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# MOBILE FIRE-RESCUE DEPARTMENT

Community Risk Assessment and Standards of Cover

Published March 22, 2023

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# Cory PennDistrict 1William CarrollDistrict 2C.J. SmallDistrict 3Ben ReynoldsDistrict 4Joel DavesDistrict 5Scott JonesDistrict 6Gina GregoryDistrict 7

# Mobile City Council

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Lawrence Battiste	Executive Director of Public Safety
Ricardo Woods	City Attorney

# Mobile Fire-Rescue Leadership

Jeremy Lami	Fire Chief
James Frank	Chief of Operations
Johnny Morris	Chief of Staff

#### Mission

#### Mobile Fire-Rescue's MISSION STATEMENT:

The Mobile Fire Rescue Department is committed to mitigating the challenges of fire, medical emergencies, rescue, hazardous materials, disaster preparedness, and risk reduction while protecting our own health.

#### Vision

#### Mobile Fire-Rescue's VISION STATEMENT:

To create the safest city in America by setting the standard for preparedness and emergency response.

#### Values

#### Mobile Fire-Rescue's GUIDING VALUES:

**Competence**: Knowing every aspect of our job. Being an expert on the many hazards that we face.

**Courage**: The commitment to protect the community and our organization against all adversity.

**Compassion**: Placing needs of the community and our Department above our own personal needs.

#### Document Validation Tracking

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# Introduction

The Mobile Fire-Rescue Department (*MFRD*) Community Risk Assessment and Standards of Cover 2023 is the result of a comprehensive deployment analysis conducted by the MFRD, it has been written to follow the guidelines in Community Risk Assessment: Standards of Cover, 6th Edition and follows the Center for Public Safety Excellence's (CPSE) new 10th edition accreditation model.

The community risk assessment and standards of cover process is a constant cycle of deployment monitoring, evaluation, and modification. The true value of this document lies in the process undertaken in creating it. The MFRD identified the boundaries and unique characteristics of its jurisdictional area, identified the types and levels of risk present within, and evaluated the service demand for each risk type. It then evaluated its ability to deliver the resources needed to handle these identified risks against best practice standards. Areas in need of improvement were identified and a plan made to improve the deployment ability of each.

The goal of the MFRD is to promote a high quality of life for the citizens and visitors of the City of Mobile. This can only be done by delivering a high level of service. The information provided within these pages will assist the department to provide better service to the citizens and visitors of the City of Mobile and help make it a safer and more hazard resilient community.



## Strategic Improvement Model

# **Executive Summary**

MFRD has provided fire protection services to the City of Mobile and surrounding communities for the past 132 years. Since its inception in September of 1888, MFRD has continued to expand in numbers and services provided, employing 459 uniformed and 34 non-uniformed men and women. The Department is comprised of 18 fire stations organized into 4 Districts. In total MFRD has 19 pumpers, 6 ladders, 11 rescues, 1 hazmat, 1 technical rescue, 1 heavy rescue, 2 brush trucks, and 1 fire boat.

MFRD's commitment to mitigating the challenges of fire, medical emergencies, rescue, hazardous materials, disaster preparedness, and risk reduction while protecting our own health is what drives the Department to assemble and publish this Community Risk Assessment and Standards of Cover (CRA-SOC) document. MFRD's CRA-SOC is an in-depth compilation of data collected to showcase department strengths and areas of improvement within current operations.

The CRA-SOC has been determined for MFRD's entire response area and divided up by the station locations within its jurisdiction. Within this document MFRD presents its risk assessment, department and system performance, drive time analysis, established baselines, benchmarks and service level objectives for each emergency service provided and an explanation of the methodologies incorporated in this data compilation.

MFRD's CRA-SOC represents its commitment towards achieving and maintaining its mission and to continually improve the Department and the community it serves.

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## Purpose

The purpose of this document is to assess and describe the various risks within the service area of the Mobile Fire-Rescue Department (MFRD). Risk is commonly thought of as a product of a threat or hazard, the vulnerability of a community or facility to a threat or hazard, and the resulting consequences that may impact the community or facility.<sup>1</sup> The assessment of risk is critical to the appropriate development of station response zones, service areas, and overall system effectiveness. This document describes each identified risk factor and establishes mitigation efforts for each factor.

