

Independence Fire Department

Missouri

September 2022

Community Risk Assessment Standard of Cover Analysis Master Plan

Dec 1, 2022

FINAL REPORT

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ACKNOWLEDGEMENTS

ESCI wishes to thank the Independence City Council and staff for their invaluable support and time in completing this project.

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...and the rest of the members of the Independence Fire Department who selflessly serve their citizens and visitors with compassion and professionalism.

EXECUTIVE SUMMARY

In April of 2022, the City of Independence was successful with a voter initiative that raised its fire protection sales tax rate from .125% to .5% for purposes of raising revenue to improve fire protection services across the city. This improvement could be new or relocated fire stations and additional units and staff. Beginning in 2023, this revenue increase was expected to be over \$6 million annually.

ESCI was asked to provide insight on the following items:

- Evaluate current operational service delivery.
- Identify future service delivery needs.
- Provide recommendations for operational service delivery.
- Provide recommendations on fire station upgrades and locations.

In February of this year, department staff provided answers to ESCI posed questions as well as provided dozens of documents that provided detailed characteristics of the department and community. In late March, ESCI staff were onsite and met with a variety of stakeholders over a two day period followed by a few Zoom meetings. Meetings included senior department leadership, union leadership, and city administration staff. ESCI also took brief tours of the existing stations to get a first-hand look at the status of the existing stations.

As a result of these efforts, ESCI is providing 45 recommendations, 24 major and 21 minor. Since the main focus of the study was on the sales tax increase funding impact on the department, the following are the major funding-oriented elements of our assessment:

- Build a new fire station near Rte 291 and East 39th St South and staff it with a new 4-person pumper (Pumper 11)
- Move Station 9 farther south (details in report) and move Station 10 farther west (details in report)
- Rebuild Stations 5, 6, and 8; Station 8 could be combined with a rebuilt training facility
- Upgrade and add an addition to Station 2
- Add an additional two person rescue unit (Rescue 3) to be stationed at Station 7
- Move Rescue 2 to Station 5
- Add a second shift battalion chief
- Add two full-time training officers

The complete major and minor recommendations are below in the sequence of the report. The major recommendations are in bold.

Recommendation 1: Continue to bi-annually update 5-yr strategic plan and review the mission and vision statements.

Recommendation 2: Review/update 1/3 of department policies annually so that all policies are reviewed every three years.

Recommendation 3: Create meeting minutes of senior staff meetings that shift battalion chiefs can use to distribute identical messages to lower staff.

Recommendation 4: Consider annual or bi-annual officer sessions to allow senior leadership to have greater interaction with first-line supervisors.

Recommendation 5: Re-engage media presence and/or regular public communication and dialog.

Recommendation 6: Set an ISO rating of '1' to be achieved within the next three years.

Recommendation 7: Consider pursuing accreditation from the Center for Public Safety Excellence.

Recommendation 8: Management and labor agree to pursue elements of organizational strategic plans collaboratively.**Recommendation 9: Management and labor identify how elements of tradition can be maintained while pursuing new models of community service.**

Recommendation 10: Implement a formal employee/member recognition program.

Recommendation 11: Consider conducting exit interviews, periodic employee surveys, and other mechanisms to acquire feedback from members.

Recommendation 12: Conduct periodic skills testing for all personnel commensurate with their position in the department through the Training Division.**Recommendation 13: With union collaboration, IFD should implement an annual/bi-annual physical fitness evaluation.**

Recommendation 14: Develop and implement a formal succession plan for senior leadership.

Recommendation 15: Add an additional battalion chief per shift.**Recommendation 16: Create a joint committee of police and fire representatives that gives equal voice to both disciplines within the communications center and allows a collaborative approach to dispatch operations.****Recommendation 17: Establish an electronic interface between IFD and AMR computer systems to exchange incident data.**

Recommendation 18: With the exception of accidents and rescues, IFD call-takers should immediately transfer EMS calls to AMR.

Recommendation 19: - Consider operational changes that would provide for ALS service on all ALS potential calls.

Recommendation 20: Change AMR approval process from a permit to a contract that spells out specific performance standards and provides accountability.

Recommendation 21: Add staffing to the training division to assist in the development and delivery of a comprehensive training program.

Recommendation 22: Utilize formal lesson plans for department training activities.

Recommendation 23: Develop a formal training program that includes an annual training plan. This plan should cover the needs of new members and incumbent members. Consider revising SOP 601: Fire Department Training Program.

Recommendation 24: Establish as a part of department succession planning including opportunities to attend the required courses.

Recommendation 25: Modernize IFD's training facility.

Recommendation 26: Consider the creation of a fire investigation team that includes arson investigators from the police department.

Collaborate with local law enforcement to formalize the procedures when handling fire investigations that involve, or suspect to involve, arson or other criminal matters.

Recommendation 28: Develop and implement a comprehensive pre-plan process that allows rapid retrieval of pre-plans during an emergency incident.

Recommendation 29: Create benchmarks for each aspect of the fire prevention program. Measure these data points and establish goals related to them. This will provide relevant and measurable outcomes for each fire prevention program.

Recommendation 30: Review and possibly update the SOP 208: Hazardous Materials.

Recommendation 31: Review the current capabilities of the IFD Haz-Mat Team. Consider expansion and/or adding mutual aid capabilities.

Recommendation 32: Ensure all Haz-Mat training completed by IFD members meets the appropriate standards set by IFD, particularly when the training is completed by outside agencies.

Recommendation 33: Review current inventories of equipment and budget for replacement.

Recommendation 34: Consider expanding the ability to provide other technical rescue services as needed within the city. This would include increasing the level of certification in confined space rescue to the operations and/or technician level and adding additional disciplines.

Recommendation 35: Develop a complete database of all high risk/high impact facilities in the IFD service area.

Recommendation 36: Develop response plans for all non-facility risks (transportation systems and weather extremes) that are high impact risks.

Recommendation 37: Develop and publish an Independence Fire Department Standards of Cover.

Recommendation 38: Build a new station 11 near I-470 and E 39th St South and staff it per contractual staffing.

Recommendation 39: Move Station 9 to the Rte 7/Coon Rd area and move Station 10 to the E Rd Mize Rd and Eureka Rd area.

Recommendation 40: Rebuild Station 8 at/near its existing location

Recommendation 41: Consider the addition of an additional truck company (Truck 3) to be located at Station to cover the east side of the city.

Recommendation 42: Rebuild Stations 5 and 6 at/near their existing locations.

Recommendation 43: Rebuild a combined Station 8 and an IFD training facility.

Recommendation 44: Add a third rescue unit.

Recommendation 45: With the addition of a third rescue, reconfigure the rescue station configuration from Stations 1 and 2 to Stations 1, 5, and 7.

INTRODUCTION

In early 2022, the City of Independence contracted ESCI to develop a Community Risk Assessment/Standards of Cover combined with a Fire Department Master Plan that focused on fire station infrastructure. The project had four primary deliverable sections:

1. **Evaluate current operational service delivery.** Using information provided by Independence Fire Department, ESCI was tasked with establishing an informational baseline, benchmarking emergency operations performance, and providing a detailed analysis of existing conditions and emergency operations.
2. **Identify future service delivery needs.** ESCI was tasked with providing a basic Community Risk Assessment to identify potential service gaps and redundancies, considering community expectations, needs, and resources.
3. **Provide recommendations for operational service delivery.** ESCI was tasked with developing recommendations to improve and enhance emergency services delivery for both the intermediate, short-term, and long-term. Where possible, recommendations were to include consideration of cost/benefit analysis, benchmarks, standards, and best practices.
4. **Provide recommendations on fire station upgrades and locations.** ESCI was tasked with evaluating the current fire station infrastructure and consistent with anticipated increased tax revenues make recommendations on fire station upgrades and locations.

Section I

EVALUATION OF CURRENT CONDITIONS

SERVICE AREA POPULATION AND DEMOGRAPHICS

The City of Independence is part of the Kansas City Metropolitan area in the State of Missouri and is the county seat of Jackson County. According to the U.S. Census Bureau, the 2020 population is 123,011, an increase of 5.3% from the 2010 population of 116,830 making it the fifth largest city in the state. The city has a total area of 77.57 square miles of land area and lies on the southern side of the Missouri River.

Independence is the eastern neighbor of Kansas City, Missouri, the largest city in the metropolitan area and state and 150 miles west of the state's capitol, Jefferson City. Geographically, it is located in the Missouri Valley and is generally composed of rolling hills, some high and some low, and on the edge of the meteorological "tornado alley", the area of the country with the highest percentage of tornadoes.

There are 48,836 households in Independence with an average of 2.37 persons per household. Of these households, 90.3 percent are listed as a household with a computer and 83.3 percent has having a broadband internet subscription. The 2020 unemployment rate was 5.6 percent in Independence compared to 4.5 percent nationally.

The city has a diverse population. The racial makeup is 78.8 percent White alone; 8.5 percent Black or African American alone; 0.4 percent American Indian and Alaska Native alone; 1.4 percent Asian alone; 1.5 percent Native Hawaiian or Other Pacific Islander alone; 3.9 percent two or more races; 9.3 percent Hispanic or Latino; and 75.3 percent White alone, no Hispanic or Latino.

In the City, the 2020 population was 123,028 and spread out with 6 percent under the age of 5 years, 22.5 percent under the age of 18 years, and 18.2 percent over the age of 65 years, with a median age of 39.5 years. Females account for 52.3 percent of the population. The median household income in 2020 was \$50,797 with 14 percent of the population listed as living in poverty. The education level contains 89.8 percent of the population with at least a high school diploma or equivalent and 20 percent with a bachelor's degree or higher. These demographics represent the customer base that the Independence Fire Department serves in the community.

CITY OF INDEPENDENCE GOVERNANCE AND STRUCTURE

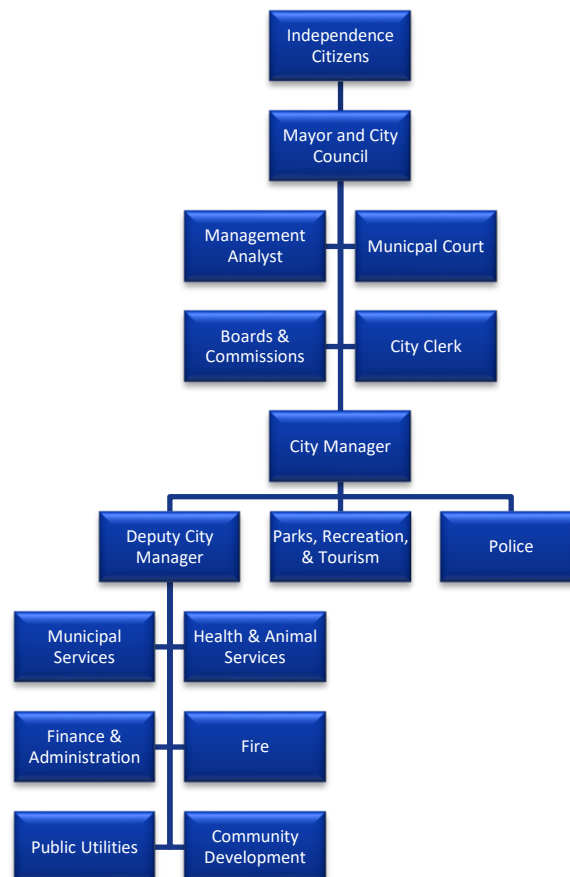
The Independence Fire Department is a department within the city's government, and accountable to the city manager, who is hired by the City Council. The City Council is made up of six elected council members and one mayor who represents the more than 123,000 residents of the city.

The City Council is the primary legislative and policy-making body for Independence. Four of the council members represent each of the four city districts in which they reside. The remaining council member is elected at-large from the entire city residents. They are elected to serve four-year terms.

The City Manager position is the top administrative post in Independence government. The City Manager, along with a Deputy City Manager, is responsible for implementing city policies and directives, leading the preparation of the city budget, and overseeing daily operations all city departments and offices. Furthermore, the administrator manages, through department heads, all city-owned public facilities, as well as their maintenance and safety.

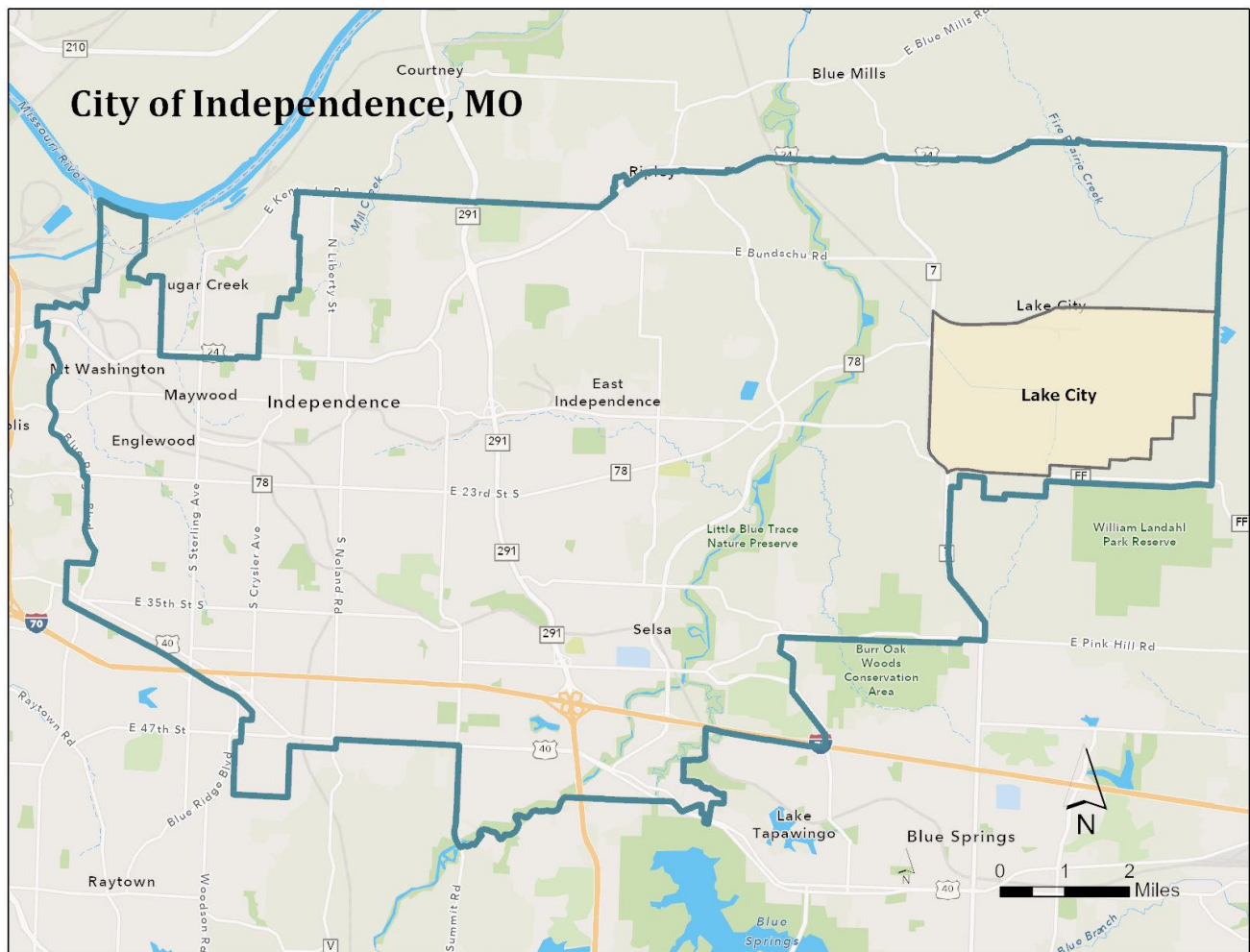
The following figure reflects the organizational structure of the City of Independence.

Figure 1: City of Independence Organizational Chart



The following figure reflects the service area of the Independence Fire Department.

Figure 2: City of Independence Boundaries



Lake City is a United States military installation that is within the city limits of Independence and provides its own fire protection. IFD does not provide service or coverage to the installation unless requested by them.

Organization Overview

The Organizational Overview component provides a summary of agency composition, configuration, and services provided. Data provided by the management staff of the IFD were evaluated. In addition, interviews with line personnel, bargaining unit representatives, supervisory and administrative staff, city administration, and communications staff were combined with information collected in the course of ESCI's fieldwork to develop the following overview.

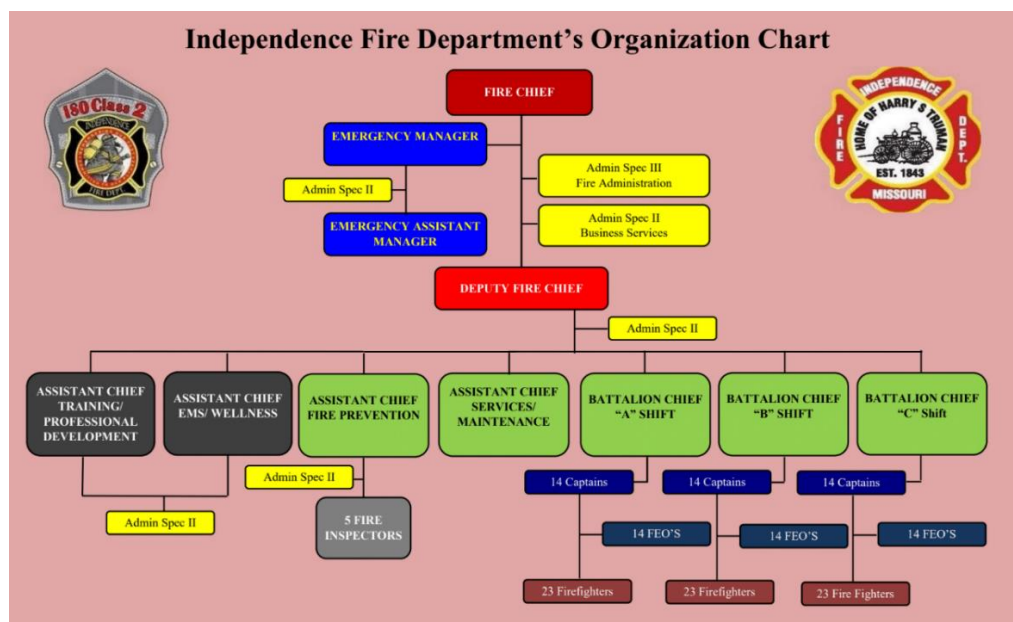
The purpose of this section is two-fold. First, it verifies the accuracy of baseline information along with ESCI's understanding of the agency's composition. This provides the foundation from which the Emergency Services Standards of Cover and Master Plan are developed. Secondly, the overview serves as a reference for the reader who may not be fully familiar with the details of the agency's operations. Where appropriate, ESCI includes recommended modifications to current observations based on industry standards and best practices.

Independence Fire Department Structure

The Independence Fire Department (IFD) was originally incorporated as the Independence Fire Company on February 6, 1843, with paid service dating back as early as 1894. Currently, the IFD has 177 members assigned to one of seven divisions: administration, operations, prevention, services, professional development, emergency medical services, and emergency preparedness. The operations division is the largest division and operates on a 3-platoon system, with each platoon working twenty-four hours on duty followed by forty-eight hours off duty.

The Independence Fire Department organization chart is reflected in the following figure.

Figure 3: IFD Organizational Structure



These professionals have the skills and equipment to respond to structure, brush, and vehicle fires; medical emergencies involving cardiac arrest, respiratory distress, and trauma; vehicle accidents requiring extrication; hazardous materials incidents; technical rescue; natural disasters; and many other emergencies.

Independence has 10 fire stations and 14 fire companies, all located within the city limits of Independence. Each fire company is staffed with a Captain to serve as the supervisor along with a Fire Equipment Operator. Daily minimum staffing is 41 firefighters and officers. It's 2021 budget is \$26,688,951 excluding capital expenditures.

Fire Station #1 serves as the administrative offices and houses the fire prevention division, training division, and emergency management offices. In addition to the fire stations, the fire department also has a multi-purpose live-fire training tower that was built in 2009.

MANAGEMENT COMPONENTS

Effective department management is a complicated and expanding challenge for service leaders. With increasing complexity comes increased cost. Today's department must address management complexities that include an effective organizational structure, setting and measuring levels of service, staying abreast of new technologies and methods, evaluation and maintenance of a qualified force, staff development for effective succession, and financial sustainability for the future.

Foundational Management Elements

To be effective, the management of a department needs to be based on a number of components. These include a clearly stated *mission* (the fundamental purpose of an agency); a *vision* for the future (where is the organization going); and the *values* or *guiding principles* (how will the organization treat its members, as it navigates from its current state to its desired future state). From these fundamental elements, the organization evaluates the environment it operates within, and establishes a series of strategic initiatives, goals, and objectives. These elements combine to form a strategic plan.

Independence Fire Department (IFD) has an established mission and vision statement, which are approximately 8-years old. Both the mission and vision statements are displayed in some of the fire stations and can be found in the Standard Operating Procedures (SOPs) manual.

Mission Statement for the Independence Fire Department:

The Independence Fire Department will meet the challenges of present and future community needs through pro-active leadership, dedication to our core values, provision of quality All-Hazard emergency services, and community risk-reduction strategies in an efficient and effective manner.

Vision Statement of the Independence Fire Department:

To consistently provide high quality services in the most efficient manner for our growing community and be recognized as a leader in providing quality Fire, EMS, and Emergency Preparedness services.

Independence Fire Department Core Values

- **Accountability** – We take responsibility for our actions, and we answer to each other for our actions and our inactions.
- **Compassion** – We genuinely care about the well-being of others. We strive to pursue the procedural goals of the organization while being attentive and sympathetic to the needs of both internal and external stakeholders.
- **Consistency** – We conduct the daily business of the organization fairly and uniformly with everyone. When inconsistencies arise, we will seek to correct them within the context of these Organizational Values.
- **Fairness** – We treat all people equally and make decisions without favoritism or prejudice.
- **Honesty** – We consistently seek and speak the truth. We interact with each other without lying, cheating, stealing, or other forms of deception.

- **Integrity** – We adhere to the high principles and professional standards of the fire service. We do what we say we will do. We strive to always do the right thing and not the easy thing.
- **Professionalism** – We pride ourselves in the delivery of our services. We pursue excellence through personal improvement. We advance our knowledge and skills through continuous training and professional development.
- **Respect** – We value ourselves, as well as the ideas, principles, and property of our internal and external stakeholders. We show appreciation for efforts that have been made for the benefit of others. We seek to understand others, and we extend to others the same rights and privileges we want for ourselves.
- **Service (externally)** – We are dedicated to serving the citizens of Independence, and we are committed to the preservation of life, health, property, and the environment of our community. We serve with honor.
- **Service (internally)** – We are dedicated to serving our co-workers of the City of Independence. We serve with honor.

In addition to the above elements, it is an industry best practice to combine them into a single strategic plan, which creates a workplan and guides the progress of the organization, ensuring organizational energy is invested in the most important initiatives. A strategic plan typically has the following elements:

- Internal and external environmental scan (SWOT analysis).
- Mission, vision, and values (or guiding principles).
- Initiatives, goals, and subordinate objectives with performance metrics or outcome statements.
- Timelines assigned to each objective.
- Manager assigned to each initiative.
- Responsible persons assigned to coordinate achievement of each objective.

The strategic plan establishes timelines for the goals and objectives to be accomplished and assigns them to appropriate personnel to complete. In compiling a strategic plan, the goals and objectives are aligned as prioritized workflow, timelines ensure they stay on track, and the personnel assigned to achieve them are accountable for keeping the work product moving forward. The work is consistent with the mission, propels the agency toward its vision, and the values reinforce how personnel treat each other (culture) in the process of achieving the strategic plan.

While a strategic plan document from 2018 exists, IFD should consider revisiting the strategic planning process to supplement and revise the current plan. The new strategic plan should cover three-to-five years, depending upon the scope of the work involved, and should be approved and adopted by the City Council, which then sanctions the work to be performed in implementing the plan. All non-emergency work that does not align with the strategic plan should be evaluated for its importance, since work not reflected in the strategic plan robs energy away from accomplishing the strategic plan.

Regulatory, Policy, and Guidance Documents

Consistent with other fire and EMS services nationally and even globally, IFD functions in a paramilitary manner. This is to ensure that when personnel are engaged in rapidly changing circumstances in an emergency situation, clear and concise direction from a central authority (Incident Commander) is

followed without delay. Cultural norms tend to relax the formality of this structure during routine operations, but it is nonetheless followed. The paramilitary structure must be supported by standardized set of rules, regulations, and policies that guide appropriate behavior and accountability. These guiding documents are vital for success in all phases of fire department operation and at all levels.

IFD has a complete set of regulatory documents, both guidance and directive in nature. Training is conducted on the IFD policies. There is no specific review schedule for the regulatory documents, but all personnel are able to provide suggestions for approximately quarterly updates. The SOPs are utilized in training evolutions. The regulatory documents are internally reviewed for consistency and for legal mandates.

All of these documents should be reviewed and revised as appropriate on a planned cycle. ESCI recommends that one-third of the documents be reviewed each year so that the complete set is reviewed and revised every three years. IFD has a formal policy, SOP 100 that establishes a formal process for developing new regulations, policies, and guidelines. This should be reviewed.

Critical Issues

Public safety agencies routinely face a complex array of new critical issues and emerging challenges. Some public safety leaders unwisely choose to face these issues and challenges alone and forego the benefits of involving numerous talented and capable members of the organization at all levels. IFD's Fire Chief has listed the following critical issues facing the organization:

- Public Safety Sales Tax-Oversight Committee responsibilities
- Quantity, location, and condition of fire stations
- Sufficient staffing

These items require engaging with IFD leadership, the city manager, and the Oversight Committee to develop strategies to address the use of the sales tax funds in accordance with the recent ballot initiative.

Communication

Community newsletters, media coverage, social media, and websites are the means most commonly employed by organizations to communicate with the public. IFD does not invest considerable time and effort into its internal communication. Staff meetings are held at the Senior Staff Level—Fire Chief, Deputy Chief, Assistant Chiefs, and Battalion Chiefs—and are held twice a month. No written minutes are taken at the staff meetings. Memoranda are utilized as needed. IFD does not have member newsletters or all-member forums. The Fire Chief and his command staff subscribe to an open-door policy and there is a vertical communication path clearly identified (chain of command).

External communication is more dependent upon the broader City by utilizing the department's website and advisory committee. No community newsletter or survey is issued to the citizens. IFD does have a social media presence, however, it is long been inactive and is not updated regularly.

Record Keeping and Documentation

In any organization, documentation of activities is of paramount concern. Sound management decisions cannot be assured without sound data, which is gathered in records routinely.

IFD has implemented sound processes for documentation control. Public records access is provided for in City and department policy. Any hard copy records are secured by lock and key in file cabinets or locked in offices, as well as stored in the City offices. All computer files are backed up within the City network servers and are located off site. Electronic logins are secured by passwords which are assigned to individual users with rights to various documents and files.

IFD provided an annual report at one time, but no such report has been submitted since 2019. All records are kept for patient care reports, exposure records, and hose testing. Self-contained breathing apparatus (SCBA), ladder, pump, and breathing air from the cascade system are contracted to a third party. Vehicle maintenance records are retained by Independence Fleet Services.

Security

Facilities, equipment, and records are all important elements to a fire and emergency services agency. Significant investment of public dollars was made to provide for the services IFD provides to the community. Thus, it is critical that proper precautions are taken to protect those investments and those records from loss, whether intentional or otherwise.

IFD fire department buildings and offices are secured by physical locks and a card access system is in place for access control. IFD's computers are secured inside buildings or vehicles where personnel must have keys to unlock doors and then have a valid username and password to gain access.

Emergency response vehicles are typically stored within a secured facility until responding to alarms, while staff support vehicles under lock and key. Capital inventory is maintained on an inventory list by the Services Division. Internal records are maintained in a records management operating system.

Financial security controls are in place. The City of Independence operates under a Procurement Policy that is in line with Missouri Contracting Statute RSMo., Section 432.070. In addition, an in-depth Internal Controls policy is in place for all Independence city divisions and personnel. These controls are in line with current Governmental Accounting Standards Board (GASB) practices. In addition, an annual audit of all city financials is completed by an independent contractor.

Recommendation 1. Continue to bi-annually update 5-yr strategic plan and review the mission and vision statements.

Recommendation 2. Review/update 1/3 of department policies annually so that all policies are reviewed every three years.

Recommendation 3. Create meeting minutes of senior staff meetings that shift battalion chiefs can use to distribute identical messages to lower staff.

Recommendation 4. Consider annual or bi-annual officer sessions to allow senior leadership to have greater interaction with first-line supervisors.

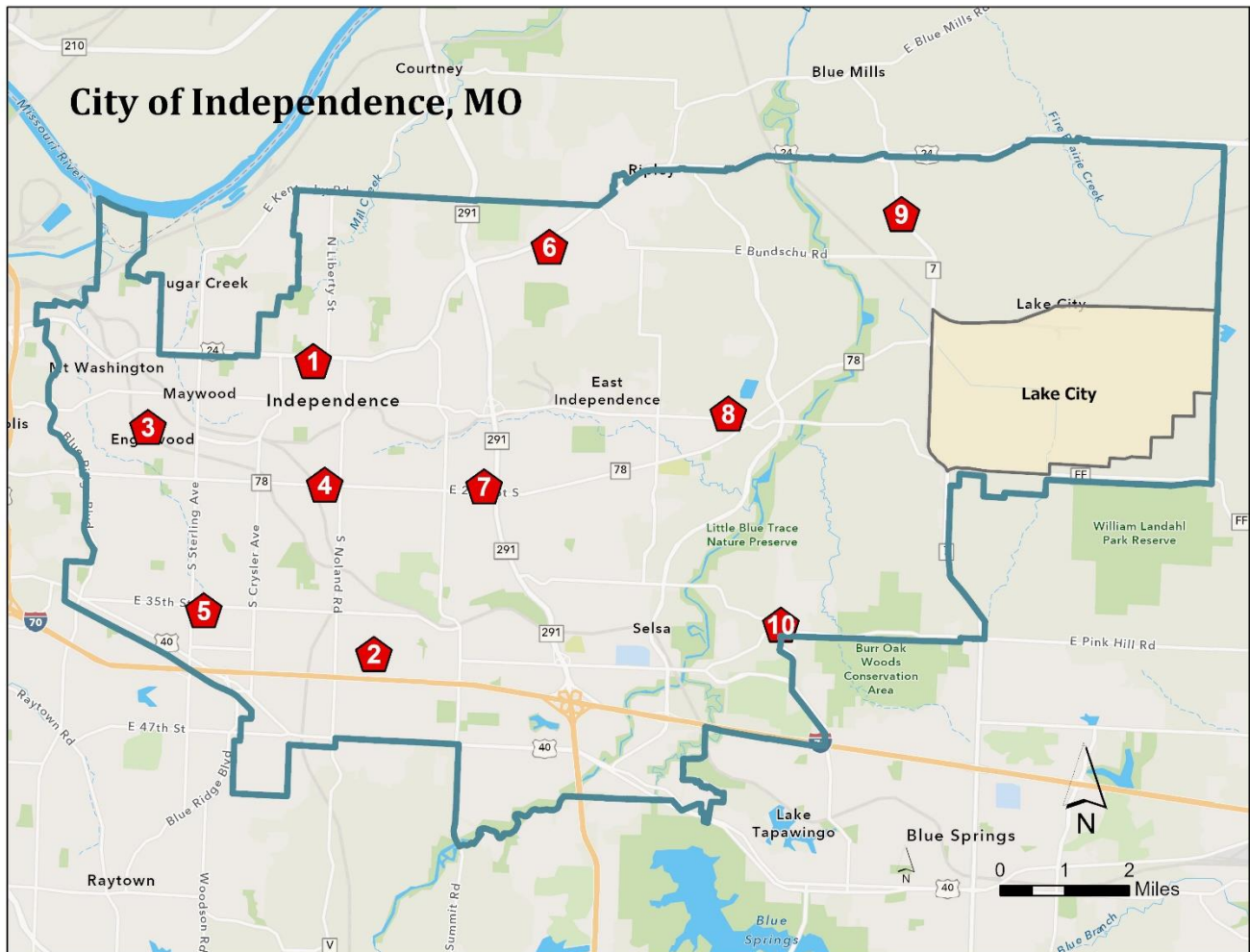
Recommendation 5. Re-engage media presence and/or regular public communication and dialog.

CURRENT SERVICE DELIVERY INFRASTRUCTURE

Service Area

The following graphic depicts where IFD fire stations are within the service area

Figure 4: IFD Service Area/Fire Stations



Public Protection Classification: Insurance Services Office—Rating Bureau

As of March 1, 2020, IFD has a Public Protection Classification (PPC) rating of Class 2/2X from the Insurance Services Office (ISO). The previous rating of 2 which was effective in 2014. This rating is what many insurance companies base premiums on for privately insured properties. The higher the PPC class, the greater the likelihood that individual property insurance premiums will increase, especially for commercial properties. PPC also provides fire departments with a valuable benchmark and is used by

many departments as a valuable tool when planning, budgeting and justifying protection improvements. The ISO rates four major areas:

- Emergency Communications—10 percent (emergency reporting, telecommunications, dispatch circuits);
- Fire Department—50 percent (engine companies, reserve pumpers, pumper capacity, ladder service, reserve ladder and service trucks, deployment analysis, company personnel, training, and operational considerations);
- Water Supply—40 percent (supply system, hydrants, inspection, and flow testing);
- ISO allows for up to 5.5 points to be added onto the score based on Community Risk Reduction activities creating a maximum score potential of 105 points.

IFD was only 2.3 points shy of a very achievable Class 1 rating, a prestigious national recognition as well as a statement to the community about the quality of their fire protection services. There are opportunities to improve in areas of the PPC that can increase the likelihood of IFD receiving a Class 1 in its next evaluation. The following specific areas represent opportunities for significant improvement:

- Credit for Ladder Service (Currently 2.74 out of possible 4 points)
- Credit for Deployment Analysis (Currently 8.33 out of possible 10 points)
- Credit for Company Personnel (Currently 8.30 out of possible 15 points)
- Credit for Training (Currently 7.36 out of possible 9 points)

In addition, the PPC imposed a score for divergence of -3.31. The divergence factor mathematically reduces the score based upon the relative difference between the fire department and water supply scores.

To achieve continued accountability to both them and the community, IFD should also consider pursuing an 'Accredited' rating from the Center of Public Safety Excellence which affirms organizational practices are moving the organization towards a standard of excellence.

Recommendation 6. Set an ISO rating of '1' to be achieved within the next three years.

Recommendation 7. Consider pursuing accreditation from the Center for Public Safety Excellence.

STAFFING & PERSONNEL MANAGEMENT

The 21st century is a turning point for the fire service. Public education, modern technology and advanced fire suppression systems, community risk models, and greater public accountability have reduced the demand for traditional fire services. Organizations that recognize this change and discover how to preserve values, experience, and traditions that contribute to a strong professional identity but also enlarge the strengths it currently has to the changing needs of the community will be the most successful long-term. This means fire departments looking at new models of service delivery, starting new traditions, and re-thinking its mission.

Along with this also comes new leadership and management styles; ones that demonstrate a different form of decision-making, employee valuation and participation, accountability and change management. All must realize that models of service delivery that were ubiquitous twenty to thirty years ago are often now obsolete and must be adapted to perpetual cultural changes.

An organization's most valuable asset is its people. It is important that special attention be paid to managing human resources in a manner that achieves maximum productivity while ensuring a high level of job satisfaction for the individual. Consistent management practices combined with a safe working environment, fair treatment, the opportunity for input, and recognition of the workforce's commitment and sacrifice are key components impacting job satisfaction. This section provides an overview of IFD's personnel structure and practices, as well as its staffing configuration and staffing deployment.

Personnel Management

Human Resources

The City of Independence has a full-time Human Resources Director. The fire department has a labor contract with Local 781 of the International Association of Firefighters (IAFF). The existing contract is valid through the end of 2025 and covers all fire department members with the exception of chief officers, the emergency preparedness manager, and civilian aides. Monthly meetings between the administration and union take place indicating an open communication line exists however there have been occasional disagreements about department priorities.

Recommendation 8. Management and labor agree to pursue elements of organizational strategic plans collaboratively

Recommendation 9. Management and labor identify how elements of tradition can be maintained while pursuing new models of community service.

Salary & Benefits

Full-time employees are provided a salary and benefits package collectively bargained. The benefits provided employees are straightforward and consistent with those benefits typically found in the fire service nationally. The following figure outlines those benefits with a brief description of each.

Figure 5: IFD Full-Time Employee Benefits

Career Employee Benefits	Description of Benefit Coverage
Social Security	Old Age, Survivors, And Disability Insurance (OASDI)—standard SS program.
Worker's Compensation	Missouri law requires all employers to provide workers' compensation coverage.
Pension	Employee is covered by state pension system (Lagers Pension Plan).
Deferred Compensation	Employee has option to participate or not and employee makes all contributions.
Medical Insurance	Employee contribution not to exceed 20% of the cost of the plan.
Dental Insurance	Employee has option to participate or not, and employee pays monthly fee.
Short- & Long-Term Disability Insurance	Yes.
Life Insurance	Annually salary x 1 for natural death. Three full year's salary for accidental death.
Vision Insurance	Employee has option to participate or not and employee pays monthly fee.
Survivor Income Benefit	Medical, dental, and vision plans are provided to the spouse for 10 years or until remarriage; dependent children covered until age 26.
Additional Life Insurance	Employee has option to purchase additional coverage.
401-A Plan	A retirement program where the city contributes to a fund that is given to retiring employees in lieu of unused sick time.

Personnel Records

The Independence Fire Department manages its personnel records consistent with industry best practices, which include maintaining records in a secure location, retaining applications for positions applied for, archival of older records, retention of performance evaluations, separate but secure health files holding sensitive records such as injury and accident records, and health and exposure records.

The Independence Fire Department and the City of Independence HR maintain disciplinary policies, communicates those policies to all employees, and provide a well-articulated appeals process for employees wishing further review from others further up the chain of command or outside of the chain of command.

Post-Traumatic Stress Services

The frequency and significance of post-traumatic stress for first responders is a national challenge. First responder suicide is a tragic and unfortunately growing trend nationally. First responders perform their jobs in highly stressful circumstances where dealing with death and serious injury are a daily occurrence. Mental health is an important aspect to keeping employees healthy and effective in their jobs over the long term. The department recognizes that and provides appropriate counseling services for its members.

IFD provides employees critical incident stress debriefing/diffusing as needed to assist with overall mental well-being and critical incidents. In addition to these services, the City of Independence provides an employee assistance program to all employees without regard to the department they work for. Those seeking help will be directed towards specific resources, and in the event that employees need urgent intervention, those services are also available as part of the Employee Assistance Program (EAP).

Recruiting, Retention, and Promotion

The City of Independence and the Independence Fire Department have established practices to announce internal and external position openings. Entry-level Firefighter/EMT positions require candidates to possess an EMT or higher medical certification, nationally recognized Firefighter I and Firefighter II, as well as Hazardous Materials Awareness and Operations certifications. Candidates for employment must pass a standardized pre-employment written exam, medical and drug tests, and a background investigation. Partnership with Metropolitan Community College - Blue River Campus is mutually beneficial. The college can use local fire departments' hiring practices to recruit students into a fire and EMS education, while the IFD can monitor student progress prior to graduation.

IFD conducts recruitment activities when vacancies arise. This includes advertising on the city website and the creation of flyers to assist in generating applicants. When processing applicants for positions within IFD, applicant qualifications and references are checked, a background check is conducted, and a Candidate Physical Abilities Test (CPAT) is required. A written test is also conducted for candidates, which is accomplished through a partnership with Metropolitan Community College. Successful

candidates are further required to pass a medical examination and drug screening. There is no psychological or lie detection examination included in the testing process.

Once a candidate is hired and successfully completes probation, however, no annual physical performance review process is in place. The steps required to implement an annual performance review process is under way. Other than annual evaluations of SCBA (Self-Contained Breathing Apparatus) skills, there are no skills testing to determine whether incumbents continue to possess the skills necessary to perform these functions once probation has been satisfied, although supervisory staff do monitor skills during various training cycles throughout the year. Physical fitness equipment is provided at each station, and each member is encouraged to utilize it.

Retention is of great importance to maintain a well-trained and stable workforce. Areas that assist in keeping qualified personnel include formal recognition programs, reviewing exit interview information, employee surveys, soliciting feedback to improve policies and procedures, and a well-defined succession plan. Currently, IFD does not provide several of these initiatives. Implementing some or all of these initiatives may assist in retaining tenured and experienced personnel.

The promotional testing process is outlined for each opportunity as vacancies occur and when a list for the position is exhausted or has expired. Generally, the IFD's contract with the City outlines the promotional process. This includes a minimum number of years in a position, a percentage for seniority, and a written examination. The promotional candidate must score a minimum of 70 percent to be eligible for promotion. The eligibility list is established for one year or until the list is exhausted.

Recommendation 10. : Implement a formal employee/member recognition program.

Recommendation 11. : Consider conducting exit interviews, periodic employee surveys, and other mechanisms to acquire feedback from members.

Recommendation 12. Conduct periodic skills testing for all personnel commensurate with their position in the department through the Training Division.

Recommendation 13. With union collaboration, IFD should implement an annual/bi-annual physical fitness evaluation.

Recommendation 14. Develop and implement a formal succession plan for senior leadership.

Staffing

The personnel working for IFD provide a wide array of services to their constituency. This includes fire suppression (structures and wildland), EMS first response, specialized rescue, emergency management, fire prevention, public education, and hazardous materials response. IFD has an authorized staffing of 178.5 positions. Of these, 161 are operational employees, all full-time paid members. There are six Community Risk Reduction personnel, five being uniformed members and one civilian.

Organizational Structure

The structural design of an organization is important to successful service delivery. The IFD mimics a paramilitary organization. This structure is similar to those found in many fire and EMS agencies. The IFD's organizational chart can be found in Figure 3 on page 11.

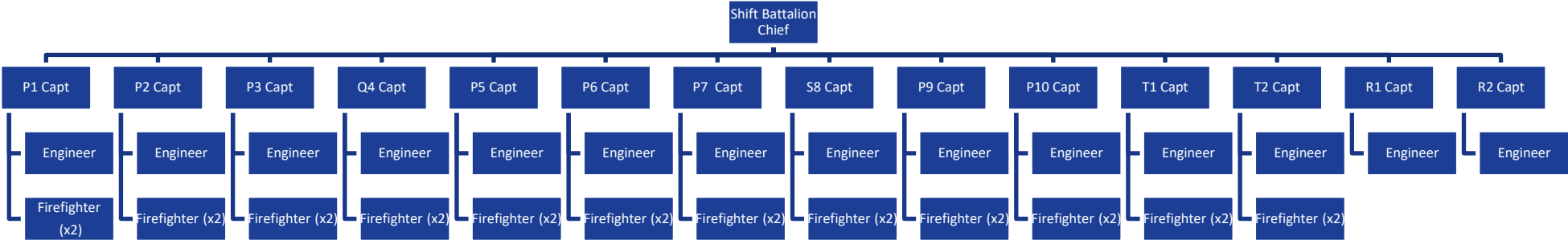
The chain of command is important as it provides a clear source of direction, lines of communication, and accountability. The organization design does not have any conflicting pathways and each operating unit has only one supervisor. The span of control, is a practical management application of the chain-of-command describing a supervisor-to-subordinate ratio and is part of a larger Incident Command System (ICS), an important element in the effective and efficient mitigation of emergency incidents. This characteristic can be applied both in permanent organizational structures such as a city government and in temporary organizational structures such as an emergency scene. While an effective span of control will vary based on administrative demands and operational complexity, within the National Incident Management System, of which the ICS is a part of, it is widely accepted that a single person's span of control should not be greater than seven subordinates. Higher than this ratio, lack of sufficient supervision and safety, and incident management complexity increases.

Operations

The Operations division has 161 uniformed operational positions of various ranks, certifications, and assignments. They are typically broken into companies of three or four for a fire pumper or ladder truck, with a company officer, driver/operator, and firefighters. Rescue companies are staffed with three personnel, a company officer, a driver/operator and firefighter. The shift battalion chief supervises all suppression companies, totaling fourteen units and a minimum of forty-one personnel per shift spread across ten fire stations.

Within the current organizational structure, the maximum span of control for the shift battalion chief is 1:14 which is the number of company officers responsible to a shift battalion chief. The below graphic (Figure 6) shows the existing shift organizational structure.

Figure 6: Shift Organizational Chart



In both administrative and operational settings, the battalion chief's span of control is larger than standard industry practice. The ability of a leader to manage subordinates is reduced during emergency operations. Each pumper and ladder company is staffed with three and sometimes four personnel; a captain, an equipment operator, and one or two firefighters resulting in a 1:2 or 1:3 span of control. Rescue companies are staffed with two personnel, a captain and an equipment operator, and have a 1:1 span of control. The shift battalion chief supervises all suppression companies both administratively and operationally. In both settings, the battalion chief's span of control is too large and can lead to excessive workload, untimely completion of tasks, and burnout. In a fire suppression setting, a broad span of control can lead to errors in accountability, delays in task completion, and ineffective communications that can jeopardize firefighter safety.

The duty hours for Fire Operations are an average of forty-nine and one-half (49.5) hours per week based on twenty-four (24) consecutive hours on duty followed by forty-eight (48) consecutive hours off duty. One full twenty-four (24) hour shift off duty per twenty-seven (27) day pay cycle without compensation is granted each member assigned to the Fire Operations Division (Kelly Day) to accomplish the reduction of scheduled hours to the average of forty-nine and one-half (49.5) hours per week. The Kelly Day is the non-compensated time that is used to prevent the member's regular schedule from entering an overtime status in accordance with current FLSA (Fair Labor Standards Act) law.

There is a detail minimum staffing and call-back procedure in place for operational personnel (SOP 116) that outlines the required positions each day and who should fill those. The fire department's participation in EMS is limited in that, depending on staffing, it can intermittently provide Advanced Life Support service (paramedics) but does not provide any transport service. This will be covered further in the EMS section.

Recommendation 15. Add an additional battalion chief per shift.

Administration & Support

Two important components of a well-organized and effective organization consist of administration and support staffing. The primary responsibilities of these positions are to ensure that the operational elements of the organization have the means to effectively accomplish the tasks and responsibilities of emergent and non-emergent incidents. Emergency services organizations require adequate oversight, planning, records management, administrative support, training, and maintenance. As with the operational components, administration and support services require sufficient resources in order to function properly.

It is important to note that the various staff positions within the IFD can be viewed from different perspectives. For example, Chief Officers in upper management positions may occasionally have a role in incident command at significant events. However, they typically perform non-combat responsibilities.

The following figure lists executive-level management positions within IFD whose responsibilities consist *primarily* of administrative and support functions. These range from the level of Fire Chief to Assistant Chief of Training.

Figure 7: Uniformed Administration (Non-Union, Exempt) Positions & FTE

Position Title	Number of FTEs
Fire Chief	1 Full-Time Equivalent
Deputy Chief	1 Full-Time Equivalent
Assistant Chief	4 Full-Time Equivalents
Total Administrative	6

There are also support personnel within the department to provide logistical, technical, or professional support to the administrative and operational functions of the department. They are listed in the following figure.

Figure 8: Non-Suppression Personnel Positions and Employment Status

Position Title	Number of FTE & Status
Administrative Specialist II	4.5 FTE, non-union/non-exempt
Administrative Specialist III	1 FTE, non-union/non-exempt
Emergency Preparedness Manager	1 FTE, non-union/non-exempt
Emergency Preparedness Planner	1 FTE, non-union/non-exempt
FPB Inspectors	5 FTE, union/non-exempt
Total Non-Suppression Support	12.5
Percent Admin & Support Staff to Total FTEs	11.5%

As the previous two figures illustrate, IFD currently employs 18.5 administrative and support positions, or 11.5 percent of the workforce within the fire department. Typically, municipal or county fire departments maintain an administrative and support-to-operations ratio of at least 1:10, or a ten percent share of the total employee base. ESCI recommends 10-15% of Operations personnel as an effective support system. IFD is proportionately sized.

SERVICE DELIVERY AND PERFORMANCE

Independence Fire Department serves the community in many ways. Ultimately, the main reason for the existence of the department is to provide services to the citizens and visitors of Independence, Missouri when requested. For department leadership, elected officials, and the public to fully understand the scope and breadth of service delivery and performance by IFD, this section of the report will evaluate the current and historical service delivery elements to include the following.

- Service demand
- Resource distribution
- Resource concentration
- Resource reliability
- Response performance
- Mutual and automatic aid system

Service Demand Study

Incident Type

Throughout the year, IFD responds to a wide variety of incidents and provides services to those at the scene of the emergency. An evaluation of those incidents could be illustrated as a total number of incidents each year, but this is a very narrow analysis. Instead, there is greater value in illustrating a more in-depth analysis of the types of incidents to which IFD responds. When department leadership is armed with this knowledge, they can effectively determine the most appropriate staffing and resources needed to serve the community.

To assist fire departments in quantifying response to incidents, the United States Fire Administration has developed the National Fire Incident Reporting System (NFIRS). Within this system, each type of incident is assigned a three-digit code and then those codes are grouped into categories based on the first digit of each code as illustrated in the figure below (Figure 9).

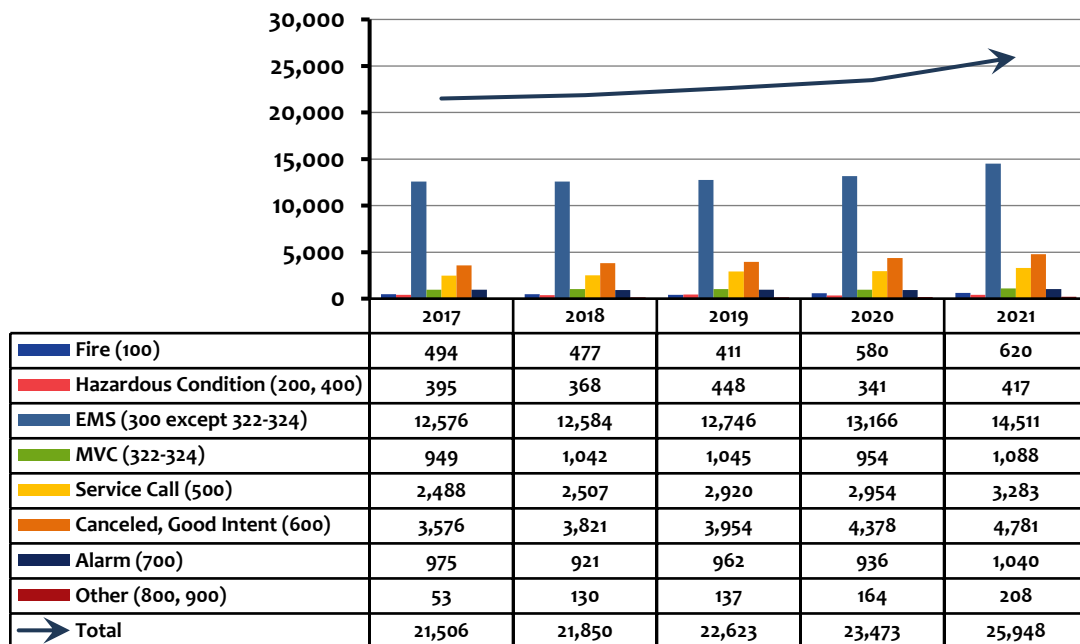
Figure 9: NFIRS Incident Types

Incident Series	Incident Heading
100-Series	Fires
200-Series	Overpressure Rupture, Explosion, Overheat (No Fire)
300-Series	Rescue and Emergency Medical Service (EMS) Incidents
400-Series	Hazardous Condition (No Fire)
500-Series	Service Call

Incident Series	Incident Heading
600-Series	Cancelled, Good Intent
700-Series	False Alarm, False Call
800-Series	Severe Weather, Natural Disaster
900-Series	Special Incident Type

IFD personnel complete incident reports in the New World Records System. This system is compliant with the NFIRS guidelines and provides the ability to enter all needed data. The department provided ESCI with exports from this records management system for calendar years 2017 through 2021. Using the data provided, ESCI analyzed the incident types, and this is illustrated in the figure below (Figure 10).

Figure 10: IFD Service Demand by NFIRS Incident Type, 2017–2021



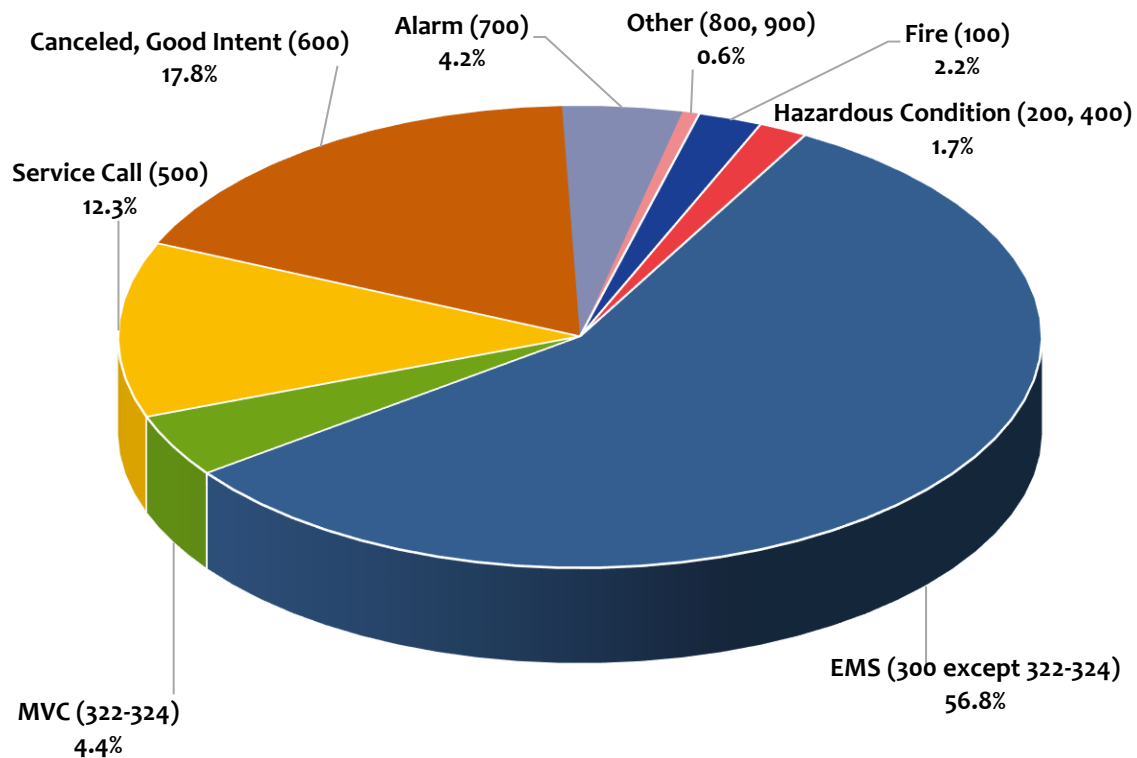
From 2017 to 2021, there was an overall increase of total incidents of 20.7%. This included an increase of 1.6% from 2017 to 2018, an increase of 3.5% from 2018 to 2019, an increase of 3.8% from 2019 to 2020, and an increase of 10.5% from 2020 to 2021. While most departments experienced a decrease in responses during 2020 due to the COVID-19 pandemic, IFD did not experience this decrease. However, based on the much higher increase in 2021, it is likely that the impact from COVID-19 resulted in a lower increase than may have occurred otherwise.

Over the study period fire incidents increased by 25.5%, hazardous condition incidents increased by 5.6%, emergency medical service incidents increased by 15.4%, motor vehicle collision incidents increased by 14.6%, service call incidents increased by 32.0%, canceled/good intent incidents increased by 33.7%, alarm incidents increased by 6.7% and other incidents increased by 292.5%.

Knowledge of the overall change from year-to-year provides leadership with insight as to the growth of incidents as well as the growth of individual incident types. There is also value in viewing the same data from the perspective of how each incident type compares to the total number of incidents, expressed as a percentage.

As illustrated in the figure below (Figure 11), the greatest demand for service is for emergency medical service incidents at 56.8%. This is followed by canceled/good intent incidents at 17.8%, service call incidents at 12.3%, motor vehicle collision incidents at 4.4%, alarm incidents at 4.2%, fire incidents at 2.2%, hazardous condition incidents at 1.7%, and other incidents at 0.6%.

Figure 11: IFD Service Demand by NFIRS Incident Type, 2017–2021



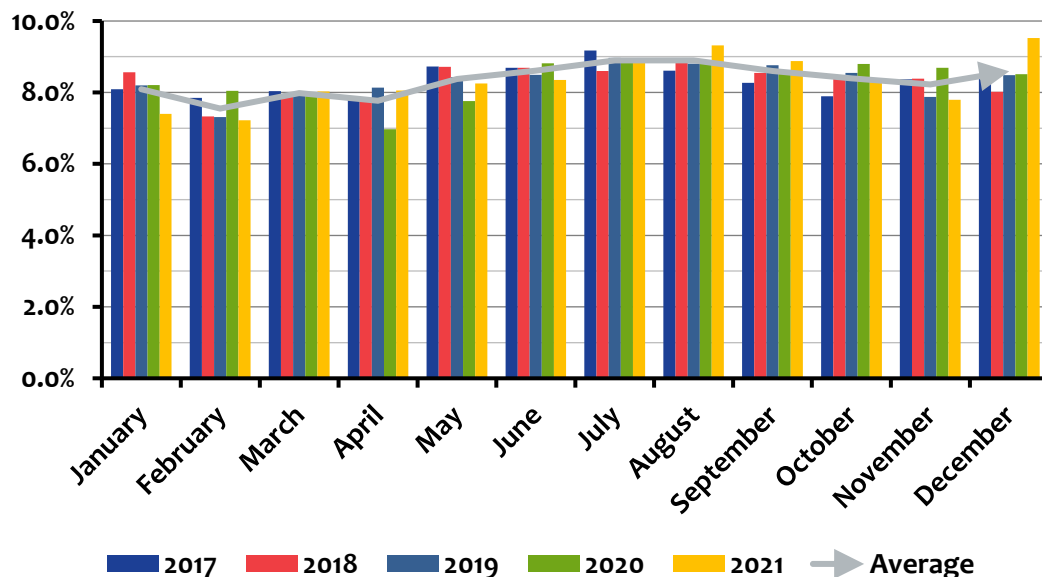
Temporal Variation

An in-depth understanding of the types of incidents as analyzed above provides leadership with a knowledge of the types of equipment, training and apparatus may be needed to provide service to the community. Analyzing the temporal nature of service demand—when incidents occur—is also valuable to leadership. One focus of the temporal nature of service demand provides insight as to the staffing needed to provide the base response capability as well as when increased staffing may be needed. A second focus of the temporal nature of service demand enables leadership to schedule non-incident activities during periods of lesser demand for service. These non-incident activities may include the following.

- Training
- Pre-incident planning
- Fire hose testing
- Fire hydrant testing
- Apparatus maintenance
- Station maintenance

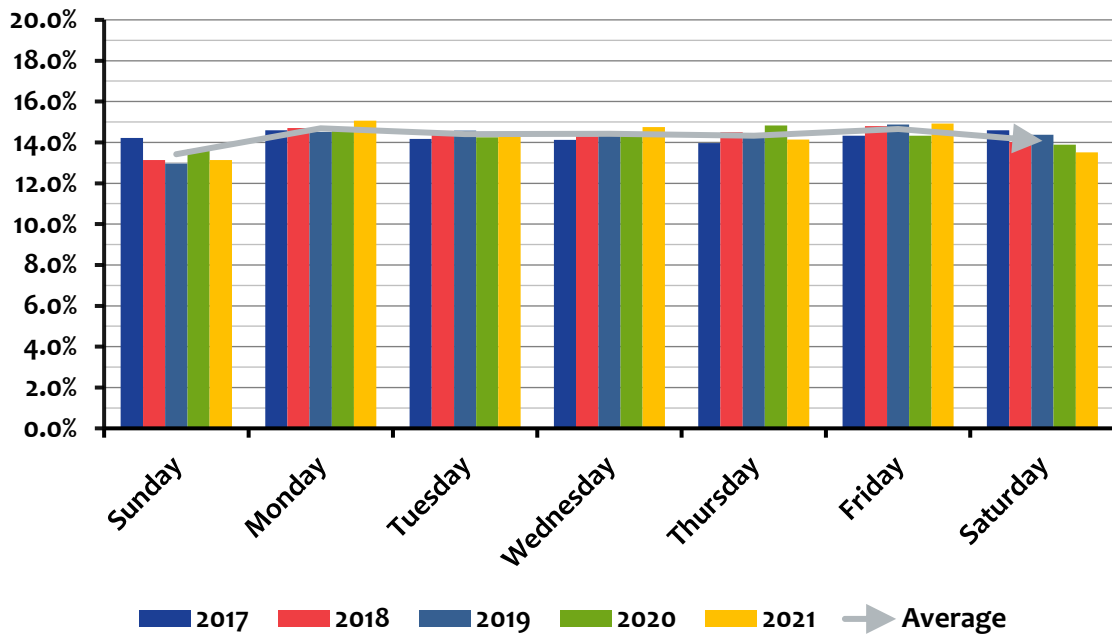
The first analysis as to the temporal variation of service demand considers how many incidents occur each month as compared to the total, expressed as a percentage of the whole. As illustrated in the figure below (Figure 12), the greatest demand for service occurs in July and August. Service demand then decreases for the next three months, followed by an increase in December. With decreases over the next two months, demand for service reaches its lowest point in February, followed by an overall steady increase through June.

