Marion County Fire Rescue

Florida

Long Range Master Plan

Community Risk Assessment: Standards of Cover

We proudly protect life and property with honor, compassion, and respect.

This page intentionally left blank.

Acknowledgments v
Methodology and Guiding Standards vi
Executive Summary 10
Situation 10
Complication 10
Resolution 11
Recommendations & Roadmap 11
Risks if Deferred 12
Conclusion 12

DESCRIPTION OF COMMUNITY SERVED 13

Community Overview 14
Marion County, Florida 14
City of Ocala, Florida 15
Jurisdiction Demographics 16

REVIEW OF SERVICES PROVIDED 20

Organizational Overview 21
The History of the Marion County Fire Rescue 21
Organizational Structure 23
Management Components 28
Mission, Vision, Goals, and Objectives 28
Internal and External Communication Processes 29
Planning For Fire Protection Services 31
The Current Planning Process 31
Staffing 41
Historical Staffing Perspective 41
Administrative and Support Staffing Analysis 44
Emergency Response Staffing 50
Emergency Medical Services 63
EMS Service Delivery and Logistical Support Services 63
Current Medical Control and Oversight 64
Quality Assurance/ Quality Improvement Mechanisms 65
EMS System Integrity and Required Credentialing 65
Personnel Management 67
Regulatory, Policy, and Guidance Documents 67
Job Descriptions 67
Compensation 68
Disciplinary Process 69
Application, Recruitment, and Retention Process 70
Performance Reviews, Testing, Measurement, and Promotion Process 71
Health and Safety 72
Reporting and Recordkeeping 73

Document Control and Security....74
Financial Analysis....75
Background and Historical Review....75
Historical Revenue and Expense....76
Current Facilities & Apparatus....102
Fire Stations & Other Facilities....102
Fire Station Apparatus/Vehicles....108
Support Programs....111
Training....111
Fire and Life Safety Services....118
Special Operations Response Teams....125
Hazardous Materials Response Capabilities....125
Technical Rescue Response Capabilities....128
SWAT Medic Response Capabilities....131
Helicopter Rescue Response Capabilities....133
Disaster Response Capabilities/USAR Task Force 8....135
REVIEW OF HISTORICAL SYSTEM PERFORMANCE....138
Service Delivery & Performance....139
Service Demand Analysis....139
Resource Distribution....147
Resource Concentration....154
Resource Reliability Study....156
Response Performance....161
Overview of Compliance Methodology....170
Compliance Model....170
FUTURE SYSTEM DEMAND FORECASTS....173
Population Growth Projections....174
Population Growth Projection Analysis....174
Service Demand Projections....180
Service Demand Projection Analysis....180
OVERVIEW OF COMMUNITY RISK ASSESSMENT....185
Community Risk Assessment....186
Risk Assessment Methodology....187
Characterizing Risk....188
Hazard Classification....191
At-Risk Populations....215
Risk by Land Use Designation....217
Hazardous Substances and Processes....225
STANDARD OF COVER PERFORMANCE OBJECTIVES AND MEASURES 226
Measuring System Effectiveness....227

People **228**
Critical Tasks, Risk, and Staffing Performance 228
Tools **233**
Apparatus Serviceability 233
Apparatus Replacement Planning 234
Fire Station Locations and Impacts of Modifications 235
Capital Improvement Planning 241
Time **242**
Dynamics of Fire in Buildings 242
Emergency Medical Event Sequence 245
Response Standards, Goals, and Targets **247**

FUTURE SYSTEM RECOMMENDATIONS AND IMPROVEMENTS 250

Recommendations & Improvement Goals **251**
Short-Term Recommendations 251
Mid-Term Improvement Goals 255
Long-Term Improvement Goals 268
Cost Projections for Improvement Goals **292**
Financial Basis for Decision Unit Cost Projections 292

CONCLUSION 295

Conclusion **296**
Appendix A: Table of Figures **297**
Appendix B: Decision Unit Cost- Personnel **302**
Appendix C: Decision Unit Cost- Apparatus **303**
Appendix D: Decision Unit Cost- Fire Stations **306**
Appendix E: Critical Tasking and Alarm Assignment Summary **307**
Appendix F: Alarm Assignments **311**

ACKNOWLEDGMENTS

Marion County Fire Rescue (MCFR) would like to acknowledge the dedication, helpfulness, and seriousness with which this study was undertaken. Without the assistance and support of the Marion County Commission, the Fire Chief, and the personnel of Marion County Fire Rescue (MCFR), this project could not have been successfully completed.

The Marion County Board of County Commissioners

Kathy Bryant

Carl Zalak

Michelle Stone

Craig Curry

Matthew McClain

County Administrator

Mounir Bouyounes

Fire Chief

James Banta

The MCFR Project Team

Chief Chad Belger	*Chief Brad Olmsted*	*Chief Jimmy Davis*	*Chief Joe Rinaudo*
PIO James Lucas	*Fire Marshal Ken McCann*	*Cassandra Li*	*GIS James Lenkowski*
Deputy Chief Robert Kruger	*Deputy Chief Drew Rogers*		*Deputy Chief Robert Graff*

The men and women of the Marion County Fire Rescue, who sacrifice daily to tirelessly serve their community.

METHODOLOGY AND GUIDING STANDARDS

In January of 2025, Marion County Fire Rescue (MCFR) began the process to conduct a Long-Range Master Plan with a Community Risk Assessment/Standards of Cover (Master Plan with CRA/SOC) component. This Master Plan, including the Community Risk Assessment and Standards of Cover components, provides a high-level assessment of future needs and strategic direction. It helps MCFR evaluate current service delivery, identify community risks, anticipate future growth, and develop response strategies aligned with national standards and local conditions.

Project Initiation & Development of the Work Plan

In the initial phase of the Marion County Long-Range Master Plan with Community Risk Assessment/Standards of Cover process staff developed a project work plan based on the approved scope of work. Staff conversed with the Marion County Fire Rescue's project team to gain a comprehensive understanding of the organization's background, goals, and expectations for this project. The work plan included identifying the primary tasks to be performed, the method for evaluating the results, and possible obstacles that may arise during the project.

Acquisition & Review of Background Information

Marion County Fire Rescue's project team collected data that included information about the fire department service area, National Fire Incident Reporting System (NFIRS) data, automatic and mutual aid agreements, geographic planning zones and station/apparatus locations, staffing plans, financial data, relevant community comprehensive plans, land use studies, climate action plans, and the hazard mitigation plan. Further consideration was given to ISO reports and previous studies. Marion County Fire Rescue's project team used the collected data in the analysis and development of the Long-Range Master Plan with Community Risk Assessment/Standards of Cover.

Key Concepts & National Trends

This report includes best practices based on nationally recognized guidelines and criteria, including concepts from the National Fire Protection Association (NFPA), the Insurance Services Office (ISO), the Center for Public Safety Excellence (CPSE), laws and regulations of the State of Florida, and other generally accepted practices for emergency services. The project team referenced and aligned the content and structure of this report with the CPSE Community Risk Assessment: Standards of Cover (10th Edition) and other NFPA and industry benchmarks, including:

- Community Risk Assessment: Standards of Cover, 10th Edition, Quality Improvement for Fire and Emergency Services, Center for Public Safety Excellence, Chantilly, VA, 2021.
- NFPA 470: Hazardous Materials/Weapons of Mass Destruction (WMD) Standard for Responders
- NFPA 921, Guide for Fire and Explosion Investigations
- NFPA 1006: Standard for Technical Rescuer Professional Qualifications
- NFPA 1021, Standard for Fire Officer Professional Qualifications

- NFPA 1061, Standard for Public Safety Telecommunications Personnel Professional Standards Qualifications
- NFPA 1201, Standard for Providing Fire and Emergency Services to the Public
- NFPA 1225, Standard for Emergency Services Communications
- NFPA 1300, Standard on Community Risk Assessment and Community Risk Reduction Plan Development
- NFPA 1321, Standard for Fire Investigation Units
- NFPA 1402, Standard on Facilities for Fire Training and Associated Props
- NFPA 1403, Standard on Live Fire Training Evolutions
- NFPA 1500, Standard on Fire Department Occupational Safety, Health, and Wellness Programs
- NFPA 1521, Standard for Fire Department Safety Officer Professional Qualifications
- NFPA 1561, Standard on Emergency Services Incident Management System and Command Safety
- NFPA 1581, Standard on Fire Department Infection Control Program
- NFPA 1582, Standard on Comprehensive Occupational Medical Program for Fire Departments
- NFPA 1583, Standard on Health-Related Fitness Programs for Fire Department Members
- NFPA 1660, Standard for Emergency, Continuity, and Crisis Management: Preparedness, Response, and Recovery
- NFPA 1620, Standard for Pre-Incident Planning
- NFPA 1670: Standard on Operations and Training for Technical Search and Rescue Incidents
- NFPA 1710, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments.
- NFPA 1720, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments.
- NFPA 1851, Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting
- NFPA 1901, Standard for Automotive Apparatus
- NFPA 1911, Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles
- NFPA 1912, Standard for Fire Apparatus Refurbishing

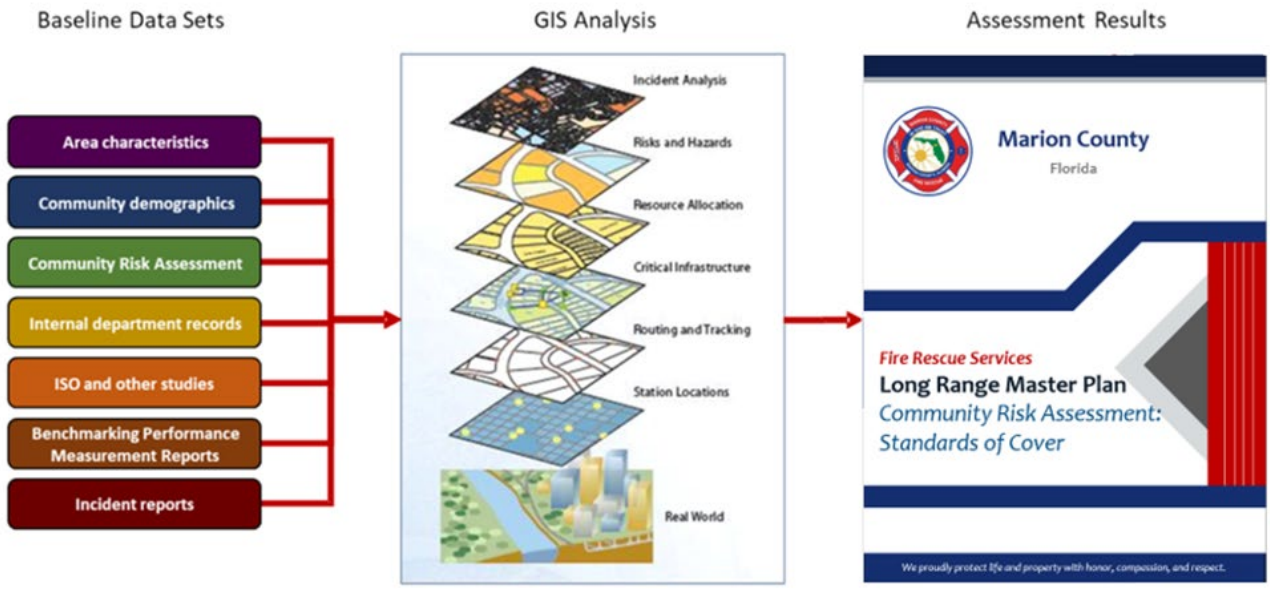
Baseline Assessment & GIS Technology

From the information provided by MCFR, the project team established a baseline assessment of current community risks and service delivery needs centered around the specialized and technical services provided by Marion County Fire Rescue. The purpose of this assessment was to identify risks, hazards, vulnerabilities, and threats in comparison to industry standards and best practices to determine current and future emergency service delivery needs.

The Marion County Fire Rescue project team also collected information, reviewed population, and other community growth patterns, and then analyzed trends and expectations. This was done to provide a glimpse into future community conditions, land use, and fire protection risks, interpreting their potential impact on emergency service planning and delivery.

The project team then used Geographic Information Systems (GIS) technology and analysis tools to visualize the data and provide additional information for the Department. The following figure illustrates the conceptual GIS methodology as applied to this assessment.

Figure 1: GIS Methodology



Performance Analysis and Development of Recommended Strategies

From the time the first fire station is built, there is an expectation that the facility can and will provide a timely response to calls for service within a given area surrounding that facility. When the original criterion was set for response time from that facility, there was an immediate location – allocation created by that fire station. The fire station provides a response to a given area within a reasonable time in a pattern that essentially is an overlay on the streets and highways that radiate outward from that location. Even before any incidents occur in a community, the geographic road-network and topographical attributes of a community create a dynamic segmentation that results in the ability of fire professionals to reasonably predict what areas can be, and those that will not be, adequately covered.

Over time the area of coverage changes and evolves based on community growth. The concept of using actual travel time today is based upon a more accurate representation of the level of service for an all-hazards approach. It is more performance-based. Today, most fire agencies set a time standard that includes three elements, two of which were missing from the strict use of mileage from a fire station – specifically, alarm processing time and turnout time. Actual road travel time has often been used in combination with the other two-time increment components to set the community's expectation of performance.

Using this approach, fire stations are seldom located in a linear fashion. This concept is based on the time intervals identified in the Standards of Response Coverage section of the Self-Assessment Manual published by the Commission on Fire Accreditation International. This process leads to the development of a standard of response coverage, or a time and level of staffing decision designed to control an emergency with a minimum level of loss. The process is, however, a policy choice based on risk and local conditions.

The basic performance standards with time goals are based on the rapid speed of fire growth and consequences of emergency medical situations over a short time frame. It has been determined that both fires and medical emergencies can gain a foothold resulting in higher losses when the times are excessive.

Based on this concept Marion County Fire Rescue performance was evaluated and recommendations for improvement offered.

EXECUTIVE SUMMARY

Marion County Fire Rescue (MCFR) developed this Master Plan to provide a long-range framework for the delivery of fire and emergency medical services within the County. The comprehensive report that follows evaluates current conditions within MCFR and projects future growth, development, and service demand, while also providing recommendations to enhance the effectiveness and efficiency of current services and to ensure an equal or improved level of service over the next 5–10 years.

This document describes Marion County Fire Rescue's Master Plan. The current conditions of key components—including management, staffing, capital assets, facilities, fire protection, emergency medical services, community risks, response resources, deployment strategies, and service levels—have been evaluated in this study. Recommendations are provided to strengthen the effectiveness of these components and align future services with anticipated demand.

Situation

Marion County Fire Rescue (MCFR) is one of Florida's largest combination fire and EMS agencies, serving a population of more than 400,000 residents across 1,663 square miles. The department operates 28 fire stations and employs over 800 full-time personnel. Recent years have been marked by rapid population growth, increasing service demand, and significant operational pressures. MCFR has made notable strides with a comprehensive apparatus replacement plan, expansion of training initiatives, and strategic use of funding streams such as ad valorem property taxes, fire assessments, impact fees, and the one-cent sales surtax. The department's current ISO Public Protection Classification (PPC) of Class 2/2Y demonstrates a strong commitment to service delivery, community risk reduction, and operational effectiveness.

Complication

Despite these successes, MCFR faces critical challenges that threaten to strain its capacity. Call volumes and EMS demand continue to grow, while staffing levels, recruitment timelines, and relief factor requirements limit operational flexibility. Administrative capacity is lean compared to peer metro agencies, placing pressure on HR, finance, and logistics. Training facilities remain outdated, constraining firefighter readiness and compliance with NFPA 1402/1403 standards. Facility assessments identified aging fire stations with health, safety, and functional deficiencies that impact firefighter well-being and operational efficiency. Ladder truck coverage is insufficient in several high-growth zones, leaving portions of the county outside NFPA 1710 benchmarks. Alarm handling times at the Public Safety Communications center exceed national standards, contributing to response delays. Together, these gaps create risks in service equity, firefighter health and safety, and long-term sustainability.

Resolution

This Master Plan provides a roadmap for addressing these challenges through a phased and prioritized set of recommendations. These include expanding ladder truck deployment at Stations 10, 17, and 24; systematically adding rescue units to meet EMS demand; modernizing training through development of a new 13-acre training facility co-located with the Baldwin Ranches Fire Station; and implementing staffing strategies to align with relief factor calculations, succession planning, and evolving state legislation on firefighter work hours. Facility replacement and renovation needs are prioritized based on condition assessments, while continued execution of the apparatus replacement schedule ensures fleet reliability. The plan also emphasizes strengthening administrative and planning capacity, improving communications center performance, and aligning MCFR with NFPA 1710 effective response force criteria.

Metric Table

- FY25 Budget / Cost per Capita: $130M / approx. $325 per capita
- Staffing Profile: 811 FTEs (646 operations; 165 support including PSC and EMS billing)
- Workload/Service Focus: High EMS demand; growth in multi-story residential and commercial occupancies; increasing training compliance needs
- Peer Context: Comparable metro agencies allocate 10–13% of staff to administrative support; MCFR allocates ~7.6% (excluding PSC and EMS billing)

Headline Findings

- Rapid workload growth driven by population expansion and EMS demand
- Staffing volatility with high turnover, vacancies, and overtime reliance
- Gaps in aerial ladder coverage and effective response force assembly
- Outdated training facilities and limited live fire training capacity
- Facility deficiencies impacting firefighter health, safety, and efficiency
- Lean administrative structure relative to peer agencies
- Alarm handling times above NFPA standards, affecting response benchmarks
- Funding reliant on multiple streams that must be strategically aligned

Recommendations & Roadmap

Short-Term (1-3 years):

- Establish a new rescue unit annually to match EMS demand growth
- Add ladder companies at Stations 10, 17, and 24
- Implement staffing strategies for relief factor compliance and succession planning
- Strengthening PSC processes to improve alarm handling times
- Continue apparatus replacement on adopted lifecycle schedule

Mid-Term (3-5 years):

- Begin phased renovation or replacement of aging stations based on condition and risk profile
- Construct the new MCFR training facility and Baldwin Ranches Fire Station
- Enhance administrative and planning capacity to align with peer agency benchmarks
- Formalize integration of performance dashboards for staffing, training, and response times

Long-Term (5-10 years):

- Complete additional fire station construction per optimization analysis
- Expand funding models to ensure sustainability of staffing, facilities, and fleet
- Fully align with NFPA 1710 effective response force standards
- Strengthen community risk reduction and fire prevention staffing

Measures of Success (Quarterly Dashboard)

- Reduction in vacancies, turnover, and overtime reliance
- Improvement in alarm handling and turnout times toward NFPA standards
- Increase in training hours and compliance with NFPA 1402/1403
- Improved ISO PPC scoring through facility, staffing, and fleet investments
- Expansion of ladder and rescue unit coverage in growth corridors

Risks if Deferred

- Increased response times and gaps in NFPA 1710 compliance
- Greater firefighter health and safety risks from outdated stations and training gaps
- Rising overtime costs and turnover strain on workforce stability
- Loss of ISO credit and higher insurance premiums for the community
- Reduced community confidence in MCFR's ability to meet service demand

Conclusion

This Master Plan positions Marion County Fire Rescue to meet the challenges of rapid growth, evolving hazards, and increasing community expectations. By investing strategically in staffing, facilities, apparatus, training, and administrative capacity, MCFR can maintain its strong foundation while enhancing resilience, efficiency, and operational performance. The recommendations are grounded in national best practices, NFPA standards, ISO criteria, and locally identified needs, ensuring that the department continues to protect life and property with honor, compassion, and respect.

DESCRIPTION OF COMMUNITY SERVED

COMMUNITY OVERVIEW

An assessment of the Marion County Fire Rescue's existing composition and service delivery was conducted by the MCFR Project team. This evaluation is based on data provided by the agency and collected during subsequent fieldwork. Where applicable, the information is compared to a combination of applicable state laws and regulations, National Fire Protection Association (NFPA) standards, Commission on Fire Accreditation International (CFAI) self-assessment criteria, the Center for Public Safety Excellence (CPSE), health and safety requirements, federal and state mandates relative to emergency services, and generally accepted best practices within the emergency services community, as well as the experience of the MCFR Project team.

The following section provides a general overview of Marion County, the City of Ocala, and Marion County Fire Rescue (MCFR).

Marion County, Florida

Marion County, Florida, is a rural county located in north-central Florida. The county covers an area of approximately 1,663 square miles, or roughly 1.06 million acres. Due to its location in the southeastern United States, Marion County has a humid subtropical climate with hot summers and mild winters. Florida ranks among the warmest states in the U.S., with an annual average temperature of approximately 70°F. The warmest months are typically June through September, with average high temperatures reaching the low to mid-90s°F. The highest recorded temperature in Marion County was 103° on June 22, 1998, in Ocala. Winters are mild, with average lows in the 40s° and occasional cold snaps. The county's elevation varies, with its lowest point near sea level and its highest natural elevation at approximately 205 feet above sea level near the western portion of the county.

Marion County, Florida, incorporates the City of Ocala and several unincorporated communities. The county is bordered to the west by Levy and Citrus Counties, to the north by Alachua and Putnam Counties, to the east by Volusia and Lake Counties, and to the south by Sumter County.

Historical and Economic Development

Marion County, Florida, was established on March 14, 1844, from portions of Alachua, Hillsborough, and Mosquito (now Orange) counties. The county is named after General Francis Marion, a hero of the American Revolutionary War known as the 'Swamp Fox.' Covering approximately 1,663 square miles, it is one of the largest counties in Florida by land area. The county seat is the City of Ocala, which serves as the economic and cultural hub of the region. Early development in Marion County was rooted in agriculture and ranching, with the arrival of the railroad in the late 19th century spurring growth in citrus production and commerce.

After a series of freezes in the late 1800s damaged the citrus industry, the county shifted its focus to equine breeding and training, becoming known as the 'Horse Capital of the World.' Today, Marion County is home to over 600 horse farms and 200 breeding and training facilities, including the World Equestrian Center, the largest equestrian complex in the United States. The equine industry has produced several Kentucky Derby and Triple Crown winners, contributing significantly to the local economy.

Marion County's economy is supported by healthcare, agriculture, manufacturing, and tourism. Major healthcare providers include AdventHealth Ocala, HCA Florida Ocala Hospital, and the Veterans Administration Medical Center. Agriculture remains a cornerstone of the local economy, with cattle farming, hay production, peanuts, and various produce contributing to the county's agricultural output. The manufacturing and logistics sectors benefit from the county's location along Interstate 75, with major employers such as Lockheed Martin and Signature Brands operating in the area. Tourism also plays a significant role, with Silver Springs State Park, Ocala National Forest, and the Rainbow River drawing outdoor enthusiasts for hiking, camping, kayaking, and wildlife observation. The Appleton Museum of Art, Don Garlits Museum of Drag Racing, and the historic downtown district of Ocala provide cultural and recreational opportunities for residents and visitors.

Transportation and Infrastructure

Marion County's transportation infrastructure includes Interstate 75, US-301, and US-441, with Amtrak service available nearby and Ocala International Airport supporting general aviation. Driving to work alone in a private vehicle is the most common commuting option and is used by 80% of the workforce. Just over 10% of the workforce carpooled. Regardless of transportation methods, most of the self-reported commute times in the county are greater than 15 minutes. Transportation in the city is roughly 20 minutes or less for more than half the commuters.

City of Ocala, Florida

The City of Ocala, Florida, located in Marion County, serves as the county seat and is known for its rich history, equestrian culture, and natural beauty. Founded in 1846, Ocala's name is derived from the Timucua word Ocali, meaning "Big Hammock." Its historical roots trace back to early Native American settlements and the establishment of Fort King in 1827 during the Second Seminole War. Over time, Ocala transitioned from an agricultural and citrus hub to a center for the equine industry, earning the title of "Horse Capital of the World" due to its large number of thoroughbred horse farms. The area has produced several Kentucky Derby winners and is home to the World Equestrian Center, one of the premier equine facilities in the world.

Economic Profile

Ocala's economy is supported by the equine industry, healthcare, manufacturing, logistics, and tourism[1]. Major employers include AdventHealth Ocala and HCA Florida Ocala Hospital. Its strategic location along Interstate 75 makes it a prime spot for logistics and distribution centers. Tourism also plays a significant role, with Silver Springs State Park, known for its glass-bottom boat tours, and the Ocala Historic District, which features well-preserved Victorian-era architecture and a vibrant downtown square with dining and shopping. The Appleton Museum of Art and Ocala National Forest further contribute to the city's cultural and recreational appeal.

Demographics

Ocala's population is approximately 65,000, with a median household income of around $47,000 and a median age of 39 years[2]. The city's racial composition is about 63% White, 22% African American, 12% Hispanic or Latino, and 3% other[3].

Transportation and Infrastructure

Transportation infrastructure includes Interstate 75, US-301, and US-441, with Amtrak service available nearby and general aviation supported by Ocala International Airport. SunTran provides a public bus service within the city.

Jurisdiction Demographics

Demographics is the statistical study of human populations and characteristics. Demographic data can include information on population size, density, growth, and organizational groupings such as race, gender, or age. Institutions like the U.S. Census Bureau conduct surveys to gather information about the nation's citizens on a regular basis. The population of the United States tends to be ethnically diverse due to the country's history of immigration, making it a cultural melting pot.

In the 2020 U.S. Census, the permanent population of Marion County was 375,908[4]. According to the Environmental Systems Research Institute (Esri), the current estimated population of the county has grown to approximately 400,000[5] residents.

Marion County contains both urban and rural areas. The U.S. Census Bureau classifies portions of Marion County, particularly the City of Ocala, as urban, while other areas, including Dunnellon, Belleview, and unincorporated communities, are considered rural. The Census Bureau's urban-rural classification delineates geographical areas based on population density, residential, commercial, and non-residential urban land uses.

[1] *Ocala Metro Chamber and Economic Partnership (CEP), 2023 Regional Report.*
[2] *U.S. Census Bureau, ACS 2022 5-Year Estimates.*
[3] *U.S. Census Bureau, ACS 2022 5-Year Estimates.*
[4] *U.S. Census Bureau, 2020 Decennial Census*
[5] *Esri Community Analyst, 2024 Estimates.*

The Census Bureau defines urban areas as densely developed territories, while rural areas include all population, housing, and territory not classified as urban. Marion County has a mixed urban-rural designation, which is important when applying specific National Fire Protection Association (NFPA) consensus standards to Marion County Fire Rescue (MCFR) operations for demand zones.

The following figure breaks down the five demand zones depicted by NFPA for population per square mile.

Figure 2: NFPA Population Breakdown

Demand Zone	Demographics/Population
Urban Area	>1000 People/Square Mile
Suburban Area	500-1000 People/Square Mile
Rural Area	<500 People/Square Mile
Remote Area	Travel Distance > 8 Miles from a Fire Station
Special Risks	Determined by the Authority Having Jurisdiction

A jurisdiction can have multiple demand zones outlined at one time, and each demand zone can have a respective response criterion established. For instance, most of Marion County is considered rural or suburban, while the City of Ocala meets the urban area designation due to its higher population density of approximately 1,500 people per square mile within city limits.

It is important to note that Marion County Fire Rescue (MCFR) services a rural and suburban demand zone in much of the county but has concentrated urban populations in Ocala and portions of Belleview. These classifications impact fire response times, station placement, and resource allocation, ensuring appropriate emergency services are provided throughout the jurisdiction.

Education, Workforce, and Business

Approximately 89.9% of residents aged 25 and older have graduated from high school or obtained an equivalent qualification. About 22.6% have attained a bachelor's degree or higher. Conversely, around 10.1% of the population aged 25 and older do not possess a high school diploma[6]. Marion County, Florida, is home to 8,179 employer establishments, collectively employing 97,716 individuals[7]. The City of Ocala serves as a significant business hub. Ocala has been recognized for its vibrant small business community, ranking No. 1 for small businesses per capita among mid-sized U.S. metropolitan areas, with 134.3 small businesses per 1,000 residents[8].

[6] *U.S. Census Bureau, ACS 2022 5-Year Estimates, Table S1501.*
[7] *U.S. Census Bureau, ACS 2022 5-Year Estimates, Tables S2403 and S2404.*
[8] *AdvisorSmith, Top Cities for Small Businesses – 2022.*

At-Risk Populations and Public Safety Planning

Marion County, Florida, has a median age of 48.5 years[9], indicating a relatively older population compared to state and national averages. Approximately 29.8% of residents are aged 65 and older, while 18.0% are under 18 years old. About 15.2% of residents aged five and older speak a language other than English at home[10], which underscores the need for bilingual services in public safety, healthcare, and education. These demographic trends highlight the importance of strategic planning for public safety and emergency services. EMS demand, age-specific fire prevention, language accessibility, and support for vulnerable populations must be integrated into service delivery and future planning efforts across Marion County.

Governance and Public Services

The government of Marion County operates under a five-member Board of County Commissioners elected by district, with a county administrator managing daily operations. Public safety services are provided by the Marion County Sheriff's Office for law enforcement and Marion County Fire Rescue (MCFR) for fire suppression and EMS services, operating from over 25 fire stations and 3 EMS Stations. Ocala Fire Rescue provides additional fire and EMS coverage within Ocala city limits. Judicial services are part of Florida's Fifth Judicial Circuit, with the county courthouse located in Ocala. The Marion County Public School District operates 49 schools, with Forest High School, Vanguard High School, and West Port High School being the largest. Higher education opportunities include the College of Central Florida, Rasmussen University, and other technical schools.

Marion County Commissioners

The Marion County Board of County Commissioners (MCBCC) serves as the primary legislative and policy-making body for Marion County, Florida. The board consists of five members, each elected to represent one of the county's five districts. Commissioners are elected to four-year terms, with elections staggered to ensure continuity. The MCBCC holds the authority to approve the county's budget, oversee various departments, and implement policies that guide the county's development and services. Additionally, the board appoints members to various advisory boards and commissions to facilitate effective governance and community involvement.

In matters of planning and zoning, the MCBCC is empowered to regulate land use within the unincorporated areas of Marion County. This includes the authority to determine the location and use of buildings and structures, as well as the occupancy of land for purposes such as residential, recreational, agricultural, industrial, commercial, and public use. The goal of these regulations is to promote public health, safety, and general welfare. The Planning and Zoning Division, under the Growth Services Department, manages existing and future development by ensuring the availability of adequate services and facilities, promoting the wise use of natural resources, and facilitating the protection and enhancement of the quality of life in Marion County.

[9] U.S. Census Bureau, ACS 2022 5-Year Estimates.
[10] U.S. Census Bureau, ACS 2022 5-Year Estimates, Table B16001.

Ocala City Council and Administration

The City of Ocala operates under a Council–Manager form of government. Policy-making and legislative authority rest with the City Council, while day-to-day administration is handled by the City Manager. The legislative body consists of a Mayor and four City Council members, each elected by Ocala residents. The Council enacts ordinances, adopts the annual budget, and sets overall city policy. The Mayor presides over meetings, represents the city at official functions, and supports community initiatives. The City Manager is the chief administrative officer and oversees all city departments and operations, ensuring alignment with Council directives.

Marion County Fire Rescue Governance

Marion County Fire Rescue (MCFR) operates as a department within Marion County government, overseen by the Marion County Board of County Commissioners and administered by the county administrator. Governance and policy decisions are guided by county ordinances, state statutes, and the Marion County Fire Prevention Code, which define the department's authority and responsibilities. The Marion County Fire and EMS Advisory Board, an eight-member panel appointed by the County Commission, serves as a liaison between county leadership and the public. This board provides input on fire rescue and emergency medical services, ensuring that operations align with community needs and safety standards.

MCFR's governance structure allows it to effectively manage fire suppression, prevention, and emergency medical services across Marion County's diverse urban and rural areas. The fire chief is responsible for enforcing regulations and overseeing daily operations, while regular public meetings ensure transparency and community involvement. The department's funding, staffing, and service levels are reviewed periodically by the Board of County Commissioners, ensuring resources are allocated efficiently to meet the county's growing public safety demands.

REVIEW OF SERVICES PROVIDED

ORGANIZATIONAL OVERVIEW

The Organizational Overview provides a summary of MCFR's composition, discussing its configuration and the services it provides. The purpose of this section is twofold. First, it verifies the accuracy of baseline information along with the understanding of MCFR's composition. This provides the foundation from which the Long-Range Master Plan with Community Risk Assessment/Standards of Cover is developed.

Second, the overview serves as a reference for the reader who may not be fully familiar with the details of MCFR's operations. Where appropriate, the MCFR project team recommended modifications to current conditions based on industry standards and best practices.

The History of the Marion County Fire Rescue

Marion County Fire Rescue (MCFR) has grown from a patchwork of volunteer fire departments into one of Florida's largest and most capable emergency services agencies. This evolution was driven by decades of community need, strategic leadership, and a persistent focus on improving public safety outcomes across a geographically vast and diverse region.

Prior to unification, Marion County was served by more than 20 independent volunteer fire departments. These groups were often underfunded, operating with donated equipment and fundraising efforts such as fish fries. Staffing was minimal, and it was common for a single engine to respond to a structure fire with only one or two personnel. Inter-agency cooperation was limited, and turf wars sometimes hindered effective service delivery. The county's early emergency response relied heavily on personal initiative and ingenuity, including volunteers building fire apparatus from surplus jet fuel tankers and repurposed vehicles.

Recognizing the need for more structured and reliable emergency response, Marion County leadership began consolidating services under a single operational umbrella. This transformation formally began with the hiring of the County's first Fire Coordinator, Gene Gallant, in 1978. Chief Gallant played a key role in removing jurisdictional boundaries, creating unified budgets, centralizing training, and improving firefighter safety through procurement of protective equipment.

Marion County Fire Rescue's first paid firefighter, Robert Desmarais, was hired in 1979. From there, MCFR began steadily building capacity and professionalism. The department unionized in the late 1980s under IAFF Local 3169 and began transitioning volunteer departments into staffed stations. During this time, MCFR also upgraded its medical capabilities from Basic Life Support (BLS) to Advanced Life Support (ALS), enabling paramedics to deliver critical interventions in the field.

The 1990s and early 2000s marked a period of rapid growth, both for the department and the community. The tragic 1995 Florida Seed and Feed warehouse fire and the historic 1998 wildfire season underscored the need for robust, coordinated emergency services. MCFR responded by creating specialized capabilities, including a regional hazardous materials team, technical rescue operations, and participation in Florida Task Force 8 for urban search and rescue. The department also played a key role in community recovery after the devastating 2004 hurricane season.

A major milestone occurred in 2008 when MCFR assumed full responsibility for ambulance transport services countywide, transitioning from the dissolved Emergency Medical Services Alliance (EMSA). This elevated MCFR into an integrated fire-based EMS system, delivering both pre-hospital care and ambulance transport through a unified chain of command.

To meet the demands of a growing county, MCFR has consistently expanded its facilities, staffing, and training programs. Between 2001 and 2011, the department opened or renovated over a dozen fire stations, many of which transitioned from all-volunteer to fully staffed operations. MCFR also launched an in-house Fire and EMT Academy to train non-certified recruits, helping to build a workforce rooted in the local community.

While the journey from small volunteer companies to a professionally staffed multi-service agency has spanned over four decades, the department's commitment to service excellence, community partnership, and firefighter safety remains steadfast.

Now under the leadership of Fire Chief James Banta, the Department has a service area of roughly 1,663 square miles and a staff of almost 811 employees. MCFR has adopted the following mission statement and works tirelessly to achieve it.

We proudly protect life and property with honor, compassion, and respect.

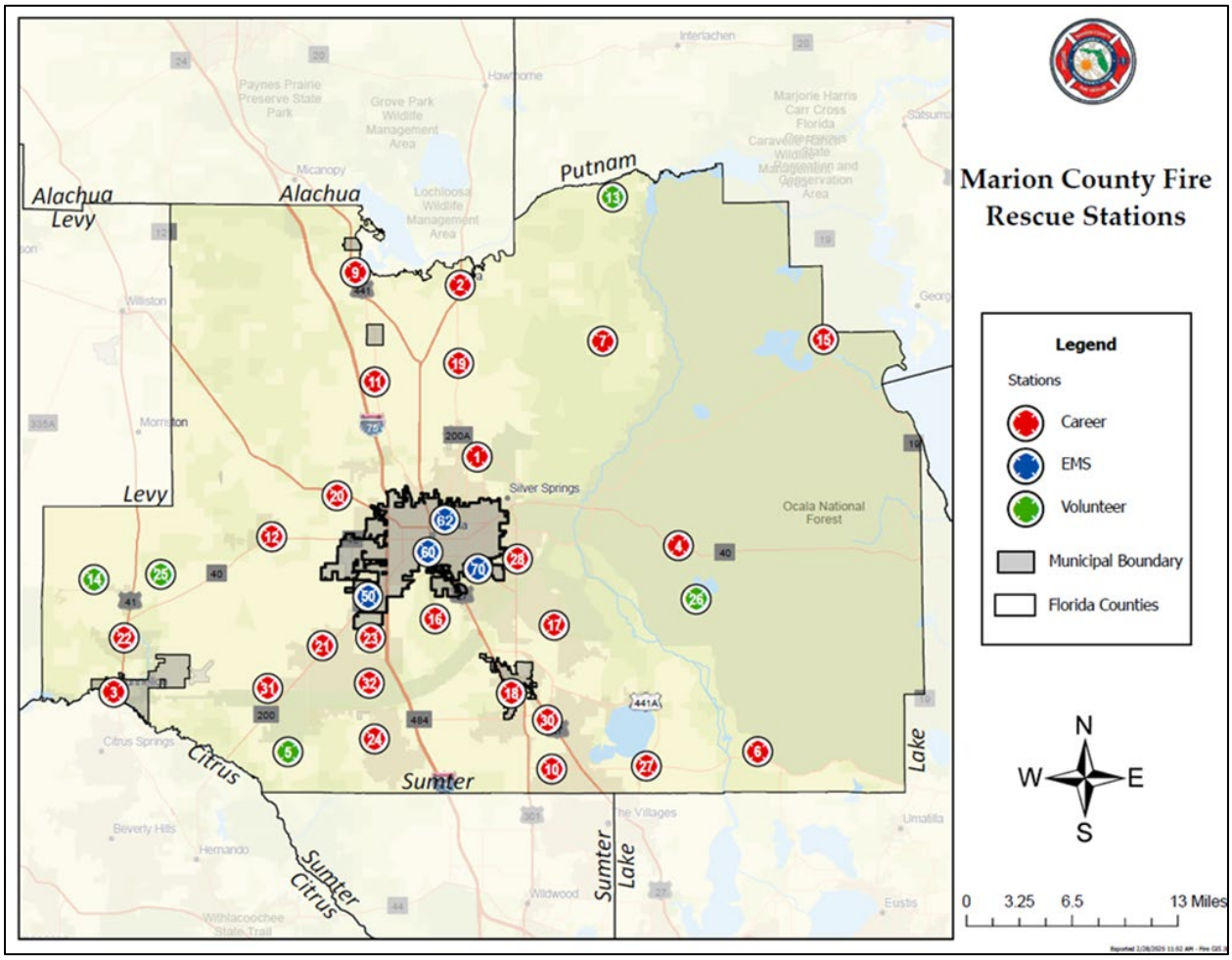
Today, MCFR operates from 28 stations with 811 personnel, providing full-service fire suppression, emergency medical services (ALS/BLS), technical rescue, hazardous materials response, and disaster mitigation across 1,640 square miles. The department responds to over 95,000 emergencies annually and continues to lead regionally in service innovation, performance monitoring, and public safety education.

Services Provided

Marion County Fire Rescue provides Fire Prevention and Public Education, as well as quick and effective response for Fire Suppression, Emergency Medical Response, Hazmat, Technical Rescue, Community Paramedicine, Critical Care, SWAT Tactical Paramedicine, Helicopter Rescue, and Disaster Management. MCFR also provides countywide ALS transport.

MCFR's service area and fire station locations are depicted in the following figure.

Figure 3: Marion County Fire Rescue Service Area



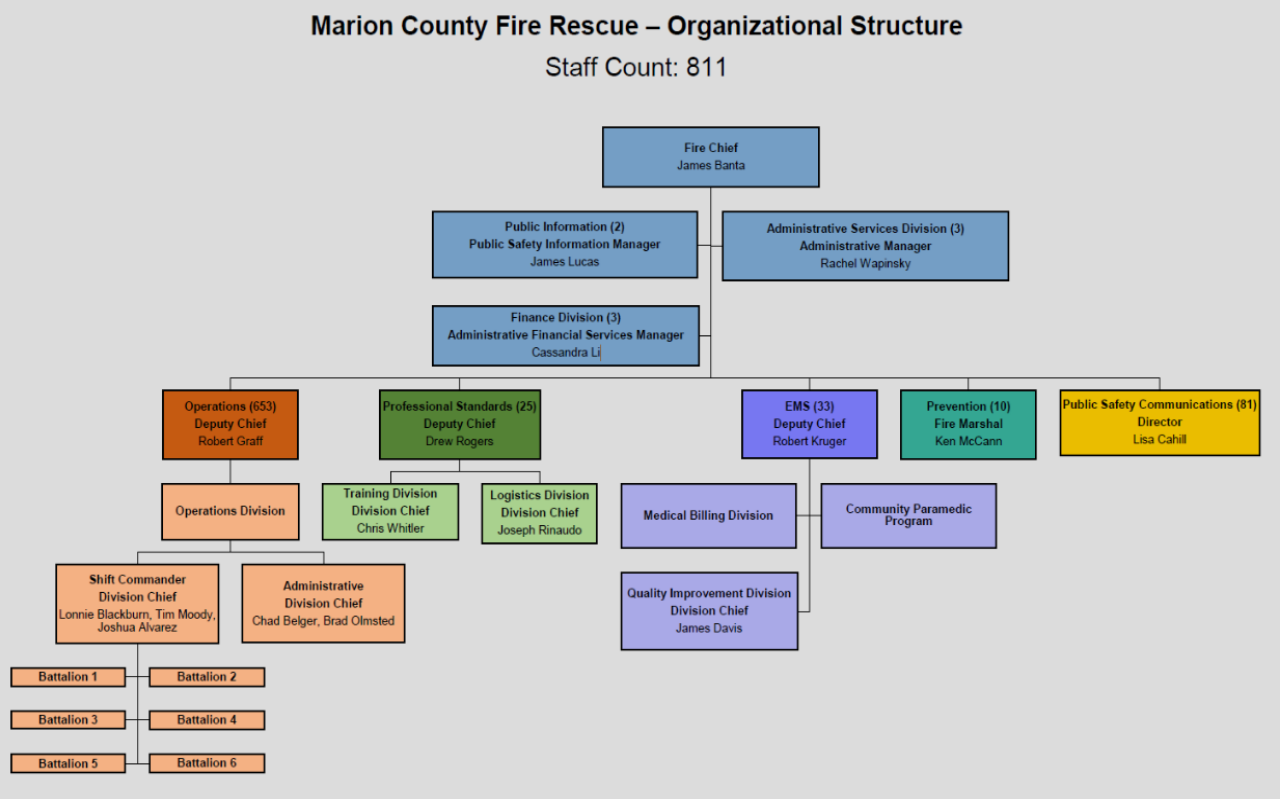
Organizational Structure

The structural design of an organization is important for successful service delivery. Marion County Fire Rescue mimics a paramilitary organization. This structure is similar to those found in many fire and EMS agencies across the country. The uniformed professionals filling the various operational positions within MCFR have the skills and equipment to respond to structure 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 fire or emergency medical calls for service.

When not responding to 9-1-1 calls, MCFR firefighters train for the worst-case scenarios; they perform other duties such as hose testing and conduct pre-incident planning, conduct public education activities, and give back to the community by supporting charitable projects.

MCFR's organization chart is reflected in the following figure.

Figure 4: Marion County Fire Rescue Organizational Chart



The chain of command is important as it provides a clear source of direction, lines of communication, and accountability. The organizational design does not have any conflicting pathways, and each operating unit has only one supervisor which provides a unity of command for the organization.

Span of control is an important element in the effective and efficient mitigation of emergency incidents, and management of administrative responsibilities. While the effective span of control will vary based on administrative demands and operational complexity, it is widely accepted that a single person's span of control should not be greater than seven subordinates. The maximum administrative span of control in the current organizational structure is 1:9 under the Deputy Chief of Operations.

Public Protection Classification: Insurance Services Office–Rating Bureau

The Insurance Services Office, Inc. (ISO©) is an independent company that collects and analyzes data about municipal fire suppression efforts in communities throughout the United States. According to a recent report, the ISO's Public Protection Classification program, or PPC, "is a proven and reliable predictor of future fire losses." [11] All other factors being equal, commercial property insurance rates are expected to be lower in areas with lower (better) ISO PPC Class ratings.

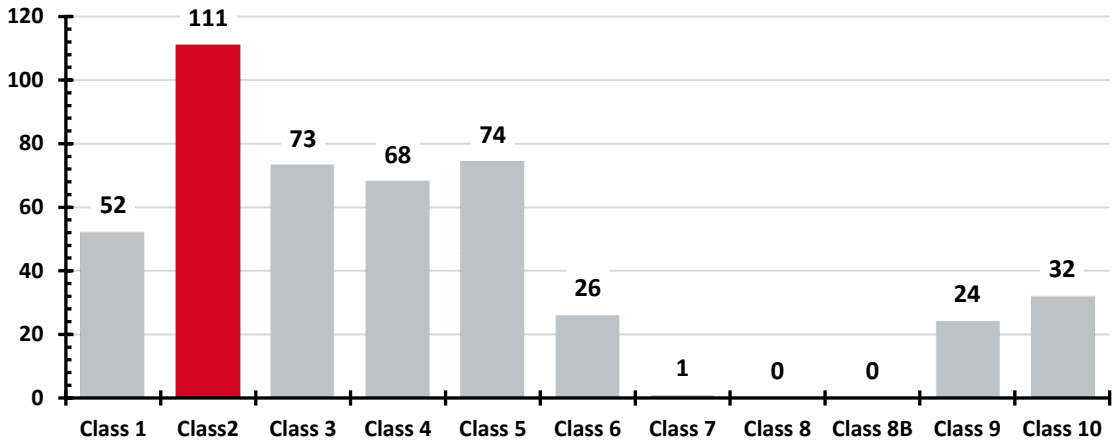
[11] *Public Protection Classification, (PPC™) Summary Report, Prepared by Insurance Services Office, Inc., Mt. Laurel, New Jersey.*

At the time of the most recent ISO survey, the ISO Fire Suppression Rating Schedule (FSRS) measured four primary elements of a community's fire protection system: Emergency Communications (max 10 points); Fire Department (max 50 points); Water Supply (max 40 points); and Community Risk Reduction (max 5.5 points); for a maximum possible total of 105.5 points.[12] The ISO then assigns a grade using a scale of 1 to 10, with Class 1 representing the highest degree of fire protection, and Class 10 designating a fire suppression program that does not meet ISO's minimum criteria.

As of 2023, MCFR has a Public Protection Classification (PPC) rating of Class 2/2Y[13] from the Insurance Services Office (ISO). This rating is critical because it is one of the key factors that many insurance companies use to determine annual premiums for privately insured property. Lower PPC classes generally translate to lower premiums. Moreover, a Class 2 rating reflects the department's enhanced fire suppression capabilities, which are supported by ongoing investments in equipment, training, and community risk reduction programs.

Figure 5 below breaks down the comparison of ISO Class Ratings for communities throughout the state of Florida. As illustrated, while only about 35% of Florida's communities achieve the top two ratings (Class 1 and Class 2), Marion County's recent reclassification places it among this select group. This favorable standing not only underscores the effectiveness of MCFR's fire protection services but also provides a benchmark that assists local fire departments in planning, budgeting, and justifying future improvements.

Figure 5: Comparison of ISO Class Ratings, State of Florida



[12] *The fourth category, community risk reduction, was added by ISO in 2012.*

[13] *"2/2Y" ISO classification means that a community has an overall fire protection rating of "2" for properties located within a close proximity to a fire station and water supply, but for properties further away from a hydrant, the rating is considered slightly less favorable, denoted by the "Y" designation, indicating a slightly higher risk due to distance from a water source; essentially, it's a split classification with a better rating for areas with closer access to fire services and a slightly lower rating for more distant areas. The second class (10) applies to properties outside 5 road miles of a recognized fire station.*

ISO Element Summary

- **Emergency Communications**. MCFR scored 9.69 points out of a possible 10 points.
- **Fire Department**. MCFR scored 38.33 points out of a possible 50 points.
- **Water System**. MCFR scored 32.14 points out of a possible 40 points.
- **Community Risk Reduction**. MCFR scored 5.31 points out of a possible 5.50 points.
- **Divergence**. MCFR had a divergence score of --.074 points.
- **Total Score**. MCFR had a total score of 88.24 points out of a possible 105.5.

The adjacent figure shows the grading for each of the four categories, plus divergence, from the most recent ISO audit. As shown, the highest scores for MCFR were Communications (9.69 points out of a possible 10 points) and Water Supply (32.14 points out of a possible 40.00 points). This score places MCFR just 5.27 points away from a potential Class 1 designation, the highest possible rating.

Figure 6: ISO Classification Scores

Category	Dec 2021
Communications Max score = 10.00	9.69
Percent max score	96.9%
Fire Department Max score = 50.00	38.33
Percent max score	76.6%
Water Supply Max score = 40.00	32.14
Percent max score	80.35%
Risk Reduction Max score = 5.50	5.31
Percent max score	96.54%
Percent max score	80.31%
Divergence factor	--0.74
Total Score	**84.73**
ISO Classification	**2/10**

Divergence

A note about "divergence." According to ISO, divergence "recognizes any disparity in the relative level of effectiveness of your fire department and water supply."[14] The divergence factor accounts for discrepancies between a community's fire department and water supply capabilities. It is always a negative adjustment and in MCFR's case was -0.74 points. This reflects a relatively balanced system, but it also highlights the importance of parallel investments in both areas to avoid suppressed scores in future assessments. ISO will reduce the overall PPC score if the relative scores for the fire department and water supply are different. In fact, the divergence factor may be high enough to result in a poorer ISO PPC classification. Thus, it is important to consider both the water supply and fire department when seeking to improve a PPC classification; investing in one without the other will be less effective over time. Areas of divergence to be considered by MCFR, along with the resultant impact, are quantified in the ISO report.

[14] *Divergence Factor, Insurance Services Office, Inc., Mt. Laurel, New Jersey; 1996, 2017; retrieved from https://www.isomitigation.com/technical/divergence-factor.html.*

Possible Corrective Actions

Areas of deficiencies within the Community Risk Reduction that would have the greatest impact are shown in the next figure. MCFR should confirm the overall potential impact on service delivery and implementation cost, its ISO rating, and potential discounts on property insurance premiums before investing in any improvements.

Figure 7: Areas of ISO Divergence

Factor	Score	Max Score	% of Max Score	Remaining Points	Impact
549. Credit for Deployment Analysis	3.61	10	36.1	6.39	Largest gap; relates to station placement, staffing, response time coverage, and ERF deployment.
571. Credit for Company Personnel	12.43	15	82.86	2.57	Could improve with more fully staffed engine/rescue companies, or 24/7 coverage.
581. Credit for Training	8.51	9	94.55	.49	Near maximum, small gain is possible with increased annual training hours or record standardization.
Divergence Penalty	-0.74	N/A	N/A	N/A	Improving the balance between fire suppression and water supply can reduce this penalty.

MCFR scored 84.73 points out of 105.5 total available points during the ISO PPC evaluation. Based on the above recommended divergence factors MCFR is within 5.27 points from the next lower PPC classification.

MANAGEMENT COMPONENTS

Effective fire and EMS organizational management is a complicated and expanding challenge for fire service leaders and planning alone will not suffice. With increasing complexity comes increased cost. Today's organization 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 workforce, staff development for effective succession planning, and financial sustainability for the future. The establishment of department mission statements, vision statements, and guiding principles ensures the employees are aware of the expected behaviors and attitude required for the success of MCFR. While this section will discuss the various components of personnel management, it should be noted that good management alone will not guarantee efficient and effective organizations.

Mission, Vision, Goals, and Objectives

To be an efficient and effective organization, management must be based on several components. These include a clearly stated *mission* (the fundamental purpose of an organization); a *vision* for the future (where is the organization going); and the *core values* or *guiding principles* (how will the organization treat its members as it navigates from its current state to its desired future). These fundamental elements allow organizations to evaluate the current environment in which they operate and establish strategic initiatives, goals, and objectives necessary to move forward progressively. MCFR has established and communicated the following fundamental elements.

Mission Statement

Through the following mission statement, Marion County Fire Rescue and its members are:

> *We proudly protect life and property with honor, compassion, and respect.*

This broad mission statement allows MCFR the flexibility to utilize a wide range of tactics in responding to the needs of the citizens and visitors of Marion County. The development of a mission statement is only one component of ensuring success. The mission statement must be communicated to internal and external stakeholders, which MCFR accomplishes by placing the statement in the lobby of all fire stations and fire administration areas, and on all fire rescue buildings.

Vision Statement

Vision statements are commonly a declaration of an organization's objectives to achieve a state of continuous improvement. This is an important foundational component because it shows that an organization recognizes that they are not necessarily where they would like to be and are willing to set goals to reach their objectives. It should be noted that adopting a vision does not necessarily indicate that an organization is broken but rather a declaration that they could be better and refuse to settle for the status quo.

MCFR has developed and adopted the following vision statement.

To deliver exceptional fire and EMS services that safeguard life, protect property, and strengthen our community for generations to come.

Core Values

The core values of MCFR are:

Humbleness— Integrity— Commitment— Accountability— Respect— Discipline

The rationale for adopting organizational core values is to support the vision and shape the culture in a manner that accurately reflects what an organization values, which should be aligned with community values and expectations. MCFR's core values are simple, easy to understand, and accomplish the overall objectives of the department. MCFR takes this one step further and explains each of the identified values and the impacts that each one makes on internal and external stakeholders.

Marion County Fire Rescue recently completed an extensive strategic planning workshop and has just published their draft findings in a brand-new strategic plan. This comprehensive document outlines clear timelines, prioritized goals, and the assignment of specific responsibilities to the appropriate personnel and will accompany this Long-Range Master Plan. It serves as a roadmap that aligns every initiative with the department's mission, vision, and core values while ensuring that progress is continuously monitored. By establishing robust follow-up mechanisms, the new plan guarantees that efforts translate into meaningful improvements rather than simply checking off tasks.

Internal and External Communication Processes

Communication within an organization and the external environment is a critical factor in achieving an effective and efficient organization. Organizations that lack effective communication can have difficulty in reaching their ultimate potential. The following describes both internal and external communications within MCFR.

Internal

Marion County Fire Rescue employs a diverse range of internal communication channels to ensure that all personnel receive timely and relevant information. Regular administrative staff meetings are held to discuss key updates and issues. The notes of these meetings are regularly distributed via county email to all employees. Every department member has an email account and receives information bulletins published via Vector Solutions, ensuring that critical updates are distributed promptly. Additionally, First Arriving Message boards are installed in every station, serving as an immediate reference for time-sensitive messages. Although member newsletters are not used, all-hands meetings provide a forum for open dialogue, and the Fire Chief maintains an open-door policy for informal conversations. A clearly defined vertical communication path through the chain-of-command further reinforces the seamless flow of information across the department.

External

MCFR also accomplishes external communications through multiple avenues. The primary source of external communication is provided by the department's website and social media accounts. The MCFR Facebook® account has approximately 46,500 followers, 3,650 followers on Instagram®. No community newsletter is utilized, there is a Fire and EMS Advisory Board. The department has a formal complaint process in place. MCFR continues to explore additional outreach tools to enhance community engagement and transparency.

PLANNING FOR FIRE PROTECTION SERVICES

Emergency services continually contend with a rapidly changing environment. Improved tools, technologies, increased regulation of activities, and changing risk profiles, are all challenges that, if not planned for, create reactionary management instead of proactive management. Departments can avoid service complications through continuous evaluations of the internal and external environment and aligning the organization around the needs of these environments. By analyzing data and trends and implementing course corrections, an organization will stay on the leading edge of service delivery.

Without effective planning, it is impossible for an organization to know when it is reaching milestones or providing exceptional services to its constituency. The National Fire Protection Association has established NFPA 1660, *Standard for Emergency, Continuity, and Crisis Management: Preparedness, Response, and Recovery* and NFPA 1201: *Standard for Providing Fire and Emergency Services to the Public,* as standards to assist fire and EMS departments in establishing and maintaining planning documents and conducting planning activities.

The Current Planning Process

As a result of the data-driven decision-making processes that are in effect throughout, the organization has produced and instituted a series of plans for the operations of the organization, consistently moving the fire department forward and ensuring that it is positioned to respond to the dynamic service demands of the community. Understanding and identifying the critical issues facing any organization is the first step in moving toward a resolution.

Internal Assessment of Critical Issues and Future Challenges

Like the need for guiding documents in the rapidly changing environment of emergency services, analysis and understanding of critical issues and emerging challenges facing the department is critical for organizational leaders and their success. No single leader should address these issues and challenges alone and must engage and involve the numerous talented and capable members of their organization at all levels. MCFR's Fire Chief has identified the five most critical issues that are currently faced by the organization. This is illustrated in the following figure.

Figure 8: Identified Critical Issues

Priority	Fire Chief's Perspective
First	Service Delivery: Reducing Workload While Ensuring Effective Response
Second	Fiscal Responsibility: Balancing Funding & Service Excellence
Third	Employee Safety & Well-Being: Physical & Mental Health Focus
Fourth	Building a Supportive Culture Without Compromising Standards
Fifth	Honoring Our Past: Learning from Successes & Mistakes

Service Delivery: Reducing Workload While Ensuring Effective Response

Maintaining high-quality service delivery requires a delicate balance between reducing the workload on personnel and ensuring an effective emergency response. Overburdened crews can lead to burnout, increased injury rates, and decreased operational efficiency.

- Call Volume Management: Continue building and expanding alternative response models such as community paramedicine, mobile integrated health units, and non-emergency transport programs to divert low-acuity calls from frontline fire and EMS units.
- Optimized Staffing & Deployment: Utilizing data-driven decision-making to adjust staffing models, station locations, and unit assignments to match call demand while maintaining response effectiveness.
- Technology & Innovation: Investing in modern dispatch systems, predictive analytics, and real-time data sharing to improve unit efficiency and reduce unnecessary responses.

Fiscal Responsibility: Balancing Funding & Service Excellence

Managing funding is crucial to ensuring that MCFR provides top-tier emergency services while remaining fiscally responsible. Strategic initiatives should focus on:

- Maximizing Revenue Streams: Seeking grants, impact fees, and cost recovery programs to supplement tax-based funding and alleviate financial burdens on the county.
- Capital Planning: Prioritizing equipment, apparatus, and infrastructure investments to align with long-term operational needs and avoid deferred maintenance costs.
- Efficiency & Cost Savings: Identifying ways to optimize fleet management and reduce overtime costs.
- Transparent Budgeting & Advocacy: Ensuring elected officials and the public understand funding needs by providing data-backed justifications and fostering stakeholder support.

Employee Safety & Well-Being: Physical & Mental Health Focus

Firefighting remains one of the most dangerous professions, with physical and mental health challenges requiring continued investment in workforce well-being. Key focus areas include:

- Cancer Prevention: Continuing efforts such as two sets of bunker gear, decontamination protocols, and station design improvements to reduce carcinogen exposure.
- Mental Health Support: Continue expanding peer support programs, chaplain services, behavioral health partnerships, and confidential counseling options to address PTSD and emotional trauma.
- Training & Injury Prevention: Strengthening physical fitness programs, rehab protocols, and injury reduction strategies to keep personnel healthy and fit for duty.

Building a Supportive Culture Without Compromising Standards

A strong organizational culture is essential to maintaining high performance while ensuring employees feel valued and engaged. Key initiatives should include:

- Leadership Development: Expanding mentorship programs (How the fire department runs), officer training, and career advancement pathways to prepare future leaders while reinforcing accountability.
- Employee Recognition & Engagement: Awards programs, conducting listening sessions, and ensuring that employees have a voice in departmental decisions.
- Professionalism: Fostering a culture of respect, camaraderie, and continuous improvement while maintaining the high standards expected of fire service professionals.
- Retention & Recruitment Strategies: Ensuring competitive pay, benefits, and career incentives to attract and retain top talent while maintaining department morale.

Honoring Our Past: Learning from Successes & Mistakes

A great fire department does not forget where it came from, and a strategic plan should reflect both the achievements and the challenges that have shaped MCFR. This means:

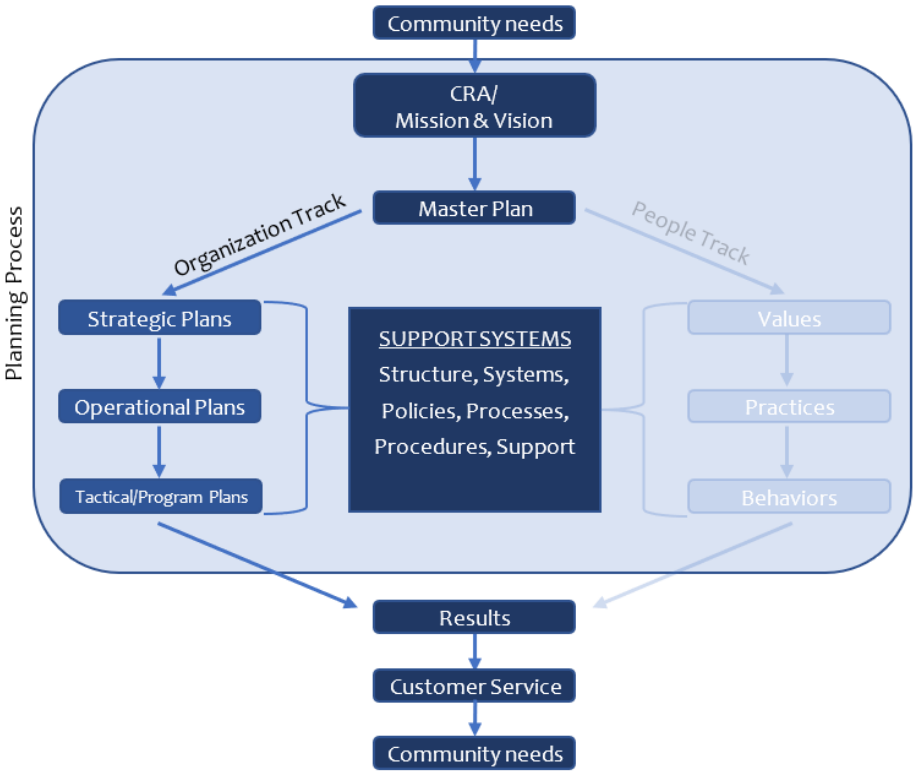
- Preserving Institutional Knowledge: Capturing lessons learned from experienced personnel, retirees, and historical incidents to guide future decision-making.
- Recognizing Achievements & Growth: Showcasing how far MCFR has come in terms of professionalism, capability, and community impact.
- Learning from Challenges & Tragedies: Acknowledging past mistakes, operational gaps, and firefighter losses to drive continuous improvement and honor those who served.
- Celebrating Tradition While Embracing Progress: Maintaining the pride and legacy of the fire service while being open to change, innovation, and new best practices.

Organizational Planning

To do the best job possible with available resources, organizations must focus on improving services while identifying programs or activities that may no longer serve their changing needs. Through planning, a fire and EMS department can establish a vision, create a framework within which decisions are made, and chart its course to the future. The quality and accuracy of the planning function determine the success of the organization. To be truly effective, an emergency services agency must consider planning on four distinct levels.

These planning levels are depicted in the following figure.

Figure 9: Organizational Alignment



To remain highly effective and improve service delivery, an organization must identify programs and activities that may no longer serve the community's changing needs. The process illustrated above is called an organizational alignment, adapted from the Vector Group to meet the fire service's needs.[15] This process aligns the entire organization by examining the community needs and cascading those needs down through the community risk assessment (CRA), mission and vision. After the community risk assessment, a master plan is created outlining the service delivery needed to mitigate the vulnerabilities from the community risk assessment. There are separate processes that mirror each other for both the organization and the people planning.

The organizational track looks at strategic, operational, and tactical/program plans. The "People" track details of the individuals' values, practices, and behaviors. Both pathways come back together to measure results. Keep in mind that these processes are not exclusive of each other, and many times come together into a single plan. Finally, we compare service delivery to the community's needs to measure results. A fire department can stay true to its core mission and competencies through proper planning while sculpting its vision to serve the new environment. The quality and accuracy of the planning processes determine the organization's success.

To be truly effective, an emergency services agency must consider planning on many distinct levels:

[15] *Group, Vector. MODEL: Strategic Alignment. PDF. Denver: Vector Group, 2016.*

- Master planning
- Strategic and values planning
- Operational and practices planning, including emergency preparedness
- Tactical/project and behavioral planning
- Infrastructure support for these plans

Master-level planning is the formulation of a long-term outlook bringing together the CRA, and the stated mission to create the organization's vision establishing the organization's long-term effectiveness as its operating environments change over time. Considering the current and future needs of the community and the organization is vital to a successful planning process. The master plan lays out a comprehensive roadmap that will take the organization to its desired future state from its current form.

Strategic and values level planning establish the direction for the organization, determining its operational objectives and cultural values and formulating the strategies required to achieve its mission and vision in the master plan. In addition, strategic planning involves creating guidelines for the department management to follow to accomplish the objectives of the organization formulated in the master plan.

On the other hand, operational and practices planning guide the organization in the routine undertaking and emergency preparedness to mitigate potentially damaging events that could compromise an organization's or constituents' ability to function. It involves short-term activities to be achieved by employees, integrates the agency into other local, regional, or national response networks, and lays out how the organization demonstrates its values. These activities directly accomplish the operational objectives and indirectly support the master plan vision.

Tactical/program and behavioral planning involve the development of strategies for potential emergency incident response and program projects like SCBA maintenance or facilities construction. Finally, the behavioral level takes the people practices and translates these practices into behaviors that demonstrate the identified values of the organization. All of which support the operational plans, strategic plan, master plan, and in turn, the organization's mission.

This planning structure directly supports the development and application of Marion County's Community Risk Assessment (CRA) and Standards of Cover (SOC) by aligning risk identification with service delivery strategies and measurable performance objectives. Each layer of this model—from master planning through tactical and behavioral levels—ensures that risk data and community expectations are integrated into resource deployment, mitigation priorities, and performance benchmarks. By cascading community needs into both organizational and personnel-focused planning, the framework ensures the CRA and SOC remain actionable, dynamic, and refined through continuous feedback. This tiered approach also lays a strong foundation for compliance with CFAI accreditation standards, reinforcing MCFR's commitment to data-driven planning, operational readiness, and community-focused outcomes.

Master Planning

Master planning, also called long-range planning, is a process that seeks to answer several questions:

- Where is our organization today (mission)?
- Where will we need to be in the future (vision)?
- What service do we need to provide (service)?
- How do we affect the risks our community faces (CRA)?
- How do we get there (plan)?

MCFR recognizes the need for a long-range planning effort by undertaking this master planning process. This study gives the department a clear understanding of today based on evaluating current conditions. Then it contemplates the department's future requirements and builds strategies to meet them. These strategies are detailed in the report's Future System Recommendations sections. The design of this Master Plan study is to provide a view of the organization for a ten-year time frame.

Strategic Planning

A strategic plan considers a three-to-five-year planning horizon and establishes prioritized goals and objectives for the organization. The strategic plan evaluates, prioritizes, and implements the recommendations of the master plan. Strategic planning involves creating guidelines for the department management to follow to accomplish the objectives of the organization formulated in the master plan. The following figure represents examples of different organizational inputs that might be considered when creating a strategic plan.

Figure 10: Strategic Planning Components

Strategic plans should ensure that the speed, strength, and depth of response by a department are adequate when deployed to an emergency. This requires the creation of a standards of cover (SOC) document. Creating this standard involves:

- Identification of potential risk types,
- Identifications of critical tasks for objectives for each risk type,

- Calculation of the number of resources needed to perform each essential task,
- A methodology assuring adequate resources are dispatched to an incident via 911 center protocols.

Operational plans stemming from the strategic planning process need to address the timely implementation of mutual and automatic aid to meet the requirements of the SOC. In addition, mutual aid agreements should incorporate resource needs and responsibilities. One of the most critical aspects is integrating these agreements into the 911 center's Computer Aided Dispatch (CAD) systems for the seamless automatic activation of mutual aid deployment.

Establishing a customer-oriented strategic plan accomplishes the following:

- Identification of the strengths, weaknesses, opportunities, and challenges of the agency
- Determination of the community's service priorities
- Understanding the community's expectations of the agency
- Establishment of realistic goals and objectives for the future
- Definition of service outcomes in the form of measurable performance objectives and targets

The MCFR project team began working on a planning process in 2025 with a staffing evaluation. This has led to the commissioning of a master plan that contains a community risk assessment and a standard of cover. MCFR has also engaged in the strategic planning process by completing a strategic plan to help implement the recommendations from the master plan. This strategic plan should also include a three- to five-year financial plan. It is recommended that this finance plan also include a strategic replacement schedule (see more in the financial review section).

Operational Planning

Operational planning includes establishing guides for the organization about routine undertakings such as divisional plans, response plans, staffing policies, mutual and automatic aid (locally and regionally), and specialty resource identification.

The following figure represents the organization's primary divisions that should be considered when an organization is in the planning process.

Figure 11: Operational Planning Components

Divisional plans such as training, EMS, support services, administration, etc., should have operational plans instituted. These divisional plans outline responsibilities, staffing, schedules, goals, objectives, and other needs specific to the division. Many of these plans are broken down into smaller groups that require specialized needs, i.e., special teams, apparatus maintenance, etc. The following figure demonstrates how a divisional plan like wildland operations can be separated to build more detail.

These plans allow the organization to understand the duties of each division and how the divisions support the master plan, mission and vision, and the fire department's strategic plan.

Tactical /Program Planning

This area of planning is where the rubber meets the road. These plans are detailed and task-driven. This planning section has two main areas, tactical response and program areas. Tactical planning is the pre-incident, target hazard, response, and emergency planning.

Tactical

When responding to a building or property during an emergency, there is limited time to sort out the special hazards, location, and treatment of critical components. A lack of familiarity with buildings and property can easily lead an emergency crew to use valuable time planning the incident, become disoriented, or, even worse, suffer an injury. The following figure shows the different parts of the tactical plans that need to be considered when formulating them.

Figure 12: Tactical Planning Components

It is critical that firefighters and command staff have information readily at hand to identify hazards, direct tactical operations, and use built-in fire-resistive features to their advantage. This situational awareness can only be accomplished by building familiarization tours, developing pre-incident plans, conducting tactical exercises, and identifying needed specialty resources.

Currently, MCFR implemented new software to begin using electronic pre-incident plans including hazard-specific plans. This information is not integrated into response resources or dispatch protocols; therefore, the hazard information is unavailable nor communicated to responders during an incident. MCFR is encouraged to develop and maintain effective pre-incident and special hazard plans and incorporate the plans routinely into dispatch communications following NFPA 1660. A defined list of "target hazards" should be developed, and focused effort should be given to ensure response personnel have ready access to pre-incident plans. 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 disaster recovery functions." Many fire departments will define target hazards by:

- Facilities that can have a substantial economic impact on the community
- Buildings with large potential occupant loads
- Buildings with populations who are partially or entirely non-ambulatory
- Buildings of considerable size (greater than 12,000 square feet)
- Buildings that contain process hazards, such as hazardous materials or equipment

Pre-incident and target hazard planning should be regularly updated, easy to use, and quickly accessible for company officers and command staff. NFPA 1660 provides excellent information on the development and use of pre-incident plans and is a vital reference. Once pre-plans are established, training personnel who may respond to an incident at those locations is essential. In addition, copies of pre-incident plans and drawings should be available on each response vehicle and incorporated into dispatch procedures.

Emergency Management

Once a low priority, emergency management has increased importance in assisting emergency response, incident support, and recovery after the incident. By developing and maintaining emergency action plans and regularly exercising and updating the plans, local governments help limit and manage the consequences of a disaster. The common term for governmental disaster preparedness is emergency management.

The Superfund Amendment and Reauthorization Act, found in Title III of the Federal Code (SARA Title III), defines requirements for tracking hazardous materials used in fixed facilities and establishes requirements for emergency response planning. Therefore, MCFR is involved with the Local Emergency Planning Committee (LEPC) at the county level. The LEPC is responsible for identifying and collecting information on the use of hazardous materials by private and public entities. Information collected includes the type of material, quantity, and the location at each site. Additionally, the LEPC ensures adequate local response plans based on the potential risk.

SARA Title III requires industries that use over a threshold limit of certain highly hazardous materials (extremely hazardous substance facilities – EHS) to develop comprehensive emergency plans for their facility. In addition, the Act requires that local fire departments coordinate with the industries involved to ensure a quality response to the emergency.

MCFR is a member of the Local Emergency Planning Committee and works in partnership with the Marion County Emergency Managers on a joint Hazard Mitigation Plan. It is paramount that MCFR staff remain updated on the plan content and understand the department's role in their execution.

Planning efforts are generally limited in the organization based on staff size and administrative support. The department has tasked the project team to assist with developing these guiding documents. MCFR has done a good job of working with Marion County on hazard mitigation planning. In addition, comprehensive long-range planning that contemplates a holistic view of the customer needs through results analysis, including the need for a standard of cover, capital improvement planning, and operational planning, was identified and a project team was identified to provide those services.

People Planning

As part of the planning process, fire departments typically publish core values that set the foundation for culture. These core values support the mission and vision of the department and are vital to the planning for personnel management in the fire department. The core values employed by Marion County are examined next.

STAFFING

An organization's greatest asset is its people. Special attention must 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, equitable treatment, the opportunity for input, and recognition of the workforce's commitment and sacrifice are key components impacting job satisfaction.

The size and structure of an organization's staffing are dependent upon the specific needs of the organization. These needs must directly correlate to the needs of the community, and a structure that works for one entity may not necessarily work for another agency. This section provides an overview of MCFR's staffing configurations.

MCFR staffing can be divided into two distinct groups. The first group is what the citizens typically recognize, and is commonly known as, the operations unit, which can be generally classified as the emergency response personnel. The second group typically works behind the scenes to provide the support needed by the operation's personnel to deliver an effective emergency response and is commonly known as the administrative group.

In this section, the MCFR project team explores each of MCFR's current staffing levels and evaluates them against the mission, identifying potential gaps and efficiencies that might be gained with their current operations.

Historical Staffing Perspective

From FY2020–21 through FY2024–25, MCFR experienced steady growth in its authorized staffing levels alongside notable fluctuations in employee turnover. Over this five-year period, the department increased its authorized full-time equivalent (FTE) positions from 715 in FY21 to 811 in FY25, reflecting an overall gain of 96 authorized positions or a 13% increase. This expansion corresponds with the County's population growth, increasing service demands, and continued investment in public safety infrastructure.

The following figure shows the historical trend for department staffing.

Figure 13: MCFR Historical Staffing FTE Counts 2020-2025

Positions	Number of Positions FY20-21	Number of Positions FY21-22	Number of Positions FY22-23	Number of Positions FY23-24	Number of Positions FY24-25
Fire Admin	7	7	8	8	21
Fire Prevention	6	7	8	10	10
Public Safety Communications	71	71	80	81	81
Support Services/EMS QA	21	19	19	20	25
EMS Billing	16	15	15	16	16
Operations Division	587	584	628	625	646
Training Division/ Professional Standards	7	7	7	15	12
Total Department FTE's	**715**	**710**	**765**	**775**	**811**

Despite the growth, MCFR has faced ongoing challenges related to employee retention. Turnover peaked in FY22–23, with 96 separations, representing a turnover rate of 12.5%, the highest during the period. Elevated turnover in FY21–22 and FY22–23 coincided with national trends in firefighter attrition and local pressures, including increased workload, competitive labor markets, and retirement eligibility among seasoned personnel.

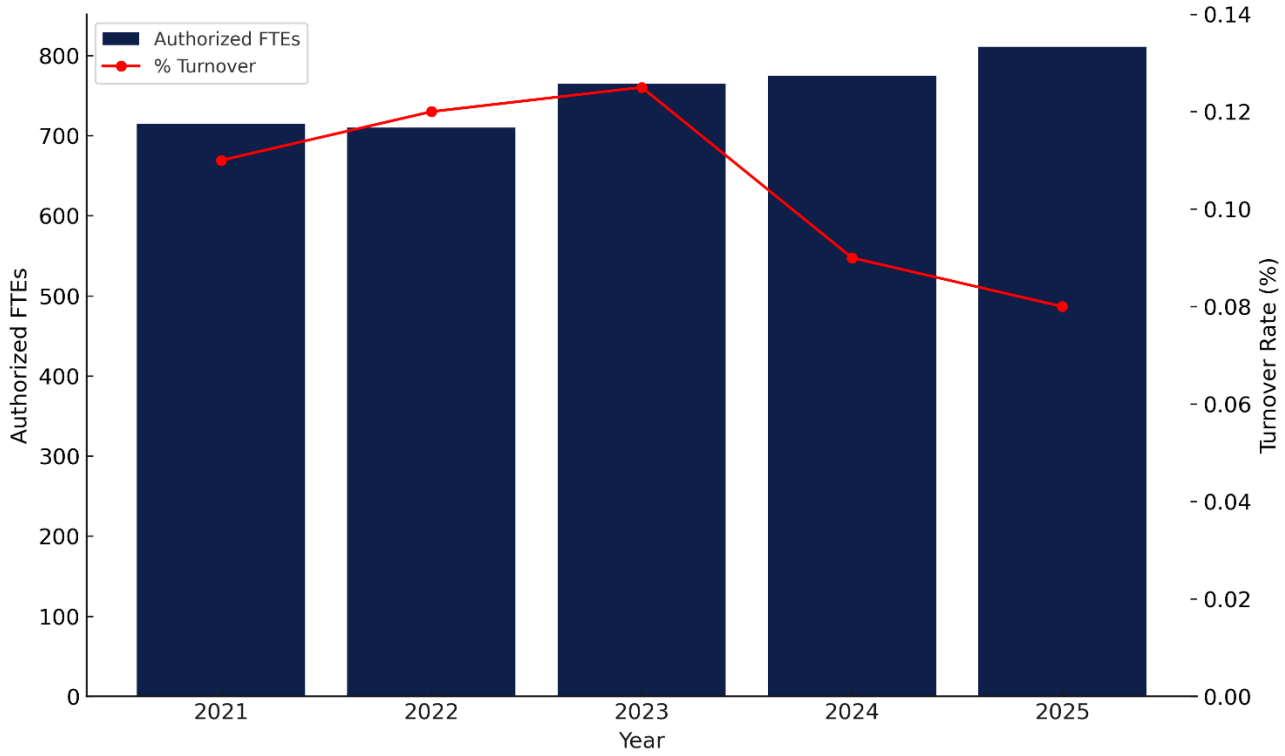
In FY23–24, turnover improved significantly, dropping to 9%, and continued to decline in FY24–25 to 8%, indicating positive momentum toward workforce stability. These improvements reflect the department's efforts to enhance employee wellness, streamline hiring practices, and expand career development pathways. However, given that even small changes in turnover can impact overtime, staffing minimums, and service continuity, ongoing monitoring and targeted retention strategies remain essential.

Figure 14: Historical Turnover Percentage

Year	Authorized FTEs	FTEs Leaving Service	% Turnover
Number of Positions FY20-21	715	81	11%
Number of Positions FY21-22	710	91	12%
Number of Positions FY22-23	765	96	12.5%
Number of Positions FY23-24	775	73	9%
Number of Positions FY24-25	811	67	8%

The accompanying chart illustrates this trend by comparing authorized FTEs (bar graph) with annual turnover rates (line graph) over the five-year period. The visual highlights MCFR's deliberate growth trajectory and the variable nature of personnel transitions. As MCFR continues expanding to meet the needs of Marion County's residents, maintaining a healthy, sustainable workforce remains a critical operational priority. The bar chart shows the steady increase in staffing, while the line graph highlights variations in turnover. This perspective underscores both organizational growth and ongoing workforce challenges.

Figure 15: MCFR Authorized FTEs and Turnover Rates 2020-2025



Vacancy Impacts

Vacancies caused by attrition, promotions, or prolonged hiring timelines have a direct impact on MCFR's ability to maintain consistent staffing across all shifts. Even with an authorized FTE increase, unfilled positions translate to greater reliance on overtime, reassignments, or reductions in unit availability. This operational strain can lead to increased fatigue, reduced training availability, and higher burnout risk. Additionally, temporary station brownouts or dynamic unit staffing may occur when adequate personnel are not available, affecting both service delivery and morale. The department's ability to swiftly fill vacant positions, particularly in high-demand roles such as paramedics or field officers, remains a key factor in preserving operational readiness.

Float Staffing

To offset the effects of leave, training, and short-term vacancies, MCFR utilizes a float staffing model, assigning personnel who are not tied to a fixed unit or station. Float staff are essential in maintaining minimum daily staffing levels without excessive overtime. However, the department's current float pool remains limited relative to the overall demand for coverage, particularly when extended sick leave, modified duty assignments, or FMLA leave overlaps with high call volume periods. Increasing the number of dedicated float positions could reduce overtime costs, support employee wellness, and enhance scheduling flexibility, especially during peak leave seasons and periods of high operational tempo.

Recruit Class Throughput

Recruitment and training play a pivotal role in MCFR's long-term staffing health. The department typically runs several recruit classes per year. While this model helps manage onboarding and instructional quality, it limits the pace at which MCFR can backfill vacancies, expand operational units, or respond to sudden shifts in workforce availability. Increasing the frequency or size of recruit classes, along with continued investment in instructional support and training facilities, are essential to meeting future staffing needs, particularly if turnover remains unpredictable or the department's authorized staffing level continues to rise.

This dynamic environment of rapid staffing growth, periodic turnover spikes, and ongoing service demands has put considerable pressure on the department's administrative and support systems. As the number of operational and support staff has increased, so has the complexity of scheduling, onboarding, records management, and compliance functions.

Without a proportional increase in administrative and support personnel, MCFR faces ongoing challenges in maintaining efficiency, regulatory compliance, and staff well-being during a period of historic organizational change.

Administrative and Support Staffing Analysis

One of the primary responsibilities of a fire department's administration is to ensure that the operations segment has the means and capacity to respond to and mitigate emergencies in a safe, efficient, and timely manner. An effective system of administration and support services is therefore critical to the success of MCFR.

Like any other division within a fire protection jurisdiction, administration and support require appropriate resources to function at a high level. By analyzing these positions and their functions within the organization, MCFR can achieve a common understanding of the relative resources committed to this function, both in comparison to industry best practices and in similar agencies. Striking the

appropriate balance between administration, support, and operational resources is essential for the department to accomplish its mission and meet community needs.

Typical responsibilities of administration and support staff include planning, organizing, directing, coordinating, and evaluating a wide range of departmental programs. This list is not exhaustive; in practice, administrative functions frequently overlap and coincide rather than occur in a linear fashion. For MCFR, this requires the Fire Chief and leadership team to focus on many complex and competing priorities simultaneously.

In this section, MCFR's project team explored current staffing levels and evaluated them against the mission, identifying potential gaps and efficiencies that might be gained with their current operations. For simplicity, personnel are grouped as follows; the ratios of each staff group are explored in detail.

- **Administrative/Support Staff-** Individuals considered full-time or part-time staff primarily assigned to manage, plan, or support the activities of the agency and its programs.
- **Emergency Response Staff-** Individuals considered full-time or part-time employees, primarily assigned to provide emergency services at the operational level.

Administrative Staffing Composition and Support Ratios

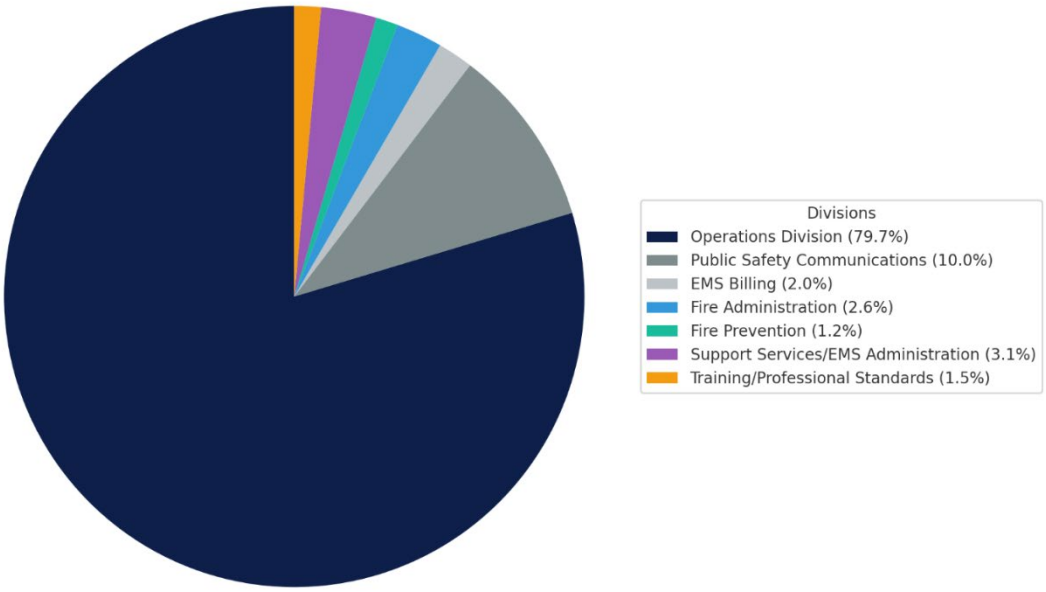
MCFR operates with a workforce of 811 authorized full-time equivalents (FTEs) in FY24-25. Of these, 646 personnel (approximately 79.7%) are assigned to the Operations Division, providing front-line fire suppression, rescue, and EMS services. The remaining 165 FTEs are distributed across a range of support functions that enable the department's mission but vary in their direct connection to emergency response operations.

Among the support groups, Public Safety Communications (81 FTEs) and EMS Billing (16 FTEs) fulfill vital system-wide roles, but they do not directly support MCFR's field operations in a manner comparable to internal logistics, administration, or training. When those two groups are excluded, the remaining 68 support FTEs are allocated as follows: Fire Administration (21), Fire Prevention (10), Support Services/EMS Administration (25), and Training/Professional Standards (12).

This results in an adjusted internal support-to-operations ratio of approximately 1:9.5, meaning one internal support FTE for every 9.5 operational FTEs. This structure reflects a focused and efficient administrative footprint, especially when compared with peer agencies of similar size. It ensures the Operations Division remains the backbone of the department, while maintaining essential internal capacity for planning, compliance, prevention, training, and workforce development.

The accompanying pie chart reflects the full distribution of staff across all major divisions. While PSC and EMS Billing are included for transparency, MCFR continues to monitor internal resource alignment to ensure the core mission of operational readiness is strongly supported by a well-structured and appropriately scaled administrative foundation.

Figure 16: Ratio of MCFR Staff Assignments



The following figure reviews the fire administration, fire prevention, support services, EMS administration and billing, training, and logistical support staff of MCFR.

