



**City of Lincoln  
Fire Department  
Lincoln, California**

# **MASTER PLAN**

## **Community Risk Assessment & Standards of Cover**

July 2025

# Contents

<b>Acknowledgments .....</b>	<b>iv</b>
<b>Executive Summary .....</b>	<b>v</b>
<b>SECTION I: EVALUATION OF CURRENT CONDITIONS .....</b>	<b>1</b>
<b>Description of the Community Served.....</b>	<b>2</b>
City of Lincoln .....	2
Placer County .....	4
<b>Overview of the Lincoln Fire Department.....</b>	<b>5</b>
Operations & Deployment.....	8
Other Emergency Services Resources in the Region.....	8
<b>Financial Overview .....</b>	<b>10</b>
Historical Revenues.....	11
Historical Expenses.....	12
Capital Improvement Plan/Fund .....	14
Village 5A Financial Impact .....	14
<b>Management Components.....</b>	<b>15</b>
<b>Planning for Fire Protection &amp; EMS.....</b>	<b>18</b>
<b>Staffing &amp; Personnel.....</b>	<b>25</b>
Operational Staffing.....	25
<b>Critical Tasking Analysis .....</b>	<b>29</b>
Fire Incidents .....	31
EMS Incidents .....	35
Wildland Incidents .....	39
Technical Rescue Incidents .....	42
HazMat Incidents .....	46
ARFF Incidents .....	50
<b>Capital Facilities &amp; Equipment .....</b>	<b>54</b>
<b>SECTION II: SUPPORT PROGRAMS .....</b>	<b>64</b>
<b>Emergency Medical Services .....</b>	<b>65</b>
<b>Communications &amp; Dispatch.....</b>	<b>67</b>

<b>Life Safety Services &amp; Public Education.....</b>	<b>69</b>
Code Enforcement & Permitting.....	69
Fire Investigations.....	73
Fire & Life Safety Education Programs .....	73
Community Risk Reduction Program .....	74
<b>Training &amp; Continuing Medical Education.....</b>	<b>76</b>
Special Operations .....	83
<b>SECTION III: STANDARDS OF COVER &amp; DEPLOYMENT ANALYSIS .....</b>	<b>85</b>
<b>Historical System Performance .....</b>	<b>86</b>
Service Demand.....	89
Resource Distribution.....	99
Performance Review.....	108
<b>Population Growth &amp; Service Demand Projections .....</b>	<b>128</b>
<b>Performance Objectives.....</b>	<b>132</b>
Industry Standards .....	136
<b>SECTION IV: COMMUNITY RISK ASSESSMENT.....</b>	<b>139</b>
<b>All Hazards Community Risk Assessment.....</b>	<b>140</b>
Demographics .....	140
Additional Demographics .....	145
<b>Environmental Hazards .....</b>	<b>154</b>
Weather Conditions .....	154
Precipitation.....	158
Physical Hazards .....	160
<b>Critical Infrastructure.....</b>	<b>169</b>
<b>Land Use.....</b>	<b>183</b>
Village 5A .....	184
<b>Physical Assets Protected .....</b>	<b>187</b>
Structural Risks .....	187
Insurance Services Office .....	199
<b>Risk Classification .....</b>	<b>201</b>
Risk Assessment Methodology .....	201
<b>Comparison of Fire Risks in Other Communities .....</b>	<b>211</b>

<b>SECTION V: FINDINGS &amp; RECOMMENDATIONS .....</b>	<b>213</b>
<b>Findings .....</b>	<b>214</b>
<b>Recommended Short-Term Strategies.....</b>	<b>220</b>
<b>Recommended Mid-Term Strategies.....</b>	<b>226</b>
<b>Recommended Long-Term Strategies.....</b>	<b>228</b>
<b>SECTION VI: APPENDICES .....</b>	<b>229</b>
<b>Strategic Partners—Stakeholder Interviews .....</b>	<b>230</b>
Introduction to the Stakeholder Interviews .....	230
<b>Appendix B: Risk Classifications.....</b>	<b>234</b>
<b>Appendix C: Table of Figures .....</b>	<b>238</b>

## Acknowledgments

AP Triton wishes to extend its sincere appreciation to each of the individuals from the individuals and organizations participating in this study and whose contributions and assistance made this project possible.

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

### **Lincoln Fire Department**

**Matt Alves**

Public Safety Chief

**Aaron Bjorgum**

Fire Captain

**Anthony Mejia**

Deputy Fire Chief

### **Lincoln City Council & Administration**

**Holly Andreatta**

Mayor

**Ben Brown**

Mayor Pro Tem

**Richard Pearl**

Council Member

**John Reedy**

Council Member

**Whitney Eklund**

Council Member

**Sean Scully**

City Manager

***And to each of the firefighters, officers, and support staff who daily serve the citizens and visitors of the City of Lincoln and Placer County.***

## Executive Summary

The City of Lincoln, situated in Placer County on the edge of the Sierra Nevada foothills, is a growing community with distinct historical roots, a diverse population, and increasing public safety demands. The Lincoln Fire Department (LFD), established in 1896, has evolved from an all-volunteer organization to a fully staffed professional agency serving over 53,000 residents across 20 square miles. With the city's population expected to continue rising, particularly in areas like Village 5A, the LFD confronts greater responsibilities in protecting lives, property, and the environment. This Master Plan provides a thorough review of the department's current resources, capabilities, and strategic needs to ensure the community's safety and preparedness.

LFD operates three stations, supported by a Deputy Fire Chief, three Battalion Chiefs, and a Public Safety Chief. The department aims to maintain at least ten personnel on duty daily. All stations are in fair to good condition and were designed with future growth in mind, but lack accommodations for female firefighters—an issue that must be addressed to meet future staffing diversity goals. The department responds to a wide range of emergencies, including fires, medical incidents, hazardous materials, and wildland-urban interface (WUI) threats. It also plays a crucial role in public education, fire investigations, and community risk reduction.

A central feature of this plan is the Community Risk Assessment (CRA), which examines various hazard categories, including structural fires, wildland fires, hazardous materials, and emergency medical services (EMS). The CRA highlights areas of high risk due to rapid urban development, particularly in WUI zones. Special emphasis is placed on target hazards such as assisted living facilities, commercial occupancies, and schools. Population growth has increased the demand for fire and EMS services, with the department responding to a significant volume of calls annually. At-risk populations, including young children and seniors, further complicate service challenges.

The Standards of Cover (SOC) portion of the plan assesses resource deployment, performance, and operational capacity. LFD currently does not formally adopt performance benchmarks but tracks metrics such as call processing, turnout time, and travel time. Industry best practices emphasize that adequate staffing, appropriate tools, and timely responses are essential for effective fire suppression and medical intervention. The analysis identifies the need for improvements in both apparatus and facilities. While frontline vehicles are generally in good condition, some wildland and reserve vehicles are outdated and should be replaced. Facilities like fire stations also require modernization to meet operational and inclusion needs.

Training, certification, and continuing education remain a priority for the LFD. The department provides training in technical rescue, hazardous materials response, and EMS. Collaboration with regional entities such as the Sierra-Sacramento Valley EMS Agency ensures effective emergency medical service delivery. Additionally, the City engages community members and implements educational programs to prevent emergencies and promote safety, especially among high-risk groups and schoolchildren. Fire investigations and pre-incident surveys further inform risk mitigation efforts.

The plan also highlights the significance of aligning with national standards and industry best practices. These standards include benchmarks set by the Insurance Services Office (ISO), operational standards from the National Fire Protection Association (NFPA), and accreditation frameworks provided by the Center for Public Safety Excellence (CPSE). Integrating these standards enhances risk classification, improves response effectiveness, and supports ISO ratings that can lower insurance premiums for residents. By aligning with these models, the Lincoln Fire Department seeks to enhance service delivery, build public trust, and promote ongoing organizational improvement.

The Master Plan outlines clear short-term, mid-term, and long-term recommendations. LFD should adopt response performance goals, and begin planning for additional infrastructure and personnel, particularly to support development in Village 5A. Actions include constructing a new fire station, increasing staff, and investing in apparatus and equipment. Other goals emphasize keeping pace with city growth, updating policies, and expanding service delivery capabilities. Specific milestones and funding mechanisms, such as the City's development agreement with Richland Developers, support these objectives.

Finally, the Master Plan emphasizes proactive planning and risk-informed decision-making. It calls for integrating demographic data, growth projections, and environmental risks into future service models. Given the city's evolving landscape, which includes significant developments and changing population needs, the plan identifies the necessity for an agile, scalable emergency services infrastructure. The plan also highlights the importance of equity and inclusion, resilience in infrastructure, and strategic partnerships with regional agencies to create a more responsive and adaptive fire department.

The Lincoln Fire Department Master Plan illustrates the City's commitment to public safety and organizational excellence. Through a comprehensive assessment, strategic foresight, and alignment with national standards, the LFD is well-positioned to meet its community's current and future needs. With projected population growth, increasing service demand, and a changing risk environment, the Master Plan serves as a vital roadmap to guide the department in fulfilling its mission of protecting life, property, and the environment with honor, courage, and devotion to duty.

---

## **Section I: EVALUATION OF CURRENT CONDITIONS**

---

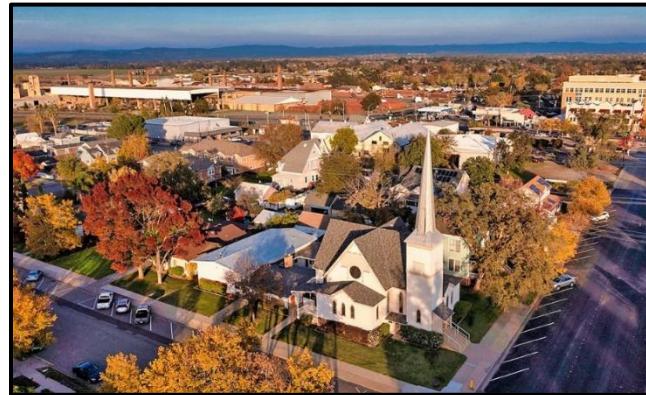
## Description of the Community Served

### City of Lincoln

The City of Lincoln is in Placer County on the eastern side of the Sacramento Valley at the base of the Sierra Nevada foothills. The city is approximately 164 feet above sea level and encompasses 20.1 square miles. California Highway 65 connects to Interstate 80, which is about ten miles to the south and east.<sup>1</sup> The average temperature ranges from a high of 96°F in July to a low of 35°F in December, and precipitation has averaged nearly 12 inches annually between 2011 and 2023. Lincoln's estimated 2023 population from the California Department of Finance is 52,313.

**Figure 1: Lincoln, California**

The Nisenan people were the first inhabitants of the area where Lincoln now exists. They were a part of the Maidu Native Americans, who had lived in this part of California for more than 5,000 years. Spanish fur traders began exploring the area in the early 1800s, and by the 1840s, Europeans began moving into the area, creating farms and ranches. The gold rush increased the area's population and was where the California Central Railroad terminated. In 1859, Lincoln was established and named after the railroad president, Charles Lincoln Wilson, but it was not incorporated until 1890.



As Lincoln expanded, it became the hub of transportation and trading in Western Placer County, and in 1873, coal was discovered. The discovery of coal also uncovered a high-quality clay, which had been the city's leading industry.<sup>2</sup>

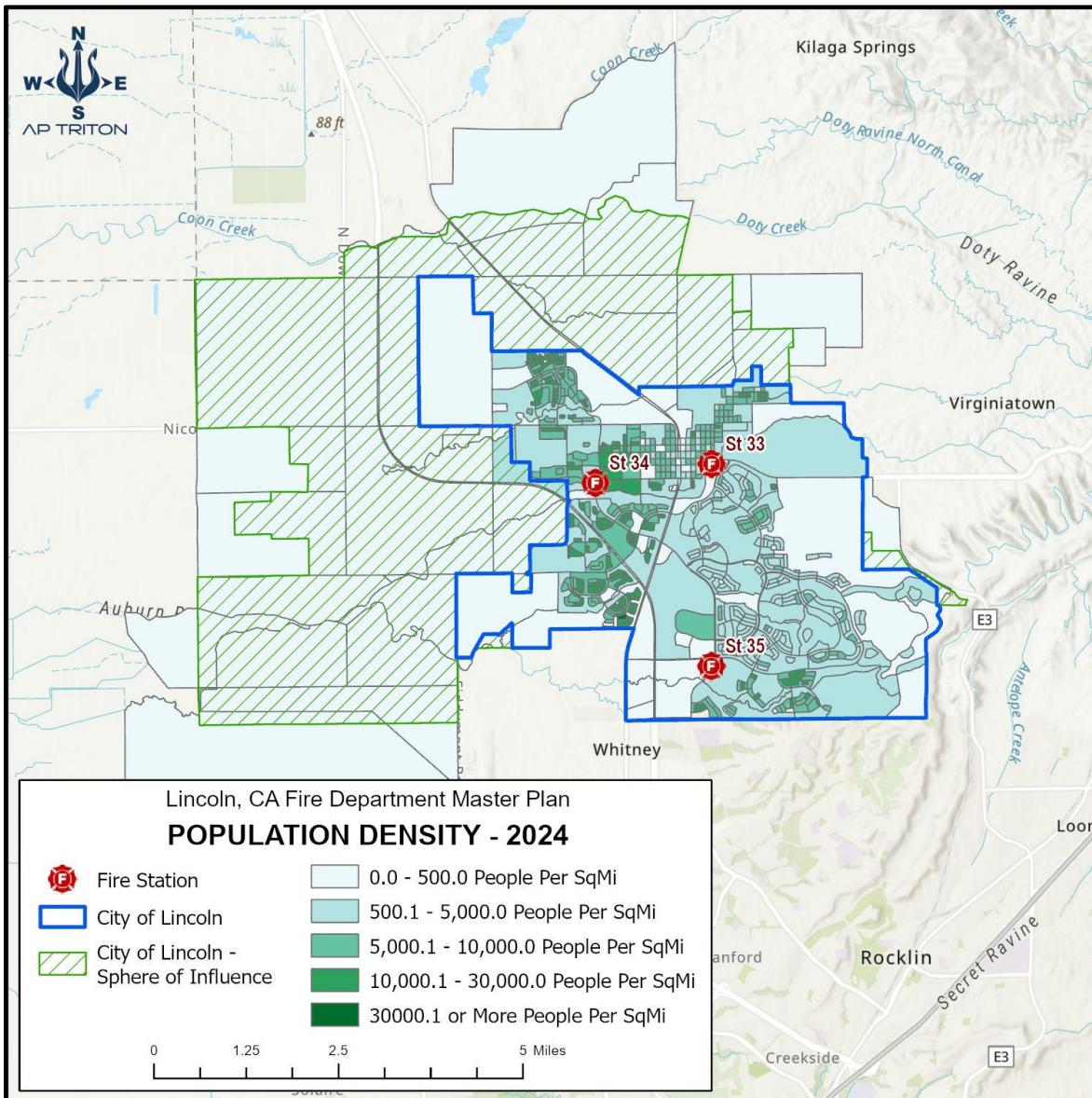
<sup>1</sup> Placer County Local Hazard Mitigation Plan Update, June 2021.

<sup>2</sup> Downtown Lincoln, A Brief History of Lincoln, California.

## Governance

The City of Lincoln uses a Council/Manager form of government. The City Council sets policies, approves ordinances, adopts the annual budget, appoints committee members, and hires the City Manager and Attorney. The City Council is elected to staggered four-year terms and elects the Mayor and Vice-Mayor. The meeting of the City Council takes place on the second and fourth Tuesday of each month, except can fluctuate during November and December because of the holidays.<sup>3</sup>

**Figure 2: Population Density of Lincoln (2024)**



<sup>3</sup> City of Lincoln website, <https://www.lincolncalifornia.gov/en/our-government/council.aspx>.

## **Placer County**

Placer County encompasses 1,506 square miles and has six incorporated cities and towns. The county was established in 1851 from parts of Sutter and Yuba Counties. Thousands of miners came to Placer County during the Gold Rush, which caused the county to grow because of the services provided to the miners.

The county seat is in Auburn, which was previously the county seat of Sutter County. The estimated population of the county in 2022 was 403,608. The county extends westward from the Nevada state line in the Sierra Nevada mountains to the Central Valley of California. The county includes Lake Tahoe and parts of the Eldorado and Tahoe National Forests. The county is governed by a five-person board of supervisors from five districts.

## Overview of the Lincoln Fire Department

The following section entails a general overview of the various components and services provided by the Lincoln Fire Department (LFD).

### History of the Lincoln Fire Department

The City of Lincoln was incorporated in August 1890 in Placer County. The Lincoln Fire Department was established on November 14, 1896, with the formation of Lincoln Hose Company #1. Like many organized fire services of that time, it was composed of volunteers from the community.

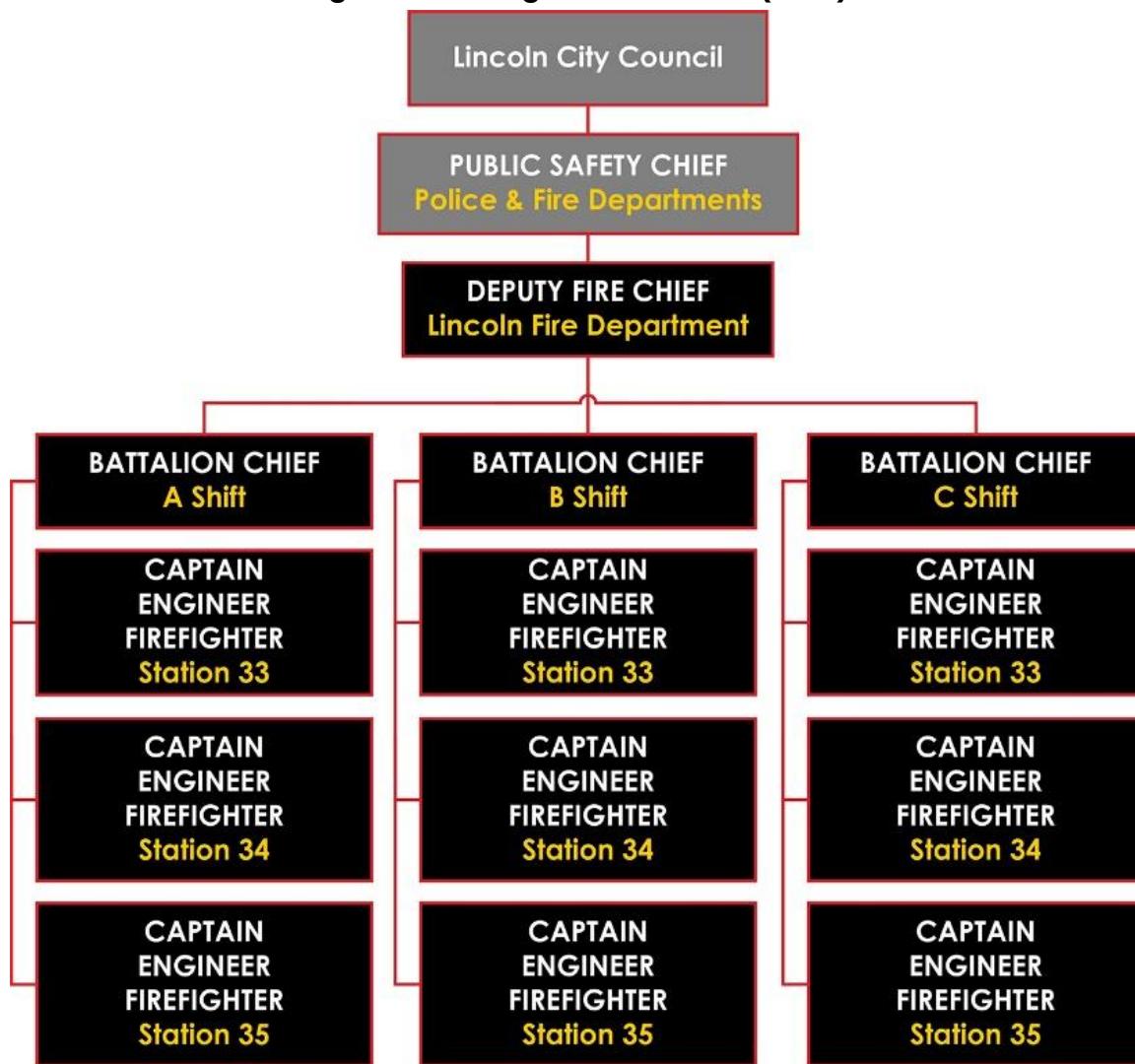
Amid the rapid growth of the city in the mid-1990s and the increasing demand for public safety services, the department began moving away from its reliance on volunteer fire personnel and initiated full-time staffing in 2001. Today, the Lincoln Fire Department aims to maintain a minimum of ten personnel on duty daily. LFD responds to various emergency and non-emergency situations, including fires, medical emergencies, and hazardous incidents.

## Organization Structure

### Governance & Line of Authority

The City of Lincoln is a general law city governed by a City Council/City Manager form of government. The five-member elected Lincoln City Council oversees the City Manager, who provides administrative direction to the Public Safety Chief (PSC). The PSC manages the Lincoln Fire Department and Lincoln Police Department. The next figure is an illustration of the current LFD organization chart.

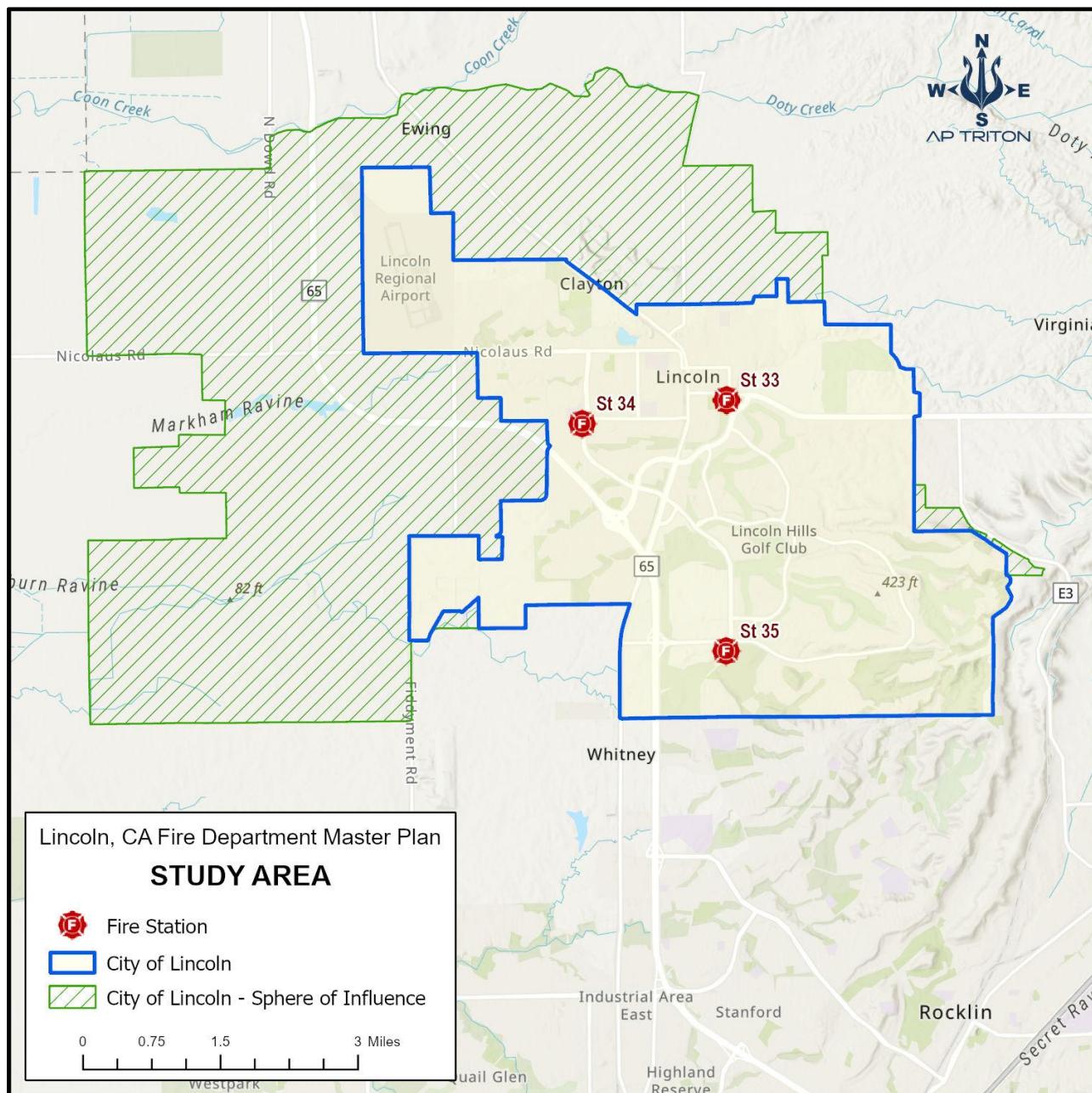
**Figure 3: LFD Organization Chart (2024)**



## LFD Response Area

The Lincoln Fire Department's response area comprises nearly 24 square miles in Placer County, with an estimated 2020 population of 48,584 persons. However, the 2024 population estimate is 53,231 residents.<sup>4</sup> The following figure shows LFD's service area.

**Figure 4: LFD Response Area**



<sup>4</sup> California Department of Finance.

## Operations & Deployment

LFD provides traditional fire protection, wildland firefighting, and Medical First-Response (MFR) primarily at the Basic Life Support (BLS) level; however, some advanced skills are utilized for certain cases. The Lincoln Fire Department does not provide technical rescue operations or mitigation for hazardous material incidents.

LFD deploys its apparatus and personnel from three staffed fire stations in locations throughout the city. Minimum staffing includes nine Firefighters and company officers and one shift Battalion Chief.

In 2025, the Insurance Services Office (ISO) assigned the Lincoln Fire Department a Public Protection Classification (PPC®) grade of Class 2/2X. The PPC grade primarily impacts businesses' insurance costs. Class 1 represents the highest grade, and 10 is the lowest.

## Other Services Provided by LFD

In addition to emergency operations, LFD provides various prevention programs, including fire inspections, code enforcement, plan reviews, fire-cause investigations, and public education programs. These will be discussed in more detail later in the report.

## Other Emergency Services Resources in the Region

### Mutual & Automatic Aid Resources

The following figure shows that the Lincoln Fire Department has several resources available for mutual aid and automatic aid responses.

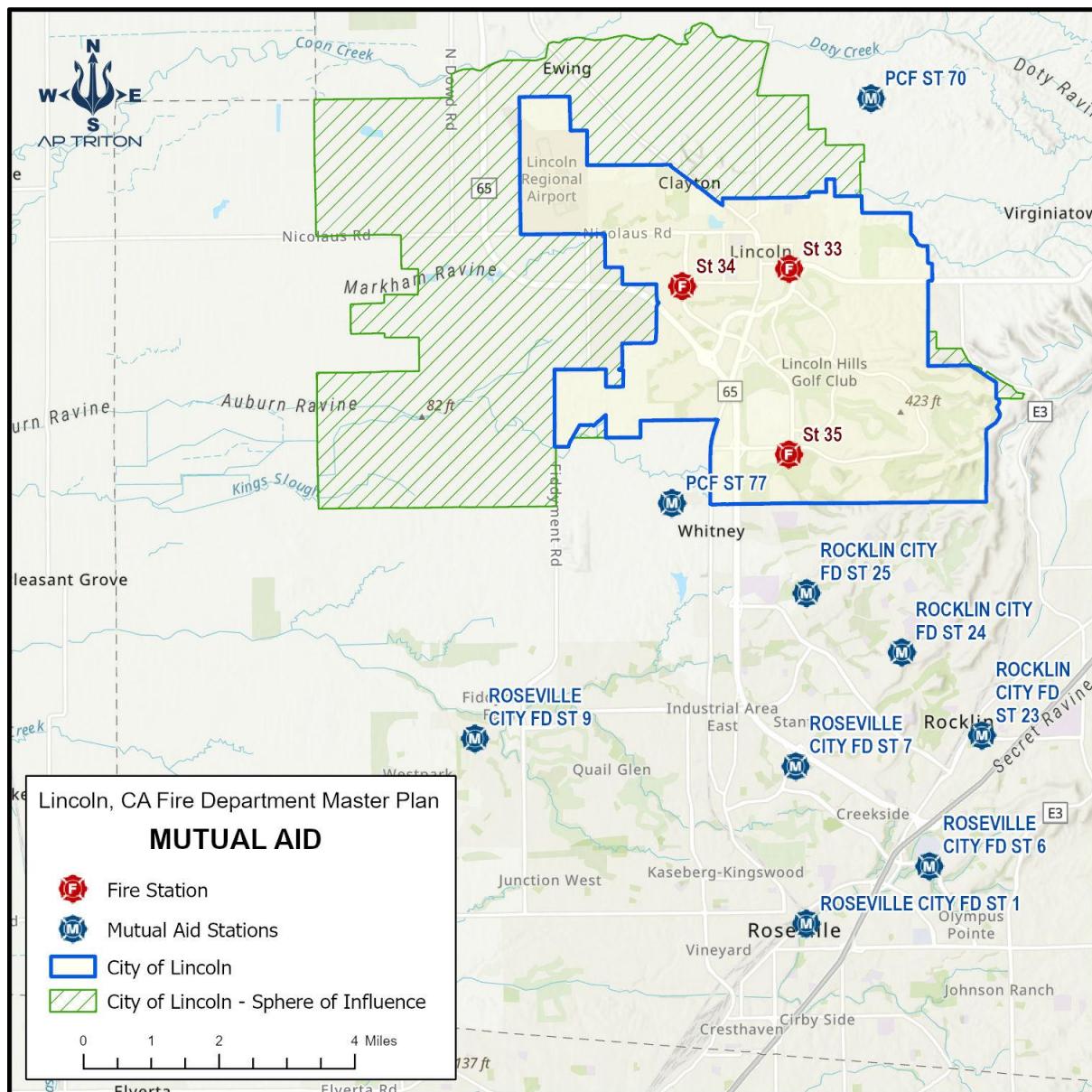
**Figure 5: Mutual & Automatic Aid Resources Available to LFD**

Agency Name	Station Number	No. of Engines	No. of Aerials	No. of Personnel
Rocklin Fire Department	#23	2	0	3
	#24	1	1	5
	#25	2	0	3
CAL FIRE Placer County	#70	1	0	2
	#77	2	1	7
	#180	2	0	7
Roseville Fire Department	#7	1	1	7
	#6	1	0	3
	#9	1	0	3
	#1	1	1	7

The Rocklin Fire Department can also provide a breathing support system, a Battalion Chief, and a Type 3 wildland engine. CAL FIRE Placer County has substantial resources, including a hazardous materials unit, USAR apparatus, and a Battalion Chief.

The Roseville Fire Department also has a hazardous materials unit, brush trucks, and a Battalion Chief. The following figure shows the locations of various mutual aid fire stations in relation to the City of Lincoln and the Lincoln Fire Department stations.

**Figure 6: Mutual & Automatic Aid Fire Stations**



## Financial Overview

Lincoln's 2023–2025 biennial budget is the City's first budget presented in a biennium framework, enabling a long-term approach to fiscal planning. The current budget seeks to address structural deficits, diversify revenue streams, and maintain critical public services—including public safety services.

The City has set a target of maintaining 0.85 sworn police officers and 0.66 firefighters per 1,000 residents. With a population of just over 52,000, this equates to approximately 45 police officers and 35 firefighters. Both departments are below these targets. To address this shortfall, the City hired nine firefighters using American Rescue Plan Act (ARPA) funding. This funding is scheduled to expire in 2027, and the published budget reflects that timeline. The General Fund forecast includes 100% of these personnel costs in future years.

The Capital Improvement Plan of the biennium budget identifies and funds certain capital projects for the fire department. This includes a perimeter fence at Station 35 and the replacement of multiple vehicles, apparatus, and equipment. Other projects are planned for the future to address Americans with Disabilities Act (ADA) upgrades necessary for ADA Title II compliance. Many capital projects have been delayed due to insufficient funding, which is a common problem nationwide. However, delaying replacements and upgrades will only worsen the funding shortage as costs for materials, equipment, and labor continue to rise faster than revenue.

The General Fund is budgeted at \$55 million for the biennium, with property and sales taxes being the largest sources of revenue. Property and sales taxes account for 54% and 22% of the revenue, respectively. The current budget includes modest annual growth projections. However, the expected growth of these streams is unlikely to keep up with increasing personnel and materials costs, highlighting the City's structural deficit. Addressing this deficit can be managed in two ways: 1) increasing and diversifying revenue, or 2) modifying and reducing expenses.

## Historical Revenues

The fire department accounts for 28% of the City's General Fund expenditures, and the General Fund makes up 80.5% of the fire department's revenue. This makes the department more vulnerable to General Fund limitations and more likely to face cuts if other departments or funds become dependent on General Fund subsidies. This highlights the need to right-size and stabilize other City funds, especially the Water, Wastewater, and Solid Waste enterprise utility funds. These funds have not had significant rate increases for many years and are at risk of insolvency. Rate increases must comply with Proposition 218, separate from the City's budgeting process.

The next largest revenue fund for the fire department in this biennium budget is the Standard Allowance Fund, which serves as the disbursement fund for American Rescue Plan Act (ARPA) funds. This funding is limited in duration, and upon its completion, the costs allocated to these funds will be absorbed by the General Fund. The department also receives money from the Public Safety Tax Share agreement with Placer County. For fire, this agreement provides just under \$700,000 in the current biennium, all of which is allocated to personnel accounts. A 2023 article in Gold Country Media noted that replacing this revenue for the City would require a 17% increase in sales tax revenue (\$10 million in new business sales) based on the City's 1% of the 7.25% sales tax.<sup>5</sup> Even with current annexation and development conversations on the table, no development would be able to happen quickly enough to make the necessary revenue impact. The department allocated to Professional Services expenses. Funds are received from license and permit costs, as well as additional fees for services within the City of Lincoln.

---

<sup>5</sup> Gold Country Media, <https://goldcountrymedia.com/news/297167/city-hall-beat-crime-in-lincoln-statistics-and-funding/>.

The following figure illustrates the revenue sources for LFD from FY 2021 to FY 2025.

**Figure 7: FY 2021–FY 2025 Revenue**

Revenue Source	FY2021 Actuals	FY2022 Actuals	FY2023 Actuals	FY2024 Actuals	FY2025 Projected
General Fund	5,730,898	5,892,988	6,258,441	6,385,409	7,704,255
Public Safety Tax Share	—	—	66,232	650,140	129,929
Standard Allowance	—	—	1,064,491	1,090,784	1,235,722
Development Services	88,909	96,566	117,770	112,573	241,897
<b>Total</b>	<b>5,819,807</b>	<b>5,989,554</b>	<b>7,506,934</b>	<b>8,238,906</b>	<b>9,311,803</b>

### Historical Expenses

Personnel costs have made up between 88% and 90% of the fire department's expenses over the past five years. This includes benefits and pension obligations for employees. Materials, services, and fees accounted for roughly 8–9% of actual expenses, while capital expenses ranged from 2–3% annually, depending on the year. Without reducing the workforce, there is little opportunity to influence actual spending; decreasing staff would conflict with all established staffing goals aimed at meeting increasing demand. Personnel expenses are heavily influenced by the individuals in those positions. The provided financial data does not include details on bargained premium costs; however, an older and more tenured workforce generally leads to higher personnel expenses. Larger vacation accruals are linked to increased overtime costs to cover absences and payouts of employees leaving the department, which are influenced by employees' tenure with the City.

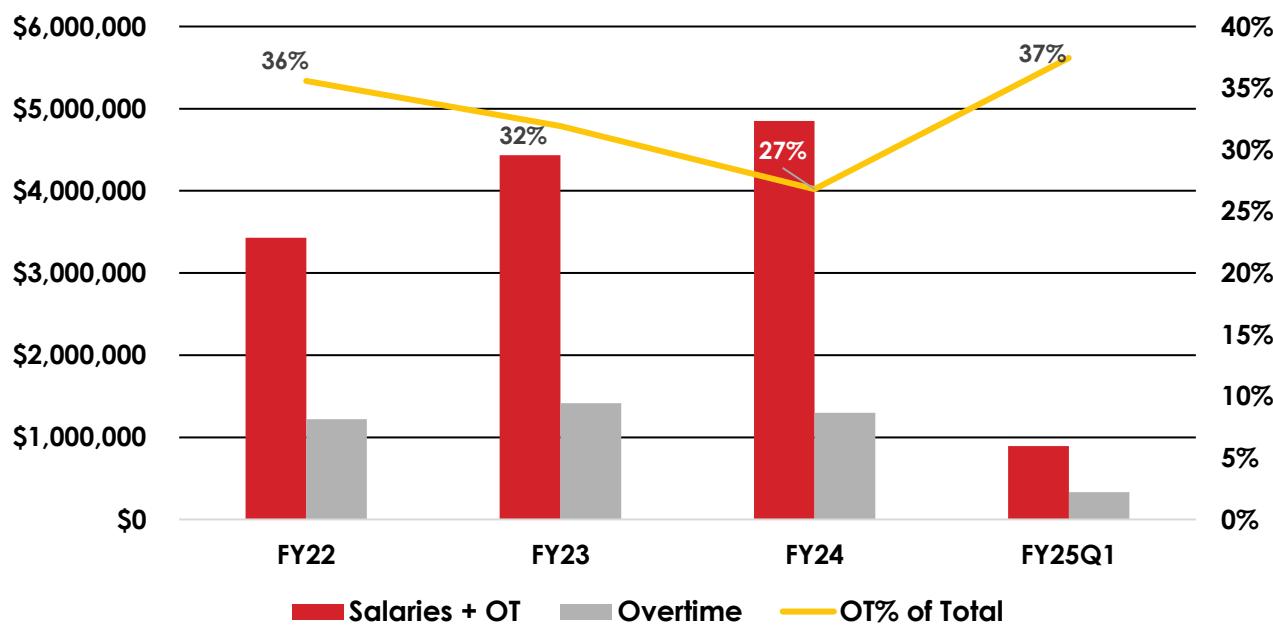
The following figure provides the operational expenses for LFD for the last five years:

**Figure 8: FY 2021–FY 2025 Expenses for LFD**

Expense Categories	FY2021 Actuals	FY2022 Actuals	FY2023 Actuals	FY2024 Actuals	FY2025 Projected
Salaries	3,574,591	3,430,374	4,474,457	4,827,496	5,165,409
Benefits	1,279,854	1,399,009	1,561,922	1,861,812	2,078,134
Pension Obligation	285,855	347,584	466,052	480,558	655,698
OPEB Annual Liability	60,720	115,600	159,432	229,299	300,018
Other Operating Costs	315,610	362,678	483,940	499,673	586,749
Professional Services	145,591	157,512	184,175	163,270	348,997
Capital Outlay	157,586	176,798	176,955	176,798	176,798
<b>Total</b>	<b>5,819,807</b>	<b>5,989,554</b>	<b>7,506,934</b>	<b>8,238,906</b>	<b>9,311,803</b>

The department has used a significant amount of overtime over the past four years (no detailed expense data was provided for FY 2021). Overtime, including salary and mutual aid overtime, accounts for at least 25% and up to 37% of all paid salary time, excluding benefits. Sometimes, overtime is necessary to operate efficiently. There will always be some level of overtime. For example, covering a period when an employee is on approved leave is usually less expensive with overtime pay than hiring an additional employee to work straight time, which would also require covering benefits. However, the trend of overtime use in the department over the last four years indicates that adding more staff within the current size and staffing model could be beneficial. Spending \$1.3 million on overtime in one fiscal year suggests that hiring additional straight-time staff to cover daily operational gaps would be a worthwhile investment to reduce overtime and ensure minimum staffing levels.

**Figure 9: Overtime Percentage of Salary Expense**



The fire department will encounter funding challenges if the City's General Fund continues to depend on current revenue streams. Options for increasing and diversifying revenue include expanding opportunities to collect commercial sales tax, exploring public-private partnerships or other regional collaborations, and reviewing utility users' taxes. Each of these options requires careful consideration—the current population in Lincoln is higher than average, with 27.9% of residents over 65. Proposition 218 mandates voter approval for rate increases, and a sizable portion of the population on fixed incomes may be less inclined to support additional tax measures, regardless of who benefits.

## **Capital Improvement Plan/Fund**

LFD's Capital Improvement Projects (CIP) are managed centrally through the City. Within this plan, project inclusion within the budget is based on priorities related to the availability of funding as well as critical infrastructure needs. The plan covers the department's fleet and facilities, as well as maintenance and replacement. Though the CIP plan has multiple dedicated funding sources, all of the fire department's projects are funded within the General Fund. Given the structural deficit issues in the General Fund, it is unclear how this will specifically put the department at risk in the coming years without additional revenue sources to address the gap.

## **Village 5A Financial Impact**

The annexation of Village 5A offers a unique chance to increase revenue through anticipated development. Public Services, as detailed in the Village 5 Specific Plan (V5SP), include Police and Fire Protection provided by the City of Lincoln. The village is expected to add nearly 20,000 residents to the service area, which, based on the City's staffing goals, would require adding 17 police officers and 13 firefighters to current staffing levels. Expanding the population and service area also requires additional considerations, such as staffing to manage higher call volumes, vehicles, apparatus, and new facilities for expanded services. The personnel costs for the 13 firefighters would be around \$3 million. One-time expenses for facility builds, apparatus, technology, and other capital costs would be additional.

Developer fees, along with property and sales tax from the full V5SP, could potentially cover this amount, including Community Facilities Districts and Fees. However, the timing of development phases compared to public safety expenses will not align until after the V5SP build-out is complete. Onboarding fire personnel, building a fire station, and acquiring fire apparatus require a significant amount of lead time. If the goal is to have a station (or stations) ready to serve the growing population as soon as development permits new residents and visitors, the City of Lincoln and Lincoln Fire Department will need to prioritize using developer fees for these projects. If developer fees are flexible, the City might also consider using these revenues for training personnel and later replacing funds for capital and infrastructure expenses when property and sales tax revenues are realized.

## Management Components

Managing today's fire service can be quite complex. A progressive department must address various elements, including maintaining a stable and qualified workforce, addressing increasing health and safety concerns, meeting community expectations, ensuring adequate and timely emergency responses, and providing stewardship over limited financial resources.

In addition to these organizational challenges, managing a fire department requires establishing key elements, including the department's mission, vision, and values; setting goals and objectives; identifying critical internal issues and challenges; providing channels for internal and external communication; keeping accurate and up-to-date records; and developing effective planning processes.

### Foundational Elements

#### **Vision, Core Values & Mission Statement**

The City of Lincoln's Vision Statement: ***America's Hometown – A City of Opportunity***, currently guides the fire department in the absence of a department-specific one. LFD has crafted the following mission statement and organizational core values. These foundational elements guide the department's culture and help to set policy priorities, goals, objectives, and direction for the fire department's future.

#### **LFD Mission Statement**

***The members of the Lincoln Fire Department serve the community and the citizens of Lincoln by protecting life, property, and the environment while being courteous, respectful, and safe in the performance of their duties.***

#### **LFD Core Values**

##### **Honor**

We honor the Fire Service by reflecting the high standards set by those who provide excellent service and the Firefighters that have gone before us.

##### **Courage**

We exhibit the mental and moral courage to do what is right even when faced with temptation under adverse conditions.

##### **Devotion to Duty**

By embracing our mission and core values we dedicate our service to those we are sworn to protect.

## Management Goals & Objectives

The approved FY 2023–25 biannual City Budget includes the department-specific goals listed below. They support the fire department's strategic priorities throughout the adopted two-year budget. Additionally, the City's current Strategic Plan emphasizes increasing Public Safety Service levels, specifically setting a goal of achieving a ratio of 0.66 firefighters for every 1,000 residents.

- **Organization Efficiency and Team Cohesion:** Continue to support probationary employees to reach a successful completion of probation.
- **Organization Efficiency and Team Cohesion:** Bolster Reserve Firefighter Program.
- **Organization Efficiency and Team Cohesion:** Bolster CERT team membership and activity.
- **Organization Efficiency and Team Cohesion:** Implementation of Lexipol Policy Manual.
- **Organization Efficiency and Team Cohesion:** Conduct joint training with the Police Department.
- **Organization Efficiency and Team Cohesion:** Complete Engineer hiring process.
- **Organization Efficiency and Team Cohesion:** Update Municipal Code (Fireworks & Burning).
- **Organization Efficiency and Team Cohesion:** Add additional administrative support within the Fire Department.
- **Infrastructure:** Research/explore additional grant opportunities.
- **Infrastructure:** Update fire station alerting systems.
- **Infrastructure:** Continue to improve breathing apparatus equipment.
- **Infrastructure:** Make additional fleet enhancements.
- **Infrastructure:** Continue to meet CSFM-mandated inspection needs (schools and multi-family residential).

### **Fire Department Leadership**

The Lincoln Fire Department operates as the Fire Division within the City's Public Safety Department. In July 2019, the Lincoln Fire and Police Departments were unified under a single administration. Until the recent establishment and hiring of the Deputy Fire Chief position, the department was overseen by three shift Battalion Chiefs, who reported directly to the Public Safety Director. The Fire Department's leadership includes a Public Safety Chief (Police Chief), a Deputy Fire Chief, and three Battalion Chiefs. The Deputy Fire Chief reports to the Public Safety Chief, supervises the three Battalion Chiefs, and manages the daily operations of the fire department and all of its personnel.

## Planning for Fire Protection & EMS

The dynamic nature of emergency services requires the Lincoln Fire Department to plan proactively for future challenges and operational demands. As fireground safety standards evolve and new technologies, equipment, and procedures are introduced, fire departments must be prepared to adapt quickly to maintain compliance, safety, and efficiency. Establishing internal processes to regularly evaluate these changes enables the department to remain adaptable and effective.

Developing a formal continuous improvement process allows LFD to identify which programs are functioning efficiently, which require modification, and which may need to be discontinued. Strategic organizational planning ensures that the department is shaping its future intentionally—rather than reacting to change without structure. When guided by internal performance metrics and external community indicators, planning serves as a foundation for informed, forward-looking decision-making.

Although LFD has not yet formally adopted organizational mission, vision, or values statements, a working group has been established to develop these foundational components. Once complete, these statements will provide clarity of purpose and alignment for departmental initiatives.

Historically, LFD's planning efforts have been closely tied to the budget development process. As the City of Lincoln continues to grow and evolve, the department would benefit from implementing a comprehensive planning framework that incorporates input from the community, including residents and local businesses. This inclusive approach will help ensure that service levels, priorities, and investments reflect the needs and expectations of those LFD serves.

To be truly effective, an emergency services agency must plan across five key levels of focus:

**Figure 10: Planning for the Future**

Planning Level	Description
1. Tactical Planning	The development of strategies for potential emergency incidents.
2. Operational Planning	The organization of day-to-day activities, as primarily outlined by a department's standard operating guidelines and procedures. This includes the integration of the agency into other local, regional, or national response networks.
3. Master Planning	Preparation for the long-term effectiveness of the agency as the operating environment changes over time.
4. Strategic Planning	The process of <i>identifying</i> an organization's mission, vision, and values and <i>prioritizing</i> goals and objectives for things that need to be accomplished in the near future.
5. Emergency Management Planning	The process of identifying potential critical risks and threats facing a community with the intent to mitigate their impacts and positively impact recovery.

### Tactical Planning

A firefighter's first visit to a building occurs during a fire or other emergency. This is also when the internal environment is the least conducive for responding personnel. During a fire, visibility is at or near zero due to smoke and a lack of familiarity with a building. A firefighter can quickly become disoriented or injured by an unfamiliar internal layout, equipment, or other hazards they may encounter.

It is critically important that firefighters and command staff have comprehensive, accurate information to identify hazards, direct operations, and built-in fire protection features. This can only be accomplished by building familiarization tours, developing pre-fire plans, and conducting on-site or tabletop simulation exercises.

A defined list of "target hazards" should be developed, and aggressive efforts should be taken to ensure response crews have ready access to the plans.

Target hazards are defined by:

- Buildings with large potential occupant loads.
- Buildings with populations who are partially or entirely non-ambulatory.
- Buildings of considerable size (greater than 12,000 square feet).
- Buildings that contain process hazards, such as hazardous materials or equipment.

Pre-incident plans should be easy to use, and quick-reference tools should be available for company officers and command staff. At a minimum, a pre-incident plan should include information such as:

- Building construction
- Occupant characteristics
- Incorporated fire protection systems
- Capabilities of public or industrial responding personnel
- Water supply
- Exposure factors
- Facility layouts

NFPA 1620 provides excellent information on developing and using pre-incident plans and should be used as a reference. Once pre-incident plans are established and updated, training should be provided to all personnel who may respond to an incident at those locations. LFD is currently using Visio software for pre-incident planning but is migrating to First Due, which is an improved platform for completing and retrieving information than the current system.

## **Operational Planning**

Operational planning connects tactical and strategic planning by turning long-term goals into daily operations and resource management. This process ensures the LFD remains prepared and effective, ready to handle emergencies, and contributes to the community's safety and well-being. Operational planning also establishes minimum staffing policies, standardized response protocols, regional incident command, mutual aid, automatic aid (locally and regionally), resource identification, and disaster planning. These plans or guides allow an organization to prepare for emergency operations and ensure an adequate response internally and from outside resources.

This planning is developed to:

- Identify community risks;
- Determine the resources needed to mitigate an incident or risk;
- Creating a response plan for notification of necessary resources for the incident; and
- Manage the incident until its conclusion.

LFD uses a regional incident command system during an emergency and has contracted with a third party (Lexipol) to help implement departmental policies and procedures. These should be reviewed annually to ensure they meet established guidelines or need modification.

With minimal policies and procedures, LFD has contracted with Lexipol, which assists public safety agencies in developing state-specific policy manuals and resources to support and manage behavioral and physical health risks. A draft has been developed and is under review by the union. It is expected to be implemented by the summer of 2025.

Additionally, the LFD has created an Operations Group comprised of 11 firefighters of all ranks, tasked with developing an in-depth Operations Guide that establishes operational guidelines for efficiency and standardization within the department. This guide aligns with all standards set by FIRESCOPE to ensure consistency in incident response and resource management. Furthermore, LFD is in the implementation phase of establishing Tablet Command, a technology-driven incident command system that enhances real-time accountability and response efficiency during emergencies.

## **Master Planning**

Adopting a master plan is needed to provide an organization with a blueprint for the future. The process should ultimately involve all members of the City and input from the community. The City has recognized the need for this process, and this study will assist in answering the following questions:

- Where is the organization today?
- Where do we need to be in the future? and,
- How do we get there?

A master plan is particularly essential in a community undergoing change or growth, and it is crucial to effectively identify needs and plan for an emergency response agency's future. This master plan is designed to provide a view of the organization in a 10- to 15-year timeframe and includes a community risk assessment and standards of cover deployment analysis. Implementation of the master plan findings should use a strategic planning process to determine how the plan is implemented.

Lincoln has not undertaken a master planning process before initiating this study. The master planning process provides the City insight into its current situation based on evaluating current conditions. The master plan projects LFD's future needs and strategies for meeting the recommendations.

## **Strategic Planning**

A strategic plan involves a three- to five-year planning window and establishes prioritized goals and objectives for the organization. This planning approach is critical after the master plan has been completed. A master plan identifies multiple recommendations and future strategies, which are evaluated and prioritized within the strategic plan.

Establishing a community-focused strategic plan accomplishes the following:

- Development of a mission statement based on current and future services.
- Development of a forward-looking vision statement for the agency.
- Establish the current values of the agency.
- Assessing the strengths, weaknesses, opportunities, and challenges of the agency.
- Determining the community's service priorities.
- Understanding of the community's expectations of the agency.
- Establishment of realistic goals and objectives for the future.

- Identify tasks for each objective with timelines.
- Determine outcomes for each measurable performance objective and target.

A strategic plan is not a stagnant tool kept on a shelf but should be maintained and reviewed consistently and updated as needed. The strategic plan can be used to create a work plan for the organization, which allows LFD to monitor progress. These documents can guide the agency as it plans for the future. It gives the agency a defined purpose, direction, and path to improve services.

This master plan provides a list of recommendations and advice for changes and new initiatives. Strategic planning is considered the most effective method to prioritize and plan. The master plan guides LFD as the organization develops and implements a strategic plan.

### **Emergency Management Planning**

Emergency management, once a lower priority for many communities, has become an essential component of public safety operations. Prior to the terrorist attacks of September 11, 2001, emergency management was largely disconnected from daily life. Since then, the creation of federal agencies such as the Department of Homeland Security (DHS) and the Transportation Security Administration (TSA) has led to significant advancements in national preparedness, including the coordination of threat warnings, transportation screenings, and security measures at public venues.

At the local level, emergency management plays a critical role in helping governments, businesses, and residents prepare for, mitigate, respond to, and recover from disasters. This is achieved through the development and regular maintenance of emergency action plans, coordination of training and exercises, and ongoing updates that reflect emerging threats and evolving best practices. These efforts help reduce risks, limit the consequences of emergencies, and strengthen community resilience.

The City of Lincoln maintains an Emergency Operations Plan (EOP), last updated in 2004, with an update anticipated in the near future. The City's Director of Public Safety currently serves as the Emergency Management Director, and Placer County provides supplemental emergency management services upon request. The County also assists with Emergency Operations Center (EOC) readiness and Incident Command System (ICS) training to ensure City personnel are equipped for coordinated response efforts.

As the Lincoln Fire Department evolves from a smaller organization into a more capable and comprehensive agency, its emergency planning responsibilities must evolve as well. This master plan serves as a strategic guide for enhancing the City's fire protection and life safety services while supporting the integration of emergency management principles into daily operations and long-term planning.

## Staffing & Personnel

### Operational Staffing

Like many other communities in California, Lincoln experienced a significant downsizing period following the 'Great Recession' of the early 2000s. It took nearly a decade for the City to regain the financial ability to hire the additional firefighters necessary to maintain a staffing level of three personnel across its three fire companies. With funding from the American Rescue Plan Act, nine new firefighters were added in late 2022. The department currently operates with three engine companies, each staffed by a Fire Captain, Fire Engineer, and firefighter. LFD follows a three-platoon staffing plan, with line personnel working a 96/48 schedule. Each shift is supervised by an on-duty Battalion Chief who works the same schedule as the line personnel. The Deputy Chief is responsible for managing all administrative and operational aspects of the fire department while reporting to the Public Safety Chief (Police Chief).

**Figure 11: LFD Staffing**

Position	FTEs
Fire Chief	0
Deputy Chief	1
Battalion Chief	3
Captain	9
Fire Engineer	9
Firefighter	9
<b>Total FTEs</b>	<b>31</b>

### Staffing & Personnel

The fire service has traditionally depended on personnel to deliver emergency services that enhance community safety and protect property and lives. Today, fire departments must regard their employees as their most valuable assets. Without sufficient administrative and support staff to manage supervision, command, and control, operational personnel may find it difficult to perform satisfactorily. An organization's ability to meet its obligations and mission relies on proactive recruiting, management, and maintenance of adequate staffing. Consistency, fairness, safety, and opportunities for personal and professional growth are vital values for a healthy fire service organizational culture.

This is especially true in departments that are evolving and adapting to meet current emergency response challenges. The size and structure of a fire department's staffing depend on the organization's specific needs. These needs must directly align with the community's requirements and available funding; a configuration that works for one department may not necessarily fit another.

### **Administrative, Support & Operational Staffing**

Fire service staff functions are divided into two distinct groups: administrative and operational. For an agency to function effectively, both groups must have the necessary resources to carry out their tasks. Allocating resources to balance the two can be challenging, but adequate staffing is essential.

Planning, organizing, directing, coordinating, and evaluating each of the various programs within a fire department are typical responsibilities of the administration and support personnel. This list is not exhaustive and may include other elements as needed. It is essential to understand that tasks associated with each function often occur simultaneously.

This requires the fire administration and associated City support staff to concentrate on multiple areas simultaneously to effectively address the fire department's organizational needs. The LFD's current organizational structure, as a component of the City of Lincoln Public Safety Department, administratively places many typical fire department support services in a shared relationship with the police department and other City Departments (e.g., HR, Finance, Personnel, and Public Works).

### **Policies, Rules, & Regulations**

LFD policies and procedures are migrating to Lexipol®, where they will be managed and maintained. LFD conducts policy reviews as necessary, with the most recent review completed in 2022. The policies developed between LFD and Lexipol® primarily target sworn department personnel. Additionally, the City of Lincoln Human Resource Department maintains rules and regulations for fire department personnel in the City's Personnel Manual.

### **Standard Operating Guidelines (SOGs)**

LFD is developing various standard operating guidelines (SOGs) for specific operational processes. These formal guidelines address fire ground operations, engine company evolutions, and training exercises, all based on internal and external industry sources. LFD staff have reviewed recognized best practices and standards while creating these policies and procedures. The staff is evaluating each of these as they adopt and integrate them into the Lexipol system. Although this process is incomplete, AP Triton has reviewed several drafts provided by LFD and supports the department's efforts in this area.

### **Job Descriptions**

The City of Lincoln's Human Resources Department maintains job descriptions for all municipal positions, including those within the fire department. Job descriptions for existing fire department positions are available on the City's website. AP Triton reviewed these descriptions and found them to be consistent with those used by fire departments of comparable size, structure, and operational scope.

### **Application & Recruitment Process**

LFD has established an internal task force composed of line personnel to support firefighter recruitment efforts. The department utilizes a combination of traditional print, written, and social media platforms to engage potential candidates. Outreach initiatives to local high schools, colleges, and regional fire academies also support recruitment and marketing objectives. Full-time firefighter positions are publicly posted on the City of Lincoln's website. The department also provides a Fire Department Employment Informational Packet online, offering applicants an overview of the hiring process.

The LFD hiring process includes several screening steps: a qualifications review, reference and background checks, structured interviews, and a psychological evaluation.

Candidates must pass the Candidate Physical Ability Test (CPAT) prior to applying. Upon receiving a conditional offer, selected applicants must also complete a comprehensive medical examination, consistent with NFPA 1582 guidelines.

### **Performance Reviews, Testing, Measurement, & Promotional Process**

LFD conducts annual performance evaluations for all full-time and permanent personnel. Probationary firefighters currently have an 18-month probationary period, with evaluations monthly. The City HR department oversees all department performance reviews, testing, measurement, and recruitment/promotional processes.

### **Disciplinary Process**

LFD's disciplinary process is governed by the City of Lincoln's Personnel Rules and Regulations and the applicable Memoranda of Understanding (MOUs) for represented employee groups within the department. Additionally, all disciplinary actions involving fire personnel are subject to the provisions of the California Firefighters Procedural Bill of Rights Act, which ensures procedural protections for fire service employees during investigations and disciplinary proceedings.

### **Health, Wellness, & Safety**

LFD maintains a Health and Wellness Program that includes access to peer counselors and assigns a designated firefighter to oversee department fitness equipment. The department is in the process of implementing a Health and Fitness Program modeled after NFPA 1582: Standard on Comprehensive Occupational Medical Program for Fire Departments. These efforts reflect a commitment to firefighter physical and mental readiness.

### **Counseling Services**

The City of Lincoln provides all fire department employees with access to counseling services through the ACI Specialty Benefits Employee Assistance Program (EAP). Additionally, members of IAFF Local 522 benefit from peer support programs and post-incident debriefing teams. Through the department's partnership with Cordico by Lexipol®, all LFD personnel have 24/7 access to confidential mental health resources, stress management tools, and wellness content tailored to the unique needs of public safety professionals.

## Critical Tasking Analysis

Each type of emergency incident—whether fire, medical, rescue, or hazardous materials—requires the completion of specific critical tasks to achieve a successful outcome. These tasks must be supported by an appropriate number of trained personnel and the correct types of apparatus. Effective incident response depends on the ability to carry out multiple operations simultaneously; when staffing is insufficient, the incident commander is forced to prioritize and sequence tasks, which can delay key interventions and compromise outcomes.

Fire incidents, in particular, involve two essential components: **life safety** and **fire flow**.

