



STRATEGIC PLAN

MISSOURI CITY FIRE & RESCUE SERVICES



2017-2022

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WELCOME LETTER FROM THE CHIEF



As the Fire Chief of Missouri City Fire and Rescue Services (MCFRS), it is a privilege to bring to you the Strategic and Standards of Response Cover Plans for 2017-2022. It has been an honor to serve the nearly 71,000 residents of this great city. I was selected as the 11th Fire Chief for MCFRS and I am proud to lead the brave men and women of this Fire Department, as we continue our commitment to deliver excellent and dedicated services to this community. Proper planning and execution is the foundation to all we do. Through our primary functions of Community Risk Reduction, Fire and Emergency Medical Response, Leadership Development, Emergency Management, and Administration, we strive to keep our citizens safe and prepared with integrity, respect, and professionalism.

MCFRS’s vision is that we are professionals committed to excellence, honor and service to all. Our vision is the backbone for our mission which is to preserve life, property and promote a safe community for all. We are committed to providing an enhanced level of Service, Professionalism, Innovation, Respect, Integrity, Teamwork (S.P.I.R.I.T) and preparedness. Each of these values in its truest form is what our department stands for, but the preparedness is what keeps us at a constant state of readiness.

As we move through this journey I want to thank our Mayor, the City Council and the City Executive Leadership Team for their support as we continue to be known as a superior organization. MCFRS is committed to deliver outstanding customer service to the community. This strategic plan with the companion Standards of Cover (deployment) plan, will now through 2022 will position MCFRS to serve with excellence. As Missouri City continues its efforts to engage the community and sustain its economic and residential appeal, it is the priority of MCFRS to ensure fire safety services provided remain consummate with growth. We are excited to see this strategic plan unfold and watch as the department continues to strive to new heights, because “Together We Excel”.

- EUGENE CAMPBELL, JR. FIRE CHIEF

“ TOGETHER, WE EXCEL! ”

HISTORY

It was December 3, 1956, when 22 men came together with the purpose of creating an organization that met the fire safety needs of “Missouri City”.

Guided by a dedication to public service and community protection, those individuals established a volunteer fire department



for the bedroom-community of residents. More than a decade after its inception, the volunteer department evolved into a full-time station in 1968.

While the present-day Department serves 72,470 citizens throughout the City and an additional 32,026 in the extra territorial jurisdiction, the mission has remained the same as it was in 1956: to provide exemplary fire safety services. As the City continues to expand, the Department will continue to reflect Missouri City's spirit by serving with professionalism and integrity.

With a staff of 66 full-time fire fighters and twelve staff members in administration, the Missouri City Fire and Rescue Services (MCFRS) agency not only provides services that meet the main priority of fire safety and rescue but has evolved into community risk reduction, providing public education programs and environmental safety procedures.

— EST. 1956

DEPARTMENTAL FACTS

Missouri City Fire & Rescue Services has a proud history made up of men and women who pride themselves in service to others. Coming from multiple communities and around the world, they form a dynamic team with multiple languages spoken. Their commonality is to save lives, prevent loss and provide sound stability in our team.

This strategic plan affirms Missouri City Fire & Rescue Services commitment to the citizens of this community. The Vision, Mission, Values, Goals, and Objectives outlined in this document lay out our continued efforts to provide residents high-quality services and remain diligent servants in our quickly-expanding environment. This five-year strategic plan aligns with the overarching goals of Missouri City.



STRATEGIC PLANNING PROCESS

This strategic plan is a culmination of the City's adoption of the High-Performance Organization (HPO) framework and a new leadership vision for MCFRS. Building on the objectives of MCFRS's previous strategic plan, this document intends to comprehensively address public safety concerns while increasing innovation across the City's landscape in collaboration with all city departments.

To promote an all-inclusive environment, members from all levels of the organization attended a leadership retreat that afforded them the opportunity to share their ideas of how the department should move forward. It was in that retreat a departmental Vision and Mission was revised. From there, focus groups convened to brainstorm on how the department can become more efficient and better serve the community. Meetings with internal and external stakeholders, along with the City Manager's Office took place to guide operational alignment.

The goals and objectives outlined in this plan epitomize the purpose of the HPO framework that now guides the City of Missouri City and is an overall reflection of the dedication the members of this organization possess.

INDUSTRY AND LITERATURE REVIEW

Missouri City Fire and Rescue conducted research to answer the question “what is a solid strategic plan?” To answer that question, our organization reviewed the Missouri City 2016 Citizen Survey, Missouri City 2017 Comprehensive Plan, Huitt-Zollars Facilities evaluation and assessment of city structures, local, state and nationally recognized fire services and public safety organizations to benchmark against. This led to the identification of key elements that affect the safety, community risk, growth and service delivery to our citizens and department. This strategic plan provides direction and systematic framework for the recommendations in this document.