Figure 17: MCFR Administrative and Support Staff

Position Title	Number of Positions	Hours Worked/Week	Work Schedule
Career Admin/Support Staff (full-time & part-time)	*Individuals considered full-time or part-time staff primarily assigned to manage, plan, or support the activities of the agency and its programs.*		
Fire Admin	21	40	M–F
Fire Prevention	10	40	M–F
Support Services/EMS Admin	25	40	M–F
Training Division/ Professional Standards	12	40	M–F
Administrative and Support Staff FTEs	**68**		
Public Safety Communications	**81**		
Total Department FTEs	**811**		
Admin/Support FTEs Percentage	**8.3%**		
EMS Billing FTEs Percentage	**2%**		
PSC FTEs Percentage	**10%**		
Operations FTEs Percentage	**79.7%**		

The MCFR project team notes that the current level of administrative and support staffing represents roughly 8.3% of the overall department staffing. Currently staff assigned to operational shift functions are also given administrative tasks in some cases.

Peer Comparison Ratios and Best Practices

A comparative analysis was conducted to evaluate the ratio of internal administrative and support personnel to operational fire-rescue staff across several metro-sized fire departments in the United States. This metric provides insight into how departments structure their workforce to support front-line service delivery and organizational sustainability.

MCFR maintains an adjusted internal administrative-to-operations ratio of 1:9.5, meaning there is one administrative/support staff member for every 9.5 operational personnel. This calculation excludes Public Safety Communications and EMS Billing positions, which, while essential, do not provide direct internal support to the fire and EMS operational workforce. The revised figure equates to 8.3% of MCFR's total workforce and reflects a lean but functional administrative model.

This places MCFR in alignment with peer agencies such as Frederick County (MD) (1:9.1) and slightly leaner than departments like Loudoun County (VA) and Henrico County (VA) (both around 1:8.2–1:8.4). Departments with higher administrative staffing ratios include Sacramento Metro Fire (CA) and Howard County (MD), each allocating over 13% of their total staff to support functions—often indicating deeper investments in training, planning, and internal systems.

Conversely, agencies such as Virginia Beach (VA) and Pasco County (FL) operate with notably lean support ratios (1:15.6 and 1:14.1, respectively), with administrative staff comprising less than 7% of total personnel. While this approach may reduce overhead, it can present challenges in sustaining long-term organizational health as service demand and complexity increase.

Charlotte Fire Department (NC) stands out as a unique case, with a support ratio of 1:3.8 (21% of staff), which is likely to reflect a broader inclusion of civilian roles in training, HR, logistics, and prevention to offload non-emergency duties from uniformed personnel.

The following figure illustrates these peer ratios.

Figure 18: Peer Comparisons

Agency	Operational FTEs	Admin/Support FTEs	Ratio (Admin: Ops)	% Admin/Support of Total Staff
Marion County Fire Rescue, (FL)	646	68	1:9.5	8.3%
Fairfax County Fire & Rescue (VA)[16]	1,396	174	1:8.0	11.1%
Sacramento Metro Fire (CA)	699	106	1:6.6	13.2%
Virginia Beach Fire Department (VA)	360	23	1:15.6	6.0%
Pasco County Fire Rescue (FL)†	918	65	1:14.1	6.6%
Loudoun County Fire Rescue (VA)	674	80	1:8.4	10.6%
Henrico County Fire Department (VA)	534	65	1:8.2	10.8%
Frederick County Fire & Rescue (MD)	528	58	1:9.1	9.9%
Charlotte Fire Department (NC)	1,027	273	1:3.8	21.0%
Frederick County, (MD)[17]	528	58	1:9.1	9.9%
Howard County, (MD)[18]	400	60	1:6.7	13.0%

[16] *Fairfax County Advertised Budget Plan FY2026, Volume 1, Agency 92: Fire & Rescue Department*
[17] *Frederick County, MD, FY2021 Budget/Staffing Report, Division of Fire and Rescue Services.*
[18] *Howard County, MD, FY2023 Operating Budget, Department of Fire and Rescue Services.*

MCFR's current organizational structure demonstrates a balanced, operations-focused staffing model that supports both service agility and internal accountability. The department maintains sufficient administrative and support personnel to ensure effective service delivery, regulatory compliance, long-range planning, and member development, all without significantly increasing overhead. When compared with peer agencies, MCFR's overall ratio aligns favorably, suggesting a deliberate effort to prioritize front-line capacity while sustaining core support functions. However, future improvements are likely to come not from increasing the number of support staff overall, but from expanding and refining specialized roles in areas such as training, Quality Improvement, prevention, community risk, data analytics, and strategic planning.

These targeted enhancements would directly improve operational readiness and help the organization keep pace with growing service complexity. The primary challenge moving forward is not the size of the administrative workforce, but ensuring the right mix of capabilities is in place to meet the department's evolving needs.

Fostering Partnerships in Administrative Support Functions

Although MCFR's internal administrative and support staffing levels are lean, they mirror broader challenges observed across Marion County government. Interviews with county partners—including Human Resources, Finance, Facilities, Office of the County Engineer, Information Technology, and Fleet Services—highlighted common concerns such as heavy workloads, constrained staffing, and rising organizational demands. Many of the delays and service limitations affecting MCFR, including prolonged recruitment cycles, difficulties with payroll or software implementation, facilities upkeep, new construction projects, and limited capacity to adopt new technologies, stem from these countywide resource limitations. Rather than being isolated to the fire rescue department, these constraints reflect systemic pressure on Marion County's administrative infrastructure, underscoring the need for coordinated investment in internal service functions.

Addressing these interconnected challenges will require not only a coordinated approach to administrative resource allocation and process improvement, but also intentional efforts to strengthen trust and understanding between MCFR and County leadership. Fostering open dialogue, joint problem-solving, and shared accountability will be essential to building a resilient administrative foundation that can support both departmental and county-wide priorities. Solutions that enhance both capacity and collaboration within Marion County administrative functions will ultimately benefit MCFR and all departments, supporting a more effective and unified public safety system.

Emergency Response Staffing

Every 23 seconds, a fire department in the United States responds to a fire somewhere in the nation.[19] It takes an adequate and properly trained staff of emergency responders to put the appropriate emergency apparatus and equipment to its best use in mitigating incidents. Overall, local fire departments across the nation responded to an estimated 1,388,500 fires in 2020, resulting in 3,500 civilian deaths, 15,200 civilian injuries and $21.9 billion in direct property damage.[20]

Insufficient staffing at an emergency scene decreases the effectiveness of the response and increases the risk of injury to all individuals involved. A fire occurs in a structure at the rate of one every 64 seconds, and a home fire occurs every 89 seconds.[21] Tasks that must be performed at a fire can also be broken down into three key components: life safety, incident stabilization, and property conservation. Responder's base life safety tasks on the number of building occupants and their location, status, and ability to take self-preservation action. Life safety-related tasks involve search, rescue, and evacuation of victims. The incident stabilization element involves delivering enough water to extinguish the fire and create an environment within the building that allows firefighters to make entry. Property conservation comes from efficient confinement and extinguishment.

NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program* was developed in 1987 due to the high number of line-of duty deaths being documented and reported and the growing concern with the number of firefighters who were suffering disabling injuries or developing occupational diseases. Several revisions to this consensus standard ensued over the years that continue to address changes in the fire industry regarding firefighter health and safety. Chapter 8 of this standard specifically addresses emergency operations as it pertains to all hazards that may be faced by firefighters. Section 6 of this chapter provides the following requirements:

- 8.6.1 The fire department shall provide an adequate number of personnel to safely conduct emergency scene operations.
- 8.6.1.3 Operations shall be limited to those that can be safely performed by the personnel available at the scene.
- 8.6.3 When inexperienced members are working at an incident, direct supervision shall be provided by more experienced officers or members.
- 8.6.4 Members operating in hazardous areas at emergency incidents shall operate in crews of two or more.

Furthermore, the annex (A.8.6.1.3) states "the limitation of emergency scene operations to those that can be safely conducted by the number of personnel on the scene is intended to reduce the risk of fire fighter death or injury due to understaffing" (NFPA, 2021, p. 48). In this statement, NFPA 1500 strongly recommends that:

[19] *2021 National Fire Protection Agency, Fire Loss in the United States During 2020*
[20] *Ibid.*
[21] *Ibid.*

"Interior fire-fighting operations not be conducted without an adequate number of qualified fire fighters operating in companies under the supervision of company officers. It is recommended that a minimum acceptable fire company staffing level should be four members responding on or arriving with each engine and each ladder company responding to any type of fire. The minimum acceptable staffing level for companies responding in high-risk areas should be five members responding or arriving with each engine company and six members responding or arriving with each ladder company. These recommendations are based on experience derived from actual fires and in-depth fire simulations and are the result of critical and objective evaluation of fire company effectiveness. These studies indicate significant reductions in performance and safety where crews have fewer members than the above recommendations. Overall, five member crews were found to provide a more coordinated approach for search and rescue and fire-suppression tasks. During actual emergencies, the effectiveness of companies can become critical to the safety and health of fire fighters. Potentially fatal work environments can be created very rapidly in many fire situations. The training and skills of companies can make a difference in the need for additional personnel and in reducing the exposure to safety and health risks"[22]

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

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

The first 15 minutes are the most crucial period in the suppression of a fire. The timing of these 15 minutes does not start when the firefighters arrive at the scene but begin when the fire initially starts. How effectively and efficiently firefighters perform during this period has a significant impact on the overall outcome of the event. This general concept is applicable to fire, rescue, and medical situations. Responders must perform critical tasks promptly to control a fire or to treat a patient. MCFR is responsible for assuring that responding companies are capable of performing all of the described tasks in a prompt, efficient, and safe manner.

[22] *NFPA 1500, Standard on Fire Department Occupational Safety and Health Program, Chapter 8.6.1.3, 2021*

Considerable ongoing local, regional, and national discussion and debate draws a strong focus and attention to the matter of firefighter staffing. Frequently, this discussion is set in the context of firefighter safety. The 2020 edition of NFPA 1710: *Standard for Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments* has updated the definition of career fire department to include departments that utilize full-time or full-time equivalent station-based personnel immediately available to comprise 50% of an initial full alarm assignment. MCFR falls into this new definition and should model their response based on these new guidelines regarding response practices when possible.

The jurisdiction may choose to establish response demand zones and use criteria outlined in the National Fire Protection Association (NFPA) standards. NFPA 1720: *Standard for the Organization and Deployment of Fire Suppression* Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments establishes demand zones for use. A demand zone can be a single building or group of buildings. It is usually a geographical boundary called fire management area or fire management zone. Marion County faces significant geographical challenges that limit the ability to assemble resources quickly. By applying NFPA 1720 to establish demand zones, MCFR can set performance metrics that reflect these realities while aligning with nationally recognized best practices.

The NFPA 1720 demand zone deployment model is listed in the following figure.

Figure 19: NFPA 1720 Deployment Model

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

***** A jurisdiction can have more than one demand zone.

***** Minimum staffing includes members responding from AHJ's department and automatic aid.

***** Response time begins upon completion of the dispatch notification and ends at the time interval shown in the figure.

MCFR has adopted and established Urban, Suburban, and Rural response zones and uses these designations for measuring performance.

NFPA 1710: *Standard for Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments* specifies the number of firefighters assigned to a particular response apparatus, often characterized as a "minimum of four personnel per engine company." Analysis notes that the more critical issue is the number of firefighters assembled at the scene of an incident in conjunction with the scope and magnitude of the job tasks expected of them, regardless of the type or number of vehicles upon which they arrive. The community should set staffing levels based on risk, capability, and citizen expectations. This ultimately becomes a policy decision set by the governing body. There is not a mandated requirement that fits all situations, although NFPA 1710 has objectives to meet regarding the number required for some typical scenarios.

Some terms are interchangeable, such as assembly of firefighters on an incident, which may also be referred to as "Initial Full Alarm Assignment," "Effective Firefighting Force" (EFF), or "Effective Response Force" (ERF). In the figures below, the MCFR project team describes the NFPA 1710 level of staffing comprising this effective response force for three different scenarios[23].

Figure 20: Initial Full Alarm Assignment for Residential Structure Fire

Initial Full Alarm Assignment—2,000 SF Residential Structure Fire	
Incident Commander	1
Water Supply Operator	1
2 Application Hose Lines	4
1 Support Member per line	2
Victim Search and Rescue Team	2
Ground Ladder Deployment	2
Aerial Device Operator	1
Incident Rapid Intervention Crew (4 FF)	4
Total	**17**

The above figure shows the staffing needed to safely and effectively mitigate a single-family, 2,000-square-foot two-story residential structure without a basement and no exposures. The following figure describes an initial full alarm assignment for an open-air strip-type shopping center. Note that as the risk and difficulty become greater, the staffing levels needed for effective mitigation increase.

[23] *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 (National Fire Protection Association 2020 ed.) Article 5.2.4 Deployment.*

Figure 21: Initial Full Alarm Assignment for Strip Shopping Center

Initial Full Alarm Assignment Open Air Strip Shopping Center (13,000 SF to 196,000 SF)	
Incident Commander	2
Water Supply Operators	2
3 Application Hose Lines	6
1 Support Member per line	3
Victim Search and Rescue team	4
Ground Ladder Deployment	4
Aerial Device Operator	1
Rapid Intervention Crew (4 FF)	4
EMS Care	2
Total	**28**

The following is an initial full alarm assignment for a three-story apartment building with a single 1,200-square-foot apartment fire.

Figure 22: Initial Full Alarm Assignment in a Three-Story Apartment Building

Initial Full Alarm Assignment 1,200 SF Apartment (3-story garden apartment)	
Incident Commander	2
Water Supply Operators	2
3 Application Hose Lines	6
1 Support Member per line	3
Victim Search and Rescue Team	4
Ground Ladder Deployment	4
Aerial Device Operator	1
Rapid Intervention Crew (4 FF)	4
EMS Care (1 crew)	2
Total	**28**

These are generalizations representative of different types of structures and their associated risks. Each authority may handle these types of fires with fewer or more personnel; however, this describes the work functions that must take place, generally concurrently and, for safe and effective fire handling, promptly.

Additional crews are necessary when a fire escalates beyond the capability of the initial assignment, or the fire has unusual characteristics such as a wind-driven fire, or when involving an accelerant with a highly flammable compound. There are also types of scenarios that may not be fires, but mass casualty incidents, explosions, tornadoes, and so forth that may need additional staffing. It is difficult or impossible to staff for these worst-case incidents. These incidents require a strong mutual aid or automatic aid plan for assistance and/or call-back policies.

The following figure depicts the career emergency staff employed by MCFR.

Figure 23: MCFR Career Emergency Response Staffing

Position Title	Number of Positions	Hours Worked/Week	Work Schedule
Career Operational Staff (full-time & part-time)	*Individuals considered full-time or part-time employees, primarily assigned to provide emergency services at the operational level.*		
Division Chief	3	53	0800-0800
Battalion Chief	18	53	0800-0800
Captain	26	53	0800-0800
Lieutenant	64	53	0800-0800
Driver Engineer	90	53	0800-0800
Firefighters	333	53	0800-0800
EMS Captain	3	48	0800-0800
EMS Lieutenant	6	48	0800-0800
Paramedic	66	48	0800-0800
EMT	37	48	0800-0800
Total Emergency Operations Staff	**646**		
Total Emergency Operations Staff per shift (max)	**215**		
Total Emergency Operations Staff per shift (min)	**173**		

A baseline overview of the staffing model, staffing levels, and relief factors provides an opportunity to review and analyze the current staffing patterns, shifts, and options to increase efficiency, effectiveness, and capabilities. The current MCFR shift leadership roles of Division Chief (3 FTEs), Battalion Chief (18 FTEs) and Company Officer (99 FTEs) to Driver Engineer and FF/PM/EMTs (526 FTEs) ratio for full-time positions within MCFR operations is at 23% or 1:4.3. The organizational structure for span of control is appropriate and provides the necessary leadership for emergency responses. As more line staff is added consideration should be given to ensure appropriate command staff is increased as well to maintain this ratio. Additional span of control issues should be considered for special programs that require detailed management such as special operations team functions and response capabilities.

MCFR guidelines direct the following first alarm assignment for structure fires.

Figure 24: MCFR Initial 1st Alarm

Initial Full Alarm Assignment—2,000 ft² Residential Structure Fire	
Division Chief	1
Battalion Chief	1
3 Engines/Tower	9
1 Heavy Rescue	3
2 Rescues	4
Volunteer Companies	Varies
Total Minimum Personnel	**18**

The on-duty minimum staffing for a first alarm meets the need for a routine house fire in accordance with NFPA 1710. An initial 1st Alarm Assignment is not sufficient for a strip shopping mall or an apartment building unless there is fire protection built into these structures and even then, the available staff on a 1st Alarm Assignment will be strained. This is a type of fire that is likely within the jurisdiction and represents a higher level of risk than the typical medium-size residential dwelling requiring additional alarms. MCFR's daily staffing and initial alarm assignments are structured to satisfy the demand zones defined in NFPA 1720, which are representative of the diverse response environments across the county. Beyond the initial assignment, MCFR employs additional alarm levels to expand the response as needed, tailoring resource deployment to the occupancy type, incident complexity, and information provided at dispatch.

Emergency Response Staff Allocation

Each shift is led by a Division Chief (Shift Commander), who serves as the senior officer on duty and is responsible for all aspects of shift operations, including resource allocation, incident command, and personnel management. These individuals also act as the Fire Chief's representative at significant incidents, ensuring strategic oversight and operational efficiency. Each shift is further divided into six individual battalions, each overseen by a Battalion Chief who reports directly to the Division Chief (Shift Commander). The Battalion Chiefs are responsible for managing personnel, apparatus, and emergency response operations within their respective battalions, ensuring efficient service delivery across Marion County's urban, suburban, and rural areas. This structured command system allows for effective coordination of emergency response efforts and ensures that MCFR maintains high levels of operational readiness and incident management throughout the county.

A variety of apparatus are used to deliver service and accomplish the department mission. Each day there are 7 command officers, 26 suppression units, 2 tower aerials, 2 heavy rescues, and 40 ambulances. MCFR uses the term rescue for a dual certified ambulance and medic for a single certified ambulance. The department operates with a Captain assigned to manage each fire station. Lieutenants are assigned to engines, heavy rescues, and ladders on opposite shifts. MCFR uses promoted apparatus operators called driver engineers to serve as the individual responsible for all aspects of maintaining and operating fire engines, heavy rescues, and aerial units. The role of the driver engineer or fire apparatus operator whether promoted or not is a very important role in the safe delivery and accomplishment of fire ground activities and should be maintained to ensure accountability of these tasks.

Several career firefighters, paramedics, and EMTS staff each fire/EMS station daily. When fully staffed, each suppression apparatus has a company officer, driver engineer, and two firefighters. Each rescue has a firefighter paramedic and a firefighter EMT. Each medic unit has a paramedic and an EMT assigned for the day. This staffing across the three shifts is rarely the case due to vacancies created by scheduled or unscheduled leave, and more likely, MCFR can normally expect a mixture of 173 total staff for the day. This combination of command staff, suppression units, rescues, and medic units across the 26-career fire and 3 EMS stations represents a total shift staffing of roughly 215 FTEs not including the Fire Chief and his administrative staff. Occupational Health and Safety Administration (OSHA) established guidelines and regulations in OSHA 29 CFR 1910.134(g)(4)(i) require two firefighters outside the hazard area while two firefighters are inside the hazard area. MCFR uses this as a method to ensure staffing remains consistently equal to our above this required number on shift at each fire station for the shift.

MCFR Scheduling Methodology

MCFR operates on a traditional three-platoon (shift) system, with most dual-certified personnel working 24-hour shifts on a rotating schedule, resulting in a 56-hour work week for shift operations. The remainder of EMS personnel work 24-hour shifts on a rotating schedule, resulting in a 48-hour work week for shift operations. Known in the industry as a “Kelly Day” schedule.

Recent legislative developments in Florida and national trends in fire service labor practices have reignited conversations around reducing firefighter work hours to better support wellness, retention, and performance. While Marion County Fire Rescue currently operates on a 56-hour average workweek, consideration should be given to the long-term feasibility of transitioning to a shorter, 48-hour workweek for dual-certified firefighter/paramedics. Such a shift aligns with growing efforts across the country to mitigate fatigue-related risks, improve work-life balance, and address the mental and physical health impacts of extended shift schedules.

The Florida legislature has introduced bills that reflect this evolving standard, indicating potential policy shifts at the state level. As workforce demands increase and competition for qualified personnel intensifies, evaluating the operational and financial implications of a 48-hour work week may be a critical step in sustaining a resilient and healthy workforce.

Minimum Staffing Factor Considerations

The starting point for any staffing analysis is to determine the minimum number of personnel needed to fill the minimum daily staffing positions for fire and EMS operations and avoid overtime for unscheduled hours. MCFR uses two different schedules for employees, the 56-hour week for dual-certified employees and the 48-hour week for single-certified employees. Each requires their own calculations to ensure coverage for 168 hours a week or 8,760 hours per position a year.

MCFR has adopted a minimum staffing factor of 3 personnel on all suppression apparatus and 2 personnel on all rescues and medic units. These required minimum staffing numbers are used to determine the number of positions needed to fill each seat for 168 hours a week. To ensure minimum daily staffing, MCFR budgets 646 FTEs across the three shifts, allowing for a baseline daily staffing level of 215 personnel. However, the minimum staffing operational "floor" is often 173 personnel due to vacancies, injuries, leave, and training assignments.

Relief Factor Considerations

The next staffing factor to be analyzed is the "relief factor" or the amount of additional FTE positions needed to reasonably cover "off time" including, leave, training, vacancies, etc. The following is an accepted industry best practice methodology used to determine a relief factor to adequately cover paid leave, training time off, and vacancies for 24-hour fire department shifts.

Relief Factor Calculation Overview

The relief factor represents the number of additional full-time equivalent (FTE) personnel needed beyond daily minimum staffing to account for time off, including vacation, sick leave, training, and vacancies. This is a standard calculation used in fire department staffing analysis, particularly for 24-hour shift schedules.

- Determine the Total Hours of Leave and Vacancy Coverage Needed Annually:
  - Add together all categories of leave (sick, vacation, training, injury leave, etc.) and the impact of position vacancies. Convert this into total hours per year that require coverage.
- Convert Hours to Shifts:
  - Divide the total annual hours by the number of hours in a standard 24-hour shift to determine the number of shifts that must be filled each year.
    - 2,912 for 56-hour week
    - 2,496 for 48-hour week
- Determine Average Leave per FTE:
  - Divide the total number of shifts needing coverage by the number of line personnel (minimum staffing). This will provide the average number of shifts each employee is unavailable annually.
- Calculate Available Shifts per FTE:

    - Subtract the average unavailable shifts from the total number of scheduled shifts per FTE in a 56-hour or 48-hour workweek (typically 121 shifts per year or 104 shifts per year) to find the average number of shifts each employee is actually available to work.
- Computing the Relief Factor:
    - Divide the total scheduled shifts per year (e.g., 121 or 104) by the average number of shifts each FTE is available to work. This provides the relief factor. A relief factor of 1.25 means that for every position that must be filled daily, 1.25 FTEs are needed to reliably maintain staffing levels year-round.

This relief factor is then multiplied by the number of positions required per shift to determine total FTEs needed to cover all scheduled and unscheduled time off without incurring excessive overtime or risking understaffing.

Departments typically use the relief factor to calculate how many personnel are needed to maintain minimum staffing when accounting for time off, leave, and injuries. Historically, MCFR has applied a relief factor of:

- 1.17 FTEs per dual-certified employee
- 1.18 FTEs per single-certified employee
- .07 FTEs to account for average yearly attrition rates

When combined with the yearly attrition rate MCFR uses 1.25 as the department relief factor. However, this relief factor has not been consistently funded or applied, particularly during recent budget cycles. As a result, the department has increasingly relied on holdovers, reduced staffing, and overtime to fill unavoidable gaps.

Workforce planning and overtime data suggest that a revised relief factor and updated position planning model are necessary to sustain 24-hour operations. A more consistent relief strategy, aligned with shift leave trends and historical attrition, would reduce forced overtime, improve training continuity, and ensure safe minimum staffing levels are preserved without reactive adjustments.

Deployment Methods and Staffing Performance for Incidents

Typical fire department responses across the nation include structure fires, vehicle fires, wildland fires, vehicle accidents, hazardous materials responses, technical rescue responses, general calls for service, and emergency medical calls. The latter is the most frequent reason for activating the 911 system.

The prompt initial arrival of at least four personnel is critical for structure fires. Federal Occupational Safety and Health Administration (OSHA) Safety regulations (CFR 1910.120) require that personnel entering a building involved in fire must do so in groups of two. Further, before personnel can enter a building to extinguish a fire, at least two personnel must be on the 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.[24]

[24] *OSHA CFR 1910.120, Two-in, Two-out Regulation*

Fireground Staffing and OSHA

To comply with federal safety standards, MCFR adheres to the Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1910.134(g)(4)(i), commonly known as the "two-in/two-out" rule. This regulation requires that two firefighters operate inside a hazardous atmosphere while two remain outside, ready for immediate rescue if conditions deteriorate. MCFR uses this rule as a baseline for determining safe minimum staffing at each station.

While the department strives to meet this benchmark consistently, it is not always achieved, especially during periods of vacancy or unexpected leave. The rule emphasizes the need for at least four on-scene personnel to begin safe interior operations at a structure fire. NFPA and OSHA standards both emphasize that without this minimum, firefighters must delay entry, potentially allowing incidents to escalate in severity.

Emergency Fire Incidents

MCFR currently maintains daily budgeted operational staffing of approximately 215 personnel across its system. However, this level is only fully realized when no vacancies exist due to vacation, training, or other leave. Like many departments nationwide, MCFR has defined a "minimum staffing" threshold—set at 173 personnel—below which overtime is authorized to ensure operational readiness.

While the department staffs most engines with three firefighters, this is not always sufficient to initiate interior operations independently, especially when complex tasks must be performed concurrently. Larger or multi-unit responses often strain available resources, particularly during overlapping calls or special incidents. The staffing model of four personnel per company, though ideal, is not currently sustainable within MCFR's available workforce.

Emergency Medical Incidents

MCFR delivers Advanced Life Support (ALS) first response and EMS transport across its jurisdiction. This critical EMS role frequently draws fire units away from availability for fire or rescue response, especially during overlapping incidents. This system, while tiered and efficient in design, still places significant strain on MCFR personnel, especially when transport delays or overlapping calls require extended fire unit commitment at EMS scenes.

Special Operations Incidents

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* outlines special rescue situations that require additional training and education. These rescues are categorized as special operations and are those emergency incidents to which a fire department responds that require specific and advanced training and specialized tools and equipment. These are often known as hazardous materials and technical rescue incidents. In addition to technical rescue and hazardous materials, MCFR responds to a variety of technical low-frequency, high-risk incidents, including water rescue, rope rescue, confined space, collapse rescue, trench, and lost persons. MCFR also offers a SWAT tactical medicine program, Urban Search and Rescue program, and a Helicopter Search and Rescue Program.

Responsibilities and Activity Levels of Personnel

In every fire department, there exist several activities accomplished that are outside of the "regular" duties of responding to emergency incidents. These typically involve general maintenance of self-contained breathing apparatus (SCBA), hose testing, air monitor calibration, EMS quality assurance, and various committees. MCFR relies upon individuals who have a particular interest in these additional areas to accomplish the tasks along with the use of contractors to perform the specific testing or services. In addition to the benefit of completing these tasks, the additional responsibilities serve to develop further knowledge, skills, and abilities of participating individuals.

MCFR will continue to face the challenge of making prudent staffing and facility placement decisions based on weighing multiple considerations, including risk exposure, response times, access challenges, deployment, community expectations, and response capacity. Those decisions are difficult with financial constraints and service demand increases. MCFR's current operational staffing model reflects a highly adaptive workforce managing diverse risks through a combination of shift-based and dynamic staffing coverage. While the structure supports consistent service delivery under routine conditions, it is increasingly strained by simultaneous call volume, vacancies, and regional response demands. Battalion Chiefs and front-line personnel frequently adjust unit coverage mid-shift to account for absences, injuries, or training. These real-time workarounds, while necessary, create operational fatigue and inconsistent command presence, especially during complex or concurrent incidents.

During internal interviews, MCFR operations personnel consistently described the need for frequent adjustments to maintain minimum staffing levels. Several members referred to the experience as "constantly shifting to fill the gaps," noting that multi-unit responses often carry uncertainty depending on available personnel and unit location. Battalion Chiefs echoed these concerns, citing diminished span of control when key command positions are unstaffed and acknowledging that operating below optimal staffing levels has become more routine than exceptional. These conditions emphasize the importance of evaluating deployment strategies and relief factors to ensure reliable, sustainable emergency response coverage.

These insights underscore the need for more sustainable staffing levels, predictable relief coverage, and deliberate resource planning to reduce burnout and maintain performance across a growing and geographically complex system.

Utilization of Career and Volunteer Companies

In addition to the 25 career fire stations, five of MCFR's stations are staffed by all-volunteer members who respond when called upon or schedule shifts at their respective stations. MCFR's combination structure utilizes volunteer personnel who are not currently working a shift to respond when "paged" from their places of residence or work in addition to career staff. Once the call is complete, these individuals return to their place of residence or work.

This system has worked well for MCFR but has not been without its challenges. Over time, MCFR has been required to add the necessity of covering a 24-hour shift utilizing career personnel to address an increasing difficulty of ensuring an effective response during specific time periods. As with volunteer fire departments across the country, the life demands (i.e., careers, family functions) of volunteer staff have negatively impacted their abilities to consistently respond in support of MCFR needs. Many of the volunteer companies are failing to answer calls for service with regularity.

One of the challenges facing MCFR is the ability to recruit and retain individuals willing to commit to being a volunteer firefighter. Onboarding volunteers is equally as expensive as onboarding career staff. While MCFR has been working diligently to recruit and train individuals to bring staffing levels to a maximum level, the efforts have been unsuccessful in achieving maximum authorized operational staffing levels and participation.

EMERGENCY MEDICAL SERVICES

MCFR provides Emergency Medical Services (EMS) across the county through a high-performance model that integrates Advanced Life Support (ALS), Basic Life Support (BLS), and specialty care transport services. EMS-related responses account for over 80.4% of MCFR's total incidents, with more than 95,000 rescue unit responses annually. As Marion County continues to grow and the population ages, EMS demand has increased significantly, particularly in areas with medically vulnerable populations.

MCFR operates a fleet of ALS engines and rescues from over 25 fire stations and 3 EMS-specific stations. The department's coverage model uses a mix of 24/48 dual-certified units, Peak Demand Units (PDUs), and special operations EMS personnel. Urban and suburban communities benefit from overlapping station coverage, while rural areas require broader response zones with extended travel times. The agency is actively exploring alternative staffing and scheduling models to reduce fatigue, improve crew safety, and support long-term workforce sustainability, in alignment with its strategic objectives.

Since its formation in 1979, MCFR has evolved from a decentralized system of volunteer fire departments into a fully integrated, career-based agency. Besides the traditional services provided by EMS divisions, MCFR includes Critical Care Transport (CCT) capabilities, and a growing Community Paramedicine program. These enhancements allow MCFR to serve both emergent 911 responses and support community health initiatives, particularly for high-risk and medically complex populations.

Innovative programs such as the Community Paramedicine and CORe initiatives extend care into high-utilizer populations and address behavioral health and opioid-related crises. These services are delivered in partnership with local hospitals and public health agencies to reduce reliance on emergency departments, improve patient outcomes, and reduce 911 calls. MCFR continues to evaluate how these programs can expand to meet growing needs, while ensuring community paramedics maintain operational readiness and core emergency skills.

Regional EMS delivery is enhanced through automatic aid agreements and clinical alignment with Ocala Fire Rescue and The Villages Public Safety Department. All agencies operate under the same medical protocols and oversight structure, ensuring consistency in patient care and seamless collaboration during mutual aid responses.

EMS Service Delivery and Logistical Support Services

MCFR's EMS system is structured to provide timely and efficient prehospital care across diverse geographic areas, from densely populated corridors to remote rural zones. The department utilizes a layered deployment strategy that includes 24/48-hour full-time rescue units, Peak Demand Units (PDUs), and specialty units such as Community Paramedics and Critical Care Teams. This configuration is designed to optimize resource allocation and preserve system integrity as demand continues to grow. Ongoing analysis of dispatch data and call trends informs regular adjustments to the deployment matrix to improve efficiency and eliminate low-value responses.

MCFR monitors system performance through response time metrics aligned with national benchmarks, including NFPA 1710 and CPSE standards. Urban and suburban zones aim for more stringent turnout and travel times, while rural benchmarks accommodate geographic realities. Despite coverage challenges, MCFR consistently meets or exceeds many key indicators due to strategic station placement and adaptive unit deployment.

Supporting this system is a logistics network that maintains EMS vehicles, equipment, and medical supplies. Marion County Fleet services have invested in dedicated Emergency Vehicle Technicians (EVTs) to ensure fleet readiness. Spare units are rotated systematically, and fuel and maintenance strategies are being enhanced to reduce out-of-service intervals. Additionally, MCFR has established multiple logistics caches strategically placed throughout the county. These caches allow field units to rapidly restock medical supplies and return to service without the need to travel to a central location, reducing turnaround time and enhancing system efficiency. These improvements are part of a broader strategic effort to minimize crew delays and reduce fatigue.

The integration of data analytics through ESO Insights and other platforms allows MCFR to dynamically adjust coverage, analyze response trends, and forecast unit demand. These tools enable informed decisions on staffing, unit relocation, and potential station expansions. Strategic planning is ongoing to address projected growth corridors, especially along major highways and in developing communities. This planning also includes efforts to balance EMS and fire service delivery, ensuring equity in resources, training, and operational readiness across both disciplines.

Current Medical Control and Oversight

MCFR operates under a robust and collaborative medical oversight structure that ensures clinical excellence and evidence-based care delivery. The department's EMS operations are governed by a designated Medical Director who provides direction for clinical protocols, performance standards, and continuing education requirements. This role is supported by the Medical Advisory Committee (MAC), composed of EMS leadership, field providers, and hospital-based physicians, ensuring broad-based clinical input and system-wide alignment. MCFR is currently evaluating the added role of an Associate Medical Director to assist with the duties of the Medical Director as their department and community continue to grow an evolve.

Clinical protocols are reviewed regularly and updated to reflect advances in prehospital care, changes in state or national guidance, and evolving community health trends. This process includes an internal protocol review team that collaborates closely with the Medical Director to vet proposed changes, conduct risk-benefit analyses, and ensure alignment with both ALS and BLS scope of practice guidelines. These efforts support MCFR’s strategic goal of maintaining progressive, high-performing EMS clinical operations.

MCFR emphasizes consistent engagement between field personnel and the medical oversight team. Online Medical Control (OLMC) remains readily available for complex or high-acuity calls, and physician ride-along, case reviews, and crew debriefs help maintain open dialogue between clinicians and operational staff. This culture of transparency and collaboration reinforces provider confidence and supports continuous improvement across all levels of EMS delivery.

Additionally, the department is committed to standardizing medical control across jurisdictional partners. MCFR, Ocala Fire Rescue, and The Villages Public Safety Department operate under the same protocol framework and Medical Director, enabling clinical consistency and mutual aid integration. This alignment was identified as a strategic priority to ensure seamless patient care regardless of response agency.

The department continues to evaluate enhancements to its medical oversight model, including expanded physician engagement in simulation-based training, data-driven protocol refinement, and targeted clinical performance feedback. These initiatives contribute to a proactive and agile oversight structure that is responsive to both emerging trends and frontline feedback.

Quality Assurance/ Quality Improvement Mechanisms

MCFR maintains a comprehensive Quality Assurance and Quality Improvement (QA/QI) program to ensure consistency, accuracy, and clinical excellence across all levels of EMS service delivery. The department utilizes ESO's Quality Management (QM) module and custom-built dashboards to review patient care reports, monitor documentation standards, and identify performance trends. All reports undergo review by trained staff, with focused audits triggered for high-acuity calls, clinical deviations, or incomplete narratives.

The QA/QI process is closely aligned with state and national reporting systems including EMSTARS and NEMSIS, ensuring compliance while enabling benchmarking against peer agencies. MCFR's QA program also supports internal performance tracking through ESO Insights, Ad-Hoc Reports, and Tracker tools, allowing supervisors and QA staff to target provider-specific feedback and trend-based education initiatives.

Field providers are engaged throughout the process. Feedback loops include direct communication from QA personnel, case reviews with medical direction, and real-time performance alerts. The department continues to refine its approach by integrating QA/QI with ongoing education, protocol updates, and simulation-based training reinforcing the strategic goal of embedding quality into daily operations.

In support of the strategic plan's emphasis on efficient workflow, MCFR is also pursuing enhancements to the ESO report-writing process. This includes reducing redundancy, improving clarity, and aligning reporting workflows with billing and QA requirements to minimize administrative burden on crews.

EMS System Integrity and Required Credentialing

To ensure a reliable, safe, and high-performing EMS system, MCFR maintains rigorous credentialing and system integrity standards for all personnel and operations. Each EMS provider, whether EMT or Paramedic, must meet State of Florida certification requirements and undergo internal verification before being cleared for independent duty. These certifications are tracked through ESO's Personnel Management module, which also alerts leadership to upcoming expirations or missing qualifications.

Agency-level credentialing is equally robust. MCFR maintains its Advanced Life Support (ALS) licenses through the Florida Department of Health and complies with all regulations for DEA-controlled substances, CLIA certifications, and the Certificate of Public Convenience and Necessity (COPCN). MCFR's EMS operations are governed by a comprehensive set of federal, state, and local regulations designed to ensure safe, competent, and accountable service delivery.

Key statutes and rules include Chapter 401, Florida Statutes (Emergency Medical Services), and Rule Chapter 64J-1, Florida Administrative Code, which define licensure requirements, standards of practice, training protocols, and operational mandates for EMS agencies and personnel. These frameworks are enforced by the Florida Department of Health, Bureau of Emergency Medical Oversight. Internal audits are performed regularly to ensure compliance, safety, and accountability.

Credential maintenance is supported through a robust continuing education system. MCFR delivers recurring EMS training via classroom instruction, simulations, and online modules. Strategic priorities focus on expanding these opportunities while emphasizing equal attention to EMS and fire service disciplines. High-risk, low-frequency procedures receive focused attention to ensure operational readiness.

Community Paramedics, Critical Care Transport personnel, and newly promoted EMS providers are required to complete additional credentialing steps and undergo skills verification through structured task books. These systems are aligned with QA and training workflows to reinforce clinical proficiency.

MCFR's credentialing strategy also supports succession planning and workforce development. By embedding credentialing milestones into promotional pathways and performance evaluations, the department fosters a culture of accountability and growth while maintaining a resilient and skilled EMS workforce.

PERSONNEL MANAGEMENT

Although the delivery of emergency services to the citizens and visitors of a community is critical, effective management and organization of an emergency services agency are just as critical to its success. The personnel that deliver those services are the backbone of the system. However, without the proper administrative and support personnel to handle supervision, command, and control, operational personnel may not be able to perform satisfactorily.

Regulatory, Policy, and Guidance Documents

The rapidly changing environment and circumstances typically associated with emergency services require a standardized set of rules, regulations, and policies to guide appropriate behavior and accountability. These guiding documents are vital for success in all phases of fire department operations and are critical for effective and efficient organizations.

MCFR has established a set of regulatory documents, including Standard Operating Procedures and Standard Operating Guidelines (SOPs/SOGs). Once established, training should be provided to all personnel, which MCFR incorporates into the annual fire and EMS training requirements. MCFR updates and reviews SOPs for consistency and legal mandates annually. Agencies should ensure that SOPs/SOGs are fully reviewed and revised at least every three years, leading to a goal of one-third of the department's SOPs reviewed annually. SOPs/SOGs are utilized during all training evolutions, with several specific examples referenced in other sections of this report.

The MCFR SOPs/SOGs provide guidance for personnel issues and requires fire chief approval for changes. The policy manual should be updated periodically. This is a difficult task for most organizations to complete amongst the other daily tasks required by staff. MCFR uses Vector Solutions® for employee access and management. Changes are communicated through departmental memoranda referred to as information bulletins.

MCFR has a standard process for review or periodic updates. MCFR established an SOP/SOG review committee that has committed to complete a comprehensive review of one third of the SOP/SOGs each year. MCFR has a process to trigger changes to a guideline that has been modified due to a new method or a technology change.

Job Descriptions

MCFR employs several different positions with job descriptions that are not unlike other agencies of similar size and organization. MCFR currently employs the uniformed positions of EMT, Paramedic, EMS Lieutenant, EMS Captain, Firefighter, Firefighter/EMT, Firefighter Paramedic, Driver Engineer, Lieutenant, Captain, Fire Inspector, Fire Marshal, Battalion Chief, Division Chief, Deputy Chief, and Fire Chief. Job descriptions should receive periodic review and revision. MCFR has reviewed the job descriptions annually.

Compensation

MCFR ability to attract, hire, and retain employees has a direct impact on its ability to provide the desired services effectively and efficiently. Agencies should provide periodic reviews of current compensation structures, market competitiveness, and department compensation philosophies. These internal and external comparisons of equitable positions and workloads ensure the agency can attract and maintain an effective workforce.

Marion County Fire Rescue (MCFR) recognizes that competitive and equitable compensation is essential to attracting, retaining, and motivating a highly skilled and committed workforce. The department's compensation philosophy is rooted in maintaining parity with peer agencies across Florida and ensuring internal fairness between job classes and ranks. As a high-volume metro system with dual-certified firefighter/paramedics staffing most positions, MCFR seeks to align wages with both the technical complexity and the physical demands of the role.

Compensation for rank-and-file employees is governed through a collective bargaining agreement (CBA), which outlines base wages, incentive pay, overtime, and specialty pay for various roles and certifications. Regular market evaluations and comparative studies are used to ensure that salary ranges remain competitive in a tight labor market, especially for paramedic-certified personnel. MCFR also supports longevity and career development through structured step increases and promotional opportunities tied to both experience and credentialing.

Beyond base pay, MCFR's compensation practices include specialty pay (e.g., HazMat, TRT, ARFF), tuition reimbursement, and wellness incentives, all of which contribute to the department's strategy to remain the employer of choice in the region. These practices support the department's broader goals of operational readiness, professional growth, and long-term workforce sustainability.

MCFR's pay scale spreads, the percentage difference between minimum and maximum salaries within each pay grade, are thoughtfully positioned to support both recruitment and career progression. In HR best practices, a range spread of 30–50% is generally recommended for roles that require long-term retention and internal mobility.

- Non-union county positions: Spread ranges from approximately 30% to 50%, allowing entry-level employees room to grow and managers flexibility to reward performance and tenure.
- Union-represented fire suppression and EMS personnel (CBA-covered): Most classifications reflect a 75% wage spread between minimum and maximum pay. This significantly exceeds traditional public sector benchmarks and is designed to promote retention, support long-term career growth, and reduce the urgency for promotion to achieve wage progression.
- Chief Officer grades (300+): Exhibit higher spreads, often 40–50%, reflecting both broader responsibilities and variability in experience and leadership skills.

MCFR's collective bargaining agreement establishes wage spreads of approximately 75% across most classifications, exceeding common public sector benchmarks of 30–50%. This structure provides significant earning potential within each rank and supports long-term retention by enabling career salary growth independent of promotion. However, such wide spreads require structured progression systems to avoid internal compression and maintain transparency. It is important to note that while there is a larger spread the starting wage must be monitored to ensure it remains competitive to attract candidates.

This compensation philosophy and structure ensures MCFR remains competitive in the labor market while retaining flexibility to acknowledge performance and increase equity over time. It aligns well with recommended benchmarks for public sector roles and supports transparent, merit-based advancement.

Disciplinary Process

Under the existing organizational structure, personnel-related decisions are made at various levels to support a culture of growth, accountability, and professional development. The Fire Chief holds the authority to hire, promote, and manage personnel decisions. The organization follows a behavioral modification approach, focusing on identifying whether an employee is unaware, unable, or unwilling to meet expectations. This method emphasizes coaching, mentoring, and training to address performance concerns before formal corrective actions are considered.

Guidance and performance improvement efforts are initiated through the chain of command, beginning at the company officer level, with the goal of reinforcing expectations and providing necessary support. Policies and procedures outlined in the Standard Operating Guidelines (SOG) manual help ensure consistency in managing personnel-related matters. While the organization prioritizes education and professional development, it also acknowledges the importance of maintaining operational effectiveness. Employees are provided with access to a grievance policy, offering a structured process for addressing concerns, fostering transparency, and promoting fairness in decision-making. Legal counsel is available to provide guidance, helping to mitigate potential risks associated with hiring decisions, performance management, and personnel actions.

Mental Health and Wellness

Our nation's firefighters face emotional needs that are very different and unique to the occupation. The percentage of firefighters struggling with career-related stress is very high, with suicide rates climbing each year. These issues manifest themselves through higher divorce rates and addictions such as alcohol, drugs, or gambling. Frequently seen in recent studies, another major concern is Post-Traumatic Stress Disorder (PTSD). As these symptoms occur, employees need support systems that are readily accessible and provide access to someone who is qualified and genuinely understands the employee's circumstances.

MCFR has adopted a proactive mentality for mental health resources and engaging employees in need. There were several examples of the successes achieved through current processes. A strong desire to enhance and continue the improvement of these resources was expressed. Several staff have referenced the work the Peer Support Team is doing and how it helps during the interviews with stakeholders.

Several programs can assist including critical incident stress management, employee assistance programs, Behavioral Health Access Programs, and intervention programs, to name a few. MCFR offers an Employee Assistance Program, and a Critical Incident Stress Management team is requested when needed. Regular information is sent to all members to communicate and make each member aware of the availability of resources.

Marion County Fire Rescue (MCFR) has formally adopted a Behavioral Health Access Program (BHAP), establishing a comprehensive framework to support the mental and emotional well-being of its personnel. The BHAP represents a structured, department-wide approach to behavioral health and is accessible in every MCFR fire station in both printed and electronic formats. It provides a centralized and stigma-free network of services that recognize the dynamic nature of mental health, empowering employees to seek timely, individualized support as needed.

The BHAP integrates established resources including the department's Mental Wellness Standard Operating Guideline, the Chaplaincy and Peer Support Programs, and the Clinician Response Team. These resources are coordinated under the guidance of the Health and Safety Committee (HSC), which is led by the Health and Safety Officer. The HSC oversees all aspects of the BHAP along with other wellness initiatives such as cancer prevention, physical fitness, and general health promotion, ensuring alignment with MCFR's commitment to employee safety and well-being.

The BHAP guide includes operational guidelines for Chaplain Services, Peer Support, the Clinician Response Team, and outlines the scope and function of the HSC. Resources are consolidated through a dedicated internal website, giving personnel streamlined access to support systems including Critical Incident Stress Management, family support resources, behavioral health education, and first responder-specific Employee Assistance Programs (EAPs).

BHAP's multidisciplinary support model includes trained peer supporters, licensed clinicians, and chaplain personnel with specialized crisis intervention training. By providing this continuum of care, MCFR reinforces its commitment to long-term resilience, wellness, and proactive mental health care for all members of the organization.

Application, Recruitment, and Retention Process

Marion County Fire Rescue (MCFR) maintains a robust recruitment pipeline, reflective of its scale as a large, metro fire-rescue agency. The department employs both traditional and innovative outreach strategies to attract qualified candidates, including job fairs, digital and social media advertising, ride-alongs, and partnerships with local fire academies and EMS programs.

MCFR's recruitment materials highlight its dual-certified model (Firefighter/Paramedic), career growth potential, comprehensive benefits, and opportunities to serve in specialized operations such as USAR, HazMat, and SWAT teams.

The application process is competitive and managed in partnership with Marion County Human Resources. MCFR also completes background checks on potential volunteer and career candidates for hire. MCFR uses the Candidate Physical Ability Test (CPAT) as their pre-employment physical agility test. One of the unique challenges MCFR faces is the high demand for dual-certified personnel, which narrows the applicant pool and often extends the hiring timeline. To offset this, the department has explored partnerships with local schools and internal development of EMTs to paramedics. Once through the interview phase MCFR then requires a medical exam. MCFR has implemented NFPA 1582: *Standard on Comprehensive Occupational Medical Program for Fire Departments* medical exams for new hire employees.

Once hired, new personnel enter a structured onboarding and mentorship process. Recruits attend a comprehensive orientation and field training program designed to transition them into full-duty operational roles. This process includes the following:

- Mentorship Program: Mentors help integrate new firefighters, candidates, and recruits into MCFR's culture and expectations, covering topics such as safety, operations, chain of command, and interpersonal dynamics.
- Recruit Academy: For entry-level positions, the department periodically conducts full recruit academies that combine fire and EMS orientation, MCFR-specific protocols, and physical conditioning to prepare new hires for shift work.
- Field Training Program: MCFR uses structured evaluations and task books to assess new employees' progression during their initial months. Feedback is provided at key milestones to ensure professional growth and operational competency. New hires are assigned officers, experienced personnel who provide guidance, support, and accountability during the probationary period.

Overall, MCFR's recruitment and mentorship efforts are designed not only to fill vacancies, but to cultivate committed professionals who understand and align with the department's core values. Stakeholder interviews identified mentorship as one of MCFR's strengths.

Performance Reviews, Testing, Measurement, and Promotion Process

MCFR provides annual performance reviews for full-time employees that include a comprehensive analysis of employee performance goals and objectives. MCFR conducts annual physical competency testing and performance reviews of knowledge, skills, and abilities. Promotional testing is completed on an as-needed basis to fill open Engineer, Lieutenant, Captain, and Battalion Chief positions.

Marion County Fire Rescue (MCFR) has established a structured and comprehensive system for employee evaluation and advancement that integrates annual performance reviews, promotional testing, and skill development pathways.

Performance Reviews and Evaluation

All MCFR employees undergo regular performance evaluations in accordance with the Collective Bargaining Agreement (CBA). These evaluations are used to assess employee competence, professionalism, and readiness for advancement. Evaluations typically influence eligibility for step increases, promotional testing, and educational incentives. For new hires and rehires, evaluations are conducted at the midpoint and end of their 12-month probationary period. Promotional probation lasts six months and includes continuous assessment to determine suitability for the elevated role.

Measurement and Testing

MCFR applies standardized and role-specific testing to assess candidates during promotional cycles. Promotional processes are governed by MCFR's Standard Operating Guideline 2.10, it includes written examinations, assessment centers, taskbooks, and interviews. Candidates must meet eligibility criteria, including minimum tenure, certifications, and a clean disciplinary record within the past two years. A minimum score of 70% is required to advance from the written examination to the assessment center.

Assessment centers are tailored to the responsibilities of the targeted position, using scenario-based exercises to evaluate decision-making, leadership, communication, and operational knowledge. Written exams may be challenged, and assessments are overseen by the Training and Safety Division. Taskbooks assigned upon inclusion on a promotional list must be completed within 60 days or the candidate is removed from consideration.

Promotional Process

MCFR employs the "Rolling Rule of Three" for promotions. Once promotional testing is completed, the top three scoring candidates are eligible for selection. The Fire Chief may choose any of the three, allowing discretion based on department needs or individual performance. Promotional lists remain active for two years or until exhausted. For higher ranks such as Lieutenant and Captain, candidates must complete progressively more advanced coursework and have a defined minimum tenure in preceding ranks. Scores for promotional testing are weighted across written exams, assessment centers, and interviews, with scoring rubrics varying by rank.

This merit-based system ensures fairness, promotes professional growth, and aligns with MCFR's goals of continuous improvement and leadership development. It also supports succession planning by maintaining a pool of qualified candidates ready to step into advanced roles as operational needs evolve.

Health and Safety

MCFR recognizes the importance of health and safety within the department and follows guidelines aligned with several key NFPA standards that serve as industry benchmarks for firefighter wellness, occupational health, and operational safety:

- NFPA 1500: *Standard on Fire Department Occupational Safety, Health, and Wellness Program*
  - Establishes the comprehensive framework for department-wide safety, health, and wellness policies, including training, risk management, PPE, and behavioral health.
- NFPA 1521: *Standard for Fire Department Safety Officer Professional Qualifications*

    - Defines the roles, responsibilities, and qualifications for both Incident Safety Officers and Health and Safety Officers, supporting a dedicated safety management system.
- NFPA 1582: *Standard on Comprehensive Occupational Medical Program for Fire Departments*
    - Sets the medical requirements for fire service personnel and guides annual medical evaluations, fitness-for-duty decisions, and exposure risk tracking.
- NFPA 1583: *Standard on Health-Related Fitness Programs for Fire Department Members*
    - Provides requirements for implementing and managing fire department fitness programs, including physical assessments, exercise protocols, and wellness education.

These standards reinforce the foundation of MCFR's approach to firefighter wellness and risk reduction, while also serving as targets for continuous program improvement.

At the time of this report, MCFR participates in the Countywide Safety Committee. It has regular meetings monthly. Currently, safety issues (accidents and injuries) are presented to the Chiefs at their monthly meetings. The establishment and empowerment of a safety committee can be one of the best tools to increase the safety of firefighters. The MCFR project team strongly encourages MCFR to ensure all activities of the safety committee are in alignment with Chapter 4 of NFPA 1500.

To be effective, safety committees must be diverse in their representation from across the department, ensuring representation by shift, rank, function, and interest, and including representation from non-uniformed staff members as well. The committee should meet monthly and include in its mission raising awareness and modifying member behaviors that will result in a safe work environment. Additionally, the committee should review all accidents, injuries, near-miss incidents, and workplace safety suggestions. The committee should analyze the information before them and continue to report the findings to the Fire Chief.

Rather than taking a reactionary approach through the development of additional rules, the MCFR project team recommends that the committee work proactively to implement member safety education programs and encourage a climate of member safety self-awareness. The committee should maintain regular and open meeting times and locations; minutes of the meetings should be recorded and posted for all members of the authority to review. A diverse representation of command staff and labor representatives should constitute the committee. The MCFR project team underscores the importance of maintaining a functioning safety committee.

One practice beginning to emerge is the importance of separating the safety committee to form sub-committees for peer support, fitness, health, and wellness. These sub-committees allow for a more focused effort to address firefighter needs regarding health and wellness.

Reporting and Recordkeeping

Documentation of activities is of paramount concern in any organization. Quality data is required to ensure that sound management decisions are made to support the effective and efficient operation of the organization.

MCFR currently utilizes ESO Solutions® software for documenting both fire and EMS incident response data. Computers are available in all fire stations to access the software. In addition to incident response data, records are maintained for personnel exposures. Self-contained breathing apparatus (SCBA), hose, ladder, and pump testing records are maintained by MCFR. Vehicle maintenance records are retained by the fleet department. Gas monitors are calibrated internally by the department's HazMat technicians, and records are maintained.

MCFR has implemented processes for documentation control. A process for public records access is in place. Hard copy files are protected by a secured entry in locked cabinets. All computer files are backed up and secured on-site and off-site via Marion County's Information Technologies Department (IT).

Reports are generated for elected officials relating to finance, management, and operations. An annual report is also generated, including an analysis of incident data, and distributed electronically with a limited number of hard copy versions available.

Document Control and Security

Facilities, equipment, and records are all critical elements to any fire and EMS organization, representing a significant investment of public dollars. Due to these factors and many others, securing these elements through proper precautions is critically important. MCFR secures all buildings and facilities with electronic locks, combination locks, or key locks. Staff vehicles and apparatus are secured with typical key locks.

FINANCIAL ANALYSIS

A comprehensive financial analysis is a critical component of the MCFR Master Plan, as it directly connects service expectations to the resources required to achieve them. Fire and EMS operations are among the most capital- and labor-intensive functions of local government, with significant costs tied to personnel, facilities, apparatus, and specialized equipment. By evaluating current revenues, expenditures, and long-term funding strategies, the financial analysis provides a clear picture of the department's fiscal capacity and sustainability. This framework enables decision-makers to align service delivery goals with available resources, identify funding gaps, and develop strategies that ensure MCFR remains both operationally effective and financially resilient as the community grows.

This analysis also supports the department's Capital Improvement Plan by establishing the fiscal foundation for facility construction, apparatus replacement, and equipment lifecycle planning, ensuring that critical investments are both affordable and achievable over time.

Background and Historical Review

An analysis of Marion County Fire Rescue's (MCFR'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 comprised of the Fire Rescue and EMS Fund (1120) and Emergency Medical Services Fund (Cost Center 305) of the General Fund (0010). The Department provides services to all the properties of unincorporated Marion County and all cities except the City of Ocala, which has an Interlocal Agreement that determines each call by either party is $700, attributing to an annual cost that MCFR will pay to the City of Ocala based on the number for calls per fiscal year. The Rainbow Lakes Estates (RLE) Municipal Service District (MSD) has transitioned their fire services to MCFR as of October 1, 2022 (per Ordinance 22-16, executed on May 3, 2022) with funds to offset the financial impact to the department until September 30, 2025.

As of the Cooperative Transition Agreement Between Emergency Medical Services Alliance, Inc., Marion County Board of County Commissioners and Marion County Clerk of the Court for the Provision of Closeout Administrative, Financial and Business Services, dated August 15, 2008, ambulance services would no longer be provided by EMSA after September 30, 2008 and would be transitioned to Marion County on October 1, 2008. The Final Distribution and Termination Agreement Between Marion County, Florida and the City of Ocala Relating to the Marion County EMS Alliance, Inc., dated July 1, 2003 provided 71% of EMSA's assets to Marion County and 29% of the assets to the City of Ocala.[25]

Marion County Fire Rescue has multiple funding sources, which includes a municipal service taxing unit (MSTU) for Emergency Medical Services and Fire Protection and Rescue Services (Ordinance 03-9, executed June 17, 2003), also known as a millage rate (ad valorem tax). The current level of this millage rate is 1.11 mills, with the maximum being 1.5 mills.

[25] *Presented and executed by the Marion County Board of County Commissioners on August 19, 2008.*

There is also a Municipal Service Benefit Unit (MSBU) that is authorized by an annual resolution to be adopted every year in September (non-ad valorem tax). This year, the Department completed an assessment rate study through Accenture Infrastructure and Capital Projects Consulting, LLC with Nabors, Giblin & Nickerson, P.A. to review the maximum assessment rate for which would accommodate the 5-year needs of the department. Resolution 2025-R-179, adopted June 3, 2025, is the Amended and Restated Initial Assessment Resolution, that would allow for the maximum residential assessment rate to be set at $283.97 from $199.91.

MCFR also contracted with Alfred Benesch & Company to complete the Impact Fee Update Study that led to the adoption of Ordinance 2025-17 on May 23, 2025, to implement Fire Protection Impact Fees (Fund 1121) and EMS Impact Fee Trust Fund (Fund 1122).

Marion County Board of County Commissioners also adopted Ordinance 23-31 (December 5, 2023) to provide for a voter referendum by the residents who voted for a 20 year extension of the one-percent sales surtax levy on November 5, 2024 (general election) for public safety and roadway infrastructure, specifically to reduce traffic congestion, build new fire stations, reduce 911 response times, improve animal control, law enforcement and other public safety and transportation infrastructure in Marion County and its municipalities. The first surtax was approved by voter referendum March 15, 2016 and has provided funding for replacement apparatus and new and rebuilt fire stations. Station 28 (Rolling Greens) was a new build, completed in 2020, with rebuilds completed for EMS Central, Station 2 (Citra); and currently under construction, Station 20 (Golden Ocala). Future plans include a rebuild of Station 11 (Lowell).

Historical Revenue and Expense

Understanding historical revenue and expenditure trends is essential for evaluating the financial health of MCFR and anticipating future needs. Reviewing past funding levels and spending patterns provides context for how resources have been allocated across personnel, operations, capital, and support functions. This perspective highlights the department's ability to balance revenues with growing service demands and identifies areas where funding pressures may impact long-term sustainability. Historical analysis also establishes a baseline from which to measure future financial performance and supports transparent decision-making for both policymakers and the community.

Revenue

MCFR's Fire Rescue and EMS Fund (Fire Fund) consists of property taxes, assessments, interim assessments and many fees to make up their recurring revenues. The EMS Fund, as part of the General Fund, has Ambulance Fees, Special Events and the Public Emergency Medical Transport Supplemental Payment Program that provides supplemental funding from the Agency for Health Care Administration (AHCA) for Medicaid/Medicare transports. There is also a Community Paramedic (CP) Program that started collecting revenues in Fiscal Year (FY) 2021. There are also funds provided for the Coordinated Opioid Recovery (CORE) Program that started in FY 24, but may not have future funding (and is therefore included with non-recurring revenues).

Of the non-recurring revenue sources, the Department has obtained over $5.2 million in grants and disaster-related reimbursements that have helped to supplement hurricanes, deployments and one-time purchases of operating and capital equipment. There was also funding from the CARES Act during the COVID pandemic totaling $463,563.

The Fire Department has the Public Information Division, Administrative Services Division and Finance Division reporting to the Fire Chief. The following Divisions also report to the Fire Chief and are, as follows: the Deputy Chief of Operations that oversees approximately 700 field personnel through 6 Battalions that answer to Shift Commanders and Administrative (Division Chiefs) ; Deputy Chief of Professional Standards (including Logistics and Training divisions); Deputy Chief of EMS (with the Medical Billing, Community Paramedics and Quality Improvement divisions); Fire Marshal (that includes Community Risk Reduction); and Public Safety Communications Director (that also oversees Public Safety Radio). Both the Public Safety Communications and Public Safety Radio departments are housed within the General Fund. However, these two departments cost allocate their operational budget to Fire Rescue and Marion County Sheriff's Office (MCSO), to be supplemented by the two departments that largely require their services.

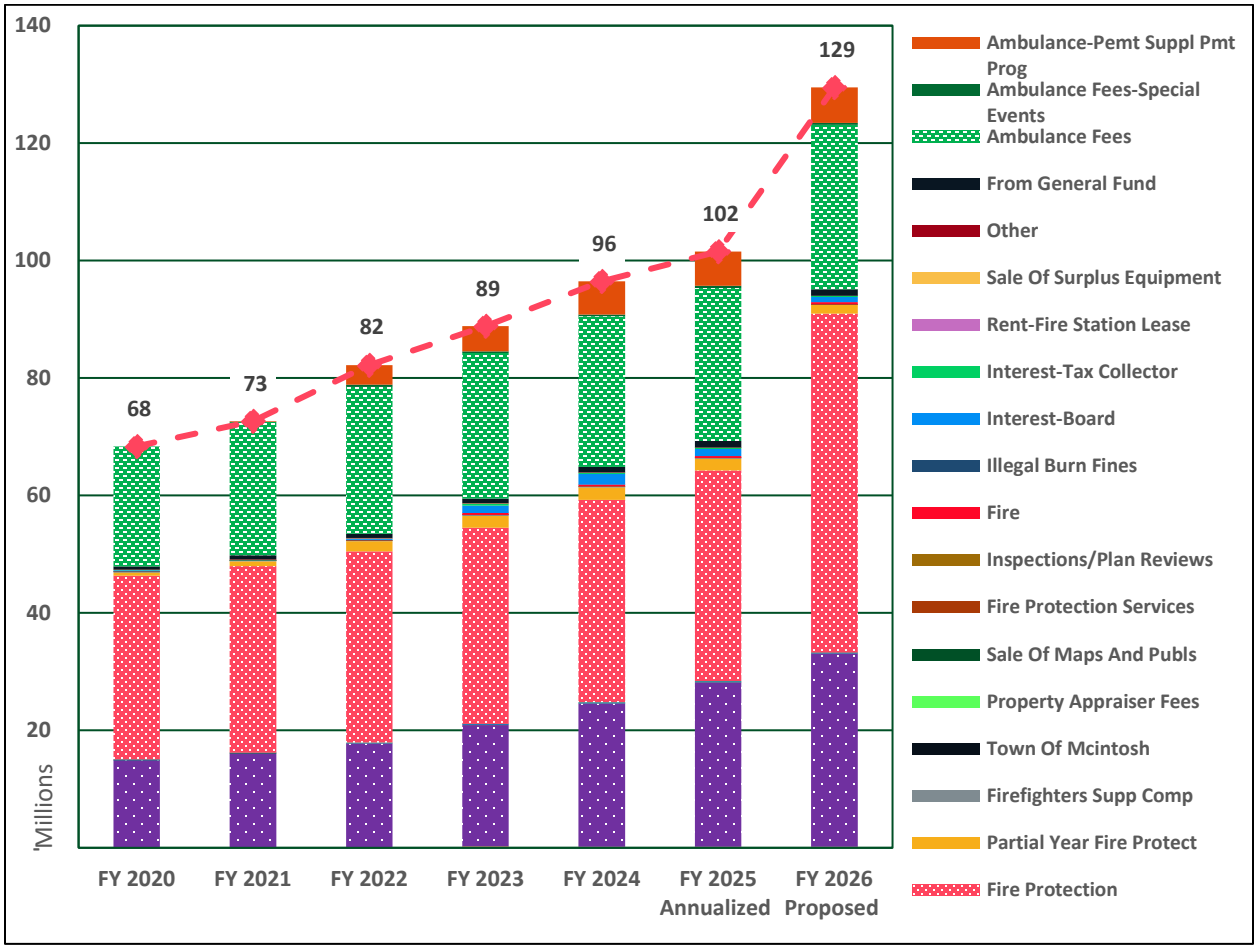
Marion County Fire Rescue has a continuous replacement plan for approximately 239 apparatus that includes squads, utility vehicles, medium and heavy rescues, pumpers, tankers/tenders, ladders, brush and Type I ambulance/rescues, with almost all of it being funded from the infrastructure sales surtax (1% sales tax).

The recurring revenues for the combined Fire Fund and EMS Fund have increased an average of 1.91 percent year over year, while total revenues have increased approximately 1.80 percent year over year. Partial Year Fire Protection (or interim assessments) have increased an average of 4.35 percent annually from FY 20 to FY 26 Proposed. The two main sources of recurring revenues include Current Taxes (MSTU) and Fire Protection (MSBU) and have an average annual increase of 2.36 percent and 2.07 percent, respectively. These indicate increases in growth through the 7 years being analyzed. The highest percentage change of revenues collected at the 1.11 millage rate (MSTU) was FY 24 at 18.0 percent from the previous fiscal year. The FY 26 Proposed revenues for the assessment rate (MSBU) is calculated at the $283.97 residential assessment rate, while FY 20 through FY 25 were collected based on the $199.91 residential assessment rate.

Ambulance Fees have increased at 0.91 percent year over year, even though inter-facility transport has been given to the hospitals. AdventHealth started transferring their patients in-between their facilities starting June 7, 2022, and HCAFlorida started on July 1, 2022. Ambulance Fee amounts were reduced by about $247,146 from FY 23 to FY 22, but have since increased, indicating an uptick in transports through increased need and growth in the population.

While the department has separate funds to comply with financial and auditing requirements, the following analysis will group the two funds for consideration to determine the financial health of the needs of the entire department and the personnel within. The following graph indicates the breakdown of the historical recurring and non-recurring revenues.

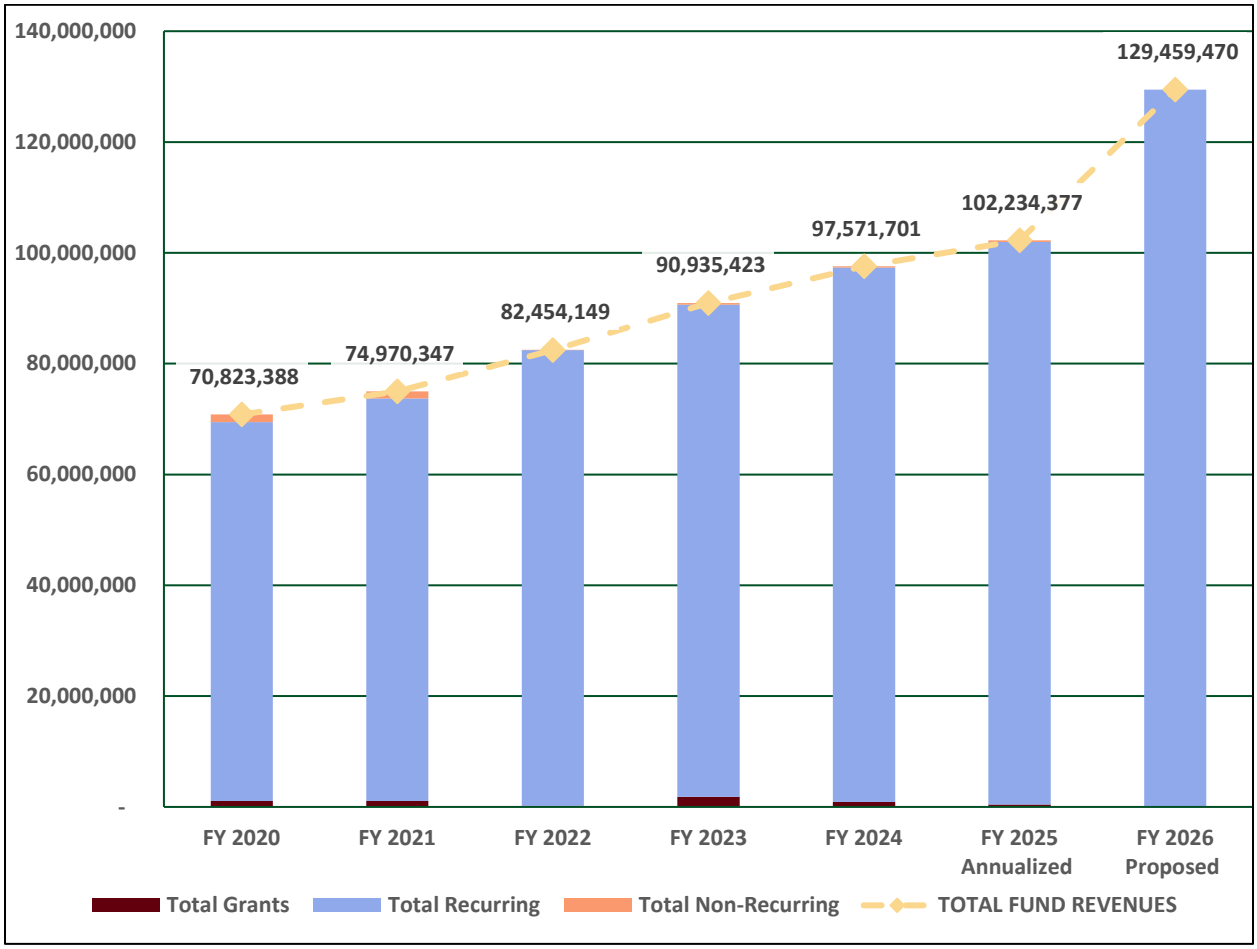
Figure 25: Recurring Revenue Breakdown, FY20-26



The highest recurring revenue sources are indicated by patterns, to distinguish from other funding sources. The Fire Protection revenue is projected for FY 26 at a higher assessment rate and therefore shows a larger amount included in what is anticipated to be collected in the budget. The increased rate is anticipated to bring it 60.8 percent over what is anticipated to be collected by fiscal year end for FY 25. The largest annual percentage change is anticipated from FY 25 to FY 24 at 4.1 percent, indicating the increase in either residences or businesses that are on the tax roll. Current Taxes are adjusted accordingly to offset the need for any increased budgetary requests that have not been met by what is projected to be collected through the assessment rate. While the millage rate has remained at 1.11 mills, the amount collected has increased an average of 2.36 percent year over year, with the highest change being from FY 24 to FY 23 with 18.0 percent. This identifies the increases in completed homes on the property appraiser's tax roll, as well as increases in property value due to the previous year's market value sales that are calculated in arrears.

While there are many funding sources for the department, it is essential to review the recurring and non-recurring revenue sources to determine the effect of one-time funding sources and whether they help supplement the needs of the department. The following graph shows the impact of these funding sources.

Figure 26: Recurring Versus Non-Recurring Revenue Breakdown, FY20-26 Proposed



Non-recurring revenue sources total over $3 million over the 7-year period being analyzed. Some of these include transfers to make the General Fund whole or are supplemental revenues for the startup of the CORE program. Over $5 million was received over this period from the State and Federal governments to offset historical disasters or pandemics to reimburse the amount spent on recovery efforts that burdened the department to benefit the needs of those affected.

The following figure shows the grouped line-item revenue sources by Recurring, Non-Recurring and Grants.

Figure 27: Grouped Revenues, FY20-26

Revenues	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025 Annualized	FY 2026 Proposed
Current Taxes	14,870,753	15,993,369	17,576,560	20,660,832	24,387,094	27,963,838	32,820,525
Delinquent Taxes	46,718	67,842	73,817	75,035	52,708	58,313	66,000
Fire Marshall	111,509	112,975	120,071	160,134	151,923	152,000	162,000
Fire Service Misc Fees	12,360	24,720	18,240	18,680	25,760	25,000	25,000
Fire Protection	31,286,034	31,747,867	32,546,514	33,380,790	34,464,570	35,870,083	57,681,784
Partial Year Fire Protect	534,694	808,971	1,737,457	2,026,750	2,103,773	2,000,000	1,500,000
Firefighters Supp Comp	93,467	80,223	72,665	98,070	91,765	90,000	90,000
Town Of Mcintosh	20,867	22,029	27,045	29,415	32,261	15,388	15,696
Property Appraiser Fees	379	849	1,255	1,596	2,404	-	-
Sale Of Maps And Publs	173	274	279	240	242	204	204
Fire Protection Services	840	1,550	12,078	450	14,785	4,260	1,000
Inspections/ Plan Reviews	11,807	12,577	9,457	5,871	16,665	10,435	10,000
Fire	69,000	54,000	76,851	337,051	337,051	337,051	337,051
Illegal Burn Fines	9,874	1,840	10,597	1,690	50	-	-
Interest-Board	172,862	31,845	230,254	1,247,394	1,789,006	1,186,290	890,000
Interest-Tax Collector	72,613	16,079	18,976	395,123	252,565	261,000	196,000
Rent-Fire Station Lease	-	-	3,568	1,400	1,400	1,400	-
Sale Of Surplus Equipment	10,819	27,600	50,410	14,000	7,950	250	-
Other	21,192	87,047	33,282	22,848	31,955	15,000	15,000
From General Fund	546,422	724,472	706,085	783,080	924,346	1,086,914	1,116,210
Ambulance Fees	20,478,458	22,713,559	25,047,758	24,800,611	25,665,926	26,078,000	28,000,000
Ambulance Fees-Special Events	-	-	349,788	281,115	286,218	343,000	343,000
Ambulance-Pemt Suppl Pmt Prog	-	110,689	3,352,392	4,287,226	5,637,842	5,854,362	6,000,000
Community Paramedic Program	-	5,282	129,294	209,137	165,685	190,000	190,000

Total Recurring	**68,370,842**	**72,645,658**	**82,204,693**	**88,838,539**	**96,443,944**	**101,542,788**	**129,459,470**
Coordinated Opioid Recovery	-	-	-	-	179,852	264,733	-
Court Settlement	48	45	-	-	-	144	-
Fees-Copying-Paper	-	-	5	-	-	-	-
Fr Fire Rescue	1,376,810	-	-	-	-	-	-
Installment Purchase Proceeds -Fire	-	1,236,059	-	-	-	-	-
Interest-Prop Appraiser	3	-	-	1	-	-	-
Lease Agreements - EMS	-	-	8,721	5,154	875	-	-
Lease Agreements - Fire	-	-	16,602	18,990	11,570	-	-
Med/Nonmed Transport Fee	200	-	4,000	-	2,000	-	-
Other Contrib & Donations - EMS	-	-	3,000	2,245	-	-	-
Other Contrib & Donations - Fire	50	5,270	3,110	5,554	12,490	-	-
Other Scrap Or Sur Sales - Fire	360	-	-	20	830	-	-
Subscription It Arrangements - EMS	-	-	-	50,325	-	-	-
Subscription It Arrangements - Fire	-	-	-	218,809	-	-	-
Total Non-Recurring	**1,377,471**	**1,241,373**	**35,437**	**301,098**	**207,618**	**264,877**	**-**
Cares Act Provider Relief	447,149	16,414	-	-	-	-	-
Disaster Relief Oth - EMS	-	12,531	28,016	385,700	385,154	-	-
Disaster Relief Oth - Fire	83,653	488,512	-	46,773	-	-	-

Emergency Medical Service - Fire	2,098	71,915	30,312	24,637	-	25,612	-
Fire Decontaminati on Equipment - Fire	-	-	17,249	27,945	12,843	-	-
Firefighters Assistance - Fire	401,970	397,273	-	767,755	1	-	-
Hazard Mitigation - Fire	-	-	-	-	-	236,686	-
State Homeland Security	140,205	96,671	138,442	114,137	60,064	164,414	-
Urban Search Rescue Sustain - Fire	-	-	-	428,840	462,079	-	-
Total Grants	**1,075,075**	**1,083,316**	**214,019**	**1,795,786**	**920,140**	**426,712**	**-**
TOTAL FUND REVENUES	**70,823,388**	**74,970,347**	**82,454,149**	**90,935,423**	**97,571,701**	**102,234,377**	**129,459,470**

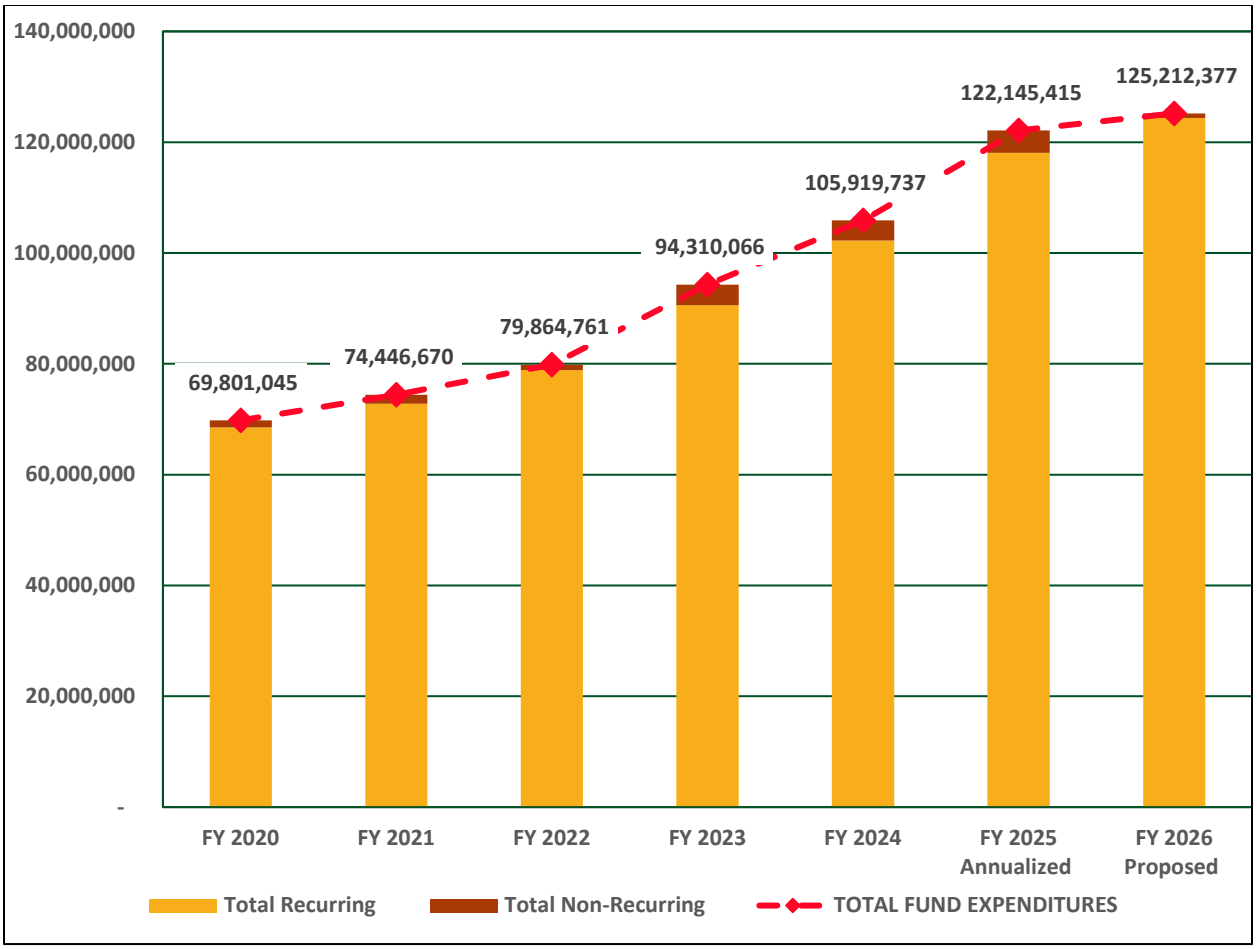
Expenditures

Historical expenditures were minimally increased at an average of 2.4 percent over the fiscal years from the FY 2020 to FY 2026 Proposed Budget. Over $3.8 million has been contributed to the Capital Improvement Programs to supplement increased needs for costs that the surtax funds alone did not anticipate. The department has purchased over $9.8 million in Machinery & Equipment, which also helps supplement the unanticipated needs for the department that arise. The Infrastructure Sales Surtax that was originally implemented in 2016 has helped to provide over $74 million of capital equipment and projects to the department, which is evidenced by the community's continuous support to vote to approve the 1 percent sales tax for the county. The sales tax is anticipated to bring in $70,000,000 of annual revenue for each year of the newly voted 20-year surtax. However, budgeting is done in 5-year increments to be able to maintain the financial needs of each of the departments that include Public Safety Communications, Animal Services, Marion County Sheriff's Office (MCSO), Fire Rescue; and EMS; with a large portion of the annual amounts allocated to Transportation.

The actual expenditures have historically been lower than the actual revenues, except starting in FY 23, where fund balance for the department started becoming negative, with a negative $3.3 million fund balance.

The following graph shows the recurring and non-recurring expenditures for the combined funds. Recurring expenditures include predictable annual costs, such as salaries, contracts and operating expenses. Non-recurring expenditures are one-time costs such as capital equipment.

Figure 28: Recurring Versus Non-Recurring Expenditure Breakdown, FY20-26 Proposed



Recurring costs comprise 96.6 percent of the FY 24 actual expenditures, while Capital comprises 3.1 percent of the actual expenditures.

The following figure shows the individual line items that were provided and the corresponding grouped category for which it was combined to provide a holistic comparison. Efforts were made to combine as many line item details that were similar.

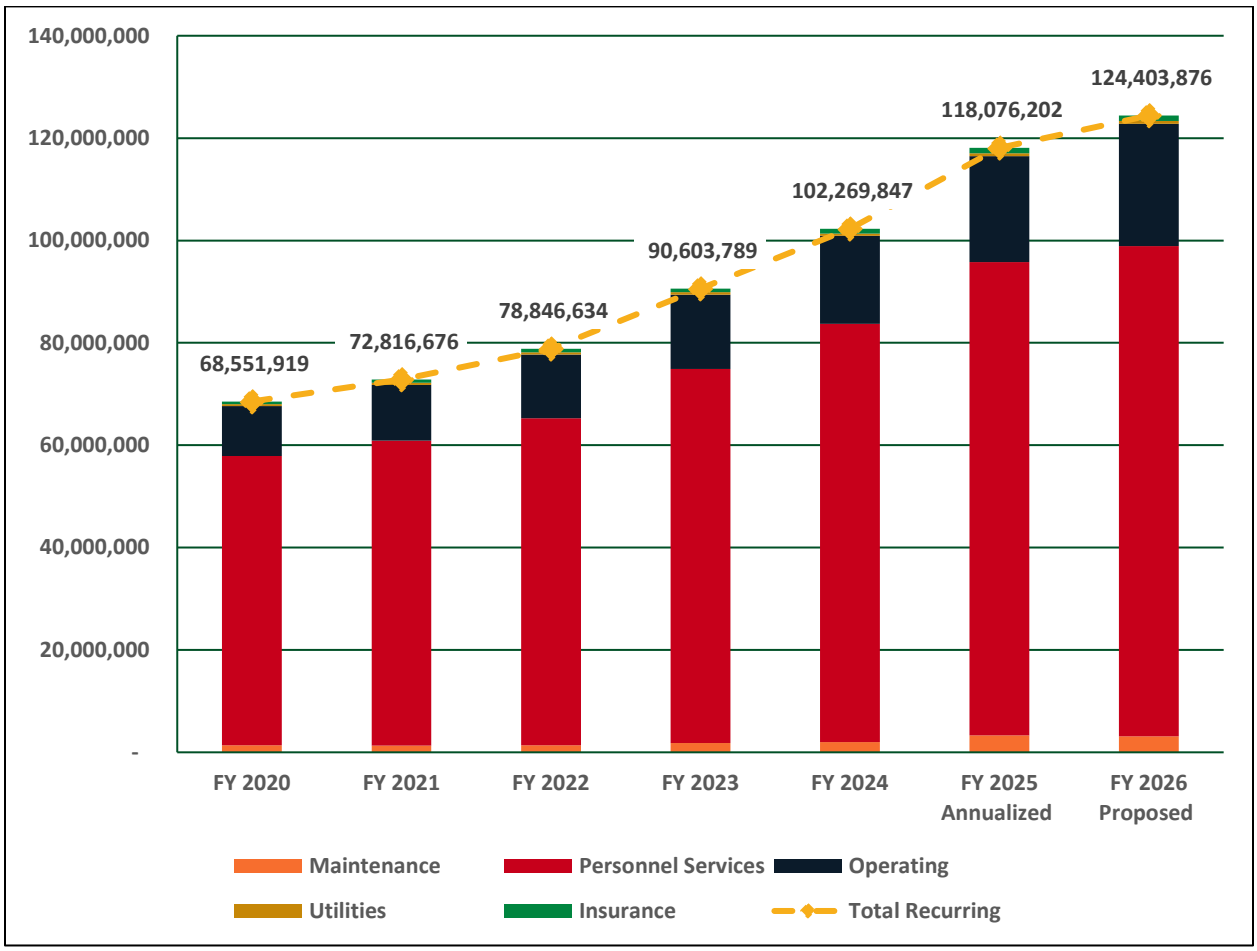
Figure 29: Expenditure Line Items Versus Category Grouping

MCFR Line Item/Description	Grouped Category
Personnel Services	Salaries & Benefits
Regular Salaries & Wages	
Other Salaries & Wages	
Overtime	
FICA Taxes	
Retirement Contributions	
Health Insurance	
Life, AD&D, Ltd	
Firefighter Cancer Policy	
Worker's Compensation	
Worker's Compensation - VFDS	
Unemployment Compensation	
Insurance - Premiums	Insurance
Budget Trans To Insurance Fund	
Legal Claims	Legal
Maintenance	Maintenance
Repairs/Maint - Bldgs & Grnds	
Repairs/Maint - Fleet Management	
Repairs/Maint - Equipment	
Repairs/Maint - Computer Equip	
Parts - Vehicle / Equipment	
Rentals & Leases - Equipment	
Rentals & Leases - Buildings	
Oper Supplies - CIP	Capital
Land - CIP	
Land Acq - Row/Easements	
Buildings - Construct Improv	
Buildings - CIP	
Machinery & Equipment	
Machinery & Equipment - CIP	
Intangible Software - CIP	
Lease Agreements - Equipment	Debt
Principal - Lease Purchase	
Principal - Lease Agreements	
Principal - Subscriptions	
Interest - Lease Purchase	

Interest - Lease Agreements	
Interest - Subscriptions	
Other Debt Service Costs	
Prof Serv - Attorney	
Professional Services	
Prof Serv - Medical - Immune	
Contract Serv - Other - Misc	
Contract Serv - Staff Leasing	
Travel & Per Diem	
Communications Services	
Postage & Freight	
Rentals & Leases - Equipment	
Rentals & Leases - Buildings	
Print & Bind	
Oth Curr Charge - Refunds	
Oth Curr Charge - Tax Collector	
Oth Curr Charge - Prop Appraiser	
Oth Curr Charge - Vol FF	
Charges - Cost Allocation	
Oth Curr Charge - Misc Expenses	Operating
Office Supplies	
Gasoline, Oil & Lubricants	
Medical Supplies	
Computer Software	
Clothing And Wearing Apparel	
Operating Supplies	
Oper Supplies - Public Ed	
Oper Supplies - Comp Hardware	
Books, Pubs & Subscriptions	
Dues & Memberships	
Training Materials & Supplies	
Training & Education	
Subscriptions - Software	
Aid To City Of Ocala - Fr Rescue	
Budget Trans To General Fund	
Aid To AHCA	

Total fund expenditures averaged a 2.4 percent year over year increase. Actual expenditures are more indicative of the needs of the department, while the proposed budget indicates what has been allocated and expected to be completed in the upcoming fiscal year. These would be anticipated based on historical trends, contracted obligations and any upcoming projects that would be foreseeable in the budget preparation cycle. Salaries & Benefits comprise 77.2 percent of the total fund expenditures, but is 80 percent of the recurring expenditures. This is comparable with other departments, based on the personnel-intensive service needs for the community. There is an average of 2.1 percent year over year increases, which is conservative. The following figure indicates the breakdown of recurring expenditures.