- **Life safety tasks** are driven by the number of occupants within a structure, their locations, conditions, and ability to self-evacuate. These tasks include search, rescue, and evacuation.
- **Fire flow tasks** focus on delivering an adequate volume of water to suppress the fire and create a tenable environment for interior firefighting operations.

To perform these tasks effectively and concurrently, a minimum number of personnel must be present on scene. The key tasks typically required at a structure fire incident include:

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

This same concept of critical tasking applies to non-fire emergencies as well. Medical calls, technical rescues, and hazardous materials incidents demand the coordination of multiple concurrent actions. Whether it is stabilizing patients, securing hazardous zones, or performing extrication, the department's ability to quickly mobilize the necessary resources and personnel is a defining factor in operational success.

The Commission on Fire Accreditation International (CFAI) provides general staffing recommendations based on incident risk levels. These are outlined below:

**Figure 12: Critical Task Analysis—Risk Level Description**

RISK LEVEL	DESCRIPTION
<b>LOW RISK</b>	Minor incidents such as small fires (fire flow < 250 GPM), single-patient non-life-threatening medical incidents, minor rescues, small fuel spills, or wildland fires without extreme behavior.
<b>MODERATE RISK</b>	Includes fires in single-family homes or comparably sized commercial structures (fire flow 250–1,000 GPM), life-threatening medical emergencies, technical rescues, hazardous materials calls, and larger wildland fires.
<b>HIGH RISK</b>	Events involving large commercial structures requiring sustained fire attack (fire flow > 1,000 GPM), mass-casualty medical incidents, large-scale hazardous materials releases, high-risk rescues, and wildland fires with extreme conditions.

In summary, identifying the critical tasks associated with various incident types—and ensuring adequate staffing and apparatus to perform them concurrently—is essential to meeting service delivery expectations and maintaining firefighter and civilian safety. This analysis forms a foundational element of effective deployment planning and Standards of Cover development.

## Fire Incidents

### Low Fire Risk Incidents

The following figures illustrate the personnel required to perform all critical tasks for a low fire risk incident and compare those needs against current alarm assignments. These incidents typically involve small, well-contained fires with minimal threat to life or property but still require an effective and coordinated response to ensure safety and operational control.

**Figure 13: Critical Task Analysis—Low Fire Risk**

Task Description	Personnel Needed
Command	1
Size-Up (360°)	1
Engineer (driver or pump operator)	1
Fire Attack	1
<b>Effective Response Force:</b>	<b>4</b>

**Figure 14: Alarm Assignments—Low Fire Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid	
	Units	Staff	Units	Staff	Units	Staff
Engine/Pumper	1	3				
<b>Staff Available:</b>		<b>3</b>				<b>3</b>
<b>Staff Needed:</b>						<b>4</b>
<b>Deficiency:</b>						<b>-1</b>

### Moderate Fire Risk Incidents

For moderate fire risk incidents—such as fires in single-family homes or similarly sized structures—the figures below identify the minimum personnel needed to perform key tasks and assess how current staffing compares. These events require additional coordination, a larger fire flow, and simultaneous operations to support life safety and fire control.

**Figure 15: Critical Task Analysis—Moderate Fire Risk**

Task Description	Personnel Needed
Command	1
Safety	1
Size up (360°)	1
Driver/Engine or Pump Operator	2
Fire Attack	2
<b>Effective Response Force:</b>	<b>7</b>

**Figure 16: Alarm Assignments—Moderate Fire Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid	
	Units	Staff	Units	Staff	Units	Staff
Engine/Pumper	2	6				
<b>Totals:</b>		<b>6</b>				
<b>Staff Available:</b>		<b>6</b>				
<b>Staff Needed:</b>						<b>7</b>
<b>Deficiency:</b>						<b>-1</b>

## High Fire Risk Incidents

High-risk fire incidents involve larger commercial or multi-unit structures where extended fire attack, rescue, and ventilation efforts are necessary. The following figures outline the range of critical functions required and evaluate whether available personnel meet the needs of such complex operations.

**Figure 17: Critical Task Analysis—High Fire Risk**

Task Description	Personnel Needed
Command/Support	1
Safety	1
Size up (360°)	1
Driver/Engine or Pump Operator	1
Water Supply	1
Standpipe/Sprinkler Control	1
Fire Attack	2
Search & Rescue	3
Ventilation/Utilities	3
Back-up Line	3
Rapid Intervention Team	3
<b>Effective Response Force:</b>	<b>20</b>

**Figure 18: Alarm Assignments—High Fire Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid	
	Units	Staff	Units	Staff	Units	Staff
Engine/Pumper	3	9	1	3		
Ladder/Aerial			2	6		
Battalion Chief	1	1	1	1		
<b>Totals:</b>	<b>4</b>	<b>10</b>	<b>1</b>	<b>10</b>		
<b>Staff Available:</b>		<b>10</b>		<b>10</b>		<b>20</b>
<b>Staff Needed:</b>						<b>20</b>
<b>Deficiency: None</b>						<b>0</b>

### Maximum Fire Risk Incidents

Maximum-risk incidents, such as fires in high-rise or large industrial facilities, demand extensive tasking and multi-unit coordination. The following figures detail the full range of required operational roles and assess staffing adequacy in meeting the demands of these high-impact events.

**Figure 19: Critical Task Analysis—Maximum Fire Risk**

Task Description	Personnel Needed
Command/Support	1
Safety	1
Size up (360°)	1
Driver/Engine or Pump Operator	1
Water Supply	1
Standpipe/Sprinkler Control	1
Fire Attack	6
Search & Rescue	3
Ventilation/Utilities	3
Back-up Line	2
Rapid Intervention Team (Two Teams)	6
<b>Effective Response Force:</b>	<b>26</b>

**Figure 20: Alarm Assignments—Maximum Fire Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid	
	Units	Staff	Units	Staff	Units	Staff
Engine/Pumper	3	9	5	15		
Ladder/Aerial			3	9		
Rescue						
Battalion Chief	1	1	2	2		
EMS						
<b>Totals:</b>	<b>4</b>	<b>10</b>	<b>10</b>	<b>26</b>		
<b>Staff Available:</b>		<b>10</b>		<b>26</b>		<b>36</b>
<b>Staff Needed:</b>						<b>26</b>
<b>Deficiency: None</b>						<b>10</b>

## EMS Incidents

### Low EMS Risk Incidents

Low-risk EMS incidents typically involve single patients and require basic life support care.

The following figures provide an overview of the personnel needed to safely manage these incidents and how current alarm assignments meet those demands.

**Figure 21: Critical Task Analysis—Low EMS Risk**

Task Description	Personnel Needed
Safety	1
Documentation	1
Basic Life Support Treatment	2
<b>Effective Response Force:</b>	<b>4</b>

**Figure 22: Alarm Assignments—Low EMS Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid		Totals
	Units	Staff	Units	Staff	Units	Staff	
EMS Unit			1	2			
Fire Unit	1	3					
<b>Totals:</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>2</b>			
<b>Staff Available:</b>							<b>5</b>
<b>Staff Needed:</b>							<b>4</b>
<b>Deficiency: None</b>							<b>1</b>

### Moderate EMS Risk Incidents

Moderate-risk EMS incidents typically involve serious medical conditions requiring both basic and advanced life support. The following figures define critical tasks and compare staffing needs to currently available response resources.

**Figure 23: Critical Task Analysis—Moderate EMS Risk**

Task Description	Personnel Needed
Safety	1
Basic Life Support Treatment	2
Advanced Life Support Treatment	2
<b>Effective Response Force:</b>	<b>5</b>

**Figure 24: Alarm Assignments—Moderate EMS Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid		Totals
	Units	Staff	Units	Staff	Units	Staff	
EMS Unit			1	2			
Fire Unit	1	3					
<b>Totals:</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>2</b>			
<b>Staff Available:</b>							<b>5</b>
<b>Staff Needed:</b>							<b>5</b>
<b>Deficiency: None</b>							<b>0</b>

### High EMS Risk Incidents

High-risk EMS incidents include multiple patients or complex care situations where triage, treatment, and transport must be coordinated simultaneously. The following figures outline the full range of required roles and indicate whether current assignments are sufficient to support these operations.

**Figure 25: Critical Task Analysis—High EMS Risk**

Task Description	Personnel Needed
Command/Support	1
Safety	1
Triage Group	2
Basic Life Support Treatment	4
Advanced Life Support Treatment	4
Transport Group	2
<b>Effective Response Force:</b>	<b>14</b>

**Figure 26: Alarm Assignments—High EMS Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid	
	Units	Staff	Units	Staff	Units	Staff
EMS Unit						
Fire Unit	4	10	2	4		
<b>Totals:</b>	<b>4</b>	<b>10</b>	<b>2</b>	<b>4</b>		
<b>Staff Available:</b>						<b>14</b>
<b>Staff Needed:</b>						<b>14</b>
<b>Deficiency: None</b>						<b>0</b>

### Maximum EMS Risk Incidents

For maximum-risk EMS events, such as mass casualty incidents, a high number of personnel are needed across multiple command, treatment, and support functions. The following figures demonstrate the critical staffing requirements and the degree to which existing resources meet or fall short of those needs.

**Figure 27: Critical Task Analysis—Maximum EMS Risk**

Task Description	Personnel Needed
Command	2
Safety	1
Operations	3
Triage Group	3
Basic Life Support Treatment	3
Advanced Life Support Treatment	4
Evacuation Group	3
Transport Group	3
Staging	1
<b>Effective Response Force:</b>	<b>23</b>

**Figure 28: Alarm Assignments—Maximum EMS Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid	
	Units	Staff	Units	Staff	Units	Staff
EMS Unit			2	4		
Fire Unit	20	20	2	4		
<b>Staff Available:</b>		<b>20</b>		<b>4</b>		<b>24</b>
<b>Staff Needed:</b>						<b>23</b>
<b>Deficiency: None</b>						<b>1</b>

## Wildland Incidents

### Low Wildland Risk Incidents

The following figures present the minimum critical tasks and staffing for low-risk wildland fires. These incidents typically involve small fires without complex weather or fuel conditions, yet still require effective coordination of fire attack and safety functions.

**Figure 29: Critical Task Analysis—Low Wildland Risk**

Task Description	Personnel Needed
Safety	1
Engineer (driver or pump operator)	1
Fire Attack	1
<b>Effective Response Force:</b>	<b>3</b>

**Figure 30: Alarm Assignments—Low Wildland Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid		Totals
	Units	Staff	Units	Staff	Units	Staff	
Fire Unit	1	3					
<b>Totals:</b>	<b>1</b>	<b>3</b>					
<b>Staff Available:</b>		<b>3</b>					<b>3</b>
<b>Staff Needed:</b>							<b>3</b>
<b>Deficiency:</b>							<b>0</b>

### Moderate Wildland Risk Incidents

Moderate wildland fires demand additional resources to manage flank divisions and water supply operations. The following figures outline the essential personnel needed and evaluate current alarm assignments against those operational requirements.

**Figure 31: Critical Task Analysis—Moderate Wildland Risk**

Task Description	Personnel Needed
Command	1
Safety	1
Driver/Engine or Pump Operator	1
Flank Divisions	3
Water Supply	1
<b>Effective Response Force:</b>	<b>7</b>

**Figure 32: Alarm Assignments—Moderate Wildland Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid		Totals
	Units	Staff	Units	Staff	Units	Staff	
Fire Unit	3	7					
<b>Totals:</b>	<b>3</b>	<b>7</b>					
<b>Staff Available:</b>		<b>7</b>					<b>7</b>
<b>Staff Needed:</b>							<b>7</b>
<b>Deficiency:</b>							<b>0</b>

### High Wildland Risk Incidents

High-risk wildland fires involve aggressive fire behavior and the need for structure protection and broader incident command functions. The following figures detail required tasking and assess whether available staffing can meet those needs under complex and fast-evolving conditions.

**Figure 33: Critical Task Analysis—High Wildland Risk**

Task Description	Personnel Needed
Command	1
Safety	1
Recon Group	1
Lookout	2
Driver/Engine or Pump Operator	1
Flank Divisions	3
Water Supply	1
Holding	3
Structure Protection	3
Staging	1
<b>Effective Response Force:</b>	<b>17</b>

**Figure 34: Alarm Assignments—High Wildland Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid		Totals
	Units	Staff	Units	Staff	Units	Staff	
Fire Unit	6	14					
<b>Totals:</b>	<b>6</b>	<b>14</b>					
<b>Staff Available:</b>		<b>14</b>					<b>14</b>
<b>Staff Needed:</b>							<b>17</b>
<b>Deficiency:</b>							<b>-3</b>

## Technical Rescue Incidents

### Low Technical Rescue Risk Incidents

Low-risk technical rescue incidents, such as routine vehicle extrications, still require specific technical and medical tasks. The following figures outline those responsibilities and compare personnel requirements to current staffing levels.

**Figure 35: Critical Task Analysis—Low Technical Rescue Risk**

Task Description	Personnel Needed
Command	1
Safety	1
Basic Life Support Treatment	1
Extrication/Hazard Mitigation	1
<b>Effective Response Force:</b>	<b>4</b>

**Figure 36: Alarm Assignments—Low Technical Rescue Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid		Totals
	Units	Staff	Units	Staff	Units	Staff	
Fire Unit	1	3					
<b>Totals:</b>	<b>1</b>	<b>3</b>					
<b>Staff Available:</b>		<b>3</b>					<b>3</b>
<b>Staff Needed:</b>							<b>4</b>
<b>Deficiency:</b>							<b>-1</b>

### Moderate Technical Rescue Risk Incidents

These figures identify the critical tasks and effective response force needed for moderate-risk technical rescue incidents involving confined spaces, complex extrications, or similar events requiring advanced rescue and EMS functions.

**Figure 37: Critical Task Analysis—Moderate Technical Rescue Risk**

Task Description	Personnel Needed
Command	1
Safety	1
Size Up (360°)	1
Basic Life Support Treatment	2
Advanced Life Support Treatment	2
Extrication/Hazard Mitigation	3
<b>Effective Response Force:</b>	<b>10</b>

**Figure 38: Alarm Assignments—Moderate Technical Rescue Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid		Totals
	Units	Staff	Units	Staff	Units	Staff	
EMS Unit			1	2			
Fire Unit	3	7					
<b>Totals:</b>	<b>3</b>	<b>7</b>		<b>2</b>			
<b>Staff Available:</b>			<b>7</b>	<b>2</b>			<b>9</b>
<b>Staff Needed:</b>							<b>10</b>
<b>Deficiency:</b>							<b>-1</b>

## High Technical Rescue Risk Incidents

High-risk technical rescues demand specialized teams for operations, treatment, and scene support. The following figures summarize the task-based staffing requirements and measure the current response model's ability to meet those operational demands.

**Figure 39: Critical Task Analysis—High Technical Rescue Risk**

Task Description	Personnel Needed
Command/Support	1
Safety	1
Size Up (360°)	1
Operations	9
Rescue Teams	4
Rescue Support Group	1
Basic Life Support Treatment	3
Advanced Life Support Treatment	2
<b>Effective Response Force:</b>	<b>22</b>

**Figure 40: Alarm Assignments—High Technical Rescue Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid		Totals
	Units	Staff	Units	Staff	Units	Staff	
EMS Unit			1	2			
Fire Unit	4	10	5	13			
Rescue							
<b>Totals:</b>	<b>4</b>	<b>10</b>	<b>6</b>	<b>15</b>			<b>25</b>
<b>Staff Available:</b>		<b>10</b>		<b>15</b>			<b>22</b>
<b>Staff Needed:</b>							
<b>Deficiency: None</b>							<b>3</b>

### Maximum Technical Rescue Risk Incidents

Maximum-risk rescues often involve unstable structures or time-intensive operations requiring comprehensive coordination and EMS integration. The following figures illustrate the full array of personnel required and compare those needs to available staffing through current alarm protocols.

**Figure 41: Critical Task Analysis—Maximum Technical Rescue Risk**

Task Description	Personnel Needed
Command/Support	2
Safety	1
Size Up (360°)	1
Operations	9
Entry team leader and teams	2
Rescue Support Group	2
Basic Life Support Treatment	3
Advanced Life Support Treatment	4
Staging	1
<b>Effective Response Force:</b>	<b>25</b>

**Figure 42: Alarm Assignments—Maximum Technical Rescue Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid		Totals
	Units	Staff	Units	Staff	Units	Staff	
EMS Unit			2	4			
Fire Unit	3	9	5	13			
<b>Totals:</b>	<b>3</b>	<b>9</b>	<b>7</b>	<b>17</b>			
<b>Staff Available:</b>							<b>26</b>
<b>Staff Needed:</b>							<b>25</b>
<b>Deficiency:</b>							<b>-1</b>

## HazMat Incidents

### Low HazMat Risk Incidents

The following figures outline the staffing requirements for low-risk hazardous materials incidents, typically involving minor spills or contained exposures. They also provide a comparison between required staffing and current unit assignments.

**Figure 43: Critical Task Analysis—Low HazMat Risk**

Task Description	Personnel Needed
Command	1
Safety	1
Size-Up (360°)	1
Hazard Mitigation	5
<b>Effective Response Force:</b>	<b>8</b>

**Figure 44: Alarm Assignments—Low HazMat Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid		Totals
	Units	Staff	Units	Staff	Units	Staff	
Fire Unit	2	4					
<b>Totals:</b>	<b>2</b>	<b>4</b>					
<b>Staff Available:</b>		<b>4</b>					<b>4</b>
<b>Staff Needed:</b>							<b>8</b>
<b>Deficiency:</b>							<b>-4</b>

### Moderate HazMat Risk Incidents

Moderate-risk HazMat incidents require a coordinated response including decontamination, hazard mitigation, and medical support. The following figures summarize the personnel needed to manage these functions and assess alignment with current response capabilities.

**Figure 45: Critical Task Analysis—Moderate HazMat Risk**

Task Description	Personnel Needed
Command	1
Safety	1
Size up (360°)	1
Pump Operations/Decontamination	1
Hazmat Group Supervisor	1
Hazard Mitigation	6
EMS Unit	2
<b>Effective Response Force:</b>	<b>13</b>

**Figure 46: Alarm Assignments—Moderate HazMat Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid		Totals
	Units	Staff	Units	Staff	Units	Staff	
EMS Unit			1	2			
Fire Unit	3	7					
Rescue	1				1	4	
<b>Totals:</b>	<b>4</b>	<b>7</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>4</b>	<b>Totals</b>
<b>Staff Available:</b>		<b>7</b>		<b>2</b>		<b>4</b>	<b>13</b>
<b>Staff Needed:</b>							<b>13</b>
<b>Deficiency:</b>							<b>0</b>

### High HazMat Risk Incidents

High-risk HazMat events involve large-scale releases or unknown substances and require multiple entry teams, backup crews, and support functions. The following figures detail these needs and evaluate current staffing against the required effective response force.

**Figure 47: Critical Task Analysis—High HazMat Risk**

Task Description	Personnel Needed
Command/Support	1
Safety	1
Size Up (360°)	1
Operations	9
Entry Team Officer and Team	4
Back-up Entry Team	4
HazMat Support Group	3
Decon Group	6
Medical Group	6
<b>Effective Response Force:</b>	<b>35</b>

**Figure 48: Alarm Assignments—High HazMat Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid		Totals
	Units	Staff	Units	Staff	Units	Staff	
EMS Unit			4	8			
Fire Unit	4	10	3	9			
Rescue					1	4	
<b>Totals:</b>	<b>4</b>	<b>10</b>	<b>7</b>	<b>17</b>	<b>1</b>	<b>4</b>	<b>Totals</b>
<b>Staff Available:</b>		<b>10</b>		<b>17</b>		<b>4</b>	<b>31</b>
<b>Staff Needed:</b>							<b>35</b>
<b>Deficiency:</b>							<b>-4</b>

### Maximum HazMat Risk Incidents

Maximum-risk HazMat scenarios require extensive mitigation operations, medical management, and staging across a broad area. The following figures show the expected tasking and compare the department's available staffing to the level necessary for these highly complex emergencies.

**Figure 49: Critical Task Analysis—Maximum HazMat Risk**

Task Description	Personnel Needed
Command/Support	1
Safety	1
Size Up (360°)	1
Operations	9
Entry Team Officer and Team	4
Back-up Entry Team	4
HazMat Support Group	3
Decon Group	6
Medical Group	6
Staging	1
EMS	6
<b>Effective Response Force:</b>	<b>42</b>

**Figure 50: Alarm Assignments—Maximum HazMat Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid		Totals
	Units	Staff	Units	Staff	Units	Staff	
EMS Unit			3	6			
Fire Unit	5	11	3	9			
Rescue					1	4	
<b>Totals:</b>	<b>5</b>	<b>11</b>	<b>6</b>	<b>15</b>	<b>1</b>	<b>4</b>	<b>Totals</b>
<b>Staff Available:</b>		<b>11</b>		<b>15</b>		<b>4</b>	<b>30</b>
<b>Staff Needed:</b>							<b>42</b>
<b>Deficiency:</b>							<b>-12</b>

## ARFF Incidents

### Low ARFF Risk Incidents

Low-risk ARFF incidents typically involve minor emergencies or precautionary landings. The following figures outline the basic tasking and staffing levels necessary for an effective response, based on current standards and resources.

**Figure 51: Critical Task Analysis—Low ARFF Risk**

Task Description	Personnel Needed
Command	1
Size Up (360°)	1
Fire/Rescue Standby	1
<b>Effective Response Force:</b>	<b>3</b>

**Figure 52: Alarm Assignments—Low ARFF Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid		Totals
	Units	Staff	Units	Staff	Units	Staff	
Fire Unit	1	3					
<b>Totals:</b>	<b>1</b>	<b>3</b>					
<b>Staff Available:</b>		<b>3</b>					<b>3</b>
<b>Staff Needed:</b>							<b>3</b>
<b>Deficiency: None</b>							<b>0</b>

### Moderate ARFF Risk Incidents

These figures illustrate the staffing and unit assignments required for moderate ARFF risk incidents, which may involve multiple aircraft systems, standby operations, or limited rescue functions.

**Figure 53: Critical Task Analysis—Moderate ARFF Risk**

Task Description	Personnel Needed
Command	1
Safety	1
Size up (360°)	1
Fire Attack Group Standby	3
Rescue Group Standby	1
<b>Effective Response Force:</b>	<b>7</b>

**Figure 54: Alarm Assignments—Moderate ARFF Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid		Totals
	Units	Staff	Units	Staff	Units	Staff	
Fire Unit	3	7					
<b>Totals:</b>	<b>3</b>	<b>7</b>					
<b>Staff Available:</b>		<b>7</b>					<b>7</b>
<b>Staff Needed:</b>							<b>7</b>
<b>Deficiency:</b>							<b>0</b>

## High ARFF Risk Incidents

High-risk ARFF incidents require robust command, rescue, and fire suppression operations. The following figures define the critical staffing needed to manage such events and compare it with current alarm assignments.

**Figure 55: Critical Task Analysis—High ARFF Risk**

Task Description	Personnel Needed
Command	1
Safety	1
Size Up (360°)	1
Operations Section	6
Fire Attack Group	6
Rescue Group	3
Medical Group	3
Staging	1
<b>Effective Response Force:</b>	<b>22</b>

**Figure 56: Alarm Assignments—High ARFF Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid	
	Units	Staff	Units	Staff	Units	Staff
Fire Unit	4	10	2	6		
Other:						
<b>Totals:</b>	<b>4</b>	<b>10</b>	<b>2</b>	<b>6</b>		
<b>Staff Available:</b>		<b>10</b>		<b>6</b>		<b>16</b>
<b>Staff Needed:</b>						<b>22</b>
<b>Deficiency:</b>						<b>-6</b>

### Maximum ARFF Risk Incidents

Maximum-risk ARFF events involve mass casualty potential and require complex coordination of fire suppression, rescue, triage, and transport. The figures that follow provide a comprehensive view of tasking requirements and the extent to which current staffing meets those needs.

**Figure 57: Critical Task Analysis—Maximum ARFF Risk**

Task Description	Personnel Needed
Command	1
Safety	1
Size Up (360°)	1
Operations Section	1
Fire Attack Group	9
Rescue Group	3
Triage Group	3
Basic Life Support	9
Advanced Life Support	8
Transport Group	3
Staging	3
<b>Effective Response Force:</b>	<b>42</b>

**Figure 58: Alarm Assignments—Maximum Fire Risk Incident**

Unit Description	LFD		Auto Aid		Mutual Aid		Totals
	Units	Staff	Units	Staff	Units	Staff	
ARFF Unit					1	4	
Fire Unit	5	11	6	18			
EMS Unit			4	8			
<b>Totals:</b>	<b>5</b>	<b>11</b>	<b>10</b>	<b>26</b>	<b>1</b>	<b>4</b>	<b>41</b>
<b>Staff Available:</b>		<b>11</b>		<b>26</b>		<b>4</b>	<b>42</b>
<b>Staff Needed:</b>							
<b>Deficiency:</b>							<b>-1</b>

## Capital Facilities & Equipment

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

Since the essential capital assets for emergency operations are facilities, apparatus, and other emergency response vehicles, this portion of the report will address those in the following sections.

### Fire Station Features

Fire stations play an integral role in delivering emergency services for several reasons. Primarily, a station's location will dictate response times to emergencies. A poorly located station can mean the difference between confining a fire to a single room and losing the structure or survival from sudden cardiac arrest.

Fire stations also need to be designed to adequately house equipment and apparatus and meet the organization's and its personnel's needs.

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

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

In gathering information from LFD, AP Triton asked the department to rate its fire stations' condition using the criteria in the following figure. The results will be seen in the figures following the criteria description.

**Figure 59: 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 ten 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 crumbling concrete on the apron may exist. The roof has evidence of leaking and has been repaired multiple times. The interior is poorly maintained or showing 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.

The following figures describe the basic features of each of LFD's fire stations.

**Figure 60: LFD Station 33**

<b>Address/Physical Location:</b>	17 McBean Park Dr, Lincoln, CA 95648
	<b>General Description:</b> Fire Station 33 is a 17-year-old, 2-story, 1,700 sq. ft. facility. It has two drive-through apparatus bays and can accommodate multiple apparatus and personnel. Only the first-floor public areas of the station are ADA-compliant. This station appears to be well-maintained and in good condition at this time.
<b>Structure</b>	
Date of Original Construction	2008
General Condition	Good
Seismic Protection	Yes
Auxiliary Power	Yes
ADA Compliant	1 <sup>st</sup> Floor only
Number of Apparatus Bays	Drive-Through:   2   Back-In:   1   Total Bays:   3
Total Square Footage	17,000
<b>Facilities Available</b>	
Sleeping Quarters	Bedrooms:   6   Beds:   11   Dorm Beds:   0
Maximum Staffing Capability	11 (Total no. staff that can be housed at the station)
Bathroom/Shower Facilities	Yes
Gender Segregation (Y/N)	Bathrooms?   N   Showers?   N   Bedrooms?   N
Exercise/Workout Facilities	Yes
Kitchen Facilities	Yes
Individual Lockers Assigned	Yes
Training/Meeting Rooms	Yes
Washer/Dryer/Extractor	Yes
<b>Safety &amp; Security</b>	
Station Sprinklered	Yes
Smoke & CO Detection	Yes
Decon & Biological Disposal	No
Security System	No
Apparatus Exhaust System	Yes

**Figure 61: LFD Station 34****Address/Physical Location:**

126 Joiner Parkway, Lincoln, CA 95648

**General Description:**

Fire Station 34 currently serves as the LFD Headquarters. The on-duty Battalion Chief and a 3-person engine company are also located here. The building is protected by an automatic fire sprinkler system and equipped with an auxiliary power generator. Although ADA-compliant, the station facilities do not include gender-specific restrooms, showers, or sleep areas for staff.

**Structure**

Date of Original Construction	2008
General Condition	Good
Seismic Protection	Yes
Auxiliary Power	Yes
ADA Compliant	Yes
Number of Apparatus Bays	Drive-Through:   3   Back-In:   1   Total Bays:   4
Total Square Footage	20,000

**Facilities Available**

Sleeping Quarters	Bedrooms:   6   Beds:   11   Dorm Beds:   0
Maximum Staffing Capability	11 (Total no. staff that can be housed at the station)
Bathroom/Shower Facilities	Yes
Gender Segregation (Y/N)	Bathrooms   N   Showers   N   Bedrooms   N
Exercise/Workout Facilities	Yes
Kitchen Facilities	Yes
Individual Lockers Assigned	Yes
Training/Meeting Rooms	Yes
Washer/Dryer/Extractor	Yes

**Safety & Security**

Station Sprinklered	Yes
Smoke & CO Detection	Yes
Decon & Biological Disposal	No
Security System	No
Apparatus Exhaust System	Yes

**Figure 62: LFD Station 35**

<b>Address/Physical Location:</b>	2525 E Joiner Parkway, Lincoln, CA 95648
	<b>General Description:</b> Station 35 is a single-story 6,400 sq. ft. built in 2001. Designed to house one 3-person engine company, this station is the smallest of the three existing LFD stations. Like the other stations, it is protected by a fire sprinkler system and has auxiliary power provided by an on-site generator. It appears to be reasonably well-maintained and in fair condition.
<b>Structure</b>	
Date of Original Construction	2001
General Condition	Fair
Seismic Protection	Some
Auxiliary Power	Yes
ADA Compliant	Yes
Number of Apparatus Bays	Drive-Through:   2   Back-In:   0   Total Bays:   2
Total Square Footage	6,400
<b>Facilities Available</b>	
Sleeping Quarters	Bedrooms:   4   Beds:   4   Dorm Beds:   0
Maximum Staffing Capability	4 (Total no. staff that can be housed at the station)
Bathroom/Shower Facilities	Yes
Gender Segregation (Y/N)	Bathrooms   N   Showers   N   Bedrooms   N
Exercise/Workout Facilities	Yes
Kitchen Facilities	Yes
Individual Lockers Assigned	Yes
Training/Meeting Rooms	No
Washer/Dryer/Extractor	Yes
<b>Safety &amp; Security</b>	
Station Sprinklered	Yes
Smoke & CO Detection	Yes
Decon & Biological Disposal	No
Security System	No
Apparatus Exhaust System	Yes

## Fire Stations Discussion

All of LFD's fire stations appear to be adequately sized to meet the needs of the Town of Lincoln currently. Stations 33 and 34 were both built with the future growth of the community they serve in mind. Both stations are large enough to house multiple companies if the need arises. None of the three stations were classified as being in "Excellent" condition; Stations 33 and 34 were noted to be in "Good" condition, while Station 35 was assessed as being in "Fair" condition.

**Figure 63: Summary of FFD Fire Stations**

Station	Square Footage	Apparatus Bays	Staffing Capacity	General Condition	Station Age
Station 33	17,000	3	11	Good	17
Station 34	20,000	3	11	Good	17
Station 35	6,400	2	4	Fair	24

### Fire Station 33

Station 33, built in 2008, is a two-story, 1,700-square-foot facility. It currently houses a single 3-person engine company that also staffs a Type 3 Wildland engine and the department's 2,000-gallon Water Tender. Only the first-floor public areas of the station are compliant with the Americans with Disabilities Act (ADA).

The station has a fire sprinkler system and auxiliary power supplied by an on-site generator. However, it lacks gender-specific public restrooms, male and female bathrooms, showers, and sleeping areas for staff. Station 33 appears to be well-maintained and in good condition currently.

### Fire Station 34

Fire Station 34 is a single-story, 20,000-square-foot facility built in 2008 and currently serves as the LFD Headquarters. All department administrative offices are located in this area. The on-duty battalion chief and a three-person engine company, which also cross-staffs a Type 3 Wildland engine, are stationed here. The building is protected by an automatic fire sprinkler system and equipped with an auxiliary power generator. Although the building is ADA-compliant, it does not offer gender-specific restrooms, bathrooms, or dormitories for staff.

### **Fire Station 35**

Station 35 was built in 2001; it is a single-story 6,400 sq. ft. facility designed to house one 3-person engine company. A fire sprinkler system protects the station, and an on-site generator provides auxiliary power. Considering the facility's age, it appears reasonably well-maintained and in fair condition. Due to its location, the engine company housed here is first due into the 12 Bridges area and the Del Web – Lincoln Hills development.

While all structures require regular maintenance, fire stations demand even more upkeep due to their continuous occupation by at least three adults. The frequent departures and arrivals of heavy equipment also affect the integrity of these facilities. During AP Triton's fire station inspections, they were found to be well-maintained and properly equipped to support the assigned firefighters. However, all three fire stations lack gender-specific bathrooms, showers, and sleeping facilities designed for female fire suppression staff members. Currently, LFD does not have any female firefighters on its roster. In preparation for hiring female firefighters, the department should start planning how to accommodate these new employees within the existing fire station facilities.

### **Facility Replacement and Expansion**

Lincoln is a rapidly growing community and will, in the immediate future, face the following challenge: We need to build several new fire stations to respond adequately to the recently annexed areas. Considerable attention should be given to locating these new facilities in locations across and around the city to ensure that fire companies' response times are enhanced and meet the recognized NFPA standards noted in the Standards of Cover portion of this document.

### **Facility Maintenance**

Consistent maintenance and prompt replacement of specialized equipment ensure the stations remain in good condition. Developing plans to update and repair systems, such as heating and air conditioning (HVAC), generators, roofs, driveways, parking lots, security gates, painting, carpets, and small appliances, can help minimize costs and prolong the lifespan of the buildings.

## Apparatus & Vehicles

Clearly, apparatus must be sufficiently reliable to transport firefighters and equipment rapidly and safely to an incident scene. Such vehicles must be properly equipped and function appropriately to ensure that the delivery of emergency services is not compromised.

As part of this study, AP Triton requested that the fire department provide a comprehensive inventory of its fleet, including suppression apparatus, command and support vehicles, specialty units, and other relevant equipment. For each vehicle listed, LFD was asked to rate its condition utilizing the criteria described in the next figure.

**Figure 64: Criteria Used to Determine Apparatus & Vehicle Condition**

Evaluation Components	Points Assignment Criteria	
<b>Age:</b>	One point for every year of age, based on the 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 the service type received (e.g., a pumper would be given a 5 since it is classified as severe duty service).	
<b>Condition:</b>	1, 3, or 5 points are assigned to this category that 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 if 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)

## Lincoln Fire Department Apparatus

The following figure lists the inventory of the current frontline apparatus and other vehicles of the Lincoln Fire Department.

**Figure 65: Apparatus Inventory**

Apparatus	Type	Make	Year	Condition	Status
<b>Type 1 Engines</b>					
E 33 (3433)	Type 1	Pierce	2019	Good	Frontline
E 34 (3434)	Type 1	Pierce	2019	Good	Frontline
E 35 (3435)	Type 1	Spartan/Hi-Tech	2016	Good	Frontline
R 1786	Type 1	Spartan/Hi-Tech	2006	Fair	Reserve
R 1787	Type 1	Spartan/Hi-Tech	2006	Fair	Reserve
<b>Tenders</b>					
WT 33 (1793)	Type II	International E-One	2000	Fair	Frontline
<b>Type 3 and Type 6 Engines</b>					
BR 33 (1763)	Type 3	International E-One	2000	Poor	Frontline
BR 34 (1761)	Type 3	International HME	2015	Good	Frontline
G35 (1751)	Type 6	Ford/Hi-Tech	1999	Poor	Frontline

**Figure 66: Command & Staff Vehicles**

Unit	Assigned To	Manufacturer	Year	Condition
3401 (3402)	Deputy Chief	Chevrolet SUV	2018	Good
BC 34 (1708)	BC/Duty Chief	Ford F250	2023	Excellent
U 33 (1709)	Utility Vehicle	Ford F150	2024	Excellent
U 34 (1707)	UV/BC Unit	Ford F250	2024	Excellent
U 35 (1710)	Utility Vehicle	Ford F150	2024	Excellent
R (1704)	Utility Vehicle	Dodge 1500	2004	Fair
R (1701)	Utility Vehicle	Dodge SUV	2005	Poor
R (1702)	Utility Vehicle	Dodge SUV	2005	Poor

Note: BC-Battalion Chief, UV-Utility Vehicle

In summary, the overall condition of the Lincoln Fire Department's in-service apparatus, command vehicles, and utility vehicles is typically good to excellent. LFD's Type I apparatus fleet seems to be in good to fair condition.

Due to their age and condition, two of the three Wildland apparatus and the current Water Tender should be assessed for potential replacement. LFD's reserve utility vehicles, which appear to be over 20 years old, are slated for replacement in the 2024–25 budget cycle.

---

## **Section II: SUPPORT PROGRAMS**

---

## Emergency Medical Services

The following section entails a general overview of the EMS delivery system in the City of Lincoln and Placer County.

### EMS Administration

#### Regional EMS Administration

The Sierra-Sacramento Valley Emergency Medical Services (S-SV EMS) Agency serves as the Local Emergency Medical Services Agency (LEMSA) for Butte, Colusa, Glenn, Nevada, Shasta, Siskiyou, Sutter, Tehama, Yuba, and Placer counties.

S-SV EMS was founded as a Joint Powers Authority (JPA) with legal responsibilities for planning, developing, implementing, and overseeing all EMS components within our 10-county jurisdiction. This includes:

- EMS system design.
- Qualification, accreditation, and authorization of all prehospital care personnel.
- Compliance with local and state EMS statutes and regulations.

#### LFD EMS Administration

The responsibility of managing LFD's EMS delivery lies with the Deputy Fire Chief. The fire department does not have an assigned Medical Director. EMS is allocated a specific budget, and has increased each year over the last three years:

- FY 21–22: \$25,000
- FY 22–23: \$28,750
- FY 23–24: \$37,750

LFD utilizes the ImageTrend® RMS system to generate electronic patient-care records (ePCR) for EMS incidents. ImageTrend® is compliant with the National Emergency Medical Services Information System (NEMSIS) and Health Insurance Portability and Accountability Act (HIPAA) standards (as well as the National Fire Incident Reporting System).

Patient refusals are documented. The department has policies that enable patients to request ePCRs while ensuring patient confidentiality and records security.

The Lincoln Fire Department does not have a formal quality management process for evaluating EMS system performance or clinical care. Neither does LFD have a program to address frequent users or “abusers” of the EMS system.

## **EMS Operations**

### **Medical First Response**

Approximately 69% of LFD's annual responses are emergency medical incidents.<sup>6</sup> The Lincoln Fire Department provides medical first-response at the BLS level (with some advanced skills) from its three staffed fire stations. The department's full-time Type 1 engines are equipped with BLS equipment and staffed with certified Firefighter/Emergency Medical Technicians.

### **Ground Emergency Medical Transport**

American Medical Response (AMR) is a national private ambulance service that provides Ground Emergency Medical Transport (GEMT) service to the Lincoln area. AMR provides Advanced Life Support (ALS) as well as Basic Life Support. In addition to emergency operations, AMR provides non-emergency medical transportation management services.

### **Air Medical Transport**

Since Lincoln is within the catchment area of Sutter Roseville Medical Center (SRMC), about 10 miles distant, helicopter scene transport is rarely indicated except in high-acuity pediatric cases and severe burns.

The California Association of Air Medical Services (CALSTAR) is typically utilized when helicopter transport is required. CALSTAR maintains rotor wing bases throughout California, including one about 14 miles from Lincoln in Auburn.

---

<sup>6</sup> Completed Data Table 8-A: Emergency Medical Services (Fire-Based/Non-Transport).

## Communications & Dispatch

The following section describes the dispatch services and emergency communications utilized by the Lincoln Fire Department.

### **Lincoln Police Department Dispatch Center**

The City of Lincoln Police Department (LPD) operates the Lincoln Dispatch Center (LDC) and serves as the community's primary 911 Public Safety Answering Point (PSAP). LDC provides dispatch and communications services for police, fire, and EMS. The Center serves a population of just over 55,000 residents. The Rocklin Police Department's 911 Center serves as the redundant or backup communications facility.

### **Personnel & Staffing**

A Dispatch/Records Supervisor oversees eight 911 Call-Takers/Dispatchers who work 12-hour shifts on a 36-hour/48-hour rotation. The minimum daily staffing is one Call-Taker/Dispatcher. Staff must meet California State training and certification requirements.

### **Operations**

In accordance with a contractual arrangement, LDC transfers callers requiring Emergency Medical Dispatch (EMD) services and pre-arrival instructions to the American Medical Response (AMR) dispatch center.

In 2023, Lincoln Dispatch Center received 10,751 calls for fires, EMS, and other related incidents. The Center reported that over 94% of its calls were answered in 10 seconds or less, with an average call-processing time of just over 69 seconds.

### **Quality Management Standards**

The Lincoln Dispatch Center has not adopted any performance standards or benchmarks. While dispatch activities are evaluated, no formal quality management (QM) or quality assurance (QA) program is in place.

### **Communications Equipment**

The latest Computer-Aided Dispatch (CAD) system is from Sun Ridge System, Inc., which was installed in 2005. LDC uses a digital radio system for the police department and an analog system for the fire department.

The Lincoln Dispatch Center does not have separate funding; expenses are funded through the Lincoln Police Department's general budget. Currently, there are no capital facilities or equipment plans for upgrades or replacement.

## **Data Collection & Records Management**

LDC's CAD system is interfaced with LFD's records management system (RMS). CAD data is automatically downloaded into the ImageTrend® RMS, which LFD utilizes to document all its incidents. The CAD system collects multiple data elements and can export incident data into an Excel format for detailed data analyses.

The following is a list of the data elements collected in the CAD system:

- Dispatch center incident number
- Time call received (911 system access)
- Unit dispatched time
- Time unit began the response
- Time arrived at the scene
- Time unit canceled
- Unit response mode/priority
- Suspect/complainant contact time
- Unit available for service time
- Incident type description
- Incident location street address
- Incident location latitude/longitude
- Unit name/number
- Unit type (engine, ambulance, truck, etc.)

These data elements are helpful when conducting assorted data analyses to determine service demand and operational performance.

## Life Safety Services & Public Education

### Code Enforcement & Permitting

A primary component of any risk reduction program is to provide a comprehensive fire and life safety inspection and permitting process. The goal is to prevent or mitigate a fire or injury before it occurs.

### Building Plan Review

The review process provides information on how the construction may affect LFD's access to the building during an incident, the type of construction, the need for fire protection systems, or a change of use.

Plan reviews should begin when the initial concept is presented for permitting. The initial review allows the fire department to provide suggestions and enforce existing requirements before permitting. For example, the site plan should include fire apparatus access, fire department connection location if a sprinkler system is present, size and height of the building, hydrants, or other features that impact emergency responders.

Proper permit applications and processes are necessary to assist the contractor when submitting plans for review and ultimate approval. Reviewing construction plans allows fire service representatives to ensure code compliance for existing fire sprinkler and alarm systems, emergency lighting, or other processes. In addition, a permitting system allows the organization to require changes to plans if they do not meet code requirements before construction begins.

A third-party company provides all inspections and plan reviews for new construction, such as a new building or tenant improvement. They review fire sprinklers and alarm systems, suppression systems for commercial kitchen hoods, and underground fire mains for fire sprinkler systems. These contractors work through the community development, which issues the permits and tracks the inspections before a final certificate of occupancy is issued.

## Fire & Life Safety Inspections

Inspections of commercial buildings and properties allow LFD to reduce risks by educating the public and business owners about why the violation is a safety concern. Fire and life safety inspections utilize three of the *Five E's*, education, engineering, and enforcement. Each of these provides a method to reduce risks through mitigation or prevention. LFD uses ImageTrend as its records management system to track all properties, buildings, and inspections.

LFD manages all fire code complaints and residential daycare facilities. California Health and Safety Code, Section 13146, outlines the local fire agency's authority and responsibility to inspect certain occupancies, namely:

- For Multi-Family Dwellings, Group R-1 and R-2 occupancies must be inspected annually (13146.2).
- For Residential Care Facilities, Groups R2.1 and R-4 must be inspected upon request of a licensee for a pre-inspection and upon receipt of a licensing request [H&S 13146.2 and 17921(b)].
- High-rise structures more than 75 feet above the lowest floor level with building access must be inspected annually, and the result must be sent to the State Fire Marshal (SFM) within 30 days. If the fire authority does not inspect, the SFM will conduct the inspections and assess a fee to the owner [H&S 13217(a)]. It is noted that there are currently no buildings of this height in the City.
- Public and Private Schools, K-12, Group E-1 must be inspected annually (H&S 13146.3).
- Detention Facilities, Group I-3 must be inspected every two years by the SFM unless the Fire Chief indicates in writing to the SFM that the department will handle the inspections. The Fire Chief must submit inspection reports to the SFM and Board of Corrections within 30 days of inspection. If the SFM conducts the inspection, they may assess a fee to the City (H&S 13146.1).

LFD is not meeting these requirements. Other than the required inspection by the state, there is no requirement to inspect other occupancies. An example of buildings not receiving a periodic inspection is the *Ghost Ship* fire in Oakland, California, which killed 36 people. The fire occurred in a repurposed warehouse without proper permitting, and the building had not been inspected in 30 years and was not listed in the department's RMS.<sup>7</sup> Without these buildings receiving periodic inspections, life safety violations may exist without the knowledge of code enforcement officials and responding operations staff.

National Fire Protection Association (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 based on the risk. Therefore, LFD should institute an inspection schedule based on NFPA 1730's recommendation, as shown in the following figure.

**Figure 67: NFPA 1730 Inspection Frequency<sup>8</sup>**

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

\*Authority Having Jurisdiction

The following figure is a risk classification based on International Building Code occupancy types to guide the development of a periodic inspection schedule.

<sup>7</sup> NFPA Journal, *Ghost Effect*, January/February 2018.

<sup>8</sup> NFPA 1730: *Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations*.

**Figure 68: Occupancy Classifications**

Risk	IBC Group	Examples
High	A-1, A-2	Nightclubs, restaurants, theaters, 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
Moderate	(Target hazard)	Any building with life safety risk beyond the reach of preconnected hose lines > 200 feet
	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
Low	S-1	Storage of combustible materials, car repair facilities, hangars
	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

### Permitting & Fees

A permit system enables Lincoln to review plans or conduct inspections to ensure code requirements are met. The fees associated with the permit or other types of inspection are designed to recover any costs for the plan reviews or inspections. LFD has an extensive fee schedule for fire alarm and sprinkler systems, kitchen hoods, alternative automatic fire extinguishing systems, and other permits required by the California Fire Code. Except for plan reviews and inspections related to new construction or tenant improvements, no other fees are charged by LFD.

## Fire Investigations

Fire causes may include intentional, unintentional, failure of equipment, an act of nature, under investigation, or undetermined. Documenting the types of ignition is required by the National Fire Incident Reporting System (NFIRS) for all fires and is necessary for fire investigations.

Determining the origin and cause of a fire enables LFD to develop prevention programs that minimize future incidents. Any program designed should utilize data to analyze the cause of the fire and reveal trends of potential issues within the community. Data such as name, age, and gender may help identify specific individuals or groups to target with prevention programs like Juvenile Firesetter.

LFD has one state-certified fire investigator, but the company officer conducts most origin and cause investigations. The Sierra Sacramento Arson Task Force and CAL FIRE are available if additional assistance is needed. If there is a criminal investigation, the Lincoln Police Department will assume responsibility.

## Fire & Life Safety Education Programs

Preventing or mitigating unintentional injuries or fires is a critical function of a fire department. Educational programs offer the best opportunity to reduce fires and injuries in the community.

A fire and life safety program to reduce risks requires a coordinated approach and should include other partner organizations in the community that may provide the same or similar services. These partnerships allow LFD to become a community partner and build relationships to reduce risks. In addition, developing fire and life safety programs requires a continual review of incident data to determine the types and frequency of responses.

LFD provides public education to local schools and the 55+ communities. All education and community engagement events are forwarded to the Division Chief and assigned to the appropriate stations. Local 522 is very active in the community by sponsoring events for fire prevention. The union sponsors a turkey drive in November and partners with the Salt Mine Church to assist the unhoused population.

## Community Risk Reduction Program

The following is part of an overall Community Risk Reduction (CRR) program, defined as "The identification and prioritization of risks followed by the integrated application of resources to improve public safety and reduce increasing call volumes." CRR's primary objective is to examine problems and develop prevention or mitigation strategies to reduce hazards. The goal is to incorporate emergency operations with prevention efforts at the fire station level. This station-level approach is preferred because risks vary between stations or within a station's response area.

Data collected for this master plan and continued analysis in the future create an opportunity to determine if specific hazards are increasing or decreasing based on incident response. Additionally, risks may shift as new developments or demographic changes occur in Lincoln and the overall service area, impacting LFD.

LFD provides risk reduction for the community and focuses on a comprehensive and coordinated effort. When developing strategies, they should use the "Five E's" to develop risk reduction programs, as listed below.

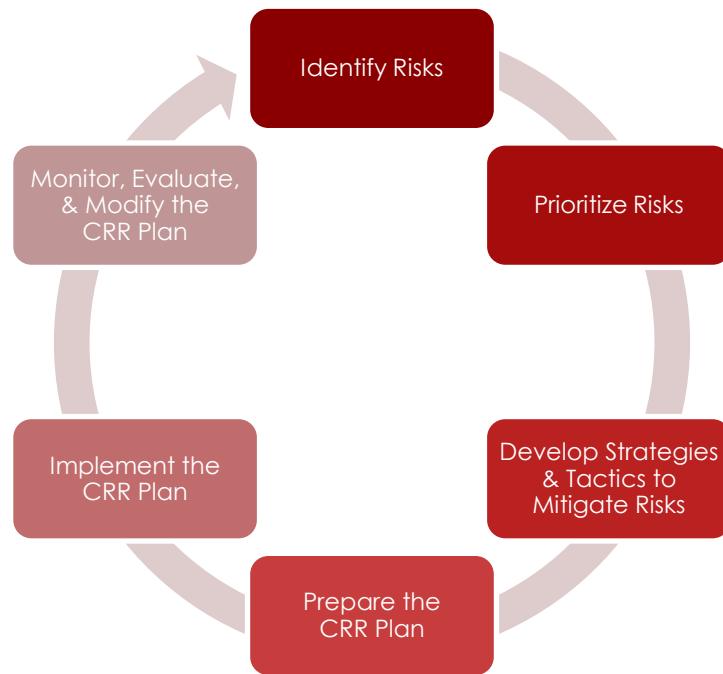
- Education—Will education help the public: who, where, when?
- Engineering—What engineering or technology is available to help?
- Enforcement—Is additional or more substantial enforcement needed?
- Economic Incentives—Could incentives increase compliance?
- Emergency Response—Would changes in response make a difference?

When developing a CRR plan, LFD must determine what strategies have already been implemented in the community to prevent duplication. In addition, outside resources may be available through partnerships with many community organizations such as law enforcement, nonprofits, health departments, EMS, religious, and local businesses. These groups may provide staff with a different perspective and offer additional funding and resources to mitigate limitations within LFD.

Preparing a CRR plan should align with the department's mission and strategic plan. Creating a plan at the station level allows personnel to engage the community they serve. It empowers staff to interact, learn more about their community, and take ownership of the program. Station personnel will begin to understand the importance of collecting accurate data to support their plan, developing strategies using partnerships, gaining their input, soliciting feedback from the community, and deciding what risk to prioritize.

The following figure is one basic methodology offered by Vision 20/20 to identify and analyze risks within a community. In addition, Vision 20/20 includes a coalition of national organizations and experts that exemplify how collaboration, communication, and commitment to data-based solutions can save lives and properties.

**Figure 69: The Community Risk Assessment Process**

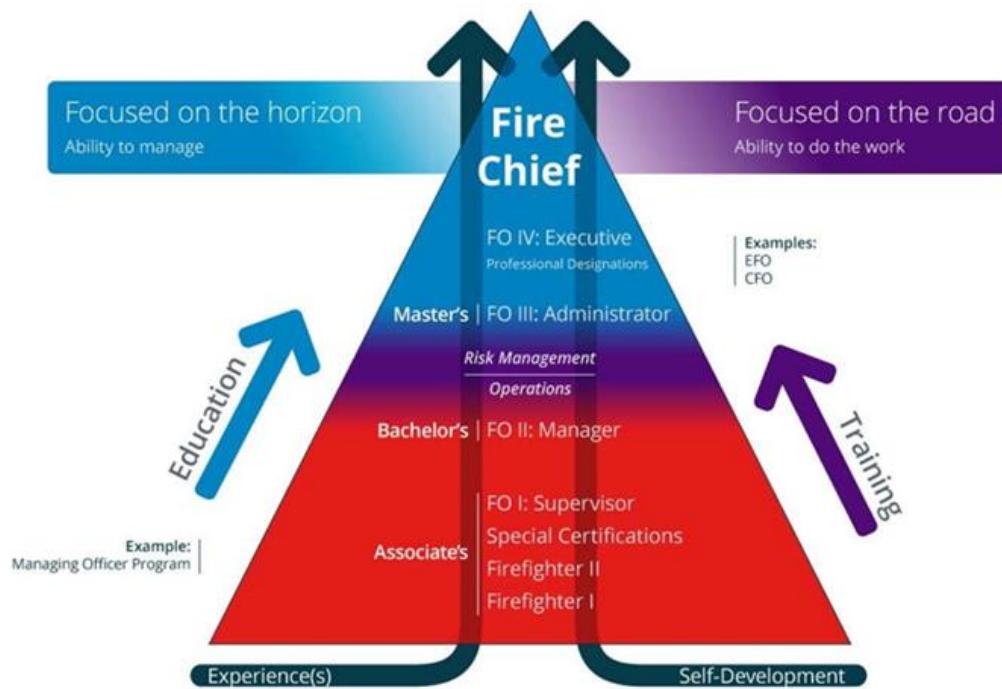


## Training & Continuing Medical Education

An extensive training program is essential for providing safe and effective emergency services. Firefighters need to obtain and sustain the required initial training, ongoing fire and special operations training, and continuous medical education to support the service's mission of effectiveness and safety. Training is the second highest priority for line personnel, after operational readiness. Inadequate training could expose both personnel and citizens to avoidable risks, potentially leading to liability for the department.

The initial training for personnel needs to be enhanced with regular, ongoing, and verifiable training sessions. This requires instructors to have access to training facilities, necessary equipment, and high-quality training materials. Such provisions are crucial for skill and knowledge acquisition, retention, and competency. Ideally, training should follow a structured lesson plan to ensure that targeted learning objectives are achieved. Furthermore, compliance with recognized standards and industry best practices is vital, including adherence to NFPA standards, Insurance Services Office (ISO) requirements, and California State Fire Training (SFT) directives. Every manipulative exercise training session must incorporate a safety message and involve a dedicated Safety Officer.

**Figure 70: FEMA & USFA's National Fire Service Professional Development Model**



This section reviews the Department's training practices, compares them to national standards and best practices, and suggests modifications where appropriate. Staff and AP Triton field visits provided specific information for the LFD.

### **General Training Competencies**

The National Fire Protection Association (NFPA) offers several documents, including NFPA 1001: *Standard for Fire Fighter Professional Qualifications*, and NFPA 1410: *Standard on Training for Emergency Scene Operations*. Additionally, the California State Fire Training (SFT), a division of the Office of State Fire Marshal (OSFM), establishes, develops, and provides standardized training and education for the California fire service.<sup>9</sup>

The LFD utilizes ICS levels 100 to 800 for incident command training and certification programs tailored to personnel rank. The incident command program for the LFD conforms to California SFT guidelines, which are recognized by both the International Fire Service Accreditation Congress (IFSAC) and the International Accreditation for Fire Service Organizations (Pro Board). From a training evolution safety perspective, accountability procedures and general training policies and procedures are established. The training safety procedures are clearly defined and included in each lesson plan.

New LFD hires undergo pre-employment training by completing an external fire academy. Upon successful completion, trainees receive their Firefighter 1 certificate and are promoted to firefighter. They are then assigned to a crew and station to acclimate to LFD operations and culture. Before the end of their probation period, they are expected to complete the FF1 and FF2 probationary task book, which outlines all job performance requirements (JPRs) and job-related tasks as mandated by NFPA 1001 and State Fire Training (SFT).

Probationary firefighters receive monthly evaluations from their assigned Captains, who document their performance, behavior, and conduct and provide feedback to the Firefighters. LFD has implemented six-month and 12-month probationary testing for firefighting and emergency medical services knowledge and skills.

---

<sup>9</sup> <https://osfm.fire.ca.gov/what-we-do/state-fire-training>.

All LFD firefighters must possess a National Registry Emergency Medical Technician Certificate (NREMT) as a condition of employment and complete 24 hours of continuing education every two years. Continuing Education (CE) is provided through quarterly EMS training, multi-company drills, and an online EMS training program utilized by the department via Vector Solutions. Basic life support (BLS) skills practice is included annually in CE training.

LFD firefighters receive annual training in Hazardous Materials First Responder Awareness (FRA), wildland firefighting, vehicle extrication, and defensive driving.

The City of Lincoln requires all city employees, including fire department employees, to complete training in anti-discrimination, disability awareness, a drug-free workplace, and anti-harassment. Supervisors must also undergo additional training on anti-harassment and reasonable suspicion of drug and alcohol use.

### **Training Administration**

Administrative program support is essential for program success, but it often faces challenges due to budget constraints or conflicting organizational priorities. A key aspect of effective administration is developing program guidance, encompassing training plans, goals, and defined objectives. These goals and objectives should be communicated at all levels of the organization to ensure program awareness, input, feedback, and support. Although it can be difficult for any organization, consistent messaging across the LFD is crucial for success, especially as the organization evolves to meet the needs of a rapidly growing community.

An on-duty Battalion Chief oversees the LFD training program. Fire Captains assigned to various stations and engine companies conduct in-service and probationary training. Additionally, other department personnel provide specialized training based on their expertise or certification. Currently, no clerical staff is available to support the training program.

Training incorporates NFPA standards and best practices to enhance employee skills and knowledge. Video and computer simulation equipment and hands-on training drills are utilized to maintain and acquire new skills. The total amount allocated for training in the most recent budget was \$50,000, which is approximately \$1,600 per fire department employee.

## Training Schedule

The department's training schedule aims to fulfill the needs of firefighting personnel working a 56-hour schedule divided across three platoons.

To deliver efficient and effective training to fire and EMS personnel, resources are necessary to equip the trainer with the tools needed to provide adequate educational content. In addition to these tools, effective methodologies must be employed to ensure that delivery meets the needs sufficiently.

## Training Program Planning

A structured program planning process is a critical element of any training program. For an organization to operate efficiently and effectively, training delivery should be based on:

- Periodic training needs assessments.
- Defined annual program goals based on a needs assessment.
- Specific delivery objectives, addressing program goals.
- A process of performance measuring and monitoring.
- Periodic re-evaluation and modification.
- Pre-incident planning.

It is recommended that an annual training plan be developed or modified based on the preceding criteria, including clearly defined program goals and objectives.

## Training Facilities

To be effective and efficient, a modern fire organization should have a centralized training facility that complies with industry standards, such as NFPA 1402: Guide to Building Fire Service Training Centers, which includes classrooms, practice grounds, a training tower, a live-fire building, and training props.

The department lacks a dedicated training facility, which includes a classroom, training props, and a tower. NFPA 1402 recommends that fire training facilities cover at least two acres, feature a three-story tower, and facilitate live fire training.

The department recently acquired a Connex box training prop for practicing firefighting skills, including forcible entry, ladder techniques, search and rescue, and ventilation training. The Connex box buildings can be utilized for smoke-involved training, but they cannot be used for live burns. LFD is considering a service agreement with a college fire training facility to gain access to a live burn training site.

### **Training Policies, Procedures, and Guides**

The department's policies, procedures, and guides provide the foundation for delivering educational content. LFD staff and personnel are actively engaged in developing essential department-wide policies, procedures, and Standard Operating Guidelines (SOGs). The first operations guidelines have been completed and are incorporated in current and future training programs. Developing and adhering to these documents is essential for a successful training program. The LFD can enhance safety, operations, and training performance through policies, procedures, and guides.