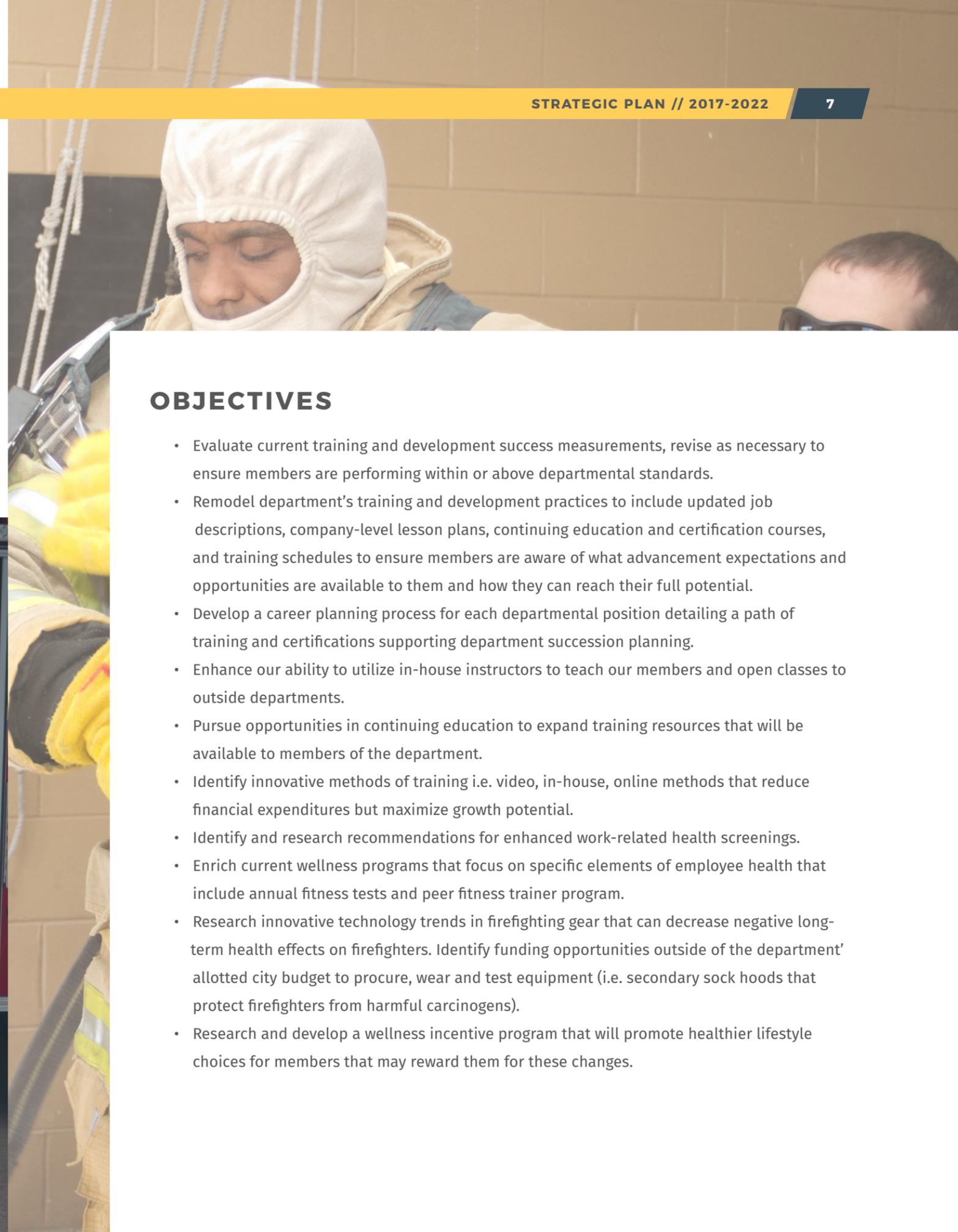
GOAL 1 : DEVELOP MEMBERS TO THEIR HIGHEST POTENTIAL

The MCFRS Department's **most significant asset is its employees**. To achieve our first goal to develop members to their highest potential, we continually **reevaluate** and **update** job descriptions, **revise** training schedules, **encourage growth** through the ranks, and **prepare** members for administrative leadership. This process begins with new recruits and extends through the most senior members of the organization. It is through this goal and its objectives that MCFRS will continue its reputation as an **exemplary department**.



OBJECTIVES

- Evaluate current training and development success measurements, revise as necessary to ensure members are performing within or above departmental standards.
- Remodel department's training and development practices to include updated job descriptions, company-level lesson plans, continuing education and certification courses, and training schedules to ensure members are aware of what advancement expectations and opportunities are available to them and how they can reach their full potential.
- Develop a career planning process for each departmental position detailing a path of training and certifications supporting department succession planning.
- Enhance our ability to utilize in-house instructors to teach our members and open classes to outside departments.
- Pursue opportunities in continuing education to expand training resources that will be available to members of the department.
- Identify innovative methods of training i.e. video, in-house, online methods that reduce financial expenditures but maximize growth potential.
- Identify and research recommendations for enhanced work-related health screenings.
- Enrich current wellness programs that focus on specific elements of employee health that include annual fitness tests and peer fitness trainer program.
- Research innovative technology trends in firefighting gear that can decrease negative long-term health effects on firefighters. Identify funding opportunities outside of the department's allotted city budget to procure, wear and test equipment (i.e. secondary sock hoods that protect firefighters from harmful carcinogens).
- Research and develop a wellness incentive program that will promote healthier lifestyle choices for members that may reward them for these changes.