Figure 30: Recurring Expenditure Breakdown, FY20-26 Proposed



Operating costs comprise 16.2 percent of the FY 24 actual expenditures. The Marion County Clerk of Court – Finance Division changed the capital item threshold from $1,000 per unit to $5,000 per unit for an item to be inventoried and considered capital equipment (or Machinery & Equipment) during the budgeting process for FY 21. This change allows the departments to purchase out of Operating Supplies and not need to budget items under Capital. It also attributes to the increase in purchases out of Operating as the Operating Supplies line item increased 43.7 percent from FY 21 to FY 22.

The following figure provides the breakdown of grouped line-item expenditures.

Figure 31: Grouped Expenditures, FY20-26 Proposed

EXPENDITURES	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025 Annualized	FY 2026 Proposed
Personnel Services	56,496,580	59,586,109	63,863,230	73,088,419	81,723,165	92,488,892	95,768,326
Operating	9,755,672	10,896,427	12,452,186	14,486,305	17,178,657	20,726,333	23,878,139
Utilities	385,554	403,201	446,302	485,448	476,498	530,100	607,000
Insurance	541,332	630,602	698,668	717,352	906,719	1,040,515	1,023,151
Maintenance	1,372,781	1,300,337	1,386,248	1,826,265	1,984,809	3,290,362	3,127,260
Total Recurring	**68,551,919**	**72,816,676**	**78,846,634**	**90,603,789**	**102,269,847**	**118,076,202**	**124,403,876**
Legal	-	721,728	91,455	-	-	-	-
Capital	1,249,126	908,266	639,616	3,217,717	3,223,886	3,819,212	558,500
Debt	-	-	287,057	488,560	426,004	250,001	250,001
Total Non-Recurring	**1,249,126**	**1,629,995**	**1,018,128**	**3,706,276**	**3,649,890**	**4,069,213**	**808,501**
TOTAL FUND EXPENDITURES	**69,801,045**	**74,446,670**	**79,864,761**	**94,310,066**	**105,919,737**	**122,145,415**	**125,212,377**

The debt service that is included in the operating budget is for a 2022 E-One Typhoon based on the First Amendment to Development Agreement Concern Concurrency, Impact Fee Credits, and Other Matters, for Golden Ocala. This Series 2021 Loan will end July 1, 2027 for a total of $1,298,274. Per GASB 87, Finance also includes the amounts of leased equipment (which is solely printer leases) that are then calculated for financial auditing and reporting and indicates the difference from the $250,001 that is budgeted for the Series 2021 Loan.

Maintenance Costs include Repairs/Maintenance - Buildings & Grounds and Repairs/Maintenance - Equipment, as well as Parts for Vehicles, and has an average annual increase of 3.9 percent, indicating the increasing damages and wear and tear of equipment and/or buildings.

The largest three expenditure line items for Personnel Services are Regular Salaries & Wages, which comprise 50.3 percent of the budget, with average annual increases of 1.4 percent; Overtime at 14 percent of the budget and an increase of 3.9 percent year over year; as well as Retirement Contributions that take up 19.7 percent, with an increase of 3.3 percent year over year. Of the Operating line items, Cost Allocation (which is MCFR's share of central services, such as Procurement Services, County Attorney, Information Technology, etc.) total 19 percent of the budget, with an increase of 2.9 percent year over year.

While the EMS Fund is a portion of the General Fund, the following analysis will focus on the expenditure and personnel components of the budget and its breakdown. The following figure illustrates the breakdown of expenditures for all General Fund departments from the Marion County budget.

Figure 32: General Fund Expenditure Breakdown by Fund, FY24-26 Proposed

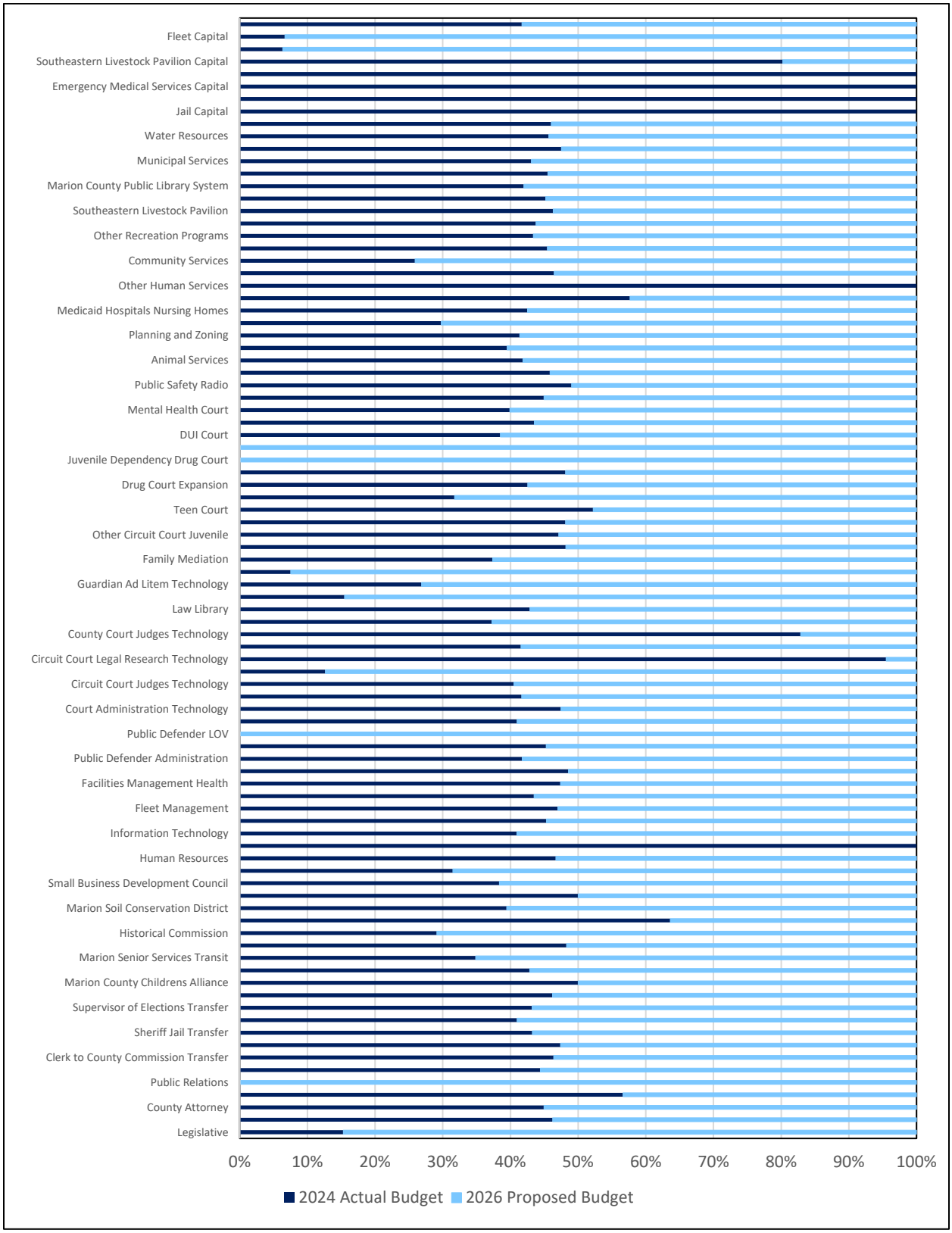
Expenditures	2024 Actual Budget	% of Total	2026 Proposed Budget	% of Total
Legislative	5,397,283	2.43%	29,863,257	9.60%
Finance & Administration	256,086	0.12%	297,574	0.10%
County Attorney	1,431,327	0.64%	1,751,501	0.56%
County Administrator	2,239,312	1.01%	1,713,805	0.55%
Public Relations	-	0.00%	970,674	0.31%
General Fund Transfers	2,136,622	0.96%	2,674,365	0.86%
Clerk to County Commission Transfer	4,964,081	2.23%	5,736,024	1.84%
Property Appraiser Transfer	4,681,114	2.10%	5,196,336	1.67%
Sheriff Jail Transfer	60,076,451	26.99%	78,827,388	25.33%
Sheriff Emergency Management Transfer	1,004,768	0.45%	1,446,380	0.46%
Supervisor of Elections Transfer	3,968,402	1.78%	5,220,182	1.68%
Tax Collector Transfer	10,387,314	4.67%	12,086,582	3.88%
Marion County Childrens Alliance	15,000	0.01%	15,000	0.00%
Early Learning Coalition	150,000	0.07%	200,000	0.06%
Marion Senior Services Transit	1,164,544	0.52%	2,177,176	0.70%
East Central FL Regional Planning Council	81,885	0.04%	87,636	0.03%
Historical Commission	3,698	0.00%	9,000	0.00%
Florida Forest Service Fire Control	76,475	0.03%	43,747	0.01%
Marion Soil Conservation District	121,462	0.05%	186,372	0.06%
Ocala Marion County Chamber and Economic Partnership	300,000	0.13%	300,000	0.10%
Small Business Development Council	112,000	0.05%	180,000	0.06%
Industry Development	310,953	0.14%	676,032	0.22%
Human Resources	896,158	0.40%	1,022,517	0.33%
Employee Health Clinic	255,794	0.11%	-	0.00%
Information Technology	6,038,555	2.71%	8,704,925	2.80%
Procurement Services	1,383,342	0.62%	1,669,191	0.54%
Fleet Management	9,011,958	4.05%	10,166,175	3.27%
Facilities Management	10,374,755	4.66%	13,489,307	4.33%
Facilities Management Health	247,590	0.11%	275,000	0.09%
Courthouse Security	1,038,242	0.47%	1,100,000	0.35%
Public Defender Administration	41,018	0.02%	57,285	0.02%
Public Defender Technology	448,767	0.20%	542,509	0.17%
Public Defender LOV	-	0.00%	500	0.00%
Court Administrator	28,307	0.01%	40,758	0.01%

Court Administration Technology	559,761	0.25%	619,401	0.20%
Circuit Court Judges	214,663	0.10%	300,468	0.10%
Circuit Court Judges Technology	325,726	0.15%	478,581	0.15%
Circuit Court Judges Legal Research	145	0.00%	1,000	0.00%
Circuit Court Legal Research Technology	9,570	0.00%	450	0.00%
County Court Judges	13,154	0.01%	18,500	0.01%
County Court Judges Technology	6,534	0.00%	1,350	0.00%
Detention and Corrections	34,731	0.02%	58,500	0.02%
Law Library	54,854	0.02%	73,100	0.02%
Guardian Ad Litem Program	5,881	0.00%	32,076	0.01%
Guardian Ad Litem Technology	13,786	0.01%	37,495	0.01%
County Court Summ Claims Mediation	506	0.00%	6,200	0.00%
Family Mediation	2,686	0.00%	4,500	0.00%
Pre Trial Release	253,217	0.11%	272,451	0.09%
Other Circuit Court Juvenile	124,375	0.06%	139,454	0.04%
Early Intervention Program	247,596	0.11%	266,590	0.09%
Teen Court	50,426	0.02%	46,128	0.01%
Drug Court	110,219	0.05%	237,046	0.08%
Drug Court Expansion	79,006	0.04%	106,661	0.03%
Misdemeanor Drug Court	34,350	0.02%	37,000	0.01%
Juvenile Dependency Drug Court	-	0.00%	426,437	0.14%
Adult Diversion Drug Court	-	0.00%	249,520	0.08%
DUI Court	24,419	0.01%	39,000	0.01%
Veterans Court	112,493	0.05%	145,903	0.05%
Mental Health Court	129,552	0.06%	195,149	0.06%
Emergency Medical Services	**40,170,379**	**18.05%**	**49,161,236**	**15.80%**
Public Safety Radio	2,937,647	1.32%	3,052,242	0.98%
Public Safety Communications	7,501,208	3.37%	8,863,560	2.85%
Animal Services	5,588,240	2.51%	7,767,517	2.50%
Code Enforcement	1,516,815	0.68%	2,322,573	0.75%
Planning and Zoning	2,295,495	1.03%	3,252,502	1.05%
Health	101,689	0.05%	240,000	0.08%
Medicaid Hospitals Nursing Homes	6,652,682	2.99%	8,999,442	2.89%
Unclaimed Decedent Program	62,659	0.03%	46,000	0.01%
Other Human Services	92,239	0.04%	-	0.00%
Assessments Public Assistance	21,702	0.01%	25,000	0.01%
Community Services	156,341	0.07%	447,380	0.14%
Parks and Recreation	5,358,703	2.41%	6,428,232	2.07%
Other Recreation Programs	118,061	0.05%	154,086	0.05%

Belleview Sportsplex	301,620	0.14%	387,209	0.12%
Southeastern Livestock Pavilion	863,643	0.39%	1,001,429	0.32%
Cooperative Extension Service	1,069,151	0.48%	1,295,972	0.42%
Marion County Public Library System	8,991,301	4.04%	12,418,127	3.99%
Veterans Service Office	732,041	0.33%	876,059	0.28%
Municipal Services	631,763	0.28%	833,675	0.27%
Property Engineering Services	72,478	0.03%	80,002	0.03%
Water Resources	166,719	0.07%	198,458	0.06%
General Government Capital	3,569,290	1.60%	4,183,550	1.34%
Jail Capital	162,274	0.07%	-	0.00%
Courthouse Capital	85,553	0.04%	-	0.00%
Emergency Medical Services Capital	50,804	0.02%	-	0.00%
Parks and Recreation Capital	49,612	0.02%	-	0.00%
Southeastern Livestock Pavilion Capital	1,589,778	0.71%	391,400	0.13%
Library Capital	62,892	0.03%	925,000	0.30%
Fleet Capital	523,714	0.24%	7,305,000	2.35%
Total of All GF Departments	**$ 222,547,406**	**100%**	**$ 311,175,809**	**100%**

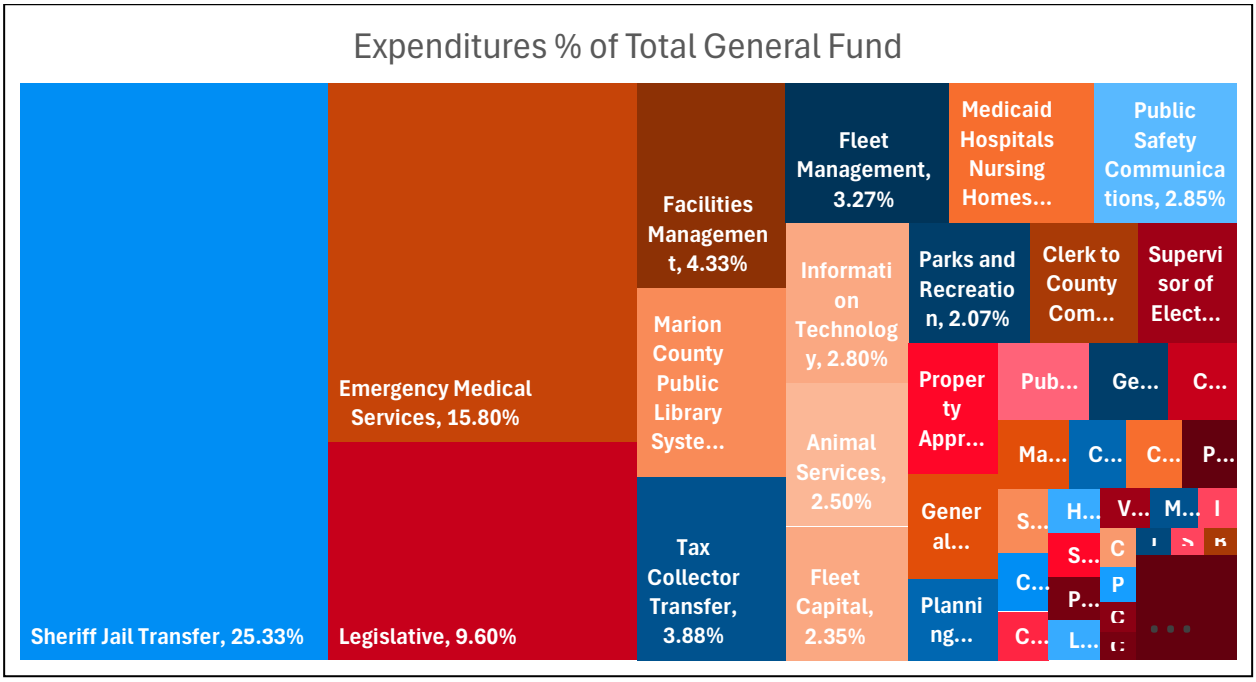
The comparison provides analysis of the FY 24 actual expenditure budget versus the FY 26 proposed budget. The EMS Fund comprised 18.05 percent of the general fund for FY 24, but 15.8 percent for the FY 26 proposed budget. The following figure shows the breakdown of the expenditures from FY 24 to the FY 26 budget.

Figure 33: Expenditures from FY24-26 Budget



The next figure indicates the amount of the expenditure budget that is allocated for their use, with the EMS fund being the second largest after the Sheriff's Jail Transfer fund.

Figure 34: Expenditure % of Total General Fund by Use



While these are based on expenditures, of which some are not budgeted for FY 26 due to the needs of the County, the following figure breaks down the personnel for the General Fund departments.

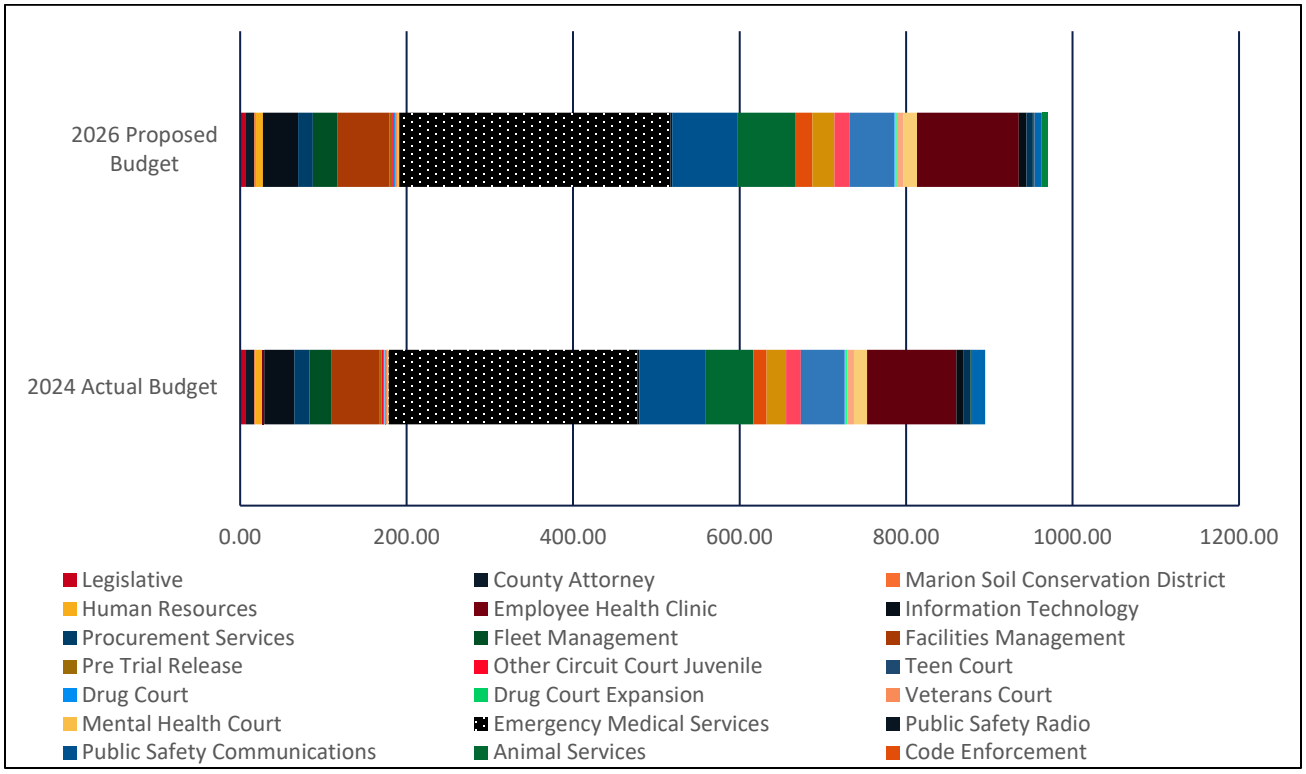
Figure 35: General Fund Personnel Breakdown by Department, FY24-26 Proposed Budget

Personnel	2024 Actual Budget	% of Total	2026 Proposed Budget	% of Total
Legislative	7.00	0.78%	7.00	0.72%
County Attorney	10.00	1.12%	10.00	1.03%
County Administrator	15.72	1.76%	8.72	0.90%
Public Relations	0.00	0.00%	7.00	0.72%
Marion Soil Conservation District	1.50	0.17%	2.00	0.21%
Human Resources	8.50	0.95%	8.50	0.88%
Employee Health Clinic	2.00	0.22%	0.00	0.00%
Information Technology	36.00	4.02%	42.00	4.33%
Procurement Services	18.00	2.01%	18.00	1.86%
Fleet Management	27.00	3.02%	29.00	2.99%
Facilities Management	57.00	6.37%	63.00	6.49%
Pre Trial Release	3.00	0.34%	3.00	0.31%
Other Circuit Court Juvenile	2.00	0.22%	2.00	0.21%
Teen Court	0.50	0.06%	0.50	0.05%

Drug Court	1.00	0.11%	2.00	0.21%
Drug Court Expansion	1.00	0.11%	0.00	0.00%
Veterans Court	2.00	0.22%	2.00	0.21%
Mental Health Court	2.00	0.22%	2.00	0.21%
Emergency Medical Services	**299.00**	**33.41%**	**326.00**	**33.61%**
Public Safety Radio	2.00	0.22%	2.00	0.21%
Public Safety Communications	79.00	8.83%	79.00	8.14%
Animal Services	58.00	6.48%	69.24	7.14%
Code Enforcement	16.00	1.79%	20.00	2.06%
Planning and Zoning	23.50	2.63%	26.50	2.73%
Community Services	17.50	1.96%	18.50	1.91%
Parks and Recreation	52.75	5.89%	53.75	5.54%
Other Recreation Programs	1.00	0.11%	1.00	0.10%
Belleview Sportsplex	2.00	0.22%	2.00	0.21%
Southeastern Livestock Pavilion	8.00	0.89%	8.00	0.82%
Cooperative Extension Service	16.00	1.79%	16.00	1.65%
Marion County Public Library System	107.12	11.97%	122.49	12.63%
Veterans Service Office	9.00	1.01%	9.00	0.93%
Municipal Services	7.84	0.88%	7.84	0.81%
Property Engineering Services	1.00	0.11%	1.00	0.10%
Water Resources	1.00	0.11%	1.00	0.10%
Total of All GF Departments	**894.93**	**100%**	**970.04**	**100%**

Personnel is one of the largest recurring expenditures for departments; the General Fund comparison shows that the EMS Fund comprises over 33 percent of the General Fund in personnel. The following graph shows the amount of personnel proposed to be added in the FY 26 proposed budget with the data set for the fund shown in a pattern fill.

Figure 36: Proposed Personnel FY26 Budget by Fund



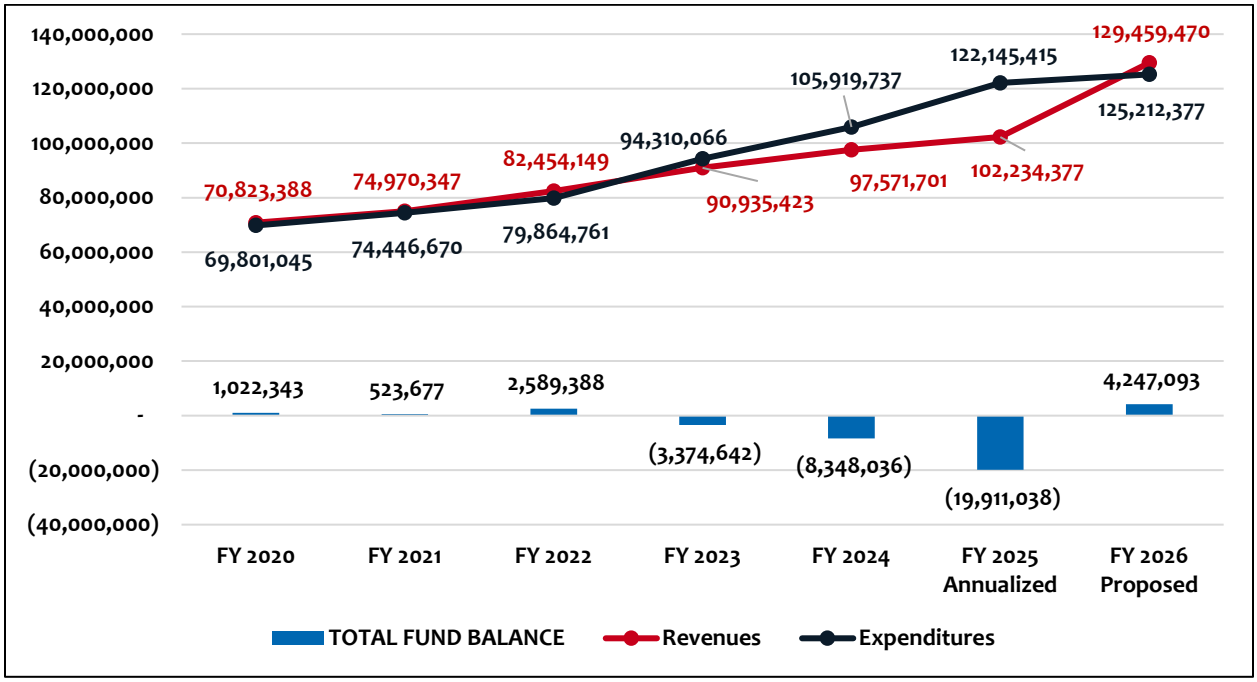
Fund balance is an indication of the health of the entire department but can also depict if there were unknown contingencies that normally require one-time expenses to be incurred. The following figure shows the fund balance over the analysis period for the entire department.

Figure 37: Fund Balance, FY20-26 Proposed

Fund Balance	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025 Annualized	FY 2026 Proposed
Revenues	70,823,388	74,970,347	82,454,149	90,935,423	97,571,701	102,234,377	129,459,470
Expenditures	69,801,045	74,446,670	79,864,761	94,310,066	105,919,737	122,145,415	125,212,377
TOTAL FUND BALANCE	**1,022,343**	**523,677**	**2,589,388**	**(3,374,642)**	**(8,348,036)**	**(19,911,038)**	**4,247,093**

The department starts having a negative fund balance for FY 23, indicating the use of reserves needing to offset operating expenditures compared to the revenue sources. While this is the analysis of two aggregated funds, it indicates where spending due to either increased costs or needs outpaced revenues that were being collected. The increased projections for the assessment rate has helped to offset the FY 26 fund balance. The following graph shows the historical trend.

Figure 38: Total Fund Balance, FY20-26



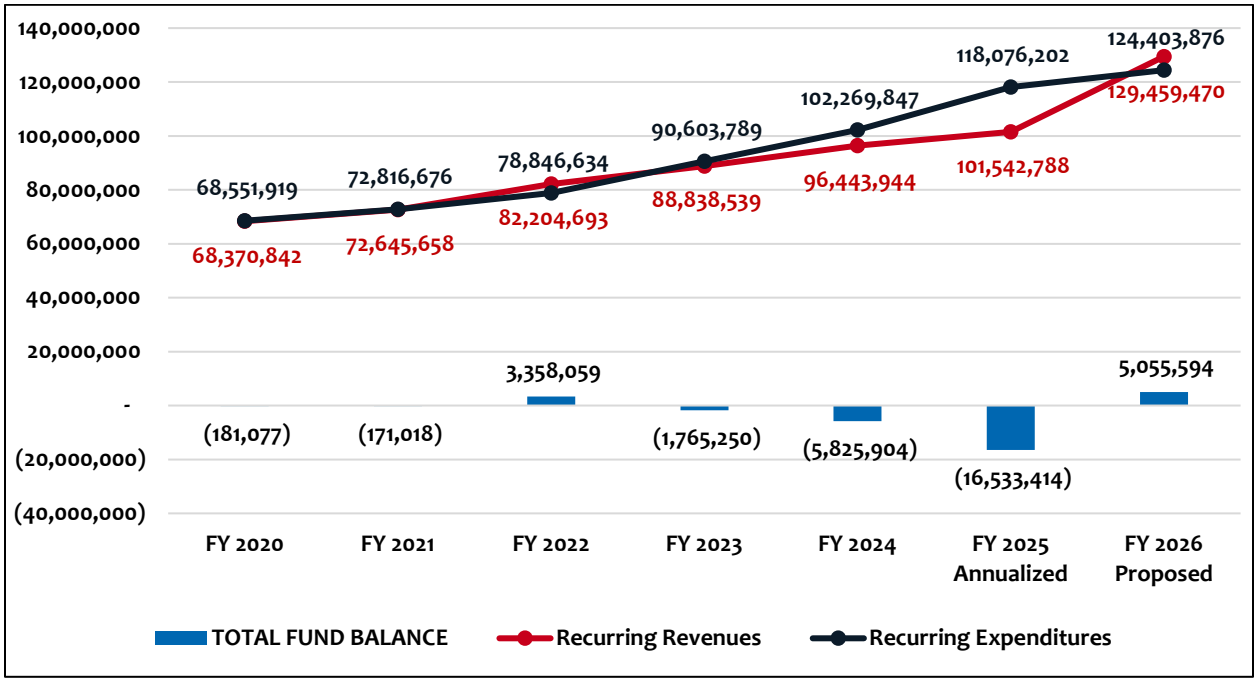
By analyzing the recurring revenues and recurring expenditures, it can provide a better analysis of whether the department's health will suffice. The following figure shows the fund balance on recurring items.

Figure 39: Fund Balance for Recurring Revenues and Expenditures, FY20-26 Proposed

Fund Balance - Recurring Only	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025 Annualized	FY 2026 Proposed
Recurring Revenues	68,370,842	72,645,658	82,204,693	88,838,539	96,443,944	101,542,788	129,459,470
Recurring Expenditures	68,551,919	72,816,676	78,846,634	90,603,789	102,269,847	118,076,202	124,403,876
TOTAL FUND BALANCE	(181,077)	(171,018)	3,358,059	(1,765,250)	(5,825,904)	(16,533,414)	5,055,594

The negative fund balance indicates that the entire department has spent more than what was brought in revenue sources, therefore reducing that fiscal year's reserves. The following graph indicates the breakdown of total fund balance.

Figure 40: Total Fund Balance by Recurring Line items, FY20-26 Proposed



Capital Plan Trends

MCFR depends on the Infrastructure Sales Surtax Plan and will benefit from the newly adopted Impact Fees to help provide capital improvement projects (CIP) and replacements based on the apparatus plan.

The following figure shows the amounts allocated for the combined Fire Protection Impact Fees and EMS Impact Fee Trust Fund through FY 30, which includes land acquisition and 4 new stations for Pedro, West Port, EMS West and Baldwin Ranch (currently un-numbered).

Figure 41: 5 Year Growth Plan for Impact Fees, FY25-30

Fire Rescue 5 Year Growth Plan				
Category	**Impact Fee**	**Projected Fiscal Year**	**Resource Type**	**Resource Location**
Capacity	300,000	FY24/25	Land Acquisition	Pedro
Capacity	8,350,000	FY25/26	New Station	Pedro
Capacity	300,000	FY25/26	Land Acquisition	Westport
Capacity	8,350,000	FY26/27	New Station	Westport
Capacity	5,500,000	FY 26/27	New Station	EMS West
Capacity	8,350,000	FY29/30	New Station	Baldwin Ranch
Subtotal	**31,150,000**			

The following breaks down the 5-year apparatus replacement plan that will be supported out of the Infrastructure Sales Surtax fund and the amounts allowed by refurbishing existing end of life equipment.

Figure 42: 5 Year Apparatus Replacement Plan, Infrastructure Sales Tax, FY26-30

Apparatus Type	Unit Cost	25/26	26/27	27/28	28/29	29/30	Subtotal
Ambulance (New)	*475,000*	2,375,000	2,850,000	2,375,000	2,850,000	2,850,000	13,300,000
Ambulance (Refurb)	*315,000*	1,260,000	1,260,000	1,260,000	1,260,000	1,260,000	6,300,000
Pumper (New)	*1,200,000*	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	6,000,000
Pumper (Refurb)	*400,000*	800,000	800,000	800,000	800,000	800,000	4,000,000
Tanker	*300,000*	300,000	300,000	-	300,000	300,000	1,200,000
Tower	*2,250,000*	-	-	-	-	-	-
Brush Truck	*175,000*	175,000	175,000	175,000	175,000	175,000	875,000
Support Vehicles	*90,000*	270,000	270,000	270,000	270,000	270,000	1,350,000
ATV/UTV	*28,000*	-	-	-	-	-	-
Heavy Rescue	*1,500,000*	-	-	-	-	-	-
Subtotal		**6,380,000**	**6,855,000**	**6,080,000**	**6,855,000**	**6,855,000**	**33,025,000**

The replacement plan allows for 87 apparatus to be replaced, with 48 rescues/ambulances out of the Infrastructure Surtax EMS versus 39 apparatus out of the Infrastructure Surtax Fire. The following figure illustrates the breakdown for the Infrastructure Surtax for Fire and EMS, along with respective project numbers that are used to track capital items.

Figure 43: Years 1-6 of 20 Year Surtax, Fire Rescue and EMS, FY25-30

As of 6/3/2025		Year 1	Years 2-6						
Department Name	**Project Description**	**2024/2025**	**2025/2026**	**2026/2027**	**2027/2028**	**2028/2029**	**2029/2030**	**Subtotal**	**%**
Fire Rescue	Engine - Replacement (STC0732VE)		$1,200,000	$1,200,000	$1,200,000	$1,200,000	$1,200,000	$6,000,000	
	Engine - Refurb (STC0732VE)		$800,000	$800,000	$800,000	$800,000	$800,000	$4,000,000	
	Grass Truck - Replacement (STC0732VE)		$175,000	$175,000	$175,000	$175,000	$175,000	$875,000	
	Tanker - Replacement (STC0732VE)		$300,000	$300,000	$0	$300,000	$300,000	$1,200,000	
	Fire Station 9 - Rebuild (Orange Lake)(FRC000022)	$0		$7,400,000				$7,400,000	
	Fire Station 11 - Rebuild (Lowell) (FRC000020)	$2,600,000						$0	
	Fire Station 24 - Rebuild (Marion Oaks)(FRC000023)		$7,000,000					$7,000,000	
	Fire Station 10 - Remodel					$3,000,000		$3,000,000	
	Fire Station 17						$7,500,000	$7,500,000	
	Service Vehicle - Refurbishment (STC0732VE)		$270,000	$270,000	$270,000	$270,000	$270,000	$1,350,000	
Total		**$2,600,000**	**$9,745,000**	**$10,145,000**	**$2,445,000**	**$5,745,000**	**$10,245,000**	**$38,325,000**	**10.2%**
Emergency Medical Services	Ambulances, New, Equipped, Replacements (STC0733VE)		$2,375,000	$2,850,000	$2,375,000	$2,850,000	$2,850,000	$13,300,000	
	Ambulances, Refurb (STC0733VE)		$1,260,000	$1,260,000	$1,260,000	$1,260,000	$1,260,000	$6,300,000	
	Safety Gear (STC0733SG)	$4,276,722							
Total		**$4,276,722**	**$3,635,000**	**$4,110,000**	**$3,635,000**	**$4,110,000**	**$4,110,000**	**$19,600,000**	**6.0%**

The following figure shows the percentage of allocation for the expected sales tax revenue for each of the departments for the first 6 years of the fund.

Figure 44: Years 1-6 Budget, Infrastructure Sales Surtax, FY 25-30

	FY 24/25 Year 1 Budget		FY 25/26 - FY 29/30 Years 2-6 Budget		FY 24/25 - FY 29/30 Years 1-6 Budget	
Public Safety Communications	$0	30.1%	$0	0.2%	$16,115,652	4.0%
Animal Services	$15,335,085		$0			
Sheriff Emergency Management	$0		$780,567			
Fire Rescue	$2,600,000	13.5%	$38,325,000	16.6%	$64,801,722	16.2%
Emergency Medical Services	$4,276,722		$19,600,000			
Sheriff Jail	$1,500,000	2.9%	$3,476,169	16.1%	$57,743,423	14.4%
Sheriff Regular	$0		$52,767,254			
Sheriff Bailiff	$0		$0			
Transportation	$22,478,640	44.1%	$239,359,539	68.4%	$261,838,179	65.3%
Total	**$46,190,447**	**90.6%**	**$354,308,529**	**101.2%**	**$400,498,976**	**99.9%**

The Infrastructure Sales Surtax Fund is budgeted at 5 years at a time for more manageable adaptation to fluctuating needs for each department. The allocations will change based on the projects for which are most pressing. Public Safety Communications, while not budgeted for this period, will receive allocations in the future. As such, Animal Services utilized a large portion of the Surtax and therefore do not have allocated funds from years 2-6 of the budget.

Revenue & Expenditure Forecast

The financial review of the revenues and expenditures of the aggregated funds for Marion County Fire Rescue 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.

Revenue Assumptions

- Tax revenue is limited by homestead exemptions and caps of 3 percent through State Statutes. Increases in growth helped the Fire Rescue Fund to sustain at 1.11 mills.
- The MSBU (assessment) rate has been tentatively adopted at a higher rate and provided for a reasonable amount in reserves for the fund to be balanced. However, upcoming CBA changes will affect the rate for the next contracted period.
- Partial Year Fire Protection (interim assessments) have increased largely due to growth but shows a 3.8 percent increase over FY 24 to FY 23, indicating slowing growth in the market.
- Newly adopted Impact Fees will help with the construction of new stations due to increased growth.
- Ambulance Fees have increased 0.91 percent year over year and have fluctuated due to changes in Medicare/Medicaid rates, Veterans Affairs rates and other federally impacted rate changes.
- The PEMT program has supplemented the reduced rates for Medicare/Medicaid patients.
- Special Events are expected to decrease if approved to be provided by private ambulance companies for the county, similar to inter-facility transports.
- The Community Paramedic and Coordinated Opioid Recovery programs should be anticipated to be reduced due to funding sources being reduced in the future.
- State and Federal provided assistance programs and grants are reducing funding levels.

Expenditure Assumptions

Personnel Services

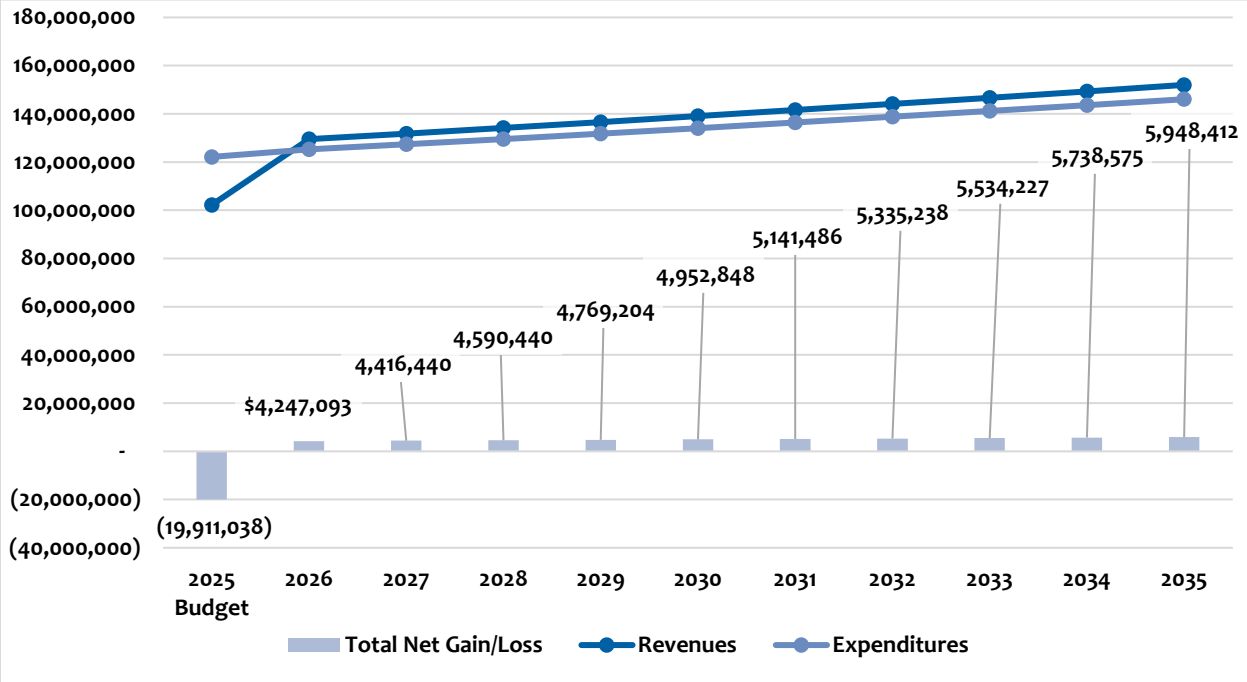
- Salaries comprise almost 80 percent of the budget, with a small percentage for operating and maintenance costs.
- Operating Costs comprise 16.2 percent of the FY 24 expenditures, while Clothing and Wearing Apparel comprise 9.7 percent of the Operating Costs.
- Overtime increases 3.9 percent year over year while Salaries & Wages increase 1.4 percent.
- Retirement Contributions comprise 19.7 percent of Personnel Services for FY 24.

Status Quo Forecast

Based upon the revenue and expenditure assumptions presented previously, a forecast based upon continuing the current level of service (the Status Quo Forecast) was prepared.

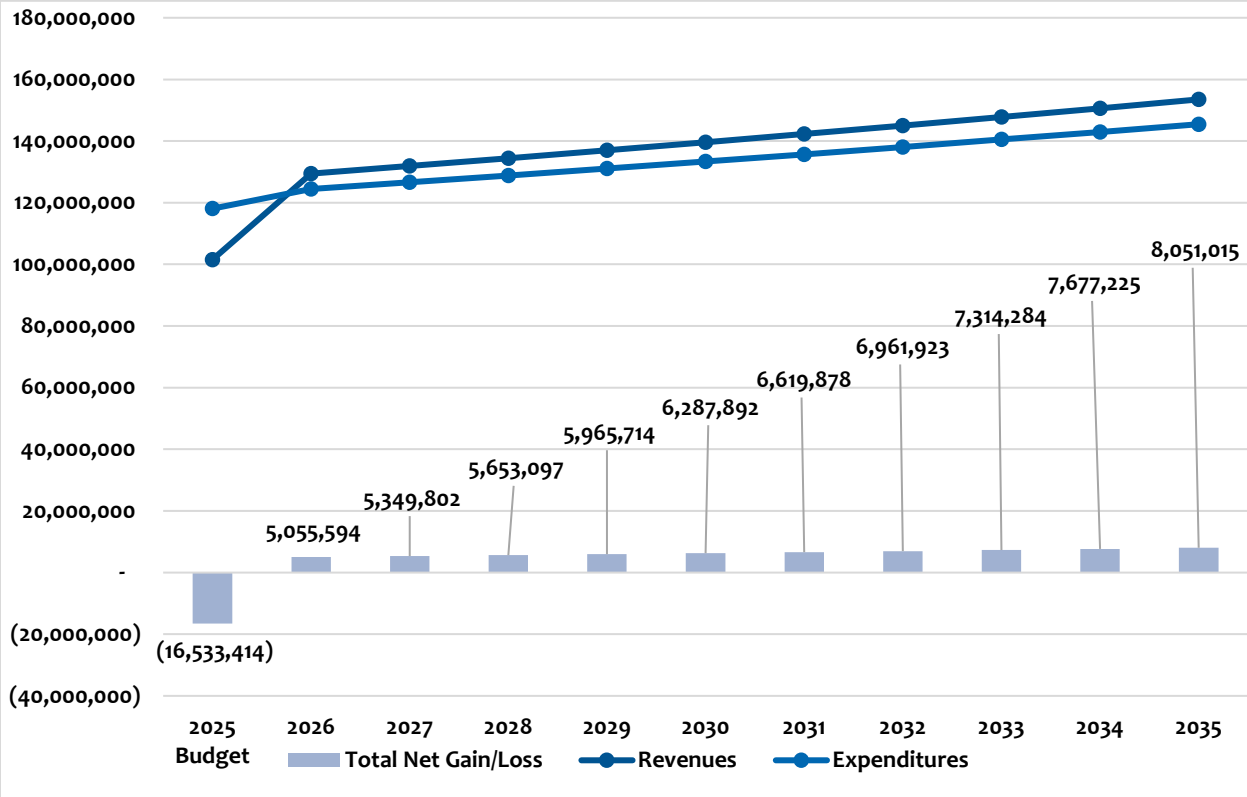
The following figure shows the projected fund balance of the entire department, with a 1.8 percent annual increase in revenues and a 1.73 percent annual increase in expenditures, with all else being equal and constant.

Figure 45: Future Fund Balance, FY 25 Budget to FY 35



Future Collective Bargaining Agreements (CBA) and personnel needs would affect this projection. Recurring revenues and expenditures, extrapolated at 1.91 percent and 1.75 percent, respectively, would provide the following fund balance trends. However, it is typical to have 20 percent in reserves, of which having a total budget of $125 million would require $25 million. The following figure provides the breakdown for recurring line-item revenues and expenditures, indicating the health of the department without any one-time provisions.

Figure 46: Recurring Line Item Fund Balance Projections, FY 25 to 35



Short and Mid-Term Strategies

- Continue to rely on existing capital funds for replacement and refurbished apparatus and ensure the funding is sufficient to meet future needs.
- Review current contracts to see if vendors are willing to agree to multi-year terms for a reduction in increased operating costs.

Long-Term Strategies

- Review Repairs/Maintenance – Fleet Management can be reduced or if the department can be added to the Cost Allocation plan as it comprises 40.4 percent of the Maintenance Costs, based on a 15 percent markup on items.
- Review Repairs/Maintenance – Equipment, which comprises 31.3 percent of the Maintenance Costs and whether there is a 15 percent markup on the items.

Taken together, the historical revenue and expense patterns for MCFR demonstrate both the strengths and vulnerabilities of the department's financial position. Consistent growth in expenditures reflects the increasing demand for emergency services, while fluctuations in revenue highlight the importance of stable, diversified funding sources. These trends underscore the need for careful long-term planning to ensure that revenues keep pace with operational and capital costs. By grounding future decisions in a clear understanding of historical performance, MCFR can position itself to meet emerging challenges while maintaining fiscal responsibility and community trust.

CURRENT FACILITIES & APPARATUS

Regardless of an emergency service agency's financing, if appropriate capital equipment is not available for use by responders, it is impossible for a fire department to deliver services effectively. Two primary capital assets essential to the provision of emergency response are facilities and apparatus (response vehicles). In this section of the report, the MCFR project team provides a review and analysis of Marion County Fire Rescue's capital assets and infrastructure. Because of the expense of these assets, planning must be developed to address replacement, refurbishment (when appropriate), 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 through an adopted CIP process. The replacement must be planned far enough ahead of the actual expense to allow an agency time to acquire the funds necessary to implement the plan and accommodate the lead time between placement of the order and receipt of the final product.

Fire Stations & Other Facilities

Fire stations are more than housing for personnel and equipment; they are strategic deployment nodes that directly influence response times, incident outcomes, and service coverage. A well-located station can reduce response time, improve unit reliability, and contribute to better outcomes in both fire suppression and medical emergencies. Conversely, outdated or poorly located stations may limit a department's ability to meet its service objectives.

In 2022, the MCFR project team initiated a comprehensive evaluation of station coverage, facility conditions, and anticipated growth pressures throughout the county. This included a spatial analysis of 5-mile travel zones, incident concurrency studies, and apparatus workload trends. The result was the identification of several high-priority areas in need of additional station coverage to meet demand and reduce the burden on surrounding stations. Among the proposed sites were locations in Westport, Pedro, Rolling Hills, Baldwin Ranch, and Majestic Oaks areas. Each location was selected based on data indicating high incident volume, extended response times, or insufficient proximity to an effective response force.

As of 2024, MCFR has proactively addressed one of these identified gaps by establishing a temporary station in Majestic Oaks, which is now in service. This deployment has already helped alleviate unit stress in surrounding areas and is an example of the department's agility in adapting to emergent community needs ahead of permanent construction.

Consideration should be given to a fire station's ability to support the department's mission as it exists currently and into the future. The activities that take place within a fire station should be closely examined to ensure the structure is adequate in both size and function. Below are some typical functions provided in the fire station:

- Isolation of potential hazardous substances from living areas
- The housing and cleaning of apparatus and equipment, including decontamination and disposal of biohazards.

- Residential living space and separate non-communal sleeping quarters for on-duty personnel (all genders).
- Kitchen facilities, appliances, and storage.
- Bathrooms and showers (all genders).
- Nursing rooms and quiet rooms.
- Administrative and management offices; computer stations and office facilities for personnel.
- Training, classroom, and library areas.
- Firefighter fitness area.
- Public meeting space for community functions and public education events.
- Areas designed to serve as an Emergency Operations Center

In addition to geographic coverage, the condition of existing stations is vital to ensuring firefighter wellness, operational efficiency, and equipment preservation. The MCFR project team evaluated each station based on physical condition, age, layout suitability, and functionality. Station assessments used the following rating scale:

Figure 47: Criteria Utilized to Determine Fire Station Condition

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

Fire Station Facilities

The site visit/assessment included building reviews with a focus on construction, building condition, building amenities, and visible problems or concerns. Each fire station visited varied broadly from relatively new (built in 2024) and in excellent condition to others that are aging and in fair condition. Several need repair and/or renovations if not total replacement. Most of the stations observed are nearing or have already reached their maximum capacity in terms of room for future expansion as workload and service demand increases. Stations range in age from 1 to 95 years. As a result, MCFR has significant facility sustainment and refurbishment costs that will need to be addressed.

The following figure lists some of the findings and basic features of each MCFR Fire Stations.

Figure 48: Summary of MCFR Stations

MCFR Station	Age	Rated Condition	Number of Apparatus	No. of Apparatus Bays	Minimum Staffing
Fire Station 1	21	Good	7	3	8
Fire Station 2	1	Excellent	4	3	3
Fire Station 3	89/35*	Poor	2	2	3
Fire Station 4	34/12*	Good	5	3	6
Fire Station 6	36/18*	Poor	3	2	3
Fire Station 7	14	Good	5	3	5
Fire Station 9	45	Poor	5	3	5
Fire Station 10	23	Good	4	3	7
Fire Station 11	40	Poor	3	3	3
Fire Station 12	20	Good	6	2	6
Fire Station 15	18	Good	4	3	5
Fire Station 16	51/14*	Good	7	3	8
Fire Station 17	39/7*	Fair	5	3	5
Fire Station 18	15	Good	6	3	11
Fire Station 19	28	Fair	5	3	6
Fire Station 20	20	Good	5	3	5
Fire Station 21	16	Good	9	3	12
Fire Station 22	38/18*	Good	5	3	5
Fire Station 23	1	Temporary	1	0	3
Fire Station 24	42/19*	Poor	5	3	5
Fire Station 27	36	Fair	5	3	5
Fire Station 28	4	Excellent	6	3	5
Fire Station 30	17	Good	5	3	7
Fire Station 31	16	Good	6	3	8
Fire Station 32	14	Good	3	2	5
EMS Central	1	Excellent	12	6	14
EMS East	95	Poor	5	0	8-10
EMS West	N/A	N/A	2	0	4

Common Facility Issues

Marion County Fire Rescue (MCFR) operates several stations that were originally designed for single-unit staffing and intermittent occupancy. Over time, staffing increases and the evolution to full 24-hour coverage have led to operational demands that exceed the original design and capacity of many of these facilities. In numerous cases, stations have undergone only minor retrofits to accommodate additional personnel and apparatus, resulting in overcrowded conditions and space inefficiencies. This mismatch between design and current use places strain on the living, working, and operational functions of the facilities.

A prevalent issue across many fire stations is the lack of compliance with modern health, safety, and building standards, including those outlined in the National Fire Protection Association's (NFPA) facility-related guidance such as NFPA 1500, 1581, and related life safety codes. For example, some stations still lack automatic fire sprinklers or smoke detection systems—critical components for the safety of the personnel who live and work within these buildings. Ice machines and other shared equipment remain located in apparatus bays where they are exposed to diesel exhaust and other harmful particulates, contradicting infection control and occupational health recommendations.

Decontamination facilities are often inadequate or improperly configured. Many stations do not provide for the physical separation of gear decontamination, equipment cleaning, and personal hygiene spaces, as required under NFPA 1581 (Standard on Fire Department Infection Control Program). Current layouts often result in bunker gear, PPE, and contaminated equipment being brought into living quarters, kitchens, or sleeping areas, increasing firefighter exposure to harmful particulates and off-gassing chemicals.

Industry best practices increasingly emphasize cancer prevention strategies within fire station design. Key prevention measures include minimizing exposure to diesel exhaust, isolating contaminated gear, and ensuring PPE is never stored or worn in living quarters. Although MCFR has taken steps to advance cancer prevention awareness and practices, many existing stations lack gear extractors, designated clean/dirty zones, and proper ventilation or UV protection for gear storage. Stations constructed before these best practices were recognized are particularly lacking in these areas, underscoring the need for targeted upgrades or long-term replacement planning.

Another concern is the reliance on back-in apparatus bays at many older stations. While common in legacy station designs, back-in bays increase the risk of vehicular accidents involving fire apparatus. Modern fire station standards recommend the use of drive-through bays whenever feasible, as they significantly reduce vehicle backing incidents and enhance safety for personnel and equipment.

While there is no universally mandated replacement cycle for fire stations, many fire service leaders consider a 50-year service life as a reasonable benchmark. However, station age alone should not dictate renovation or replacement. Instead, facility decisions should be based on a comprehensive assessment of functionality, safety, compliance, and support of operational requirements. As MCFR continues to modernize, these facility issues should be prioritized within the department's capital improvement strategy to protect firefighter health, promote operational efficiency, and ensure the long-term resilience of the system.

Administrative Facilities

Marion County Fire Rescue Headquarters is centrally located within Marion County, situated on the same grounds as the County Commission Chambers within the McPherson Complex. Headquarters shares facilities with EMS Billing and the Procurement Office, creating a centralized hub for essential operations. The Fire Chief, Deputy Chiefs, and their staff are based at headquarters, ensuring efficient leadership and coordination. Office spaces are well-organized and easily accessible. While conference rooms are limited, additional meeting space is available in the training classroom. Headquarters is fully ADA-compliant, with accessible office spaces and ADA-approved ramps to ensure ease of access for all citizens.

Training Facilities and Live Fire Readiness

MCFR's hands-on training facilities are located offsite from operational fire stations and have served the department for many years. However, several key components are outdated or have limited utility due to age and structural concerns. MCFR utilizes alternative live fire training props constructed from modified Conex box containers to conduct regular compliant live fire training. These modular structures allow for controlled, scenario-based burns while maintaining a degree of safety and flexibility. While these props offer valuable functionality, they do not fully replace the need for a modernized, purpose-built training campus that aligns with industry standards.

Recognizing this gap, MCFR has initiated the design phase for a new state-of-the-art training facility that will be co-located with the planned Baldwin Ranches Fire Station on a dedicated 13-acre site. This integrated campus will consolidate live-fire, technical rescue, and didactic learning capabilities in one location. The facility is being designed in accordance with NFPA 1402: *Standard on Facilities for Fire Training and Associated Props*, which outlines best practices for planning, constructing, and maintaining effective fire training environments. Features will include a new burn building, rescue simulators, SCBA confidence courses, and multi-functional classrooms to support recruit academies, in-service training, and officer development.

In the interim, classroom instruction remains a vital component of MCFR's educational program. The department conducts classroom-based sessions for recruit academies and departmental in-service education, supported by designated instructional space. However, consistent access to modernized drill grounds and simulation facilities remains essential to meet evolving training demands.

Best practices across the fire service emphasize that training must be frequent, realistic, and safe. MCFR is committed to ensuring its personnel are highly skilled and prepared for the wide range of emergencies they may face. The planned training facility represents a critical investment in operational readiness, firefighter safety, and community protection.

Fire Station Apparatus/Vehicles

The size, age, and deployment of a fire department's fleet of vehicles (emergency response and support) have a significant impact upon the service capabilities of an organization. It is critical that a fire department establish an appropriate inventory level of its emergency and non-emergency vehicles that allows it to effectively serve its community and constituents well. Fire suppression apparatus, aerial apparatus, special operations and support units, and some command vehicles are unique and expensive pieces of equipment customized to operate for a specific community and defined mission. Other than its firefighters, officers, and support staff, emergency apparatus and vehicles are the next most important resource in a fire department that has a direct impact on service delivery.

Apparatus must be in good condition, regularly maintained, and configured in a way that ensures reliable, safe, and effective deployment and operations at emergency incidents. As a result, most fire apparatus are very expensive to purchase and maintain and offer little flexibility in use and reassignment to other missions. Additionally, older vehicles tend to increase maintenance costs and can potentially have a negative impact on response reliability as units experience increased breakdowns and longer out-of-service times.

A complete list of MCFR apparatus and vehicles is listed in Appendix C.

MCFR has a significant number of fire apparatus to maintain and replace roughly 300 pieces. Various factors can have either a positive or negative impact on the life expectancy of an emergency response apparatus. Fire trucks, rescue trucks and aerial ladder trucks located in "busy" portions of a jurisdiction can realize an even shorter lifespan as the units are exposed to more harsh operations. These units often experience increased breakdowns due to wear and tear, which reduces apparatus availability and increases maintenance costs.

As with any mechanical device, a fire apparatus possesses a finite life. Often, when a frontline apparatus reaches a certain threshold regarding age or wear and tear, or begins to require increasing maintenance costs, it is moved to reserve status or decommissioned. The decision to move an apparatus to reserve status or to decommission it is a local decision. Typically, apparatus replacement is based on multiple factors such as age, mileage, engine hours, increased need for maintenance, or financial considerations. Annex D of NFPA 1901: *Standard for Automotive Apparatus* (2016) suggests the following:

> *The safety improvements addressed in the most recent edition of NFPA 1901 are so significant that the standard suggests that apparatus more than 15 years old should be refurbished to meet current standards or removed from service; however, the standard acknowledges that apparatus can continue to be serviceable far beyond the 15-year threshold, depending on maintenance, wear and tear, service demands, and driver training programs. Finally, 1901 recommends that apparatus over 25 years in age should be replaced.*

Apparatus represents one of the most critical and capital-intensive components of any fire and EMS organization. Ensuring that MCFR's fleet remains reliable, safe, and mission-ready requires a well-structured replacement plan rooted in lifecycle planning, fiscal responsibility, and operational demand.

Marion County Fire Rescue has developed a comprehensive apparatus replacement schedule based on nationally accepted best practices, including the NFPA 1900 and 1911 series standards. Each vehicle type is assigned a target service life, replacement cost, and anticipated lead time to account for manufacturing and procurement delays. These timelines are informed by operational use, mechanical aging, manufacturer guidelines, and the growing need to avoid unplanned failures and costly repairs.

For example, heavy rescue trucks are planned for replacement every 15 years, with estimated costs exceeding $2 million and lead times of up to 18 months. Similarly, rescue units, engines, and aerials are evaluated based on both age and performance, ensuring MCFR maintains frontline readiness while avoiding service disruptions. Smaller vehicles, such as utility squads or command vehicles, are also tracked for timely replacement, typically on a shorter lifecycle due to mileage and wear patterns.

A unique feature of MCFR's apparatus strategy is the recognition of continued deterioration during the extended procurement window. To mitigate these risks, the department's replacement model considers depreciation and operational wear during the build cycle itself. This ensures funding requests and project timelines are aligned with actual delivery schedules, preventing gaps in operational capability.

By forecasting capital needs across a multi-year horizon, MCFR can budget responsibly, avoid compounding deferred maintenance, and maintain a fleet that reflects the growing service demands of Marion County. The MCFR apparatus replacement plan also serves as a critical tool in the department's capital improvement planning and long-range fiscal strategy.

The following figure depicts the life expectancy metrics used by MCFR.

Figure 49: Fleet Metrics for Life Expectancy

Metrics for Life Expectancy			
MCFR strives for 25% of the front-line fleet to determine the adequate number of spare units.			
1 Hour of Unit Idle Time	25 Miles	0%	
10,000 Hours of Unit Idle Time	250,000 Miles	50%	Move To Reserve (33%)
20,000 Hours of Unit Idle Time	500,000 Miles	100%	Dispose of Unit

Vehicle Type	NFPA 1900/1911 Life Expectancy	Replacement Lead Time	Continued Deterioration During Unit Production (Hours)	
Squad/Utility	15	12	N/A	N/A
Med Rescue Truck	15	18	N/A	N/A
Heavy Rescue Truck	15	18	871.82	4%
Custom Pumper	15	24	1,466.49	7%
Tanker/Tender	15	12	67.36	0%
Ladder	15	36	1,855.78	9%
Brush	15	12	93.76	0%
Type I Ambulance/Rescue	7	24	3,959.43	20%

SUPPORT PROGRAMS

Fire department support programs can encompass a wide range of initiatives and resources aimed at assisting fire departments in carrying out their mission to protect life and property from fire and other hazards. Some examples of fire department support programs are training programs, communication services and dispatch, and life safety services.

Training

A comprehensive training program is one of the most critical factors to ensuring safe and effective delivery of emergency services. This is especially true of smaller departments where staffing is limited but the types of incidents they respond to can be the same as larger departments. Maintaining a sufficient initial and on-going fire, rescue, and hazardous materials training program as well as continuing medical education is essential to ensure maximum effectiveness and safety in the complex environment firefighters must work. Failure to provide necessary and effective training on a continual basis endangers firefighters and the citizens they serve, and at the same time exposes the fire department to liabilities that can have severe consequences.

In this section, the project team reviews the department's training practices and compares them to national standards and best practices. Recommendations for strategic changes or opportunities for improvement are noted where appropriate.

General Training Competencies

Newly hired firefighters must participate in probationary firefighting recruit training. The National Fire Protection Association (NFPA) in its standard NFPA 1001 (Firefighter I and II) identifies the minimum training requirements that can serve as the basis for entry-level firefighters. The NFPA recommends other standards that address initial and ongoing training for firefighters and officers in a variety of specific topics.

In its Fire & Emergency Service Self-Assessment Manual, the Commission on Fire Accreditation International (CFAI) addresses "Training and Competency," and lists performance indicators under the headings of training and education program requirements, performance, and resources. Some of these competencies include the following:

- The organization has a process in place to identify training needs. The process identifies the tasks, activities, knowledge, skills, and abilities required to deal with anticipated emergency conditions.
- The agency's training program is consistent with the mission statement, goals and objectives and meets its needs.
- The training program is consistent with legal requirements for performing mandatory training.
- The agency identifies the minimum levels of training required for all positions in the organization.
- A command and staff development program is in place that encourages pursuit of professional credentialing.

- A process is in place to ensure that personnel are appropriately trained.
- The agency provides a training schedule that meets the organization's needs.
- The agency evaluates individual and crew performance through validated and documented performance-based measurements.
- The agency analyzes student evaluations to determine the reliability of training conducted.
- The agency maintains a training records management system that meets recognized standards.
- Facilities and apparatus are provided to support the agency's all hazards training needs. The agency has plans addressing any facilities and apparatus not available internally to complete training activities.
- The agency has instructional personnel with teaching qualifications and expertise to meet its needs.
- Instructional materials are current, support the training program, and are easily accessible.
- The agency has a process for purchasing, developing, or modifying existing curriculum to meet its needs.
- Equipment utilized for the training is properly maintained in accordance with the agency's operational procedures. The agency makes training equipment readily accessible to instructional personnel.
- The agency maintains a current inventory of all training equipment and resources.
- A selection process is in place for training and educational resource materials.
- Training materials are evaluated at least annually, to reflect current practices and meet the needs of the agency.

Furthermore, the Insurance Service Organization (ISO) requires detailed hours of specific training as part of their fire department ranking. Below is a summary of the new and/or annual ISO required training hours for each firefighter.

- Facilities Training: 18 Hours
- Company Training: 192 Hours
- Officer Development Training: 12 Hours
- New Driver Training: 60 Hours
- Driver Continuing Education: 12 Hours
- Hazardous Materials Training: 6 Hours
- New Recruit Training: 240 Hours
- Pre-fire Planning: Annual Review

Even though the Insurance Services Office (ISO) requires specific detailed training for department personnel, training programs must go beyond simply fulfilling mandatory hours. Emergency services training administrators and instructors must ensure that firefighters, EMS personnel, and officers are not only competent, but also self-confident in the variety of skills necessary to perform effectively in high-stress situations.

Training Administration and Delivery

To function effectively, a training program must be managed. An additional element of effective administration is the development of program guidance in the form of training planning, goals, and defined objectives. MCFR has established goals and objectives. MCFR management supports training, and it is shown by the amount of training being conducted and coordinated throughout the year. This provides for a busy calendar of events as the size of the department's service area can create challenges arranging for training evolutions outside of first due territories. Interviews with staff highlighted concerns suggesting the need for additional support to ensure operational units get the required and needed training.

Currently MCFR manages their training program with a Division Chief, three Battalion Chief's, one Fire Captain, one EMS Captain, two EMS Lieutenants, and two paramedic training specialists. Two administrative support staff members provide invaluable support to the division. Based on the span of control in the department training program and the sheer number of required training hours, MCFR should consider operational shift officers designated as training liaisons to assist with consistent training delivery across the shifts. This approach is used across the country to accomplish training program goals and objectives when staff is limited. However, operational members tasked with additional administrative support functions must prioritize their daily, weekly, monthly, and yearly assignments. Operational emergency functions and daily responses can interrupt or delay the accomplishment of these scheduled tasks.

Training Program Goals and Objectives

Every area of the department requires clearly defined goals and objectives to ensure operational success, and MCFR's training program is no exception. Proficiency in high-risk, low-frequency skills particularly those required for safe operation within Immediately Dangerous to Life and Health (IDLH) environments—requires consistent, structured, and realistic training opportunities. Currently, MCFR utilizes an aging off-site facility that includes modular Conex-style live burn props and other training elements. While these props offer some value, limitations in infrastructure, space, and structural reliability have made comprehensive and repeatable training increasingly difficult.

To meet these needs, MCFR is actively engaged in the design phase of a new, state-of-the-art training campus on a 13-acre site, co-located with the planned Baldwin Ranches fire station. This facility is being developed to support a full range of fire, EMS, technical rescue, and officer development programs in alignment with NFPA 1403, *Standard on Live Fire Training Evolutions*, and NFPA 1402, *Standard on Facilities for Fire Training and Associated Props*. Once completed, the new training center will enable daily, monthly, and annual drills in both simulated and live fire environments, ensuring MCFR personnel remain prepared, compliant, and confident in their roles.

Goals and objectives provide the foundation for an effective training program. These goals and objectives can be determined by creating a training committee of dedicated employees who are passionate about department training. An analysis of MCFR's ability to complete tasks and evolutions outlined in NFPA 1410, *Standard on Training for Emergency Scene Operations* will provide guidance on where to begin. Furthermore, Post Incident Analysis (PIA) review can also provide much needed information as to weaknesses and gaps in service ability. Often gaps can be identified by outlining the high-risk, low frequency events that may occur or have occurred in the service area. Once these gaps are identified, the training program can be tailored to address the deficiencies.

Training Schedules

As with many fire departments, MCFR is challenged with balancing on-duty training sessions and the necessity to maintain sufficient personnel and apparatus to ensure adequate emergency response. Furthermore, providing training for volunteer staff is challenging based on their schedules and availability. Competency-based training sessions occur frequently at the agency despite these challenges. In addition to ensuring personnel have the quality knowledge, skills, and abilities necessary to deliver effective and efficient emergency services, training programs have an added effect of improving employee morale. MCFR utilizes a variety of on-duty and off-duty training schedules to try and accomplish the required training hours set by ISO. MCFR also has a variety of night and weekend training opportunities for volunteer members to attend and achieve their training requirements.

The MCFR training program should be balanced between three areas: statistically driven training evolutions and skills reflecting current call volume, special team training, and re-certification course requirements. The use of heat maps and actual service demand listed in the Service Delivery and Performance Section of the report can aid in tailoring the training program specifically to the types and frequency of incidents experienced by MCFR. Furthermore, the required ISO training requirements can be broken down and scheduled across the entire year to ensure compliance.

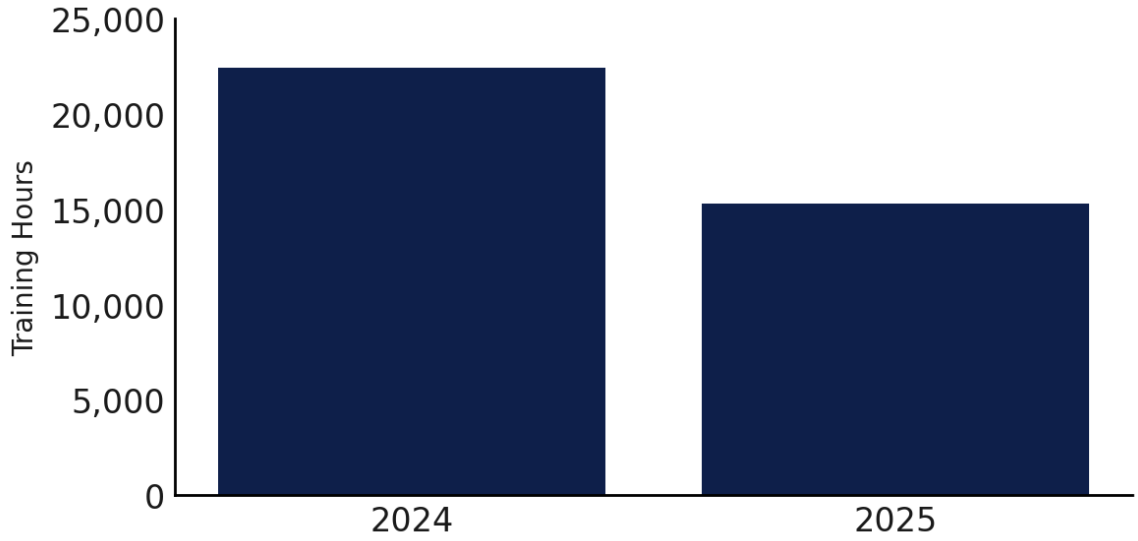
Training Record Keeping

Training records are maintained utilizing MCFR's records management system, Vector Solutions©. The system is working well and allows the department to easily track and achieve required ISO training documentation. MCFR currently uses task books for each rank outlining required ISO training in addition to Vector Solutions© for training recordkeeping and guidance. The use of task books for record keeping is very beneficial to the advancement and training of members. Task books not only outline the necessary steps to advance through the ranks but also provide members with more education than required by ISO.

Their use of Vector Solutions© as their training platform allows for ease of scheduling, assignment, and tracking of required training. It also allows the end user, both career and volunteer, the ability to seek out additional training through a variety of already programmed available training as part of the platform. Furthermore, it enhances the department's availability to meet ISO training requirements.

The following figure represents training completed and recorded in Vector Solutions©.

Figure 50: Total Training Hours Recorded 2024 and YTD 2025



The chart above illustrates the total training hours completed by MCFR personnel for the years 2024 and 2025. It is important to note that the 2025 figure represents year-to-date (YTD) training hours only and does not yet reflect a full calendar year. Despite this, MCFR has already demonstrated strong training engagement, indicating continued emphasis on operational readiness and professional development.

Figure 51: Training by ISO Category for 2024

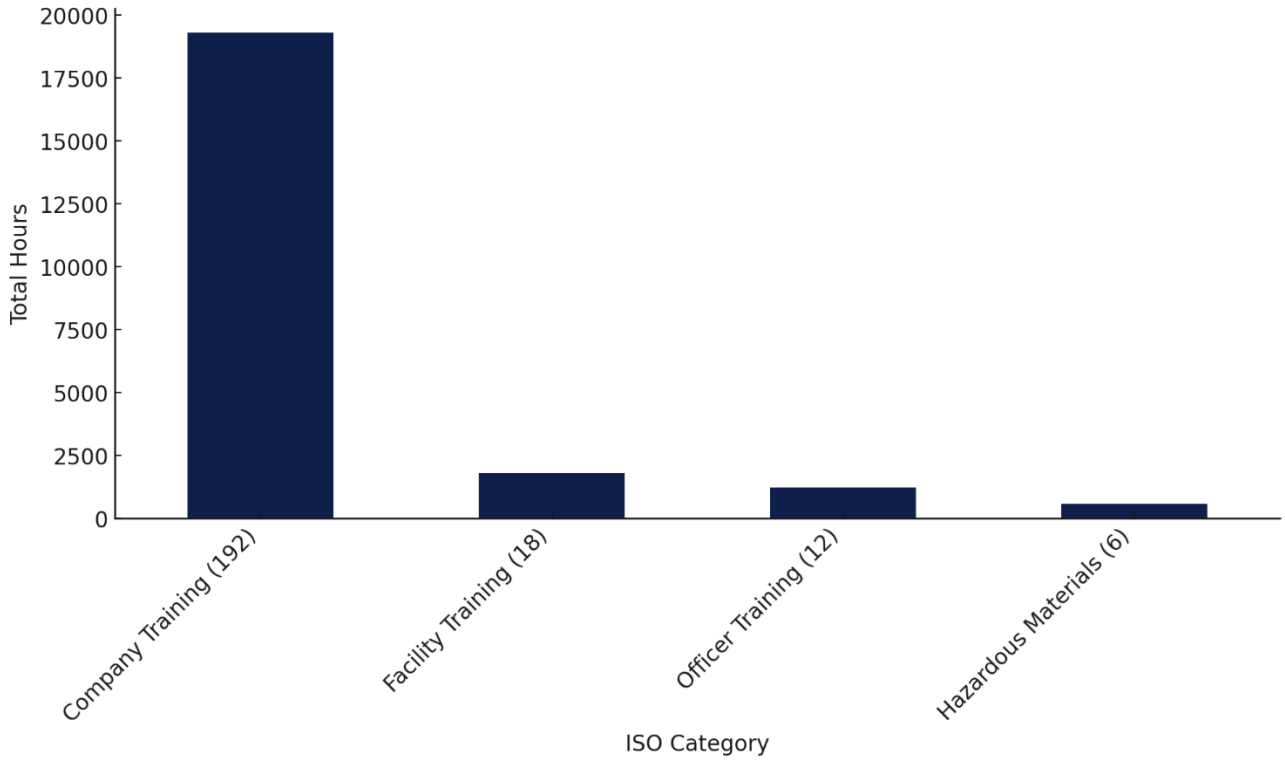
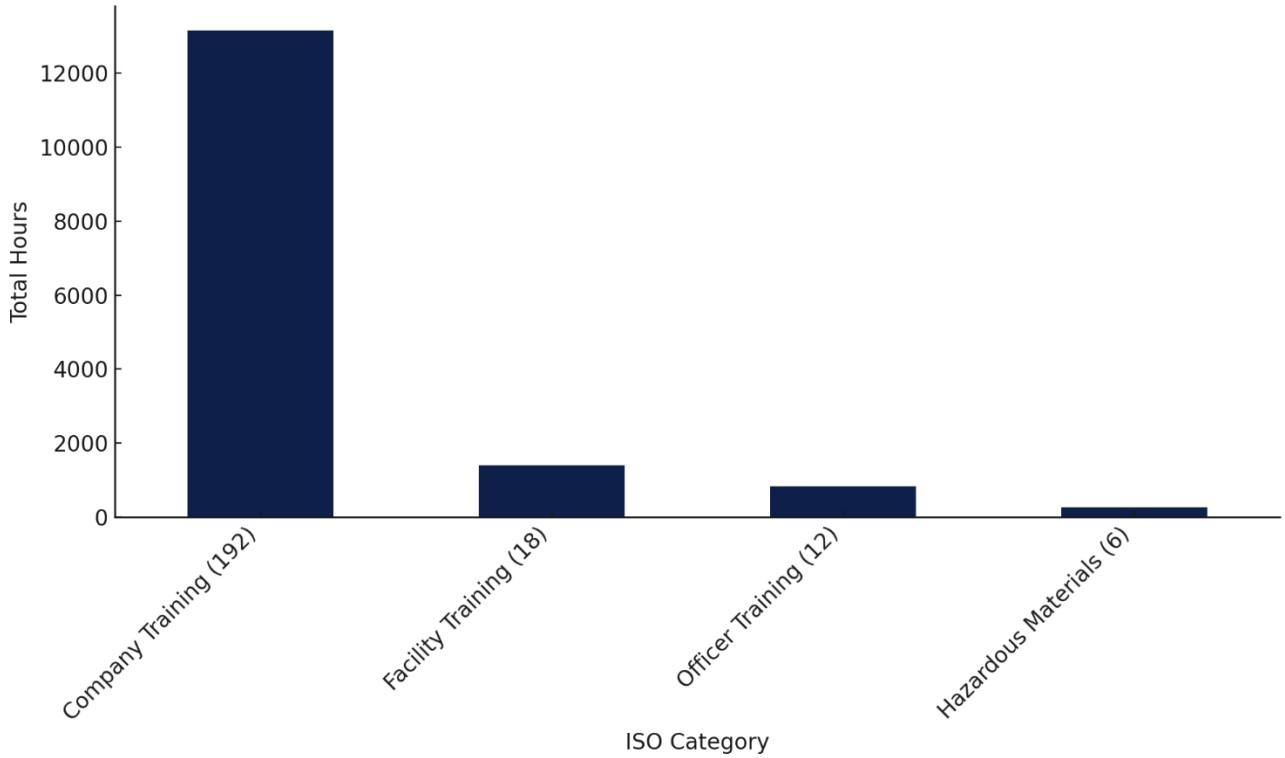


Figure 52: Training by ISO Catagory 2025(YTD)



One of the largest challenges MCFR faces is the ability to offer in-service training in addition to the constant rotation of new employee orientation classes.

Candidate Hiring and Training Programs

Marion County Fire Rescue (MCFR) continues to invest heavily in developing a high-quality pipeline of firefighter-paramedics and EMTs to meet its growing operational needs. The department has implemented a structured onboarding program that includes rigorous EMS and fire orientation phases designed to integrate new hires effectively and maintain a high standard of operational readiness.

In 2025 to date, MCFR hired and processed 155 candidates through 16 separate recruit classes, a testament to the department's commitment to maintaining adequate staffing levels in response to turnover and increasing service demand.

Orientation Process and Structure

The onboarding program consists of two primary components: EMS Orientation and Fire Orientation. Together, they span over five weeks and serve to transition new employees into field operations while ensuring they meet MCFR's professional and safety expectations.

EMS Orientation

Conducted over 15 days at 8 hours per day, this program familiarizes new hires with MCFR's EMS protocols, equipment, documentation systems, and patient care expectations. Instruction is primarily provided by internal training division staff; however, adjunct instructors may be brought in when staffing requires. The total instructor cost for EMS Orientation is approximately $3,840 per class.

Fire Orientation

Spanning four weeks, this program includes both classroom and hands-on field training. Eighteen days are dedicated to non-burn instruction, followed by two days of live fire training. Live fire days require an increased instructor-to-student ratio due to safety standards, including the use of certified Live Fire Training Instructors (LFTIs). Estimated instructor costs for the fire component reach $9,216 per class, excluding additional overtime for supplemental instructors during burn scenarios.

The combined cost for onboarding one class of recruits (EMS + Fire Orientation) is approximately $13,056, excluding overtime incurred for live fire training. This structure allows for a maximum of six recruits per class, adhering to the recommended 1:6 instructor-to-student ratio for safety and effectiveness.

Per-Candidate Certification and Equipment Costs

In addition to onboarding instruction, MCFR bears the cost of initial certifications, exams, and essential supplies to ensure recruits are fully credentialed upon entry. The breakdown per candidate includes:

- Fire Academy: $4,233.93
- EMT Certification: $2,479.70
- Fire & EMS Books, Exams, and Licenses: $541.80
- Wildland Fire Module: $120

The total individual training investment per recruit is approximately $7,375, not including internal instruction or salary during orientation.

Facilities and Delivery Challenges

Although MCFR delivers these programs with strong internal staff and a well-developed curriculum, the department's current training facilities present significant limitations. Live burns are conducted using CONEX-style container props, which are functional but do not meet the modern standards outlined in NFPA 1402 and NFPA 1403. Additionally, limited classroom and drill ground space challenge the department's ability to run larger or concurrent recruit classes. As described, the department is in the process of designing a new facility but lacks dedicated funding.

Fire and Life Safety Services

Fire Prevention

In today's fire service, the many competing interests for limited funding make establishing priorities very difficult. Often the mission of fire prevention and public education becomes a combined effort between the department and their municipality. Outreach and education combined with identifying and emphasizing Community Risk Reduction (CRR) should become part of the everyday mission of the fire department.

It is far more effective to prevent fires and other emergencies than it is to respond to them. The financial impact of a fire or injury goes far beyond the cost of extinguishment or treatment. According to the Federal Emergency Management Agency (FEMA), 40% of businesses do not reopen following a disaster. Additionally, another 25% fail within one year. The United States Small Business Administration found that more than 90% of companies fail within two years of being struck by a disaster.[26]

The fiscal impacts of injuries, while not as immediately evident, can be equally devastating. Individuals experiencing an injury may lose the ability to earn an income during the recovery time, and businesses lose productivity of that individual until they return to work. Beyond the fiscal impacts associated with lost work time, injured people and families often experience significant emotional trauma.

A strong fire prevention and life safety program, based on effective application of relevant codes and ordinances, reduces the loss of property, life, and the personal disruption that accompanies catastrophic fires and accidents.

The fundamental components of an effective fire prevention program are listed in the following figure, accompanied by the elements needed to address each component.

[26] *https://www.accesscorp.com/press-coverage/study-40-percent-businesses-fail-reopen-disaster/*

Figure 53: Fire Prevention Program Components

Fire Prevention Program	Elements Needed to Address Program
Fire Code Enforcement	Proposed construction and plans review New construction inspections Existing structure/occupancy inspections Internal protection systems design review Storage and handling of hazardous materials
Public Fire and Life Safety Education	Public education Specialized education Youth Fire setter intervention Prevention information dissemination
Fire Cause Investigation	Fire cause and origin determination Fire death investigation Arson investigation and prosecution

Fire Code Enforcement

The review of planned construction is a critical component of fire prevention. Working in conjunction with the local, county, city and/or regional building officials ensures that planned construction will be built to applicable fire codes and standards that make for a safe environment for those that will occupy/use it.

Plan Reviews and Inspection Activities

A comprehensive fire inspection and construction plan review program ensures that the business/occupancy continues to meet the codes and standards to which it was built and provides an opportunity for fire personnel to develop a plan of action (pre-plan) in the event of a fire or other emergency. The recommended frequency for business/occupancy inspection may vary based on the type of property and degree of hazard. NFPA 1730, *Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations* is the recommended standard for fire safety inspections by hazard class and is noted in the following figure.

Figure 54: Recommended Fire Inspection Frequencies per NFPA 1730

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

MCFR has adopted and follows the 2021 Edition of the International Fire Code (IFC) (8th Edition of the Florida Fire Prevention Code incorporating 2021 NFPA 1 Uniform Fire Code and NFPA 101 Life Safety Code) developed by the International Code Council (State of Florida Fire Marshal's Office and the National Fire Protection Association). MCFR requires an annual/biannual inspection for various occupancies. Data provided by the department pertaining to life safety and building fire code inspections reveals that the frequency of inspections performed annually does not meet the NFPA 1730 annual inspection requirements due to the workload associated with new construction inspections and plan reviews and the limited number of qualified Fire Inspectors. As a result, the department prioritizes inspections towards new construction and high-hazard facilities.

MCFR Fire Prevention staff were only able to complete 800 of 4,800 required (NFPA 1730) annual inspections in 2024. To identify potential options for ensuring completion of the required inspections noted in the preceding figure, the MCFR project team calculated a theoretical daily inspection workload if all inspections were assigned and scheduled uniformly throughout the year, resulting in the following calculation:

- Number of annual inspections required = 4,800 (Does not include plans review)
- Number of workdays (M–F) in 2024 = 250
- Number of Federal Holidays in 2024 = 10
- Number of Vacation, Sick, Personal Day, Incentive days, Education days = 40
- 4,800 ÷ 210 workdays = 22.8 inspections required per day

Evaluation of current Fire Prevention staffing compared to the required daily inspection workload quickly reveals that there are not enough staff to conduct 22.8 inspections every weekday. Recordkeeping, code consultations, leave time, training, code enforcement follow-up, and other administrative duties are staff activities required above and beyond physically visiting and inspecting occupancies.

Fire departments across the United States utilize civilian or sworn operations personnel to perform occupancy inspections. The use of civilian personnel typically results in cheaper personnel costs as opposed to using sworn firefighters. In addition, sworn firefighters have many competing priorities during any given shift, besides responding to emergencies. Using retired firefighter annuitants or part-time staff may be another cost-effective option for adding inspection capacity to bolster the fire inspection program.