### **Training Delivery Methodology—Competency-Based Training**

The industry standard for training is typically based on contact hours. The primary goal is to provide 240 hours of training annually for each firefighter, a criterion used by the Insurance Services Office (ISO) for fire department ratings. Additional minimums relate to state certification maintenance and specialized functions, such as driver training, officer training, and hazardous materials response training. The LFD currently adheres to an hours-based model for fire (20 hours annually per member) and EMS training (24 hours annually per member), which is monitored through the Vector Solutions LMS and entered by individuals, Captains, and the shift Battalion Chiefs. The following figure displays the results of this hours-based model for the specified period based on data provided by the LFD. All training hours include a combination of classroom, online, and practical training.

**Figure 71: LFD Training Hours (2024)**

Personnel Trained	Hours
Number of Personnel Trained	33
Total Training Hours	6,336
Fire-related Training Hours	5,068
EMS Training Hours	1,268
Other Training Hours	0

An hours-based approach is appropriate and generally effective. However, the shortcoming of this methodology is that sometimes training is delivered merely to meet minimum hour requirements, even when the individuals receiving the training are already fully versed in the subject matter. In this instance, time would be better spent having the students participate in a skills performance demonstration. Once competency in the skill area is demonstrated, the remaining time can be used to address new skills or subject areas.

In a competency-based system, skill performance is evaluated at scheduled intervals to determine whether the person being assessed can perform tasks according to predetermined standards. Skills performed well do not require additional training, while those not performed well are practiced until the standard is achieved. This approach optimizes training time and ensures that members perform at an established level. Specialty skills can be assessed similarly, and further training can be provided. Ideally, the competency-based training approach is used continuously. For instance, each quarter, different skills are evaluated individually.

The LFD typically conducts task-specific practical skills training through monthly proficiency drills. Lesson plans, complete with outlines and objectives, are developed internally within the department.

The LFD conducts multi-company drills annually. Night drills are also part of the LFD's training methodology and occur biannually. The LFD performs post-incident analyses or after-action reviews through safety and company officer surveys, along with "Hot Wash" meetings. Multi-agency drills are conducted yearly with various outside partner agencies. Pre-incident fire planning is currently implemented and is a component of the engine company's monthly training.

### **Training Records**

Each program should adhere to the guidelines established in NFPA 1401: Recommended Practices for Fire Service Training Reports and Records, regarding training reports and records. This information is vital for comprehensively evaluating the organization's training program. It becomes especially important when an agency is undergoing a review by ISO and other potential regulatory entities.

The LFD training program adheres to the requirements outlined in NFPA 1401, ensuring that department documents are comprehensive, accurate, consistent, and securely recorded. While implementing these standards, the department consistently logs training events such as course completions, certifications, and skill assessments. Training records are maintained using a robust data management system (Vector Solutions), allowing quick access and inspection while complying with legal and regulatory requirements. This structured approach supports operational readiness and career development by providing verifiable documentation for audits, accreditation, and incident investigations, reinforcing the department's commitment to professionalism and accountability.

### **Emergency Medical Training and Continuing Education**

Training is a fundamental aspect of emergency medical services delivery. Responders need to acquire and maintain the knowledge, skills, and abilities relevant to the level of service they provide within their jurisdiction. Training programs should focus on initial training, skill improvement, and ongoing needs that align with the agency's mission and responsibilities.

LFD currently provides only basic BLS/EMT emergency medical response. AMR offers all ALS interventions for the Town of Lincoln as the ambulance provider for Placer County. Oversight of LFD personnel's EMS certification, training, and continuing education is under the S-SVEMS (Sierra-Sacramento Valley EMS) Joint Powers Authority. This JPA includes Butte, Colusa, Glenn, Nevada, Placer, Shasta, Siskiyou, Sutter, Tehama, and Yuba Counties. LFD personnel can access continuing education courses, CA EMSA training resources, and online training that provides approved CEUs through the JPA. EMT renewal certification via SSVEMS requires successful completion of either a 24-hour refresher course through an authorized EMT training program or at least 24 hours of continuing education (CE) from an approved CE provider.

The department assigns all EMT personnel at least one hour of S-SVEMS-approved online training through Vector Solutions each month. It monitors each employee's EMS training and CE progress monthly.

## Special Operations

The Lincoln Fire Department provides Special Operations in a limited capacity. Instead, LFD relies primarily on local and regional mutual aid for significant incidents. The department conducts low-angle, surface water, swift water, and vehicle and machinery rescue.

### Technical Rescue

The CAL FIRE/Placer County Fire Department's Technical Rescue Team (TRT) provides emergency response and technical rescue services throughout the region. The TRT typically responds to incidents involving:

- Medical rescues.
- Water rescues.
- Rope rescues.
- Large animal rescues.
- Remote area rescues.

The TRT consists of personnel representing at least 20 agencies throughout the CAL FIRE Nevada-Yuba-Placer Unit. Team members participate in more than 400 hours of training in various disciplines and specialties.

### Hazardous Materials Response

Highly trained Firefighters from agencies around the area comprise the Placer County Office of Emergency Services Hazardous Materials Response Team. The Team responds to known and potential hazardous materials incidents within the region. The types of incidents may include:

- Dangerous cargo.
- Biohazards.
- Combustible substances.
- Explosives.
- Corrosive liquids.
- Oxidizing agents.
- Radioactive or asphyxiating materials.
- Toxic substances, pathogenic, or allergenic materials.

Other hazardous conditions may include container leaks or the explosion of compressed gases, liquids, hot materials, chemicals, and acts of terrorism. The Placer County Hazardous Materials Response Team also responds to transportation-related accidents involving oil, chemical, and other liquid spills and industrial and military explosions.

### **Tactical Emergency Medical Support**

The Placer County Fire Department (PCFD) maintains a Tactical Emergency Medical Support Team (TEMS) to provide EMS support to the Placer County Sheriff's Office and Special Enforcement Team (SET).

TEMS comprises specially trained and equipped Firefighters certified as EMTs or Paramedics, one Battalion Chief, and one Division Chief. TEMS responds with the Placer County Sheriff's Office to high-risk operations that include:

- Active shooters.
- High-risk warrant services.
- Hostage situations.
- Bombing incidents.
- Other law enforcement and tactical actions.

### **Air Operations**

The Nevada County Airport serves as the Grass Valley Air Attack Base (GVAAB). The mission of the GVAAB is to provide safe, effective, and efficient aerial firefighting operations when working with multiple agencies. The organization maintains substantial resources that include both helicopter and fixed-wing aircraft.

---

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

---

## Historical System Performance

This section will give LFD a general understanding of relevant response information. It is developed to assist the City with identifying its recent performance and creating a baseline performance expectation. LFD, city, and political 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 LFD. Detailed information was provided between July 1, 2020, and June 30, 2024. Annual analyses were grouped by fiscal, rather than calendar year, to fully capture the data available. For this report, the fiscal year begins July 1 and ends June 30. Information sources included records management and computer-aided dispatch systems.

Mathematical and technological methodologies must be used judiciously to evaluate something as complex as an emergency incident response. Unfortunately, there are instances of incorrect evaluations leading to severe consequences. This analysis is designed to quantify and analyze available information. The agency should use it as a starting point as it is seeking to improve performance.

### Statistical Tools

This section was created using various statistical analysis tools, the primary of which were categorization, percentiles, and regression analysis. These tools paint a clearer picture of historical performance, providing insights that may assist leaders in identifying positive and negative performance trends.

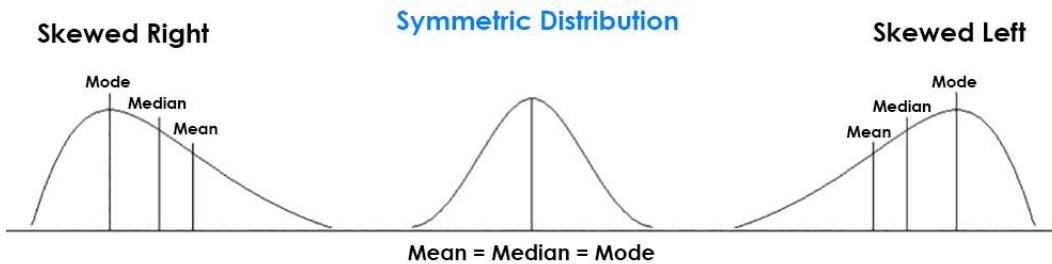
#### 90<sup>th</sup> Percentile

The time performance measures for this report utilize the 90th percentile metric. While discussing the mathematics behind this measure is outside the scope of this report, it is helpful to understand why it is used.

The most common reason to use this measure is that the fire service 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 National Fire Protection Association (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 to use the measure is that it fully captures performance and will identify trends in performance more quickly. Unfortunately, the time performance data used in this study has a skew, making other statistical measures less sensitive and representative. The following figure is a general example of data skew.

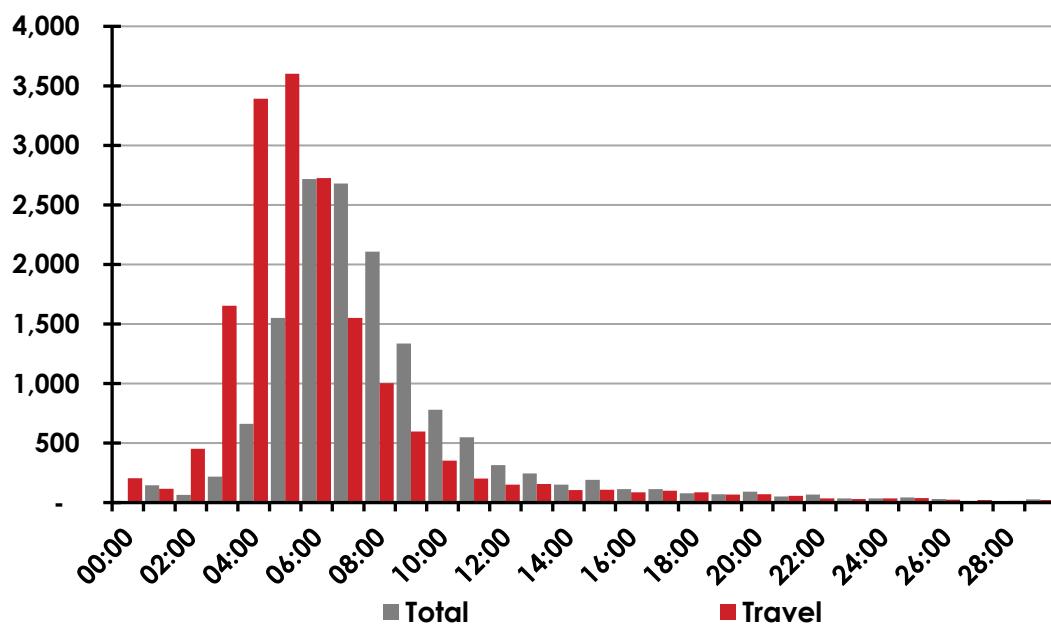
**Figure 72: Data Skew<sup>10</sup>**



In a symmetric distribution, the mean (average), median (middle of the data), and mode (the most frequent) are all equal. When the distribution skew, these three measures of the middle shift. Using the average, or mean, in left-skewed data would underrepresent the bulk of the performance. While the opposite is true when skewed right. In LFD's case, most of the time-performance data is skewed right. In this case, using the average would overrepresent the performance.

The following figure shows this right skew with a histogram of LFD's travel and total time calculations.

<sup>10</sup> Pipis, G. (2020, November 9). Skewness and Kurtosis in Statistics. R-Bloggers. <https://www.r-bloggers.com/2020/11/skewness-and-kurtosis-in-statistics/>.

**Figure 73: LFD Data Skew Evaluation**

### Data Discussion

Detailed data was provided from LFD's primary incident reporting software (RMS) and the computer-aided dispatch (CAD) system. The data provided had already been merged in the record management system, so there was little to no difference in the number or completeness of the information provided in the CAD Unit table and the RMS table.

### Data Engineering Findings

The CAD contained 24,900 records for incidents and 107,258 for units, while RMS contained 24,919 incident records. There were 262 incidents with no NFIRS category assigned; these incidents were removed from the analysis, leaving 98.9% of the data captured in CAD. Further examination of the unit records revealed duplicate records for the same unit with varying timestamps for the same incident milestone. In these cases, the earlier timestamp was retained, favoring the response performance outcomes. The final count of unique unit records was 47,134.

There is a high degree of confidence in complete data for 24,638 incidents with 47,134 apparatus responses.

### **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 and collection errors. Various methods exist to manage these errors, including statistical exclusion, real-time exclusion, formula manipulation, and logic testing.

For LFD, the information in the data fields had limited error-prone data. Therefore, most of the data did not require any statistical intervention. However, some data was excluded by formula or logic tests. The time segment math utilized a logic tree to eliminate negative and null sets. The turnout time was limited to 10 minutes as it was a natural break between the meaningful data and the extremes outside the maximum limit.

A widely available web page was used to measure the drive time between a point on the northwest side of the airport property and a point in McCormick Park. This returned an estimated drive time of 16 minutes. Therefore, travel and total time were limited to 20 minutes, as that was a natural break and realistic time to travel across the service area. These two limitations left 99% of the records available for time analysis.

### **Service Demand**

The first dimension of the analysis is the overall system call load. Because this is a simple count of the incidents by type and location, no data was excluded after engineering. Therefore, detailed data from the two previously discussed systems will be used for most aspects of this analysis, except for the volume projection.

### **Volume Analysis**

A simple volume analysis can indicate how often the district 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.

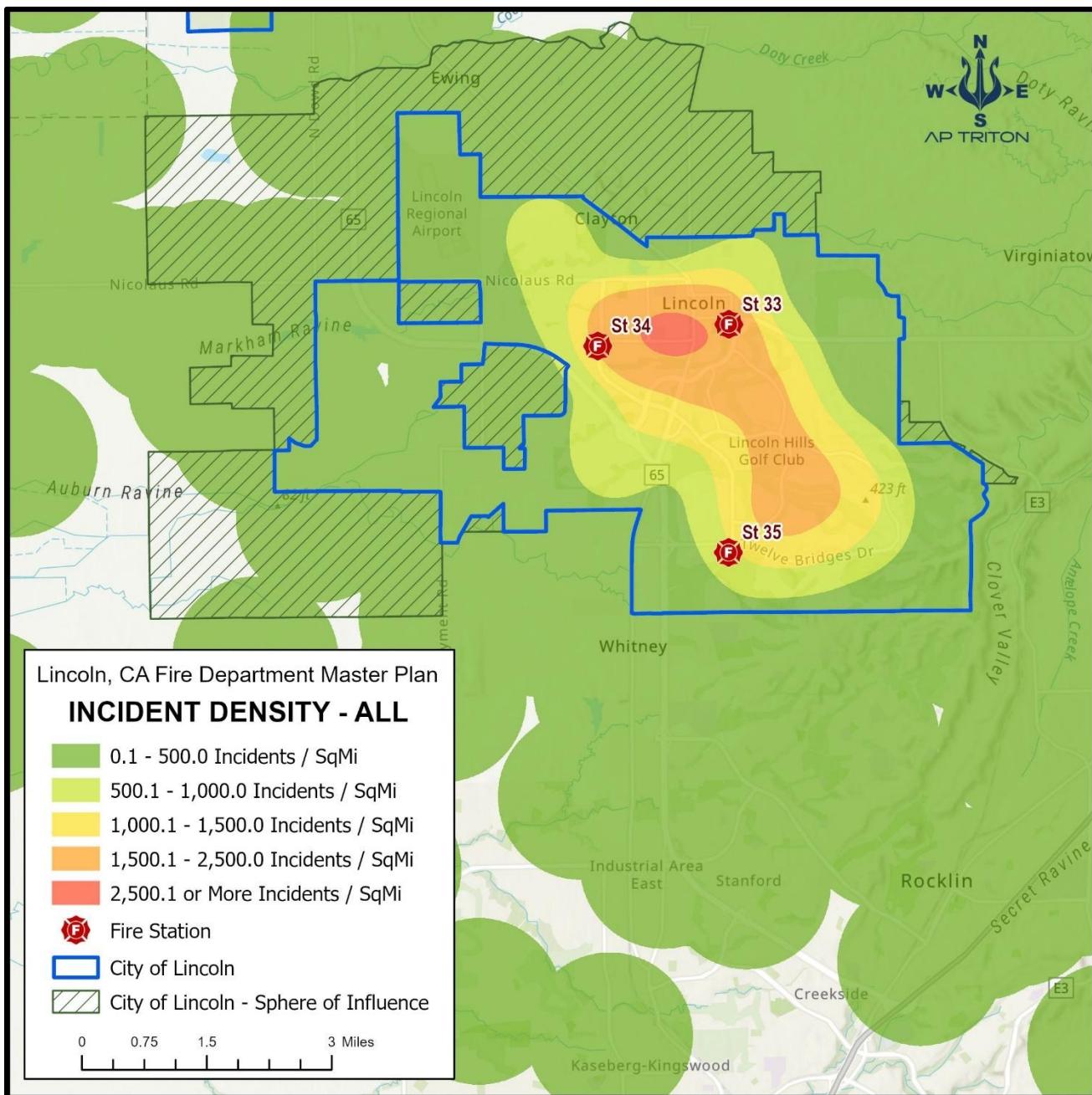
**Figure 74: Total Incident Count (FY2021–FY2024)**

Incident (NIFRS Group)	Quantity	% Total Responses
<b>Lincoln Fire Department Responses</b>		
Fire (100)	580	2.35%
Overpressure (200)	5	0.02%
Rescue-Medical (300)	16,768	68.06%
Hazardous condition (400)	243	0.99%
Service (500)	3,214	13.04%
Good Intent (600)	2,621	10.64%
False Alarm (700)	1,185	4.81%
Disaster (800)	8	0.03%
Special (900)	14	0.06%
Total Responses	24,638	100%
<b>Mutual Aid</b>		
Auto and Mutual Aid Received	246	1.00%
Auto and Mutual Aid Given <sup>1</sup>	1,030	4.18%

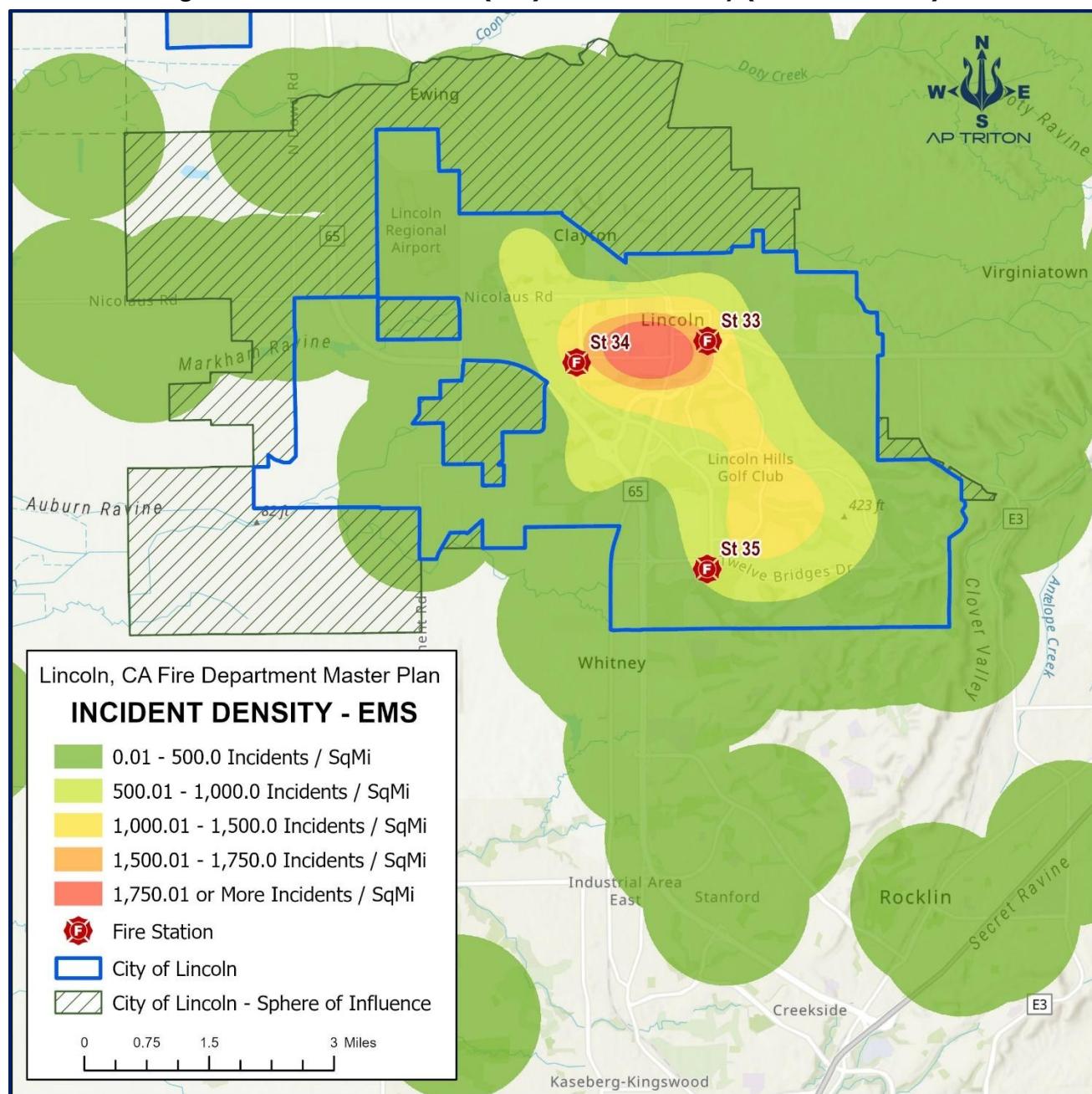
Most of LFD's responses are in the Rescue-Medical (300) category. This is a typical distribution for fire agencies that provide medical responses. It is also noteworthy that LFD provides more aid than it receives from the surrounding jurisdictions.

### Geographic Analysis

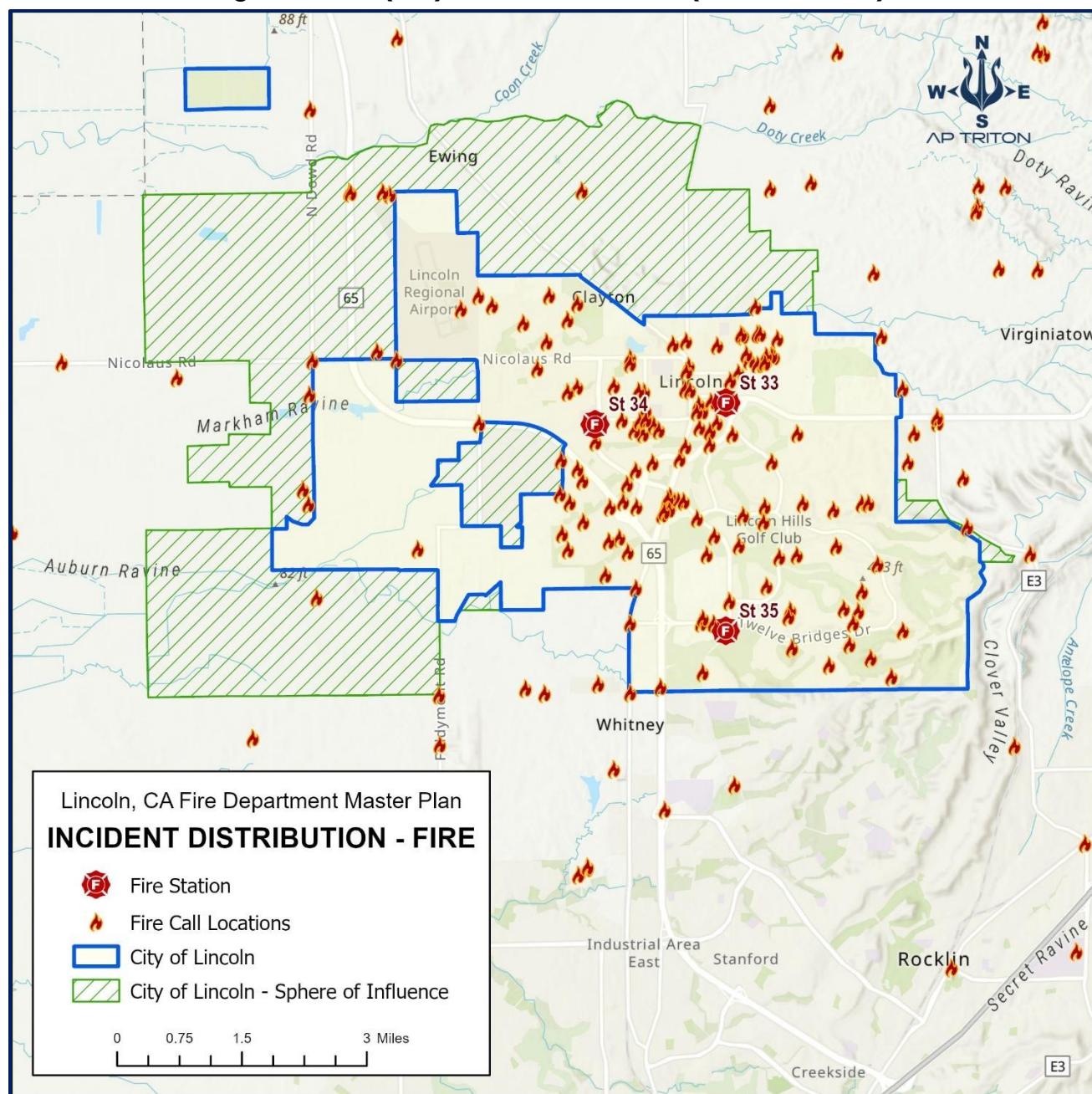
A call density analysis is helpful when reviewing the best location for apparatus placement. It is also useful when evaluating where prevention programs may have the most impact. The next figure geographically represents the incident density for the study period.

**Figure 75: Total Incident Density (FY2021–FY2024)**

As indicated in the previous figure, incident density is heavily concentrated in the most developed parts of the jurisdiction. This area comprises multi-family dwellings, high-density housing, and some commercial businesses. Incident density is primarily driven by Lincoln's volume of Rescue-Medical (or EMS) incidents. The pattern in the following map is like the overall density, but it shows the EMS incident concentration for the same period.

**Figure 76: Rescue-Medical (300) Incident Density (FY2021–FY2024)**

While the previous map may provide a general idea of where to focus medical prevention efforts, it does not address the more hazardous incident types. The following map illustrates the distribution of fire incidents within the study period. There are too few fire incidents for an effective density map, so individual incidents are shown. Most fires have occurred between Station 33 and Station 34 in the more densely populated areas of Lincoln.

**Figure 77: Fire (100) Incident Distribution (FY2021–FY2024)**

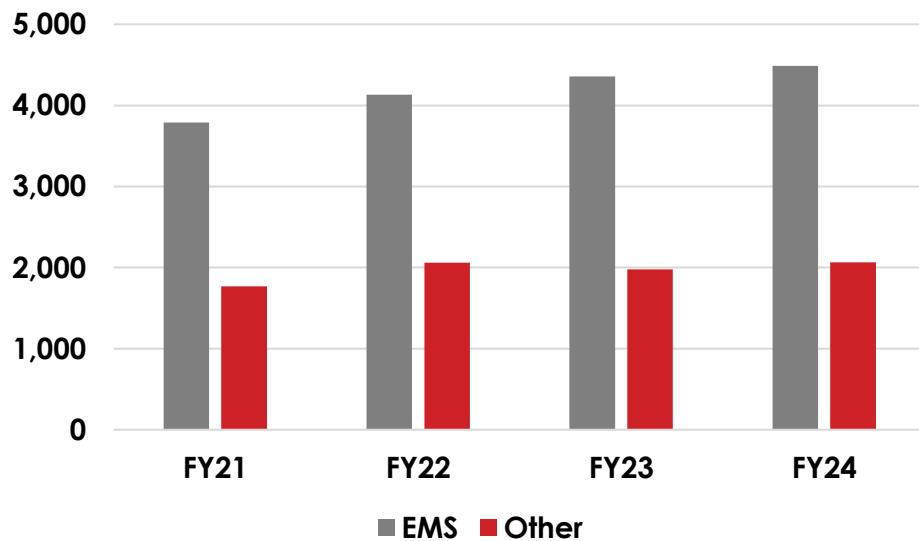
Several addresses have more significant incident counts. These locations include senior and assisted living facilities and healthcare facilities. Most of these facilities are located within 1 mile of one another. The following figure shows the top 5 locations by the address where LFD responded.

**Figure 78: Top Five Most Common Incident Locations (FY2021–FY2024)**

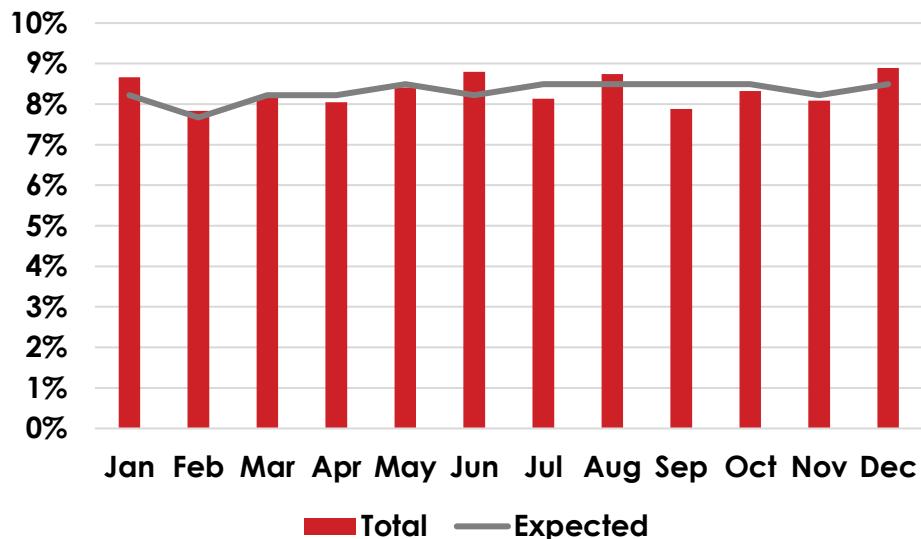
Location	Location Type	Incidents
567 3 <sup>rd</sup> St	Assisted Living	605
1550 3 <sup>rd</sup> St	Healthcare	478
550 2 <sup>nd</sup> St	Assisted Living	412
1660 3 <sup>rd</sup> St	Assisted Living	215
77 Lincoln Blvd	Urgent Care	211

### Temporal Analysis

The annual incident count for LFD has generally increased each year, with an overall increase over time of 17%. The following figure shows the fiscal year incident volume broken into emergency medical (EMS) and all other incidents.

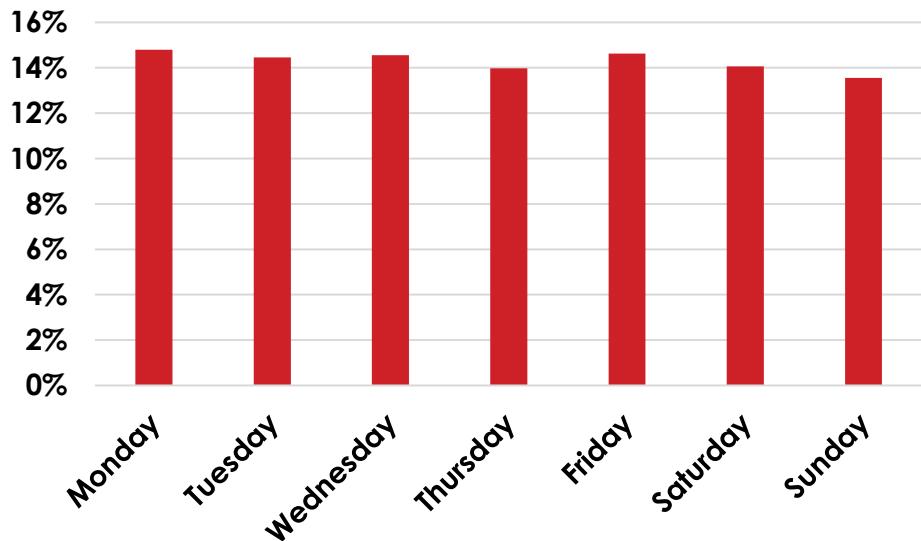
**Figure 79: Annual Incident Volume (FY2021–FY2024)**

Analyzing the incident volume by month, day of the week, 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 days. The following figure analyzes incident volume percentage by month across the analysis period.

**Figure 80: Monthly Call Percentage (FY2021–FY2024)**

The data has some slight seasonality, with a lower-than-expected incident volume from September to November. Demand increases slightly in June. It should be noted that the monthly variation is less than  $\pm 1\%$  over expected values.

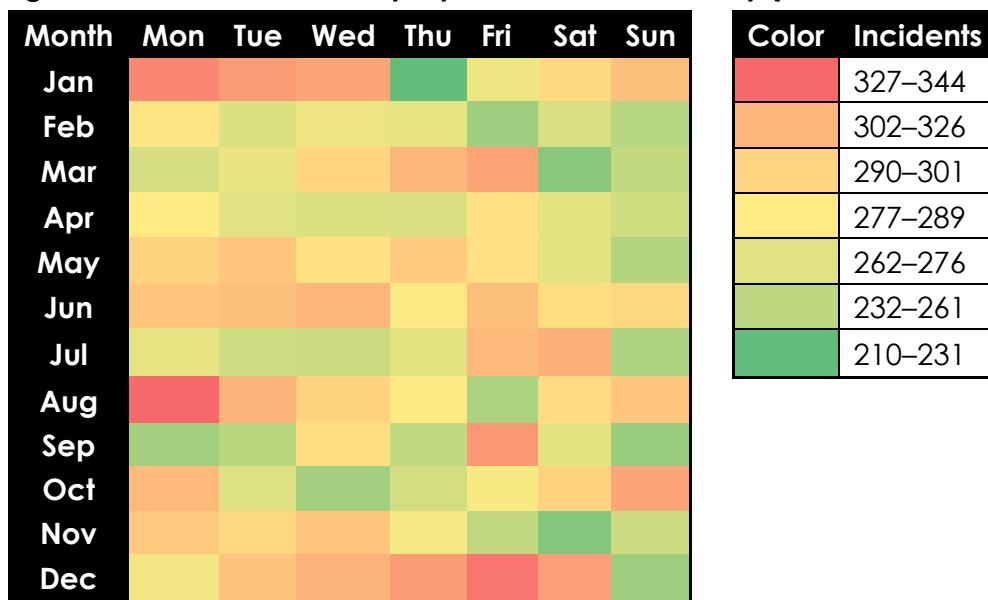
Another dimension for evaluation is the percentage of incidents that occur by day of the week. The following figure is the percentage of incidents that occur by day of the week for the entire study period.

**Figure 81: Incident Volume by Day of the Week (FY2021–FY2024)**

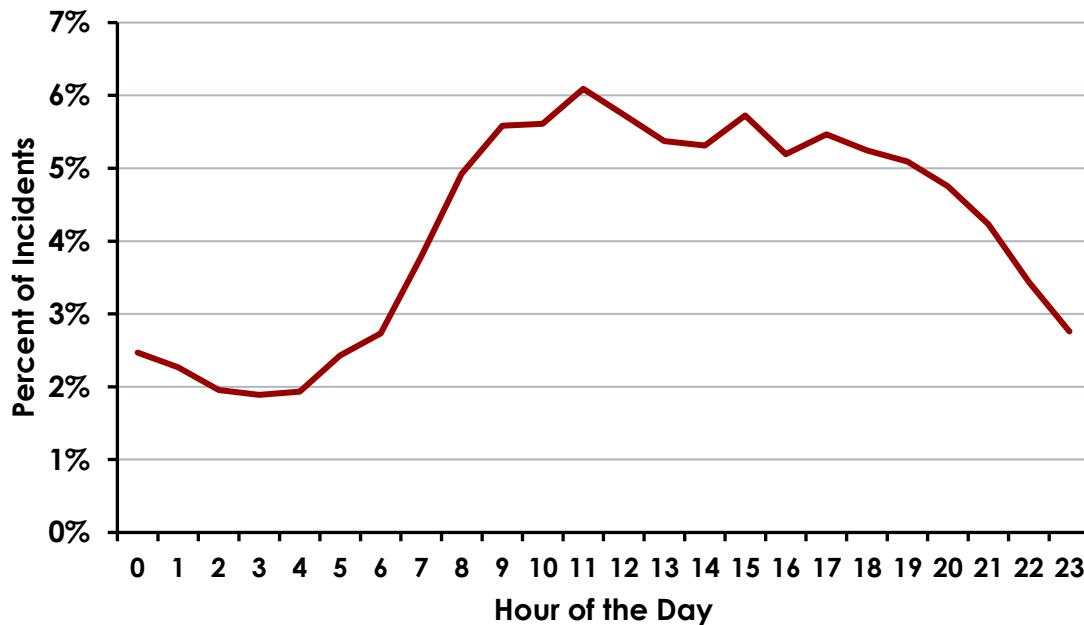
There is a slight decrease in calls for service on the weekend, with the lightest incident volume on Sundays. This is consistent throughout the year, as shown in the following figure.

It can be helpful to combine the month and day dimensions to identify potentially significant combinations of the month and weekday. The following figure shows the density of call volume by month and weekday. Unusual patterns appear, such as the drop in volume on Thursdays in January or high volume on Mondays in August.

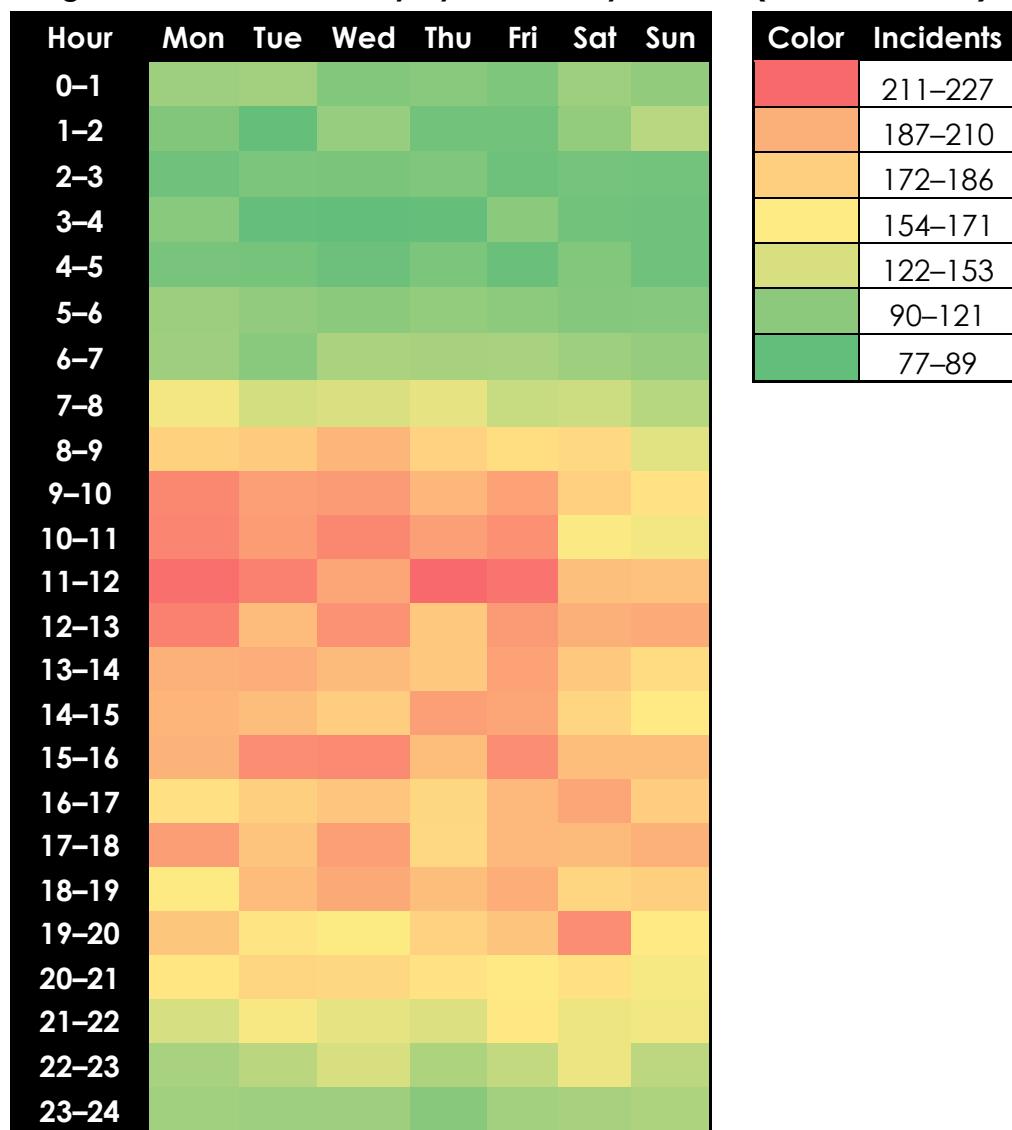
**Figure 82: Incident Heat Map by Month and Weekday (FY2021–FY2024)**



Another analytic dimension is to evaluate call volume across 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 LFD closely follows this daytime pattern, with nearly 70% of incidents occurring between 8 a.m. and 8 p.m.

**Figure 83: Incident Volume by Hour (FY2021–FY2024)**

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 LFD's case, the evaluation shows a consistent and statistically significant pattern of increased volume in the daytime, particularly during the workweek. There is also a slightly elevated concentration on Saturday late night. The next figure indicates incident density by the hour and day of the week for all incidents between FY2021 and FY2024.

**Figure 84: Incident Density by Hour & Day of Week (FY2021–FY2024)**

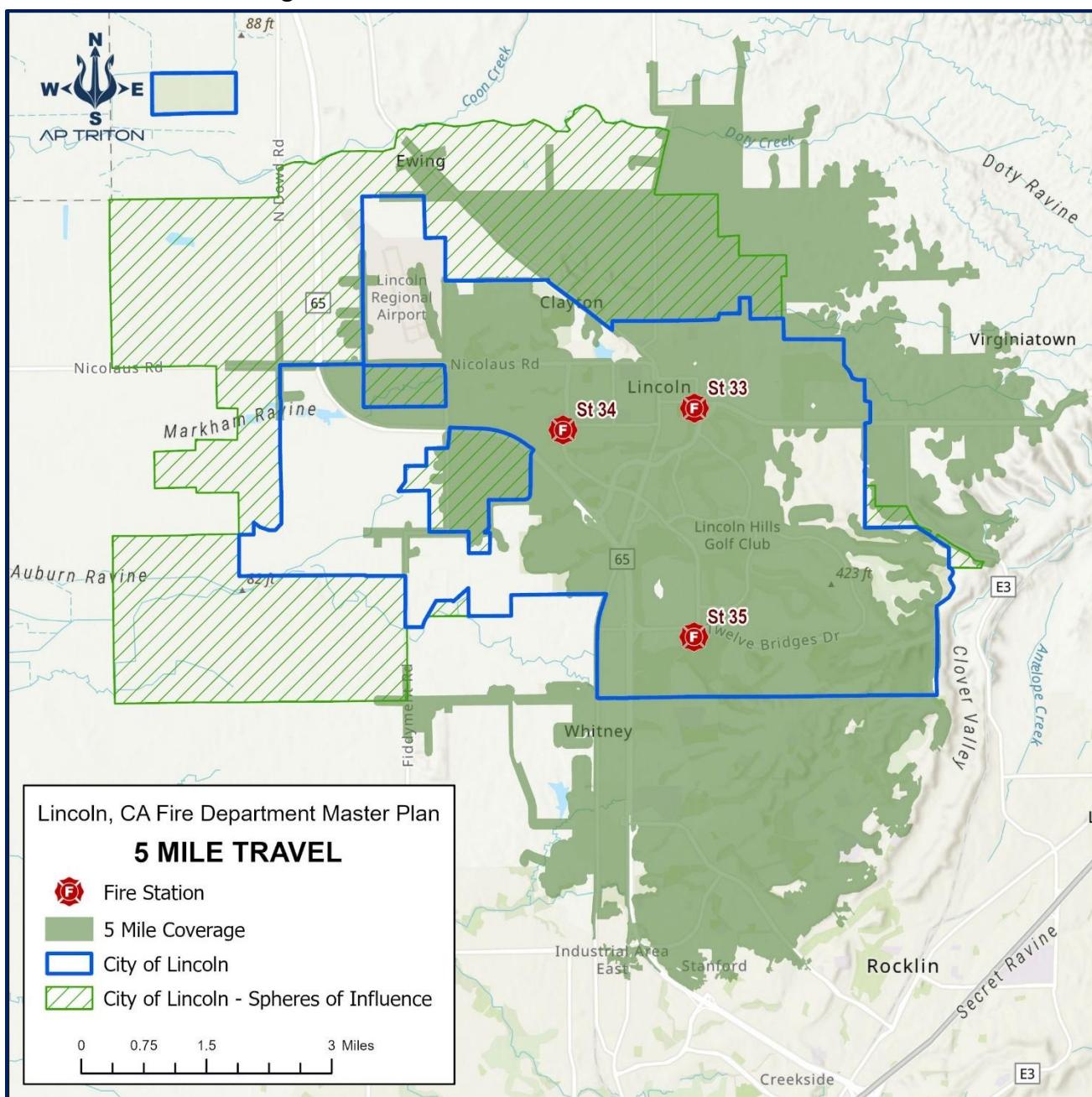
## Resource Distribution

Several key performance metrics help to identify the effectiveness of resource distribution. A broad allocation of resources allows for a more rapid first response to any given area. However, the first unit is only a portion of the deployment question. It is critical to have enough units to respond to incident volumes, types, and severity. It is also essential to attempt 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 National Fire Protection Association (NFPA) utilizes time as a criterion.

The ISO uses 5 miles from a fire station as its standard. The following figure shows the 5-mile travel distance from a fire station. The majority of the City of Lincoln falls within the 5-mile travel area, and the densely populated areas are covered. The recently annexed Village 5 area is beyond the 5-mile coverage.

**Figure 85: 5 Mile Travel Distance from All Stations**

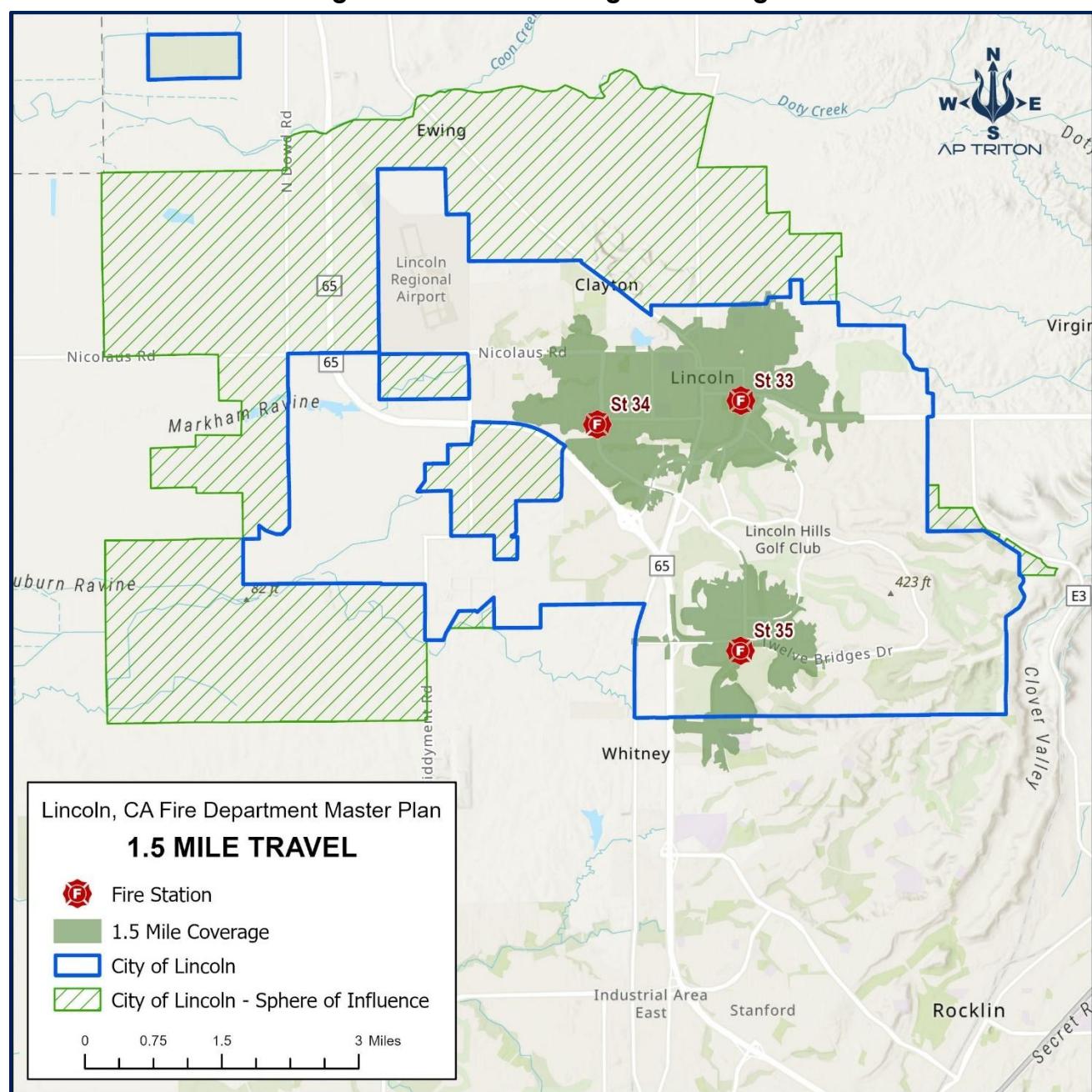
For full credit in an ISO Fire Suppression Rating Schedule (FSRS), any building within the jurisdiction should be within 1.5 miles of an engine company and 2.5 miles of a truck company.<sup>11</sup> LFD has an engine at all fire stations. This provides sufficient coverage for most of the city's population centers.

However, the populated portions of the city south of Ferrari Ranch Rd and east of Del Webb Blvd do not have the same 1.5-mile coverage. The Lincoln Regional Airport is well beyond the reach of Station 34's 1.5-mile area. Village 5, when built out, would be far beyond the 1.5-mile reach of an engine. The following figure shows the 1.5-mile travel distance from each station, as they each house engine companies.

---

<sup>11</sup>Verisk. (2024). *Criteria for Deployment Analysis of Companies*.

<https://www.isomitigation.com/ppc/technical/criteria-for-deployment-analysis-of-companies>.

**Figure 86: 1.5 Mile ISO Engine Coverage**

## Unit Workload Analysis

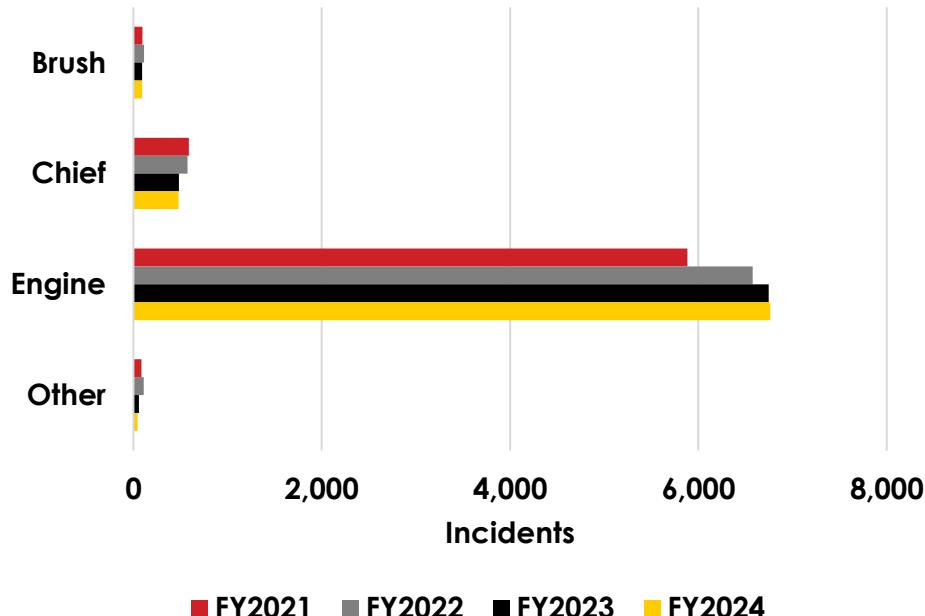
Unit workload should be balanced to maintain readiness, resiliency, and service availability. While it is common for one unit to be busier than others, no crew should carry a load that makes them less effective.

### Incidents by Unit

LFD had 15 unique units responding to all incidents in the jurisdiction. However, most unit responses were accomplished by the three frontline engines, two brush trucks, and the battalion chief. The remaining units included reserve engines, specialty units, and other response vehicles. The engines (frontline and reserve) were the primary response units and accounted for approximately 90% of all unit responses.

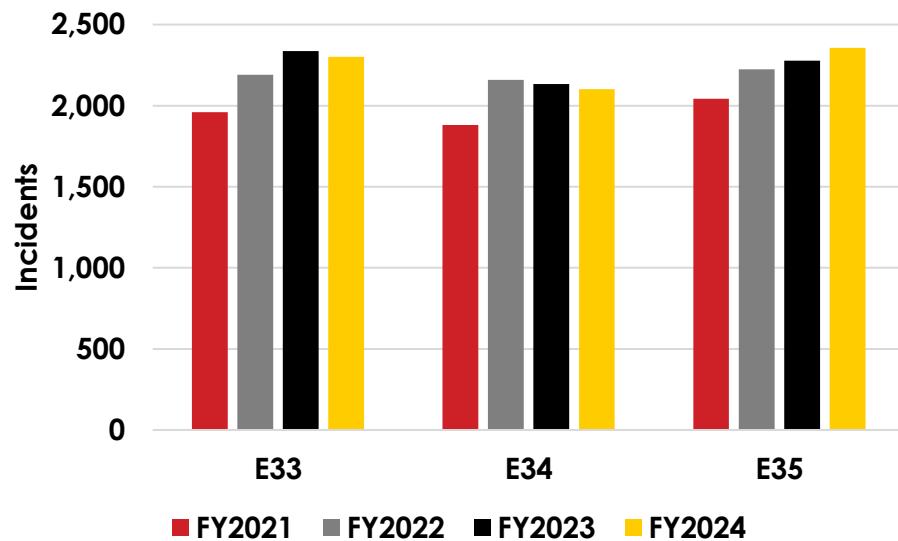
The volume of incidents for brush trucks remained steady over the study period, while battalion/deputy chief incidents and other (specialty and response vehicles) decreased by 18% and 47%, respectively. The engine response volume increased by 15%. The following figure shows the fiscal year volume for each apparatus type within LFD.

**Figure 87: Incident Volume by Apparatus Type (FY2021–FY2024)**



The workload is not evenly distributed across all units. Each of the three frontline engines responds to approximately 40 times the number of incidents involving the brush trucks. Engine 33, Engine 34, and Engine 35 respond to similar yearly incident volumes, from 2,100 to 2,300 in FY2024. Incident volume for Engine 34 decreased from FY2022 to FY2024, while Engine 35 showed a consistent increase year over year. The following figure shows each unit's response volume over the study period.

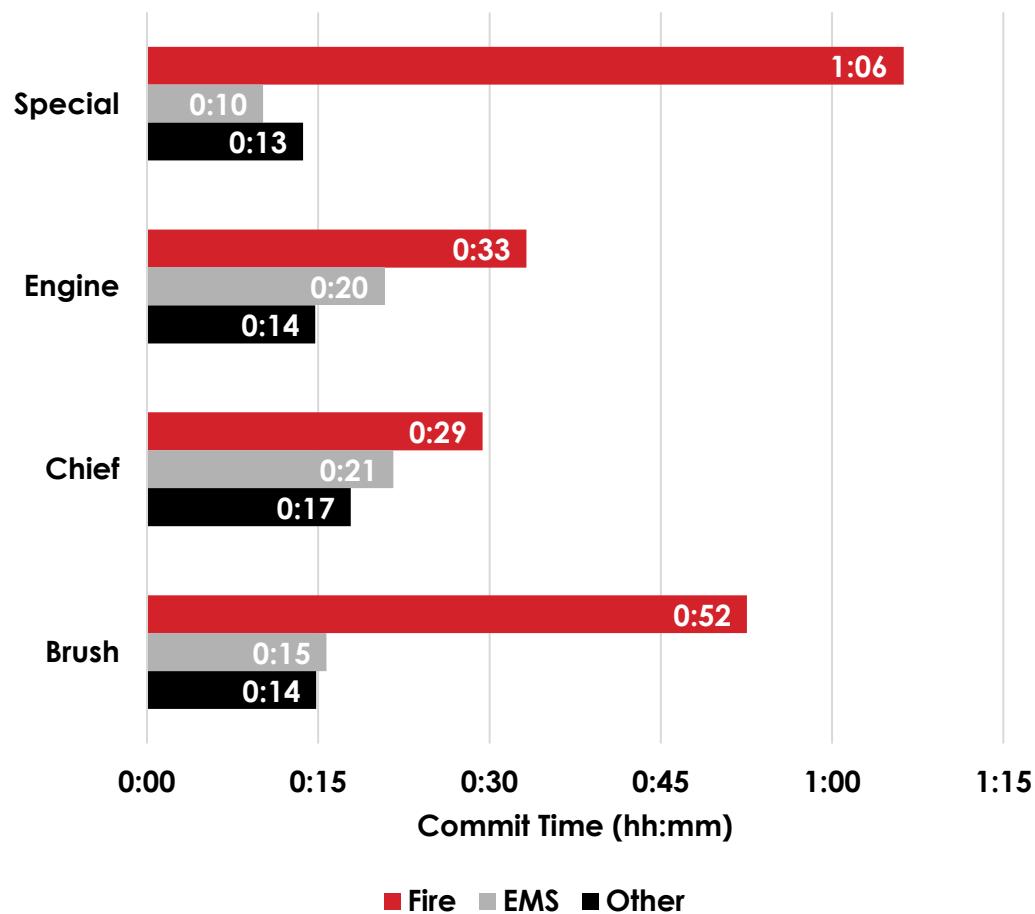
**Figure 88: Incident Volume by Frontline Engine (FY2021–FY2024)**



Each incident requires a unit to remain on scene to handle the situation. Therefore, a general idea of how long a specific crew is committed to an incident can assist operational planning. Commit time begins with dispatch and ends with clearing the incident.

LFD has three primary types of units that respond to emergencies. First, engines provide the most flexible responses. Brush trucks and specialty response vehicles serve unique functions and are often committed to an incident for the greatest amount of time.

Finally, command officers are any chief officers within the LFD system. The following figure shows the average hours and minutes each apparatus type was committed to a given incident category for the entire study period.

**Figure 89: Average Incident Commit Time by Apparatus (FY2021–FY2024)**

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 versus the total time on duty during a specific time frame. The formula for this calculation is the total time committed to incidents divided by the sum of all time the unit is staffed.

$$UHU = \frac{\sum \text{Time Committed to a Scene}}{\sum \text{Time Unit is Staffed and In Service}}$$

The desire is for the primary unit at a station, typically an engine, the most flexible response unit, to be under 10% UHU. Maintaining 10% UHU should indicate 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.

LFD has a busy system, but the incident workload is approaching even distribution. The UHU for each unit in a station is aggregated to the station level to capture the impact of cross-staffing. As shown below, Station 33 has exceeded 9% UHU in prior years. Station 34 and 35 have a similar incident volume, but the lack of a water tender at these stations leads to a slightly lower UHU.