Figure 12: IFD Service Demand by Month, 2017–2021



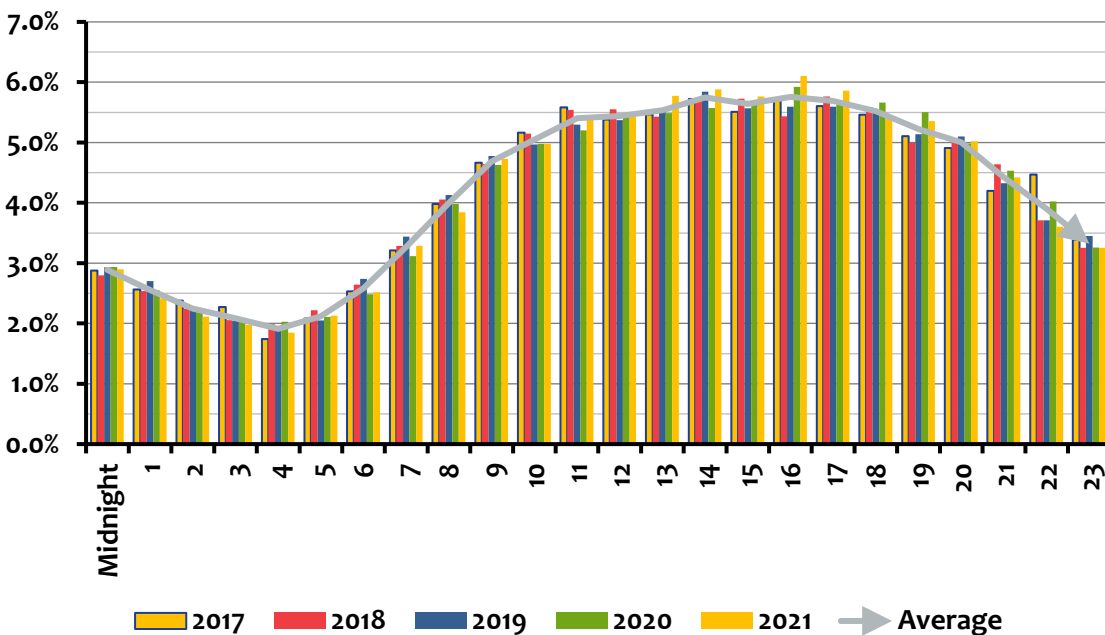
The next analysis as to the temporal variation of service demand considers how many incidents occur each day as compared to the total, expressed as a percentage of the whole. As illustrated in the figure below (Figure 13), the first day with the greatest demand for service occurs on Monday. With slightly lower fluctuations over the next three days, Friday also has the same demand for service as Monday. Demand then decreases through the weekend, reaching its lowest point on Sunday.

Figure 13: IFD Service Demand by Day, 2017-2021



The final analysis in the temporal variation of service demand considers how many incidents occur each hour as compared to the total, expressed as a percentage of the whole. As illustrated in the figure below (Figure 14), the lowest demand for service occurs at 4:00am and then begins increasing through the morning, coinciding with the movement of the population from their beds. Demand continues to increase as the population leaves their homes and begins their daily activities, until reaching the greatest demand for service at 2:00pm. Service demand then remains level over the next few hours and begins decreasing at 6:00pm, coinciding with the population completing their daily activities and moving to their evening activities. Calls for service continue to slowly decrease until midnight, followed by a steeper decrease until returning to the lowest point.

Figure 14: IFD Service Demand by Hour, 2017-2021



While service demand is lowest during those early morning hours, it should be noted that most fatal residential fires occur most frequently late at night or early in the morning. Based on findings from a national study, from 2014 to 2016, residential fatal fires were highest between 1:00am to 2:00am, and 4:00am to 5:00am. The 8-hour peak period (11pm to 7am) accounted for 48 percent of residential fatal fires.¹

¹ Fatal Fires in Residential Buildings (2014-2016), Topical Fire Report Series Volume 19, Issue 1 /June 18, U.S. Department of Homeland Security, U.S. Fire Administration, National Fire Data Center.

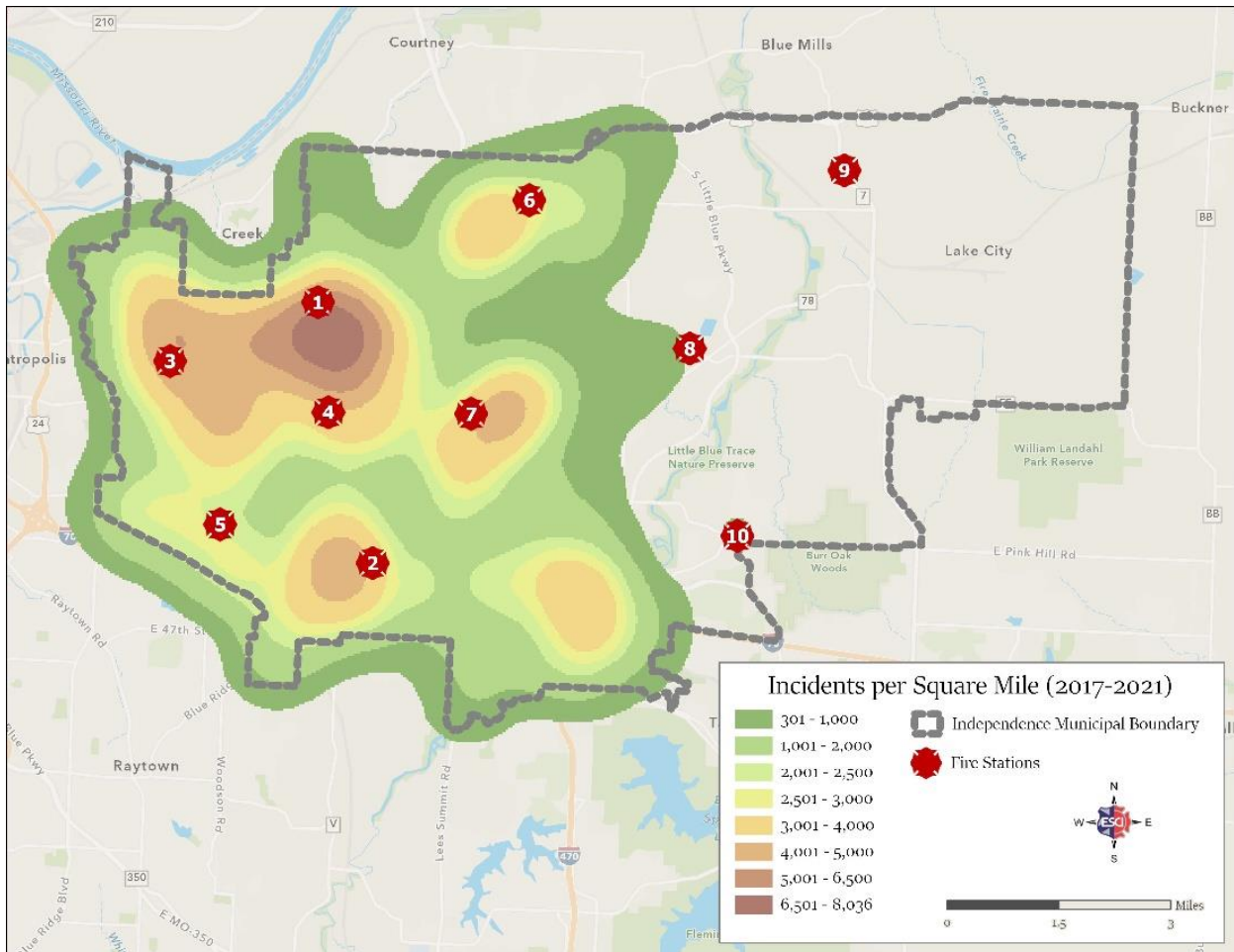
Resource Distribution Study

The preceding sections illustrated the nature of service demand and the temporal variation of service demand. The next key analysis is to consider the geographic location of calls for service and how those compare to location of resources within the City of Independence.

Through use of geographical information systems (GIS) software, ESCI is able to calculate the mathematical density of incidents (incidents per square mile) during the study period. Each of the following figures illustrate this density using a heat map format whereby the cooler colors indicate areas of lower demand for service and increase towards hotter colors that indicate areas of higher demand for service.

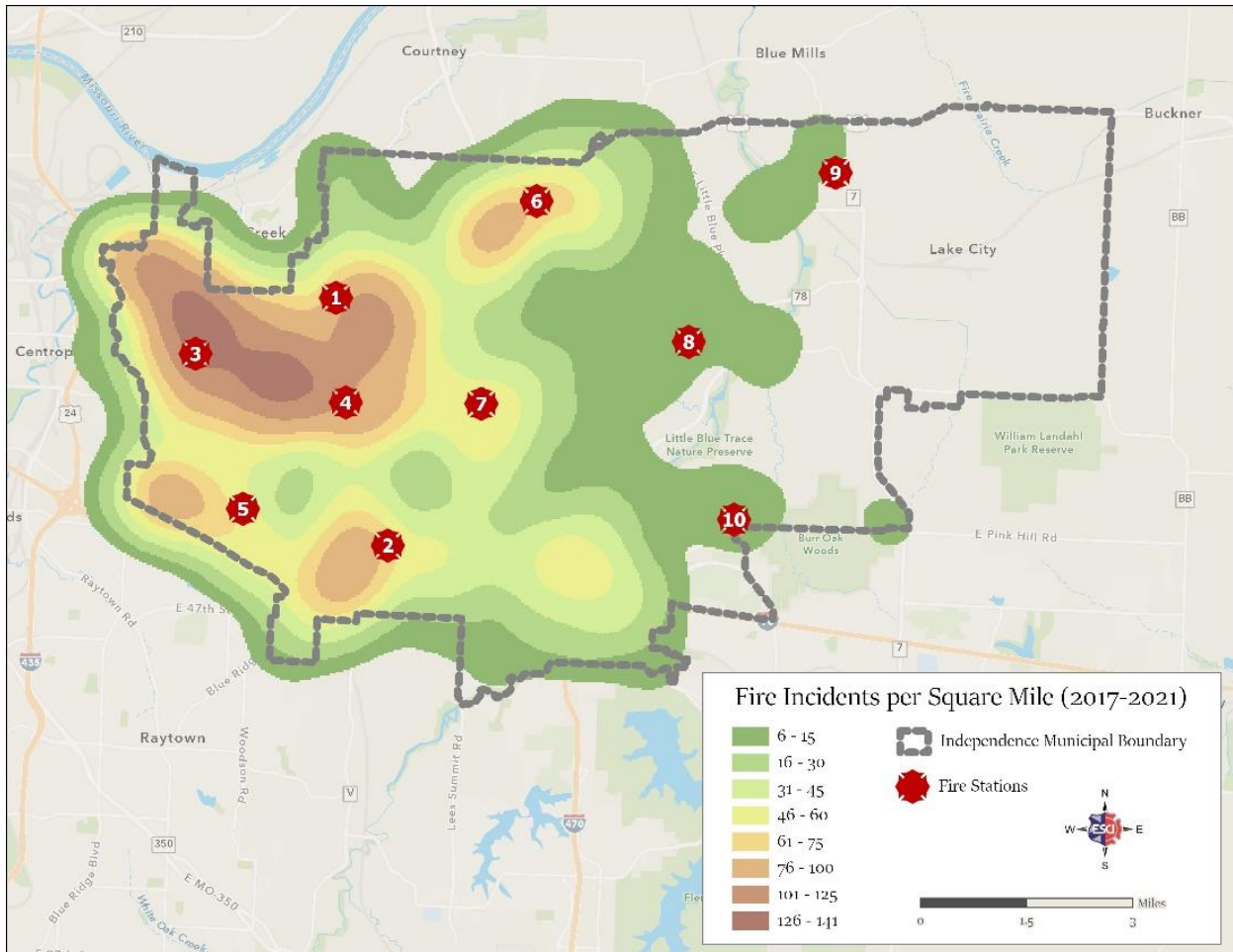
As illustrated in the following figure, the greatest demand for service (6,501–8,036 incidents per square mile)—including all incidents—occurs in an epicenter just below Station 1 and expanding outward in an elliptical fashion. Two epicenters of slightly lower demand for service (4,001–5,000 incidents per square mile) occur in the areas of Station 2 and Station 7, one lesser demand epicenter (3,001–4,000) near Station 6 and the final epicenter nearly equidistant between Station 2 and Station 10. Demand for service within the areas east of Station 8 — including Station 9 and Station 10 — is much lower than other areas of the community.

Figure 15: IFD Service Demand (All Incidents), 2017–2021



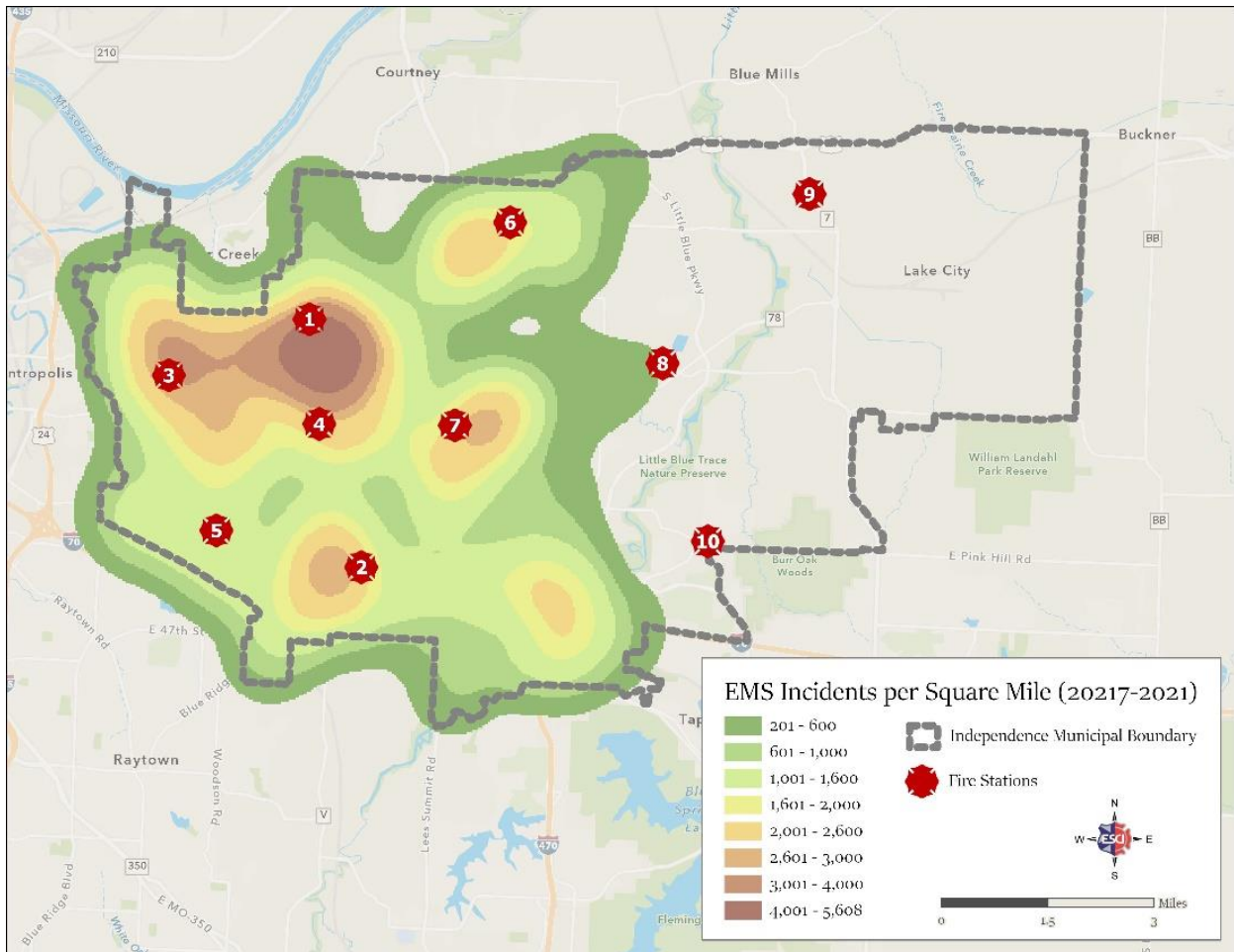
In the following figure, there is a slightly different distribution of incidents when focusing on only those incidents codes as fires (NFIRS 100-series). As illustrated, the primary epicenter of greatest service demand (126–141 incidents per square mile) shifts closer to Station 3 and expanding out from there. Three additional epicenters of slightly lower demand for service (76–100 incidents per square mile) are near Station 5, Station 2, and Station 6.

Figure 16: IFD Service Demand (Fire Incidents), 2017–2021



When focusing on just the emergency medical services incidents (those incidents coded as NFIRS 300-series), the pattern illustrated in the following figures follows a pattern similar to that of the previous all incidents illustration.

Figure 17: IFD Service Demand (EMS Incidents), 2017-2021



The process of analyzing the geographical location of service demand as it relates to geographical location of community resources involves comparison to industry standards. These are illustrated in the following sections.

ISO Distribution

The Insurance Services Office (ISO) is a national insurance industry organization that evaluates fire protection for communities across the country. ISO assesses all areas of fire protection as broken down into four major categories including emergency communications, fire department, water supply, and community risk reduction. Following an on-site evaluation, an ISO rating, or specifically, a Public

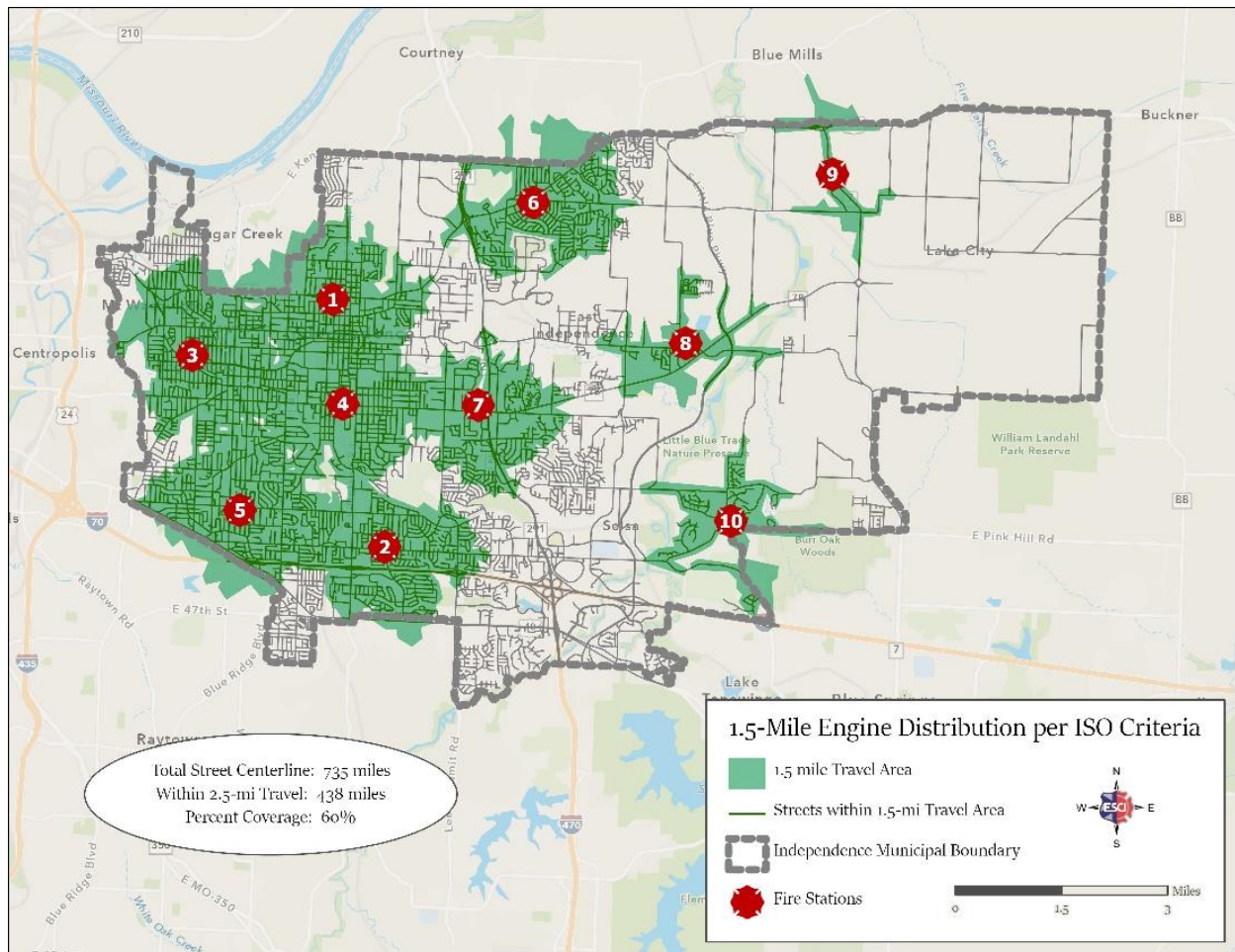
Protection Classification (PPC®) number is assigned to the community ranging from 1 (best protection) to 10 (no protection)..

A community's ISO rating is an important factor when considering fire station and apparatus concentration, distribution, and deployment due to its effect on the cost of fire insurance for the residents and businesses. To receive maximum credit for station and apparatus distribution, ISO evaluates the percentage of the community (contiguously built upon area) that is within specific distances of fire stations, central water supply access (fire hydrants), pumper companies and aerial/ladder apparatus.

Travel Distance from a Fire Station

The first travel component within the PPC® score analyzes the number of structures protected by the department which are within 1.5 road miles of the closest fire stations. This 1.5-mile travel is comparative to the 4-minute travel as specified within NFPA 1710—illustrated in the next section. As illustrated in the figure below (Figure 18), 60% of the service area is within the 1.5-mile travel distance measured by ISO.

Figure 18: IFD 1.5-Mile Travel per ISO Criteria

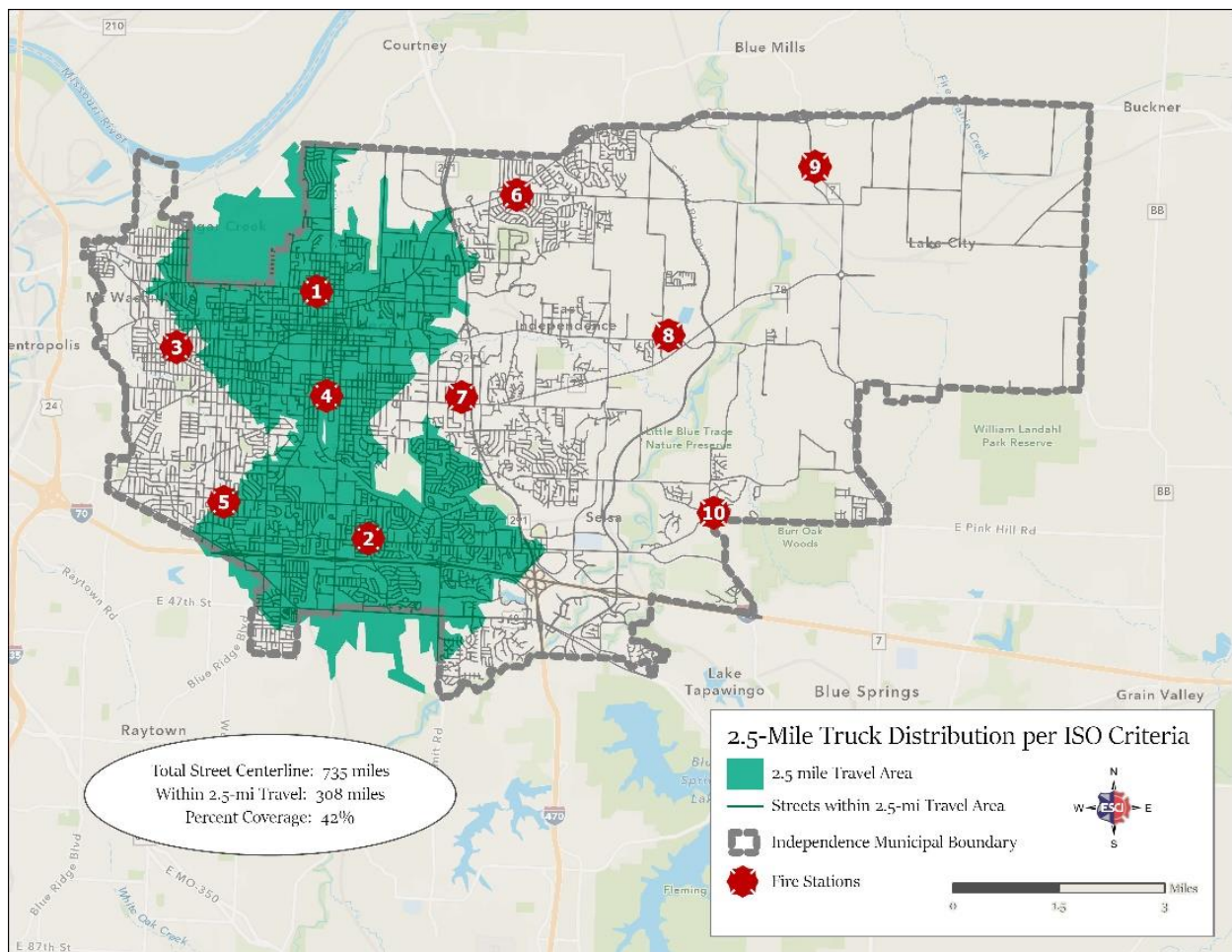


The addition of aerial apparatus is recommended in communities with either of the following criteria.

- Five or more buildings of three stories or greater.
- Five or more buildings of 32 feet or greater in height.
- Five or more buildings requiring a needed fire flow of greater than 3,500 gallons per minute.

Where aerial apparatus is included within the community, often these units are not dispatched as a primary unit but rather are considered to be a part of the full response to structure fires. For this reason, the travel component associated with the PPC® score considers the number of structures that fall within 2.5 road miles of the apparatus' station. Just as the ISO 1.5-mile measure compares to the NFPA 4-minute measure, so does the ISO 2.5-mile measure compares to the NFPA 8-minute measure. As illustrated in the following figure, 42% of the service area is within the 2.5-mile travel distance.

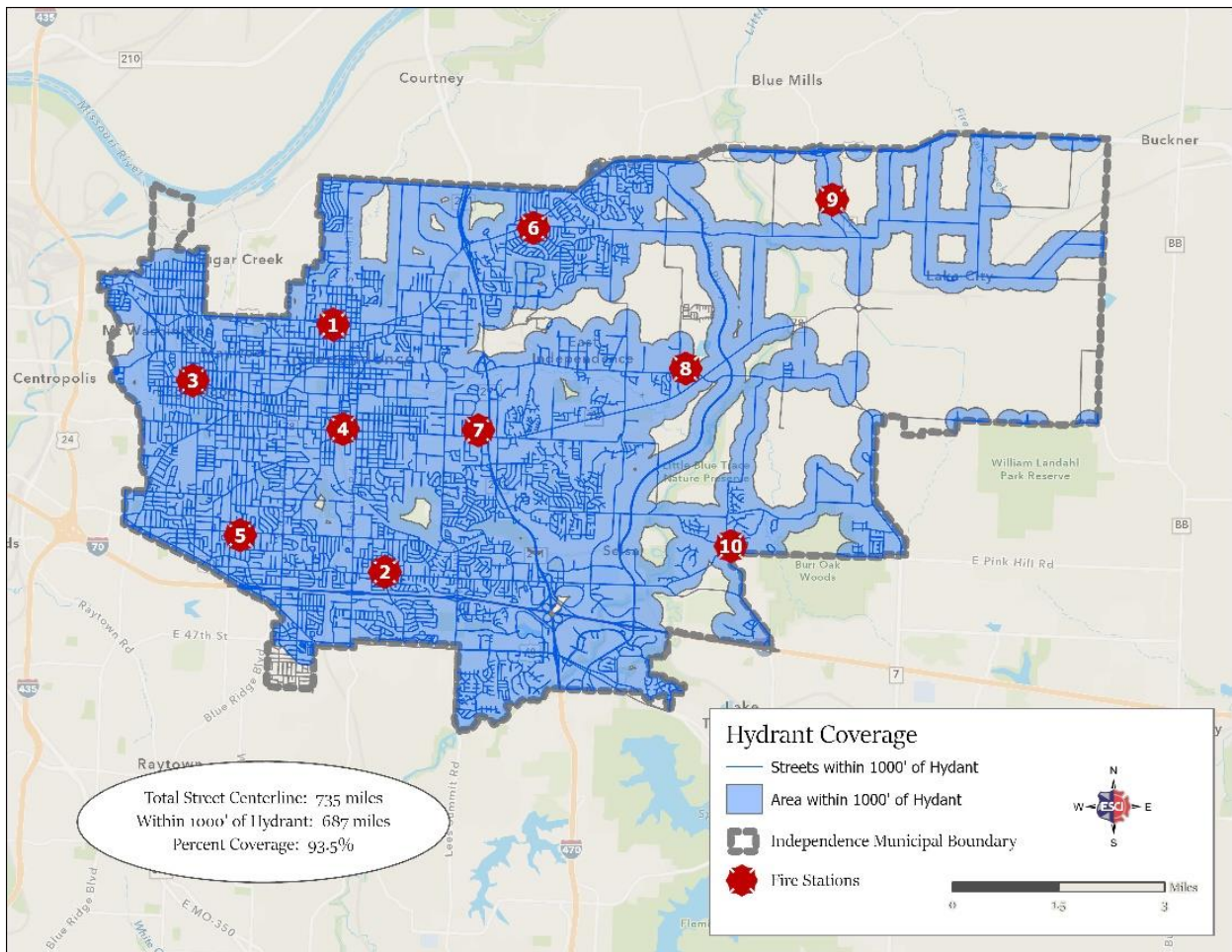
Figure 19: IFD 2.5-Mile Travel per ISO Criteria



Water Supply Distribution

ISO evaluates a community's availability of a sufficient water supply, which is critical for the extinguishment of fires. Included in this evaluation is the geographic location and distribution of fire hydrants. Structures outside a 1,000-foot radius of a fire hydrant are subject to a lower Public Protection Classification® rating than areas with adequate hydrant coverage, thus signifying limited fire protection. Exceptions are made when a fire department can show that either a dry hydrant or a suitable water tanker operation is possible to provide the needed volume of water for fire suppression activities for a specific period. As illustrated in the figure below (Figure 20), 93.5% of the service area is within 1,000 feet of a fire hydrant.

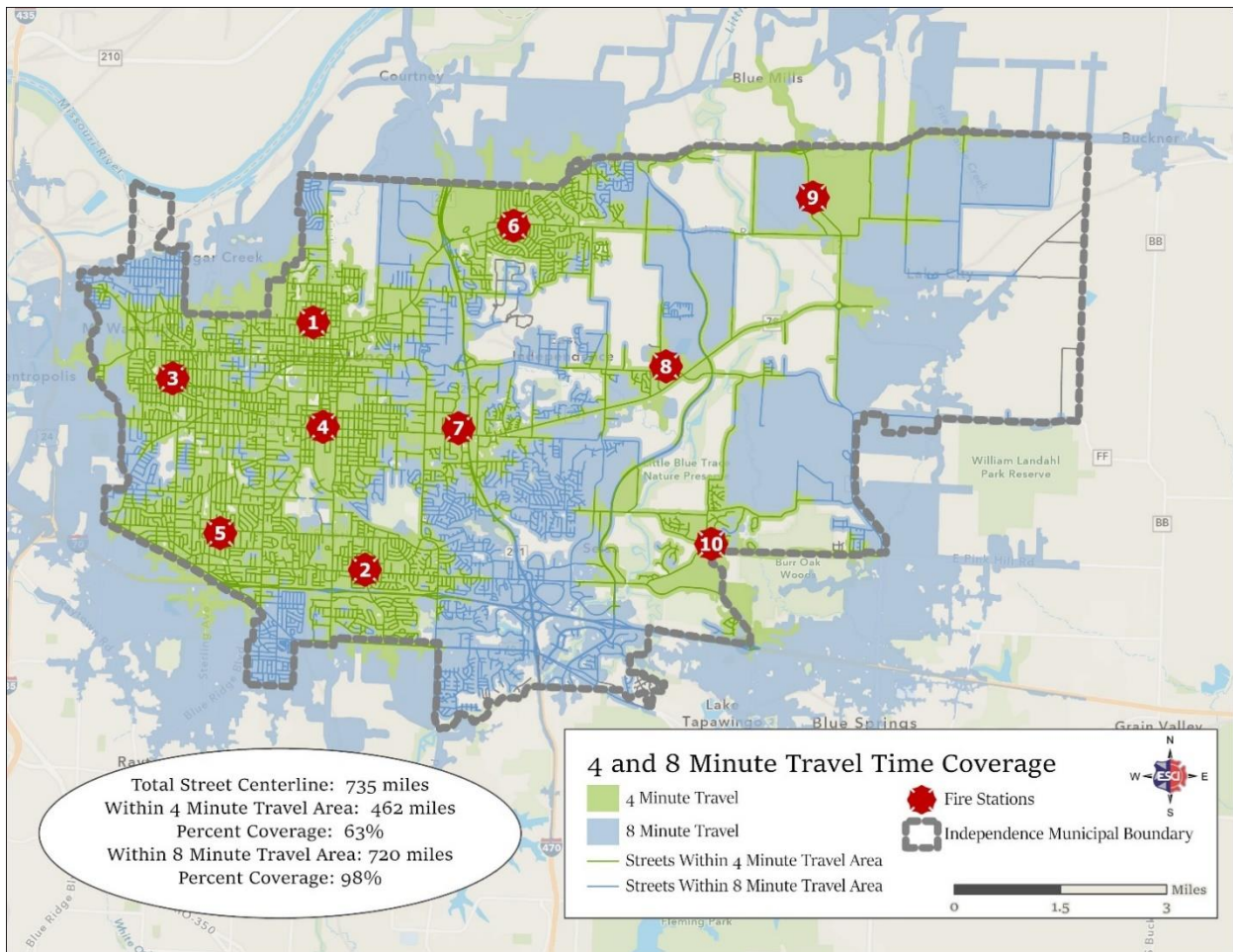
Figure 20: 5-mile Hydrant Coverage (ISO)



NFPA Distribution

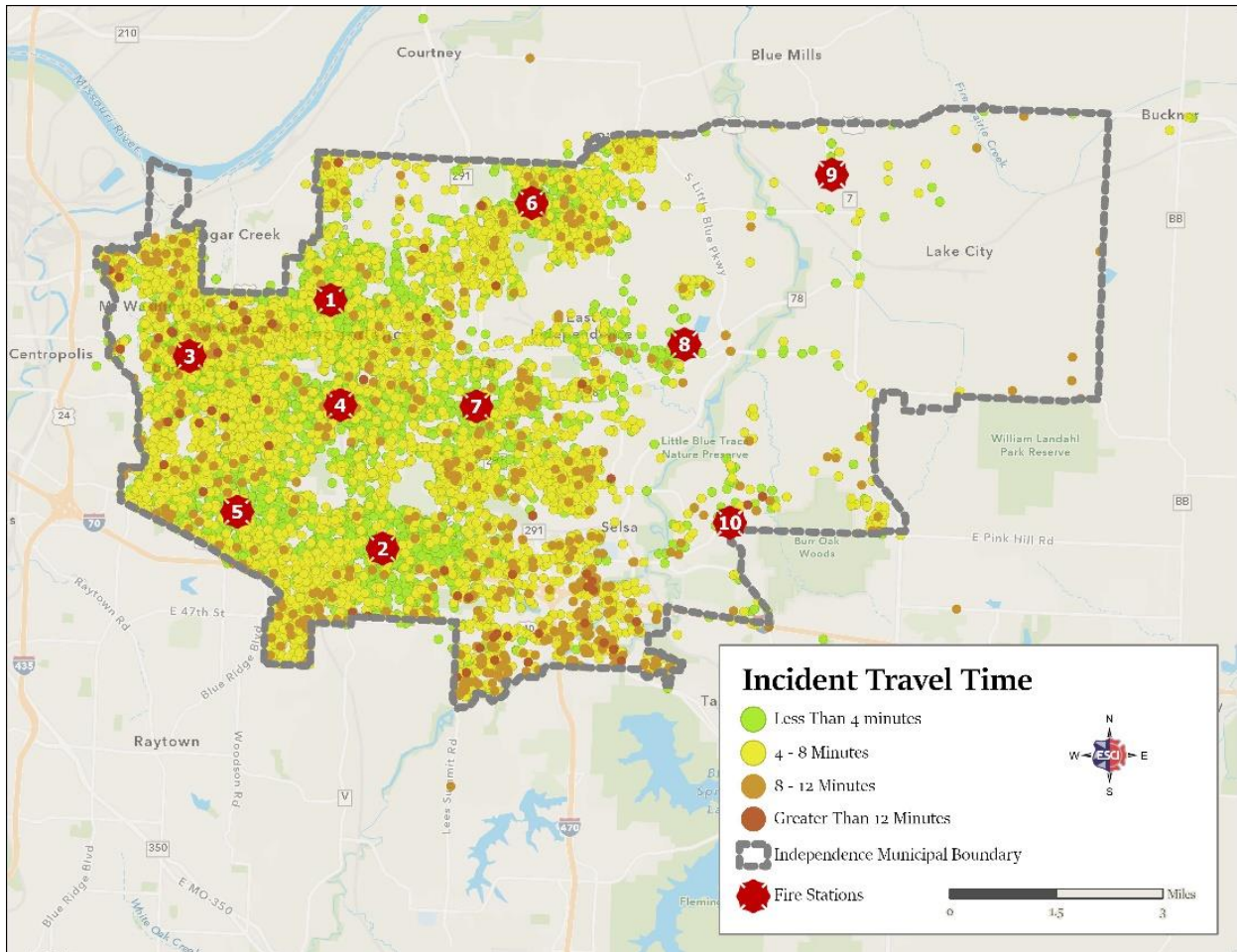
National Fire Protection Association (NFPA) standards and the Center for Public Safety Excellence (CPSE) accreditation of fire departments both evaluate response time criteria for purposes of analyzing resource distribution. For low/medium hazard incidents, the first unit should arrive within 4 minutes and the full assignment should arrive within 8 minutes. Travel time is calculated using the posted speed limit and adjusted for negotiating turns, intersections, and one-way streets. As illustrated in the figure below (Figure 21), 98.4% of the service area meets the 4-minute travel time and 100% of the service area meets the 8-minute travel time.

Figure 21: 4 min/8 min Travel Time (NFPA)



The preceding figure illustrates the theoretical travel time based on the assumption that all units are at their assigned station at the time of dispatch. However, this is not always the case and there is value in evaluation of actual travel times within the service area as compared to station locations. The following figure illustrates actual incidents and their associated travel time categories from the 2021 incident data.

Figure 22: IFD Actual Travel Time (2021)



Resource Concentration Study

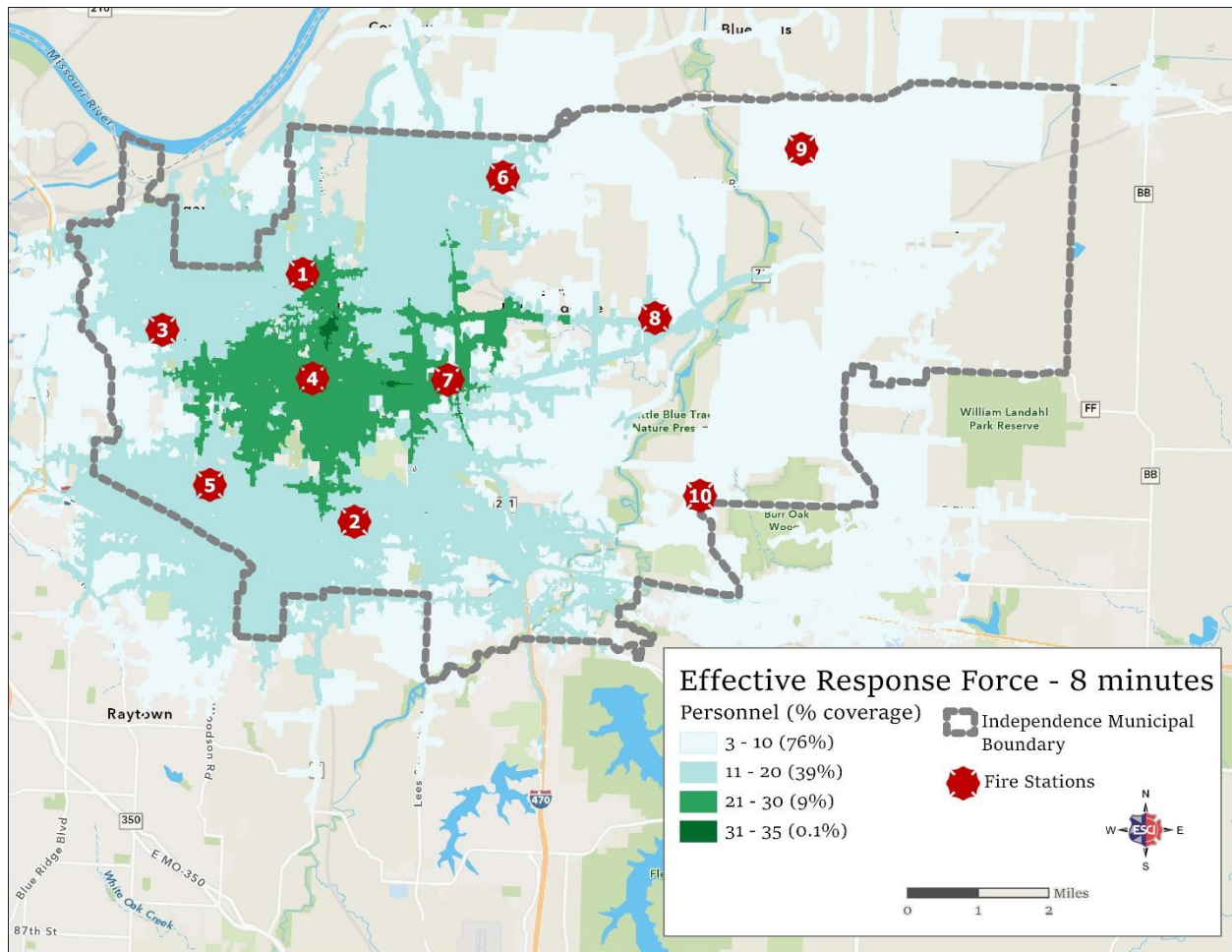
Each of the prior measures provided a view specifically associated with the arrival of the first unit to incident scene. While arriving at an incident in a quick and safe manner is important, the ability to safely mitigate the incident is also impacted by the arrival of sufficient resources within an appropriate amount of time. The measure of this ability is referred to as ERF (Effective Response Force) and ensures that sufficient personnel and resources arrive on scene early enough to safely control a fire or mitigate other types of emergencies prior to substantial damage, injury or loss of life. The following figure illustrates the ERF recommended through standards such as NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments* and the Commission on Fire Accreditation (CFAI) Standards of Cover, 6th Edition.

Figure 23: Recommended Effective Response Force

Function/Task	Single-Family Residence (2,000 SF)	Open Air Strip Shopping Center (13,000–196,000 SF)	3-Story Garden Apartment (1,200 SF)
Command	1	2	2
Apparatus Operator	1	2	2
Handlines (2 members each)	4	6	6
Support Members	2	3	3
Victim Search and Rescue team	2	4	4
Ground Ladders/Ventilation	2	4	4
Aerial Device Operator (if ladder used)	(1)	(1)	(1)
Initial Rapid Intervention Team	4	4	4
Initial Medical Care Component	N/A	2	2
Total	16 (17)	27 (28)	27 (28)

Through the use of geographic information system software, ESCI calculates the number of firefighters that can be assembled within an 8-minute travel time. This calculation assumes that all units are at station and minimum staffing is in place at each station. As illustrated previously, IFD has 100% coverage within an 8-minute travel time and thus the effective response force coverage is exceptional. The following figure illustrates the areas of coverage with the lighter colors representing the lower number of firefighters on-scene within an 8-minute travel time. Within the majority of the service area (99%) IFD is able to assemble and ERF of 3–10 firefighters followed by 11–12 firefighters within 87%, 21–30 firefighters within 71% and 31–41 firefighters within 58%.

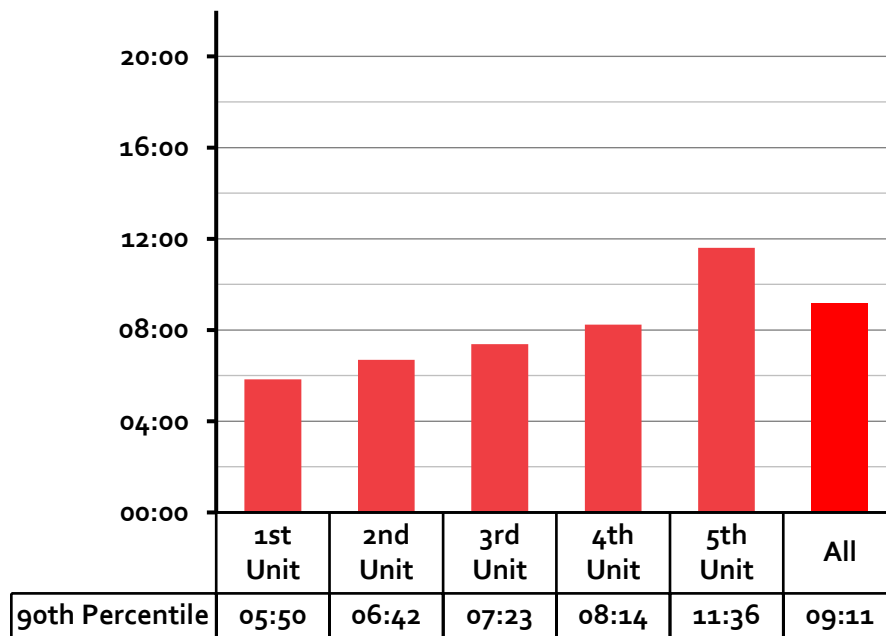
Figure 24: IFD Effective Response Force, 8-Minute Travel



Response Time Performance for Structure Fires

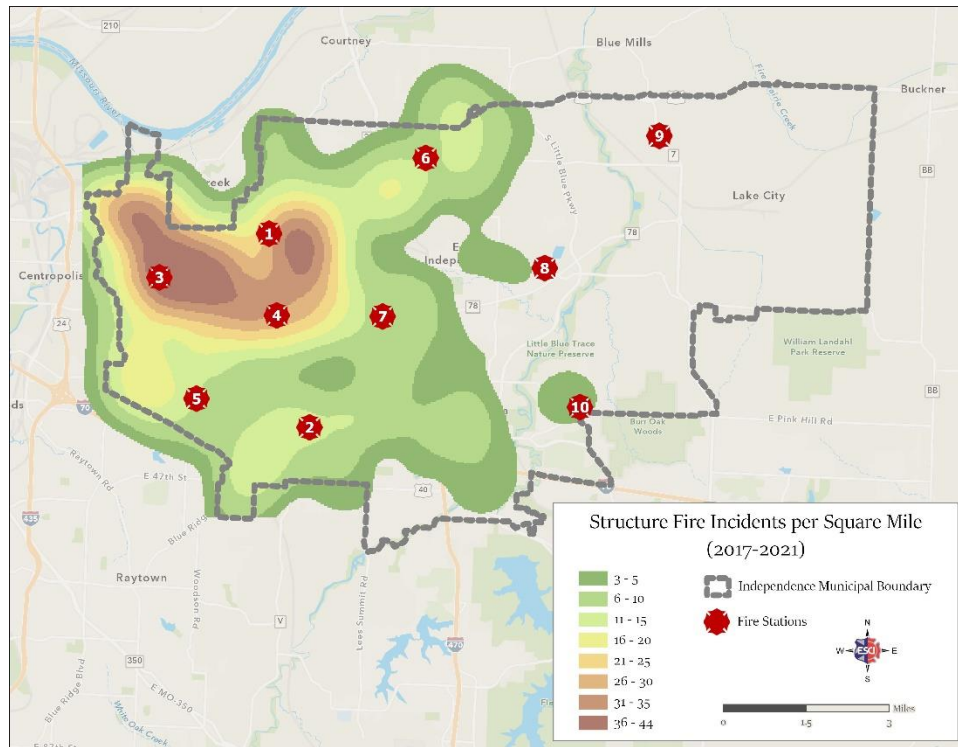
The preceding figure illustrates the ERF within an 8-minute travel time based on all units located at their assigned stations at the time of dispatch. To provide IFD leadership with additional information for evaluation of current and future conditions, it is of value to illustrate the arrival time of units at structure fires. This is illustrated in the figure below (Figure 25) and represents the time from unit dispatch until arrival at the scene.

Figure 25: IFD 90th Percentile Structure Fire Order of Arrival, 2017–2021



The following figure illustrates the geographical density of structure fires over the study period. For purposes of this illustration, only those incidents coded as NFIRS 111 (building fire) and NFIRS 112 (fire in structure other than a building) were included.

Figure 26: IFD Structure Fires, 2017-2021



Response Reliability Review

Each of the preceding sections illustrated various components that impact the ability of IFD to provide service to the community. However, there are two additional factors that may impact the reliability of the department to provide timely service when 9-1-1 is activated. These two factors are incident concurrency and workload.

Incident Concurrency

Incident concurrency refers to the number of incidents occurring simultaneously within the service area. As the number of concurrent incidents increases, the number of units available to respond to additional calls for service is decreased. While there is not a specific standard to which IFD incident concurrency can be compared, leadership should monitor regularly to identify increases that may indicate a decreased liability to respond to incidents.

As illustrated in the figure below (Figure 27), incident concurrency within the IFD service area is not at a concerning level. During 2021, there were three or fewer concurrent incidents 94.5% of the time.

Figure 27: IFD Incident Concurrency, 2017–2021

Concurrent Incidents	2017	2018	2019	2020	2021	Change Over Study Period
Single Incident	58.09%	54.46%	50.86%	50.41%	46.54%	11.56%
Two Incidents	31.02%	32.46%	33.26%	33.82%	34.12%	3.10%
Three Incidents	8.72%	10.31%	12.12%	11.91%	13.84%	5.12%
Four Incidents	1.66%	2.31%	2.94%	3.14%	4.29%	2.63%
Five Incidents	0.31%	0.39%	0.62%	0.59%	0.97%	0.66%
Six Incidents	0.11%	0.04%	0.12%	0.12%	0.17%	0.06%
Seven Incidents	0.07%	0.02%	0.04%	0.01%	0.05%	-0.02%
Eight Incidents	0.02%	0.00%	0.01%	0.00%	0.01%	-0.01%
Nine Incidents	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%
Ten or More Incidents	0.00%	0.00%	0.02%	0.00%	0.01%	0.01%

The above figure illustrates incident concurrency and has primary value based on a single unit responding to each incident. However, as the number of incidents requiring multiple units increases, then increases in incident concurrency may be more significant. This metric should be monitored by IFD leadership in conjunction with monitoring incident concurrency.

Figure 28: IFD Percentage of Incidents by Number of Units Responded, 2017–2021

Number of Units	Dispatched	Arrived
1	81.0%	92.3%
2	11.7%	5.0%
3	5.0%	1.5%
4	0.7%	0.3%
5	0.3%	0.2%
6 or More	1.4%	0.7%

Workload

Workload is a measure of how busy a unit is and is one measure to be considered in determining adequate resource levels. It is the time committed to responding to calls for service or how much time it is unavailable to respond to a call. Two common methods for determining the busyness of a unit is the number of calls a unit responds to or is dispatched per year and unit hour utilization. There are no national standards for when a unit is considered busy or not busy so each department must decide its own busyness standard.

Traditionally, the fire service has relied on incident counts to monitor a unit's workload. It was the simplest method as there was no actual way to measure time actually spent on a call let alone a cumulative time of all calls. The limitation to this methodology is that it requires context and can be misleading. A unit that regularly responds on calls with small time durations may appear busier than a unit that responds to fewer incidents but have longer incident durations. An example of the first is a unit that is regularly returned prior to their arrival at an incident. An example of the latter is a unit that regularly sees long duration incidents like a heavy rescue unit but responds to fewer incidents. However, with the technological ability to calculate incident durations, more accurate calculation processes are now available.

Unit Hour Utilization (UHU) is a process initially used by the EMS industry to determine appropriate ambulance resourcing. Rather than just a simple count of the number of incidents per year assigned to each unit, there is greater value in the total time per year each unit is assigned to incidents. This value is gained as incident duration can vary significantly from minutes to hours, so the actual measure of time carries more weight. The UHU method of workload measurement represents the comparison of total potential hours available to respond to a call (8,760 per year in a 24/7/365 staffed unit) versus total hours assigned to incidents, expressed as a percentage. It should be noted that this measure focuses solely on the time spent assigned to incidents and does not include other non-incident workload such as training, station duties, pre-incident planning, fire hose testing, fire hydrant testing, public education events, and more.

While there are limited formal performance measures to use as a target measure, in May 2016, Henrico County (VA) Division of Fire published an article after studying their department's EMS workload.² As a result of the study, Henrico County Division of Fire developed a general commitment factor scale for their department. The next figure is a summary of the findings as it relates to commitment factors. ESCI recommends that IFD leadership consider this method of measure and develop a similar standard that meets the needs of their community.

² How Busy Is Busy?; Retrieved from <https://www.fireengineering.com/articles/print/volume-169/issue-5/departments/fireems/how-busy-is-busy.html>

Figure 29: Commitment Factors as Developed by Henrico County (VA) Division, 2016

Factor	Indication	Description
16%-24%	Ideal Commitment Range	Personnel can maintain training requirements and physical fitness and can consistently achieve response time benchmarks. Units are available to the community more than 75 percent of the day.
25%	System Stress	Community availability and unit sustainability are not questioned. First-due units are responding to their assigned community 75 percent of the time, and response benchmarks are rarely missed.
26%-29%	Evaluation Range	The community served will experience delayed incident responses. Just under 30 percent of the day, first-due ambulances are unavailable; thus, neighboring responders will likely exceed goals.
30%	"Line in the Sand"	Not Sustainable: Commitment Threshold—community has less than a 70 percent chance of timely emergency service and immediate relief is vital. Personnel assigned to units at or exceeding 0.3 may show signs of fatigue and burnout and may be at increased risk of errors. Required training and physical fitness sessions are not consistently completed.

As illustrated in the following figures, none of the IFD units are at a concerning level of workload however it's important to note that there are other factors other than UHU that can cause additional units to be recommended such as long response times or wide spans of control. It should be noted that Pumper 7 has experienced an increasing level of workload each year—6.31% increase since 2018. This should be monitored by IFD leadership and may provide insight into the need for additional resources in the future

Figure 30: IFD Unit Hour Utilization (Pumpers), 2017–2021

Unit	2017	2018	2019	2020	2021	Change Over Study Period
Pumper 1	10.26%	8.25%	6.33%	6.78%	7.02%	-3.25%
Pumper 2	9.01%	7.43%	6.85%	6.15%	7.64%	-1.37%
Pumper 3	9.18%	8.97%	9.48%	9.42%	9.83%	0.65%
Pumper 5	8.66%	8.84%	9.43%	8.57%	9.26%	0.60%
Pumper 6	6.34%	6.77%	7.02%	6.96%	7.93%	1.59%
Pumper 7	***	3.85%	6.94%	8.81%	10.16%	6.31%
Squad 8 (Pumper)	1.90%	2.04%	2.12%	2.46%	2.99%	1.08%
Pumper 9	1.00%	2.03%	1.26%	0.94%	1.19%	0.18%
Pumper 10	5.23%	5.95%	6.56%	6.36%	7.03%	1.80%

Figure 31: IFD Unit Hour Utilization (Aerial Apparatus), 2017–2021

Unit	2017	2018	2019	2020	2021	Change Over Study Period
Quint 4	7.13%	7.37%	6.95%	7.59%	8.42%	1.29%
Truck 1	2.91%	4.83%	5.52%	5.53%	6.44%	3.53%
Truck 2	2.37%	3.99%	5.31%	5.37%	6.28%	3.92%

Figure 32: IFD Unit Hour Utilization (Rescues), 2017–2021

Unit	2017	2018	2019	2020	2021	Change Over Study Period
Rescue 1	4.83%	5.93%	6.14%	6.10%	6.39%	1.56%
Rescue 2	4.03%	4.97%	6.44%	5.83%	6.81%	2.78%

Figure 33: IFD Unit Hour Utilization (Command Units), 2017–2021

Unit	2017	2018	2019	2020	2021	Change Over Study Period
Shift Commander	***	***	0.61%	2.90%	2.68%	2.07%

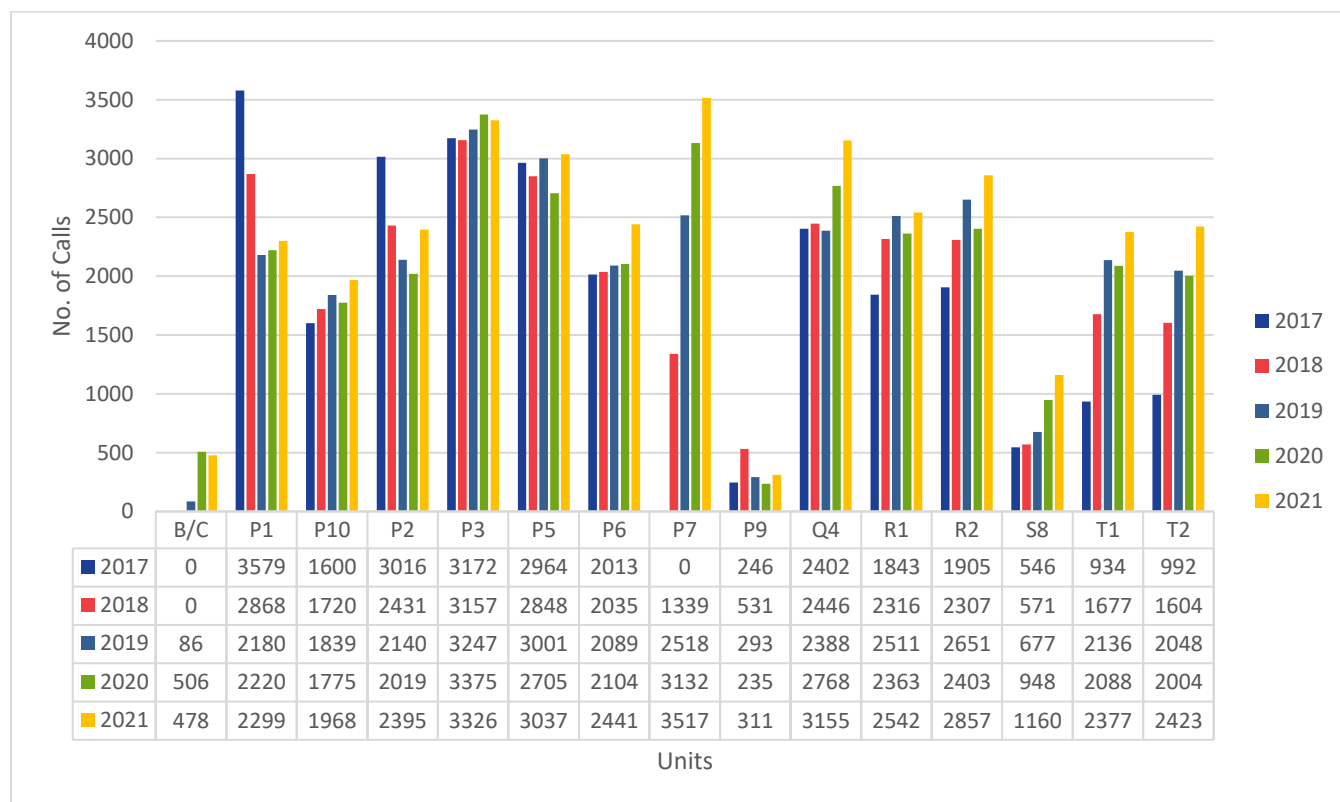
In 2018, the IFD switched the designation to Pumper 7 from Quint 7.