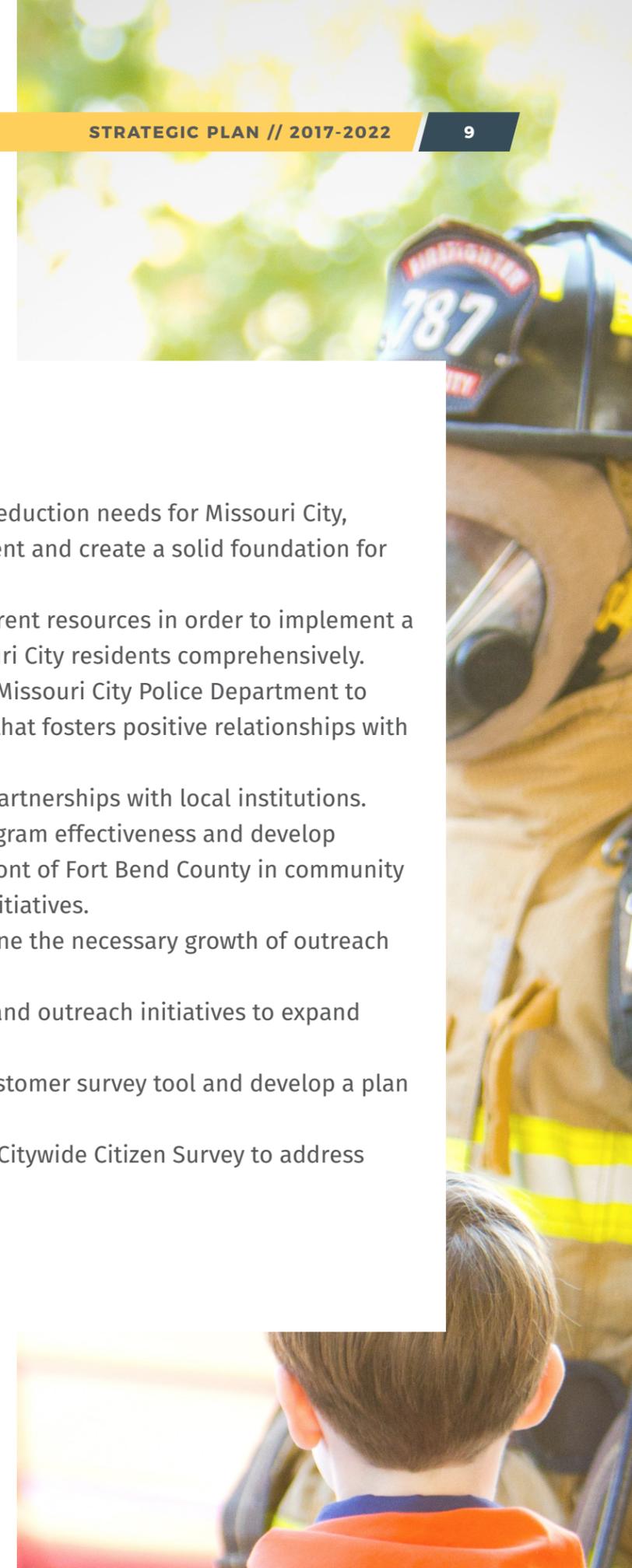
GOAL 2: MAINTAIN A POSITIVE COMMUNITY PARTNERSHIP

Our top priority is to continue to provide Missouri City residents with **high-quality service**. The Missouri City Fire and Rescue Services department is a **proud community partner**, and through our **outreach programs** and **education initiatives**, it is our goal to maintain a **strong** and **positive community partnership**. This will be achieved by our continued efforts of engagement combined with the analysis of a community risk reduction study. This objective will create the groundwork of how to best proceed as an **innovative** and **progressive** agency to assist our citizens. Continuously building these relationships allows for **transparent communication** and helps reinforce prevention messages.



OBJECTIVES

- Research and assess community risk reduction needs for Missouri City, identify areas of necessary improvement and create a solid foundation for future growth.
- Identify outreach capabilities with current resources in order to implement a consistent program that serves Missouri City residents comprehensively.
- Continue on-going collaboration with Missouri City Police Department to provide a community-based program that fosters positive relationships with area youth.
- Continue to establish public/private partnerships with local institutions.
- Analyze past events to determine program effectiveness and develop programs that put MCFRS at the forefront of Fort Bend County in community youth-based Public Safety outreach initiatives.
- Study population forecasts to determine the necessary growth of outreach programs.
- Participate in county-wide education and outreach initiatives to expand MCFRS community footprint.
- Assess the viability of developing a customer survey tool and develop a plan for its implementation.
- Utilize information obtained from the Citywide Citizen Survey to address identified



GOAL 3: CREATE AN ENVIRONMENT CONDUCTIVE TO SUCCESS

To maintain an organization that increasingly **thrives** to create an environment conducive to **success**. MCFRS will continue to implement processes and procedures that **promote a cohesive internal atmosphere** and **identify methods** of achieving **unified development**. By focusing on collective workforce satisfaction, we capitalize on opportunities for **growth, efficiency, and innovation**.

OBJECTIVES

- Research and develop programs to integrate information sharing from the Community Risk Reduction Division to the Operations Division.
- Create a volunteer mentoring program, allowing department members to share their knowledge and experience with newer members and promote team-building.
- Identify methods that will cultivate trust, learning, and increase employee morale. Schedule team-bonding events and retreats annually.
- Identify opportunities to share job knowledge across department specializations, and other agencies (i.e. Prevention & Operations, County, Courts, Police Department and Public Works department).
- Collaborate with Information Technology (IT) department to create a long-term technology plan that addresses equipment updates as necessary.
- Establish training needs for our department's "rescue/recognition drone program" and identify department members that are most interested in the use of the technology.
- Research the financial feasibility and efficiency of partnering with Fort Bend County EMS for EMS software to enhance reporting, inventory control and emergency care.
- Identify methods of information sharing from mutual-aid departments in order to analyze MCFRS performance and service delivery.
- Create a training schedule and program that allows all members to remain current on all applicable equipment and technology.
- Evaluate and update our current computer-aided dispatch system (CAD), responses for efficiency and effectiveness.
- Evaluate current and future Risk Management Solutions (RMS).
- Update file management of Electrocardiogram (EKG) response.



EQUIPMENT

- Assess the need for new and innovative equipment for firefighter safety and efficiency. Develop recommendation for viable implementation.
- Review effectiveness of fleet service contracts and make recommendation to improve.
- Ensure all apparatus are equally standardized for accountability and efficiency.
- Align new firefighting tactics and procedures to current equipment and Insurance Service Office (ISO), the Commission on Fire Accreditation International (CFAI) and best practices.