**Figure 90: UHU and Average Responses (FY2021–FY2024)**

Unit	FY2021	FY2022	FY2023	FY2024	Overall	Incidents/Day
<b>BC34</b>	<b>2.3%</b>	<b>2.5%</b>	<b>2.0%</b>	<b>1.9%</b>	<b>2.2%</b>	<b>1.5</b>
<b>St 33</b>	<b>8.8%</b>	<b>9.4%</b>	<b>9.2%</b>	<b>8.7%</b>	<b>9.0%</b>	<b>6.2</b>
BR33	0.5%	0.3%	0.3%	0.3%	0.3%	0.1
E33	7.9%	8.6%	8.6%	8.2%	8.3%	6.0
E33B	0.0%	0.0%	0.0%	0.0%	0.0%	0.0
U33	0.0%	0.1%	0.0%	0.0%	0.0%	0.0
WT33	0.5%	0.4%	0.2%	0.2%	0.3%	0.1
<b>St 34</b>	<b>7.4%</b>	<b>8.6%</b>	<b>7.9%</b>	<b>8.0%</b>	<b>8.0%</b>	<b>5.8</b>
BR34	0.2%	0.4%	0.3%	0.4%	0.3%	0.2
E34	7.2%	8.2%	7.6%	7.5%	7.6%	5.7
E34B	0.0%	0.0%	0.1%	0.0%	0.0%	0.0
U34	0.0%	0.0%	0.0%	0.0%	0.0%	0.0
<b>St 35</b>	<b>7.7%</b>	<b>8.1%</b>	<b>8.0%</b>	<b>8.3%</b>	<b>8.0%</b>	<b>6.2</b>
E35	7.6%	7.8%	7.8%	8.1%	7.8%	6.1
E35B	0.0%	0.0%	0.0%	0.0%	0.0%	0.0
G35	0.2%	0.3%	0.2%	0.1%	0.2%	0.1

Not all the time committed to an incident is apparent in the data. Crews may be out of service for maintenance, training, or other events that do not appear in this analysis.

Approximately half of a crew's day is spent in administrative, training, or recovery activities. For example, assuming the crews are allowed eight hours of rest and recovery daily, two hours for meals, and two hours for station, equipment, and vehicle maintenance, that totals 12 hours. Physical fitness, training, and public education are typically given additional time.

## Concurrency Analysis

Incidents that occur simultaneously can affect an agency's ability to respond quickly and effectively. This type of concurrency analysis helps identify whether an agency has sufficient front-line resources to appropriately handle incidents within its jurisdiction.

The first dimension of the concurrency evaluation is the frequency of multiple incidents occurring simultaneously within LFD's entire response area. This includes responses to outside agency jurisdictions for assistance. A concurrent call happens when another incident arises while an initial incident is still utilizing resources. It is essential to evaluate only those incidents that the agency is likely to handle during normal operations. To account for this, incidents lasting longer than 12 hours were excluded. The following figure illustrates how often multiple incidents occur at the same time within the LFD jurisdiction.

**Figure 91: Incident Concurrency FY2024**

Number Working Incidents	Historical Percent Likelihood
2	24.5%
3	4.3%
4	0.6%
5	0.1%
More than 5	0.1%

As is evident, it is not uncommon for LFD to run simultaneous incidents. The maximum number of concurrent incidents within the historical data was seven incidents working simultaneously. However, with three frontline apparatus, LFD appears capable of handling the most likely concurrent call demands.

Another factor affecting unit workload is the number of units assigned to a specific incident. Only 22% of incidents are handled by a single unit. Over 70% of LFD incidents involve two units, while the remaining 8% are managed by a total of 4 to 6 units.

## 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 ones. In this case, the Lincoln Fire Department has not adopted performance requirements.

Therefore, as a reference, National Fire Protection Association (NFPA) standards will be utilized as a reference where appropriate. This will include the NFPA 1710: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments* (NFPA 1710). It will also include portions from NFPA 1225: *Standard for Emergency Services Communications* (NFPA 1225).

Evaluating overall performance requires an understanding of the lifecycle of an incident. It starts with a normal state and should end with a new normal state, but 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 standards.

**Figure 92: Incident Metrics Table**

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 & 1710	Prevention and Education			
PSAP Notification							
PSAP Interrogation	PSAP Transfer & Agency Answer		NFPA 1225 & 1710	CAD-to-CAD Agreements			
Agency Notification							
Agency Interrogation	Call Processing	Total Response Time	NFPA 1225 & 1710	These segments should be evaluated at a minimum. Each segment should have an adopted performance standard.			
FD Notified							
FD Unit Dispatched	> Turnout Time		NFPA 1710				
FD Unit Responding	> Travel Time						
FD 1 <sup>st</sup> Unit Arrives	Total time						
FD ERF Dispatched	ERF Travel & Total Time		NFPA 1710	Applicable to EMS transport agencies.			
FD ERF Arrives							
EMS to Destination	> Destination Travel		N/A				
EMS at Destination	> Wall Time						
EMS Clears Destination							
FD Units Clear Incident	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.						

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, and total response time. The NFPA standards will be used as a performance benchmark.

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

## Call Processing Analysis

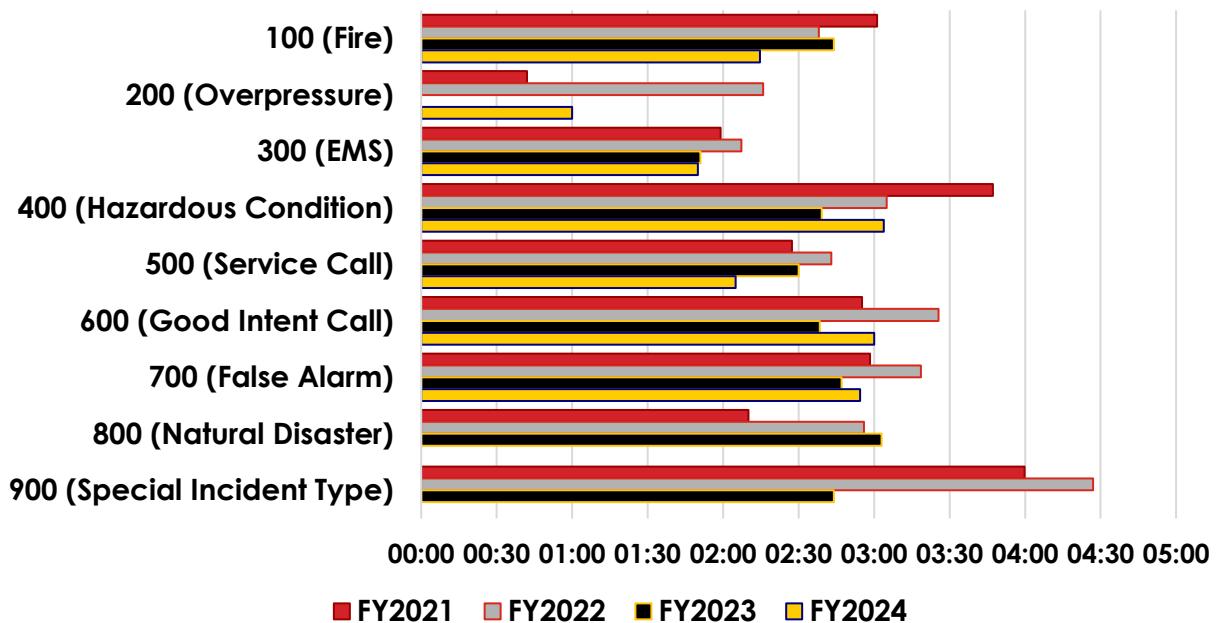
There are several time measures of a dispatch center. The metrics identified in NFPA 1225 and NFPA 1710 are ring time and call processing. Ring time measures when the phone in dispatch begins to ring until someone answers. NFPA 1225 requires the ring time to be less than 15 seconds, 90% of the time and less than 20 seconds, 95% of the time. Call processing measures the time from a person answering the call for help until the first unit is notified of the 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 begins when the phone is answered and ends when the first, preferably correct, unit has been notified of an incident in progress. However, there is typically a short period, seconds usually, from when the phone is answered to when the incident is started in the computer-aided dispatch system. For this analysis, it is assumed this short period, while not captured, is inconsequential. The NFPA 1710 and 1225 standards indicate that a high-priority incident should be processed within **60 seconds, 90% of the time**.

While NFPA 1710 further defines specific call types to be processed within 90 seconds, 90% of the time and 120 seconds, 99% of the time, the new NFPA 1225 standard does not. However, NFPA 1225 states the same incidents are exempt from the high-priority incident time requirement. These incident types include those requiring emergency medical questioning, hazardous materials incidents, and technical rescue incidents. This additional time is available for persons needing translation, calls from devices used by hard-of-hearing individuals, text messages, and calls requiring location determination.

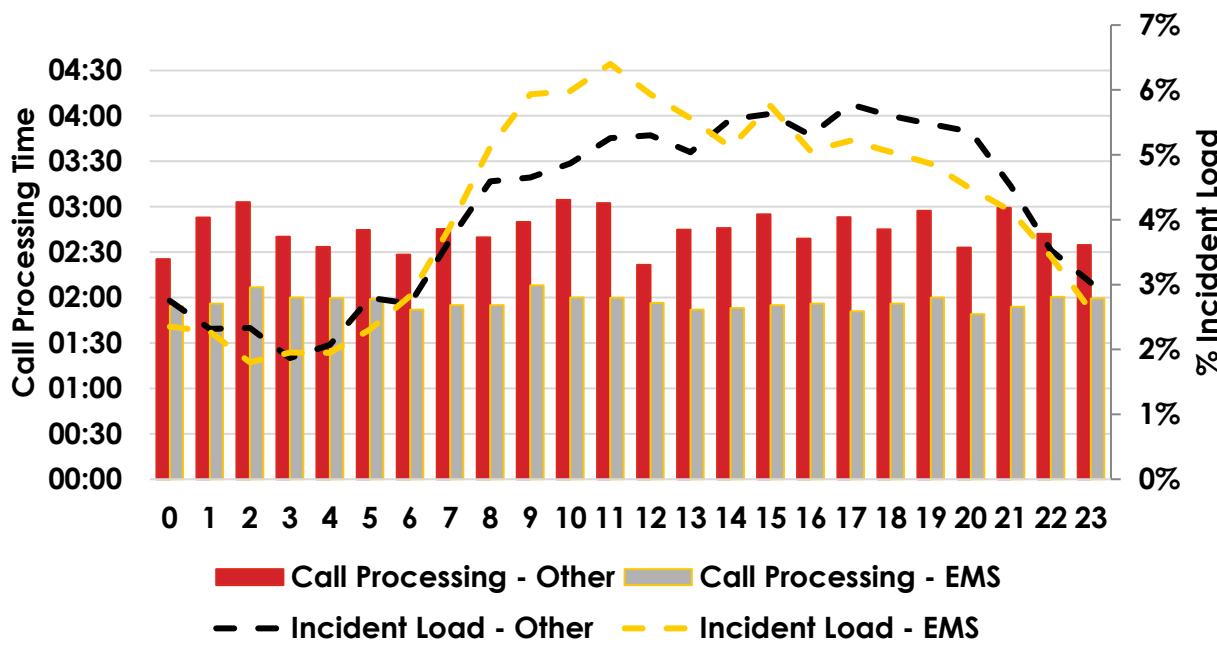
The data provided was evaluated for integrity and reliability. It was found that 1.5% of the data were statistically unreliable. In addition, the maximum call processing time was set at 10 minutes to remove some substantial anomalies that skewed the analysis.

However, that did leave 22,926 incidents for evaluation. Overall, Lincoln Police and Fire Dispatch Center processes calls within **2 minutes, 9 seconds, 90% of the time**. The following figure shows the call processing time at the 90<sup>th</sup> Percentile based on the NFIRS incident grouping for FY2021 through FY2024.

**Figure 93: Call Processing by Incident Type (FY2021–FY2024)**

Special incident type calls typically require much more time to process. However, when this NFIRS category was removed from the analysis, due to the limited number of responses, it did not change the overall call processing time.

Another dimension of the call processing time is how incident workload affects dispatch center performance. The dispatch center manages the workload well, and the call processing time is generally consistent by the hour. The following figure is the call processing times of medical incidents and all other incidents by the hour of the day, with the call load added as a reference.

**Figure 94: Call Processing by Hour with Volume Reference (FY2021–FY2024)**

### Turnout Time Analysis

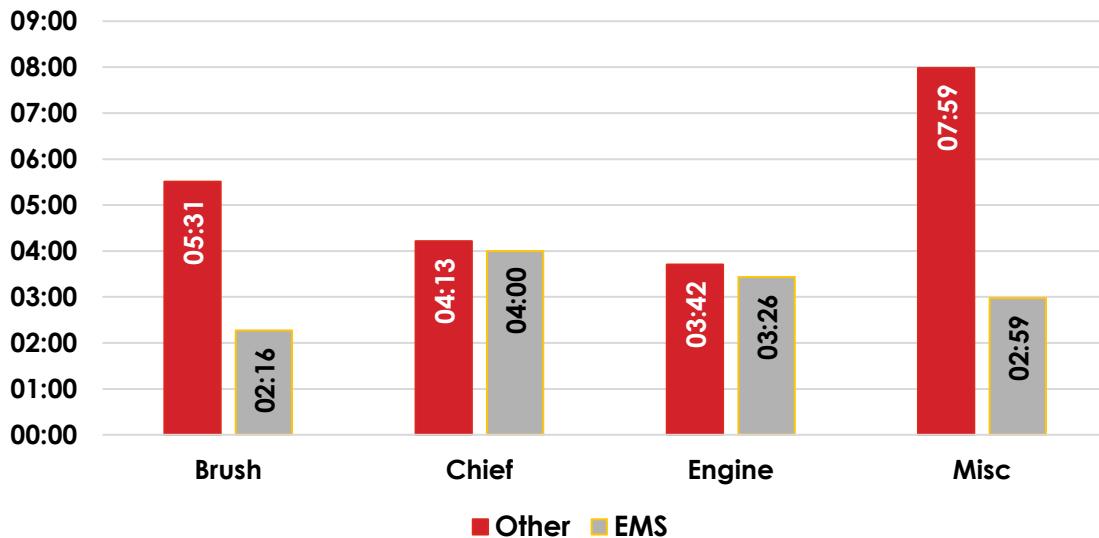
The turnout time segment begins when the unit is notified of an incident and ends when they start to respond. NFPA 1710 indicates the performance measure for this time segment is **60 seconds for medical incidents and 80 seconds for fire incidents**. For this analysis, the incidents will be grouped by EMS and others.

The data was analyzed for statistical reliability; over 38,000 records could be measured. This represents approximately 82% of the recorded information, slightly better than the typical reliability for this data point.

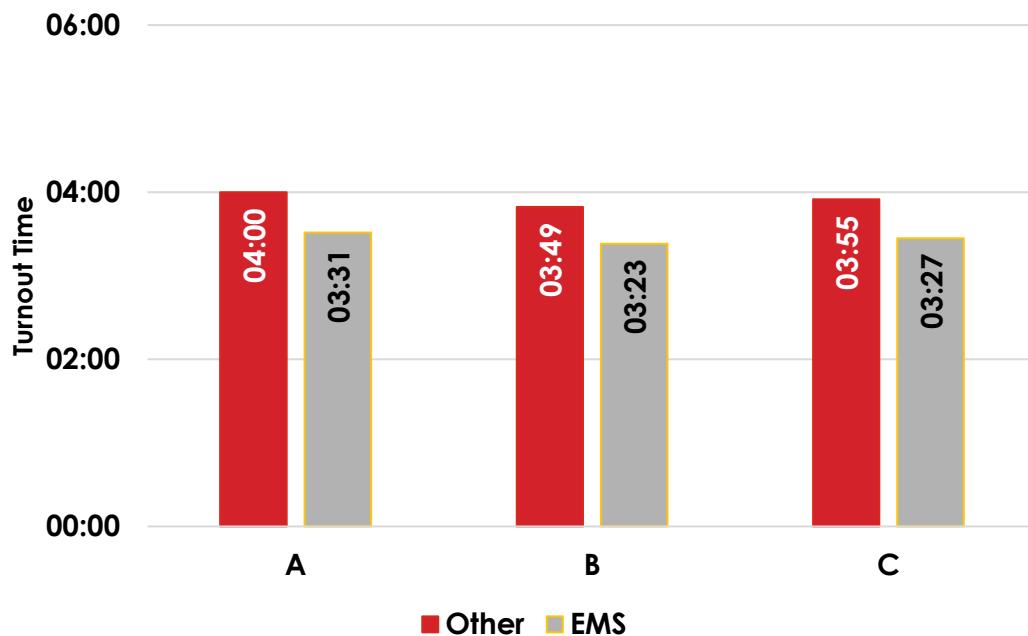
In addition, to ensure the responding crew was facing an urgent situation, only emergent responses were evaluated. Overall, LFD staffed apparatus have a turnout time of **3 minutes, 24 seconds at the 90<sup>th</sup> percentile**. There was also slight variation between an EMS incident and other incidents. EMS call volume is the primary influence on overall turnout time performance.

The following figure shows the turnout times by unit and general incident types.

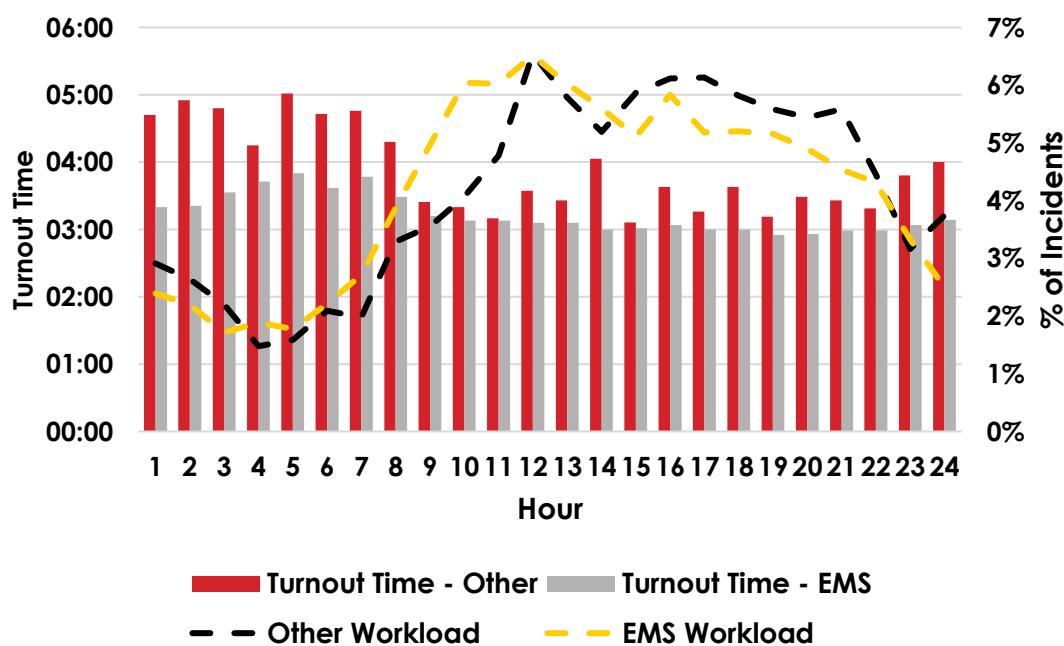
**Figure 95: Turnout Time by Apparatus Type and Incident Category (FY2021–FY2024)**



Each apparatus is equipped and staffed for specific responses. The turnout time for each response type and apparatus category reflects the complexity of the equipment and staffing needed. Generally, non-EMS responses using specialty apparatus require the longest turnout time. The following figure shows the 90th percentile turnout time for each staffed unit grouped by shift. There is minimal variation between shifts, indicating that procedures are consistent across the organization.

**Figure 96: Turnout Time by Shift (FY2021–FY2024)**

One final dimension of the turnout time analysis is the changes in the percentile by hour of the day. Since LFD staffs its units 24 hours, it is expected that crews can try to sleep at night. However, sleeping personnel impacts how quickly they can get to the apparatus and begin to respond. The following figure shows the turnout response by the hour of the day, with the workload by general incident type added for reference.

**Figure 97: Turnout Time by Hour with Workload Reference (FY2021–FY2024)**

It is interesting to note the inverse pattern of turnout times and workload. This phenomenon is common 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, found at lighter incident periods, is typically much more susceptible to higher times and more obvious data swings.

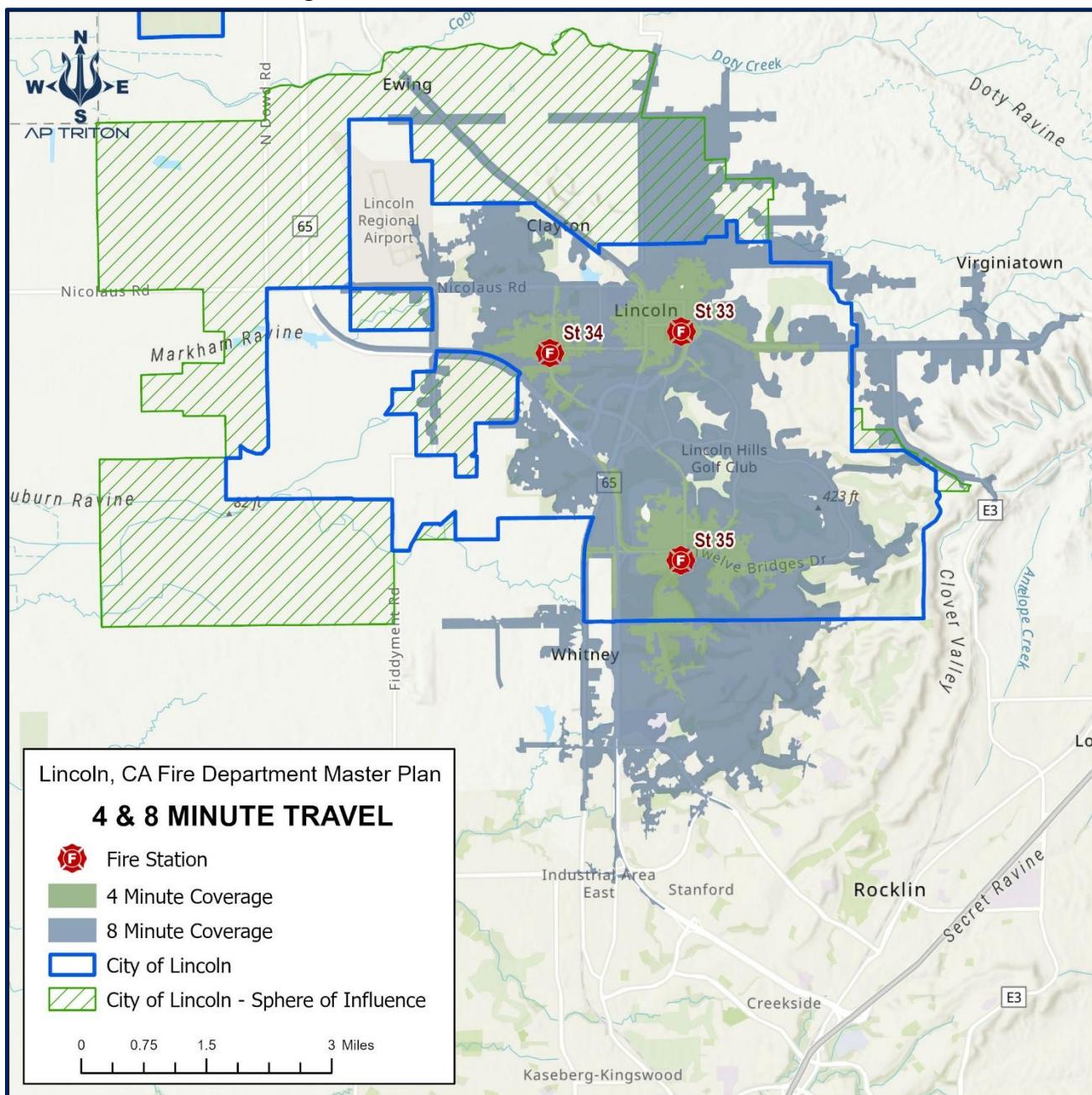
### Travel Time Analysis

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* lists several travel time requirements for apparatus. The first defined travel time goal is four minutes for the first-arriving unit, either an engine or a truck that can operate as an engine. The second-due engine should arrive within six minutes, and the first alarm should arrive within eight minutes for a moderate-risk structure fire.<sup>12</sup> However, the new standard leaves the first alarm timing up to the authority having jurisdiction.

<sup>12</sup> National Fire Protection Association. *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*. 2020 [Appendix D].

Travel time is the difference between when the apparatus marks enroute and when it arrives on the scene. The following figure shows the theoretical 4- and 8-minute travel times from LFD's fire stations.

**Figure 98: 4 & 8 Minute Modeled Travel Times**



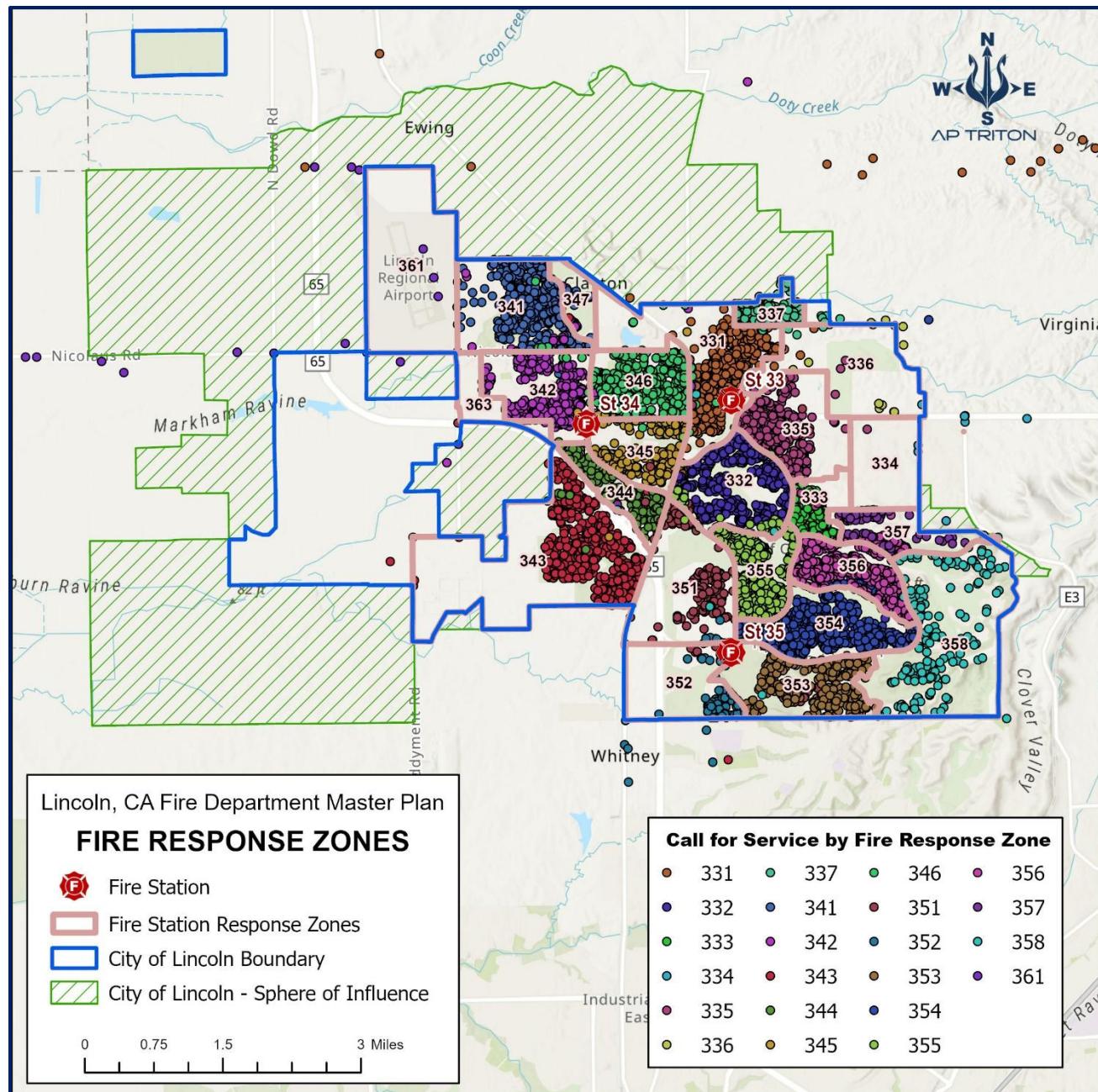
In theory, the 4-minute coverage is adequate for most of the more populous areas in the jurisdiction. However, areas in the center and southeast struggle to meet the 4-minute travel time but have good coverage at the 8-minute mark. Areas to the west and all of the Village 5 annex are beyond 8 minutes from a station.

Theoretical models are beneficial when evaluating what can happen. Consideration of actual performance may give a better understanding of what the agency can provide.

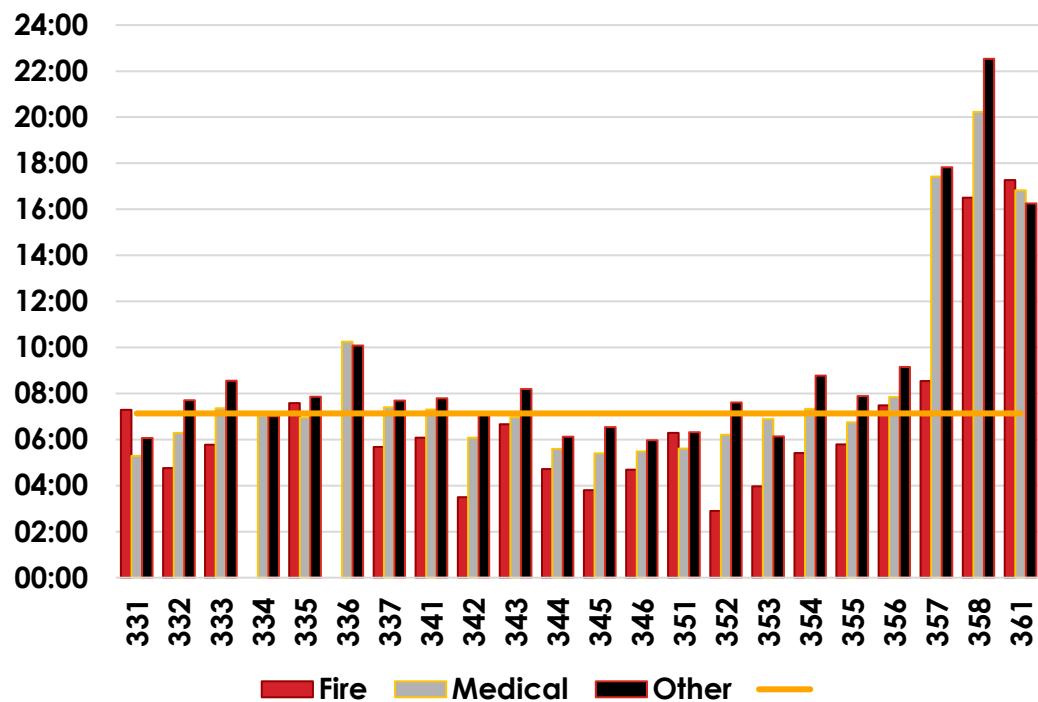
### **First Due Apparatus**

Understanding the agency's capabilities is more manageable when defining smaller geographic areas. CAD response zones were provided in the record management system data provided. There is some inconsistency in how the incidents are coded by zone, but for the most part, incidents are spatially grouped into geographic response zones, as shown in the following figure.

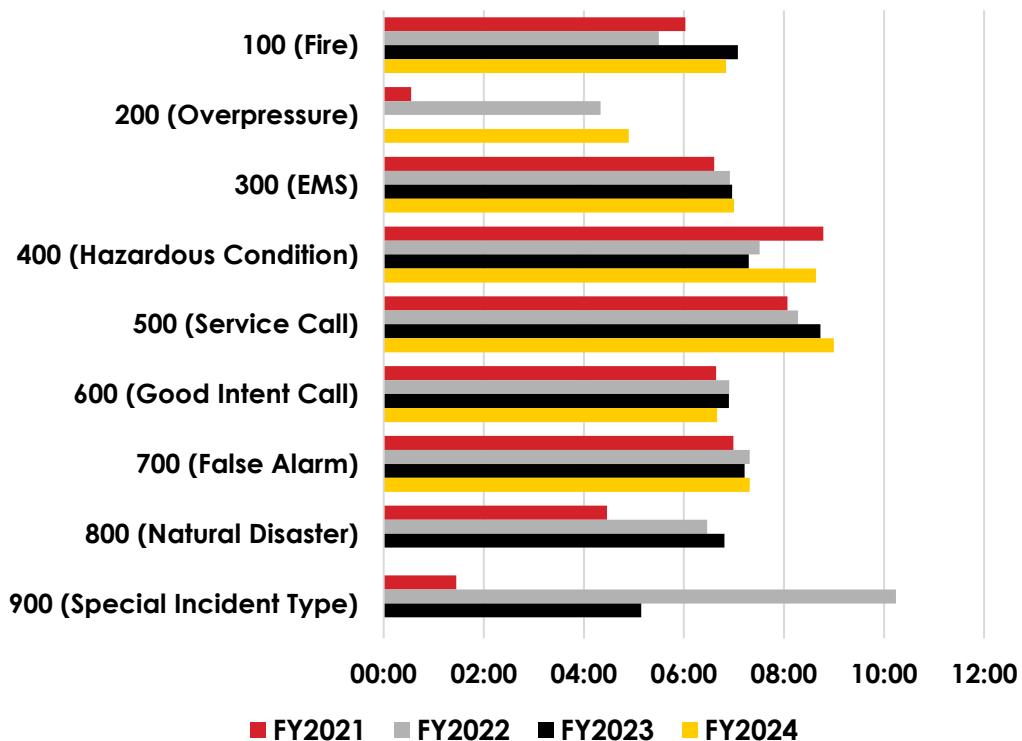
Figure 99: Incidents and CAD Response Zones (FY2021-FY2024)



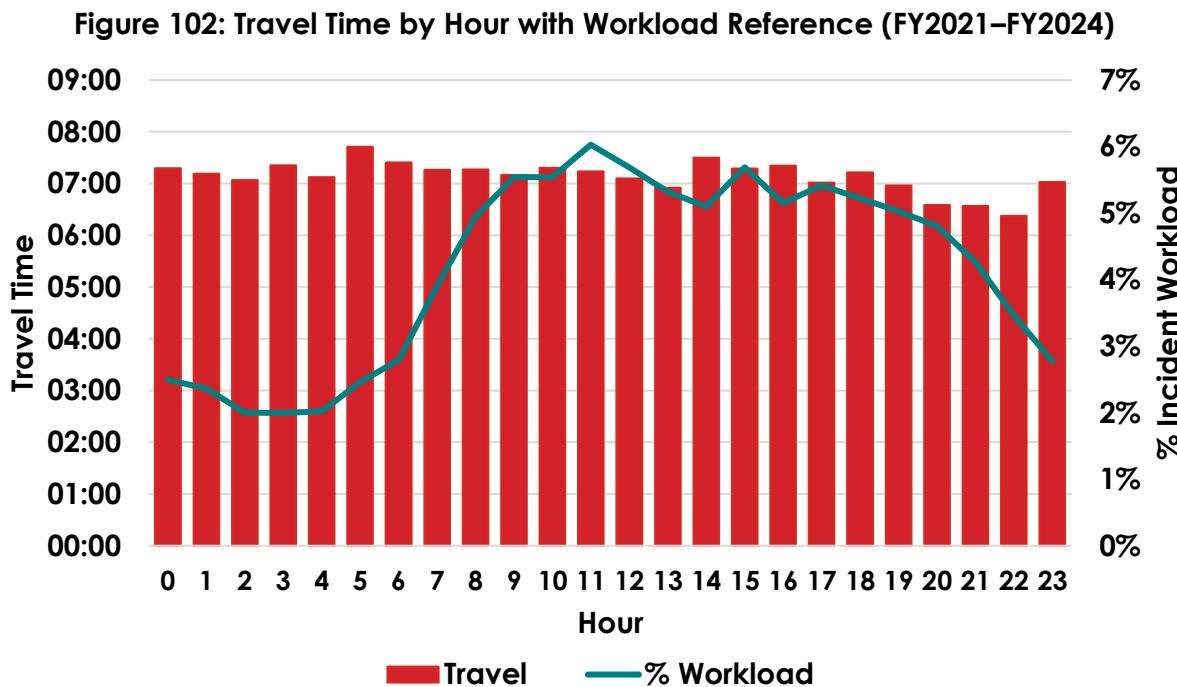
The first-due travel time performance for LFD is **7 minutes, 8 seconds at the 90<sup>th</sup> percentile** for all incidents within the city. The following figure shows the first due travel time for emergent responses by response zones and incident type.

**Figure 100: First-Due Travel by Type & Zone (FY2021–FY2024)**

The annual travel times have generally increased or remained stable over the study period. The following figure is an annual evaluation of the first due travel time by general incident type.

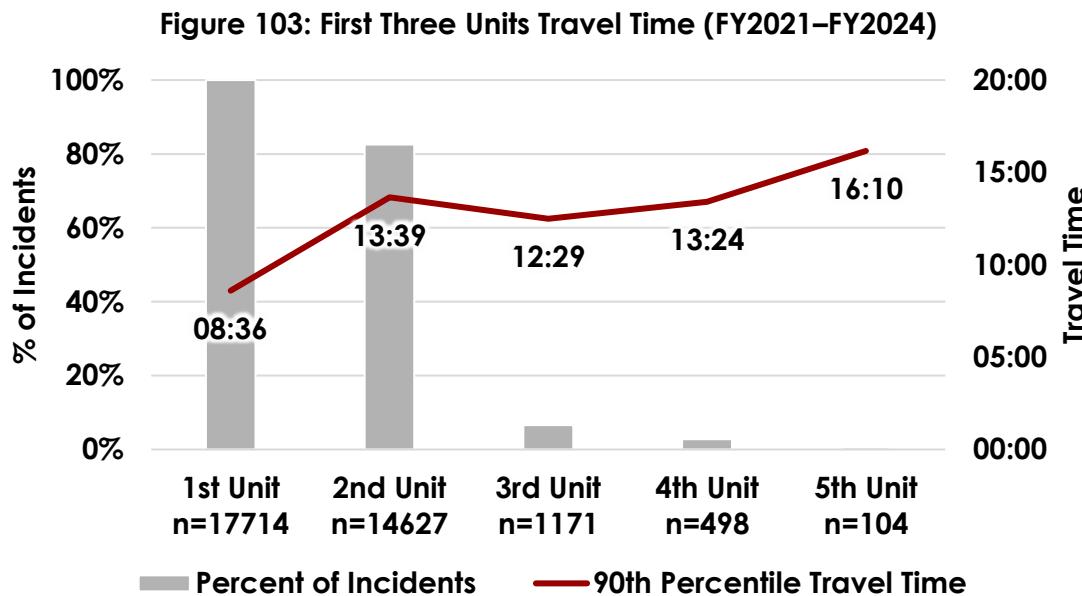
**Figure 101: Annual Travel Time Performance by Type (FY2021–FY2024)**

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



### Effective Response Force

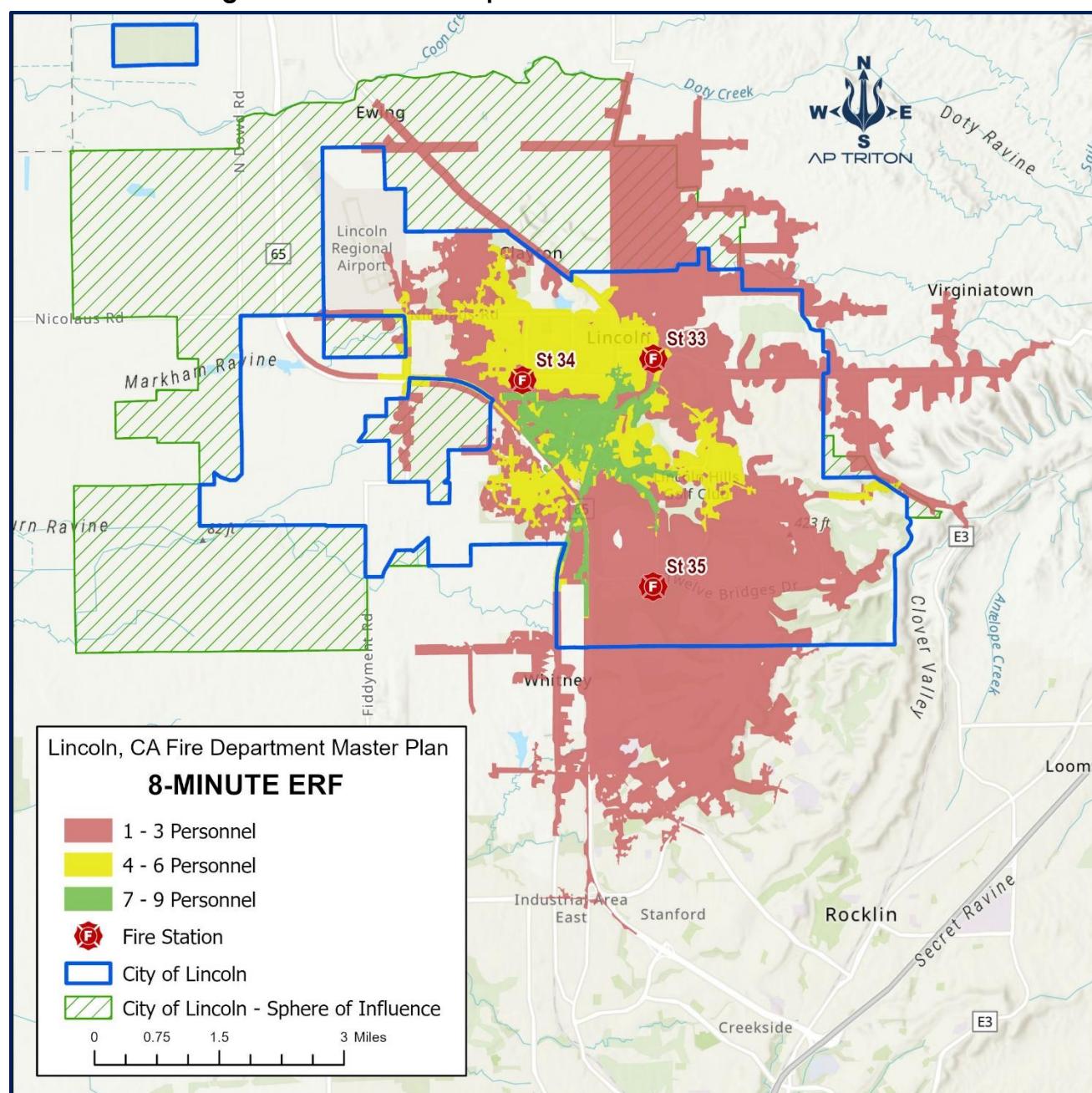
The second dimension of the travel time analysis is how well the effective response force (ERF) needed for a type of incident can be assembled. ERFs change with the complexity and resources required of any incident. They can range from one unit to multiple units with specialty equipment. The following figure shows the travel time for emergent incidents of the first three units arriving.



Interestingly, the third and fourth arriving units have a faster travel time at the 90<sup>th</sup> percentile than the second arriving unit. This is likely because the number of incidents with three units is so small; the fast travel times in the small population of incidents drive the resulting statistic. There is little difference between the third unit's arrival and subsequent times. Again, this is primarily due to concentration.

Theoretically, the number of people LFD can assemble in 8 minutes is adequate for the northern portion of the city. Similar to the travel time evaluation, it is difficult to get a full complement to a moderate-risk structure fire, commonly called a first alarm, in the south and east portions of the city. There is no response capable of reaching the annexed area to the west within 8 minutes.

The following figure shows the ability of LFD to assemble the indicated number of personnel within 8 minutes.

**Figure 104: Effective Response Force—8 Minute Travel Time**

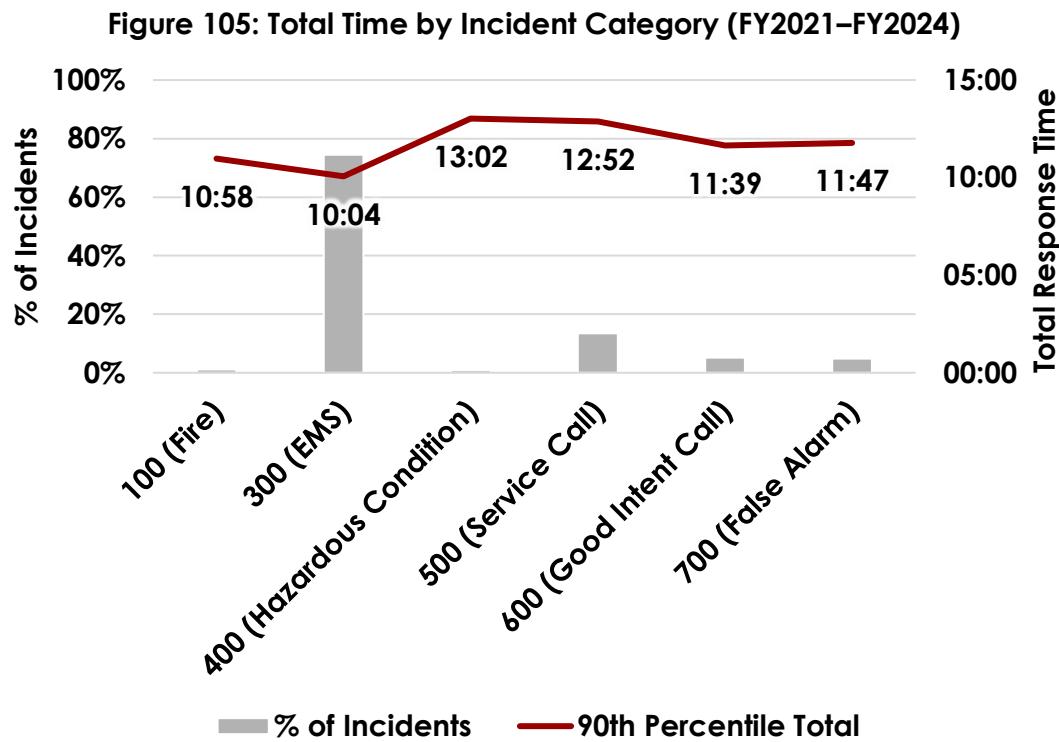
### Total Response Time Analysis

The reason each time segment is analyzed is to get an understanding of where performance can be measured and improved. However, the primary performance measurement is the total response time. The person in need sees this as LFD's performance.

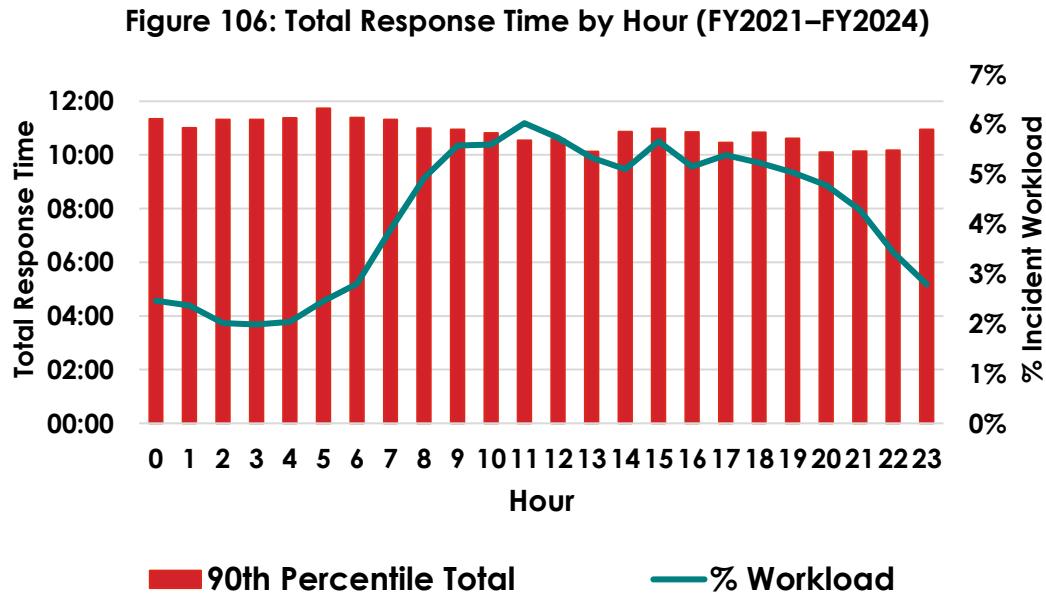
It may seem that the 90<sup>th</sup> percentile total response time is simply the sum of call processing, turnout, and travel times. However, this is not usually the case. Each time segment is analyzed independently, including the total response time. The total response time does not simply combine the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

One of the most straightforward methods of displaying the total response time was developed by the Commission on Fire Accreditation International (CFAI). Annually, the CFAI requires an accredited agency to report its performance by response program in chart form. These charts show the incident time segments culminating in the total response time of the first unit and the entire ERF. While each element leading up to the total response time is self-explanatory and was explored in previous sections of this report, the total response time can be confusing. LFD's performance chart will be presented later in this section.

LFD's **90<sup>th</sup> percentile total response time performance is 10 minutes, 52 seconds**. This time segment encompasses the call processing time, first unit turnout, and travel times. The following figure shows incident types with their first due and ERF total response times.

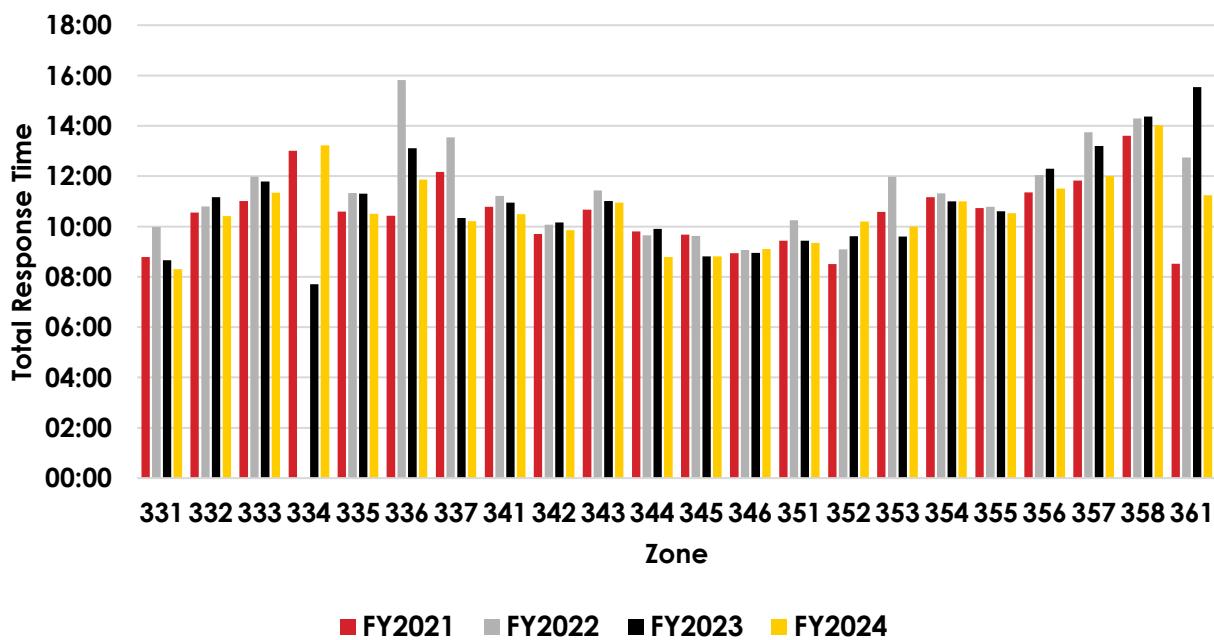


For LFD, the time of day does not drastically change the overall total response time. The following figure shows the total response time by hour with the workload percentages as a reference.



Geography influences total response time. Looking at FY2024 specifically, zones 334 and 358 are above 12 minutes. Higher 90<sup>th</sup> percentile total response times come from a combination of low call volume and rural areas with limited access. Consistently lower response times occur in zones that are more densely populated and have higher call volumes. The following figure shows the 90<sup>th</sup> percentile total time by zone by year.

**Figure 107: Total Response Time by District and Year (FY2021–FY2024)**



#### Overall Time Segment Evaluation: Fire Responses

Typically, the overall time segment evaluation is focused on a particular type of incident, such as a moderate risk fire. However, the incident data provided did not allow for discriminating incident severity. Therefore, all incidents that achieved an ERF of seven and are classified as Fire in the NFIRS are examined. The ERF criteria are based on the LFD critical tasking for a moderate-risk structure fire, requiring two engines and a command officer.

The following figure shows the total response time by time segment, based on the chart required by the CFAI accredited agencies.

**Figure 108: Fire Incident Evaluation Chart**

Segment	FY2021– FY2024	FY2024	FY2023	FY2022	FY2021
Call Processing	04:54	04:08	04:39	06:11	04:51
Turnout Time	04:08	03:19	04:09	04:50	04:03
First Travel Time	06:01	05:47	06:12	06:16	05:46
ERF Travel Time	07:58	08:20	7:22	08:21	07:49
First Total Time	11:06 n <sup>1</sup> = 418	10:14 n = 104	11:33 n = 107	12:15 n = 98	10:48 n = 109
ERF Total Time	14:25 n = 147	12:38 n = 32	11:52 n = 40	16:14 n = 33	12:47 n = 42

<sup>1</sup>n indicates the total records in the evaluation.

CFAI charts would also include the benchmarks adopted by the agency. However, LFD has not adopted performance standards, so those benchmarks were left off. It also becomes apparent how data points can skew a 90<sup>th</sup> percentile figure when there are high values and a lower frequency.

Typically, the CFAI considers any data set under 100 statistically insignificant. However, the ultimate idea is to understand fire district performance from the customer's standpoint.

## Population Growth & Service Demand Projections

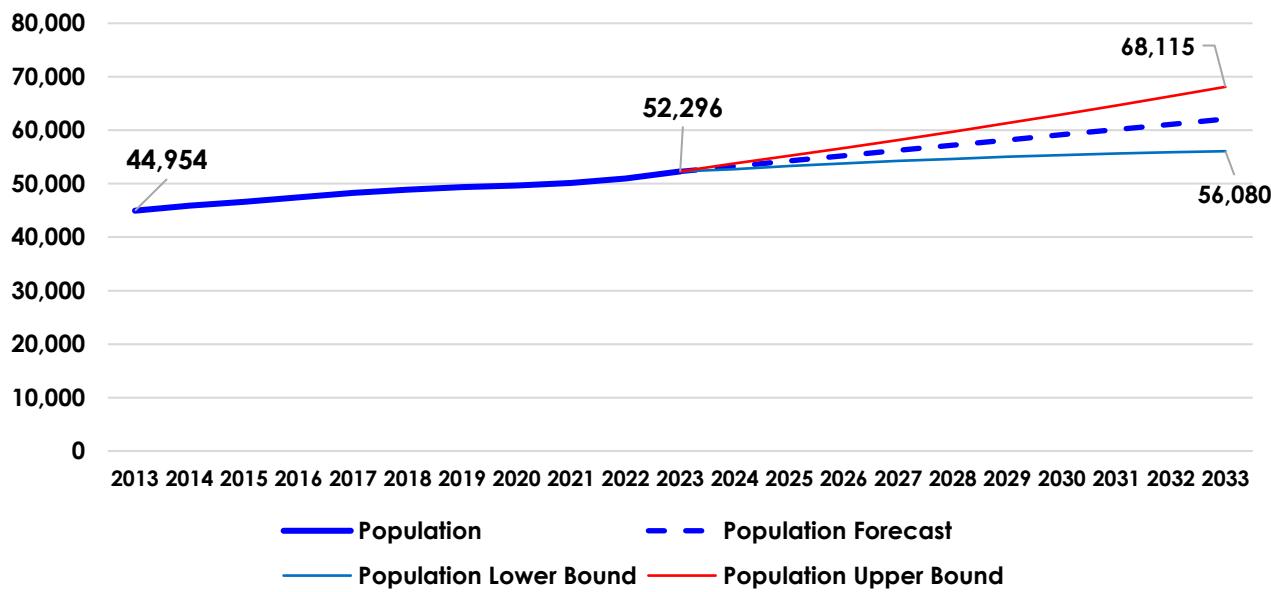
Service demand is generally driven by population. Without people, there is very little need for emergency services. However, the relationship between population growth and service demand growth is not fully understood. Therefore, this analysis provides information for leadership to determine appropriate resources and distribution.

### Population Growth Projections

As an incorporated city, the California Department of Finance collects statistics and population information for the City of Lincoln.<sup>13</sup> This analysis was conducted utilizing the CDF population estimates from 2013–2023. The sphere of influence was not included in this analysis.

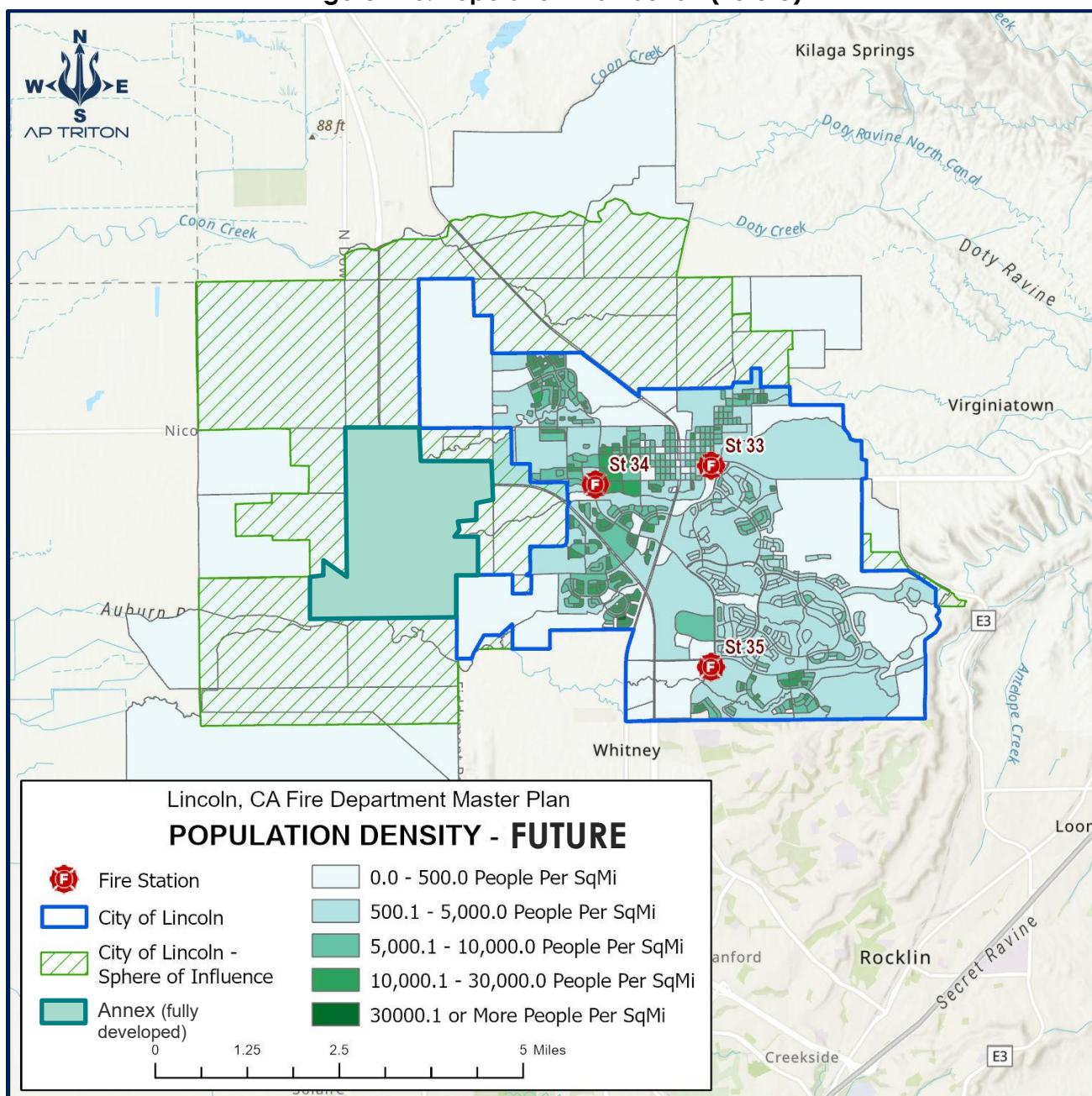
Based on the CDF, the population in the City of Lincoln has grown from 44,954 in 2013 to 52,296 in 2023. Based on this data, the annual average growth rate was 1.5%, with a high of 2.6% and a low of 0.7%. Based on the CDF data and simple forecasting tools, the population in 2033 should be between 56,080 and 68,115. The following figure shows the 10-year projection based on the previous 10 years of CDF data. With the annexation of 2,721 acres of Village 5A west of Lincoln, and the proposed development plan for the development, the upper limit of the population forecast is the more likely scenario.