In 2019, the IFD switched to a system where battalion chiefs were assigned a single unit identifier. Prior to that, each individual battalion chief had his own identifier.

In both cases, IFD was unable to provide data for these previous unit designations.

The following identifies specific call volumes per unit.

Figure 34: Unit Call Volume



Response Performance Summary

The community of Independence, Missouri expects that their fire department will provide high-quality service as quickly as possible. Citizens, visitors, and elected officials view the value of the fire department based on the quality of that service and how long it takes from activating 9-1-1 until the first unit arrives at the scene of the emergency. This measure of 9-1-1 activation until arrival of the first unit is referred to as total response time. However, this greater measure is comprised of several other interim measures. Through regular monitoring of these measures, IFD leadership will be better prepared to modify processes, equipment, personnel, and other factors to improve performance where needed.

In analyzing response performance, ESCI generates percentile measurements of response time performance. The use of percentile measurement using the components of response time follows the recommendations of industry best practices. The best practices are derived by the Center for Public Safety Excellence (CPSE), Standard of Cover document and the National Fire Protection Association (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*.

The “average” measure is a commonly used descriptive statistic also called the mean of a data set. The most important reason for not using the average for performance standards is that it may not accurately reflect the performance for the entire data set and may be skewed by outliers, especially in small data sets. One extremely good or bad value can skew the average for the entire data set.

The “median” measure is another acceptable method of analyzing performance. This method identifies the value at the middle of a data set and thus tends to not be as strongly influenced by data outliers.

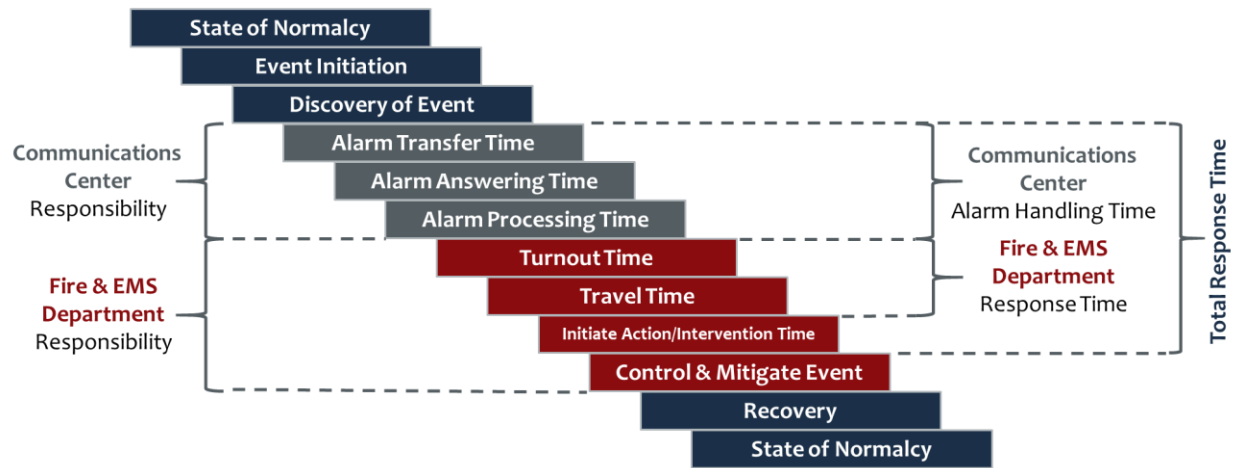
Percentile measurements are a better measure of performance because they show that most of the data set has achieved a particular level of performance. The 90th percentile means that 10 percent of the values are greater than the value stated, and all other data are at or below this level. This can be compared to the desired performance objective to determine the degree of success in achieving the goal.

As this report progresses through the performance analysis, it is important to keep in mind that each component of response performance is not cumulative. Each is analyzed as an individual component, and the point at which the fractal percentile is calculated exists in a set of data unto itself.

The *Response Time Continuum*—the time between when the caller dials 911 and when assistance arrives—is comprised of several components:

- *Alarm Handling Time*—The time between a dispatcher getting the call and the resources being dispatched.
- *Turnout Time*—The time between unit notification of the incident and when they are responding.
- *Travel Time*—The time the responding unit spends on the road to the incident
- *Response Time*—A combination of turnout time and travel time, the most commonly used measure of fire department response performance.
- *Total Response Time*—The time from when the 911 call is answered until the dispatched unit arrives on the scene.

The following figure illustrates the response time continuum and its components, along with identifying where responsibility lies for each component.

Figure 35: Response Time Continuum

The standard analysis of response performance includes only those incidents recorded as emergency responses. In the dataset provided by ESCI, there was not consistent documentation of this field, so all incidents were included in each of the following analyses, which may illustrate slightly longer performance times than actually exist for emergency incidents. ESCI recommends that IFD leadership research this gap in documentation and implement processes to improve accuracy.

Alarm Handling Time Performance

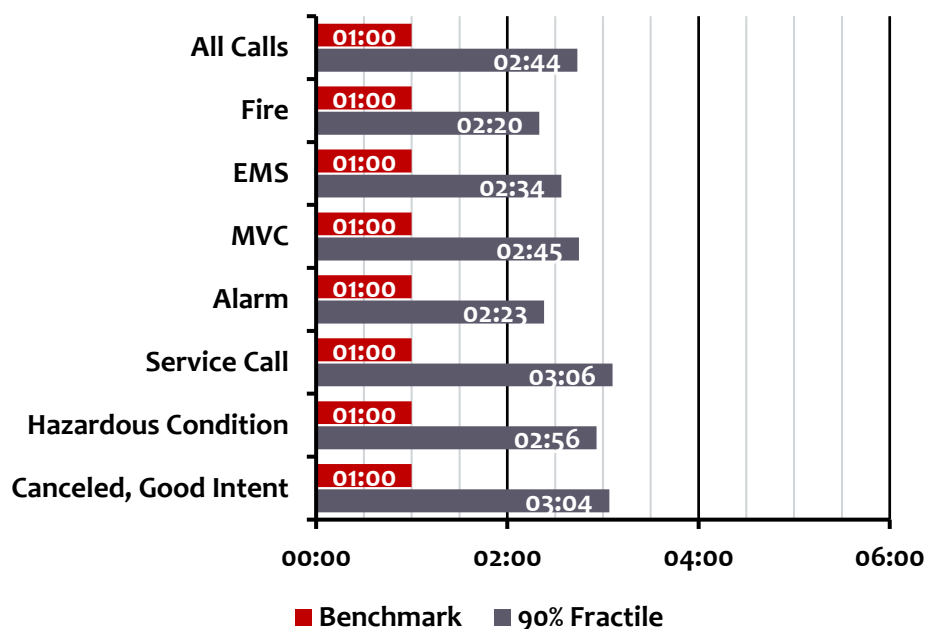
Alarm handling time is the time between a dispatcher getting the call and the resources being dispatched. This component of the response time continuum is under the responsibility of the communications center, rather than the fire department. The communications center is under the direction of the Independence Police Department. The primary standard for this measure is illustrated in the following.

Standard: NFPA 1225 – Standard for Emergency Services Communications (2022 Edition)

Performance: 60 seconds at the 90th percentile

As illustrated in the following figure, overall alarm handling time performance for IFD is 2 minutes, 44 seconds, more than double the expected performance. When analyzed by individual incident type, performance ranges from 2 minutes, 20 seconds for fire incidents to 3 minutes, 6 seconds for service call incidents.

Figure 36: IFD 90th Percentile Alarm Handling Time Performance, 2017–2021



Turnout Time Performance

The first component of the response time continuum under direct control of the fire department is turnout time—the time between unit notification of the incident and when they are responding. For this measure the one applicable standard is illustrated in the following.

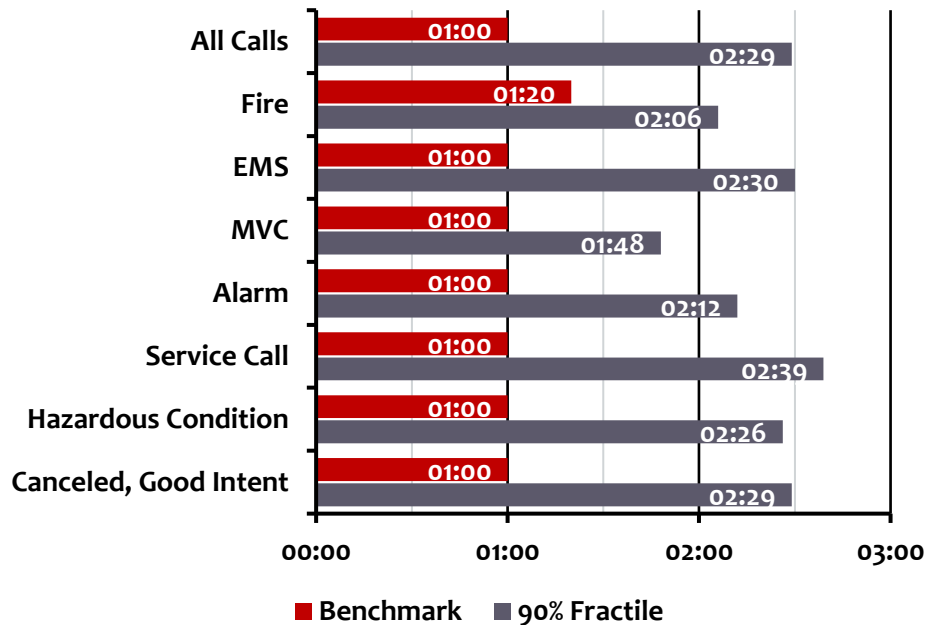
Standard: NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments

Performance: Fire and Special Operations Incidents – 80 seconds at the 90th percentile

All Other Incidents – 60 seconds at the 90th percentile

As illustrated in the following figure, overall turnout time performance for IFD is 2 minutes, 29 seconds, more than double the expected performance. When analyzed by individual incident type, performances range from 1 minute, 48 seconds for motor vehicle collision incidents to 2 minutes, 39 seconds for service call incidents.

Figure 37: IFD 90th Percentile Turnout Time Performance, 2017–2021

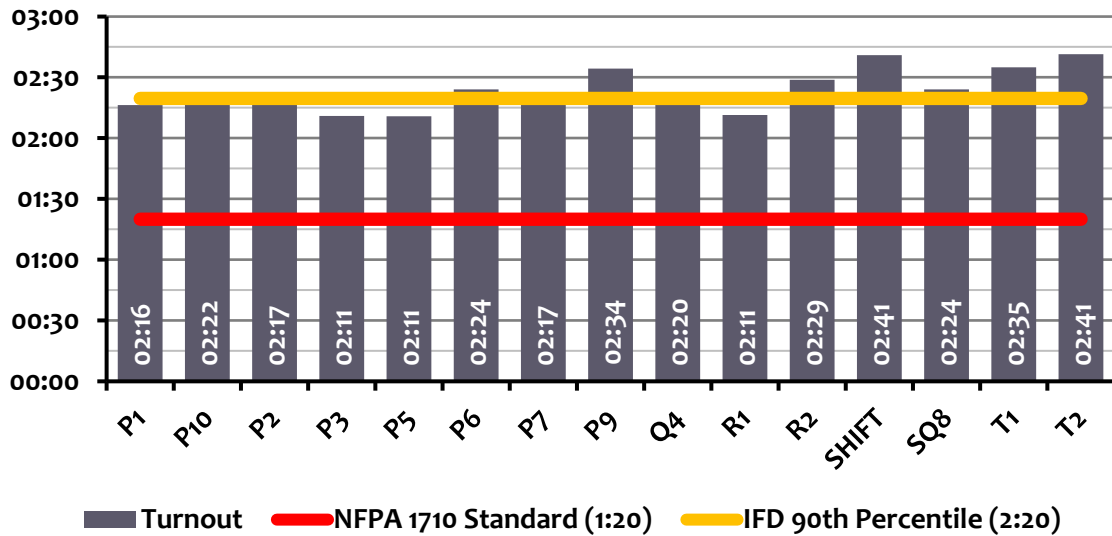


ESCI recommends that IFD leadership consider various factors that may have a negative impact on turnout time performance and implement changes where possible to enact improved performance. These factors may include:

- Systems used to notify personnel of an incident.
- Station design as it relates to the movement of personnel from living quarters to the apparatus bay.
- Personnel adherence to department policies and acting with appropriate speed towards the apparatus.
- Time required to don protective equipment prior to responding.
- Moving equipment between apparatus when units are cross staffed.
- Time from starting apparatus until radio system is capable of transmitting.

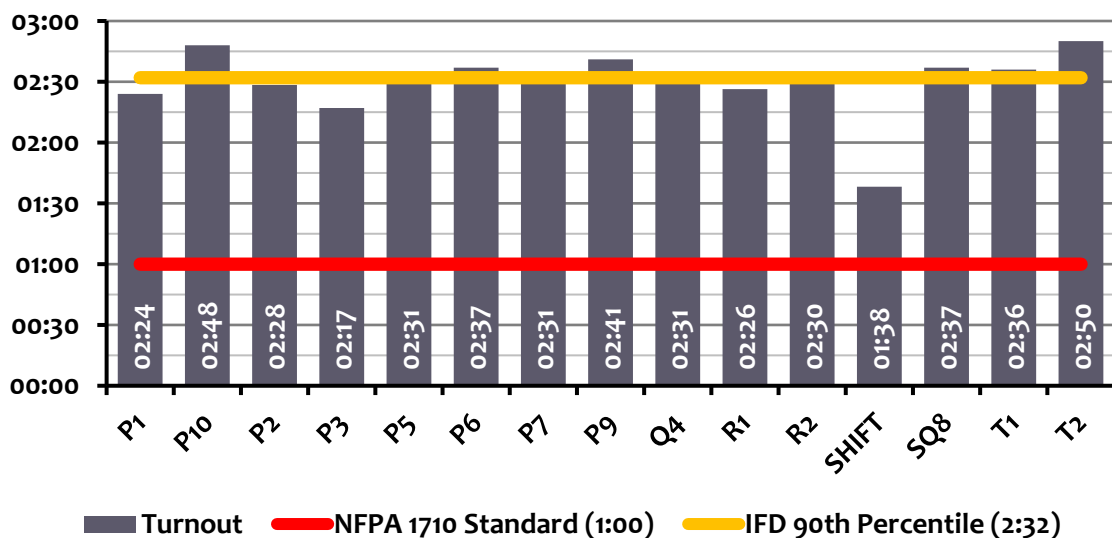
The following figure illustrates the overall turnout time performance by individual units to fire incidents. For purposes of this analysis, only those NFIRS incident Series 100 were included in the analysis.

Figure 38: IFD 90th Percentile Turnout Time Performance by Unit (Fire), 2017–2021



The following figure illustrates the overall turnout time performance by individual units to non-fire incidents. For purposes of this analysis, all NFIRS Incident Series were included except NFIRS incident Series 100.

Figure 39: IFD 90th Percentile Turnout Time Performance by Unit (Non-Fire), 2017–2021



Travel Time Performance

Travel time performance—the time the responding unit spends on the road to the incident—is the next component of the response time continuum. For travel time performance, the applicable standard is illustrated below.

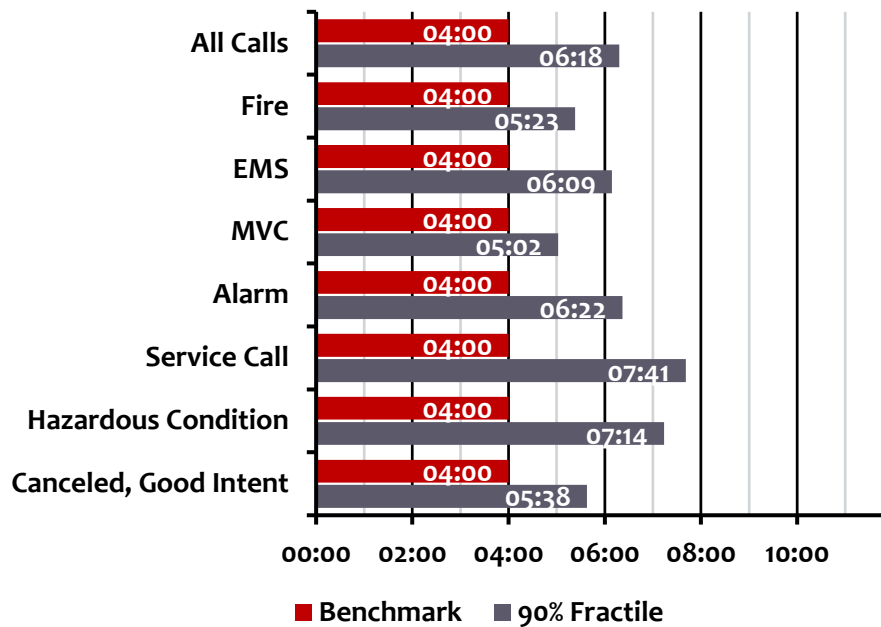
Standard: NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments

Performance: First Unit – 4 minutes at the 90th percentile
Full Compliment – 8 minutes at the 90th percentile

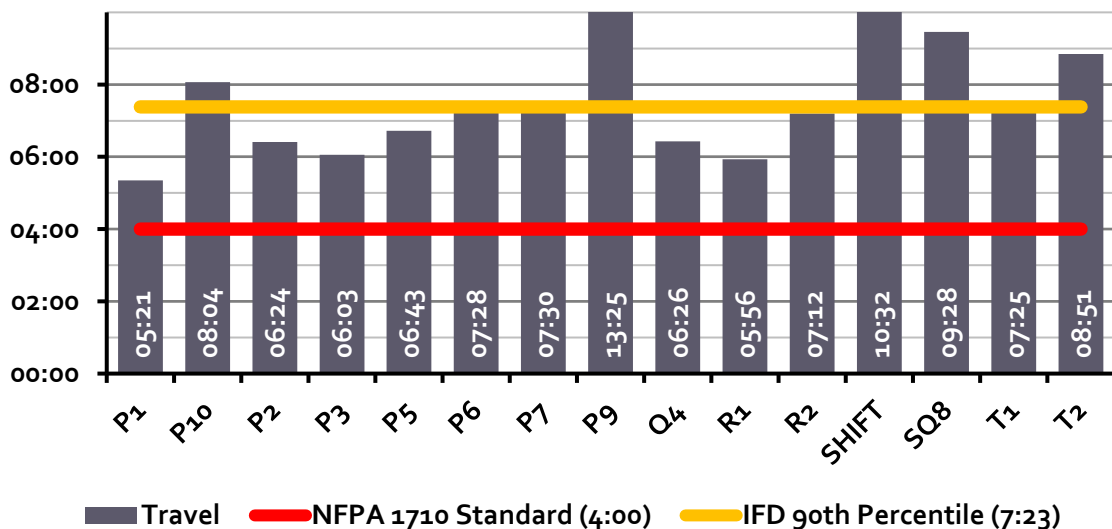
There are multiple factors associated with travel time performance, some of which are not under direct control of fire department personnel and may include:

- Geographic location of incident compared to geographic location of apparatus at the time of dispatch.
- Traffic.
- Weather conditions.
- Decisions on shortest route.
- Road conditions.

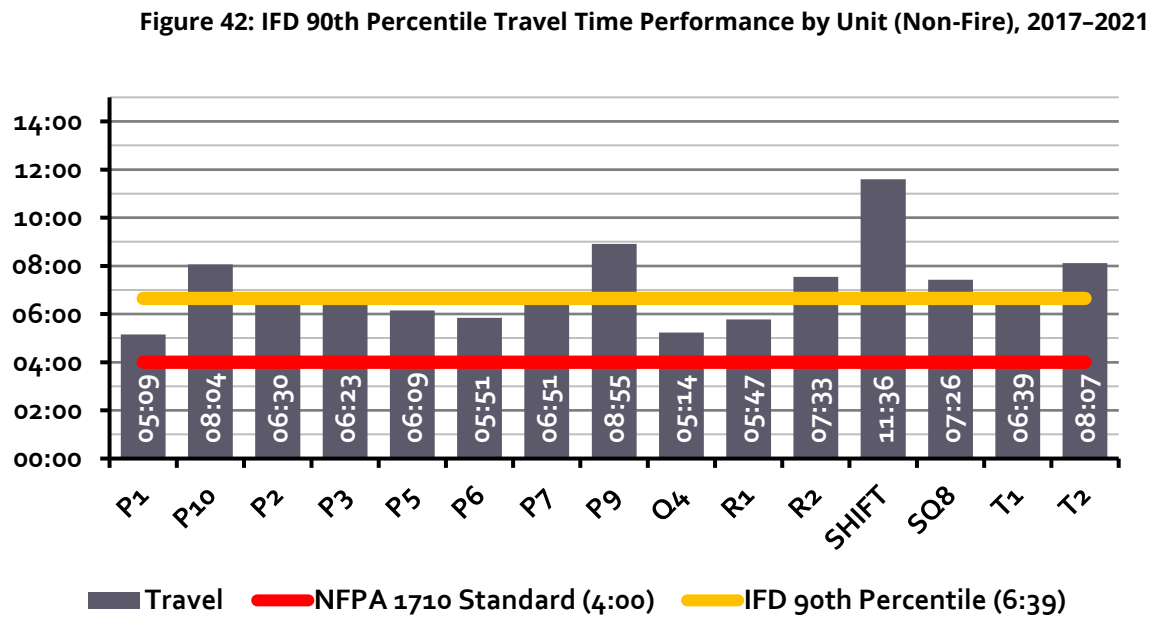
As illustrated in the figure below (Figure 40), the overall travel time performance for IFD is 6 minutes, 18 seconds. While this is slightly more than 2 minutes greater than the expected standard, it represents an excellent travel time. Often, it is difficult for communities to meet the 4-minute standard as it requires a balance of travel time performance versus the cost of additional resources within the community. When analyzed by incident type, travel time performance ranges from 5 minutes, 2 seconds for motor vehicle collision incidents to 7 minutes, 41 seconds for service call incidents.

Figure 40: IFD 90th Percentile Travel Time Performance, 2017-2021

The following figure illustrates the overall travel time performance by individual units to fire incidents. For purposes of this analysis, only those NFIRS incident Series 100 were included in the analysis.

Figure 41: IFD 90th Percentile Travel Time Performance by Unit (Fire), 2017-2021

The following figure illustrates the overall travel time performance by individual units to non-fire incidents. For purposes of this analysis, all NFIRS Incident Series were included except NFIRS incident Series 100.



Response Time Performance

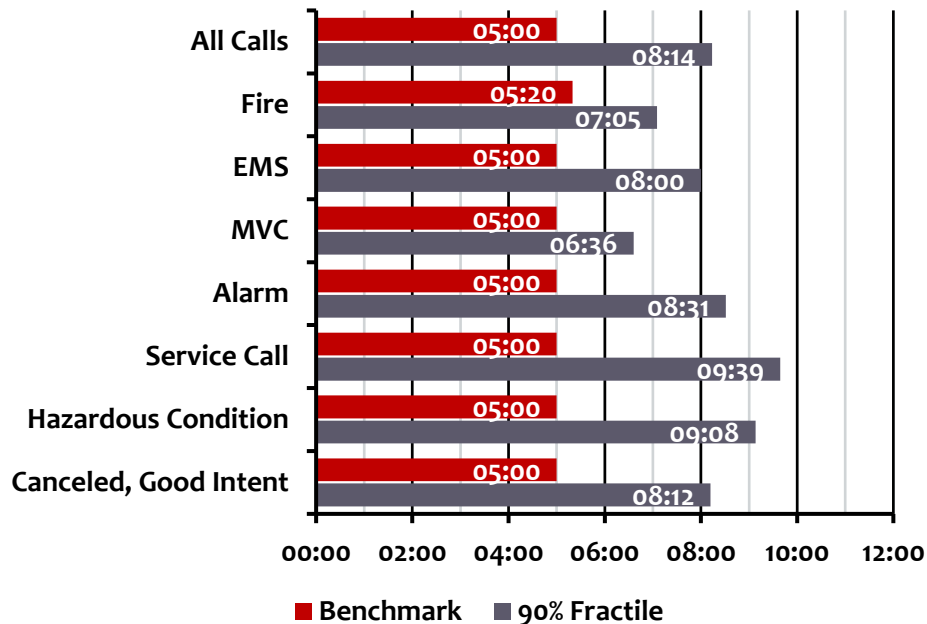
Response time performance is the first measure that combines two of the separate performance measures already illustrated and is a measure of the time between unit notification and arrival at the scene. For this measure, there is not a specific standard. However, by combining the two individual component standards, a comparative standard may be seen, as illustrated below (Figure 43).

Figure 43: Response Time Performance (NFPA)

Component		Performance
Turnout Time	Fire and Special Operations Incidents	80 secs (90 th percentile)
	All Other Incidents	60 secs (90 th percentile)
Travel Time	All Incidents	4 mins (90 th percentile)
Combined	Fire and Special Operations Incidents	5 mins, 20 secs (90 th percentile)
	All Other Incidents	5 mins (90 th percentile)

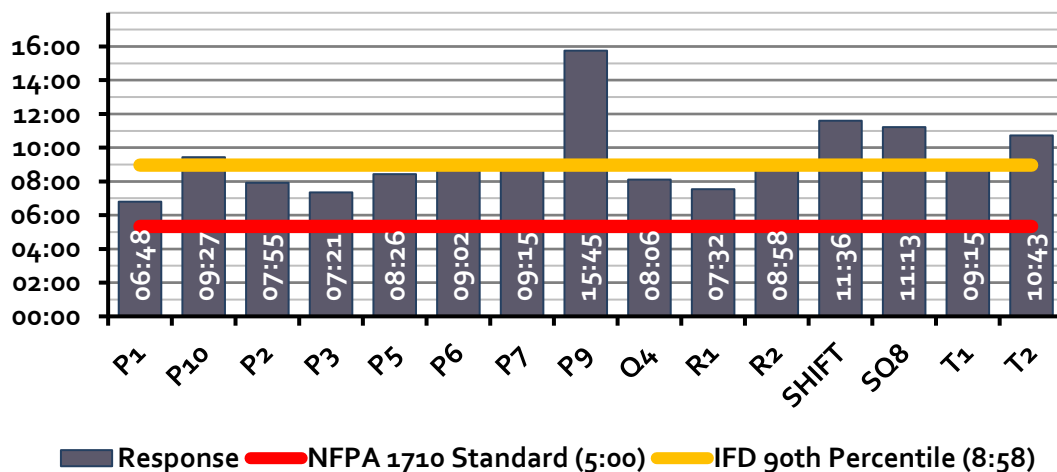
As illustrated in the following figure, IFD overall response time performance is 8 minutes, 14 seconds. When analyzed by individual incident type, performance ranges from 6 minutes, 36 seconds for motor vehicle collision incidents to 9 minutes, 39 seconds for service call incidents.

Figure 44: IFD 90th Percentile Response Time Performance, 2017-2021



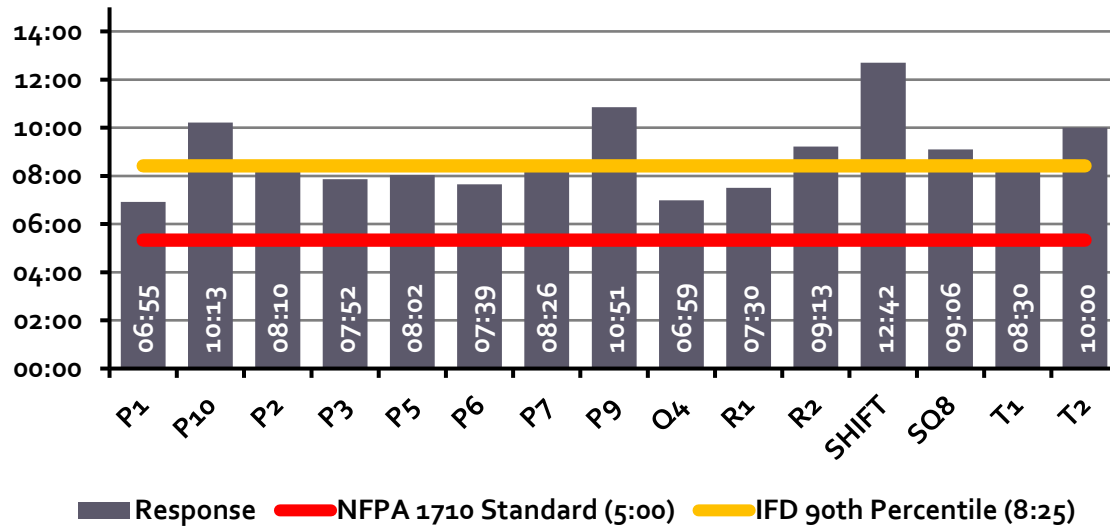
The following figure illustrates the overall response time performance by individual units to fire incidents. For purposes of this analysis, only those NFIRS incident Series 100 were included in the analysis.

Figure 45: IFD 90th Percentile Response Time Performance by Unit (Fire), 2017-2021



The following figure illustrates the overall response time performance by individual units to non-fire incidents. For purposes of this analysis, all NFIRS Incident Series were included except NFIRS incident Series 100.

Figure 46: IFD 90th Percentile Response Time Performance by Unit (Non-Fire), 2017–2021



Total Response Time Performance

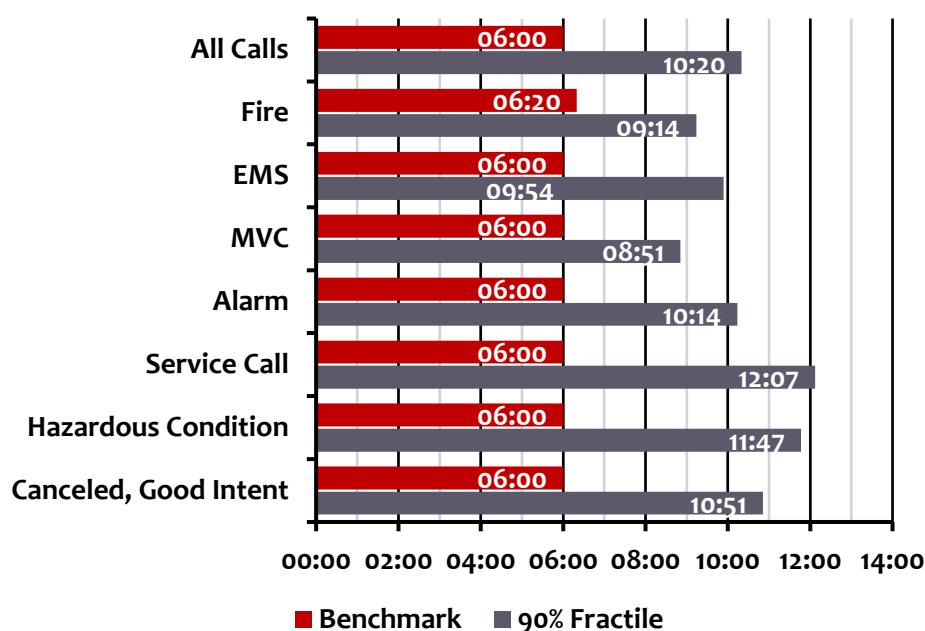
The final measure to illustrate the overall response time continuum—from 9-1-1 activation until arrival at the scene—is known as total response time. For this measure, there is not a specific standard. However, by combining the three individual component standards, a comparative standard may be seen, as illustrated below (Figure 47).

Figure 47: Total Response Time Performance (NFPA)

Component		Performance
Call Processing Time	All Incidents	60 secs (90 th percentile)
Turnout Time	Fire and Special Operations Incidents	80 secs (90 th percentile)
	All Other Incidents	60 secs (90 th percentile)
Travel Time	All Incidents	4 mins (90 th percentile)
Combined	Fire and Special Operations Incidents	6 mins, 20 secs (90 th percentile)
	All Other Incidents	6 mins (90 th percentile)

As illustrated in the following figure, IFD overall total response time performance is 10 minutes, 20 seconds. When analyzed by individual incident type, performance ranges from 9 minutes, 14 seconds for fire incidents to 12 minutes, 7 seconds for service call incidents.

Figure 48: IFD 90th Percentile Total Response Time Performance, 2017–2021



Mutual and Automatic Aid Systems

As agencies throughout the nation endeavor to provide emergency services while balancing fiscal responsibility, they often enter into aid agreements whereby they share services with neighboring agencies. To accomplish this, agencies enter into two types of agreements—automatic aid and mutual aid.

Automatic aid agreements encompass processes to allow dispatch of resources from the participating agencies without direct interaction from department officers at the time of dispatch. Under these agreements, specific incident types and processes are included in the agreement to allow the communications center to automatically request units from surrounding agencies simultaneously with dispatch of the home agency units.

Mutual aid agreements have similar content but rather than automatic dispatch of resources, resources are only dispatched upon the request of the incident commander or other responding officer. Under this process, the officer from the home agency requests specific resources from the mutual aid agency and those units are then dispatched in accordance with the agreement.

IFD leadership has identified the value in development of aid agreements as a means of providing service to the community. The following lists the aid agreements of which IFD is currently a party and the department reviews each agreement on a 3-year cycle to ensure it is current.

Figure 49: IFD Automatic/Mutual Aid Agreements

Agency	Agreement Type
Western Missouri Jackson County Clay County Cass County Platte Counties	Mutual Aid
Fort Osage - IFD CAD Quadrants 63, 64, 66, 68, 69, 70, 71, 172, 44, 46, 52, 53 FOFPD CAD Zones F01-1, F01-5, F03-1, F03-2	Automatic Aid
Central Jackson County Fire Protection District - Interstate 70 between Blue River Expressway and Woods Chapel Road	Automatic Aid Addendum
Mid-America Regional Council (MARC)	Interoperability
Forestry Division Missouri Department of Conservation	Memorandum of Understanding
Harry S. Truman National Historic Site	Memorandum of Understanding

The following figure illustrates the counts for each year where aid was either received or given, along with the type of aid.

Figure 50: IFD Aid Given/Received, 2017-2021

Description	2017	2018	2019	2020	2021
Automatic Aid Given	1	6	16	10	4
Automatic Aid Received	6	14	5	28	0
Mutual Aid Given	9	13	38	26	20
Mutual Aid Received	2	8	5	5	65
No Aid Given or Received	20,150	20,889	21,492	22,420	23,215

FIRE, RESCUE, AND EMS DISPATCHING

911 Communications Overview

Emergency communication for the City of Independence is provided by the City of Independence Emergency Communications Center (ECC). Opened in 2018, the ECC is housed in a modern building with redundant infrastructure and room for expansion of the dispatch operations area. The ECC is the primary Public Safety Answering Point (PSAP) and is responsible for processing wireless and wireline emergency, non-emergency, VOIP, and Text-to-911 requests. The ECC staff dispatch for the Independence Police Department (IPD) and the Independence Fire Department.

In the town's organizational structure, the ECC falls within the Communications Unit of the IPD and is overseen by an IPD captain. This is a typical organizational structure where both the police and fire departments for a community are dispatched in a shared dispatch center. The police department tends to have management oversight of the staff and operations since their call volume and resource requirements usually exceed those of the fire department. As single-person units, police officers will often have more interaction and rely on their dispatchers more than fire departments do. This higher usage by police usually gives them the prevailing influence when it comes to communications center operations. Unfortunately, this influence can also mean that the fire department's communications needs can go unheard.

Sound emergency scene operations by fire departments are increasingly relying on the communications system, both dispatcher and CAD system for support. Automated "run-card" or pre-defined responses, firefighter emergencies such as Maydays, and multi-jurisdictional mutual aid are part of the regular fireground operations that may not be as prevalent in police activities but require strong CAD and/or dispatcher involvement. Consequently, in single jurisdiction communications centers, the fire department needs to have strong, if not equal, input to dispatch operations. IFD feels that while IPD is a great partner and they get along well, they are often not given the attention that allows them to be as strong and efficient as possible.

Call Processing/Handling

The City of Independence ECC uses separately staffed positions for call taking and dispatching. Distributed job responsibilities allow for the dispatch of resources without interrupting the information gathering process.

All requests for fire and/or EMS service start with the call taker obtaining basic incident information. The preliminary questioning is consistent with the National Emergency Number Association's (NENA) 911 call answering guidelines. It includes the address of the emergency, the caller's phone number, and the nature of the emergency. Once this information is known, local protocol directs when an incident is entered into CAD, and emergency type will direct additional call processing steps.

Modern emergency call-processing includes the usage of emergency fire dispatch (EFD) and emergency medical dispatch (EMD) protocol structures. Rather than a dispatcher gathering necessary information from a caller at random, these protocols provide the dispatcher a series of dependency-based questions steering them to not only the appropriate resources to send to the emergency but providing instructions that can be given to the caller on what to do in the interim prior to emergency units arriving.

Fire Call Processing

Emergency calls that only require a response from the IFD continue to be processed locally. Call typing, CAD event entry, and pre-arrival instructions, EFD, are completed using local, internally created processing guidelines but not a third-party EFD system.

When fire department resources are dispatched, Automatic Vehicle Locating (AVL) uses real-time GPS to determine the closest unit(s) to the incident. This results in the closest appropriate resource being dispatched to the scene, which helps the IFD achieve NFPA, ISO, and CPSE response time standards. The IFD uses a set of structured response patterns based on alarm classification. These classifications are defined in the ECC Procedural Manual and are based on the IFDs determination of Effective Response Force (ERF).

EMS Call Processing

Emergency calls that require an EMS response are processed using a secondary public safety answering point operated by American Medical Response (AMR). After obtaining basic incident information, the ECC call taker will transfer 911 callers to AMR. Dispatchers at AMR complete the emergency medical dispatch (EMD) process and provide pre-arrival instructions when required while dispatching their ambulance. Independence FD/PD dispatchers are not trained in EMD relying on the AMR system to provide this information. This is due to both cost and the city not being the primary EMS provider in the community. This creates delays and repetition as the caller needs to provide information twice, to the Independence dispatcher and then again to AMR. Granted, the Independence dispatcher only request enough information to determine if a fire response is warranted but it can be confusing to a caller to have to repeat the information a second time when the call is transferred to AMR.

The nature of EMS in Independence is that two separate agencies, IFD and AMR, participate in medical responses. The severity of the call may eventually reduce this participation to one agency, but the call begins with both agencies being involved, IFD initially screening for their involvement and then ultimately the call being passed off to AMR for final disposition. Eventually, this disposition may include the termination of IFD's response, but inefficiency is created when the agency regularly starts a process and then cancels it. This is not completely unavoidable however when the process is the source of this inefficiency, the process must be evaluated.

To provide direction on more efficient practices, a few questions need to be asked:

- 1) What process includes the least amount of time for a caller to provide information (i.e., not provide it twice)?

- 2) What process allows for the best initial response (and highest potential for appropriate care) to an incident?
- 3) What process minimizes the number of times a responding unit cancellation takes place?

Due to the complexities involved with these answers and other cultural matters described in the next section, many fire departments have taken on the responsibility of being the community's EMS provider. The city of Independence has identified this option as too costly and therefore uses AMR as their EMS provider.

Technology

Before the questions are answered, it must be accepted that both dispatch centers require the same basic information from a caller to fulfill their dispatch requirements. To accomplish this, either both centers need to ask the same questions requiring the duplicative experience of the caller, or one center needs to ask all the questions and then pass the information to the other. When the total time a caller is online with a dispatcher is analyzed, the latter is preferred as more streamlining can take place between the dispatch centers than can take place between the caller and two dispatch centers. Technology has also advanced to the level that this streamlined communication transfer can take place near instantaneously and with no required human intervention.

IFD has been told that due to PD security concerns, this form of electronic transfer cannot take place. ESCI would disagree with this conclusion as there are numerous 9-1-1 centers that have cross interaction with outside computer systems, whether it's an adjacent agency's 9-1-1 centers in the manner ESCI is recommending, separate local government systems that do trigger-processing based on 9-1-1 input, or state and national agencies that work collaboratively with 9-1-1 center data requests. There certainly exists added protocols to be followed to maintain secure networks but nothing that should prevent a communications link between an Independence dispatch center and an AMR dispatch center. ESCI would recommend that an interface be established between the IFD/IPD dispatch and AMR computer systems.

Procedure

In an emergency call, since EMD protocols have been accepted as a higher level of initial medical intervention, to minimize duplication of dispatch questioning and hasten appropriate responses, the agency that is willing to provide this level of care should receive the emergency call especially if they are also providing the resource. IFD has said that they cannot provide this level of intervention so while IFD wants to know when receiving the call if they will need to respond, this determination only delays a potential ALS response that may be required. ESCI would recommend that as soon as a call is identified as a medical (excluding automobile accidents or rescues), the call be immediately transferred to AMR. (This assumes AMR has timely call answering processes and standards.) In a phone-call interview, AMR provided little information to ESCI about their practices. If IFD chooses to implement EMS protocols, an option now exists to keep call-taking within the IFD dispatch center.

This also answers the last two questions about how to maximize responses and reduce cancellations. Should AMR determine that an IFD response is required, an electronic transfer of call information back to the IFD dispatch center from AMR could take place meaning fire apparatus would only go on those calls that there is relative certainty of there being an IFD response benefit. Lastly, one last non-technological option is to have the IFD call-taker transfer the call to AMR but remain on the line, monitor the AMR questioning, and make a determination if an IFD response is warranted.

Recommendation 16. Create a joint committee of police and fire representatives that gives equal voice to both disciplines within the communications center and allows a collaborative approach to dispatch operations.

Recommendation 17. Establish an electronic interface between IFD and AMR computer systems to exchange incident data.

Recommendation 18. With the exception of accidents and rescues, IFD call-takers should immediately transfer EMS calls to AMR and if the technology is present, stay on the line for simultaneous dispatch entry.

EMERGENCY MEDICAL SERVICES SUPPORT AND SYSTEM OVERSIGHT

EMS Operations

Independence has determined that the primary pre-hospital care provider is AMR. While many fire departments across the country are accepting this part of a redefined mission to the community and establishing ambulance service, IFD finds this option cost-prohibitive and has provided a permit (not contract) to AMR to provide pre-hospital care.

AMR Paramedic Response

Independence provides a permit to AMR to provide pre-hospital care to the community. This permit is handled as a business license with the only requirement being that the appropriate fees are paid. ESCI recommends that this relationship be changed from a permitting one to a contractual one that provides clarity of service deliverables and accountability.

In the current service delivery model, AMR often can choose between emergency calls to the community and other non-emergency revenue generating services. While in most cases, AMR would prioritize emergency services, experiences with other communities have revealed that AMR can have a degree of unavailability because they are providing some of these other non-emergency services. Having a contract rather than a permit allows the city to establish response standards, expect accountability, and create incentive to comply with city-established performance standards.

Once a call for service is received by AMR, each request is prioritized by the call taker. High-priority calls are dispatched immediately, while the dispatch of low-priority requests may be delayed. AMR and the Medical Director have determined that low-priority EMS incidents do not require the IFD to send a first responding unit. In those cases, AMR will call the IFD dispatch center and attempt to cancel any IFD response, if initiated. ESCI was unable to determine the percentage of calls that AMR was either delayed or unavailable.

IFD EMS First Response

First responders can provide life-saving care in various prehospital medical emergencies, including cardiac arrest, stroke, and major traumatic injuries. A decision a community must ask itself is whether or not their fire departments should fundamentally be a part of EMS services. The main advantage of fire department participation is that they are often the quickest to arrive on an emergency scene. In addition, if the fire department does participate, what level of service should they be capable of providing. Advance Life Support (ALS) care can not only be provided by paramedics on ambulances, but it can be provided by firefighter/paramedics on fire trucks. The benefit is since they often arrive quicker than an AMR ambulance, they can provide advanced levels of care quicker. The challenge is that this is not an inexpensive service to provide both in time and equipment. Firefighters can also be trained to an

EMT level which gives them basic, non-invasive, life-saving skills but lacks any potential to provide advanced levels of care until an ambulance arrives. IFD currently provides both basic life support (BLS) and advanced life support (ALS) levels of care. All units are equipped and staffed to provide BLS care but ALS care is staff dependent. Some of IFD personnel are trained paramedics and distributed throughout the city's stations and shifts however, IFD does not have an ALS staff requirement so when a paramedic is on duty, the unit is ALS capable. If no paramedic is on duty, then the unit is BLS capable. IFD should consider a policy supporting a response from an ALS unit on calls that have a potential need for ALS service. This would require a more in-depth evaluation of call types to determine more specific call natures, acceptable or desired ALS response times from IFD units, and then a determination of how many paramedics would be needed to support the desired response times.

Every employee of the IFD is certified to a minimum of Emergency Medical Technician (EMT), with some being certified to the Paramedic level. The State of Missouri follows the National Highway Traffic Safety Administration's (NHTSA) National EMS Scope of Practice Model. Under this model, EMTs are expected to mitigate life-threatening conditions using basic medical equipment and provide basic patient assessment, treatments, and transportation. Paramedics are trained to manage complex conditions and treat patients with more advanced medical devices, procedures, and pharmacological interventions. Authorized paramedics are commonly required to maintain additional certifications that may include Advanced Cardiac Life Support (ACLS), Pediatric Advanced Life Support (PALS), and Trauma Life Support (ITLS/ATLS).

The IFD uses EMTs and Paramedics to provide a 'Medical First Response' service. The IFD sends first responders to every request for EMS service in the city. While commonly assigned to the pumper companies, the medical first response can be provided by any IFD staffed apparatus. The IFD does not own or staff, any EMS transport units.

EMS Processing Impact on Operations

The IFD's use of first responders to provide early medical care assumes all patients will benefit from these resources until proven otherwise by the EMD process. This results in a highly sensitive screening process that guarantees all patients that would benefit from rapid EMS care receive it without delay.

However, sending first responders on all EMS calls is not a selective process. It results in some 'false positives' where IFD units are dispatched and canceled, or they are dispatched and arrive on the scene before being canceled. In the second case, the IFD unit must remain committed to patient care until AMR arrives, which could be delayed. The time spent committed in these cases increases Unit Hour Utilization and workload, while decreasing reliability.

The Medical Director and the IFD are challenged to balance the risks and benefits of this methodology.

IFD EMS Administration

The roles and responsibilities of all members of the EMS system are outlined in IFD SOP 304. Primary responsibilities of EMS administration are assigned to the Assistant Chief of EMS, also referred to as the EMS Chief. The EMS Chief is tasked with maintaining the IFD's EMS agency license and individual provider certifications. The EMS Chief is also responsible for maintaining equipment inventories, monitoring electronic patient care report (ePCR) documentation, and conducting quality assurance and quality improvement (QA/QI).

The EMS Advisory Committee, also referred to as the EMS Committee, was established to support the administration of the EMS Division. Led by the EMS Chief, the EMS Committee consists of an additional Chief Officer, and four members of the Local 781 bargaining unit, with two certified EMTs, and two certified paramedics, each of any rank. The EMS Committee evaluates all aspects of EMS performance and service delivery, interfaces with the Labor/Management and Safety Committees regarding EMS issues, and reviews clinical performance data provided by the EMS Chief.

One civilian administrative specialist is shared between the EMS Chief and Assistant Chief of Training and Professional Development.

Medical Control and Oversight

The State of Missouri Department of Health and Senior Services (DHSS) Comprehensive Emergency Medical Services Systems Regulations requires a Medical Director to provide oversight of an EMS agency's operations. Emergency Medical Services in the IFD and American Medical Response are authorized to practice under the medical license of Dr. Lorraine Duncan, MD, FACEP. The contract between Dr. Duncan of ER Staffing and Consulting, Inc. and the IFD details the expectations of both parties.

One of the primary functions of a Medical Director is to develop, approve, and communicate the patient care protocols executed by EMS providers. Dr. Duncan's Medical Direction encompasses all phases of the EMS response system. Medical oversight starts with the Emergency Medical Dispatch (EMD) process and the Pre-Arrival Instructions (PAI) utilized during the initial 911 call. Medical Direction covers patient care the IFD provides on scene and care AMR provides during transport to local emergency departments. Dr. Duncan's protocols govern all functions of the EMS system in Independence.

Quality Assurance/Quality Improvement

The second major function of a Medical Director is to provide Quality Assurance and Quality Improvement (QA/QI) systems. Quality assurance is traditionally focused on the performance of an individual provider to ensure that the standard of care is met, and improvements are made through individualized refresher training. Quality improvement captures the performance of the EMS system in aggregate and changes the system through continuing medical education, protocol clarifications, policy adjustments, and equipment selections.

The State of Missouri Department of Health and Senior Services (DHSS) requires a quality improvement program for EMS agency licensing. The responsibility to meet this requirement is placed on the EMS agency. The Medical Director's Contract Scope includes the requirement to assist the IFD in managing a QA program. State regulation does not define how a QI program should be administered. The EMS Chief is authorized to "implement EMS procedures and standards facilitating continuous improvement and quality care." The IFD has not developed an SOP that establishes a formal QA/QI program that defines its function, expectations, and workflow.

An important element of a QI program is the establishment of Key Performance Indicators (KPIs). Dr. Duncan's EMS protocols have Quality Metrics listed within each that provide the framework for which individual and system performance are measured.

EMS Training and Skills Evaluation

EMT certification is a prerequisite for hiring, so the IFD has no involvement in the initial EMT training of its members. All new employees attend a new hire school at the training academy, followed by on-the-job training. Both of these steps are detailed in the Collective Bargaining Agreement.

The State of Missouri requires all EMTs and paramedics to recertify every five years. The IFD provides Continuing Education Units (CEUs) through an online learning management system (LMS). Each member is responsible for managing their recertification progress.

Comprised of IFD members at the EMT and paramedic levels, the EMS Instructor Group is expected to deliver 80% of the in-person training. In-person training topics can include suggestions by the EMS Advisory Committee following a QI process, suggestions by the Medical Director, and topics required by the Missouri Board of Emergency Medical Services (MOBEMS). The EMS Instructor group also delivers American Heart Association Cardio-Pulmonary Resuscitation (CPR) refresher training every two years.

Recommendation 19: - Consider operational changes that would provide for ALS service on all ALS potential calls.

Recommendation 20: Change AMR approval process from a permit to a contract that spells out specific performance standards and provides accountability.

SUPPORT PROGRAMS

Training

Undoubtedly, a comprehensive training program is one of the most critical factors for helping to ensure the safe and effective provision of emergency services. This is especially true of integrated organizations such as the Independence Fire Department, which provides a broad range of services throughout the community. To ensure maximum effectiveness and safety in complex environments, firefighters, officers, and EMS providers must acquire and maintain sufficient initial training, ongoing training, and continuing educational units (CEUs). Failure to provide necessary training endangers firefighters, EMTs, paramedics, and citizens, and exposes the fire department to liability. In addition, a well-trained workforce contributes to better emergency incident outcomes and community services.

Training programs must go beyond simply fulfilling mandatory hours. Fire rescue training administrators and instructors must ensure that firefighters, EMS personnel, and officers are not only competent, but also self-confident in the variety of skills necessary to perform effectively in high-stress situations. To accomplish this, fire rescue organizations must have access to training resources—either within the organization, externally with regional partners, or both.

Following probationary periods, personnel need on-going training and skills maintenance. To this end, there has to be a sufficient number of instructors, training grounds, and adequate training materials either internally or available from outside sources. Training sessions should be formal and follow a prescribed lesson plan that meets specific objectives. Additionally, training sessions involving manipulative exercises should include a safety message and have a dedicated Safety Officer.

In this section, ESCI reviews IFD's training practices, compares them to national and other applicable state standards and best practices and offers recommendations as are appropriate.

General Training Competencies

The basis for effective training is established standards. There exists a variety of training standards including those from the National Fire Protection Association (NFPA), the International Fire Service Training Association (IFSTA), the International Fire Service Accreditation Congress (IFSAC), Missouri Division of Fire Safety, and the National Incident Management Systems (NIMS) from FEMA. EMTs and Paramedics must comply with State of Missouri Department of Health-EMS for initial and continued certification as well.

New hires with IFD go through a brief orientation period that introduces them to the City's Human Resources policies and procedures as well as brief instruction from various divisions within the IFD. After the orientation period, new firefighters are assigned to a shift schedule where they will work alongside other incumbent firefighters to learn aspects of the department with on-the-job training. In addition, they are assigned a "task book" that must be completed within 12 months of hire. The task book reviews various aspects of the department and guides the new member in expected behaviors

within the organization. The task book items are signed off by the supervising Captain that the new recruit is assigned to.

Firefighters must learn and retain a vast number of skills. Training should be on maintaining skills and acquiring new abilities. This can be accomplished with competency-based training (CBT). CBT is training designed to allow a learner to demonstrate the ability to do something. The key being that they either can or cannot yet do the task that they are learning. They do not have to be better or faster than others, they simply have to demonstrate the task, exercise, or skill well enough to be competent. When a firefighter demonstrates competency to a task, the focus can be shifted to advanced training or learning additional skills.

On-going firefighter training is for skills maintenance and learning new techniques for established practices. In addition to regular on-going training, a path for developing future company and chief officers should be offered. IFD currently has probationary task books (actions to be accomplished or knowledge to be learned) for new members, but no task book has been developed for company or chief officers. Additionally, inter-station drills should be conducted monthly or quarterly to ensure that all personnel are competent in firefighting skills and knowledge.

Overall, the IFD has a training program that is improving. After hitting a low number of training hours in 2018 (15,565 hours), the numbers have increased to 40,935 in 2021. However, IFD has yet to reach the high that was achieved in 2013 (47,915). Although training performance cannot be judged solely on the number of documented training hours, this is a clear indication of the priority that is currently given to the training division. Training records are tracked through the Target Solutions software, now known as Vector Solutions.

Training Administration

IFD's Training Division is led by the Assistant Chief-Training and represents the only staff member assigned to training. The Assistant Chief-Training is housed at fire station #1, along with the other fire administration members. Overall, IFD's Training Division is not well equipped for their monumental mission. Training staff is limited to one Assistant Chief. Based on the size of the department, one member responsible to coordinating and conducting training is not feasible. The current SOP related to the department's training program was last updated in 1996. Many new ideas, requirements, and best practices have been updated since this time. Therefore, a thorough review and possible revision of this SOP would be appropriate.

Training Schedules

With the number of skills required for firefighting, it is necessary to assess a firefighter's abilities and skill level. The majority of training conducted throughout the year is accomplished and directed by company officers. The IFD training division provides the ISO standards as a guideline for the number of required hours for each member. Additional training is available through an online training program from *Target Solutions*, which has recently been adopted for use by IFD.

The annual training hours are tracked by the Training Division, but follow-up and review should be conducted by the Company Officer and Battalion Chief levels also. Occasionally, more often than not a list of objectives and teaching points are utilized instead of formal lesson plans. Typically, when lesson plans are formulated, they are done in-house unless a class is for certification or re-certification.

Training Facilities and Infrastructure

An effective, standards-driven training program is a vital part of a fire department's safety and accident prevention program and vice versa. Training is especially important for high risk/low frequency scenarios, such as building collapse or rail accidents. Regular participation in an effective and continuous training program results in safer, more efficient, and effective emergency operations. Proficient emergency responders develop confidence in their abilities to handle emergency incidents through regular access to training centers for repetitive drills (skill maintenance and refinement) and to develop new abilities.

Emergency responders must be equipped with a balance of knowledge and skills that are periodically exercised in a realistic but safe environment. Modern fire training centers continue to evolve with the blending of suitable space, durable yet adaptable structures, and current technology. Training center facilities must incorporate classroom resources, computer resources, incident simulation equipment, and individualized study resources.

A fire department needs access to an area where firefighters can safely practice and maintain manipulative skills proficiency. Equally important are open spaces that include devices (props) that provide or create the realistic effects associated with fire, EMS, and rescue incidents. Training facilities provide a controlled and safe environment to simulate emergencies in order to develop and test skill sets of emergency workers. Training involves both individual and group manipulative skills development in the operation of firefighting equipment and fire apparatus. NFPA 1402: *Guide to Building Fire Service Training Centers* is a standard that describes the appropriate design and construction of facilities for fire training.

IFD's training facility is located in the area near Station 8. The facility consists of a multi-story live-fire burn tower and incorporates many features that allow for a wide array of training scenarios to be completed. Fire hydrants are on site to facilitate scenarios involving fire hose usage. While a great potential exists to conduct training, several elements are missing from the site. These include classroom facilities, restrooms, shower facilities, meeting rooms, locker rooms, and breakroom amenities. Adding these vital amenities to the site will ensure that training events can take place over a longer time period, without the need to leave the facility. In addition, areas that allow for firefighter recovery and rehabilitation will ensure all member remain safe and rested in between training scenarios.

Recommendation 21. Add staffing to the training division to assist in the development and delivery of a comprehensive training program.

Recommendation 22. Utilize formal lesson plans for department training activities.

Recommendation 23. Develop a formal training program that includes an annual training plan. This plan should cover the needs of new members and incumbent members. Consider revising SOP 601: Fire Department Training Program

Recommendation 24. Establish as a part of department succession planning including opportunities to attend the required courses.

Recommendation 25. Modernize IFD's training facility

Fire Prevention

Fire prevention should be the cornerstone for all activities performed by a fire department. The prevention of fire and loss of life, human suffering (injuries to civilians and firefighters), environmental harm, and property damage is the optimum return on investment for fire agencies. Proactive involvement in construction, code enforcement, educating the public to prevent destructive fires, and training the public to survive them is the best accomplishment of fire prevention.

There are seven fundamental components that together work to create an effective fire prevention program:

- Code enforcement activities
- New construction inspection and involvement
- General inspection program
- Fire and Life-Safety public education programs
- Fire investigation programs
- Pre-incident planning
- Statistical collection and analysis

Code Enforcement & General Inspection Program

The most effective way to combat fire is to prevent them from occurring in the first place. A strong fire prevention program, based on locally identified risk and relevant codes and ordinances, reduces loss of property, life, and the personal and community-wide disruption that accompanies a catastrophic fire.

The IFD has adopted the 2018 International Fire Code (IFC). With the IFC, the Fire Department has also adopted the newer version of the NFPA Life Safety 101 Code, the National Electrical Code NFPA 70 and other reference codes from the National Fire Protection Association (NFPA) which supplements the International Fire Code. Several NFPA documents are referred to within the IFC code series. Within the

IFC, several appendices exist that have been deleted and not adopted by IFD. These include appendices E, F, G, H, I, J, K, L, M, and N.

Each business is required to be inspected on an annual basis by the local fire station. Critical life safety hazards are immediately remediated, while other violations are required to be fixed within 10 working days. Fire companies are assigned to complete these inspections, and educational brochures that provide an overview of the inspection process are provided to the business owners. These brochures also provide an overview of other fire prevention activities that IFD has available to the business owners.

New Construction Inspections and Involvement

Plan reviews and permitting for a new development or building in Independence should be the responsibility of the Fire Prevention Division. Once constructed, the city will have the responsibility to protect the structure and building. As a result, the City and IFD have an interest and fiduciary duty to ensure that development and building construction meets adopted fire and life safety codes.

Fire and Life-Safety Public Education Programs

The purpose of public fire and life safety education is to minimize the number of emergencies and training the community in appropriate actions to take should an emergency occur. Fire and life safety education provides the best chance for minimizing the effects of fire, injury, and illness to the community. Additionally, public education can correlate to firefighter safety. As an example, arriving at the scene of a house fire, the first arriving Fire Officer finds that the residents have all evacuated safely, and are accounted for in a meeting location. Their actions have accomplished the first priority of the fire department, life safety, and the firefighters can concentrate on fire suppression.

Public fire and life safety can be simple or an in-depth program covering a variety of topics. Example topics include fire extinguisher training, smoke detector education and installation, CPR, first aid courses, fall prevention, home fire safety, fire prevention materials in multiple languages, fire brigade training for businesses, and many others. Even the largest departments cannot cover all fire and life safety topics and so a fire department needs to decide where to direct resources.

IFD participates in equipment demonstrations to various groups as well as provides station tours to interested parties. In addition, a Juvenile Firesetter program is in place that deals with minors who have started, or the potential to start fires of a curious or malicious nature. In addition, IFD partners with the Red Cross and the local CERT to provide smoke detector installations in neighborhoods affected by recent fires.