Fire and Life Safety Public Education Program

The prevention of fires and other emergency incidents is one of the most critical functions of any community's service to its citizens and visitors. This activity cannot be accomplished in a haphazard approach by simply "talking to people" during the normal course of business. Delivering fire and life safety messages must be accomplished through an intentional process resulting from a strategic fire protection campaign. A comprehensive fire and life safety education program involves teaching the public methods and techniques used to minimize the occurrence of fire and other accidents. The reality is that it is more cost effective to prevent a fire or emergency than it is to respond to a fire or emergency. A well-educated and trained public becomes a force multiplier in maintaining a safe community.

MCFR has a public education/Community Risk Reduction Battalion Chief officer assigned and relies on various staff to co-manage and assist with delivery of these programs and functions.

Providing fire and life safety education to the public to minimize the number of emergencies while training the community to take appropriate actions when an emergency occurs is essential. Life and fire safety education provides the best chance for minimizing the effects of fire, injury, and illness to the community. Fire and Life Safety Education Programs offered within MCFR include smoke alarms, carbon monoxide alarms, scheduled school programs and classes that are offered by request to the community. Topics presented within the schools include Calling 911, Exit Drills in the Home (EDITH), and Injury Prevention. Programs offered to the community by request include, Senior Citizen Fire Safety Training, Fire Extinguisher Training, and a Youth Firesetter Program.

The MCFR project team recommends that MCFR develop and implement a formal Community Risk Reduction (CRR) plan that is updated annually. The plan should evaluate the risks most faced by the residents of MCFR and establish strategies for reducing those risks. A formal risk evaluation will evaluate the need for additional programming. The role of the Community Risk Reduction Battalion Chief is to ensure the development, delivery, and enhancement of MCFR's Community Risk Reduction Program.

Fire Origin and Cause Determination

Accurately determining the cause of a fire is an essential element of a fire prevention program. When fires are set intentionally, identification and/or prosecution of the responsible offender is critical in

preventing additional fires and potential loss of life. Moreover, when a fire is determined to be accidental, identifying its origin and cause becomes critically important, as this knowledge provides the foundation for targeted fire prevention strategies and public education efforts aimed at reducing the likelihood of similar incidents occurring in the future.

According to NFPA 921, *Guide for Fire and Explosion Investigations,* there are four determinations when investigating the cause of a fire.

- Accidental fire cause
- Natural fire cause
- Incendiary fire cause
- Undetermined fire cause

Accurately determining the cause of fires often provides clues to prevent future incidents. Identifying fires 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 to know and understand its origin. It is of value in identifying where to direct fire prevention and public education efforts to reduce or prevent re-occurrences.

MCFR conducts fire origin and cause investigations to determine how and why fires occur, supporting public safety, property protection, and potential criminal prosecution. The department follows the standards outlined in NFPA 1321, which governs investigative methods, safety practices, quality assurance, and reporting procedures. Initial investigations are typically performed by on-duty command staff with foundational training, and more complex or suspicious incidents are escalated to certified fire investigators or the Fire Marshal. MCFR works in close partnership with local law enforcement agencies and the Florida State Fire Marshal's Office when criminal activity such as arson is suspected. Investigators are trained to document scenes thoroughly and prepare detailed reports that meet legal and professional standards.

The MCFR fire investigation team includes a range of highly qualified personnel, including one IAAI-Certified Fire Investigator (CFI), two NAFI-Certified Fire and Explosion Investigators (CFEI), one NAFI-Certified Instructor (CI), one IAAI-Certified Instructor (CI), two State of Florida Certified Fire Investigators, and three IAAI Fire Investigator Technicians (FIT) or equivalent. Each investigator is also trained in fire scene photography to ensure accurate documentation. The department continues to emphasize professional development and maintains compliance with NFPA 1321 and 921 to uphold investigative integrity and effectiveness.

Data Collection and Analysis

Finally, one aspect that is critical to the entire MCFR operation is the collection of data and statistical analysis of that information. Therein lies the primary reason for maintaining an accurate record of emergency responses, fire inspections and code enforcement, fire investigations, and public education programs. Complete, accurate, and thorough data collection is necessary for planning purposes.

It is recommended that the Fire Marshal's Office and MCFR's leadership utilize this data to develop a monthly report to allow for the regular review of incident data and response performance. The information contained within a common records management system provides valuable information that can assist the department in identifying areas of concern needing to be addressed through its fire prevention programs.

Pre-Incident Planning

Marion County Fire Rescue (MCFR) has implemented First Due, state-of-the-art pre-incident planning software designed to enhance firefighter preparedness and emergency response. Pre-incident plans provide critical information on specific structures and processes, allowing firefighters to engage in strategic and tactical discussions before an emergency occurs. These plans evaluate protection systems, building construction, contents, and operating procedures that may impact emergency operations.

Firefighters often operate in extreme environments characterized by heat, darkness, confusion, and danger. In many cases, their first time inside a building is during an emergency when conditions are at their worst. Unlike Hollywood's portrayals, real-life fire conditions often result in zero visibility due to smoke, increasing the risk of disorientation and injury. Familiarity with a building's layout, hazards, and built-in fire-resistive features is crucial for both firefighter safety and effective operations.

To ensure this level of preparedness, MCFR personnel routinely tour structures, develop pre-incident plans, and conduct tactical exercises, both on-site and through tabletop simulations. These efforts align with NFPA 1620: *Standard for Pre-Incident Planning*, which sets guidelines for developing and maintaining pre-incident plans. To be effective, these plans must be current and readily accessible to all response personnel, including mutual and automatic aid partners.

MCFR also utilizes the Knox® key-box entry program to provide secure access to buildings during emergencies. An ideal pre-incident planning system incorporates standardized forms and protocols, ensuring that data is consistently collected, verified, stored, and updated. Quick and easy retrieval of this information is essential for commanders and emergency responders to make informed, split-second decisions.

Historically, MCFR's pre-incident plans have been outdated due to technological limitations. The implementation of First Due addresses this issue by enabling company-level inspections and pre-planning with seamless updates and easy data retrieval. This software enhances situational awareness and supports the development of a Community Risk Assessment and Community Risk Reduction Plan, both of which are essential for proactive risk management and improving overall public safety.

Communications/Dispatch Services

Communications center operations are among the most critical support components of a fire rescue organization. These centers serve as the first link in the emergency response chain, and their performance directly impacts call processing times, unit response intervals, and ultimately, patient outcomes and property preservation. A well-staffed, properly equipped dispatch operation ensures emergency resources are deployed rapidly and efficiently, while also providing life-saving pre-arrival instructions and situational updates to first responders.

In Marion County, Public Safety Communications (PSC), a division of Marion County Fire Rescue (MCFR) functions as the Primary Public Safety Answering Point (PSAP) for all emergency services, including fire, EMS, and law enforcement. PSC provides 24/7 dispatch services for Marion County Fire Rescue, utilizing advanced Computer-Aided Dispatch (CAD) systems and a countywide radio communications network to coordinate emergency responses across a 1,640-square-mile service area.

The PSC center is equipped with an Uninterruptible Power Supply (UPS) and backup generator to ensure operational continuity during power outages and disasters. The facility supports both call-taking and dispatch functions for multiple agencies, requiring telecommunicators to manage simultaneous radio channels, prioritize incoming incidents, and coordinate multi-agency responses under high-pressure conditions.

PSC personnel are trained in accordance with industry standards such as:

- NFPA 1225: Standard for Emergency Services Communications
- NFPA 1061: Standard for Public Safety Telecommunications Personnel Professional Qualifications
- NFPA 1710: Standard for Organization and Deployment by Career Fire Departments

As Marion County grows and MCFR's operational footprint expands, there is an opportunity to explore the enhancement of fire-specific dispatching functions to support increasingly complex call types and inter-agency coordination. Considerations may include:

- Improved Incident Tracking: Fire-specific dispatchers can enhance situational awareness by tracking unit status, hydrant locations, staging areas, and special hazards in real time.
- Fireground Communication Support: Dedicated staff trained in fire operations can better manage active incidents, provide tactical channel coordination, and streamline resource requests.
- Response Time Optimization: Enhanced focus on NFPA 1225 and 1710 benchmarks can help improve dispatch and turnout times, contributing to better service delivery and outcomes.

Moving forward, MCFR should continue to collaborate closely with Public Safety Communications leadership and stakeholders to evaluate staffing, training, and technological needs that support best practices in emergency communications.

SPECIAL OPERATIONS RESPONSE TEAMS

Hazardous Materials Response Capabilities

Hazardous materials incidents are a part of every fire department's call volume. While this type of emergency response does not occur as often as some other emergency incidents, they can pose a very high risk due to the challenges and dangers of this type of incident. MCFR has the capability to respond to hazardous material incidents. Hazardous materials (Hazmat) 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. In a location like MCFR, hazardous materials may be present in various locations throughout the County. The County contains industrial and agricultural environments with significant hazardous materials release potential.

Standard Operating Procedures, Policies, and Guidelines

The first area of evaluation involves the established standard operating procedures, policies, and guidelines used to manage the team. MCFR has a written Emergency Response Plan for Hazardous Materials incidents. The existence of MCFR's Emergency Response Plan (ERP) is required and is related to the mandate from the Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120 (q)(1), which requires that employers establish emergency procedures to be followed when responding to emergencies involving hazardous materials. This plan should be available online to all employees and reflect pre-planning and coordination with outside shareholders.

The Incident Command System is a standard on-site command and control system used to manage emergency incidents and planned events. MCFR has adopted and uses the NIMS system to manage its incidents. This system defines the lines of authority, roles, and responsibilities for managing large scale incidents. Furthermore, it designates a single incident commander as well as recognizes the "Unified Command" concept. Passing of command to senior officials is recognized and the safety officer is identified.

During hazardous materials responses, MCFR maintains available advanced life support services on-scene for responders during actual and potential immediately dangerous to life and health (IDLH) atmospheres inside the county. When responding outside the county to the region, the requesting or local jurisdiction will provide those services. These advanced life support personnel are specifically trained in the medical aspects of hazardous materials through local protocols and are not part of MCFR. MCFR team leaders believe they need more personnel trained to perform these functions. The roles of the emergency medical support personnel are clearly defined. Medical treatment protocols for handling medical emergencies involving hazardous materials have been approved by the organization's Medical Director.

The procedures used by MCFR address safe distances and areas of refuge for responders who may require it. They do not address or identify the required personal protective equipment to be employed along with emergency equipment. This is something the department should add when establishing the ERP. The standard operating procedures identify site security and control as well as establish the usage of a personal accountability system. The department procedures detail the use of emergency evacuation procedures and decontamination procedures to include collection and disposal of runoff. Finally, the absence of a response plan leads to a lack of after-action reports and critiques. MCFR procedures and guidelines provide for deployment of resources outside of the jurisdiction for local, regional, and state assistance. These procedures should be incorporated into a formal ERP.

The MCFR hazardous materials team has a formal personal protective equipment plan. Additionally, the team follows manufacture's guidelines to address hazard-based selection of protective ensembles, their use and limitations, work mission duration, maintenance and storage, decontamination and disposal, training, and fitting, donning, and doffing, and inspection procedures. Occupational Safety and Health Administration (OSHA) in CFR 1910.120 requires the employer to implement safe work procedures for the use of personal protective equipment in the workplace as well as train workers in its use. The regulation continues to require the employer to ensure that employees are complying with the regulations. MCFR has policies in place to ensure this happens. All personnel are required to use a minimum of positive pressure, self-contained breathing apparatus until the atmosphere has been measured.

MCFR has policies and procedures that reference the usage of air monitors during the emergency response. These policies include documented maintenance procedures and calibration of its air monitors. MCFR's procedures require the establishment of a site-specific safety plan. MCFR does not have policies that reference a standardized methodology for assigning incident levels to hazardous materials emergencies. MCFR does not outline the specific procedures for various tasks that team members may be required to perform, such as spill or leak control.

Human Resources

The Occupational Safety and Health Administration (OSHA) in CFR 1910.120 requires that employers ensure that firefighters establish teams of two or more when working and that a rescue team suitably equipped is readily available. Listed specifically in the regulations are incidents involving hazardous materials. One accepted industry standard practice requires seven hazardous materials technicians to facilitate a minimal entry during a hazardous materials response. These seven people must be dispatched on the initial hazardous materials emergency response once it is determined that an emergency does exist. Of these seven, one should be the designated hazardous materials safety officer trained in accordance with NFPA 470: *Hazardous Materials/Weapons of Mass Destruction (WMD) Standard for Responders*, and another the incident commander. MCFR has a minimum staffing requirement of 9 hazardous materials personnel assigned for the day at Sation 16. Ensuring that the initial alarm assignment contains the industry best practice should continue to be a goal for the organization.

One concern from team leaders was the geographical size of the service area requiring protection. Currently one station is providing all special operations support for the county. If the Hazardous Materials Team members from Fire Station 16 are busy, then services are delayed. Furthermore, geographical size of the response area can delay arrival of units.

MCFR has a written medical surveillance plan for personnel assigned to the hazardous materials response team. This policy requires an opinion from a physician and provides for periodic examinations as determined by the physician. The medical surveillance plan provides for a medical assessment after exposures above the permissible exposure limit (PEL). All employees receive proper fitting for respiratory protective equipment.

Training

MCFR's hazardous materials team certifies that its members have achieved technician level training in accordance with NFPA 470: *Hazardous Materials/Weapons of Mass Destruction (WMD) Standard for Responders.* MCFR keeps records for documenting initial and refresher training and requires the completion of job tasks for all members and certifies all members who are required to use respiratory protection. All members have been trained to a minimum level of EMT. The MCFR hazardous materials team has a plan for annual refresher training and measurement of continued competency of all team members. Team leaders have expressed that the ability to train more on these practices should be increased to increase efficiency and proficiency for rescuers in more complex rescue situations.

Equipment

An objective review of equipment available for hazardous materials response was conducted. MCFR has an adequate supply of decontamination equipment. This equipment consists of the required containment and collection items as well as the necessary solutions for decontamination operations. Gross decontamination as well as technical decontamination operations were evaluated and found to be adequate for the type of operations that MCFR may encounter.

The inherent ability of hazardous materials emergencies to progress into longer-term operations dictates the need for effective rehabilitative efforts. MCFR has arrangements in place for the sheltering of personnel during the rehabilitation process in an area out of the heat, cold, and elements. The means by which this is accomplished can be varied. Ambulances, buses, ventilated tents, and shelters are all possible means to achieve the desired outcome. MCFR has methods in place to obtain meals for responders during extended operations.

MCFR has various methods for analysis and detection of hazardous materials. This includes PH paper, multi-gas monitoring equipment, radiological monitors, and chemical detection and analysis. There are also sufficient supplies for gathering and collecting samples. MCFR uses the Smith Detection Hazmat ID, Gas ID, Area Rae, MSA single and multi-gas monitors to increase ability from simple detection to actual identification of specific compounds. These monitors are expensive and MCFR should ensure replacement plans are in place to ensure upgrades are made to keep up with technological changes.

Every member of the hazardous materials team operating on-scene should have radio communications with the safety officer and entry coordinator during entry operations. At a minimum, one portable radio must be available for every entry team member who is at any level of dress, (multiple entry teams and back up teams) as well as any team member who is coordinating a function (decontamination, research, safety, group leader, etc.) MCFR has the communication capability to do this and has made it part of its standard operating procedures.

MCFR has an assortment of equipment to handle LPG and NG leaks including flaring kits. Further spill and leak capabilities are available for various other types of hazardous materials releases. MCFR has a full array of chlorine leak kits at its disposal including rail car chlorine kits. They also include additional gaskets for use with these kits for other toxic chemicals. Moving equipment for handling drums is also available. MCFR stocks more than the appropriate amount of overpack drum capabilities.

MCFR provides adequate fire protection capabilities with foam application if required. There is an adequate amount of foam on hand as well as in reserve should the need materialize as well as the equipment to operate at 250 gallons per minute during application. MCFR stocks the necessary medical equipment to monitor and provide treatment for team members during entry. As discussed previously in this report, MCFR relies on other agencies to provide medical treatment providers available with hazardous materials toxicology training. Team leaders believe additional training is required to increase the number of personnel who can serve in this role.

MCFR maintains an adequate number of reference materials and can provide internet capabilities for research. The implementation of Starlink satellite internet has increased MCFR's ability to access online and digital resources to ensure rapid and specific response plans. MCFR also employs a weather station for immediate on-site analysis.

MCFR carries a standard complement of protective ensembles for rescuers. These include both 60-minute SCBA bottles with sufficient reserve bottles and a cascade system to support long-term operations. MCFR also requires responders to bring their issued turnout gear to ensure each rescuer has adequate NFPA compliant protective equipment that has been sized appropriately. This reduces the amount of equipment required to be stored for deployment. Industry best practices require each person operating as part of the team to be assigned NFPA compliant firefighting protective equipment.

Technical Rescue Response Capabilities

Much like fire and EMS incidents, MCFR needs to be prepared for technical rescue emergencies. Technical rescue includes vehicle machinery extrication, high angle rope rescue, confined space rescue, water rescue, trench, and collapse rescue categories.

MCFR includes a special operations component of technical rescue in place to respond to technical rescue incidents. Some members are also cross trained as Hazardous Materials Operations level and are trained in air monitoring and other specific HAZMAT awareness procedures. The disciplines for which the agency is prepared include confined space rescue, rope (high angle) rescue, vehicle/machinery rescue, water rescue, ice rescue, trench rescue and limited structural collapse rescue.

The technical rescue operations are well structured, and appropriate training is in place. MCFR deploys assets that are trained in technical rescue inside the county as well as to the surrounding area as mutual aid. Several chief level officers are also trained in technical rescue and count towards the response numbers.

Standard Operating Procedures, Policies, and Guidelines

The first area of evaluation involves the established standard operating procedures, policies, and guidelines used to manage the team. MCFR uses an all-hazards response plan and standard operating guidelines and procedures for incidents. This plan is available online to all employees. Non-team members are also governed by specific Standard Operating Guidelines (SOGs) and Standard Operating Procedures (SOPs) that dictate scene operations for initial company arrival.

The Incident Command System is a standard on-site command and control system used to manage emergency incidents and planned events. MCFR has adopted and uses the National Incident Management System (NIMS) to manage its incidents. This system defines the lines of authority, roles, and responsibilities. Furthermore, it designates a single incident commander as well as recognizes the "Unified Command" concept. Passing of command to senior officials is recognized. MCFR identifies an incident safety officer for technical rescue incidents.

The standard operating guidelines used by MCFR address the required personal protective equipment to be employed along with emergency equipment. The procedures identify site security and control. The standard operating guidelines and procedures establish the usage of a personal accountability system. The standard operating guidelines are thorough and detail the use of emergency evacuation procedures. Finally, the plan also details the procedures for after action reports and critiques. MCFR has specific SOGs and SOPs for each discipline that provide further direction for personnel. These guidelines are in draft format and cover: water rescue, trench rescue, rope rescue, and confined space rescue.

MCFR has a personal protective equipment plan or program specific to technical rescue equipment. All personnel are required to use a minimum of positive pressure, self-contained breathing apparatus until the atmosphere has been quantified.

Human Resources

The number and type of qualified rescuers is an important aspect for special operations type responses. Some states, like Florida, have established industry best practices and outline personnel qualifications as well as the number of rescuers required for these teams. This is commonly called resource typing. The Florida Association of Search and Rescue Resource Typing for light technical rescue teams mandates that six technical rescue technicians should be present for light technical rescue operations as an industry standard. NFPA 1710: *Standard for Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, requires that employers ensure that firefighters establish teams when working and that a suitably equipped rescue team is readily available, when firefighters are required to engage in emergency responses that require specific and advanced training and specialized equipment.

MCFR staffs a minimum of 11 personnel throughout the county each day to handle technical rescue calls for service. All members are trained to technician level and as with hazardous materials responses the geographical constraints of a large service area and limited numbers of specialized resources can delay services. Members at Fire Station 1 and Fire Station 18 are the current assets for response within Marion County.

Training

MCFR certifies that its members have achieved Technician level training in accordance with NFPA 1006: *Standard for Technical Rescuer Professional Qualifications*. MCFR keeps records for documenting initial and refresher training. The organization requires the completion of a task book for all members and certifies all members who are required to use respiratory protection. MCFR has a plan for annual refresher training or measurement of continued competency of all team members. Annual requirements for confined space entries are maintained. This is a general recommendation and required by OSHA 1910.146(k)(2)(iv) to ensure that affected employees practice making permit space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual permit spaces or from representative permit spaces.

It is noted that MCFR has identified the difficulty in obtaining continued training for team members. New team members must attend a long and extensive training regimen that requires significant commitment from the department to cover. As with many technical rescue teams, the amount and variety of skills required to be maintained amongst the various disciplines often make it difficult to cover all of them frequently enough. This can be combated with frequent on going and continuing education training.

MCFR team leaders recognize a need for additional training in dealing with large types of automotive incidents. Buses, semi-tractor trailers, trains, and aircraft can pose unique hazards and complications for rescuers. These incidents require specific training to ensure rescuers are prepared. Based on the transportation corridor through Marion County, training in large vehicle operations should be encouraged.

Equipment

The disciplines involved with technical rescue require an extensive amount of necessary equipment to meet the demands of the incident. MCFR uses a well-structured mix of deployment methods to deliver the necessary resources to the scene. The ability to assemble the equipment and resources is further complicated by the expensive nature of this equipment. The MCFR assessment used an objective evaluation of MCFR equipment utilized to mitigate these emergencies.

For example, the extrication equipment employed by MCFR will eventually need to be replaced. The automotive industry has made significant breakthroughs in technology and materials that older extrication equipment with cutting forces of around 60,000 psi struggle to be effective on. Upgrading extrication equipment to handle the newer high strength structural steel with a required cutting strength of 300,000 psi that manufacturers are using in today's automobiles will ensure that rescuers have the best chance of succeeding. MCFR has worked to make this transition but because this equipment is expensive and wears out over time, a replacement schedule much like those used for apparatus should be developed as well as the funding mechanisms to support it.

Another expensive area of replacement is lifting and moving airbags, and stabilization struts. This is a valuable piece of equipment and greatly enhances the abilities of the extrication team to handle a greater variety of rescue situations. These air bags are good for a specific life span. This characteristic presents the ability to schedule replacement timelines and prepare appropriate budget considerations. This is very similar to the rope rescue replacement plan already in use by MCFR. The main difference being the cost per item considered for replacement.

Water rescue services are provided using 2 Inflatable Rescue Boat (IRB). Team leadership has identified the need for hard-side boats to augment the team's water rescue capabilities.

MCFR has a strong complement of technical rescue equipment. These current capabilities can be improved with some increased training and a dedicated capital expenditure plan for replacement items. Team leaders have identified several of these shortfalls and have already begun the process of addressing them.

SWAT Medic Response Capabilities

Much like other specialized emergency response capabilities, Marion County Fire Rescue (MCFR) recognizes the need to provide advanced medical support during high-risk tactical operations. The SWAT Medic Team is a critical component of MCFR's Special Operations, working in direct collaboration with the Marion County Sheriff's Office (MCSO) to embed highly trained paramedics within the sheriff's tactical response units.

The SWAT Medic Team's responsibilities include providing immediate advanced life support in dynamic, hazardous environments such as active shooter situations, hostage rescues, and high-risk warrant services. These medics are trained to operate under the principles of Tactical Emergency Casualty Care (TECC) and Committee on Tactical Combat Casualty Care (CoTCCC), focusing on rapid hemorrhage control, airway management, and casualty extraction under fire or threat.

MCFR and MCSO conduct joint training exercises throughout the year to ensure operational coordination, communication, and responder safety. This close interagency cooperation allows medics to wear ballistic personal protective equipment and carry specialized medical kits tailored to austere and dangerous conditions.

MCFR SWAT Medic team is also the lead for the departmental Active Shooter Hostile Event (ASHER) response. This effort adds additional strain on personnel and equipment. MCFR SWAT Medics provide, department wide training, host TECC and Stop the Bleed classes, and manage the maintenance and purchase of ASHER PPE.

Standard Operating Procedures, Policies, and Guidelines

MCFR maintains comprehensive standard operating procedures (SOPs) and guidelines that govern the deployment and operation of the SWAT Medic Team. These SOPs align with national best practices and guidance from the National Tactical Officers Association (NTOA) and incorporate lessons learned from tactical medical operations nationwide.

The team operates within the Incident Command System (ICS) framework under the National Incident Management System (NIMS), designating incident command and clearly defining roles and responsibilities during tactical events. Unified Command structures are recognized when appropriate, and a designated safety officer oversees operational risk management on scene.

Medical treatment protocols specific to tactical medicine are approved by MCFR's Medical Director and integrated into daily operations. Roles of SWAT medics are clearly delineated, emphasizing rapid casualty stabilization and evacuation while ensuring medic and team safety.

Human Resources

The SWAT Medic Team is comprised of specially selected paramedics from MCFR who have completed advanced tactical medical training. These personnel maintain certifications in tactical emergency medical care, hemorrhage control, and ballistic protection. The team size fluctuates based on operational needs but is sufficient to provide embedded medics during all high-risk MCSO tactical deployments.

The collaboration with MCSO ensures medics are fully integrated into the tactical team's command and control structure. Joint exercises foster team cohesion and allow personnel to practice complex scenarios that reflect real-world threats in Marion County. Team leadership has identified the need for team expansion and for the SWAT station to become self-sufficient regarding staffing. These changes will ensure that the team will always have available staffing for non-notice events and planned events alike.

Training

Training for the SWAT Medic Team is rigorous and continuous. MCFR requires team members to complete initial and refresher courses in tactical EMS, including bleeding control, airway management, casualty extraction, and medical threat assessment. Training also includes ballistic safety, communications, and coordinated movement with law enforcement operators.

Joint training exercises with MCSO's SWAT team occur regularly, emphasizing interoperability and communication under stress. MCFR tracks the completion of continuing education and competency documentation to ensure compliance with standards set forth by the NTOA and Tactical Medicine consensus guidelines.

Equipment

The SWAT Medic Team is equipped with state-of-the-art tactical medical kits containing tourniquets, hemostatic dressings, airway adjuncts, and rapid patient transport equipment. Medics wear ballistic helmets and body armor designed for tactical environments. Communication devices compatible with law enforcement radios ensure real-time coordination.

Personal protective equipment is regularly inspected and maintained per manufacturer guidelines and operational readiness standards. MCFR is committed to investing in updated medical and ballistic equipment as tactical medicine evolves to improve responder and patient outcomes.

Team leadership has identified the ongoing cost of initial equipment and replacement as a challenge for the continued growth of the team.

Helicopter Rescue Response Capabilities

Standard Operating Procedures, Policies, and Guidelines

The Marion County Fire Rescue Helicopter Search and Rescue Team (HSART) operates in coordination with the Marion County Sheriff's Office Aviation Unit and responds to incidents requiring aerial extraction and reconnaissance in environments inaccessible by ground units. HSART missions include wilderness rescues, swift water operations, and remote victim access.

Hoist operations shall be conducted only when victims require immediate extraction from hazardous conditions or urgent medical intervention, and where landing is unsafe or impractical. All hoist operations are at the discretion of the pilot-in-command (PIC) and must consider:

- Weather conditions and visibility
- Aircraft performance and limitations
- Victim location and medical status
- Availability of properly trained personnel

Operational Limitations:

- Hoist loads shall not exceed 300 lbs.
- Hoist operations are restricted to daylight hours only; no new cycles shall begin after sunset.
- Night operations are limited to landings only using NVGs at approved locations, no hoisting shall occur using NVGs or searchlights.
- If a hoist cycle is underway at sunset, it may be completed safely under pilot discretion.

Incident Coordination:

For operations in restricted federal areas such as the Juniper Prairie Wilderness Area, strict coordination with the Florida Interagency Coordination Center (FICC) and U.S. Forest Service is required. PSC will notify necessary agencies, and command shall be established at Juniper Springs Recreational Area. Ground and air resources will be assigned specific communication channels:

- Operations: VHF Marine Channel #1
- Hoisting: VHF Marine Tactical 5 (restricted to aircrew and command)

Command shall ensure accountability, staging, safety briefings, and compliance with interagency requirements. Motorized vessels may only be used with Operations Section Chief approval.

Human Resources

HSART will consist of a minimum of two personnel per deployment, typically including:

- Pilot-in-Command (PIC)

- System Operator (S/O)
- Rescue Specialist (R/S)

All HSART personnel shall be MCFR employees and/or integrated MCSO aircrew members who have met qualifications and been approved by the Unit Commander. An additional crew member may be utilized to assist with litter handling or patient care if helicopter performance allows.

Personnel Requirements:

- All flight crew shall wear FAA-approved harnesses.
- No hoist mission shall be conducted without a qualified, current S/O and R/S onboard.
- R/S shall be a certified paramedic assigned to the aviation unit and trained in hoist-specific rescue techniques.

Crew deployment to federal lands will follow the designated paging procedure. Two HSART members will be dispatched to the MCSO hangar and respond with Air 1 as part of the operational response. All mission details will be coordinated through PSC and shared with Division 1 and Battalion 1, or those designated by the Operations Chief.

Training

Initial and recurrent training is mandatory for all HSART personnel and shall follow MCFR and Aviation Unit Command guidelines:

Minimum Training Requirements:

- PIC and S/O must complete a minimum of three hoist operations and three external load lifts within a six-month period to maintain currency.
- R/S must complete three hoist operations every six months.
- Training shall be conducted by designated instructors and documented with certificates of completion prior to operational deployment.

Topics Include:

- Hoist system safety and operation
- Patient packaging and litter management
- Over-water and remote extractions
- Air-to-ground communications
- Wilderness survival basics and GPS navigation
- Incident Command System (ICS) integration
- Juniper Springs-specific access, map reading, and environmental regulations

Instructors shall be appointed by the Unit Commander and must meet MCFR and FAA training standards. Final authorization for operational status rests solely with the Unit Commander.

Equipment

All equipment used in hoist operations must comply with FAA and manufacturer specifications. HSART equipment should be maintained and inspected to ensure safety and operability.

Aircraft & Hoist Systems:

- Aircraft hoist systems shall be inspected per Breeze-Eastern Corporation's Maintenance Manual BL-16600-120-3.
- Any deficiencies must be immediately reported and resolved prior to operations.

Personnel Equipment:

- Hoist-related rescue gear (harnesses, litter, slings, etc.) shall be inspected monthly, and before and after each use.
- Any unserviceable equipment shall be removed from service, tagged, and sent for repair or replacement.
- Only FAA-approved lifting devices may be used.

Communication & Safety Devices:

- All personnel involved in hoist operations must have functioning intercom communications with the pilot.
- The hoist release mechanism must require two distinct actions: an arming function and a release control.
- On-ground personnel must have direct radio contact with the aircraft and monitor for safety updates.
- GPS units, VHF marine radios, flashlights, and life vests are mandatory for creek or wilderness entries.

Landing Zones (LZs) and Ground Extraction Points have been mapped for Juniper Run, including detailed USNG and Lat/Long coordinates, which must be reviewed prior to each mission.

Disaster Response Capabilities/USAR Task Force 8

Standard Operating Procedures, Policies, and Guidelines

FL-TF8 operates as a FEMA Type IV USAR Task Force, including 22 personnel organized into four rescue squads—each comprising a squad leader and five rescue specialists—as well as technical, search, and medical specialists. As part of Florida's statewide USAR system, the task force adheres to National Incident Management System (NIMS) principles under ESF-9 coordination.

Mission scope:

- Locate and extricate victims from structural collapse (light to heavy reinforced), wide-area events, transportation incidents, trenches, confined spaces, and water-related entrapments.
- Conduct search (physical and electronic), rescue (technical extrication, shoring), medical stabilization, and incident reconnaissance.

- Self-sustain operations for up to 72 hours, deployable immediately and operating continuously via 12-hour shifts continuously for up to 14 days.

Operational structure:

- Incident Support Team (IST) coordinates logistics, communications and command integration with local authorities upon activation.
- Unified Command structure ensures coordination with local EOCs, interagency responders, and the Florida State Fire Marshal's office.
- Safety protocols include establishing Hot/Collapse Zones, working and staging areas, accountability systems, and continuous hazard monitoring

Deployment:

- FL-TF8 mobilizes either deploying a full team or surge elements depending on incident severity.
- Routine deployment occurs under Florida's Emergency Support Function-9 (ESF-9), for hurricanes, large-scale disasters, or regional structural collapses.

Human Resources

As a Type IV USAR team, FL-TF8 is comprised of a minimum of 22 personnel including:

- Task Force Leader
- Structural Collapse Technicians
- Swiftwater/Floodwater Technicians
- Rescue Specialists
- Medical Specialists
- Logistics and Safety Officers
- Technical Search Specialists
- Communications Specialists

All members are emergency responders, typically firefighters or paramedics, and are cross trained in multiple technical rescue disciplines. The team may include heavy riggers, technical search specialists, and incident support personnel when needed.

Team members are provided by MCFR and the support agencies of Gainesville Fire Rescue and Ocala Fire Rescue. These assets are deployable through local, state, and federal mutual aid systems and remain on-call for regional or statewide response. Personnel are required to meet swim test standards, maintain certification currency, and participate in regular deployments, exercises, and training events.

Training

All FL-TF8 personnel meet the training requirements established by NFPA 1006 and NFPA 1670 for technical rescue operations. Members receive training in:

- Structural Collapse Rescue
- Rope Rescue (High and Low Angle)
- Confined Space and Trench Rescue
- Machinery and Vehicle Extrication
- Water and Flood Rescue
- Hazardous Materials Awareness and Operations
- Tactical Search Operations (including canine, fiber optic, and acoustic search)

Personnel are trained in safety procedures, accountability systems, air monitoring, rescue rigging, breaching and breaking, and victim packaging. Leadership and logistics personnel receive ICS and USAR leadership training. Team members must maintain a minimum number of annual training hours and participate in multi-agency drills to remain operationally ready.

Equipment

FL-TF8 maintains a deployable equipment cache sufficient to support technical rescue operations for up to 72 hours. The cache includes:

- Breaching and Breaking Tools (rotary saws, jackhammers, core drills)
- Rope Rescue Kits (pulleys, harnesses, anchors)
- Shoring Equipment (wood, pneumatic, mechanical)
- Search Equipment (acoustic sensors, search cameras, thermal imaging)
- Medical Equipment (ALS/BLS kits, trauma supplies, oxygen, AEDs)
- Confined Space Entry Gear (tripods, air monitors, ventilation)
- Personal Protective Equipment (helmets, gloves, eye protection, respiratory gear)
- Communications Equipment (interoperable radios, repeaters, satellite phones, Starlink)
- Lighting, power, and logistical support supplies (generators, tents, fuel, water, food)
- ATV's, UTV's, High Water Trucks, and Rapid Inflatable Boats

All equipment is inventoried regularly and stored in ready-to-deploy trailers. Equipment is maintained according to manufacturer guidelines, with pre- and post-deployment inspections and after-action reviews conducted to ensure operational readiness.

REVIEW OF HISTORICAL SYSTEM PERFORMANCE

SERVICE DELIVERY & PERFORMANCE

MCFR, like many departments across the nation, provides a plethora of services to the community. However, for most of the public and elected officials, the service that is of most importance is the ability of the department to respond to calls for service in a timely manner. MCFR leadership is aware of this key concept, along with the need to understand the various components that comprise service delivery. Within this section, the MCFR project team analyzed the following components of service delivery.

- Service demand
- Resource distribution
- Resource concentration
- Resource reliability
- Response performance.

Service Demand Analysis

Ultimately, the requests for services from the public are the key factor associated with service delivery. The quantity and type of requests for services drive the need for resources, training, etc. This section will provide MCFR leadership with detailed analysis of the quantity and nature of historical service demand.

Incident Type Analysis

For many years, fire departments focused on one simple function—response to fires. Over time, departments have vastly expanded services and now respond to many different types of incidents. To assist fire departments with a systematic approach to quantifying incident types, the National Fire Incident Reporting System (NFIRS) was developed. Through a standardized approach, fire departments can analyze their own response data compared to other fire departments throughout the nation.

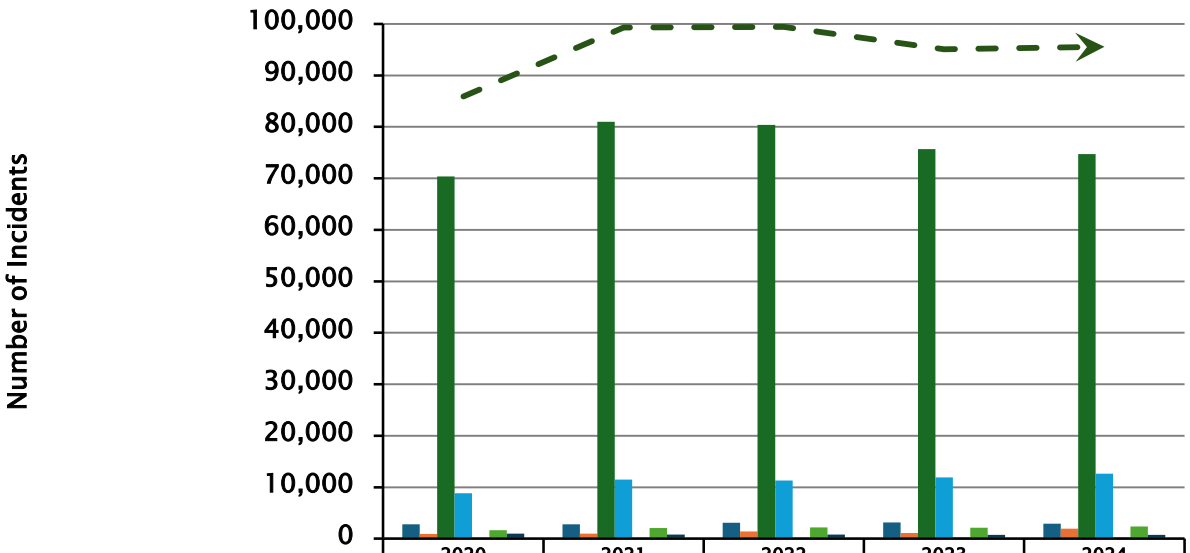
Within the NFIRS system, each incident type is assigned a three-digit code (there are currently 178 different codes). These codes are then organized into broader categories—referred to as series—based on the first digit of each code, as illustrated in the following figure.

Figure 55: 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
600-Series	Cancelled, Good Intent
700-Series	False Alarm, False Call
800-Series	Severe Weather, Natural Disaster
900-Series	Special Incident Type

As illustrated in the following figure, MCFR has experienced an 11.3% increase in overall requests for service. This overall change includes a 15.6% increase from 2020 to 2021, a .1% increase from 2021 to 2022, a -4.4% decrease from 2022 to 2023, and a .6% increase from 2023 to 2024.

Figure 56: Service Demand by NFIRS Incident Type, 2020–2024

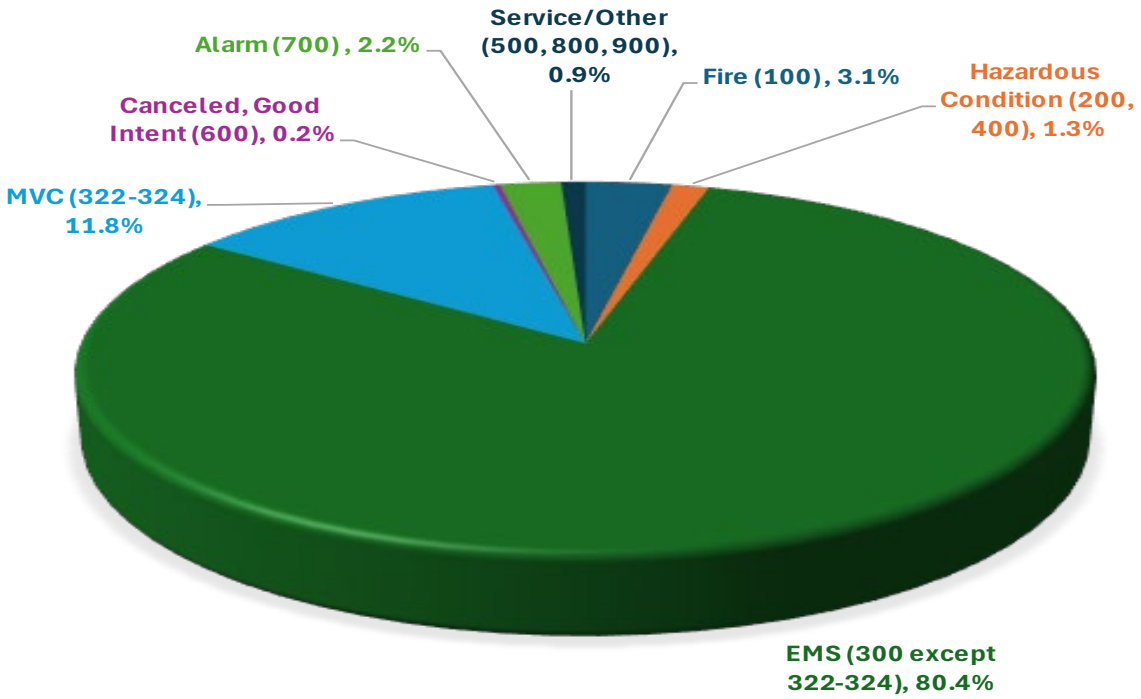


	2020	2021	2022	2023	2024
Fire (100)	2,814	2,802	3,075	3,184	2,922
Hazardous Condition (200, 400)	936	957	1,387	1,120	1,982
EMS (300 except 322–324)	70,382	81,000	80,385	75,684	74,683
MVC (322–324)	8,857	11,477	11,316	11,911	12,618
Canceled, Good Intent (600)	229	191	224	238	248
Alarm (700)	1,680	2,096	2,210	2,141	2,393
Service/Other (500, 800, 900)	1,009	784	832	772	734
Total	85,907	99,307	99,429	95,050	95,580

The preceding figure provides an excellent illustration of the yearly calls for service, and the change over time. There is also value for leadership to understand a different view of the same data—one that illustrates how each category compares to the whole, expressed as a percentage. A thorough understanding of the nature of service demand assists MCFR leadership in ensuring training, apparatus, equipment, etc. that would best meet the needs of that demand for service.

As illustrated in the following figure, emergency medical services incidents comprise most of service demand, at 80.4%. This is followed, in descending order, by motor vehicle collision incidents, fire incidents, alarm incidents, hazardous condition incidents, canceled/good intent incidents, and service call/other types of incidents.

Figure 57: Service Demand by NFIRS Incident Type, 2020-2024



Temporal Variation

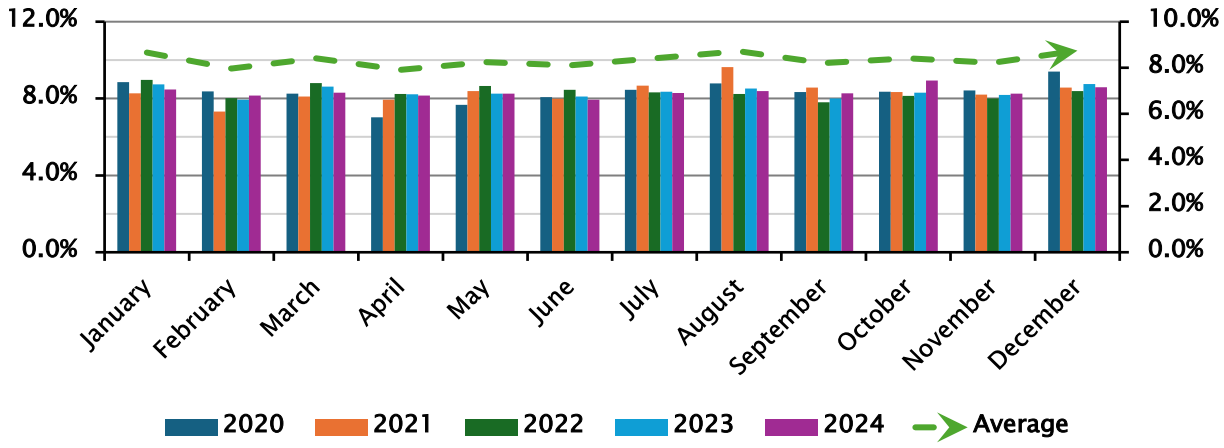
MCFR leadership can better understand the staffing needs of the department through an understanding of the temporal nature of service demand, in other words, when incidents occur. This same knowledge provides valuable insight for scheduling of non-incident activities such as the following:

- Pre-incident planning
- Training
- Station maintenance

- Apparatus maintenance
- Fire hose testing
- Fire hydrant testing
- Public education

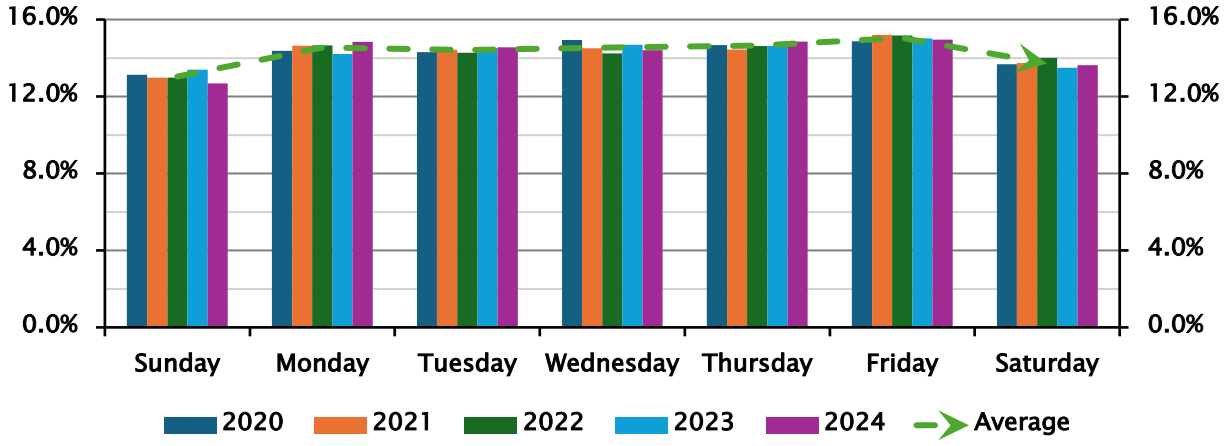
From the perspective of incident occurrence during the year, the first analysis considers temporal analysis by month of the year. As illustrated in the following figure, the lowest demand for service within MCFR's service area occurs in April. Demand for service reaches its highest level in January.

Figure 58: Service Demand by Month, 2020-2024



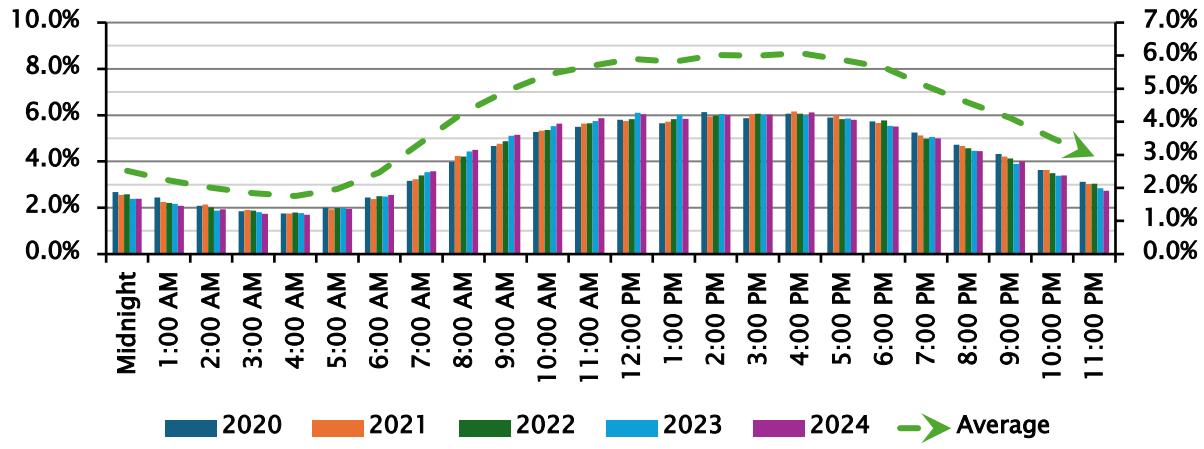
From the perspective of incident occurrence during the week, the second analysis considers temporal analysis by days of the week. As illustrated in the following figure, the lowest demand for service within MCFR's service area occurs on Sunday. Demand for service reaches its highest level on Friday. However, service demand remains fairly level throughout all the weekdays.

Figure 59: Service Demand by Day, 2020-2024



From the perspective of incident occurrence during the day, the final analysis considers temporal analysis by hour-of-the-day. As illustrated in the following figure, the lowest demand for service within MCFR's service area occurs between 3 AM and 4 AM, consistent with when the population is asleep. Over the next few hours, there is a moderate increase in service demand as the population rises and prepares for their daily activities. As the population leaves their residences to begin their daily activities, service demand increases at a faster rate until reaching an initial peak at 1 PM. Through most of the early afternoon, service demand remains level before increasing again, reaching the highest level of service demand at 5 PM. As the day winds down, service demand decreases gradually, and then more rapidly as the population moves into their evening activities and ultimately returns to their homes. This same overall pattern is found within most communities.

Figure 60: Service Demand by Time-of-Day, 2020-2024



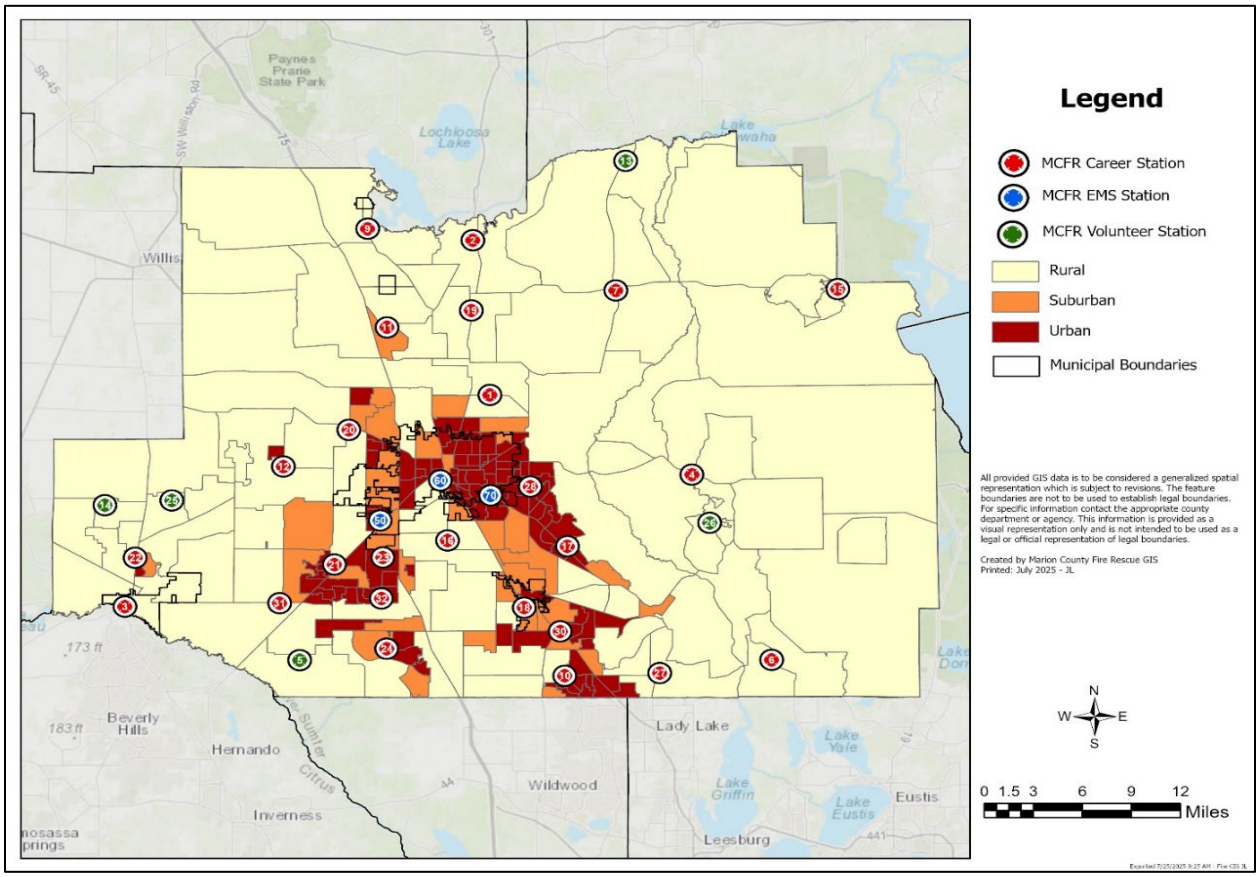
While the preceding figure illustrates that demand for service is at its lowest during the late night and early hours, leadership should ensure adequate staffing is still in place to quickly respond to and mitigate structure fire incidents. Based on a national study recently published, from 2014 to 2016, the occurrence of residential structure fires with fatalities were highest between 1 AM and 2 AM, and 4 AM to 5 AM. The 8-hour peak period (11 PM to 7 AM) accounted for 48% of residential fatal fires[27].

Population Density & Geographic Service Demand

The final analysis of service demand considers incident location. The first component of this analysis is to understand population density within the community. For purposes of analyzing population density, the MCFR project team uses the density as recorded by the U.S. Census Bureau for 2020 within each census block, the smallest unit of division within the census data. The population density for Marion County is illustrated in the following figure.

[27] *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.*

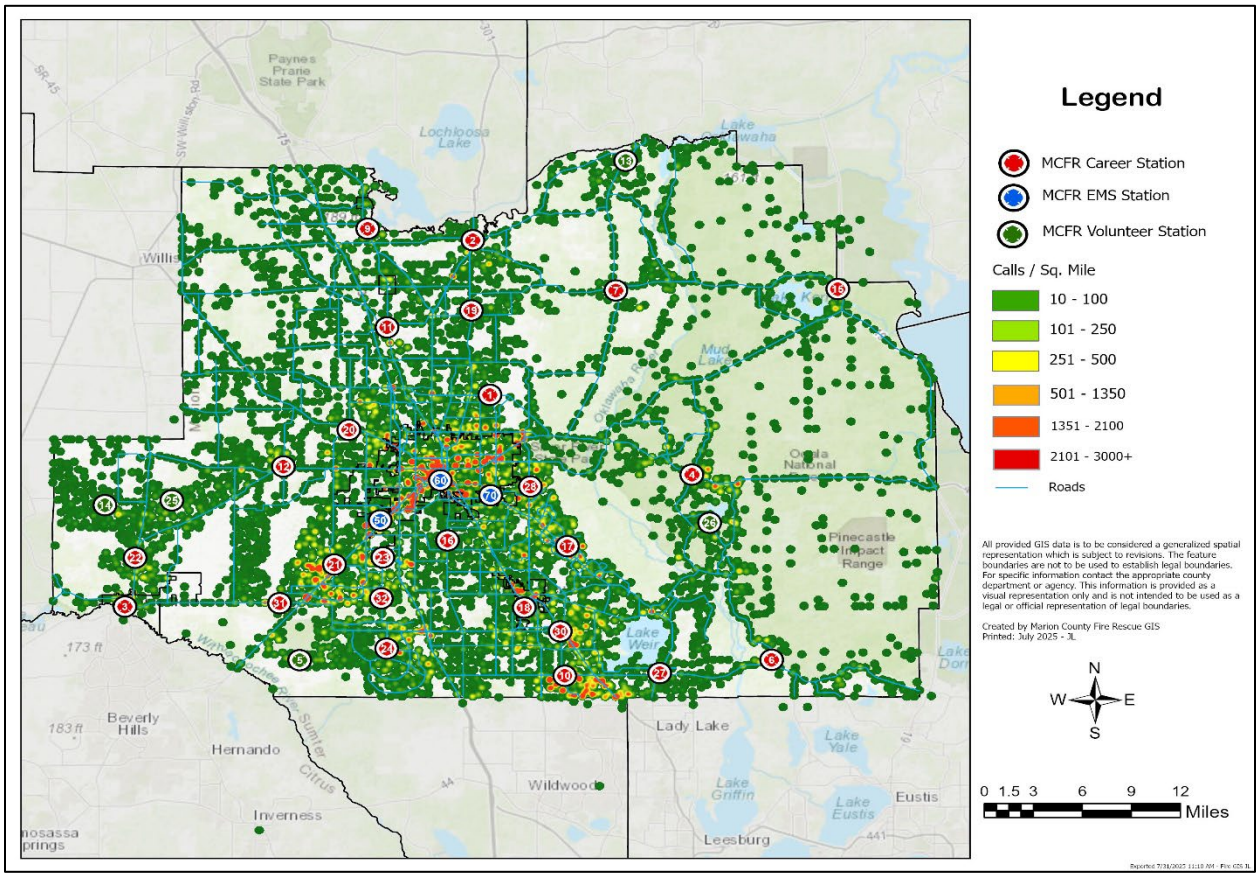
Figure 61: MCFR Population Density



Population density is important information as, most often, incident density is closely related to population density. Where there are greater numbers of people, there tend to be a greater number of incidents. Using geographical information systems (GIS) software, the MCFR project team analyzed the demand for service based upon the geographical location of each incident. This analysis calculates the mathematical density of incidents (incidents per square mile) and then illustrates this using a graphic known as heat mapping.

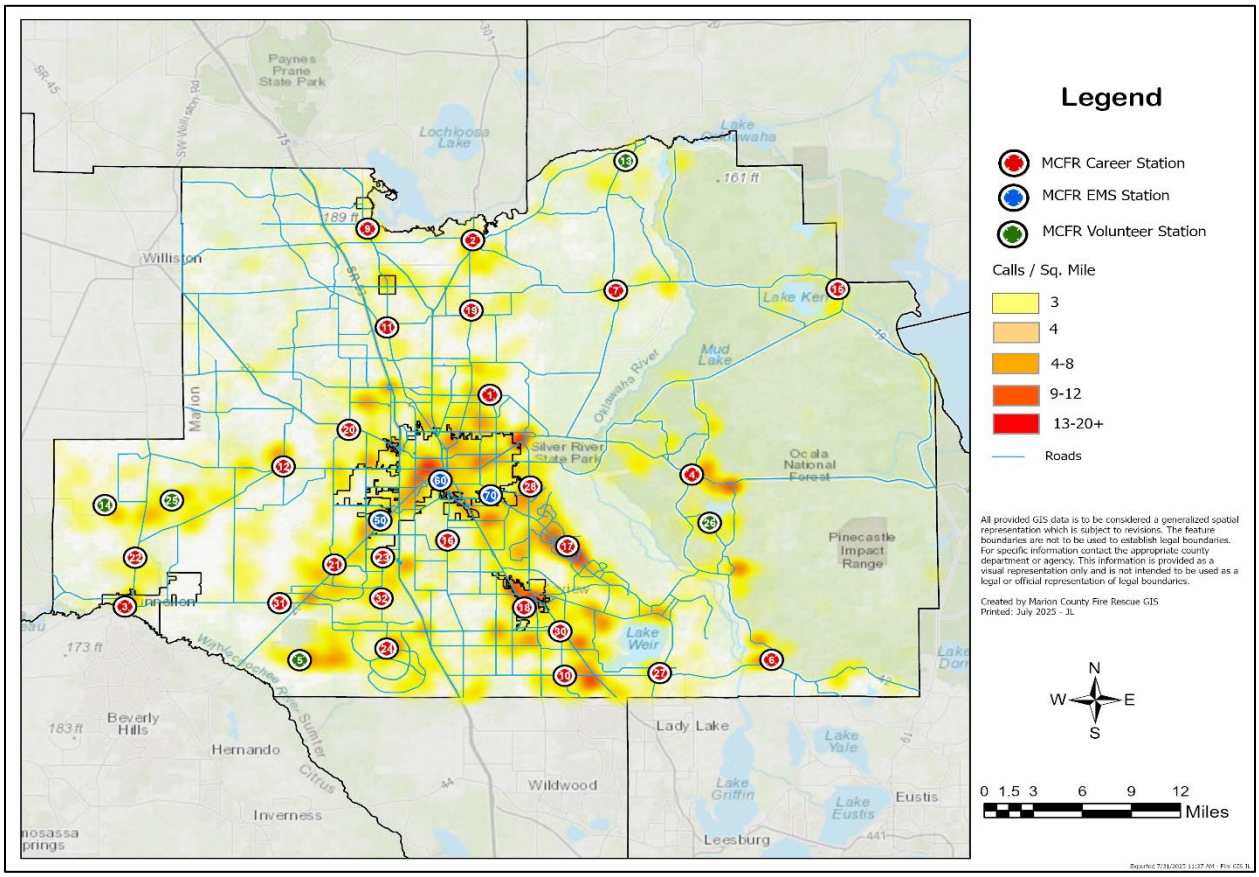
As illustrated in the following figure, there are incidents occurring throughout the jurisdiction, with the greater density occurring within the City of Ocala, Belleview, The Villages of Marion, and the Freindship area out on HYW 200. Thus, also coinciding with the areas of greater population density. It is very common for this relationship of greater incident density near areas of greater population density, since such a large portion of incidents are emergency medical service incidents, directly related to the people, versus the geography.

Figure 62: MCFR Incident Density Analysis (All Incidents), 2020-24



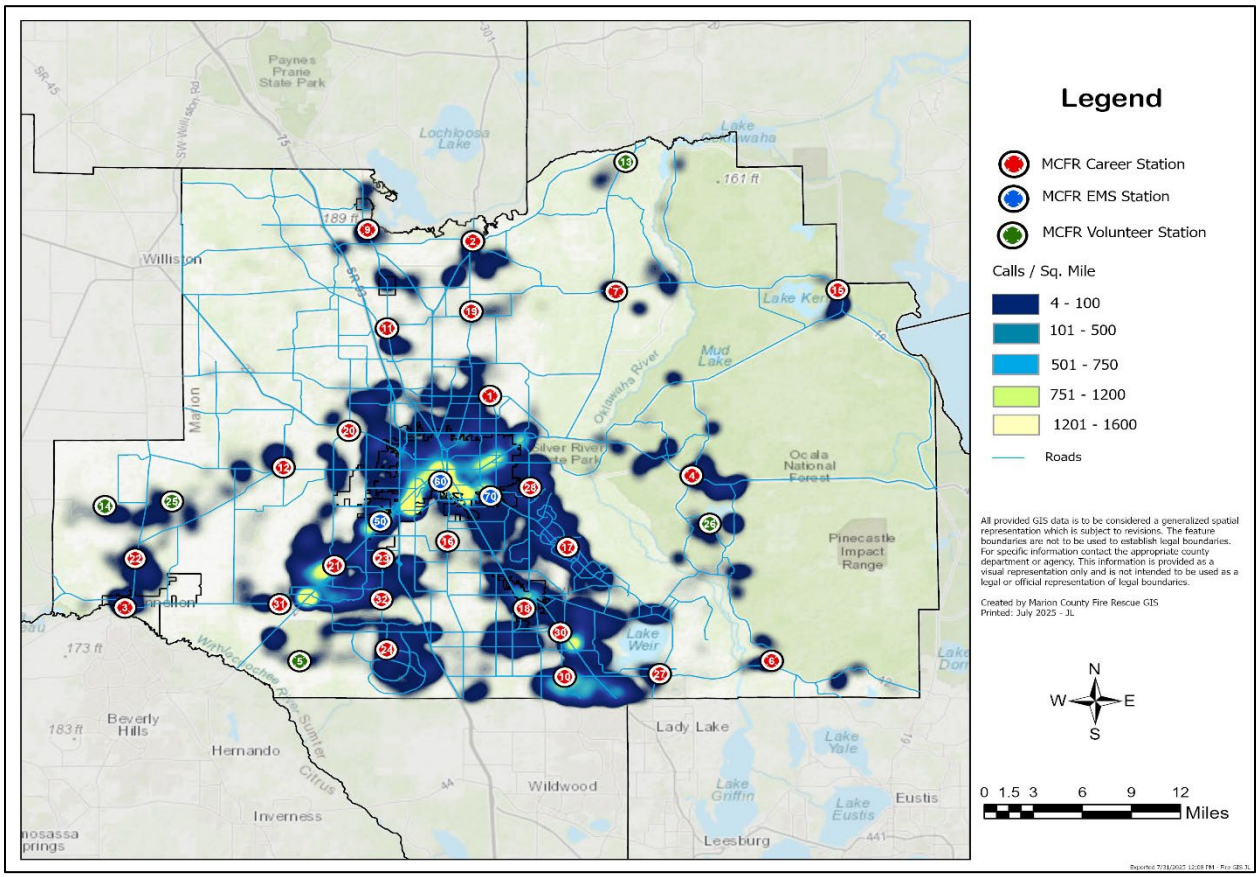
When analyzing the same data with a subset of all incidents to only include fire incidents (NFIRS Series 100), a similar pattern is seen. This is illustrated in the following figure.

Figure 63: MCFR Incident Density Analysis (Fire Incidents), 2020-2024



When analyzed for the subset of emergency medical incidents (NFIRS Series 300), the heat map pattern for emergency medical service incidents remains similar, as illustrated in the following figure.

Figure 64: MCFR Incident Density Analysis (EMS Incidents), 2020-2024



Resource Distribution

Within the community, it is important to locate resources where they are best suited to respond to the greatest number of incidents. Where this is accomplished, response times may be decreased, and citizens receive service quicker. It is important to note that as a combination department (career and volunteer staff) with more than 85% of career members, MCFR falls within the National Fire Protection Association (NFPA) 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*. However, there is also value in comparison to NFPA 1720: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments*. Throughout the following sections, both will be illustrated where appropriate. NFPA is an industry trade association that develops and provides standards and codes for fire departments and emergency medical services for use by local governments.

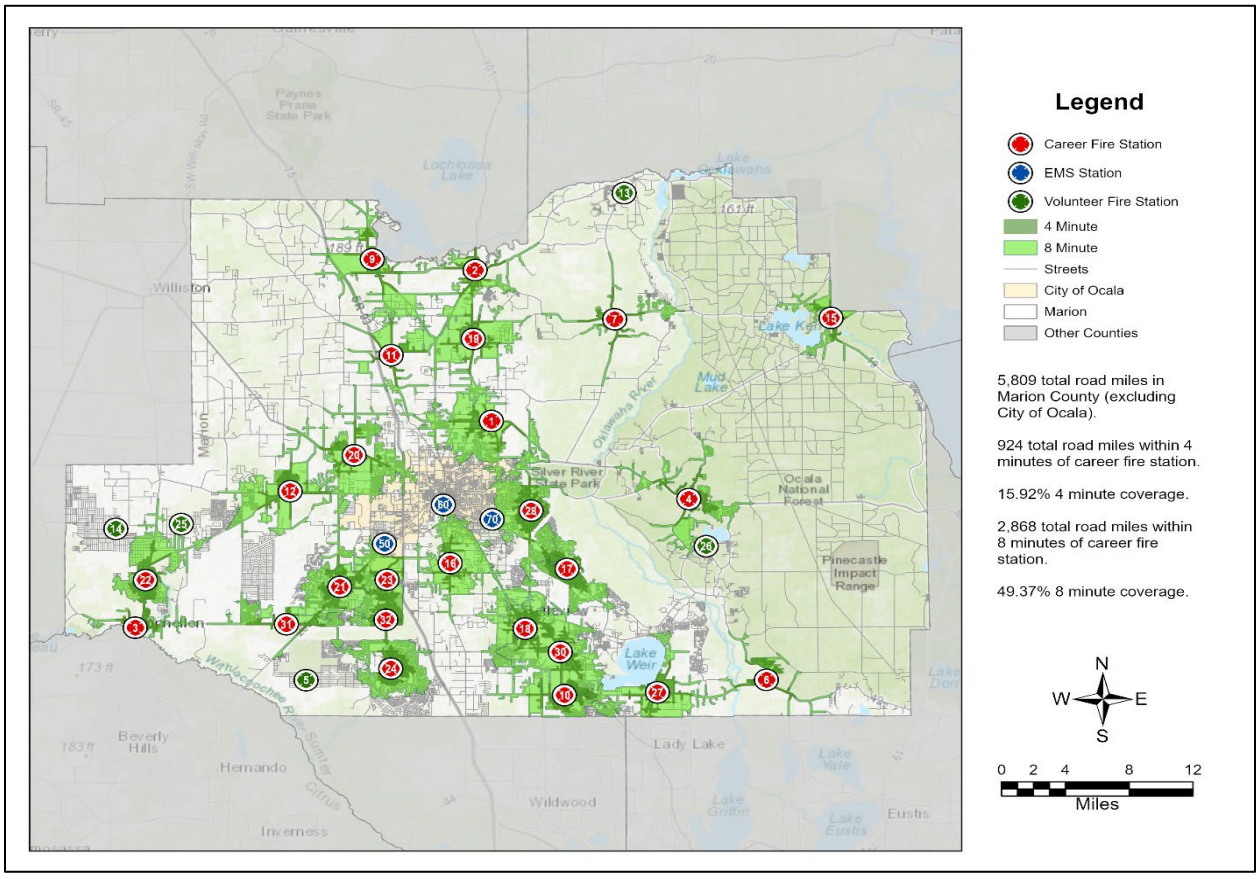
When evaluating distance and time measures as it relates to the various maps, the MCFR project team uses GIS software which evaluates the actual road network provided by Marion County. While the software evaluates theoretical travel time, the true measures will vary due to impact from factors such as road conditions, traffic, weather, road closures, etc. For this reason, there is variance between actual, and the theoretical illustrations provided herein.

NFPA 1710 Criteria

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*, recommends a travel time of 240 seconds, or 4 minutes, as the benchmark for career departments to reach emergency incidents within their jurisdiction with the first arriving unit. Additionally, the balance of the response (called the effective response force or ERF) is required to arrive at the incident within 480 seconds, or 8 minutes.

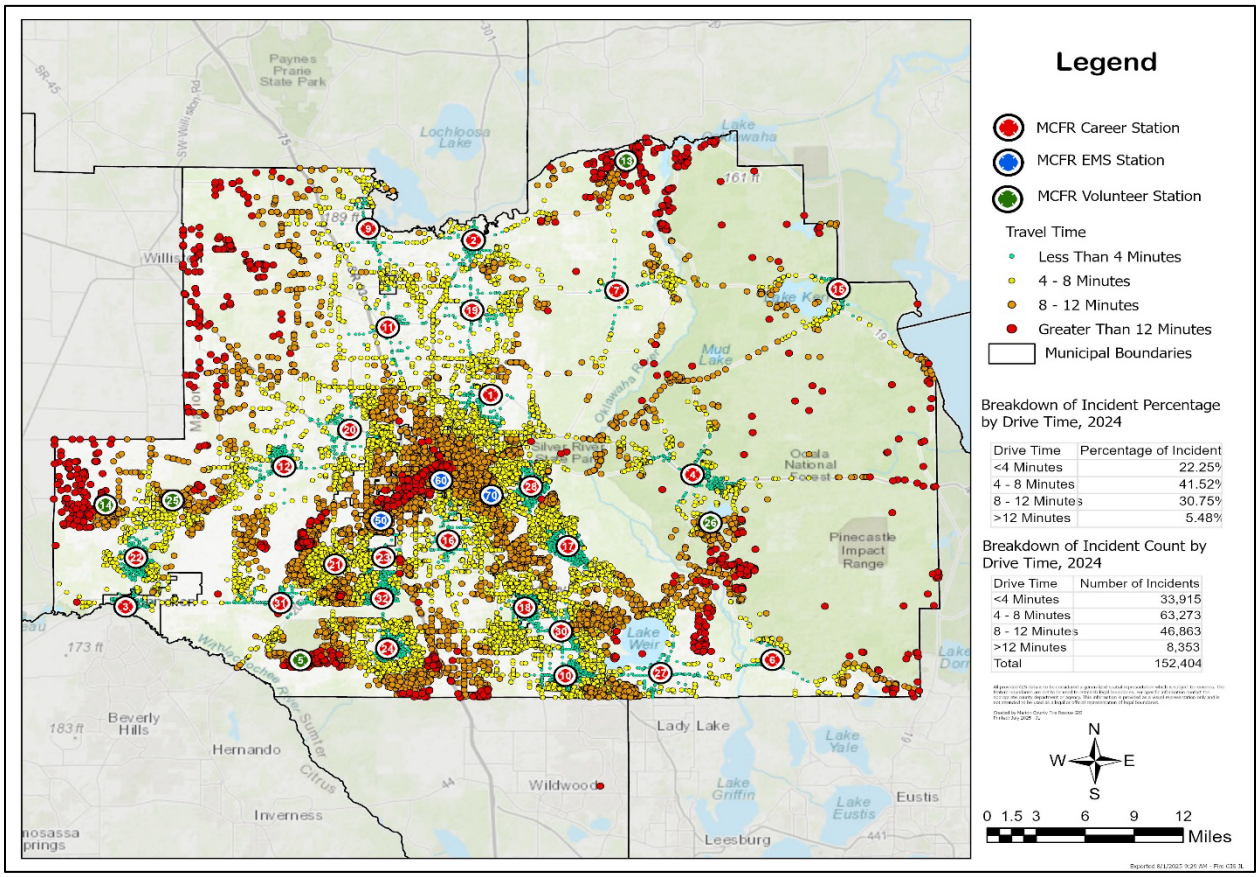
As illustrated in the following figure, 15.92% of the service area falls within the 4-minute travel time of a fire station and 49.37% falls within the 8-minute travel time of a fire station. This illustration accounts for speed limits, one-way streets, and other static factors. While these percentages of cover are low, it is to be expected based on the geographical makeup of the service area.

Figure 65: MCFR Predicted 4 and 8-Minute Travel Times, NFPA 1710



It is helpful to evaluate actual travel time against the theoretical mileage coverage and estimated travel time maps depicted above. As illustrated in the following figure, actual travel time to incidents was less than 4 minutes to 22.25% of incidents, 4–8 minutes to 41.52% of incidents, 8–12 minutes to 30.75% of incidents and greater than 12 minutes to 5.48% of incidents. Due to the geographic configuration of the service area, including large areas of rural density separate from the main population centers, a lower percentage of travel time less than 4 minutes is to be expected.

Figure 66: MCFR Travel Time, 2024



ISO Distribution

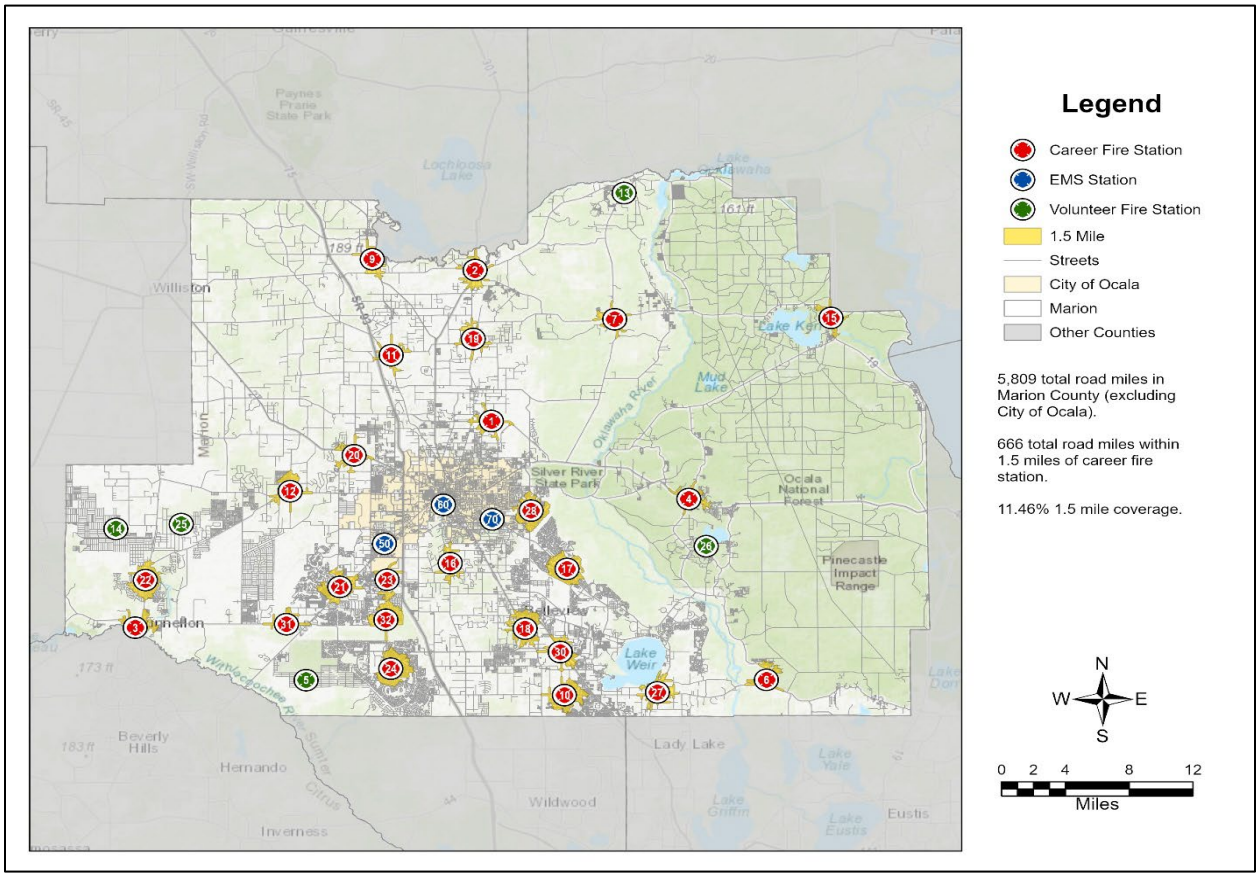
The Insurance Services Office (ISO) is a national insurance industry organization that evaluates fire protection for communities across the country. ISO assesses all areas of fire protection as broken down into four major categories including emergency communications, fire department, water supply, and 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). The PPC® score is developed using the Fire Suppression Rating Schedule (FSRS), which outlines sub-categories of each of the major four, detailing the specific requirements for each area of evaluation.

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), engine/pumper companies and aerial/ladder apparatus.

Engine Company Performance

As part of the ISO evaluation, an analysis determines the overall number of structures protected by a fire department that are located within 1.5 road miles of the closest fire station. This 1.5-road-mile standard is used to estimate a 4-minute travel time for first responding units as required by NFPA 1710. As illustrated in the following figure, 11.46% of MCFR's service area is covered within 1.5-road-mile travel of the closest fire station.

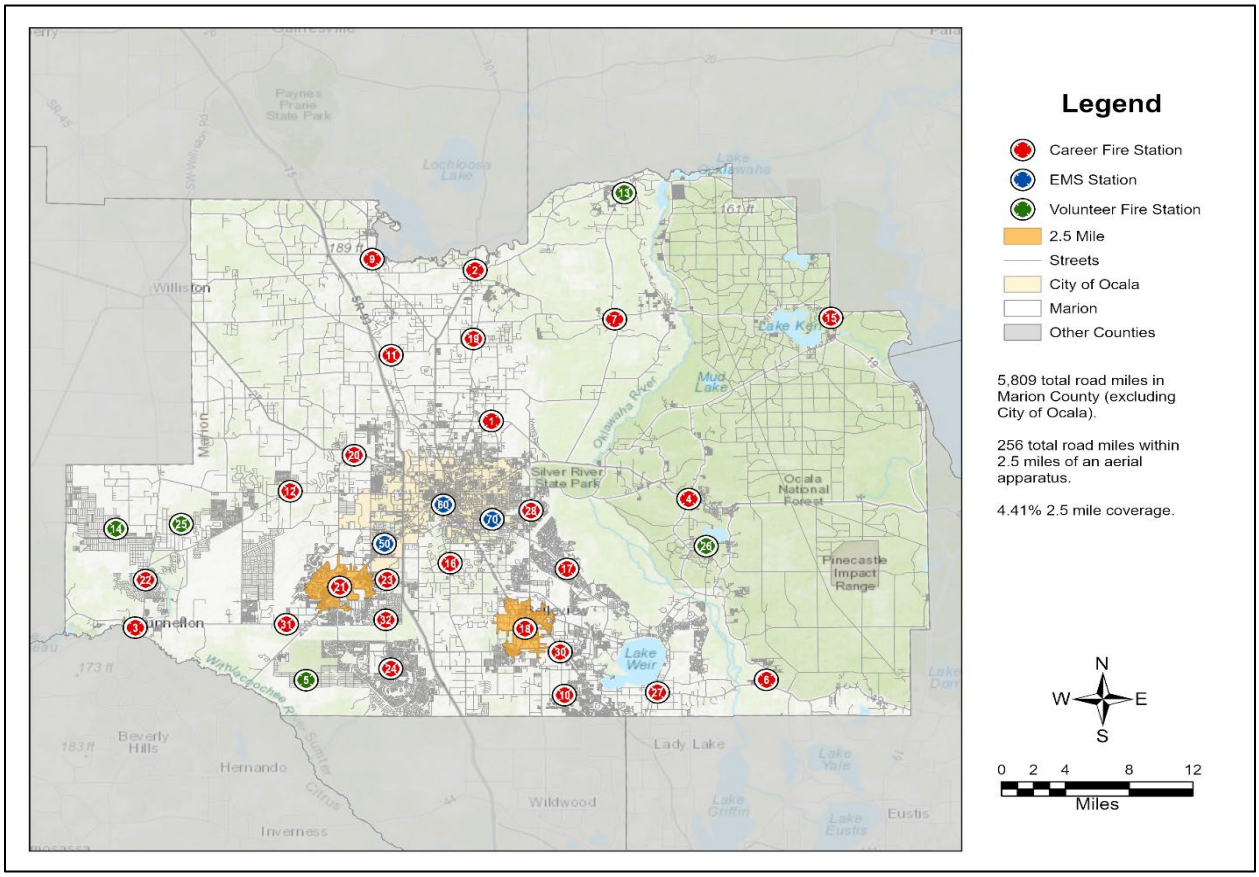
Figure 67: MCFR ISO 1.5-Mile Engine Company Service Areas



Ladder Company Performance

The next part of the ISO evaluation determines the overall number of structures protected by a fire department that are located within a 2.5 road-mile travel distance for ladder companies to estimate an 8-minute travel time in urban and suburban areas by ladder companies to provide the balance of personnel and equipment needed for incidents such as working fires. As illustrated in the following figure, 4.41% of MCFR's service area is located within 2.5-road-miletravel of a ladder company.

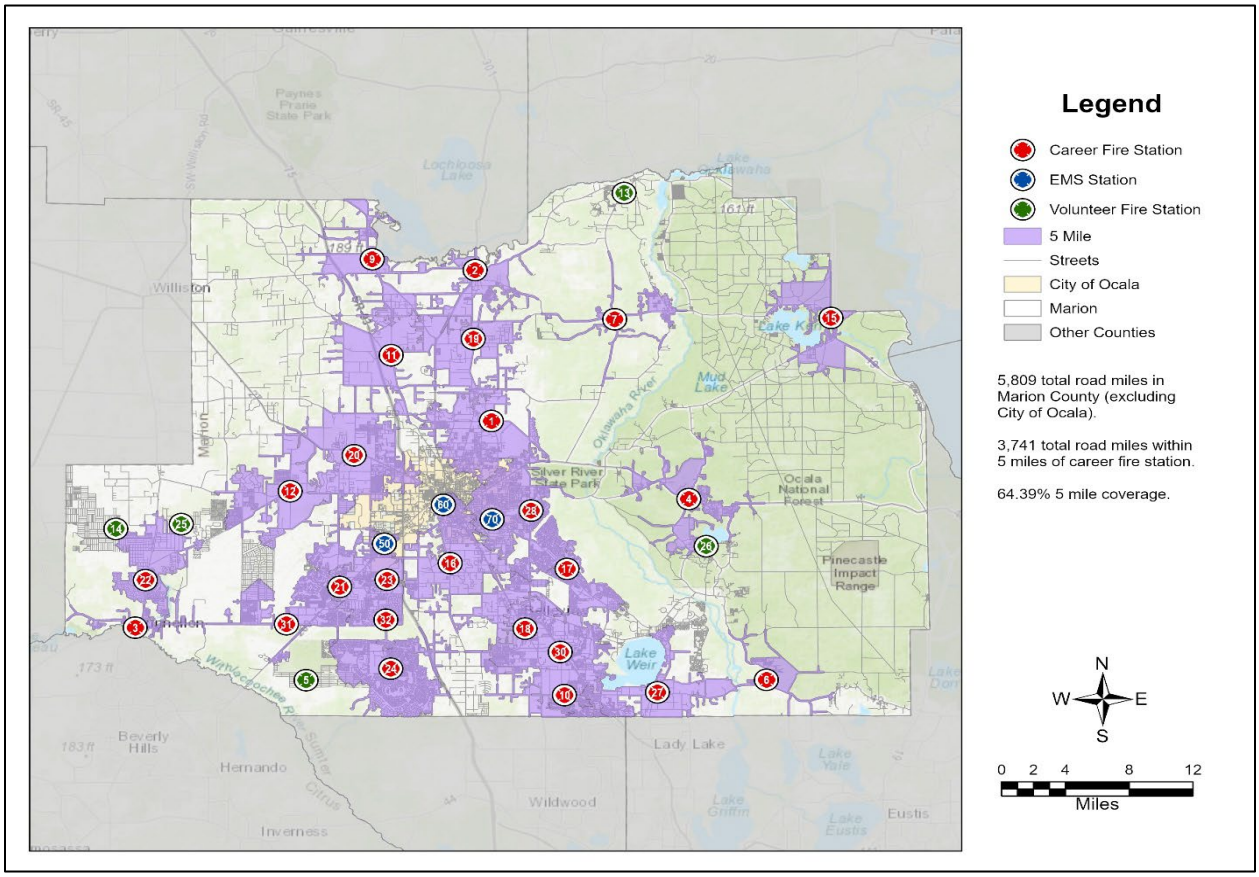
Figure 68: MCFR ISO 2.5-Mile Ladder Company Service Area



ISO Fire Station Coverage

The third part of the ISO evaluation determines the overall number of structures protected by a fire department that are located within a 5 road-mile travel distance of a fire station. Areas outside of 5 miles are subject to receiving a PPC® rating of 10 (no fire department protection available). As illustrated in the following figure, 64.39% of MCFR's service area is located within a 5-road-mile travel distance of a fire station.