To assess the risks within the MFRD jurisdiction, it was necessary to determine what risks were present and the likelihood and consequence of their occurrence. Based upon the risk categories and the establishment of service delivery zones, the risk assessment process has been used to develop an effective emergency response system that is capable of objectively determining MFRD's ability to provide the level of service that is expected by the citizens within the jurisdiction. The information within this document has also been used to establish a comprehensive Standard of Cover and an up-to-date Strategic Plan for MFRD.

<sup>1</sup> Threat and Hazard Identification and Risk Assessment Guide. Comprehensive Preparedness Guide (CPG) 201. U.S. Department of Homeland Security. Second Edition, August 2013, page 1.

# 1. Community Risk Assessment

## 1.1 Community Characteristics

The City of Mobile is located in the extreme southwest portion of the State of Alabama, along Mobile Bay, and is bisected by Interstate 10 running east and west, and Interstate 65, running north and south. The total area of the city is just over 180 square miles, with 138.5 square miles of it being land, and 41.5 square miles covered by water, giving Mobile a population density of 1,383.82 people per square mile.

The Department's response area includes the City of Mobile, as well as unincorporated portions of the 3-mile police jurisdiction not served by an existing fire department.



#### History of Mobile, Alabama

One of the oldest cities in the United States, The City of Mobile is the seat of Mobile County in the southwest corner of Alabama along the banks of the Mobile River.

As a port city, its influences were shaped by the varied cargoes and exotic travelers that constantly passed through.

Mobile was founded as the capital of colonial French Louisiana in 1702 and remained a part of New France for over 60 years. In 1763, Britain took control of the colony following their victory in the Seven Years War. Following the American Revolutionary War, Mobile did not become a part of the United States, as it was part of territory captured by Spain from Great Britain in 1780.

Mobile first became a part of the United States in 1813, when it was captured by American forces and added to the Mississippi Territory, then later re-zoned into the Alabama Territory in August 1817. Finally, on December 14, 1819, Mobile became part of the new 22nd state, Alabama, one of the earlier states of the U.S.

The initial formation of the Department and its authority to provide emergency response to the City of Mobile was establishing through the



Code of Ordinances of the City of Mobile, 1859. This document authorizes the establishment and regulation of fire wards and fire companies within the jurisdiction and provided the authority to act.

The Paid Department was established in 1888 and has evolved over its 132-year history into a true all-hazards response agency that includes fire suppression, emergency medical, and technical services.

#### **Local Government**

The City of Mobile operates under a City Council – Mayor System of Government in accordance with the State Codes of Alabama, Title 11 – Section 11-44c-2 --- Acts 1985, No. 85-229, p.96, §2. The City of Mobile Fire-Rescue Department operates under the jurisdiction of the Mayor and the City Council, and the City Code of the City of Mobile 1991, §§ 22-32-22-40.

The Department was established to provide all fire protection services, including but not limited to, providing all forms of fire prevention and rescue service, adopting and enforcing fire codes, fixing and charging fees for ambulance or emergency medical services and fire prevention activities.



# Jurisdictional Area

The service area of the Mobile Fire-Rescue Department includes the City of Mobile, as well as unincorporated portions of the 3-mile police jurisdiction not served by an existing fire authority. The response area encompasses 227.7 square miles. The elevation in Mobile ranges from 10 feet (3 m) on Water Street in downtown to 211 feet (64 m) at the Mobile Regional Airport on the western edge of the jurisdiction.

The City of Mobile is bisected by Interstate 10 running east and west, and Interstate 65, running north and south.

Mobile has a number of notable historic neighborhoods. These include Ashland Place, Campground, Church Street East, De Tonti Square, Leinkauf, Lower Dauphin Street, Midtown, Oakleigh Garden, Old Dauphin Way, Spring Hill, and Toulminville.



## Surrounding Jurisdictions

MFRD maintains effective and mutually beneficial relationships with all of the emergency services agencies with borders that are adjacent to MFRD's response area. Mutual aid agreements have been established, approved, and are reviewed annually with all of the surrounding jurisdictions, and are described later in this document. Following is a brief overview of each jurisdiction.