Fire Investigation Program

According to NFPA 921, there are four determinations when investigating the causes of fire:

- Accidental fire cause
- Natural fire cause

- Incendiary fire cause
- Undetermined fire cause

Accurately determining the cause of fires often provides clues to preventing future incidents. Identifying fire that are set intentionally (incendiary), along with the identification and/or prosecution of the responsible parties, can prevent additional fires. If the cause of a fire is natural or accidental, it is also of great value in knowing and understanding its origin. It is of value in identifying where to direct fire prevention and public education efforts to reduce or prevent re-occurrences.

The initial origin and cause scene examinations are conducted by company officers, incident commanders, fire inspectors, or other trained shift staff. If further investigation is needed, the fire is deemed suspicious or incendiary, or further intelligence is needed, then the police department is authorized to be immediately requested. However, the Independence Police Department does not have a policy in place related to the handling of arson cases. All fires shall have a brief narrative and description completed and stored within the department's records management system. IFD along with IPD should consider the creation of a 24/7 fire investigation/arson unit that is responsible for all fire investigations. This unit should have a round-the-clock investigator on call to provide credentialed fire investigation personnel to any incident.

Recommendation 26. Consider the creation of a fire investigation team that includes arson investigators from the police department.

Recommendation 27. Collaborate with local law enforcement to formalize the procedures when handling fire investigations that involve, or suspect to involve, arson or other criminal matters.

Pre-Incident Planning

Pre-incident plans give firefighters information on specific structures and processes and are a tool for firefighters to engage in strategy and tactical tabletop discussions before an emergency occurs. Pre-incident planning involves evaluating protection systems, building construction, contents, and operating procedures that may influence emergency operations.

A firefighter typically works in an alien environment of heat, darkness, confusion, and extreme danger. Often, a firefighter's first visit to a building is when he or she is summoned to an emergency at the facility; the very time that the internal environment of the structure may be at its worst. Contrary to Hollywood's portrayal of the inside of a building on fire, visibility is likely to be zero due to smoke. A lack of familiarity with the layout of a structure can easily cause a firefighter to become disorientated and subsequently suffer injury.

It is important that firefighters and command staff have accurate information readily at hand to identify hazards, direct tactical operations, and understand the proper use of built-in fire resistive features of

structures. This is accomplished by routinely touring structures, developing pre-incident plans, and conducting tactical exercises—either on-site or tabletop. The standards set forth in NFPA 1620: *Standard for Pre-Incident Planning*, guide the development of pre-incident plans. To have value, pre-incident plans need to be current. Pre-plans should be distributed to all mutual/automatic aid partners.

An ideal pre-incident planning system uses standardized forms and protocols. Data is collected in a consistent format and presented in a manner that permits commanders and emergency workers to retrieve it quickly and easily. All require the use of consistent methods for collection, verification, storage, presentation, and update of emergency plans.

IFD didn't provide any information related to their pre-plan process and this is an area that was identified in their most recent ISO survey as weak and that possibly with improvements, move them into an ISO Class 1 rating.

Recommendation 28. Develop and implement a comprehensive pre-plan process that allows rapid retrieval of pre-plans during an emergency incident.

Statistical Collection and Analysis

The U.S. Fire Administration states that, "A compelling reason for documenting fire and EMS incidents is a legal requirement." Insurance companies, victims, regulatory agencies, and others may require documentation of the facts surrounding an incident.

Incident reports of fire response can yield a bevy of insight. Proffering elementary data in fire department annual reports is common. However, the details can be beneficial to fire departments by yielding information into the origin of fires, how people are being injured, and the geographic locations where events are occurring in a jurisdiction, among other evidence.

IFD utilizes a records management system for recording fire incident data in compliance with NFIRS. Analysis of response data occurs in-house by the Fire Chief or other Chief Officers. Reports can be made depending on the request and distributed as requested. No one person is assigned as a data collection analyst.

In addition to incident reporting, analysis of data can be used to develop benchmarks for performance in all aspects of the department operations. For example, public education programs could have a benchmark and goal that can help determine how many programs are needed and how many citizens the department in reaching in their efforts. This along with fire response data can ultimately help to determine the effectiveness of the overall fire prevention program. Understanding the impacts and outcomes of each program is essential to meeting the goals and objectives of the IFD.

Recommendation 29. Create benchmarks for each aspect of the fire prevention program. Measure these data points and establish goals related to them. This will provide relevant and measurable outcomes for each fire prevention program.

HAZARDOUS MATERIALS RESPONSE AND SUPPORT CAPABILITY

In addition to providing fire and rescue services, IFD has response capabilities to mitigate incidents involving chemical or biological substances. Hazardous materials (Haz-Mat) are defined as any item or agent (biological, chemical, radiological, and/or physical), which has the potential to cause harm to people or the environment. Independences, like many cities in the state, contains industrial and agricultural environments with significant hazardous material release potential. It is because of this potential that firefighters with specialized training, equipment, and experience must be available to respond, identify, rescue, and mitigate these types of incidents.

Due to the volume of hazardous materials stored and utilized throughout the city and the potential quantities in transit on any given day through the City along Interstates 70 and 470, Highways 291 and 24, and other high-volume roadways, the need for hazardous materials preparedness and response is apparent. The amount of hazardous materials transiting the city via rail, and highway is substantial. However, the transportation routes are not the only risk the community faces. Industrial warehousing activities and other business activities increase risk due to the handling of these materials.

Staffing & Certification

Haz-Mat certification levels are defined by NFPA 472, *Standard for Competence of Hazardous Materials/ Weapons of Mass Destruction Incidents* and the Occupational Safety and Health Administration (OSHA) in CFR 1920.120. The highest level of certification for responders is the "Technician" level. While IFD currently allows many firefighters to be trained at the Haz-Mat Technician level, only the top 20 senior Haz-Mat Technicians are considered part of the Haz-Mat Team and paid incentive pay. Fire Station 5 serves as the base of operations for the IFD Haz-Mat Team and operates with 3-4 Technician level members per day. However, based on staffing needs, Operations level personnel may be assigned to Station 5.

Every IFD member receives annual Haz-Mat training either through outside agencies or in-house. In addition to annual physicals for all IFD members, Haz-Mat Team members are provided additional screening for toxicology and heavy metal labs.

Standard Operating Procedures, Policies, and Guidelines

The IFD currently has an SOP in place that outlines Hazardous Materials response last updated in 2022.. Like many things in the fire service, the Haz-Mat discipline is ever-changing. With that change, brings new ideas, challenges, equipment, and response techniques.

The Mid-America Hazardous Materials Emergency Preparedness Alliance provides a planning document called the Regional Hazardous Materials Emergency Preparedness Plan (RHMEPP). The purpose of this RHMEPP is to coordinate planning and response actions among stakeholders within the Missouri Region A Urban Local Emergency Planning District (LEPD) and Kansas Mid-America Local Emergency Planning Committee (LEPC). In a collaborative effort, these organizations established the Mid-America Hazardous Materials (Hazmat) Emergency Preparedness Alliance (HEPA) to ensure ongoing cooperation in hazmat

planning and response activities. The RHMEPP provides an administrative framework for hazmat planning and response in the areas served by the Missouri Region A Urban LEPD and Kansas Mid-America LEPC that include Cass, Clay, Jackson, Platte, and Ray Counties in Missouri, and Johnson, Leavenworth, and Wyandotte Counties in Kansas. Through Mid-America HEPA, the LEPC and LEPD strive to implement a Whole Community approach as promoted by the National Preparedness Goal, by working with private industry and the public safety community on behalf of the citizens, businesses, and visitors. While the RHMEPP was recently updated, ongoing revision and training exercises should be conducted to ensure the plan is understood by all agencies that may utilize it.

Currently, IFD characterizes their Haz-Mat Teams response capabilities as only being able to effectively mitigate small-scale incidents. Given the potentially devastating effects of a larger-scale Haz-Mat incident, increasing this capability would be prudent. This could be accomplished through mutual aid agreements or by increasing the training and certification of current IFD members and adding additional equipment and apparatus to the fleet.

Recommendation 30. Review and possibly update the SOP 208: Hazardous Materials.

Recommendation 31. Review the current capabilities of the IFD Haz-Mat Team. Consider expansion and/or adding mutual aid capabilities.

Recommendation 32. Ensure all Haz-Mat training completed by IFD members meets the appropriate standards set by IFD, particularly when the training is completed by outside agencies.

Recommendation 33. Review current inventories of equipment and budget for replacement.

TECHNICAL RESCUE SUPPORT AND RESPONSE CAPABILITY

Fire departments across the country take on various roles in the preparation and response to technical rescue emergencies. Technical rescue incidents involve vehicle and machinery extrication, high angle rope rescue, confined space rescue, water rescue, trench rescue, and collapse rescue emergencies.

As it relates to technical rescue, IFD has only taken a role in vehicle extrication and awareness level in confined space rescue. IFD responds to vehicle accidents and provides extrication services when needed. Various apparatus maintains appropriate tools and equipment that assists in this effort. In addition, all IFD members participate in periodic training for vehicle extrication.

Annually, the City of Independence Water Pollution Control provides confined space rescue training to the IFD. At the awareness level for confined space, IFD is able to provide support services to other higher-trained individuals during these incidents.

Recommendation 34. Consider expanding the ability to provide other technical rescue services as needed within the city. This would include increasing the level of certification in confined space rescue to the operations and/or technician level and adding additional disciplines.

FINANCIAL ANALYSIS

Introduction

The city of Independence is on a July 1 – June 30 fiscal year making budget year identifiers span two years. In November of 2021, Independence voters approved the expansion of the local Fire Protection Sales Tax from one-eighth of one percent set to expire in 2026 to one-half of one percent with no sunset clause other than voter repeal to go into effect on April 1, 2022. This sales tax increase increases potential revenue by four times. In 2021, revenue from the tax produced \$2.2 million and was revenue that made up approximately 8% of the department's \$26,755,291 operational budget. The following items were identified by the city's finance department as goals of the increased sales tax:

- Replace five aging fire stations
- Replace aging fire apparatus
- Purchase lifesaving equipment
- Add one new fire station
- Add new fire apparatus
- Maintenance and Repair Expenses for Equipment, Apparatus and Fire Stations

Sales tax funds would also be used to:

- Hire additional Firefighters
- To fully staff current positions
- To staff additional apparatus
- Hire additional Administration
- To maintain proper span of control
- Hire additional personnel
- To improve department training needs
- To maintain new technology

In addition, prior to the passage of the November ballot initiative, Independence elected officials committed to the use of the increased sales tax by passing a local ordinance in August of 2021 allocating fire protection sales tax funds 50% towards "funding capital improvements, specifically, the purchase, construction, maintenance, and repair of facilities, apparatus and equipment" and 50% towards "funding additional uniformed Fire personnel."

Historical Revenues and Expenses

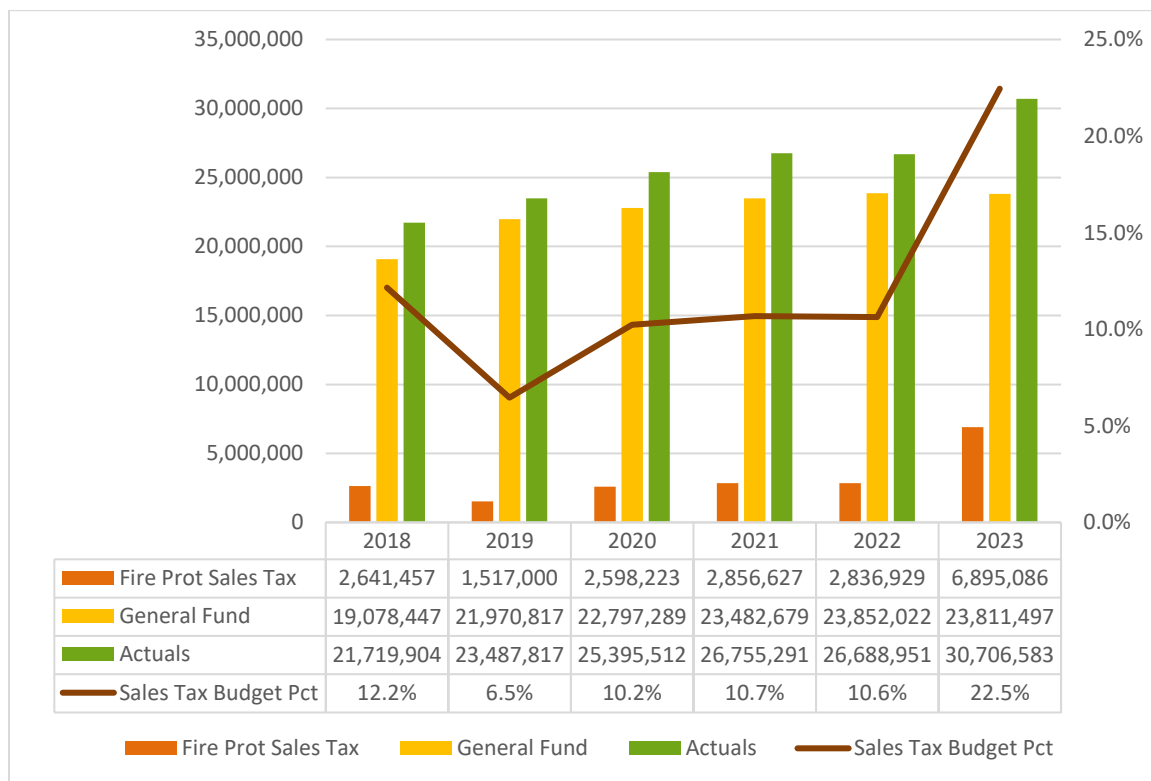
An analysis of Independence Fire Department's historical revenues and expenses was completed to help identify financial trends, strengths, weaknesses and to provide the background for the financial forecast presented later in this report. The department is funded by the General Fund, grants and the fire protection sales tax. Up until the successful ballot initiative, Fire Protection Sales tax was generated

from one-eighth of one percent of all tangible personal property or taxable services at retail. The Department provides quarterly information to the Public Safety Tax Oversight Committee with regard to the fire protection sales tax fund for review and evaluation of the department's compliance with goals on this voter-levied tax. Grants help supplement the Emergency Preparedness Division of the department.

Analysis

The following observations represent an analysis of the data provided for fiscal years FY 2019 to FY 2022. The below (Figure 51) figure depicts the department budget and percentages from the general fund and the sales tax fund and includes a FY 2023 projected with the sales tax increase.

Figure 51: IFD Expense Actuals



Operating Budget Trends

The department's operating budget is funded by both the general fund and the sales tax fund. From FY 2019 to FY 2022 the fire department's budget increased from \$23,487,817 to \$26,688,951, an increase of 13.6% or 4.5% annually. Over the period from 2018 to 2022, the budget was funded by an approximate average of 90% general fund, 10% sales tax fund.

Recurring expenses are those that are to be reasonably expected to continue year over year, which includes personnel services and many operational line items. Non-recurring expenditures are those that are one-time purchases or major purchases that are expected for a certain time period, i.e., capital purchases and/or capital outlay.

Personnel services are normally the largest recurring expenditures in the department, which is typical of one that provides public safety to the visitors and citizens of Independence. Salaries and benefits in the operating budget increase at an average of 5.27 percent (or 1.76 percent year over year).

Salaries and benefits include base pay, overtime, benefits, health insurance, LAGERS, etc. Regarding the operating budget, individual line items for salaries and benefits were provided. The largest increase was for Worker Comp Medical Costs at 72.16 percent (or 24.05 percent year over year). Factors that affect this line include the type of injury, the number of injuries in the year, as well as the increase in medical costs for treatment. Longevity pay was not in the FY 22 budget and therefore can indicate a younger workforce whereby many of the personnel recently retired or left. Overtime pay averaged 29.05 (or 9.68 percent year over year), while Overtime averaged 24.36 (or 8.12 percent year over year). These two line items indicate that there were personnel coverages being made for vacancies or new positions until they were able to be deployed into the field to cover the shifts and apparatus.

The following figure is the breakdown of recurring and non-recurring expenditures for the operating budget, which includes salaries and benefits. Motor Vehicle Fuels Other increased an average of 100.74 percent (or 33.58 percent), following market gas prices. Unexpected increases in commodities or equipment can affect the fund balance of a department's budget based on unexpected percentages being charged. Percentages indicate the effect of the line item, even though the dollar amount may be less than other line items, such as Clothing Uniform Allowance, but do help to identify any trends that can be seen for future projections.

Figure 52: Expenditure Breakdown, Operating (FY 19-22)

EXPENDITURES	FY 19	FY 20	FY 21	FY 22
Salaries & Benefits	\$ 27,252,378	\$ 28,725,107	\$ 29,522,371	\$ 31,776,916
Clothing Uniform Allowance	\$ 121,458	\$ 120,289	\$ 118,458	\$ 118,062
Operating Supplies	\$ 60,175	\$ 62,386	\$ 42,813	\$ 78,209
Professional Services	\$ 43,514	\$ 24,768	\$ 75,442	\$ 39,878
Office Supplies	\$ 7,831	\$ 7,907	\$ 5,167	\$ 11,065
Maintenance Costs	\$ 75,142	\$ 80,511	\$ 84,722	\$ 17,318

Communication Services	\$ 26,999	\$ 30,782	\$ 26,628	\$ 30,866
Utilities	\$ 251,148	\$ 106,946	\$ 146,156	\$ 150,176
Gas	\$ 26,229	\$ 21,263	\$ 20,982	\$ 33,686
Motor Vehicle Fuels Other	\$ 2,840	\$ 2,257	\$ 5,943	\$ 15,419
Travel, Training & Per Diem	\$ 6,339	\$ 5,581	\$ 11,105	\$ 9,295
Small Tools and Equipment	\$ 5,079	\$ 2,855	\$ 4,366	\$ -
Events and Meetings	\$ 4,368	\$ 8,746	\$ 5,964	\$ 3,192
Dues and Memberships	\$ 3,613	\$ 4,527	\$ 4,220	\$ 5,269
Mailing and Shipping	\$ 410	\$ 418	\$ 382	\$ 1,714
Printing and Binding	\$ 1,109	\$ 2,913	\$ 1,809	\$ 408
Maint Mobile Equip CG	\$ 317,037	\$ 343,194	\$ 268,624	\$ 351,876
Motor Vehicle Fuels CG	\$ 107,976	\$ 89,454	\$ 59,025	\$ 117,314
Interfund Lease Charge - CG	-	\$ -	-	\$ 30,298
Other Pay Types	\$ 880,616	\$ 915,948	\$ 1,684,175	\$ 1,886,896
Other Services	\$ 16,499	\$ 7,680	\$ 19,971	\$ 3,705
Insurance and Bonds	-	\$ 40,000	\$ 37,962	\$ 40,000
Total Recurring Expenditures	\$ 29,210,760	\$ 30,603,532	\$ 32,146,285	\$ 34,821,562
PYE Operating Supplies	\$ -	\$ -	\$ -	\$ 84
Fees and Permits	\$ 150	\$ -	\$ 180	\$ -
Small, Mobile and Rental of Equipment	\$ -	\$ 68	\$ 2,090	\$ 22,120
Computer Equipment	\$ -	\$ -	\$ -	\$ 1,864
Computer Software & Supplies	\$ -	\$ -	\$ -	\$ 1,150
Grant Expenditures	\$ (98,500)	\$ (163,310)	\$ (118,776)	\$ (104,420)
Other Allowances	\$ -	\$ -	\$ -	\$ 79
Pers Ser charged to Projects	\$ (152,268)	\$ (185,700)	\$ (185,700)	\$ (185,700)
TechServ Internal Chg-SW&Maint	\$ -	\$ -	\$ -	\$ 1,752
Total Non-Recurring Expenditures	\$ (250,618)	\$ (348,942)	\$ (302,206)	\$ (263,071)
Bond Principal Payments	\$ -	\$ -	\$ -	\$ 20,553
Interest Expense Cap Lease	\$ -	\$ -	\$ -	\$ 3,845
Total Debt Service	\$ -	\$ -	\$ -	\$ 24,398
TOTAL EXPENDITURES	\$ 28,960,142	\$ 30,254,590	\$ 31,844,079	\$ 34,582,889
TOTAL EXPENDITURES W/O DEBT	\$ 28,960,142	\$ 30,254,590	\$ 31,844,079	\$ 34,558,491

Fire Protection Sales Tax Fund

The following figure identifies the recurring and non-recurring revenue sources for the Fire Protection Sales Tax Fund. Actual revenues are shown for better analysis after numbers have been audited and compared with fiscal year 2020 unaudited numbers and the budget for fiscal year 2021. These figures will help to determine the economic state of the city over the years being analyzed for better interpretation and understanding of future financial projections.

Recurring revenues are those that one can reasonably expect to continue year-to-year, such as taxes and investment income. Non-recurring revenues are either one-time sources or those of a limited

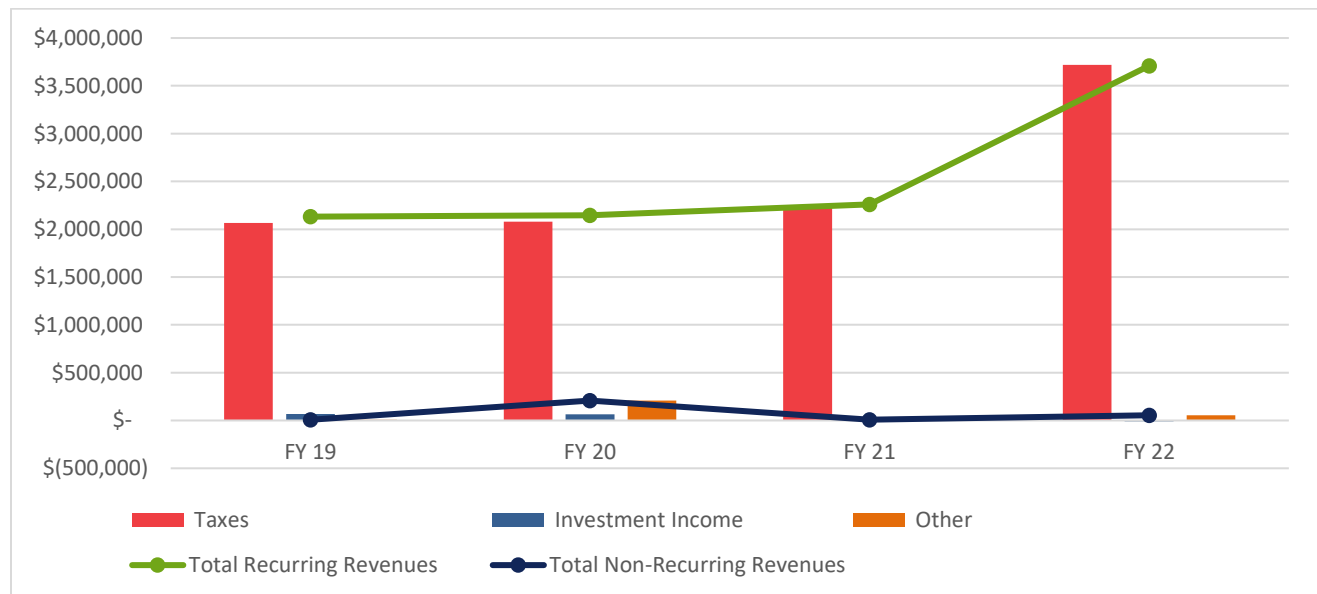
duration, other sources. The following figure shows all available revenue sources for the Fire Protection Sales Tax fund for which to consider in future financial analysis. The revenues for the fire protection sales tax have increased from FY 2019 to FY 2022 at an average of 24.7 percent for the period being analyzed, equating to about 8.25 percent year over year, indicating retail sales over the period have increased. Investment income has decreased 31.72 percent year over year. Total revenues increased an average of 24.1 percent, equating to about 8.02 percent year over year.

Figure 53: Fire Protection Sales Tax Revenues (FY 19-22)

REVENUES	FY 19	FY 20	FY 21	FY 22
Taxes	\$ 2,064,701	\$ 2,080,829	\$ 2,250,479	\$ 3,720,007
Investment Income	\$ 67,140	\$ 63,881	\$ 23,143	\$ (10,562)
Total Recurring Revenues	\$ 2,131,841	\$ 2,144,710	\$ 2,273,622	\$ 3,709,445
Other	\$ 8,739	\$ 208,100	\$ 8,381	\$ 54,006
Total Non-Recurring Revenues	\$ 8,739	\$ 208,100	\$ 8,381	\$ 54,006
TOTAL REVENUES	\$ 2,140,580	\$ 2,352,810	\$ 2,282,003	\$ 3,763,451

Figure 54 indicates that the main source of revenues for the Fire Protection Sales Tax Fund is from taxes. As Independence prospers from growth and increased retail sales, this fund will increase in proportion. There is an Investment Income source that is minimal in the fund. Monitoring the retail sales amounts of the city will help to project future revenues.

Figure 54: Recurring and Non-Recurring Revenues - Fire Protection Sales Tax, FY 19-22



Historical expenditures for the Fire Protection Sales Tax increased at a total of 62.52 percent, equating to 20.84 percent year over year. When analyzing the expenditures without debt service, the total expenditures increased 66.46 percent, equating to 22.15 percent year over year. The largest increase in the budget was for the Buildings line item from FY 20 to FY 22, at a rate of 1,579 percent. This can be caused by a capital item that required repair, renovations, or a new construction. Other Machinery and Equipment has decreased over the period at about 47.95 percent, equating to 15.98 percent decreases year over year. There was a large expense for Mobile Equipment in FY 20 at \$1,191,192 that may have been needed for replenishment of old equipment.

The below figure (Figure 55) breaks down the recurring expenditure for the Fire Protection Sales Tax Fund in the fiscal years 2019 to 2022. Mobile Equipment totaled 530.71 percent (or 176.90 percent) and has periodically been a large portion of the budget. Buildings totaled 468.23 percent (or 156.08 year over year) and is another large line item in this fund out of the operating budget (excluding salaries and benefits). The sales tax has helped to offset larger purchases from the operating budget for equipment and capital purchases. Mobile Equipment has large purchases every other year which indicate either a replacement plan or coordinates equipment purchases with training opportunities that may occur every other year.

Analysis of General Fund data would provide more accurate analysis and future projections, however the data was not made available for analysis of the operating budget revenues or fund balance. The below figure (Figure 56) shows the total expenditures for the time being analyzed for the Fire Protection Sales Tax Fund.

Figure 55: Fire Protection Sales Tax Expenditures (FY 19-22)

EXPENDITURES	FY 19	FY 20	FY 21	FY 22
Salaries & Benefits	\$ -	\$ 89,217	\$ 397,373	\$ 617,203
Other Machinery & Equipment	\$ 572,040	\$ 81,111	\$ 47,451	\$ 39,606
Small Tools & Equipment	\$ 217,622	\$ 146,137	\$ 90,791	\$ 134,550
Maintenance	\$ 305,434	\$ 260,776	\$ 200,149	\$ 267,035
Mobile Equipment	\$ 127,330	\$ 1,191,192	\$ 101,177	\$ 959,289
Maintenance Mobile Equipment	\$ 10,316	\$ 18,777	\$ 10,366	\$ 33,852
Communications Services	\$ 55,297	\$ 27,232	\$ 60,247	\$ 129,072
Professional Services	\$ 26,237	\$ 46,240	\$ 5,500	\$ 60,328
Computer Equipment	\$ 47,366	\$ 31,539	\$ 60,978	\$ 63,381
Other Services	\$ 54,078	\$ 43,002	\$ 15,346	\$ -
Buildings	\$ 45,362	\$ 11,673	\$ 195,976	\$ -
Overnight Travel & Meetings	\$ 5,400	\$ 5,827	\$ 440	\$ 7,139
Training & Education	\$ 32,129	\$ 29,263	\$ 19,736	\$ 42,864
Operating Supplies	\$ 4,583	\$ 36,025	\$ 15,766	\$ 27,539
Court Ordered Payments	\$ -	\$ 4,806	\$ 9,612	\$ 7,679
Total Recurring Expenditures	\$ 1,503,194	\$ 2,022,816	\$ 1,230,908	\$ 2,389,536
Software & Computer Maintenance	\$ -	\$ -	\$ 994	\$ -

EXPENDITURES	FY 19		FY 20		FY 21		FY 22	
PYE Buildings	\$	-	\$	-	\$	-	\$	38,368
PYE Mobile Equipment	\$	-	\$	-	\$	-	\$	1,106,097
PYE Small Tools and Equipment	\$	-	\$	-	\$	-	\$	44,924
PYE Computer Equipment	\$	-	\$	-	\$	-	\$	33,179
PYE Maintenance Other	\$	-	\$	-	\$	-	\$	5,256
Damage Claims	\$	-	\$	-	\$	-	\$	2,756
Maintenance Supplies	\$	-	\$	-	\$	376	\$	7
Office Supplies	\$	-	\$	25	\$	-	\$	-
Events and Meetings	\$	-	\$	-	\$	-	\$	89
Internal Charge - SW & Maintenance	\$	-	\$	-	\$	-	\$	5,880
Accounts Payable Manual	\$	583	\$	-	\$	-	\$	-
Other Improvements	\$	-	\$	225,329	\$	-	\$	-
Union Dues	\$	-	\$	-	\$	-	\$	1,973
Contributions	\$	-	\$	-	\$	-	\$	8,061
Total Non-Recurring Expenditures	\$	583	\$	225,354	\$	1,371	\$	1,246,590
Bond Principal Payments	\$	57,839	\$	59,571	\$	61,354	\$	63,191
Interest Expense Cap Lease	\$	15,396	\$	13,665	\$	11,881	\$	10,044
Total Debt Service	\$	73,235	\$	73,235	\$	73,235	\$	73,235
TOTAL EXPENDITURES	\$	1,577,012	\$	2,321,405	\$	1,305,514	\$	3,709,361
TOTAL EXPENDITURES W/O DEBT	\$	1,503,777	\$	2,248,170	\$	1,232,279	\$	3,636,126

The below (Figure 56) is the identified fund balance for the Fire Protection Sales Tax Fund for FY 2019 through FY 2022. The fund balance fluctuates based on the types of purchases needed each year.

The fund balance fluctuates based on the revenues collected versus the expenditures that are purchased. There was no distinguishable trend for the fund balance as it seemed there were more purchases made every other year, which could correlate with a replacement plan for equipment, etc.

The FY2021-FY2022 budget states the estimated unassigned fund balance for the Fire Protection Sales Tax fund is \$1,999,612. Preceding years' figures are calculated off this number. It should be noted that ESCI was unable to determine any actual fund balances for the Fire Protection Sales Tax fund, only estimates.

Figure 56: Fire Protection Sales Tax Fund Balance

	FY 2019	FY 2020	FY 2021	FY 2022
Revenues	\$ 2,140,580	\$ 2,352,810	\$ 2,282,003	\$ 3,763,451
Operating Expense	\$ 1,577,012	\$ 2,401,919	\$ 2,856,627	\$ 3,709,361
Net Gain (Loss)	\$ 563,568	\$ (49,108)	\$ (574,624)	\$ 54,090
Balance	\$2,569,254	\$2,520,146	\$1,945,522	\$1,999,612

Grant Fund

The Grant Fund has fewer expenditure line items and is shown in the figure below (Figure 57).

Expenditures based on grant awards were sporadic and does not provide enough data to determine a trend analysis. Recommendations would include to pursue annual grants, whether state, federal or local grants to help offset large purchases, which can help reduce the burden to the General Fund, with which provides most of the funding for the fire department.

The sporadic line-item purchases indicate that the expenditures depend on the amount received from the grants that were applied. This would be hard to analyze or predict as some grants do not allow for annual funding applications whereas others may provide smaller amounts yearly. There were only two years in the Grant Fund. That was not enough to provide an average or trend calculation.

Figure 57: Recurring Expenditure Breakdown, Grants (FY 19-22)

EXPENDITURES	FY 19		FY 20		FY 21		FY 22
Salaries & Benefits	\$	-	\$	-	\$	10,214	\$ 21,061
Professional Services	\$	-	\$	-	\$	108,449	\$ 6,452
Operating Supplies	\$	99	\$	6,228	\$	79,174	\$ 27,449
Small Tools & Equipment	\$	-	\$	24,568	\$	9,005	\$ -
Total Recurring Expenditures	\$	99	\$	30,796	\$	206,842	\$ 54,962

Revenue & Expenditure Forecast

The financial review of the revenues and expenditures of the District's Fund will help to assess the sustainability of current operations (status quo) and other factors to consider through short- and long-term planning. The key assumptions used in the forecast are presented below, followed by the recommendations and metrics with which to consider.

Fire Protection Sales Tax Revenue Assumptions

Taxes

- Sales Tax revenue can increase significantly based on retail spending, which can help offset operating budget costs.
- The Fire Protection Sales Tax was on the ballot on November 2, 2021, and increased the tax rate to 0.500% from .0125%.
- Retail trends needs to be analyzed in order to be able to determine future trends for revenue collections.
- If the area does not have information available, consumer price index and consumer spending trends can be used to roughly provide data on spending trends nationwide that may help the City of Independence, depending on the industries in the area.

District Fund Expenditure Assumptions

Personnel Services

- Salaries & Benefits consists of the larger portion of the operating budget. A newer workforce may require different types of incentive to inspire longevity.

CAPITAL ASSETS AND CAPITAL IMPROVEMENT PROGRAM

Capital Improvements

Capital assets include all facilities, all rolling stock (apparatus), and the key equipment used on the apparatus dedicated to achieving the mission of the Independence Fire Department. The single most expensive infrastructure elements in a fire department are the facilities and apparatus. Because of this expense, planning must be developed to address replacement, refurbishment, and maintenance. The funding of these elements is difficult to absorb for most agencies in a single year, thus a multi-year funding strategy or funding source must be identified. The replacement or refurbishment must be planned far enough ahead of actual expense to allow the agency time to acquire the funds necessary to implement the plan. Recent challenges related to apparatus and equipment acquisition has further emphasized this point. With the newly approved sales tax funding, updates and replacement of these expensive items can be accomplished in a systematic and efficient manner.

Regardless of an emergency service agency's financing status, if appropriate capital facilities and equipment are not available for use by responders, it is impossible for a fire department to deliver services effectively.

Figure 58: Capital Assets Plan Status

Capital Element	Status
FACILITIES	
Capital Improvement Plan	There is not currently a Capital Improvement Plan in place for facility needs.
APPARATUS	
Apparatus Replacement Plan	A Capital Outlay Guidance document was published in 2014 and has been utilized as a plan for apparatus replacement. The document outlines guidance for pumpers, aerials, rescues, and staff vehicles
SUPPORT EQUIPMENT	
Equipment Replacement Plan	A Capital Outlay Guidance document was published in 2014 and has been utilized as a plan for equipment replacement. The document outlines guidance for SCBA, PPE, thermal imaging cameras, extrication tools, EMS monitors and defibrillators, breathing air compressors, mobile data terminals, and fire hose. Outside of this, all equipment needing to be replaced is budgeted for annually as needed.

Facilities

Each of the Independence Fire Department's buildings were visited. The visits included a walk-around of each building with focus on construction, building condition, building amenities, and visible problems or issues. Personnel onsite were welcome to contribute comments and concerns. The information was compiled into a spreadsheet for each building. This information is included in Appendix B of this report. Specific recommendations for each building are identified and should be reviewed on an individual basis. The apparatus assigned to each facility is also listed with the current condition included.

A number of issues common to many of the stations were identified. The overall condition of the facilities is generally poor to good as described below. There are a variety of building configurations and designs affecting working conditions and efficiencies, however. The newer buildings are clearly more functional and more efficient. The general cleanliness and organization at each facility were not listed as concerns and therefore most likely meet the expectations of the fire department administration.

The following table is the unweighted average condition score for each station, provided by IFD staff, with the following score ranges:

- Very Good – (4.1 – 5.0)
- Good – (3.1 – 4.0)
- Fair – (2.1 – 3.0)
- Poor – (1.1 – 2.0)
- Critical (0.1 – 1.0)

Figure 59: Fire Station Condition Scores

Fire Station	Location	Original Construction Date	Remodel Date	Score
1	950 N Spring	1971	*	2.1 (Fair)
2	14510 E 39 th St	1971	2011/12	1.9 (Poor)
3	10219 E Winner Rd	2009	*	3.8 (Good)
4	202 W 23 rd St	2008	*	4.0 (Good)
5	11301 E 35 th St	1980	2012/13	1.7 (Poor)
6	17707 E Bundschu	1986	2009	2.0 (Poor)
7	2206 Hub Dr	2006	*	4.0 (Good)

8	21300 E Truman Rd	1964	2009	1.7 (Poor)
9	1411 N. M-7 Hwy	1985	2009	2.0 (Poor)
10	3303 RD Miize	1986	2009	2.0 (Poor)
Tr	21011 E M-78 Hwy	2009	2018/21	3.5 (Good)

Based on station condition coupled with original construction and remodel dates, station conditions are ranked below (Figure 60) from worst condition to best condition:

Figure 60: Station Condition Rankings

- 1) Station 8**
- 2) Station 5**
- 3) Station 2**
- 4) Station 9**
- 5) Station 6/10 (tie)**
- 6) Station 1**
- 7) Station 3**
- 8) Station 4**
- 9) Station 7**

Many of the buildings house large numbers of personnel. Some household style kitchen appliances and furniture are overused and inadequate in many applications. Kitchen appliances, furniture, and eating areas should accommodate the size of the crew assigned to the building and potential future growth. The department should update the household style appliances and furniture with commercial quality replacements as current pieces wear out and funding is available or as part of a building-wide renovation project, if called for.

Most, but not all of the fire stations are equipped with Personal Protective Equipment (PPE) extractors. Extractors for each station should be evaluated. Many forms of cancer are becoming increasingly identified as a job-related exposure, and protective equipment that has been contaminated with many of these cancer-causing fire byproducts is a potential cause. Further, PPE should be stored in an environment that protects the material from vehicle exhaust and damaging UV light. All stations should have accommodations for proper PPE storage. Decontamination and eye wash stations need to be provided in all facilities that are not currently equipped.

Some of the facilities have floor coverings that are difficult to clean and keep clean. As floors need to be replaced, the department should install floor products that require less maintenance. New fire stations should also be designed for easy maintenance and durability.

Each station is equipped with an emergency generator. The department should review the status of the emergency generators and provide the right size fuel tanks for each application, since these facilities are critical infrastructure for the community.

One particular station, Station 10, was notified by the City of Independence during ESCI's on-site visit that they could no longer wash apparatus at the station due to issues with the drainage collection system in their apparatus bay. While just one example, this station design is similar to two other fire stations, and it would be prudent to believe that this situation will soon present itself at these stations as well.

New Stations

A standard design should be identified for future fire station construction. To the extent possible, new fire stations should be designed for rapid access to the truck bays from any location in the station. This improves turnout time for responding crews. Expansion of the station to accommodate additional apparatus, crews, and living/training space ensures future flexibility of these facilities. Low maintenance materials should be a factor in the design, as well as ventilation and other environmental strategies. Every new fire station should be designed with emergency generators to operate for a sustained period of time to ensure continuous operation during an emergency. In addition, fire station compatibility with the surrounding neighborhood should be considered in the architecture of the new stations.

Also, when reviewing property for new stations, in order to keep response times at their lowest, fire stations should be located as close to the directional decision-point as possible. In other-words, a fire station that has a 10-second response just to exit the fire station ramp or 15 seconds to get to the entry of a dead-end street court, will have lost the opportunity to maximize response in all directions from the fire station when they have to traverse the same roadway on every response.

Station Replacement

Based on station condition, age, design, and/or functionality, ESCI recommends replacing Stations 5, 6, 8, 9, and 10. These fire stations are in poor condition and are not conducive to modern fire service housing. The formal recommendation will come later in the report.

Apparatus/Fleet

The apparatus serving frontline duty were evaluated by IFD administration utilizing ESCI's apparatus assessment criteria along with the facility assessments and are listed at the bottom of each detailed facility assessment in Appendix B of this report.

NFPA 1901, 1911, and 1912 are applicable standards for the purchase, refurbishment, maintenance, and retirement of fire apparatus. ESCI supports Annex D of these standards as they relate to replacement schedules for heavy fire apparatus (engines, tankers, and ladder trucks). Generally, the annex recommends a maximum of fifteen years of frontline service, followed by a maximum of ten years in reserve status, followed by removing the unit from service. However, usage can have a significant effect on the resource role during its life expectancy, as is the case in IFD. Thus, the following figure should be a useful guide for the department, providing a formulaic approach to apparatus replacement.

Figure 61: Apparatus Replacement Criteria

Evaluation Components		Points Assignment Criteria	
Age	One point for every year of chronological age, based on in-service date.		
Miles/Hours	One point for each 10,000 miles or 1,000 hours.		
Service	1, 3, or 5 points are assigned based on type of service unit receives. (For instance, fire pumpers would be given a five because it is classified as severe duty service.)		
Condition	This category takes into consideration body condition, rust interior condition, accident history, anticipated repairs, etc. The better the condition the lower the points assignment.		
Reliability	Points are assigned as 1, 3, or 5 depending on the frequency that a vehicle is in the shop for repair. (For example, a 5 would be assigned to a vehicle in the shop two or more times per month on average, while a 1 would be assigned to a vehicle in the shop an average of once every three months or less.)		
Point Ranges	Condition Rating	Condition Description	
Under 18 points	Condition I	Very Good	
18 to 22 points	Condition II	Good	
23–27 points	Condition III	Fair (Consider Replacement)	
28 points or higher	Condition IV	Poor (Immediate Replacement)	

The apparatus serving frontline duty were evaluated by IFD administration and ESCI utilizing ESCI's apparatus assessment criteria. ESCI observed the IFD's vehicles to be well maintained and generally in good condition. The City of Independence has recently made significant investments in the IFD fleet, and from interviews with firefighters, the general impression of the fleet's condition is that it is very good. ESCI was impressed with the appearance and general condition of the department's apparatus, which is indicative of the agency's culture of pride and ownership.

ESCI evaluated the age of the IFD's apparatus fleet, finding that the units range from a high of twenty-one years of age, which includes the department's reserve apparatus and utility vehicles, to a low of just one year. Nine of the department's 25 frontline apparatus are five or fewer years old. By averaging the total apparatus list, ESCI calculates an overall combined average of 11.4 years.

Concern was expressed by during the on-site visit that the fleet was being overutilized in many areas. These include the use of pumpers and ladder trucks responding to low acuity medical calls and other non-emergency responses. While replacing older units and units with higher mileage will help the overall reliability of these units, consideration should be given to how these lower acuity incidents are handled; including determining the most appropriate resources to fulfill the needs of the incident.

ESCI understands from staff that several units are on order; including a new Squad, new Pumper, and a new Quint. The Squad and Pumper should arrive soon in 2022, with the Quint expected within 16-18 months. An IFD capital improvement guidance document was published in 2014 that outlined criteria for replacing each type of apparatus and/or removing it from frontline service. The delivery times of recently ordered apparatus have been delayed, resulting in some of the criteria for removal of frontline service to be stretched beyond the standard.

The following are the conditions of the IFD Fleet.

Figure 62: IFD Fleet Evaluation Status (Part I)

2022 Independence Fire Department - Fleet Evaluation Sheet																	
Apparatus/Vehicle			2022 - Current 12/31/21			2023 - Projection			2024 - Projection			2025 - Projection			2026 - Projection		
Unit	Asset#	Year	Odometer	Rating	CPM	Odometer	Rating	CPM	Odometer	Rating	CPM	Odometer	Rating	CPM	Odometer	Rating	CPM
P1	4324	2016	59162	21	1.44	69022	23		78882	25		88743	27		98603	29	
P2	4300	2015	87156	28	1.79	99606	30		112057	32		124508	34		136959	37	
P3	4447	2018	33907	14	1.36	42383	16		50860	18		59337	20		67814	22	
P5	4445	2018	44866	18	1.04	56082	21		67299	23		78515	25		89732	28	
P6	4225	2014	68978	24	1.5	77600	26		86222	28		94844	30		103467	32	
P7	4446	2018	44050	15	.87+	55062	17		66075	19		77087	21		88100	24	
P9	4208	2013	51385	21	1.09	57094	23		62803	25		68513	27		74222	29	
P10	4350	2016	70268	22	1.01	81979	24		93690	26		105402	28		117113	31	
RP1	4221	2014	53727	22	1.38	60 +/-	24		65+/-	25		70 +/-	27		75 +/-	28	
RP2	3903	2008	90+	34	3.22	94 +/-	35		100 +/-	37		105 +/-	38		110 +/-	39	
RP3	3809	2007	89751	39	5.75	94 +/-	40		95 +/-	41		100 +/-	42		105 +/-	43	
S8	3988	2010	110666	34	1.86												
RS1	3988	2010				119888	36	2.00+	122 +/-	37		125 +/-	38		128 +/-	39	
R1	4222	2014	69592	26	0.86	78291	28		86990	30		95689	32		104388	34	
R2	4223	2012	95209	30	0.7	104729	32		114250	34		123771	36		133292	38	
RR1	3990	2008	68351	30	4.54*	75 +/-	32		80 +/-	34		84 +/-	35		86 +/-	36	
T1	4326	2016	40346	19	4.21	47070	21		53794	24		60519	27		67243	30	
T2	4692	2021	4523	4	1.39	12 +/-	6		19677	9		26237	12		32796	15	
Q4	4202	2013	79211	28	2.87	88012	30		96813	32		105614	34		114415	36	
RT1	3620	2005	111508	43	3.18	115 +/-	44		116 +/-	45		117 +/-	46		118 +/-	47	
RT2	3993	2007	112344	39	3.41	116 +/-	40		118 +/-	41		120 +/-	42		122 +/-	43	
BR	3301	2001	28024	26	1.32	30571	27		33119	28		35666	29		38410	30	
HZ5	3467	2004	7264	22	4.2	8172	23		9080	24		9988	25		10896	27	
Very Good <17			Good 18 -22			Fair 23-27			Poor 28 - 30			Critical 31+					
0-5 years of service			6-10 years of service			11-15 years of service			16+ years of service			16+ years of service					
Low mileage			Moderate mileage			High mileage			High mileage			High mileage					
As New, No Defects,			Minor defects			Moderate defect			Minor or major defect			Major defect					
Performing as intended			Performing as intended			Functioning, but worn			Not functioning as desired			Not functioning OR					

Figure 63: IFD Fleet Evaluation (Part II)

2022 Independence Fire Department - Fleet Evaluation Sheet																	
Apparatus/Vehicle			2022 - Current 12/31/21			2023 - Projection			2024 - Projection			2025 - Projection			2026 - Projection		
Unit	Asset#	Year	Odometer	Rating	CPM	Odometer	Rating	CPM	Odometer	Rating	CPM	Odometer	Rating	CPM	Odometer	Rating	CPM
BC1	4635	2021	9650	5	0.41	20 +/-	7		30 +/-	9		40 +/-	11		50 +/-	13	
RBC1	4233	2014	83754	22	0.41	90 +/-	23		94 +/-	24		98 +/-	26		102 +/-	27	
C1	4433	2018	17224	8	0.36	21530	10		25836	11		30142	13		34448	14	
C2	4437	2018	27695	9	0.16	34618	11		41542	13		48466	15		55390	17	
C3	4316	2016	42463	15	0.21	49540	17		56617	19		63'694	21		70771	23	
C4	4636	2021	11388	5	0.23	23 +/-	7		36 +/-	9		48 +/-	11		60 +/-	13	
C5	4232	2015	64809	18	0.2	74067	20		83325	22		92585	24		101842	26	
C6	4234	2015	82901	20	0.22	94744	22		106587	24		118430	26		130273	28	
C7	4436	2018	63375	13	0.14	79218	15		95062	17		110906	19		126750	21	
C8	4315	2016	39687	12	0.2	46301	14		52916	16		59530	18		66145	20	
C9	4317	2016	43105	12	0.16	50289	14		57473	16		64657	18		71841	20	
I1	4673	2021	1219	4	0.25												
I2	4674	2021	1050	4	0.23												
I3	4675	2021	1560	4	0.27												
I4	4676	2021	2514	4	0.2												
I5	4677	2021	2947	4	0.22												
EMS-OR	4231	2015	35648	13	0.18	40740	15		45833	17		50925	19		56018	21	
EM1	4435	2018	84647	15	0.12	105808	18		126970	21		148132	24		169294	28	
EM2	4678	2021	2142	4	0.19												
EM-R	4235	2014	70641	17	0.2	74 +/-	19		78 +/-	21		82 +/-	23		86 +/-	25	
EM-MC	4512	2015	48115	15	0.06	50 +/-	17		52 +/-	19		54 +/-	21		56 +/-	23	
Very Good <17			Good 18-22			Fair 23-27			Poor 28-30			Critical 31+					
0-5 years of service Low mileage As New, No Defects, Performing as intended			6-10 years of service Moderate mileage Minor defects Performing as intended			11-15 years of service High mileage Moderate defect Functioning, but worn			16+ years of service High mileage Minor or major defect Not functioning as desired			16+ years of service High mileage Major defect Not functioning OR					

Section II

FUTURE SERVICE DELIVERY NEEDS

COMMUNITY RISK ASSESSMENT

Community Risk Factors

This section analyzes risks present within the Independence Fire Department service area that potentially threaten people and property within the city. These risks are identified to assist Independence Fire Department in evaluating the location of response resources in the types and numbers necessary to effectively respond to likely emergencies. While not all hazards of individual occupancies can be considered—that is beyond the scope of the study—there are risks that seem to be relevant to the city. It is recommended that Independence Fire Department know and rate the hazards and risks in terms of frequency and severity within the jurisdiction.

NFPA 1300, *Standard on Community Risk Assessment and Community Risk Reduction Plan Development* outlines a minimum of nine elements of a community's profile to be assessed for risk. They are:

- 1) Demographic
- 2) Geographic
- 3) Building Stock
- 4) Public Safety Response Agencies
- 5) Community Service Organizations
- 6) Hazards
- 7) Economic
- 8) Past Loss/Event History
- 9) Critical Infrastructure Systems³

For the purposes of this report and its emphasis on fire station locations, ESCI will only discuss demographic, geographic, building stock, hazards, and critical infrastructure system however all profile elements should be a part of a comprehensive Community Risk Reduction Plan. These factors affect the number and type of resources (both personnel and apparatus) necessary to mitigate an emergency. Properties with high fire and life risk often require greater numbers of personnel and apparatus. Therefore, staffing and deployment decisions should be made with consideration to the level of risk within geographic sub-areas of a community

The next figure is one sample method of identifying and analyzing risks within a community.

³ -www.nfpa.org, NFPA 1300, Standard on Community Risk Assessment and Community Risk Reduction Plan Development

Figure 64: Risk Identification and Analysis Process¹

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

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

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

Demographic

Population and Population Density

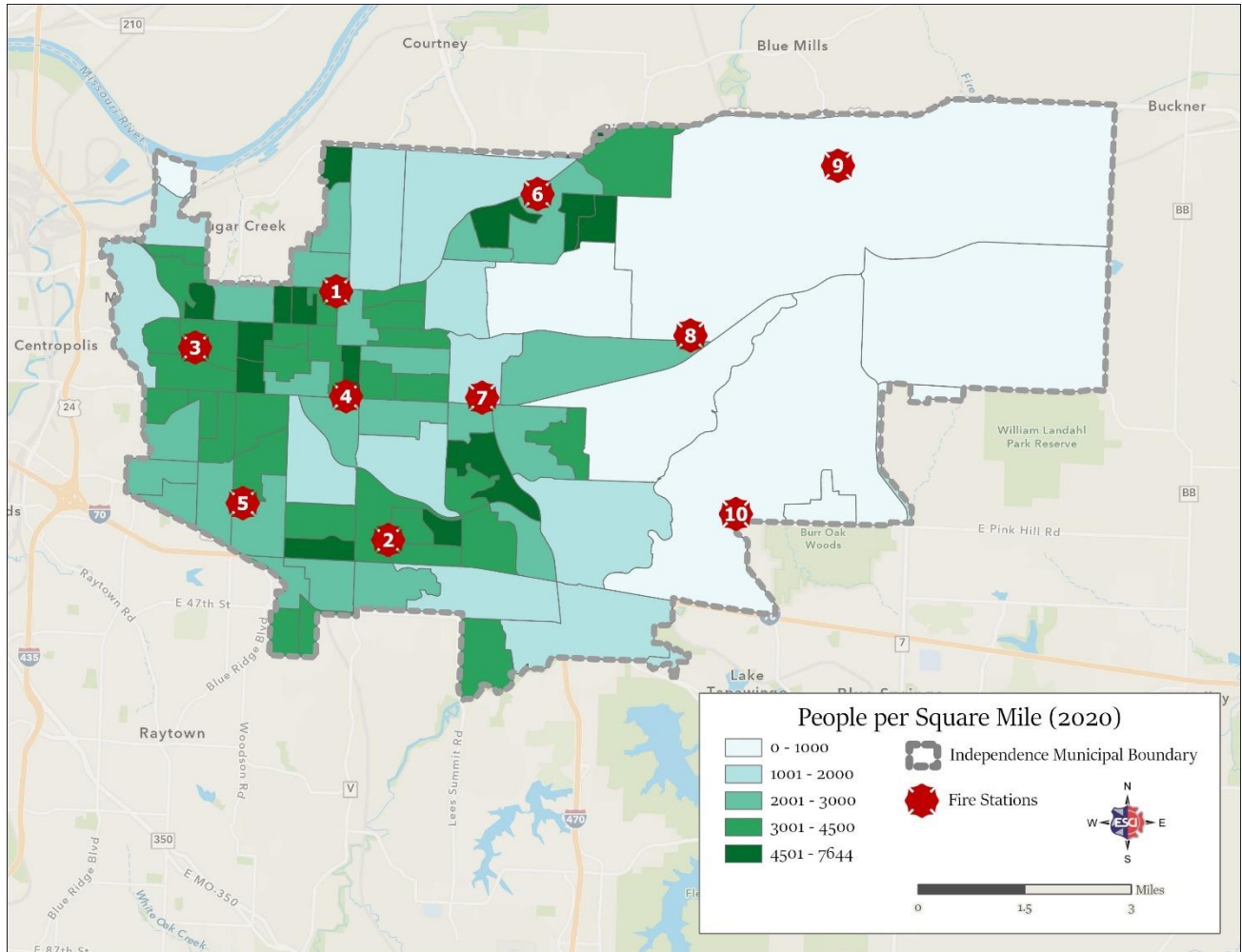
An important aspect of classifying risk is to know where the population of a community is located. Community risk is assessed based on the total population and its distribution (normal, transitional, road miles, general, and different types of occupancies). The Independence Fire Department's current service area population (2020) is estimated at 123,011 based on US census data which provides the urban, suburban, and rural definitions. Population increases correlate to variations in population density or the population per square mile. Population density for the Independence Fire Department's service area is comprised of:

- Dense Urban (> 3,000 people per square mile)
- Urban (1,000-3,000 people per square mile)
- Suburban (500-1,000 people per square mile)

- Rural (< 500 people per square mile)

The graph below (Figure 65) shows population density for Independence with rural and suburban areas combined into one color. The graph indicates that the overwhelming portion of Independence's population lies on the west half of the municipality, roughly west of MO-291.

Figure 65: Independence Population Density



Education

The population within Independence is educated and roughly equivalent to the state and country average with 89.8% of the population over 25 years of age possessing a high school diploma or higher as compared to 90.6% of Missouri, and 88.5% of the U.S. The proportionate share of college educated citizens with bachelor's degrees in the city is lower than the state and national averages with 29.9% and 30.2% respectively versus 20.0% having a bachelor's degree in Independence.

Income and Unemployment

Independence's median household income is \$50,797, which is lower than both the median income of Missouri, which is \$57,290, and the median household income within the United States, which is \$64,994. Additionally, the poverty rate is 14.0%, which is slightly higher than the rate of 12.1% for Missouri.

Race and Ethnicity

The majority of the population of Independence is white (78.8%) and English-speaking (93.0%). Although prevention and information materials written in English will reach most of the population, there is some value in presenting risk reduction and prevention messages in Spanish as 9.3% of the community identifies as Hispanic or Latino.

Figure 66: Independence Ethnicity

Race/Ethnicity	Percentage of Population (Independence)	Percentage of Population (Missouri)
White	78.8%	82.6%
Hispanic/Latino	9.3%	4.7%
Black/African American	8.5%	11.8%
Other	3.4%	.9%

Health/Insurance

Employed citizens have increased access to health insurance, and therefore receive preventative health care at higher levels. In Independence, 14.7% of the citizens under the age of 65 do not have access to health insurance, as opposed to 12.0% across Missouri. The benefit of health insurance extends to the frequency of pre-hospital emergency medical incidents, as citizens with health insurance use primary health care providers over emergency room facilities at higher levels.

Home Ownership

There are 54,120 housing units in Independence, and 59.4% are owner-occupied while 40.6% are renter occupied.

Figure 67: Independence Housing

Housing	Percentage/Number
# of Housing Units	54,120

Housing (Occupied)	91.9%
Housing (Vacant)	8.1%
Housing (Single-Family)	77.4%
Housing (Multi-Family)	22.6%

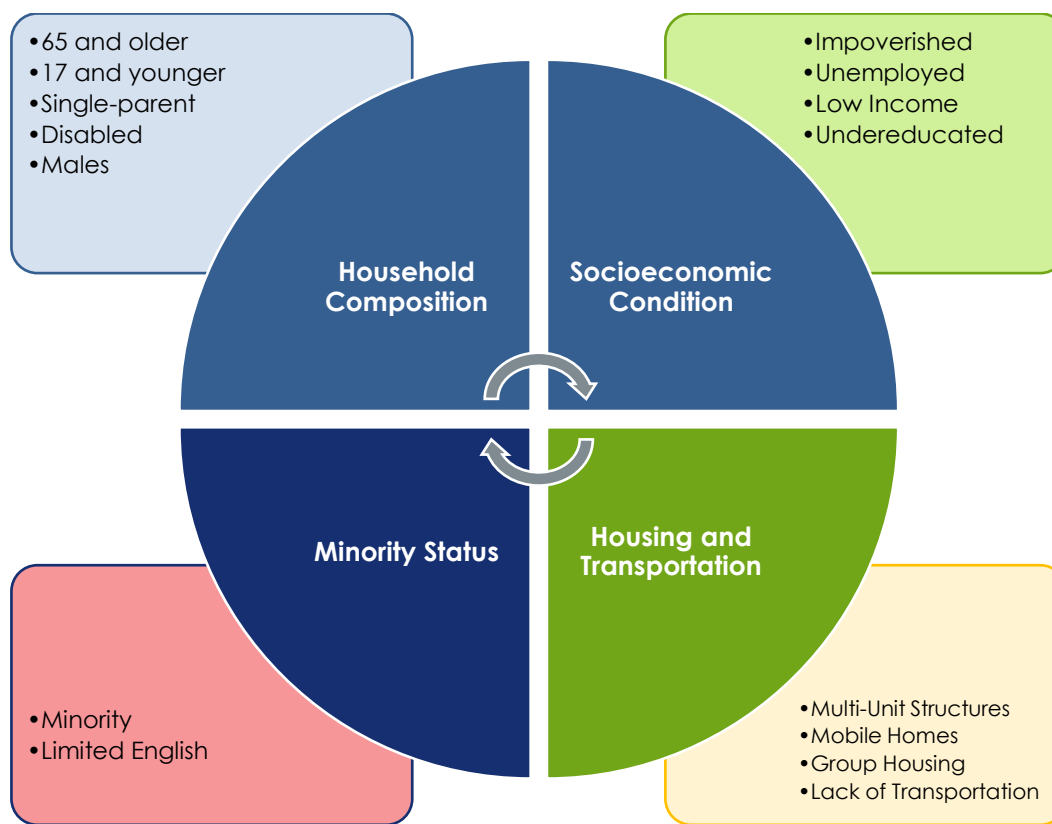
Another benefit of a stable local economy is the rate at which citizens remain in a household. In Independence, 91.2% of citizens report living in the same household as in the previous year. This longevity provides for increased rates of investing in repairs and upgrades to make homes safer and more energy efficient and assists in maintaining housing values.

At-Risk Populations

Several causal factors determine the population of at-risk individuals or groups within a community. Understanding the causal factors and populations of the community that are at greatest risk will contribute to programs and prevention efforts to address higher risk factors and reduce the effects of the associated risks. These factors also are important to consider when calculating demand for fire and emergency services within the community.

Often defined very broadly, the term “populations at risk” does not include all citizens within a defined group, as they experience risk at varying levels or rates. Coupling two or more risk factors contribute to significantly higher levels of risk than those who only experience one risk category. Those with compounded risk factors should be a priority in prevention programs and strategies.