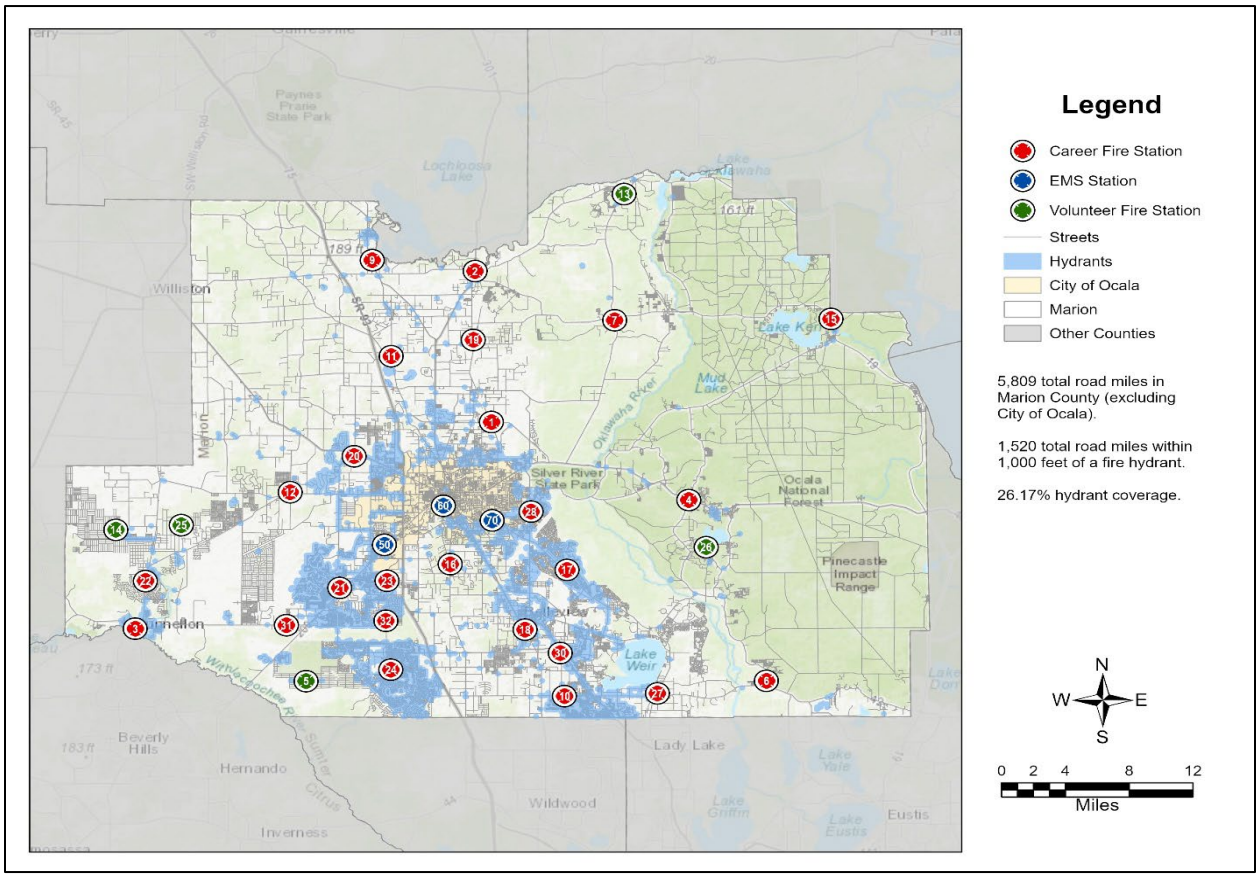
Figure 69: MCFR ISO 5-Mile Service Area



Water Supply and Hydrant Locations

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 volume of water needed for fire suppression activities for a specific period. As illustrated in the following figure, 26.17% of MCFR's service area is within 1,000 feet of a hydrant.

Figure 70: MCFR ISO Fire Hydrant Coverage



Resource Concentration

While the ability to have the first unit arrive on-scene in a timely manner is important, another key factor of effective management of the incident is the arrival of sufficient resources (apparatus, equipment, and personnel) within a timely manner is important as well. Ensuring the arrival of sufficient personnel and resources to safely control a fire or mitigate other types of emergencies prior to substantial damage, injury, or loss of life is referred to as effective response force (ERF). The following figures 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, NFPA 1720 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments* and the Commission on Fire Accreditation (CFAI) Standards of Cover, 10th Edition.

Figure 71: NFPA 1710 ERF Recommendations Based on Risk

Functions/Tasks	Single-Family Residence (2,000 ft²)	Open Air Strip Shopping Center (13,000–196,000 ft²)	3-Story Garden Apartment (Mid-Rise Style Apartment) (1,200 ft²)
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 Ladder 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)**

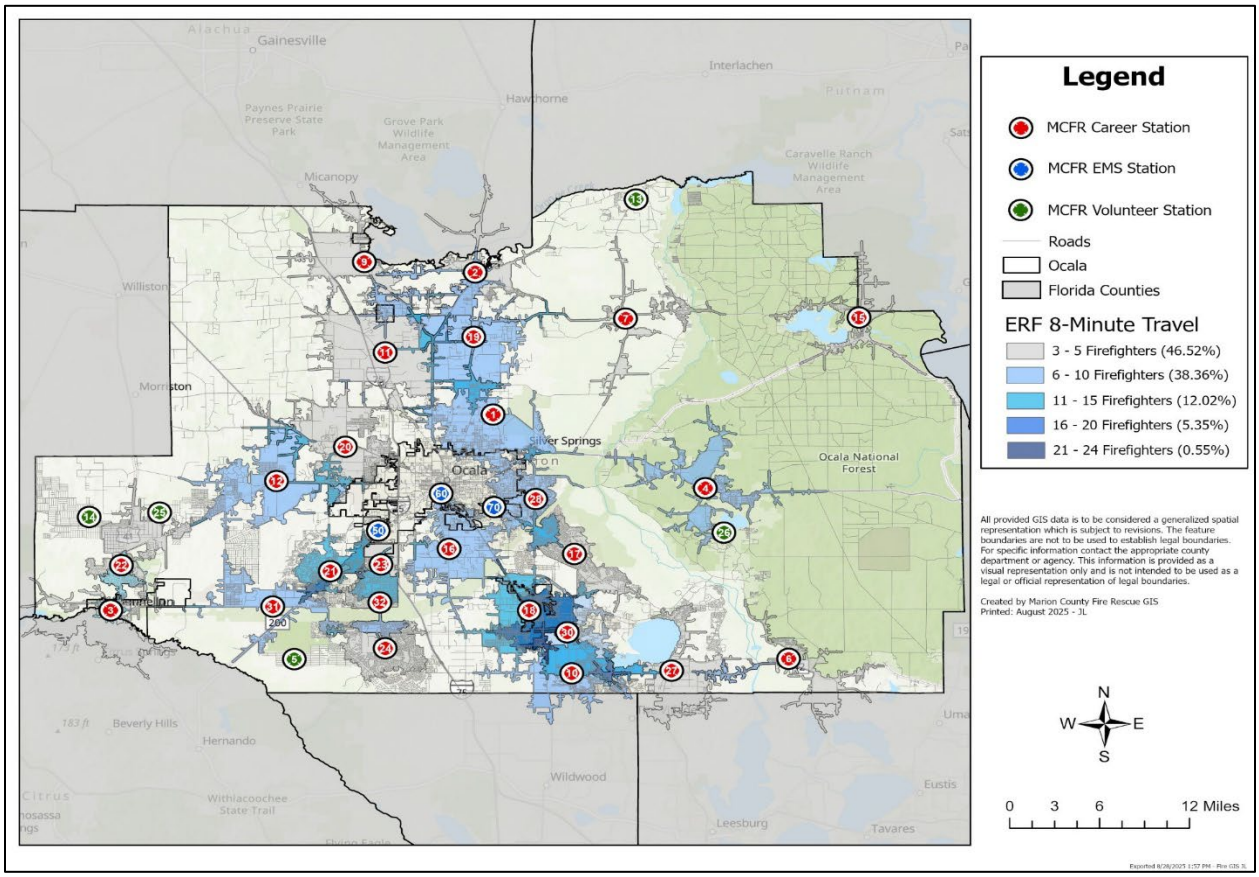
Figure 72: NFPA 1720 ERF Recommendations Based on Demand Zone

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

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

As illustrated in the following figure, within an 8-minute travel time, MCFR can assemble 3–5 firefighters within 46.52% of the service area, 6–10 firefighters within 38.36% of the service area, 11–15 firefighters within 12.02% of the service area, and 16–20 firefighters within 5.35% of the service area. The greater concentration of firefighters is within Marion County's urban areas due to the number of career personnel located there, while suburban and rural areas experience lower concentrations based on staffing distribution and travel time.

Figure 73: Effective Response Force (ERF), 8-Minute Travel



The preceding figure was created to illustrate the ERF with the assumption that all units and firefighters are located within the station at the time of dispatch. Also, there are additional units responding with volunteer firefighters which are not included in the ERF calculation. Thus, it is of value for MCFR leadership to understand the timing of unit arrival to structure fires. Putting all factors together may assist leadership in understanding what level of resources are available on scene within the various time frames.

Resource Reliability Study

Another consideration as to the ability of MCFR to provide timely services to the community is resource reliability. Within this concept, unit availability to respond to incidents may be impacted by either increased concurrency or by increased workload. As either (or both) of these factors increase, the unit within that zone may not be available and additional incidents may be assigned to other units, resulting in an increased response time.

Workload

Workload is the first factor for consideration. The measure of how much work an individual unit incurs could be as simple as a sum of incidents within a given period of time, such as a year. However, incident duration can vary significantly from minutes to hours and thus this method does not provide the best measure of workload. A more accurate method—while still not a perfect measure—is to consider the amount of time to which a unit is assigned and compare that to the amount of time the unit is in service, a measure referred to as unit hour utilization. The imperfection of this measure is that it does not capture other on-duty activities such as training, station maintenance, apparatus maintenance, hydrant testing, hose testing, pre-incident planning, public education events, etc.

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.[28] 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 and may be utilized by MCFR leadership as a base for developing internal workload measures.

Figure 74: 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 for more than 75% of the day.
25%	System Stress	Community availability and unit sustainability are not questioned. First-due units are responding to their assigned community 75% of the time, and response benchmarks are rarely missed.
26%-29%	Evaluation Range	The community served will experience delayed incident responses. Just under 30% 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% 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. The required training and physical fitness sessions are not consistently completed.

[28] *How Busy Is Busy?; Retrieved from https://www.fireengineering.com/articles/print/volume-169/issue-5/departments/fireems/how-busy-is-busy.html*

For this analysis, only those units with career staffing were considered. MCFR utilizes the existing staff at stations to cover multiple units. It is important to note that several of the apparatus in MCFR are cross staffed by the same employees and the percentages listed below represent only the time in that apparatus.

Figure 75: Division 1 Unit Hour Utilization, 2020 to 2024

Unit	2020	2021	2022	2023	2024
Div1	8.4%	7.1%	4.6%	5.6%	9.2%

Figure 76: Battalion Unit Hour Utilization, 2020 to 2024

Unit	2020	2021	2022	2023	2024
BC1	0.0%	3.3%	3.6%	3.1%	3.2%
BC2	0.0%	3.7%	4.9%	4.7%	3.8%
BC3	0.0%	5.1%	6.0%	4.9%	5.5%
BC4	0.0%	4.1%	4.1%	3.6%	3.6%
BC5	0.0%	1.7%	2.0%	3.4%	3.7%
BC6	0.0%	5.9%	5.1%	1.9%	2.8%
BC7	0.0%	2.7%	1.2%	0.0%	0.0%

Figure 77: Heavy Rescue Unit Hour Utilization, 2020 to 2024

Unit	2020	2021	2022	2023	2024
HR1	4.2%	3.8%	4.2%	3.3%	3.2%
HR2	3.6%	3.6%	3.7%	2.9%	2.7%

Figure 78: Aerial Unit Hour Utilization, 2020 to 2024

Unit	2020	2021	2022	2023	2024
L1	10.3%	10.9%	11.0%	4.8%	0.0%
L2	0.0%	2.4%	6.3%	2.8%	0.0%
L3	9.9%	15.1%	15.8%	6.1%	0.0%
TWR1	0.0%	0.0%	0.0%	0.6%	3.2%
TWR2	0.0%	0.0%	0.0%	1.1%	2.5%

Figure 79: MCFR Suppresion Unit Hour Utilization, 2020-2024

Unit	2020	2021	2022	2023	2024
E1	10.2%	10.9%	11.2%	9.5%	8.4%
E2	4.3%	5.4%	5.5%	5.1%	4.9%
E3	3.9%	4.7%	4.8%	4.6%	4.2%
E4	10.3%	11.8%	11.6%	12.0%	9.9%
E5	0.4%	0.3%	0.6%	0.4%	0.4%
E6	5.9%	6.2%	6.8%	7.0%	5.9%
E7	4.4%	5.1%	5.1%	5.2%	4.6%
E9	5.3%	6.0%	6.1%	6.3%	5.5%
E10	11.8%	6.8%	13.4%	12.8%	10.5%
E11	7.0%	7.6%	7.4%	6.1%	5.5%
E12	6.7%	7.5%	7.9%	7.2%	7.5%
E15	2.7%	3.5%	3.4%	3.1%	2.6%
E16	8.3%	8.9%	8.6%	7.7%	7.0%
E17	10.4%	11.2%	11.3%	10.2%	9.3%
E18	10.9%	12.4%	13.1%	12.3%	10.2%
E19	5.1%	5.5%	5.2%	5.1%	4.3%
E20	9.8%	11.5%	11.0%	10.1%	8.9%
E21	0.0%	0.0%	0.0%	9.5%	13.2%
E22	7.7%	8.4%	8.8%	8.3%	8.3%
E23	0.0%	0.0%	0.0%	1.4%	5.7%
E24	9.3%	11.2%	10.7%	11.1%	9.9%
E27	7.1%	7.3%	7.8%	7.4%	6.9%
E28	11.6%	13.9%	13.4%	11.2%	8.8%
E30	0.0%	0.0%	0.0%	6.3%	10.2%
E31	9.0%	10.1%	10.0%	8.4%	8.3%
E32	7.5%	9.0%	8.6%	6.8%	4.7%

Figure 80: MCFR Transport Unit Hour Utilization, 2020-2024

Unit	2020	2021	2022	2023	2024
R1	27.2%	31.4%	29.6%	27.5%	27.3%
R4	25.0%	26.7%	25.9%	26.5%	25.7%
R7	13.2%	15.9%	14.9%	14.8%	14.9%
R9	15.5%	19.1%	17.8%	18.3%	19.4%
R10	26.3%	31.4%	28.8%	23.2%	24.4%
R12	20.0%	23.8%	23.4%	21.5%	23.8%
R15	8.8%	10.1%	9.5%	8.7%	8.9%
R16	14.7%	18.4%	16.1%	12.9%	12.7%

R17	25.3%	28.2%	24.3%	21.4%	23.7%
R18	24.4%	30.2%	28.5%	19.8%	20.4%
R518	24.0%	29.4%	28.5%	20.1%	18.9%
R19	19.1%	23.4%	22.9%	23.6%	24.0%
R20	23.9%	28.6%	27.5%	26.4%	25.7%
R21	25.1%	29.6%	25.5%	20.5%	22.0%
R521	24.7%	29.3%	25.7%	21.9%	22.5%
R621	22.8%	29.0%	26.1%	21.6%	22.0%
R22	22.6%	26.0%	25.3%	24.8%	26.3%
R24	25.6%	31.7%	26.5%	24.0%	30.1%
R27	26.5%	31.1%	28.2%	22.8%	22.0%
R30	24.8%	29.8%	28.5%	19.1%	18.5%
R530	22.0%	30.2%	28.5%	19.7%	20.3%
R31	25.1%	30.5%	27.6%	21.5%	20.6%
R531	24.9%	29.9%	27.7%	22.0%	21.3%
R32	25.2%	31.0%	25.1%	20.9%	26.6%
M50	0.0%	0.0%	15.1%	24.4%	23.1%
M51	0.0%	0.0%	14.5%	25.4%	26.2%
M54	31.0%	37.5%	17.8%	0.0%	0.0%
M55	30.6%	36.4%	18.9%	0.0%	0.0%
M56	28.3%	37.9%	17.6%	0.0%	0.0%
M57	29.6%	37.5%	17.1%	0.0%	0.0%
M58	31.7%	36.7%	18.0%	0.0%	0.0%
M59	12.2%	33.5%	7.9%	0.0%	0.0%
M60	28.9%	36.3%	32.6%	25.3%	22.9%
M61	0.0%	0.0%	14.4%	26.3%	24.6%
M62	32.7%	37.8%	32.9%	26.3%	22.7%
M63	24.1%	0.4%	12.8%	27.3%	23.3%
M64	0.0%	0.0%	13.6%	24.9%	22.4%
M65	31.1%	37.0%	31.3%	25.4%	23.6%
M66	31.8%	37.3%	18.7%	0.0%	0.0%
M70	0.0%	0.0%	12.0%	20.1%	18.6%
M71	0.0%	0.0%	11.9%	19.6%	18.0%
M80	0.0%	0.0%	0.0%	9.8%	17.4%
M81	0.0%	0.0%	1.0%	8.0%	0.2%
CC1	0.0%	41.4%	32.7%	28.4%	25.9%

Incident Concurrency

Incident concurrency, the second factor to be considered, refers to the number of incidents occurring simultaneously within the service area. As the number of concurrent incidents increases, the ability to respond to additional calls for service decreases. As illustrated in the following figure, concurrency of greater than 10 incidents occur 45.5% of the overall service demand. At this level, MCFR is well able to handle responses. However, it should be noted that this analysis assumes one unit responding to each call because the majority of MCFR calls are handled with one unit. Where there are multiple units responding to one call for service, additional requests may require use of automatic aid or mutual aid resources.

Figure 81: MCFR Call Concurrency, 2020-2024

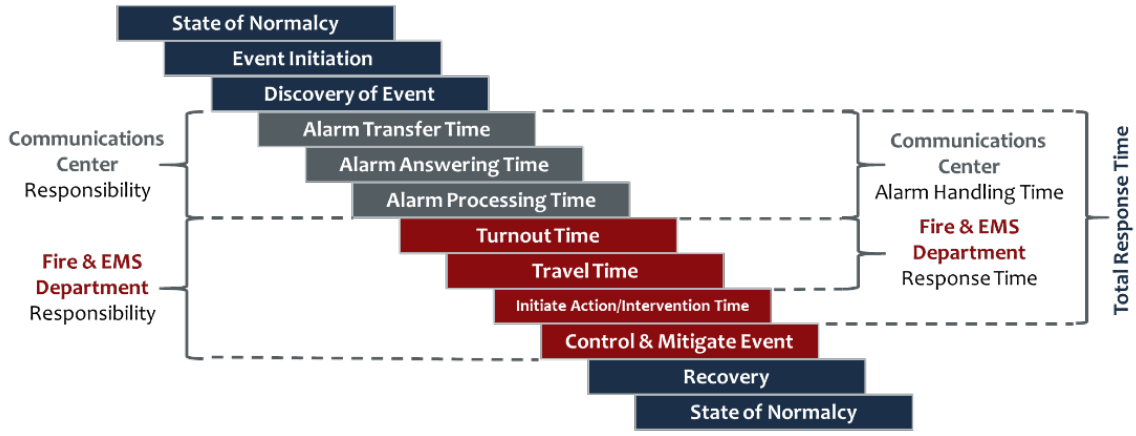
Concurrent Incidents in Progress	2020	2021	2022	2023	2024	Change Over Study Period
Single Incident	0.9%	0.8%	0.8%	0.8%	0.7%	-0.2%
Two Incidents	2.1%	1.7%	1.8%	2.0%	2.0%	0.0%
Three Incidents	3.5%	2.9%	3.2%	3.8%	4.0%	0.5%
Four Incidents	4.9%	4.0%	4.5%	5.6%	5.8%	0.8%
Five Incidents	6.1%	4.9%	5.7%	7.0%	6.9%	0.8%
Six Incidents	7.0%	5.9%	6.5%	7.9%	7.8%	0.8%
Seven Incidents	8.0%	6.3%	7.3%	8.8%	8.5%	0.6%
Eight Incidents	8.5%	6.8%	7.9%	9.3%	9.3%	0.8%
Nine Incidents	8.5%	7.3%	8.3%	9.4%	9.6%	1.1%
More than Ten Incidents	50.5%	59.4%	54.0%	45.4%	45.5%	-5.0%

Response Performance

For the public, the key value of their fire department is the timely arrival of quality services when 911 is activated. This overall concept of 911 call to response is referred to as response performance and is comprised of the following components and illustrated in the following figure:

- **Alarm Handling Time:** The amount of time between when a call is answered by the 911 Primary Public Safety Answering Point (PSAP) or dispatch center, and when resources are dispatched.
- **Turnout Time:** The time interval between when response units are notified of the incident and when the apparatus begins to respond.
- **Travel Time:** The time the responding unit spends on the road traveling to the incident until arrival at the scene. This is a function of speed and distance.
- **Response Time:** The time from initial alerting of an incident until arrival on the scene. Response Time equals the sum of "Turnout Time" and "Travel Time."
- **Total Response Time:** This is the most apparent time to the caller requesting emergency services, as the time from when the emergency calls is placed until units arrive on the scene.

Figure 82: Total Response Time Continuum



Tracking the individual components of response time can help MCFR leadership identify impediments to timely response and make operational adjustments to improve; including developing response time goals and standards that are both relevant and achievable. Fire service best practices recommend that fire service organizations monitor and report the components of Total Response Time.

In analyzing response performance, the MCFR project team 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% 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 percentile is calculated exists in a set of data unto itself. Each of the following analyses only included those incidents where the response was coded as "lights and sirens" priority. Each of the following analyses were conducted using the response data provided by MCFR.

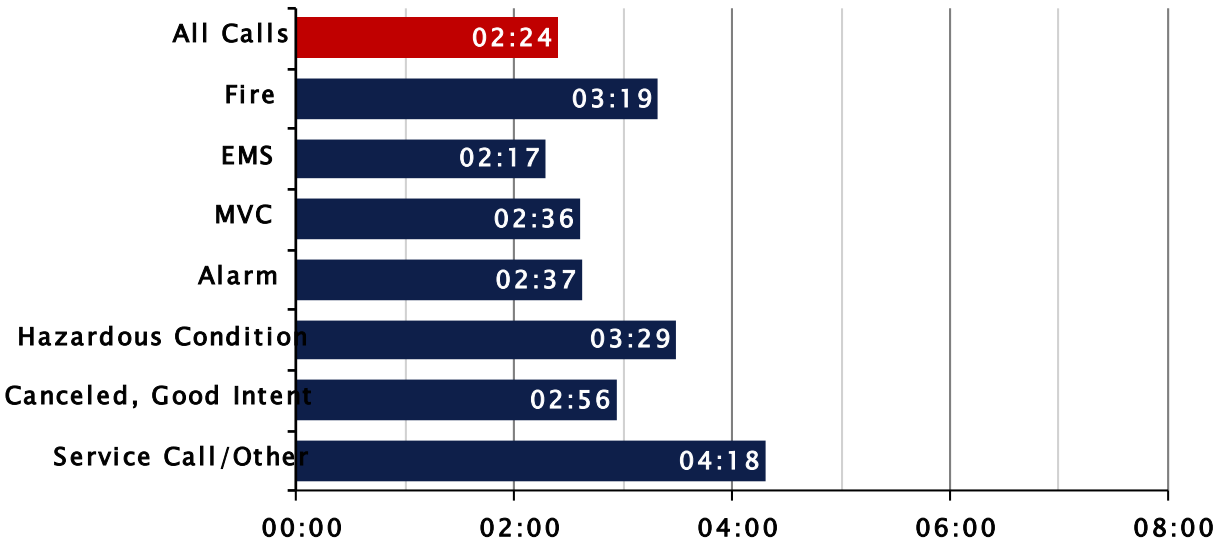
Alarm Handling Performance

Alarm handling performance measures the length of time between activation of 911 and dispatch of the first unit. MCFR units are dispatched by Marion County Public Safety Communications. As such, they do not have direct control over the call processing performance but should work with communications leadership to monitor performance and make improvements as needed. For this measure, there is one applicable standard as illustrated below.

Standard	Expected Performance
NFPA 1225: Standard for Emergency Services Communications (2022 Edition)	60 seconds at the 90th percentile

As illustrated in the following figure, overall alarm handling performance for MCFR was 2 minutes, 24 seconds. When analyzed by incident type, performance ranged from 2 minutes 17 seconds for emergency medical calls to 4 minutes, 18 seconds for service calls and other emergencies. While this performance exceeds the expected standard, MCFR leadership should coordinate with communications leadership to validate the measure including development of the local performance standard expectations to account for any priority dispatch procedures being used.

Figure 83: MCFR Alarm Handling at the 90th Percentile, 2020-2024



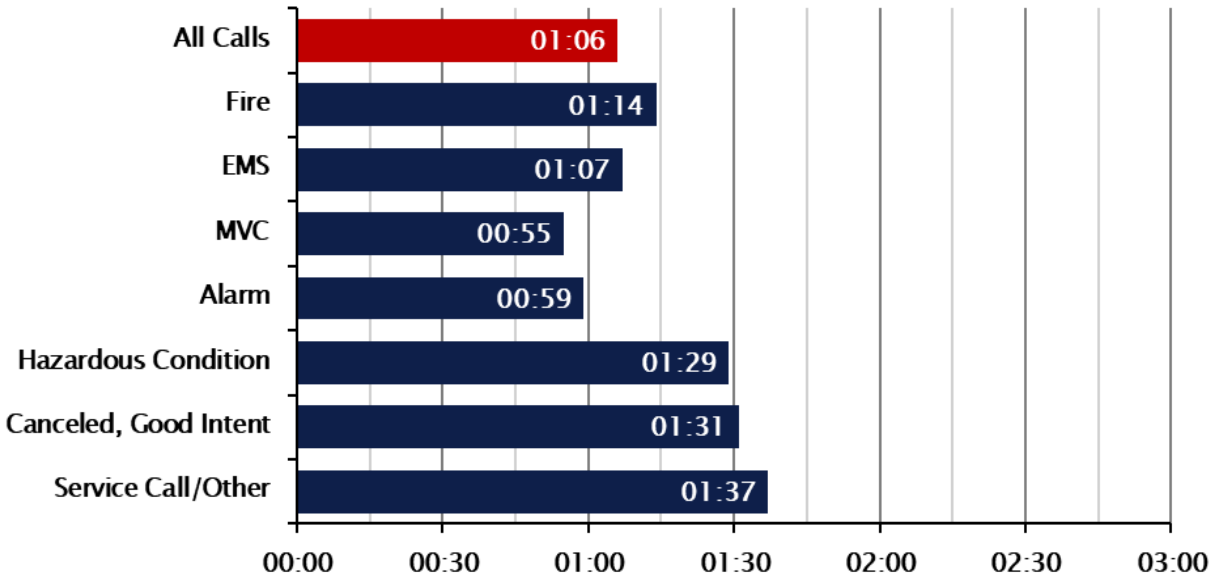
Turnout Performance

Turnout performance is measured by turnout time, which is the length of time between dispatch time and when a unit begins responding to the call. For this measure, there is one applicable standard as illustrated below.

Standard	Expected Performance
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* recommends	Fire and Special Operations Incidents 80 seconds at the 90th percentile All Other Incidents 60 seconds at the 90th percentile

As illustrated with the following figure, the overall turnout performance for MCFR is 1 minute, 6 seconds. When analyzed by incident type, performance ranged from 59 seconds for alarm incidents to 1 minute 37 seconds for service call/other.

Figure 84: MCFR Turnout at the 90th Percentile, 2020–2024



As this is the first measure under direct control of the fire department, MCFR leadership may consider the various actions that occur within this measure and determine if there are areas where process changes could improve performance. These factors 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.

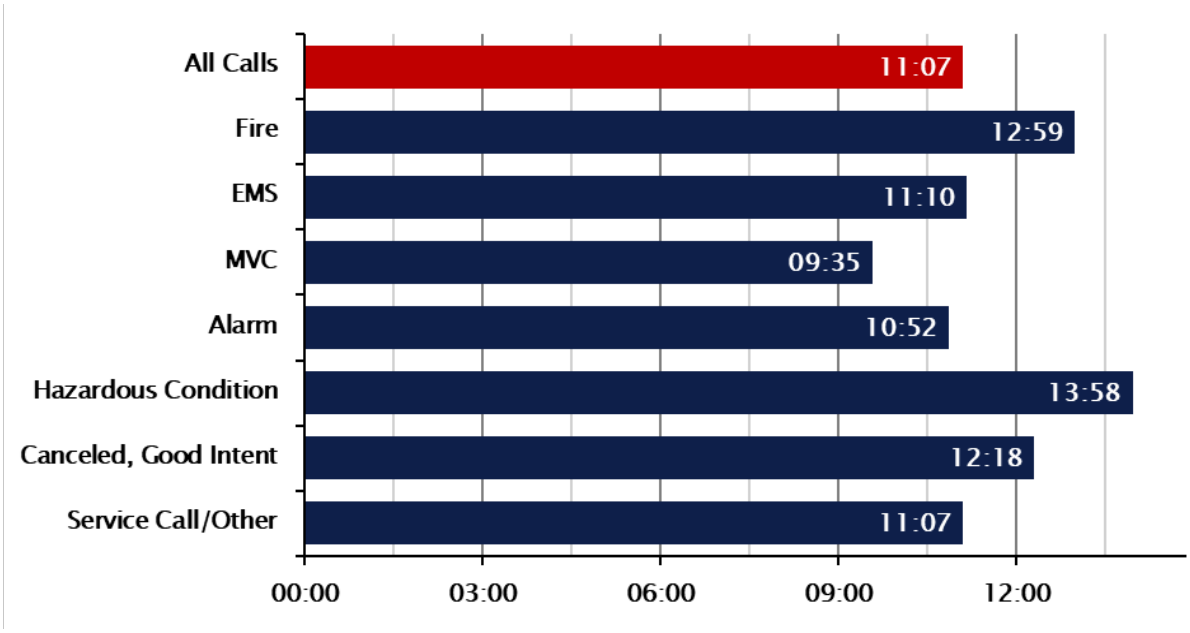
Travel Performance

Travel performance is measured by travel time with the length of time between when a unit begins to respond and arrival on scene. For this measure, there is one applicable standard as illustrated below.

Standard	Expected Performance
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* recommends	First Unit 4 minutes at the 90th percentile Full Compliment 8 minutes at the 90th percentile

As illustrated in the following figure, overall travel performance for MCFR is 11 minutes, 7 seconds. When analyzed by incident type, performance ranged from 9 minutes, 35 seconds for motor vehicle collisions to 13 minutes, 58 seconds for hazardous condition calls for service. It is important to note that this includes all responses to fires throughout the jurisdiction and the long travel times to far reaches of the county account for the extended travel time.

Figure 85: MCFR Travel at the 90th Percentile, 2020-2024



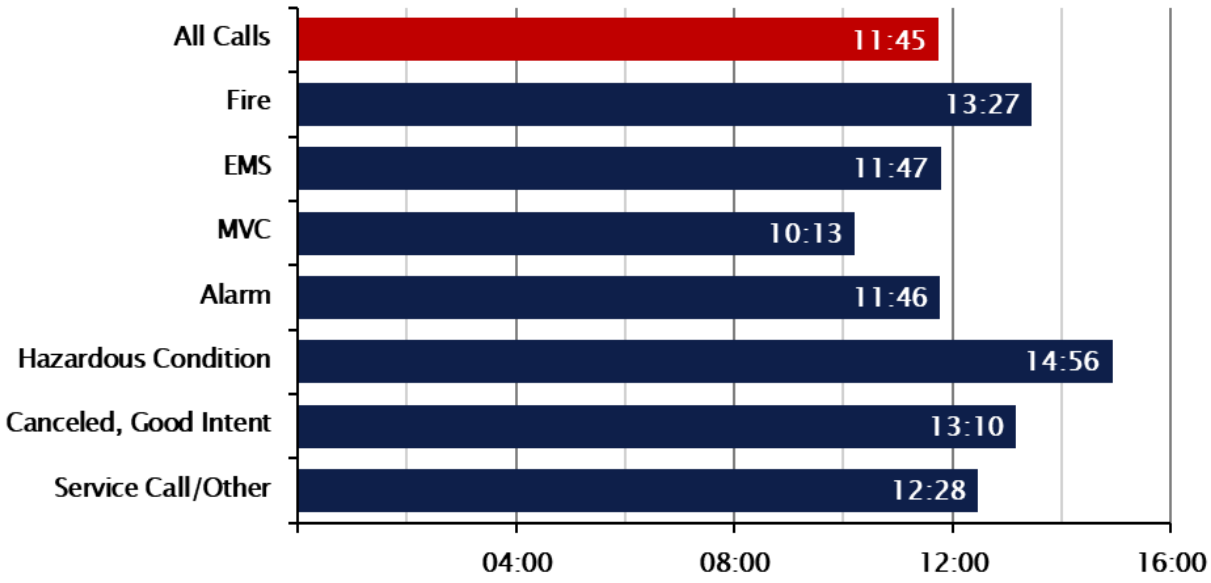
Response Time Performance

Response time is defined as the length of time between dispatch time and arrival at scene time. For this measure, there is not a specific applicable standard. However, by combining the individual component standards, the following figure illustrates expected performance.

Component	Expected Performance
Turnout Time	Fire and Special Operations Incidents 80 seconds at the 90th percentile All Other Incidents 60 seconds at the 90th percentile
Travel Time	4 minutes at the 90th percentile
Combined	Fire and Special Operations Incidents 5 minutes, 20 seconds at the 90th percentile All Other Incidents 5 Minutes at the 90th percentile

As illustrated in the following figure, overall response time performance for MCFR is 11 minutes, 45 seconds. When analyzed by incident type, performance ranged from 10 minutes, 13 seconds for motor vehicle collisions to 14 minutes, 56 seconds for hazardous conditions.

Figure 86: MCFR Response Time at the 90th Percentile, 2020-2024



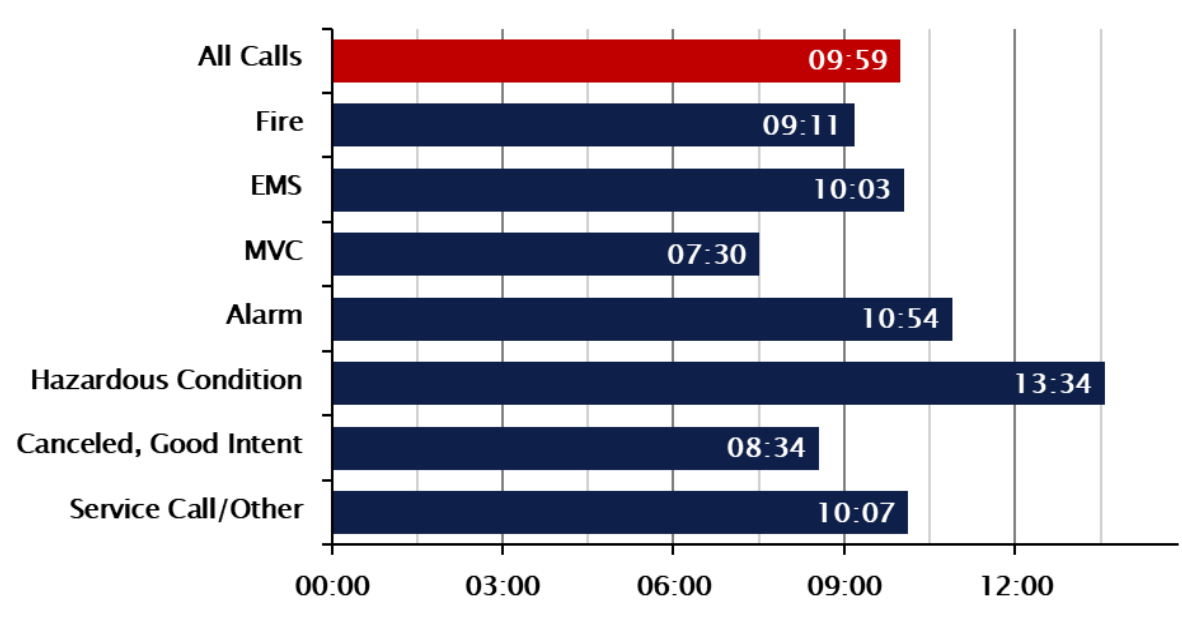
NFPA 1720 Performance Objectives and Measures

As a combination department with greater than 85% career staff, MCFR falls within NFPA 1710 guidelines. However, NFPA 1720: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments*, which is measured based on the population density and is illustrated in the following figure, provides guidance for rural areas when determining performance metrics.

Component	Expected Performance
Urban (Greater than 1,000 persons per square mile)	9 minutes or less at the 90th percentile
Suburban (500–1,000 persons per square mile)	10 minutes or less at the 80th percentile
Rural (Less than 500 persons per square mile)	14 minutes or less at the 80th percentile

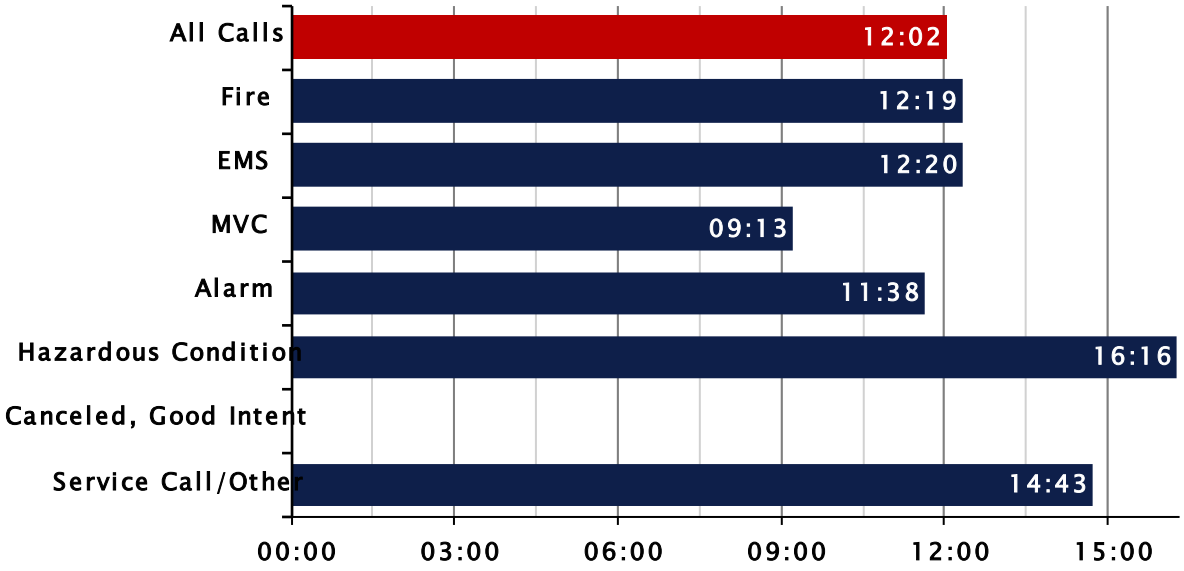
As illustrated in the following figure, the overall MCFR urban zone performance is 9 minutes, 59 seconds which is 59 seconds greater than the recommended standard.

Figure 87: MCFR NFPA 1720 Response (Urban), 2024



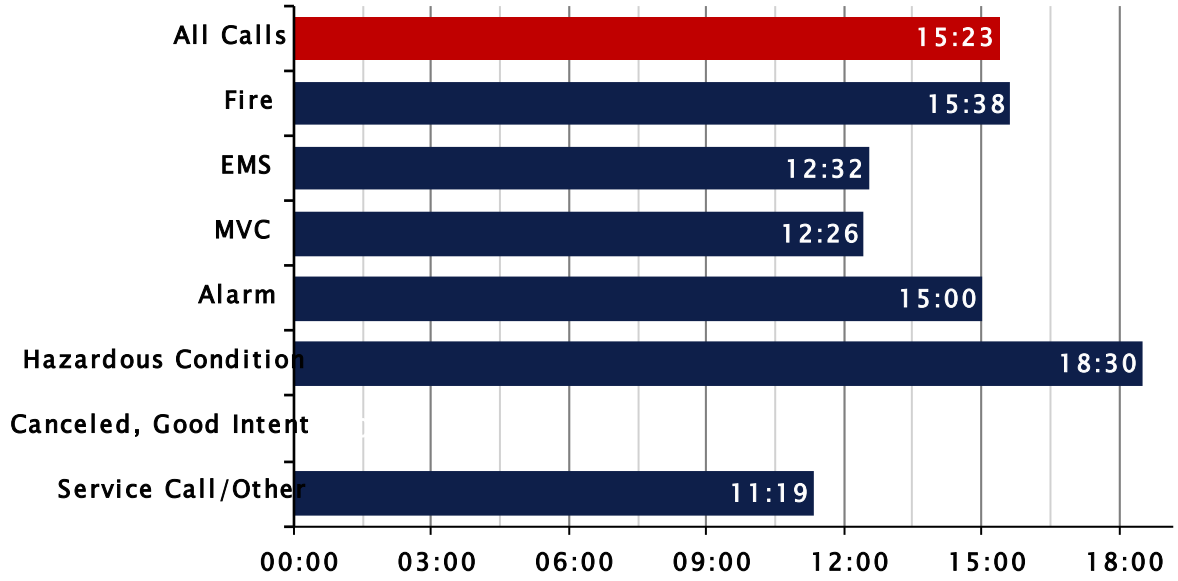
As illustrated in the following figure, the overall MCFR suburban performance is 12 minutes, 2 seconds, which is 2 minutes higher than the recommended standard.

Figure 88: MCFR NFPA 1720 Response (Suburban), 2024



As illustrated in the following figure, the overall MCFR rural performance is 16 minutes, 15 seconds which is approximately 2 minutes greater than the expected standard.

Figure 89: MCFR NFPA 1720 Response (Rural), 2024



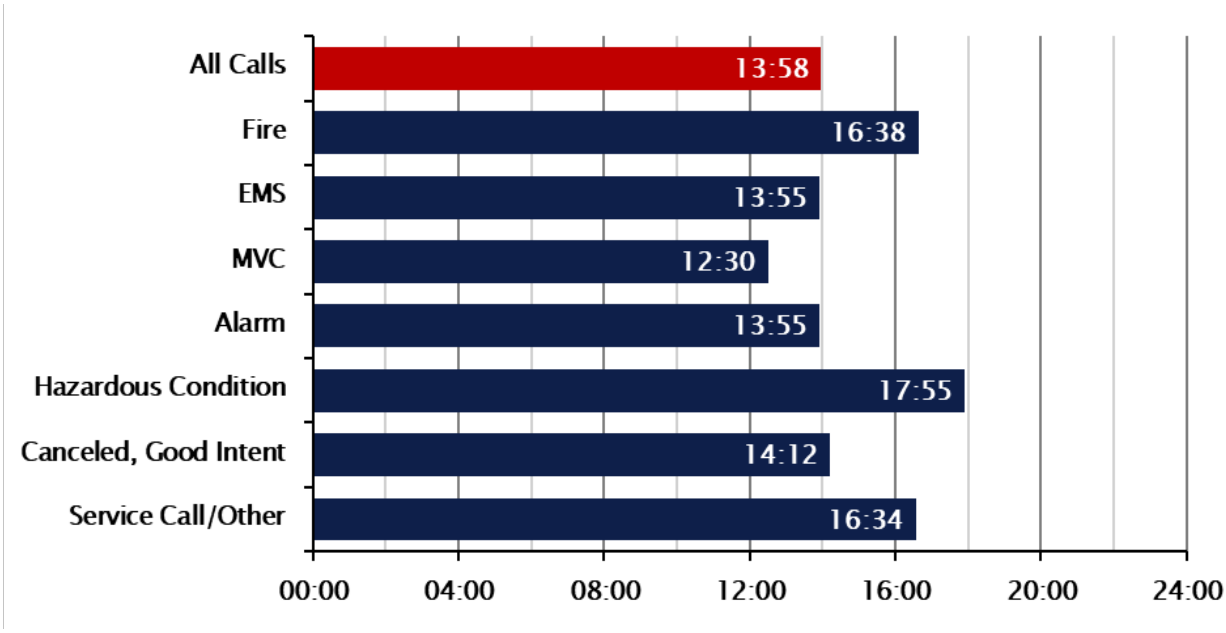
Total Response Time Performance

Total response time is defined as the length of time between activation of 911 and arrival at scene time. This performance measure is ultimately how the citizen views response performance. For this measure, there is not a specific applicable standard. However, by combining the individual component standards, the following figure illustrates expected performance.

Component	Performance
Call Processing Time	60 seconds at the 90th percentile
Turnout Time	Fire and Special Operations Incidents 80 seconds at the 90th percentile All Other Incidents 60 seconds at the 90th percentile
Travel Time	4 minutes at the 90th percentile
Combined	Fire and Special Operations Incidents 6 minutes, 20 seconds at the 90th percentile All Other Incidents 6 Minutes at the 90th percentile

As illustrated in the following figure, overall total response time performance for MCFR is 13 minutes, 58 seconds. When analyzed by incident type, performance ranged from 12 minutes, 30 seconds for motor vehicle collision incidents to 17 minutes, 55 seconds for hazardous conditions.

Figure 90: MCFR Total Response Time at the 90th Percentile, 2020–2024



OVERVIEW OF COMPLIANCE METHODOLOGY

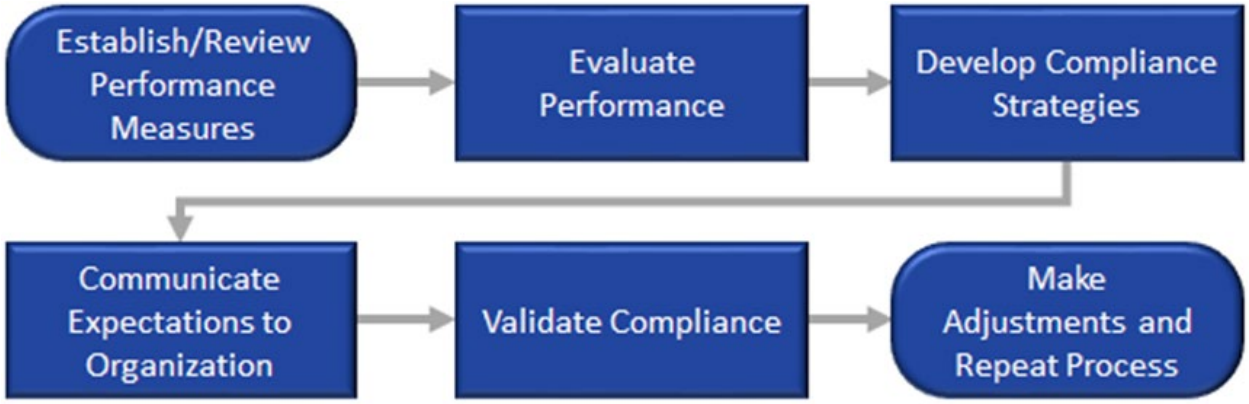
The preceding sections of this report provide a detailed analysis of the historical performance of MCFR. For this analysis to prove beneficial to MCFR and BOCC policymakers, the continued analysis should be performed on a routine basis. The data provided to the project team for analysis proved to be easy to analyze from the standpoint of consistency and completeness.

MCFR is committed to a continual process of analyzing and evaluating actual performance against the adopted Standards of Cover and will enhance the data collection procedures of field operations personnel. A periodic review of MCFR's records management system reports will be necessary to ensure compliance and reliability of data.

Compliance Model

Compliance is best achieved through a systematic approach. The MCFR project team has provided the following six-step compliance model.

Figure 91: Six-Step Compliance Model



Phase 1–Establish/Review Performance Measures

Complete the initial Standards of Cover process. Conduct a full review of the performance measures every five years:

- Identify services provided.
- Define levels of service.
- Categorize levels of risk.
- Develop performance objectives and measures:
  - By incident type
  - By geographic demand zone
  - Distribution (first on scene)
  - Concentration (arrival of full first alarm)

Phase 2–Evaluate Performance

Performance measures are applied to actual services provided:

- System level
- First due area level
- Unit level
- Full effective response force (ERF)

Phase 3–Develop Compliance Strategies

Determine issues and opportunities:

- Determine what needs to be done to close the gaps.
- Determine if resources can/should be reallocated.
- Seek alternative methods to provide service at the desired level.
- Develop budget estimates as necessary.
- Seek additional funding commitment as necessary.

Phase 4–Communicate Expectations to Organization

Communicate expectations:

- Explain the method of measuring compliance to personnel who are expected to perform services.
- Provide feedback mechanisms.
- Define the consequences of noncompliance.

Train personnel:

- Provide appropriate levels of training/direction for all affected personnel.
- Communicate the consequences of noncompliance.
- Modify (remediate) business processes, business application systems, and technical infrastructure as necessary to comply.

Phase 5–Validate Compliance

Develop and deploy verification tools and/or techniques that can be used by subsections of the organization on an ongoing basis to verify that they are meeting the requirements:

- Monthly evaluation:
  - Performance by unit
  - Overall performance
  - Review of performance by division/section management
- Quarterly evaluation:

- Performance by unit
- Performance by first due
- Overall performance
- Review of performance by executive management

Phase 6–Make Adjustments/Repeat Process

Review changes to ensure that service levels have been maintained or improved. Develop and implement a review program to ensure ongoing compliance:

- Annual review and evaluation:
  - Performance by unit
  - Performance by first due
  - Overall performance
  - Review of performance by governing body
  - Adjustment of performance standards by governing body as necessary
- Five-year update of Standards of Cover:
  - Performance by unit
  - Performance by first due
  - Full effective response force
  - Overall performance
  - Adoption of performance measures by the governing body
- Establish management processes to deal with future changes in MCFR's service area.

FUTURE SYSTEM DEMAND FORECASTS

POPULATION GROWTH PROJECTIONS

This section provides an assessment of anticipated community conditions, service demand, and risks that Marion County Fire Rescue (MCFR) can expect to encounter in the coming years. The analysis emphasizes population growth trends as a foundation for emergency service planning and delivery.

Population Growth Projection Analysis

The Project Team analyzed historical trends and future growth projections using data from the U.S. Census Bureau, University of Florida Bureau of Economic and Business Research (BEBR), and local comprehensive planning documents developed by Marion County Growth Services. These data points inform strategic decision-making and resource allocation for MCFR.

To support future population estimates, key demographic terms must be defined:

- Natural Increase: The rate of births minus deaths per 1,000 residents.
- Net Migration: The rate of in-migrants minus out-migrants, including both domestic and international, per 1,000 residents.

Both metrics are used alongside base population figures to model long-term growth trends and their impact on emergency services.

In terms of classification, Marion County qualifies as part of a metropolitan statistical area (MSA), anchored by the City of Ocala. As such, the county includes both densely developed urban centers and more rural outlying areas, each of which presents unique challenges for fire and EMS response.

Population History for Marion County

Marion County has experienced steady and accelerating growth over the past two decades. According to the U.S. Census Bureau:

- The population was 258,916 in 2010.
- By 2020, the population had grown to 375,908, reflecting a 45% increase.
- As of 2024, estimates place the population at over 410,000 residents, driven largely by net in-migration from other Florida counties and northern states.

Unlike areas where the population is driven primarily by industry, Marion County's growth is shaped by:

- Retiree Migration: The county is part of Florida’s "Retirement Belt" and includes large, planned communities such as The Villages (which also spills into Sumter and Lake Counties).
- Residential Development: Rapid construction of new housing subdivisions in the southwest, northwest, and Silver Springs Shores areas.
- Workforce Migration: Increasing employment in logistics, healthcare, and manufacturing sectors.

In addition, proximity to Interstate 75, regional hospitals, and low cost of living continue to make Marion County an attractive option for new residents and businesses.[29]

The primary driver of population change in Marion County is net in-migration, influenced by affordability, quality of life, and job availability. Between 2015 and 2023, Marion County experienced sustained population growth, largely fueled by residential development and its appeal to retirees and families relocating from more expensive urban centers across Florida and the southeastern United States.

Key economic sectors such as healthcare, logistics, construction, and advanced manufacturing have steadily expanded, providing job opportunities that attract working-age residents. In particular, the Ocala/Marion County Commerce Park and proximity to Interstate 75 have bolstered regional employment and transportation infrastructure. This has led to increased demand for both housing and public services.

Unlike resource-dependent regions, Marion County's economic base is more diversified, which has allowed it to maintain growth even during broader economic downturns. However, the surge in demand has strained the housing market, particularly in terms of affordable housing inventory, a trend evident in fast-growing communities like Silver Springs Shores, Southwest Ocala, and Marion Oaks.

Recognizing that a large portion of the population resides outside the two incorporated municipalities—Ocala and Dunnellon—it is anticipated that future population growth will continue to expand outward into the unincorporated areas. The following figure illustrates Marion County’s historical population trends and annual percentage changes over the past two decades.

[29] *Population projections and demographic estimates for Marion County are primarily provided by the University of Florida’s Bureau of Economic and Business Research (BEBR) and the Florida Office of Economic & Demographic Research (EDR).*

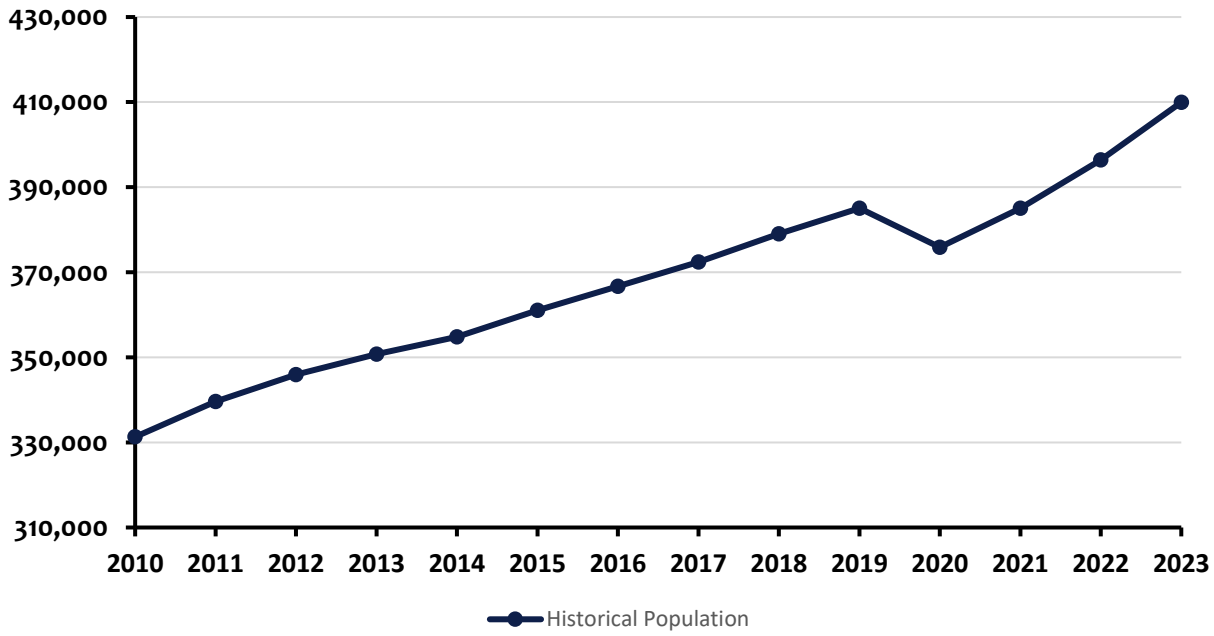
Figure 92: Marion County, Florida Population Totals

Year	Marion County Population	Annual Change
2010	331,303	
2011	346,965	4.73%
2012	358,984	3.49%
2013	358,135	3.05%
2014	385,135	4.14%
2015	396,437	2.90%
2016	406,000	2.40%
2017	415,000	2.20%
2018	425,000	2.41%
2019	353,526	3.4%
2020	375,908	6.33%
2021	387,697	-1.47%

The slight decrease in population growth in the early 2020s can be attributed to the economic uncertainty and job losses brought on by the COVID-19 pandemic, which impacted industries across the nation, including those in Marion County. However, population forecasts for 2023 and beyond indicate a strong resurgence in growth. This renewed increase is likely due to a migration trend seen across the country, where individuals and families from larger metropolitan areas are choosing to relocate to more rural, affordable communities. Marion County offers the benefits of a slower-paced lifestyle, access to nature, and a lower cost of living—factors that continue to attract people seeking alternatives to "big city" living.

The following figure shows the historical population changes in Marion County.

Figure 93: Historical Population Change for Marion County, Florida



Census-Based Population Growth Projections

Population projections are estimates of future population totals, typically based on the most recent decennial census. These projections help illustrate potential population changes based on assumptions regarding future births, deaths, and both domestic and international migration. In many cases, multiple projection models are developed using alternative assumptions for factors such as fertility rates, life expectancy, and migration trends—particularly important for local and regional planning efforts.

Recent indicators suggest strong momentum for Marion County's economic growth. Since 2017, the area has experienced consistent increases in residential development, healthcare expansion, and infrastructure investment. These trends reflect a shift toward a more diversified and resilient local economy, less dependent on a single industry and more capable of withstanding economic fluctuations.

The U.S. Census provides essential data to guide local governments in their planning and development efforts. This information enables Marion County and its partners to tailor population projections and growth strategies to the unique characteristics and needs of the community.

Community Planning-Based Population Growth Projections

Marion County has established a Comprehensive Plan to guide growth management, land use decisions, infrastructure planning, and public safety service delivery. Originally adopted in accordance with Florida's Growth Management Act, this living document provides a framework for the county's long-term development and is regularly updated to reflect changes in demographics, zoning, and community priorities.

The Marion County Office of the County Engineer and Growth Services Department plays a key role in the implementation of the Comprehensive Plan, coordinating with internal stakeholders such as Marion County Fire Rescue to ensure that public safety resources are aligned with anticipated growth corridors and future development patterns.

In support of this Long-Range Master Plan and Community Risk Assessment/Standards of Cover (CRA/SOC), current and projected population trends have been analyzed to help inform fire rescue service planning. Growth projections from sources such as the University of Florida's Bureau of Economic and Business Research (BEBR) and the Florida Office of Economic and Demographic Research (EDR) suggest continued moderate population increases over the next 25 years.

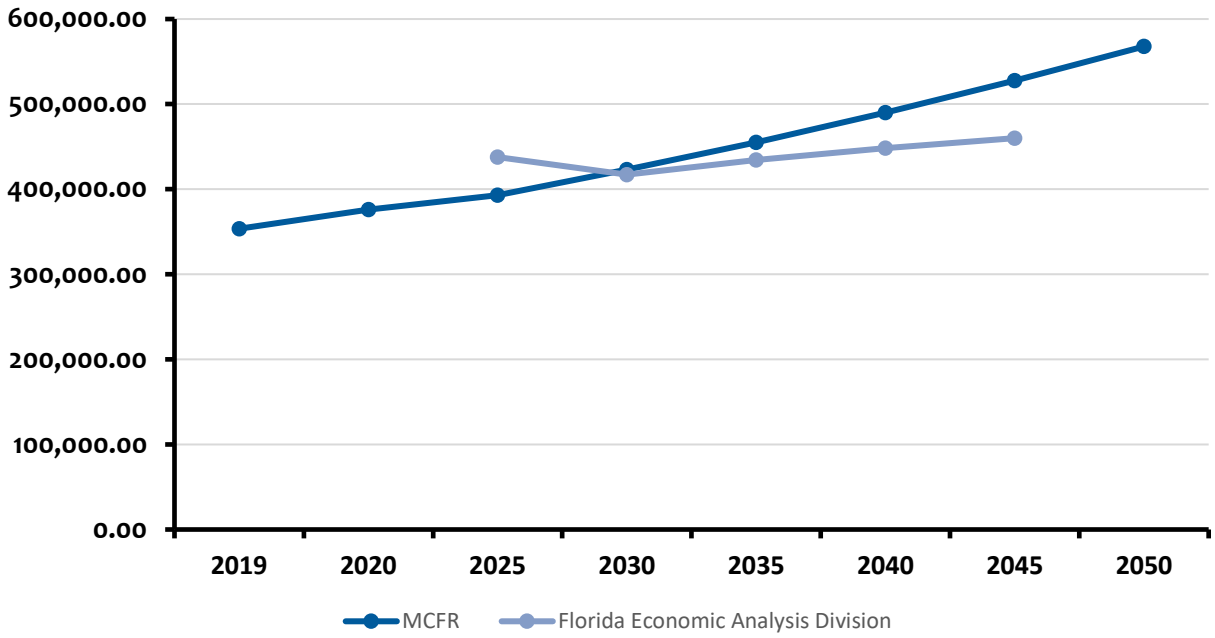
While some projections rely strictly on historical growth rates, they may not fully account for the dynamic development pressures specific to Marion County—such as land availability, economic migration, retirement influx, or major regional infrastructure projects. Therefore, projections included in this plan use both statistical data and planning assumptions to reflect localized conditions.

Using a conservative average annual growth rate of 0.85%, Marion County's population is projected to grow from approximately 405,000 residents in 2025 to an estimated 480,000 by 2050. This projection is based on historical trends, land use capacity, regional development initiatives, and anticipated expansion of suburban and rural housing areas.

Understanding this growth trajectory is essential for MCFR's long-term planning, particularly in evaluating future station locations, staffing levels, apparatus deployment models, and service demand distribution. Integration of these growth estimates into capital planning, staffing strategies, and mutual aid considerations will ensure that MCFR remains responsive to the evolving needs of the community.

The following figure represents the expected growth Marion County can expect and find useful for planning purposes.

Figure 94: Marion County Community Planning -Based Population Projections



SERVICE DEMAND PROJECTIONS

In evaluating the deployment of resources and staffing, it is imperative to account for changes in population, demographics, and economic activity that directly affect emergency workload. Rising service demand may require adjustments to staffing levels, apparatus, and station deployment to sustain performance.

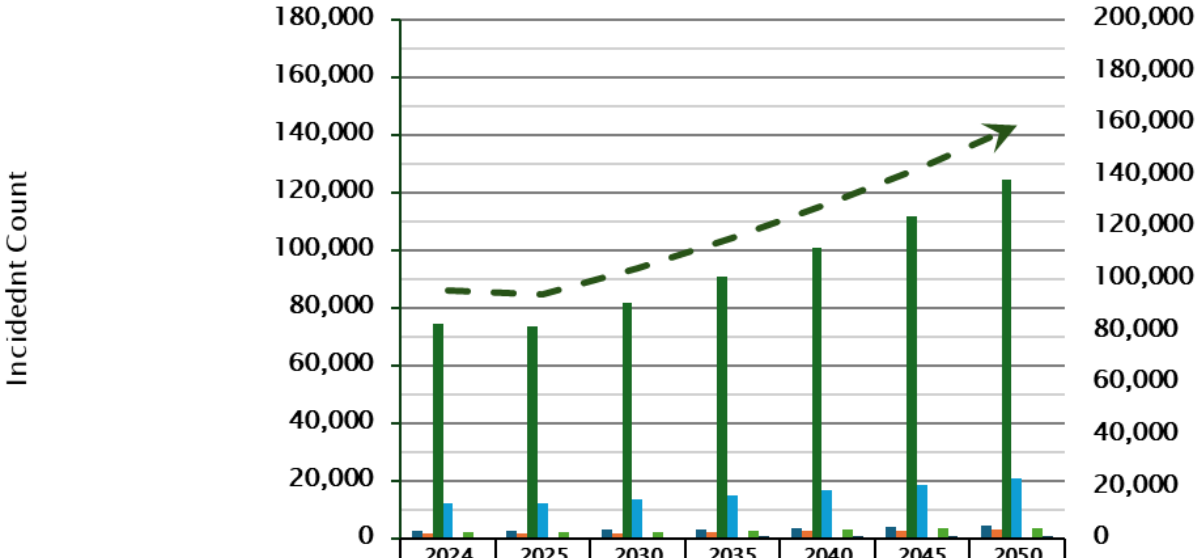
Service Demand Projection Analysis

Future population—and the activity of that population—are reliable predictors of future service demand. All EMS demand is people-driven, and NFPA notes that roughly 70% of fires stem from human behavior (acts of commission or omission). It is therefore reasonable to use population change, together with MCFR's historical call growth, to project future service demand.

MCFR incident data show service demand increased by approximately 31.7% from 2018 to 2022 (an average of about 7.1% per year). Using those trends and projected population growth, two projection models were prepared:

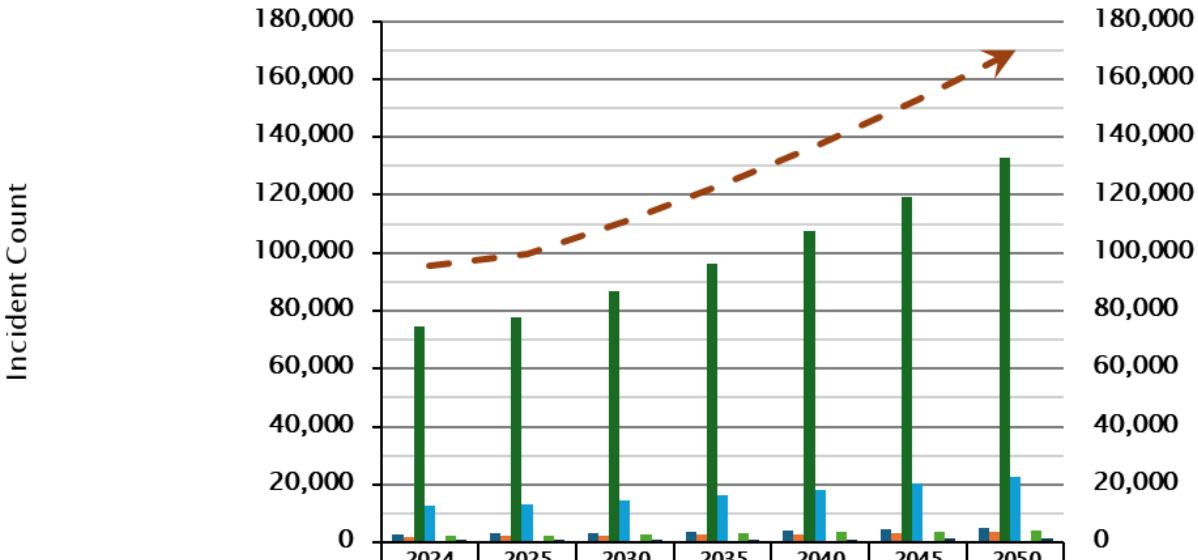
The potential service demand predictions are listed in the following figures.

Figure 95: MCFR Projected Service Demand by Population



	2024	2025	2030	2035	2040	2045	2050
Fire (100)	2,922	2,876	3,195	3,549	3,942	4,378	4,863
Hazardous Condition (200, 400)	1,982	1,951	2,167	2,407	2,674	2,970	3,299
EMS (300 except 322–324)	74,683	73,516	81,657	90,700	100,745	111,902	124,294
MVC (322–324)	12,618	12,421	13,796	15,324	17,021	18,906	21,000
Canceled, Good Intent (600)	248	244	271	301	335	372	413
Alarm (700)	2,393	2,356	2,616	2,906	3,228	3,586	3,983
Service/Other (500, 800, 900)	734	723	803	891	990	1,100	1,222
Total	95,580	94,086	104,505	116,079	128,934	143,213	159,073

Figure 96: MCFR Projected Service Demand by Historical Change



	2024	2025	2030	2035	2040	2045	2050
Fire (100)	2,922	3,049	3,393	3,775	4,200	4,673	5,199
Hazardous Condition (200, 400)	1,982	2,068	2,301	2,560	2,849	3,170	3,526
EMS (300 except 322–324)	74,683	77,939	86,715	96,479	107,343	119,429	132,877
MVC (322–324)	12,618	13,168	14,651	16,301	18,136	20,178	22,450
Canceled, Good Intent (600)	248	259	288	320	356	397	441
Alarm (700)	2,393	2,497	2,779	3,091	3,439	3,827	4,258
Service/Other (500, 800, 900)	734	766	852	948	1,055	1,174	1,306
Total	95,580	99,748	110,979	123,475	137,378	152,847	170,057

There is expected disparity between the two projections: historical experience in MCFR shows call growth outpacing population growth alone, which is consistent with national trends as fire departments operate under an "all-risks, all-hazards" mission profile. Both models indicate substantial growth, with a plausible 2050 range of approximately 159,000 to 170,000 total incidents, up 66%–78% from 2024.

Based on these comparisons, a reasonable planning envelope is approximately 160k–170k incidents by 2050, growing at roughly 2.0%–2.25% per year (or about 11% per five years), with EMS consistently comprising around 78% of workload. This level of increase will require corresponding adjustments in staffing, unit hours, and station/apparatus deployment to maintain performance targets.

Impact of Aging Population on Service Demand

It is very likely that the existing population will continue to age in place. The increasing number of elderly populations will increase the demand for emergency medical services as the elderly population is a disproportionately greater user of these services. National medical industry studies suggest that patients over 65 years of age are three times more likely to access local emergency services than other age groups.

The service demand by aging population base is included in the following figure.

Figure 97: Marion County Service Demand for Aging Population 2023[30]

Age	Male	Female	Total
Under 5 years	9991	8976	4.6%
5 to 9 years	12173	9715	5.3%
10 to 14 years	10400	11421	5.3%
15 to 19 years	11414	9674	5.1%
20 to 24 years	9706	8227	4.4%
25 to 29 years	10201	11621	5.3%
30 to 34 years	11183	11213	5.5%
35 to 39 years	13296	12270	6.2%
40 to 44 years	10684	10525	5.2%
45 to 49 years	8313	11001	4.7%
50 to 54 years	11625	12731	5.9%
55 to 59 years	10919	13547	6.0%
60 to 64 years	14633	16139	7.5%
65 to 69 years	15146	17410	7.9%
70 to 74 years	13364	16781	7.4%
75 to 79 years	13112	12837	6.3%
80 to 84 years	7076	9891	4.1%
85 years and over	5676	7068	3.1%

Marion County's aging population is expected to significantly increase demand for fire rescue and emergency medical services over the next two decades. As of 2021, residents aged 65 and older made up nearly 28.8% of the county's population, with projections estimating that the 65–84 age group will grow by approximately 24,000 individuals by 2035 and over 44,000 by 2045. This growth is driven by the aging of existing residents and ongoing migration of retirees to Florida. As this demographic is more likely to require frequent EMS responses, advanced life support, and chronic care interventions, Marion County Fire Rescue must plan strategically to expand EMS capacity, enhance community-based programs, and ensure adequate resource deployment in areas with high concentrations of older adults.

[30] *https://data.census.gov/table/ACSST1Y2023.S0101?q=Marion+County+Florida*

The growth projection of an aging population over the next twenty years is illustrated in the following figure.

Figure 98: Projection of Aging Population 2025[31]

Age	2025	2040	2050
65 to 84 years of age	149,490	156,700	175,000*

It is reasonable to assume that demand for emergency medical services in this age group will increase in proportion to the increase in size of the demographic. Since the service demand data for EMS calls is not stratified as to age, it is difficult to predict the exact impact on the number of calls for service. It is impossible to predict if people will stay in town as they age or move elsewhere. Conversely, it may be that the individuals moving into the county may be disproportionately in the "over 65" demographics. What can be derived is an increased aging population will most likely require emergency services greater than what is currently experienced today.

[31] *University of Florida, Bureau of Economic and Business Research (BEBR). Florida Population Projections by Age, Sex, Race, and Hispanic Origin, 2025–2050. Florida Population Studies, Bulletin 192, January 2023. Retrieved from https://www.bebr.ufl.edu*

OVERVIEW OF COMMUNITY RISK ASSESSMENT

COMMUNITY RISK ASSESSMENT

This Community Risk Assessment identifies the people, places, and hazards that shape emergency demand in Marion County and links those findings to how MCFR deploys resources. The analysis draws on MCFR incident records, county demographic and land use data, historical loss information, and nationally recognized guidance from CPSE/CFAI and NFPA. The CRA is designed to integrate directly with the Standards of Cover (SOC), the Capital Improvement Program, and MCFR's strategic planning so that risk findings translate into measurable deployment and investment decisions.

Every community faces distinct risks that pose potential threats to life, property, and infrastructure. In Marion County, these risks are identified and evaluated based on their potential impact to both the community and MCFR's operational readiness. This section outlines the community-wide risks specific to MCFR's service area, drawing from factors such as local population and demographics, land use patterns, development trends, and the region's geographic and natural hazard profile.

The ability to mitigate these risks directly influences the personnel, equipment, and apparatus required to support effective response, recovery, and long-term community resilience. While it is not feasible to account for every hazard associated with individual occupancies, this assessment focuses on those risks that are broadly applicable across the jurisdiction and most critical to fire rescue planning and resource allocation.

Community Risk Assessment is defined by 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* as:

> *A systematic approach that identifies, assesses, categorizes, and classifies the probabilities and consequences of a community's fire and non-fire hazards and threats, taking into account all pertinent facts that increase or decrease risks in each first-due response zone.*

This section provides a basic "all-risks, all-hazards" perspective of community risks in the service area. It is intended to assist fire department officials to (1) identify hazards and risks within the community, and (2) prioritize hazards and risks based on impact to determine the appropriate resources necessary to reduce risk and attain positive desired outcomes. This analysis is intended to provide insight into *what* needs exist, *where* those needs exist, and *how* those needs are expected to change in the future. Physical, economic, and demographic data were utilized to assess the fire/EMS-related hazards and risks that threaten the community, to include:

- Current hazard classification, planning, and mitigation measures from various sources.
- Specific information provided by Marion County about target hazards and land use; and
- Planning zones established by Marion County and MCFR.

Risk Assessment Methodology

Using FEMA's prescribed methodology to assess a community's risk, standardized language becomes used for all emergency services. This standard language allows for seamless collaboration locally, regionally, and nationally. The National Preparedness System has six components. These components are tied together to guide community-wide preparedness actions to achieve the goal of a prepared community and work to fulfill the National Preparedness Goal. The community risk assessment section focuses on six components, identifying and assessing risk.

Risk can be defined as the potential for negative impacts due to threats and hazards, including natural, technological, and human-caused occurrences. Through the risk assessment process, organizations identify common risks that may challenge their capabilities and risks in which the organization is not as capable as it wishes.

Figure 99: Components of Preparedness

These identified hazards that may challenge or exceed the organization's capabilities highlight capability gaps and barriers to a department's capability to prevent, protect against, mitigate, respond to, and recover from a threat or hazard.

Evaluating the risks that may occur helps the fire department to determine what level of preparedness they should plan to build and sustain. Although only some fire departments can budget, staff, and purchase the equipment needed to be prepared for all potential risks, these evaluations help to prioritize planning and help give insight into where to get the most impact and value.

Characterizing Risk

Simply stated, a community risk assessment (CRA) is "the identification of potential and likely risks within a particular community and the process of prioritizing those risks." This concept is consistent with the FEMA concept of "whole community" and shared responsibility for emergency preparedness.[32] Thus, a CRA is a critical component of evaluating core capabilities as part of the phases of emergency management—prevent, prepare, respond, recover, and mitigate—as shown in Figure 78.

Figure 100: Phases of Emergency Management

- **Prevention** focuses on preventing human hazards, primarily from potential natural disasters or terrorist attacks, both physical and biological.
- **Preparation** is a continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action.
- **Response** is the coordination and management of resources in an all-hazards approach with measures taken for life, property, and environmental safety.
- **Recovery** is the group of activities to restore critical community functions and begin to manage stabilization efforts.
- **Mitigation** is the effort to reduce the loss of life and property by lessening the impact of disasters and emergencies.

Preparedness is the shared responsibility of our entire community, region, state, and nation. The whole community must contribute, beginning with individuals, communities, and emergency services. This collaboration works toward fulfilling the National Preparedness Goal. The National Preparedness Goal states what it means for the community to be prepared for all disasters and emergencies.

The Federal Emergency Management Agency (FEMA) states the National Preparedness Goal: "A secure and resilient nation with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risk." [33]

[32] *National Planning Frameworks, U.S. Department of Homeland Security, FEMA, 2018. Retrieved from: https://www.fema.gov/whole-community#.*

33 National Risk and Capability Assessment U.S. Department of Homeland Security, FEMA, 2018. Retrieved from: https://www.fema.gov/emergency-managers/risk-management/risk-capability-assessment#spr

Marion County's Community Risk Assessment (CRA)

Every community faces risks that are specific to its geography, population, infrastructure, and development patterns. In Marion County, these risks include natural hazards shaped by climate and terrain, population demographics including a large senior community, human-caused and technological threats, the presence and use of structures, and the extent of transportation and utility infrastructure.

Marion County Fire Rescue (MCFR) acknowledges that these hazards present varying degrees of risk to both life and property. The frequency and severity of these risks differ, and their potential impacts influence not only the safety of the community but also the operational readiness of the department. These risk factors directly inform planning, training, and resource deployment.

To address the complexity of these threats, MCFR has adopted an "all-hazards, all-risks" framework consistent with national emergency management practices, such as FEMA's Threat and Hazard Identification and Risk Assessment (THIRA) and Stakeholder Preparedness Review (SPR). This expanded approach considers both the likelihood of occurrence and the consequences of an event, applying these evaluations to both natural and human-caused hazards.

Community Overview

Marion County covers more than 1,600 square miles with a mix of rural, suburban, and urban development that includes the City of Ocala and several unincorporated communities. Major transportation corridors such as I-75, US-27, and SR-200 support regional commerce and influence incident patterns. Population growth is concentrated in the southwest and northeast portions of the county, which increases EMS demand and structure fire risk and places pressure on travel times, water supply needs, and ladder company coverage. Marion County is subject to a wide range of community-wide risks. The most common include:

- Hurricanes and Tropical Storms
- Flooding and High Water, particularly in low-lying and rural areas
- Tornadoes and High Winds from severe thunderstorms
- Extreme Heat and prolonged heat waves impacting vulnerable populations
- Wildland and Brush Fires, especially in the wildland-urban interface areas
- Hazardous Materials Incidents, particularly along major transportation corridors like I-75 and U.S. 441 and 301
- Transportation Accidents, including high-speed and rural road vehicle collisions

These hazards are assessed not only for their impact on the community but also for their operational consequences to MCFR, guiding mitigation efforts, emergency planning, and resource management.

History of Incident Hazards and Vulnerabilities

Recent years show EMS as the primary driver of service demand, followed by fire, rescue, and other incident types. Calls cluster near population centers and commercial corridors, with notable activity along SR-200 and within the greater Ocala area. Fire loss experience varies by occupancy type and construction features. EMS outcomes and fire containment performance correlate with alarm processing, turnout, and travel times, reinforcing the need to manage performance across all time segments and to position units where demand and risk are highest.

Since 1953, the number of federally declared disasters in Marion County (38) is almost equal to the Florida average (39.7).[34] The United States average is (120 to 125 per year). The cause for each of these declarations is shown in the next figure.

The Federally Declared disasters from 1978 until 2024 are listed in the following figure.

Figure 101: Federally-Declared Disasters, 1978 to 2024[35]

Type	Marion County	
	Number	Percentage
Hurricane	19	50%
Biological	2	5%
Severe Storm	4	10.5%
Fire	4	10.5%
Tropical Storm	5	13%
Freezing	3	7%
Tornado	1	2%
Total	**38**	**100.0%**

In addition to the federally declared disasters mentioned above, there have been about 8,085 other extreme weather events within 50 miles of the county from 1950 to 2010. The site lists the following categories of extreme weather events are defined as Blizzard, Cold, Dense Fog, Drought, Flood, Hail, Heat, Heavy Snow, High Surf (not likely in Florida), Hurricane, Ice Storm, Landslide, Strong Wind, Thunderstorm Winds, Tropical Storms, Wildfire, Winter Storms, Winter Weather, and other non-specified. Over 17.2% of these events were categorized primarily as Thunderstorm Winds (47.2%), Hail (26.8%), or Flood (5%).[36]

[34] *FEMA Disaster Declarations Summary - Open Government Dataset, U.S. Department of Homeland Security, last updated June 25, 2025. Retrieved from: https://www.fema.gov/openfema-data-page/disaster-declarations-summaries-v2*

[35] *FEMA Disaster Declarations Summary - Open Government Dataset, U.S. Department of Homeland Security, last updated June 25, 2025. Retrieved from: https://www.fema.gov/openfema-data-page/disaster-declarations-summaries-v2*

[36] *Natural Disasters and Extremes, USA.com. Retrieved from: http://www.usa.com/marion-county-fl-natural-disasters-extremes.htmusa.com*

Hazard Classification

A *hazard* is "a condition that presents the potential for harm or damage to people, property, or the environment." the MCFR project team performed the Community Risk Assessment to determine community characteristics, vulnerabilities, special hazards, and risks. The information used in this assessment was gathered through:

- The Marion County Local Mitigation Strategy (LMS).
- The Marion County Comprehensive Emergency Management Plan (CEMP).
- The FEMA National Risk Index.
- Other relevant federal, state, and local data sources.

The risk categories presented in this section are hazards the jurisdiction may be vulnerable to. These risks can significantly impact the local economy, residents of the jurisdiction, or the jurisdiction's service delivery capabilities. Therefore, hazards were assessed by the probability of occurrence and vulnerability and the likely impact on the community. Risk management should also consider a community's fiscal and political environment, as policymakers must determine service priorities and funding levels to support these services.

MCFR may be vulnerable to a variety of hazards, which are grouped into one of three categories:

- **Natural hazards:** events resulting from natural processes (e.g., hurricanes, wildfires, flooding)
- **Technological hazards:** Risks associated with system failures, accidents, or infrastructure breakdowns (e.g./ utility failures, hazardous materials incidents).
- **Human-caused hazards:** incidents stemming from human actions, whether accidental or intentional (e.g., acts of violence, arson, terrorism).

Figure 102: Hazards by Category

Natural	Technological	Human-caused
Hurricanes and Tropical Storms	Hazardous Materials	Arson
Flooding	Utility Disruptions	Active Shooter or Violent Acts
Wildfires	Transportation Accidents	Cyberattacks
Severe Thunderstorms and Lightning	Information Systems Failure	Civil Disturbances

Natural Hazards

Natural hazards can be classified into three primary areas. Natural hazards are typically challenging to prevent.

- **Meteorological** -Flooding, Tropical Storms and Hurricanes, Severe Thunderstorms (Wind, Rain, Lightning, Hail), Tornado, and Extreme Heat and Drought.

- **Geological** -Sinkhole (common in Florida's karst topography, Landslides (though rare, possible in certain slope areas), and Earthquakes (infrequent but not impossible).
- **Biological** - Pandemic Disease (COVID-19, influenza outbreaks), Vector-Borne Illnesses (e.g., West Nile Virus, Zika), Foodborne Illness Outbreaks, Invasive Species or Agricultural Pests (impacting local food systems).

Historically, federal disaster declarations in Marion County have primarily stemmed from meteorological hazards such as hurricanes, flooding, and severe storms.

Based on the MCFR project team's Community Risk Assessment model, the following table presents the relative risk levels of natural hazards affecting Marion County.

Figure 103: Relative Risk Analysis Model- Natural Hazards

Event	Probability	Community Impact			Mitigation Capacity			Risk
	Likelihood this will occur	HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT	PREPAREDNESS	INTERNAL RESPONSE	EXTERNAL RESPONSE	*Relative Threat*
Tornado	2	2	2	2	1	1	1	25%
Severe Thunderstorm	3	1	2	1	1	1	1	29%
Hurricane	4	3	4	4	2	2	2	78%
Temperature Extremes	2	2	2	2	1	1	2	28%
Drought	2	2	2	2	1	1	2	28%
Flood, External	2	2	2	2	1	1	2	28%
Wildfire	4	3	3	2	2	2	2	78%
Epidemic	2	2	2	2	1	1	1	25%

Risk analysis using FEMA's National Risk Index indicates that meteorological hazards pose the greatest natural threat to MCFR operations. The top five natural risks for the region include wildfires, drought, severe storms, extreme temperatures, and flooding. While these events are largely unpreventable, their impact can be significantly reduced through proactive education, pre-incident planning, and enhanced response capabilities. Of these threats, wildfire remains one of the most frequent and operationally demanding hazards for MCFR, particularly in rural and wildland-urban interface (WUI) areas. Focused mitigation efforts and interagency coordination are essential to minimize risks and protect life and property across Marion County.

According to FEMA's National Risk Index, Marion County is assessed at a relatively high overall risk level for natural hazards when compared nationally. The FEMA NRI evaluates risk across 18 natural hazard types, factoring in expected annual losses, social vulnerability, and community resilience. This tool supports long-term hazard mitigation and planning efforts by identifying where focused preparedness and resilience investments can reduce future impacts on the community.

Wildfire

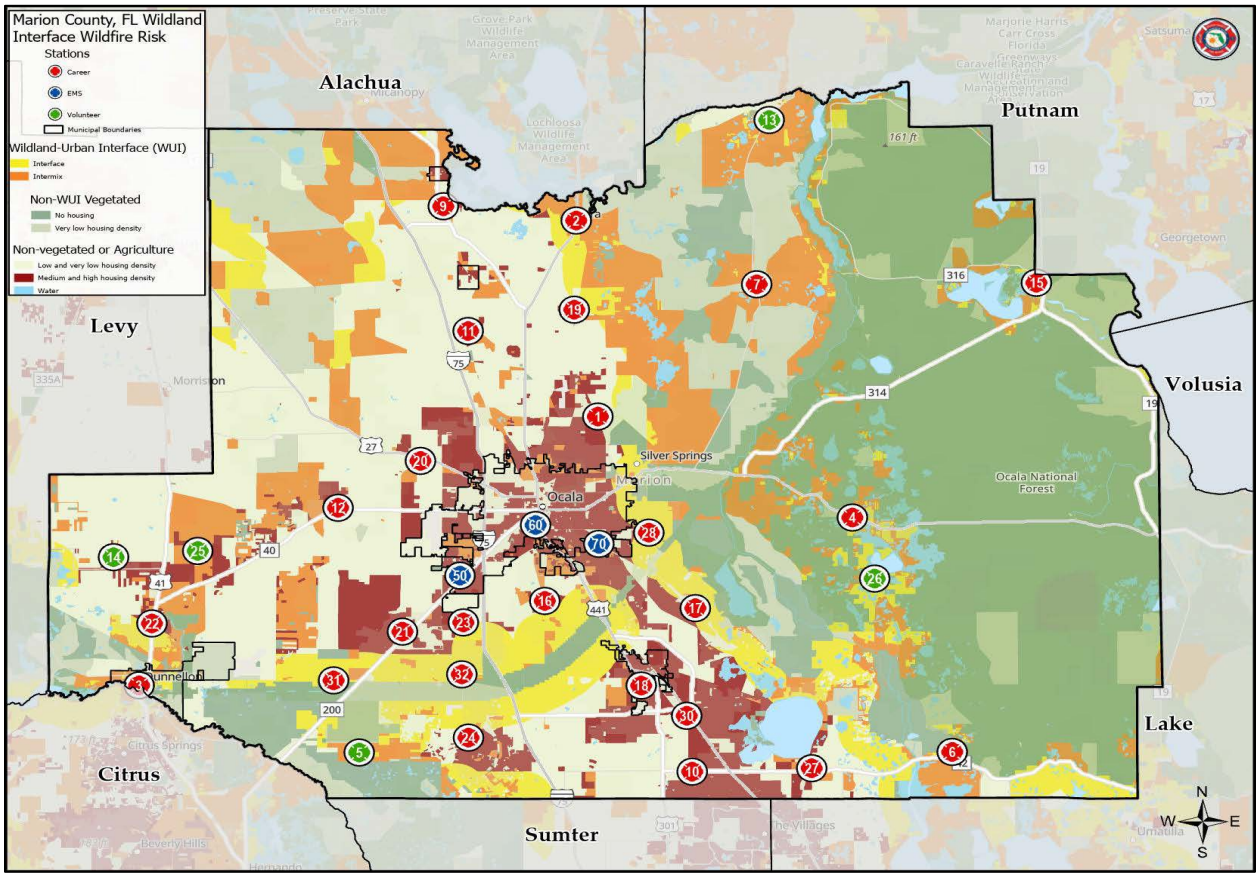
A growing concern for MCFR is the increasing frequency and intensity of urban interface fires, particularly in suburban developments adjacent to wildland areas. These incidents are becoming more severe due to high summer temperatures, prolonged drought conditions, and elevated wind events. While MCFR often coordinates wildfire response with state and federal partners, including the Florida Forest Service and mutual aid agencies, effective planning, public notification, evacuation protocols, and periodic testing are essential for maintaining readiness and community safety.