GOAL 4: ENSURE WE ARE PREPARED TO DELIVER AN EFFECTIVE RESPONSE

Our core services require that we are **always prepared** to deliver an **effective response**. To continue to be **effective**, we must perform an all-points reassessment that will enable us to identify our areas of **needed improvement** and perhaps find a place where we can be more **innovative**. Streamlining our technological processes, overhauling our deployment operational plans, implementing equipment and contractor schedules will allow us to be more **fiscally sound** and ensure we are always working towards meeting or **surpassing** this goal.

OBJECTIVES

- Establish a stakeholder committee to assess and research current and future technologies for inclusion in a technology plan, implement recommendations as budgetary and operational resources allow.
- Research and develop recommendations for a deployment operations plan.
- Assess response readiness of all emergency equipment and implement new equipment updating schedule to address any shortfalls.
- Review recommendation of the 2017 facilities study and final revision of the comprehensive plan and consider implementing its findings.
- Establish a community-wide annual Cardiopulmonary Resuscitation/First Aid Program (a collaborative effort with Community Stakeholders).
- Establish a standing contract with vendors for Emergency Management Disaster Response Support, create quarterly correspondence to ensure policy adherence and clear communication in a disaster event.
- Collaborate with the Finance Department on establishing a Disaster Finance Policy.
- Conduct study to establish in-house Dispatch effectiveness, and prepare to implement feasible recommendations.
- Collaborate with mutual-aid departments to develop a universal live event accountability procedure in order to streamline processes and services.
- Evaluate our Fort Bend County EMS Program, research program requirements, and service and delivery models.

DEPLOYMENT OPERATIONAL PLAN

- Create CAD districts for stations 6&7 to capture response data

FUTURE STATIONS

- Station location study – Evaluate the location of current station locations and the need for additional fire stations by producing a station location study.
- Station Six and Fire Administration Building Design, Construction and build: Inspect and examine the design of these new structures to address the growth of Missouri City and the MCFRS employees.
- Training facility Research and Propose - Design a training facility to assist in the continued development of MCFRS employees.
- Funding – Research the Prospects for funding opportunities outside of Missouri City for facility needs.

SERVICE DELIVERY

- Public Research – Assess and develop public education and community outreach programs given by MCFRS.
- Read-a-day children's program – Continue to provide and cultivate a children's Read-a-Day program for children located within the MCFRS response jurisdiction.
- Interact with Home Owners Association (HOA) – Continue to keep the rapport and connection already established with HOA's located within the MCFRS response jurisdiction.
- Handout flyers – Create and refine flyers that will promote MCFRS and its programs.
- City website – Continue to develop ways to engage with stakeholders within the MCFRS response area by using the City's website and social media.
- Home schools and foster homes – Explore opportunities to improve public education programs that engages home school and foster home stakeholders.
- Community liaison – Pursue the availability and commitment of a community liaison.
- Special Ops program – Refine, research and develop different special operations programs that will be beneficial to Missouri City.
- Evaluate response efficiency – Research, develop and evaluate methods to measure MCFRS response efficiency.
- Resource placement – Evaluate the placement of MCFRS resources within MCFRS response area.
- CAD response – Using the developed MCFRS response efficiency measurement tool to establish and refine MCFRS deployment model within Computer Aided Dispatch (CAD).
- Dedicated fire dispatch overhaul SOG/GO – Continue to evaluate, research and refine MCFRS Standard Operating Guidelines and General Orders.
- Intra Relations – Establish a rapport and collaborate with other Missouri City Departments creating a team environment.
- Smoke Detector Program – Evaluate and refine the MCFRS Smoke Detector Program as a continual safety measure.
- Employee Evaluations – Working together with Missouri City Human Resources to evaluate and enhance the City's Employee Evaluation Program.

STAFFING

- Recruitment and Retention – Evaluate and continually refine the recruitment and retention efforts by MCFRS.
- Evaluate support staff – Continuously evaluate support staff needs within training, logistics, public education, and community risk reduction.
- Second battalion chief – Research and evaluate the need for an additional Battalion Chief to the department's operation.
- Redevelop organizational plan – Evaluate and refine the department's organizational plan.
- Cost analysis – Research and develop methods to perform cost analysis on all operations and programs within MCFRS.
- Task assignments for apparatus positions – Research and develop a predetermined task assignment for each apparatus riding position.
- Research and evaluate the change of title of Lieutenants to Captains for better comparisons to other fire departments.

CUSTOMER SURVEY TOOL

- Post-incident packet – Research and develop a post-incident packet or handout for victims of misfortunes.
- Public relations event survey – Research, develop and implement a means to survey stakeholders for ideas and effectiveness of the departments public relations.
- Link on MCFRS website – Using the survey to develop a means to market the survey via website, social media and/or business cards.



GOAL 5: ENHANCE OUR STANDING AS A HIGH-PERFORMANCE ORGANIZATION

- Missouri City has adopted the High-Performance Organization (HPO) framework; MCFRS has also embraced this philosophy.
- To further MCFRS standing our department will develop a formal marketing communication plan to evaluate our citizen's ability to learn CPR and use AED to prepare for unforeseen emergencies through the URL link on business card, website and decal on apparatus, etc.
- Create business cards w/ Apparatus links to Face Book page – Business cards with URL decal that link to Cardio Pulmonary Resuscitation (CPR), Automated

External Defibrillators (AED) and other websites that allow for access to certain directories in case of emergency.

- Through the HPO framework, our foremost priority is to assess our department at every level and identify areas of improvement and realign our priorities to meet the cultural and structural concepts that make the framework effective.
- This new approach allows MCFRS to continuously evaluate our standing amongst our peers, enrich external systems relations, identify opportunities for new training and competency programs and pursue standards of nationally recognized best practices.



OBJECTIVES

- Develop three formal and informal methods to recognize high performance within our department.
- Consider the implementation and feasibility of the 2017 Standard of Cover study recommendations.
- Enroll in Texas Fire Chiefs Association (TFCA) Best Practices Recognition Program.
- Maintain ISO 1 rating, and implement annual assessment schedule.
- Examine the feasibility of pursuing Commission on Fire Accreditation International accreditation.