Broadly, “populations at risk” includes citizens at the lower end of socioeconomic status, those with housing and transportation challenges, those of minority status or with English-speaking challenges, those with households containing citizens with disabilities, and those over 65 and under 17 years of age. More specifically, citizens most at risk include the impoverished, disabled, homeless, racial, and ethnic minorities, as well as people with low literacy. Also, groups suffering from poor health or who are uninsured/underinsured may be at greater risk during emergency or disaster situations.

Figure 68: Vulnerability Factors Matrix

Understanding the age, gender, and historical geographic distribution patterns among fire victims is critical to developing appropriate community risk reduction strategies. Additionally, studies have shown that these same factors indicating populations at risk for death or disability from fire can also be good predictors of medical emergencies and diseases. These groups may require greater time, effort, and resources to prepare, evacuate, and recover from emergency situations. In addition to deciding where to focus risk reduction efforts within a community, Independence Fire Department should carefully consider these factors when creating emergency plans for wide-area disasters within the community.

The following discussion includes several of the populations most at-risk within the Independence community. We compare some of them to state numbers to give an indication of whether this might be a more localized or statewide risk.

Gender (Males)

Males, especially those under 25-years of age, are more prone to engage in risky activities. Additionally, males are 1.7 times more likely to die in fires than females. Within Independence, 47.7% of the population is male. The city's population distribution is slightly lower than the state's population, where 49.4% of the population is male.

Age

Independence's population over 65 years of age makes up 18.2% (22,220) of the population. The percentage of residents reaching senior status in Independence is above the state average of 17.6% and the national average of 16.8%, respectively. Coupled with the senior population to make up those most at risk are the 6.0% (7,325) who are under five years of age. These two age groups, 24.2% combined (29,545), are statistically more reliant on the emergency services offered by the Independence Fire Department. Understanding these types of data assists in developing targeted safety campaigns and hazard reduction efforts.

Disability

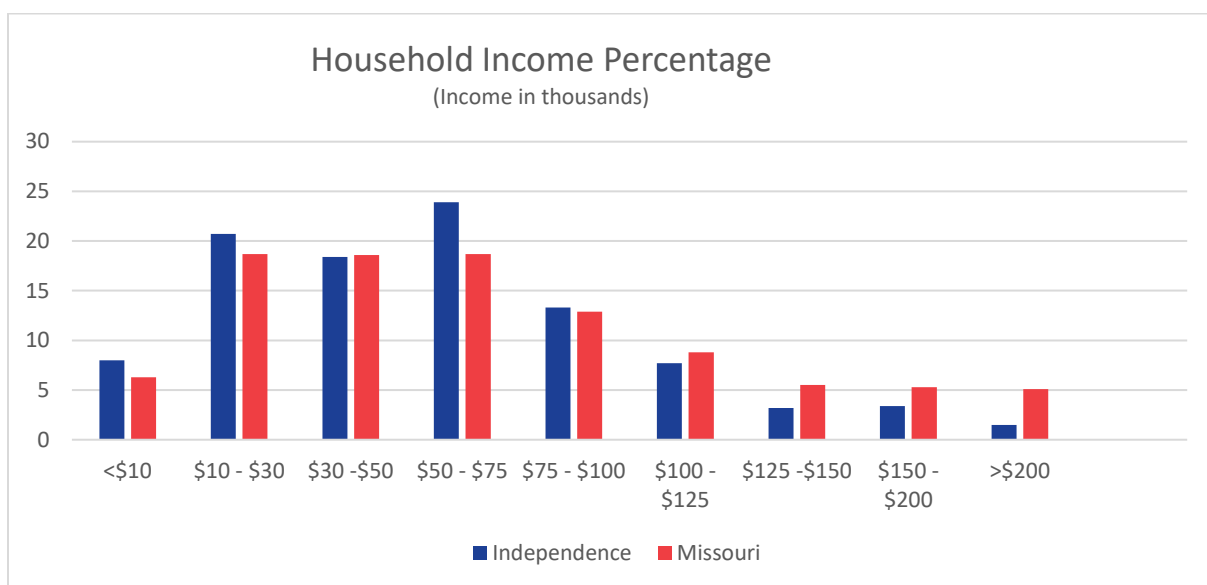
Fires in the home can be potentially dangerous and deadly for everyone, but persons with disabilities and impairments face additional challenges. Persons with disabilities often have a difficult time identifying or escaping a fire. 10.6% (12,941) of the population is identified as having a disability. These citizens in the community would benefit from programs to assist in their needs during times of emergency and for emergency planning efforts.

Language

According to the National Fire Protection Association (NFPA), "Language barriers, cultural differences, and inexperience with unfamiliar home technologies are factors that mark the challenges of helping newcomers live safely from the threat of fire in the home." By itself, speaking a language other than English at home does not directly contribute to a higher risk of emergencies; however, if a person has difficulty speaking English, it may contribute to negative outcomes during an emergency. Most of the population within Independence speak English, whether as a primary or a secondary language. In Independence, 7.0% (8,546) of the population purport to speak a primary language other than English. Often, organizations overcome language barriers through a diversified workforce, allowing these persons to receive proper care during emergency incidents. This suggests that normal English versions of fire safety messages are potentially missing a portion of the community. Prevention and education messages could reach more residents if the messaging were expanded to include additional languages.

Income

Low-income residents typically utilize government services at higher rates than other economic brackets. Persons living in poverty experience an increased risk from fire and medical emergencies due to the age and condition of their housing, inability to pay for routine medical care, lack of medical insurance, and general health conditions. Often associated with poverty is the lack of reliable transportation, which likewise leads to increased demand for local emergency services. The income distribution in the city of Independence is compared to the state of Missouri in the following figure.

Figure 69: Independence Household Income

Those living below the poverty line are the most at-risk. Unfortunately, those at risk due to income often represent additional “at-risk” categories. Examples where the low-income category often combines with other factors include education, disability, and work status. Of the citizens living in Independence, 14.0% live in poverty, above the state’s average of 12.1%, and the national average of 11.4%. The impoverished should be the focus of many of the programs and services of the fire department. These citizens benefit at greater levels from fire and fall prevention programs, emergency planning activities, supply distribution programs, and from materials targeting the risks they face routinely.

Environmental Hazards

While it is impossible to predict or prevent risks stemming from environmental events accurately, it is possible to identify these factors based on historical data and apply mitigation strategies to reduce the level of impact. Independence Fire Department has several weather-related and environmental risks of concern. The MARC 2020 Regional Multi-Hazard Mitigation Plan identifies five broad natural hazards to the region. These include tornadoes, severe thunderstorms, severe winter weather, heat, and flooding. The climate for Independence is like that found across most of southern Missouri and eastern Kansas which is in the mixed-humid climate zone. Rainfall averages about 43.7 inches with the highest precipitation in May, June and September and the lowest from December through February. Annual snowfall averages 14”. The annual average temperatures range from a high of 65 °F to a low of 44 °F.

Tornadoes

Tornadoes can create winds of over 300 mph, which will cause a significant threat to life and property. Tornado intensity is measured on the Enhanced Fujita Tornado Scale with an intensity range from EF-0 to EF-5. The Enhanced Fujita Scale or EF scale became operational on February 1, 2007 and is used to assign a “rating” based on estimated wind speeds and related damage. The EF Scale was revised from

the original Fujita Scale, developed in 1971, to reflect tornado damage better. Figure 70 is a summary of the damage associated at the various levels.

Figure 70: Tornado Intensity, Enhanced Fujita Scale

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

⁴ https://en.wikipedia.org/wiki/Enhanced_Fujita_scale

While ranges of winds are listed on the Enhanced Fujita Scale, the wind estimate is not exact or verified in science and engineering. Different wind speeds may cause similar damage from place to place and even from building to building.

According to the MARC plan, Jackson County has a 30% probability of a tornado in any given year with nearly half of them occurring in April or May and 83% of them occurring between noon and midnight, the warmest part of the day. Since 1950, the county has experienced 37 deaths and 193 injuries due to tornadoes with damage exceeding \$11 million. According to the website *ustornadoes.com*, Missouri experiences the bulk of their violent tornadoes in two sections, one to the north of a line from near Kansas City to Quincy, IL and southeast of a Springfield to St. Louis line. The deadliest tornado in the last 50 years was the 2011 Joplin, Missouri tornado that killed 158 people.

Severe Thunderstorms

The MARC report also identifies that Jackson County has a 97% chance of experiencing a severe thunderstorm in a given year. According to the National Weather Service, a thunderstorm is classified as severe if it has winds exceeding 58 mph and/or hail that exceeds 1" in diameter (quarter coin). Severe thunderstorm winds can exceed 100 mph knocking trees and powerlines down and causing extensive structural damage. Hail can also cause structural damage in addition to potential injury from larger hailstones. The largest hailstone recorded in Missouri was 6" in diameter (cantaloupe size). Thunderstorm lightning is also a major source of fires.

Severe Winter Weather

Severe winter weather would be classified as those winter events which greatly impact the well-being of the community. In Independence, those events would likely include excessive snowfall, extreme cold, and ice storms. Excessive snowfall greatly hinders the ability of the community to move around while ice storms not only hinder community movement but cause property and infrastructure damage.

Independence averages approximately 13.6" of snowfall per year, not a great deal spread across the entire winter season but very impactful all at one time.

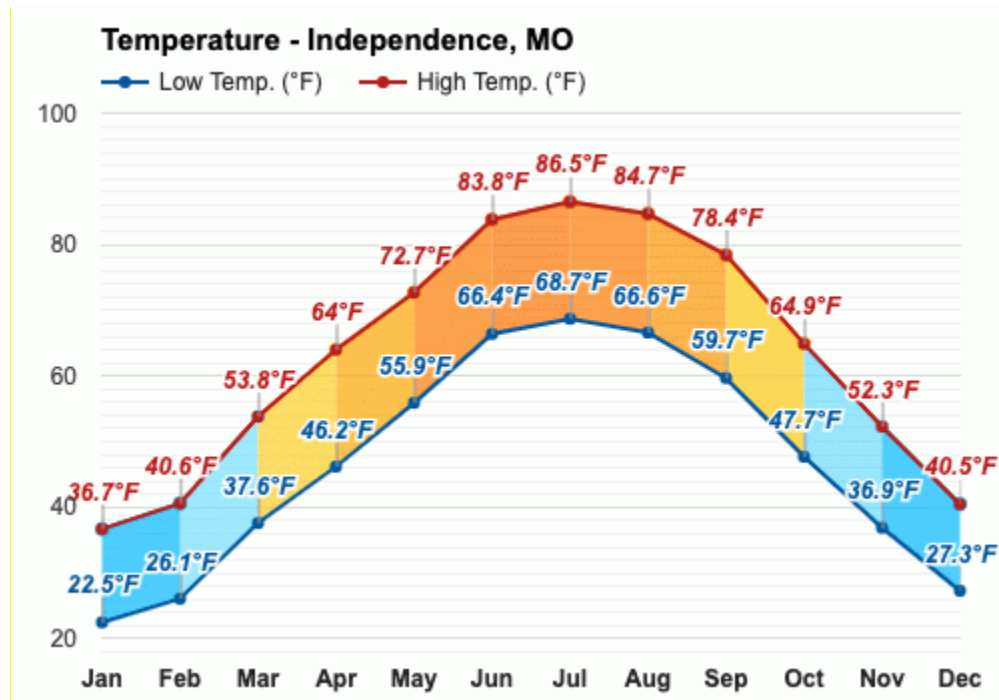
Flooding

All of Independence is served by the city's Water Department, providing 27 million gallons per day. Water comes from wells located at the Courtney Bend Water Treatment Plant along the Missouri River. Because of the nature of droughts, this type of hazard would likely impact the entire community, meaning the location of occurrence is "large" or over 50% of the city. In Missouri, the last drought event with substantial impacts occurred in 2014. As with all communities east of the meteorological "dry line", Independence is unlikely to be adversely affected by anything other than a major, extended drought. While such a drought would require water-saving measures to be implemented, foreseeable damage to structures or loss of life resulting from the hazard would likely be very limited, with a modestly increased risk of damaging wildland fires. Based on the above assessment, Minimal or no loss of property or damage to people or property is expected due to this hazard.¹⁸

Extreme Temperatures

Extreme temperatures can be defined as those that are far outside the normal ranges. The average temperatures for Missouri are Winter (Dec–Feb) Average = 27.51 °F Summer (Jun–Aug) Average = 68.15 °F The impact of extreme heat or cold in Independence is considered to be “limited,” with no property damage and very limited effect on humans. Extreme temperatures are of some concern due to health threats to the very young and very old and the homeless. Bursting pipes with extreme cold and air quality issues with extreme heat could impact emergency responders.

Figure 71: Independence Temperatures



While much of the country talks about new weather records, over the past 10 years, Independence has stayed below its record high temperatures and stable with its record low temperatures. According to the National Weather Service, the last time Independence had a temperature that exceeded 100F degrees was in August of 2012 with its record temperatures being 113F in August of 1936. Record low temperatures were achieved as recently as January of 1989 with a low of -23F. The annual monthly maximum temperatures have been decreasing over the past 5-10 years, but the monthly mean average temperature has been stable.

Flooding/Drought

Flooding is generally caused by severe rainstorms, thunderstorms, rapid. Residents living in flood zones should be informed of the risks. During the planning process, the city must consider station location and relocations in relation to flood zones. Flood zone and flood insurance information should be part of the public education process to ensure flood awareness and actions residents need to take to ensure readiness.

During a flood event, Independence Fire Department personnel may respond to incidents that may involve moving water, possibly requiring intervention by specialty-trained technical rescue teams. In addition, after the flood, EMS-related incidents will increase as injuries and medical conditions occur.

Severe Snowstorms/Ice Storms/Nor'easter

The entire City of Independence is susceptible to ice storms, which means the location of occurrence is "large." Because these storms occur regionally, they would impact the entire City. Based upon the availability of records for Mid-American Regional Council, the likelihood that a severe snowstorm will affect Independence is "very high" (greater than 70% in any given year). The City faces a "limited" impact or less than 10% of total property damaged from snowstorms. The weight from multiple snowfall events can test the load ratings of building roofs and potentially cause significant damage. Multiple freeze-thaw cycles can also create large amounts of ice and make for even heavier roof loads and lead to ice dams and both interior and exterior structural damage.

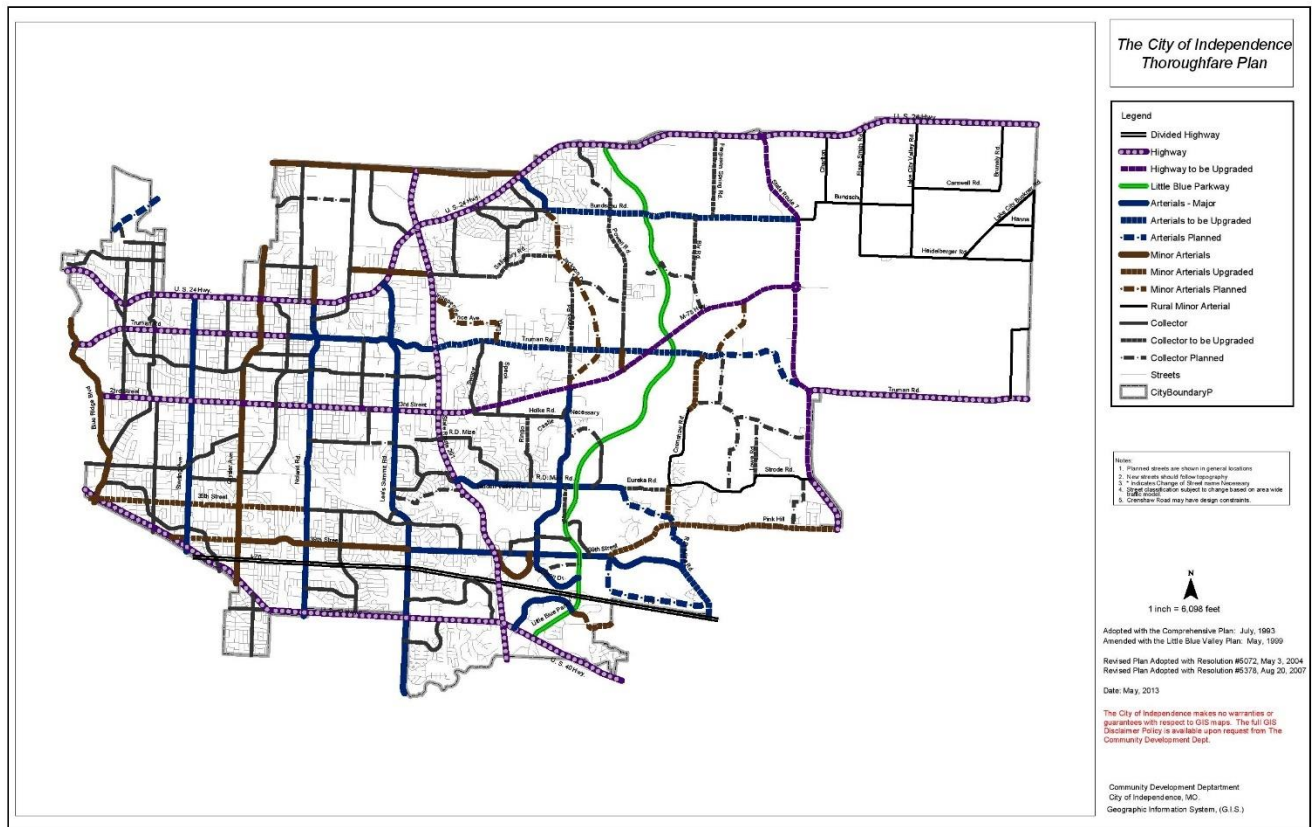
Technological Hazards

Transportation

There are several transportation corridors and various modes of transportation within the area of the Independence Fire Department. Roadways have the potential for motor vehicle crashes, vehicle fires, medical emergencies, grass fires, or hazardous material spills/leaks. Each incident is not only a risk to the community but to the first responders who can potentially be struck by vehicles while operating near moving traffic.

Major thoroughfare that accommodates intermodal traffic in the region that serve Independence are shown below in Figure 72. Regardless of the type of facility or transportation infrastructure, each poses a risk associated with human error.

Figure 72: Major Roadways



Land Use

Community Land Use Regulations

Future infrastructure requirements to sustain the growth of the Independence Fire Department will be critical to property owners and coincides with zoning, subdivision regulations, and higher property values. Infrastructure will include roads and bridges, sewers, water, and fire hydrants. Additional considerations when examining the zoning of a jurisdiction are the impact new development and changes to the existing structures may have on emergency response capabilities.

Occupancy Types by Land Use Designation

Activities occurring within a building or on an undeveloped property can often be used to begin the process of risk classification. Zoning maps provide permitted use information for each parcel identified by land use designation. Vacant lots and open land are often identified as a much lower risk than commercial or industrial occupancies as open areas lack the people and processes associated with emergency incidents. Fires in commercial occupancies often lead to higher dollar loss than many residential properties, and the long-term income loss affects the people employed by the business when it is destroyed. In Independence, while commercial fires can still have a dramatic impact on the community, residential fires in dense or multi-family housing can have a much greater impact than

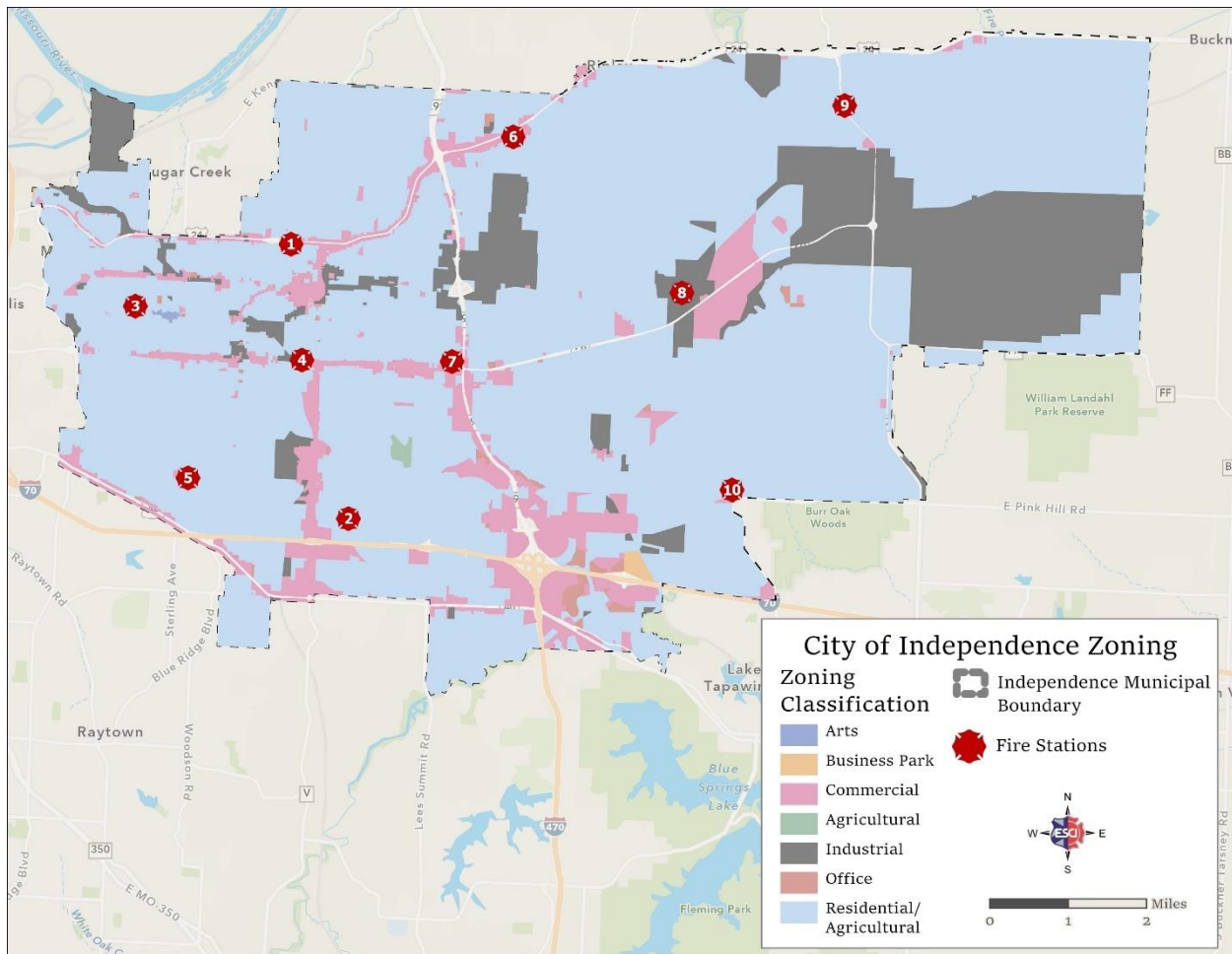
ordinary residential fires. This is because these building(s) often house many people and a fire immediately displaces them. Since many may be low income to begin with, following a fire, these displaced people may potentially become homeless and have no ability to protect themselves from the elements, particularly in the winter.

The following figure translates zoning to categories of relative fire and life risk.

Figure 73: Relative Fire and Life Risk

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

The following figure provides a simplified illustration of the general classes of zoning found in Independence. Categories are divided into arts, business park, commercial, agricultural, industrial, office, and residential/agricultural occupancies.

Figure 74: Zoning Classifications

Physical Assets Protected

Public Assembly

An assembly occupancy is defined by the National Fire Protection Association (NFPA) as an occupancy used for gathering 50 or more persons for deliberation, worship, entertainment, eating, drinking, amusement, awaiting transportation, or similar uses or used as a special amusement building, regardless of occupant load.⁵

According to the NFPA, fires in assembly occupancies have shown to be deadly when the proper features, systems, and construction materials were not present. The Independence Fire Department can

⁵ Fire Safety in Assembly Occupancies, October 2014. Retrieved from: <https://www.nfpa.org/Public-Education/Staying-safe/Safety-in-living-and-entertainment-spaces/Nightclubs-assembly-occupancies/Fire-safety-in-assembly-occupancies>.

reduce life safety and fire risk to these properties through NFPA code provisions requiring a combination of multiple safeguards and features. Basic requirements include control of unintentional ignition sources, furnishings, and contents, as well as requiring fire alarm and sprinkler systems and the proper number of exits for the occupancy load calculated by the Independence Fire Department.

Schools

The NFPA states that a facility where six or more people up to grade 12 receive instruction for four or more hours a day is considered an educational occupancy. Missouri educational facilities are subject to the NFPA Fire (NFPA 1) and Life Safety Codes (NFPA 101) through Missouri statutes. Independence Department provides effective prevention and safety programs during the school year to reduce risk factors through education.

Hospitals and Medical Care Facilities

Medical and congregate-care facilities, particularly hospitals and nursing homes, provide care for and house vulnerable, often non-ambulatory occupants. Although these facilities have fire safety inspections and are generally built of fire-resistive construction with built-in fire suppression, emergencies still occur that require occupants to be quickly moved away from the hazard. These types of facilities require high resource levels, often for long periods, and will strain fire department capabilities. Independence has one hospital.

Critical Infrastructure

Communications

Emergency communication centers and the associated transmitting and receiving equipment are essential facilities for emergency response. The Independence Police Department's Communications Unit houses the Independence Communications Center for the city's Emergency Communications Unit staff.

The facility creates multiple system redundancies and allows space for future expansion in response to the state's requirement that the city's 911 center accepts all wireless 911 calls directly. This piece of emergency infrastructure helps ensure Independence's police, fire, and other emergency responders have the best tools possible to keep residents safe.

There are other communication facilities and equipment that are equally important to the community and government operations within the Independence Fire Department service area. These are the telephone company central offices and the transmission lines of local telephone service providers. Internet service providers, along with wireless cellular communication providers, provide essential communication capabilities for the community as well as emergency personnel through their facilities and equipment.

Energy

Without a stable energy supply, the health and welfare of the Independence community are threatened, and the economy cannot function. Energy is uniquely critical to the community because it is an "enabling

function” across all critical infrastructure in Independence. Communication services can be greatly compromised during a power outage, rendering technology-based equipment and communications inoperable. Energy loss is a planning consideration for response and readiness requiring system redundancy development to reduce risk.

Hazardous Materials

Industries and businesses in Independence use chemicals to make products such as pharmaceuticals, computers, paints, clothing, and automobiles.

As of 1986, businesses that possess or maintain hazardous chemicals that exceed thresholds established by the Emergency Planning Community Right-to-Know Act are required to complete a Tier II Hazardous Chemical Inventory Report. These occupancies are required by the Environmental Protection Agency to annually submit Tier II reports to local fire departments, Local Emergency Planning Committees (LEPC), and State Emergency Response Commissions (SERC) so that these agencies can plan for the response and mitigation of any potential spills or accidents. Additionally, the reporting facility's designated emergency point of contact is also required as part of the submission.

Structural Risks

Certain buildings, contents, functions, and sizes present greater firefighting challenges and require special equipment, operations, and training.

Buildings Three or More Stories in Height

The Insurance Services Office calls for a ladder truck within 2.5 miles of developed areas containing buildings three or more stories in height. Accessing the upper floors and roofs of buildings this tall typically requires ladder truck capability as ground ladders may not provide access. The following figure shows the locations of ladder company stations and that portion of the city which lies within 2.5 miles of a ladder company. This would be an EMS response time consideration as well as a fire suppression issue because of the vertical response time necessary to reach the patients.

Large Square Footage Buildings

Large buildings such as warehouses, malls, and large “box” stores require greater volumes of water for firefighting and require more firefighters to advance hose lines long distances into the building.

Aging Buildings

The age of a building can greatly affect the conditions and level of difficulty encountered when conducting suppression or search and rescue operations. Buildings constructed prior to the development and enforcement of modern fire codes can allow fires to move quickly from one area of the building to another without being detected, and as buildings age, they can also become unstable unless ongoing home maintenance and care have occurred. In the next figure, buildings constructed prior to 1900 are displayed.

Risk Prioritization

In her recent article, *3 Elements of an Effective Fire Department Community Risk Assessment*, Dr. Lori Moore-Merrell provided the following explanation for the three main elements that should provide the foundation for all Community Risk Assessments:⁶

Figure 75. Community Risk Assessment Elements

Community Risk Assessment Element	Description
Probability (likelihood) of an incident occurring.	Probability is associated with the frequency of an incident type. Incidents with high probability will occur more frequently. Once these predictions are made, risks can then be ranked as having a low, moderate, or high probability of occurring.
Consequence (magnitude) of an incident on the community.	Consequence is the measure of the outcome of an incident type occurrence. To assess consequence, fire department leaders must first identify, categorize, and prioritize community hazards. Hazards are the causes of danger and peril in the community. Risk quantifies the degree of potential danger the hazard presents. The consequences of an emergency incident result from a combination of the risk level of the hazard, the duration and nature of the event, and the response interventions. Consequences are divided into four categories: ▪ Civilian and firefighter injury or loss of life ▪ Property damage or loss ▪ Critical infrastructure damage or loss ▪ Environmental damage or loss
Impact of an incident on the department's response system.	Impact is a measure that explains the effects of multiple concurrent incidents on the fire department. Impact describes a fire department's ability to provide ongoing services to the remaining areas of a community considering frequent activity in known high-volume demand areas.

⁶ <https://www.lexipol.com/resources/blog/3-elements-of-an-effective-fire-department-community-risk-assessment/>

Establishing Community Risk Priorities

After the risks within a community have been identified and prioritized, the community is well-positioned to develop an effective set of Community Risk Reduction strategies and tactics to mitigate the risks.

Figure 76: Community Risk Reduction Planning Cycle



The NFPA defines Community Risk Reduction (CRR) as “programs, actions, and services used by a community, which prevent or mitigate the loss of life, property, and resources associated with life safety, fire, and other disasters within a community.” Vision 20/20 describes Community Risk Reduction as a “process to identify and prioritize local risks, followed by the integrated and strategic investment of resources (emergency response and prevention) to reduce their occurrence and impact.” In both instances, the previously identified and prioritized hazards form the basis for Community Risk Reduction Programs in an effort to save lives and property.

Figure 77: Community Risk Reduction Planning Considerations

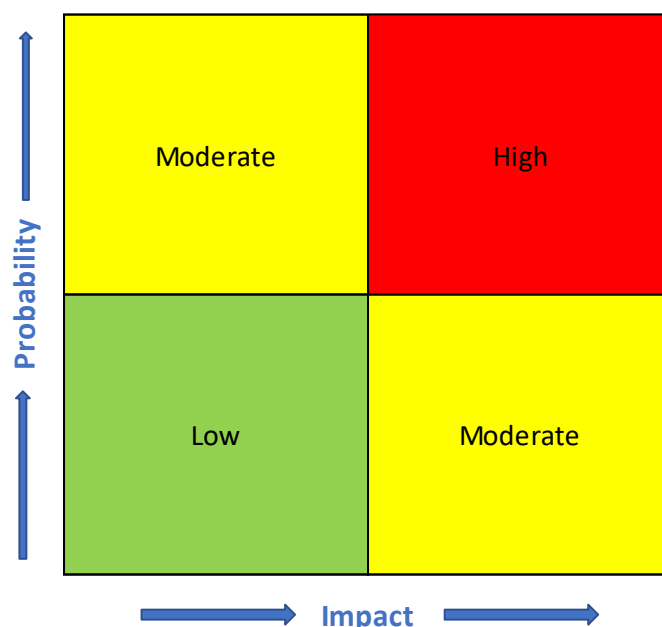
Planning Processes

The fire service nationally creates and gathers large volumes of data in performance of duties, both from emergency response activities and in preparation for and anticipation of large-scale disasters. However, many of these same organizations do not analyze the data sufficiently to evaluate effectiveness and adjust as necessary to become more effective or efficient. While there are always areas for improvement, IFD analyzes a significant amount of data, given the resource constraints it faces.

There are two major types of planning fire departments should employ: emergency preparedness and response planning, and administrative planning for the future of the organization. There are sub-elements under each of these as well. Each of these are described in the following pages, as well as how IFD fares in these major categories.

Emergency Preparedness & Response Planning

As emergency response agencies, fire departments must thoroughly understand their community's risks. These risks must be quantified. There are numerous risk/consequence or risk/probability matrices available; but regardless of the labels on the axes, they usually fall into one of the quadrants in the following figure.

Figure 78: Risk (Impact/Probability) Matrix

As the risk is quantified generally into one of the four quadrants, a decision is made based on the level of risk. Communities cannot create a zero chance of a risk, which would indicate there is no risk in that community. Likewise, there cannot be 100 percent chance of a risk, since that would make it a certainty, not a risk. Every community must come to grips with an acceptable level of risk, recognizing that it is improbable, impractical, and unaffordable to eliminate all risk in a community. Using a matrix helps fire department officials determine approximately where the line is between an acceptable and unacceptable risk. It is important to note that for the individuals directly involved in an incident, it is never considered an acceptable risk. The quadrants in the previous figure may be defined as follows.

- **Low impact/low probability**—Risks in the bottom left corner are low level, with acceptable consequences if the incident occurs. These are considered *Low Risk* which is often considered acceptable and require no further action.
- **Low impact/high probability**—Risks in the top left corner are considered *Moderate Risk*—if the incident happens, the fire department can usually handle it with existing resources. However, effort should be given to reduce the likelihood that these incidents occur. This is where community risk reduction strategies pay significant dividends to a community.
- **High impact/low probability**—Risks in the bottom right corner are significant if they do occur, but they are very unlikely to happen. Risks in this quadrant are referred to as *Moderate Risk* and are prime candidates for training and contingency planning. A fire department may spend time and energy preparing for such an incident and may even acquire specialized equipment and other non-staff resources to prepare for this risk. These risks also lend themselves well to community risk reduction strategies, such as public education, community engagement, and code enforcement.

- **High impact/high probability**—Risks toward the top right corner are critical and are viewed as *High Risk*. These should be the highest priorities for the fire department and for the community. Aggressive action is required, such as staffing for these risks, equipping for these risks, and engaging the community in risk reduction and preparedness.

Once the community risks are identified and appropriately categorized, plans of action are developed consistent with their category. In many instances, high-risk facilities are preplanned in the event of an incident occurring there. Fire personnel become very familiar with these facilities, understanding what risks each of these facilities poses and what features the building has that can be used to gain a tactical advantage, such as area separation walls or built-in fire deluge systems. These facilities are known as target hazards.

A key component of response planning is developing a critical task analysis and deployment plan for various incident types within the community. These elements are core elements of a Standards of Cover. Applying the principles of risk analysis and practical emergency response strategies and priorities, fire departments can address, in general terms, how they will respond to a variety of emergency incidents that may occur.

Developing such a document serves to reinforce the department's approach to mitigating emergencies and helps to inform both policy makers and the community's citizens about the differences in response, such as to a single-family house fire as opposed to a commercial/industrial occupancy.

A Standards of Cover performs a safety function to the extent that it serves to remind both firefighters and chief officers of the limits of what can be prudently accomplished at an emergency scene. The creation and the promulgation within the department of such a document can have a lasting effect upon the effectiveness of the agency.

Administrative Planning

Administrative planning is often an underappreciated process. It does not have the urgency of response planning and is therefore easy to put off to a later date. Many fire departments do not fully appreciate the importance of these plans. There are multiple types of administrative planning devices. The most common are master planning, strategic planning, capital improvement planning, fleet and equipment replacement planning, and personnel planning (which includes succession planning). Some elements of capital improvement planning, apparatus and equipment replacement planning, and to a lesser extent personnel planning (as it relates to staffing levels) are included in master plans.

A master plan is essentially a long-range plan of the community served by the fire department. It identifies the current conditions and assesses land use and development plans for the community, as well as the urban growth boundaries for potential future growth. Population and service demand growth are projected ten years into the future, and the impact of that growth is identified. Recommendations are made in a master plan which address critical infrastructure gaps or gaps which will occur if the projected growth is not responded to appropriately and in a timely manner.

A strategic plan is of shorter duration, typically three-to-five years, and is internally focused. In this type of planning process, citizen-stakeholders are often interviewed to identify their attitudes, priorities, and concerns as it relates to the department. Internally, a SWOT Analysis (**S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats) is conducted. Reconciling the citizen-stakeholder feedback with the internal SWOT analysis results provides a clear picture of the organization's environment. This environmental scan shapes the strategic initiatives the department should focus on. Within each strategic initiative, multiple goals and subordinate objectives are established, complete with timelines, outcome measures, and responsible parties. A strategic plan is in essence a three-to-five-year internal work plan for a department. IFD does not have an effective strategic plan in place.

The capital improvement plan coincides with the fleet replacement plan, including the funding mechanism and duration. Ideally, this plan identifies not only when replacement expenditures are expected but identifies funding mechanisms. The master plan will have a direct bearing on the capital improvement needs of the department. The plan should be updated to complement this report's recommendations as it relates to capital improvement. This is discussed in greater detail in the Capital Facilities and Equipment section of this report.

It is commendable that Independence Fire Department has recognized the importance of administrative planning by embarking on this master planning effort. The recommendations contained in this master plan, if executed, will help IFD serve the community well into the future with appropriate infrastructure in place in advance of the growth that drives an increase in service demand.

Risk Assessment by First Due District

FEMA defines target hazards as "facilities in either the public or private sector that provide essential products and services to the general public, are otherwise necessary to preserve the welfare and quality of life in the community, or fulfill important public safety, emergency response, and/or disaster recovery functions." The NFPA further breaks these down into three risk categories for occupancies.

- **High-Risk Occupancy:** An occupancy that has a history of a high frequency of fires, high potential for loss of life or economic loss, or that has a low or moderate history of fires or loss of life, but the occupants have a high dependency on the built-in fire protection features or staff to assist in evacuation during a fire or other emergency.
- **Moderate-Risk Occupancy:** An occupancy that has a history of a moderate frequency of fires or moderate potential for the loss of life or economic loss.
- **Low-Risk Occupancy:** An occupancy that has a history of a low frequency of fires and minimal potential for life or economic loss.

To help provide visual illustrations of community risk, IFD should consider the use of the Fire CARES: Community Assessment/Response Evaluation System. A free data analytics resource funded by the Federal Emergency Management Agency, it assists communities in understanding its risk to fire.

Identifying and Categorizing Community Risk

Community risk level is typically established through an overall profile of the community based on the unique mixture of demographics, socioeconomic factors, occupancy risk, fire management zones, and the level of services currently provided.

Consequences of community hazards, associated risk events, and fire department mitigation efforts may be divided into four categories.

- Civilian and firefighter injury or loss of life
- Property damage or loss
- Critical infrastructure damage or loss
- Environmental damage or loss

Each of these categories contains hazards and therefore risks relevant to emergency responders.

Characteristics of properties can have a significant impact on outcome and associated response requirements. Each property or structure in a community can be considered a hazard that carries inherent risks based on occupancy type and fire load.

Occupancy risk is a sublevel of property risk and is established through an assessment of the relative risk to life and property resulting from a fire inherent in a specific building/structure or in generic occupancy classes (e.g., high-rise residential).

The *NFPA Fire Protection Handbook* defines hazard levels of occupancies by types.

- **High-Hazard Occupancies:** High-rise buildings, hospitals, schools, nursing homes, explosive plants, refineries, public assembly structures, other high life hazard or large fire potential occupancies.
- **Medium-Hazard Occupancies:** Apartments, offices, mercantile, and industrial occupancies that may require extensive use of firefighting forces.
- **Low-Hazard Occupancies:** One-, two-, or three-family dwellings and scattered small business and industrial occupancies.

Community risks were also estimated as a function of the socio-demographic and geographic characteristics of the locations (census tracts) of reported structure fires over a nine-year period (2007–2016), according to available NFIRS data. The socio-demographic attributes include:

- *Population characteristics* (e.g., size category of the department, population, number of males, age group counts, race counts)
- *Housing characteristics* (e.g., total housing units, total vacancies, size of the home, number of renters, age of units)
- *Household characteristics* (e.g., median household income, social vulnerability index)

- Geographic region

The final set of variables varied by model and were selected to ensure the best prediction of risk. Note that because deaths are rare, many departments will be predicted to have only a fractional number of deaths.

Community risks are not currently estimated for communities with populations less than 10,000 people because small departments are expected to behave differently from larger departments.

Recommendation 35. Develop a complete database of all high risk/high impact facilities in the IFD service area.

Recommendation 36. Develop response plans for all non-facility risks (transportation systems and weather extremes) that are high impact risks.

Recommendation 37. Develop and publish an Independence Fire Department Standards of Cover.

GROWTH PROJECTIONS

Understanding how the community is predicted to change in the future is an essential part of the planning process. Without some understanding of how Independence's current levels of service will be affected over time, today's capital purchase and staffing deployment plans may or may not be adequate in future years. The types and intensity of change, where change occurs, and the amount of time these changes occur should all be considered in current planning and budgeting. In this section, future and projected development and their impact on population and demand for services are examined.

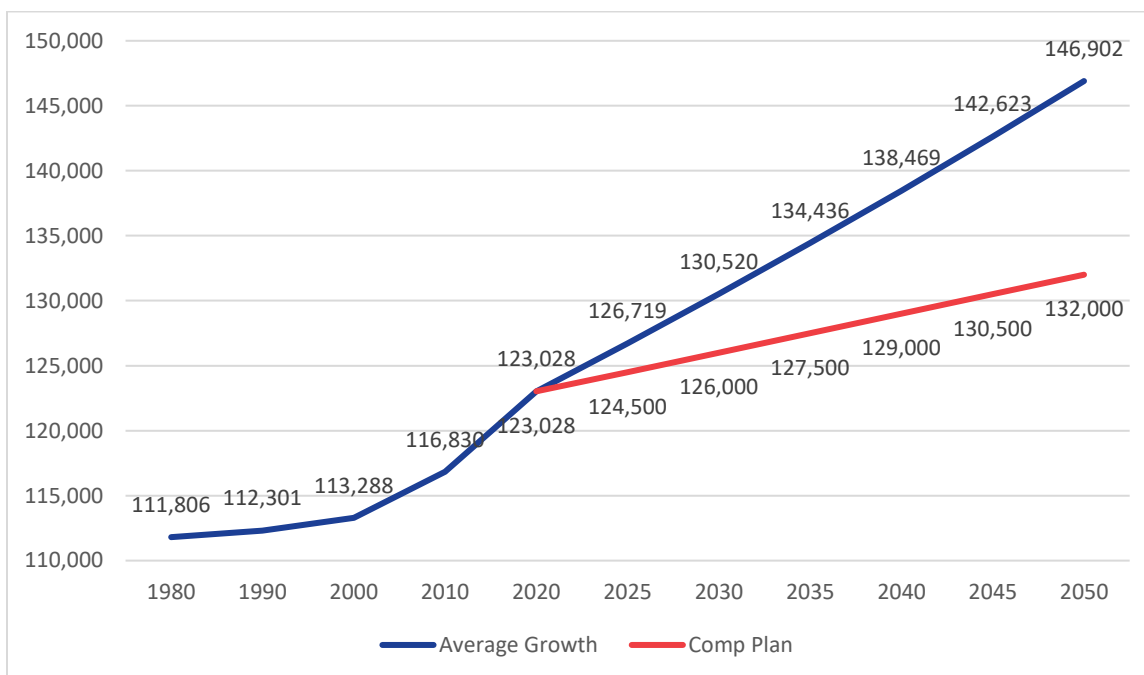
Population

Current Population Information and Projections

Populations and the rates at which they change fluctuate from year to year. Using US Census data, the rate of population increase for Independence from 2000 to 2010 was 3.1% or .3% annually and from 2010 to 2020 was 5.3% or .5% annually. American Community Survey population *estimates* a reduction in population in 2021 compared to 2020 with the 2021 population estimated at 122,088 and the 2020 population US Census Survey at 123,028, a reduction of .8%. It is too early to assess whether the decline is the beginning of an unanticipated population decline, a conservative estimate in the research, or just a temporary short-term aberration from the anticipated predicted growth.

The city's current 2040 Comprehensive Plan completed in 2018, cites the Mid-America Regional Council 2040 Forecast estimating a population increase of approximately 129,000 people by 2040 or about 4.8% over the next 20 years, a .24% annual increase. However, the annual growth over the past twenty years has averaged a higher .4% with 2000 through 2010 averaging 0.3% and 2010 through 2020 a .5%. An average of .4% annual increase was also applied to create a 30-year linear projection based on 2020 population totals that can be conceived as a low-likelihood higher possibility. Several factors can influence how quickly or slowly a population will change over time including land availability, housing costs, cultural values, leisure and recreational opportunities, educational system reputations and others.

The chart below reflects both those projections.

Figure 79: Historical Population and Future Projections for Independence

Demographic and Community Changes

While population changes can affect service demand, other factors also have an effect. Changes in community demographics and economic development also affect demand. The most pressing demographic to impact service that will be changing is aging. An aging population increases service demand as they tend to rely on medical services and assists at a higher rate than the average population. In 2020, the American Community Survey reported the median age of Independence citizens was 39.5 with 18.2% of the population at age 65 or older, slightly higher than the Kansas City Metro area (14.9%) and the state of Missouri (16.9%). National surveys reveal the Baby-Boomer generation is nearing its completed transition to a senior population. Estimates are that this population category is growing by approximately 3% per year. Estimates from a 2013 MARC project⁷, predict the senior population within the Kansas City Metropolitan Statistical Area will grow by approximately 185,000 people. With a previously mentioned estimated .4% population growth, this means that the percentage of the Independence population that is 65 and over will be increasing above the 18.2%. According to the Jackson County Cares Coalition,

⁷ https://www.marc.org/sites/default/files/2022-06/PSP_Projects_2013_40_Highway_Final_Report.pdf

- 31% of Jackson County seniors live alone making them more vulnerable to depression, falls, and lack of emergency care
- 1 in 10 live in poverty (another service demand contributor)
- 70% of the people 65 and over will need long-term care which local fire departments frequently become a part of.

Another demographic taking place is the aging structures within the community, many of them built in the early 1800s. These structures tend to lack modern conveniences and structural systems often forcing homeowners to improvise in ways that can jeopardize their personal safety. Homes and buildings with old HVAC systems, limited utility capacity, and construction styles that paid little attention to fire protection become more vulnerable as time passes.

Independence is anticipating an increased percentage of land devoted to industrial use. Industrial properties possess unique hazards that often require specialized resource and equipment when things go wrong. Independence is planning that the amount of property devoted to industrial business will increase from the current 5.5% to 12.1% in 2040. One major development currently in planning is the development of the Little Blue Parkway Corridor from E R D Mize Rd on the south to Twyman Rd and 78 Hwy on the north. This project estimated to last ten years will develop 10 million square feet of industrial and business park space with over 60 buildings currently planned.

Major Development Projects

The development of the Little Blue Parkway, a new thoroughfare connecting the eastern portion of the City from I-70 to 24 Highway will open land for development. This project has been discussed for many years and is now beginning to develop. . In the heart of the city,

Historic Independence Square is undergoing a renaissance with substantial increase in private investment and a planned restoration of the Historic Jackson County Courthouse. The traditional town square offers unique shops, restaurants, loft-style apartments and a newly renovated cinema and bowling alley.

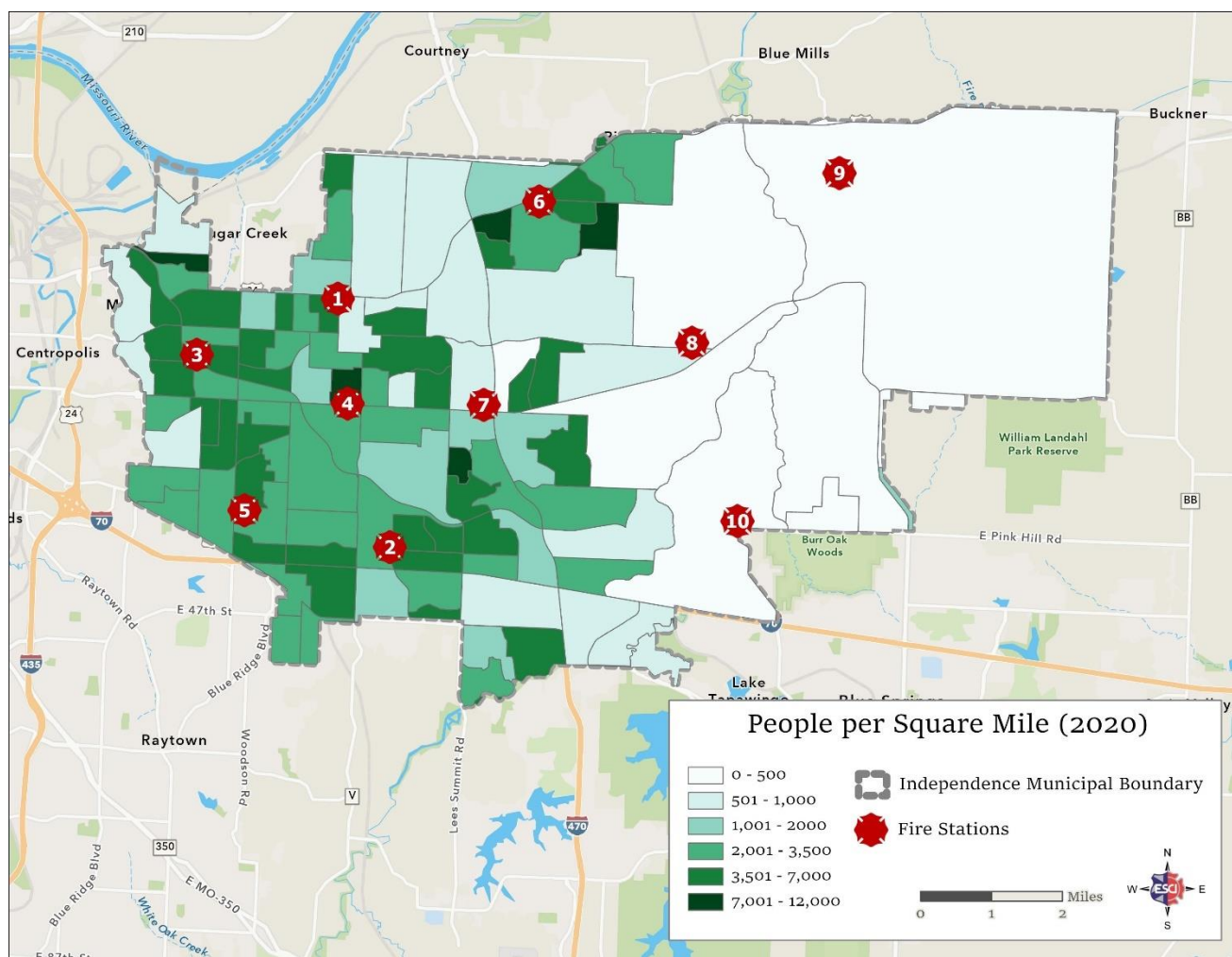
Current Demand Conditions

As mentioned earlier, demand for services is often tied to the size of the population served and other demographics. Age, access to medical care, general health, and economic stability can all influence how frequently emergency services are requested. With some of the future community and demographic changes now identified, we turn to how these will affect the fire department.

First, we will identify how the fire department is currently used within the community, whether or not it meets any type of performance standard, and then what if any changes, are recommended.

First, below is a graphic of population density within Independence. It identifies the greatest population density is on the west side of the city, largely west of Jackson Dr/Jones Rd. Seven of the ten Independence fire stations are located in this area.

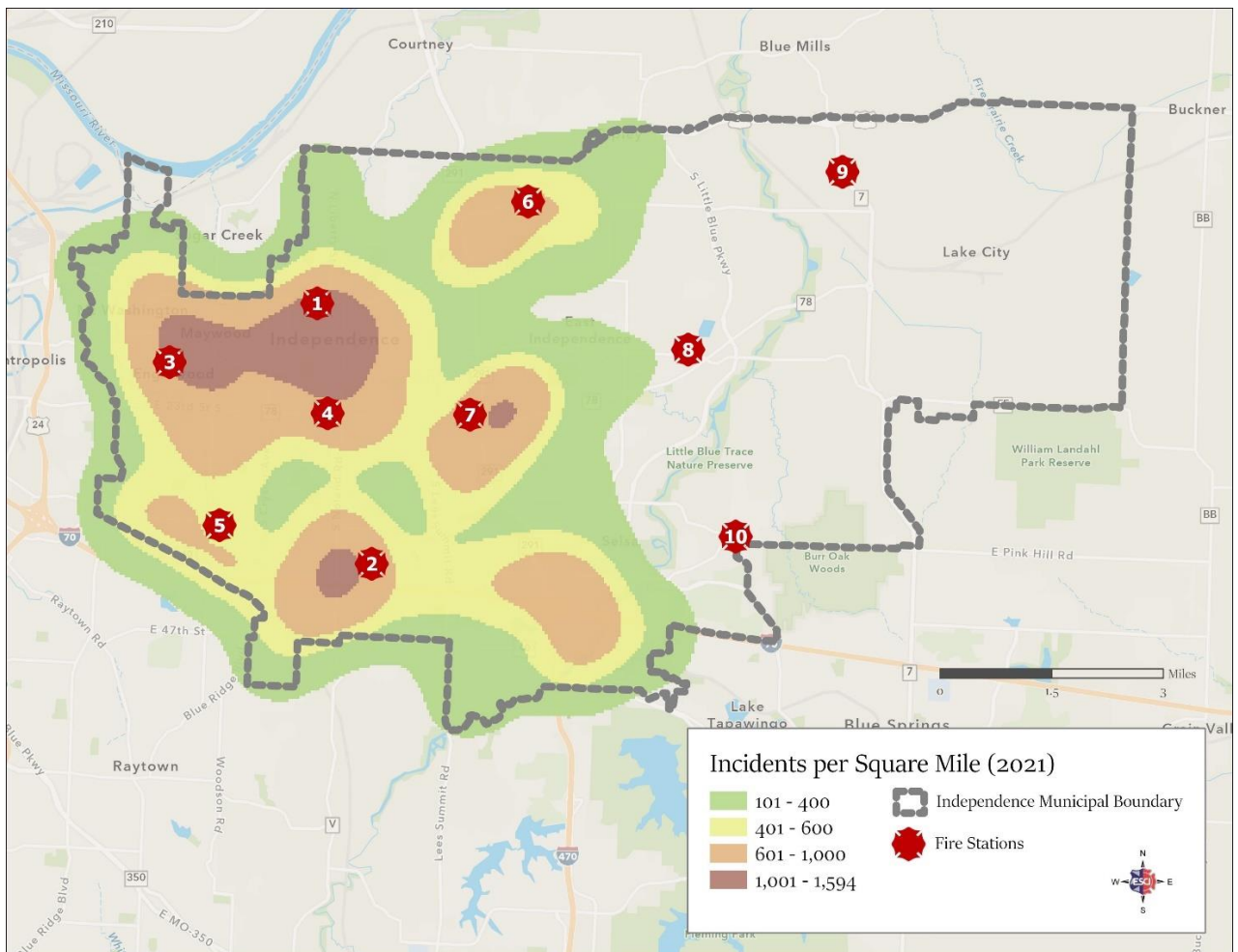
Figure 80: Independence Population Density



Incident Density

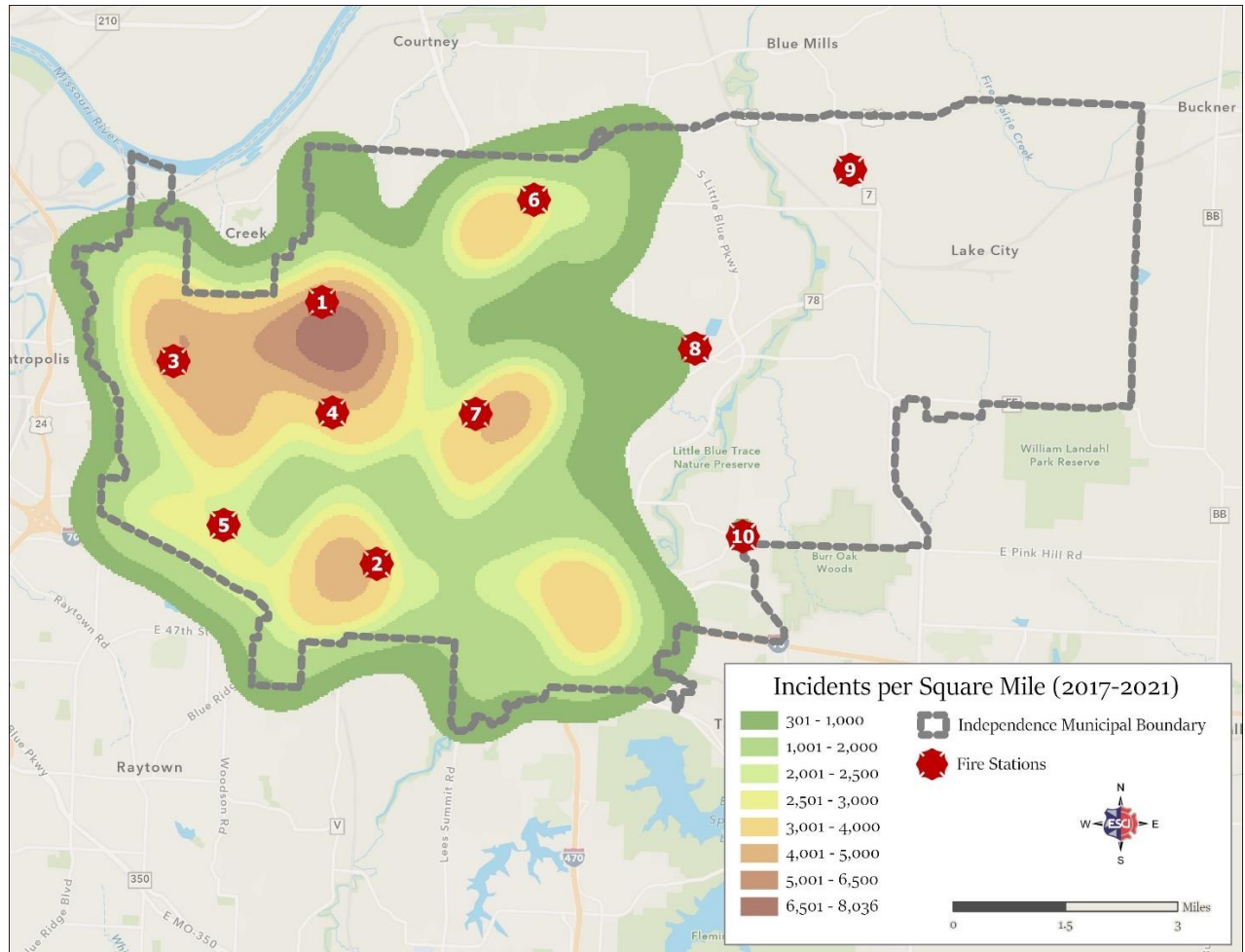
The next three graphics identify three different perspectives on IFD responses. The first graphic shows a broad depiction of where the highest call volumes are located. The area triangulated by Stations 1, 3, and 4 along with small areas near Stations 2 and 7 reflect the highest call volume.