Wildfires can ignite anywhere natural vegetation serves as a fuel source, including grasslands, wooded areas, and transitional zones. According to regional hazard mitigation assessments, including the Withlacoochee Regional Wildfire Risk Assessment, the primary natural hazards impacting Marion County are drought, wildfires, flooding, and severe storms, each posing significant threats to life, property, and economic stability.

The greatest wildfire vulnerability lies within the wildland-urban interface (WUI)—areas where residential or commercial development borders wildland vegetation. These zones often include a mix of public and private lands, creating complex challenges for access, fuel management, and response coordination. As population growth continues in WUI-adjacent communities, MCFR must prioritize strategic planning, interagency cooperation, and public education to reduce ignition risks and improve wildfire resilience.

The following figure illustrates the wildland-urban interface (WUI) risk surrounding several of Marion County's most populated areas. MCFR is responsible for protecting numerous communities that border or include high-risk WUI zones, particularly in the southwestern, central, and northeastern parts of the county. Although the predominant fuel types in these regions are grasses, brush, and light vegetation, they are highly susceptible to seasonal curing, especially during periods of drought, low humidity, and high winds—all of which are common contributing factors to wildfire activity in Florida. These overlapping hazards significantly increase the potential for rapid fire spread and underscore the importance of proactive fuel mitigation, public education, and WUI-specific response planning.

Figure 104: Wildland Urban Interface Exposure Area in Marion County



Many actions can reduce wildfire risk by hardening structures, developing defensible spaces, planting fire-resistant vegetation, and other measures. These measures should be considered for creating a community wildfire protection plan to aid community-wide mitigation efforts. Other actions that help reduce wildfire risk are fire department risk assessments and county-wide building code and regulation adoption. In addition, programs exist to guide efforts to adapt to living with wildfire.

As the figure illustrates, MCFR has areas of significant exposure to wildfire around the population centers. Despite MCFR having a large area with the potential for extreme fire intensity, the low housing density in most areas minimizes MCFR's risk. MCFR should focus on wildfire planning in areas with the highest housing density. After completing wildfire planning in these areas, MCFR should move to prepare for the lower-density areas. Planning with MCFR's wildfire response partners will benefit when a more significant incident occurs.

Other Climate-Related Events

Other climate-related events may impact service demand and the ability of MCFR to perform adequately. While less frequent than hurricanes or flooding, events such as severe thunderstorms, extended drought conditions, and occasional cold weather incidents should be included in planning considerations.

Marion County is in north-central Florida and has a humid subtropical climate, characterized by hot, humid summers and mild, drier winters. The county receives an average of 52 inches of precipitation annually, with the majority occurring during the summer months from June through September due to frequent afternoon thunderstorms and tropical activity.

Winter temperatures (December to February) typically range from the low 40s to mid-60s Fahrenheit (5 to 18 degrees Celsius), while summer temperatures (June to August) often range from the low 70s to mid-90s Fahrenheit (21 to 35 degrees Celsius), with high humidity levels contributing to dangerous heat index values.

Although snowfall and ice storms are rare in Marion County, cold snaps and hard freezes can occur, occasionally impacting agriculture and increasing demand for EMS and fire services. Similarly, periods of drought elevate the risk of brush and wildland fires, prompting seasonal fire restrictions and heightened preparedness. As climate variability increases, MCFR should continue to incorporate flexibility into its operational planning to account for extreme weather events that could strain resources or disrupt service delivery.

Floods

Floods are the most prevalent hazard in the United States. A flood is defined as "two or more acres of dry land, or two or more properties, that are covered by water temporarily." In Marion County, Florida, three primary types of flooding may occur: river flooding, inland (or sheet) flooding, and flash flooding.

- A river flood occurs when water levels rise over the banks of rivers such as the Ocklawaha River, Silver River, or Withlacoochee River due to excessive rainfall or prolonged storm activity.
- Inland flooding, or sheet flooding, occurs when moderate rainfall accumulates across broad, flat areas over a period of days, often overwhelming drainage systems and retention ponds.
- Flash floods are sudden and intense, caused by excessive rainfall in a short period (generally less than six hours), and may lead to rapidly rising water levels in creeks, streets, or poorly drained areas.

Residents living in designated flood zones—identified by FEMA flood maps—should be informed of the risks and encouraged to take protective actions. As part of its long-range planning efforts, MCFR must consider current and future station locations in relation to flood-prone areas to ensure operational continuity. Public education campaigns should include information on flood zones, evacuation readiness, and flood insurance to promote community preparedness.

During a flood event, MCFR personnel may respond to water-related incidents requiring boat operations or technical rescue capabilities. Boats are strategically staged throughout the county, and select crews are trained in water rescue operations to respond effectively as conditions arise. In the aftermath of flooding, communities will often see an increase in EMS-related incidents, including injuries, infections, and medical conditions exacerbated by limited access to care or unsafe environments. The following figure provides a summary of flood zone risks throughout Marion County.

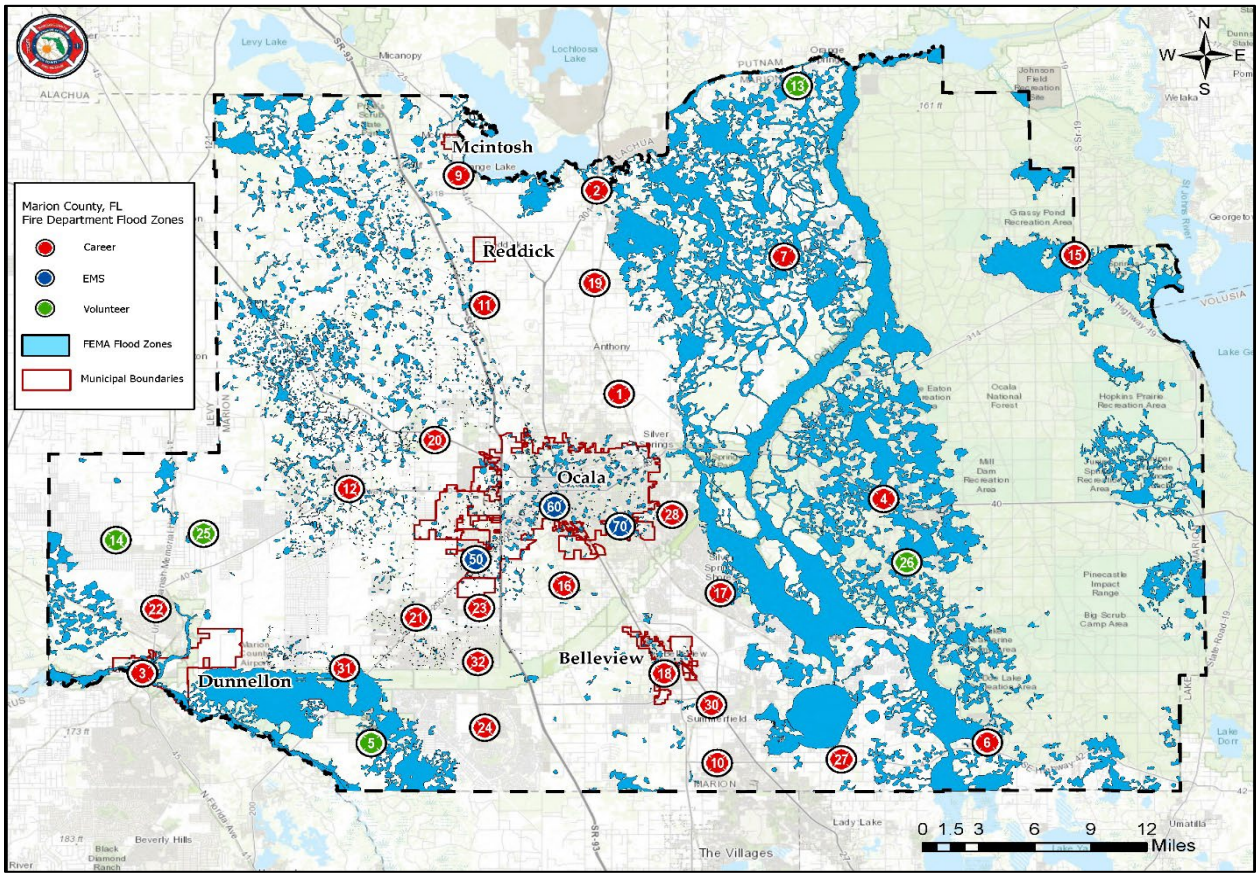
Figure 105: Summary of Flood Zone Risks

Zone	Risks
A Zone **AE Zone** **AO Zone**	• High Special Flood Hazard Area (SFHA) • Flood-prone building codes apply • Flood insurance is mandatory for most mortgage holders • A Zone: 100-year floodplain, with no Base Flood Elevations (BFEs) determined • AE Zone: 100-year floodplain, with Base determined • AO Zone: 100-year floodplain with sheet flow, BFEs determined
B, C, and X	Less than 1% chance of flooding each year
D	Possible but undetermined flood hazards
VE Zone, V1-V30	• High Special Flood Hazard Area (SFHA) • Flood-prone building codes apply • 100-year floodplain with wave action, no base flood elevation determined

Flooding hazards in Marion County, Florida, are most significant in low-lying areas, especially near the Ocklawaha River, Silver River, and Lake George. While flood risk is not limited to these locations, the greatest impact on life and property is typically associated with these waterways and surrounding floodplains. Other vulnerable areas include neighborhoods with poor drainage infrastructure and those near retention ponds or low-lying areas that may overflow during heavy rainfall. MCFR maintains boats staged strategically throughout the county, with appropriately trained personnel assigned to those stations to ensure a rapid response to water-related emergencies. While flooding remains a periodic concern, it is considered a lower overall risk when compared to other hazards within the county's all-hazards risk profile.

The following figure shows Marion County in relation to the 100-year floodplain.

Figure 76 106: FEMA 100-Year Floodplain in Marion County



Thunderstorms/Hail

The National Weather Service defines a severe thunderstorm as "a storm that has winds of at least 58 mph (50 knots), and/or hail at least 1-inch in diameter." Severe thunderstorms also can be capable of producing a tornado. Straight-line winds are often responsible for wind damage associated with a severe thunderstorm. Downbursts or microbursts are examples of damaging straight-line winds. Wind speeds in some of the stronger downbursts can reach 100 to 150 miles per hour.

Severe thunderstorms produce precipitation in the form of irregular pellets or balls of ice that combine and fall with rain. The size of hailstones is a direct correlation of the severity and size of the storm.

High-velocity updraft winds are required to keep hail in suspension in thunderclouds. Generally, the higher the strength of the updraft, the longer the suspension time and hailstone size. Due to the unpredictable nature of hailstorms, it is impossible to determine the exact area of their future occurrence. Thus, all of Marion County is equally subject to thunderstorms, with accompanying lightning and hail. Large-size hail would cause major impacts to the community, causing severe roof damage and serious risk of injuries.

Tornado/Severe Winds

A tornado is defined as a rapidly rotating vortex or funnel of air extending groundward from a cumulonimbus cloud. Most of the time, vortices remain suspended in the atmosphere. Produced from powerful thunderstorms, tornadoes can cause fatalities and devastate neighborhoods in seconds. A tornado appears as a rotating, funnel-shaped cloud that extends from a thunderstorm to the ground, with winds that can reach 300 miles per hour. According to historical data, Marion County, Florida, has experienced 33 documented tornado events with a magnitude of F2 or greater since 1950. These tornadoes have resulted in 2 fatalities, 75 injuries, and millions of dollars in property damage. Marion County's inland location and proximity to common storm tracks in Central Florida make it vulnerable to tornadoes spawned by severe thunderstorms or tropical systems.

Tornado risk in Marion County is considered moderate, and preparedness efforts remain essential to reduce the impact of these fast-developing hazards.[37]

Figure 107: Tornado Intensity, Enhanced Fujita Scale[38]

Designation	Wind Speed, mph	Typical Damage
EF-0	65–85	Minor or no damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over. Confirmed tornadoes with no reported damage (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 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).

[37] *Natural Disasters and Weather Extremes and Historic Tornado Events, Marion County FL. Retrieved from: http://www.usa.com/marion-county-fl-natural-disasters-extremes.htm*

[38] *The Enhanced Fujita Scale, complied from multiple sources, Wikipedia. https://en.wikipedia.org/wiki/Enhanced_Fujita_scale.*

Severe Winter Storms

Severe winter weather can be a variety of precipitation that forms at low temperatures such as heavy snowfall, sleet, or ice. Many winter storms give rise to exceptionally heavy rain and widespread flooding. Conditions worsen if the precipitation is frozen. The biggest concern to the planning area is maintaining power to structures, as winter weather may cause disruptions. The other concern is the citizen's inexperience in preparing for, and driving in, severe winter weather events. There is always the risk of low temperature and wind chill from an EMS standpoint in terms of reduced body temperature and frostbite.

Technological Hazards

Many of the technological hazard risks can be classified as critical infrastructure. For MCFR, there are several infrastructure systems evaluated. Typical types of technological hazards are listed below.

- Airplane Crash
- Communications failure or cyber-Incident
- Dam/Levee Failure
- Fire or Explosion
- Hazmat/CBRNE Release
- Industrial/Mine Incident
- Infrastructure failure
- Medical Emergency
- Pipeline Emergency
- Power Failure
- Structure Collapse
- Technical Rescue
- Train Derailment
- Urban Conflagration

Communications/Infrastructure Failure

Infrastructure refers to the essential systems and services required to support a functioning community. In Marion County, this includes a wide range of assets such as roadways, water and wastewater treatment facilities, utility infrastructure, power distribution systems, bridges, schools, an airport, and rail lines. In addition, telecommunications infrastructure—including cellular networks, fiber optics, radio systems, and data centers—is integral to the reliable operation of emergency services and daily civic functions.

One of the most significant vulnerabilities within modern infrastructure is the potential for communications failure. This may involve the disruption or complete loss of systems such as radio networks, telecommunications, broadband internet, or emergency alert platforms. Failures may result from hardware malfunction, software issues, cyberattacks, human error, or cascading impacts from other hazards (e.g., hurricanes or utility outages).

Nearly every function of contemporary emergency response is dependent on resilient digital infrastructure. A communications failure can lead to delays in 9-1-1 call processing, disruption of MCFR's emergency dispatch and response operations, and breakdowns in interagency coordination. Furthermore, it can impair public warning systems and hinder the delivery of critical services across the county. Recognizing these interdependencies, MCFR's emergency preparedness efforts must include infrastructure resilience planning, redundant communications capabilities, and coordination with county and regional partners to mitigate operational impacts during infrastructure-related emergencies.

Cyber Infrastructure Incidents

Cyber infrastructure includes electronic information and communications systems, and the information contained in those systems. Computer systems, control systems such as Supervisory Control and Data Acquisition (SCADA) systems, and networks such as the Internet are all part of cyberinfrastructure.[39] , Effectively securing the Nation's critical infrastructure requires investments in network resiliency as well as cyber infrastructure protection because of the pervasiveness of information technology (IT) and cyber networks systems in nearly every aspect of society. As all levels of government now rely on cyber networks and assets to provide national security, public safety, and economic prosperity, their operations depend on information systems that are maintained, protected, and secured from exploitation and attack.

Fire or Explosion

Fire is "a rapid oxidation process, which is a reaction resulting in the evolution of light and heat in varying intensities." An explosion is "the sudden conversion of potential energy (chemical or mechanical) into kinetic energy with the production and release of gases under pressure, or the release of gas under pressure. These high-pressure gases then do mechanical work such as moving, changing, or shattering nearby materials".

In Marion County, fires most commonly occur in residential structures, typically resulting from careless cooking, unattended appliances, or improper disposal of smoking materials. These incidents represent the highest frequency of fire responses within the county.

Conversely, the occurrence of fires or explosions in large commercial, industrial, or other high-risk occupancies remains relatively low. This is largely due to fire-resistive construction, properly maintained fire protection systems, and compliance with local codes and inspection programs. However, while infrequent, incidents in these occupancies can present significant operational challenges and potential for severe consequences, particularly if hazardous materials or complex occupancies are involved. These events may require specialized extinguishment techniques or the deployment of mutual aid resources from neighboring jurisdictions.

An urban conflagration, defined as a fire involving multiple adjacent buildings or structures, is considered unlikely in Marion County due to the suburban and rural development patterns. However, should such an event occur—particularly in dense commercial zones or older communities with minimal fire separation—the potential impact to property, infrastructure, and continuity of operations could be substantial.

[39] *National Infrastructure Protection Plan (NIPP), 2016*

Hazardous Materials Release

Hazardous materials mean a substance or material that the Secretary of Transportation has determined can pose an unreasonable risk to health, safety, and property when transported in commerce, and has designated as hazardous under section 5103 of Federal hazardous materials transportation law (49 U.S.C. 5103). The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table[40], and materials that meet the defining criteria for hazard classes and divisions in part 173 of that subchapter.

The release of hazardous materials can occur throughout Marion County, either during transport or while in production, use, packaging, or storage in a fixed facility. Thus, an incident involving hazardous materials could occur at any fixed site, including industrial, commercial, public, or residential locations.

A release could also occur along any transportation route. In Marion County, the greatest potential for release lies in over-the-road transportation and would be along the primary transportation corridors. These corridors are Highways 27, 301, 441 and Interstate I75. The greatest potential for a release during rail transportation would be along the route of the CSX or Florida Northern Railroad (FNOR) line that runs North and South. A release of hazardous material could also occur along the route of any of the gas transmission, distribution, or service lines that lie underground throughout Marion County.

Medical Emergency

A medical emergency usually involves an emergency medical services (EMS) response, i.e., pre-hospital medical care, typically delivered on-site by trained specialists, with transport by ground ambulance. Common responses include sick calls, vehicular incidents, difficulty breathing, injuries due to trauma, and heart attacks. The number of patients is usually small, and symptoms are within the capabilities of first arriving units. Some calls require only first aid; others require basic life support (BLS) or advanced life support (ALS). Overall, EMS responses accounted for over 80.4% of all MCFR calls for service during the 2020-2024 period.

Mass casualty trauma calls involve multiple patients and require additional units. Mass casualty responses are most often associated with commercial bus, aircraft, or passenger train crashes; release of hazardous materials in a congested area (including a deliberate chemical attack); or evacuations of schools, office buildings, shopping centers, hospitals, or other health care facilities. A mass casualty incident would cause minor to major impacts on the community; even though that type of incident is rare. On the other hand, medical emergencies are highly likely to occur, with a limited to minor impact on the community.

[40] *49 CFR 172.101*

Power Outage

A power outage is defined as any interruption or loss of electrical service caused by disruption of power transmission, which may be the result of an accident, sabotage, natural hazards, or equipment failure. A significant power failure is defined as any incident of a long duration, which would require Marion County to provide food, water, heating, cooling, or shelter.

Power outages in Marion County are usually localized and the result of a natural hazard involving high winds and thunderstorms. As days get warmer in summer months, temperatures rise, and demand for energy on the grid will increase, therefore increasing the vulnerability of the power providers in Marion County. An extended power outage could become a cascading event that may cause impacts from extreme heat.

Structural Collapse/Technical Rescue

Structural collapse hazards are predominantly a problem in mature communities where several large structures predating modern building codes (built before 1970) are still in use by the public, or conversely, abandoned buildings or buildings under construction that have not been secured. A structural collapse usually occurs when a building or structure collapses due to engineering or construction problems, metal fatigue, changes to the load-bearing capacity of the structure, human operating error or intentional act, or other causes such as severe weather. Other types of technical rescue include the specialized rescue of victims from vehicles, elevators, rising water, confined spaces, elevated spaces (high-angle), or similar environments.

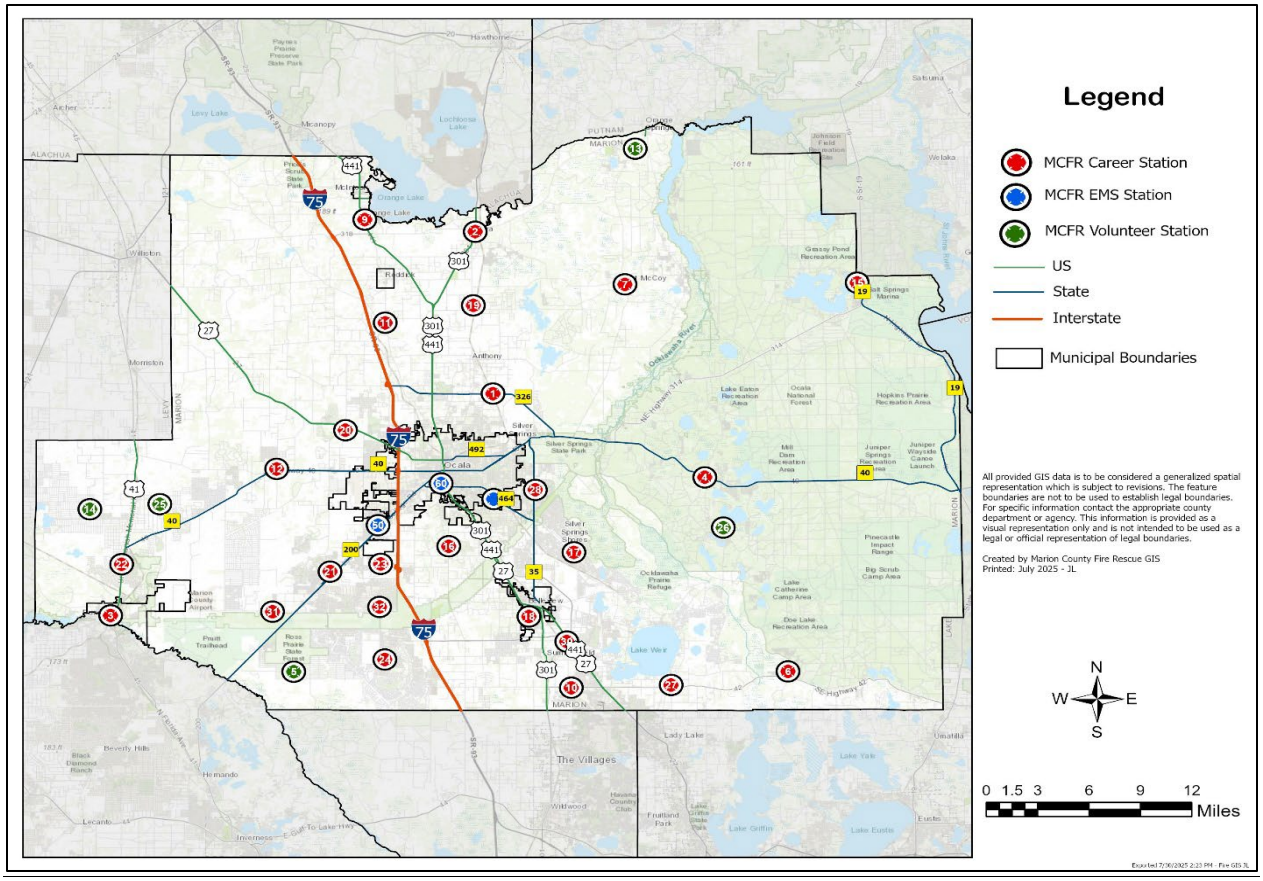
Transportation Corridors

Marion County is traversed by several major transportation corridors that shape both growth and risk throughout the region. Interstate 75, U.S. Highways 27, 301, and 441, along with State Roads 40, 200, and 326, form the backbone of regional mobility and commerce. These corridors connect Marion County to the rest of Florida and serve as essential arteries for freight, tourism, and daily commuter traffic. While they provide economic and logistical benefits, they also create unique emergency response challenges, including high call volume from vehicle accidents, hazardous materials incidents, and limited access points in rural stretches of roadway. For MCFR, maintaining strategic coverage along these corridors is vital to ensuring rapid response to emergencies that have both local and regional consequences.

High-speed travel along I-75 and other major arterials introduces significant risk for large-scale motor vehicle accidents, mass casualty incidents, and hazardous materials releases. Tractor-trailer collisions, rollovers, and multi-vehicle pileups are more likely to occur at interstate speeds and often require complex extrication, advanced medical care, and coordination with law enforcement and towing services. Extended travel distances between exits can delay unit access, while congestion during peak travel or tourist seasons compounds response challenges. For MCFR, the hazards associated with high-speed corridors demand specialized training in technical rescue, mass casualty management, and hazardous materials response, as well as robust mutual aid agreements to ensure sufficient resources are available during large-scale incidents.

The following figure shows the locations of major roadways in Marion County.

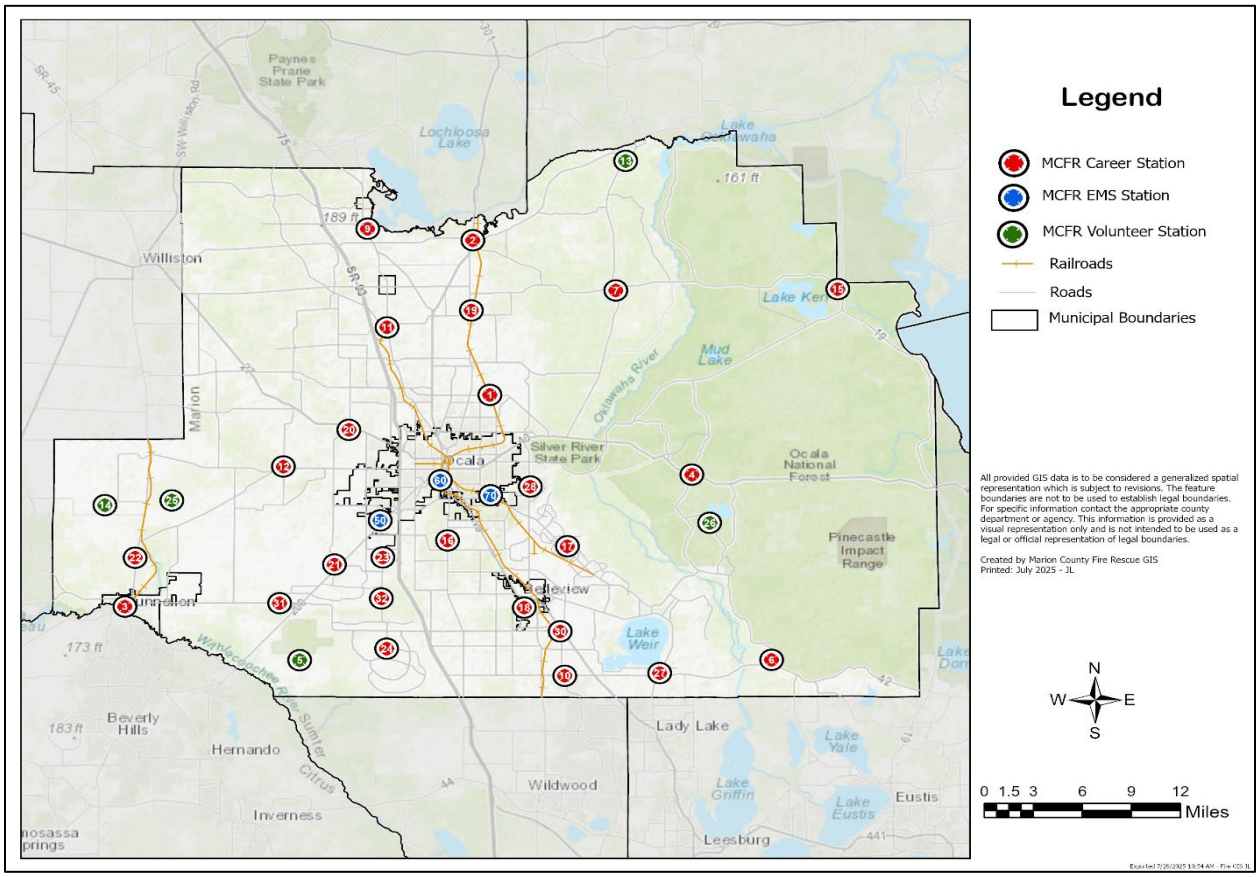
Figure 108: Major Roadways in Marion County



Railroads add another layer of transportation-related risk in Marion County. The CSX Wildwood Subdivision (S-Line) is a major freight corridor running north–south through the county, supplemented by Florida Northern Railroad lines serving industrial and agricultural customers. These systems transport petroleum, fertilizers, chemicals, and other hazardous commodities that, in the event of a derailment or release, could have catastrophic impacts on surrounding communities, waterways, and infrastructure. Rail lines often pass near populated areas, schools, and commercial centers, amplifying the potential consequences of an incident. Additionally, blocked crossings may delay emergency response access, particularly in rural areas with limited alternative routes. For MCFR, these risks highlight the importance of pre-incident planning with rail operators, investment in hazmat response capability, and integration of railroad hazards into countywide emergency management strategies.

The following figure shows the locations of major railways in Marion County.

Figure 109: Major Railways in Marion County



Fixed Facility Target Hazards

A **target hazard** is any location at which there is a great likelihood of loss of life or property. These locations may require greater numbers of emergency response resources during an emergency. MCFR has identified several buildings to list as target hazards, e.g., places of public assembly, schools and childcare centers, medical and congregate-care facilities, residential care facilities, multi-family dwellings, and high-rise office buildings, and those that, if damaged or destroyed, would have a significant impact on the community. Responses to target hazards are expected to require a significant number of resources during an incident.

Assessing the risk of fixed facilities is vital because emergencies can occur anytime and without warning. Therefore, preplanned emergency responses are crucial to ensure the safety and well-being of patients, the workforce, and visitors. In addition, preplanning emergency responses in various settings is essential to ensure that emergency responders can respond quickly, effectively, and safely to any emergency. Locations such as hospitals, schools, churches, and other public places should have a well-planned response plan, rehearsed regularly, and updated to ensure its effectiveness. Such measures can save lives, minimize injuries, and protect the safety of all involved in emergencies.

Hospitals/Care Facilities

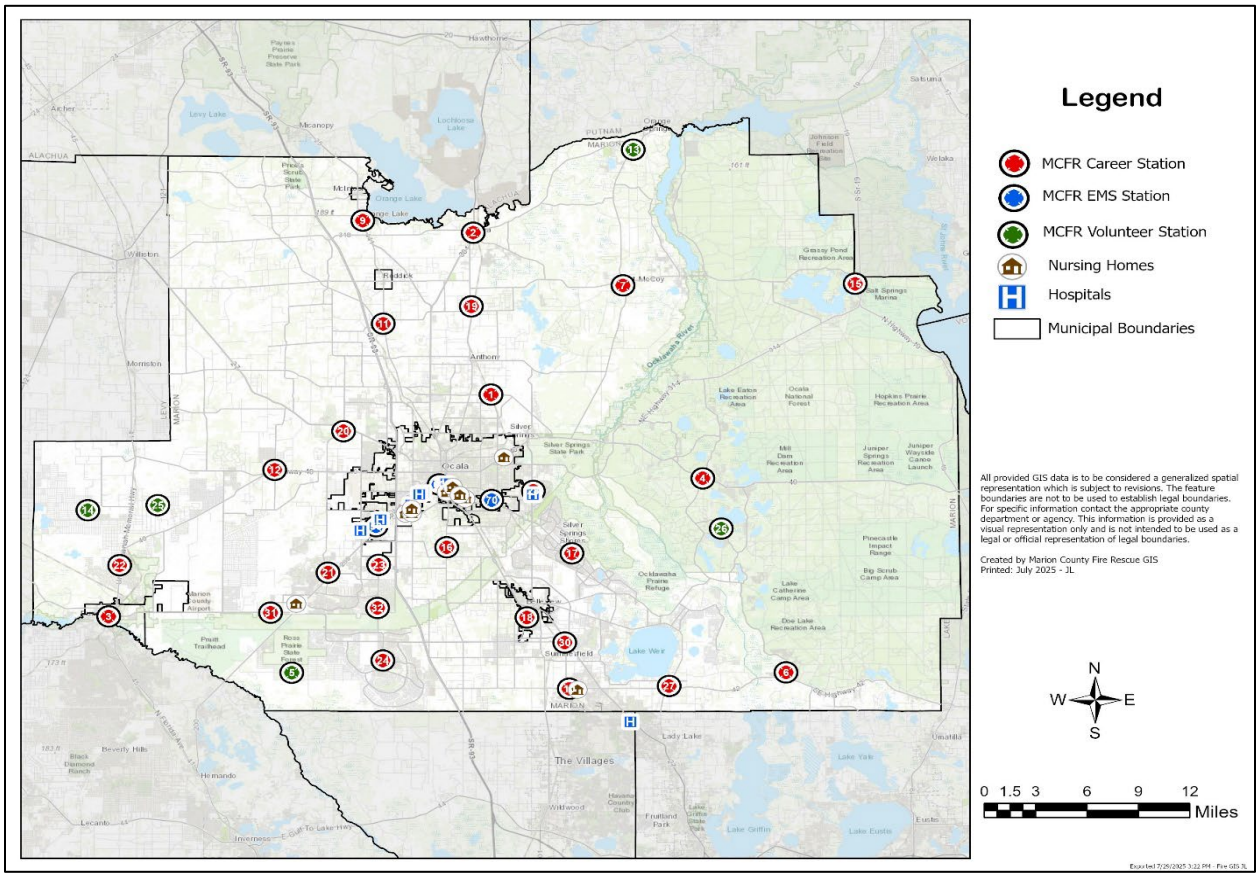
Responding to fires or emergencies at hospitals can be particularly challenging for fire departments due to hospital buildings' unique features and functions and potential risks to patients and staff. Some of the challenges that fire departments may face when responding to hospitals include the following:

- Complex building layouts: Hospitals are often large, complex buildings with multiple floors, wings, and specialized areas. This can make it difficult for firefighters to locate the source of the emergency and access it quickly.
- Life support equipment: Hospitals often have many patients dependent on equipment such as ventilators, oxygen tanks, and dialysis machines. These devices can be challenging to move, and their failure could put patients at risk.
- Patients with mobility issues: Many hospital patients have mobility issues, making evacuating quickly in a fire or emergency difficult.
- Containment of infectious diseases: Hospitals may have patients infected with contagious diseases, which can pose a risk to firefighters and other responders.
- Limited access: Hospitals often have limited access points, making it difficult for fire department vehicles and equipment to reach the building quickly and easily.

To overcome these challenges, fire departments typically work closely with hospital staff to develop emergency response plans that consider the unique features of the building and the needs of patients and staff. This should involve conducting regular training and fire drills, ensuring that all safety equipment is well-maintained, and establishing clear emergency plans between the hospital and the fire department.

The following figure shows the locations of hospitals and care facilities in Marion County.

Figure 110: Hospital/Care Facilities in Marion County



Churches

Effective emergency response planning for churches should involve a comprehensive risk assessment to identify potential hazards, developing emergency response procedures and protocols, training staff and part-time employees on those procedures, establishing communication channels to alert and inform those on the premises during an emergency, and practicing emergency response scenarios regularly to ensure preparedness. By prioritizing emergency response planning, churches can better protect their congregants and minimize the potential impact of emergencies on their communities.

Responding to church emergencies often presents unique challenges for fire departments due to the nature of church buildings and the potential risks to congregants and staff. Some of the challenges that fire departments may face when responding to churches include the following:

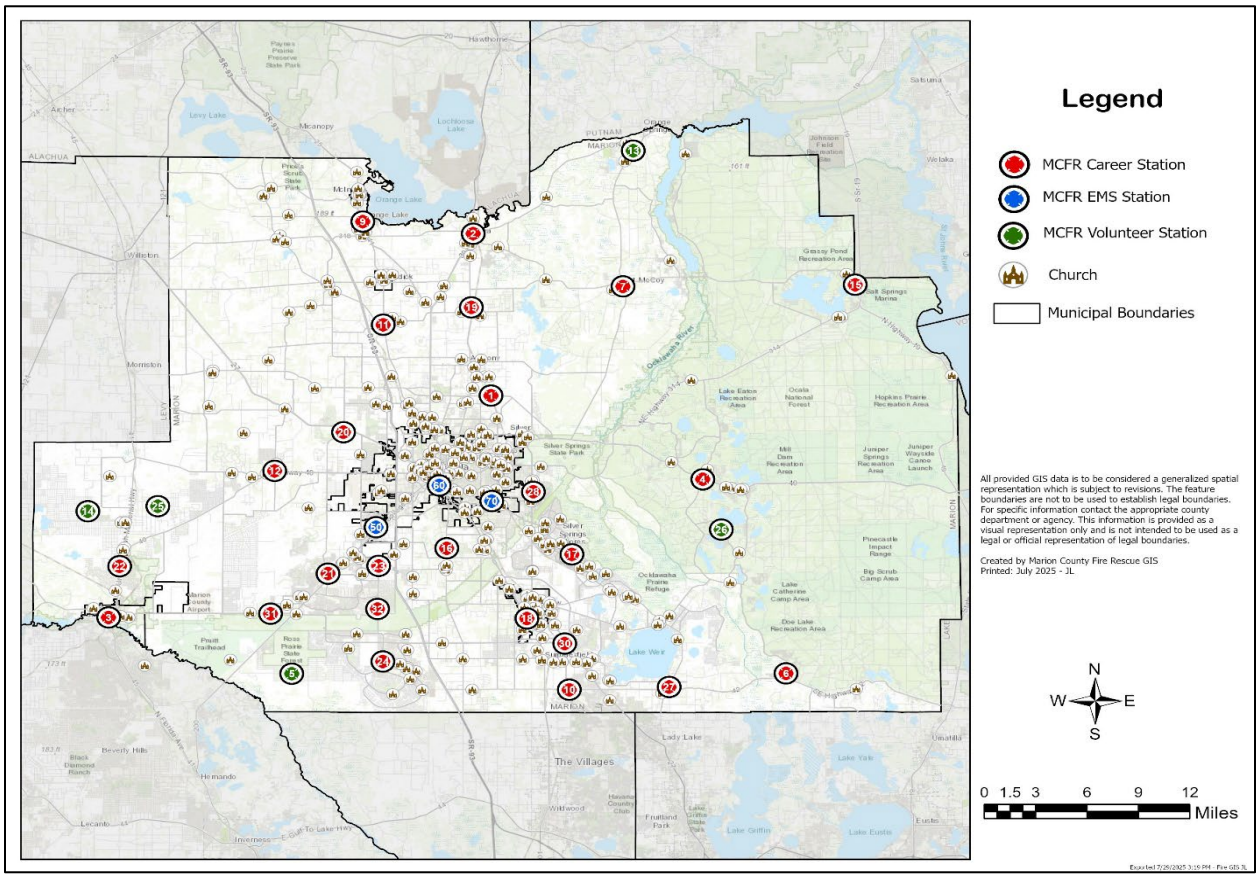
- Unique building designs: Churches often have unique architectural features and designs, making it difficult for firefighters to navigate the building and locate the source of an emergency.
- Limited access: Churches may have restricted access points or narrow staircases, making it difficult for fire department vehicles and personnel to reach areas of the building quickly and easily.
- Large crowds: Churches may have large congregations or visitors attending services, making evacuations more complex and requiring additional resources.

- Limited fire protection systems: Many older churches may not have modern fire protection systems installed, such as fire sprinklers or smoke alarms, which can increase the fire risk and make it more difficult to contain.
- Historical and cultural significance: Some churches may have significant historical or cultural value, which can complicate fire response efforts due to the need to balance preservation with emergency response.

To address these challenges, fire departments may work closely with church staff to develop emergency response plans that consider the unique features of the building and the needs of congregants and staff. This may involve conducting regular fire inspections, ensuring all fire safety equipment is up-to-date and well-maintained, and establishing a clear communication plan between the church and the fire department.

The following figure shows the locations of churches in Marion County.

Figure 111: Church Location in Marion County



Schools

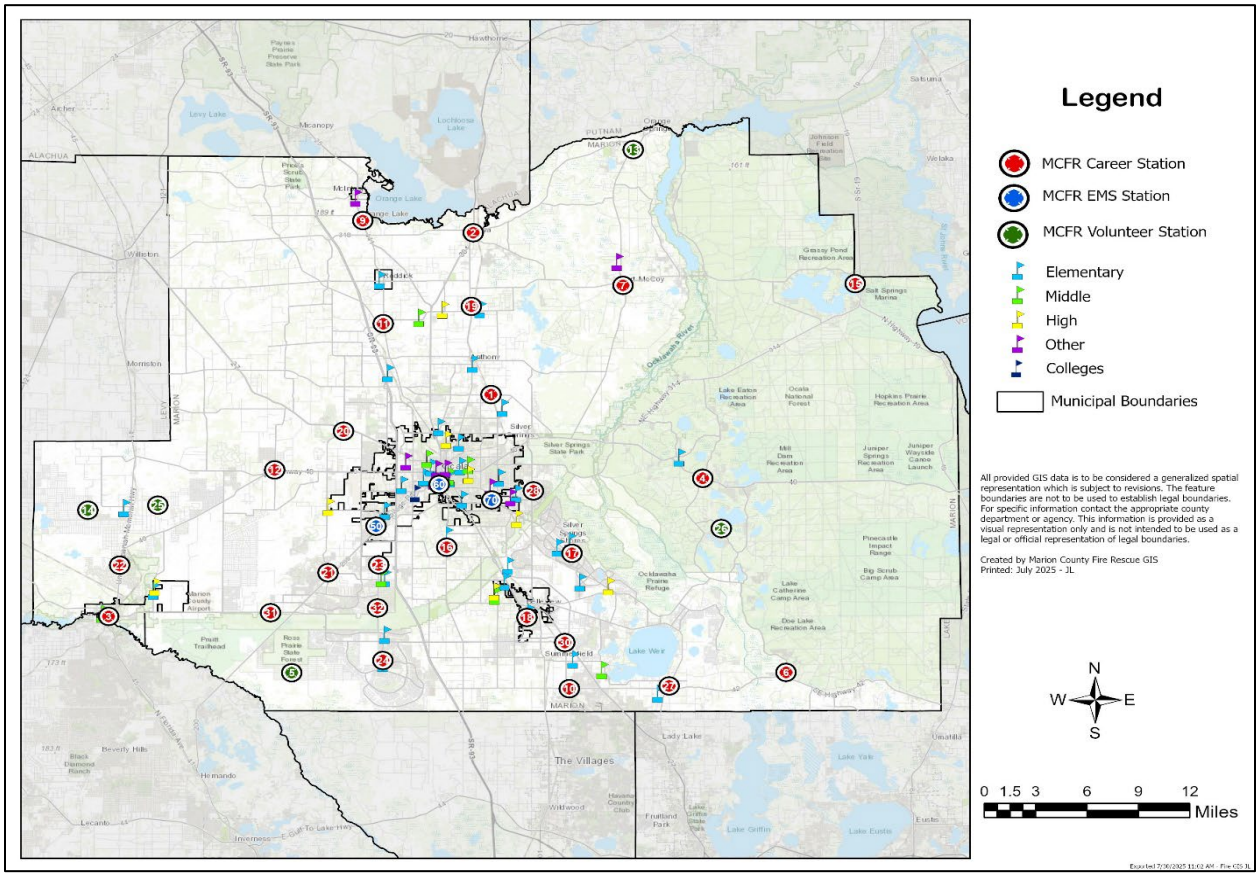
Fire departments can face unique challenges when responding to school emergencies, which are often large, complex buildings that house many people, including students, staff, and visitors. Some of the critical challenges that fire departments face when responding to schools include the following:

- Many people: Schools often have many people in the building, making it difficult to evacuate everyone quickly and safely during an emergency.
- Limited access: Schools may have limited access points, making it difficult for fire department vehicles, equipment, and personnel to reach portions of the building quickly.
- Unique building designs: Schools may have unique architectural features or building layouts, making it difficult for firefighters to navigate the building and locate the source of an emergency.
- Life safety issues: Schools may have many children, some of whom may have mobility issues or special needs, which can make evacuation and rescue efforts more complex.
- Hazardous materials: Schools may have hazardous materials on-site, such as chemicals used in science labs or cleaning supplies, which can pose additional risks during an emergency.

Fire departments should work closely with school staff to develop emergency response plans that consider the unique features of the building and the needs of students and staff. This may involve conducting regular lock-down training and fire drills, ensuring regular fire inspections, and establishing emergency plans between the school and the fire department for fire and other emergencies. Additionally, some schools should have fire suppression systems, such as sprinklers or fire alarms, to help detect and mitigate fires.

The following figure shows the locations of schools in Marion County.

Figure 112: School Locations in Marion County



Large Commercial Buildings

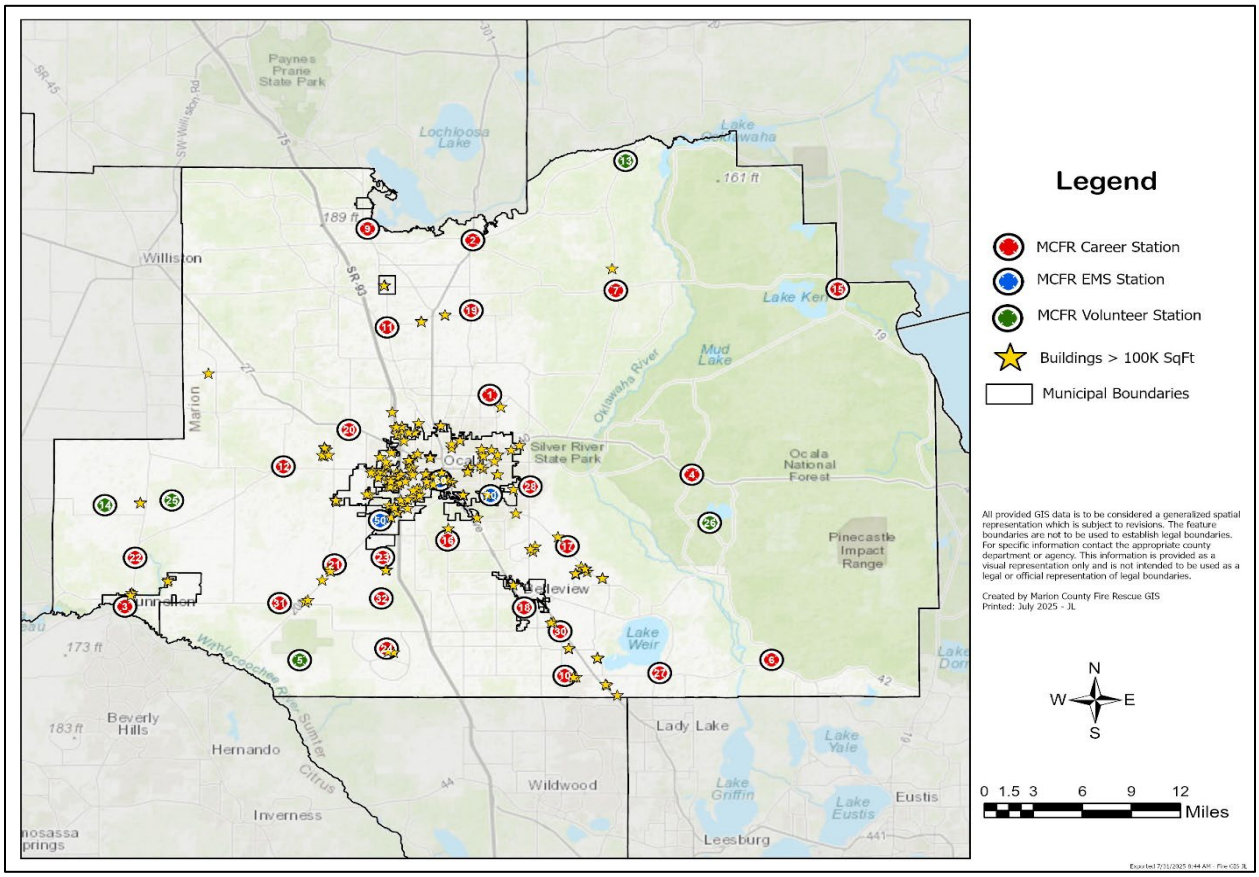
Responding to emergencies at large buildings, such as those that are 100,000 square feet or more, can pose unique challenges for fire departments. Some of the critical challenges that fire departments may face in these situations include the following:

- Large size: The sheer size of a 100,000-square-foot building can make it difficult for firefighters to quickly locate the source of an emergency, particularly if the building has multiple floors or sections.
- Fire spread: The size of the building and the presence of large open spaces can increase the risk of fire spread, making it more difficult for firefighters to contain the fire and prevent it from spreading to other parts of the building.
- Structural stability: large buildings may be more prone to collapse or structural damage during a fire or emergency, posing additional risks to firefighters and occupants.
- Limited resources: Responding to emergencies at large buildings may require a significant number of resources, including firefighters, equipment, and water. Fire departments may need to bring in additional resources from areas to manage the emergency effectively.

Fire departments usually create emergency response strategies that address the specific challenges posed by large buildings and tailor them to the occupants' needs. Additionally, some large facilities may have fire suppression systems, such as sprinklers or fire alarms, installed to aid in detecting and controlling fires. Ensuring all equipment is in good condition and up-to-date while creating effective emergency plans between the building owners or occupants and the fire department.

The following figure shows the locations of large commercial buildings in Marion County.

Figure 113: Large Commercial Buildings in Marion County



Human-Caused Hazards

Human-caused hazards result from people's actions, either accidental or intentional. Intentional acts are always deliberate; however, the intent may differ (e.g., a deliberate action may be planned, careless, reckless, or intended to cause harm). Likewise, the outcome may have unintended consequences in negligent or reckless acts or poorly designed and executed.

Terrorism

According to the Homeland Security Act of 2002, terrorism is defined as "activity that is dangerous to human life or potentially destructive of critical infrastructure or key resources." There are different types of terrorism defined by the motivation behind attacks. There are also different methods and tactics that terrorists use in their attacks, such as assassination, explosives, radiological threats, radicalization, chemical threats, biological threats, active shooters, infrastructure threats, arson, kidnapping, and cyber threats.

Although rare, it is necessary to account for human-caused risks. The highest risk for MCFR is a mass casualty incident. Due to the impact on life and the level of preparedness, this ranks highest on the human-caused hazard list. The risk of mass casualty is more common, either from trauma or medical. Both scenarios can impact a response system even for the most prepared organizations. The drawdown of resources and available capacity of treatment facilities creates a high risk for the jurisdiction.

Based on the MCFR project team's assessment model, the following table shows the relative risk of these human-caused hazards.

Figure 114: Relative Risk Analysis Model- Human-Caused

Event	Probability	Community Impact			Mitigation Capacity			Risk
	Likelihood this will occur	HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT	PREPAREDNESS	INTERNAL RESPONSE	EXTERNAL RESPONSE	*Relative Threat*
Mass Casualty Incident (trauma)	3	3	2	3	1	1	1	34%
Mass Casualty Incident (medical)	2	3	1	3	2	1	1	23%
Terrorism	1	3	3	3	1	1	1	13%
VIP Situation	2	2	1	2	1	1	1	17%
Infant Abduction	1	3	0	1	1	1	1	7%
Hostage Situation	1	3	2	2	1	1	1	10%
Civil Disturbance	2	2	2	2	1	1	1	19%
Active Shooter	3	4	2	3	2	1	1	41%
Arson	2	2	3	2	1	1	1	21%
Bomb Threat	1	3	2	2	1	1	1	10%

County-Wide Hazard Risks

Much of Marion County's unincorporated land is mainly zoned as low risk, while the City of Ocala, Belleview, the Villages of Marion, and Friendship contain the highest risk. The moderate and low-risk areas are shared across the county. Identifying potential risks in MCFR's future assists in determining the impacts on the types of service and demand for service in the jurisdiction. As the jurisdiction continues to see a change in the areas, the impact of some risks could change dramatically. While MCFR cannot prevent all risks from occurring, as the initial response, MCFR will have to be prepared for the responsibility of the initial life safety, incident stabilization, and property conservation duties.

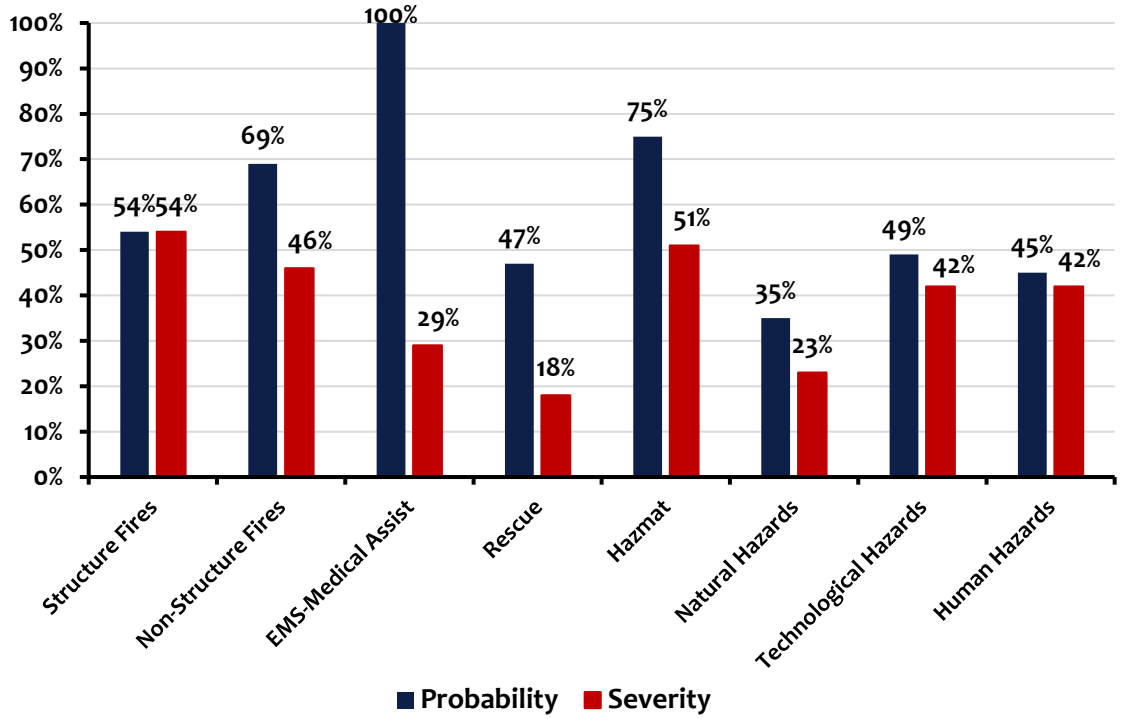
The City of Ocala is home to the Ocala International Airport, a regional aviation hub that includes commercial, charter, and general aviation activity. This facility introduces unique hazards such as aircraft accidents, fuel fires, hazardous material releases, and mass-casualty incidents. Marion County Fire Rescue (MCFR) should maintain close coordination with airport administration to ensure that emergency response plans, specialized training, and mutual aid agreements address the complexities of airport operations.

Beyond aviation-related risks, MCFR must also account for the county's expansive geography. With more than 1,600 square miles and a mix of urban, suburban, and rural communities, the department faces extended travel distances in many regions, which can delay response to both fire and medical emergencies. This challenge is particularly evident in rural areas where limited infrastructure and hydrant coverage further complicate operations.

Marion County is exposed to a wide spectrum of hazards—natural, technological, and human-caused. This risk assessment identifies those events most likely to impact the community based on frequency, potential severity, and the department's ability to mitigate. Emergency medical services represent the highest ongoing community risk, driven by high call volumes, human impact, and the probability of occurrence. In rural areas, these risks are compounded by longer response times and limited access to care.

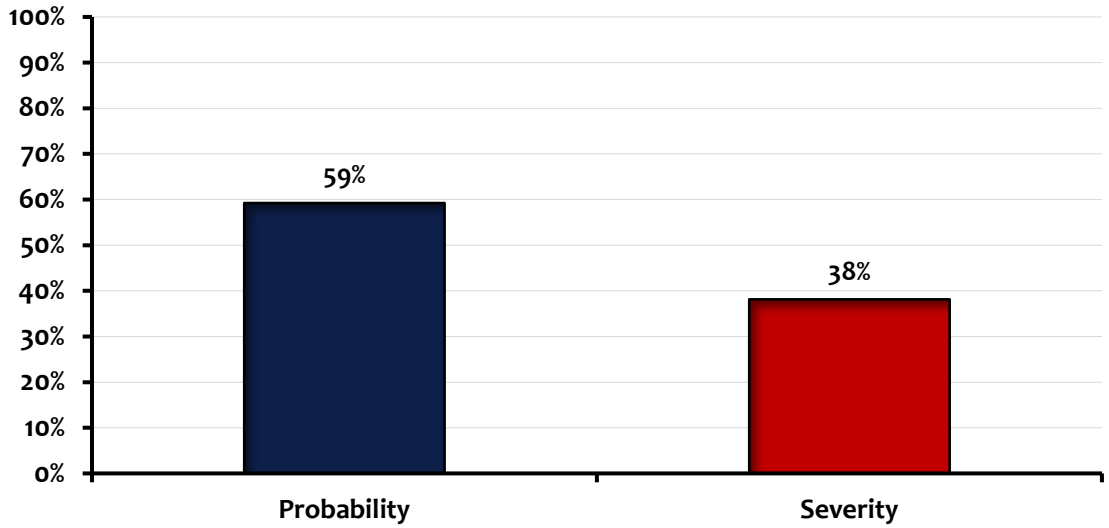
In this assessment, risk is defined as the interaction of probability and impact. The following figure illustrates this comparison across event categories, providing a framework for understanding how different hazards rank relative to one another and guiding MCFR's planning, training, and resource allocation.

Figure 115: Hazard Specific Relative Probability and Severity



The MCFR project team's community-wide risk analysis contains eight (8) categories of emergency events, under which 86 individual characteristics are evaluated and ranked based on event frequency, community impact, and mitigation capacity. The following table summarizes the emergency event characteristics and their relative threat index.

Figure 116: Relative Community Risk



As can be seen from the preceding figure, the overall probability of an incident occurring is moderate. The overall severity, or impact, of each incident type, is reduced by the high levels of MCFR mitigation efforts—pre-incident preparation and the capabilities of both internal and external resources. Put another way, the risk reduction and fire prevention efforts in the jurisdiction are reducing overall risk; however, there is still a moderate to high risk of an incident occurring within the jurisdiction, and when the fire department is called to respond, there is a high likelihood they are needed, and the severity of the incident warrants the response.

It is impossible to include or predict all aspects and indicators of hazards and risk. There are simply too many variables of weather, human behavior, and systems malfunction. Likewise, the potential impact on specific government entity-provided services may not be the same for all entities. Thus, it would not be unusual for MCFR to rank some hazards higher and others lower than the rankings provided by other local government entities.

In general, MCFR currently has properly trained and prepared personnel, plus well-maintained facilities and equipment, along with appropriate policies and plans to guide the organization in mitigating identified risks. They are currently able to provide appropriate levels of moderate to high-risk response for the residential, industrial, and large commercial warehouse areas of the service area. As with most first responder agencies, there are opportunities for improvements that will be discussed later in this report.

At-Risk Populations

Risk is shaped by who lives in each area and how easily responders can reach them. Factors include age distribution, household income, limited English proficiency, disability status, roadway connectivity, hospital proximity, and hydrant availability. These elements inform targeted prevention and education, preparedness for high-risk populations, and investments in water supply, access, and response routes.

The demographics of the population can affect the amount of service demand and the nature of risk within a community. In urban cities, several factors have been identified that place groups of people at risk. Reports by the U.S Fire Administration[41] and NFPA[42] has identified the groups that face a higher risk of being injured or killed in a fire as:

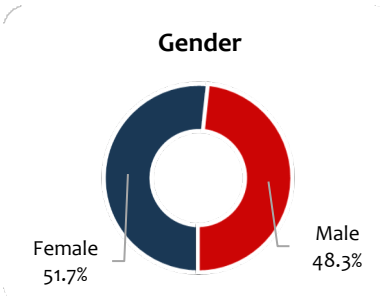
- Males
- Children under 5 years of age
- Older Adults over 65 years of age
- People with disabilities
- People with a language barrier
- People in low-income communities

According to the latest Census Bureau estimate, with exception of the male category listed above only a small number of the residents of the Marion County service area are in one or more at-risk population groups. This segment of the population is more likely to use fire department services, especially emergency medical services (EMS), than other population groups.

As discussed in the *Service Delivery and Performance* section, EMS incidents represent 80.4% of the total calls for service for the years 2020-2024. Older adults and individuals with lower incomes and no health insurance are more likely to use local EMS resources than individuals with health insurance and a personal physician. Further, quality of life issues and increased reliance on assisted living could affect service delivery and the number of resources required.

Selected demographics—age, sex, ethnicity, housing type, income level, primary language, education, health, and assessed property values—are shown in the following figures. Areas in blue are at lower risk, areas in yellow are at higher risk, and areas in red are at the highest risk. [43]

Gender: Males make up slightly less than half of the population; slightly more than half the population is female. Males, especially those under 25 YOA, are more prone to engage in risky activities and may require higher levels of emergency response. This is somewhat, but not completely, offset by complications during pregnancy. There is not a significant difference between the number of males and females living in Marion County.

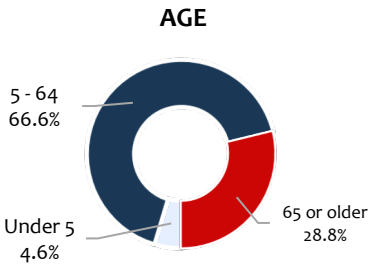


[41] *"Fire Risk in 2015," U.S. Fire Administration, September 2017, Volume 18, Issue 6; Retrieved from https://www.usfa.fema.gov/downloads/pdf/statistics/v18i6.pdf?utm_source=website&utm_medium=pubsapp&utm_content=Fire Risk in 2015&utm_campaign=RID*

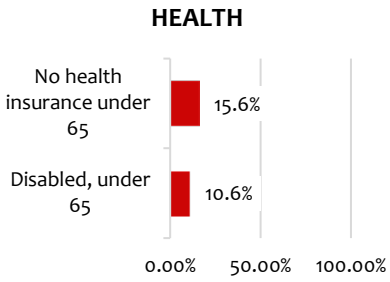
[42] *http://www.nfpa.org/public-education/by-topic/people-at-risk/urban-fire-safety/reports-and-presentations*

[43] *U.S. Census Bureau, Quick Facts and American Fact Finder. Retrieved from: https://www.census.gov.*

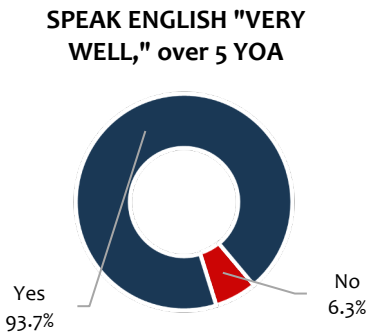
Age: Senior citizens can have difficulty escaping from fire due to physical limitations. Quality of life issues and increased reliance on assisted living could affect service delivery and the number of resources required due to an increase in service demand for emergency medical services. The very young also represent a vulnerable population, both regarding their ability to escape a structure fire as well as their susceptibility to serious medical ailments such as asthma, traumatic events, choking, or injury from vehicular accidents. The percentage of seniors and young children in Marion County is a factor that could increase community risk and service demand in the service area.



Disabilities: People living with a disability under 65 YOA may have difficulty or be incapable of self-preservation during an emergency. Thus, they may require a higher level of fire-rescue and EMS responses. Likewise, people under 65 years of age with no health insurance are more prone to chronic illness or exhibit poor physical condition simply because they do not seek treatment promptly. This, too, may lead to higher dependence on basic EMS care. Fortunately for Marion County these populations are very low in percentage.

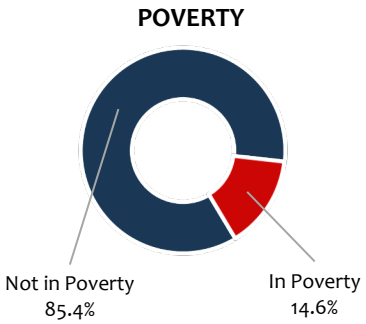


Language barrier: People may have cultural differences or language barriers that decrease the likelihood they would call for service or may affect their ability to communicate needs and concerns effectively. According to the NFPA, "Language barriers, cultural differences, and inexperience with unfamiliar home technologies are factors that mark the challenges of helping newcomers live safely from the threat of fire in the home."[44] By itself, speaking a language other than English at home does not directly contribute to difficulties in communicating with others; however, if a person has difficulty speaking English, it may contribute to negative outcomes during an emergency.

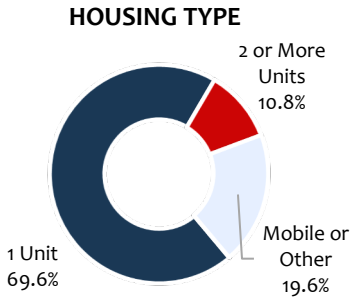


[44] *Serving immigrant and refugee populations, National Fire Protection Association, 2017. Retrieved from: https://www.nfpa.org/Public-Education/Campaigns/Fire-Prevention-Week/Teaching-FPW/Serving-immigrant-and-refuge-populations.*

Low-income[45]: Likewise, low-income people are more at risk from fire or medical conditions due to age or condition of housing level, inability to pay for routine medical care, lack of medical insurance, and general health conditions. Sometimes, lack of access to transportation leads to increased use of care and transport. Those living below the poverty line are the most at risk. Low-income is often combined with other factors such as education, disability, and work status. In rural communities, low-income residents may live far from treatment centers and require extended response times.



Housing type: Although housing type is not included in the NFPA at-risk categories, certain housing types, such as older multi-family units and mobile homes pose a higher risk due to potential loss of life or lack of fire protection features.



Another at-risk population group not included in the NFPA report is the **transient population**—people that are not but are working, visiting, or passing through the service area. The department is often called to provide services for this population in addition to those offered to residents. While these people are in the service area, their needs must be considered when planning for emergency responses.

Risk by Land Use Designation

As Marion County continues to grow, future infrastructure development will be essential to sustaining fire protection and emergency services. Key infrastructure such as roads, bridges, sewer systems, water lines, and fire hydrants must be planned in coordination with zoning regulations and land development trends. Higher property values and increased density, particularly in the southwest and northeast regions of Marion County, will demand strategic investments to maintain service reliability and response times.

Zoning plays a central role in assessing fire and life safety risk. The type of activity permitted on a parcel, whether residential, commercial, or industrial, often determines the risk level. Vacant or undeveloped land generally presents a lower risk due to the absence of structures and human activity, while commercial and industrial uses typically carry higher fire loads, greater economic impact, and more complex response requirements. As new developments emerge, evaluating their potential effects on emergency response access, hydrant availability, and staffing needs will be critical to ensuring MCFR remains prepared to meet the county's evolving demands.

[45] *https://www.census.gov/topics/income-poverty/poverty.html*

The Marion County Comprehensive Plan guides this growth and establishes the Future Land Use Map (FLUM), which identifies how land is designated for long-term development. Categories include agricultural and conservation lands, rural residential, low- to high-density residential, commercial, industrial, mixed-use, and public/semi-public uses. Growth is concentrated within designated Urban Growth Boundaries (UGBs) to preserve agricultural and environmentally sensitive areas while focusing infrastructure investment in growth corridors. This framework allows MCFR to anticipate demand and plan for additional resources where they will be most needed.

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

Figure 117: Relative Fire and Life Risk Categories

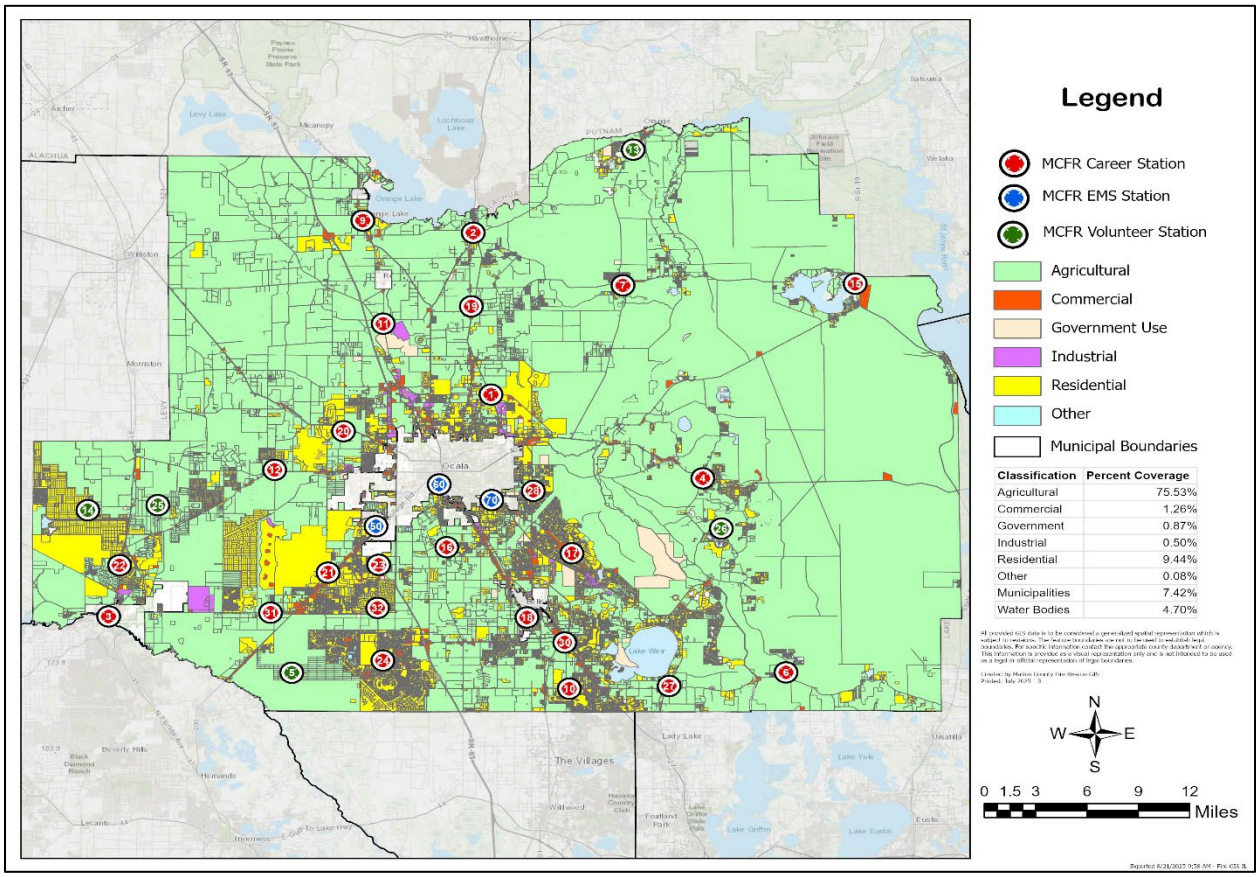
Relative Risk Category	Zoning
Low Risk	Areas zoned and used for agricultural purposes, open space, and very-low-density residential use
Moderate Risk	Areas-zoned for medium-density single-family properties, small commercial and office uses, low-intensity retail sales, and equivalently sized business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

Land use planning in Marion County is coordinated through its Comprehensive Plan, originally adopted in 1991**,** the plan is updated every seven years. It was last updated April 30, 2021. The plan is implemented in collaboration with the Cities of Ocala and Dunnellon and includes provisions for concurrency, requiring that public facilities including fire protection be available concurrent with the impacts of new development. Revisions and amendments are reviewed by the Planning & Zoning Commission and approved by the Board of County Commissioners to ensure the plan reflects evolving community needs and safeguards public health and safety.

From a fire and life safety perspective, the projected growth in southwest and northeast Marion County will generate the most significant increases in service demand, while industrial corridors along I-75 and SR 200 present higher fire loads and specialized response requirements. The Future Land Use Map therefore provides MCFR with a planning tool to anticipate risk, prioritize capital investments, and align resources with development patterns.

Understanding how zoning categories translate into fire and life safety risk allows MCFR to move beyond abstract land use designations and anticipate where service demands will occur. Low-risk agricultural and conservation areas require wildland resources and extended water supply planning, while higher-risk commercial, industrial, and dense residential zones drive the need for engines, ladders, and specialized suppression capabilities. Linking relative risk to zoning provides MCFR with a practical tool to forecast growth, prioritize capital investments, and align future facilities, apparatus, and staffing with the county's development trajectory.

Figure 118: Marion County Zoning Categories



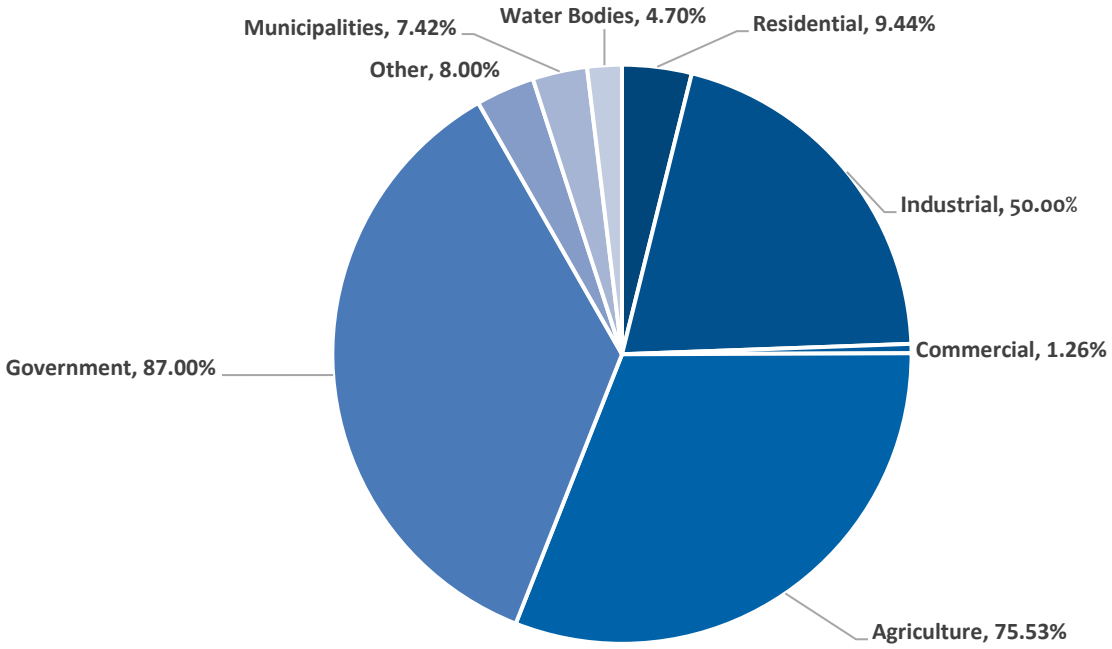
Land Use Plan

Marion County's land use plan serves as the guiding document for how growth and development will occur across the county. Adopted as part of the Comprehensive Plan, the land use element establishes the preferred mix of residential, commercial, industrial, agricultural, conservation, and mixed-use development. It is designed to balance economic growth, environmental protection, and community livability while ensuring that public services, including fire and emergency response, keep pace with development.

The plan outlines development priorities for both urbanized areas and rural communities. In higher-density areas, such as the urban growth boundary around the City of Ocala, land use policies encourage compact, mixed-use development that supports infrastructure efficiency and reduces travel distances for emergency response. In suburban and rural areas, the plan emphasizes conservation of open space and agricultural lands while accommodating new residential and commercial development at scales appropriate to the surrounding community.

The following figure shows the current land use by percentage throughout Marion County.

Figure 119: Marion County Current Land Use



The land use plan is implemented through the Future Land Use Map (FLUM), which designates specific areas for residential, commercial, industrial, institutional, agricultural, and conservation purposes. This map provides a long-term framework for zoning, capital improvement planning, and infrastructure investment. As growth occurs, the land use plan ensures that infrastructure such as roads, utilities, and fire protection resources are aligned with development patterns to protect public health, safety, and welfare.

Marion County's land use policies are reviewed and updated regularly to reflect changing conditions, population growth, and emerging economic opportunities. Coordination with the City of Ocala, the City of Dunnellon, and other municipalities ensures that development is consistent and that fire and life safety needs are addressed across jurisdictional boundaries. For MCFR, the land use plan provides both a forecast of where future service demands will emerge and a roadmap for planning new facilities, staffing, and resources.

Occupancy Types by Land Use Designation

The Future Land Use Map (FLUM) provides Marion County with a long-range framework for managing growth and balancing residential, commercial, industrial, and agricultural needs. For Marion County Fire Rescue, the FLUM is more than a planning tool; it is a predictor of service demand and risk. Linking occupancy types to land use categories allows MCFR to anticipate call volume, response complexity, and staffing requirements in a predictable manner.

By integrating land use designations with occupancy risk, MCFR can better predict where future resources will be needed. This allows the department to align station placement, apparatus deployment, and staffing levels with growth trends rather than reacting after service demands outpace resources.

Marion County's Future Land Use Map (FLUM) provides a framework for growth that directly influences the fire and life safety risks MCFR must address. Each land use category carries different response implications, from rural areas with extended travel distances and limited water supply to dense urban and mixed-use centers with high occupant loads and complex fire suppression demands. Understanding these patterns allows MCFR to anticipate resource needs, strategically locate stations, and plan for specialized apparatus.

The County Future Land Use Map is shown in the following figure.

Figure 120: Marion County Future Land Use Plan

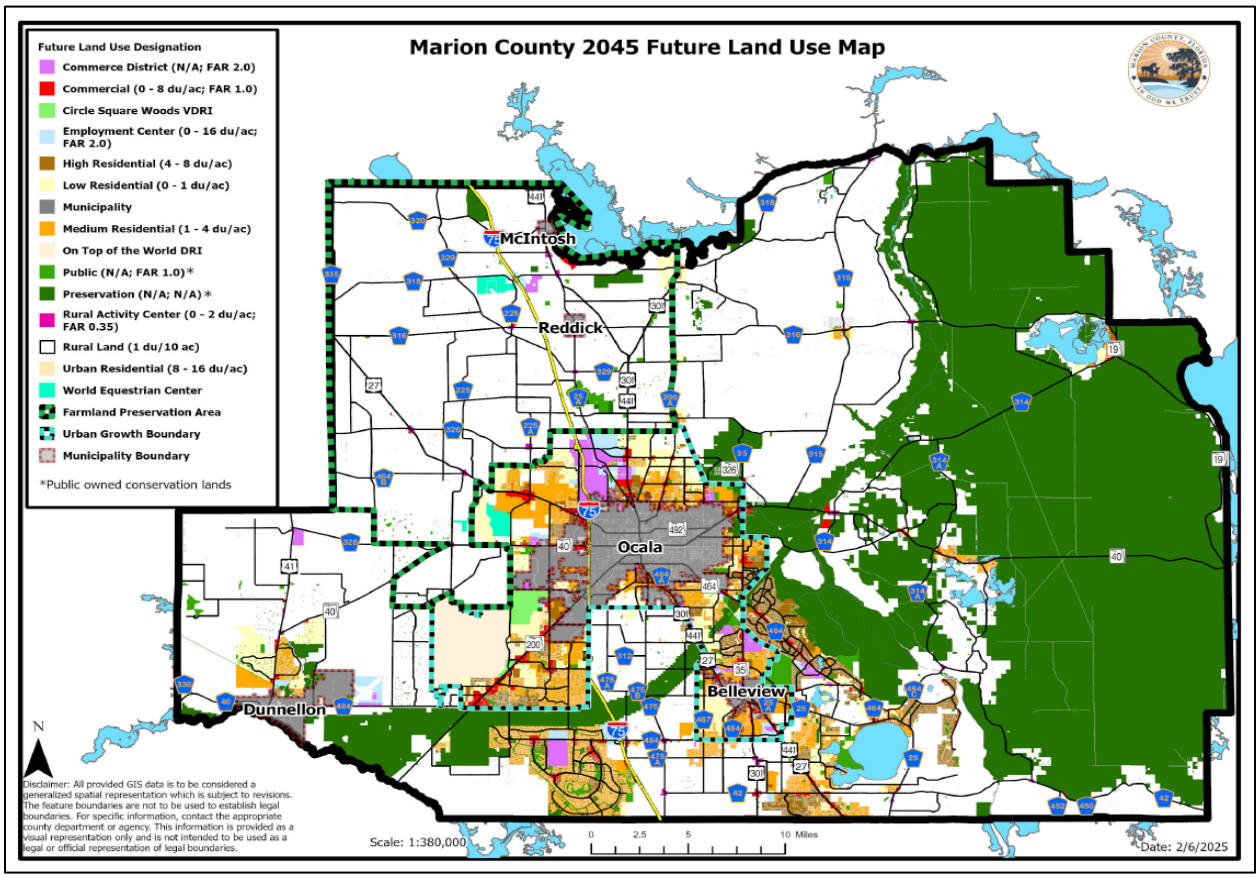


Figure 121: Occupancy Type by County and Percentage

Classification	# of Structures County	# of Structures Municipalities	Total Structure Count	Percentage within County	Percentage within Municipalities	Total Percentage of Classification
Agricultural	1,895	81	1,976	95.90%	4.10%	1.02%
Commercial	4,473	2,839	7,317	61.13%	38.87%	3.77%
Government	359	218	577	62.22%	37.78%	0.30%
Industrial	1,029	1,096	2,125	48.42%	51.58%	1.09%
Residential	153,907	21,037	174,944	87.98%	12.02%	90.06%
Utilities	64	46	110	58.18%	41.82%	0.06%
Assembly	745	356	1,101	67.67%	32.33%	0.57%
Education	597	610	1,207	49.46%	50.54%	0.62%
Other	4,365	534	4,899	89.10%	10.90%	2.51%
		Total	194,256		**Total**	100.00%

Residential

Low-density rural residential areas typically present lower call volumes and reduced fire risk but may require extended travel times, placing added emphasis on water supply and tanker operations.

Medium- and high-density residential developments generate increased EMS demand and higher potential for structure fires. Apartments, townhomes, and senior living facilities carry unique risks, including higher occupant loads and evacuation challenges.

Commercial

Neighborhood-scale retail and offices create moderate EMS and fire risks, often requiring standard engine company coverage.

Regional commercial centers such as shopping malls, big-box stores, and entertainment venues increase both the fire load and life safety risk, requiring enhanced suppression capability and access to ladder companies.

Industrial/Warehousing

Industrial corridors and logistics facilities along I-75 and other arterial routes represent high-risk occupancies due to large building footprints, hazardous materials use, and significant economic impact potential. Specialized apparatus, such as aerials and heavy rescues, are necessary for these occupancies.

Mixed-Use

Mixed-use developments combine residential, commercial, and office occupancies in vertical or clustered designs. These areas elevate risk due to population density, diverse hazards, and complex access requirements.

Agricultural and Conservation

Agricultural lands and conservation areas remain low risk in terms of fire suppression but can generate wildland fire concerns. Brush trucks and wildland firefighting resources are essential to managing these areas, particularly in the dry season.

Public and Institutional

Schools, hospitals, and government facilities present high life safety risks due to vulnerable populations and large occupant loads. These occupancies require specialized pre-planning, fire prevention efforts, and coordination with law enforcement and emergency management.

The following table and map illustrate how FLUM categories translate into relative risk levels and operational considerations for emergency response.

Figure 122: Occupancy Type Risk Level by FLUM Designation

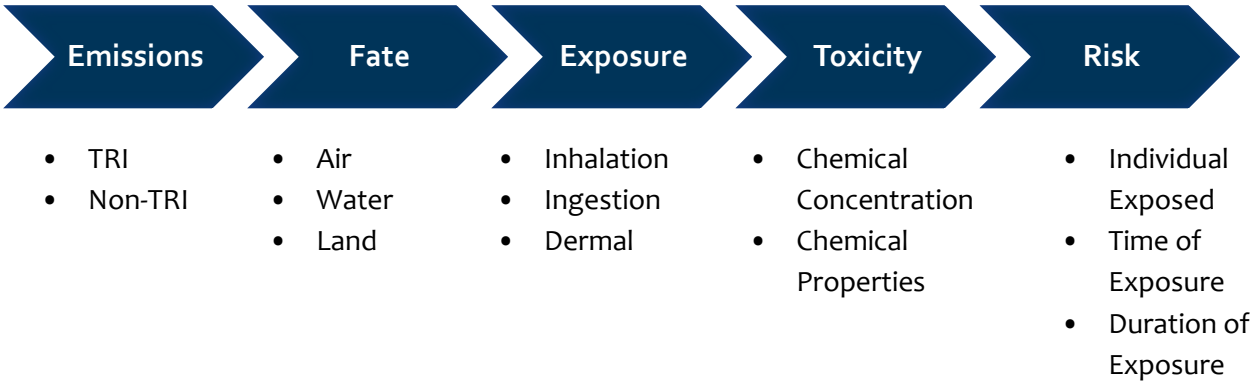
FLUM Land Use Category	Typical Occupancy Types	Relative Risk Level	MCFR Service Implications
Rural Lands / Agriculture	Farms, ranches, equestrian facilities, state forests	Low	Wildland fire exposure; tanker shuttles; long response distances; seasonal staffing surge needs
Urban Residential	Subdivisions, townhomes, apartment complexes	Moderate–High	High EMS demand, frequent fire incidents, need for strong engine coverage and nearby ladders
Rural Residential	Single-family homes on large parcels	Low–Moderate	Extended response times, tanker dependence, limited hydrant coverage
High-Density Residential	Multifamily housing, senior living centers, mobile home parks	High	High occupant loads, evacuation challenges, increased ladder and rescue company demand
Commercial	Retail strips, shopping centers, restaurants, service businesses	Moderate–High	Frequent EMS calls, elevated suppression risk, require nearby aerial access and preplans
Employment Center / Industrial	Warehouses, distribution hubs, factories, logistics corridors	High–Very High	Hazardous materials potential, large fire load, heavy suppression needs, special operations
Mixed-Use / Activity Centers	Planned urban nodes with housing, offices, retail	High	Dense population centers; diverse fire/EMS risks; need for multi-company response capability
Public / Institutional	Schools, hospitals, government buildings	High	Vulnerable populations, large occupant loads, pre-plan and prevention priority
Conservation / Open Space	Parks, preserves, recreational lands	Low	Minimal built environment risk; wildland and rescue incidents dominate

Hazardous Substances and Processes

A federal law called the Emergency Planning and Community Right to Know Act (EPCRA) requires facilities in certain industries which manufacture, process, or use significant amounts of toxic chemicals, to report annually on their releases of these chemicals. The U.S. Environmental Protection Agency (EPA) maintains this information in a database called the Toxics Release Inventory (TRI). The toxic release files on the National Library of Medicine's® (NLM) Toxicology Data Network (TOXNET®) come from TRI. The reports contain information about the types and amounts of toxic chemicals that are released each year to the air, water, land, and by underground injection, as well as information on the quantities of toxic chemicals sent to other facilities for further waste management. Facilities with ten or more full-time employees that process more than 25,000 pounds in aggregate or use greater than 10,000 pounds of any one TRI chemical, are required to report releases annually. Industries and businesses use chemicals to make products such as pharmaceuticals, computers, paints, clothing, and automobiles. Most chemicals are included on the Toxic Release Inventory (TRI) chemical list managed by industrial facilities to minimize releases into the environment. Unfortunately, releases still occur as part of business operations. It is the right of citizens to know what TRI chemicals are being used in Marion County as well as the management of amounts released into the environment and whether such quantities are increasing or decreasing over time.