SELF-ASSESSMENT/PEER REVIEW

- Research accreditation and conduct a gap analysis that can provide data to see if it is viable for Missouri City Fire & Rescue Services. Educate members on the process of accreditation.
- Develop a standardized Quality Assurance/Quality Improvement (QA/QI).
- Review and Revise Standard Operating Guidelines/General Orders (SOG/GO).
- Create a well-defined mission and strategic plan.
- Explore Texas best practices and implement where applicable.
- Conduct standard of coverage research and implementation of the plan.
- Research the Texas Fire Chiefs Association best practices and develop a implementation plan where applicable.
- Research, determine feasibility and develop and implementation plan for the department standards of cover.

STANDARDS OF COVERAGE UTILIZATION STUDY

The Standard of Coverage section describes the overall risk for the City of Missouri City and one of the major initiatives listed in the 2017-2022 Fire department strategic plan. This section was researched, developed and finalized over seven months and was conducted while the strategic plan was finalized. The Standard of Coverage had many elements to develop the risk and staff study and was lead by the Citygate group who are made up of fire service subject matter experts.

In mid 2017, Missouri City retained Citygate Associates, LLC to perform a Standards of Coverage and Staffing Utilization Study for the Fire Department (SOC for short). Outside expertise was needed to conduct the detailed incident statistics and geographic mapping analysis for a deployment master plan.

The study was completed and presented to the City Council on March 5, 2018. The study is contained in three attached volumes that are now a technical part of this Strategic Plan. In all the SOC and Headquarters review assessments made 36 key findings and 21 specific action item recommendations. Taken together, this Strategic Plan and the companion SOC technical work will drive the Fire Department's resource requests as part of the City's on-going budget and community development cycles over the next several years.



The SOC effort revolved around the following elements:

- Modeling the response time ability of the current fire station locations.
- Use of an incident response time analysis program called StatsFD™ to review the statistics of prior historical performance.
- Use of a geographic mapping response time measurement tool called FireView™ to measure fire unit driving coverages from the City's current fire stations.
- Establishing performance goals for the City consistent with best practices and national guidelines from the National Fire Protection Association (NFPA) and the Commission on Fire Accreditation International (CFAI).

The project made findings and recommendations as to the following questions:

- Is the type and quantity of apparatus and personnel adequate for the City's deployment to emergencies?
- What is the recommended deployment to maintain adequate emergency response times as growth continues to occur?

The users of the SOC technical study understand that in the United States, there are no federal or state government requirements for a minimum level of fire services. Fire service levels are an issue for each community to consider and fund in protecting its risks as it chooses. The SOC systems approach to deployment, rather than a one-size-fits-all prescriptive formula, allows for local determination. In this comprehensive approach, each agency can match local needs (risks and expectations) with the costs of various levels of service. In an informed public policy debate, a governing board "purchases" the fire and emergency medical service levels the community needs and can afford.

The SOC process consisted of the following eight parts:

Standards of Coverage Process Elements	
Element	Meaning
Existing Deployment Policies	Reviewing the deployment goals the agency has in place today
Community Outcome Expectations	Reviewing the expectations of the community for response to emergencies
Community Risk Assessment	Reviewing the assets at risk in the community
Critical Task Study	Reviewing the tasks that must be performed and the personnel required to deliver the stated outcome expectation for the Effective Response Force (ERF)
Distribution Study	Reviewing the spacing of first-due resources (typically engines) to control routine emergencies
Concentration Study	Reviewing the spacing of fire stations so that building fires can receive sufficient resources in a timely manner (First Alarm assignment or the ERF)
Reliability and Historical Response Effectiveness Studies	Using prior response statistics to determine the percent of compliance the existing system delivers
Overall Evaluation	Proposing Standard of Cover statements by risk type as necessary

STANDARDS OF COVERAGE UTILIZATION STUDY

In rapidly growing communities like Missouri City, it is a monumental challenge to keep fire service levels commensurate with growth along with all the other competing needs as General Fund revenues growth over the years. Over the past decades, Missouri City has made significant investments in its fire service by adding career firefighters and fire stations.

If continued incremental growth in fire services is desired, build a multi-year plan for additional fire services balanced with revenue growth projections.

The findings and recommendations for headquarters services, programs and staffing should be taken in context with a best-practice review. The Missouri City Fire & Rescue Department has made significant progress in the last 10 years. The current leadership is in the process of meeting best practices, the community's expectations, and developing the Department's personnel.

Fire department deployment, simply stated, is about the speed and weight of the attack. Speed calls for first-due, all-risk intervention units (engines, trucks, and/or squads) strategically located across a city/department responding in an effective travel time. These units are tasked with controlling moderate emergencies without the incident escalating to second alarm or greater size, which unnecessarily depletes department resources as multiple requests for service occur. Weight is about multiple-unit response for serious emergencies such as a room-and-contents structure fire, a multiple-patient incident, a vehicle accident with extrication required, or a heavy-rescue incident. In these situations, enough firefighters must be assembled within a reasonable time frame to safely control the emergency, thereby keeping it from escalating to greater alarms.

This deployment design paradigm is reiterated in the following table:

	Meaning	Purpose
<i>Speed of Attack</i>	Travel time of first-due, all-risk intervention units strategically located across a department.	Controlling moderate emergencies without the incident escalating to second alarm or greater size.
<i>Weight of Attack</i>	Number of firefighters in a multiple-unit response for serious emergencies.	Assembling enough firefighters within a reasonable time frame to safely control the emergency.