Figure 81: 2021 Incident Density (per square mile)



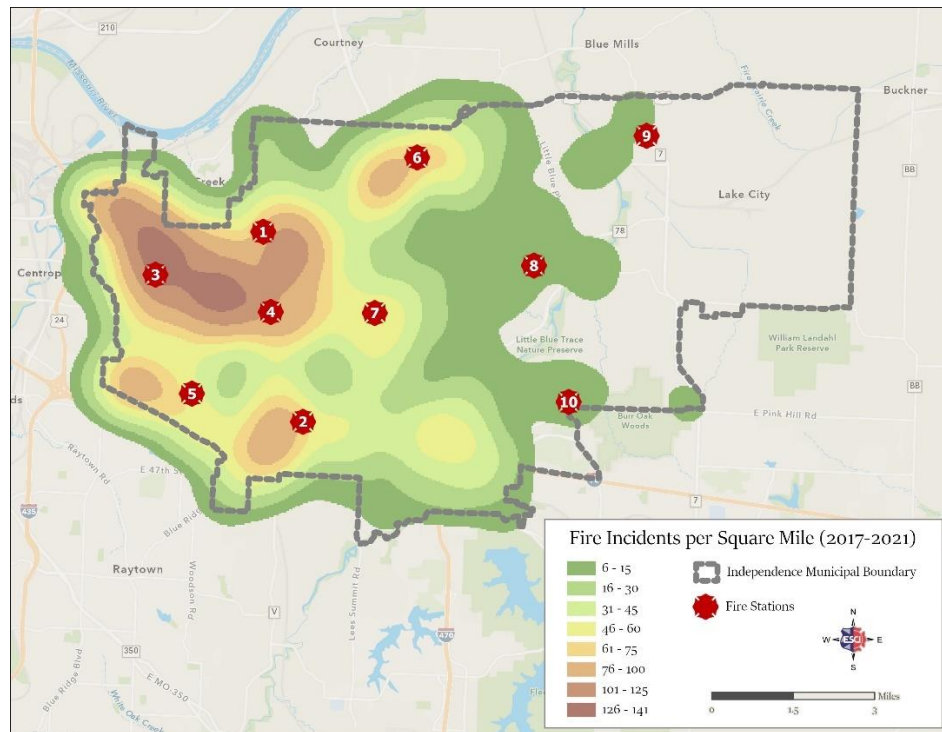
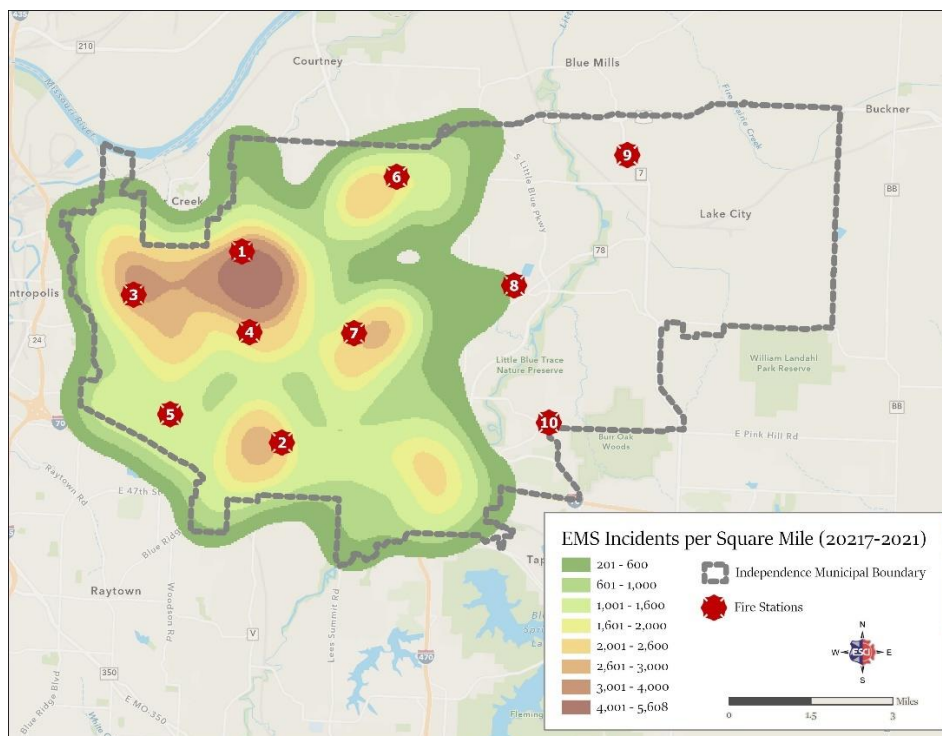
The next graphic shows only 2021 call volume with a very similar pattern with the exception that in 2021, the area between stations 1 and 4 showed higher than average response activity.

Figure 82: 2017-2021 Incident Density (per square mile)



The two previous graphics reflect that, apart from an area centered roughly on the I-70 and I-470 interchange, fire stations are positioned near areas with the highest incident densities. Both the 2021 individual graph and the collective 2017-2021 reflect that incident density geography is not changing quickly. Since the graph in Fig. ____ shows an increasing call volume, it's safe to say that call volumes change within existing demographics.

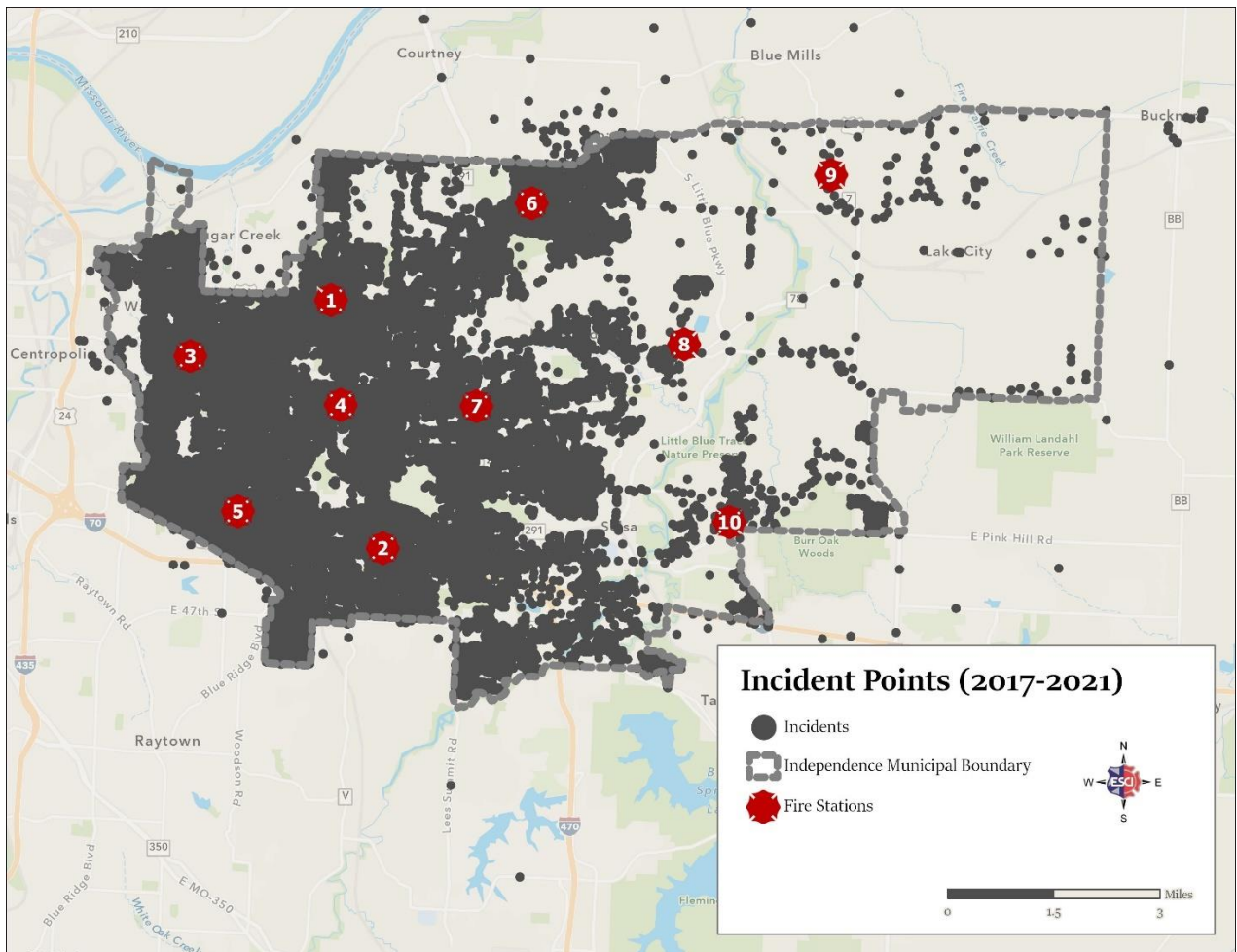
The following graphics identify the breakdown of all incidents into fire and EMS calls and their incident densities across the city.

Figure 83: 2017-2021 Fire Incident Density (per square mile)**Figure 84: 2017-2021 EMS Incident Density (per square mile)**

Both prior graphics reflect that fire and EMS call distribution are similar across the city. The area of the city with a significant fire and EMS call volume that does not have a proximal fire station is along the I-70/I-470 interchange. From a call volume perspective, a conclusion is reached that the city, with the previously identified corridor, is largely covered adequately by current fire stations.

The next graphic shows that while call volume is largely located on the west side of the city, there is still considerable responses to other areas of the city.

Figure 85: 2017-2021 Incidents

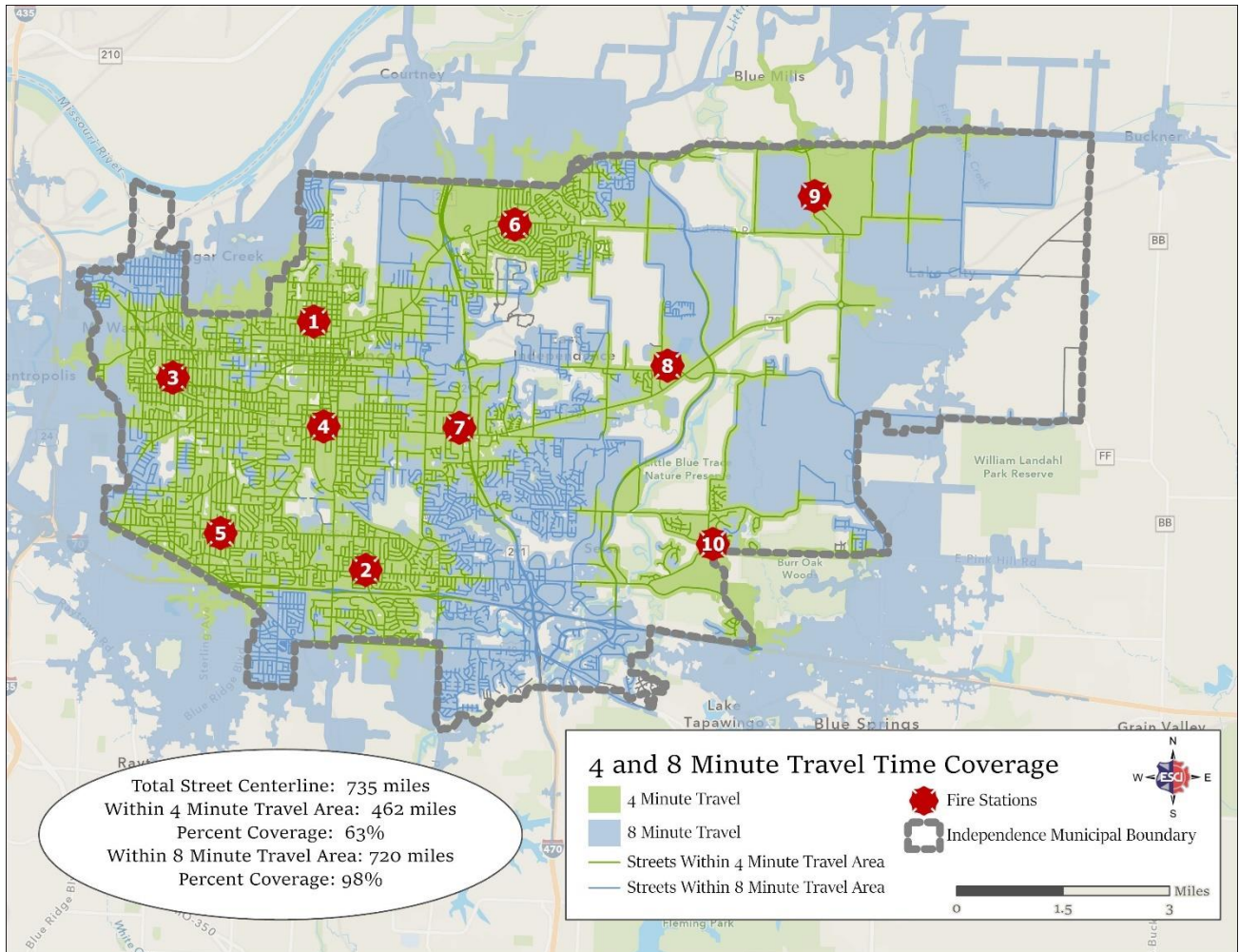


Current Response Standards

As referenced earlier, 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 suggests (standards are suggestions, not requirements) that the first arriving engine to a fire must arrive on the scene within four minutes travel time. Below (Figure 86) is

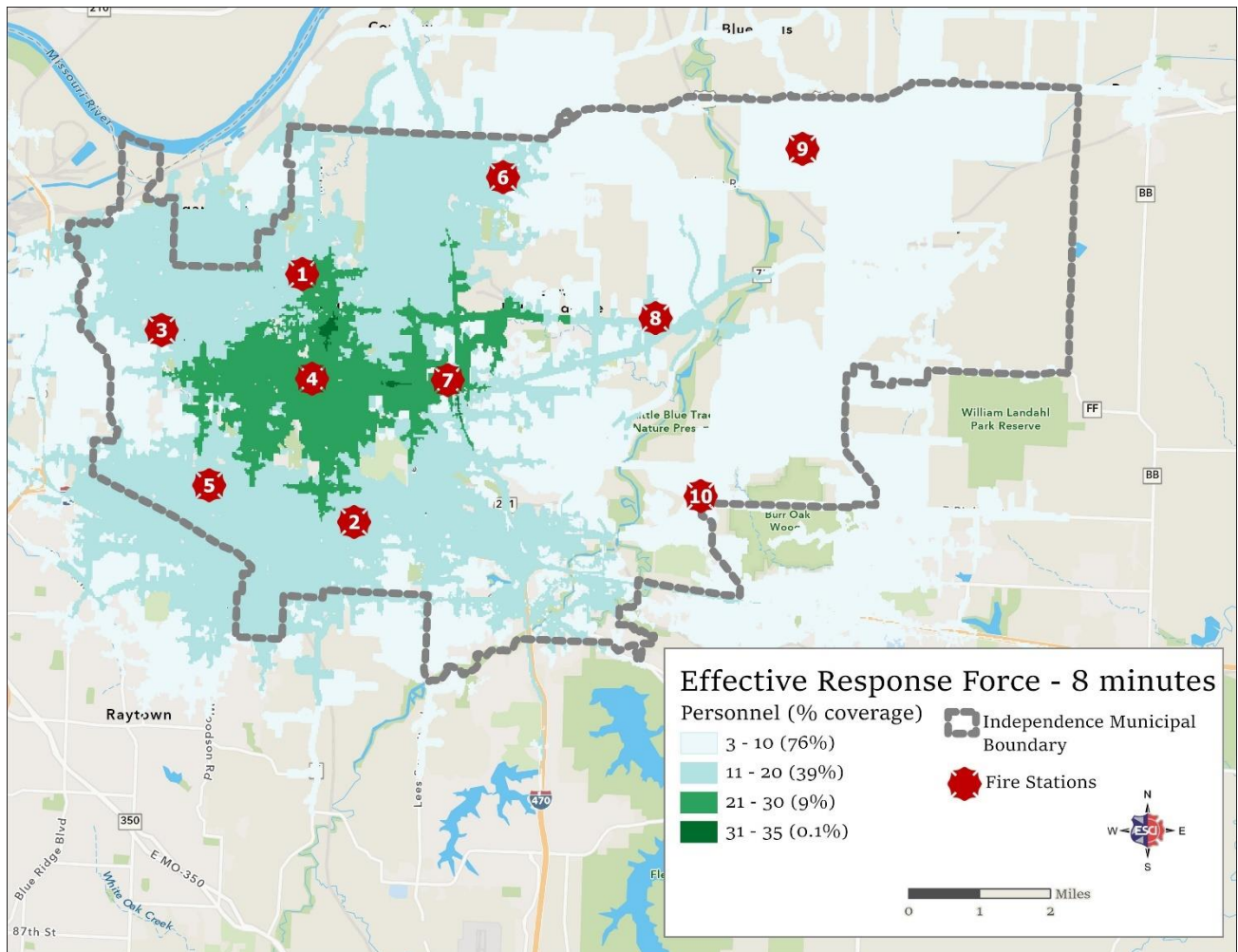
a graphic that shows the portions of the city that are within four minutes of a fire station, which is 63% of the city's road miles.

Figure 86: 4/8 Min NFPA Travel Time



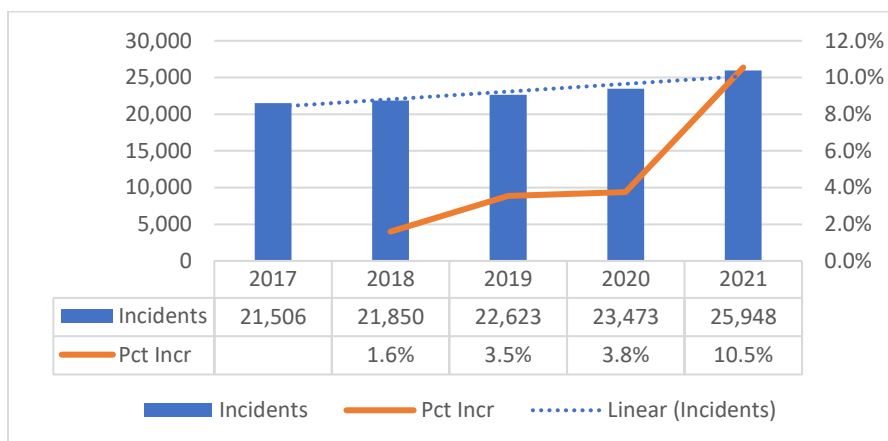
The graphic also displays that the I-70/I-470 interchange area, a previously identified high incident density region, is outside any of the closest station 4-minute response areas. From a statistical perspective, this inadequacy would increase the average fire department call times across the city.

The NFPA 1710 standard also identifies also suggests that an entire response force to an initial alarm arrive within eight minutes. Below is a graphic that represents where an entire initial response force can arrive within eight minutes. For a single-family dwelling which requires an ERF of 15, 39% of the city is protected under that standard.

Figure 87: Effective Response Force - 8 mins

Future Service Demand Projections

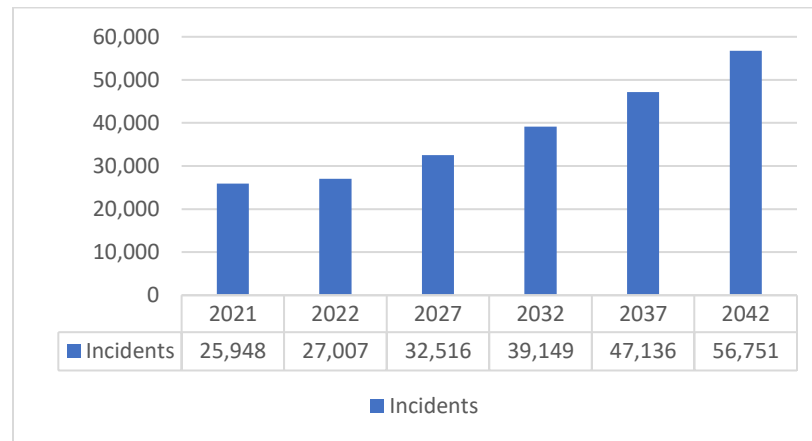
To provide context on how demand will change over the next several years, we must begin with the state of IFD's current responses. The Service and Delivery Section showed the current status of the IFD response system. In 2021, IFD handled 25,948 calls. The below graph (Figure 88) shows the pattern of call volume for IFD over the past five years.

Figure 88: IFD Incident Count (2017-2021)

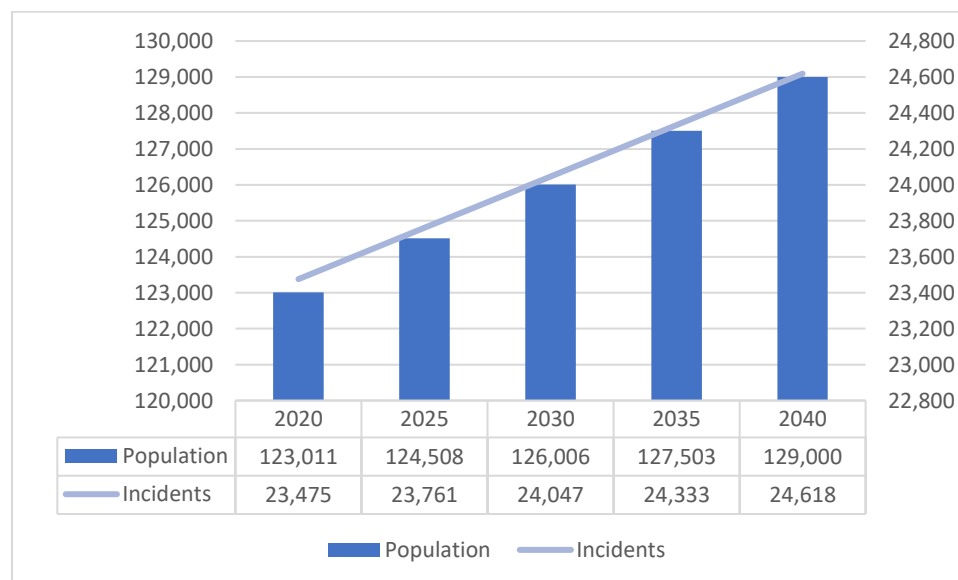
One way of calculating future demand projections is based on the current call volume pattern. Year-to-year trends can be a bit unreliable as individual years may have aberrations that do not reflect the overall pattern. For example, an unusual year of severe weather may have caused a higher call volume than normal while many departments across the country experienced decreased call volumes in 2020 and 2021 due to the pandemic and some changes in lifestyles.

In a smoothed-out projection over these past five years, if 2021 is included, IFD experienced a 20.7% call volume increase or 5.18% per year. If it is excluded, IFD's average is closer to a 2.97% annual increase. It is too early to tell whether the sudden increase in call volume in 2021 is indicative of the beginning of a rapid growth pattern, even if it's not 10%, or an aberration. However, it's substantial enough to at least take it into consideration. Taking both of these options into consideration and splitting the difference yields a potential annual call growth rate of 4.08%.

Projecting this call volume linearly 20 years into the future has a call volume prediction as below. Split across IFD's current 14 fire responding units means that all units on average will see a one to one- and one-half calls per day increase in a five-year period. While this even distribution increase is unlikely to happen, more likely some units where growth is occurring will see much higher volume increases and others will stay similar to their current call patterns.

Figure 89: Call Volume Projection (Volume Pattern)

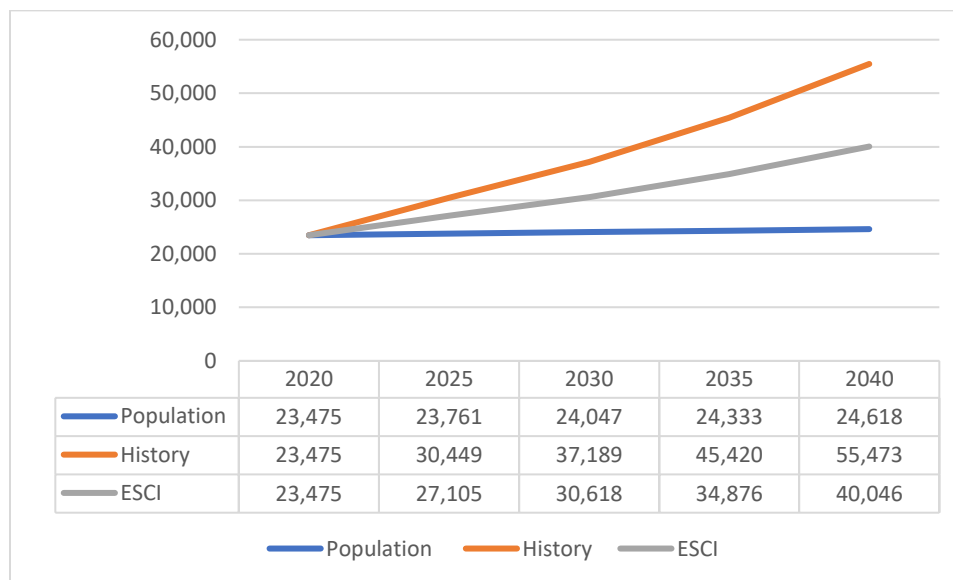
A second means of projections is population growth. As mentioned earlier on, Independence's 2020 census population was 123,011. In 2010, it was 116,830 and in 2000, it was 113,288. Using five-year comparison blocks again, Independence's population grew 5.3% from 2010 to 2020, 2.7% each five-year block and .54% annually. Then 2000 to 2010 was 3.1% growth, 1.6% in those five-year blocks, and .3% annually. Independence's 2018 *Imagine Independence Comprehensive Plan 2040* projects a 2040 population of 129,000. This would translate to an annual growth rate of approximately of .5% per year. With a 2020 call volume of 23,473 and a population of 123,011, this would be 1 call per 5.24 people. Projecting this ratio to a population of 129,000 in 2040

Figure 90: Call Volume Projection (Population Pattern)

The city has been planning and expecting a great deal of growth along Little Blue Parkway. Some estimates are as high as an increase of 20,000 people in this area which would make the 2040

population estimate low. ESCI believes that the 2021 IFD call volume growth of 10.5% per cent is an aberration and will not be a constant however the 5.18% is not out of the question as what is not taken into consideration in population-oriented call volume projections is volume to due to commercial activities such as fire alarms, medicals, and other commercial hazardous incidents. Therefore ESCI projects the below number (Figure 91) as a projected call volume for IFD over the next 20 years.

Figure 91: Call Volume (ESCI)



Section III

RECOMMENDATIONS FOR FIRE STATION UPGRADES AND LOCATIONS

Development of Response Goals

There are three main factors that lead to successful mitigation of emergencies; sufficient numbers of well-trained *personnel*, arriving on reliable and well-equipped *apparatus* appropriate to the task at hand, *quickly enough* to make a positive difference in property preserved or lives saved. The previous sections of this report have laid out the current staffing levels, facilities and equipment, and response performance for MCFR. The following describes the consequences of failing to deliver sufficient personnel and equipment early enough to mitigate the emergency addressed.

Dynamics of Fire in Buildings

Most fires within buildings develop in a predictable fashion unless influenced by highly flammable material. Ignition, or the beginning of a fire, starts the sequence of events. It may take several minutes or even hours from the time of ignition until a flame is visible. This smoldering stage is very dangerous, especially during times when people are sleeping, since large amounts of highly toxic smoke may be generated during this phase.

Once flames do appear, the sequence continues rapidly. Combustible material adjacent to the flame heat and ignite, which in turn heats and ignites other adjacent materials if sufficient oxygen is present. As the objects burn, heated gases accumulate at the ceiling of the room. Some of the gases are flammable and highly toxic.

The spread of the fire from this point continues quickly. Soon the flammable gases at the ceiling as well as other combustible material in the room of origin reach ignition temperature. At that point, an event termed “flashover” occurs; the gases and other material ignite, which in turn ignites everything in the room. Once flashover occurs, damage caused by the fire is significant and the environment within the room can no longer support human life. Flashover usually occurs about five to eight minutes from the appearance of flame in typically furnished and ventilated buildings. Since flashover has such a dramatic influence on the outcome of a fire event, the goal of any fire agency is to apply water to a fire before flashover occurs.

Although modern codes tend to make fires in newer structures more infrequent, today’s energy-efficient construction (designed to hold heat during the winter) also tends to confine the heat of a hostile fire. In addition, research has shown that modern furnishings generally ignite more quickly and burn hotter (due to synthetics). In the 1970s, scientists at the National Institute of Standards and Technology found that after a fire broke out, building occupants had about 17 minutes to escape before being overcome by heat and smoke. Today, that estimate is as short as three minutes.⁸ The

⁸ National Institute of Standards and Technology, Performance of Home Smoke Alarms, Analysis of the Response of Several Available Technologies in Residential Fire Settings, Bukowski, Richard, et al.

necessity of effective early warning (smoke alarms), early suppression (fire sprinklers), and firefighters arriving on the scene of a fire in the shortest span of time is more critical now than ever.

The prompt arrival of at least four personnel is critical for structure fires. Federal regulations (CFR 1910.120) require that personnel entering a building involved in fire must be in groups of two. Further, before personnel can enter a building to extinguish a fire, at least two personnel must be on scene and assigned to conduct search and rescue in case the fire attack crew becomes trapped. This is referred to as the two-in, two-out rule.

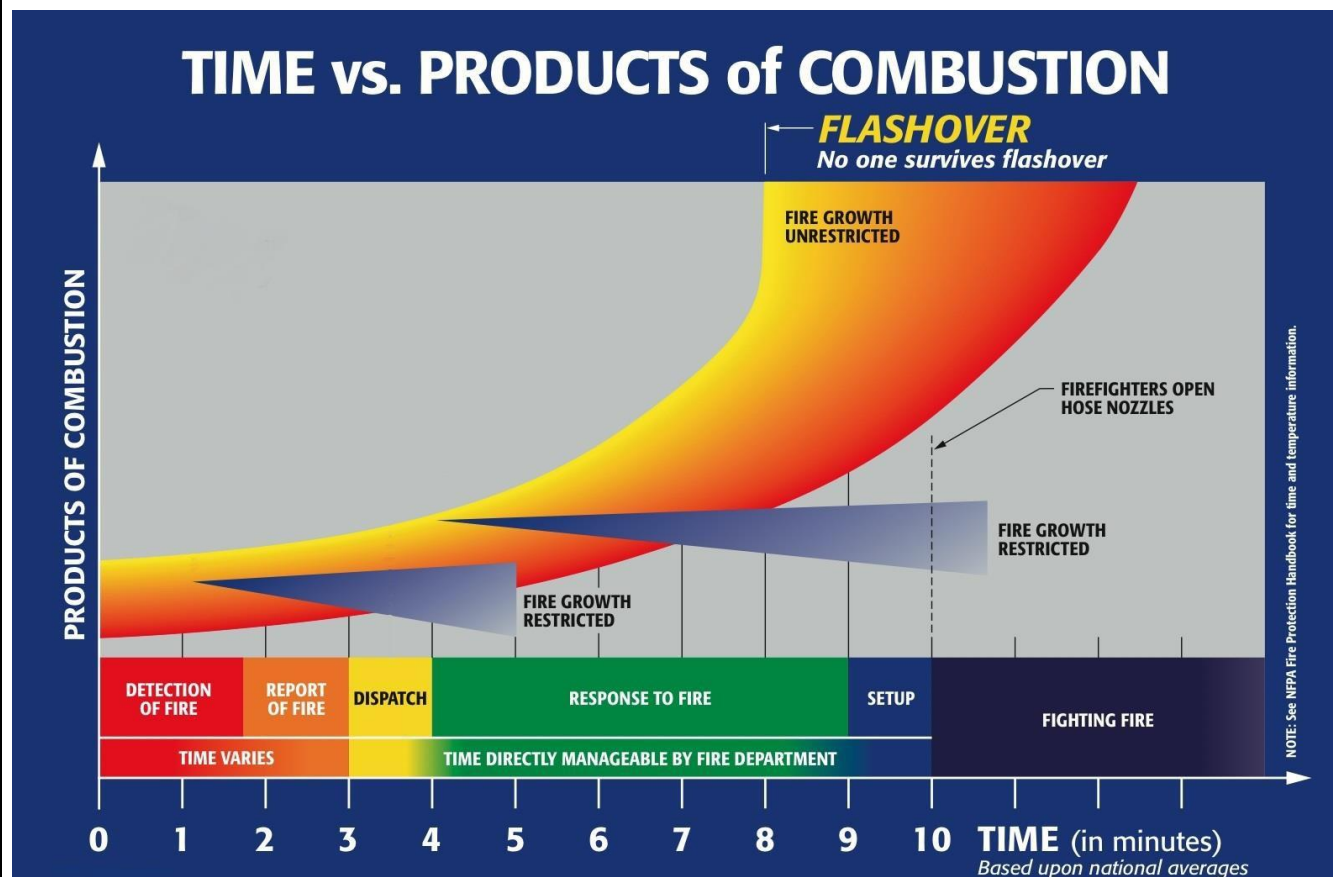
However, if it is *known* that victims are trapped inside the building, a rescue attempt can be performed without additional personnel ready to intervene outside the structure. Further, there is no requirement that all four arrive on the same response vehicle. Many fire departments rely on more than one unit arriving to initiate interior fire attack.

Perhaps as important as preventing flashover is the need to control a fire before it does damage to the structural framing of a building. Materials used to construct buildings today are often less fire resistive than the heavy structural skeletons of older frame buildings. Roof trusses and floor joists are commonly made with lighter materials that are more easily weakened by the effects of fire. "Light weight" roof trusses fail after five to seven minutes of direct flame impingement. Plywood I-beam joists can fail after as little as three minutes of flame contact. This creates a dangerous environment for firefighters.

In addition, the contents of buildings today have a much greater potential for heat production than in the past. The widespread use of plastics in furnishings and other building contents rapidly accelerate fire spread and increase the amount of water needed to effectively control a fire. All of these factors make the need for early application of water essential to a successful fire outcome.

Figure 92 illustrates the sequence of events during the growth of a structure fire over time.

Figure 92: Fire Growth v. FD Reflex Time



As is apparent by this description of the sequence of events, application of water in time to prevent flashover is a serious challenge for any fire department. It is critical, though, as studies of historical fire losses can demonstrate.

The National Fire Protection Association found that fires contained to the room of origin (typically extinguished prior to or immediately following flashover) had significantly lower rates of death, injury, and property loss when compared to fires that had an opportunity to spread beyond the room of origin (typically extinguished post-flashover). As evidenced in the following figure, fire losses, casualties, and deaths rise significantly as the extent of fire damage increases.

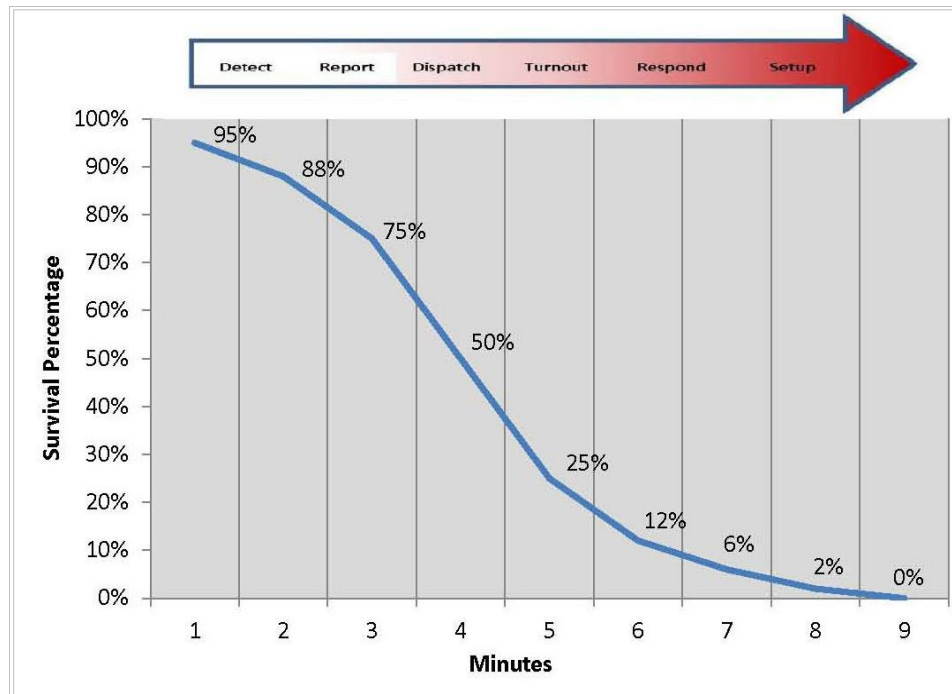
Figure 93: Fire Extension in Residential Structures—United States

Consequence of Fire Extension in Residential Structures 2011–2015			
Fire Extension	Rates per 1,000 Fires		
	Civilian Deaths	Civilian Injuries	Average Dollar Loss Per Fire
Confined to room of origin or smaller	1.8	24.8	\$4,200
Confined to floor of origin	15.8	81.4	\$36,300
Confined to building of origin or larger	24.0	57.6	\$67,600

Source: National Fire Protection Association

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 in which to receive lifesaving care if there is to be any hope for resuscitation. The American Heart Association (AHA) issued a set of cardiopulmonary resuscitation guidelines designed to streamline emergency procedures for heart attack victims, and to increase the likelihood of survival. The AHA guidelines include goals for the application of cardiac defibrillation to cardiac arrest victims. Cardiac arrest survival chances fall by 7 to 10 percent for every minute between collapse and defibrillation. Consequently, the AHA recommends cardiac defibrillation 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 94: Cardiac Arrest Event Sequence

The percentage of opportunity for recovery from cardiac arrest drops quickly as time progresses. The stages of medical response are very similar to the components described for a fire response. Recent research stresses the importance of rapid cardiac defibrillation and administration of certain medications as a means of improving the opportunity for successful resuscitation and survival.

People, Tools, and Time

Time matters a great deal in the achievement of an effective outcome to an emergency event. Time, however, is not the only factor. Delivering sufficient numbers of properly trained, appropriately equipped personnel within the critical time period completes the equation.

For medical emergencies this can vary based on the nature of the emergency. Many medical emergencies are not time critical. However, for serious trauma, cardiac arrest, or conditions that may lead to cardiac arrest, a rapid response is essential. Equally critical is delivering enough personnel to the scene to perform all of the concurrent tasks required to deliver quality emergency care. For a cardiac arrest, this can be up to six personnel; two to perform CPR, two to set up and operate advanced medical equipment, one to record the actions taken by emergency care workers, and one to direct patient care. Thus, for a medical emergency, the real test of performance is the time it takes to provide the personnel and equipment needed to deal effectively with the patient's condition, not necessarily the time it takes for the first person to arrive.

Fire emergencies are even more resource critical. Again, the true test of performance is the time it takes to deliver sufficient personnel to initiate application of water to a fire. This is the only practical method to reverse the continuing internal temperature increases and ultimately prevent flashover. The arrival of one person with a portable radio does not provide fire intervention capability and should not be counted as "arrival" by the fire department. The following figure displays the NFPA Standard 1710 critical tasks expected to be performed by firefighters concurrently, referred to as the "effective response force" (ERF).

Figure 95: NFPA 1710 Effective Response Force by Task & Building Type

Task	Single-Family Dwelling ¹	Open-Air Strip Mall ²	Apartments ³	High-Rise ⁴
Command	1	2	2	2
Apparatus Operator	1	2	2	1
Handlines (2 members on each)	4	6	6	4
Support Members	2	3	3	
Victim Search & Rescue Team	2	4	4	4
Ground Ladders/Ventilation	2	4	4	
Aerial Operator (if ladder used)	1	1	1	
Initial Rapid Intervention Team	2	4	4	
Initial Medical Care Component		2	2	
Building Fire Pump Monitor				1
Hoseline-Floor Above Fire				2
Rapid Intervention Team				4
Accountability Officers (fire floor & floor above)				4
Evacuation management teams				4

Elevator Operations Manager				1
Incident Safety Officer				1
Interior Staging Manager				1
Member Rehabilitation				2
Vertical Ventilation Crew				4
Lobby				1
Transport Equipment				2
External Base Operations				1
EMS Crews with Transport				4
Total Required:	15	28	28	43

¹Typical 2,000 ft., two-story single-family dwelling without basement and no exposures

²Typical open-air strip mall/shopping center ranging from 13,000 –196,000 feet

³Typical 1,200-foot apartment within a three-story, garden-style apartment building

⁴Building with the highest floor greater than 75 feet above the lowest level of fire department vehicle access

Current Response Goals

ESCI emphasizes the importance of establishing and regularly monitoring performance metrics for the deployment of resources. These metrics serve as the foundation for determining whether or not the organization is meeting the expectations of the community that it serves. Without regular and consistent performance evaluation, it is impossible to set and achieve goals established to meet community expectations.

Response standards are individual to each organization. Multiple factors such as staffing, financial constraints, size of the service area, and political will influence each department's ability to set achievable goals and objectives for response. Response standards established by the department must originate from the community served to create a balance between what is desired and what can be afforded. Because of this, ESCI cannot establish baseline and benchmark performance metrics for a given organization. However, recommendations based upon the analysis conducted throughout this report may be helpful in serving as a starting point for these discussions with the community served or may serve as a reevaluation tool for the organization's current standards.

When establishing measurable performance metrics, NFPA 1710 offers suggested response standards, created with a 90% percentile model as good starting points. In other words, 90% of the time, the fire department will achieve this benchmark. These benchmarks can be adjusted in such a way that they are a combination of realism and organizational performance stretching.

IFD attempts to comply with the 1710 standard. For the purposes of this report, highlights of the fire standard include:

- Organizational standards
- Alarm Handling
- Fire Suppression Capabilities
- EMS Services
- Special Operations

While IFD uses the NFPA 1710 standard for evaluating its organization, elected officials should formally choose which elements of the standard they would apply to their fire department.

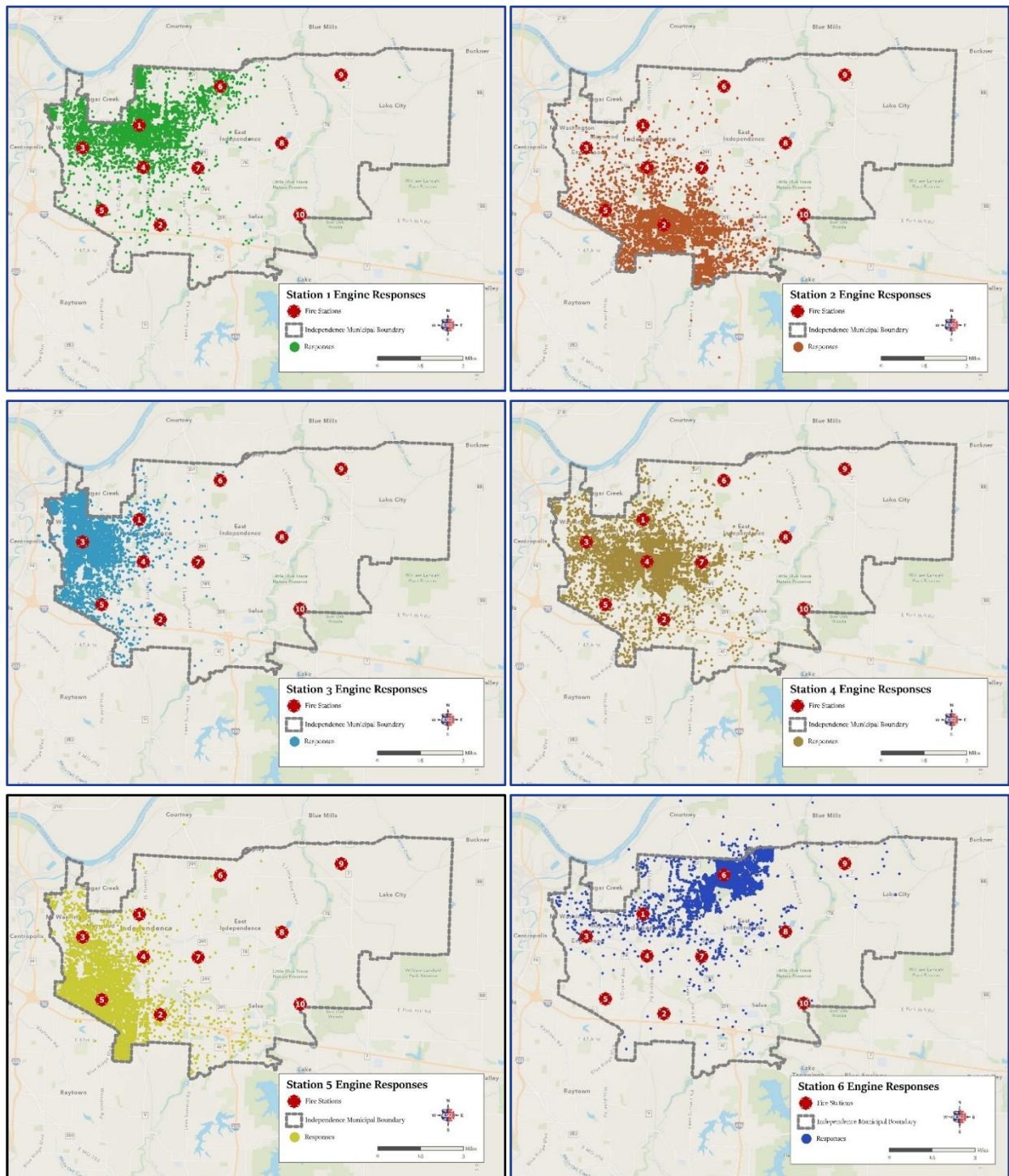
Rescue Model

IFD runs with a Pumper/Truck/Rescue model where three types of units can respond to calls. In an overly simplistic definition of firefighting, pumpers are used primarily for providing water and hose to put the fire out, trucks provide for life rescue and ventilation (reducing the hazardous environment for victims and firefighters) and rescues are more versatile and cover a gamut of functions that may either reinforce what pumpers and trucks do or complement them by filling any holes on an emergency scene. They also have the expertise and tools for unique situations such as automobile extrications or hazardous materials responses.

Rescues may be large vehicles with significant staffing (5-6) or they may be small vehicles with just a few people (2). In the latter staffing arrangement, smaller squads can replace large pumper or ladder truck responses to medical calls saving the wear and costs of very expensive apparatus while also complementing fireground operations. IFD practices this model by staffing two rescues, R1 and R2 at Stations 1 and 2 respectively and responding on calls that can keep the larger apparatus in quarters keeping them available for other calls. Pumper costs in 2022 are rapidly approaching \$1 million for an engine and almost \$2 million for a ladder truck with a basket. Equipping a much smaller squad for \$250,000 - \$300,000 can extend the life cycle of the larger and more expensive pumpers and trucks.

Optimization of Fire Station Locations

The next graphic are graphics depicting call distribution for all apparatus in relationship to their stations; first pumpers, second trucks, and then third is rescues.

Figure 96: Pumper Incident Proximities

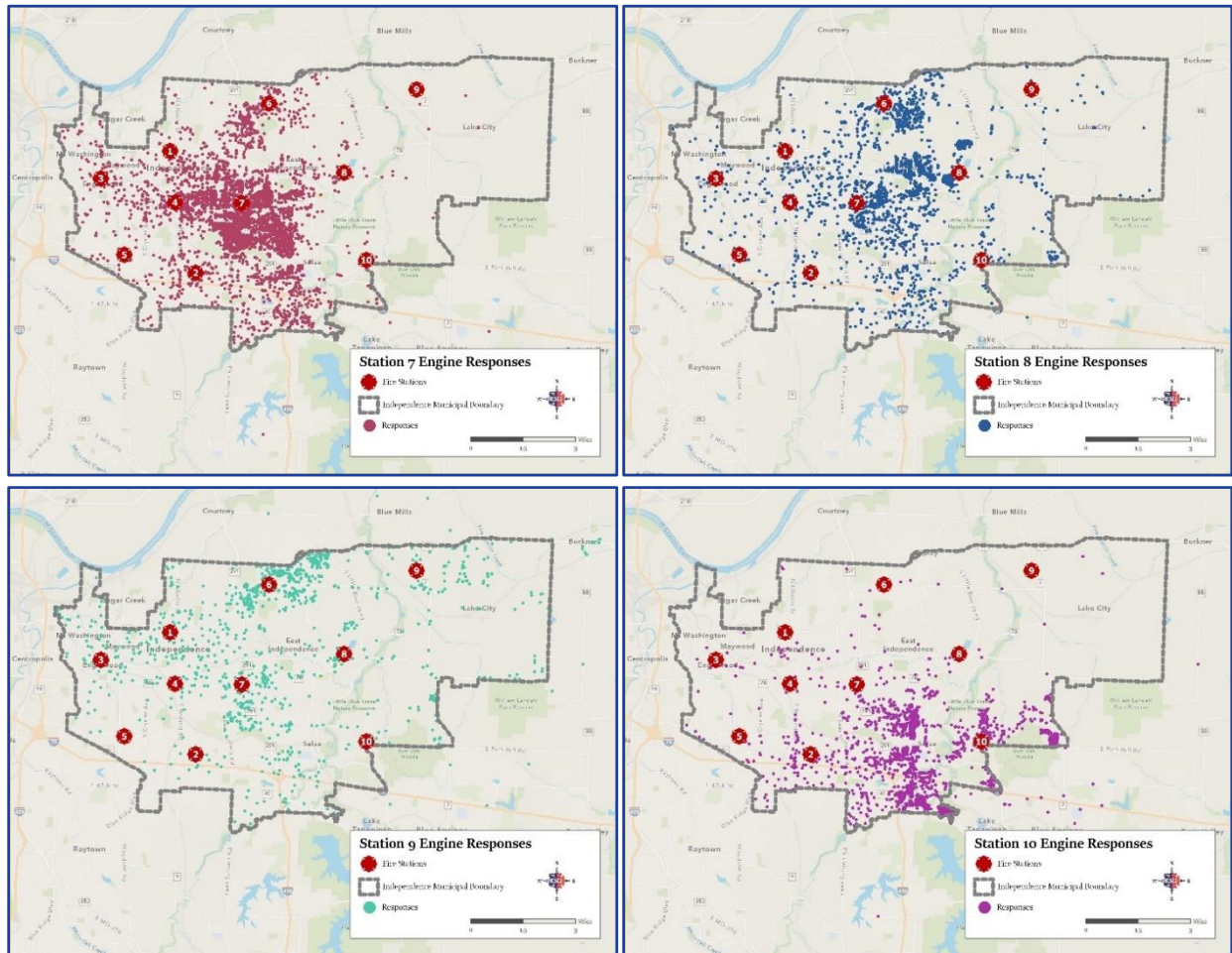
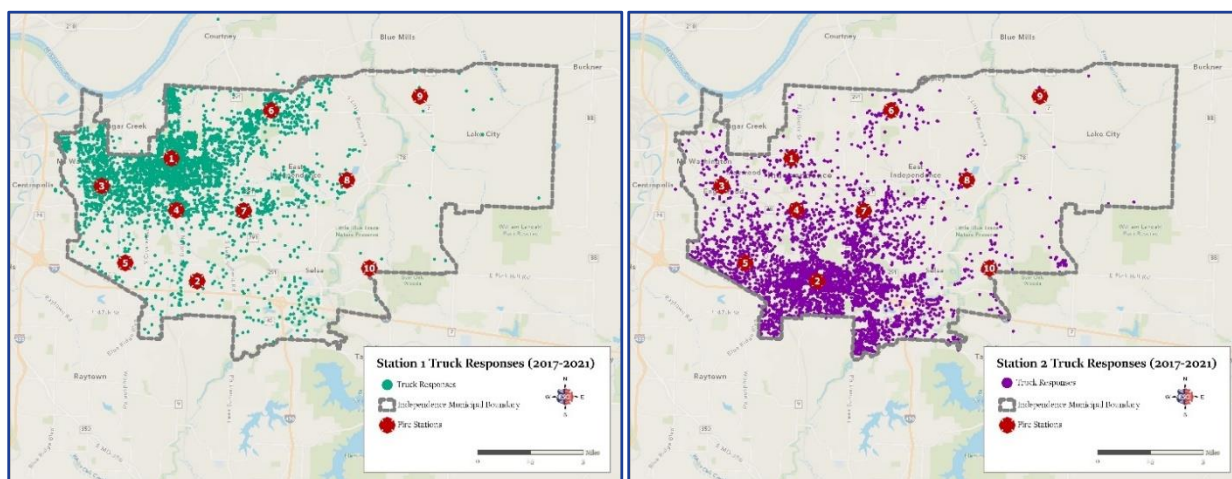
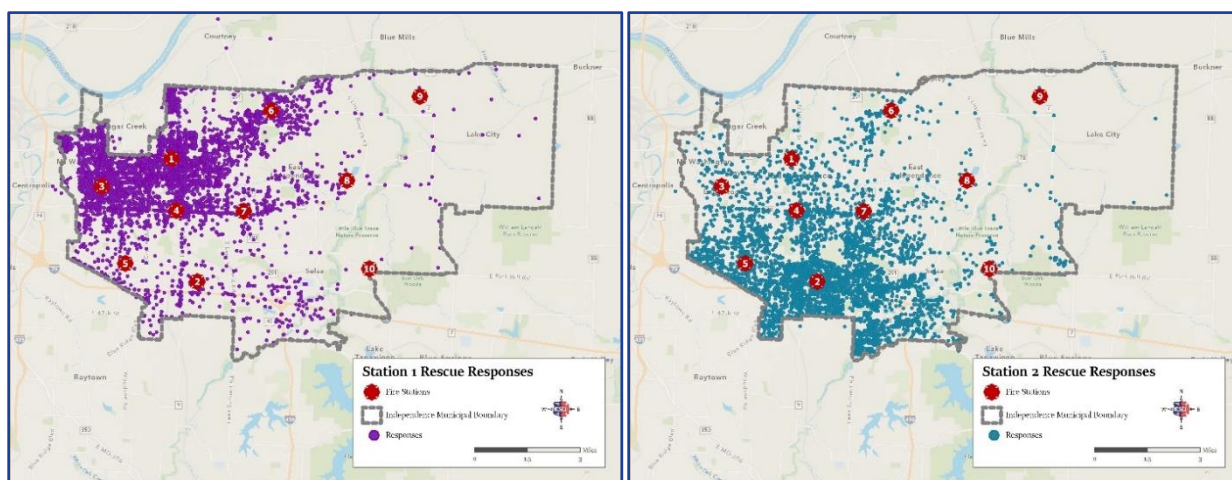


Figure 97: Truck Incident Proximities**Figure 98: Rescue Incident Proximities**

When looking at station response districts that have lower incident densities, Station 10 would be a candidate as it is not located next to one of these response areas. Whether Station 10 should be moved, let's also look at the impact a move may make on other stations as well as other factors that should be considered.

In considering whether Station 10 should be moved to the previously recommended area, this degree of move would greatly increase response times to the southeast portion of the city, especially to the neighborhood near Rte 7 and Pink Hill Rd, with likely response times to this area increasing to between six to eight minutes. Moving Station 9 farther south could alleviate this, but it still does not also address the anticipated growth along the Little Blue Parkway which some areas would now be in a four-to-six-minute response area. ESCI does not recommend moving Station 10

to the I-70/I-470 interchange area but rather recommends a new station, Station 11, be built. This station would be staffed with a 3-person pumper and greatly reduce response times to the interchange area, the Rte 291 corridor north of the interstate as well as provide a degree of relief to pumpers 2, 7, and 10. It would be projected, based on similar responses from other stations, that this station would respond to approximately 1500 runs per year.

Recommendation 38. Build a new station 11 near I-470 and E 39th St South and staff it per contractual staffing

Relocations of Existing Fire Stations

In reviewing all of the responses by stations, most of the stations are situated well within their response areas. Exceptions to this observation would be Stations 9 and 10.

Station 9 – The majority of Pumper 9's responses are into response districts other than their own. In addition, a large part of their NFPA 1710 4-minute response zone lies outside the municipal boundaries indicating a relocated station may be able to have a larger response area within city limits. The volume of calls into other districts could point to the need for additional pumper however, ESCI feels some other recommendations may better accommodate this need when incorporated alongside a larger internal response area. A relocation of Station 9 as a part of a larger strategic move will be a recommendation.

Station 10 – The majority of Pumper 10's responses are to their west largely between Rte 291 and Little Blue Parkway. However, they also do have a response area to the far southeast corner of the city northwest of the Missouri Route 7/Pink Hill Rd intersection. Any movement of this station to the west to accommodate the larger call volume potentially creates an area of lower coverage in Rt 7/Pink Hill neighborhood unless some other coverage can be provided. An aid agreement between Independence and Central Jackson County FPD to its south would not be beneficial as CJCFPD's closest stations are over seven miles away. In addition, Pumper 10's responses will likely increase with the expanded growth along the south end of the Little Blue Parkway corridor. Similar to Station 9, its current location also does not allow its complete NFPA 1710 4-min response zone to be entirely within municipal boundaries. In addition, growth to the west of Station 10 will cause increases in the number of responses for Pumper 10 so moving them to better accommodate the increased growth and better situate them more completely within the community.

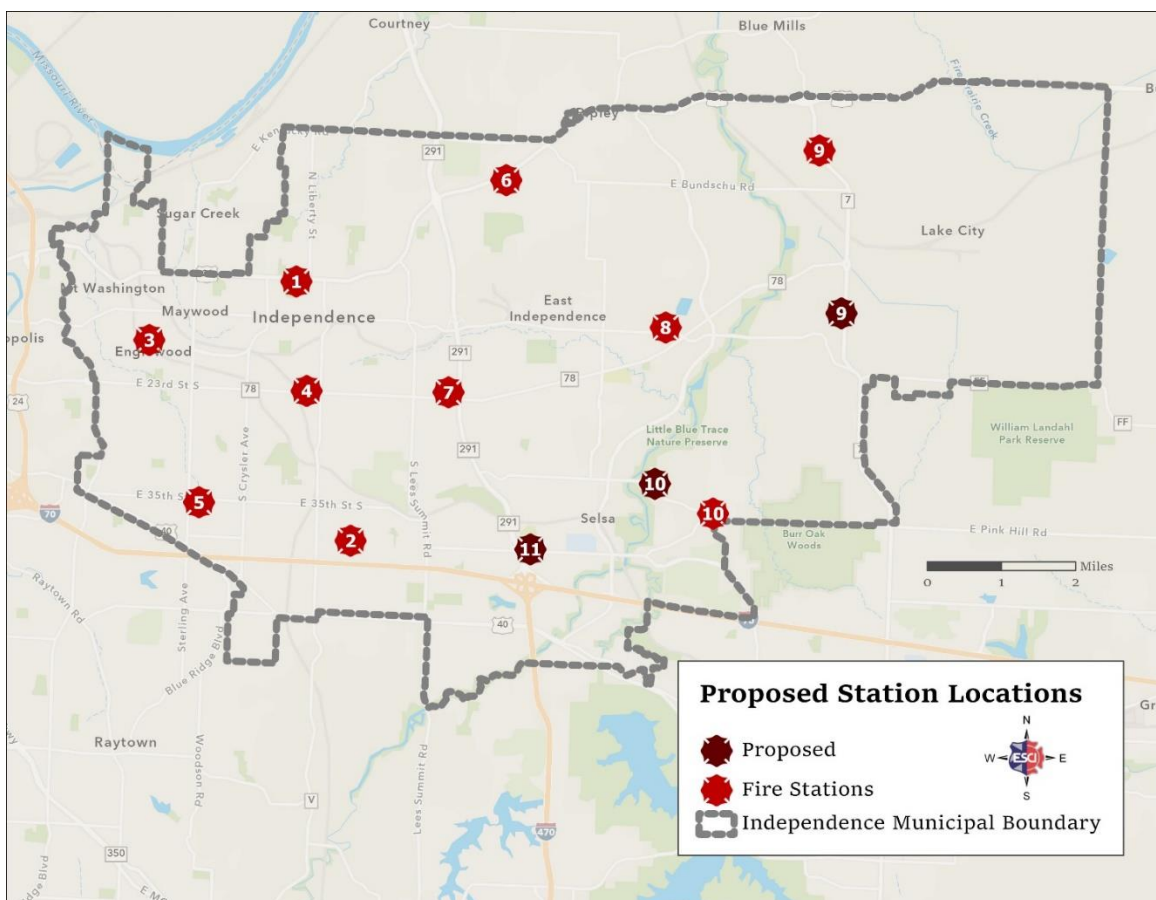
ESCI recommends a double station relocation with Station 9 being relocated farther south on Rte 7 to the Coon Rd area and Station 10 being relocated to the west with an ideal location being near E Rd Mize Rd and Eureka Rd. These locations would provide the following benefits:

- Quicker access to the southern portion of the Little Blue Parkway corridor

- Better support the new Pumper 11 station
- More of the 4-min response areas would be within the municipal boundaries
- Still allow coverage to the north and east and provide backup coverage to Pumpers 8 and 10 (but reducing Pumper 6's. Squad 8 would likely pick up more of this responsibility)

The new graphic below (Figure 99) shows all the stations and relocations including a new Station 11 and the two station relocations.

Figure 99: Proposed Station Locations



Lastly, in addition, to the addition of these two new apparatus, P11 and R3, as outlined earlier in the Staffing section, ESCI is recommending a second battalion chief be added per shift, Battalion 2. This second battalion chief would provide both administrative and operational support, reduce the workload on an overloaded shift supervisor, increase safety on the emergency scene, and allow improved management capabilities by allowing greater interaction between shift chiefs and

company officers. ESCI recommends this could be in either an east/west configuration with the new battalion chief at Station 8 or in a north/south configuration with the new battalion chief at the proposed Station 11. If the latter, as call volume to the east increases in the future, this chief could be moved to Station 8, or a third battalion chief added at Station 8.

The existing Station 8 structure is not capable of supporting this type of organizational growth as it does not have the vehicle capacity, living arrangements, and space to accommodate this type of growth. Therefore, this station is a strong candidate for replacement.

Recommendation 39. Move Station 9 to the Rte 7/Coon Rd area and move Station 10 to the E Rd Mize Rd and Eureka Rd area.

Recommendation 40. Rebuild Station 8 at/near its existing location

Recommendation 41. Consider the addition of an additional truck company (Truck 3) to be located at Station to cover the east side of the city.