The following figure shows the many factors that determine the human health risks resulting from oexposure to chemicals.

Figure 123: Overview of Factors that Influence Risk



Florida ranks 27th out of 56 states/territories nationwide for the number of total releases of TRI chemicals per square mile.[46] Of the 21,797 facilities in the United States only 14 facilities are listed in the jurisdiction that requires reporting of TRI chemicals. These factors allow MCFR to prepare and plan for the future.

[46] *Environmental Protection Agency TRI National Analysis; retrieved from https://enviro.epa.gov/triexplorer/tri_factsheet.factsheet_forstate?pstate=FL&pyear=2023&pParent=TRI&pDataSet=TRIQ1*

STANDARD OF COVER PERFORMANCE OBJECTIVES AND MEASURES

MEASURING SYSTEM EFFECTIVENESS

The MCFR project team evaluated the entire system regarding current station location and system performance metrics gathered during the evaluation to determine if the current system is poised to be able to handle the future expected demands. As with any emergency services system the ability to provide current service needs and prepare for future community needs becomes a delicate balancing act for government officials who ultimately are trusted with community funds generated for such purposes. These funds are all too often torn between competing priorities. Fire departments are faced with systems that often experience less fires than our previous generations but still require an appropriate level of preparedness "just in case" to prevent catastrophic results of potential emergencies.

It is imperative that nationally established standards are adhered to so that departments have the needed proof and backup to support their requests for the needed people, tools, and time to deliver these components of the system.

The key components of any system are listed in the following figure.

Figure 124: Measuring System Effectiveness

There is a direct relationship between available personnel and equipment and timing of their application in an emergency on fire department effectiveness. Increasing or decreasing one or more of these components can have a significant effect on the overall ability of the system to efficiently, safely and effectively mitigate an emergency incident. The following results of the previous analysis provide policy-makers with both general information on how this occurs and specific information regarding the potential system needs and/or improvements for MCFR.

PEOPLE

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

Critical Tasks, Risk, and Staffing Performance

The goal of any fire service organization is to provide adequate resources within a period of time to reasonably mitigate an emergency event. However, all emergency events inherently carry their own set of special circumstances and will require varying levels of staffing based upon factors surrounding the incident. Properties with high fire risk often require greater numbers of personnel and apparatus to mitigate the fire emergency effectively. MCFR should make staffing and deployment decisions with consideration of the level of risk involved.

Risks are classified as low, moderate, high, or maximum where the department gages threats considering the probability of occurrence, and hazard, danger, or loss and measures it in consequence. The following definitions and discussion apply to the process for classifying risk which will lead to an illustration of the minimum emergency incident staffing recommendation.

- **Low Risk**—A risk category measurement at a low level where threats are measured considering the probability of occurrence, and hazard, danger, or loss is measured in consequence. Minor incidents involving small fires (fire flow less than 250 gallons per minute), single patient non-life-threatening medical incidents, minor rescues, small fuel spills, and small wildland fires without unusual weather or fire behavior.
- **Moderate Risk**—A risk category measurement at a moderate level where threats are measured considering the probability of occurrence, and hazard, danger, or loss is measured in consequence. Moderate-risk incidents involving fires in single-family dwellings and equivalently sized commercial office properties (fire flow between 250 gallons per minute to 1,000 gallons per minute), life-threatening medical emergencies, hazardous materials emergencies requiring specialized skills and equipment, rescues involving specialized skills and equipment, and larger wildland fires.
- **High Risk**—A risk category measurement at a high level where threats are measured considering the probability of occurrence, and hazard, danger, or loss is measured in consequence. High-risk incidents involving fires in larger commercial properties with a sustained attack (fire flows more than 1,000 gallons per minute), multiple patient medical incidents, major releases of hazardous materials, high-risk rescues, and wildland fires with extreme weather or fire behavior.
- **Maximum Risk**—A risk category measurement at a maximum level where threats are measured considering the probability of occurrence, and the hazard, danger, or loss is measured in consequence.

The next three figures provide examples of the recommended staffing needs based on the CPSE and NFPA recommendations for risk and its classification.

Figure 125: Example of Critical Task Staffing Analysis (Firefighters Needed) Based on Risk[47]

Task	Non-Structure Low Risk	Structure Moderate Risk	Structure High Risk	Structure Maximum Risk
Attack Line	2	2	4	4
Back-Up Line	(2)	2	2	
Support for Hose Lines/Water Supply		2#	3	
Ventilation		2	2	4
Search and Rescue		2	2	4
Forcible Entry/Support		2	2	
Standby/Rapid Intervention Team		2	2	4
Driver/Pump Operator	1	1	1	1
2nd Apparatus/Ladder Operator			1	
Command	1#	1	1	2
Communications/Safety		1	1	1
Accountability			1	
Rehabilitation				2
Building Fire Pump Monitor				(1)
Attack Line—Floor Above the Fire				2
Evacuation Management Teams				4
Elevator Operations Manager				1
Lobby Operations				1
Transport Equipment to Staging				2
EMS Crews				4
Division/Group Supervisors				4
Total	**3–6**	**16–17**	**22**	**40–41**

( ) indicates tasks may not be required at all incidents. # Indicates task may be completed concurrently with others.

As a comparison—The next figure is from 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 illustrates the critical staffing for tasks associated with various types of structural fires as outlined in the standard.

[47] *Adapted from "Community Risk Assessment and Standards of Cover," 6th edition, Center for Public Safety Excellence.*

Figure 126: Example of Tasks and Staff Required as defined from NFPA 1710[48]

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[5]	4	4	4	
Initial Medical Care Component		2	2	
Building Fire Pump Monitor (if equipped)				(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 Control				1
Transport Equipment				2
External Base Operations				1
EMS Crews with Transport[6]				4
Total Required:	**16 (17)**	**27 (28)**	**27 (28)**	**42 (43)**

[1] *Typical 2,000 ft., two-story single-family dwelling without a basement and no exposures.*
[2] *Typical open-air strip mall/shopping center ranging from 13,000–196,000 feet.*
[3] *Typical 1,200-foot apartment within a three-story, garden-style apartment building.*
[4] *Building with the highest floor greater than 75 feet above the lowest level of fire department vehicle access.*
[5] *At a minimum, an initial rapid intervention crew (IRIC) assembled from the initial attack crew and, as the initial alarm response arrives, a full and sustained rapid intervention crew (RIC) established.*
[6] *For Single-Family Dwellings: When the incident escalates beyond an initial full alarm assignment, or when significant risk is present to the members due to the magnitude of the incident, the Incident Commander shall request an EMS crew consisting of a minimum of two members to provide treatment and transport for injured members and civilians.*

[48] *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, 2020.*

When reviewing the charts listed in Figure 119 and Figure 120 compared to the daily minimum staffing listed in Figure 100 employed by MCFR it is easy to see that they has the ability to handle smaller and moderately complex incidents. MCFR can become understaffed and unable to handle incidents of more complexity based on the tasks required to mitigate these events if more than one of these events happens in more than one place across the jurisdiction. These are events that are highly likely based on current completed projects and future land use approved projects under construction.

Figure 127: MCFR Daily Minimum Staffing

MCFR Daily Minimum Staffing	
Division Chief	1
Battalion Chief	5
26 Engines	78
2 Truck	6
2 Heavy Rescue	6
27 Rescue	54
12 Medic	24
Volunteers	Varies
Total Minimum Personnel	**173**

Distribution Performance Criterion

A fire department's *distribution* is essentially the location of resources to ensure an initial intervention within the specific time frame identified in the community's performance goals. Tasks that must be performed at a fire can also be broken down into three key components: life safety, incident stabilization, and property conservation. Responder's base life safety tasks on the number of building occupants; and their location, status, and ability to take self-preservation action. Life safety-related tasks involve search, rescue, and evacuation of victims. The incident stabilization element involves delivering enough water to extinguish the fire and create an environment within the building that allows entry by firefighters. Property conservation comes from efficient confinement and extinguishment.

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

- Command
- Scene Safety
- Search and Rescue
- Fire Attack
- Salvage
- Water Supply
- Pump Operation
- Ventilation
- Backup/Rapid Intervention
- Environmental Protection

Critical Tasking

Critical tasks are those activities that must be conducted promptly by firefighters at emergency incidents to control the situation, to stop-loss, and to perform necessary tasks required for a medical emergency. MCFR is responsible for ensuring those responding companies are capable of performing all of the described tasks in a prompt, efficient, and safe manner. Critical tasking defines the minimum number of personnel needed by incident type. More personnel will be needed for incidents of increased complexity or size.

The first 15 minutes is the most crucial period in the suppression of a fire. How effectively and efficiently firefighters perform during this period has a significant impact on the overall outcome of the event. The first 15 minutes is also applicable to rescue and medical situations.

Critical tasks must be conducted promptly to control a fire or to treat a patient. Three scenarios of commonly encountered emergencies are routinely utilized by fire departments when conducting field validation and critical tasking: a moderate risk structure fire, a traffic collision with a trapped victim, and a cardiac arrest. Each scenario is conducted using standard operating procedures and realistic response times based on actual system performance. Each scenario is normally run multiple times with a variety of fire companies to validate and verify observations and times.

To further validate the analysis process, results are compared with records from actual working fires and similar incidents from previous years. Overall results are reviewed to determine if the actions taken within the early minutes of an incident resulted in a stop-loss or not, and if additional resources were required. The critical task analysis process demonstrates the rate at which the current deployment plan results in stopping loss a high percentage of time within initial critical time goals.

A critical tasking summary provided by MCFR is detailed in Appendix E.

Alarm Assignments

First alarm response assignments have been established to ensure sufficient personnel and apparatus are dispatched to an emergency event. "Total Staffing Needed" is the number identified in the critical tasking analysis outlined in Appendix E. Based on the size of MCFR's jurisdiction there are times that incidents will overwhelm the initial resources until additional resources arrive to provide assistance and fill necessary critical tasking roles.

A complete detailed account of MCFR's first alarm assignments are listed in Appendix F.

TOOLS

Delivering people and equipment to the scene of an emergency is another key component to measuring delivery system efficiency. In most cases the people and equipment arrive via specialized apparatus and/or fire department vehicle. A great deal of discussion is spent determining the location and siting of a fire station but the importance of reliable and adequate vehicles to travel the distance to the emergency must not be overlooked.

Apparatus Serviceability

Identifying and tracking the reliability and costs for maintaining expensive emergency apparatus are important aspects in ensuring prudent financial planning and emergency services delivery. Apparatus service-lives can be readily predicted based on factors including vehicle type, call volume, age, maintenance downtime, and maintenance costs.

NFPA 1901: *Standard for Automotive Fire Apparatus*, NFPA 1911: *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles*, and NFPA 1912: *Standard for Fire Apparatus Refurbishing* are three specific standards that are used to inform and guide fire department leadership in the management and oversight of emergency services fleets through effective specification, purchase, refurbishment, maintenance, and retirement of fire apparatus.

For instance, as a general guideline, NFPA 1901: *Standard for Automotive Fire Apparatus* recommends placing fire apparatus 15 years of age or older into reserve status and replacing apparatus 25 years or older. However, as mentioned previously, an apparatus's usage can have a significant effect and impact on the resource role during its life expectancy. This standard identifies the following objective criteria in evaluating fire apparatus lifespan:

- Vehicle road mileage.
- Engine operating hours.
- The quality of the preventative maintenance program.
- The quality of the driver-training program.
- Whether the fire apparatus was used within its design parameters.
- Whether the fire apparatus was manufactured on a custom or commercial chassis.
- The quality of workmanship by the original manufacturer.
- The quality of the components used in the manufacturing process.
- The availability of replacement parts.

The MCFR project team supports Annex D of the NFPA 1901 standard as it relates to replacement schedules for heavy fire apparatus (engines, rescues, and trucks). MCFR's apparatus ranges in age from 1 to 45 years, with an average age of 11.2 years.

Apparatus Replacement Planning

Clearly, no piece of mechanical equipment or vehicle can be expected to last indefinitely. As apparatus age, repairs tend to become more frequent and complex. Parts may become more difficult to obtain, and downtime for repair and maintenance increases. Given that fire protection, EMS, and other emergency services are critical to community safety, minimizing downtime is one of the most frequently cited justifications for apparatus replacement.

Marion County Fire Rescue has established a robust, data-driven apparatus replacement plan that proactively addresses these concerns. The department maintains a comprehensive tracking system that evaluates vehicle age, mileage, maintenance costs, operational reliability, and frontline vs. reserve status. This system enables leadership to prioritize replacements and forecast long-term capital needs accurately. The plan is updated regularly to reflect current fleet conditions and integrates with broader capital improvement planning efforts. As a result, there is no current need to recommend the development of a replacement strategy; instead, MCFR's existing plan should be recognized as a model of sound fleet management that ensures readiness, reliability, and fiscal responsibility.

Rescue and Medic Unit Design and Procurement Considerations

Marion County Fire Rescue currently utilizes Type I ambulances across its EMS fleet—a decision rooted in operational necessity, fleet consistency, and long-term durability. Type I ambulances are mounted on a truck chassis, offering superior road handling, higher clearance, increased cargo capacity, and improved structural integrity compared to smaller Type II (van-style) or Type III (cutaway van) designs.

Given the size and geography of Marion County—spanning over 1,600 square miles with a mix of rural roads, horse farms, suburban development, and high-speed highway corridors—ambulances frequently travel long distances, often on uneven terrain. Additionally, MCFR ambulances are staffed with dual-certified firefighter-paramedics and firefighter-EMTs, which necessitates space for turnout gear, SCBA, and cross-trained fire/EMS equipment.

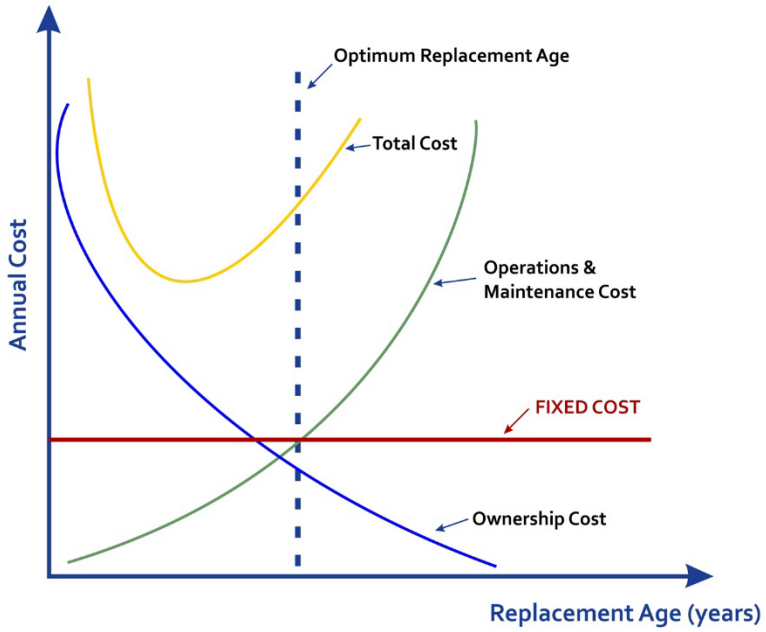
Transitioning to smaller ambulance types would create a fragmented fleet, reducing parts compatibility, complicating training and maintenance, and ultimately diminishing operational flexibility. MCFR remains committed to a standardized Type I ambulance platform to ensure reliability, equipment interoperability, and personnel safety. While continuous evaluation of ambulance options is appropriate, the department's current model is specifically matched to the service environment and mission scope.

Economic Theory of Apparatus Replacement

To further support MCFR's Apparatus Replacement Plan, the *Economic Theory of Vehicle Replacement* is another conceptual model used to determine when a vehicle should be replaced. The theory states that, as a vehicle ages, the cost of capital diminishes and its operating cost increases. The combination of these two costs produces a total cost curve. The model suggests the optimal time to replace any piece of apparatus is when the operating cost begins to exceed the capital costs. This optimal time may not be a fixed point, but rather a time range.

The following figure is a graphic representation of the *Economic Theory of Vehicle Replacement*.

Figure 128: Economic Theory of Vehicle Replacement



Shortening the replacement cycle time window can result in optimal savings to the fire department. If an agency does not routinely replace equipment in a timely manner, the overall reduction in replacement spending can result in accelerated maintenance and repair expenditures. Fire officials, who assume that deferring replacement purchases is a good tactic for balancing the budget, need to understand two possible outcomes that may occur because of that decision:

- Costs are transferred from the capital budget to the operating budget.
- Such deferral may increase overall fleet costs.

Other potential impacts are delays in service delivery and lengthened response times because of a lack of apparatus to respond when experiencing mechanical issues or in need of repairs. Regardless of its net effect on current apparatus costs, the deferral of replacement purchases unquestionably increases future replacement spending needs. This may also impact operational capabilities and safe and efficient use of the apparatus. MCFR has a significant unfunded apparatus replacement need regardless of which method for determining replacement is used. Having a reliable fleet is of the utmost importance when providing emergency services.

Fire Station Locations and Impacts of Modifications

When a community creates a fire department and builds its first fire station, a response time criterion is usually established. This response time anticipates that it applies throughout the area covered by the boundaries of that fire station. This is especially true when there is only one fire station and a small area to cover. Simply speaking, a central fire station is among the first public buildings created in most communities, no matter how small it is. As the community grows away from that fire station in incremental steps, the expectation is that the original fire station will still provide adequate coverage.

However, that expectation is problematic. The total area covered by a fire station may or may not be highly developed initially and is likely not even developed in a uniform manner. Even if a crew is available and capable of responding, it may not do so in a timely manner to some or any portions of its response area. Most fire departments begin as all volunteer departments, often for economic reasons. When the population and service area increase, there is often pressure to add career staff and to consider adding additional stations to provide sufficient and timely response.

There are many variations on this theme. Older, established cities tend to be densely developed and smaller in dimensions but often annex new areas that may be less densely developed. Newer communities may be created from much larger areas than an initial fire station can cover and additional stations are needed. The bottom line for policymakers is determining when to add fire stations and at what cost the desired level of service is to be achieved.

Response Failure

The contemporary method of measuring performance looks at incident response time as an indicator of levels of service. The way this is done is two-fold. The first is to measure the actual performance during emergencies; the second is to monitor the system to determine when the system fails to achieve its performance goals. This was done in the *Service Delivery & Performance* section of the report.

One point of caution – response time criterion should only be applied to calls that are emergency calls. When incidents are analyzed, the data should be reviewed to ensure that non-emergency calls are not used when calculating performance. There are many calls for service that fire departments log as incidents that are non-threatening scenarios, and the responding companies will handle them on an as needed basis. To include these times in the analysis of emergency services tends to skew the outcome, leading to a false service indicator.

To understand when a response failure occurs, we must first define what is being measured and how to measure the performance goal. For example, a basic question to be answered is whether a department is protecting the geographic location or mitigating the incident. Are we going to measure percentage of performance by first-due company or department wide? Generally, fire protection practitioners try to position fire stations to cover 90% of the ground in each first-due area, to provide overlap for concentration, redundancy for multiple calls, and for equity of access for customer service. It is economically impossible to cover 100% of the ground.

MCFR covers 64.39% of the total service area within 5 miles and 11.46% of the total service area within 1.5 miles of a fire station. Based on actual calls for service, a jurisdiction could strive for 80 to 90% of the calls for service within first-due and achieving ERF concentration total reflex measures. Because of the geographical size of Marion County this metric is not realistic and the MCBCC has chosen to concentrate its resources where most of the population resides.

If the measure for either area or incidents is set at 80 to 90% effectiveness, how much deviation from the performance measure is acceptable? For example, if a historical incident measure is at the 85th percentile, but the other five percent is covered in the next 60 seconds, is that acceptable?

Maybe yes, maybe no. It is important to understand that the values at risk, the type of unmet calls, and the total number of calls can combine to create a need. If the deficiency is only five percent (say 25 calls out of 500), the significance of the gap depends largely on the size of the data sample and on the amount of geographic area represented.

For example, if the performance requirement was to arrive at the scene of an emergency within five minutes of travel time, 90% of the time, this criterion could be applied to one year of response data to see if the goal was achieved. It should be noted that this criterion allows for 10% of the calls to be beyond the five-minute travel time over a given reporting period. This provides flexibility in the assessment of coverage to cope with anomalies, such as extraordinary response conditions, responding from out of service area, or for delays caused by simultaneous alarms.

This raises an additional question: Of the 10% overage, how many of the incidents are covered within the next 30 to 60 seconds? For example, MCFR travel time in 2024 to actual incidents was less than 4 minutes to 22.25% of incidents, 4–8 minutes to 41.52% of incidents, 8–12 minutes to 30.75% of incidents and greater than 12 minutes to 5.48% of incidents.

The first indication of the problem in providing service is when a significant number of alarms exceeding the performance standard are documented. This may or may not be a function of new growth. It could be the result of in-fill that causes a higher number of alarms than the department can service. This is especially true when alarms come in simultaneously.

Moreover, when areas are being developed that begin to extend travel times, they do not automatically become the source of new alarms. In fact, new construction often has a period of several years before adding to fire service demand. The same is not necessarily true from the perspective of emergency medical service since people drive EMS call demand.

Additional Fire Stations or Response Resources

The question that many communities must address is when to add a fire station, additional response resources, or alternative response programs to meet time goals? Obviously, this has been answered in any community that has more than one fire station or response unit. The problem comes in finding a quantifiable threshold to determine that point for each specific situation, because it varies from community to community and even within a specific jurisdiction. The overall answer is part financial and part professional judgment. In fact, in the literature of the fire service today, there is very little definitive guidance on how this should be accomplished. Once the need has been established there are several factors to take into consideration. They consist of:

- Identifying areas with minimum coverage
- Identifying feasible locations for a new facility or response resource
- Evaluating those locations using specific criterion

The description in this document is based upon a growing body of knowledge acquired by the MCFR project team and aimed at quantifying this process. What is unfortunate is that there is no universally acceptable algorithm. The fire protection planning process allows for an evaluation of potential loss because of deteriorating response times. One form of measurement is to assess the road and transportation network to ascertain the percentage of road mileage that theoretically is covered by the time criterion. This is done using computer-based modeling that will create a polygon that describes the areas of coverage. In fact, this process will also identify gaps and deficiencies where response time is not adequate.

As growth and development extends beyond the range of travel time of one fire station, the percentage of calls that exceed the performance requirement should begin to increase. It should be noted that growth, in and of itself, does not create an instantaneous demand. New construction has the advantage of better codes, a higher level of owner interest, and limited deterioration of fire-breeding conditions. However, new growth can introduce different types of occupancies with additional risks that were not considered or needed during initial fire station and resource planning.

A more subtle difference in today's fire service is the fact that community demand for medical services has increased almost from day one of occupancy. In short, this means that new construction may place more values and lives at risk, but the demand for service will be incremental. When demand for service begins, it will be based upon two factors – nature of the occupancy and hazards that are present.

Incident increases may first appear as a change in the performance of an existing fire station in the annual analysis of emergency calls. For example, if a fire station has 1,000 alarms and a 90% compliance rate with the response standard, there would be about 100 alarms per year that were beyond the goal. This would be the baseline for existing response performance. If the following year, the number of alarms was 1,200 and the percentage dropped to 85%, this would indicate that the department is losing ground on response performance.

If the change in the number of alarms had merely increased because of more calls in the same area, the response time percentage should have remained similar. One exception to this rule is when a single company has such a high call volume that it cannot handle all calls without call queuing. However, since the alarm rate went up and the performance went down, the failure threshold may be approaching.

Based upon actual response time analysis, one threshold that needs to be considered is the increase in alarms and the percentage of calls handled under the criterion adopted. Anything more than a 10% increase in calls and a 10% reduction in performance is a signal to evaluate the level of service being provided.

In larger departments, most practitioners factor out non-emergency calls for actual incident performance, only looking at *core or true emergencies*. The definition of core can be made locally based on risk and importance to the community, but they are usually structure fires and moderate to severe status EMS calls.

In general, if more than one measure must be slipping, an evaluation of all Standards of Coverage factors, along with the reason why the data is slipping, is required. A one-year snapshot may not be valid **if** the agency had a big storm event, a catastrophic weather event, major wildland fire, and stacked a large volume of calls for just a month of the year or in the case of COVID-19 a decrease that can be explained and attributed to the event but is expected to return to normal or higher levels.

The incident analysis approach depends upon having emergencies, which does not address what is at risk. That is where the GIS mapping technology applies. As depicted throughout this report, incident and land use can be GIS mapped for determining risk and demand usage. As structures and different types of fire problems are constructed on the ground, they may represent additional lives and property that are at risk that deserve equity in protection. One of the reasons for creating a governmental entity is to control land use and to create mechanisms for collecting taxes and determining ownership. Furthermore, these same individuals and properties are paying the taxes, fees, and permits for the level of services provided. In one sense, when growth occurs, the new properties are usually safer than the older part of the community because they are constructed to a higher standard.

What is clear to almost any community is that being slightly out of the response standard range does not trigger a new facility or additional response unit from an existing facility. One industry threshold for additional response capabilities should be to provide a new fire station or additional response unit into the appropriate zone in the jurisdiction outside the coverage area of current stations that has more than 35 to 50% of its parcels developed. Some of the secondary measures currently being used are 300 to 500 calls for service for any individual fire company or a service population of 10,000 to justify a full-time paid company or response unit.

The following criterion grid illustrates a series of measures that may be useful in deciding when a new fire station or additional response unit should be deployed within a jurisdiction.

Figure 129: Criterion for Fire Station and Resource Need Determination

Action Choices	Travel Distance	Criteria		
		Response Time Parameter	Out of Area Calls	Building/Risk Inventory
Maintain Status Quo	All risks within 1.5 miles	1st due company is within 5 minutes total response time, 90% of the time	100% in first due area	Existing inventory and infill
Temporary Facilities and Minimal Staffing	Risks 1.5 to 3.0 miles from existing fire station	1st due company Exceeds four-minutes travel time 10% of the time, but never exceeds 8 minutes	More than 10% of calls are in adjacent area	New area has 25% of same risk distribution as in initial area
Permanent Fire Station Needed	Risk locations exceeding 4.0 miles from the fire station	1st due company Exceeds four-minutes travel time 20–25% of the time; Some calls < 8 minutes	More than 20–25% of calls are in outlying area	New area has 35% of same risk distribution as in the ini**tial** area of coverage
Permanent Fire Station Essential	Outlying risk locations exceeding 5.0 miles from the 1st fire station	1st due company Exceeds 4-minutes travel time 30% of the time; Some calls < 10 minutes	More than 30% of calls are in outlying area	The **new** area has 50% of same risk distribution as in initial area

The decision-making process for the location of a new fire station should consider staffing pattern decisions. It is not uncommon to construct a fire station and have the staffing model evolve over the years from one system to another. For example, the station might initially be staffed with volunteers but then later have career staff added, either incrementally or all in one fiscal year. In the case of a fire station or alternative response resource under consideration, it should be anticipated that a policy decision needs to be made with respect to the staffing model to be used as soon as possible given the potential financial impacts. For example, a fully staffed paid company has a significant, associated price tag.

The MCFR project team's experience has been that it takes multiple elements of the standards of coverage to be out-of-balance along with having additional economic resources to justify an additional paid company or staffing increase in one or more companies.

Capital Improvement Planning

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

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

The same holds true for fire stations, training grounds, and other fixed facilities. As part of the site visit, the MCFR project team surveyed capital replacement planning efforts. MCFR has a Capital Improvement Plan (CIP) for its facilities and apparatus that is on a twenty-year schedule. Funding is provided by a local one cent sales tax.

MCFR's capital replacement planning is summarized in the following figure.

Figure 130: Capital Assets and Capital Improvement Planning

Capital Planning	Marion County Fire Department
Fire Stations/Structures Replacement Plan	
Period of plan	20-year plan
Apparatus Replacement Plan	
Period of plan	20-year plan
Support Equipment Replacement Plan	
Period of plan	20-year plan

TIME

The time for resources to deploy and reach the emergency can sometimes be the difference in life or death and the difference between incident stabilization and devastation. It is to this end that communities across the country struggle to balance the ever-growing need for resources and the financial constraints to fund them. The importance of establishing realistic and essential standards for deployment of adequate resources based on risk classifications is paramount.

Dynamics of Fire in Buildings

Most fires within buildings develop predictably 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.

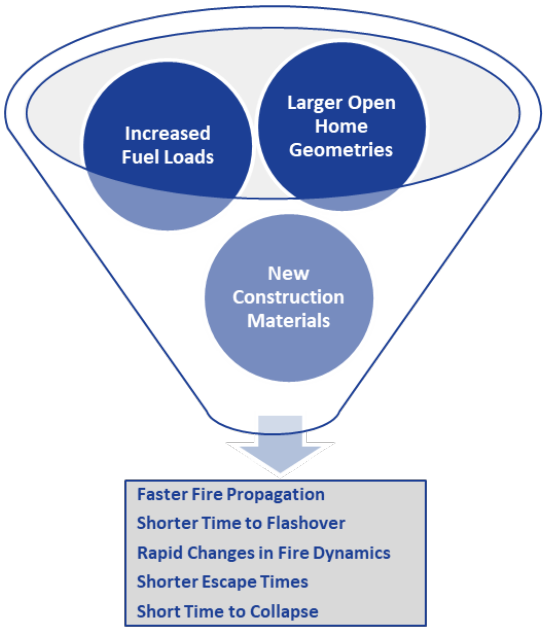
Once flames do appear, the sequence continues rapidly. Combustible material adjacent to the flame heat and ignite, which in turn heats and ignites other adjacent materials if sufficient oxygen is present. As the objects burn, heated gases accumulate at the ceiling of the room. Some of the gases are flammable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

There have been changes in the residential fire environment over the past several decades. These changes include larger homes, different home geometries, increased synthetic fuel loads, and changing construction materials.[49]

[49] *Stephen Kerber, Analysis of Changing Residential Fire Dynamics, and their Implications on Firefighter Operational Timeframes. Underwriters Laboratories.*

Figure 131: Changes in the Fire Environment & Effect on Fire Dynamics



Since flashovers have such a dramatic influence on the outcome of a fire event, the goal of any fire agency is to apply water 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).

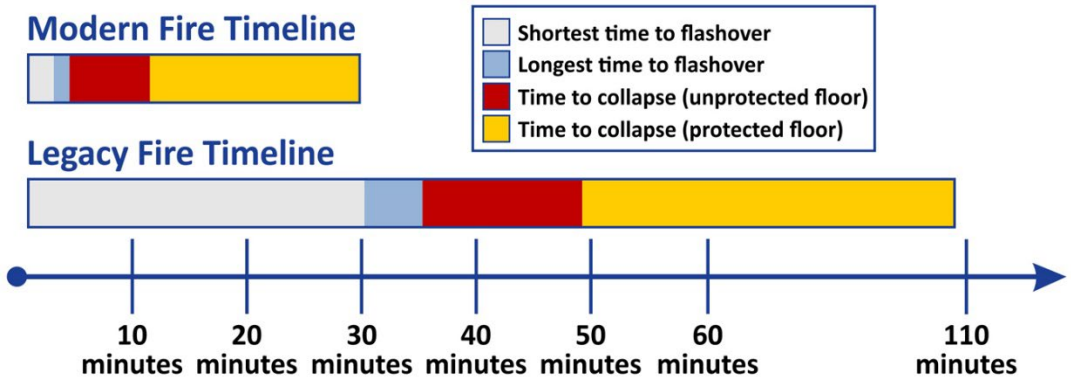
In the 1970s, scientists at the National Institute of Standards and Technology found that after a fire broke out, building occupants had about 17 minutes to escape before being overcome by heat and smoke. Today, that estimate is as short as three minutes in some cases based on materials and compartment configuration. The 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.

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. "Lightweight" 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.

Additionally, 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 control a fire effectively. These factors make the need for early application of water essential to a successful fire outcome.

Several events must take place quickly to make it possible to achieve fire suppression before flashover. The next figure illustrates the sequence of events with a comparison of modern materials vs. legacy materials.

Figure 132: Fire Growth vs. Reflex Time[50]



As is apparent by this description of the sequence of events, the 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 importance of fire station locations with adequate staffing to perform the required tasks can be further evidenced by recommendations in national consensus standards. 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 next figure, fire losses, casualties, and deaths rise significantly as the extent of fire damage increases.

[50] *Stephen Kerber, Analysis of Changing Residential Fire Dynamics, and their Implications on Firefighter Operational Timeframes. Underwriters Laboratories.*

Figure 133: Loss Rates by Fire Spread, Home Structure Fires (2012–2016)[51]

Flame Spread	Rate Per 1,000 Fires		Average Dollar Loss
	Civilian Deaths	Civilian Injuries	
Confined fire or fire spread confined to origin	0.4	11.1	$1,200
Confined to room of origin, including confined fire and fire confined to object	1.8	23.8	$4,000
Spread beyond the room of origin but confined to floor of origin	16.2	76.3	$35,000
Spread beyond the floor of origin	24.6	55.0	$65,900

Emergency Medical Event Sequence

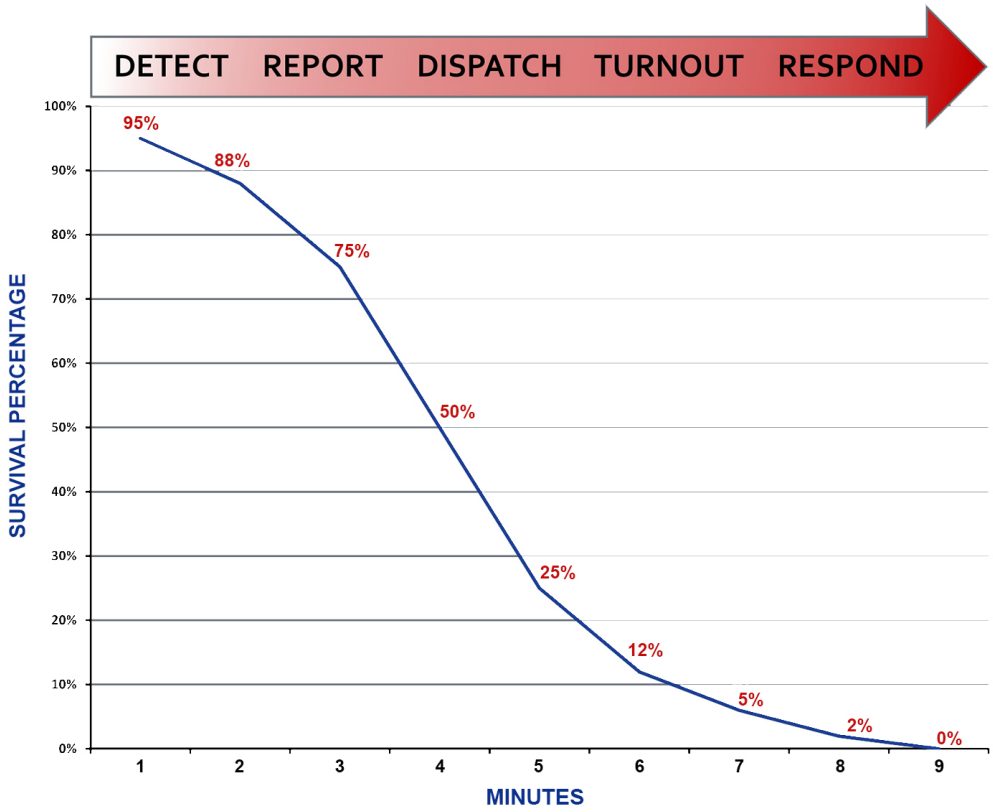
Cardiac arrest is the most significant life-threatening medical event in emergency medicine today. A victim of cardiac arrest has mere minutes in which to receive lifesaving care if there is to be any hope for resuscitation.

The American Heart Association (AHA) continues to emphasize that survival from cardiac arrest hinges on early defibrillation. Their latest guidelines reaffirm that survival chances decline by approximately 10% for every minute without defibrillation, and the likelihood of neurologically intact survival drops sharply after 10 minutes of downtime. Consequently, the AHA recommends delivering a shock "as soon as possible," ideally within the first 3 to 5 minutes of arrest, but always as quickly as feasible

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

[51] *Term "home" includes one- & two-family homes, manufactured homes, & apartments or other multi-family housing, regardless of ownership. Source: National Fire Protection Association Standard 1710, 2020 Edition.*

Figure 134: Bystander Cardiac Arrest Event Sequence



The percentage of opportunities for recovery from cardiac arrest drops quickly as time progresses. By the time the citizen bystander recognizes the need for emergency care and notifies the 911 system three to five minutes may have passed. The stages of medical responses are very similar to the components described for fire responses. Research stresses the importance of immediate CPR, rapid cardiac defibrillation, and administration of certain medications as a means of improving the opportunity for successful resuscitation and survival.

RESPONSE STANDARDS, GOALS, AND TARGETS

The MCFR project team emphasizes the importance of establishing and regularly monitoring performance metrics for the deployment of resources. These metrics serve as the foundation for determining whether 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.

The MCFR Project Team, composed of the department's Deputy Chiefs and Division Chiefs, serves as the organization's primary decision makers and policy setters. The team recognizes that response standards must originate from the community served, balancing what residents expect with what the system can realistically sustain. While the Chiefs hold the authority to establish MCFR's performance standards, they remain committed to ensuring that these decisions reflect community priorities and values.

The analysis presented within this report provides a data-driven foundation to guide leadership in setting and evaluating standards. These recommendations are not intended as mandates but as informed options designed to support policy development, encourage dialogue with community stakeholders, and offer a framework for reevaluating existing standards as risk conditions and service demands evolve.

According to the National Fire Protection Association (NFPA), departments in which career personnel constitute more than 85% of total staffing fall under the guidance of 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*. While NFPA 1710 is not mandated unless formally adopted, it is the applicable standard of performance for departments with more than 85% career staffing, such as MCFR. As such, it provides the most appropriate benchmark for response and staffing metrics in this context. This standard outlines performance objectives such as turnout times, response times, and staffing levels for career agencies. In contrast, NFPA 1720 governs departments with less than 85% career staffing, including most volunteer and some combination departments. Although both standards promote effective and timely emergency response, NFPA 1710 sets more stringent response and staffing benchmarks, including turnout time of 60 seconds and first engine arrival within four minutes for 90% of incidents in urban settings.

MCFR, with its largely career workforce, aligns with the criteria in NFPA 1710 and should measure its performance accordingly. However, in a department with diverse population densities and mixed staffing across certain areas, it may be appropriate to also consider NFPA 1720's demand-based response zones—urban, suburban, and rural—as part of a blended deployment model. By using the appropriate benchmarks for its staffing structure and community risk profile, MCFR can develop performance goals that are both ambitious and attainable.

Response standards are unique to each organization. Multiple factors such as staffing, financial constraints, size of the service area, and politics will influence each department's ability to set achievable goals and objectives for response. A comparison of the two standards and how MCFR measures against these standards of performance is summarized below.

- When compared to NFPA 1710 criteria, the response time for all calls from the overall MCFR performance is:
    - 13 minutes, 58 seconds, which is 8 minutes, 38 seconds greater than the expected standard.
- When compared to NFPA 1720 which allows jurisdictions the ability to segregate response time by population demand density the overall MCFR performance is:
    - 9 minutes, 59 seconds for urban areas, which is 59 seconds greater than the recommended standard.
    - 12 minutes, 02 seconds for suburban areas, which 2 minutes, 2 seconds greater than the expected standard.
    - 15 minutes, 23 seconds for rural areas, which is approximately 1 minute, 23 seconds greater than the expected standard.

Recommendations for a process of setting performance goals for each of the response time components are presented later in this section.

The next sections address the suggested process for a department to determine critical tasks based on local risk and setting response time standards.

For a fire department to plan effectively and make appropriate decisions regarding the deployment of resources, it needs to use clearly identified criteria, response performance objectives (targets), and quantifiable means of measuring actual response relative to targeted objectives.

To do so, the MCFR project team advises that performance objectives and measures be developed using the "**SMART**" acronym, meaning that targets should be:

- ✓ **S**pecific
- ✓ **M**easurable
- ✓ **A**ttainable
- ✓ **R**elevant
- ✓ **T**imely

The MCFR project team emphasizes the importance of the establishment of response performance metrics by every fire department. Once established, these standards result in measurable goals for service delivery, which then form the foundation upon which the organization will plan for the deployment of resources. Absent these processes, the organization cannot determine where it needs to go, nor is it able to know when it is achieving its goals and meeting the community's expectations.

Response Standards for People, Tools, & 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 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 critical of time. However, for serious trauma, cardiac arrest, strokes, 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 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. More importantly though are the patient outcomes that are experienced when sufficient resources arrive on scene in a timely manner.

Fire emergencies are even more resource critical. Again, the true test of performance is the time it takes to deliver sufficient personnel to search for lives and initiate the application of water to a fire. This is the only practical method to reverse the continuing internal temperature increases and ultimately prevent flashover. Positive outcomes are experienced when resources arrive and perform the necessary tasks to save lives and property, stabilize the incident, and conserve property. 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.

FUTURE SYSTEM RECOMMENDATIONS AND IMPROVEMENTS

RECOMMENDATIONS & IMPROVEMENT GOALS

This *Long-Rang Master Plan with Community Risk Assessment: Standards of Cover* culminates in a series of recommendations and improvement goals based on the observations and analysis previously discussed. Addressing these recommendations should be approached pragmatically. As such, the MCFR project team grouped them into recommended time frames to address.

Facilitating the adoption and implementation of many of these recommendations will take significant commitment, time, and resources (including financial). The suggested timeframes are intended to introduce a realistic "blueprint" for implementation. However, environmental conditions and circumstances may provide challenges or opportunities to address a recommendation(s) outside of the timeframes identified here.

The MCFR project team has grouped the recommendations into three implementation timeline categories: Short-Term Recommendations (6 months–1 year), Mid-Term Improvement Goals (1–3 years), and Long-Term Improvement Goals (3–5 years).

Lastly, these recommendations are just that, recommendations. They are the MCFR project team's best effort in providing guidance in addressing issues and deficiencies identified during the study period. County leaders and citizens hold the ultimate authority in embracing, revising, or discounting the following guidance.

Short-Term Recommendations

A considerable volume of observations were made relating to MCFR current conditions in management and operations. The process of understanding, prioritizing, and implementing the recommended enhancements can be daunting, simply due to the amount of work that may be involved. The following recommendations should be considered for implementation in the short term.

Management

- Use multiple methods when communicating with department personnel.
- Conduct regularly scheduled staff meetings with agenda and minutes distributed to the organization.
- Review and update applicable fire department human resource rules, policies, and procedures to ensure currency and effective processes. Finalize updating all policies and procedures.
- Establish a timetable for regular review and revision of all job descriptions.
- Review and update current job descriptions.

Planning

- Communicate succession planning efforts and ongoing plan updates.
- MCFR is encouraged to develop and maintain effective pre-incident and special hazard plans and incorporate the plans routinely into dispatch communications following NFPA 1660.

- Investigate software programs for pre-incident planning that can be uploaded to MDTs or to iPads.
- Ensure that operations personnel do tactical surveys on new construction.
- Create target hazards planning, including operational preplans for the response personnel, and incorporate them into dispatch procedures.
- Establish an internal planning group with a position delegated to the planning function: update the planning efforts annually.
- Create an emergency plan with hospital staff and practice it annually.
- Conduct a follow-up Strategic Plan to implement the recommendations, with goals related to service levels and performance with responsibilities and deadlines established.

Capital Assets

- Examine fleet size for a possible reduction of units to control the cost of maintenance and replacement.
- MCFR should work with the board to formally adopt a CIP similar to those used by the funding entities for other needs. Establish clearly defined vehicle replacement, equipment replacement, and facility improvement schedules.

Facilities

- Store turnout gear in a well-ventilated room to prevent additional firefighter exposure to off-gassing chemicals absorbed into turnout gear during a fire.
- Continue to take steps to reduce exposure to diesel soot and/or limit the potential for exposure of personnel and turnout gear to diesel fumes/soot.
- Properly decontaminate employees and their equipment in accordance with NFPA 1581: *Standard on Fire Department Infection Control Program*.
- Develop, adopt, and fund a long-range-facilities plan for the fire department.

Special Teams

Hazardous Materials

- Establish a written ERP for Hazardous Materials Response that is made available online to all members.
- Establish a plan to identify the required personal protective equipment to be employed along with emergency equipment.
- The ERP should include procedures for after-action reports and critiques.
- Create policies that reference a standardized methodology for assigning incident levels to hazardous materials emergencies.
- Develop a plan to outline the specific procedures for various tasks that team members may be required to perform, such as spill or leak control.
- Develop a training plan that includes the handling of more complex incidents.

- Establish and provide the capability for Class D metal fire extinguisher usage.
- Provide additional Hazardous Materials Toxicology training.
- Provide hazardous materials safety officer training in accordance with NFPA 472: *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*.
- Explore options to establish additional capacity in geographical locations to provide hazardous materials and technical rescue services.
- Ensure replacement plans are in place to upgrade costly hazardous materials monitoring equipment, particularly to remain abreast of technological changes.

Technical Rescue

- Provide additional training for medical personnel in technical rescue-specific emergencies and injuries.
- Develop a personal protective equipment plan for technical rescue.
- MCFR should develop a policy for a site safety plan.
- Monthly training sessions are currently conducted on shift; however, increased full team training would be beneficial and ensure greater proficiency and team cohesion.
- Provide additional large vehicle machinery extrication training.
- Because rescue equipment is expensive and wears out over time, a replacement schedule, with appropriate funding, much like those used for apparatus should be developed for all big-ticket items.
- The equipment used for ice rescue is expensive and requires a replacement schedule for suits as they age.

Fire Prevention

- Continue to provide certification and training opportunities for fire prevention staff to achieve full ISO credit for Fire Prevention Certification and Training.
- Consider the addition of another fire inspector based on workload. Using retired firefighter annuitants or part-time staff may be another option for adding inspection capacity may be a cost-effective way to bolster the fire inspection program.
- Certify investigators in accordance with NFPA 1730, Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations and NFPA 921, Guide for Fire and Explosion Investigations.
- Develop a Community Risk Reduction (CRR) plan that focuses on all the risks throughout the area based on the findings in this report and continued analysis by MCFR staff.
- Create a Community Wildfire Protection Plan (CWPP) to identify and prioritize areas for hazardous fuel reduction treatments and recommend the types and methods of treatment on Federal and non-Federal land that will protect one or more at-risk communities and essential infrastructure and recommend measures to reduce structural ignitability throughout the at-risk community.

- It is recommended that the Fire Marshal's Office and MCFR's leadership develop a monthly report to allow for the regular review of incident data and the response performance. The information contained within a common records management system provides valuable information that can assist the department in identifying areas of concern needing to be addressed through its fire prevention programs.
- The MCFR project team further recommends that MCFR consider the long-term establishment of the position of Community Outreach Coordinator. This position may be volunteer or paid and assigned to the Fire Marshal's Office. The role of the Community Outreach Coordinator would be to ensure that development, delivery, and enhancement of MCFR's Community Risk Reduction Program.

Public Education

- Establish a Fire and Life Safety Educator designation per NFPA 1035, Standard on Fire and Life Safety Educator, Public Information Officer, Youth Firesetter Intervention Specialist, and Youth Firesetter Program Manager Professional Qualifications to provide additional credibility to fire safety prevention and public education efforts and garner extra ISO points.
- Develop fire safety education pamphlets in several languages and ensure that they are readily available.
- Establish a wildland interface educational program.

Staffing

- Provide periodic reviews of current compensation structures, market competitiveness, and county compensation philosophies.
- Ensure all safety committee activities align with Chapter 4 of NFPA 1500.
- Ensure that the safety committee is diverse in their representation from across the department, ensuring representation by shift, rank, function, and interest, including representation from non-uniformed and staff members.
- The safety committee should meet monthly and should work to implement member safety education programs and encourage members' safety self-awareness.
- Update health and safety related policies to be current with the most recent applicable NFPA standards adopted in accordance with NFPA 1581.
- Ensure all members of the department understand how to access EAP resources.
- Develop and implement a formal recruitment program.
- Include cancer screenings as a part of the new hire and incumbent annual physicals.

EMS

- Establish a quality improvement (QI) program with a review of internal retrospective data.
- Establish an annual training calendar assigning specific monthly training to a particular purpose.
- Expand simulation-based reviews, frontline feedback channels, and automated documentation audits

- Increase support for CORE/CORe and Community Paramedicine programs through targeted funding, reporting, and regional collaboration.

Training

- Officers should complete NIMS ICS 400 level training.
- Consider deploying members as part of wildland operations to provide training and experience that can be shared with members when they return.
- Provide support to ensure operations units get required training.
- Designate shift officers as training liaisons to assist with consistent training delivery across the shifts.
- Balance training program in three areas 1) training reflecting the current distribution of call types, 2) special team training, and 3) re-certification requirements.
- Identify gaps in high-risk low frequency events. Design the training program to address any deficiencies.
- There are better training records management software platforms available and MCFR should look to upgrade their program to one of these available alternatives.
- Schedule the required ISO training requirements across the entire year to ensure compliance.
- Create a training committee of individuals who are passionate about department training.
- Implement an analysis of the ability to complete tasks and evolutions as outlined in NFPA 1410, Standard on Training for Emergency Scene Operations.
- The department should make Post Incident Analysis (PIA) a part of the regular training program review.

Mid-Term Improvement Goals

Implementing mid-term improvement goals involves taking specific actions to achieve the objectives and goals set for a period of one to three years. General steps that can help in implementing mid-term strategies involve defining specific objectives and goals, assigning roles and responsibilities, developing action plans, allocating resources, monitoring progress, communicating, and engaging stakeholders in the implementation process, evaluating, and adjusting as necessary based on feedback. The MCFR project team has identified several strategies to improve MCFR over the next one to three years.

Establish Geographic Response Demand Zones

MCFR should continue to refine and establish response benchmarks by considering geography, population density, and risk. Communities contain varying levels of population density and risk that allow fire jurisdictions to specify response performance objectives based on those considerations. NFPA 1720 categorizes population density as:

- **Urban** – A geographic area with a population density of over 1,000 people per square mile.
- **Suburban** – A geographic area with a population density of between 500 and 999 people per square mile.

- **Rural** – A geographic area with a population density of fewer than 500 people per square mile.
- **Remote**– Areas with a very low population density and limited access to emergency services.

Within the Marion County Fire Rescue (MCFR) service area, all levels of community risk are present based on the criteria outlined above. Figure 56 illustrates the varying levels of population density across the county. While much of Marion County is classified as rural, the majority of emergency responses occur in areas of higher population density, particularly within and around the City of Ocala and along major growth corridors. To account for these differences, MCFR should consider establishing separate response performance standards for urban, suburban, and rural service zones.

Although response zones are generally defined by proximity to the nearest fire station, other factors such as roadway networks, traffic congestion, and geographic barriers (e.g., lakes, wetlands, or limited access highways) may influence travel times. In keeping with NFPA 1720, MCFR may further classify certain rural regions as "remote," where extended response times are unavoidable due to distance, roadway limitations, or other environmental factors beyond the department's control. In these areas, response expectations may need to be adjusted while still ensuring reliable service to the community.

Each response zone should be evaluated on a recurring basis, at minimum annually, though quarterly reporting is recommended for accuracy and accountability. Performance in each zone should be measured against adopted benchmarks to determine whether resources and station placement remain aligned with community needs. Over time, this analysis will highlight areas where additional stations, staffing, or resource adjustments are necessary to improve service delivery. MCFR leadership should share these findings with the Board of County Commissioners and the community to ensure transparency and maintain trust in the department's ability to meet evolving service demands.

Community Service Level Area Considerations

In many communities, it is appropriate to consider variations in the service levels and expectations of the community based on population densities and associated risk. The following are sample service delivery goals established by the MCFR project team for the Standards of Cover that accommodate the various demand zones located within the response area. These statements are based on the MCFR project team's understanding of expectations across communities of similar size, demographics, and risk.

Figure 135: Community Outcome Goals

Service	Community Outcome Goal
Fire Suppression	For all fire incidents, the fire department shall strive to arrive in a timely manner with sufficient number and effective concentration of resources to rescue at-risk lives, contain and stop the escalation of the fire within the area of involvement, and perform property conservation operations while providing for the safety and security of the responders, the public, and the environment.
Emergency Medical Services	For all emergency medical incidents, the fire department shall strive to arrive in a timely manner with sufficient trained and equipped personnel to provide medical services that will stabilize the situation, provide care and support to the victim, and reduce, reverse, or eliminate the conditions that have caused the emergency while providing for the safety of the responders.
Vehicle Extrication	For all vehicle accidents where the rescue of victims is required, the fire department shall strive to arrive in a timely manner with sufficient resources to stabilize the situation and extricate the victim(s) from the emergency situation or location without causing further harm to the victim, responders, public, and the environment.
Technical Rescue	For all technical rescue incidents, the fire department shall strive to arrive in a timely manner with sufficient resources to stabilize the situation and establish an action plan for the successful conclusion of the incident. Working in conjunction with additional specially-trained and organized regional resources, the fire department will perform the necessary rescue functions while providing for the safety and security of the responders, public, and the environment.
Hazardous Materials	For all hazardous materials incidents, the fire department shall strive to arrive in a timely manner with sufficient resources to stabilize the situation and establish an action plan for the successful containment and notification and response of a specialized HazMat team and removal resources while ensuring the safety of the responders, the public, and the environment.

Formally Adopt Response Time Standards and Goals

Previously in this report, the MCFR project team emphasized the importance of response standards and targets. These standards establish measurable goals for service delivery, which then form the baseline for the deployment of resources. Without defined goals and targets, an organization is unable to appropriately identify how effective it is providing services that meet community expectations. Response performance goals must be tailored to match community expectations and conditions and balanced against the financial aspect of what a community is able and willing to afford.

The response time continuum, the time between when the caller dials 911 and when assistance arrives, is comprised of several components. The following are the individual components analyzed by the MCFR project team.

- **Call Processing Time**: The amount of time between when a dispatcher answers the 911 call and resources are dispatched.
- **Turnout Time**: The time interval between when units are notified of the incident and when the apparatus are responding.
- **Travel Time**: The amount of time the responding unit spends on the road to the incident.
- **Response Time**: A combination of turnout time and travel time. This is the most commonly utilized measure of fire department response performance.
- **Total Response Time**: The time interval from the receipt of the alarm at the dispatch center to when the first emergency response unit is initiating action or intervening to control the incident.

Total response time is the amount of time a resident or business waits for resources to arrive at the scene of an emergency beginning when they first call 911. This process begins for MCFR once the communications center dispatches the appropriate unit. The NFPA standard for call processing is derived from NFPA 1221: *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*. Similarly, NFPA 1710 provides response time measurements for career fire departments and is considered an industry best practice. The next figure illustrates these standards.

Figure 136: NFPA 1710 Standard for Fire/EMS Responses

Response Interval	NFPA Standard
Alarm Handling (NFPA 1225)	60 seconds or less at 90% for High Acuity Calls
Turnout Time	60 seconds or less at 90% for EMS 80 seconds or less at 90% for Fire and Special Operations
Travel Time	240 seconds or less at 90% for the First Arriving Unit

The MCFR project team detailed the current MCFR response standards (fire and EMS) previously in this report, addressing call processing times, turnout times, and response times for the first unit on scene.

To review, the next figure demonstrates MCFR's emergency response performance for the first apparatus on the scene at an emergency incident. This information covers MCFR baseline performance from 2020 to 2024:

Figure 137: MCFR Current Response Time Performance Standards (All Calls) NFPA 1710

90TH PERCENTILE BASELINE PERFORMANCE AND BENCHMARK GOALS (FIRST APPARATUS ON SCENE)				
	Alarm Handling	Turnout	Travel	Response Time (Dispatched to First Apparatus on Scene)
MCFR 90% Baseline	2:24	1:06	11:07	11:45
NFPA 1225 Standard	1:00			
NFPA 1710 Standard		1:20	4:00	5:20

Figure 138: MCFR Current Response Time Performance Standards (Fire) NFPA 1710

90TH PERCENTILE BASELINE PERFORMANCE AND BENCHMARK GOALS (FIRST APPARATUS ON SCENE)				
	Alarm Handling	Turnout	Travel	Response Time (Dispatched to First Apparatus on Scene)
MCFR 90% Baseline	3:19	1:14	12:59	13:27
NFPA 1225 Standard	1:00			
NFPA 1710 Standard		1:20	4:00	5:20

This includes the extended distances traveled for wildland fires to the far reaches of the jurisdiction. One option is to distinguish between wildland and structure fires and set performance metrics for each.

Figure 139: MCFR Current Response Time Performance Standards (EMS) NFPA 1710

90TH PERCENTILE BASELINE PERFORMANCE AND BENCHMARK GOALS (FIRST APPARATUS ON SCENE)				
	Alarm Handling	Turnout	Travel	Response Time (Dispatched to First Apparatus on Scene)
MCFR 90% Baseline	2:17	1:07	11:10	11:47
NFPA 1225 Standard	1:00			
NFPA 1710 Standard		1:00	4:00	5:00

In addition to the response performance standards displayed in the previous two figures, MCFR has defined its respective full first alarm assignments (ERF) for a structure fire. Recommendations related to the assembly of an effective response force are provided later in this section.

In reviewing the performance by MCFR, the MCFR project team found that, in general, the responses are higher than NFPA 1710 best practices and difficult to meet at best. The MCFR project team recommends that MCFR develop and formally adopt a single set of emergency response performance goals that work toward consistency with NFPA 1225 standards for alarm handling and NFPA 1710 standards for turnout times but incorporate NFPA 1720 demand zone criteria for response time. These response performance goals should address the components of response performance (call processing time, turnout time, and travel time) as well as overall response performance goals for predominant risks present in the communities.

The following figures detail the performance of MCFR in relation to these NFPA 1720 demand zone standards for 2022 and provide the ability to realize the benefit of incorporating NFPA 1720 demand zones responses into the performance metric development process.

Figure 140: MCFR Current Response Time Performance Standards (All Calls) NFPA 1720

PERCENTILE BASELINE PERFORMANCE AND BENCHMARK GOALS (FIRST APPARATUS ON SCENE)			
	NFPA 1720 Urban @ 90% Response Time (Dispatched to First Apparatus on Scene)	NFPA 1720 Suburban @ 80% Response Time (Dispatched to First Apparatus on Scene)	NFPA 1720 Rural @ 80% Response Time (Dispatched to First Apparatus on Scene)
MCFR NFPA 1720 Performance	9:59	12:02	15:23
NFPA 1720 Standard	9:00	10:00	14:00

Figure 141: MCFR Current Response Time Performance Standards (Fire) NFPA 1720

PERCENTILE BASELINE PERFORMANCE AND BENCHMARK GOALS (FIRST APPARATUS ON SCENE)			
	NFPA 1720 Urban @ 90% Response Time (Dispatched to First Apparatus on Scene)	NFPA 1720 Suburban @ 80% Response Time (Dispatched to First Apparatus on Scene)	NFPA 1720 Rural @ 80% Response Time (Dispatched to First Apparatus on Scene)
MCFR NFPA 1720 Performance	9:11	12:19	15:38
NFPA 1720 Standard	9:00	10:00	14:00

Figure 142: MCFR Current Response Time Performance Standards (EMS) NFPA 1720

PERCENTILE BASELINE PERFORMANCE AND BENCHMARK GOALS (FIRST APPARATUS ON SCENE)			
	NFPA 1720 Urban @ 90% Response Time (Dispatched to First Apparatus on Scene)	NFPA 1720 Suburban @ 80% Response Time (Dispatched to First Apparatus on Scene)	NFPA 1720 Rural @ 80% Response Time (Dispatched to First Apparatus on Scene)
MCFR NFPA 1720 Performance	10:03	12:20	12:32
NFPA 1720 Standard	9:00	10:00	14:00

The NFPA 1720 demand zone approach criteria allows for determining remote areas with travel time greater than eight miles. These responses could be carved out of the overall performance analysis to refine the performance measures even more. A well-defined, formally adopted set of response goals will accommodate more effective planning. Further, when considering the future deployment of resources decisions must be made using the same goals. In other words, it is much easier to strike a single target, rather than having different performance standards.

The following figure displays combined sample performance goals for consideration that address the various components of total response time:

Figure 143: Sample Response Goals—Components of Response Time (Fire) NFPA 1720

PERCENTILE PERFORMANCE BENCHMARK GOALS (FIRST APPARATUS ON SCENE) ANY EMERGENCY INCIDENT			
	Alarm Handling	Turnout Time	Response Time (Dispatched to First Apparatus on Scene)
Performance Goal (Urban)	01:00	01:20	9:00 @ 90%
Performance Goal (Suburban)	01:00	01:20	10:00 @ 80%
Performance Goal (Rural)	01:00	01:20	14:00 @ 80%
Performance Goal (Remote)	01:00	01:20	Directly dependent on travel distance.

Figure 144: Sample Response Goals—Components of Response Time (EMS) NFPA 1720

PERCENTILE PERFORMANCE BENCHMARK GOALS (FIRST APPARATUS ON SCENE) ANY EMERGENCY INCIDENT			
	Alarm Handling	Turnout Time	Response Time (Dispatched to First Apparatus on Scene)
Performance Goal (Urban)	01:00	01:00	9:00 @ 90%
Performance Goal (Suburban)	01:00	01:00	10:00 @ 80%
Performance Goal (Rural)	01:00	01:00	14:00 @ 80%
Performance Goal (Remote)	01:00	01:20	Directly dependent on travel distance.

The response performance benchmarks displayed in the previous two figures vary to some degree from the current 90th percentile performance of MCFR components of total response time.

The MCFR project team believes that adopting the recommended emergency response time goal of 9 minutes in urban areas, 10 minutes in suburban areas, and 14 minutes in rural areas (dispatch to arrival) for the first arriving unit allows MCFR an opportunity to develop a compliance methodology to monitor actual response performance. This will provide MCFR leaders with the necessary data to monitor compliance with the adopted standards and adjust the adopted response performance goals as needed.

The MCFR project team provides the following combined emergency response performance goals for the first unit on scene at any emergency incident, fire suppression emergencies, and EMS emergency incidents:

All Emergency Incidents–Response Performance Goal

- For 90% of all emergency incidents in urban areas, the first apparatus shall arrive within 9 minutes response time (Dispatch to first unit on-scene). The first apparatus on-scene shall be capable of establishing command, providing for scene safety, or initiating basic life support (BLS).

- For 80 percent of all emergency incidents in suburban areas, the first apparatus shall arrive within 10 minutes response time (Dispatch to first unit on-scene). The first apparatus on-scene shall be capable of establishing command, providing for scene safety, or initiating basic life support (BLS).
- For 80% of all emergency incidents in rural areas, the first apparatus shall arrive within 14 minutes total response time (Dispatch to first unit on-scene). The first apparatus on-scene shall be capable of establishing command, providing for scene safety, or initiating basic life support (BLS).
- For 90% of all emergency incidents in remote areas, the first apparatus arrival shall be directly dependent on travel time (Dispatch to first unit on-scene). The first apparatus on-scene shall be capable of establishing command, providing for scene safety, or initiating basic life support (BLS).

Fire Suppression Incident–Response Performance Goal

- For 90% of all emergency fire suppression incidents in urban areas, the first fire apparatus shall arrive within 9 minutes response time (Dispatch to first unit on-scene). The first fire apparatus on-scene shall be capable of establishing command, initiating scene size-up, and initiating a defensive fire attack operation.
- For 80% of all emergency fire suppression incidents in suburban areas, the first fire apparatus shall arrive within 10 minutes response time (Dispatch to first unit on-scene). The first fire apparatus on-scene shall be capable of establishing command, initiating scene size-up, and initiating a defensive fire attack operation.
- For 80% of all emergency fire suppression incidents in rural areas, the first fire apparatus shall arrive within 14 minutes response time (Dispatch to first unit on-scene). The first fire apparatus on-scene shall be capable of establishing command, initiating scene size-up, and initiating a defensive fire attack operation.
- For 90% of all emergency fire suppression incidents in remote areas, the first fire apparatus arrival shall be directly dependent on travel time (Dispatch to first unit on-scene). The first fire apparatus on-scene shall be capable of establishing command, initiating scene size-up, and initiating a defensive fire attack operation.

All EMS Incidents–Response Performance Goal

- For 90% of all emergency EMS incidents in urban areas, the first on scene apparatus shall arrive within 9 minutes response time (Dispatch to first unit on-scene). The first on-scene unit shall be staffed with a minimum of two personnel capable of performing patient assessment, determining life-threatening conditions, and initiating patient care.
- For 80% of all emergency EMS incidents in suburban areas, the first on scene apparatus shall arrive within 10 minutes response time (Dispatch to first unit on-scene). The first on-scene unit shall be staffed with a minimum of two personnel capable of performing patient assessment, determining life-threatening conditions, and initiating patient care.

- For 80% of all emergency EMS incidents in rural areas, the first on scene apparatus shall arrive within 14 minutes response time (Dispatch to first unit on-scene). The first on-scene unit shall be staffed with a minimum of two personnel capable of performing patient assessment, determining life-threatening conditions, and initiating patient care.
- For 90% of all emergency EMS incidents in remote areas, the first on scene apparatus arrival shall be directly dependent on travel time (Dispatch to first unit on-scene). The first on-scene unit shall be staffed with a minimum of two personnel capable of performing patient assessment, determining life-threatening conditions, and initiating patient care.

Combined response performance goals for the assembly of an effective response force (ERF) are discussed as part of later recommendations.

Improve Alarm Handling Times

Currently, Public Safety Communications call-taking and dispatch times are in excess of NFPA standards. The MCFR project team has identified several best practices and recommendations for review and consideration by the dispatch system to utilize as appropriate. PSC dispatch should monitor alarm handling performance on a monthly basis, and strive to maintain or exceed adopted standards. Based on NFPA 1225 standards, alarm handling time—the time between when the call is answered and when the call is dispatched to responding units—should be less than 60 seconds, 90% of the time for high acuity incidents. Currently, MCFR has call-handling performance of 2 minutes, 24 seconds at the 90th percentile. This is almost double the performance standard as recommended by NFPA 1225.

- Implement processes to reduce alarm handling times. The single most cause of delay in MCFR's system has been identified as alarm handling time.

Improve Turnout Time Performance

Turnout time is the one component of total response time over which the fire department has control and is not affected by outside influences. Turnout time, or the time from when the call is received by the response units (dispatched) to when the unit is enroute to the scene (responding), affects overall response times. Reducing this response time component reduces total response time. The NFPA 1710 calls for turnout times of 60 seconds for EMS incidents and 80 seconds for fire incidents. Overall turnout time performance for MCFR was 1 minute, 6 seconds.

- The MCFR project team recommends adoption of a turnout time goal of 60 seconds for EMS incidents and 80 seconds for fires and special operations incidents at the 90th percentile.
- Conduct regular reporting of turn-out times with on-going analyses of turnout time delays. Current MCFR includes turnout time as part of the performance measures.

With good information, training, and properly designed facilities that allow for rapid and efficient movement, responders can improve turnout time and hence total response time performance.

Response Performance Reporting

Once response time performance measures are adopted, the ability to measure performance is greatly dependent on collection and reporting of the data. Several recommendations are offered to improve data collection and reporting. The recommendations are listed here:

- Collect accurate and complete response time data for all units assigned to an incident. These times should include alarm handling and turnout times.
- Expand the incident reporting capability to include geographical distribution working with the GIS unit. Include graphical data in the annual report.
- Develop a quality assurance process for the data collection and analysis processes.

Insurance Services Office Public Protection Classification

As of March 1, 2023, Marion County Fire Rescue (MCFR) holds a Public Protection Classification (PPC) rating of Class 2/2Y, with a total ISO score of 84.73 out of 105.5 points. To achieve a Class 1 rating—the highest possible PPC classification—MCFR must obtain a minimum of 90.00 points. This equates to an improvement of at least 5.27 points. The following analysis identifies the most strategic areas for improvement based on the most recent ISO audit.

Figure 145: Areas of ISO Divergence

Factor	Score	Max Score	% of Max Score	Remaining Points	Impact
549. Credit for Deployment Analysis	3.61	10	**36.1**	**6.39**	**Largest gap; improve station coverage and response time reliability.**
571. Credit for Company Personnel	12.43	15	**82.86**	**2.57**	**Enhance staffing levels and full-time coverage.**
581. Credit for Training	8.51	9	**94.55**	**.49**	**Increase training hours or improve recordkeeping.**
Divergence Penalty	-0.74	N/A	**N/A**	**N/A**	**Balance fire department and water supply capabilities.**

To reach Class 1 PPC status, MCFR should prioritize improvements in the following areas:

- Deployment Analysis – Add or optimize station placement to reduce gaps in ERF coverage. Aim to meet or exceed NFPA 1710 standards for response times across all demand zones.
- Company Personnel – Strengthen staffing on frontline apparatus, targeting improved ladder service delivery and company staffing.
- Divergence Reduction – Reduce the disparity between suppression and water supply capability. Expand hydrant testing, rural water supply plans, and redundancy in supply.
- Training – Maximize remaining training points through enhanced tracking and by ensuring comprehensive documentation of multi-company and facilities training.

These strategic focus areas provide a realistic opportunity to gain the necessary 5.27 points required to elevate MCFR's PPC to Class 1. Achieving this milestone not only reflects superior fire protection capabilities but may also contribute to reduced insurance costs for property owners across Marion County.

Develop a Formal Succession Planning and Mentoring Program for Anticipated and Unanticipated Vacancies

MCFR will experience significant turnover in its leadership ranks as well as experience growth in these ranks from additional positions recently added. As fire service organizations navigate through the challenges of the 21st century, one key issue resonates to the forefront, "Who will lead our organizations in the future, and how will they do it successfully?" Many challenges facing organizations today, if not addressed, will lead to organizational turbulence and/or possible failure. Many organizations are not prepared for, nor have any real plans in place for this transition. To achieve trusted leadership and organizational success beyond the 21st century, organizations must overcome the challenges of building a leadership succession plan through education and the generation of social capital as the means for addressing healthy relationships, managing dissent, and recognizing the uses for evidence-based management in the fire service.

Key Challenges

Organizations today encounter a myriad of challenges that affect their ability to succeed. Many of these challenges can be anticipated and prepared for with proper identification, acknowledgment, and planning. Research yielded six main problems or concerns organizations will face and must address through succession planning: dealing with a retiring workforce, a loss of institutional knowledge, diminishing experience and practical wisdom, a resistance to organizational change, having four different generations in the workforce, and changing expectations and demands for emergency services. Through a vigilant effort to continuously improve the organization and develop a strategic plan to address these challenges, organizational leadership within MCFR will meet these challenges with solutions for the future.

Retiring Workforce

For fire-rescue departments, the retiring workforce can have a particularly significant impact. The specialized skills and experience required for firefighting and emergency response often take many years to develop, and losing experienced personnel can lead to gaps in service delivery and reduced operational effectiveness. The increase in the number of retirees all at once or the addition of leadership positions becomes difficult for organizations to manage and likewise produces other challenging issues if plans are not in place to address these gaps.

Loss of Institutional Knowledge

As the workforce retires and leaves, they take with them valuable, institutional knowledge gained during a career of serving the organization. Institutional knowledge is the mental history of learnings and teaching gained through employment with the organization. The history of the way things are done, or in some cases not done. Institutional knowledge collected and processed during the employee's day-to-day activities becomes valuable to the organization. The key to this institutional knowledge is time. Time served equates to lessons learned. These lessons, if not passed on through a formal and dedicated process to junior or successive employees, are lost.

Loss of Experience and Practical Wisdom

Along with institutional knowledge are the physical experiences of doing the organization's work. This is experience gained through training and actual accounts yields wisdom. These together provide the employee with the ability to make sound decisions that will benefit the organization. Each account or situation an employee experiences provides valuable insight for use in the next situation. As employees leave the organization, these stored experiences are lost. If not passed down to other employees or cataloged, the experience must be re-lived to regain the knowledge lost through attrition.

Resistance to Organizational Change

Further challenges for the organization rest on the status of change within the organization. As the organization grows, it is inevitable that change will occur. Often the need for change will bring with it the unwillingness of employees to accept change based on inherent beliefs that may differ from this new direction.

> *As the primary link between the organization's change strategy and the employees responsible for implementing that strategy, managers must be able to "unfreeze" employee beliefs that the status quo is acceptable and motivate employees to make the desired changes.* [52]

Generations in the Workforce

The type of employees that comprise the workforce is changing. Currently there are five different generations working side-by-side. These generational differences create difficulties and challenges for the organization as they navigate to appropriately address and communicate with each generation. Each of the five generations is vastly different in their approach and outlook on organizational methods for success. MCFR must approach these generational differences with methods that ensure clear communication of department mission, vision, and guiding principles and that they are understood.

[52] *Furst, S. A. (2008). Employee resistance to organizational change: Managerial influence tactics and leader-member exchange. Journal of Applied Psychology, 93 , (2), 453-462. doi:10.1037/0021-9010.93.2.453.*

Changing Expectations and Demands

In recent years, fire service organizations have experienced decreasing revenues and budget cuts while requests for service have steadily increased. Fire service organizations across the nation are challenged by decreasing budgets with rising requests for service.

> *Effectively managing these challenges requires a basic understanding of how changes in levels of fire department resources deployed affect outcomes from emergencies that occur daily. Failing to manage these challenges can leave individuals, a fire department, and a community vulnerable to undesirable events.* [53]

In some areas, these challenges move at speeds that leave organizations very little time to adjust and address the changing needs of the communities they serve. These changing community needs, coupled with other challenges, make organizational succession planning important for new leadership. Succession planning and management is indeed critical in the fire-rescue service, as it ensures that a department is adequately staffed and prepared for leadership changes, retirements, or unexpected departures. The International Association of Fire Chiefs' (IAFC) guide to succession planning provides helpful information for departments looking to start their own succession management plan.

The guide is comprehensive and covers a range of topics, including why succession management is important, the benefits of having a plan, and how to develop and implement a plan. It also includes a history of succession management in the fire-rescue service and provides examples of successful plans from different departments.

Appendix 3 of the guide is a separate document that includes plans from three fire departments. These plans can serve as useful examples for other departments looking to develop their own succession management plans. It's always helpful to see how other departments have approached the process and what has worked for them.

Overall, the IAFC's guide and the plans included in Appendix 3 can be valuable resources for fire-rescue departments looking to improve their succession management practices. By taking the time to develop and implement a plan, MCFR can ensure they have the leadership and personnel needed to continue providing critical services to their communities.

[53] *Metropolitian Fire Chiefs. (2011, October 25). Fire Service Deployment: Assessing Community Vulnerability. Retrieved from www.NFPA.org.*

Having a well-thought-out succession management program can be highly beneficial for fire-rescue organizations. It can help ensure a smooth transition of leadership and personnel, maintain continuity in operations and service delivery, and enable the organization to adapt and respond to changing needs. Furthermore, a succession management program that is tailored to the needs of the organization can enhance the morale and job satisfaction of current employees, by providing opportunities for career growth and advancement within the organization. Overall, this guide can be a valuable resource for any fire-rescue department looking to develop a meaningful succession management program that meets the needs of both their citizens and members and prepares for the future.

Long-Term Improvement Goals

To provide realistic alternatives to the current service delivery model, the following series of figures present several recommendations illustrating alternative approaches to the current service delivery model for consideration over the next five to ten years. Although these are by no means the only options, the following discussion does provide MCFR with a sense of the range of models available to them and the impacts on service delivery.

Based on the analysis conducted during this study, the MCFR project team provides several recommendations for consideration that would improve MCFR's ability to address increasing service demand, either with currently available resources or with additional resources. These recommendations would enhance firefighter safety and effectiveness. The following analysis of these options will provide MCFR with the information necessary to select the most appropriate and sustainable options and provide prioritization for future funding decisions.

It is important to recognize that the options presented are based upon the data available at the time of this report and additional factors not readily available were not considered when giving the recommendations for consideration. Detailed analysis, including extensive financial modeling of options, is beyond the scope of this study. Further, MCFR may find that it would prefer to implement some variation of the options presented here.

Continue to Support and Develop an Appropriate Funding Model

An appropriate funding model is crucial for the long-term success and sustainability of Marion County Fire Rescue (MCFR). A strong model ensures reliable revenue to support daily operations, maintain existing services, and plan for future growth. Without stable funding, the ability to protect life and property is jeopardized, as resources must constantly shift to cover immediate needs rather than supporting long-term strategies.

MCFR currently benefits from multiple funding streams that, when integrated strategically, provide both operational stability and capital investment capacity:

- Ad Valorem Property Taxes: As the most significant and stable revenue source, property taxes form the foundation of MCFR's EMS operating budget. These revenues scale with community growth and property values, providing a consistent base to support personnel and core services.

- Fire Assessment Fee: Applied countywide excluding the City of Ocala, this dedicated assessment helps stabilize funding for fire suppression services. Because it is charged per parcel and adjusted by property use type, it provides predictable revenue that supplements property taxes and ensures equity across property categories.
- Fire and EMS Impact Fees: These are collected on new development and dedicated exclusively to capacity-expanding EMS resources. Impact fees are essential for growth management, ensuring that new residential and commercial projects contribute directly to the additional stations, apparatus, and personnel required to meet increased service demand.
- Penny Sales Tax (One-Cent Surtax): Voter-approved and renewed, the surtax provides a dedicated source for capital needs, including new fire stations, apparatus, and major equipment. This funding stream reduces reliance on debt or operating funds for large capital purchases and spreads the cost of critical infrastructure across all taxable sales in Marion County.

Together, these revenue streams provide a diverse and resilient funding structure. To strengthen this model further, MCFR should continue to align each funding stream with its most effective use:

- Property taxes and the Fire Assessment should primarily sustain operations and personnel.
- Fire and EMS Impact Fees should directly support growth-related expansions.
- The Penny Sales Tax should remain focused on capital improvement projects, such as new stations, major renovations, and apparatus replacement.

A well-designed funding model also enables innovation and risk-taking, giving MCFR the resources to test new strategies like alternative response units or community paramedicine while still meeting core service needs. In addition, tying funding streams to performance measures—such as NFPA 1710 compliance, ISO improvement, or response-time benchmarks—ensures accountability and helps build public trust.

Ultimately, a balanced and diversified funding model secures MCFR's ability to sustain daily operations, expand with community growth, and invest in the capital resources required for a safe, resilient future. By leveraging property taxes, fire assessments, EMS impact fees, and the Penny Sales Tax together in a unified strategy, Marion County can ensure that MCFR continues to meet community expectations while preparing for the challenges ahead.

Develop and Fund an Appropriate Fire Station Optimization Plan

One of the considerations the MCFR project team was asked to analyze was the placement of current fire stations and the need for additional stations or relocation if necessary. Based on the preceding analysis MCFR fire stations are very well situated and provide all the opportunity to continue to provide optimal, efficient, and effective response to service demand with some minor adjustments for efficiency as well as financial savings. When comparing station siting against national consensus standards and ISO requirements MCFR covers 64.39% of the service area within five miles of a fire station. Furthermore, 11.46% of the coverage area is within 1.5 miles of a fire station and 15.92% of the coverage area is within 4 minutes travel time from a MCFR Fire Station. Lastly 49.37% of the coverage area is withing 8 minutes travel time of a MCFR Fire Station.

MCFR travel time in 2024 to actual incidents was less than 4 minutes to 22.25% of incidents, 4–8 minutes to 41.52% of incidents, 8–12 minutes to 30.75% of incidents and greater than 12 minutes to 5.48% of emergency incidents. In summary, 36.23% of emergency incidents took longer than 8 minutes for arrival of MCFR units. Furthermore, when looking at the ability to handle more than one emergency incident at a time from 2020-2024 MCFR experienced more than 10 concurrent calls 45.5% of the time.

GIS optimization tools predict the best possible fire station locations based on service demand inputs for maximizing coverage. To ensure optimized fire station location, the MCFR project team uses the Location – Allocation tool in ArcGIS® desktop or Pro.

The following requirements are entered into the Location – Allocation tool to conduct the analysis.

- The fire station locations that must remain.
- Locations that are potential candidates for new stations. In this analysis 883 potential new locations were considered.
- The number of fire stations to consider having.
- The service demand.
- A typical cutoff for travel time – the optimized station must be able to provide service to a demand point within x number of minutes. In this analysis a travel time of four minutes was used.

For fire station analysis, the department's emergency calls for service represent the demand input. In the analysis the Location – Allocation tools can only use 1000 demand inputs as a maximum. The most recent 1000 demand inputs were used for this analysis. If another type of service was considered, one could use population in census blocks as the demand. The tool identifies the locations that provide the maximum coverage for the demand, using a national street network for routing. It returns a map of the best station locations, with lines connecting those stations to their matched demand points.

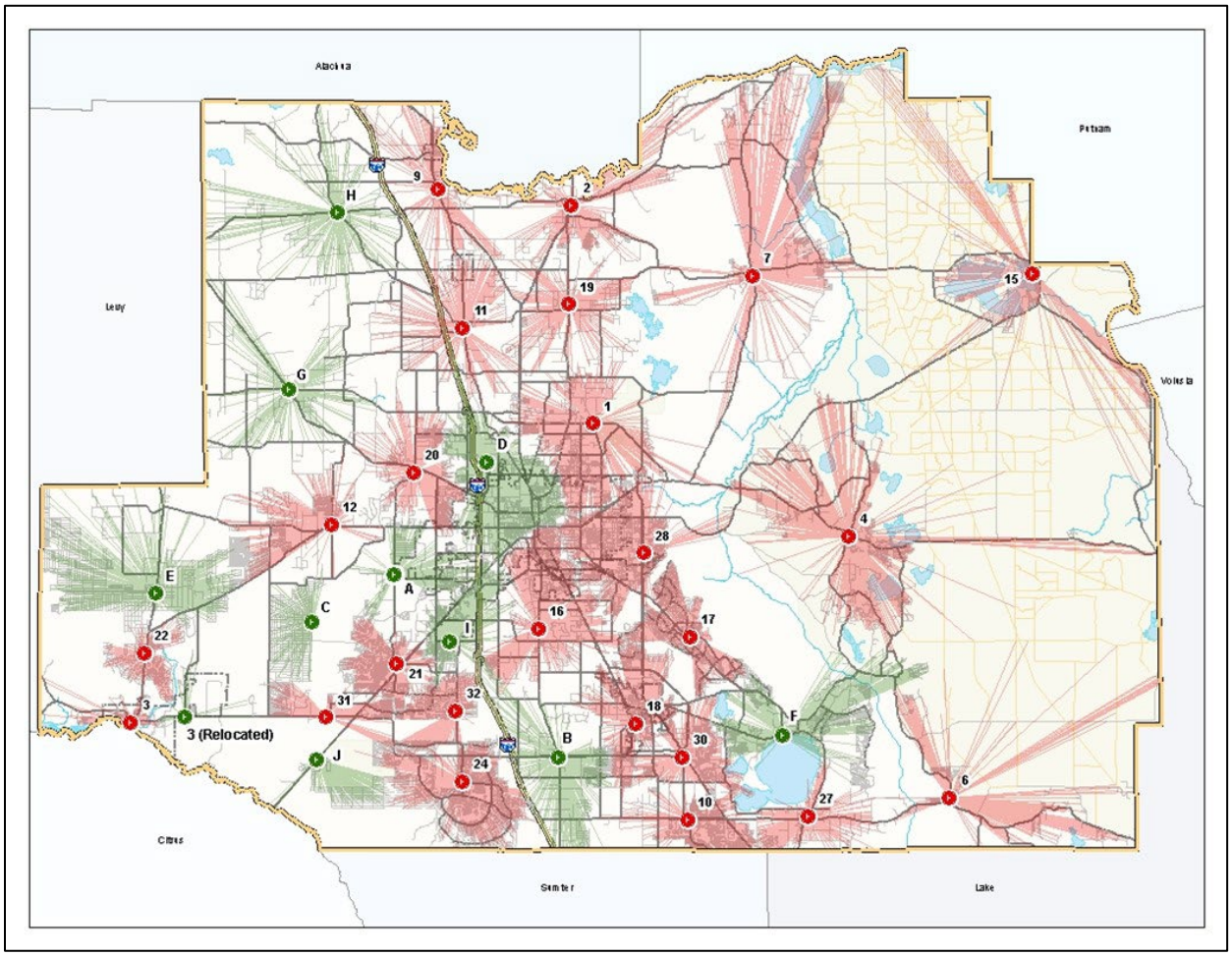
The following list describes how the "Maximize Coverage" problem handles demand:

- Any demand point outside all the facilities' impedance cutoffs is not allocated.
- A demand point inside the impedance cutoff of one facility has all its demand weight allocated to that facility.
- A demand point inside the impedance cutoff of two or more facilities has all its demand weight allocated to the nearest facility only.

As a baseline starting point the GIS tools are used to identify areas that would enhance or improve service and provide the maximum coverage based on the service demand inputs. Once completed, then additional parcels or areas of interest provided by the county are considered to ensure all avenues and options are considered.

The results of the optimization study are shown in the following figures.