<sup>13</sup> State of California Department of Finance (2025). *Estimates, January Population and Housing Estimates*. <https://dof.ca.gov/forecasting/demographics/estimates/>.

**Figure 109: 20-Year Population Trends with 95% Confidence Bands**

### Population Distribution

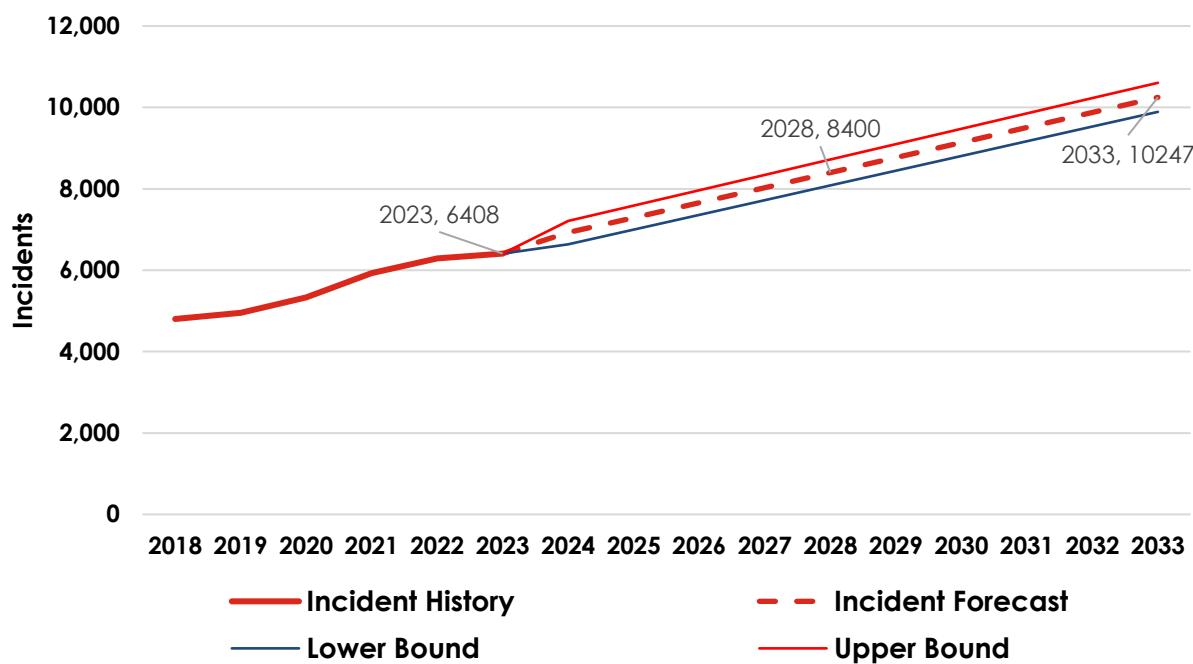
The following figure shows the current population distribution based on census blocks. The annex area west of Lincoln is depicted with the potential population distribution when the planned development currently envisioned is fully built. The remaining areas of Lincoln are not likely to change significantly in terms of population distribution, though the density of people will likely increase as the total population grows.

**Figure 110: Population Distribution (Future)**

## Service Demand Projections

A standard linear regression model was applied to the six years of incident data provided by LFD. The model was evaluated using the  $R^2$  methodology for the best data fit. The  $R^2$  value measures how well the model fits the historical data. The closer to 1 the value is, the better the fit with the historical data. In this case, the linear regression model returned an  $R^2$  value of 0.97. The following figure shows that incident responses rose from 4,801 in 2018 to 6,408 in 2023. It can reasonably be expected that the number will reach between 9,890 and 10,604 in 2033, with 95% confidence. As with population growth, the demand from 5,400 planned residential units in the annexed area increases the likelihood of the upper bound of the forecast model.

**Figure 111: Service Demand Projection to 2033 with 95% Confidence Bands**



## Performance Objectives

Managing performance objectives and measuring how an organization provides service requires a combination of data-driven approaches, personnel training, and operational adjustments as needed. These critical methodologies allow an organization to develop performance measures to improve.

- Key performance indicators and metrics measure specific data, such as call processing, turnout, and travel times. Other metrics include the effectiveness of fire suppression efforts during incidents, rescue operations, and customer satisfaction.
- Benchmarking allows an organization to compare performance between fire departments of similar size and functioning (same type of services). These benchmarks can also use NFPA standards or other recognized standards.
- Predictive analytics and risk assessments provide data to use Geographic Information Systems (GIS) to analyze fire patterns and high-risk zones and determine fire station locations for quicker response. Conducting commercial building fire and life safety inspections based on occupancy risk helps prioritize visits by trained fire department personnel. Community risk reduction identifies and addresses risks using a data-driven approach to enhance community engagement with prevention and mitigation programs.
- Training and certification programs provide regular drills, live-fire exercises, or simulation-based training designed to train new firefighters and to deliver continuing education to current staff. Leadership and decision-making training for strategic planning, incident management, and personnel administration provides more advanced skills to command staff.
- Utilizing records management systems and real-time data monitoring allows an organization to track incidents, response times, equipment usage, training records, inspections of commercial properties, fire investigations, public engagement, and other essential programs.

### Dynamics of Fire in Buildings

Most building fires develop slowly unless influenced by highly flammable materials. Ignition, the beginning of a fire, initiates a sequence of events and may take several minutes or even hours before a visible flame appears. This smoldering stage is hazardous, especially when people are asleep, as it can generate large amounts of highly toxic smoke.

Once flames appear, the sequence of events accelerates rapidly. Combustible materials near the heat ignite, heating and igniting other adjacent materials if sufficient oxygen is present. Heated gases accumulate at the ceiling, some flammable and highly toxic, underscoring the need for swift action. The flammable gases at the ceiling and other combustible materials in the room reach ignition temperature, leading to an event called "flashover." During a flashover, the gases and materials ignite simultaneously, causing everything in the room to burn. It typically occurs five to eight minutes after flames appear in typically furnished and ventilated buildings. The goal of any fire agency is to apply water to the fire before a flashover occurs, highlighting the critical role of early intervention.

Although modern building codes reduce the frequency of fires in newer structures, today's energy-efficient construction, which is designed to retain heat during winter, can also trap the heat of hostile fires. Furthermore, research has shown that modern furnishings typically ignite more quickly and burn hotter due to synthetics.

In the 1970s, scientists at the National Institute of Standards and Technology (NIST) discovered that building occupants had approximately 17 minutes to escape after a fire broke out before being overcome by heat and smoke. Today, that estimate has shrunk to as little as three minutes. This underscores the importance of effective early warning (smoke alarms), early suppression (fire sprinklers), and firefighters arriving on the scene as quickly as possible.

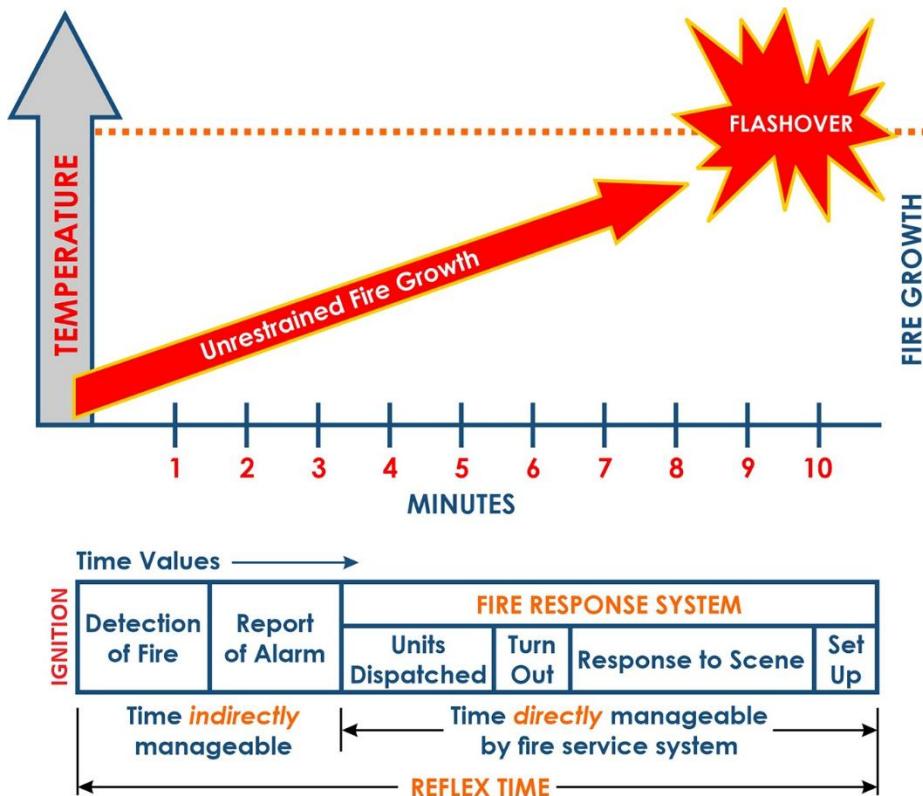
The prompt arrival of at least four personnel is critical for structure fires. Federal regulations (CFR 1910.120) mandate that personnel entering a burning building must be in groups of two. Before personnel can enter to extinguish a fire, at least two personnel must be on the scene and ready to begin search and rescue operations if the fire attack crew becomes trapped, following the "two-in, two-out" rule. However, if victims are known to be trapped inside, a rescue attempt can proceed without additional personnel ready to intervene outside the structure. Not all four personnel must arrive in the same response vehicle; many fire departments rely on multiple units arriving to initiate an interior fire attack.

Preventing flashover is crucial, but controlling a fire before it damages a building's structural framing is equally important. The materials used in modern construction are often less fire-resistant than older, heavier structural materials. Roof trusses and floor joists are now commonly made with lighter materials that weaken more easily under fire. "Lightweight" roof trusses can fail after five to seven minutes of direct flame impingement, while plywood I-beam joists can fail after as little as three minutes of flame contact, creating a dangerous environment for firefighters.

The building contents have much greater potential for heat production than in the past. The widespread use of plastics in furnishings and other building contents rapidly accelerates fire spread and increases the water needed to control a fire effectively. All these factors make the early application of water essential to a successful fire outcome.

The following figure illustrates the sequence of events during the growth of a structure fire.

**Figure 112: Growth versus Reflex Time**



Any fire department faces a significant challenge in applying water promptly to prevent flashover. The National Fire Protection Association (NFPA) found that fires contained to the room of origin—typically extinguished before or immediately after flashover—had significantly lower rates of death, injury, and property loss compared to fires that spread beyond the room of origin, which are usually extinguished after flashover.

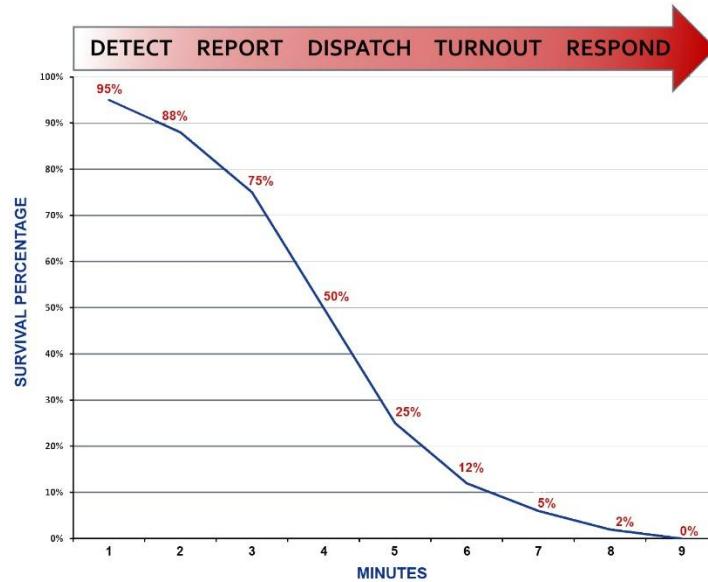
### Emergency Medical Event Sequence

Cardiac arrest is the most significant life-threatening medical event in emergency medicine today. A victim of cardiac arrest has mere minutes to receive lifesaving care to have any hope of resuscitation. The American Heart Association (AHA) has issued a set of cardiopulmonary resuscitation guidelines designed to streamline emergency procedures for heart attack victims and increase the likelihood of survival.

The AHA guidelines emphasize the importance of rapid cardiac defibrillation for cardiac arrest victims. Survival chances decrease by 7%–10% for each minute between collapse and defibrillation. Consequently, the AHA recommends that cardiac defibrillation be administered within five minutes of cardiac arrest.

As with fires, the sequence of events that lead to emergency cardiac care can be graphically illustrated, as in the following figure.

**Figure 113: Cardiac Arrest Sequence**



The opportunity for recovery from cardiac arrest drops quickly as time progresses. The stages of medical response are similar to those for fire response, with recent research emphasizing the importance of rapid cardiac defibrillation and administering certain medications to improve the chances of successful resuscitation and survival.

## Industry Standards

Several key organizations shape performance industry standards and best practices for fire departments, each providing frameworks and benchmarks to evaluate and enhance fire and emergency services. Among the most influential are the Insurance Services Office (ISO), the NFPA, and the Center for Public Safety Excellence (CPSE), along with other relevant federal and industry-based resources.

The ISO's Public Protection Classification (PPC) program focuses on a fire department's ability to effectively respond to and suppress fires. ISO assigns departments a score from 1 (best) to 10, based on factors including emergency communications, the fire department's staffing and capabilities, the availability of a reliable water supply, and community risk reduction efforts. A key performance benchmark within the ISO system is the ability for the first engine to arrive within four minutes and for the full complement of responders to arrive within eight minutes in 90% of calls. This evaluation affects property insurance premiums and community fire protection assessments.

The NFPA provides consensus-based operational and safety standards that serve as national benchmarks. NFPA 1710, applicable to career fire departments, outlines expectations for turnout and travel times, staffing levels (a minimum of four personnel per engine), and full alarm responses. It emphasizes a turnout time of one minute and a four-minute travel time for the first arriving unit, with a full complement of 15 personnel on scene within eight minutes for a structure fire. NFPA 1720: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments*, sets flexible benchmarks for volunteer or combination departments based on community population density and department staffing models. Additional NFPA standards, such as NFPA 1500: *Standard on Fire Department Occupational Safety, Health, and Wellness Program*, and NFPA 1201: *Standard for Providing Fire and Emergency Services to the Public*, address firefighter health and safety, training, and administrative effectiveness. In 2026, these documents will be combined into a new NFPA 1750: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Providing Fire and Emergency Services to the Public*.

The CPSE, through its Commission on Fire Accreditation International (CFAI), offers an accreditation model that emphasizes continuous improvement and strategic planning. Departments are assessed across ten major categories: governance, financial resources, physical and human resources, training, programs, and community engagement. CPSE promotes the development of a Standard of Cover, a data-driven approach that aligns department capabilities with community risks. This model encourages departments to go beyond mere compliance and integrate performance analysis into their decision-making processes.

Additional performance resources come from organizations such as the Federal Emergency Management Agency (FEMA), the Occupational Safety and Health Administration (OSHA), and the National Institute of Standards and Technology (NIST). These agencies provide planning tools, safety regulations, and operational research to support data-informed practices in areas including fireground safety, risk modeling, and firefighter exposure control.

In summary, effective fire department performance is guided by ISO's risk-based insurance rating system, NFPA's comprehensive operational standards, CPSE's accreditation and strategic planning framework, and various supportive tools and regulations from federal and industry research bodies. Departments aligning with these benchmarks improve service delivery and safety, and enhance public trust and organizational accountability.

### **People, Tools, & Time**

Time is crucial in achieving an effective outcome in an emergency, but it is not the only factor. Delivering enough properly trained and appropriately equipped personnel within the critical period completes the equation.

This report's community risk assessment section reviews Lincoln's common and predictable risks, including fires, natural hazards, infrastructure, and demographics.

### **Medical Emergencies**

The urgency of the response varies depending on the nature of the medical emergency. While many medical emergencies are not time-critical, situations involving severe trauma, cardiac arrest, or conditions that may lead to cardiac arrest require a rapid response.

Equally vital is deploying adequate personnel, each with a specific role at the scene. For instance, in a cardiac arrest scenario, the ideal team would consist of six members:

- **Two for CPR:** To ensure continuous chest compressions.
- **Two for advanced medical equipment setup and operation:** To manage defibrillation and other necessary interventions.
- **One for documenting actions:** To keep accurate records of the procedures performed.
- **One for patient care direction:** To oversee and direct the overall response efforts.

The real test of performance in a medical emergency is the time it takes to provide the personnel and equipment needed to manage the patient's condition effectively, not merely the time it takes for the first responder to arrive.

### **Fire Emergencies**

Fire emergencies demand even more strategic resource management. The accurate performance measure is the time it takes to deploy enough personnel to initiate water application to the fire. This is the only practical method to counter the escalating internal temperature and prevent flashover. It is important to note that the arrival of a single person with a portable radio does not constitute "arrival" in the context of fire department intervention.

By focusing on rapidly deploying adequately trained and equipped personnel, fire and medical emergency responses can be significantly improved, leading to better outcomes and increased survival rates.

### **Performance Goals**

LFD has not adopted any performance goals but does track metrics such as call processing, turnout, and travel time for incident response.

---

## **Section IV: COMMUNITY RISK ASSESSMENT**

---

# All Hazards Community Risk Assessment

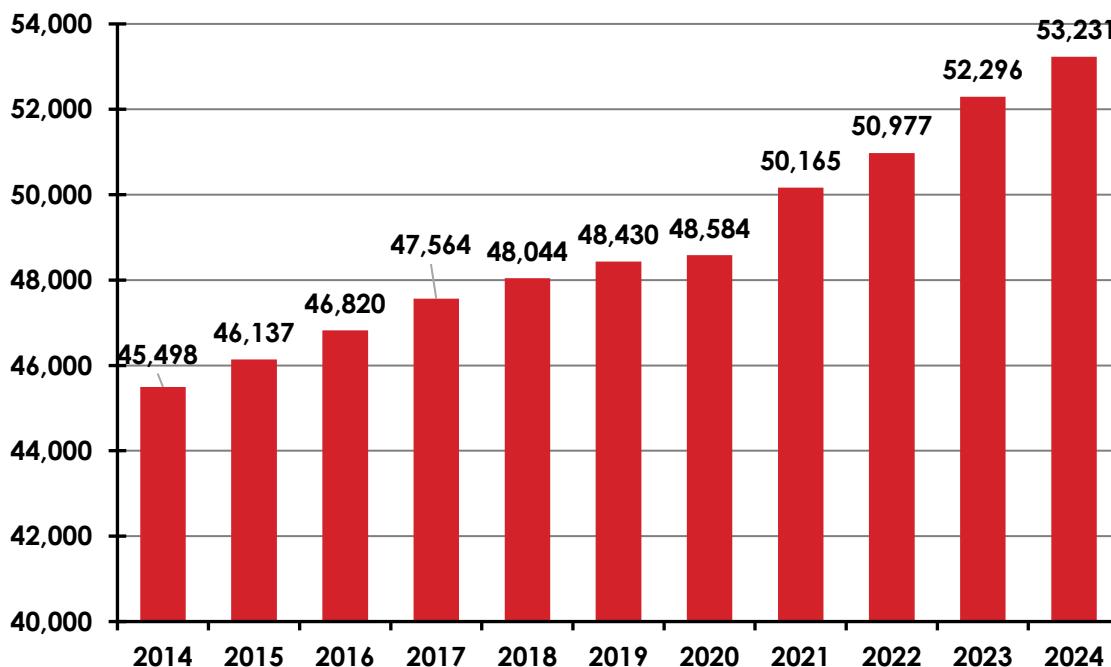
## Demographics

### Population

The population and demographics can influence the type of services provided in a community. Social conditions, such as poverty, the location of high-risk areas, and housing types, can impact the service delivery provided by LFD.

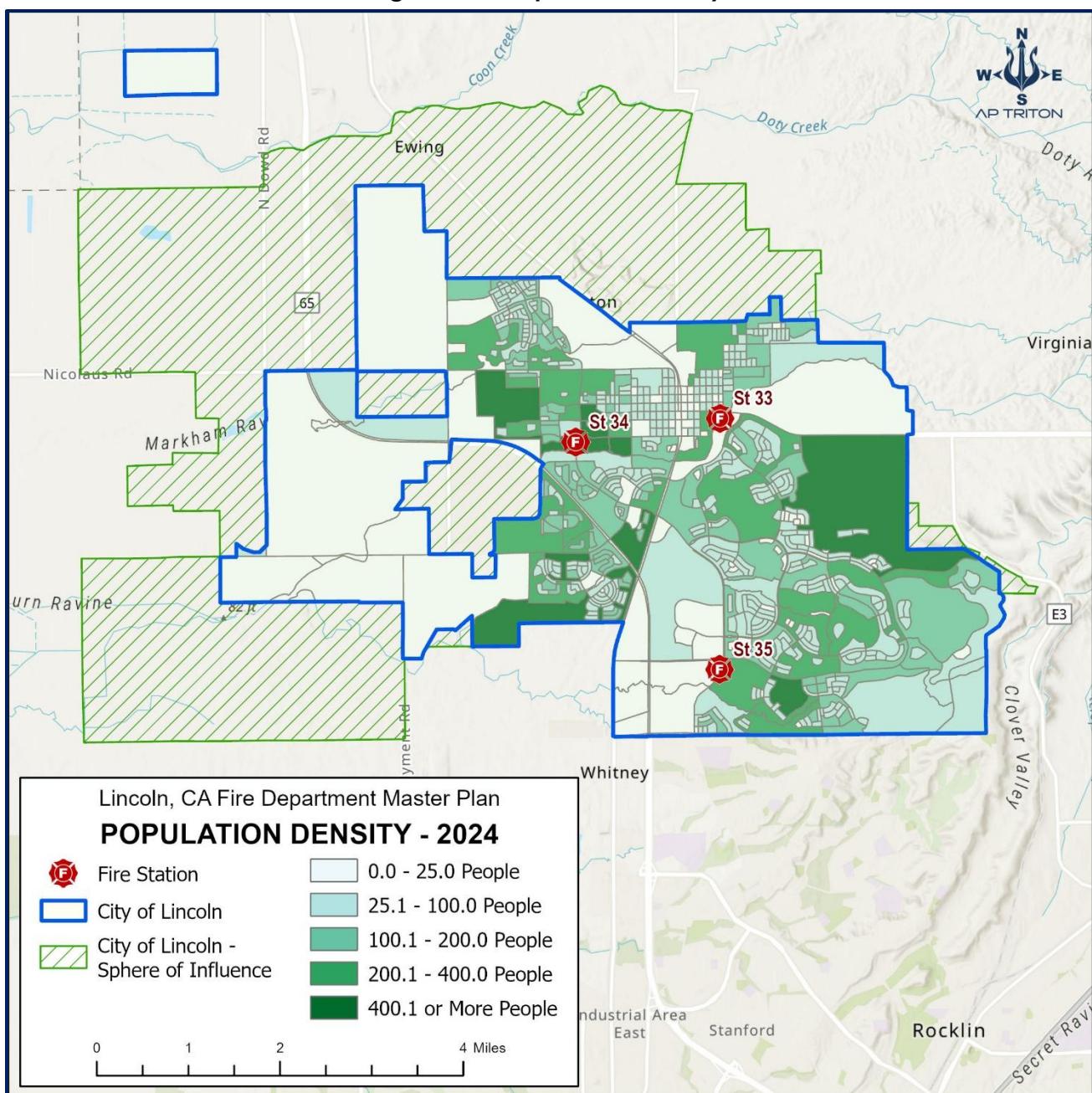
Data from the California Department of Finance shows a population of 45,498 in 2014, increasing to 53,231 by 2024, representing a growth rate of nearly 17%. Lincoln's population is rising, unlike other parts of California, which have seen their numbers decline by more than half a million since 2011. The following figure displays the population estimates from 2014 to 2024, as provided by the California Department of Finance.<sup>14</sup>

**Figure 114: Population Estimates (2014–2024)**



The following figure shows Lincoln's population density and its sphere of influence.

<sup>14</sup> California Department of Finance Website, <https://dof.ca.gov/Forecasting/Demographics/Estimates/>.

**Figure 115: Population Density**

## At-Risk Populations

At-risk populations can place additional workloads on an organization, thus increasing service demands. The National Fire Data Center has identified them as groups at a higher risk of being injured or killed in a fire.<sup>15</sup>

- Children under 5 years of age
- Adults over 55 years of age
- Adults over 85 are at the highest risk
- Gender

Data from 2022 U.S. Census American Community Survey five-year estimates identified several groups in these categories that are more likely to need emergency services, specifically EMS, than other populations.<sup>16</sup>

### Age

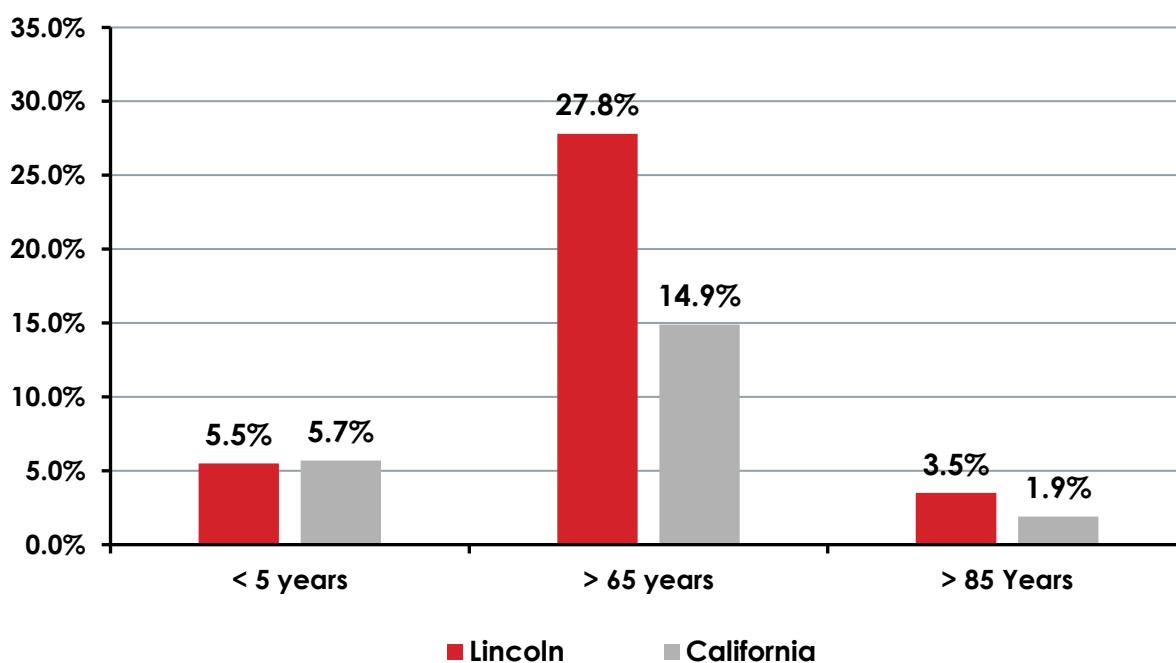
A person's age in a high-risk population directly relates to an increase in unintentional injuries and death or injury from a fire. Older adults are 2.6 times more likely to die in a fire than the overall United States population. These age-related risks increase service demand, particularly among older adults who require more extensive medical care.<sup>17</sup>

Children under the age of five are at higher risk due to their inability to care for themselves and their need for additional assistance during emergencies. Recent trend data (2018) from the U.S. Fire Administration indicate that the relative risk of dying in a fire for this age group has decreased by 30% over the past decade, attributed to increased fire prevention and education efforts. The percentage of children under five in Lincoln is 5.5%, compared to the state average of 5.7%. Adults aged 65 and older comprise 27.9%, significantly higher than the state average of 14.9%. Those aged 85 and older make up 3.5%, which is above the state's rate of 1.9%. The following figure shows the percentage of children under five years, those aged 65 and older, and those aged 85 and older.

<sup>15</sup> United States Fire Administration, National Fire Data Center, Fire Risk in 2019.

<sup>16</sup> U.S. Census Bureau.

<sup>17</sup> U.S. Fire Administration website.

**Figure 116: Age Risks**

### Gender

The U.S. Census Bureau states that 51% of the population is female, while 57% of fire deaths and 55% of injuries are male between 2015 and 2019. This indicates that males are 1.3 times more likely to be affected. Based on fire department reports, 12% of males were impaired by alcohol, compared to 6% of females. Twenty percent of females with a disability died in home fires, compared to 16% of males. Middle-aged males had a higher rate of death from intentionally set fires, while females aged 75 and older were more likely to be injured in a cooking fire than males. The following figure shows gender percentages by age.

**Figure 117: Gender Percentage by Age**

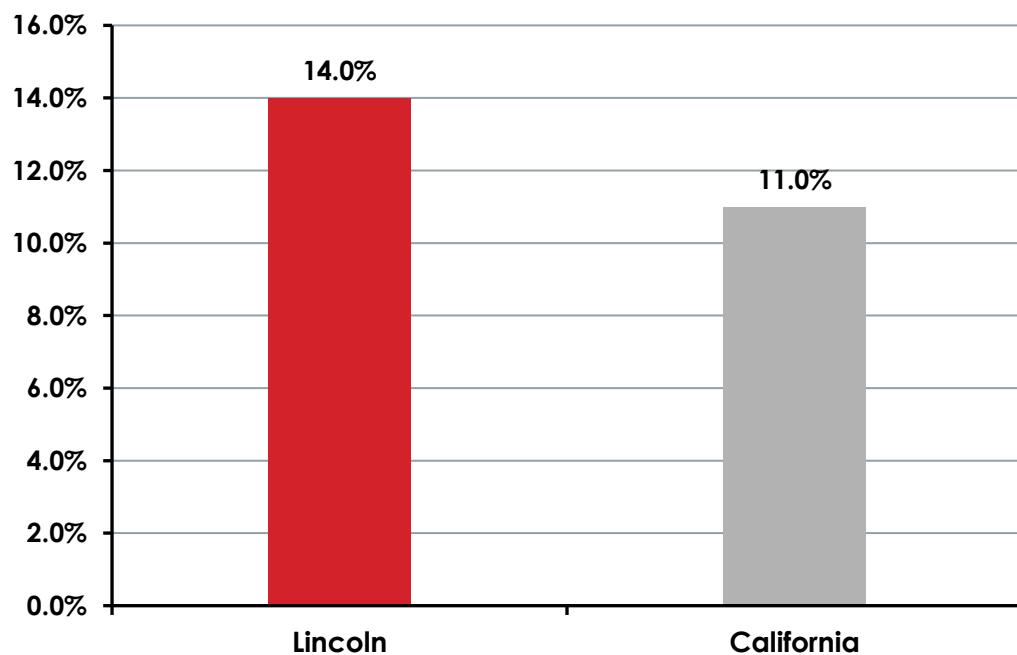
<b>Age Groups</b>	<b>Male</b>	<b>Female</b>
Under 5 years	6.4	4.7
5 to 9 years	7.5	6.9
10 to 14 years	6.6	6.7
15 to 19 years	7.2	4.7
20 to 24 years	2.9	3.5
25 to 29 years	4.4	4
30 to 34 years	5.7	5.8
35 to 39 years	6.3	5.4
40 to 44 years	6.3	6.7
45 to 49 years	7	5.5
50 to 54 years	5.6	5.4
55 to 59 years	4.6	5.2
60 to 64 years	4.9	4.9
65 to 69 years	5	6.5
70 to 74 years	6.4	9
75 to 79 years	6	6.9
80 to 84 years	3.8	4.8
85 years and over	3.6	3.4

## Additional Demographics

### Disabilities

The residential population with disabilities is 14% in Lincoln, compared to the state average of 11%. This population group may be unable to self-evacuate from a building during an emergency or may need additional medical services due to their disabilities. This situation may create further demand for medical services, especially as they age. The following figure depicts the percentage of households with a disability.

**Figure 118: Population with a Disability**

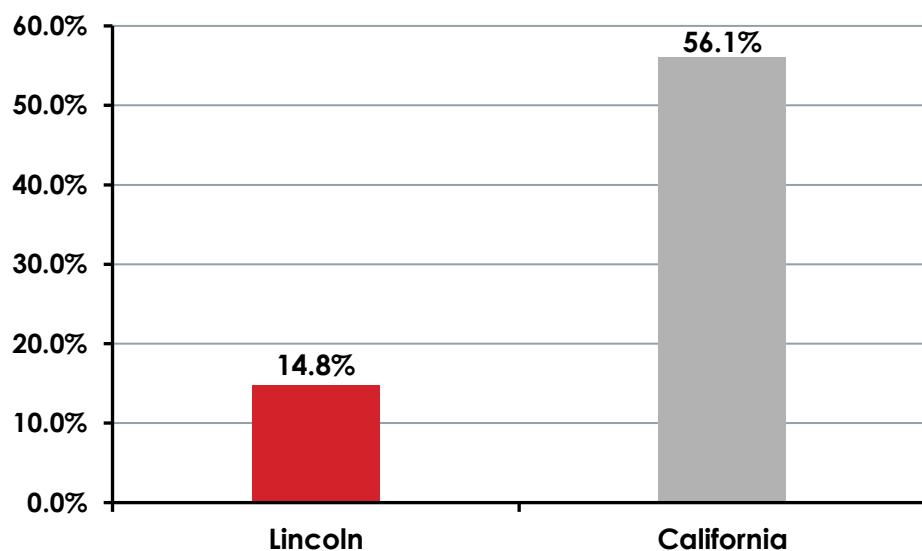


### Language Barriers

LFD may encounter individuals who require a different type of communication.

Approximately 14.8% of people over five speak a language other than English, which is less than the state average of 56.1%. This population may not understand smoke alarm technology, which is designed to provide early warning during a fire, thus increasing the risk of injuries or death in their home. The following figure illustrates the percentage of people with a language barrier.

**Figure 119: Language Barriers**

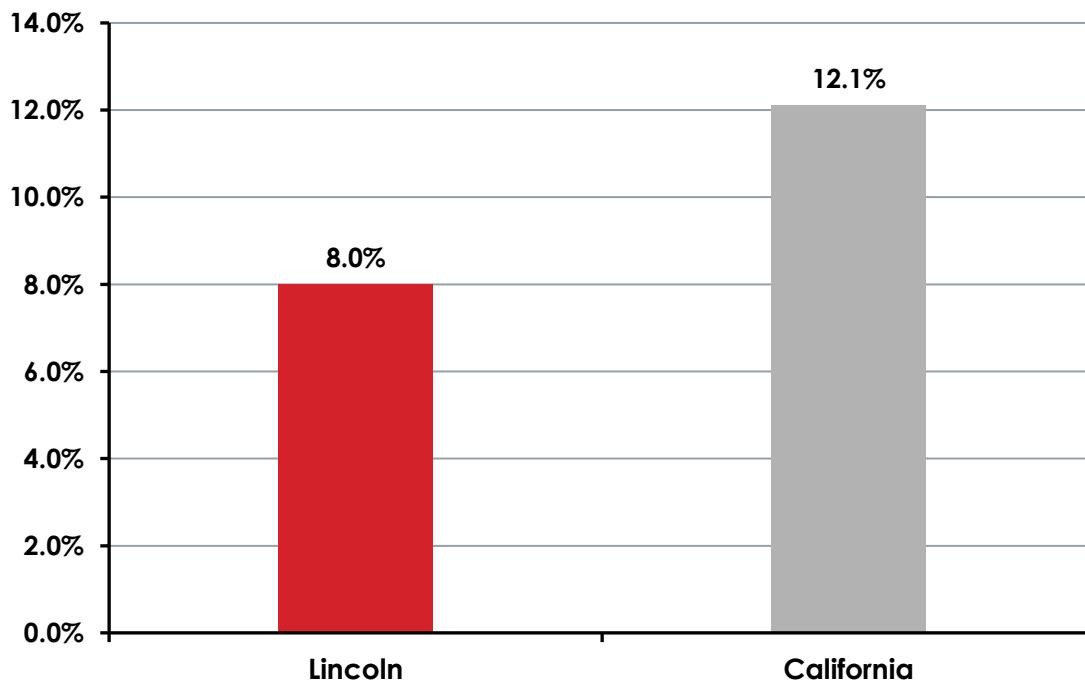


## Poverty & Income

Low wages or income create challenges in a community that can lead to poverty. Meeting a person's basic needs can reduce the risk of fires or medical incidents. People living below the poverty level are considered at the highest risk when combined with other factors such as education levels, disabilities, or being unable to work. Low incomes impact families with children, lead to lower educational scores, and create mental health issues. The COVID-19 pandemic has had a profoundly adverse impact on these families, as schools were closed and childcare was unavailable. Low income can lead to greater mental health challenges 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.

In Lincoln, 8% of the population lives in poverty, which is lower than the state rate of 12.1%. The higher poverty levels correspond with lower incomes, and the city's median household income of \$99,434 is higher than the state's median household income of \$91,905. The following figure shows the poverty rate.

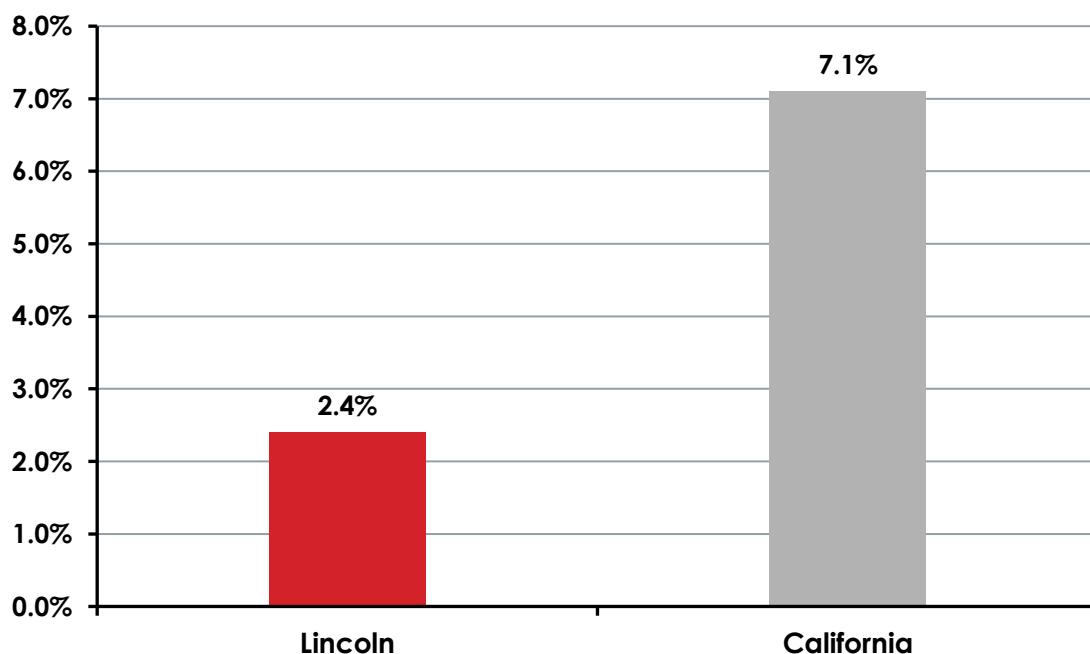
**Figure 120: Population in Poverty**



### Population without Health Insurance

Populations lacking adequate health care can overload service delivery and elevate the rate of medical incidents. The absence of health insurance may disproportionately impact lower-income populations, as they frequently cannot afford medical visits. In Lincoln, 2.4% of the population is uninsured, which is less than the state average of 7.1%. The following figure shows the percentage of people without health insurance.

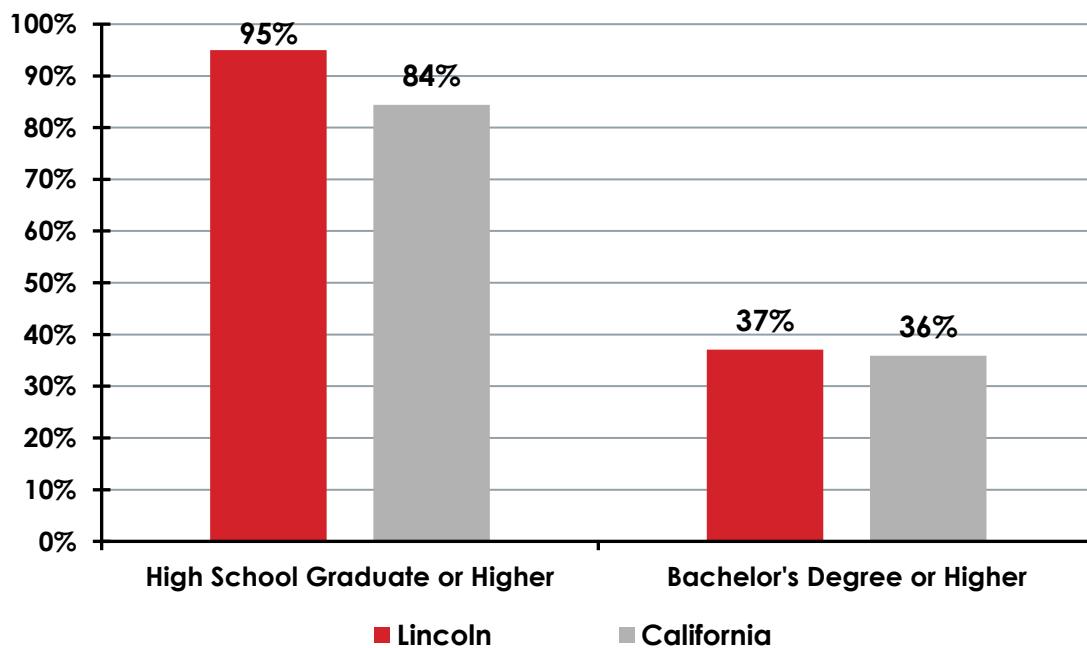
**Figure 121: Population without Insurance**



## Education Levels

Educational attainment is not considered one of the at-risk populations but is recognized as another risk group when developing fire and life safety education programs. In Lincoln, 95% of the population holds a high school diploma, which exceeds the state average. Those with a bachelor's degree or higher make up 37%, slightly less than the state average of 36%. The following figure provides information on the levels of education.

**Figure 122: Education Levels**



## Race & Ethnicity

Race is defined as a person's identification with a social group, such as White, Black, African American, or Asian, while ethnicity identifies someone based on nationality, religion, language, or culture. The following figure illustrates the representation of race and ethnicity in Lincoln compared to that of the state.

**Figure 123: Race and Ethnicity**

Race and Ethnicity	Lincoln	California
White alone*	76.2%	70.7%
Black or African American alone	1.6%	6.5%
American Indian & Alaskan Native alone	0.6%	1.7%
Asian alone	6.4%	16.3%
Native Hawaiian & Other Pacific Islander alone	0.1%	0.5%
Two or more races	10.9%	4.3%
Hispanic or Latino (of any race)	18.3%	40.3%
White alone, not Hispanic or Latino	67.7%	34.7%

\*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 were sourced directly from the U.S. Census QuickFacts page.

## Housing Characteristics

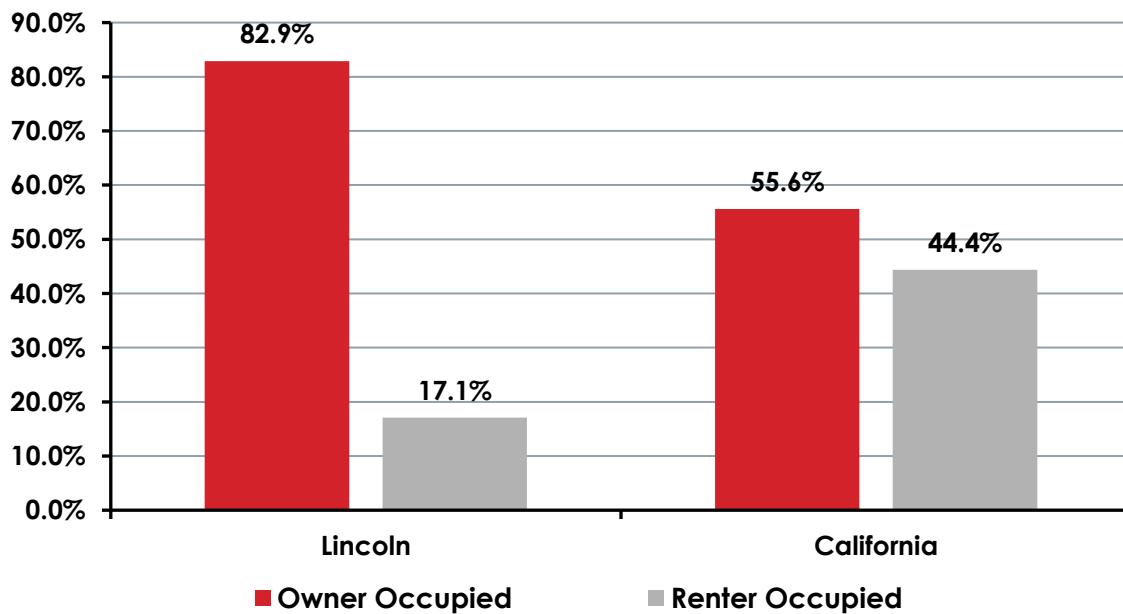
Housing types can vary within a community, providing insight into ownership, the age of the homes, and the number of units in the buildings. Lincoln has approximately 19,778 housing units, with 615 of them vacant. Vacant structures can pose a risk for the fire department and community if the buildings are not secured to prevent entry. If the buildings are not properly maintained, their structural integrity can degrade, potentially presenting problems during a fire. Vandalism may create additional challenges for the fire department and law enforcement.

Data from the NFPA states that from 2015 to 2019, 75% of fire deaths occurred in homes, and 57% were male.

## Housing Ownership

Homeownership in Lincoln is 82.9%, much higher than the state at 55.6%. The following figure shows the percentage of owner and renter-occupied housing.

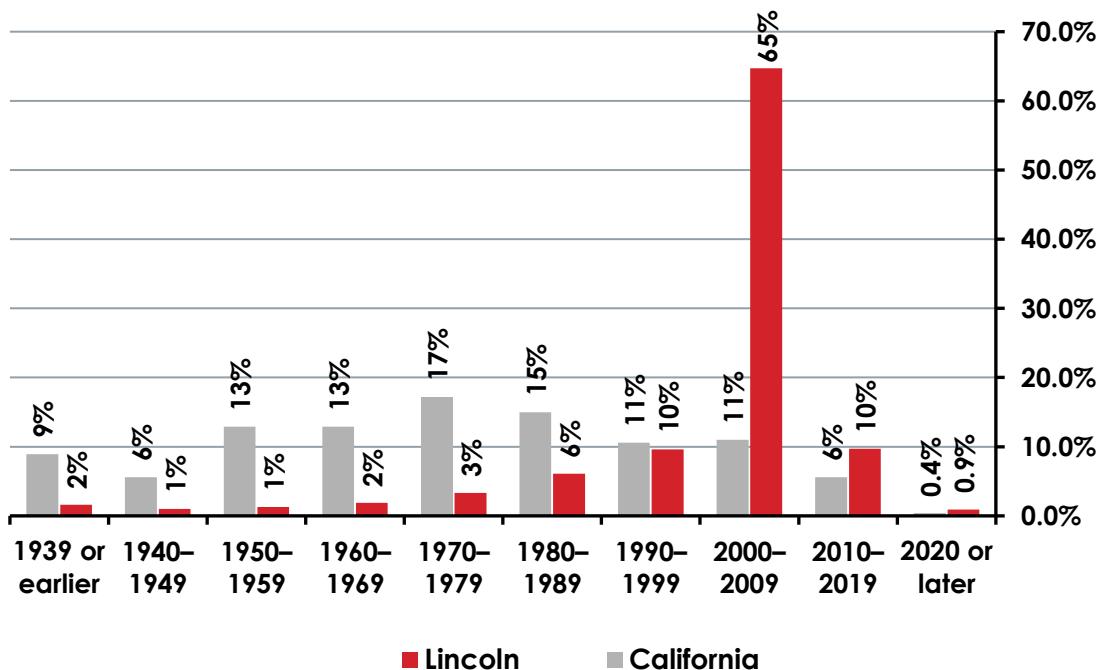
**Figure 124: Owner and Renter Occupied Housing**



## 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 none are present. The number of homes built before 1980 was 8%, before most building code requirements for smoke alarm installations. Working smoke alarms have reduced fire deaths and provided an early warning in the event of a fire. New codes now require smoke alarms in each new residential property bedroom, hall, and floor. The following figure provides the housing age by decade.

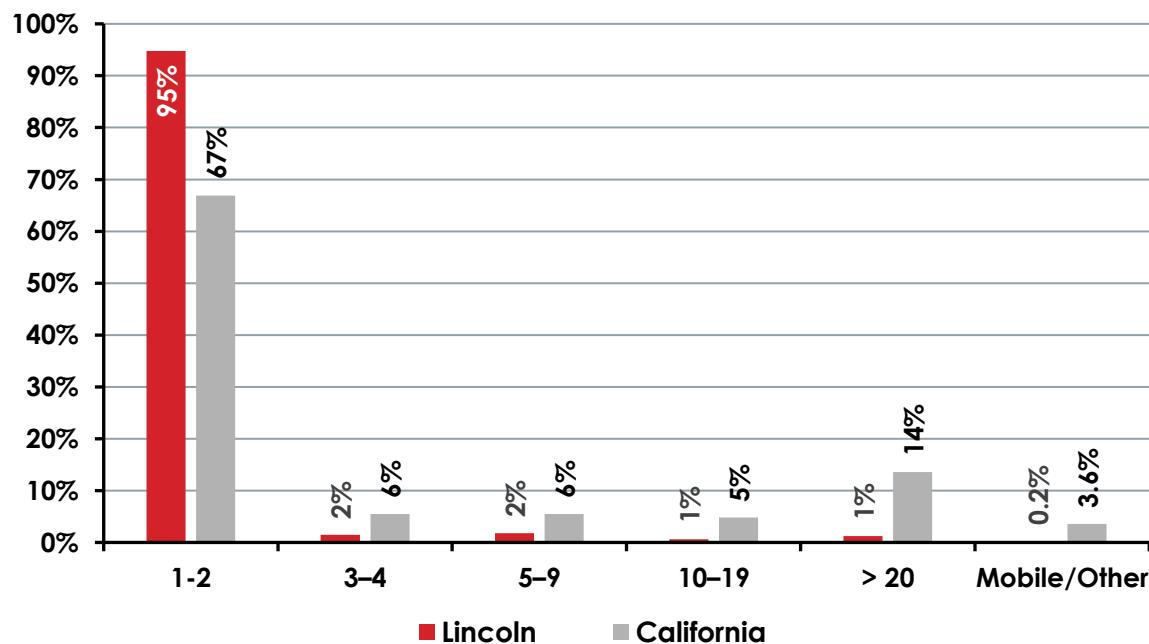
**Figure 125: Age of Housing**



## Housing Units

The percentage of people living in one- or two-family dwellings is 95%, compared to the state's 67%. This high percentage reflects homeownership levels. The number of buildings that are not one- or two-family dwellings is approximately 6%, significantly lower than the state's 34%. The following figure presents the percentage of housing units by building type.

**Figure 126: Housing Units per Building**



## Environmental Hazards

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

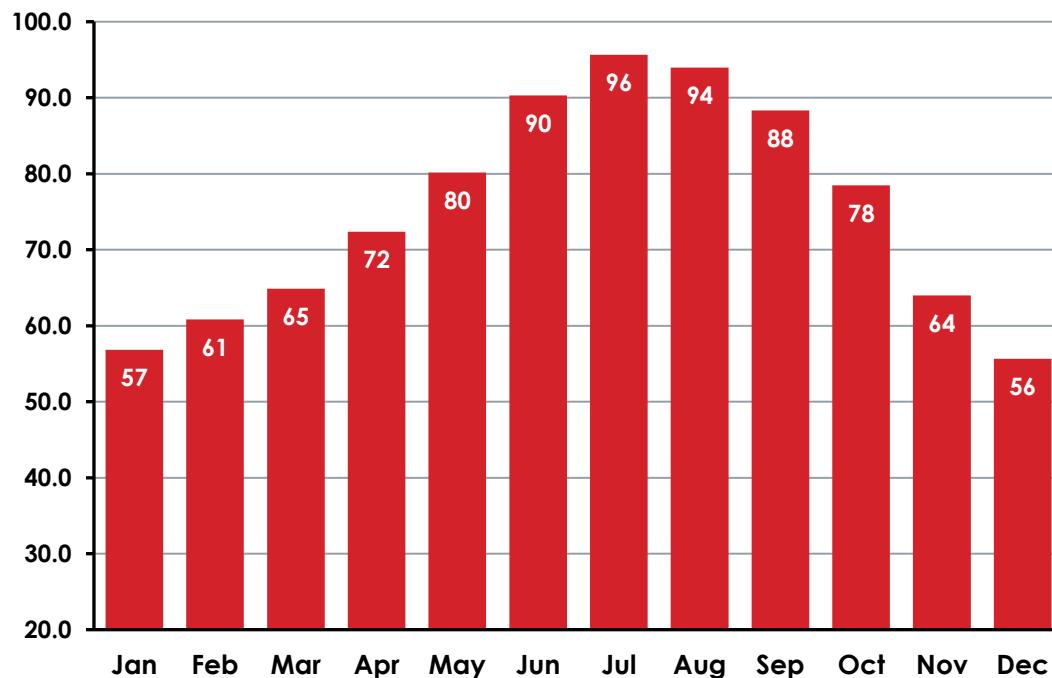
### Weather Conditions

The climate can affect Lincoln year-round and may influence emergency response. Whether it is a thunderstorm or another weather event, the fire department must respond when requested.

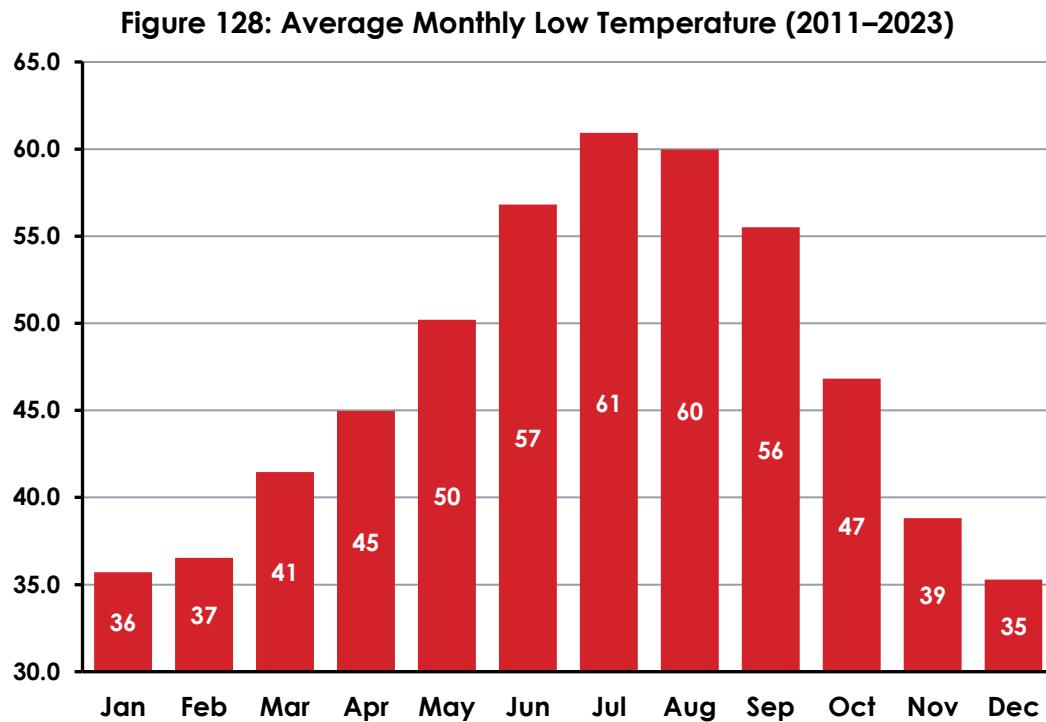
#### Temperature

The weather conditions in an area can impact the fire department and the entire community throughout the year. When temperatures are high, they can significantly affect firefighters during extended incident operations, necessitating rehabilitation to prevent heat exhaustion. The average high temperatures range from a low of 56°F in December to a high of 96°F in August. The following figure presents the average monthly high temperature.

**Figure 127: Average Monthly High Temperatures (2011–2023)**

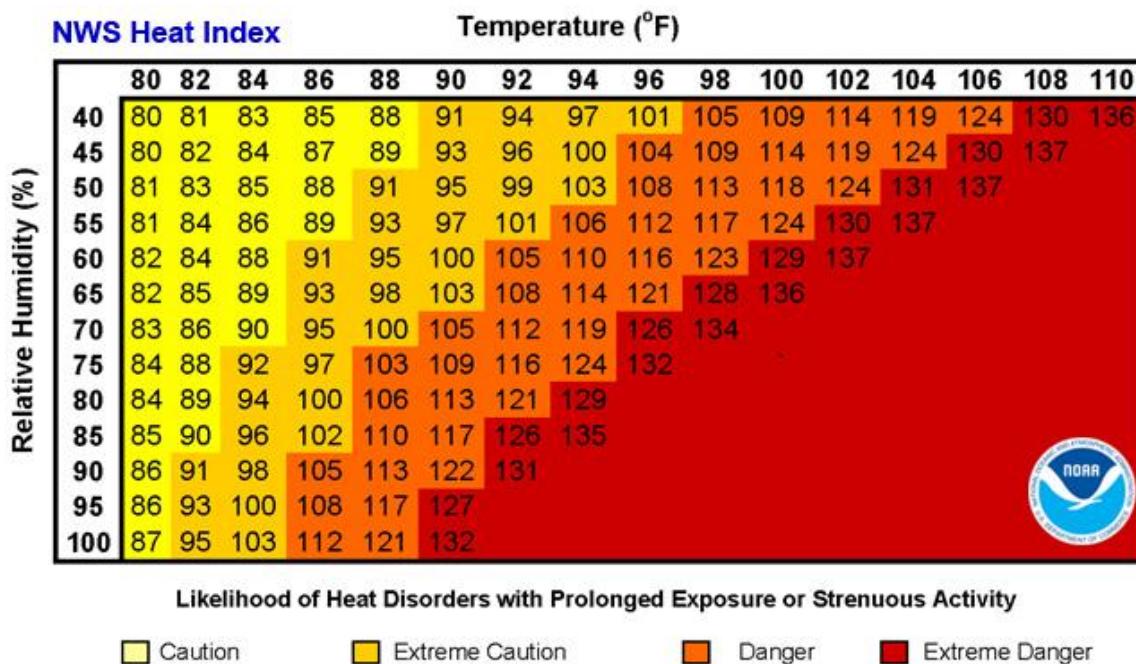


The average daily low temperature occurs in December at 35°F, and the warmest is during July at 61°F. The following figure shows the average daily low temperatures.