Figure 2: MFRD Jurisdiction in Relation to Nearby Jurisdictions

#### **Prichard Fire Department**

Prichard borders the north side of Mobile, as well as the Mobile suburbs of Chickasaw, Saraland, and the unincorporated sections of Eight Mile. As of the 2010 Census, the population of the city was 22,659. It is a part of the Mobile metropolitan statistical area. As of 2020, Prichard Fire: Fighters (20), Shift Staffing (6), Stations (3), Operational Units (3 Pumpers/1 Ladder).

#### **Semmes Fire Department**

Semmes borders the western side of Mobile and is part of the Mobile metropolitan statistical area. Formerly an unincorporated community, voters in Semmes approved incorporation of a part of the community as the city of Semmes on August 17, 2010. After a statutory enumeration, or census, the town was officially declared incorporated on May 2, 2011. The town has a population of 2,897 people. It covers 2,100 acres. As of 2020, Semmes Fire: Fighters (24), Shift Staffing (8), Stations (3), Operational Units (3 Pumpers/1 Ladder).

#### **Saraland Fire Department**

Saraland is a <u>suburb</u> of <u>Mobile</u> and borders the northwestern section the city. As of the 2010 census, the population of the city is 13,405. It is a part of the Mobile metropolitan area. Saraland is the third largest city in Mobile County. As of 2020, Saraland Fire: Fighters (24), Shift Staffing (7), Stations (2), Operational Units (2 Pumpers/1 Ladder/ 1 Hazardous Materials Unit).

#### **Spanish Fort Fire Department**

Spanish Fort is a city in Baldwin County, Alabama. It is located on the eastern shore of Mobile Bay and abuts the eastern boundary of the City. The 2010 census lists the population of the city as 6,798. It is a suburb of Mobile and is part of the Daphne-Fairhope-Foley micropolitan area. As of 2020, Spanish Fort Fire: Fighters (45 Volunteers), Shift Staffing (N/A), Stations (3), Operational Units (3 Pumpers/1 Brush Truck).

#### **Theodore Fire Department**

Theodore is a census-designated place (CDP) that borders the southwestern edge of the City of Mobile. The population was 6,130 at the 2010 census. It is a part of the Mobile metropolitan statistical area. Prior to 1900 this area was known as Clements. As of 2020, Theodore Fire: Fighters (40 Volunteers), Shift Staffing (N/A), Stations (3), Operational Units (3 Pumpers/1 Tanker/ 2 Brush Trucks).

#### **Seven Hills Fire Department**

Seven Hills is an unincorporated area of Mobile County that borders the police jurisdiction to the extreme west of the city. It is comprised of mostly rural areas with a few light commercial structures. It is a part of the Mobile metropolitan statistical area. As of 2020, Seven Hills Fire: Fighters (40 Volunteers), Shift Staffing (N/A), Stations (3), Operational Units (3 Pumpers/1 Ladder).

#### **Tanner Williams Fire Department**

Tanner Williams is an unincorporated community in Mobile County that borders the police jurisdiction to the extreme west of the city. It is comprised of mostly rural areas with a few light commercial structures. It is a part of the Mobile metropolitan statistical area. As of 2020, Tanner

Williams Fire: Fighters (30 Volunteers), Shift Staffing (N/A), Stations (1), Operational Units (2 Pumpers).

#### **Fowl River**

Fowl River is an unincorporated community in Mobile County that borders the police jurisdiction to the extreme southwest of the city. It is comprised of mostly rural fishing communities with a few light commercial structures. It is a part of the Mobile metropolitan statistical area. As of 2020, Fowl River Fire: Fighters (12 Volunteers), Shift Staffing (N/A), Stations (1), Operational Units (2 Pumpers).

#### Chickasaw

Chickasaw is a city that borders the City of Mobile to the north. As of the 2010 U.S. Census the population is 6,106. It is included in the Mobile metropolitan statistical area. As of 2020, Chickasaw Fire: Fighters (10), Shift Staffing (3), Stations (1), Operational Units (2 Pumpers).