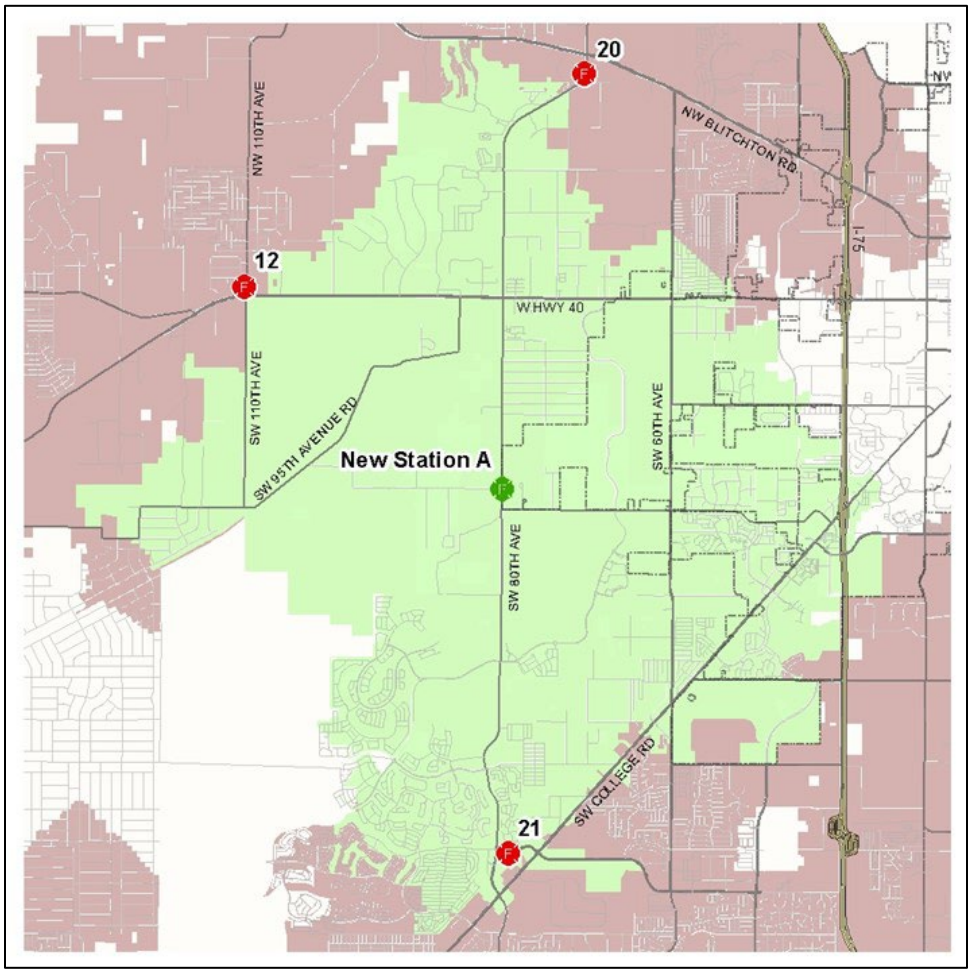
Figure 146: MCFR Station Optimization Analysis



The station location analysis identified optimal coverage using existing fire station sites, the relocation of one station, and the addition of ten new fire stations over time. Since building ten additional stations represents a significant long-term investment and must be balanced with the need to renovate or replace several existing facilities, the MCFR project team has identified the five most critical new station locations. These recommendations are based on a combination of current performance gaps, population growth patterns, and projected service demand. While these five stations are not presented in any particular order, the construction of any one of them would improve service delivery. Each location offers meaningful benefits and should be considered a priority within the department's five-year planning horizon.

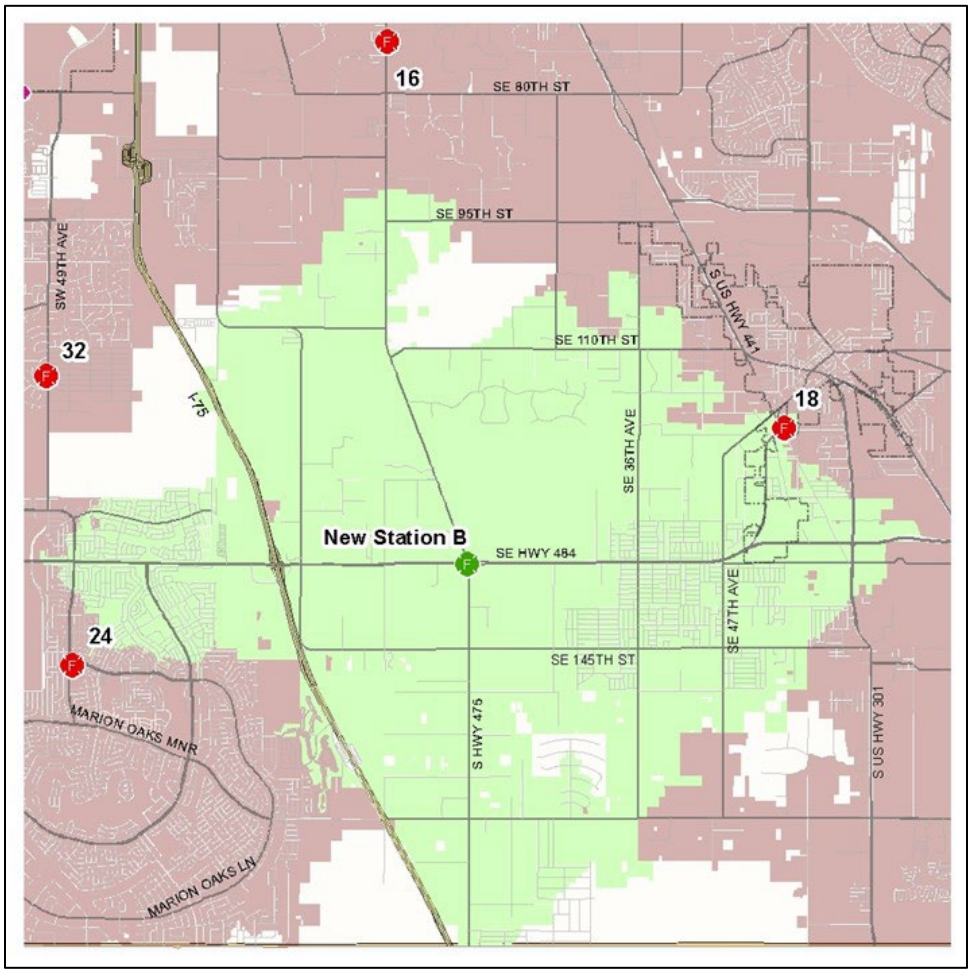
The ISO 5-mile station coverage map for those 5 proposed areas are listed in the following figures.

Figure 147: ISO 5 Mile Coverage Proposed New Fire Station A (Westport)



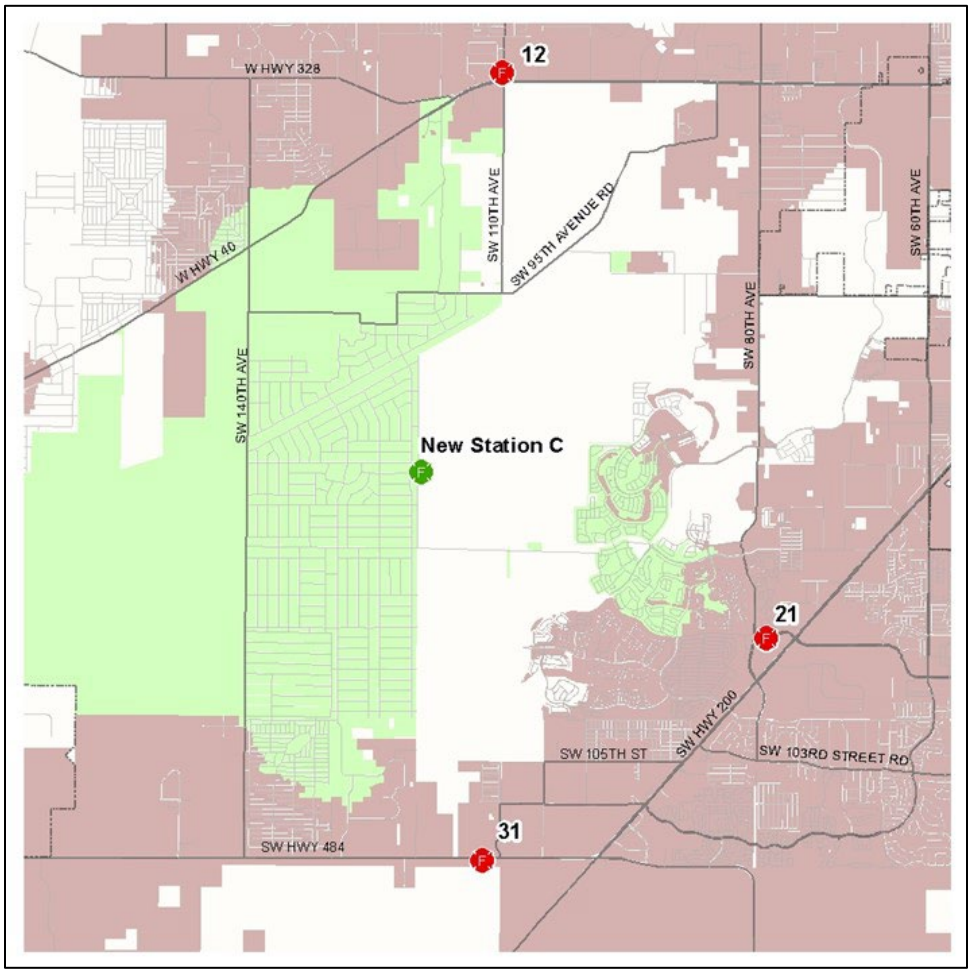
The total service area coverage within 5 miles of a fire station increases by 2.7%. This percentage of road mileage coverage will most likely increase and surpass current coverage as additional roads are constructed on the west side of the county as continued development takes place.

Figure 148: ISO 5 Mile Coverage Proposed New Fire Station B (Pedro)



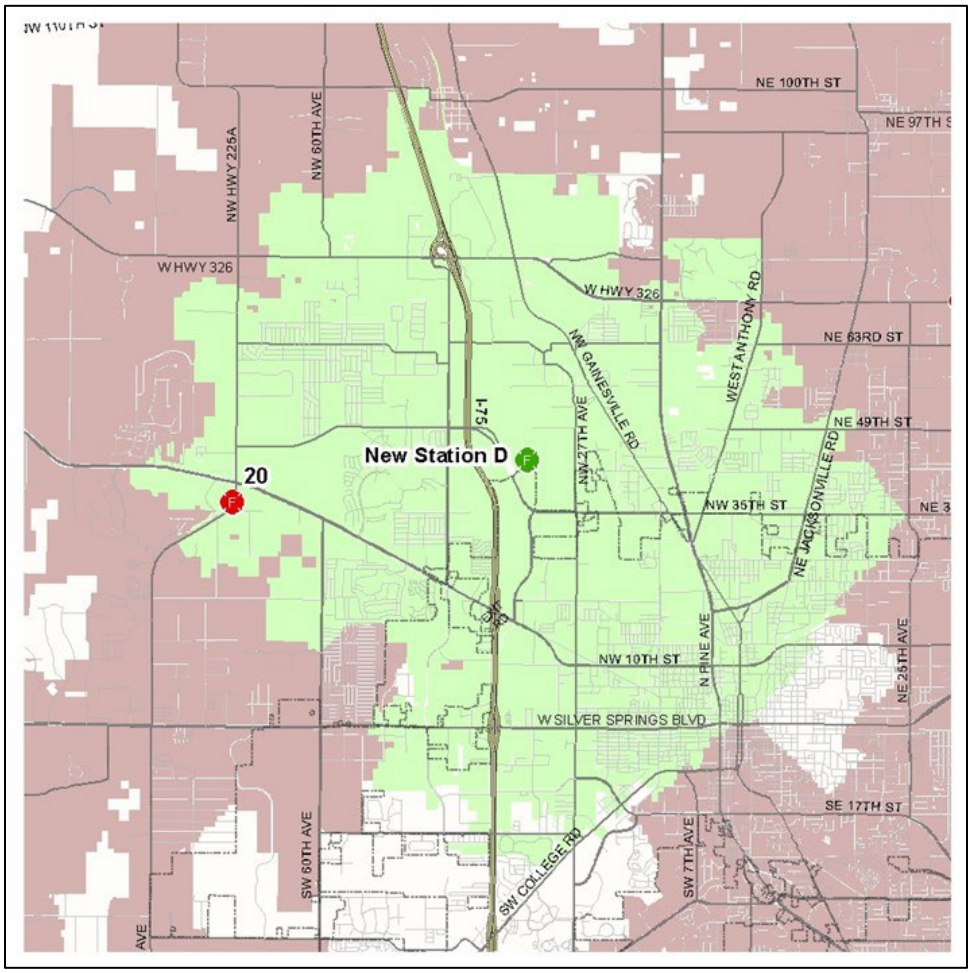
The total service area coverage within 5 miles of a fire station increases by .8%. This percentage of road mileage coverage will most likely increase and surpass current coverage as additional roads are constructed on the west side of the county as continued development takes place.

Figure 149: ISO 5 Mile Coverage Proposed New Fire Station C (Rolling Hills)



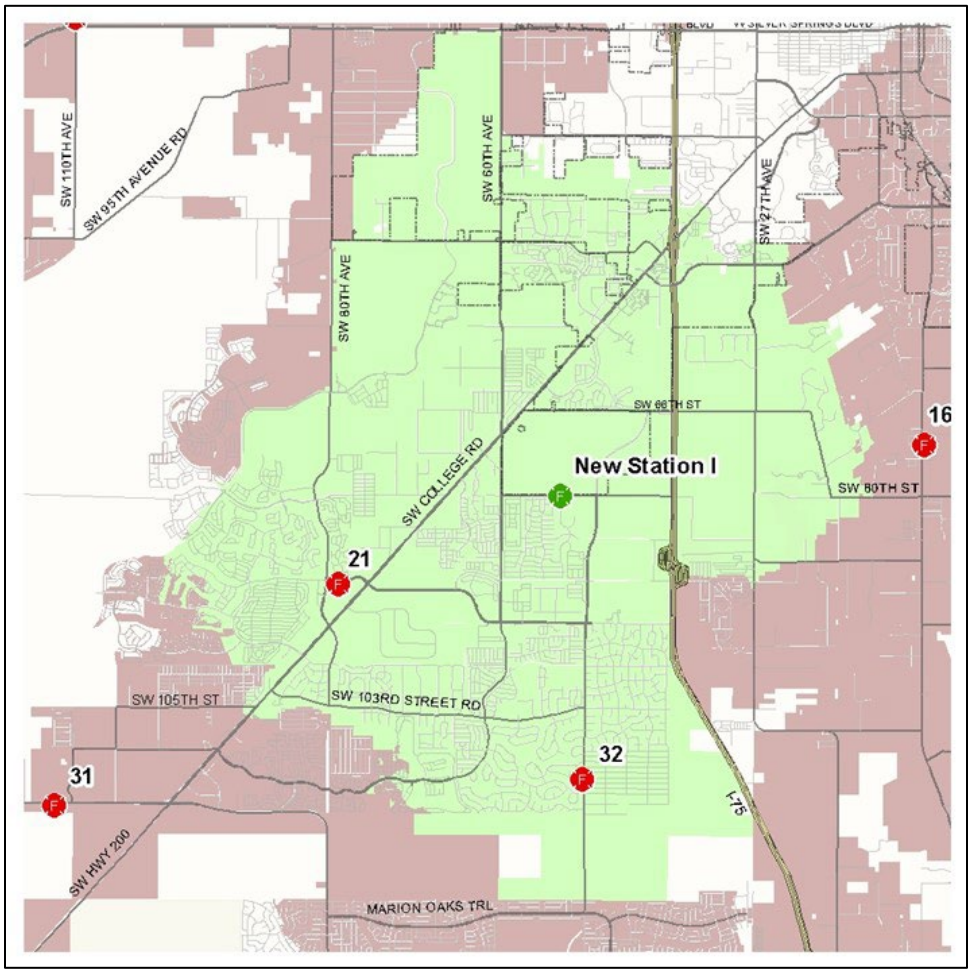
The total service area coverage within 5 miles of a fire station increases by 1.4%. This percentage of road mileage coverage will most likely increase and surpass current coverage as additional roads are constructed on the west side of the county as continued development takes place.

Figure 150: ISO 5 Mile Coverage Proposed New Fire Station D (Baldwin Ranch)



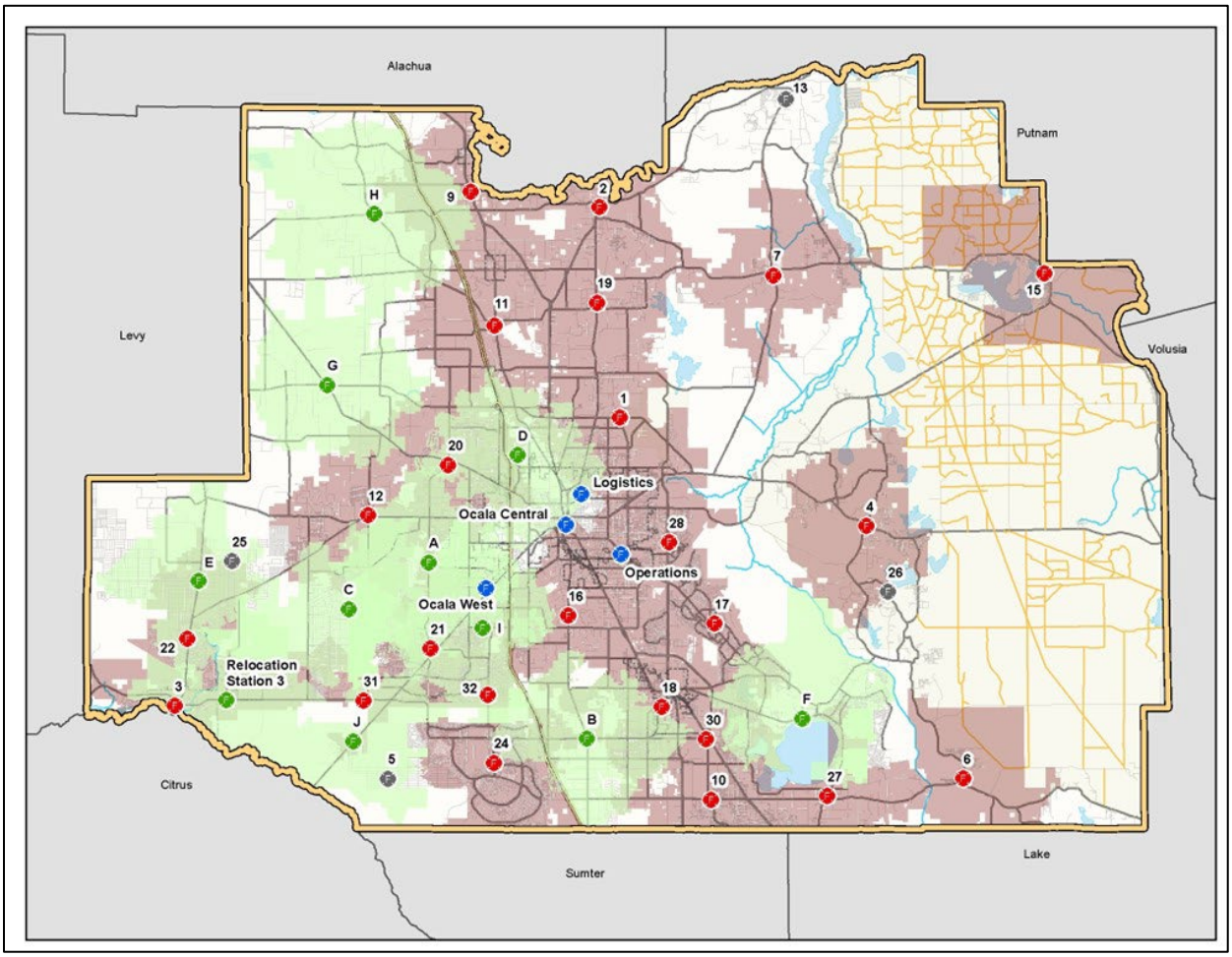
The total service area coverage within 5 miles of a fire station increases by 3.3%. This percentage of road mileage coverage will most likely increase and surpass current coverage as additional roads are constructed on the west side of the county as continued development takes place. MCFR has already purchased property for this location in conjunction with plans for a training facility in the same area. Priority for the Baldwin Ranch fire station is also dependent on the timeline for implementation of a new I-75 on ramp.

Figure 151: ISO 5 Mile Coverage Proposed New Fire Station I (Majestic Oaks)



The total service area coverage within 5 miles of a fire station increases by 1%. This percentage of road mileage coverage will most likely increase and surpass current coverage as additional roads are constructed on the west side of the county as continued development takes place. This project has property allocated and a temporary fire station is currently on location. Known as Fire Station 23, this location will need a brick-and-mortar station soon.

Figure 152: ISO 5 Mile Coverage Proposed 10 New Fire Stations



The total service area coverage within 5 miles of a fire station increases by 15% when all 10 fire stations are completed and the one fire station is relocated. This would increase the current 64.39% to 79.39% coverage within 5 miles of a fire station. This percentage of road mileage coverage will most likely increase and surpass current coverage as additional roads are constructed on the west side of the county as continued development takes place.

Figure 153: 5 Year New Fire Station Implementation Schedule

Location	Year 1	Year 2	Year 3	Year 4	Year 5
Fire Station A (Westport)	Acquire Land/Design	Construction	Completion		
Fire Station B (Rolling Hills)	Acquire Land/Design	Construction	Completion		
Fire Station C (Pedro)	Acquire Land/Design	Construction	Completion		
Fire Station D (Baldwin Ranches)			Design	Construction	Completion
Fire Station 23			Design	Construction	Completion

Rebuilding and Renovating Current Fire Stations

As discussed in the *Capital Facilities & Apparatus* section of the report, Fire Station 9, Fire Station 10, Fire Station 17, and Fire Station 24 are old and beyond their design life. When considering facilities, this report focuses on the inability to meet national consensus standards for fire station design and function regarding health and safety. Health and safety issues are at the top of the fire station design deficiencies and should be rectified for the long-term success of MCFR and employee welfare.

As MCFR begins to address the replacement, remodeling, or addition of fire stations, it is advisable to adopt a "standardized" design wherever possible. Newly constructed stations should take into consideration NFPA 1500, 1710, and 1851. These standards address specific design considerations to improve firefighter health and safety. NFPA 1500: *Standard on Fire Department Occupational Safety, Health, and Wellness Programs* addresses the separation of crew quarters from apparatus bays to protect firefighters from carcinogens, as well as workout and exercise facilities to improve cardiac health. NFPA 1851: *Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting* addresses laundry facilities for personal protective equipment, uniforms, and bedding.

Based on this the MCFR project team recommends developing a replacement, relocation, and/or renovation schedule to address current fire stations. A recommended replacement/renovation plan for MCFR Fire Stations is listed below.

Figure 154: 5 Year Fire Station Rebuilding and Renovation Schedule

Location	Year 1	Year 2	Year 3	Year 4	Year 5
Fire Station 9 (Relocate)	Acquire Land/Design	Construction	Completion		
Fire Station 10 (Renovation)		Design	Construction	Completion	
Fire Station 17 (Relocate)	Acquire Land/Design	Construction	Completion		
Fire Station 24 (Relocate)	Design	Construction	Completion		
Fire Training Facility			Design	Construction	Completion

While 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* pertains to response times, the proper design of a fire station can have a positive impact on turnout times. Collectively, these NFPA standards can have a positive impact on the effectiveness of the department and the safety of its most valuable resources.

Marion County could expand the role of public safety at these fire stations and approach rebuilding from a community public safety standpoint. This would include designing the spaces to accommodate police substations, ambulance housing, and community rooms for the public to use. The areas of Fire Station 17, and Fire Station 24 are well suited for this approach.

Improve Upon Response Deployment and NFPA 1710 Effective Response Force Assembly

Response Deployment

There are several opportunities for improving the response deployment model.

- Adopt ERF incident staffing based on geographic demand zone and occupancy risk rather than defining unit staffing.
- Determine structures that require additional effective response force personnel and plan for how to achieve those needs.
- Define fire target hazards and determine the necessary ERF for these hazards. This may require conducting a critical task analysis.
- Adopt a 1.25 relief factor when hiring adequate staff to achieve minimum staffing levels.

Adopt Effective Response Force Performance Goals.

A fire department's concentration is the spacing of multiple resources close enough together so that an initial "Effective Response Force" (ERF) for a given risk can be assembled on the scene of an emergency within the specific time frame identified in the community's performance goals for that risk type. An initial effective response force is defined as that which will be most likely to stop the escalation of the emergency.

The MCFR project team recommends the following ERF goal for structure fires in urban areas:

Figure 155: Effective Response Force (ERF) Goal, NFPA 1710 Structure Fire Urban Area

PERCENTILE PERFORMANCE BENCHMARK GOALS (FIRST APPARATUS ON SCENE) ANY EMERGENCY INCIDENT				
	Alarm Handling	Turnout Time	Minimum Staff to Respond	Response Time (Dispatched to First Apparatus on Scene)
Performance Goal (Urban)	01:00	01:20	17	8:00 @ 90%

Moderate Risk Structure Fire–Effective Response Force (ERF) Response Performance Goal

- For 90 percent of all emergency structure fire incidents, the ERF with a minimum of 17 personnel deployed, a minimum of three engines, one aerial, one Battalion Chief, and one shift Commander shall arrive in 8 minutes. The ERF shall be capable of establishing incident command, maintaining a sustained fire flow, advancing fire attack lines and back-up lines, initiating victim search and rescue, ventilation, and controlling utilities.

Note that the effective response force may include mutual or automatic aid resources. If aid from adjacent agencies is required to achieve the ERF, these resources must be included in the initial dispatch. This reduces the response time necessary to assemble adequate resources to mitigate the emergency. This initial ERF does not necessarily represent the entire alarm assignment, as additional units may be assigned based on long-term incident needs and risks. Additional engines, ladders, or other specialty companies are assigned to higher risk responses to accomplish additional critical tasks that are necessary beyond the initial attack and containment.

NFPA 1500 and 1710 both recommend that a minimum acceptable fire company staffing level should be four members responding on, or arriving with, each engine and ladder company responding to any type of fire. However, local discretion is allowed to meet locally adopted standards and risk profiles, and are compliant with NFPA standards.

Impact to Fire Suppression

Establishing a minimum staffing based on an Emergency Response Force (ERF) of 17 firefighters provides for several improvements to the fire suppression capabilities of MCFR. The increases in staffing would directly result in additional credit for the ISO categories evaluating deployment and staffing.

It is important to remember that according to 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* an ERF of 17 is recommended for mitigation of a single-family dwelling fire. The ERF required for moderate and major risk classifications increases from 17 firefighters to 28 firefighters for moderate risks and to 42 firefighters for major risks. These risks include mitigation of apartments, strip malls, and commercial building fires, all of which are present in Marion County. Using the NFPA 1720 demand zone approach will provide for some assumption of risk by MCFR that will be beyond its capabilities.

The ability for MCFR to assemble an ERF diminishes in the outer areas of the service area due to a decreased concentration of resources. Because MCFR stations are so well placed the ability to increase ERF can be achieved by simply increasing the current minimum staffing of suppression units in the urban areas.

Based on the NFPA 1720 criteria used to establish response time goals, the MCFR project team recommends the following accompanying ERF response performance goals for structure fires in suburban and rural areas:

Figure 156: Effective Response Force (ERF) Goal, NFPA 1720 Structure Fire Suburban/Rural

PERCENTILE PERFORMANCE BENCHMARK GOALS (FIRST APPARATUS ON SCENE) ANY EMERGENCY INCIDENT				
	Alarm Handling	**Turnout Time**	**Minimum Staff to Respond**	**Response Time (Dispatched to First Apparatus on Scene)**
Performance Goal (Suburban)	01:00	01:20	10	10:00 @ 80%
Performance Goal (Rural)	01:00	01:20	6	14:00 @ 80%
Performance Goal (Remote)	01:00	01:20	4	Directly dependent on travel distance.

Moderate Risk Structure Fire–Effective Response Force (ERF) Response Performance Goals

The following response performance goals have been established to meet the NFPA 1720 demand zone ERF recommendations.

- For 80% of all emergency structure fire incidents in suburban areas, the ERF with a minimum of 10 personnel deployed, a minimum of three engines, one aerial, various part-time staff, and one Battalion Chief shall arrive in 10 minutes (Dispatch to first unit on scene). The ERF shall be capable of establishing incident command, maintaining sustained fire flow, advancing fire attack lines and back-up lines, initiating victim search and rescue, ventilation, and controlling utilities.

- For 80% of all emergency structure fire incidents in rural areas, the ERF with a minimum of 6 personnel deployed, a minimum of three engines, various part-time staff, and one Battalion Chief shall arrive in 14 minutes (Dispatch to first unit on scene). The ERF shall be capable of establishing incident command, maintaining a sustained fire flow, advancing fire attack lines and back-up lines, initiating victim search and rescue, ventilation, and controlling utilities.
- For 90% of all emergency structure fire incidents in remote areas, the ERF with a minimum of 4 personnel deployed, a minimum of two engines, various part-time staff, and one Battalion Chief shall arrive in a time directly dependent on the drive time (Dispatch to first unit on scene). The ERF shall be capable of establishing incident command, maintaining a sustained fire flow, advancing fire attack lines and back-up lines, initiating victim search and rescue, ventilation, and controlling utilities.

Note that the effective response force may need to include volunteer staff and mutual aid resources. If aid from adjacent agencies is required to achieve the ERF, it is essential that these resources be included in the initial dispatch. This reduces the response time necessary to assemble adequate resources to mitigate the emergency. It is understood that the closest mutual aid is a significant distance away and in most cases is not practical. This initial ERF does not necessarily represent the entire alarm assignment, as additional units may be assigned based on long-term incident needs and risks. Additional engines, ladders, or other specialty companies are assigned to higher risk responses to accomplish additional critical tasks that are necessary beyond the initial attack and containment.

NFPA 1500 and 1710 both recommend that a minimum acceptable fire company staffing level should be four members responding on, or arriving with, each engine and ladder company responding to any type of fire. However, local discretion is allowed to meet locally adopted standards and risk profiles, and would still be compliant with NFPA standards if they can validate and document they are equal or superior to the standard.

Expansion of Rescue/Medic Unit Deployment

Incorporate the annual addition of a rescue/medic unit into MCFR's staffing and capital improvement planning. Deployment should be guided by data-driven workload analysis, with priority given to districts exceeding established workload thresholds or demonstrating the most significant year-over-year demand increases.

Marion County Fire Rescue continues to experience sustained growth in EMS demand, which accounts for nearly 80.4% of total call volume. Historical incident data shows year-over-year increases in medical responses, with concentrated growth in suburban residential developments, senior living communities, and along major transportation corridors. This trend aligns with national projections indicating EMS demand as the fastest-growing component of fire-rescue service delivery.

Based on current system workload and projected call growth, the MCFR project team recommends adding one additional rescue/medic unit per year to maintain system reliability and reduce unit overutilization. Benchmark data indicate that when a rescue unit exceeds 2,500–3,000 calls annually, or 20–25 percent of time committed to calls, operational effectiveness begins to decline. Units operating at

these levels experience increased response times due to stacking of incidents, higher maintenance needs, and greater personnel fatigue, all of which degrade overall system performance.

In FY25-26 the addition of two rescue units to address significant overlapping calls and increased unit hour utilization hours above recommended levels is necessary. These units should be concentrated in the Fire Station 4 and Fire Station 17 response zones. Additional areas of concern are Fire Station 20, 22, 24, and 10 response zones.

The following system-wide impacts support the recommendation for annual rescue/medic unit expansion:

- Workload Balancing: Adding units will reduce excessive call volume per unit, particularly in high-growth districts such as southwest Marion County, the SR-200 corridor, and northeast Marion County.
- Response Time Improvement: Increasing unit availability will reduce travel distance for the next closest unit and improve compliance with NFPA 1710 EMS response standards.
- Operational Resilience: Additional units will improve surge capacity during peak hours and mass-casualty incidents while reducing mutual-aid dependence.
- System Sustainability: Incremental growth ensures the department avoids large, reactionary fleet expansions and aligns resource growth with population and demand increases.
- ISO and Accreditation Alignment: ISO and CPSE/CFAI standards both emphasize deployment of sufficient EMS units to meet community demand and response performance objectives.

Expected Outcomes

- Reduce average rescue unit utilization rates to sustainable thresholds.
- Improve unit availability for simultaneous incidents.
- Decrease overall response times for high-frequency EMS incidents.
- Enhance firefighter and paramedic safety and wellness by lowering overwork and fatigue.

These FTEs are displayed in a sample staffing schedule to achieve the ERF at different rates over five years.

Figure 157: Sample Staffing Schedule of Additional Rescue FTEs[54]

Plan	Year 1	Year 2	Year 3	Year 4	Year 5	Total
One Year	12 FTE					6 FTE
Two Year		6 FTE				6 FTE
Three Year			6 FTE			6 FTE
Four Year				6 FTE		6 FTE
Five Year					6 FTE	6 FTE
Total	12 FTE	6 FTE	6 FTE	6 FTE	6 FTE	36 FTE

Expand Aerial Ladder Truck Deployment to Stations 10, 17, and 24

The Marion County Fire Rescue (MCFR) service area continues to experience rapid growth in both population and structural development. The County's Future Land Use Map, combined with current construction trends, indicates a sustained increase in mid-rise residential complexes, large commercial occupancies, distribution centers, industrial facilities, and high-density subdivisions. These occupancies create elevated risk profiles that require specialized aerial apparatus for safe and effective fireground operations, including elevated master streams, vertical ventilation, high-angle rescue, and rapid access to upper floors.

Current Deployment Limitations

MCFR's aerial ladder companies are strategically positioned but remain concentrated in core service areas. Analysis conducted by the project team shows that large portions of Station 10, 17, and 24's districts fall outside the 2.5-mile ISO aerial service radius, with travel times frequently exceeding NFPA 1710's 8-minute ladder response standard for urban and suburban service zones. These coverage gaps delay the arrival of aerial resources to critical incidents, compromising the ability to perform time-sensitive tasks such as upper-floor rescues or large-area ventilation.

Community Risk Profile

Station 10 District: Serves a high-growth corridor characterized by expanding mixed-use and vertical residential developments along major arterial routes. Increased population density and taller structures significantly increase both life safety and suppression demand. Several assisted living facilities are either completed or planned in the future.

Station 17 District: Encompasses extensive suburban growth areas with multiple multi-family complexes, senior housing facilities, and mid-rise residential structures. These occupancies present unique

[54] *This sample schedule of FTE's does not include the relief factor.*

evacuation and rescue challenges, with a high potential for multiple simultaneous rescues requiring aerial access.

Station 24 District: Protects a concentration of large industrial occupancies, warehouses, and distribution hubs along I-75 and associated logistics corridors. These facilities present high fire flows, large building footprints, and hazardous materials exposure, all requiring rapid access to aerial master streams and heavy tactical support.

National Standards and Benchmarks:

NFPA 1710: Requires that ladder companies arrive within 8 minutes travel time to 90 percent of incidents in urban and suburban service areas. Current coverage in Station 10, 17, and 24 districts does not consistently meet this standard.

ISO Fire Suppression Rating Schedule (FSRS): Provides credit for aerial apparatus within 2.5 miles of qualifying occupancies (three or more stories, or requiring 3,500 GPM fire flow). Significant portions of these zones contain multiple qualifying occupancies currently outside coverage, limiting MCFR's ability to improve its PPC classification.

Operational Best Practices: National research underscores the importance of balanced engine and ladder company deployment to ensure effective fireground operations. Aerial apparatus are not supplemental; they are essential components of an Effective Response Force (ERF).

Operational Impact

Without additional ladder companies, existing units must travel greater distances, leaving their first-due districts uncovered and extending overall response times. This creates cascading impacts on reliability, unit availability, and firefighter safety. At fires involving upper stories or large floor areas, the absence of timely aerial support can result in delayed rescues, greater property loss, and increased risk to both occupants and responders.

Expected Benefits of Deployment

- Improved ERF Assembly: Ensures that aerial resources are available as part of the first-arriving companies, supporting critical fireground functions.
- Enhanced Safety and Rescues: Expands capacity for upper-floor rescue, rapid ventilation, and firefighter egress.
- ISO and Accreditation Gains: Strengthens compliance with ISO PPC criteria and CPSE accreditation benchmarks for resource deployment.
- Redundancy and Resilience: Reduces workload and dependency on distant ladder companies, ensuring that simultaneous incidents can be managed effectively.

- Alignment with Growth: Anticipates and aligns resources with projected population and development growth corridors, ensuring MCFR remains proactive rather than reactive in meeting community needs.

Staffing and Facility Considerations

Each additional ladder company should be fully staffed with a minimum of three personnel per shift, with the long-term goal of reaching four to fully comply with NFPA 1710 staffing recommendations. This ensures the driver/operator can focus on apparatus operation while the remaining crew performs fireground tasks. Essential aerial ladder company operations include search, ventilation, high angle rescue, heavy extrication, aerial and water tower operations. With the large housing stock, freeways, high-speed thoroughfares, multiple story structures, and complex building campuses, a 3-person aerial ladder truck equipped with search, rescue, and aerial ladder capabilities will provide essential critical tasking in a timely manner. This resource is an essential part of the critical tasking elements and serves an important part of the ERF response within the recommended ERF target.

For aerial ladder companies staffed with four personnel, the driver/operator of the first arriving aerial ladder company must remain with the apparatus to safely position and operate the aerial ladder while the other three firefighters also perform critical fireground tasks such as ventilation, search, and rescue. Due to the demands of fireground activities, a fire attack initiated by companies with only three or fewer firefighters is not capable of effecting a safe and effective fire suppression and/or rescue operation until additional personnel arrive. Currently only two firefighters are assigned to the aerial ladder greatly reducing the effectiveness of the unit.

Insufficient numbers of emergency response units or inadequate staffing levels on those units expose civilians and firefighters to increased risk, further drain already limited fire department resources, and stress the emergency response system by requiring additional apparatus to respond from further distances. Failing to assemble sufficient resources on the scene of a fire in time to stop the spread and extinguish the fire, conduct a search and rescue, or rescue any trapped occupants puts responding firefighters and occupants in a dangerous environment with exponential risk escalation such that it is difficult to catch up and mitigate the event. Facilities at Stations 10, 17, and 24 should be assessed for modifications necessary to accommodate aerial apparatus, including bay size, turning radius, and support infrastructure.

Implementation Strategy

The project team recommends integrating these ladder company additions into the County's Capital Improvement Plan (CIP) and apparatus replacement schedule. Prioritization does not need to be sequential, as the addition of a ladder company at any of these three stations will immediately improve community risk mitigation and compliance with national standards. A phased implementation, tied to development triggers and funding capacity, will allow MCFR to strategically expand aerial coverage while maintaining fiscal responsibility.

These FTEs are displayed in a sample staffing schedule to achieve the ERF at different rates over five years.

Figure 158: Sample Staffing Schedule of Additional Ladder Company FTEs[55]

Plan	Year 1	Year 2	Year 3	Year 4	Year 5	Total
One Year	9 FTE					9 FTE
Two Year		9 FTE				9 FTE
Three Year			9 FTE			9 FTE
Four Year				3 FTE		3 FTE
Five Year					3 FTE	3 FTE
Total	9 FTE	9 FTE	9 FTE	3 FTE	3 FTE	24 FTE

Maintain and Execute a Structured Apparatus Replacement Program

Apparatus represents one of the most critical and capital-intensive resources within a fire and EMS organization. For MCFR, which operates and maintains a fleet of approximately 300 emergency and support vehicles, a disciplined replacement strategy is not only prudent, it is essential. Fire engines, aerial trucks, rescues, tankers, ambulances, and command vehicles must be safe, reliable, and mission-appropriate to meet the growing and evolving service demands of the community.

MCFR has already established a comprehensive apparatus replacement plan based on the best practices, industry standards, and operational realities. The department has adopted a 20-year capital improvement schedule for its major fleet assets and aligns its replacement timelines with NFPA 1900 and 1911 guidelines. This includes designated service lifespans, estimated lead times, and calculated depreciation during procurement cycles, a key component in today's environment of extended build times and rising costs.

Fleet planning at MCFR is further supported by detailed tracking of unit mileage, engine hours, and operational status. Vehicles are evaluated for reassignment, reserve status, or disposal based on wear indicators and functional reliability, not just age alone. The department also integrates specialized metrics such as idle time equivalent to miles driven and calculates continued deterioration that may occur while a new unit is on order. This approach ensures that replacement funding and build schedules are realistic and account for potential service gaps.

[55] This sample schedule of FTE's does not include the relief factor.

For example, heavy rescue apparatus has a projected 15-year service life, replacement costs exceeding $2 million, and build timelines of 18 months or more. Type I ambulances, which see heavy daily use and require frequent rotation, are replaced on a seven-year cycle and experience significant deterioration, up to 20 percent, during the manufacturing phase. MCFR's model accounts for these variables in its capital projections and requests.

The department's ability to accurately forecast costs, stagger procurement, and reduce maintenance downtime is bolstered by a formal Capital Improvement Plan (CIP), which is funded through Marion County's local option one-cent sales tax. This sustainable funding mechanism supports apparatus replacement alongside facility upgrades and equipment modernization, forming a long-term infrastructure investment strategy.

Given the scale of MCFR's operation, the diversity of its apparatus types, and the unique needs of its service area, the department's apparatus replacement plan reflects a high degree of maturity, precision, and alignment with best practices. There is no immediate need for the creation of a new plan. Instead, MCFR should continue refining its current strategy, ensuring that future procurement aligns with operational demands, risk profiles, and available staffing models. Particular attention should be given to evaluating unit deployment models, ensuring that replacement decisions reflect actual field usage and emerging service trends.

This forward-thinking approach protects public safety, supports operational readiness, and demonstrates fiscal responsibility to stakeholders across the community.

The following figure illustrates the financial requirements for MCFR apparatus.

Figure 159: Estimated MCFR Major Apparatus Replacement Costs[56]

Apparatus Type	Unit Cost	25/26	26/27	27/28	28/29	29/30	Subtotal
Ambulance (New)	*475,000*	2,375,000	2,850,000	2,375,000	2,850,000	2,850,000	13,300,000
Ambulance (Refurb)	*315,000*	1,260,000	1,260,000	1,260,000	1,260,000	1,260,000	6,300,000
Pumper (New)	*1,200,000*	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	6,000,000
Pumper (Refurb)	*400,000*	800,000	800,000	800,000	800,000	800,000	4,000,000
Tanker	*300,000*	300,000	300,000	-	300,000	300,000	1,200,000
Tower	*2,250,000*	-	-	-	-	-	-
Brush Truck	*175,000*	175,000	175,000	175,000	175,000	175,000	875,000
Support Vehicles	*90,000*	270,000	270,000	270,000	270,000	270,000	1,350,000
ATV/UTV	*28,000*	-	-	-	-	-	-
Heavy Rescue	*1,500,000*	-	-	-	-	-	-
Subtotal		**6,380,000**	**6,855,000**	**6,080,000**	**6,855,000**	**6,855,000**	**33,025,000**

The amounts contained in the preceding figure are rough estimates only and are intended to provide a context for the approximate potential costs and life expectancies of apparatus. This estimated replacement plan also does not take into consideration any apparatus currently being purchased or approved for purchase. Replacement costs could be higher or lower, depending upon the configurations of each apparatus and the actual date of replacement. Furthermore, the replacement schedule based on life expectancy decided upon can accelerate the expenditure of funds.

[56] *Cost increase based upon industry expert projected annual increase of 5%*

The replacement schedule was provided to outline the significant capital investment for apparatus replacement Marion County can expect based on the current fleet.

Establish Funding to Design and Construct a Purpose-Built Training Facility

Constructing a modern training facility to comply with industry standards concerning classrooms, practice grounds, training tower, live-fire building, and training props is a significant investment of capital. The ability to provide training is not only necessary it is required for ISO requirements. The requirements specifically require training at an approved facility. MCFR has initiated the design of a state-of-the-art fire training facility and co-located fire station to meet its expanding operational and professional development needs. The proposed training campus, based on conceptual planning, addresses both current deficiencies in training infrastructure and future capacity for workforce development. This recommendation supports MCFR's continued investment in its personnel and operational readiness by constructing a modern, purpose-built training complex.

The benefits of a dedicated training campus are substantial. The conceptual design includes functional elements such as a burn box tower, training classrooms, vehicle extrication area, training apparatus bay, gym and fitness testing facilities, and USAR storage, all aligned around a centralized drill field. This layout promotes safe, realistic, and efficient training for structural firefighting, technical rescue, and EMS scenarios. The site also embraces NFPA 1585 principles by integrating hot, warm, and cold zones, allowing for better contamination control and firefighter health protection.

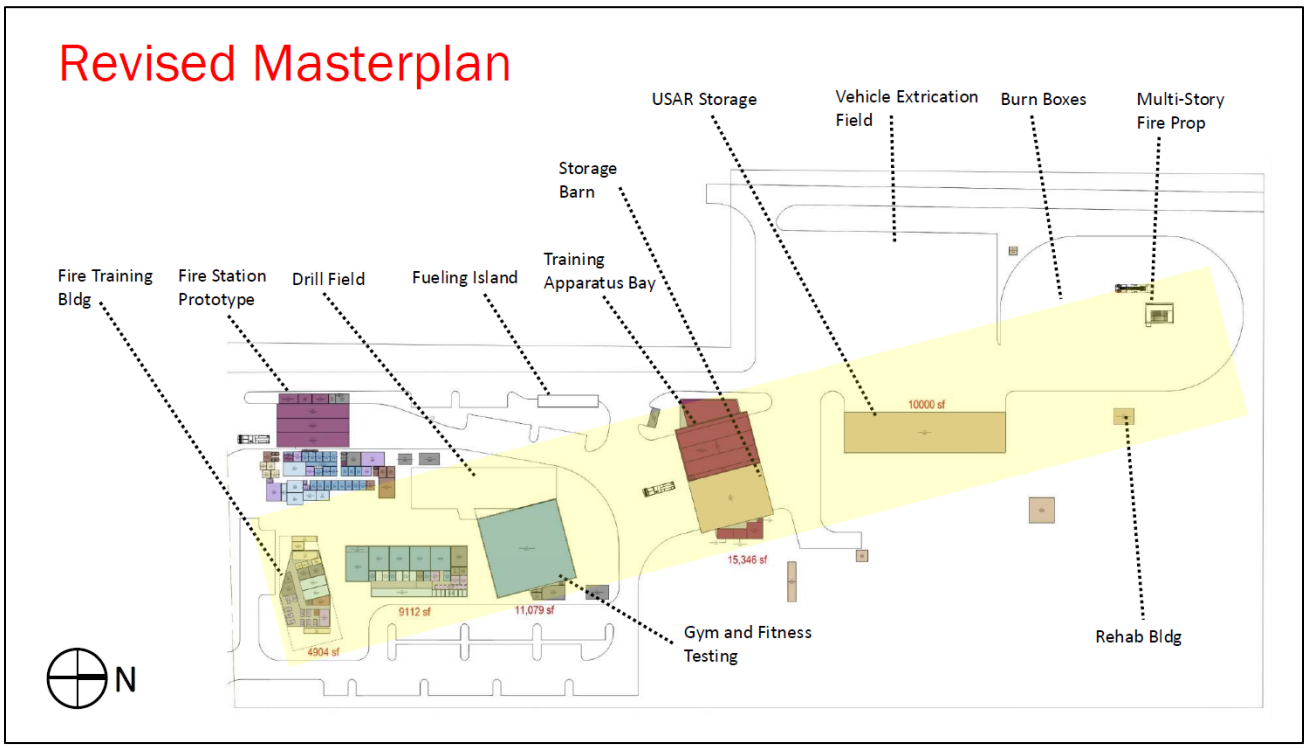
The new facility will allow for daily hands-on training, routine onboarding for new hires, and the delivery of live fire evolutions per NFPA 1402 and 1403 standards. It will replace aging or inadequate training structures that currently restrict live fire training and other complex evolutions. The inclusion of enhanced classroom and decontamination spaces, covered open-air circulation, and secure site access will also improve instructor capabilities and trainee experience.

In addition to training, the co-location of the Baldwin Ranches fire station will maximize the use of the site, providing operational service delivery in a growing area of the county while improving MCFR's response posture. This approach enhances return on investment and strengthens public safety infrastructure.

By continuing to invest in this facility, MCFR demonstrates a long-term commitment to operational excellence, firefighter safety, and professional development. The new training campus will serve as a critical foundation for sustaining a high-performance fire rescue system and preparing future generations of fire service leaders.

The following figure shows the current initial design concept.

Figure 160: MCFR Current Design Concept for a New Training Facility



COST PROJECTIONS FOR IMPROVEMENT GOALS

Financial Basis for Decision Unit Cost Projections

To estimate the future costs of any service level enhancement opportunities, it is first necessary to understand current year (FY 25-26) estimated costs for various decision unit components such as firefighter salary/benefits, onboarding costs, apparatus and equipment costs, and fire station construction and operating costs. Depending upon when these components may be added to the system, the FY 25-26 costs can be escalated based upon known or anticipated increases due to such influences as projected inflation for each component, authorized pay increases, rising benefit costs, or some combination of factors.

Policy decisions regarding the adoption of any enhancements designed to improve service level are generally evaluated based upon projected initial and recurring costs versus the benefit provided. To understand the future costs of any enhancement, it is important to evaluate improvements in terms of decision units. A decision unit can be considered the addition of a single firefighter, engineer, or company officer position, a career-staffed engine, rescue, or ladder company, shift Battalion Chief, or an operating fire station with various staffed units. These decision units are comprised of components such as personnel with various associated initial and recurring costs, capital apparatus and facility acquisition, and recurring capital operating costs.

The following discussion uses actual or estimated FY 25-26 costs, to the extent they are available, as a basis for costing of various decision unit components whose costs can then be escalated to that point in time when they may be added to the system. In other words, if the MCBCC determines that MCFR needs to add a new, staffed fire station or another engine company to its operation within the next five years, the following FY 25-26 personnel, capital, and operating costs will serve as a basis for the addition of that unit were it to be added in the future. The escalation factors for the various components of that decision unit, as estimated from various sources, will then be applied to show the future cost at the point in time the department wishes to add that unit.

Fiscal Year 25-26 Personnel Costs

When adding positions, it is also important to include first-year on-boarding costs along with the recurring cost of each new position. A breakdown of staffing costs for additional resources is included in Appendix B. These costs generally vary from department to department but typically include such items as background checks/polygraphs, physicals based upon the NFPA 1582 firefighter standard, recruit school costs, uniforms, SCBA facepieces, Personal Protective Equipment or Turnout Gear, and may include radio/technology packages or other items.

After the initial year, these costs would not continue with the added position, and the only recurring costs associated would be the total annual compensation. However, it is also understood that the department's annual operating costs over time would increase due to added PPE replacement, training, and other associated employee Maintenance and Operations costs. Further, unallocated supporting department costs would be expected to increase as the fire department adds significant staff. These non-fire department costs would include administrative, human resource/risk management, legal, finance/budget, IT, and various other supporting functions.

A further factor must be considered when evaluating the potential cost of adding positions. As with any other governmental employee, firefighters receive time off for various reasons such as vacation, sick and funeral leave, among others. MCFR has determined minimum staffing requirements for various response units based upon risk and response protocols to emergency incidents and has determined future minimum staffing. These minimum daily staffing needs require that when any firefighter is on leave, and daily staffing drops below the minimum, his or her position must be covered by another firefighter. This leave coverage required to maintain minimum daily staffing is termed the "relief factor." Based upon historical leave accruals and actual usage, MCFR's relief factor is approximately 1.25.

The current shift staffing schedule of 24 hours on duty means that for every minimum daily riding position on an apparatus, three FTE are required before considering any leave time (1 FTE x 3 shifts). The relief factor of 1.25 applied to each riding position means that 3.75 FTE are required to maintain that position and meet minimum staffing requirements. For the purposes of the projections provided for the addition of units, partial FTE are used to indicate the additional cost of covering leave time. This additional cost could either be accounted for with increased overtime or, with the hiring of additional FTE, as the level of need dictates.

Fiscal Year 25-26 Capital Apparatus/Equipment Costs

Estimated apparatus costs based upon the current MCFR specifications for each apparatus class is available in Appendix C. Also included is the estimated cost to equip each type of vehicle. First-year capital costs only and does not consider annual or recurring operating costs such as fuel, oil, and routine maintenance costs (parts and labor). To build the most accurate cost of adding each type of apparatus, these recurring costs would need to be considered for future years. Further, the department should consider an annual apparatus replacement cost as part of its annual apparatus replacement program based upon life expectancy and usage for each vehicle class.

Fiscal Year 25-26 Facility Capital Costs

The last category of costs considered as part of any potential future service level upgrade are those costs associated with building and equipping (FF&E) a new fire station, including both initial construction and annual operating costs. The estimated costs for additional stations is included in Appendix D. Land costs will vary considerably depending upon many factors, such as market condition, developer proffers, environmental, and other factors. Therefore, land costs are generally not included in the estimated costs of any notional new fire stations.

After construction costs are considered, there is an annual operating cost for a new facility that will be comprised of multiple components. Many jurisdictions provide and charge facilities maintenance, utilities, and related operating costs for the various fire department and other facilities on a square footage basis as an interfund charge. Fire departments will also budget for some routine station operating costs such as various O&M needs. Typical operating costs generally budgeted for may include printing/copying, telephone and internet, laundry and janitorial, office supplies, minor equipment, books and subscriptions, and other operating supplies. Costs either paid directly or to other external service providers including partner departments may include utilities, routine maintenance and janitorial, grounds maintenance, refuse and pest control services, among others.

The projected figures for various decision unit components can be used as an approximate guide to determine the cost of implementing various potential enhancements as recommended in the study at whatever point over the next five years the MCBCC finds appropriate and is able to fund them.

CONCLUSION

CONCLUSION

The Marion County Fire Rescue (MCFR) Master Plan represents a roadmap for the future of fire and emergency services in one of Florida's fastest-growing counties. It reflects a detailed assessment of current operations, facilities, apparatus, staffing, and community risk, while also identifying the strategic investments required to meet future demand. Guided by national standards such as NFPA 1710 and the Commission on Fire Accreditation International's Community Risk Assessment and Standards of Cover model, the plan balances best practices with the unique needs and resources of Marion County.

Key findings emphasize the importance of expanding personnel and specialized resources, modernizing facilities, strengthening aerial and rescue coverage, and maintaining a disciplined capital replacement and funding strategy. At the same time, the plan underscores the necessity of continued investment in training, health and wellness, community risk reduction, and technology integration to ensure operational readiness and firefighter safety.

MCFR has a strong foundation built on dedicated personnel, diverse funding streams, and community trust. By adopting and implementing the recommendations of this plan, the County and its fire service leaders can ensure that MCFR remains resilient, adaptable, and capable of delivering high-quality, timely emergency response well into the future. The Master Plan should be viewed not as a static document, but as a living framework that evolves with the community, continuously aligning resources with the needs and expectations of Marion County residents.

APPENDIX A: TABLE OF FIGURES

Figure 1: GIS Methodology viii
Figure 2: NFPA Population Breakdown 17
Figure 3: Marion County Fire Rescue Service Area 23
Figure 4: Marion County Fire Rescue Organizational Chart 24
Figure 5: Comparison of ISO Class Ratings, State of Florida 25
Figure 6: ISO Classification Scores 26
Figure 7: Areas of ISO Divergence 27
Figure 8: Identified Critical Issues 31
Figure 9: Organizational Alignment 34
Figure 10: Strategic Planning Components 36
Figure 11: Operational Planning Components 38
Figure 12: Tactical Planning Components 39
Figure 13: MCFR Historical Staffing FTE Counts 2020-2025 42
Figure 14: Historical Turnover Percentage 42
Figure 15: MCFR Authorized FTEs and Turnover Rates 2020-2025 43
Figure 16: Ratio of MCFR Staff Assignments 46
Figure 17: MCFR Administrative and Support Staff 46
Figure 18: Peer Comparisons 48
Figure 19: NFPA 1720 Deployment Model 52
Figure 20: Initial Full Alarm Assignment for Residential Structure Fire 53
Figure 21: Initial Full Alarm Assignment for Strip Shopping Center 54
Figure 22: Initial Full Alarm Assignment in a Three-Story Apartment Building 54
Figure 23: MCFR Career Emergency Response Staffing 55
Figure 24: MCFR Initial 1st Alarm 56
Figure 25: Recurring Revenue Breakdown, FY20-26 78
Figure 26: Recurring Versus Non-Recurring Revenue Breakdown, FY20-26 Proposed 79
Figure 27: Grouped Revenues, FY20-26 80
Figure 28: Recurring Versus Non-Recurring Expenditure Breakdown, FY20-26 Proposed 82
Figure 29: Expenditure Line Items Versus Category Grouping 84
Figure 30: Recurring Expenditure Breakdown, FY20-26 Proposed 86
Figure 31: Grouped Expenditures, FY20-26 Proposed 87
Figure 32: General Fund Expenditure Breakdown by Fund, FY24-26 Proposed 88
Figure 33: Expenditures from FY24-26 Budget 91

Figure 34: Expenditure % of Total General Fund by Use 92
Figure 35: General Fund Personnel Breakdown by Department, FY24-26 Proposed Budget..... 92
Figure 36: Proposed Personnel FY26 Budget by Fund..... 94
Figure 37: Fund Balance, FY20-26 Proposed..... 94
Figure 38: Total Fund Balance, FY20-26 95
Figure 39: Fund Balance for Recurring Revenues and Expenditures, FY20-26 Proposed..... 95
Figure 40: Total Fund Balance by Recurring Line items, FY20-26 Proposed..... 96
Figure 41: 5 Year Growth Plan for Impact Fees, FY25-30 96
Figure 42: 5 Year Apparatus Replacement Plan, Infrastructure Sales Tax, FY26-30 97
Figure 43: Years 1-6 of 20 Year Surtax, Fire Rescue and EMS, FY25-30 98
Figure 44: Years 1-6 Budget, Infrastructure Sales Surtax, FY 25-30..... 98
Figure 45: Future Fund Balance, FY 25 Budget to FY 35 100
Figure 46: Recurring Line Item Fund Balance Projections, FY 25 to 35.....101
Figure 47: Criteria Utilized to Determine Fire Station Condition.....104
Figure 48: Summary of MCFR Stations 105
Figure 49: Fleet Metrics for Life Expectancy.....110
Figure 50: Total Training Hours Recorded 2024 and YTD 2025 115
Figure 51: Training by ISO Category for 2024.....115
Figure 52: Training by ISO Catagory 2025(YTD).....116
Figure 53: Fire Prevention Program Components.....119
Figure 54: Recommended Fire Inspection Frequencies per NFPA 1730..... 120
Figure 55: NFIRS Incident Types.....140
Figure 56: Service Demand by NFIRS Incident Type, 2020–2024 140
Figure 57: Service Demand by NFIRS Incident Type, 2020-2024.....141
Figure 58: Service Demand by Month, 2020-2024..... 142
Figure 59: Service Demand by Day, 2020-2024..... 142
Figure 60: Service Demand by Time-of-Day, 2020-2024..... 143
Figure 61: MCFR Population Density 144
Figure 62: MCFR Incident Density Analysis (All Incidents), 2020-24..... 145
Figure 63: MCFR Incident Density Analysis (Fire Incidents), 2020-2024 146
Figure 64: MCFR Incident Density Analysis (EMS Incidents), 2020-2024 147
Figure 65: MCFR Predicted 4 and 8-Minute Travel Times, NFPA 1710 148
Figure 66: MCFR Travel Time, 2024.....149
Figure 67: MCFR ISO 1.5-Mile Engine Company Service Areas 150

Figure 68: MCFR ISO 2.5-Mile Ladder Company Service Area 151
Figure 69: MCFR ISO 5-Mile Service Area 152
Figure 70: MCFR ISO Fire Hydrant Coverage 153
Figure 71: NFPA 1710 ERF Recommendations Based on Risk 154
Figure 72: NFPA 1720 ERF Recommendations Based on Demand Zone 155
Figure 73: Effective Response Force (ERF), 8-Minute Travel 156
Figure 74: Commitment Factors as Developed by Henrico County (VA) Division, 2016 157
Figure 75: Division 1 Unit Hour Utilization, 2020 to 2024 158
Figure 76: Battalion Unit Hour Utilization, 2020 to 2024 158
Figure 77: Heavy Rescue Unit Hour Utilization, 2020 to 2024 158
Figure 78: Aerial Unit Hour Utilization, 2020 to 2024 158
Figure 79: MCFR Suppresion Unit Hour Utilization, 2020-2024 159
Figure 80: MCFR Transport Unit Hour Utilization, 2020-2024 159
Figure 81: MCFR Call Concurrency, 2020-2024 161
Figure 82: Total Response Time Continuum 162
Figure 83: MCFR Alarm Handling at the 90th Percentile, 2020-2024 163
Figure 84: MCFR Turnout at the 90th Percentile, 2020–2024 164
Figure 85: MCFR Travel at the 90th Percentile, 2020-2024 165
Figure 86: MCFR Response Time at the 90th Percentile, 2020-2024 166
Figure 87: MCFR NFPA 1720 Response (Urban), 2024 167
Figure 88: MCFR NFPA 1720 Response (Suburban), 2024 168
Figure 89: MCFR NFPA 1720 Response (Rural), 2024 168
Figure 90: MCFR Total Response Time at the 90th Percentile, 2020–2024 169
Figure 91: Six-Step Compliance Model 170
Figure 92: Marion County, Florida Population Totals 176
Figure 93: Historical Population Change for Marion County, Florida 177
Figure 94: Marion County Community Planning -Based Population Projections 179
Figure 95: MCFR Projected Service Demand by Population 181
Figure 96: MCFR Projected Service Demand by Historical Change 182
Figure 97: Marion County Service Demand for Aging Population 2023 183
Figure 98: Projection of Aging Population 2025 184
Figure 99: Components of Preparedness 187
Figure 100: Phases of Emergency Management 188
Figure 101: Federally-Declared Disasters, 1978 to 2024 190

Figure 102: Hazards by Category 191
Figure 103: Relative Risk Analysis Model- Natural Hazards 192
Figure 104: Wildland Urban Interface Exposure Area in Marion County 194
Figure 105: Summary of Flood Zone Risks 196
Figure 76 106: FEMA 100-Year Floodplain in Marion County 197
Figure 107: Tornado Intensity, Enhanced Fujita Scale....198
Figure 108: Major Roadways in Marion County....203
Figure 109: Major Railways in Marion County 204
Figure 110: Hospital/Care Facilities in Marion County 206
Figure 111: Church Location in Marion County 207
Figure 112: School Locations in Marion County 208
Figure 113: Large Commercial Buildings in Marion County 210
Figure 114: Relative Risk Analysis Model- Human-Caused.... 212
Figure 115: Hazard Specific Relative Probability and Severity 213
Figure 116: Relative Community Risk.... 214
Figure 117: Relative Fire and Life Risk Categories.... 218
Figure 118: Marion County Zoning Categories 219
Figure 119: Marion County Current Land Use 220
Figure 120: Marion County Future Land Use Plan 221
Figure 121: Occupancy Type by County and Percentage 222
Figure 122: Occupancy Type Risk Level by FLUM Designation 224
Figure 123: Overview of Factors that Influence Risk 225
Figure 124: Measuring System Effectiveness....227
Figure 125: Example of Critical Task Staffing Analysis (Firefighters Needed) Based on Risk 229
Figure 126: Example of Tasks and Staff Required as defined from NFPA 1710 230
Figure 127: MCFR Daily Minimum Staffing 231
Figure 128: Economic Theory of Vehicle Replacement 235
Figure 129: Criterion for Fire Station and Resource Need Determination 240
Figure 130: Capital Assets and Capital Improvement Planning 241
Figure 131: Changes in the Fire Environment & Effect on Fire Dynamics 243
Figure 132: Fire Growth vs. Reflex Time 244
Figure 133: Loss Rates by Fire Spread, Home Structure Fires (2012–2016) 245
Figure 134: Bystander Cardiac Arrest Event Sequence 246
Figure 135: Community Outcome Goals....257

Figure 136: NFPA 1710 Standard for Fire/EMS Responses 258
Figure 137: MCFR Current Response Time Performance Standards (All Calls) NFPA 1710 259
Figure 138: MCFR Current Response Time Performance Standards (Fire) NFPA 1710 259
Figure 139: MCFR Current Response Time Performance Standards (EMS) NFPA 1710 259
Figure 140: MCFR Current Response Time Performance Standards (All Calls) NFPA 1720 260
Figure 141: MCFR Current Response Time Performance Standards (Fire) NFPA 1720 260
Figure 142: MCFR Current Response Time Performance Standards (EMS) NFPA 1720 260
Figure 143: Sample Response Goals—Components of Response Time (Fire) NFPA 1720 261
Figure 144: Sample Response Goals—Components of Response Time (EMS) NFPA 1720 261
Figure 145: Areas of ISO Divergence 264
Figure 146: MCFR Station Optimization Analysis 271
Figure 147: ISO 5 Mile Coverage Proposed New Fire Station A (Westport) 272
Figure 148: ISO 5 Mile Coverage Proposed New Fire Station B (Pedro) 273
Figure 149: ISO 5 Mile Coverage Proposed New Fire Station C (Rolling Hills) 274
Figure 150: ISO 5 Mile Coverage Proposed New Fire Station D (Baldwin Ranch) 275
Figure 151: ISO 5 Mile Coverage Proposed New Fire Station I (Majestic Oaks) 276
Figure 152: ISO 5 Mile Coverage Proposed 10 New Fire Stations 277
Figure 153: 5 Year New Fire Station Implementation Schedule 278
Figure 154: 5 Year Fire Station Rebuilding and Renovation Schedule 279
Figure 155: Effective Response Force (ERF) Goal, NFPA 1710 Structure Fire Urban Area 280
Figure 156: Effective Response Force (ERF) Goal, NFPA 1720 Structure Fire Suburban/Rural 281
Figure 157: Sample Staffing Schedule of Additional Rescue FTEs 284
Figure 158: Sample Staffing Schedule of Additional Ladder Company FTEs 287
Figure 159: Estimated MCFR Major Apparatus Replacement Costs 289
Figure 160: MCFR Current Design Concept for a New Training Facility 291

APPENDIX B: DECISION UNIT COST- PERSONNEL

Single-Certified Ambulance Costs

	Multipliers	PM	EMT	Relief Factor (1.25)	Total Per Shift	Total Per Unit
Base Hourly Rate		$18.74	$15.00		N/A	N/A
Stipend					N/A	N/A
Total Hourly Rate		$18.74	$15.00		N/A	N/A
Regular Salary/Wages	2080	$38,979.20	$31,200.00	$17,544.80	$87,724.00	$307,034.00
Builtin Overtime	557	$15,657.27	$12,532.50	$7,047.44	$35,237.21	$123,330.24
Additional Overtime	50	$1,405.50	$1,125.00	$632.63	$3,163.13	$11,070.94
Subtotal		$56,041.97	$44,857.50	$25,224.87	$126,124.34	$441,435.18
FICA Taxes	0.062	$3,474.60	$2,781.17	$1,563.94	$7,819.71	$27,368.98
Medicare	0.0145	$812.61	$650.43	$365.76	$1,828.80	$6,400.81
Retirement Contributions	0.3443	$19,295.25	$15,444.44	$8,684.92	$43,424.61	$151,986.13
Worker's Compensation	0.0389	$2,180.03	$1,744.96	$981.25	$4,906.24	$17,171.83
Health Insurance	$13,584.00	$13,584.00	$13,584.00	$6,792.00	$33,960.00	$118,860.00
Life, AD&D, LTD	0.006741	$377.78	$302.38	$170.04	$850.20	$2,975.71
Total		**$95,766.24**	**$79,364.88**	**$43,782.78**	**$218,913.90**	**$766,198.65**

Dual-Certified Rescue Costs

	Multipliers	PM	EMT	Relief Factor (1.25)	Total Per Shift	Total Per Unit
Base Hourly Rate		$18.25	$15.25		N/A	N/A
Stipend		$2.00	$0.75		N/A	N/A
Total Hourly Rate		$20.25	$16.00		N/A	N/A
Regular Salary/Wages	2756	$55,809.00	$44,096.00	$24,976.25	$124,881.25	$374,643.75
Builtin Overtime	173	$5,254.88	$4,152.00	$2,351.72	$11,758.59	$35,275.78
Additional Overtime	150	$4,556.25	$3,600.00	$2,039.06	$10,195.31	$30,585.94
Subtotal		$65,620.13	$51,848.00	$29,367.03	$146,835.16	$440,505.47
FICA Taxes	0.062	$4,068.45	$3,214.58	$1,820.76	$9,103.78	$27,311.34
Medicare	0.0145	$951.49	$751.80	$425.82	$2,129.11	$6,387.33
Retirement Contributions	0.3443	$22,593.01	$17,851.27	$10,111.07	$50,555.34	$151,666.03
Worker's Compensation	0.0389	$2,552.62	$2,016.89	$1,142.38	$5,711.89	$17,135.66
Health Insurance	$ 13,584.00	$13,584.00	$13,584.00	$6,792.00	$33,960.00	$101,880.00
Life, AD&D, LTD	0.006741	$442.35	$349.51	$197.96	$989.82	$2,969.45
Total		$109,812.04	$89,616.03	$49,857.02	$249,285.09	$747,855.28

Engine/Ladder/Heavy Rescue Costs

	Multipliers	Lieutenant/PM	Driver/PM	EMT	Relief Factor	Total Per Shift	Total Per Unit
Average Hourly Rate		$27.45	$24.00	$15.25		N/A	N/A
Stipend		$0.00	$0.00	$0.00		N/A	N/A
Total Hourly Rate		$27.45	$24.00	$15.25		N/A	N/A
Regular Salary/Wages	2756	$75,652.20	$66,144.00	$42,029.00	$45,956.30	$229,781.50	$689,344.50
Builtin Overtime	173	$7,123.28	$6,228.00	$3,957.38	$4,327.16	$21,635.81	$64,907.44
Additional Overtime	150	$6,176.25	$5,400.00	$3,431.25	$3,751.88	$18,759.38	$56,278.13
Subtotal		$88,951.73	$77,772.00	$49,417.63	$54,035.34	$270,176.69	$810,530.06
FICA Taxes	0.062	$5,515.01	$4,821.86	$3,063.89	$3,350.19	$16,750.95	$50,252.86
Medicare	0.0145	$1,289.80	$1,127.69	$716.56	$783.51	$3,917.56	$11,752.69
Retirement Contributions	0.3443	$30,626.08	$26,776.90	$17,014.49	$18,604.37	$93,021.83	$279,065.50
Worker's Compensation	0.0389	$3,460.22	$3,025.33	$1,922.35	$2,101.97	$10,509.87	$31,529.62
Health Insurance	13584	$13,584.00	$13,584.00	$13,584.00	$10,188.00	$50,940.00	$152,820.00
Life, AD&D, LTD	0.006741	$599.62	$524.26	$333.12	$364.25	$1,821.26	$5,463.78
Total		$144,026.46	$127,632.05	$86,052.03	$89,427.63	$447,138.17	$1,341,414.52

APPENDIX C: DECISION UNIT COST- APPARATUS

HP Ambulance (As Equipped)		
Vehicle	**Cost**	**Expected Life Cycle**
Truck With PowerLoad System	$ 358,000	6 years
Equipment	**Total Cost**	**Expected Life Cycle**
Truck Radio	$ 9,000	10 years
Portable Radio (2)	$ 20,000	10 years
Onboard Mobile Gateway	$ 3,800	10 years
Ruggedized Tablet MDT mount included docking station and pole	$ 7,000	5 years
Cardiac Monitor	$ 50,000	10 years
Chest Compression System	$ 15,000	8 years
Stair Chair	$ 4,000	10 years
Autovent	$ 20,000	10 years
Miscellaneous Medical Equipment and Supplies	$ 15,000	
Stretcher	$ 32,000	10 years
Subtotal Equipment	**$ 175,800**	
Total	**$ 533,800**	2/17/2025

Fire-Based Ambulance (As Equipped)		
Vehicle	**Cost**	**Expected Life Cycle**
Truck With PowerLoad System	$ 358,000	6 years
Equipment	**Total Cost**	**Expected Life Cycle**
Truck Radio	$ 9,000	10 years
Portable Radio (2)	$ 20,000	10 years
Onboard Mobile Gateway	$ 3,800	10 years
Ruggedized Tablet MDT mount included docking station and pole	$ 7,000	5 years
Self Contained Breathing Apparatus	$ 24,000	10 years
SCBA bottle 4500psi	$ 6,000	10 years
Battery Powered Saw	$ 1,000	
Miscellaneous Fire Equipment and Supplies	$ 7,000	
Cardiac Monitor	$ 50,000	10 years
Chest Compression System	$ 15,000	8 years
Stair Chair	$ 4,000	10 years
Autovent	$ 20,000	10 years
Stretcher	$ 32,000	10 years
Subtotal Equipment	**$ 198,800**	
Total	**$ 556,800**	2/17/2025

Engine (As Equipped)		
Vehicle	**Cost**	**Expected Life Cycle**
Truck	$ 740,000	10-12 years
Equipment	**Total Cost**	**Expected Life Cycle**
Truck Radio	$ 9,000	10 years
Portable Radio (2)	$ 40,000	10 years
Setcom Intercom/Radio Set	$ 2,500	
Onboard Mobile Gateway	$ 3,800	10 years
Ruggedized Tablet MDT mount included docking station and pole	$ 7,000	5 years
Self Contained Breathing Apparatus	$ 48,000	10 years
SCBA bottle 4500psi	$ 12,000	10 years
Powered Extrication Equipment (1 set)	$ 30,000	10 years
Positive Pressure Fan 20"	$ 4,000	
Thermal Imager Monitor Bullard T3	$ 10,000	
K-12 950's	$ 1,700	
Chainsaw	$ 500	
Nozzles	$ 7,000	
Fire Hose	$ 15,000	
Miscellaneous Fire Equipment and Supplies	$ 7,000	
Cardiac Monitor	$ 50,000	10 years
Miscellaneous Medical Equipment and Supplies	$ 15,000	
Subtotal Equipment	**$ 262,500**	
Total	**$ 1,002,500**	2/17/2025

Tanker (As Equipped)		
Vehicle	**Cost**	**Expected Life Cycle**
Truck	$ 270,000	10-12 years
Equipment	**Total Cost**	**Expected Life Cycle**
Truck Radio	$ 9,000	10 years
Portable Radio (2)	$ 20,000	10 years
Miscellaneous Fire Equipment and Supplies	$ 7,000	
Fire Hose	$ 15,000	
Subtotal Equipment	**$ 51,000**	
Total	**$ 321,000**	2/17/2025

Ladder (As Equipped)		
Vehicle	**Cost**	**Expected Life Cycle**
Truck	$ 1,500,000	10-12 years
Equipment	**Total Cost**	**Expected Life Cycle**
Truck Radio	$ 9,000	10 years
Portable Radio (2)	$ 40,000	10 years
Setcom Intercom/Radio Set	$ 2,500	
Onboard Mobile Gateway	$ 7,600	10 years
Self Contained Breathing Apparatus	$ 72,000	10 years
SCBA bottle 4500psi	$ 18,000	10 years
Powered Extrication Equipment (1 set)	$ 30,000	10 years
Battery Extrication equipment	$ 53,000	
Air Bags	$ 44,000	
Positive Pressure Fan 20"	$ 4,000	
Thermal Imager Monitor Bullard T3	$ 10,000	
K-12 950's	$ 3,400	
Chainsaw	$ 1,000	
Nozzles	$ 7,000	
Fire Hose	$ 15,000	
Miscellaneous Fire Equipment and Supplies	$ 7,000	
Cardiac Monitor	$ 50,000	
Miscellaneous Medical Equipment and Supplies	$ 15,000	
Subtotal Equipment	**$ 388,500**	
Total	**$ 1,888,500**	2/17/2025

Grass Truck (As Equipped)		
Vehicle	**Cost**	**Expected Life Cycle**
Truck	$ 158,000	10-12 years
Equipment	**Total Cost**	**Expected Life Cycle**
Truck Radio	$ 9,000	10 years
Portable Radio (2)	$ 20,000	10 years
Miscellaneous Fire Equipment and Supplies	$ 7,000	
Subtotal Equipment	**$ 36,000**	
Total	**$ 194,000**	2/17/2025

APPENDIX D: DECISION UNIT COST- FIRE STATIONS

Fire Rescue 5 Year Growth Plan						
Category	**Fire Surtax**	**EMS Surtax**	**Impact Fee**	**Projected Fiscal Year**	**Resource Type**	**Resource Location**
Capacity			$ 300,000.00	FY24/25	Land Acquisition	Pedro
Capacity			$ 8,350,000.00	FY25/26	New Station	Pedro
Capacity			$ 300,000.00	FY25/26	Land Acquisition	Westport
Capacity			$ 8,350,000.00	FY26/27	New Station	Westport
Capacity			$ 8,350,000.00	FY29/30	New Station	Baldwin Ranch
Subtotal			**$ 25,650,000.00**			

APPENDIX E: CRITICAL TASKING AND ALARM ASSIGNMENT SUMMARY

MCFR Critical Tasking for Initial Response	
STRUCTURE FIRE (HYDRANTED) TASKS	
Command	1
Safety	1
Pump Operations	3
Attack Line	2
Back-up Line	2
Search and Rescue	2
Ventilation	2
RIT	4
Other (hydrant)	0
Total Personnel	**17**

MCFR Critical Tasking for Initial Response	
STRUCTURE FIRE (NON-HYDRANTED) TASKS	
Command	1
Safety	1
Pump Operations	3
Attack Line	2
Back-up Line	2
Search and Rescue	2
Ventilation	2
RIT	4
Water Tender Operator	0
Total Personnel	**17**

MCFR Critical Tasking for Initial Response	
WILDLAND FIRE: HIGH RISK	
Command	1
Safety	1
Pump Operations/Lookout	2
Attack Line	2
Exposure Lines	3
Structure Protection	3
Water Supply	2
Other (mop-up, overhaul, line)	1
Total Personnel	**15**

MCFR Critical Tasking for Initial Response

WILDLAND FIRE: LOW RISK	
Command	1
Safety	1
Pump Operations/Lookout	2
Attack Line	2
Exposure Lines	2
Structure Protection	0
Water Tender Operator	1
Other (mop-up, overhaul, line)	0
Total Personnel	9
MCFR Critical Tasking for Initial Response	
AIRCRAFT EMERGENCY	
Command/Safety	1
Aircraft Fire Suppression	0
Pump Operations	1
Attack Line	2
Back-up Line	0
Rescue	3
Emergency Medical Care	2
Water Supply	0
Total Personnel	9
MCFR Critical Tasking for Initial Response	
HAZARDOUS MATERIALS: HIGH RISK	
Command	1
Liaison	0
Decontamination	2
Research/Support	2
Entry team, and backup team	4
Total Personnel	**9**
MCFR Critical Tasking for Initial Response	
HAZARDOUS MATERIALS: LOW RISK	
Command	1
Liaison	0
Decontamination	2
Research/Support	2
Entry team, and backup team	4
Total Personnel	**9**

MCFR Critical Tasking for Initial Response	
EMERGENCY MEDICAL SERVICES	
Patient Management	0
Patient Care	5
Documentation	0
Total Personnel	**5**

MCFR Critical Tasking for Initial Response	
MOTOR VEHICLE COLLISION: NO ENTRAPMENT	
Scene Management/Documentation	0
Patient Care/Extrication	5
Total Personnel	**5**

MCFR Critical Tasking for Initial Response	
MOTOR VEHICLE COLLISION: WITH ENTRAPMENT	
Command	1
Safety	1
Scene Management	4
Patient Care	6
Extrication	3
Pump Operator/Suppression Line	2
Extrication/Vehicle Stabilization	3
Total Personnel	**20**

MCFR Critical Tasking for Initial Response	
MAJOR MEDICAL RESPONSE	
Incident Command	1
Safety	1
Triage	0
Treatment Manager	0
Patient Care	8
Transportation Manager	0
Documentation	0
Total Personnel	**10**

MCFR Critical Tasking for Initial Response	
TECHNICAL RESCUE: WATER	
Command/Safety	2
Rescue Team	2
Backup Team	2
Patient Care	2
Rope Tender	2
Upstream Spotter	1
Downstream Safety	1
Total Personnel	**12**

MCFR Critical Tasking for Initial Response	
TECHNICAL RESCUE: ROPE	
Command/Safety	1
Rescue Team	3
Backup Team	2
Patient Care	2
Rope Tender	2
Safety	1
Total Personnel	**11**

MCFR Critical Tasking for Initial Response	
TECHNICAL RESCUE: CONFINED SPACE	
Command	1
Safety	1
Rescue Team	3
Backup Team	2
Patient Care	2
Rope Tender	2
Total Personnel	**11**

MCFR Critical Tasking for Initial Response	
TECHNICAL RESCUE: TRENCH RESCUE	
Command/Safety	1
Rescue Team	3
Rescue Team	2
Backup/support team	2
Patient Care	2
Shoring	4
Total Personnel	**14**

APPENDIX F: ALARM ASSIGNMENTS

Unit Type	MCFR		Mutual Aid		Total Personnel	
	Units	Staff	Units	Staff	Dept.	Mutual
LOW-RISE STRUCTURE FIRE (HYDRANTED)						
Engine	4	12				
Ladder	1	3				
Battalion Chief	1	1				
Division Chief	1	1				
Medic Unit	2	4				
Total Staffing/Units Provided:	**9**	**21**			**21**	
Total Staffing/ Units Needed:					**17**	
Gap/Deficit:					**+4**	
LOW-RISE STRUCTURE FIRE (NON-HYDRANTED)						
Engine	4	12				
Ladder	1	3				
Tanker	1	2				
Battalion Chief	1	1				
Division Chief	1	1				
Medic Unit	2	4				
Total Staffing/Units Provided:	**10**	**23**			**23**	
Total Staffing/Units Needed:					**19**	
Gap/Deficit:					**+4**	
HIGH-RISE STRUCTURE FIRE (55+ feet) *Initial response (Big Box).						
Engine	4	12				
Ladder	2	6				
Heavy Rescue	2	6				
Battalion Chief	2	2				
Division Chief	1	1				
Medic Unit	3	6				
Mutual/Automatic Aid	3	9				
Total Staffing/Units Provided:	**17**	**42**			**42**	
Total Staffing/Units Needed:					**42**	
Gap/Deficit:					**0**	

Unit Type	MCFR		Mutual Aid		Total Personnel	
	Units	Staff	Units	Staff	Dept.	Mutual
MODERATE-RISK COMMERCIAL STRUCTURE FIRE						
Engine	3	9				
Ladder	1	2				
Battalion Chief	2	2				
Division Chief	1	1				
Medic Unit	3	6				
Total Staffing/Units Provided:	**10**	**20**			**20**	
Total Staffing/Units Needed:					**28**	
Gap/Deficit:						
HIGH-RISK COMMERCIAL STRUCTURE FIRE						
Engine	4	12				
Ladder	1	2				
Battalion Chief	2	2				
Division Chief	1	1				
Medic Unit	3	6				
Total Staffing/Units Provided:	**11**	**23**			**23**	
Total Staffing/Units Needed:					**43**	
Gap/Deficit:					**0**	

Unit Type	MCFR		Mutual Aid		Total Personnel	
	Units	Staff	Units	Staff	Dept.	Mutual
WILDLAND FIRE: HIGH RISK						
Grass Unit	3	6				
Engine	2	4				
Tender	1	2				
Division Chief	1	1				
Battalion Chief	2	2				
Total Staffing/Units Provided:	**9**	**15**			**15**	
Total Staffing/Units Needed:					**15**	
Gap/Deficit:					**0**	
WILDLAND FIRE: LOW RISK						
Grass Unit	1	2				
Engine	1	3				
Tender	1	1				
Battalion Chief	1	1				
Total Staffing/Units Provided:	**4**	**7**			**7**	
Total Staffing/Units Needed:					**10**	
Gap/Deficit:						

Unit Type	MCFR		Mutual Aid		Total Personnel	
	Units	Staff	Units	Staff	Dept.	Mutual
AIRCRAFT EMERGENCY						
Engine	2	6				
Rescue	2	4				
Heavy Rescue	1	3				
ARFF			1	1		
Battalion Chief	2	2				
Division Chief	1	1				
Total Staffing/Units Provided:	**8**	**16**	**1**	**1**	**16**	**1**
Total Staffing/Units Needed:					**12**	**1**
Gap/Deficit:					**+4**	**0**
HAZARDOUS MATERIALS: LOW RISK						
Engine	1	3				
Hazardous Materials Unit	1	2				
Battalion Chief	2	2				
Medic Unit	1	2				
Total Staffing/Units Provided:	**5**	**9**			**9**	
Total Staffing/Units Needed:					**14**	
Gap/Deficit:					**-5**	
HAZARDOUS MATERIALS: HIGH RISK						
Engine	2	6				
Hazardous Materials Unit	1	3				
Battalion Chief	2	2				
Division Chief	1	1				
Medic Unit	2	4				
Total Staffing/Units Provided:	**8**	**16**			**16**	
Total Staffing/Units Needed:					**24**	
Gap/Deficit:					**-8**	

Unit Type	MCFR		Mutual Aid		Total Personnel	
	Units	Staff	Units	Staff	Dept.	Mutual
EMERGENCY MEDICAL SERVICES (Life Threatening)						
Engine	1	3				
Medic Unit	1	2				
Battalion Chief	1	1				
Total Staffing/Units Provided:	**3**	**6**			**6**	
Total Staffing/Units Needed:					**6**	
Gap/Deficit:					**0**	
MAJOR MEDICAL RESPONSE (10+ Patients)						
Engine	2	6				
Rescue	5	10				
Medic	5	10				
Division Chief	1	1				
Battalion Chief	2	2				
Total Staffing/Units Provided:	**15**	**29**			**29**	
Total Staffing/Units Needed:					**28**	
Gap/Deficit:					**+1**	

Unit Type	MCFR		Mutual Aid		Total Personnel	
	Units	Staff	Units	Staff	Dept.	Mutual
MOTOR VEHICLE COLLISION: NO ENTRAPMENT						
Engine or Ladder	1	3				
Rescue	1	2				
Medic Unit						
Total Staffing/Units Provided:	**2**	**5**			**5**	
Total Staffing/Units Needed:					**5**	
Gap/Deficit:					**0**	
MOTOR VEHICLE COLLISION: WITH ENTRAPMENT						
Engine	2	6				
Rescue/Medic	2	4				
Heavy Rescue	1	3				
Battalion Chief	2	2				
Total Staffing/Units Provided:	**8**	**15**			**15**	
Total Staffing/Units Needed:					**20**	
Gap/Deficit:					**+1**	

Unit Type	MCFR		Mutual Aid		Total Personnel	
	Units	Staff	Units	Staff	Dept.	Mutual
TECHNICAL RESCUE: RISING OR SWIFT WATER						
Engine	3	9				
Rescue	1	2				
Heavy Rescue	1	3				
Boat (type) – Brush truck with Boat	1	3				
Battalion Chief	1	1				
Total Staffing/Units Provided:	**7**	**18**			**18**	
Total Staffing/Units Needed:					**15**	
Gap/Deficit:					**3**	
TECHNICAL RESCUE: ROPE						
Engine	1	3				
Rescue	1	2				
Heavy Rescue	1	3				
Division Chief	1	1				
Battalion Chief	2	2				
Total Staffing/Units Provided:	**4**	**11**			**11**	
Total Staffing/Units Needed:					**15**	
Gap/Deficit:					**-4**	
TECHNICAL RESCUE: CONFINED SPACE						
Engine	1	3				
Rescue	1	2				
Battalion Chief	2	2				
Division Chief	1	1				
Heavy Rescue	1	3				
Total Staffing/Units Provided:	**6**	**11**			**11**	
Total Staffing/Units Needed:					**15**	
Gap/Deficit:					**-4**	
TECHNICAL RESCUE: TRENCH RESCUE						
Engine	1	3				
Rescue	1	2				
Battalion Chief	2	2				
Division Chief	1	1				
Heavy Rescue	1	3				
Total Staffing/Units Provided:	**6**	**11**			**11**	
Total Staffing/Units Needed:					**15**	
Gap/Deficit:					**-4**	