Existing Fire Stations Needing Rebuilds/Additions

While ESCI noted that all of the stations could use a degree of modernization and upgrading. Lacking in many of the fire stations was contemporary decontamination areas for the cleaning of equipment from carcinogens and sufficient space for gender-specific bathrooms. The following stations were recognized as requiring major work through either an addition or complete rebuild.

Station 2 – Station 2's primary deficiency is it is too small for the complement of firefighters assigned to the station. At 8800 ft² and over 50 years old, this station with two bays is not large enough for modern fire apparatus. The building lacks contemporary fire protection sprinkler systems and a training room for company training especially needed when multiple companies are assigned to a single fire station. Given the lot this station is on, a sizeable addition that includes one additional drive-through bay could be an option for this station.

Station 5 – This station's main deficiency is the structural challenges met by its location in proximity to the pond and its associated watershed behind it. The station and its associated drives and parking areas exist on a slope that channels water to the pond and the drainage area into it. This station has already structural water damage due to water movement in the area. This station is a candidate for being rebuilt in a capacity that takes into consideration both drainage and high-water tables. Otherwise, the fire department should find a more suitable nearby location.

Station 6 – This station, originally built in 1986 was part of a hurried development project that included Stations 9 and 10 and were never intended to be long-term in their designs. Identical to

stations 9 and 10, the station is functionally a small single-family home with a 2-bay garage attached to it lacking all of the modern necessities of a contemporary fire station. The entire fire station is only 3600 ft² which is smaller than many modern homes but is expected to function as more than a home. It has only room to sleep four firefighters with no options for an elevated or surge staffing model, no training room, no modern fire protection sprinkler systems.

Station 8 – Station 8 is rated in poor condition and built nearly 60 years ago. It lacks modern fire station amenities including a training/meeting room, modern fire protection systems, ADA compliant access and poor to fair rating on all of its structure and physical systems.

The majority of Squad 8's responses are to their west. However, they also are 3 ½ miles from Pumper 7 to the west. Any movement of this station to the west would have an increasing overlap with Pumper 7's response areas. In addition, a large amount of community growth is anticipated to Squad 8's south along the Little Blue Parkway corridor. This growth will cause Squad 8's responses to the east to increase. Lastly, any movement to the west of Squad 8 will increase response times to the more rural areas east of their station which are also anticipated to grow. However, Station 8 does provide backup support for a busy Pumper 7.

ESCI also envisions that as the east side of Independence continues to develop, this station could be a major fire station potentially housing an additional ladder truck company and battalion chief.

Also, as identified in the training section, the nearby IFD training site is sub-par with no bathroom facilities or classrooms making functionality very limited. Given the close proximity to Station 8, the city could build a combined modern fire station with an attached training facility that would save on costs of having a separate training facility. In addition, the city may be able to partner with the nearby Metropolitan Community College to receive some funding that would allow new firefighter students to use the IFD training facility.

Recommendation 42. Rebuild Stations 5 and 6 at/near their existing locations and add an addition to Station 2.

Recommendation 43. Rebuild a combined Station 8 and an IFD training facility.

Section IV

RECOMMENDATIONS FOR OPERATIONAL SERVICE NEEDS

RECOMMENDED RESPONSE GOALS AND TARGETS

Response Time Performance

As Figure 25 reflects, the 2021 90th percentile response time for first-arriving IFD units on structure fires was 5 minutes and 50 seconds and Figure 44 for all calls was 8 minutes and 14 seconds where both are greater than the NFPA 1710 standard of 5 minutes and 20 seconds. Response times components include both turnout time (time from when vehicle is dispatched until they go enroute) and travel time (time from when vehicle leaves the station until it arrives on the scene). Improving these numbers are twofold.

First, for turnout times, department practice and policy must advocate for quick times out. Fire station design can contribute to this by making sure personnel are not located far from the apparatus floor. Second, high call volumes in rural response areas, poorly positioned stations, and high unit hour utilizations can all contribute to longer response times. Locating fire stations near high call volumes and having adequate resources for concurrent calls that minimize out-of-district responses are strong ways to reduce response times.

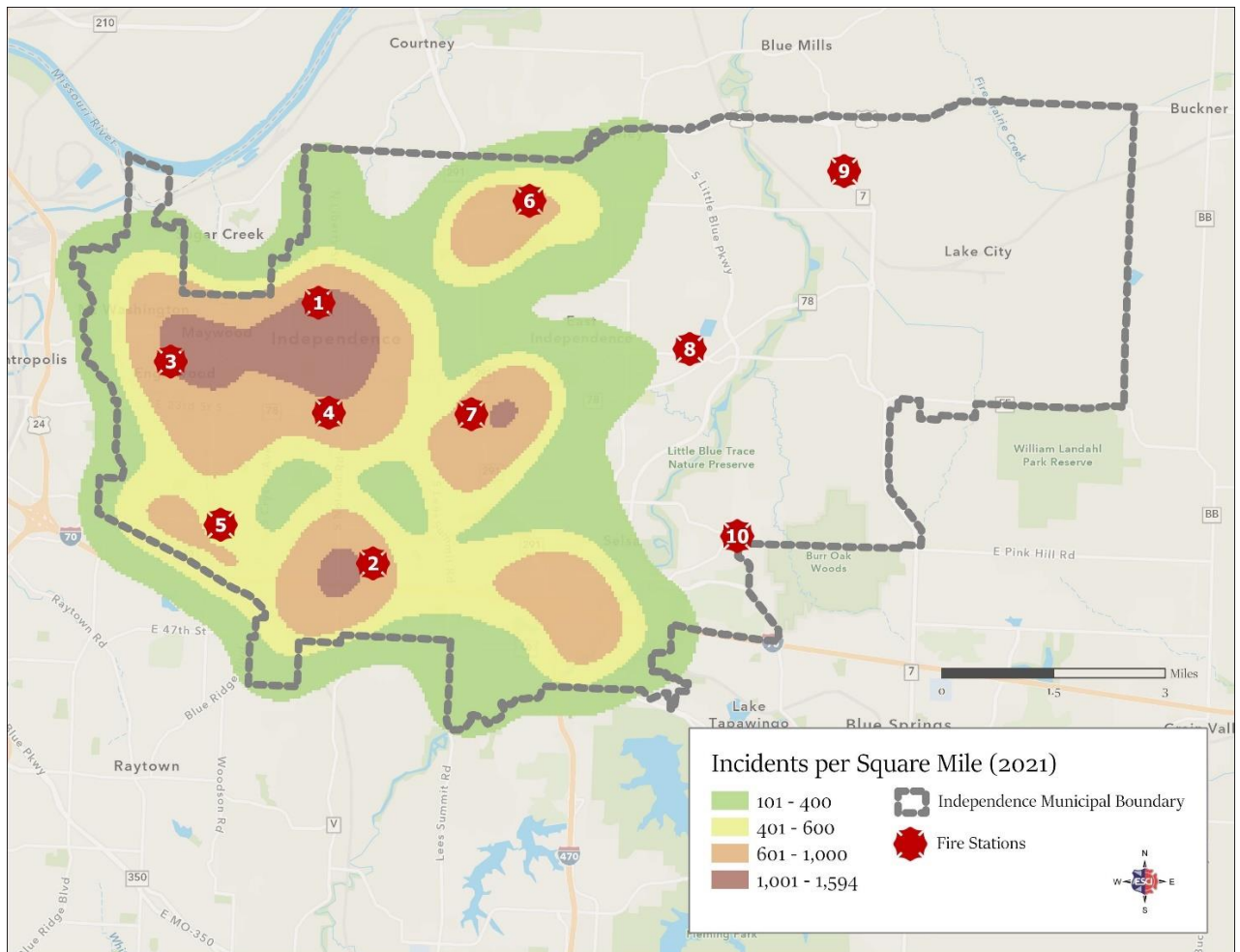
A contemporary fire station design that maximizes response efficiency should also be identified for future fire station construction. To the extent possible, new fire stations should be designed for rapid access to the truck bays from any location in the station. This improves turnout time for responding crews. Expansion of the station to accommodate additional apparatus, crews, and living/training space ensures future flexibility of these facilities.

Reducing response time in an area with a high call volume can also greatly reduce average response times department wide. Based on growth within the City of Independence in certain areas, ESCI recommends adding fire stations that will allow for proper fire protection in areas of the city that are currently not protected properly. Two areas of consideration would be near the I-70/I-470 interchange corridor and along or near Little Blue Parkway. While onsite, IFD administration spoke of potential development in this area. As that growth materializes, fire department response considerations should be at the forefront of discussions.

Additional Fire Station and Potential Locations

Additional Pumper

One area that ESCI identified where there is a high call volume and long travel times is the I-70/I-470 interchange corridor warranting a fire station nearby. In the below graphic (Figure 100), the south central portion of the city between stations 2 and 10 have a high call volume but no nearby station requiring extended responses from stations 2, 7, and 10.

Figure 100: Incident Densities

With this recommendation in mind, the next two questions become are there more specific locations recommended and second, should it be a new fire station or one that is moved. Let's begin with the first.

Are there more specific locations to be recommended such as north or south of I-70 and east or west of Rte 291/I-470. From a response time perspective, fire companies provide two functions. They are the primary responders to the area immediately around their station and either secondary responders or part of a larger primary group response to areas around other fire stations. In reviewing call volumes for the existing stations surrounding this area, response quads for stations 2 and 7 have high call volumes likely requiring regular replacement units to cover for them. Locating a station north of I-70 would provide quicker backup and group response to these areas. It also would still have the bulk of the area south of I-70 within a 4-min response time.

A station south of I-70 would provide quicker response times to the area south of I-70 but would not have the maximum 4-minute response area completely within the city limits as some of its 4-minute

response area would land outside city boundaries and would have a lengthier response time in providing support for Pumpers 2, 7, and even 10.

For east or west of Rte 291/I-470, a factor to be addresses whether or not this is a moved station or a new station. Should it be a new station, to provide a slightly better response depth to the southeast side of the city and specifically to respond into station 10's area, the east side of Rte 291 is preferred.

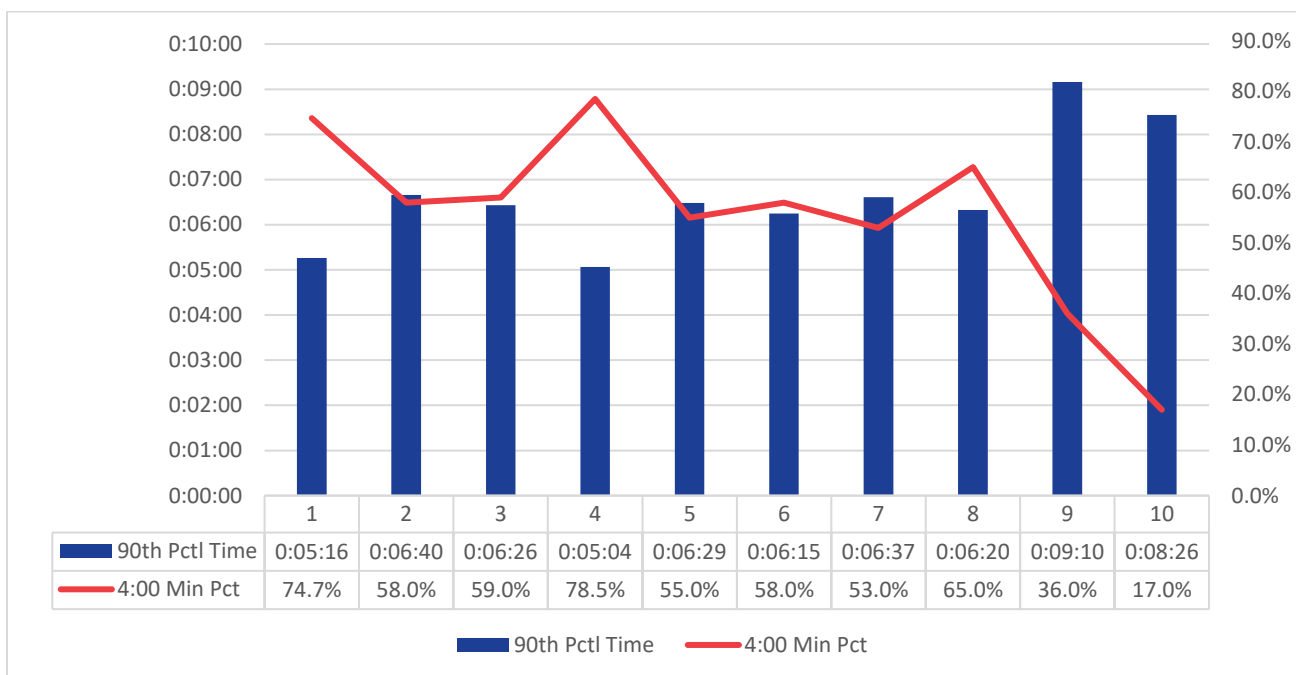
The second question is should this be a moved station, it's east/west proximity would depend on which station, 2, 7, or 10 is to be moved. When asking this question, two factors come into play; the first is the busyness of the fire stations that are possible move candidates and the second is the impact on current response areas if a station is to be moved. When looking at the three stations nearby, stations 2, 7, and 10, it has already been noted that some of the high incident density areas have fire stations located near them, in this case, stations 2 and 7. In addition, these two stations have call volumes equitably distributed around the current station locations. A move of this magnitude for Station 10 would greatly increase response times to the far southeast side of the city. It would be unwise to move these stations.

ESCI recommends a pumper be added in the area of 39th St South and Rte 291.

Additional Rescue

Under NFPA 1710, as a department, the initial unit to arrive on a call must arrive within four minutes. The ability to meet this standard is a function of fire station density where communities with closer fire stations due to community demographics will meet this standard easier than those with a lower fire station density will find it more difficult. The standard itself is based on fire behavior and not based on any community demographics so it is up to each community to decide the balance between risk and cost. Evenso, IFD, in the interest of serving the community to its best, makes efforts to accommodate the performance standard.

While Unit Hour Utilization's (UHU) for units were not significantly high, UHUs are only one factor in determining whether or not resources are adequate. Another one is whether existing stations have sufficient resources to handle call volume based on how long it takes for a unit to arrive on a scene. It has already been determined that IFD stations are generally well located where call volume is highest but if travel times are still high it can be because stations are in rural areas, or units that are normally closest to an incident are regularly unavailable on other calls or performing other necessary duties such as training and thus requiring units from farther away to respond. Below (Figure 101) is a graph that identifies how long it takes for a unit to arrive on the scene of a call once they have gone enroute based on response zones.

Figure 101: Response Time by Response Area

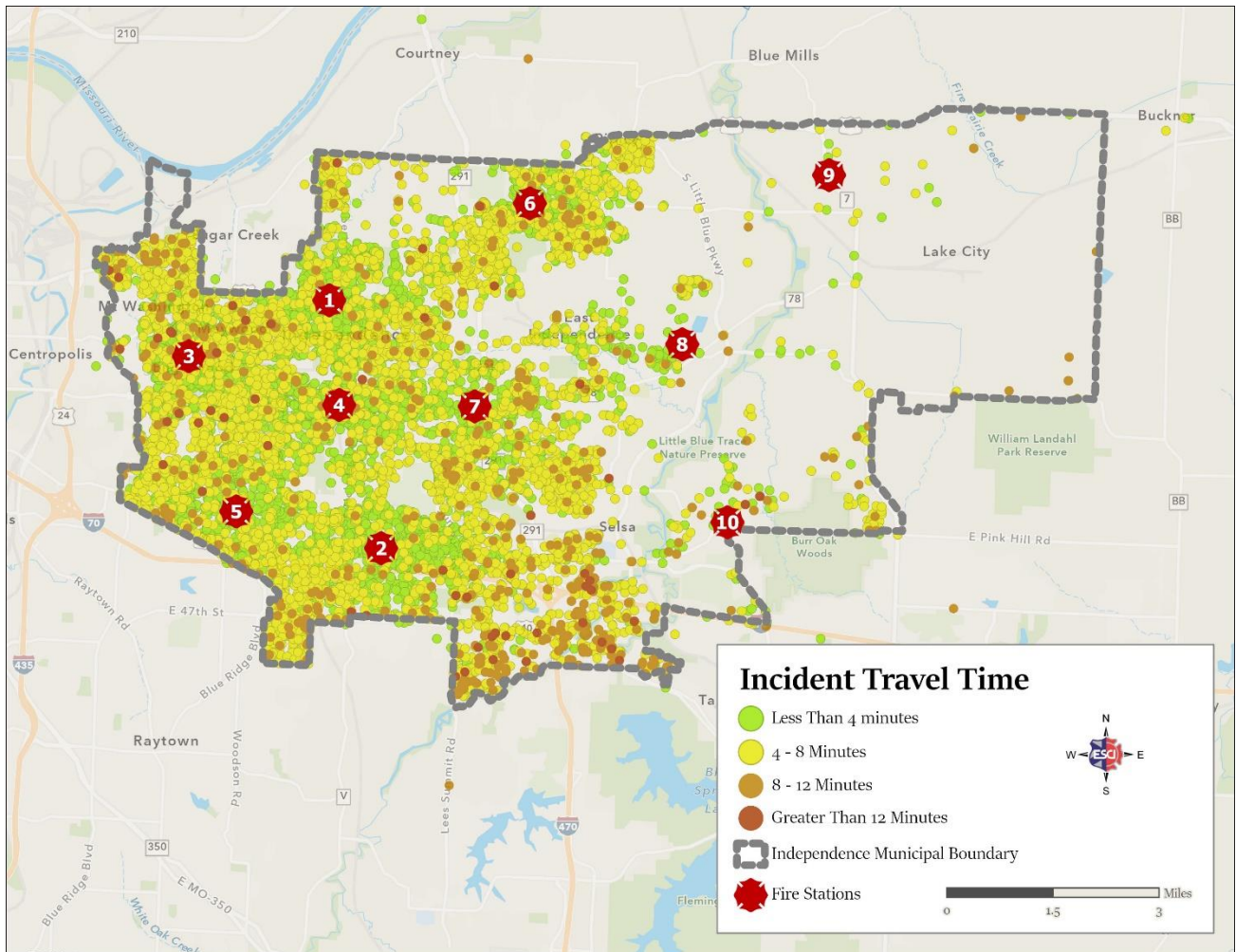
Two response elements that are part of the NFPA 1710 standard are the time that it takes for the initial unit to arrive on the scene and what percentage of calls can meet that standard. The standard suggests that units should arrive on the scene within 4 minutes of travel time 90% of the time. IFD's 90% benchmark was 6 minutes and 18 seconds. In general, departments with lower geographic densities (i.e. populations and fire stations that are more spread out) will struggle with a density-less standard such as 1710 since the standard is based on fire behavior not community demographics however, the standard should not be completely ignored.

The chart above (Figure 101) reflects both the 90th percentile and 4 min aspects of NFPA 1710 for each of the IFD response areas. In general, the higher the 90th Pctl Time is or the lower the 4:00 Min Pct is, the more often calls are being handled by out-of-district units independent of which one. So for calls into Resp Zone 1 (Station 1), units arrived on scene within 5:16 90% of the time and only achieved the 4 minute standard 74.7% of the time, both numbers below the standard.

While Station 9 and 10 areas have the largest standard differentials, low call volumes preclude additional stations in those areas and additional units there would likely not help much. Station 1, 4, and 8 response areas are the closest to the standard numbers leaving 2, 3, 5, 6 and 7 as candidates for additional vehicles. Below is a graph (Figure 102) indicating that despite good station locations, a significant number of incidents had travel times greater than four minutes. While a new station in the south central portion of the city will assist in that area, ESCI is recommending that for the rest of the city, since we didn't see any indications of delayed fire attacks indicating a need for more

pumpers, an additional rescue be added and that all three rescues be better situated. This would be rather than having rescues at Stations 1 and 2, along with the new rescue, the rescues be located at Stations 1, 5, and 7. This configuration distributes all three rescues throughout the areas with greater than four minute response times.

Figure 102: Incident Travel Times



Recommendation 44. Add a third rescue unit.

Recommendation 45. With the addition of a third rescue, reconfigure the rescue station configuration from Stations 1 and 2 to Stations 1, 5, and 7.

Additional Truck

With the large development about to take place along the Little Blue Parkway corridor as well as the high response times for Trucks 1 and 2 to the center and east parts of the city, ESCI recommends an

eventual truck company, Truck 3, should be assigned to Station 8, which is the station best centered in this area to cover the new development as well as the far east portions of the city. In addition, Truck 3 would provide relief by handling all truck responses roughly east of Jackson Dr/Jones Rd increasing ERF abilities to this portion of the city. Below (Figure 103) is a graphic showing new ERF response times with an added Pumper 11, new station locations, and Truck 3.

Below are updated ERF's that include E11 and R3 (Figure 103) and one with E11, R3, and T3. Notice the percentage of coverage increases compared to the existing ERF in Figure 24.

Figure 103: ERF with E11/R3

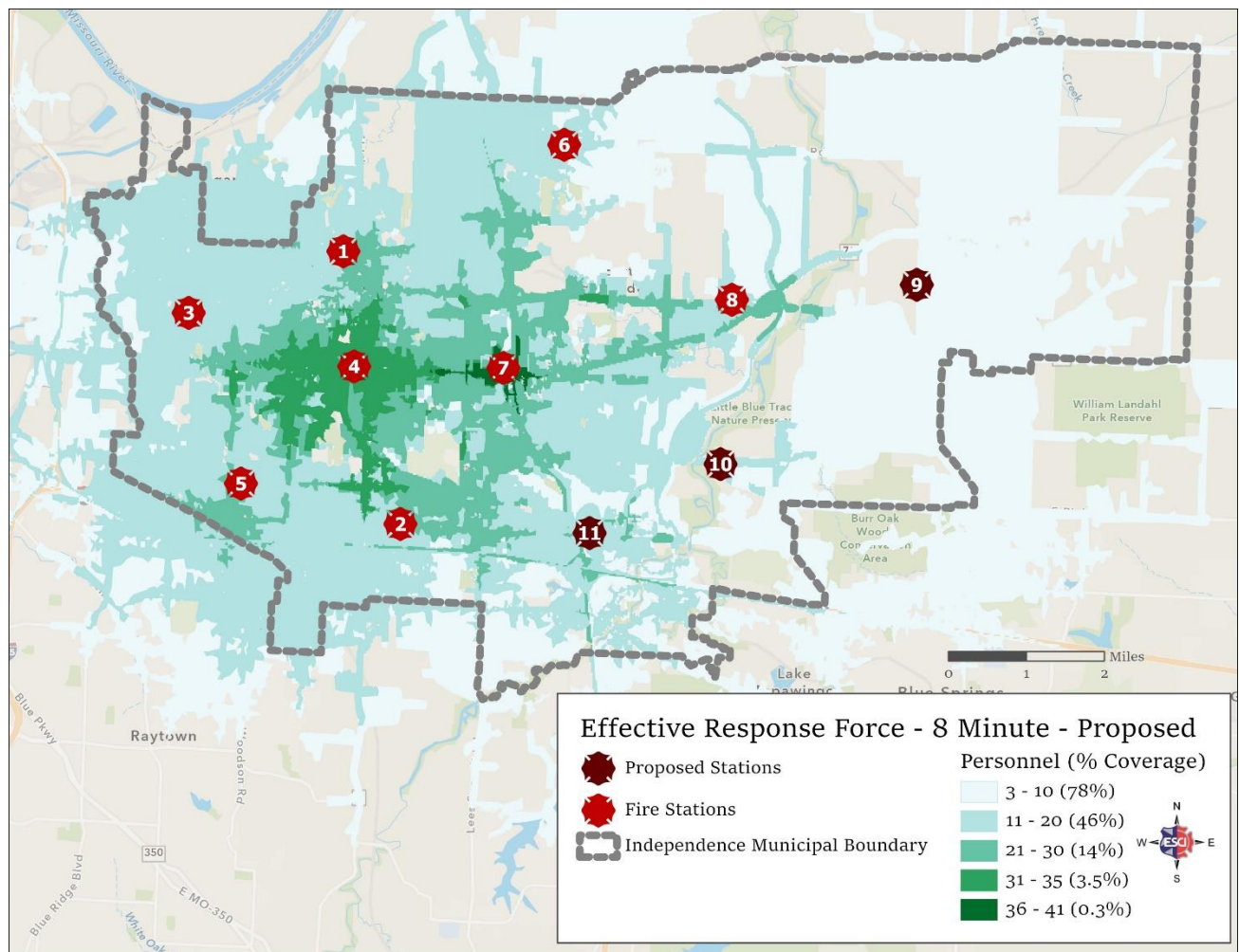
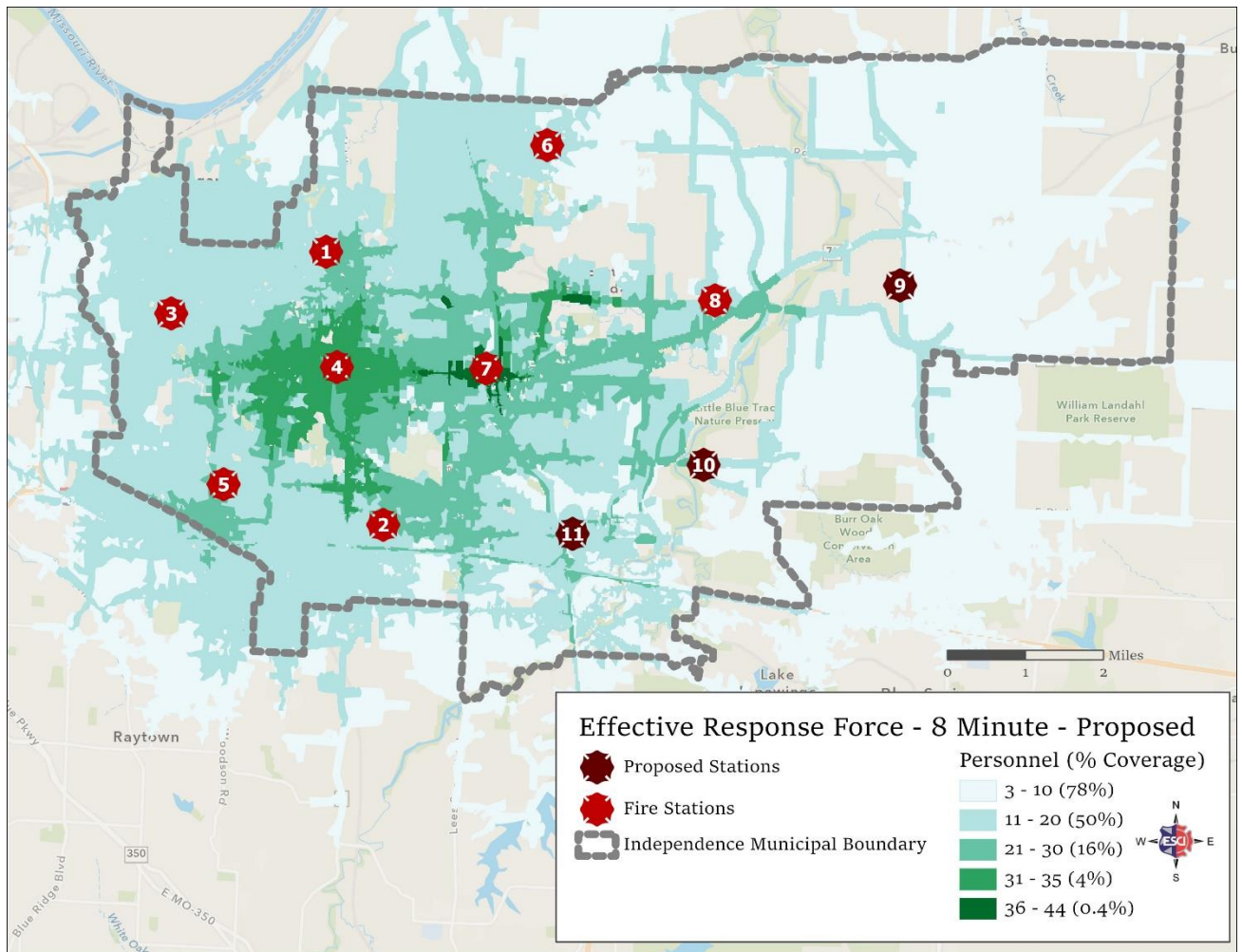


Figure 104: ERF with E11/R3/T3



PLAN OF IMPLEMENTATION

Implementation Plan

With all now being evaluated and taking into consideration the previous fire station condition scores (Figure 59), ESCI can recommend the following implementation plan to include elements of the sales tax increase. This begins with the identification of new stations to improve community service delivery, followed by which stations can be relocated to accomplish the same purpose followed by stations, for various reasons that should either be replaced or significantly modified. Lastly, but not the last step is what additional staff would the department benefit from.

The time items associated with each step are not intended to provide a sequential timeframe but rather anticipate how long it may take to accomplish each step. As such, some of the steps may be accomplished simultaneously.

Step 1: Solidly identify revenue allocations as well as what, if any, implications are on the General Fund portion of the fire department budget. This should be done with the belief that city, fire department, and union leadership have the same understanding of funding mechanisms. While the August 2021 ordinance specifies “The Fire Protection Sales Tax would be in addition to current funding and not allow for a reduction of Fire Department expenditures from the general fund, it does not clarify whether ‘reduction of expenditures’ means no reduction in dollar amount or if it means no reduction in percentage of the General Fund. No reduction in the dollar amount means that as a percentage of the city’s General Fund budget, the percentage could decrease putting a greater percentage of the department’s budget into the Fire Protection Sales Tax fund. With the second percentage interpretation, the General Fund percentage contribution to the fire department’s budget will remain the same and have dollar amount increases in proportion to General Fund budget increases keeping even budget proportions between the two funds.

The other item requiring agreement is the ordinance even splits the entire Sales Tax revenues, not just the anticipated increase. Where currently, there was discretion on personnel or capital equipment allocation, funding is now even divided on all fund expenditures. It is also likely that expenditures from this fund will not be evenly demanded every year such that internal accounting will need to take place to keep the even distribution of funds over longer periods of time. In other words, a year may exist that anticipated capital and equipment purchases are lower than personnel needs. This lower need would cause a balance increase in the proportion of the funds allocated to capital and equipment.

Lastly, the question should be answered of whether the funds only apply to firefighting personnel and equipment, or do they apply to personnel and equipment in other departments that provide fire department support and employment support. (Time: 3 months)

Step 2: Establish a minimum balance for the Sales Tax fund. The city should expect that tax revenues may not consistently increase every year and that occasionally a drawdown of the tax fund may need to occur. Elected officials should establish a minimum fund balance that still maintains an emergency reserve as well as remaining compliant with GASB (Government Accounting Standards Board) practices. (Time: 3 months)

Step 3: The sales tax increase will increase the fire department budget by approximately 20%. With funds in hand, personnel expenditures will be incorporated into the department's operating fund but capital expenditures will have the option of coming from an operating or capital and debt fund. Discussion and agreement should be reached on whether capital expenditures should be financed with cash-in-hand or to use long-term debt. Long-term debt is more costly, but it can allow for more objectives to be reached quicker when debt funding is spread across multiple years while cash-in-hand may limit how many objectives may be accomplished simultaneously. (Time: 3 months)

Step 4: Create a second shift battalion chief position and hire three additional staff. As mentioned earlier, ESCI is recommending a second shift battalion chief, and this can be accomplished relatively quickly. Time factors for this include the time it takes to establish a battalion chief promotional process as well as the identification and procurement of resources for the position such as a vehicle and quarters space. (Time: 1 year)

Step 5: Begin the process of planning for and then establishing a new Rescue 3 to be stationed at Station 7 and simultaneously adjusting operational plans to move Rescue 2 from Station 2 to Station 5. The plans for the new Rescue 3 should include plans for staffing as well as fleet and equipment requirements for the new rescue. The move of Rescue 2 to Station 5 should happen simultaneously with the implementation of Rescue 3 at Station 7.

Step 6: Begin the process of establishing a Station 11. ESCI recommends that this station be staffed identical to other pumpers with one pumper and three to four personnel. The process should include looking for available property to build a fire station in the area ESCI recommended as well as reviewing hiring list status and processes, promotional list status and processes, and operational impacts to create the station and company.

In order to improve service delivery with minimal delay by the addition of a Station 11, staff should also include seeking locations for an interim Station 11 such as an old gas station, house with a large garage, etc. The design and construction of a new permanent fire station could take two to four years including time for property purchases. As a part of this interim process, staff should investigate whether adequate resources, such as another pumper in the fleet and equipment, already exist to support an interim station. Lastly, staff should engage other city departments and determine what impacts the addition of twenty-one personnel (seven per shift) and another frontline vehicle will have on them such as changed maintenance schedules, additional HR staff, etc. (Time: 2-4 years)

Step 7: ESCI determined that a major area of the fire department that is understaffed is training. IFD should begin creating two new positions within the training department. In order to provide sufficient instructional and accountability authority, the two new positions should be to ranks that are one rank higher than the existing company officer rank or be given sufficient authority (via policy) at an equal company officer rank to provide accountability at the company officer level.

The creation of these positions should be promotions within the existing organization and then the hiring of two additional personnel. (Time: 6 months)

Step 8: Due to the dual-purpose moves of Stations 9 and 10, if funding is available, these station moves should be accomplished simultaneously. Unlike Station 11, the move for these stations is not as imperative with the move of these stations more strategic than the result of a gap in service. Therefore, a temporary situation for these units is not necessary. (Time: 2-3 years)

Step 9: The rebuilding of Station 8 includes not just the rebuilding of the existing station but the determination of whether a new Station 8 near or at the fire department's training grounds are beneficial. While ESCI has determined that Station 8's location does not need to be moved, a relocation to the area of Powell Rd and 78 Hwy, a bit further south than the existing station, would not alter the Station 8 response profile significantly. This makes a rebuild of Station 8 alongside a modernized training facility a state-of-the-art proposition. (Time: 3-5 years)

In addition, with a rebuild of Station 8, a newly established Truck 3 can be implemented as recommended earlier. This Truck 3 would provide a more rapid truck/rescue response to the entire east side of the community. With the anticipated growth at the north end of the Little Blue Parkway and the east side of the city, this station could be a major station for the east side. The station should be designed with this possibility in mind.

Step 10: Given the needs of the remaining stations to be rebuilt, Stations 2, 5, and 6, the sequence of these projects would be defined by their needs at that time. It is anticipated that the previous projects may take at least five years, long enough for these stations needs to change. The sequence of three station rebuilds should then be established by what their needs would be at that time.

Summary of Steps

- 1) Agreement on funding understanding
- 2) Establish general procurement mechanisms to help establish timeframes
- 3) Establish second shift battalion chief
- 4) Create a new Rescue 3 and move Rescue 2 to Station 5
- 5) Create a new station 11 (Rte 291/E 39th St)
- 6) Create two additional training positions

- 7) Move Stations 9 and 10
- 8) Rebuild Station 8 (and training facility)
- 9) Rebuild Stations 5 and 6 and add an addition to Station 2

The sequence prioritizes service delivery to the community unless serious life safety issues exist within the fire stations. Fortunately, some of the station relocations will address some of the more critical issues.

This is a series of multi-year projects that have many moving parts and opportunities for needs and improvements to change. Given the multi-year duration, at each stage of the projects, Independence should examine cultural, financial, and organizational needs to determine which is the best project to proceed with next.

COST PROJECTIONS

Facility Changes

Fire stations are unique in their design in that their purpose can be multiple. All fire stations allow space to conduct business but that can be as simple as creating a garage-like or carport structure to something quite complex with provides multiple functions. In addition, since fire stations are community assets, they can also provide a degree of community space.

Most fire stations offer space to conduct business, space to conduct support activities, and some degree of dormitory or living type arrangements. Living arrangements are determined by the type and amount of staffing that is needed at the station, currently and for the future. The longer periods of time that firefighters are expected to occupy the fire station, the greater that living arrangements will need to include adequate living space as well as business space. All possible spaces including business, support, residential, and community spaces contribute to the cost of the fire station. Community and fire department leaders must decide the extent a fire station may be used. The National Institute of Building Sciences has an informative webpage on the building of fire stations (www.wbdg.org/building-types/community-services/fire-station).

Long-term single-bay fire stations are rarely built anymore as they provide no room for any growth, no room for reserve equipment and no alternate space should something happen to the main bay area. At a minimum, a two-bay fire station should be the smallest structure considered. At the opposite end are fire stations that can be as large as half a dozen drive-through bays. These fire stations are those that usually house a large response fleet as well as reserve equipment. ESCI believes that Independence needs fall between the two and four bay station configurations.

Building cost projections are usually provided at a per-square foot cost that includes spacious apparatus space as well as more detailed and compact support and living spaces. Square foots cost can vary significantly and are market and construction-material oriented. Due to the economy and materials demand, a projected cost one-year may not be the same projected cost the following year and costs of these vary across the country. An approximate number that can be used for project planning cost estimation is \$650 ft² based recent fire station construction projects in the Missouri region. The following are approximate minimal square footages for two, three, and four-bay stations that provide. These prices do not include property that will need to be acquired which is currently ranges from \$50,000 to \$75,000 per acre depending on actual location assuming no existing developed property is used.

Figure 105: Projected Fire Station Costs

<u>Size</u>	<u>Square footage</u>	<u>Total cost</u>
2-bay	6,000-8,000 ft ²	\$3.9-5.2 million
3-bay	8,000-12,000 ft ²	\$5.2-7.8 million
4-bay	12,000-16,000 ft ²	\$7.8-10.4 million

Projected Costs of Stations with Recommended Improvements/Moves

Splitting the cost estimates as above and aligning them with ESCI's station move/improvement recommendations, the below graph (Figure 106) is a projected cost of the fire station upgrades over the next several years. The costs are at current pricing so cost-of-living increases above this should be added in based on how far in the future, the project takes place. The chart recognizes a 5% annual inflation increase.

Figure 106: Projected Station Costs

<u>Station</u>	<u>Size</u>	<u>Change Nature</u>	<u>2023 Cost</u>	<u>2028 Cost</u>
Station 11	3-bay	New	\$6.5 million	\$8.3 million
Station 9	2-bay	Move	\$4.6 million	\$5.9 million
Station 10	2-bay	Move	\$4.6 million	\$5.9 million
Station 8	4-bay	Rebuild	\$9.1 million	\$11.6 million
Station 6	2-bay	Rebuild	\$4.6 million	\$5.9 million
Station 2	3-bay	Addition (4000 ft ²)	\$2.6 million	\$3.3 million
Station 5	2-bay	Rebuild	\$4.6 million	\$5.9 million
Station 6	2-bay	Rebuild	\$4.6 million	\$5.9 million
Total			\$41.2 million	\$52.7 million

Staff Changes or Additions

In ESCI's recommendations, ESCI has recommended an additional two training officers. As mentioned earlier, the rank of these individuals should be ones that give them authority over company officers which makes them in the current rank structure either battalion chiefs or senior-level company officers.

Below (Figure 107) are projected costs for the next 10 years based on current budgets with a 3% annual cost-of-living increase. Costs are assumed to be a senior company officer rank. Should one or both be given the battalion chief rank, costs would be approximately 6% higher per individual.

Figure 107: Projected New Training Officer Costs

Year	Wages	Benefits	Total Cost	Cumulative Cost
2023	\$196,000	\$107,800	\$303,800	\$303,800
2024	\$201,880	\$111,034	\$312,914	\$616,714
2025	\$207,936	\$114,365	\$322,301	\$939,015
2026	\$214,174	\$117,796	\$331,970	\$1,270,986
2027	\$220,600	\$121,330	\$341,930	\$1,612,915
2028	\$227,218	\$124,970	\$352,187	\$1,965,103
2029	\$234,034	\$128,719	\$362,753	\$2,327,856
2030	\$241,055	\$132,580	\$373,636	\$2,701,492
2031	\$248,287	\$136,558	\$384,845	\$3,086,336
2032	\$255,736	\$140,655	\$396,390	\$3,482,727

The second staffing adjustment that ESCI recommended was a second shift battalion chief. Below (Figure 108) is the current cost projection for this chief.

Figure 108: Project 2nd Battalion Chief Costs

Year	Wages	Benefits	Total Cost	Cumulative Cost
2023	\$320,196	\$176,108	\$496,304	\$496,304
2024	\$329,802	\$181,391	\$511,193	\$1,007,497
2025	\$339,696	\$186,833	\$526,529	\$1,534,025
2026	\$349,887	\$192,438	\$542,325	\$2,076,350
2027	\$360,383	\$198,211	\$558,594	\$2,634,944
2028	\$371,195	\$204,157	\$575,352	\$3,210,296
2029	\$382,331	\$210,282	\$592,613	\$3,802,909
2030	\$393,801	\$216,590	\$610,391	\$4,413,300
2031	\$405,615	\$223,088	\$628,703	\$5,042,003
2032	\$417,783	\$229,781	\$647,564	\$5,689,567

Both the training officers and battalion chiefs' wages are assumed to change only as a result of cost-of-livings adjustments and not due to other salary schedules adjustments.

Primary Apparatus Changes or Additions

ESCI recommended the addition of another pumper company, rescue company and the future addition of a third ladder truck. Staffing for an pumper company requires a hiring for twelve positions (four per shift and three shifts) and for a rescue company a hiring of six positions. This gives an occasional four-person pumper company when no one is on time-off however, it also keeps overtime expenditures low.

The following are projected costs of the additional eighteen personnel plus salary differential for six promoted officers which could be increased to thirty with the addition of a third truck company (Costs not included with unknown implementation). They are based on the current cost-of-living and step increases in the current contract.

Figure 109: Projected E11 and R3 Staffing Costs

Year	Wages	Benefits	Total Cost	Cumulative Cost
2023	\$1,560,205	\$858,113	\$2,418,318	\$2,418,318
2024	\$1,638,216	\$901,019	\$2,539,234	\$4,957,553
2025	\$1,720,126	\$946,070	\$2,666,196	\$7,623,749
2026	\$1,806,133	\$993,373	\$2,799,506	\$10,423,255
2027	\$1,896,439	\$1,043,042	\$2,939,481	\$13,362,736
2028	\$1,991,261	\$1,095,194	\$3,086,455	\$16,449,191
2029	\$2,090,825	\$1,149,953	\$3,240,778	\$19,689,969
2030	\$2,195,366	\$1,207,451	\$3,402,817	\$23,092,786
2031	\$2,305,134	\$1,267,824	\$3,572,958	\$26,665,744
2032	\$2,420,391	\$1,331,215	\$3,751,606	\$30,417,349

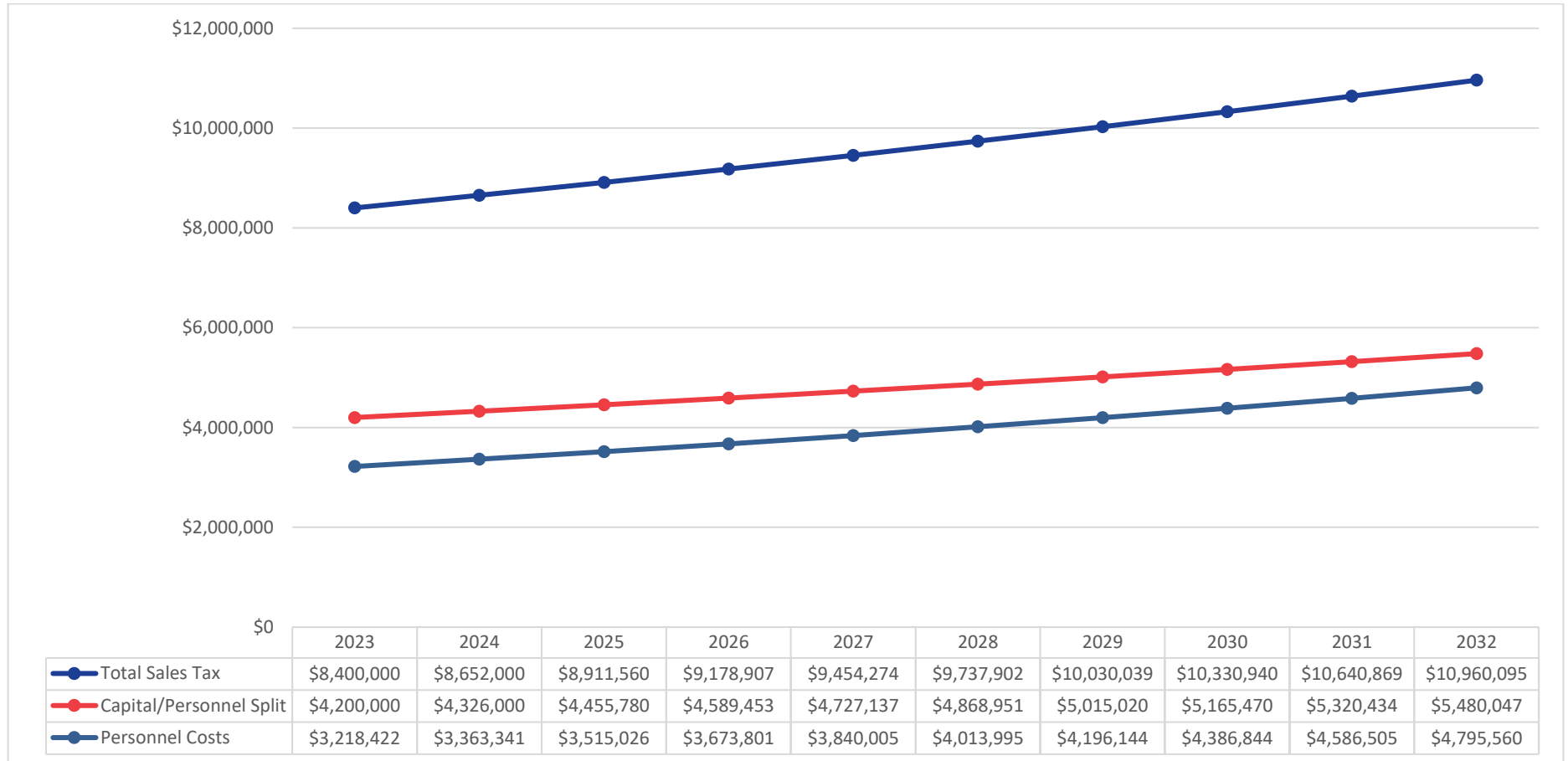
When all staffing increases are combined, the following figure displays total projected staffing costs.

Figure 110: Total 10 Year Costs Projections

Year	Training Officers	Battalion Chief	E11/R3 Staffing	Annual Cost	Cumulative Cost
2023	\$303,800	\$496,304	\$2,418,318	\$3,218,422	\$3,218,422
2024	\$312,914	\$511,193	\$2,539,234	\$3,363,341	\$6,581,763
2025	\$322,301	\$526,529	\$2,666,196	\$3,515,026	\$10,096,790
2026	\$331,970	\$542,325	\$2,799,506	\$3,673,801	\$13,770,591
2027	\$341,930	\$558,594	\$2,939,481	\$3,840,005	\$17,610,596
2028	\$352,187	\$575,352	\$3,086,455	\$4,013,995	\$21,624,590
2029	\$362,753	\$592,613	\$3,240,778	\$4,196,144	\$25,820,734
2030	\$373,636	\$610,391	\$3,402,817	\$4,386,844	\$30,207,578
2031	\$384,845	\$628,703	\$3,572,958	\$4,586,505	\$34,794,083
2032	\$396,390	\$647,564	\$3,751,606	\$4,795,560	\$39,589,643

Anticipated Sales Tax Revenue w/Operational Costs

Figure 111: 10-yr Sales Tax/Expenditures Projection



OTHER EXTENDED TIMEFRAME STRATEGIES

Most of these short and mid-term recommendations can be implemented in relatively short time frames although some may require some work that may span a few years. Some items are considerations to be made as the city grows in size and activity level. It is suggested that any dealing with potential safety concerns be made higher priority. Creating a strategic plan to accomplish these items effectively is the best approach, although some of these can be implemented by the officers responsible. There are other recommendations that are completely new strategies or may require some time and effort to implement.

Administration

- The City Manager should evaluate the Fire Chief annually based on specific goals that the City Manager sets for the Chief.

Planning

The CPSE and ICMA with collaboration from the IAFF have jointly created a document that addresses the modernized or 21st century fire department; how the fire service needs to change to both stay relevant and provide strong working environments. The following 10 items were identified that need to be strategized over. IFD should keep these in mind and keep them in their future planning.

- 1) Reidentification – the fire service needs to rethink its identity to one not focused solely on fire protection but rather one that reflects the broader, changing, and growing community expectations of the fire department.
- 2) Culture – the fire service needs to expand its mindset to one that embraces changing organizational trends while simultaneously valuing its traditions.
- 3) Robust Use of Data – Technology and data analysis are here to stay and fire departments need to incorporate it to improve dialog with their community.
- 4) Health and Wellness – Employee and employer attitudes towards well-being on physical, emotional, and mental health needs to paid attention to with the understanding that stronger employee health improves community service and personal quality of life.
- 5) Partnerships – The fire service should recognize that it does not operate in a vacuum and that collaboration with other fire departments and other organizations can improve the lives of their citizens.

- 6) Sustainability – The fire service cannot and will not survive by the traditional way of doing business indefinitely. To maintain its relevance, it must develop an attitude of being able to change with the culture.
- 7) Technology – While nothing will change the age-tested science of water puts out fire, there are many other elements of service delivery that can be improved by technology, both operationally and administratively.
- 8) Inclusiveness – Fire departments need to include efforts to both diversify their composition as well as recognize the diversity of their communities.

Service Delivery

- IFD should pay attention to their growth in the eastern portion of the city. While the current reports recommend a new pumper, battalion chief, and truck company, continued growth to the east could require another new station, likely in the Bundschu Rd/Union Pacific Railroad tracks, west of the current Station 9.
- IFD should continue to evaluate opportunities to maximize collaborative service department with neighboring fire departments (automatic aid).
- Set response time goals for urban, suburban, rural areas of the city.

Staffing

- Continue to expand the training program to allow enhanced and experiential opportunities. Promoting senior staff into these positions creates opportunities for experienced firefighters to mentor the next generation.

Finances

- Consider opportunities to recoup some of the department's costs at providing service such as charging non-residents for services provided.

Capital

- Expand the capital reserve plan to consider the establishment of recurring annual funding for the entire fleet and minimizes irregular funding needs and uncertainty.
- Consider 5-year budget planning within the department to provide a phased approach for limited revenues, so that projects are planned over multiple fiscal years. Account for cost of inflation due to the rising costs affecting operating budgets.
- Develop a separate support equipment replacement schedule.

Planning

- Consider implementation of a dropped boundary dispatching approach, with adjustments, where necessary and applicable.

EMS

- IFD should have an extended discussion about their role in providing EMS services to the community. Cross-trained paramedics can enhance the number of firefighters on an emergency scene and expand the versatility of first responders.
- Consider the opportunity to have a Community Paramedic program.

RECOMMENDATIONS

MAJOR (24 recommendations)

Recommendation 1: Continue to bi-annually update 5-yr strategic plan and review the mission and vision statements.

Recommendation 8: Management and labor agree to pursue elements of organizational strategic plans collaboratively

Recommendation 9: Management and labor identify how elements of tradition can be maintained while pursuing new models of community service.

Recommendation 12: Conduct periodic skills testing for all personnel commensurate with their position in the department through the Training Division.

Recommendation 13: With union collaboration, IFD should implement an annual/bi-annual physical fitness evaluation.

Recommendation 15: Add an additional battalion chief per shift

Recommendation 16: Create a joint committee of police and fire representatives that gives equal voice to both disciplines within the communications center and allows a collaborative approach to dispatch operations.

Recommendation 17: Establish an electronic interface between IFD and AMR computer systems to exchange incident data.

Recommendation 18: With the exception of accidents and rescues, IFD call-takers should immediately transfer EMS calls to AMR

Recommendation 19: - Consider operational changes that would provide for ALS service on all ALS potential calls.

Recommendation 20: Change AMR approval process from a permit to a contract that spells out specific performance standards and provides accountability.

Recommendation 21: Add staffing to the training division to assist in the development and delivery of a comprehensive training program.

Recommendation 25: Modernize IFD's training facility

Recommendation 35: Develop a complete database of all high risk/high impact facilities in the IFD service area.

Recommendation 36: Develop response plans for all non-facility risks (transportation systems and weather extremes) that are high impact risks.

Recommendation 37: Develop and publish an Independence Fire Department Standards of Cover.

Recommendation 38: Build a new station 11 near I-470 and E 39th St South and staff it per contractual staffing

Recommendation 39: Move Station 9 to the Rte 7/Coon Rd area and move Station 10 to the E Rd Mize Rd and Eureka Rd area.

Recommendation 40: Rebuild Station 8 at/near its existing location

Recommendation 41: Consider the addition of an additional truck company (Truck 3) to be located at Station to cover the east side of the city.

Recommendation 42: Rebuild Stations 5 and 6 at/near their existing locations and add an addition to Station 2

Recommendation 43: Rebuild a combined Station 8 and an IFD training facility.

Recommendation 44: Add a third rescue unit.

Recommendation 45: With the addition of a third rescue, reconfigure the rescue station configuration from Stations 1 and 2 to Stations 1, 5, and 7.

MINOR (21 recommendations)

Recommendation 2: Review/update 1/3 of department policies annually so that all policies are reviewed every three years.

Recommendation 3: Create meeting minutes of senior staff meetings that shift battalion chiefs can use to distribute identical messages to lower staff.

Recommendation 4: Consider annual or bi-annual officer sessions to allow senior leadership to have greater interaction with first-line supervisors.

Recommendation 5: Re-engage media presence and/or regular public communication and dialog.

Recommendation 6: Set an ISO rating of '1' to be achieved within the next three years.

Recommendation 7: Consider pursuing accreditation from the Center for Public Safety Excellence

Recommendation 10: Implement a formal employee/member recognition program.

Recommendation 11: Consider conducting exit interviews, periodic employee surveys, and other mechanisms to acquire feedback from members.

Recommendation 14: Develop and implement a formal succession plan for senior leadership.

Recommendation 22: Utilize formal lesson plans for department training activities.

Recommendation 23: Develop a formal training program that includes an annual training plan. This plan should cover the needs of new members and incumbent members. Consider revising SOP 601: Fire Department Training Program

Recommendation 24: Establish as a part of department succession planning including opportunities to attend the required courses.

Recommendation 26: Consider the creation of a fire investigation team that includes arson investigators from the police department.

Collaborate with local law enforcement to formalize the procedures when handling fire investigations that involve, or suspect to involve, arson or other criminal matters.

Recommendation 28: Develop and implement a comprehensive pre-plan process that allows rapid retrieval of pre-plans during an emergency incident.

Recommendation 29: Create benchmarks for each aspect of the fire prevention program. Measure these data points and establish goals related to them. This will provide relevant and measurable outcomes for each fire prevention program.

Recommendation 30: Review and possibly update the SOP 208: Hazardous Materials.

Recommendation 31: Review the current capabilities of the IFD Haz-Mat Team. Consider expansion and/or adding mutual aid capabilities.

Recommendation 32: Ensure all Haz-Mat training completed by IFD members meets the appropriate standards set by IFD, particularly when the training is completed by outside agencies.

Recommendation 33: Review current inventories of equipment and budget for replacement.

Recommendation 34: Consider expanding the ability to provide other technical rescue services as needed within the city. This would include increasing the level of certification in confined space rescue to the operations and/or technician level and adding additional disciplines.

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APPENDIX B: STATION ASSESSMENTS

TABLE 6B: Supplemental -- Facility Information and Condition Worksheet

Complete facilities and apparatus information using these tables. Use one table for each facility.

Department Name: Independence Fire Department		<i>For office use only</i>	
Facility Name / Station Number: #1			
Address: 950 N. Spring, Independence, MO 64050			
Latitude: 39.1011166666667			
Longitude: -94.41985			
Primary use (check all that apply) ☒ Administration ☐ Maintenance ☒ Emergency Ops ☐ Special Ops ☒ Training ☐ Communications Center ☐ Other (specify):			
Structure			
Square Footage	19500 sf	Construction Type: 2	Number of Stories: 2
Date of Construction	Original: 1971 last remodel: 2010/11		
General Condition	☐ Excellent ☐ Good ☒ Fair ☐ Marginal ☐ Poor		
Applicable Fire Code & Edition	2018	Code-compliant	☐ Yes ☒ No
Special Considerations (ADA, etc.)			
Facilities and Building Services			
Security System Type (check all that apply):	☐ Security Fence and Gate ☐ Sallyport ☐ CCTV ☒ Keypad ☐ Key ☐ Other, specify:		
Maximum Staffing Capacity	normal: 100 emergency/disaster: ?		
24-hour Watch office	☐ Yes ☒ No	Emergency Ops Center	☒ Yes ☐ No
Kitchen Facilities	☒ Yes ☐ No	Exercise/Workout Areas	☒ Yes ☐ No
Training/Meeting Rooms	☒ Yes ☐ No	Shower Facilities	☒ Yes ☐ No
Individual Lockers	☒ Yes ☐ No	Equipment Storage	☒ Yes ☐ No
Living Quarters	☒ Yes ☐ No	Apparatus Bays	☒ Yes ☐ No
# of Beds: 13	# of Bedrooms: 13	# of Back-in: 4	# of Drive through: 0
Cascade System/Compressor	☒ Yes ☐ No	Helipad	☐ Yes ☒ No
Emergency Power	☒ Yes ☐ No	Automatic Sprinklers	☒ Yes ☐ No
Smoke Detectors and Alarms	☒ Yes ☐ No	Apparatus Exhaust System	☒ Yes ☐ No
Automatic Cooking Shut-off	☐ Yes ☒ No	Seismic Protection	☐ Yes ☒ No
Washer/Dryer for station wear/linen	☒ Yes ☐ No	Washer/Extractor for PPE	☒ Yes ☐ No
Decontamination Area	☐ Yes ☒ No	Biohazard Disposal	☐ Yes ☒ No
Fuel	☒ None ☐ Diesel, gal ☐ MoGas, gal ☐ AvGas, gal ☐ Jet A, gal		
Assigned Apparatus/Vehicles (attach) other sheets if needed)			
Apparatus Type	Call Sign	Minimum Staffing *	Comments
Shift Commander	BC-1	1	2021 Ford F-250 w/Camper Shell and Rollout Asset#
Pumper	P1	3	2016 Precision Fire Apparatus - Remount
Rescue	R1	2	2014 Pierce Rescue 12', on Ford F-550 Chassis
Truck	T1	3	2016 Pierce 100' Aerial Platform

*If an apparatus is cross-staffed, enter "CS" after the minimum staffing number

Project Information Request

Use the table below to rate the condition of each facility.		Facility Name or Station Number:		
5. Very Good	4. Good	3. Fair	2. Poor	1. Critical
As New, No Defects, Performing as intended	Minor defects Performing as intended	Moderate defect Functioning, but worn	Minor or major defect Not functioning as desired	Major defect Not functioning OR Risk to safety and health
Preventive Maintenance	Conditional Repair	Repair	Repair OR Replace	Immediate Repair OR Replace

Item	Score	Item	Score
Site		Interior	
Site Utilities and fire hydrants	4	Security	2
Emergency vehicle access	3	Walls, ceilings, and interior finishes	2
Pedestrian access (ADA and safety)	1	Doors, windows, partitions, and hardware	2
Roadways/driveways and associated signage, markings	2	Floor condition and suitability	1
Parking lots and associated signage, markings	2	Stairs: Interior stairs, handrails, and landings	1
Pedestrian sidewalks and associated signage, markings	2	Technology	2
Fences, walls, and access gates	2	Cabinetry, Furniture	2
Stormwater drainage / storage	2	Multi-purpose training/meeting areas	1
Landscape vegetation and trees	2	Restroom facilities, showers, lockers	2
Irrigation system	2	Kitchen/food service facilities, water fountains	2
Patio systems and furniture	1	Dormitory facilities	2
Loading Dock	0	Living facilities, breakrooms, workout facilities	2
Helipad / Fuel storage and dispensing system	0	Apparatus bays	2
Miscellaneous utility, trash, and storage structures	1	Storage and mechanical rooms	2
Substructure		Utilities	
Foundations: Walls, columns, beams, or pilings	2	Emergency Power ☐ Gas ☒ Diesel, Day tank size: 300+	4
Basement: Materials, insulation, slab, floor underpinnings	2	Electrical service and distribution	3
Loading dock	0	Lighting & branch wiring (interior and exterior)	2
Exterior		Communications and security system	2
Frame: columns, pillars, walls, covered walkways, balconies	2	Gas service and distribution	3
Roof: Condition, gutters, eaves, openings, leakage, ponding	1	Water service, heating, and distribution	2
Exterior condition, finishes, and appearance	2	Sanitary Collection / Septic System / Grease traps	2
Exterior doors, windows, doors, and hardware	2	Mechanical systems	
Fire / Life Safety		Heat Generation and distribution systems	2
Open code violations or deficiencies	2	Cooling generation and distribution systems	2
Applied fireproofing	2	Testing, balancing, controls, and instrumentation	2
Fire doors, fire escapes	2	Chimneys, vents, and exhaust systems	2
Emergency lighting	2	Refrigeration systems, freezers, and ice machines / storage	3
Fire detection and alarm, auto shut-off (cooking)	3	Elevators, escalators, and lifts	0
Automatic sprinklers, standpipes, and fire pumps	3	Cascade system / Breathing Air Compressor	2
Eyewash stations	0	Apparatus Bay Exhaust System	3
Decontamination Area, Biohazard Disposal	0	Washer/Dryer for station wear/linen	2
		Washer/Extractor for PPE	3

TABLE 6B: Supplemental -- Facility Information and Condition Worksheet

Complete facilities and apparatus information using these tables. Use one table for each facility.