Thus, small fires and medical emergencies require a single- or two-unit response (engine and specialty unit) with a quick response time. Larger incidents require more crews. In either case, if the crews arrive too late or the total personnel sent to the emergency are too few for the emergency type, they are drawn into a losing and more dangerous battle. The science of fire crew deployment is to spread crews out across a community for quick response to keep emergencies small with positive outcomes without spreading the crews so far apart that they cannot amass together quickly enough to be effective in major emergencies.

CITYGATE'S OVERALL OPINIONS ON MISSOURI CITY'S DEPLOYMENT

Even with adding Station 5 in 2015, the City's fire and emergency medical services have not kept completely on pace with growth. The existing fire station first-due unit coverage areas are still too large and thus the units are unable to meet best practice outcome response times to all neighborhoods. In many emerging western states, cities allow non-contiguous neighborhoods to develop somewhat quickly over a few years. Stated this way, new urbanizing communities do not tend to grow outward from a solid core, with a grid or "right angle" classic street system. It is increasingly common that newer communities, including Missouri City, build in clusters and connect meandering subdivision streets to each other with longer main boulevards. For quality of life and land owners, this can be a beneficial pattern. For fire services agencies trying to maintain response times from the most efficient (fewest) number of fire stations, it is not a cost-effective community design plan; most urban communities want shorter best-outcome response times to keep small fires small and to save people with potentially fatal medical emergencies.

If best outcome response times to all similar risk and population density neighborhoods are desired, Missouri City should consider at least one more fire station for a total of six in the near term. It might be necessary, depending on the final City and Extra Territorial Jurisdiction (ETJ) limits, to need seven to eight fire stations at buildout with appropriate apparatus and personnel.

CITYGATE'S OVERALL OPINIONS ON MISSOURI CITY'S HEADQUARTERS PROGRAMS

The Department's organization of positions will likely continue to grow over at least the next 10 years. Therefore, headquarters services need to be scalable to manage current programs and to prepare the personnel and capital assets for the future. This is difficult for a smaller agency.

Citygate cautions the City's leadership that adding fire stations and personnel is not enough. The line personnel also must be led, equipped, trained, and provided quality oversight to comply with state and federal requirements. This requires the same serious commitment as providing additional fire stations. Citygate advises the City that if it cannot fund both line and headquarters positions in the safe manner required, that it first focus on headquarters positions. While this seems counterintuitive, line firefighters that are not properly led, equipped, trained, and given quality oversight are a danger to themselves and the community they serve. They can also become a costly liability for accidents, injury, and apparatus loss time and claims.

Citygate does not recommend that the City stop adding fire stations, but Citygate recommends that, as revenues increase with growth, if the City plans to add fire stations, then it should add the appropriate balance of headquarters personnel to support line firefighters.

Citygate finds that, at present, the headquarters unit is at capacity and recommends that the City consider headquarters additions before it hires additional personnel to staff another fire station. The Department also must consider the shorter tenure of the fire management team and prepare others for advancement along with the timely hiring of needed entry-level firefighters, either for replacement or a new fire station.

STANDARDS OF COVERAGE UTILIZATION STUDY

VOLUME 1– EXECUTIVE SUMMARY

Missouri City (City) retained Citygate Associates, LLC (Citygate) to perform a Standards of Coverage and Staffing Utilization Study for the Fire Department (Department). This study included reviewing the adequacy of the existing deployment system from the current fire station locations, locating as-needed future fire stations as growth occurs, and also a high level review of the fire headquarters staffing and programs. This report is presented in three volumes, including this Executive Summary (Volume 1) summarizing our findings and recommendations, a Technical Report (Volume 2) that includes a Standards of Coverage (deployment) assessment and a headquarters staffing review, and a Map Atlas of deployment coverage measures (Volume 3).

Throughout this report, Citygate makes key findings, and, where appropriate, specific action item recommendations. Overall, there are 36 key findings and 21 specific action item recommendations in Volume 2.

POLICY CHOICES FRAMEWORK

First, as the City Council understands, there are no mandatory federal or state regulations directing the level of fire service response times and outcomes. The level of service and resultant costs are a local community choice in the United States. The body of regulations on the fire service provides that if fire services are provided, they must be done so with the safety of the firefighters and citizens in mind. There is a constructive tension between a desired level of fire services and the level that can actually be funded. Thus, many communities do not have the level of fire services they may desire.

In growing communities like Missouri City, it is an even harder challenge to keep fire service levels commensurate with growth along with all the other competing needs as General Fund revenues grow modestly. Over the past decade, Missouri City has made investments in its fire services which serve as the City's baseline commitment today.

This study will identify that, in the near term, additional investment in fire services is still necessary as Missouri City continues to evolve. The fundamental policy choices are derived from two key questions:

1. What outcome is desired for an emergency? Is the desire to keep a building fire to the room, building, or block of origin, and to emergency medical care in time to lessen the possibility of preventable death and severe disability?

2. Should equitable response time coverage be provided to all similar risk neighborhoods? Once the outcomes are stated, the fire and emergency medical services (EMS) deployment system must be designed to cover the most geography in the fewest minutes to meet the stated outcome goals. In a large community such as Missouri City, with multiple neighborhoods, it must be considered whether similarly developed areas, paying the same taxes, should all receive the same response time from a fire services unit.

CITYGATE'S OVERALL OPINIONS ON THE STATE OF THE CITY'S FIRE SERVICES

Even with adding Station 5 in 2015, the City's fire and emergency medical services have not kept completely on pace with growth. The existing fire station first-due unit coverage areas are still too large and thus the units are unable to meet best practice outcome response times to all neighborhoods. In many emerging western states, cities allow non-contiguous neighborhoods to develop somewhat quickly over a few years. Stated this way, new urbanizing communities do not tend to grow outward from a solid core, with a grid or "right angle" classic street system. It is increasingly common that newer communities, including Missouri City, build in clusters and connect meandering subdivision streets to each other with longer main boulevards. For quality of life and land owners, this can be a beneficial pattern. For fire services agencies trying to maintain response times from the most efficient (fewest) number of fire stations, it is not a cost-effective community design plan; most urban communities want shorter best-outcome response times to keep small fires small and to save people with potentially fatal medical emergencies.