## Demographic Characteristics

With a 2020 population of 198,316, it is the 4th largest city in Alabama and the 135th largest



city in the United States. Mobile's population growth has been moderate to slow over the last 10 years with a recorded population of 195,111 in 2010. Spanning over 180 square miles, Mobile has a population density of 1,339 people per square mile.

Mobile's population saw rapid growth throughout the 19th century and through the early half of the 20th century. In 1960, the population reached its peak of over 202,000 residents. This was more than double the number recorded at the time of the 1940 census. However, in 1970, the population dropped below 200,000. It rose again in 1980 before dropping again in 1990. Though 2000 saw some growth, it did not again sur-

pass 200,000. The city has recently attracted more businesses, including Carnival cruise line, the Airbus assembly line, and a Walmart distribution center, which city officials hope will lead to growth in both the economy and the population.

# Mobile Fire Jurisdiction

In addition to the City Limits, the Department is required to provide emergency services coverage within a defined police jurisdiction as mandated by the State of Alabama.

Alabama law says that cities with populations of 6,000 or more have police jurisdictions that extend three miles beyond the city limits. For cities and towns with populations less than 6,000,



#### Source: These infographics contains data provided by American Community Survey (ACS), Esri, Esri and Bureau of Labor Statistics, Esri-Data Axle. The vintage of the data is 2016-2020 & 2022 – 2020 geography.

27

Unemployment

Rate

\$46 425

Median Net

Worth

16,000

18.5%

16.2%

Degree



Source: These infographics contains data provided by American Community Survey (ACS), Esri, Esri and Bureau of Labor Statistics, Esri-Data Axle. The vintage of the data is 2016-2020 & 2022 – 2020 geography.

the jurisdictions extend 1.5 miles. Municipalities that provide police and fire protection in their police jurisdictions can collect sales taxes and business license taxes at up to one-half the rate they collect in the municipal limits. The municipality has to spend those tax dollars in the police jurisdiction.

This law requires the City to provide emergency services to any area that abuts the corporate limits of the city, up to 3 miles, but does not have an existing emergency services provider such as a fire department, fire authority, fire district, or emergency medical services provider.

For decades, the City of Mobile was the sole provider of all emergency services in the 3-mile Police Jurisdiction. However, in recent years that has changed. In 2018, in an effort to improve response time within the city, a push was made to reduce our responsibilities within this area. As part of that initiative emergency medical services for the entire jurisdiction were turned over to Mobile County's ambulance provider, Mobile County EMS and primary fire services were discontinued in areas that had existing volunteer fire authorities or fire districts.

The incorporation of the City of Semmes on our western border and their development of a paid department further reduced the City's police jurisdiction responsibilities to 3 areas that require fire response from the City of Mobile.

Because of the unique situation these 3 areas present, demographic as well as response data for these areas will be provide separately here and will be identified both holistically and separately within planning zones which include portions of these areas

# Mobile Fire Jurisdiction



#### POPULATION (2022)

35,115 Total Population 27,884 Daytime Population



#### **EMPLOYMENT** \*\*\*\*\*\*\*\*\*\*\* 70% White Collar *à là là là* 20% Blue Collar Unemployment <u>ia</u> ia 10% Rate Services INCOME \$36,600 \$70,363 \$165,041 Median Household Per Capita Median Net Income Income Worth HOUSEHOLD INCOME 0 1,000 2,000 3,000 6.2% 200000+ 150000-199999 9.7% 100000-149999 17.6% 75000-99999 13.8% 50000-74999 19.9% 12.3% 35000-49999 25000-34999 6.6% 15000-24999 7.2% 6.7% 0-14999 **EDUCATION** 7% 30% No High 31% 32% School High School Bachelor's/Grad/Prof Some Diploma Graduate Degree College **BUSINESS** 7,564 755 Total Businesses Total Employees

Adults 18 to 6461.1%

Children 17 & under<sup>22.9%</sup>



# Geography

The City of Mobile is located at the mouth of the Mobile River in southwest Alabama at lati-



tude 30.6954° N and longitude 88.0399° W and stands at the head of Mobile Bay, 31 miles inland from where the bay meets the Gulf of Mexico.