Department Name: Independence Fire Department		<i>For office use only</i>	
Facility Name / Station Number: Fire Station # 2			
Address: 14510 E. 39 th St.			
Latitude: 39.0502333333333			
Longitude: -94.4064			
Primary use (check all that apply) ☐ Administration ☐ Maintenance ☒ Emergency Ops ☐ Special Ops ☐ Training ☐ Communications Center ☐ Other (specify):			
Structure			
Square Footage	7350 sf	Construction Type: 2	Number of Stories: 2
Date of Construction	Original: 1971 last remodel: 2011/12		
General Condition	☐ Excellent ☐ Good ☒ Fair ☐ Marginal ☐ Poor		
Applicable Fire Code & Edition	2018	Code-compliant	☐ Yes ☒ No
Special Considerations (ADA, etc.)			
Facilities and Building Services			
Security System Type (check all that apply):	☐ Security Fence and Gate ☐ Sallyport ☐ CCTV ☒ Keypad ☐ Key ☐ Other, specify:		
Maximum Staffing Capacity	normal: 10 emergency/disaster: ?		
24-hour Watch office	☐ Yes ☒ No	Emergency Ops Center	☐ Yes ☒ No
Kitchen Facilities	☒ Yes ☐ No	Exercise/Workout Areas	☒ Yes ☐ No
Training/Meeting Rooms	☐ Yes ☒ No	Shower Facilities	☒ Yes ☐ No
Individual Lockers	☒ Yes ☐ No	Equipment Storage	☒ Yes ☐ No
Living Quarters	☒ Yes ☐ No	Apparatus Bays	☒ Yes ☐ No
# of Beds 10	# of Bedrooms 10	# of Back-in: *	# of Drive through: 2
Cascade System/Compressor	☒ Yes ☐ No	Helipad	☐ Yes ☒ No
Emergency Power	☒ Yes ☐ No	Automatic Sprinklers	☐ Yes ☒ No
Smoke Detectors and Alarms	☒ Yes ☐ No	Apparatus Exhaust System	☒ Yes ☐ No
Automatic Cooking Shut-off	☐ Yes ☒ No	Seismic Protection	☐ Yes ☒ No
Washer/Dryer for station wear/linen	☒ Yes ☐ No	Washer/Extractor for PPE	☒ Yes ☐ No
Decontamination Area	☐ Yes ☒ No	Biohazard Disposal	☐ Yes ☒ No
Fuel	☒ None ☐ Diesel, gal ☐ MoGas, gal ☐ AvGas, gal ☐ Jet A, gal		
Assigned Apparatus/Vehicles (attach) other sheets if needed)			
Apparatus Type	Call Sign	Minimum Staffing *	Comments
Pumper	P2	3	2015 Precision Fire Apparatus - Remount
Rescue*(backs in)	R2	2	2012 Pierce Rescue 10' on Ford F-550 Chassis
Truck	T2	3	2021 Smeal/Spartan 100' Aerial Platform

*If an apparatus is cross-staffed, enter "CS" after the minimum staffing number

Project Information Request

Use the table below to rate the condition of each facility.		Facility Name or Station Number:		
5. Very Good	4. Good	3. Fair	2. Poor	1. Critical
As New, No Defects, Performing as intended	Minor defects Performing as intended	Moderate defect Functioning, but worn	Minor or major defect Not functioning as desired	Major defect Not functioning OR Risk to safety and health
Preventive Maintenance	Conditional Repair	Repair	Repair OR Replace	Immediate Repair OR Replace

Item	Score	Item	Score
Site		Interior	
Site Utilities and fire hydrants	3	Security	1
Emergency vehicle access	2	Walls, ceilings, and interior finishes	2
Pedestrian access (ADA and safety)	1	Doors, windows, partitions, and hardware	2
Roadways/driveways and associated signage, markings	2	Floor condition and suitability	2
Parking lots and associated signage, markings	2	Stairs: Interior stairs, handrails, and landings	1
Pedestrian sidewalks and associated signage, markings	1	Technology	2
Fences, walls, and access gates	1	Cabinetry, Furniture	2
Stormwater drainage / storage	2	Multi-purpose training/meeting areas	0
Landscape vegetation and trees	2	Restroom facilities, showers, lockers	2
Irrigation system	1	Kitchen/food service facilities, water fountains	2
Patio systems and furniture	1	Dormitory facilities	3
Loading Dock	0	Living facilities, breakrooms, workout facilities	2
Helipad / Fuel storage and dispensing system	0	Apparatus bays	2
Miscellaneous utility, trash, and storage structures	1	Storage and mechanical rooms	2
Substructure		Utilities	
Foundations: Walls, columns, beams, or pilings	2	Emergency Power ☐ Gas ☒ Diesel, Day tank size: 100+	3
Basement: Materials, insulation, slab, floor underpinnings	2	Electrical service and distribution	2
Loading dock	0	Lighting & branch wiring (interior and exterior)	2
Exterior		Communications and security system	2
Frame: columns, pillars, walls, covered walkways, balconies	2	Gas service and distribution	2
Roof: Condition, gutters, eaves, openings, leakage, ponding	2	Water service, heating, and distribution	2
Exterior condition, finishes, and appearance	2	Sanitary Collection / Septic System / Grease traps	2
Exterior doors, windows, doors, and hardware	2	Mechanical systems	
Fire / Life Safety		Heat Generation and distribution systems	2
Open code violations or deficiencies	1	Cooling generation and distribution systems	1
Applied fireproofing	1	Testing, balancing, controls, and instrumentation	2
Fire doors, fire escapes	1	Chimneys, vents, and exhaust systems	2
Emergency lighting	2	Refrigeration systems, freezers, and ice machines / storage	2
Fire detection and alarm, auto shut-off (cooking)	2	Elevators, escalators, and lifts	0
Automatic sprinklers, standpipes, and fire pumps	0	Cascade system / Breathing Air Compressor	3
Eyewash stations	0	Apparatus Bay Exhaust System	3
Decontamination Area, Biohazard Disposal	0	Washer/Dryer for station wear/linen	1
		Washer/Extractor for PPE	1

TABLE 6B: Supplemental -- Facility Information and Condition Worksheet

Complete facilities and apparatus information using these tables. Use one table for each facility.

Department Name: Independence Fire Department		<i>For office use only</i>	
Facility Name / Station Number: Fire Station # 3			
Address: 10219 E. Winner Rd			
Latitude: 39.0895166666667			
Longitude: -94.4568666666667			
Primary use (check all that apply) ☐ Administration ☐ Maintenance ☒ Emergency Ops ☐ Special Ops ☐ Training ☐ Communications Center ☐ Other (specify):			
Structure			
Square Footage	8300 sf	Construction Type: 2	Number of Stories: 1
Date of Construction	Original: 2009 last remodel: n/a		
General Condition	☐ Excellent ☒ Good ☐ Fair ☐ Marginal ☐ Poor		
Applicable Fire Code & Edition	2018	Code-compliant	☒ Yes ☐ No
Special Considerations (ADA, etc.)			
Facilities and Building Services			
Security System Type (check all that apply):	☐ Security Fence and Gate ☐ Sallyport ☐ CCTV ☒ Keypad ☐ Key ☐ Other, specify:		
Maximum Staffing Capacity	normal: 8 emergency/disaster: ?		
24-hour Watch office	☐ Yes ☒ No	Emergency Ops Center	☐ Yes ☒ No
Kitchen Facilities	☒ Yes ☐ No	Exercise/Workout Areas	☒ Yes ☐ No
Training/Meeting Rooms	☒ Yes ☐ No	Shower Facilities	☒ Yes ☐ No
Individual Lockers	☒ Yes ☐ No	Equipment Storage	☒ Yes ☐ No
Living Quarters	☒ Yes ☐ No	Apparatus Bays	☒ Yes ☐ No
# of Beds: 8	# of Bedrooms: 8	# of Back-in: 1	# of Drive through: 2
Cascade System/Compressor	☐ Yes ☒ No	Helipad	☐ Yes ☒ No
Emergency Power	☒ Yes ☐ No	Automatic Sprinklers	☒ Yes ☐ No
Smoke Detectors and Alarms	☒ Yes ☐ No	Apparatus Exhaust System	☒ Yes ☐ No
Automatic Cooking Shut-off	☐ Yes ☒ No	Seismic Protection	☐ Yes ☒ No
Washer/Dryer for station wear/linen	☒ Yes ☐ No	Washer/Extractor for PPE	☒ Yes ☐ No
Decontamination Area	☐ Yes ☒ No	Biohazard Disposal	☐ Yes ☒ No
Fuel	☒ None ☐ Diesel, gal ☐ MoGas, gal ☐ AvGas, gal ☐ Jet A, gal		
Assigned Apparatus/Vehicles (attach) other sheets if needed)			
Apparatus Type	Call Sign	Minimum Staffing *	Comments
Pumper	P3	3	2018 Precision Fire Apparatus Pumper
Reserve Pumper	RP2	0	2008 Sutphen Pumper
Reserve Pumper	RP3	0	2007 Sutphen Pumper

*If an apparatus is cross-staffed, enter "CS" after the minimum staffing number

Project Information Request

Use the table below to rate the condition of each facility.		Facility Name or Station Number:		
5. Very Good	4. Good	3. Fair	2. Poor	1. Critical
As New, No Defects, Performing as intended	Minor defects Performing as intended	Moderate defect Functioning, but worn	Minor or major defect Not functioning as desired	Major defect Not functioning OR Risk to safety and health
Preventive Maintenance	Conditional Repair	Repair	Repair OR Replace	Immediate Repair OR Replace

Item	Score	Item	Score
Site		Interior	
Site Utilities and fire hydrants	4	Security	4
Emergency vehicle access	3	Walls, ceilings, and interior finishes	4
Pedestrian access (ADA and safety)	4	Doors, windows, partitions, and hardware	4
Roadways/driveways and associated signage, markings	4	Floor condition and suitability	2
Parking lots and associated signage, markings	4	Stairs: Interior stairs, handrails, and landings	0
Pedestrian sidewalks and associated signage, markings	4	Technology	4
Fences, walls, and access gates	4	Cabinetry, Furniture	4
Stormwater drainage / storage	4	Multi-purpose training/meeting areas	3
Landscape vegetation and trees	4	Restroom facilities, showers, lockers	4
Irrigation system	3	Kitchen/food service facilities, water fountains	4
Patio systems and furniture	3	Dormitory facilities	4
Loading Dock	0	Living facilities, breakrooms, workout facilities	4
Helipad / Fuel storage and dispensing system	0	Apparatus bays	4
Miscellaneous utility, trash, and storage structures	4	Storage and mechanical rooms	3
Substructure		Utilities	
Foundations: Walls, columns, beams, or pilings	4	Emergency Power ☐ Gas ☒ Diesel, Day tank size 100 +	4
Basement: Materials, insulation, slab, floor underpinnings	4	Electrical service and distribution	4
Loading dock	0	Lighting & branch wiring (interior and exterior)	3
Exterior		Communications and security system	3
Frame: columns, pillars, walls, covered walkways, balconies	4	Gas service and distribution	4
Roof: Condition, gutters, eaves, openings, leakage, ponding	4	Water service, heating, and distribution	4
Exterior condition, finishes, and appearance	4	Sanitary Collection / Septic System / Grease traps	4
Exterior doors, windows, doors, and hardware	4	Mechanical systems	
Fire / Life Safety		Heat Generation and distribution systems	4
Open code violations or deficiencies	3	Cooling generation and distribution systems	2
Applied fireproofing	4	Testing, balancing, controls, and instrumentation	4
Fire doors, fire escapes	4	Chimneys, vents, and exhaust systems	4
Emergency lighting	4	Refrigeration systems, freezers, and ice machines / storage	3
Fire detection and alarm, auto shut-off (cooking)	4	Elevators, escalators, and lifts	0
Automatic sprinklers, standpipes, and fire pumps	4	Cascade system / Breathing Air Compressor	0
Eyewash stations	2	Apparatus Bay Exhaust System	4
Decontamination Area, Biohazard Disposal	0	Washer/Dryer for station wear/linen	4
		Washer/Extractor for PPE	4

TABLE 6B: Supplemental -- Facility Information and Condition Worksheet

Complete facilities and apparatus information using these tables. Use one table for each facility.

Department Name: Independence Fire Department		<i>For office use only</i>	
Facility Name / Station Number: Fire Station # 4			
Address: 202 W 23 rd St. Independence MO 64055			
Latitude: 39.07955			
Longitude: -94.416933333333			
Primary use (check all that apply) ☐ Administration ☐ Maintenance ☒ Emergency Ops ☐ Special Ops ☐ Training ☐ Communications Center ☐ Other (specify):			
Structure			
Square Footage	8300 sf	Construction Type: 2	Number of Stories: 1
Date of Construction	Original: 2008 last remodel: n/a		
General Condition	☐ Excellent ☒ Good ☐ Fair ☐ Marginal ☐ Poor		
Applicable Fire Code & Edition	2018	Code-compliant	☒ Yes ☐ No
Special Considerations (ADA, etc.)			
Facilities and Building Services			
Security System Type (check all that apply):	☐ Security Fence and Gate ☐ Sallyport ☐ CCTV ☒ Keypad ☐ Key ☐ Other, specify:		
Maximum Staffing Capacity	normal: 8 emergency/disaster: ?		
24-hour Watch office	☐ Yes ☒ No	Emergency Ops Center	☐ Yes ☒ No
Kitchen Facilities	☒ Yes ☐ No	Exercise/Workout Areas	☒ Yes ☐ No
Training/Meeting Rooms	☒ Yes ☐ No	Shower Facilities	☒ Yes ☐ No
Individual Lockers	☒ Yes ☐ No	Equipment Storage	☒ Yes ☐ No
Living Quarters	☒ Yes ☐ No	Apparatus Bays	☒ Yes ☐ No
# of Beds: 8	# of Bedrooms: 8	# of Back-in: 1	# of Drive through: 2
Cascade System/Compressor	☐ Yes ☒ No	Helipad	☐ Yes ☒ No
Emergency Power	☒ Yes ☐ No	Automatic Sprinklers	☒ Yes ☐ No
Smoke Detectors and Alarms	☒ Yes ☐ No	Apparatus Exhaust System	☒ Yes ☐ No
Automatic Cooking Shut-off	☐ Yes ☒ No	Seismic Protection	☐ Yes ☒ No
Washer/Dryer for station wear/linen	☒ Yes ☐ No	Washer/Extractor for PPE	☒ Yes ☐ No
Decontamination Area	☐ Yes ☒ No	Biohazard Disposal	☐ Yes ☒ No
Fuel	☒ None ☐ Diesel, gal ☐ MoGas, gal ☐ AvGas, gal ☐ Jet A, gal		
Assigned Apparatus/Vehicles (attach) other sheets if needed)			
Apparatus Type	Call Sign	Minimum Staffing *	Comments
Quint	Q4	3	2013 Toyne 75' Quint (replacement is ordered)
Reserve Quint	RT2	0	2007 Sutphen 75' Quint
Trailer	FP	0	Fire Prevention Education Equipment

*If an apparatus is cross-staffed, enter "CS" after the minimum staffing number

Project Information Request

Use the table below to rate the condition of each facility.		Facility Name or Station Number:		
5. Very Good	4. Good	3. Fair	2. Poor	1. Critical
As New, No Defects, Performing as intended	Minor defects Performing as intended	Moderate defect Functioning, but worn	Minor or major defect Not functioning as desired	Major defect Not functioning OR Risk to safety and health
Preventive Maintenance	Conditional Repair	Repair	Repair OR Replace	Immediate Repair OR Replace

Item	Score	Item	Score
Site		Interior	
Site Utilities and fire hydrants	4	Security	4
Emergency vehicle access	4	Walls, ceilings, and interior finishes	4
Pedestrian access (ADA and safety)	4	Doors, windows, partitions, and hardware	4
Roadways/driveways and associated signage, markings	4	Floor condition and suitability	4
Parking lots and associated signage, markings	4	Stairs: Interior stairs, handrails, and landings	0
Pedestrian sidewalks and associated signage, markings	4	Technology	3
Fences, walls, and access gates	4	Cabinetry, Furniture	4
Stormwater drainage / storage	4	Multi-purpose training/meeting areas	3
Landscape vegetation and trees	4	Restroom facilities, showers, lockers	4
Irrigation system	4	Kitchen/food service facilities, water fountains	4
Patio systems and furniture	4	Dormitory facilities	4
Loading Dock	0	Living facilities, breakrooms, workout facilities	4
Helipad / Fuel storage and dispensing system	0	Apparatus bays	4
Miscellaneous utility, trash, and storage structures	4	Storage and mechanical rooms	4
Substructure		Utilities	
Foundations: Walls, columns, beams, or pilings	4	Emergency Power ☐ Gas ☒ Diesel, Day tank size 100+	4
Basement: Materials, insulation, slab, floor underpinnings	4	Electrical service and distribution	4
Loading dock	0	Lighting & branch wiring (interior and exterior)	3
Exterior		Communications and security system	4
Frame: columns, pillars, walls, covered walkways, balconies	4	Gas service and distribution	4
Roof: Condition, gutters, eaves, openings, leakage, ponding	4	Water service, heating, and distribution	4
Exterior condition, finishes, and appearance	4	Sanitary Collection / Septic System / Grease traps	4
Exterior doors, windows, doors, and hardware	4	Mechanical systems	
Fire / Life Safety		Heat Generation and distribution systems	4
Open code violations or deficiencies	4	Cooling generation and distribution systems	4
Applied fireproofing	4	Testing, balancing, controls, and instrumentation	4
Fire doors, fire escapes	4	Chimneys, vents, and exhaust systems	4
Emergency lighting	4	Refrigeration systems, freezers, and ice machines / storage	4
Fire detection and alarm, auto shut-off (cooking)	4	Elevators, escalators, and lifts	0
Automatic sprinklers, standpipes, and fire pumps	4	Cascade system / Breathing Air Compressor	0
Eyewash stations	3	Apparatus Bay Exhaust System	4
Decontamination Area, Biohazard Disposal	0	Washer/Dryer for station wear/linen	4
		Washer/Extractor for PPE	4

TABLE 6B: Supplemental -- Facility Information and Condition Worksheet

Complete facilities and apparatus information using these tables. Use one table for each facility.

Department Name: Independence Fire Department		<i>For office use only</i>	
Facility Name / Station Number: Fire Station # 5			
Address: 11301 E. 35 th St. Independence, MO 64052			
Latitude: 39.0577833333333			
Longitude: -94.4441666666667			
Primary use (check all that apply) ☐ Administration ☐ Maintenance ☒ Emergency Ops ☒ Special Ops ☐ Training ☐ Communications Center ☐ Other (specify):			
Structure			
Square Footage	6400 sf	Construction Type: 2	Number of Stories: 1.5
Date of Construction	Original: 1980 last remodel: 2012/13		
General Condition	☐ Excellent ☐ Good ☐ Fair ☒ Marginal ☐ Poor		
Applicable Fire Code & Edition	2018	Code-compliant	☐ Yes ☒ No
Special Considerations (ADA, etc.)			
Facilities and Building Services			
Security System Type (check all that apply):	☐ Security Fence and Gate ☐ Sallyport ☐ CCTV ☒ Keypad ☐ Key ☐ Other, specify:		
Maximum Staffing Capacity	normal: 4 emergency/disaster: ?		
24-hour Watch office	☐ Yes ☒ No	Emergency Ops Center	☐ Yes ☒ No
Kitchen Facilities	☒ Yes ☐ No	Exercise/Workout Areas	☐ Yes ☒ No
Training/Meeting Rooms	☐ Yes ☒ No	Shower Facilities	☒ Yes ☐ No
Individual Lockers	☒ Yes ☐ No	Equipment Storage	☒ Yes ☐ No
Living Quarters	☒ Yes ☐ No	Apparatus Bays	☒ Yes ☐ No
# of Beds 4	# of Bedrooms 3	# of Back-in: 1	# of Drive through: 1
Cascade System/Compressor	☐ Yes ☒ No	Helipad	☐ Yes ☒ No
Emergency Power	☒ Yes ☐ No	Automatic Sprinklers	☐ Yes ☒ No
Smoke Detectors and Alarms	☒ Yes ☐ No	Apparatus Exhaust System	☒ Yes ☐ No
Automatic Cooking Shut-off	☐ Yes ☒ No	Seismic Protection	☐ Yes ☒ No
Washer/Dryer for station wear/linen	☒ Yes ☐ No	Washer/Extractor for PPE	☒ Yes ☐ No
Decontamination Area	☐ Yes ☒ No	Biohazard Disposal	☐ Yes ☒ No
Fuel	☒ None ☐ Diesel, gal ☐ MoGas, gal ☐ AvGas, gal ☐ Jet A, gal		
Assigned Apparatus/Vehicles (attach) other sheets if needed)			
Apparatus Type	Call Sign	Minimum Staffing *	Comments
Pumper	P5	3	2018 Precision Fire Apparatus
Hazmat Unit	Hazmat 5	0	2004 Freightliner Utility

*If an apparatus is cross-staffed, enter "CS" after the minimum staffing number

Project Information Request

Use the table below to rate the condition of each facility.		Facility Name or Station Number:		
5. Very Good	4. Good	3. Fair	2. Poor	1. Critical
As New, No Defects, Performing as intended	Minor defects Performing as intended	Moderate defect Functioning, but worn	Minor or major defect Not functioning as desired	Major defect Not functioning OR Risk to safety and health
Preventive Maintenance	Conditional Repair	Repair	Repair OR Replace	Immediate Repair OR Replace

Item	Score	Item	Score
Site		Interior	
Site Utilities and fire hydrants	2	Security	2
Emergency vehicle access	3	Walls, ceilings, and interior finishes	2
Pedestrian access (ADA and safety)	1	Doors, windows, partitions, and hardware	2
Roadways/driveways and associated signage, markings	1	Floor condition and suitability	2
Parking lots and associated signage, markings	1	Stairs: Interior stairs, handrails, and landings	2
Pedestrian sidewalks and associated signage, markings	1	Technology	2
Fences, walls, and access gates	1	Cabinetry, Furniture	2
Stormwater drainage / storage	1	Multi-purpose training/meeting areas	1
Landscape vegetation and trees	1	Restroom facilities, showers, lockers	3
Irrigation system	1	Kitchen/food service facilities, water fountains	3
Patio systems and furniture	1	Dormitory facilities	3
Loading Dock	0	Living facilities, breakrooms, workout facilities	1
Helipad / Fuel storage and dispensing system	0	Apparatus bays	1
Miscellaneous utility, trash, and storage structures	1	Storage and mechanical rooms	2
Substructure		Utilities	
Foundations: Walls, columns, beams, or pilings	1	Emergency Power ☐ Gas ☒ Diesel, Day tank size 100	2
Basement: Materials, insulation, slab, floor underpinnings	1	Electrical service and distribution	2
Loading dock	0	Lighting & branch wiring (interior and exterior)	2
Exterior		Communications and security system	2
Frame: columns, pillars, walls, covered walkways, balconies	1	Gas service and distribution	2
Roof: Condition, gutters, eaves, openings, leakage, ponding	1	Water service, heating, and distribution	2
Exterior condition, finishes, and appearance	1	Sanitary Collection / Septic System / Grease traps	2
Exterior doors, windows, doors, and hardware	1	Mechanical systems	
Fire / Life Safety		Heat Generation and distribution systems	2
Open code violations or deficiencies	1	Cooling generation and distribution systems	2
Applied fireproofing	1	Testing, balancing, controls, and instrumentation	2
Fire doors, fire escapes	1	Chimneys, vents, and exhaust systems	2
Emergency lighting	2	Refrigeration systems, freezers, and ice machines / storage	2
Fire detection and alarm, auto shut-off (cooking)	1	Elevators, escalators, and lifts	0
Automatic sprinklers, standpipes, and fire pumps	1	Cascade system / Breathing Air Compressor	0
Eyewash stations	0	Apparatus Bay Exhaust System	3
Decontamination Area, Biohazard Disposal	0	Washer/Dryer for station wear/linen	2
		Washer/Extractor for PPE	3

TABLE 6B: Supplemental -- Facility Information and Condition Worksheet

Complete facilities and apparatus information using these tables. Use one table for each facility.

Department Name: Independence Fire Department		<i>For office use only</i>	
Facility Name / Station Number: Fire Station # 6			
Address: 17707 E. Bundschu Independence, MO 64056			
Latitude: 39.1207333333333			
Longitude: -94.4444166666667			
Primary use (check all that apply) ☐ Administration ☐ Maintenance ☒ Emergency Ops ☐ Special Ops ☐ Training ☐ Communications Center ☐ Other (specify):			
Structure			
Square Footage	3600 sf	Construction Type: 5	Number of Stories: 1
Date of Construction	Original: 1986 last remodel: 2009		
General Condition	☐ Excellent ☐ Good ☒ Fair ☐ Marginal ☐ Poor		
Applicable Fire Code & Edition	2018	Code-compliant	☐ Yes ☒ No
Special Considerations (ADA, etc.)			
Facilities and Building Services			
Security System Type (check all that apply):	☐ Security Fence and Gate ☐ Sallyport ☐ CCTV ☒ Keypad ☐ Key ☐ Other, specify:		
Maximum Staffing Capacity	normal: 4 emergency/disaster: ?		
24-hour Watch office	☐ Yes ☒ No	Emergency Ops Center	☐ Yes ☒ No
Kitchen Facilities	☒ Yes ☐ No	Exercise/Workout Areas	☒ Yes ☐ No
Training/Meeting Rooms	☐ Yes ☒ No	Shower Facilities	☒ Yes ☐ No
Individual Lockers	☒ Yes ☐ No	Equipment Storage	☒ Yes ☐ No
Living Quarters	☒ Yes ☐ No	Apparatus Bays	☒ Yes ☐ No
# of Beds: 4	# of Bedrooms: 4	# of Back-in: 2	# of Drive through:
Cascade System/Compressor	☐ Yes ☒ No	Helipad	☐ Yes ☒ No
Emergency Power	☒ Yes ☐ No	Automatic Sprinklers	☐ Yes ☒ No
Smoke Detectors and Alarms	☒ Yes ☐ No	Apparatus Exhaust System	☒ Yes ☐ No
Automatic Cooking Shut-off	☐ Yes ☒ No	Seismic Protection	☐ Yes ☒ No
Washer/Dryer for station wear/linen	☒ Yes ☐ No	Washer/Extractor for PPE	☒ Yes ☐ No
Decontamination Area	☐ Yes ☒ No	Biohazard Disposal	☐ Yes ☒ No
Fuel	☒ None ☐ Diesel, gal ☐ MoGas, gal ☐ AvGas, gal ☐ Jet A, gal		
Assigned Apparatus/Vehicles (attach) other sheets if needed)			
Apparatus Type	Call Sign	Minimum Staffing *	Comments
Pumper	P6	3	2014 Precision Fire Apparatus Remount
Pumper	RP1	0	2014 Precision Fire Apparatus Remount

*If an apparatus is cross-staffed, enter "CS" after the minimum staffing number

Project Information Request

Use the table below to rate the condition of each facility.		Facility Name or Station Number:		
5. Very Good	4. Good	3. Fair	2. Poor	1. Critical
As New, No Defects, Performing as intended	Minor defects Performing as intended	Moderate defect Functioning, but worn	Minor or major defect Not functioning as desired	Major defect Not functioning OR Risk to safety and health
Preventive Maintenance	Conditional Repair	Repair	Repair OR Replace	Immediate Repair OR Replace

Item	Score	Item	Score
Site		Interior	
Site Utilities and fire hydrants	3	Security	2
Emergency vehicle access	2	Walls, ceilings, and interior finishes	2
Pedestrian access (ADA and safety)	1	Doors, windows, partitions, and hardware	2
Roadways/driveways and associated signage, markings	2	Floor condition and suitability	2
Parking lots and associated signage, markings	2	Stairs: Interior stairs, handrails, and landings	2
Pedestrian sidewalks and associated signage, markings	1	Technology	2
Fences, walls, and access gates	1	Cabinetry, Furniture	2
Stormwater drainage / storage	1	Multi-purpose training/meeting areas	0
Landscape vegetation and trees	1	Restroom facilities, showers, lockers	2
Irrigation system	1	Kitchen/food service facilities, water fountains	3
Patio systems and furniture	1	Dormitory facilities	2
Loading Dock	0	Living facilities, breakrooms, workout facilities	2
Helipad / Fuel storage and dispensing system	0	Apparatus bays	2
Miscellaneous utility, trash, and storage structures	1	Storage and mechanical rooms	2
Substructure		Utilities	
Foundations: Walls, columns, beams, or pilings	2	Emergency Power ☐ Gas ☒ Diesel, Day tank size 100 gal	4
Basement: Materials, insulation, slab, floor underpinnings	2	Electrical service and distribution	3
Loading dock	0	Lighting & branch wiring (interior and exterior)	3
Exterior		Communications and security system	2
Frame: columns, pillars, walls, covered walkways, balconies	2	Gas service and distribution	3
Roof: Condition, gutters, eaves, openings, leakage, ponding	2	Water service, heating, and distribution	3
Exterior condition, finishes, and appearance	2	Sanitary Collection / Septic System / Grease traps	3
Exterior doors, windows, doors, and hardware	1	Mechanical systems	
Fire / Life Safety		Heat Generation and distribution systems	3
Open code violations or deficiencies	2	Cooling generation and distribution systems	3
Applied fireproofing	2	Testing, balancing, controls, and instrumentation	3
Fire doors, fire escapes	1	Chimneys, vents, and exhaust systems	3
Emergency lighting	2	Refrigeration systems, freezers, and ice machines / storage	2
Fire detection and alarm, auto shut-off (cooking)	1	Elevators, escalators, and lifts	0
Automatic sprinklers, standpipes, and fire pumps	0	Cascade system / Breathing Air Compressor	0
Eyewash stations	0	Apparatus Bay Exhaust System	3
Decontamination Area, Biohazard Disposal	0	Washer/Dryer for station wear/linen	3
		Washer/Extractor for PPE	0

TABLE 6B: Supplemental -- Facility Information and Condition Worksheet

Complete facilities and apparatus information using these tables. Use one table for each facility.

Department Name: Independence Fire Department		<i>For office use only</i>	
Facility Name / Station Number: Fire Station # 7			
Address: 2206 Hub Dr. Independence, MO 64057			
Latitude: 39.0792333333333			
Longitude: -94.3817833333333			
Primary use (check all that apply) ☐ Administration ☐ Maintenance ☒ Emergency Ops ☐ Special Ops ☐ Training ☐ Communications Center ☐ Other (specify):			
Structure			
Square Footage	11000 sf	Construction Type: 2	Number of Stories: 1
Date of Construction	Original: 2006 last remodel: n/a		
General Condition	☐ Excellent ☒ Good ☐ Fair ☐ Marginal ☐ Poor		
Applicable Fire Code & Edition	2018	Code-compliant	☒ Yes ☐ No
Special Considerations (ADA, etc.)			
Facilities and Building Services			
Security System Type (check all that apply):	☐ Security Fence and Gate ☐ Sallyport ☐ CCTV ☒ Keypad ☐ Key ☐ Other, specify:		
Maximum Staffing Capacity	normal: 12 emergency/disaster: ?		
24-hour Watch office	☐ Yes ☒ No	Emergency Ops Center	☐ Yes ☒ No
Kitchen Facilities	☒ Yes ☐ No	Exercise/Workout Areas	☒ Yes ☐ No
Training/Meeting Rooms	☒ Yes ☐ No	Shower Facilities	☒ Yes ☐ No
Individual Lockers	☒ Yes ☐ No	Equipment Storage	☒ Yes ☐ No
Living Quarters	☒ Yes ☐ No	Apparatus Bays	☒ Yes ☐ No
# of Beds: 8	# of Bedrooms 8	# of Back-in: 2	# of Drive through: 2
Cascade System/Compressor	☒ Yes ☐ No	Helipad	☐ Yes ☒ No
Emergency Power	☒ Yes ☐ No	Automatic Sprinklers	☒ Yes ☐ No
Smoke Detectors and Alarms	☒ Yes ☐ No	Apparatus Exhaust System	☒ Yes ☐ No
Automatic Cooking Shut-off	☐ Yes ☒ No	Seismic Protection	☐ Yes ☒ No
Washer/Dryer for station wear/linen	☒ Yes ☐ No	Washer/Extractor for PPE	☒ Yes ☐ No
Decontamination Area	☐ Yes ☒ No	Biohazard Disposal	☐ Yes ☒ No
Fuel	☐ None ☒ Diesel, gal 500 ☐ MoGas, gal ☐ AvGas, gal ☐ Jet A, gal		
Assigned Apparatus/Vehicles (attach) other sheets if needed)			
Apparatus Type	Call Sign	Minimum Staffing *	Comments
Pumper	P7	3	2018 Precision Fire Apparatus
Reserve BC1	4233	0	2014 Ford F-150 w/Camper Shell
MobileCommand	4512	0	2015 Ford F-450 Econo Bus
Reserve Aerial	3620	0	2005 Sutphen 100' Aerial Platform
<i>*If an apparatus is cross-staffed, enter "CS" after the minimum staffing number</i>			

Project Information Request

Use the table below to rate the condition of each facility.		Facility Name or Station Number:		
5. Very Good	4. Good	3. Fair	2. Poor	1. Critical
As New, No Defects, Performing as intended	Minor defects Performing as intended	Moderate defect Functioning, but worn	Minor or major defect Not functioning as desired	Major defect Not functioning OR Risk to safety and health
Preventive Maintenance	Conditional Repair	Repair	Repair OR Replace	Immediate Repair OR Replace

Item	Score	Item	Score
Site		Interior	
Site Utilities and fire hydrants	4	Security	3
Emergency vehicle access	4	Walls, ceilings, and interior finishes	3
Pedestrian access (ADA and safety)	4	Doors, windows, partitions, and hardware	4
Roadways/driveways and associated signage, markings	3	Floor condition and suitability	4
Parking lots and associated signage, markings	4	Stairs: Interior stairs, handrails, and landings	4
Pedestrian sidewalks and associated signage, markings	4	Technology	3
Fences, walls, and access gates	2	Cabinetry, Furniture	4
Stormwater drainage / storage	3	Multi-purpose training/meeting areas	3
Landscape vegetation and trees	3	Restroom facilities, showers, lockers	4
Irrigation system	2	Kitchen/food service facilities, water fountains	4
Patio systems and furniture	3	Dormitory facilities	4
Loading Dock	0	Living facilities, breakrooms, workout facilities	4
Helipad / Fuel storage and dispensing system	0	Apparatus bays	4
Miscellaneous utility, trash, and storage structures	3	Storage and mechanical rooms	4
Substructure		Utilities	
Foundations: Walls, columns, beams, or pilings	3	Emergency Power ☐ Gas ☒ Diesel, Day tank size 100/500	4
Basement: Materials, insulation, slab, floor underpinnings	3	Electrical service and distribution	4
Loading dock	0	Lighting & branch wiring (interior and exterior)	3
Exterior		Communications and security system	3
Frame: columns, pillars, walls, covered walkways, balconies	4	Gas service and distribution	3
Roof: Condition, gutters, eaves, openings, leakage, ponding	4	Water service, heating, and distribution	3
Exterior condition, finishes, and appearance	4	Sanitary Collection / Septic System / Grease traps	3
Exterior doors, windows, doors, and hardware	4	Mechanical systems	
Fire / Life Safety		Heat Generation and distribution systems	3
Open code violations or deficiencies	4	Cooling generation and distribution systems	3
Applied fireproofing	4	Testing, balancing, controls, and instrumentation	3
Fire doors, fire escapes	4	Chimneys, vents, and exhaust systems	3
Emergency lighting	4	Refrigeration systems, freezers, and ice machines / storage	3
Fire detection and alarm, auto shut-off (cooking)	4	Elevators, escalators, and lifts	0
Automatic sprinklers, standpipes, and fire pumps	4	Cascade system / Breathing Air Compressor	3
Eyewash stations	3	Apparatus Bay Exhaust System	3
Decontamination Area, Biohazard Disposal	0	Washer/Dryer for station wear/linen	3
		Washer/Extractor for PPE	3

TABLE 6B: Supplemental -- Facility Information and Condition Worksheet

Complete facilities and apparatus information using these tables. Use one table for each facility.

Department Name: Independence Fire Department		<i>For office use only</i>	
Facility Name / Station Number: Fire Station # 8			
Address: 21300 E. Truman Rd. Independence, MO 64056			
Latitude: 39.09365			
Longitude: -94.32415			
Primary use (check all that apply) ☐ Administration ☐ Maintenance ☒ Emergency Ops ☐ Special Ops ☐ Training ☐ Communications Center ☐ Other (specify):			
Structure			
Square Footage	4500 sf	Construction Type: 2	Number of Stories: 1
Date of Construction	Original: 1964 last remodel: 2009		
General Condition	☐ Excellent ☐ Good ☒ Fair ☐ Marginal ☐ Poor		
Applicable Fire Code & Edition	2018	Code-compliant	☐ Yes ☒ No
Special Considerations (ADA, etc.)			
Facilities and Building Services			
Security System Type (check all that apply):	☐ Security Fence and Gate ☐ Sallyport ☐ CCTV ☒ Keypad ☐ Key ☐ Other, specify:		
Maximum Staffing Capacity	normal: 4 emergency/disaster: 0		
24-hour Watch office	☐ Yes ☒ No	Emergency Ops Center	☐ Yes ☒ No
Kitchen Facilities	☒ Yes ☐ No	Exercise/Workout Areas	☒ Yes ☐ No
Training/Meeting Rooms	☐ Yes ☒ No	Shower Facilities	☒ Yes ☐ No
Individual Lockers	☒ Yes ☐ No	Equipment Storage	☐ Yes ☒ No
Living Quarters	☒ Yes ☐ No	Apparatus Bays	☒ Yes ☐ No
# of Beds: 4	# of Bedrooms 1 divided	# of Back-in: 2	# of Drive through:
Cascade System/Compressor	☐ Yes ☒ No	Helipad	☐ Yes ☒ No
Emergency Power	☒ Yes ☐ No	Automatic Sprinklers	☐ Yes ☒ No
Smoke Detectors and Alarms	☒ Yes ☐ No	Apparatus Exhaust System	☒ Yes ☐ No
Automatic Cooking Shut-off	☐ Yes ☒ No	Seismic Protection	☐ Yes ☒ No
Washer/Dryer for station wear/linen	☒ Yes ☐ No	Washer/Extractor for PPE	☐ Yes ☒ No
Decontamination Area	☐ Yes ☒ No	Biohazard Disposal	☐ Yes ☒ No
Fuel	☒ None ☐ Diesel, gal ☐ MoGas, gal ☐ AvGas, gal ☐ Jet A, gal		
Assigned Apparatus/Vehicles (attach) other sheets if needed)			
Apparatus Type	Call Sign	Minimum Staffing *	Comments
Pumper	Squad 8	3	2010 Toyne (Replacement due March/April 22)
Reserve Rescue	RR1	0	2008 Rescue Ford F-550

*If an apparatus is cross-staffed, enter "CS" after the minimum staffing number

Project Information Request

Use the table below to rate the condition of each facility.		Facility Name or Station Number:		
5. Very Good	4. Good	3. Fair	2. Poor	1. Critical
As New, No Defects, Performing as intended	Minor defects Performing as intended	Moderate defect Functioning, but worn	Minor or major defect Not functioning as desired	Major defect Not functioning OR Risk to safety and health
Preventive Maintenance	Conditional Repair	Repair	Repair OR Replace	Immediate Repair OR Replace

Item	Score	Item	Score
Site		Interior	
Site Utilities and fire hydrants	2	Security	1
Emergency vehicle access	2	Walls, ceilings, and interior finishes	2
Pedestrian access (ADA and safety)	1	Doors, windows, partitions, and hardware	1
Roadways/driveways and associated signage, markings	1	Floor condition and suitability	2
Parking lots and associated signage, markings	1	Stairs: Interior stairs, handrails, and landings	0
Pedestrian sidewalks and associated signage, markings	1	Technology	2
Fences, walls, and access gates	1	Cabinetry, Furniture	2
Stormwater drainage / storage	1	Multi-purpose training/meeting areas	0
Landscape vegetation and trees	2	Restroom facilities, showers, lockers	1
Irrigation system	0	Kitchen/food service facilities, water fountains	2
Patio systems and furniture	1	Dormitory facilities	2
Loading Dock	0	Living facilities, breakrooms, workout facilities	2
Helipad / Fuel storage and dispensing system	0	Apparatus bays	1
Miscellaneous utility, trash, and storage structures	1	Storage and mechanical rooms	0
Substructure		Utilities	
Foundations: Walls, columns, beams, or pilings	1	Emergency Power ☐ Gas ☒ Diesel, Day tank size 100 gal	3
Basement: Materials, insulation, slab, floor underpinnings	1	Electrical service and distribution	2
Loading dock	0	Lighting & branch wiring (interior and exterior)	2
Exterior		Communications and security system	2
Frame: columns, pillars, walls, covered walkways, balconies	2	Gas service and distribution	2
Roof: Condition, gutters, eaves, openings, leakage, ponding	2	Water service, heating, and distribution	2
Exterior condition, finishes, and appearance	1	Sanitary Collection / Septic System / Grease traps	2
Exterior doors, windows, doors, and hardware	2	Mechanical systems	
Fire / Life Safety		Heat Generation and distribution systems	2
Open code violations or deficiencies	1	Cooling generation and distribution systems	2
Applied fireproofing	2	Testing, balancing, controls, and instrumentation	2
Fire doors, fire escapes	1	Chimneys, vents, and exhaust systems	2
Emergency lighting	2	Refrigeration systems, freezers, and ice machines / storage	2
Fire detection and alarm, auto shut-off (cooking)	1	Elevators, escalators, and lifts	0
Automatic sprinklers, standpipes, and fire pumps	1	Cascade system / Breathing Air Compressor	0
Eyewash stations	0	Apparatus Bay Exhaust System	3
Decontamination Area, Biohazard Disposal	0	Washer/Dryer for station wear/linen	2
		Washer/Extractor for PPE	0

TABLE 6B: Supplemental -- Facility Information and Condition Worksheet

Complete facilities and apparatus information using these tables. Use one table for each facility.

Department Name: Independence Fire Department		<i>For office use only</i>	
Facility Name / Station Number: Fire Station # 9			
Address: 1411 N. M-7 Hwy. Independence, MO 64056			
Latitude: 39.1263833333333			
Longitude: -94.28855			
Primary use (check all that apply) ☐ Administration ☐ Maintenance ☒ Emergency Ops ☐ Special Ops ☐ Training ☐ Communications Center ☐ Other (specify):			
Structure			
Square Footage	3600 sf	Construction Type: 5	Number of Stories: 1
Date of Construction	Original: 1985 last remodel: 2009		
General Condition	☐ Excellent ☐ Good ☒ Fair ☐ Marginal ☐ Poor		
Applicable Fire Code & Edition	2018	Code-compliant	☐ Yes ☒ No
Special Considerations (ADA, etc.)			
Facilities and Building Services			
Security System Type (check all that apply):	☐ Security Fence and Gate ☐ Sallyport ☐ CCTV ☒ Keypad ☐ Key ☐ Other, specify:		
Maximum Staffing Capacity	normal: 4 emergency/disaster: 0		
24-hour Watch office	☐ Yes ☒ No	Emergency Ops Center	☐ Yes ☒ No
Kitchen Facilities	☒ Yes ☐ No	Exercise/Workout Areas	☒ Yes ☐ No
Training/Meeting Rooms	☐ Yes ☒ No	Shower Facilities	☒ Yes ☐ No
Individual Lockers	☒ Yes ☐ No	Equipment Storage	☐ Yes ☒ No
Living Quarters	☒ Yes ☐ No	Apparatus Bays	☒ Yes ☐ No
# of Beds: 4	# of Bedrooms: 3	# of Back-in: 2	# of Drive through:
Cascade System/Compressor	☐ Yes ☒ No	Helipad	☐ Yes ☒ No
Emergency Power	☒ Yes ☐ No	Automatic Sprinklers	☐ Yes ☒ No
Smoke Detectors and Alarms	☒ Yes ☐ No	Apparatus Exhaust System	☒ Yes ☐ No
Automatic Cooking Shut-off	☐ Yes ☒ No	Seismic Protection	☐ Yes ☒ No
Washer/Dryer for station wear/linen	☒ Yes ☐ No	Washer/Extractor for PPE	☐ Yes ☒ No
Decontamination Area	☐ Yes ☒ No	Biohazard Disposal	☐ Yes ☒ No
Fuel	☒ None ☐ Diesel, gal ☐ MoGas, gal ☐ AvGas, gal ☐ Jet A, gal		
Assigned Apparatus/Vehicles (attach) other sheets if needed)			
Apparatus Type	Call Sign	Minimum Staffing *	Comments
Pumper	P9	3	2013 Toyne (1000 gal. water tank)
Brush Rig	BR1	0	2002 Ford F-350 with Skid Unit

*If an apparatus is cross-staffed, enter "CS" after the minimum staffing number

Project Information Request

Use the table below to rate the condition of each facility.		Facility Name or Station Number:		
5. Very Good	4. Good	3. Fair	2. Poor	1. Critical
As New, No Defects, Performing as intended	Minor defects Performing as intended	Moderate defect Functioning, but worn	Minor or major defect Not functioning as desired	Major defect Not functioning OR Risk to safety and health
Preventive Maintenance	Conditional Repair	Repair	Repair OR Replace	Immediate Repair OR Replace

Item	Score	Item	Score
Site		Interior	
Site Utilities and fire hydrants	2	Security	2
Emergency vehicle access	2	Walls, ceilings, and interior finishes	2
Pedestrian access (ADA and safety)	1	Doors, windows, partitions, and hardware	1
Roadways/driveways and associated signage, markings	2	Floor condition and suitability	2
Parking lots and associated signage, markings	1	Stairs: Interior stairs, handrails, and landings	2
Pedestrian sidewalks and associated signage, markings	1	Technology	2
Fences, walls, and access gates	1	Cabinetry, Furniture	2
Stormwater drainage / storage	1	Multi-purpose training/meeting areas	0
Landscape vegetation and trees	2	Restroom facilities, showers, lockers	2
Irrigation system	1	Kitchen/food service facilities, water fountains	3
Patio systems and furniture	0	Dormitory facilities	3
Loading Dock	0	Living facilities, breakrooms, workout facilities	2
Helipad / Fuel storage and dispensing system	0	Apparatus bays	2
Miscellaneous utility, trash, and storage structures	1	Storage and mechanical rooms	0
Substructure		Utilities	
Foundations: Walls, columns, beams, or pilings	2	Emergency Power ☐ Gas ☒ Diesel, Day tank size 100 gal	3
Basement: Materials, insulation, slab, floor underpinnings	2	Electrical service and distribution	2
Loading dock	0	Lighting & branch wiring (interior and exterior)	2
Exterior		Communications and security system	2
Frame: columns, pillars, walls, covered walkways, balconies	2	Gas service and distribution	2
Roof: Condition, gutters, eaves, openings, leakage, ponding	2	Water service, heating, and distribution	2
Exterior condition, finishes, and appearance	2	Sanitary Collection / Septic System / Grease traps	2
Exterior doors, windows, doors, and hardware	1	Mechanical systems	
Fire / Life Safety		Heat Generation and distribution systems	3
Open code violations or deficiencies	2	Cooling generation and distribution systems	3
Applied fireproofing	2	Testing, balancing, controls, and instrumentation	2
Fire doors, fire escapes	2	Chimneys, vents, and exhaust systems	3
Emergency lighting	2	Refrigeration systems, freezers, and ice machines / storage	2
Fire detection and alarm, auto shut-off (cooking)	2	Elevators, escalators, and lifts	0
Automatic sprinklers, standpipes, and fire pumps	0	Cascade system / Breathing Air Compressor	0
Eyewash stations	0	Apparatus Bay Exhaust System	3
Decontamination Area, Biohazard Disposal	0	Washer/Dryer for station wear/linen	3
		Washer/Extractor for PPE	0

TABLE 6B: Supplemental -- Facility Information and Condition Worksheet

Complete facilities and apparatus information using these tables. Use one table for each facility.

Department Name: Independence Fire Department		<i>For office use only</i>	
Facility Name / Station Number: Fire Station # 10			
Address: 3303 RD Miize Independence, MO 64057			
Latitude: 39.0554333333333			
Longitude: -94.31545			
Primary use (check all that apply) ☐ Administration ☐ Maintenance ☒ Emergency Ops ☐ Special Ops ☐ Training ☐ Communications Center ☐ Other (specify):			
Structure			
Square Footage	3600 sf	Construction Type: 5	Number of Stories: 1
Date of Construction	Original:1986 last remodel: 2009		
General Condition	☐ Excellent ☐ Good ☒ Fair ☐ Marginal ☐ Poor		
Applicable Fire Code & Edition	2018	Code-compliant	☐ Yes ☒ No
Special Considerations (ADA, etc.)			
Facilities and Building Services			
Security System Type (check all that apply):	☐ Security Fence and Gate ☐ Sallyport ☐ CCTV ☒ Keypad ☐ Key ☐ Other, specify:		
Maximum Staffing Capacity	normal: 4 emergency/disaster: 0		
24-hour Watch office	☐ Yes ☒ No	Emergency Ops Center	☐ Yes ☒ No
Kitchen Facilities	☒ Yes ☐ No	Exercise/Workout Areas	☒ Yes ☐ No
Training/Meeting Rooms	☐ Yes ☐ No	Shower Facilities	☒ Yes ☐ No
Individual Lockers	☒ Yes ☐ No	Equipment Storage	☐ Yes ☒ No
Living Quarters	☒ Yes ☐ No	Apparatus Bays	☒ Yes ☐ No
# of Beds: 4	# of Bedrooms: 4	# of Back-in: 2	# of Drive through:
Cascade System/Compressor	☐ Yes ☒ No	Helipad	☐ Yes ☒ No
Emergency Power	☒ Yes ☐ No	Automatic Sprinklers	☐ Yes ☒ No
Smoke Detectors and Alarms	☒ Yes ☐ No	Apparatus Exhaust System	☒ Yes ☐ No
Automatic Cooking Shut-off	☐ Yes ☒ No	Seismic Protection	☐ Yes ☒ No
Washer/Dryer for station wear/linen	☒ Yes ☐ No	Washer/Extractor for PPE	☒ Yes ☐ No
Decontamination Area	☐ Yes ☒ No	Biohazard Disposal	☐ Yes ☒ No
Fuel	☒ None ☐ Diesel, gal ☐ MoGas, gal ☐ AvGas, gal ☐ Jet A, gal		
Assigned Apparatus/Vehicles (attach) other sheets if needed)			
Apparatus Type	Call Sign	Minimum Staffing *	Comments
Pumper	P10	3	2016 Precision Fire Apparatus Remount
Rescue Trailer	N/A	0	Out dated, Out of service equipment

*If an apparatus is cross-staffed, enter "CS" after the minimum staffing number

Project Information Request

Use the table below to rate the condition of each facility.		Facility Name or Station Number:		
5. Very Good	4. Good	3. Fair	2. Poor	1. Critical
As New, No Defects, Performing as intended	Minor defects Performing as intended	Moderate defect Functioning, but worn	Minor or major defect Not functioning as desired	Major defect Not functioning OR Risk to safety and health
Preventive Maintenance	Conditional Repair	Repair	Repair OR Replace	Immediate Repair OR Replace

Item	Score	Item	Score
Site		Interior	
Site Utilities and fire hydrants	2	Security	2
Emergency vehicle access	2	Walls, ceilings, and interior finishes	2
Pedestrian access (ADA and safety)	2	Doors, windows, partitions, and hardware	2
Roadways/driveways and associated signage, markings	2	Floor condition and suitability	2
Parking lots and associated signage, markings	2	Stairs: Interior stairs, handrails, and landings	2
Pedestrian sidewalks and associated signage, markings	2	Technology	2
Fences, walls, and access gates	1	Cabinetry, Furniture	2
Stormwater drainage / storage	2	Multi-purpose training/meeting areas	0
Landscape vegetation and trees	2	Restroom facilities, showers, lockers	1
Irrigation system	0	Kitchen/food service facilities, water fountains	2
Patio systems and furniture	0	Dormitory facilities	2
Loading Dock	0	Living facilities, breakrooms, workout facilities	2
Helipad / Fuel storage and dispensing system	0	Apparatus bays	2
Miscellaneous utility, trash, and storage structures	2	Storage and mechanical rooms	1
Substructure		Utilities	
Foundations: Walls, columns, beams, or pilings	1	Emergency Power ☐ Gas ☒ Diesel, Day tank size 100 gal	3
Basement: Materials, insulation, slab, floor underpinnings	1	Electrical service and distribution	3
Loading dock	0	Lighting & branch wiring (interior and exterior)	3
Exterior		Communications and security system	2
Frame: columns, pillars, walls, covered walkways, balconies	1	Gas service and distribution	3
Roof: Condition, gutters, eaves, openings, leakage, ponding	2	Water service, heating, and distribution	3
Exterior condition, finishes, and appearance	2	Sanitary Collection / Septic System / Grease traps	1
Exterior doors, windows, doors, and hardware	2	Mechanical systems	
Fire / Life Safety		Heat Generation and distribution systems	2
Open code violations or deficiencies	2	Cooling generation and distribution systems	2
Applied fireproofing	2	Testing, balancing, controls, and instrumentation	2
Fire doors, fire escapes	2	Chimneys, vents, and exhaust systems	2
Emergency lighting	2	Refrigeration systems, freezers, and ice machines / storage	2
Fire detection and alarm, auto shut-off (cooking)	2	Elevators, escalators, and lifts	0
Automatic sprinklers, standpipes, and fire pumps	0	Cascade system / Breathing Air Compressor	0
Eyewash stations	0	Apparatus Bay Exhaust System	3
Decontamination Area, Biohazard Disposal	0	Washer/Dryer for station wear/linen	2
		Washer/Extractor for PPE	3

TABLE 6B: Supplemental -- Facility Information and Condition Worksheet

Complete facilities and apparatus information using these tables. Use one table for each facility.

Department Name: Independence Fire Department		<i>For office use only</i>	
Facility Name / Station Number: Fire Training Facility			
Address: 21011 E. M-78 Hwy. Independence, MO			
Latitude: 39.083890			
Longitude: -94.330213			
Primary use (check all that apply) ☐ Administration ☐ Maintenance ☐ Emergency Ops ☐ Special Ops ☒ Training ☐ Communications Center ☐ Other (specify):			
Structure			
Square Footage	5000+ sf	Construction Type: 1	Number of Stories: 5
Date of Construction	Original: 2009 last remodel: Upgraded 2018 & 21		
General Condition	☐ Excellent ☒ Good ☐ Fair ☐ Marginal ☐ Poor		
Applicable Fire Code & Edition	2018	Code-compliant	☒ Yes ☐ No
Special Considerations (ADA, etc.)			
Facilities and Building Services			
Security System Type ☒ Security Fence and Gate ☐ Sallyport ☐ CCTV ☐ Keypad ☐ Key (check all that apply): ☐ Other, specify:			
Maximum Staffing Capacity		normal:	emergency/disaster:
24-hour Watch office	☐ Yes ☒ No	Emergency Ops Center	☐ Yes ☒ No
Kitchen Facilities	☐ Yes ☒ No	Exercise/Workout Areas	☐ Yes ☒ No
Training/Meeting Rooms	☐ Yes ☒ No	Shower Facilities	☐ Yes ☒ No
Individual Lockers	☐ Yes ☒ No	Equipment Storage	☐ Yes ☒ No
Living Quarters	☐ Yes ☒ No	Apparatus Bays	☐ Yes ☒ No
# of Beds	# of Bedrooms	# of Back-in:	# of Drive through:
Cascade System/Compressor	☐ Yes ☒ No	Helipad	☐ Yes ☒ No
Emergency Power	☐ Yes ☒ No	Automatic Sprinklers	☐ Yes ☒ No
Smoke Detectors and Alarms	☐ Yes ☒ No	Apparatus Exhaust System	☐ Yes ☒ No
Automatic Cooking Shut-off	☐ Yes ☒ No	Seismic Protection	☐ Yes ☒ No
Washer/Dryer for station wear/linen	☐ Yes ☒ No	Washer/Extractor for PPE	☐ Yes ☒ No
Decontamination Area	☐ Yes ☒ No	Biohazard Disposal	☐ Yes ☒ No
Fuel	☒ None ☐ Diesel, gal ☐ MoGas, gal ☐ AvGas, gal ☐ Jet A, gal		
Assigned Apparatus/Vehicles (attach) other sheets if needed)			
Apparatus Type	Call Sign	Minimum Staffing *	Comments

*If an apparatus is cross-staffed, enter "CS" after the minimum staffing number

Project Information Request

Use the table below to rate the condition of each facility.		Facility Name or Station Number:		
5. Very Good	4. Good	3. Fair	2. Poor	1. Critical
As New, No Defects, Performing as intended	Minor defects Performing as intended	Moderate defect Functioning, but worn	Minor or major defect Not functioning as desired	Major defect Not functioning OR Risk to safety and health
Preventive Maintenance	Conditional Repair	Repair	Repair OR Replace	Immediate Repair OR Replace

Item	Score	Item	Score
Site		Interior	
Site Utilities and fire hydrants	3	Security	2
Emergency vehicle access	4	Walls, ceilings, and interior finishes	4
Pedestrian access (ADA and safety)	0	Doors, windows, partitions, and hardware	4
Roadways/driveways and associated signage, markings	4	Floor condition and suitability	4
Parking lots and associated signage, markings	1	Stairs: Interior stairs, handrails, and landings	4
Pedestrian sidewalks and associated signage, markings	0	Technology	4
Fences, walls, and access gates	4	Cabinetry, Furniture	0
Stormwater drainage / storage	3	Multi-purpose training/meeting areas	0*
Landscape vegetation and trees	3	Restroom facilities, showers, lockers	0*
Irrigation system	0	Kitchen/food service facilities, water fountains	0
Patio systems and furniture	0	Dormitory facilities	0
Loading Dock	0	Living facilities, breakrooms, workout facilities	0
Helipad / Fuel storage and dispensing system	0	Apparatus bays	0
Miscellaneous utility, trash, and storage structures	0	Storage and mechanical rooms	0
Substructure		Utilities	
Foundations: Walls, columns, beams, or pilings	4	Emergency Power ☐ Gas ☐ Diesel, Day tank size _____	0
Basement: Materials, insulation, slab, floor underpinnings	4	Electrical service and distribution	4
Loading dock	0	Lighting & branch wiring (interior and exterior)	4 ext
Exterior		Communications and security system	0
Frame: columns, pillars, walls, covered walkways, balconies	4	Gas service and distribution	4
Roof: Condition, gutters, eaves, openings, leakage, ponding	3	Water service, heating, and distribution	0
Exterior condition, finishes, and appearance	4	Sanitary Collection / Septic System / Grease traps	0
Exterior doors, windows, doors, and hardware	4	Mechanical systems	
Fire / Life Safety		Heat Generation and distribution systems	0
Open code violations or deficiencies	4	Cooling generation and distribution systems	0
Applied fireproofing	4	Testing, balancing, controls, and instrumentation	0
Fire doors, fire escapes	4	Chimneys, vents, and exhaust systems	0
Emergency lighting	0	Refrigeration systems, freezers, and ice machines / storage	0
Fire detection and alarm, auto shut-off (cooking)	0	Elevators, escalators, and lifts	0
Automatic sprinklers, standpipes, and fire pumps	0	Cascade system / Breathing Air Compressor	0
Eyewash stations	0	Apparatus Bay Exhaust System	0
Decontamination Area, Biohazard Disposal	0	Washer/Dryer for station wear/linen	0
		Washer/Extractor for PPE	0