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STANDARDS OF COVERAGE UTILIZATION STUDY

CHALLENGE #1 - FIELD OPERATIONS DEPLOYMENT (FIRE STATIONS)

Fire department deployment, simply stated, is about the speed and weight of the attack. Speed calls for first-due, all-risk intervention units (engines, ladder trucks, and/or ambulances) strategically located across a department responding in an effective travel time. These units are tasked with controlling moderate emergencies preventing the incident escalating to second alarm or greater size, which unnecessarily depletes department resources as multiple requests for service occur. Weight is about multiple-unit response for serious emergencies such as a room-and-contents structure fire, a multiple-patient incident, a vehicle accident with extrication required, or a heavy rescue incident. In these situations, enough firefighters must be assembled within a reasonable time frame to safely control the emergency, thereby keeping it from escalating to greater alarms.

In Volume 2 of this study, the Technical Report, Citygate’s analysis of prior response statistics and use of geographic mapping tools reveals that the City currently does not have adequate fire station coverage across all areas in the City limits, much less the ETJ sections outside the City limits. The deployment system largely does not meet the City’s geographic coverage and incident demands. The maps provided in Volume 3 and the corresponding text explanation beginning in Volume 2 describes, in detail, the City’s current deployment system performance.

For effective outcomes on serious medical emergencies and to keep serious but still-emerging fires small, best practices recommend that the first-due fire unit should arrive within 7:30 to 8:30 minutes of fire dispatch being alerted of an incident, 90 percent of the time. In the City, the current fire station system provides the following unit response time performance, across a variety of population density/risk areas for emergency medical and fire incident types. As the table shows, no measure is close to a 7:30 to 08:30 best practice goal for an urban area.



Call to Arrival Analysis

Station	2016
Department-Wide	10:13
Station 1	09:43
Station 2	10:49
Station 3	09:18
Station 4	10:37
Station 5	12:38

As Volume 2 of this report will detail, the dispatch, crew turnout, and travel times are all higher than recommended best practices. However, the travel times are very long, resulting in the bulk of the slow responses in Table 1. National Fire Protection Association (NFPA) Standard 1710 recommends a 4:00-minute travel time goal in urban and suburban areas. As seen in Table 2, none of the travel times meet this goal. There are several reasons for slower travel time such as a curvilinear road network and open spaces further separating neighborhoods. Given the City is close to buildout and has long ago set its planning policies and first five fire station locations, not all of the travel time issues can be cost-effectively improved.

STANDARDS OF COVERAGE UTILIZATION STUDY

Travel Analysis

Station	2016
Department-Wide	07:29
Station 1	06:55
Station 2	07:53
Station 3	06:38
Station 4	07:46
Station 5	08:35

As a starting point, only 39.3 percent of the City's public streets are within 4:00 minutes travel time of a fire station, which is well below Citygate metropolitan buildout expectations of 70 to 90 percent. Even adding 1:00 minute to the coverage (5:00 minutes total) as some communities do, increases the covered percent to 67.1 percent.

Missouri City's travel times are reflective of the reality that, in congested urban areas, achieving 4:00-minute travel coverage to most the urban density neighborhoods will not be possible to 90 percent of the serious incidents from only five and even six fire stations.

If at least a six-station deployment plan can be achieved as modeled in this study, first-due unit coverage improves to 44.2 percent at the fourth minute and 72.9 percent at the fifth minute during normal traffic hours. Based on current and near-term known roads, an eight-station model improves first-due unit coverage to 52 percent at the fourth minute and 77.2 percent at the fifth minute during normal traffic hours.

As a measure of the impact of adding one or more fire stations, using current resident population measures from American Fact Finder by census tract in 2016, adding a sixth fire station at the site mapped in this study will bring 4,090 more residents into 4:00-minute travel time coverage. If two more fire stations were to be added in the central City area, 9,487 current residents would be within 4:00-minute travel time coverage. Even with three added stations, due to the challenging-to-serve road network, 5,574 residents would be just outside 4:00-minute coverage but within 6:00 minutes. These figures do not take into consideration any future growth, business employees, or cross-City automobile traffic through these areas. In other words, 19,151 residents are presently beyond 4:00-minute travel time coverage, yet they pay the same general taxes, some of which fund fire services.

CHALLENGE #2 - ADMINISTRATIVE PROGRAMS STAFF CAPACITY

The current headquarters staff is at the minimum necessary, if not already too small, to provide the required oversight for a full-service fire department. In addition, the Department faces succession planning time burdens to replace near-retirement supervisors in addition to growing the force to potentially add a sixth fire station. General administration, fiscal controls, training, safety, and patient care quality assurance are not delivered within standards when too few personnel are doing too many jobs. These issues should be addressed in parallel with considering adding a sixth fire station.



STANDARDS OF COVERAGE UTILIZATION STUDY

OVERALL EVALUATION AND SUMMARY RECOMMENDATIONS

If the risk of fire is to be limited to only part of the inside of an affected building, for the foreseeable future, the City will need both a first-due firefighting unit, and Effective Response Force (multiple-unit, also known as First Alarm) coverage, in all parts of the City and possibly (dependent on revenue and annexation) the most populated areas of the ETJs, consistent with current best practice recommendations.

While the volume of, and response times to, EMS incidents consume much of the City's attention, all communities need a "stand-by and readily available" firefighting force to respond to fires that break out. The Fire Department provides paramedic squad and Emergency Medical Technician fire crew care but, in addition, the threat of fire, even if low, still requires resources in addition to EMS hourly demand for an effective response to emerging fires.