Heat can significantly impact fireground operations, and when combined with high humidity, the temperature can feel even hotter, requiring firefighters to take extra precautions and potentially necessitate rehabilitation. The below figure shows the National Weather Service's Heat Index chart.<sup>18</sup>

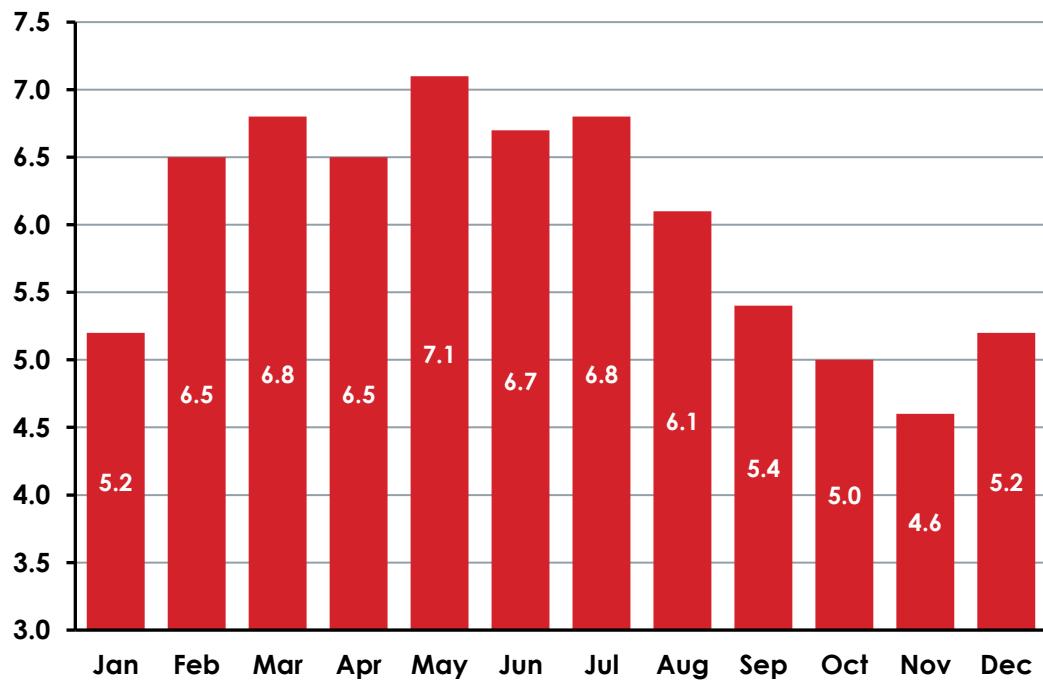
<sup>18</sup> National Weather Service website.

**Figure 129: National Weather Service Heat Index Chart**

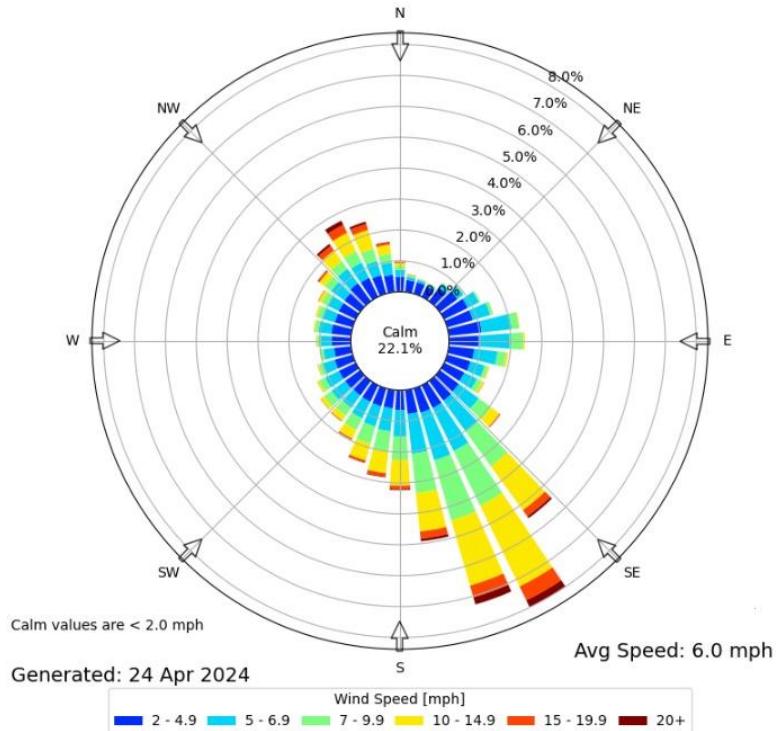
## Winds

Wind speed and direction influence how Lincoln manages events such as wildfires or hazardous materials incidents. The highest average winds occur between February and August of each year.<sup>19</sup> The following figure shows the average monthly wind speeds.

<sup>19</sup> National Weather Service website.

**Figure 130: Average Monthly Wind Speeds (2011–2023)**

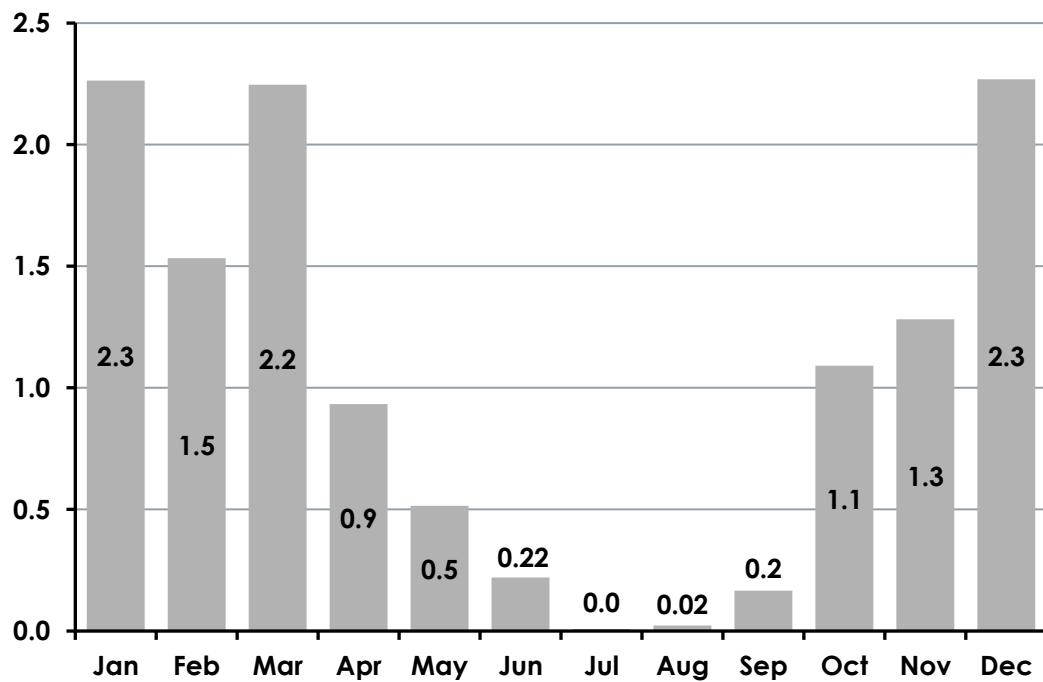
The prevailing winds are from the southeast, as shown in the following figure from the wind rose provided by the NWS at the Lincoln Municipal Airport reporting station.

**Figure 131: Wind Rose**

## Precipitation

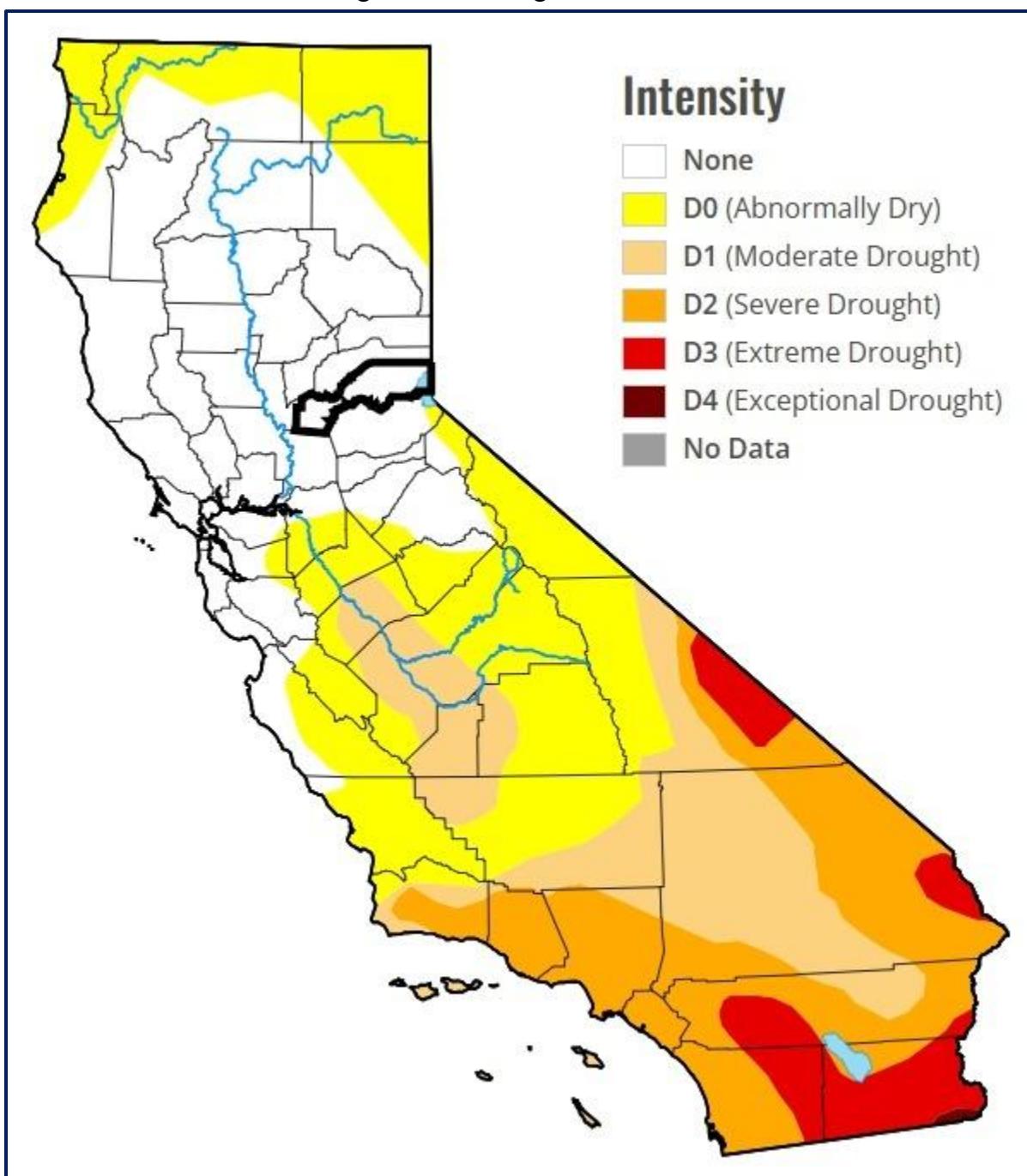
The prolonged absence of precipitation creates problems for a community. Drought increases the risks of wildland fires as the moisture content of vegetation decreases and leads to higher combustible fuels. Insufficient rainfall impacts the ability to grow crops and maintain landscaping. The months with the highest precipitation occur between December and March, as shown in the following figure.

**Figure 132: Average Monthly Precipitation (2011–2023)**



## Drought Conditions

Placer County has no drought, but the region was in a severe drought until 2023. As of July 1, 2025, there were no drought conditions in Placer County, as shown in the following figure.

**Figure 133: Drought Conditions**

## Physical Hazards

A physical hazard is usually defined as a natural disaster or weather event that affects a community. The event can last a few hours or extend for a prolonged period, such as a heatwave or drought. The National Weather Service (NWS) issues advisories, watches, or warnings for these hazards when conditions exist or are predicted to occur in the near future.

### Wildland Fires

The threat of wildland fire in Placer County is high, but the danger is lower on the county's western side. The threat is considered moderate in most of Lincoln, including the sphere of influence. Lincoln is in a local area and is responsible (LRA) for wildfire protection. The Local Responsibility Area (LRA) is that portion of the county, either incorporated or unincorporated, not classified by the State Board of Forestry as a state responsibility area, where the financial responsibility for preventing and suppressing fires belongs to the county, a city, or a fire district.

Any area containing forests, vegetation, and buildings is considered a wildland interface. Areas of grass can cause fires to spread rapidly during dry and windy conditions. Combustible landscaping, whether in an interface or urban area, can impact the City when dry and windy conditions exist. When these conditions occur, ember cast can quickly spread the fire and affect surrounding areas. This was a significant issue during the recent fires in Los Angeles County, where extreme Santa Ana winds caused the fires to spread to residential and commercial areas. These buildings were exposed to embers from the spreading fires, which were distant from the main fire. Combustible vegetation near or beside buildings, combustible roofs, wood decks, and locations not adequately protected against embers can ignite the structure.

Certain mitigation efforts should be implemented to reduce the risk of a fire damaging or destroying a building in an urban interface. This defensible space surrounding the property focuses on vegetated or landscaped areas and how to harden the home or building. Removing fuels such as dead trees, plants, grasses, or weeds is a first step for the property owner. The National Fire Protection Association (NFPA) guides the development of the defensible space by breaking the property into three zones.<sup>20</sup>

---

<sup>20</sup> <https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Preparing-homes-for-wildfire>.

- **Immediate Zone:** This area is between 0'-5' from the furthest extent of the building that is considered noncombustible.
  - Clean roofs and gutters.
  - Replace missing or lose shingles to prevent ember penetration.
  - Install metal mesh screens around any exterior vents to reduce embers passing through the opening.
  - Remove combustible materials away from the exterior walls or items stored under decks or porches.
- **Intermediate Zone:** This area is from 5'-30' away from the furthest exterior portion of the building.
  - Clear vegetation around propane tanks and create fuel breaks using driveways, paths, etc.
  - Keep grasses cut to no more than 4" in height.
  - Prune trees within 6'-10' from the ground.
  - Space trees so the crowns are separated to prevent a spreading fire.
  - Keep trees at least 10' away from a building.
  - Maintain shrubs and trees in small clusters on the property.
- **Extended Zone:** The area is between 30'-100' from the building.
  - Remove dense accumulations of dead vegetative material.
  - Cut back any small trees growing in developed areas to reduce fuels.
  - Remove vegetative material away from storage sheds or other small buildings.

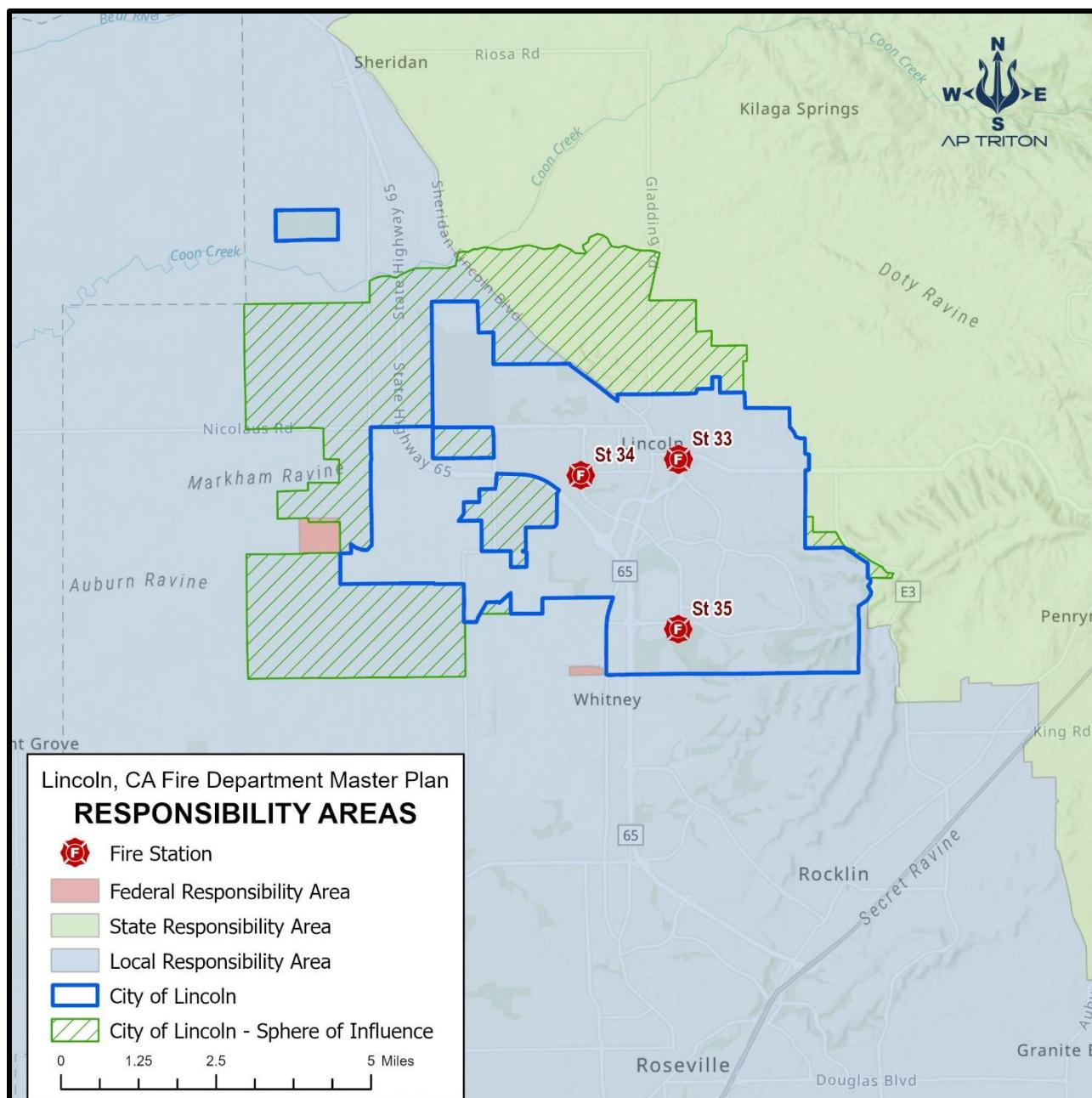
This guidance has been developed to reduce the impact on a property during a wildfire. Programs have been developed from grant funding from local fire safe councils (such as Greater Lincoln Fire Safe Council) to assist homeowners when removing vegetative materials and establishing a chipping program. These programs also reduce the risks to firefighters when they respond to wildfires. Overgrown vegetation can prevent emergency responders from gaining access to the property, thus increasing their risks during the incident.

Red flag events, which occur when there are dry conditions, low humidity, warm temperatures, and high winds, can occur in Lincoln. These extreme wildfire conditions can create a similar situation in Lincoln if unprepared. The community should consider implementing programs such as Ready, Set, Go! This program, developed in collaboration between the International Association of Fire Chiefs and the U.S. Forest Service, aims to engage residents in reducing wildfire risk. The program works in conjunction with *Firewise USA*, a program from the NFPA that enables local communities to organize and develop wildfire safety programs. The City already uses a sheep grazing program to reduce vegetation in open spaces.

The recent fires in Los Angeles County underscore the need to harden buildings, not just homes, to mitigate the impact of embers released by wildland fires. Combustible vegetation near buildings provides fuel that can extend to buildings. These structure fires create additional sources of embers, especially during high wind conditions that expose other vegetation and buildings to ignition.

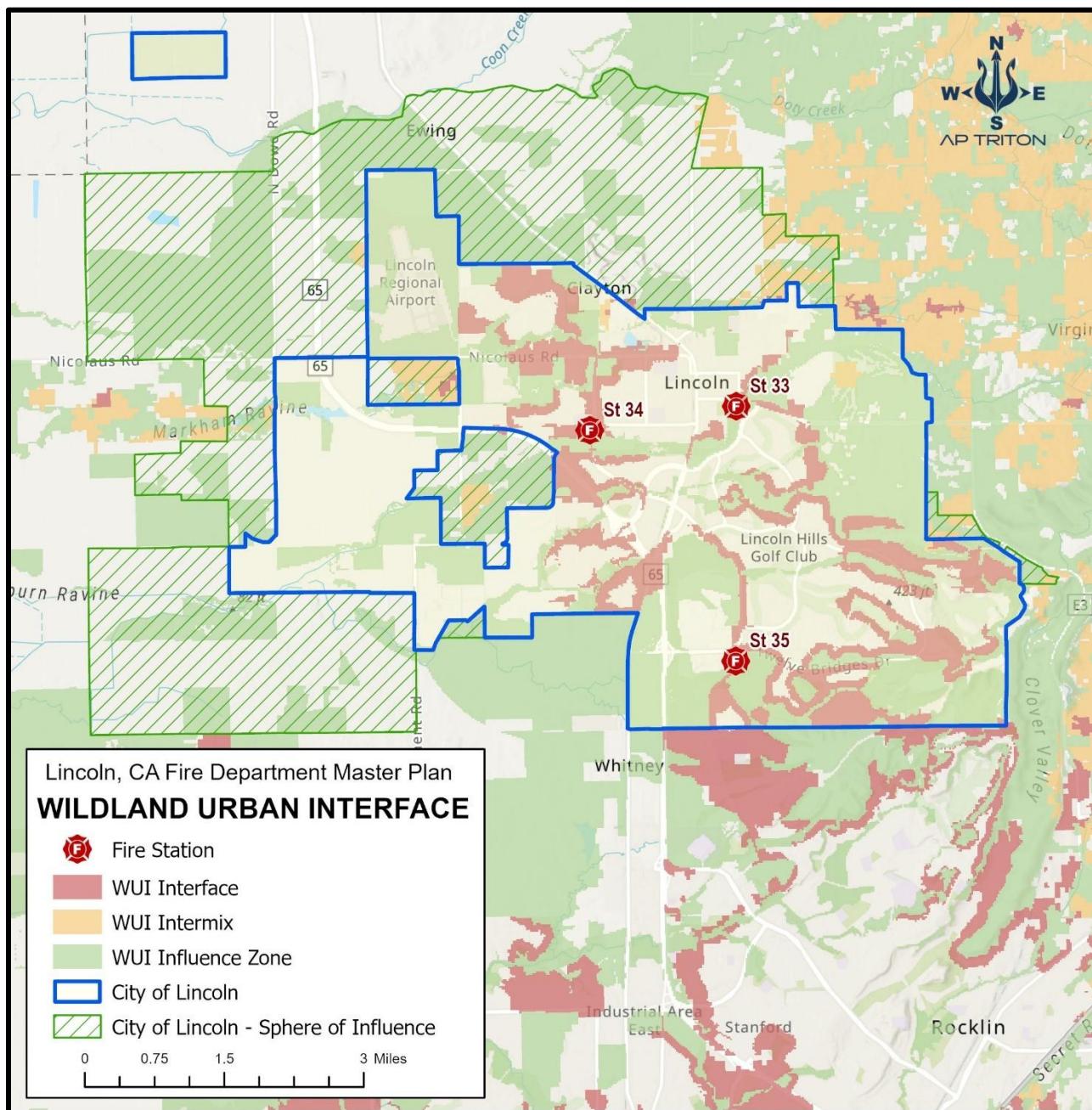
Lincoln must adopt the new Local Area Responsibility (LRA) maps, which are currently under review and produced by CAL FIRE. These maps incorporate the 100-foot defensible space requirement and may affect property closures when sold. These new maps are considerably different from the previous 2011 version. There are no Very High Hazard Severity Zones in Lincoln, but they now include Moderate and High Fire Hazard Zones. All homes in high-risk areas are required to meet the defensible space requirements. The High Risk area is located along the Auburn Ravine to the east of Lincoln, and the Moderate zones are scattered throughout the city. The moderate risk areas are recommended to meet the defensible space requirements.

Some planning/zoning landscaping requirements adopted by Lincoln should be reviewed to ensure they comply with the new LRA requirements. The following figure shows the location of the LRA.

**Figure 134: Local Responsibility Areas**

The following figure shows the locations of the new fire hazard severity zones.

**Figure 135: Fire Hazard Severity Zones**



## Flooding

There are areas in Lincoln classified as regulated waterways by the Federal Emergency Management Agency; the City has the following flood zones:<sup>21</sup>

- An area classified as "A" zone is exposed to a 1-percent chance of a flood event but does not have a "...detailed hydraulic analysis."
- The AE designation is considered "areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods" and is further defined as a 26% chance of a flood occurring in 30 years.
- The AH areas are subject to inundation by 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are 1–3 feet. BFEs derived from detailed hydraulic analyses are shown in this zone.
- The AO designation is an area subject to inundation by 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are 1–3 feet. Average flood depths derived from detailed hydraulic analyses are shown within this zone.
- Zone "X" is a "moderate risk area within the 0.2-percent annual chance floodplain."

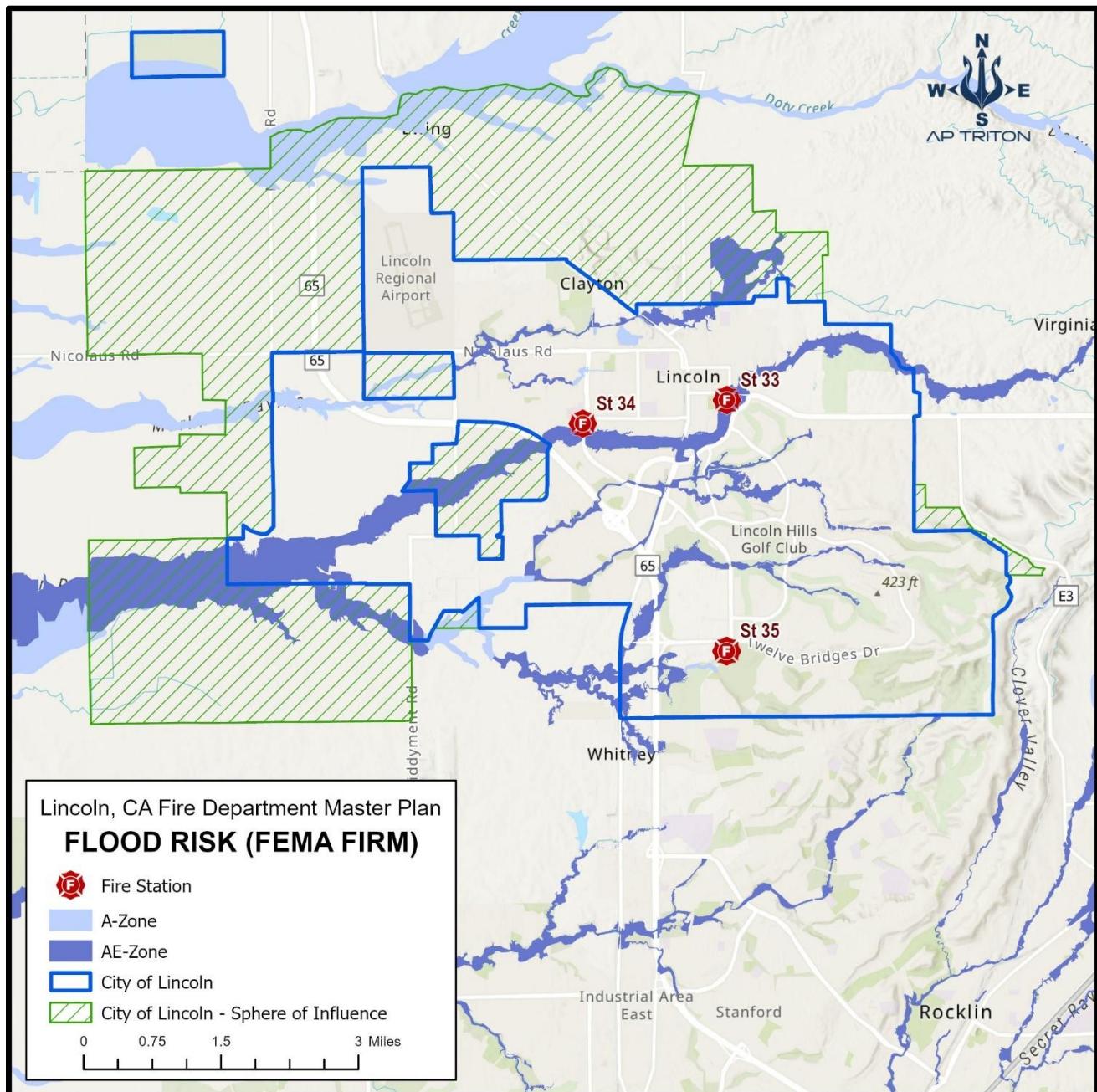
Auburn and Markham Ravines and Orchard Creek Tributaries are regulated waterways classified as an "AE" flood zone. The Ingram Slough and its irrigation pond are regulated waterways with Zone "X" locations, extending into commercial and residential areas.

---

<sup>21</sup> FEMA Flood Map Service Center website.

The following figure shows the flood risks in Lincoln.

**Figure 136: Flood Risks**



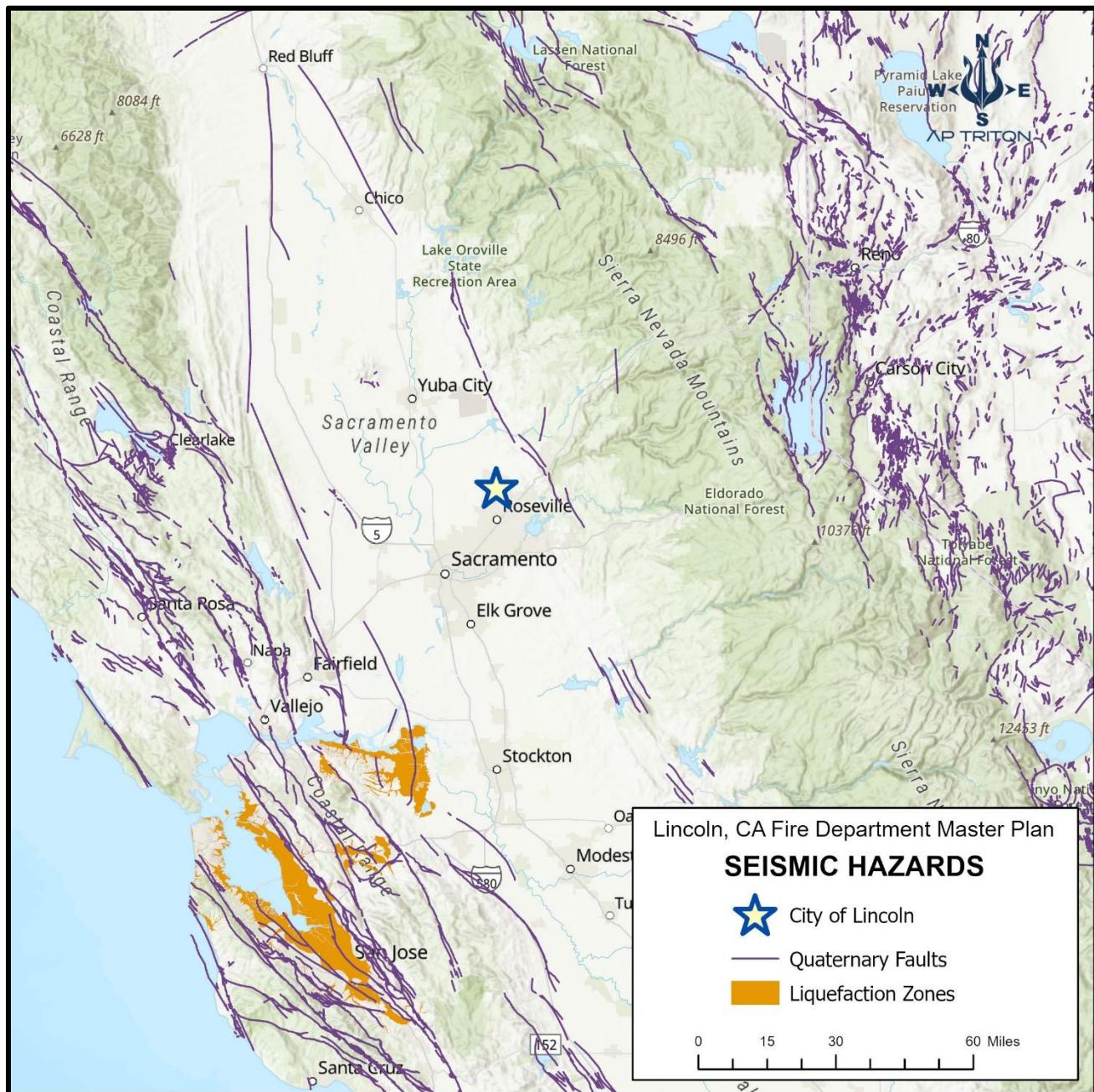
## **Earthquakes**

An earthquake can cause damage to infrastructure, depending on its severity and location. If roads or highways are damaged, assistance from outside agencies may be delayed, impacting the community. Other impacts include loss of utilities, damage to buildings, injuries, and loss of life. The probability of an earthquake is considered "occasional," and the vulnerability is "medium," according to the 2021 Placer County Local Hazard Mitigation Plan – City of Lincoln (LHMP).

The closest active fault to Lincoln is the Cleveland Hills Fault, located about 40 miles north of Lincoln. The Willow Fault, about 15 miles southwest of Lincoln, is mentioned in the LHMP but is not considered active. Although earthquakes can affect Lincoln, no significant events have occurred in recorded history in Placer County. In 1892, an earthquake occurred between Vacaville and Winters in Yolo County, causing only minor structural damage.

The following figure provides the seismic hazards.

**Figure 137: Seismic Hazards**



## Critical Infrastructure

Critical infrastructure and key resources (CIKR) refer to the elements that are crucial for a community to function effectively 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>22</sup>

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

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

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

<sup>22</sup> Infrastructure Security, Department of Homeland Security.

## Target Hazards

A target hazard is a location or facility that poses a risk to the community. The CIKR provides a list of sectors that are critical to a community. Targeted hazards also include high-value buildings and historic or culturally significant sites. Identifying these locations enables a fire department to prepare for potential emergencies and ensure it has the appropriate resources and strategies to prevent, respond to, and mitigate risks.

## Hazardous Materials

Events that occur without warning or are unknown and suddenly appear are considered technological hazards. Examples include industrial accidents or hazardous chemical releases. Each community should develop contingency plans tailored to the specific risks within its jurisdiction. This may include permits, periodic fire and life safety inspections, and pre-incident planning. These activities aim to reduce risks and provide on-site visits for fire department personnel.

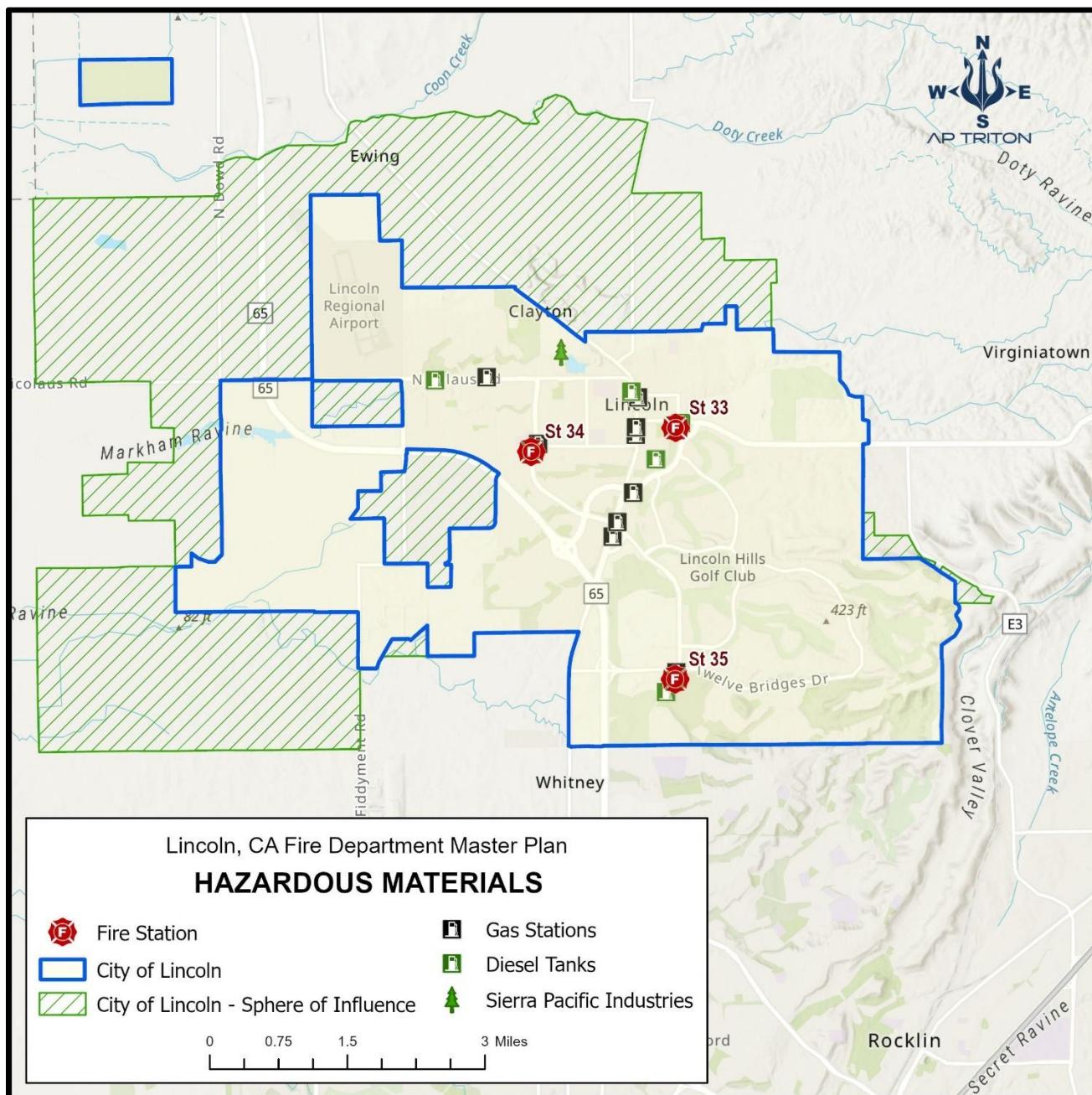
If a building or facility that stores or produces hazardous materials has been identified, it may require special personal protective clothing and equipment to control or mitigate the event. Locations with hazardous materials on-site for any period during the year that exceeds the limits established 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
- Less than 500 pounds or the threshold planning quantity for extremely hazardous chemicals
- California requires additional reporting quantities through a five-tier system that authorizes the treatment and storage of hazardous waste.

LFD personnel are trained in hazardous materials response to the awareness level, and 11 are certified as Hazardous Materials Incident Commanders.

The following figure shows the storage locations of Tier II hazardous materials.

**Figure 138: Hazardous Materials Tier II Locations**

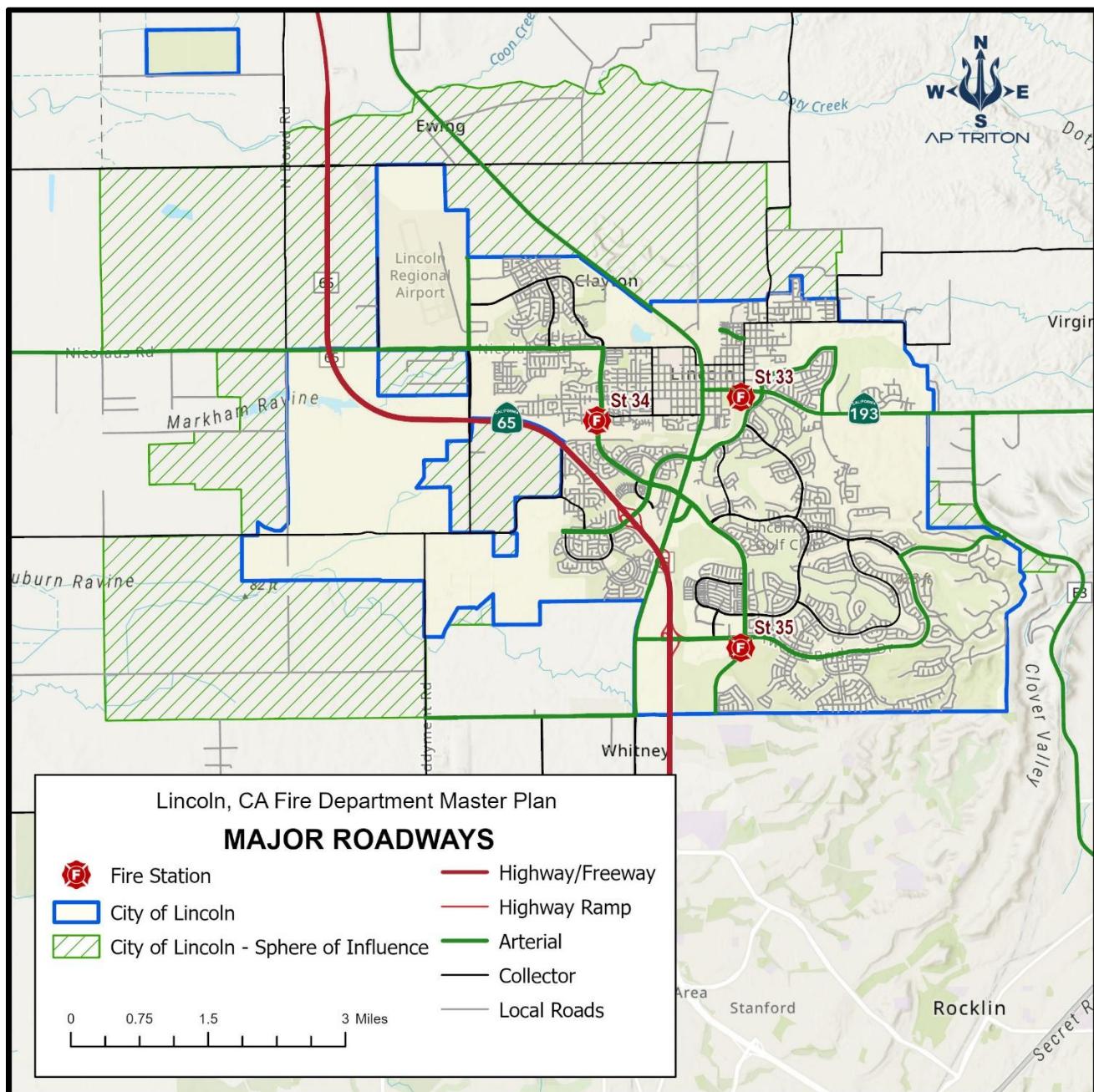


## Highways & Roads

Emergency personnel require a reliable transportation network to respond efficiently to incidents. A delayed response can occur without a system of interconnected roads and streets. Interconnectivity provides multiple access points to a location, allowing for alternative approaches if one is unavailable. Many of the streets in Lincoln are arranged in a grid pattern, while others are winding and interspersed with cul-de-sacs with only one access point. The major roads into Lincoln are CA 65, a north-south connection, and CA 193, which provides east-west access to New Castle. These roads offer connections to the south and east, linking to Interstate 80. Major collector streets include Nicolaus Road, Joiner Parkway, Lincoln Boulevard, 1st Street, 4th Street, Twelve Bridges Road, and Del Webb Boulevard.

The following figure shows the location of major roadways in Lincoln.

**Figure 139: Major Roadways**



## Energy

The ability to provide energy is a necessary component of a thriving community. The community relies on various energy sources, including electricity generation and transmission systems, fuel distribution and storage tanks, natural gas pipelines, and regulator stations.

### Electricity

High-voltage electrical transmission lines operated by Pacific Gas and Electric (PG&E) pass through or terminate in Lincoln. A 115 kV line traverses the city primarily north-south and ends at an electrical substation along Gladding Rd near Old Hwy 65. Two other lines, one at 60 kV and the other at 115 kV, travel north from the substation. Sierra Pacific operates a wood biomass facility off Lincoln Blvd that can generate up to 19.2 megawatts of electricity.

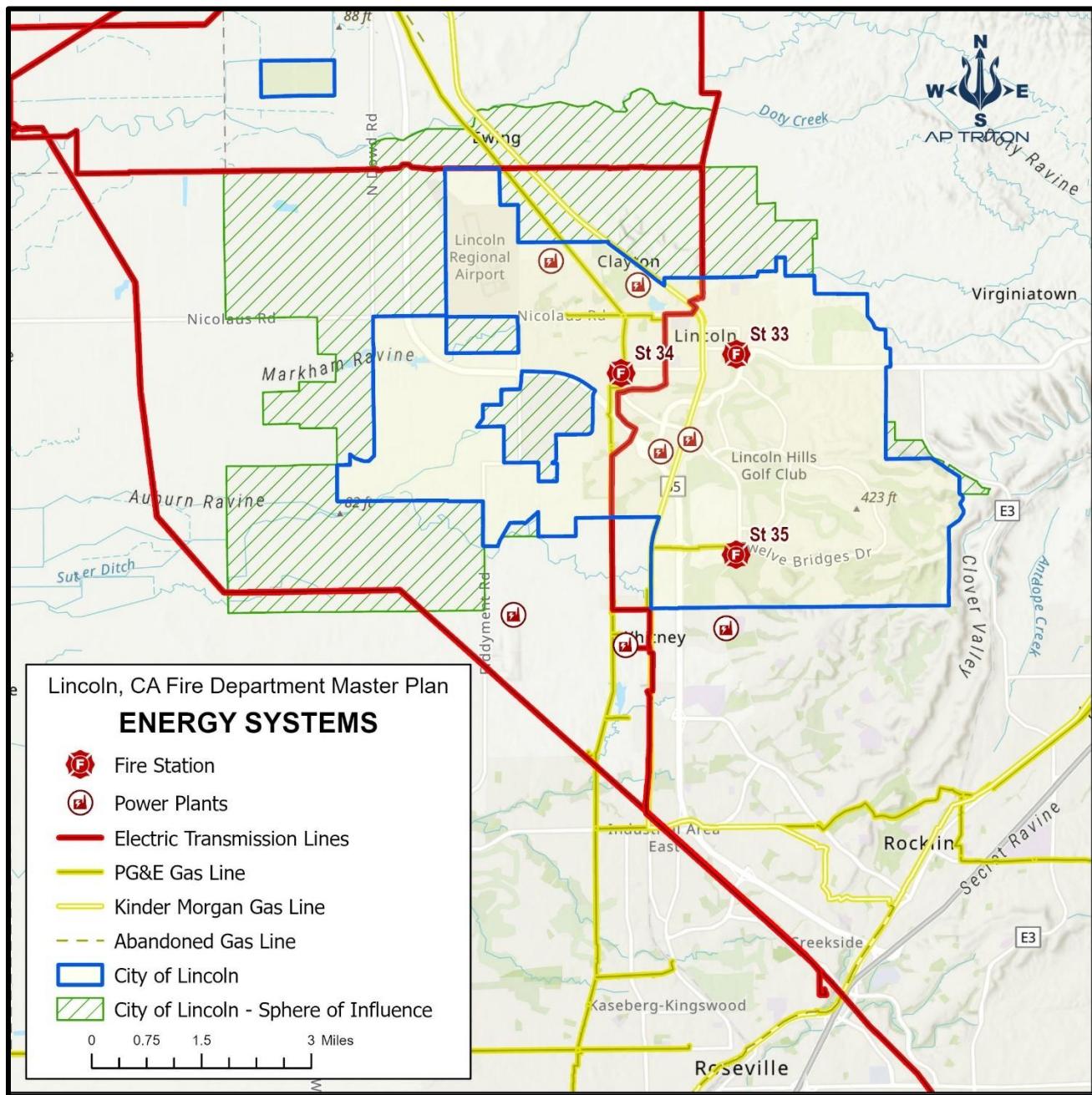
An electrical substation reduces the voltage in the distribution system for residential and commercial users. Emergency responders must exercise extreme caution in the event of an incident at one of these locations. Entry by LFD personnel into a substation should not occur until representatives of PG&E arrive on the scene and provide clearance. PG&E could implement Public Safety Power Shutoffs to prevent wildfires under certain conditions, such as high winds and dry weather. The likelihood of this occurring is minimal.

### Natural Gas

PG&E provides natural gas to the City through transmission and high-pressure distribution lines that supply service lines for commercial and residential use. These lines traverse and terminate in the City. High-pressure lines enter the city from the north along a right-of-way northeast of the airport and travel south to Nicholas Boulevard, where they branch east and west. They continue south along Joyner Parkway and under CA 65 to the city limits.

The following figure shows the locations of electrical transmission lines, natural gas transmission piping, and a Kinder Morgan petroleum pipe.

**Figure 140: Energy Systems**

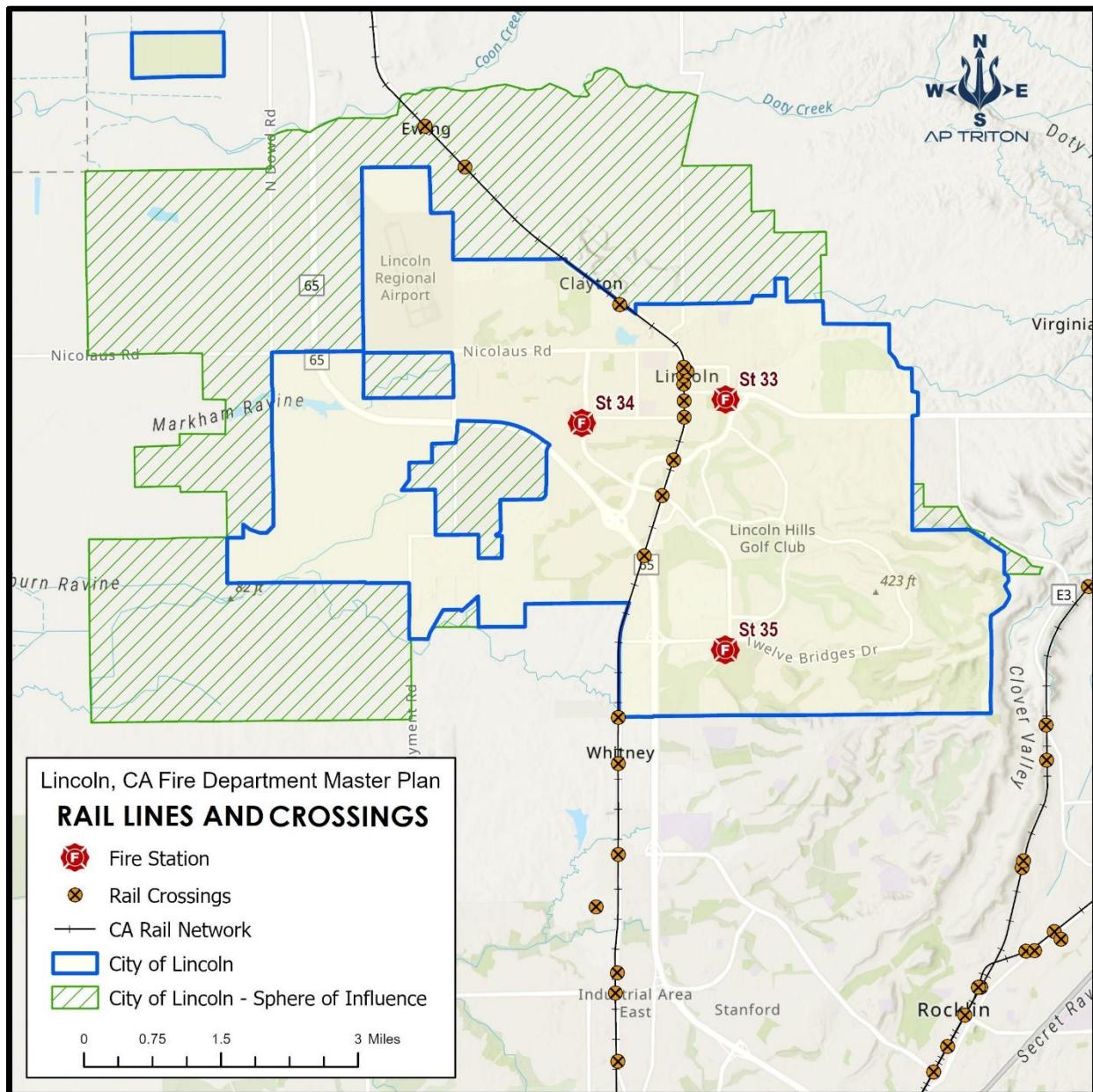


## Railways

Union Pacific operates a main rail line that transports freight through the city. Sierra Pacific Industries has a rail spur to access its facilities. Lincoln does not have passenger service. There have been rail accidents at 1<sup>st</sup> St and Ferrari Ranch Road. Both accidents resulted in fatalities and injuries. These incidents occurred in 2016, 2017, and 2022. All the intersections are signalized, or an overpass allows the train to pass under a road or highway.

The following figure shows the locations of the rail lines and crossings.

**Figure 141: Rail Lines and Crossings**



## Water and Wastewater Utilities

The City of Lincoln's Public Works Department provides water and wastewater services to residents.

### Water

Controlling a fire becomes challenging without an adequate water supply and distribution system, which includes 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 fireground use.

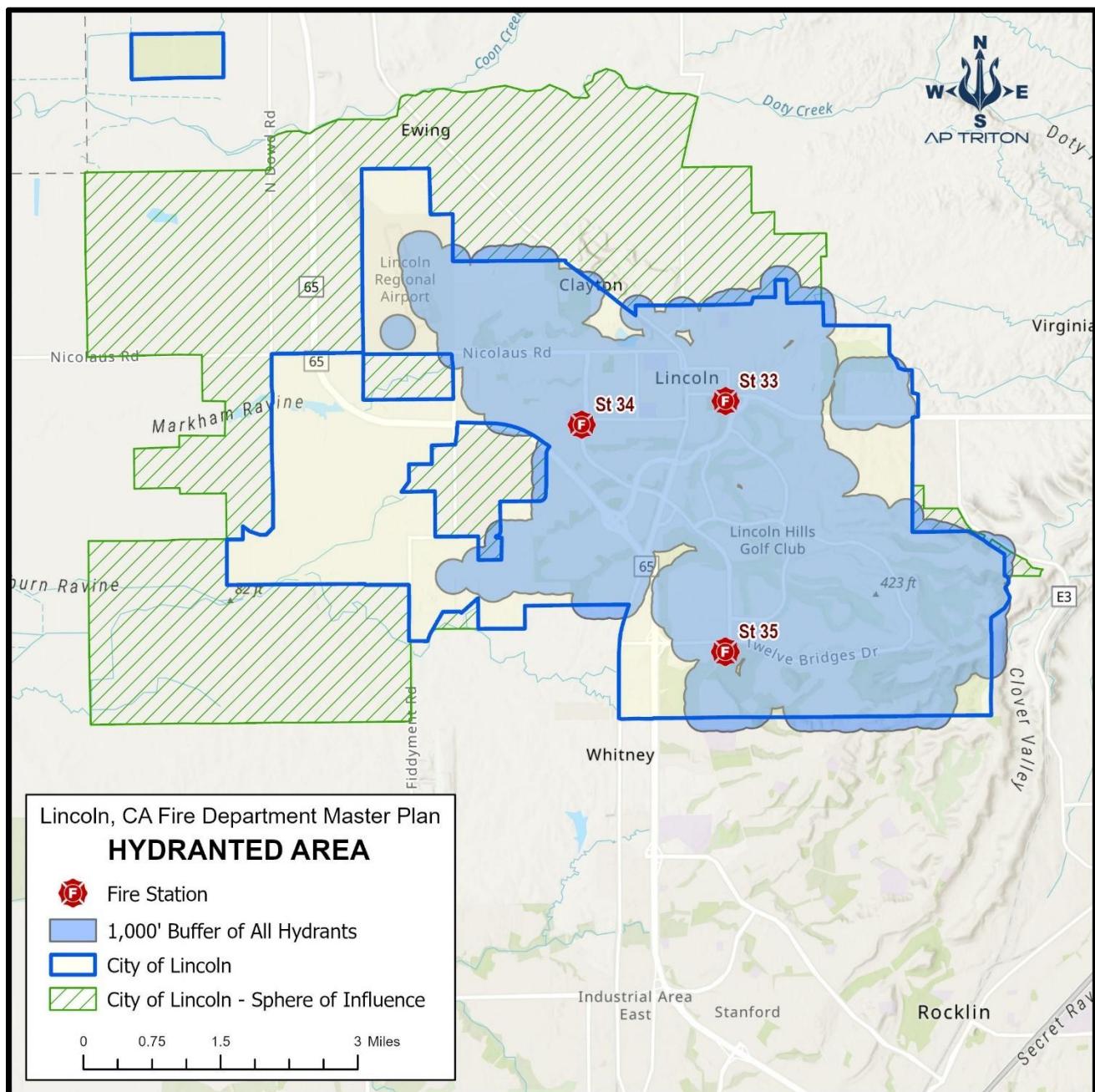
The City of Lincoln purchases water from the Placer County Water Agency (PCWA) and the Nevada Irrigation District. The water for PCWA comes from the Yuba/Bear River watershed and the American River. The Foothill Water Treatment Plant treats the water for drinking and other uses in the city. When the water reaches the city's meter from PCWA, it splits into regulated and unregulated categories. The regulated water is distributed to the city's lower regions, while the unregulated water serves the city's higher elevations, primarily in the Catta Verdera development. The system encompasses more than 200 miles of piping. There are two elevated storage tanks: a five-million-gallon tank at Catta Verdera South and a three-million-gallon tank at Reservoir 1. Additionally, five active wells supply extra water to the system.<sup>23</sup>

---

<sup>23</sup> City of Lincoln Water Master Plan, 2017.

The following figure shows the hydrant area in Lincoln.

**Figure 142: Hydranted Area**

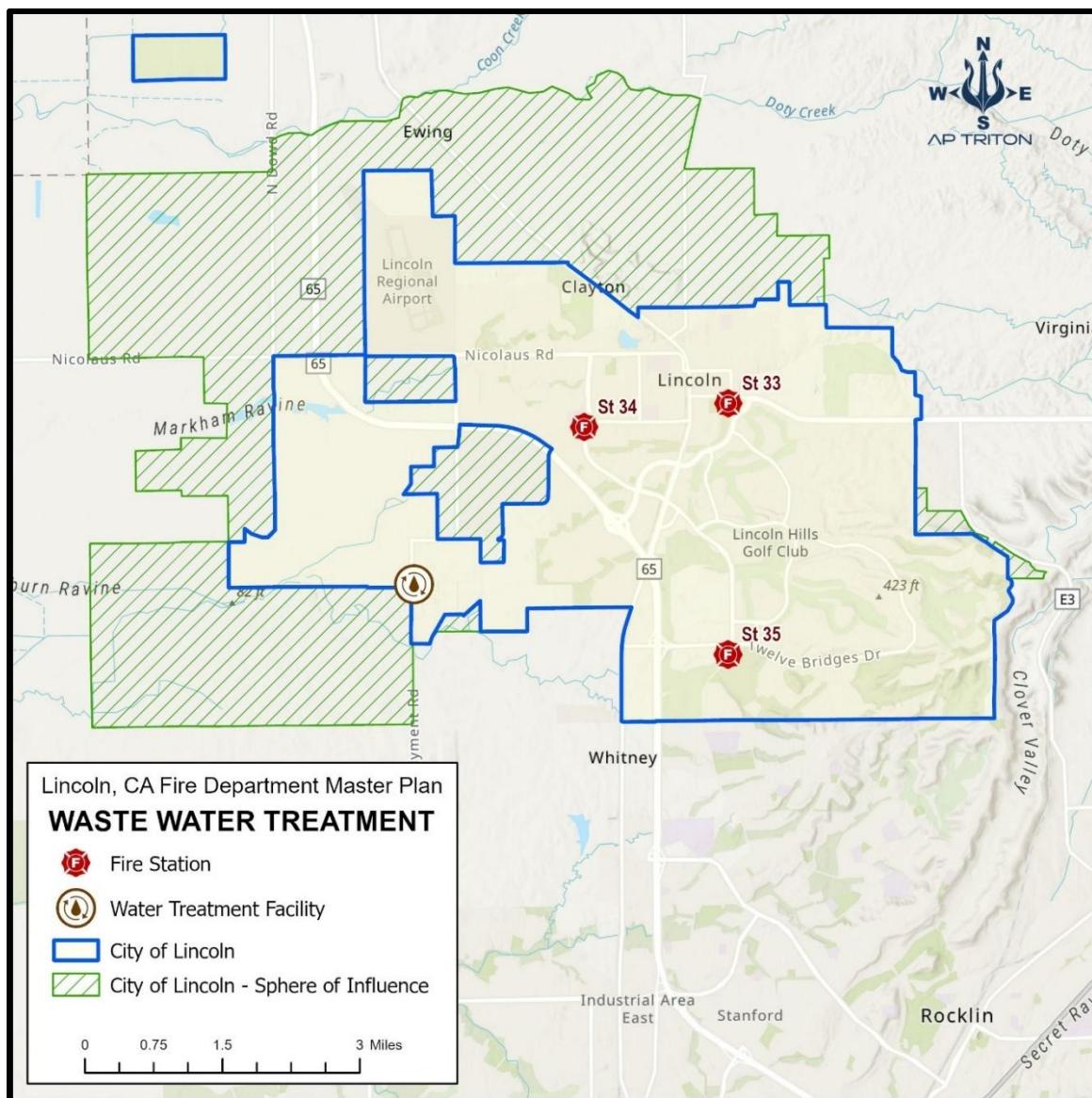


## Wastewater

Wastewater for domestic and industrial uses is collected through approximately 220 miles of pipelines, 17 miles of force mains, and 10 pumping stations before treatment. The city also receives and treats wastewater from Placer County's Sewer Maintenance District No. 1 (SMD1) via a 13.5-mile force main. The wastewater treatment facility is designed to serve the current city customers, future annexations within its sphere of influence, and regional flows from the SMD, including the City of Auburn. The maximum buildout flow is 100.1 million gallons per day.

The following figure provides Lincoln's location of the wastewater facility.

**Figure 143: Wastewater Treatment Facility**



## Communications

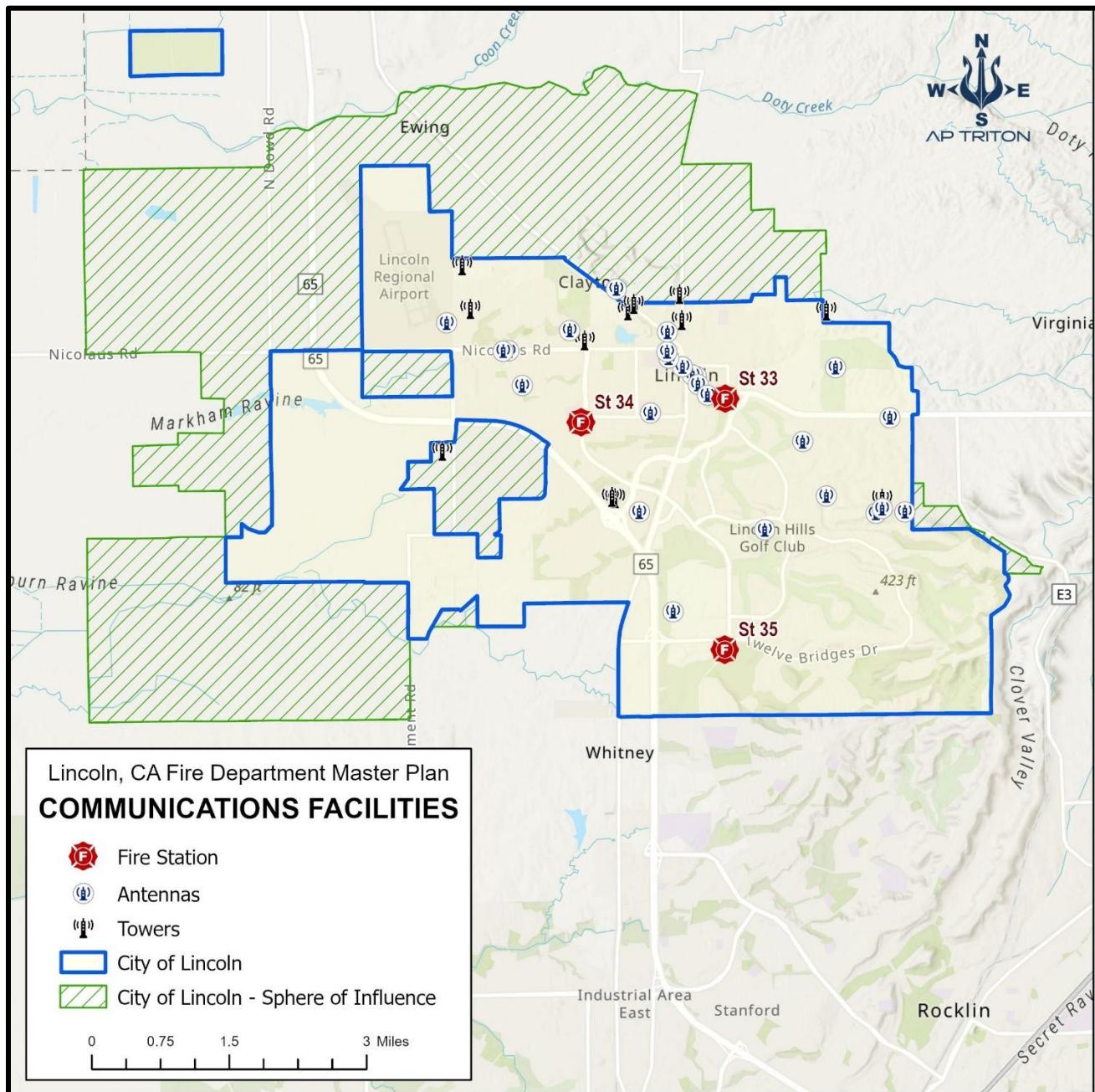
When an incident occurs, essential facilities that receive and transmit alarm information require a communication center to effectively coordinate with emergency responders. Other forms of communication are also critical to the community, such as cellular phones, Voice over Internet Protocol (VoIP) telephone systems, and transmission lines provided by local telecommunication companies. These systems enable the public to report incidents to emergency services. Internet services are vital for the public, commercial establishments, and emergency services to conduct daily business. Whether internet services are accessed through cellular networks or an internet service provider, the failure of these communication systems can significantly impact both emergency services and the public.

The Lincoln Police Department operates a public safety answering point for 911 services for fire and law enforcement. The dispatch center has eight telecommunicators assigned to four 12-hour shifts. If there is only one telecommunicator on duty because a shift cannot be filled because of vacation, sickness, or other time off, a police officer must provide backup services when taking a break or eat.

The center utilizes Sunridge RIMS computer-aided dispatch software to track calls for service. They have not formally adopted performance benchmarks but have developed standard operating procedures (SOPs). No quality management or assurance programs are in place to review calls for service and determine if SOPs are being followed.

The following figure shows the locations of communication facilities in Lincoln.

**Figure 144: Communication Facilities**



## **Governmental Buildings**

Governmental buildings are typically located near their customers to provide effective public services. The buildings are considered part of the critical infrastructure necessary to operate services provided by local, state, or federal governments.

## Land Use

The concept of land use regulation aims to achieve attractive social and environmental outcomes, thereby facilitating 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, which may include 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 uses, 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.

The City of Lincoln's General Plan 2050 outlines key points for development to guide the city's growth and ensure a sustainable future. Here are some of the main points:

1. **Economic Development:** It promotes economic growth by supporting local businesses and attracting new industries.
2. **Land Use:** The plan designates various land use categories to balance residential, commercial, industrial, and open space areas.
3. **Transportation:** The plan emphasizes the development of a comprehensive transportation network, including roads, public transit, and pedestrian pathways.
4. **Public Services and Facilities:** It ensures essential services such as water, sewer, public safety (fire, law enforcement), and schools are available to support the growing population.
5. **Open Space and Conservation:** The plan highlights measures needed to use, enjoy, and protect appropriately the City's natural resources.
6. **Health and Safety:** This component outlines the objectives, guidelines, and action plans necessary to safeguard public health, safety, and well-being in the face of both natural and human-made hazards.
7. **Housing:** It includes a Housing Element that addresses the housing needs of Lincoln residents, focusing on availability, adequacy, and affordability.

Increased growth and density in Lincoln affect how the fire department delivers services to the community. The City of Lincoln's Sixth Cycle Housing Element (2021–2029) discusses development trends, with the downtown, South Centre City, and East Valley areas expected to experience the most growth. The Regional Housing Needs Allocation (RHNA) has assigned Lincoln 5,120 units between 2021 and 2029. The following shows the RHNA allocations through 2029.

**Figure 145: Regional Housing Needs Allocation (2021–2029)**

Income Level	RHNA Allocation
Extremely Low	748
Very Low	748
Low	902
Moderate	807
Above Moderate	1,915
<b>Total</b>	<b>5,120</b>

### Village 5A

The most significant new development in Lincoln is the recently annexed Village 5A. The development plan aims to create a vibrant, mixed-use community encompassing residential, commercial, and public spaces. The housing component will consist of approximately 5,400 homes of various types and 3.1 million square feet of commercial property. The plan also includes schools, parks, and a regional sports facility, making it a comprehensive project designed to meet the growing community's needs.

Village 5A is currently in the design phase, with site development approvals expected by June 2026. Utility installation is anticipated to begin in March 2027. By January 2028, approximately 20 new homes will be constructed each month in Area A. As the Village's population grows, commercial development is projected to be delayed by four to five years and is not expected to commence until 2032.

The ongoing development, particularly in Village 5A, will affect the fire department as the population and service demand grow. To serve this area, a new fire station, along with an additional engine and truck company and increased staffing, will be necessary. Planning for this expansion should begin by 2026, as the delivery of the new fire truck is expected to take three to four years after the contract is signed.

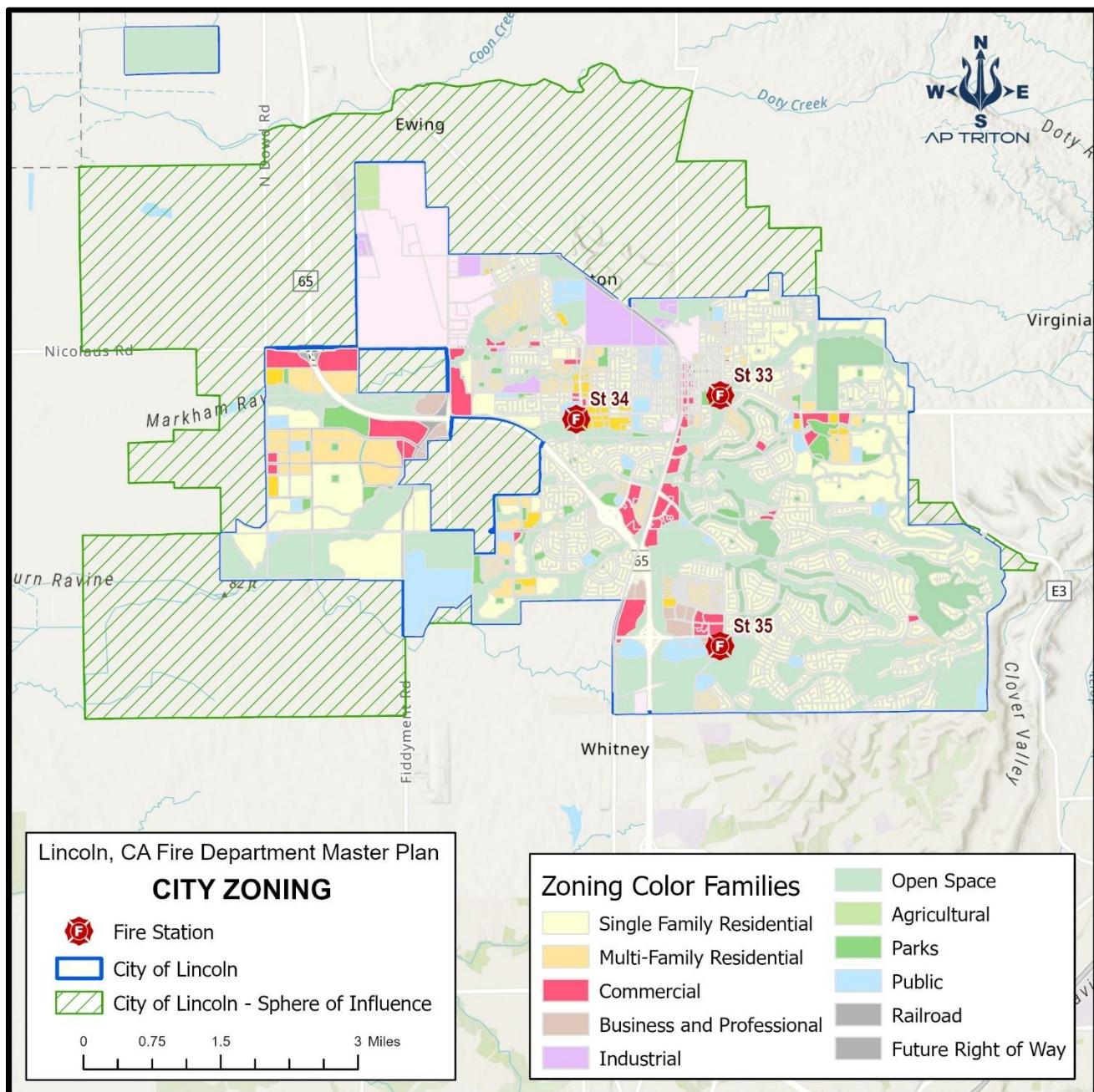
The design of the fire station will take at least one year after completing a request for proposals, selecting an architectural firm, and finalizing the design. Once the City approves the design, a bidding process will be necessary to hire a contractor for the station's construction, with permitting and building expected to take 12 to 18 months.

The 2018 development agreement between the City of Lincoln and Richland Developers, Inc., outlines the responsibilities of both parties as listed below.

- Complete a Standard of Coverage (SOC).
- Determine the timing and need for additional LFD staff and fire stations.
- Land dedication for the Area A and H fire station sites shall occur when each section's first large lot final subdivision map is recorded.
- The fire station will be constructed before the issuance of the first building permit unless required by the SOC.
- The developer will pay the City of Lincoln until it is no longer required for interim wildland fire protection (e.g., CAL FIRE) at approximately \$135,000 annually with yearly increases.
- The City's financing plan will fund fire stations and apparatus.

The following figure provides the zoning in the city.

**Figure 146: City of Lincoln Zoning**



## Physical Assets Protected

Commercial occupancies or properties are considered target hazards in every community due to the special or unique risks they pose to emergency responders and 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.

During an incident, these occupancies and facilities should maintain a current pre-incident plan for LFD operations personnel. The pre-incident plan informs emergency responders about potential hazards and assists them in developing effective strategies and tactics during an incident. All target hazards and, ultimately, all commercial buildings should possess up-to-date pre-incident plans.

### Structural Risks

The risks created by residential or commercial occupancies for those in a building and emergency responders increase based on the type.

### Educational and Childcare Facilities

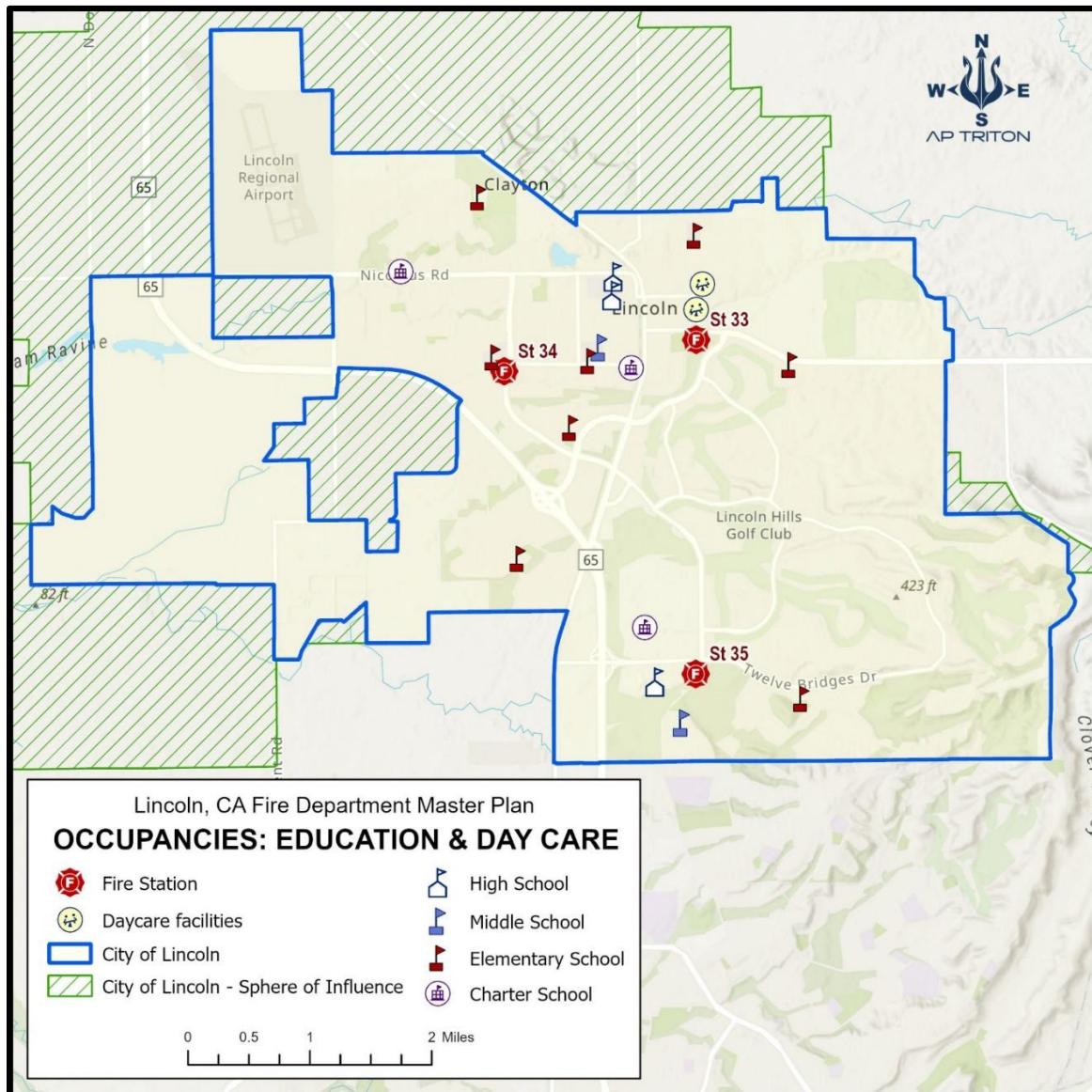
Public and private schools and childcare facilities raise risks in any community and require substantial assistance during significant events, such as mass casualty or fire responses. In Lincoln, numerous schools and childcare facilities need inspections and pre-incident plans to ensure the properties are safe and that emergency responders are familiar with the locations and site-specific hazards.

The Western Placer Unified School District (WPUSD) provides public education to Lincoln from kindergarten through 12th grade. The district operates seven elementary schools, two middle schools, and two high schools in the city. In 2022, WPUSD approved a master plan outlining how the district will grow as new students enroll. Since 2003, WPUSD has nearly doubled its enrollment, and the Village 5A development will continue to increase the need for new schools. The following figure shows the projected number of students from the Villages and infill development.

**Figure 147: Project Student for the Village and Infill Development**

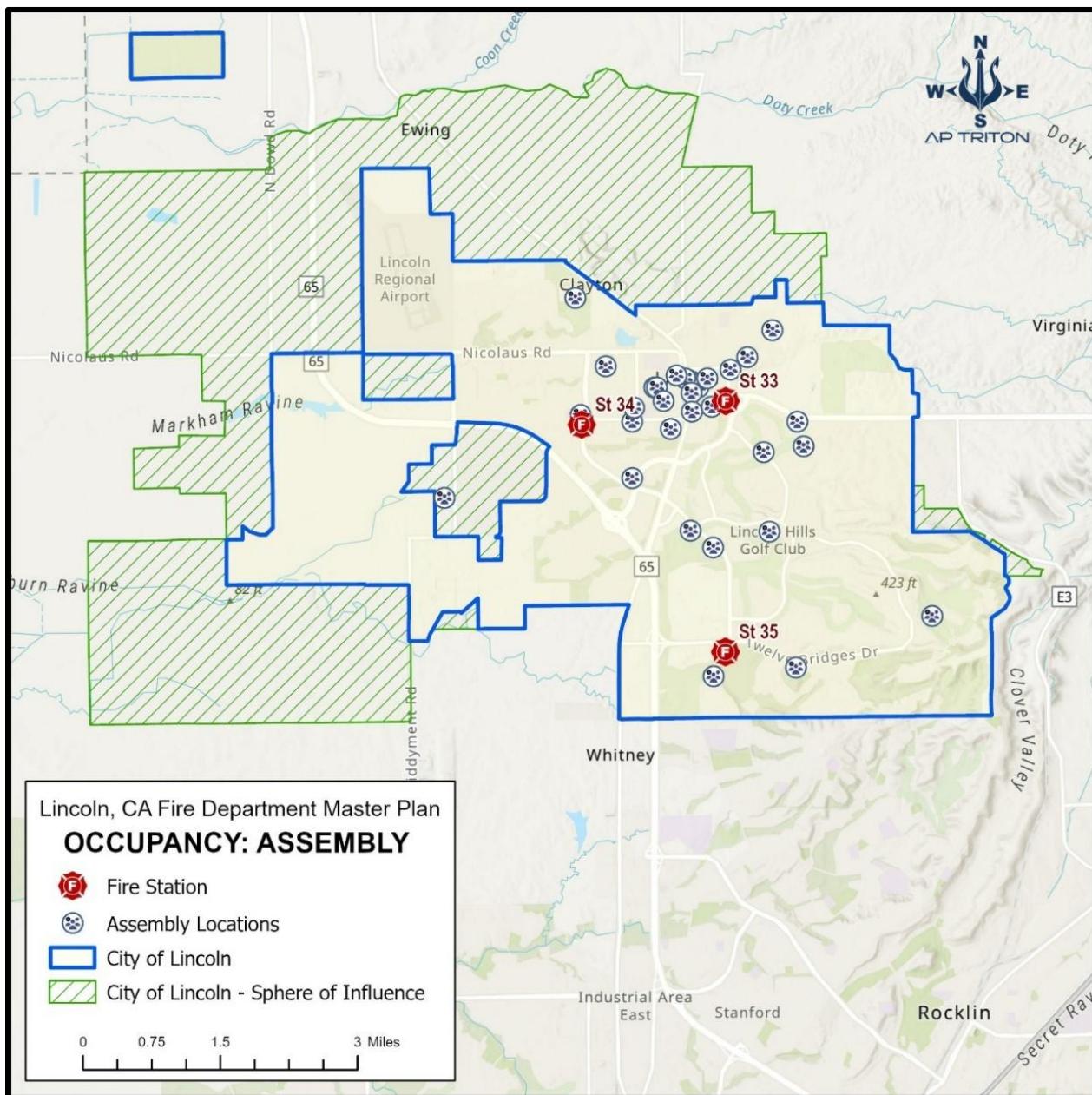
Village	K-5	6 <sup>th</sup> -8 <sup>th</sup>	9 <sup>th</sup> -12 <sup>th</sup>	Total
1	1,542	630	555	2,727
5	2,280	931	820	4,031
7	1,050	429	378	1,857
SUD-B	141	58	51	250
<b>Total</b>	<b>5,013</b>	<b>2,048</b>	<b>1,804</b>	<b>8,865</b>

The following figure provides the location of schools in Lincoln.

**Figure 148: School Locations**

## **Assembly**

Gathering large groups of people in a single location or building increases risks in settings such as places of worship, entertainment venues, or dining establishments. According to the California Fire Code, outdoor special events, such as street fairs or mass gatherings, may require a public safety plan. This plan should include emergency vehicle access and egress, fire protection, emergency medical services, public assembly areas, directing vehicular traffic and attendees, vendor and food concessions, the need for law enforcement, fire, or EMS personnel, and weather monitoring. There are several major outdoor assembly events in Lincoln, such as the Fourth of July Parade, fireworks, the Christmas Parade, and tree lighting. LFD is part of the planning team and permits to ensure code compliance. The following figure illustrates the location of assembly occupancies in the LFD's response area.

**Figure 149: Assembly Occupancies**

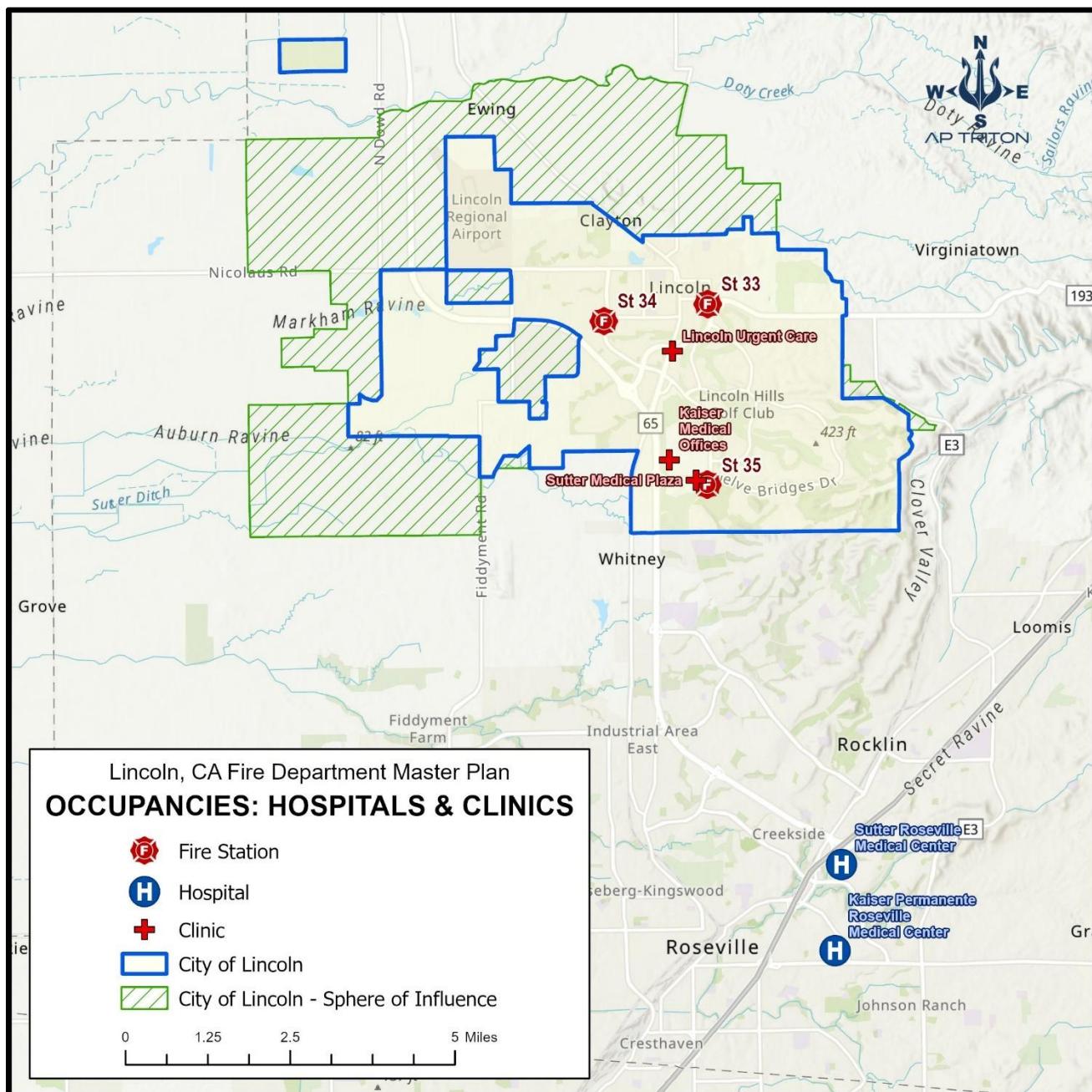
## **Health Care Facilities**

These types of buildings are where occupants may be unable to leave without assistance from the staff. These locations may contain medical gases that pose additional risks to emergency responders during a fire; therefore, completing up-to-date pre-incident plans is essential.

As people age, they may require additional care, necessitating the search for a facility that meets their needs. Depending on their mobility or cognitive conditions, they may need more assistance evacuating the building. Staff should have developed plans for removing occupants or patients during an emergency. These locations require additional fire protection systems to safeguard the occupants, similar to those in hospitals. Special locking arrangements for areas where patients with dementia or Alzheimer's live are permitted to prevent them from leaving the facility. Although there are no hospitals in Lincoln, medical offices, including Kaiser Permanente Lincoln Medical Offices, provide medical care to patients.

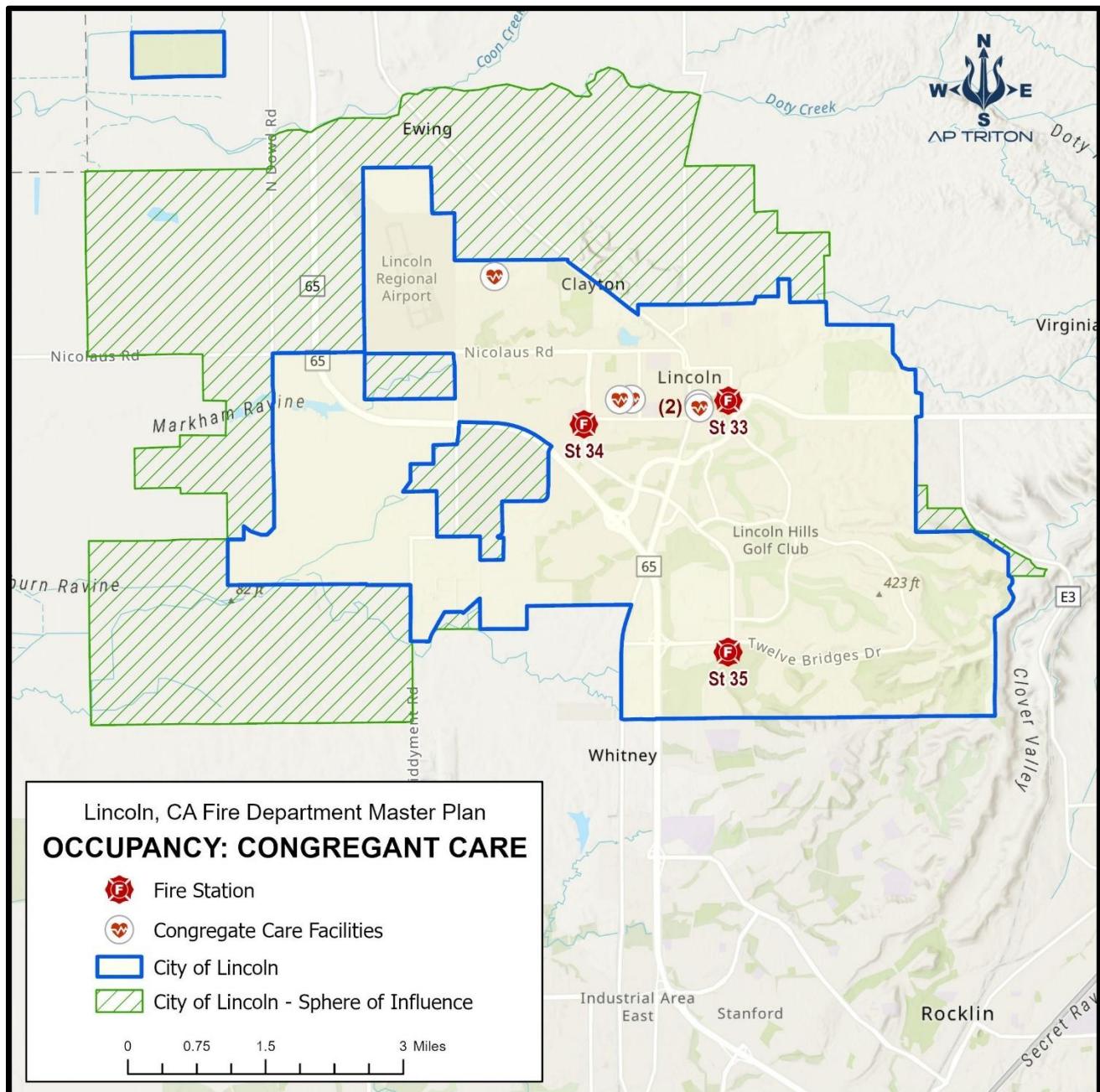
The following figure provides the location of Lincoln's primary hospital and medical clinics.

**Figure 150: Clinical Facilities and Hospitals**



The following figure shows the location of congregant care and nursing home facilities.

**Figure 151: Congregant Care/Nursing Homes**

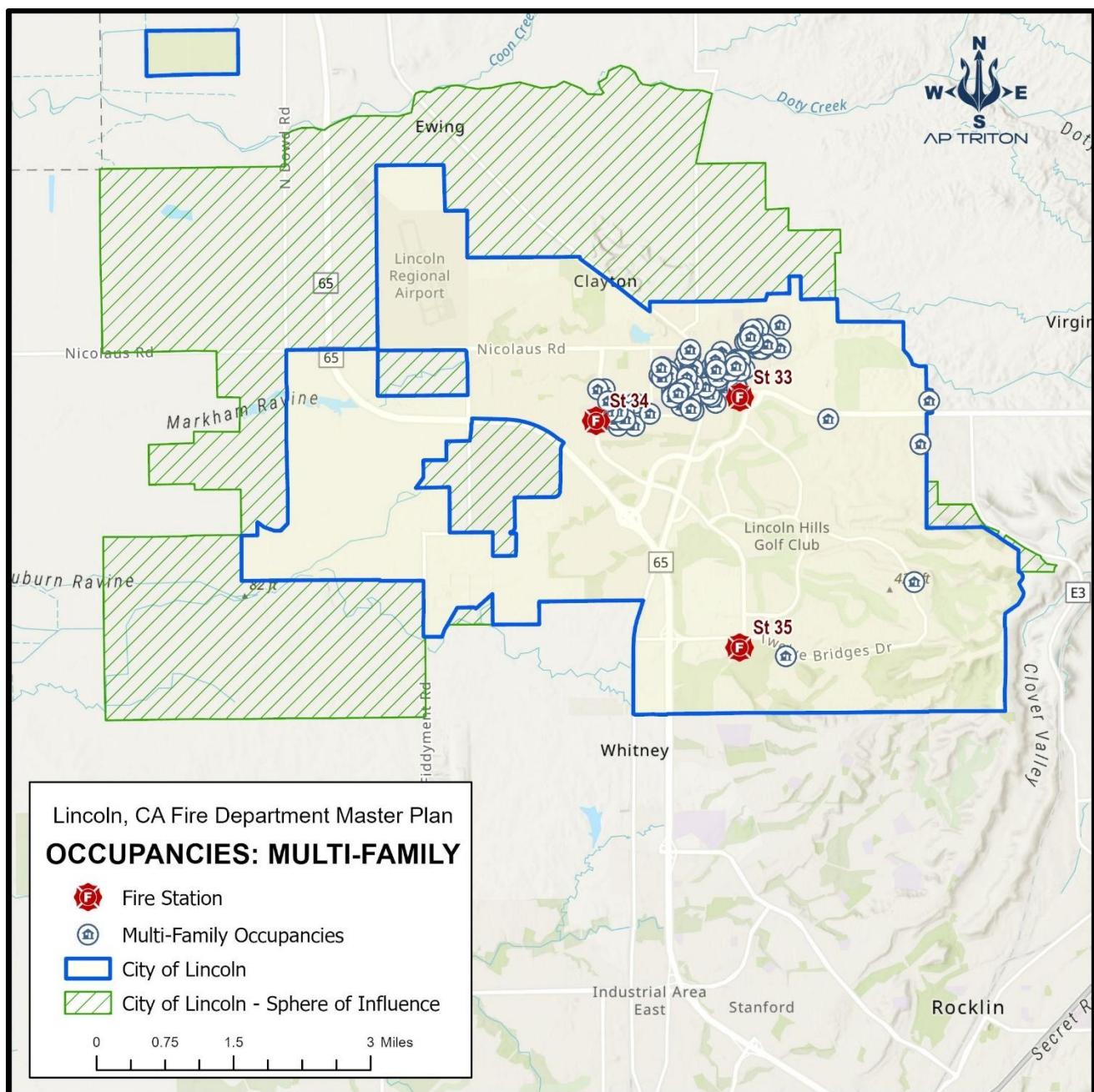


### **Multi-family Occupancies**

Although multi-family housing has fewer fires caused by electrical or heating malfunctions, the risk of cooking fires is twice the rate of other types of 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. These fire protection systems are designed to provide enough time for the occupants to evacuate the building. The following figure shows the location of multi-family housing units in Lincoln.

---

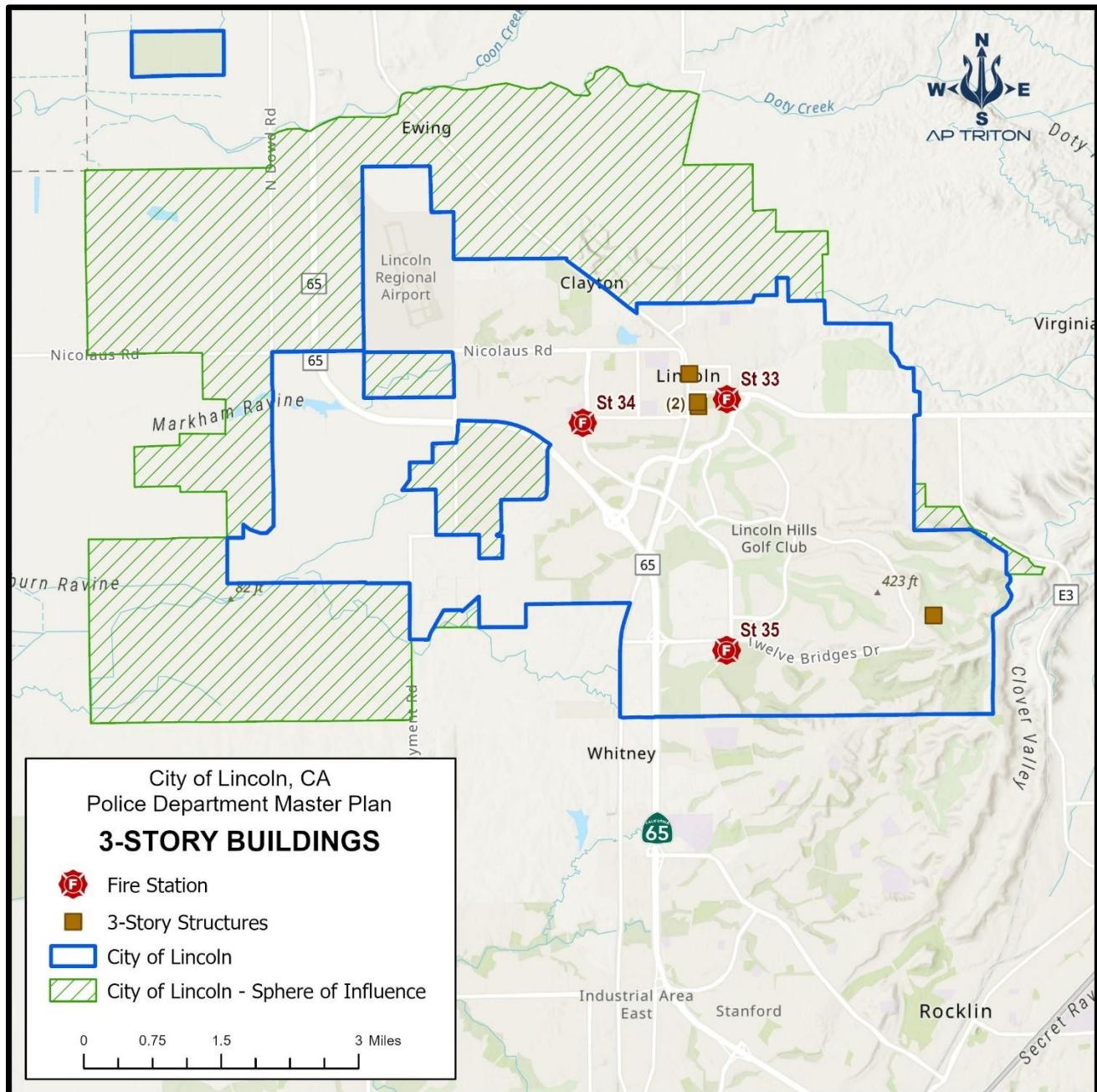
<sup>24</sup> Topical Fire Report Series, Multifamily Residential Building Fires (2013–2015), June 2017.

**Figure 152: Multi-Family Housing Units**

### Buildings Three or More Stories in Height

Structures three stories or more in height require a response from an aerial apparatus with elevated master stream capabilities. The Insurance Services Office (ISO) reviews the coverage area for a ladder truck, encompassing all buildings within a 2.5-mile radius. A ladder truck may be necessary to access these higher buildings' upper floors or roofs, as most ground ladders cannot reach such heights. The following figures display these buildings.

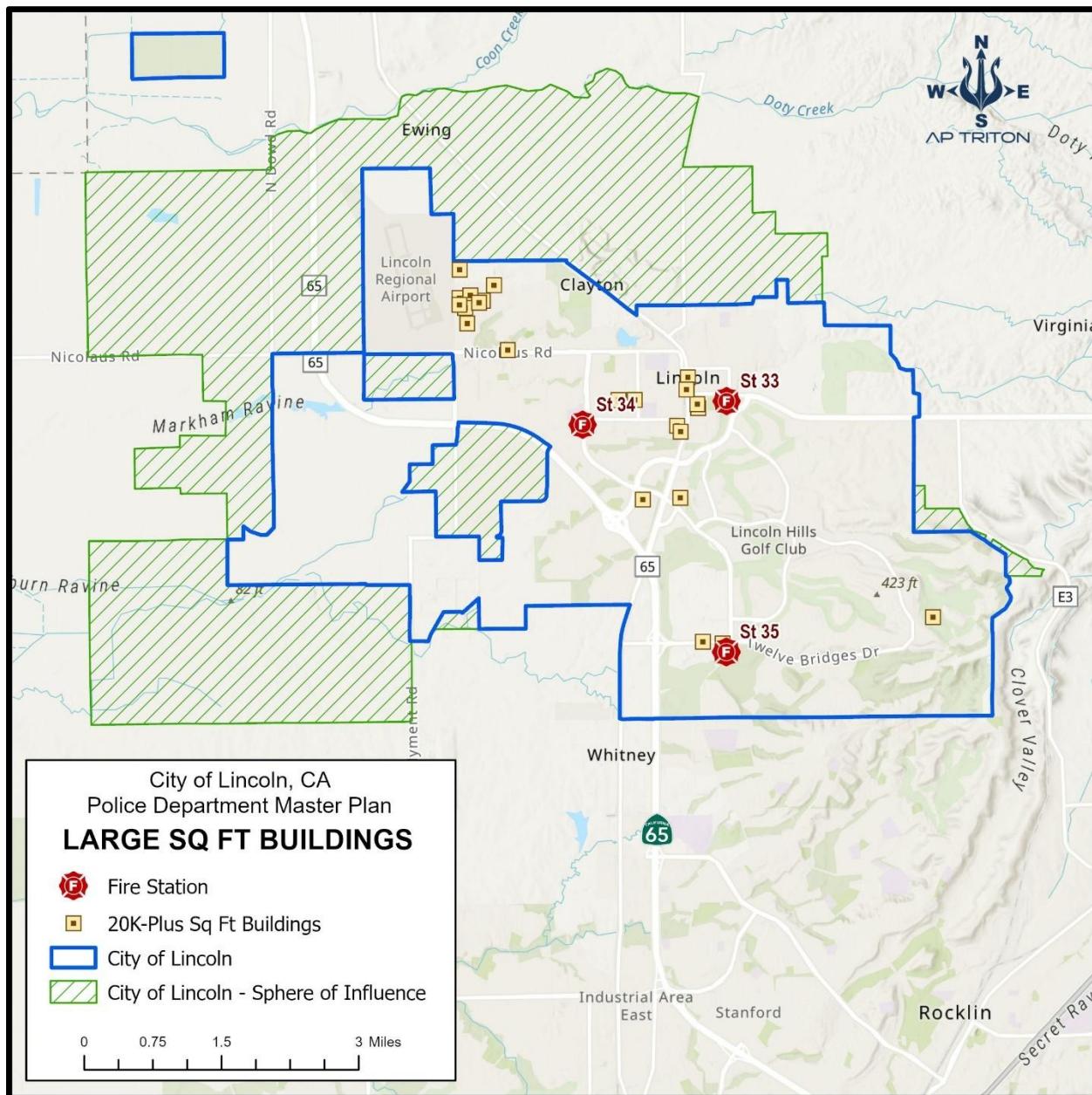
**Figure 153: Buildings Three Stories or More**



## Large Square Footage Buildings

Large buildings, such as warehouses, strip malls, and large “box” stores, require greater volumes of water for firefighting and necessitate the deployment of more firefighters to advance hose lines over long distances into the building. Although the number of large square-footage buildings is low, the fire flow may be greater for smaller buildings due to construction type, distance to exposures, and the lack of built-in fire protection systems, such as fire sprinklers. The following figure, based on data from ISO, shows the locations of 20,000 square feet or larger buildings.

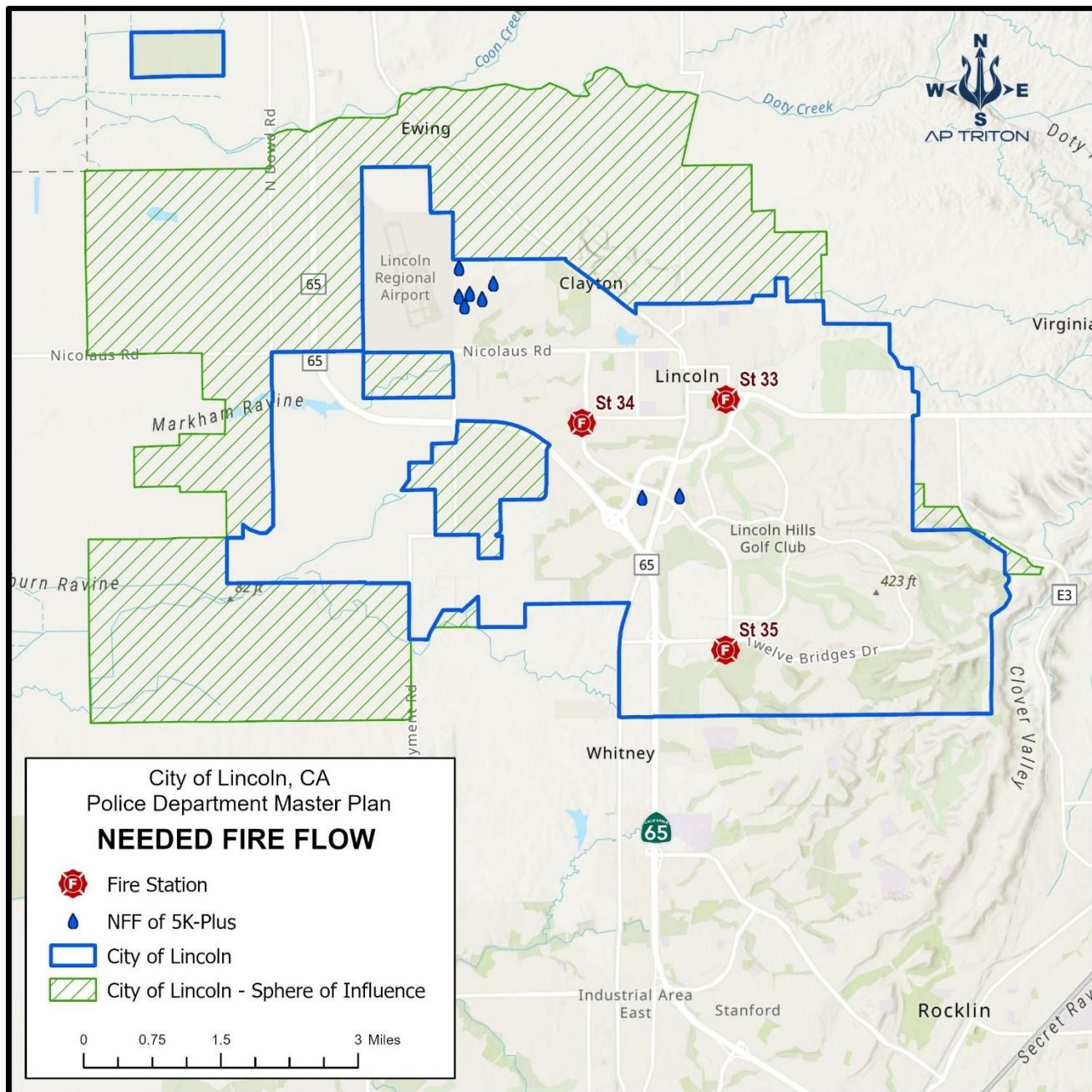
**Figure 154: Buildings 20,000 Square Feet and Greater**



## High Fire-Flow Occupancies

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

**Figure 155: Buildings with Large Fire Flows (> 2,500 gallons per minute)**



## Insurance Services Office

The ISO is an independent organization that collects and analyzes data from fire departments in communities across the United States to determine fire insurance rates. According to its report, the ISO's 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 assesses four primary elements of a community's fire protection system: Emergency Communications (max 10 credits), Fire Department (max 50 credits), Water Supply (max 40 credits), and Community Risk Reduction (max 5.5 credits), for a maximum possible total of 105.5 points. ISO then assigns a grade using a scale of 1 to 10, where 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 ISO's most recent evaluation, effective January 2025, assigned 82.02 credits out of 105.5 and provided the community with a classification of 2/2X. Areas for improvement include credit for telecommunicators (3.59 out of 4) and dispatch circuits (2.1 out of 3). The 10% deduction stemmed from the absence of Emergency Dispatch Protocols. For the fire department, potential areas for improvement include the Deployment Analysis, which received a score of only 2.69 out of 10.

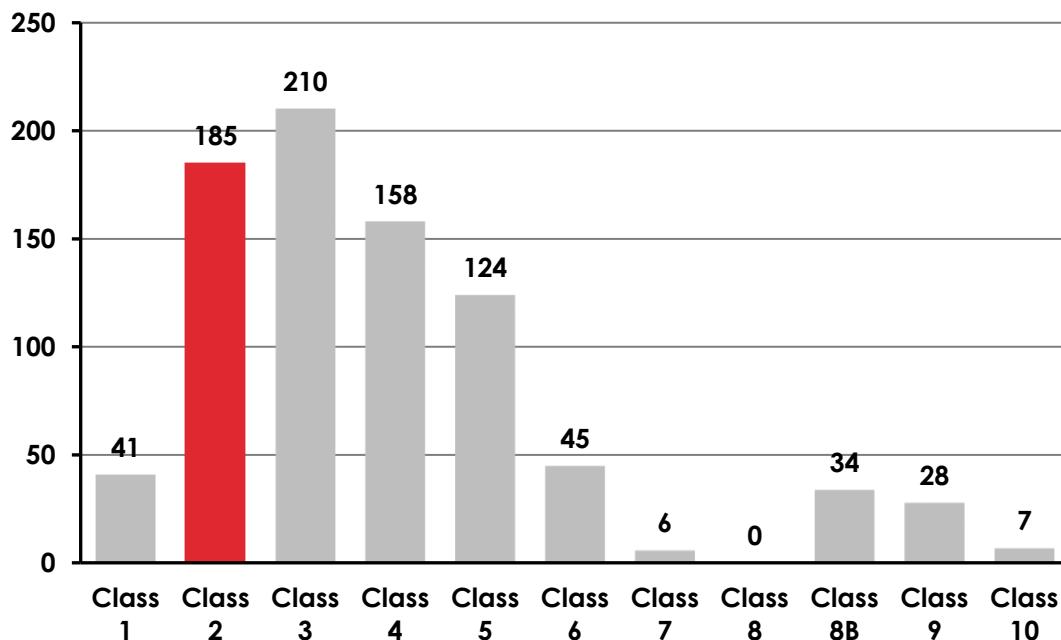
The following figure displays the ISO Earned and Available Credits for LFD as of its most recent inspection in 2025.

**Figure 156: ISO Earned & Available Credits for LFD**

ISO Feature	Earned Credit	Available Credit
Emergency Communications	8.69	10
Fire Department	36.97	50
Water Supply	36.18	40
Divergence	-3.30	0
Community Risk Reduction	3.48	5.5
<b>Totals:</b>	<b>82.02</b>	<b>105.5</b>

The following figure illustrates the ratings distribution across all fire departments in California, highlighting the number of departments in each classification. Notably, 185 departments in California have achieved a Class 2 rating.

**Figure 157: California ISO Classifications**



## Risk Classification

### Risk Assessment Methodology

Developing a risk score to identify risks within a community is crucial for enabling an organization to create effective response protocols in the event of an incident. The Three-Axis Heron model assigns a score by evaluating probability, consequence, and impact factors, ranging from 2 to 10 in each category.<sup>25</sup> A description of the incident types for each risk is located in Appendix C.

The use of the Three-Axis Heron Formula involves the following equation.

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

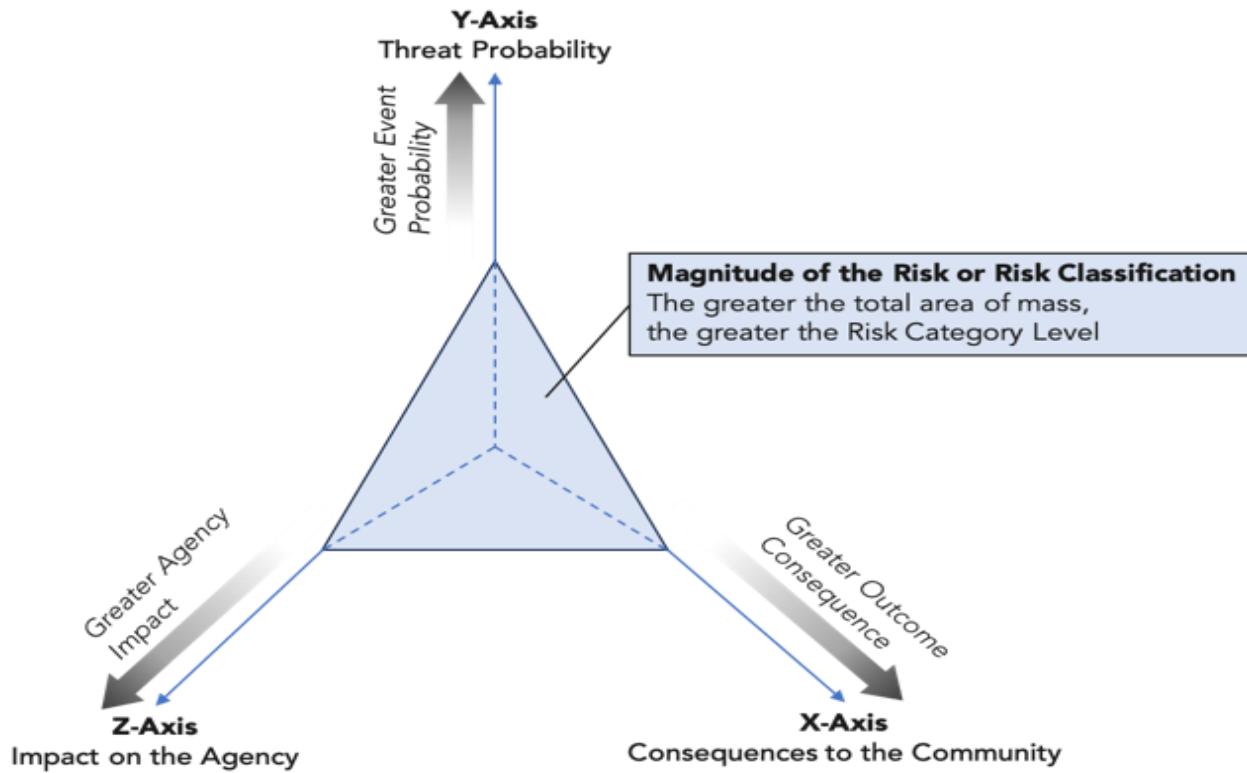
The risk is graphically illustrated through a three-axis model as follows:

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

<sup>25</sup> Quality Improvement for the Fire and Emergency Services.

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

**Figure 158: Three-Axis Risk Classification Process**



When developing the score, each of the three scoring components is based on LFD's 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 the impact on LFD are low. The probability of a low-risk incident in Lincoln is 10 (high), while the consequence and impact are 2 (low). These numbers are placed into the above formula to create a score of 35. The score will increase for a maximum risk, although the probability is low (2), because the consequence to the community is an 8, and the impact on LFD is also 8, which gives a score of 48.

These scores are designed to provide LFD with information 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 details on probability, consequences, and impacts.

**Figure 159: Three Axis Scoring**



### Probability

Probability refers to the likelihood of an incident occurring in a community over time. This axis represents the probability of a specific type of incident occurring, which contributes to the overall risk level. Many factors are considered, including the time of day, location, hazard present, season of the year, building construction and maintenance, demographic factors, and more. It can range from a rare occurrence to one that happens frequently. The following figure defines probability categories.

**Figure 160: 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 consequences of an incident can vary from minor casualties to severe impacts that may destroy historical or major facilities in the community, resulting in a significant loss of employment or life. The following figure defines consequence categories.

**Figure 161: 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 people 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, whether available internally or from external agencies. It measures the department's ability to respond to a given risk or incident while providing service to the remaining parts of Lincoln. The following figure defines impact categories.

**Figure 162: 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

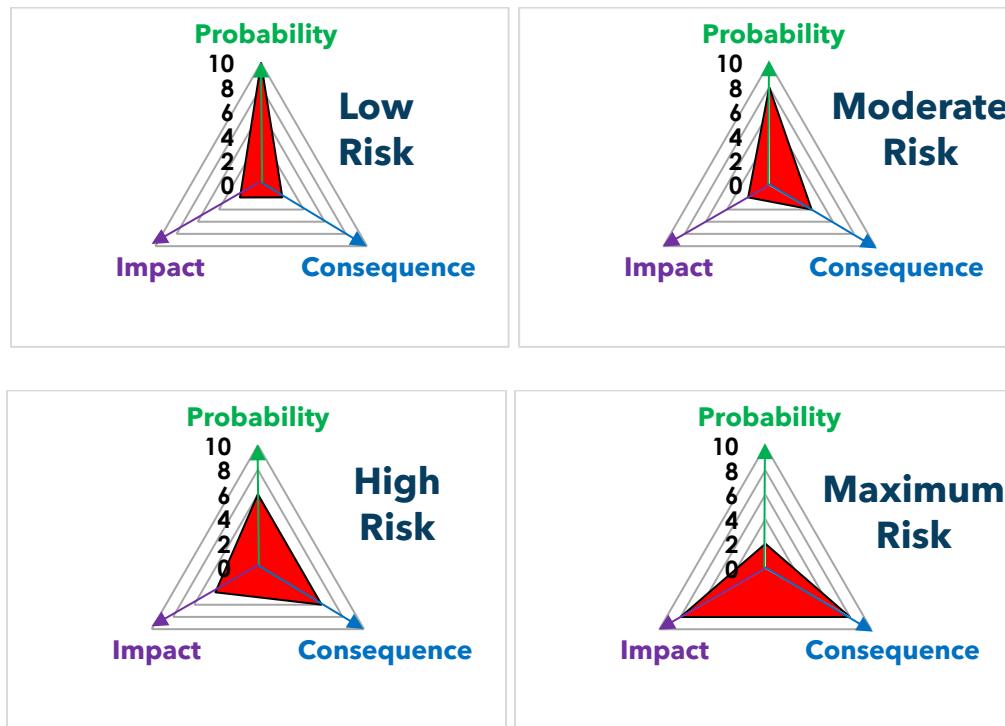
## Fire Response

LFD 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 associated with a vehicle fire are considered low compared to the maximum risk posed by a school that houses students. This scoring is applied to four different categories of fire incidents within LFD's response area to determine staffing needs for critical tasks on the fire ground. The following figures provide the fire response risk assessment score and three-axis risk classifications.