If the City can continue to add fire stations over time, as revenues permit, it will be able to:

- Provide a more equitable response times to all similar risk neighborhoods.
- Provide a depth of response when multiple, single-unit response incidents occur.
- Provide a concentration of response units for high-risk properties.

The first deployment step for the City Council, in the near term, is to adopt updated and complete performance measures starting at the time the 9-1-1 call is received, from which to set forth fire service outcome expectations and, on an annual budget basis, monitor and fund Fire Department performance.

Based on the deployment analysis contained in this study, Citygate's multiple recommendations in Volume 2 will strengthen deployment performance as incidents increase year to year. The broad themes of our recommendations are:

- Adopt updated, outcome-driven response time goals.
- Consider adding fire stations as economics allow to increase the equity of coverage to similar neighborhoods.
- Once a baseline response-time-to-outcome desired goal is identified by the City Council, if coverage gaps occur, build a multi-year plan for additional fire services balanced to revenue growth projections.

OVERALL HEADQUARTERS SERVICES EVALUATION AND SUMMARY RECOMMENDATIONS

The findings and recommendations for headquarters services, programs, and staffing should be taken in the context of a best practice review. The Department has evolved as the City grew and service demands changed. The current leadership is in the process of meeting training, safety, and other best practices, but more needs to be done.

However, the Department's organization of positions will likely continue to grow over at least the next 10 years. Therefore, headquarters services need to be scalable to manage current programs and to prepare the personnel and capital assets for the future. This is difficult for a smaller agency.

Citygate cautions the City's leadership that adding fire stations and personnel is not enough. The line personnel also must be led, equipped, trained, and provided quality oversight to comply with state and federal requirements. This requires the same serious commitment as providing additional fire stations. Citygate advises the City that if it cannot fund both line and headquarters positions in the safe manner required, that it first focus on headquarters positions. While this seems counterintuitive, line firefighters that are not properly led, equipped, trained, and given quality oversight are a danger to themselves and the community they serve. They can also become a costly liability for accidents, injury, and apparatus loss time and claims.

Citygate does not recommend that the City stop adding fire stations, but Citygate recommends that, as revenues increase with growth, if the City plans to add fire stations, then it should add the appropriate balance of headquarters personnel to support line firefighters.

Citygate finds that, at present, the headquarters unit is at capacity and recommends that the City consider headquarters additions before it hires additional personnel to staff another fire station. The Department also must consider the shorter tenure of the fire management team and prepare others for advancement along with the timely hiring of needed entry-level firefighters, either for replacement or a new fire station.

The broad themes of our headquarters recommendations are:

- Conduct an in-depth job task analysis time study of sworn and non-sworn positions in fire administration.
- Complete the work with Fort Bend County EMS to locate an additional paramedic ambulance in the City at a fire station.
- Ensure all personnel are obtaining the minimum annual training needed.
- Establish a succession plan for the expected turnover in senior supervisors as well as the addition of personnel for a possible sixth fire station.
- Review the frequency and type of fire inspections performed and determine if the frequencies are suited for each type of risk; add inspectors as justified to meet inspection needs and to enhance public education delivery.
- Begin the process of siting and designing a modest training center.

STANDARDS OF COVERAGE UTILIZATION STUDY

The Strategic Plan was developed to identify objectives and action items to be accomplished over a 5-year period through the annual business planning process by pulling from each item annually to accomplish the goals set forth in the plan.

As a part of this Strategic Plan one major action item that was simultaneously being acted upon was the research and completion of the Standard of Coverage study by Citygate & Associates.

The Strategic Plan represents culmination of the HPO process through collaboration with multiple stakeholders. It's Completion in early 2018 and the FY 2019 Missouri City budget process came together through Council's action and support to move forward with another major item, which was the construction of Fire Station 6. The Citygate study and the budget process has helped to initiate the building of fire station 6, acquiring one Apparatus and Personnel.

NEXT STEPS...

The City can continue to build on what it has accomplished to date in growing best-practices-based fire and first responder EMS services. The purpose of this assessment is to compare the Department's current performance against the local risks to be protected, as well as to compare against nationally recognized best practices. This analysis of performance forms the base from which to make master plan recommendations for changes, if any, in fire station locations, equipment types, staffing, and fire administration programs.

As a first step, the City Council should adopt updated, clearly measurable response time goals for the City based on best practices and provide accountability for the Department personnel to meet those standards. The goals identified in Recommendation #3 are consistent with national best practices and risks to be protected in Missouri City. Measurement and planning as the City continues to evolve will be necessary for the City to meet these goals.

Based on this evaluation, Citygate offers these likely next steps to move the Department forward:

- Receive this study along with the Department's new Strategic Plan and direct staff to use the plans as the foundation for resource changes and headquarters staff requests during the City's normal budget cycles.
- Consider and adopt a set of response time policies.
- Work with the County's ambulance system to house an additional paramedic ambulance in the City.
- Work to improve dispatch processing times and the overall quality of the Department's incident data tracking programs.
- Conduct a job task analysis workload study for headquarters positions in fiscal year 2018/2019, particularly if the City will open a sixth fire station in fiscal year 2019/2020.
- Finalize a plan for the siting, construction, and opening of a sixth fire station in the southeastern portion of the City.

The design of Station #6 is scheduled to begin in the fall of 2018 and take approximately 6 months to complete. The construction of the station is estimated to begin in the spring of 2019 and take approximately 16 months. Completion and move-in is estimated to take place in the fall of 2020.

The Missouri City Fire & Rescue Services Department would like to thank you for your time in reviewing the Strategic Plan and Standards of Coverage Utilization Study. We appreciate your support as we continue to strive for excellence in serving the community and remaining one of, "America's Best Place to Live".