**Figure 163: Fire Response Risk Assessment**

Description	Low			Moderate			High			Maximum		
	P	C	I	P	C	I	P	C	I	P	C	I
Risk Score	10	2	2	8	4	2	6	6	2	2	8	8
Score Assigned	20.2			25.9			35			48		

**Figure 164: Fire Three-Axis Risk Classifications**



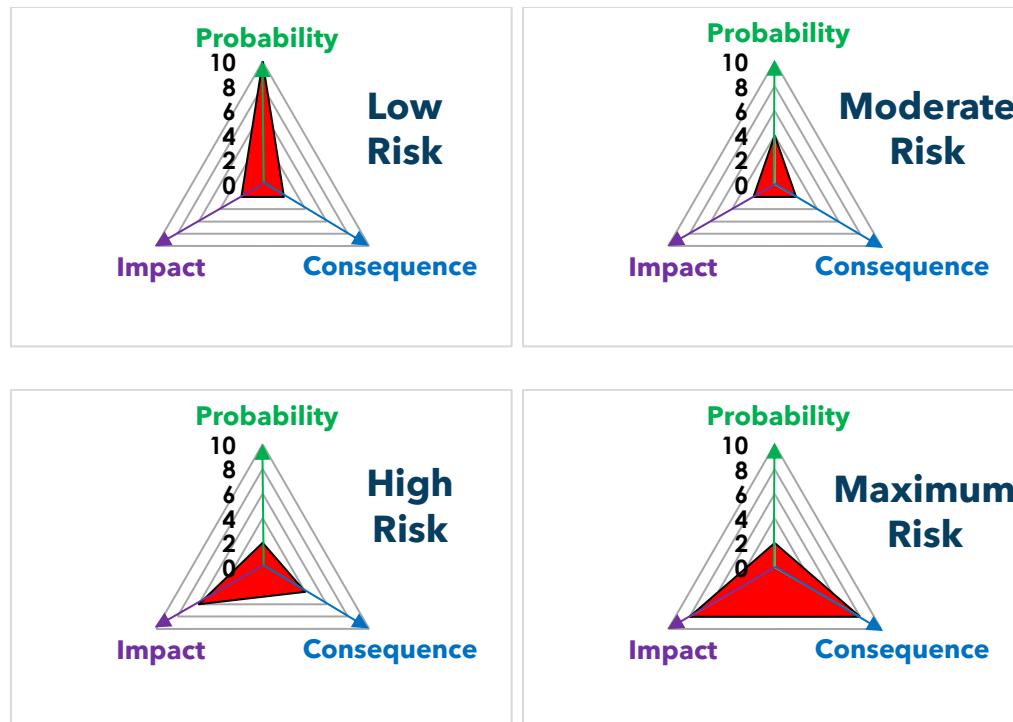
### Emergency Medical Services Response

LFD provides basic life support and emergency medical care 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. The following figures provide the EMS response risk assessment scoring and the three-axis risk classifications.

**Figure 165: EMS Response Risk Assessment**

Description	Low			Moderate			High			Maximum		
	P	C	I	P	C	I	P	C	I	P	C	I
Risk Score	10	2	2	4	2	2	2	4	6	2	8	8
Score Assigned	20.2			8.5			19.8			48		

**Figure 166: EMS Three-Axis Risk Classifications**



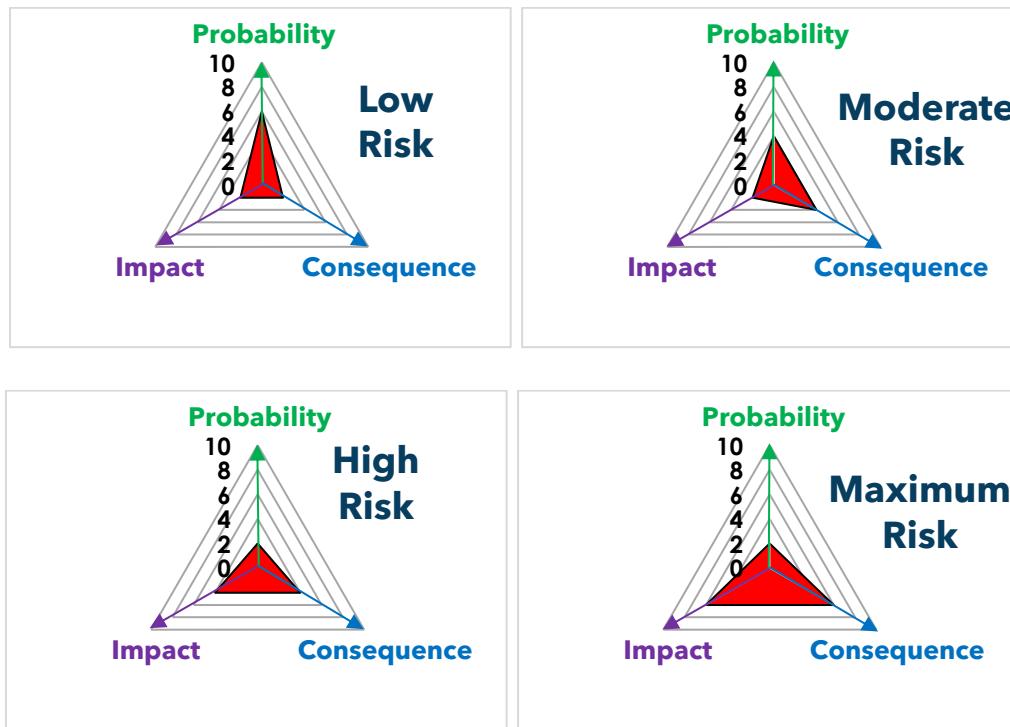
## Technical Rescue Response

Rescue services can range from low-risk incidents, such as accessing a locked vehicle with a child inside, to confined space incidents (the maximum risk), which may require multiple personnel to mitigate the situation. The following figures provide the risk score and classifications assigned to each type of technical rescue risk in LFD's response area. The following figures provide the technical rescue response risk assessment scoring and the three-axis risk classifications.

**Figure 167: Technical Rescue Response Risk Assessment**

Description	Low			Moderate			High			Maximum		
	P	C	I	P	C	I	P	C	I	P	C	I
Risk Score	6	2	2	4	4	2	2	4	4	2	6	6
Score Assigned	12.3			13.9			13.9			28.1		

**Figure 168: Technical Rescue Three-Axis Risk Classifications**



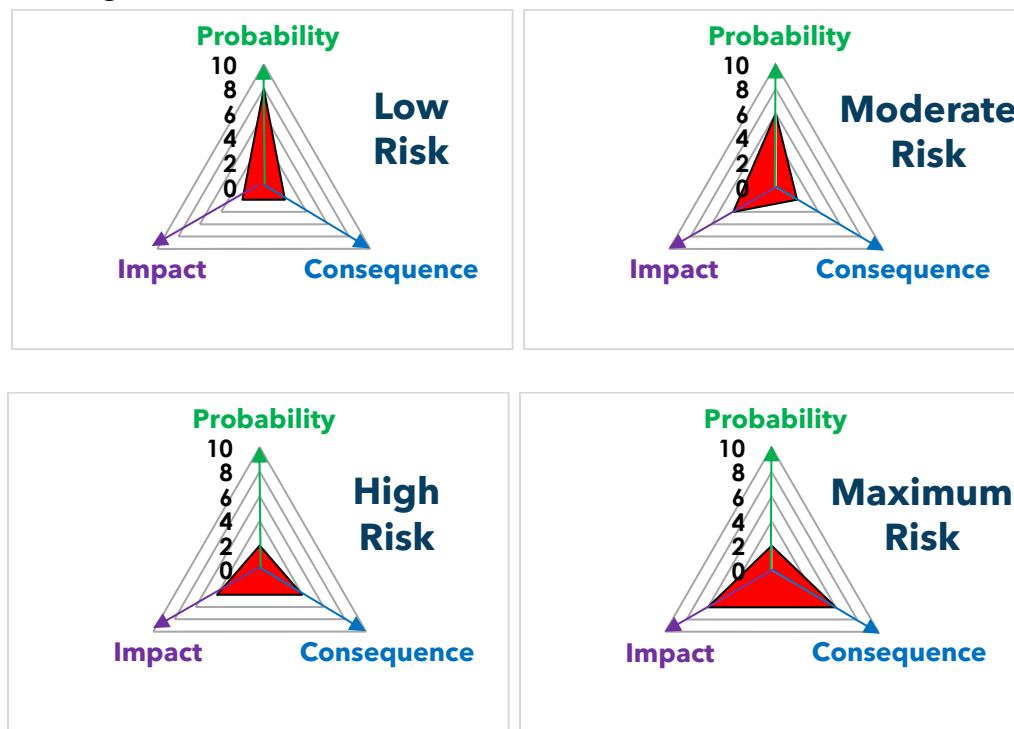
## Hazardous Materials Response

Hazardous materials responses can vary from low-risk odor investigations to the maximum risk posed by a fuel tanker fire in densely populated areas. Most of these incidents can be managed by LFD; however, higher risks may require 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 169: Hazardous Materials Response Risk Assessment**

Description	Low			Moderate			High			Maximum		
	P	C	I	P	C	I	P	C	I	P	C	I
Risk Score	8	2	2	6	2	4	2	4	4	2	6	6
Score Assigned	16.2			19.8			13.9			28.1		

**Figure 170: Hazardous Materials Three-Axis Risk Classifications**



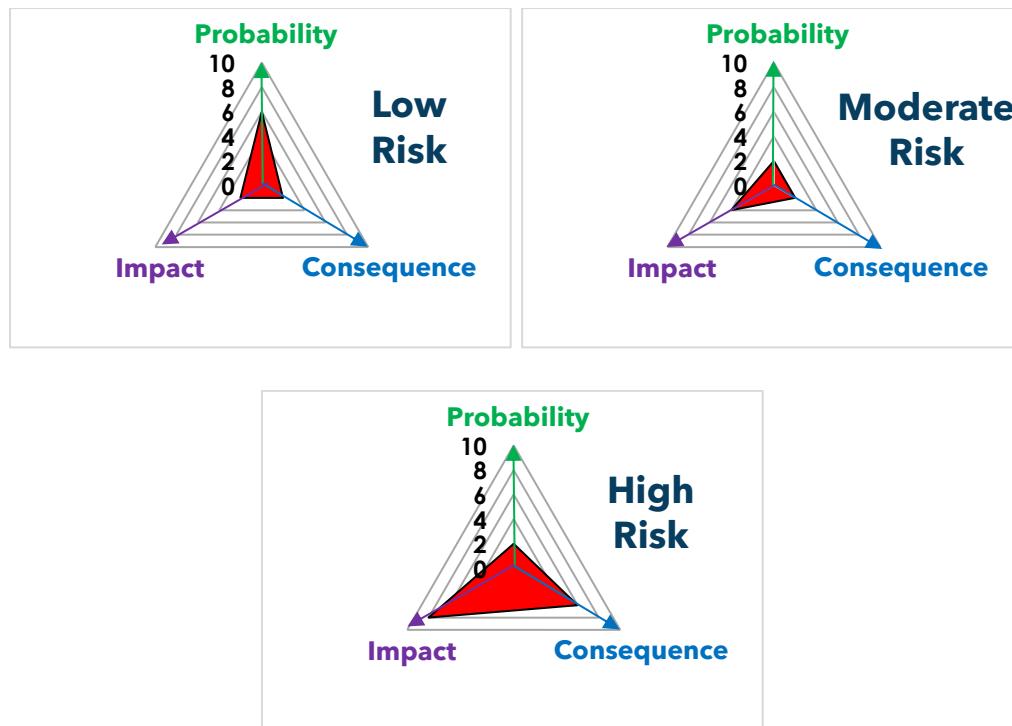
## Wildland Fires Response

The types of wildland fire risk vary from small grass fires to large forest fires requiring many internal and external resources. The following figures provide the risk score and classifications assigned to each type of wildland fire risk in LFD's response area. The wildland fire risk encompasses low, moderate, and high risks, as a maximum risk would necessitate a state and federal response. The score assigned for high risk (36.8) is significant because of the maximum score of ten for the consequence to the community and impact on LFD. This type of incident will strain the community and emergency services. The following figures provide the wildland fire response risk assessment and the three-axis risk classification scoring.

**Figure 171: Wildland Fires Response Risk Assessment**

Description	Low			Moderate			High		
	P	C	I	P	C	I	P	C	I
Risk Score	6	2	2	2	2	4	2	6	8
Score Assigned	12.3			8.5			36.8		

**Figure 172: Wildland Fires 3-Axis Risk Classifications**



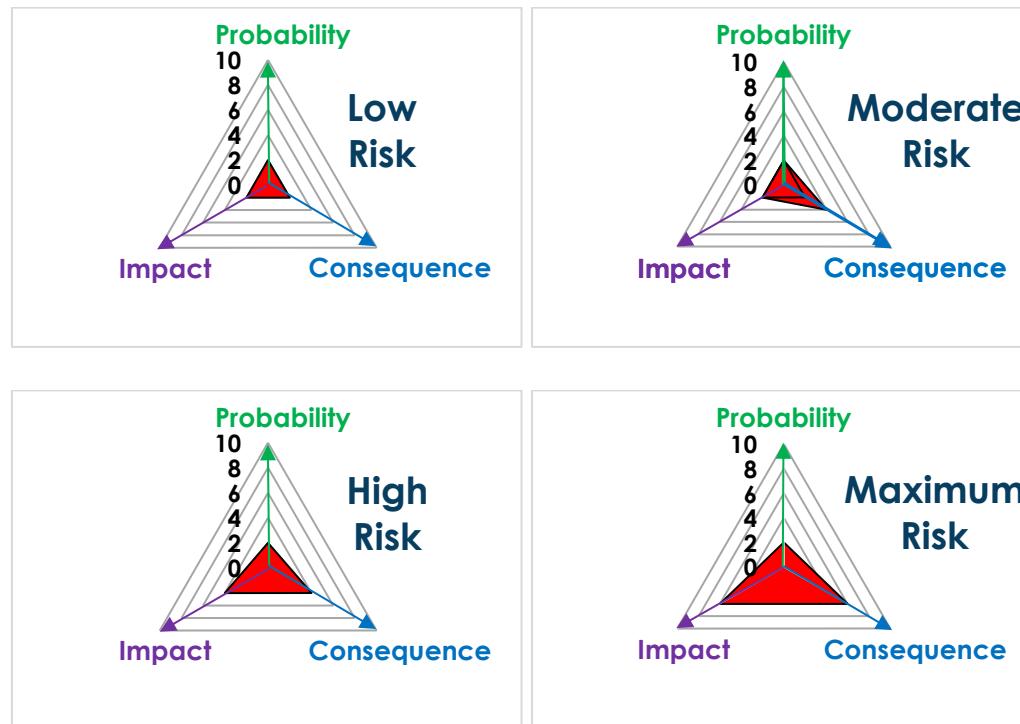
## Aircraft Rescue & Firefighting (ARFF)

ARFF responses can vary from low-risk to maximum-risk ARFF incidents. These incidents require an Alert 1 (standby) response and high-risk responses for Alert 2 (major difficulty). This would also include maximum-risk incidents for Alert 3 (aircraft crash) incidents, which are a full airport response supported by off-site fire suppression apparatus and staffing. LFD can manage most ARFF incidents, but those with higher risks will require assistance from outside resources. The following figures provide the risk score and classifications assigned to each type of ARFF risk in LFD.

**Figure 173: ARFF Response Risk Assessment**

Description	Low			Moderate			High			Maximum		
	P	C	I	P	C	I	P	C	I	P	C	I
Risk Score	2	2	2	2	4	2	2	4	4	2	6	6
<b>Score Assigned:</b>	<b>4.9</b>			<b>8.5</b>			<b>13.9</b>			<b>28.1</b>		

**Figure 174: ARFF Risk Classifications**



## Comparison of Fire Risks in Other Communities

### Fire Loss

In 2023, fire departments responded to nearly 1.4 million incidents in the United States, which resulted in 3,670 civilian fire fatalities and over 13,350 civilian fire injuries. The property damage was estimated at \$23 billion. The following figure shows that fire loss can fluctuate yearly, with 2021 having the highest at \$42.65, while 2022 and 2023 were lower.

**Figure 175: LFD Property Loss**

Year	LFD Property Loss	U.S. Property Loss <sup>26</sup>
2021	\$81.02	\$48.22
2022	\$28.79	\$54.36
2023	\$25.80	\$69.30

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

**Figure 176: Fires per 1,000 Population**

Year	LFD Fires per 1,000 Population	U.S. Fires per 1,000 Population <sup>27</sup>
2021	2.0	4.1
2022	1.8	4.5
2023	1.4	4.2

<sup>26</sup> Fire Loss in the United States, NFPA, 2018, 2019, 2020.

<sup>27</sup> Fire Loss in the United States, NFPA, 2018, 2019, 2020.

### 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>28</sup> The following figure lists the number of intentionally set fires from 2021 to 2023.

**Figure 177: Intentionally Set Fires (2021–2023)**

Year	Intentionally Set Fires
2021	3
2022	5
2023	3

<sup>28</sup> Crime Data Explorer, Federal Bureau of Investigation.

---

## **Section V: FINDINGS & RECOMMENDATIONS**

---

## Findings

AP Triton conducted a comprehensive evaluation of the Lincoln Fire Department, incorporating operational data, stakeholder input, and community expectations. The findings presented below highlight key gaps, limitations, and opportunities for enhancement across service delivery, staffing, training, administration, and infrastructure.

These findings form the basis for the recommendations that follow. While not all improvements require immediate action, they collectively offer a strategic path forward. AP Triton recognizes that implementation may be phased over time and dependent on available resources; however, each finding reflects an area where targeted improvements can significantly strengthen the department's overall effectiveness and alignment with community needs.

- The development of Village 5A will begin impacting LFD by 2028.
- A minimal number of firefighters is assigned to each shift, resulting in overtime when there is a vacancy.
- The operations staff is only certified at the hazardous materials awareness level.
- The Fire Marshal is a shift Battalion Chief.
- There is no defined schedule for inspecting all commercial properties in Lincoln.
- Not all commercial occupancies have been identified for fire and life safety inspections.
- If a unit is canceled en route, the aid type should be "None."
- There is no quality control policy or procedure for reviewing incident reports.
- LFD has not established performance goals for incident response.
- There is no renovation or replacement capital fund for facilities.
- The city does not have a first responder fee for EMS incidents.
- LFD only provides basic life support (BLS) for EMS responses.
- LFD has not developed a Vision Statement.
- LFD is continuing to develop departmental standard operating procedures and policies.
- Training is provided to firefighters, but no competency-based training program or annual training plan exists.
- The LFD does not have a dedicated training facility that meets ISO requirements.

- A fund has not been established to replace apparatus and other capital equipment.
- The 911 Center has no formal performance benchmarks for answering a call or call-processing times.
- No quality management or assurance programs are in place to review 911 calls.
- Ring time in the dispatch center is not recorded.

## Village 5A Recommendation

This recommendation is explicitly related to Village 5A due to its significant impact on the City and the LFD.

### **Recommendation: Immediately begin planning for the fire department's expansion for Village 5A.**

**Description:** The recent annexation of Village 5A is expected to increase demand for services from LFD. The first residential development is scheduled to begin in early 2028, while the commercial development is expected to start around 2032. The development agreement specifies the responsibilities of the City and Richland Developers, Inc. Land for fire stations will be dedicated upon recording the first subdivision map for each section. The initial station must be completed before issuing the first building permit. The second station may be delayed and might not be necessary if LFD can guarantee coverage by adding a second unit to the new station.

Additional personnel will be needed to staff the extra engine and truck companies serving this area. The organization currently lacks support staff, which will be essential as the new station(s) open.

**Outcome:** This development will enhance public safety by reducing emergency response times, ensuring firefighters can quickly reach incidents. The additional personnel will enable Lincoln to meet NFPA 1710 standards, improving fire suppression efforts and emergency medical services. As Village 5A grows, the new fire station will provide essential infrastructure to support residential and commercial developments. The presence of more firefighters will also bolster community resilience through public education programs and emergency preparedness initiatives.

Lincoln's Village 5 Specific Plan includes provisions for fire stations to support future expansion, ensuring that emergency services keep pace with the city's development. To minimize costs, construction of the first station and acquisition of new fire equipment should commence immediately. Delaying this will increase the funding required due to inflation.

An additional engine company requires a minimum of nine personnel. As LFD grows, maintaining at least three staff members on each company will become increasingly difficult due to vacation, sick leave, and other types of leave. As the commercial area and higher-density housing (three or more floors) are developed, a ladder company with nine firefighters will be necessary. Moreover, as LFD expands, more support staff will be needed to assist the fire chief and the organization. Currently, the battalion chiefs have collateral duties in addition to supervising the operations shift to which they are assigned.

**Estimated Cost:** According to the development agreement, Richland may request the formation of a Mello-Roos Community Facilities District to finance the public improvements for the project. The city will assist in creating the district, allowing for bonds to be issued or taxes to be levied. The financing plan should include funding for the station, apparatus, equipment, and personnel.

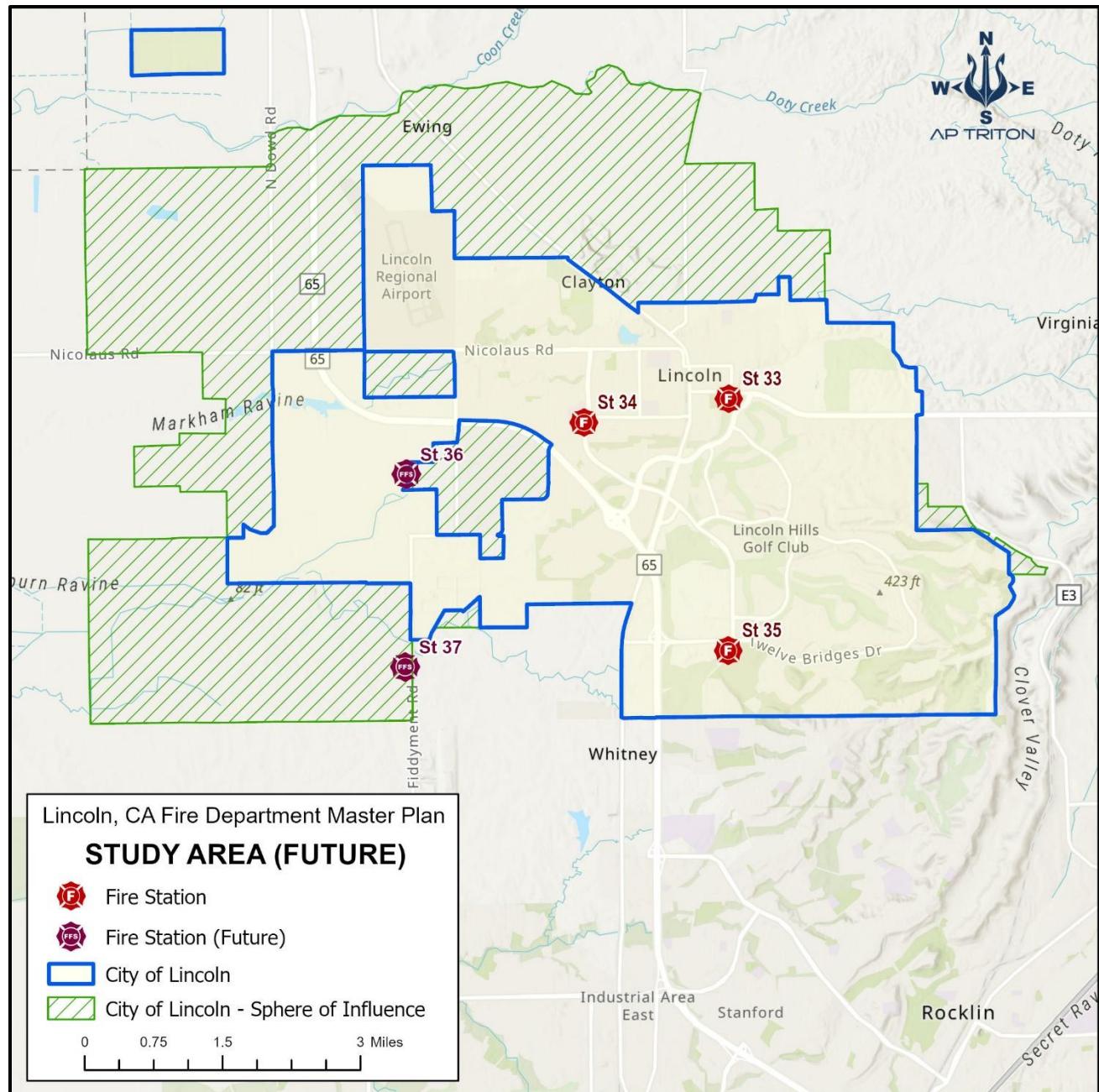
Building a new fire station costs \$1,500 per square foot, while a new engine and equipment are expected to cost nearly \$1 million and \$100,000, respectively. A ladder truck costs \$2 million and \$150,000. The following figure outlines the basic salary and benefits for staffing a new engine company for Village 5A, including the equipment allocated to each firefighter.

**Figure 178: Initial Engine Company Salary and Benefits Estimate**

Position	Number	Salary and Benefits	Total
Firefighter/EMTs	3	\$180,000	\$540,000
Engineer	3	\$227,500	\$682,500
Captain	3	\$285,000	\$855,000
Support	1	\$285,000	\$285,000
<b>Subtotal</b>	10		<b>\$2,362,500</b>
<b>Equipment</b>		<b>Cost</b>	
Turnout Gear	10	\$9,000	\$90,000
Uniforms	10	\$2,000	\$20,000
<b>Subtotal</b>		<b>\$11,000</b>	<b>\$110,000</b>
		<b>Total</b>	<b>\$2,472,500</b>

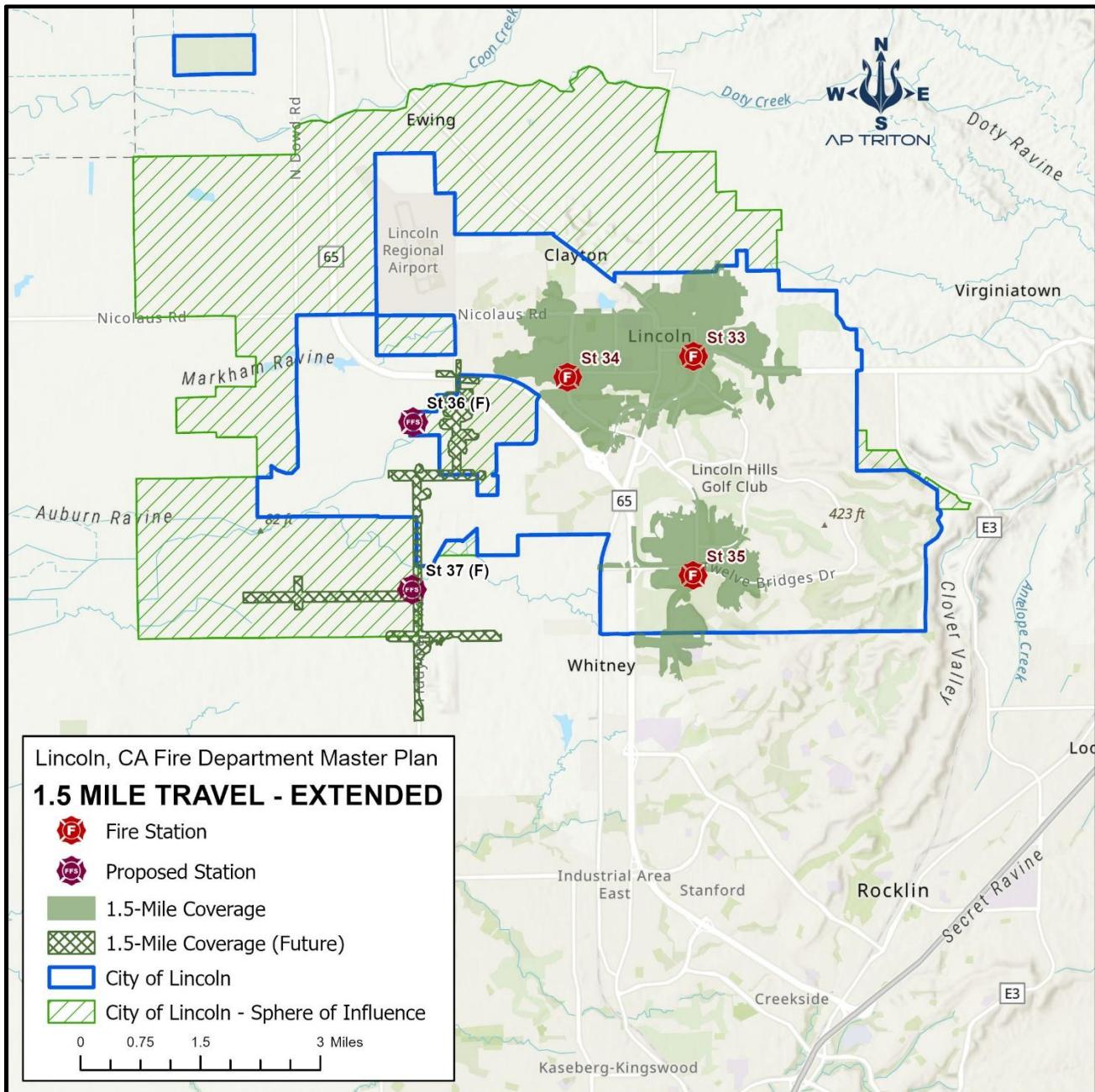
The figures below show maps of the proposed Station 36 in Village 5A and a future Station 37 on the south side of the city, in case of further annexations. The map was created based on existing roads and will need updating as Village 5A continues to grow and new streets are added.

**Figure 179: Study Area with Future Fire Stations**



The following figure shows the 1.5-mile travel distance from a fire station, including the new station for Village 5A and a potential station in the southwest corner of the city.

**Figure 180: 1.5-Mile Travel - Extended**



## Recommended Short-Term Strategies

Short-term recommendations focus on enhancing the current conditions and levels of protection over the next one to two years.

### **Recommendation A-1: Hire an additional firefighter to assist with staffing.**

**Description:** The current minimum staffing for LFD includes three personnel per engine company. This often results in increased overtime because off-duty staff must be available to cover shifts due to absences from illness, training, or vacation. Consequently, the existing firefighters are frequently required to work extra hours to maintain minimum operational readiness, which can lead to fatigue, burnout, and lowered morale.

**Outcome:** Relying on overtime not only strains the workforce but also increases departmental costs, creating a cycle where budget constraints hinder hiring more staff, thus perpetuating the need for excessive overtime.

**Estimated Cost:** The estimated cost for an additional firefighter is approximately \$180,000, including benefits.

### **Recommendation A-2: LFD should train its firefighters to the Hazardous Materials Operations Level.**

**Description:** The LFD only trains its firefighters to an awareness level. This restriction impacts the actions firefighters can take during hazardous material incidents. The Federal Occupational Safety and Health Administration sets guidelines for responding to hazardous materials. These guidelines specify the level of training a responder needs to safely handle or control an incident involving hazardous materials. An organization is penalized if it fails to meet the minimum requirements.

**Outcome:** Fire departments must train their firefighters beyond the awareness level to ensure they can effectively respond to emergencies and protect themselves and the public. Awareness-level training offers only a basic understanding of hazards, but additional training provides firefighters with the skills needed to act in critical situations. Hazardous materials incidents require more than just recognizing a threat. Firefighters trained at the operations level can contain and mitigate dangers, while technician-level training allows them to handle hazardous substances directly.

**Estimated Cost:** Bringing current firefighters to the operations level requires attending and becoming certified through the California State Training Institute. If the class cannot be provided while on shift, overtime may be necessary to receive certification.

**Recommendation A-3: Hire a Fire Marshal and an Inspector.**

**Description:** LFD does not have a fire marshal, but a shift battalion chief with a Fire Inspector II certification is usually available only when on duty. No other staff members are tasked with conducting plan reviews or fire inspections. LFD has reached its capacity for additional work and cannot develop a schedule to inspect all commercial occupancies using a risk-based method. The annexation of Village 5A will require LFD to review and approve plans for new construction and conduct inspections to verify code compliance. The current approach is unsustainable.

**Outcome:** Adding a dedicated fire marshal with proper certification for plan review and fire inspections will enable LFD to establish a fire prevention office. A fire inspector role will support the fire marshal as needed and allow LFD to start a program to inspect all commercial properties, not just those required by the state.

**Estimated Cost:** The estimated salaries range from approximately \$165,000 to \$185,000 for a Fire Marshal and \$68,000 to \$85,000 for a Fire Inspector.

**Recommendation A-4: Investigate the implementation of a fire-based ALS response capability within the City of Lincoln.**

**Description:** ALS paramedics respond to medical emergencies in Lincoln primarily through AMR via the Placer County Ambulance EOA. AMR response times have increased, which requires an LFD unit to remain at the incident until an ALS unit arrives.

**Outcome:** This initiative could begin with a paramedic-staffed squad responding from Station 34 and could eventually expand to include paramedic-staffed engine companies at every LFD fire station across the city. LFD will need to collaborate with S-SV EMS when considering implementing an LFD-based ALS program. An LFD-based paramedic response option would greatly reduce critical response times and return other assisting LFD units to service faster.

**Estimated Cost:** Adding firefighter-paramedic personnel to the existing LFD staffing through new hires or training current fire personnel as paramedics.

### **Recommendation A-5: Develop a schedule to inspect all commercial occupancies.**

**Description:** There is currently no set schedule for inspecting all commercial occupancies in Lincoln. Without a schedule, properties might have fire code violations that could put occupants at risk. The current staffing levels do not permit regular inspections of businesses that are not mandated to be inspected.

**Outcome:** Creating an inspection schedule based on risks will improve the safety of the building's occupants and responding LFD personnel while reducing community fire and life safety hazards.

**Estimated Cost:** The initial costs include staff time needed to identify all commercial properties in the service area. Additional expenses might arise later if current staffing levels are insufficient for scheduling inspections of all commercial occupancies.

### **Recommendation A-6: Develop a Quality Control process to review incident times.**

**Description:** LFD has set goals for call processing, turnout, and response times for incidents but lacks a formal policy or procedure for conducting quality control reviews of fire incidents.

**Outcomes:** Creating a quality control (QC) program for incident reporting will help ensure that the data recorded in LFD's records management system is accurate and reliable for proper analysis. Accurate data can inform LFD if calls for service exceed available resources.

**Estimated Costs:** Staff time is required to develop a program and review the data once it is established.

### **Recommendation A-7: Develop a Department Vision Statement.**

**Description:** A vision statement encapsulates what department members value most about their LFD and shares a common picture of their hopes for the department's future. This statement encourages LFD members to work together to achieve the vision.

**Outcome:** The LFD vision statement should define the organization's future direction. Turning visions into daily operations takes time. The impact of visions on any department can vary from significant to minimal. Usually, smaller departmental visions are more achievable. Sometimes, multiple smaller visions work together to support a larger, overarching vision.

**Estimated Cost:** Administrative staff time.

**Recommendation A-8: Continue to develop and adopt department SOGs and migrate them into Lexipol as approved.**

**Description:** SOGs are formal written guidelines or instructions for incident response. They usually include operational and technical elements, enabling fire personnel and emergency responders to coordinate effectively across different disciplines during an emergency.

**Outcome:** SOGs are crucial for effective incident response. Well-defined and efficient SOGs are vital for developing and executing any emergency response plan.

**Estimated Cost:** Staff time.

**Recommendation A-9: Institute a competency-based approach to training department-wide.**

**Description:** All the essential skills of the LFD's personnel must be documented to define the expected performance standards. This includes skills such as hose handling, apparatus operation, EMS procedures and protocols, equipment and tool usage, forcible entry, ventilation, tactics, strategy, and others.

**Outcome:** Using a competency-based approach to training allows the department to deliver a program that not only evaluates the essential skill levels of fire personnel but also helps improve firefighters' experiences as they advance in their careers. Once competencies are defined, a system for assessing skill development toward these standards will need to be put into place.

Competency is acknowledged when thorough training and evaluation records for a specific skill performed by the firefighter clearly show that all the defined competency requirements of the standard have been satisfied.

**Estimated Cost:** Administrative, training, and firefighter staff time.

**Recommendation A-10: Develop an Annual Training Plan.**

**Description:** An annual training plan should be based on or modified using the following criteria:

- Periodic training needs assessments
- Defined annual program goals based on a needs assessment
- Specific delivery objectives, addressing program goals
- A process of performance measuring and monitoring

- Periodic re-evaluation and modification
- Pre-incident planning

**Outcome:** Safety remains the top priority in training. Proper planning sets the training standards for a fiscal or calendar year. Developing a comprehensive program helps departments meet specific training requirements while effectively tracking training hours. An effective annual training plan promotes consistency within a department and allows firefighters to gradually improve their skills. Maintaining skill retention is essential, ensuring that the knowledge and abilities gained from training sessions grow over time rather than merely being a checkmark.

**Estimated Cost:** Administrative and Training Staff time.

### **Recommendation A-11: Develop Performance Goals for Incident Response.**

**Description:** Performance goals for a fire department include setting clear, measurable objectives that align with the department's mission, improve operational efficiency, ensure firefighter safety, enhance community risk reduction, and support ongoing training and professional growth.

**Outcomes:** Establishing performance goals for a fire department enhances outcomes because these goals provide clear direction and measurable benchmarks that guide daily operations, improve accountability, and ensure efficient resource use. By setting specific objectives, departments can concentrate on critical areas like response times, training, equipment readiness, and community risk reduction. This organized approach promotes ongoing improvement, supports data-driven decision-making, and helps identify and address performance gaps. Ultimately, it results in better service delivery, greater firefighter preparedness and safety, and increased public trust in the department's ability to protect the community.

**Estimated Costs:** The costs are minimal, but staff time is required to develop the goals and have the City to adopt them.

### **Recommendation A-12: Develop benchmarks for the 911 Center and Increase Staffing.**

**Description:** Benchmarks and adequate staffing are essential to the performance and reliability of a 911 Center, providing a structured foundation for evaluating success and ensuring that critical emergency services are delivered efficiently and effectively. Benchmarks establish clear performance standards, including call answer times, dispatch times, and response coordination, which help determine whether the center meets its operational goals. These metrics allow leadership to identify strengths and weaknesses, enabling data-driven decisions that support targeted improvements. Proper staffing guarantees enough trained personnel to handle the volume and complexity of emergency calls without delays or mistakes. When staffing levels match demand, it reduces burnout, minimizes errors, and boosts morale, improving service delivery. Additionally, it offers flexibility during peak times or major incidents to ensure the center maintains high performance even under stress. Currently, no benchmarks have been adopted for the 911 Center, and staffing becomes strained when a dispatcher is unavailable to work a shift or needs to take a break.

**Outcomes:** Benchmarks are typically based on national standards and best practices established by organizations such as the National Emergency Number Association (NENA), APCO International, and the NFPA. Tracking call answering and processing times is essential to ensure that callers are not left waiting on hold for a dispatcher or emergency services. The city might consider partnering in a Joint Powers Authority (JPA) to operate a shared center with other local governments.

**Estimated Costs:** A dispatcher's projected salary and benefits are expected to total \$87,500. The cost of joining a JPA is unknown and would require additional information to determine the City's expense.

## Recommended Mid-Term Strategies

The mid-term strategies are progressive enhancements of the current conditions. Many will likely require three to five years to accomplish.

### **Recommendation B-1: Consider implementing a First Responder Fee**

**Description:** Although LFD does not offer ambulance transportation services, its resources are usually the first to respond to emergency medical incidents. A First Responder Fee (FRF) allows an agency to recover part of the costs related to providing emergency response and patient care outside of an ambulance transport scenario.

**Outcome:** An FRF should be based on the actual costs of providing services, including staff, apparatus, equipment, and supplies. Implementing an FRF would enable FFD to recover a portion of these costs.

**Estimated Cost/Revenue:** Although calculating an FRF is beyond the scope of this study, AP Triton could assist with this calculation in the future.

### **Recommendation B-2: Develop a dedicated Fire Training Facility**

**Description:** The department does not have a dedicated training facility, which should include a classroom, training props, and a tower. NFPA 1402 recommends that fire training facilities cover at least two acres, feature a three-story tower, and support live fire training.

**Outcome:** An NFPA 1402-compliant facility might not be feasible in the short term, but the need remains based on AP Triton's assessment of the department's needs. LFD should start developing both short- and long-term strategies for either co-locating a training center beside Station 34 or the new fire station planned for Village 5A. Consider including a law enforcement component in the training facility.

**Estimated Cost:** Administrative staff time, the formation of a department-wide Fire Training Center planning committee, and a contract for planning efforts involving engineering and architectural consulting services; the cost could be between \$50,000 and \$75,000.

### **Recommendation B-3: Develop a Capital Replacement Program.**

**Description:** A fire department capital replacement program is a well-organized plan that defines how and when the department will replace key capital assets, such as fire apparatus, emergency vehicles, fire stations, communication systems, protective gear, and other vital infrastructure. This program is created based on the expected lifespans of equipment, manufacturer guidelines, maintenance records, industry standards, and operational requirements. It includes specific timelines, budget estimates, and funding plans to make sure the department can efficiently upgrade or replace aging or outdated assets before they fail or become unreliable.

The capital replacement program supports long-term budgeting and financial planning by estimating future needs and aligning them with available resources. It also helps maintain operational readiness by ensuring personnel have access to safe, functional, and current equipment. The program can be reviewed and updated regularly to reflect changes in service demand, technological advancements, wear-and-tear patterns, or shifts in strategic priorities. Ultimately, the capital replacement program is vital to a fire department's overall asset management strategy and helps maintain service quality, safety, and fiscal responsibility.

**Outcome:** By forecasting and budgeting for replacements, the department and city can reduce the financial burden of emergency purchases and ensure resources are allocated efficiently. A capital replacement program also supports firefighters and public safety by ensuring that equipment meets modern standards and performs effectively during emergencies. Additionally, maintaining a well-documented and consistently followed program demonstrates fiscal responsibility and accountability to the community and city leadership, which is vital for maintaining public trust and support. This proactive approach aligns the department's capabilities with current and future service needs.

Due to their age and condition, two of the three Wildland apparatus and the existing Water Tender should be evaluated for potential replacement. LFD's reserve utility vehicles, which are reportedly over 20 years old, are scheduled for replacement in the 2024–25 budget cycle. Planning for the financial impacts of these replacements is essential to ensure that LFD can acquire the assets on time.

**Estimated Cost:** Time needed for staff to categorize assets for the replacement schedule and to estimate the costs to replace those assets.

## Recommended Long-Term Strategies

The long-term strategies are progressive enhancements of the current conditions. Many will likely require five to fifteen years to accomplish.

### **Recommendation C-1: Create a renovation or replacement capital fund for its facilities.**

**Description:** A capital fund is designed to finance upgrades to existing facilities and the building of new ones. A fire station usually lasts 50 to 75 years, assuming all major parts are properly maintained. However, this period might not consider updates to building and fire codes that improve safety or advances in construction techniques.

**Outcome:** A designated fund enables the City to allocate a budget and plan for renovations in advance of emergency repairs, avoiding any negative impact on the fund balance or the LFD annual budget. The fund also aims to replace existing fire stations and build new ones. New fire stations are critical due to growth or high call volumes that strain current service levels.

**Estimated Cost:** Depending on the final design, building a new fire station may cost between \$1,300 and \$1,500 per square foot. The fire department's annual budget should include sufficient fund transfers to support the improvement and replacement fund for this facility.

---

## **Section VI: APPENDICES**

---

## Strategic Partners—Stakeholder Interviews

### Introduction to the Stakeholder Interviews

As part of this assessment, AP Triton conducted interviews with a broad range of internal and external stakeholders associated with the City of Lincoln Fire Department. The purpose of these interviews was to gain a deeper understanding of the current challenges, concerns, and expectations related to the City's emergency service delivery system. Discussions also explored opportunities for improved collaboration, shared services, and alignment with community needs.

The insights collected during this process represent the perspectives of individuals and groups interviewed—referred to as “people inputs.” These inputs often reflect perceptions and personal experiences rather than independently verified facts. All information was taken at face value and reviewed collectively for consistency, recurring themes, and frequency of mention. The project team utilized this information to identify trends, confirm observations across multiple sources, and determine which findings were substantial enough to be included in this report.

Stakeholders were drawn from the following categories:

- Elected Officials
- City Management
- Department Heads
- Business and Community Leaders
- Community Members and Volunteers
- Fire Department Chief Officers
- Labor Representatives
- Rank-and-File Personnel
- Administrative Staff

The observations and recommendations presented in this section are based on patterns that emerged during the stakeholder engagement process and were deemed relevant and significant to the department's current and future service planning.

**Elected Officials, City Management, Department Heads****What strengths contribute to the success of the fire department?**

- Leadership
- Developing a plan for the future
- Dedicated staff

**What does the department do well?**

- Respond to emergencies
- Good communications
- Community player

**What are some areas in which you think the department could make improvements?**

- Succession planning
- More human resources involvement

**What opportunities, in your view, are available to improve the service and capabilities of the fire department?**

- More community involvement
- On-duty battalion chief

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

- Growth
- Staffing
- Funding

**If you could change one thing in the fire department, what would it be?**

- How to fund staffing on the engines
- A little more community involvement, but they do a good job

**How would you describe the level of services provided by the fire department?**

- Excellent
- Great staff
- Team players

**What, in your opinion, are some opportunities to improve service and or coordination within the county?**

- Continue with the automatic and mutual aid system

**Business and Community Leaders, Community Members, and Community Volunteers****Can you please describe your expectations of LFD?**

- Provide service in a timely manner
- Have good equipment

**What of these expectations is not met to your satisfaction?**

- None

**What do you think the fire department is doing particularly well?**

- Providing emergency response
- Community involvement

**Are there services that you think the Department should be providing that they are not now?**

- More advanced medical care

**Are there services the Department is providing that you think should be discontinued or done differently?**

- No

**When you dial 9-1-1 to report an emergency, how long should it take for help to arrive?**

- 6 minutes
- 5 minutes

**Does that expectation change depending on where in the community you are located?**

- No
- There may be a difference depending on how far you are from a fire station.

**Chief Officers, Labor Leaders, Rank & File, Administrative Staff****What strengths and successes best define LFD today?**

- Leadership
- 3-0 staffing on the engines
- Good labor/management relationship

**What are the key areas that need attention or improvement within the department?**

- Additional staff for training
- Ability to provide better emergency medical care
- More supervision on the shifts – Need a battalion chief
- Will need a logistics person and more administrative support as the department grows

**What opportunities do you believe exist to improve department effectiveness or community service?**

- Consider advanced life support at some point in the future
- A dedicated fire marshal
- More fire and injury prevention programs
- Dedicated emergency management position

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

- Staffing is needed to keep up with existing and future demand
- Growth will occur with Village 5A and other development in the city
- Funding to build fire stations, purchase new apparatus, and increase staffing

**If you could change one thing in the department, what would it be?**

- Maybe add advanced life support for medical calls
- Plan to upgrade the oldest fire station

**How would you describe the level of service provided by the fire department?**

- We do more with less
- Provide an excellent service based on staffing and funding

## Appendix B: 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. A single fire apparatus and crew is required to manage fires involving passenger vehicles, fences, trash or dumpsters, downed power lines, residential or commercial alarm investigations, or odor investigations.

#### Moderate Risk

These incidents are the first alarm response needed to manage a moderate fire risk incident. They include smoke in a building, small outside building fires, commercial vehicle fires, a single-family residence fire, 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. They include smoke in a high-life hazard property (school, skilled nursing, etc.), a single-family residence with injured or trapped victims, a multi-family residential building, 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, no 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 one or two 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 minor 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 required from 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 required from a specialized technical rescue team and may have multiple operations 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. A hazardous materials team usually does not require direct support. 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 that does not threaten 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, including 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 C: Table of Figures

Figure 1: Lincoln, California .....	2
Figure 2: Population Density of Lincoln (2024) .....	3
Figure 3: LFD Organization Chart (2024) .....	6
Figure 4: LFD Response Area.....	7
Figure 5: Mutual & Automatic Aid Resources Available to LFD .....	8
Figure 6: Mutual & Automatic Aid Fire Stations .....	9
Figure 7: FY 2021–FY 2025 Revenue .....	12
Figure 8: FY 2021–FY 2025 Expenses for LFD.....	12
Figure 9: Overtime Percentage of Salary Expense .....	13
Figure 10: Planning for the Future .....	19
Figure 11: LFD Staffing.....	25
Figure 12: Critical Task Analysis—Risk Level Description.....	30
Figure 13: Critical Task Analysis—Low Fire Risk .....	31
Figure 14: Alarm Assignments—Low Fire Risk Incident .....	31
Figure 15: Critical Task Analysis—Moderate Fire Risk.....	32
Figure 16: Alarm Assignments—Moderate Fire Risk Incident .....	32
Figure 17: Critical Task Analysis—High Fire Risk .....	33
Figure 18: Alarm Assignments—High Fire Risk Incident.....	33
Figure 19: Critical Task Analysis—Maximum Fire Risk .....	34
Figure 20: Alarm Assignments—Maximum Fire Risk Incident .....	34
Figure 21: Critical Task Analysis—Low EMS Risk .....	35
Figure 22: Alarm Assignments—Low EMS Risk Incident .....	35
Figure 23: Critical Task Analysis—Moderate EMS Risk.....	36
Figure 24: Alarm Assignments—Moderate EMS Risk Incident .....	36
Figure 25: Critical Task Analysis—High EMS Risk .....	37
Figure 26: Alarm Assignments—High EMS Risk Incident .....	37
Figure 27: Critical Task Analysis—Maximum EMS Risk .....	38
Figure 28: Alarm Assignments—Maximum EMS Risk Incident .....	38
Figure 29: Critical Task Analysis—Low Wildland Risk .....	39
Figure 30: Alarm Assignments—Low Wildland Risk Incident .....	39
Figure 31: Critical Task Analysis—Moderate Wildland Risk.....	40

Figure 32: Alarm Assignments—Moderate Wildland Risk Incident.....	40
Figure 33: Critical Task Analysis—High Wildland Risk .....	41
Figure 34: Alarm Assignments—High Wildland Risk Incident .....	41
Figure 35: Critical Task Analysis—Low Technical Rescue Risk .....	42
Figure 36: Alarm Assignments—Low Technical Rescue Risk Incident .....	42
Figure 37: Critical Task Analysis—Moderate Technical Rescue Risk.....	43
Figure 38: Alarm Assignments—Moderate Technical Rescue Risk Incident.....	43
Figure 39: Critical Task Analysis—High Technical Rescue Risk .....	44
Figure 40: Alarm Assignments—High Technical Rescue Risk Incident .....	44
Figure 41: Critical Task Analysis—Maximum Technical Rescue Risk .....	45
Figure 42: Alarm Assignments—Maximum Technical Rescue Risk Incident .....	45
Figure 43: Critical Task Analysis—Low HazMat Risk.....	46
Figure 44: Alarm Assignments—Low HazMat Risk Incident .....	46
Figure 45: Critical Task Analysis—Moderate HazMat Risk .....	47
Figure 46: Alarm Assignments—Moderate HazMat Risk Incident.....	47
Figure 47: Critical Task Analysis—High HazMat Risk.....	48
Figure 48: Alarm Assignments—High HazMat Risk Incident .....	48
Figure 49: Critical Task Analysis—Maximum HazMat Risk.....	49
Figure 50: Alarm Assignments—Maximum HazMat Risk Incident .....	49
Figure 51: Critical Task Analysis—Low ARFF Risk.....	50
Figure 52: Alarm Assignments—Low ARFF Risk Incident .....	50
Figure 53: Critical Task Analysis—Moderate ARFF Risk .....	51
Figure 54: Alarm Assignments—Moderate ARFF Risk Incident.....	51
Figure 55: Critical Task Analysis—High ARFF Risk .....	52
Figure 56: Alarm Assignments—High ARFF Risk Incident .....	52
Figure 57: Critical Task Analysis—Maximum ARFF Risk.....	53
Figure 58: Alarm Assignments—Maximum Fire Risk Incident .....	53
Figure 59: Criteria Utilized to Determine Fire Station Condition.....	55
Figure 60: LFD Station 33.....	56
Figure 61: LFD Station 34.....	57
Figure 62: LFD Station 35.....	58
Figure 63: Summary of FFD Fire Stations .....	59
Figure 64: Criteria Used to Determine Apparatus & Vehicle Condition .....	61

Figure 65: Apparatus Inventory.....	62
Figure 66: Command & Staff Vehicles .....	62
Figure 67: NFPA 1730 Inspection Frequency.....	71
Figure 68: Occupancy Classifications.....	72
Figure 69: The Community Risk Assessment Process.....	75
Figure 70: FEMA & USFA's National Fire Service Professional Development Model .....	76
Figure 71: LFD Training Hours (2024).....	80
Figure 72: Data Skew .....	87
Figure 73: LFD Data Skew Evaluation .....	88
Figure 74: Total Incident Count (FY2021–FY2024) .....	90
Figure 75: Total Incident Density (FY2021–FY2024) .....	91
Figure 76: Rescue-Medical (300) Incident Density (FY2021–FY2024) .....	92
Figure 77: Fire (100) Incident Distribution (FY2021–FY2024) .....	93
Figure 78: Top Five Most Common Incident Locations (FY2021–FY2024) .....	94
Figure 79: Annual Incident Volume (FY2021–FY2024) .....	94
Figure 80: Monthly Call Percentage (FY2021–FY2024) .....	95
Figure 81: Incident Volume by Day of the Week (FY2021–FY2024).....	95
Figure 82: Incident Heat Map by Month and Weekday (FY2021–FY2024) .....	96
Figure 83: Incident Volume by Hour (FY2021–FY2024) .....	97
Figure 84: Incident Density by Hour & Day of Week (FY2021–FY2024) .....	98
Figure 85: 5 Mile Travel Distance from All Stations.....	100
Figure 86: 1.5 Mile ISO Engine Coverage .....	102
Figure 87: Incident Volume by Apparatus Type (FY2021–FY2024) .....	103
Figure 88: Incident Volume by Frontline Engine (FY2021–FY2024).....	104
Figure 89: Average Incident Commit Time by Apparatus (FY2021–FY2024) .....	105
Figure 90: UHU and Average Responses (FY2021–FY2024) .....	106
Figure 91: Incident Concurrency FY2024 .....	107
Figure 92: Incident Metrics Table .....	109
Figure 93: Call Processing by Incident Type (FY2021–FY2024) .....	111
Figure 94: Call Processing by Hour with Volume Reference (FY2021–FY2024) .....	112
Figure 95: Turnout Time by Apparatus Type and Incident Category (FY2021–FY2024) .....	113
Figure 96: Turnout Time by Shift (FY2021–FY2024) .....	114
Figure 97: Turnout Time by Hour with Workload Reference (FY2021–FY2024) .....	115

Figure 98: 4 & 8 Minute Modeled Travel Times .....	116
Figure 99: Incidents and CAD Response Zones (FY2021-FY2024) .....	118
Figure 100: First-Due Travel by Type & Zone (FY2021–FY2024) .....	119
Figure 101: Annual Travel Time Performance by Type (FY2021–FY2024) .....	120
Figure 102: Travel Time by Hour with Workload Reference (FY2021–FY2024).....	121
Figure 103: First Three Units Travel Time (FY2021–FY2024) .....	122
Figure 104: Effective Response Force—8 Minute Travel Time.....	123
Figure 105: Total Time by Incident Category (FY2021–FY2024) .....	125
Figure 106: Total Response Time by Hour (FY2021–FY2024) .....	125
Figure 107: Total Response Time by District and Year (FY2021–FY2024) .....	126
Figure 108: Fire Incident Evaluation Chart .....	127
Figure 109: 20-Year Population Trends with 95% Confidence Bands .....	129
Figure 110: Population Distribution (Future) .....	130
Figure 111: Service Demand Projection to 2033 with 95% Confidence Bands .....	131
Figure 112: Growth versus Reflex Time .....	134
Figure 113: Cardiac Arrest Sequence .....	135
Figure 114: Population Estimates (2014–2024) .....	140
Figure 115: Population Density .....	141
Figure 116: Age Risks.....	143
Figure 117: Gender Percentage by Age .....	144
Figure 118: Population with a Disability .....	145
Figure 119: Language Barriers.....	146
Figure 120: Population in Poverty .....	147
Figure 121: Population without Insurance.....	148
Figure 122: Education Levels.....	149
Figure 123: Race and Ethnicity .....	150
Figure 124: Owner and Renter Occupied Housing.....	151
Figure 125: Age of Housing .....	152
Figure 126: Housing Units per Building .....	153
Figure 127: Average Monthly High Temperatures (2011–2023) .....	154
Figure 128: Average Monthly Low Temperature (2011–2023) .....	155
Figure 129: National Weather Service Heat Index Chart.....	156
Figure 130: Average Monthly Wind Speeds (2011–2023) .....	157

Figure 131: Wind Rose.....	157
Figure 132: Average Monthly Precipitation (2011–2023) .....	158
Figure 133: Drought Conditions .....	159
Figure 134: Local Responsibility Areas .....	163
Figure 135: Fire Hazard Severity Zones.....	164
Figure 136: Flood Risks.....	166
Figure 137: Seismic Hazards .....	168
Figure 138: Hazardous Materials Tier II Locations.....	171
Figure 139: Major Roadways.....	173
Figure 140: Energy Systems.....	175
Figure 141: Rail Lines and Crossings.....	176
Figure 142: Hydranted Area.....	178
Figure 143: Wastewater Treatment Facility .....	179
Figure 144: Communication Facilities .....	181
Figure 145: Regional Housing Needs Allocation (2021–2029) .....	184
Figure 146: City of Lincoln Zoning .....	186
Figure 147: Project Student for the Village and Infill Development .....	188
Figure 148: School Locations.....	188
Figure 149: Assembly Occupancies .....	190
Figure 150: Clinical Facilities and Hospitals .....	192
Figure 151: Congregant Care/Nursing Homes .....	193
Figure 152: Multi-Family Housing Units .....	195
Figure 153: Buildings Three Stories or More.....	196
Figure 154: Buildings 20,000 Square Feet and Greater .....	197
Figure 155: Buildings with Large Fire Flows (> 2,500 gallons per minute) .....	198
Figure 156: ISO Earned & Available Credits for LFD .....	199
Figure 157: California ISO Classifications.....	200
Figure 158: Three-Axis Risk Classification Process.....	202
Figure 159: Three Axis Scoring .....	203
Figure 160: Probability or Likelihood of Occurrence .....	203
Figure 161: Consequence to the Community .....	204
Figure 162: Impact on Operational Forces.....	204
Figure 163: Fire Response Risk Assessment .....	205

Figure 164: Fire Three-Axis Risk Classifications .....	205
Figure 165: EMS Response Risk Assessment .....	206
Figure 166: EMS Three-Axis Risk Classifications .....	206
Figure 167: Technical Rescue Response Risk Assessment .....	207
Figure 168: Technical Rescue Three-Axis Risk Classifications .....	207
Figure 169: Hazardous Materials Response Risk Assessment .....	208
Figure 170: Hazardous Materials Three-Axis Risk Classifications .....	208
Figure 171: Wildland Fires Response Risk Assessment .....	209
Figure 172: Wildland Fires 3-Axis Risk Classifications .....	209
Figure 173: ARFF Response Risk Assessment .....	210
Figure 174: ARFF Risk Classifications .....	210
Figure 175: LFD Property Loss .....	211
Figure 176: Fires per 1,000 Population .....	211
Figure 177: Intentionally Set Fires (2021–2023) .....	212
Figure 178: Initial Engine Company Salary and Benefits Estimate .....	217
Figure 179: Study Area with Future Fire Stations .....	218
Figure 180: 1.5-Mile Travel - Extended .....	219