As part of the Central Gulf of Mexico Region, Mobile is strategically placed between Coastal Mississippi and the Florida Panhandle.

The Mobile–Tensaw River Delta sits to the northeast of downtown Mobile and is the largest

river delta and wetland in Alabama. It encompasses approximately 260,000 acres in a 40-by-10mile area and is the second largest delta in the contiguous United States.

The delta's northernmost point is the confluence of the Tombigbee and Alabama rivers and follows a southerly direction that ultimately opens into the head of Mobile Bay through the Mobile, Tensaw, Apalachee, Middle, Blakeley, and Spanish rivers near the Battleship Parkway.

The elevation in Mobile ranges from 10 feet on its eastern edge in downtown to 211 feet at the Mobile Regional Airport on the western border. Due to its low elevation, large amount of marshland and watershed areas, and high annual rainfall, which keep the soil saturated, the city is susceptible to flooding.

# Transportation Networks

Being a port city, the City of Mobile has a diverse transportation network that includes road, rail, air, and water travel serving both cargo and passengers. The City has two airports, the Mobile Regional Airport, and the Mobile Downtown Airport. The Mobile Regional Airport is a public/

military airport located in west Mobile. The airport is owned and operated by the Mobile Airport Authority, a self-funded entity that receives no local tax dollars. The airport is home to U.S. Coast Guard Aviation Training Center, Mobile, providing advanced training to U.S. Coast Guard pilots and aircrew. The Alabama Army National Guard's 1st Battalion, 131st Aviation Regiment's "B" Company is also located at the airport.

Located on the Mobile Bay just off Interstate 10 within the Mobile Aeroplex at Brookley, Mobile Downtown Airport is a public use airport that is primar-



ily a cargo terminal, but does provide some passenger travel options.



Mobile is serviced by 2 major National Interstates and multiple highway systems.

Bisecting north and south Mobile Interstate 10 travels 66.30 miles across Mobile and Baldwin Counties as part of its route across the upper Gulf Coast. The urban freeway maintains six overall lanes, with auxiliary lanes accompanying both directions of the route through Mobile. Emerging from the four-lane Wallace Tunnel, Interstate 10 ascends onto the Mobile Bayway. Also known as Jubilee

Parkway, the Bayway spans the shallow waters of Mobile Bay along a viaduct system extending eight miles east to Spanish Fort and the Baldwin County Eastern Shore.

Interstate 65 originates in Mobile at a three-wye interchange with Interstate 10. The freeway arcs

northeast around Midtown Mobile to the city of Prichard with six overall lanes. Frontage roads (Belt Line Highway) accompany both directions of the freeway. North through Prichard, Interstate 65 meets I-165, a freeway spur leading southeast to the Alabama State Docks and Downtown Mobile.

Interstate 165 constitutes a 4.90-mile freeway spur joining Downtown Mobile with Interstate 65 north to Saraland and Satsuma and south to U.S. 98. With six overall lanes, the entire freeway elevates along a viaduct system.

U.S. 43 travels the height of Alabama, connecting the Mobile area with the Black Belt region and Tuscaloosa. Within Mobile County, U.S.



43 follows Telegraph Road and Craft Highway north along an older four-lane arterial through Chickasaw, Saraland, Satsuma and Creola. Beyond its exchange with Interstate 65, U.S. 43 transitions into a rural divided highway, serving a number of paper mills and industrial plants.

U.S. 90 parallels the Interstate 10 corridor across southern Mobile County from Grand Bay to the Cochrane-Africatown Bridge across the Mobile River. Turning north through Theodore, U.S. 90 expands into a four-lane commercial arterial. It crosses paths with Interstate 10 at a six-ramp parclo interchange at Tillman's Corner. Continuing into the Mobile city limits, U.S. 90 remains a divided commercial arterial, following Government Boulevard northeast to a six-ramp parclo interchange with Interstate 65.

U.S. 98 travels 80 miles east from Interstate 59 in Hattiesburg, Mississippi as a four-lane expressway to the Alabama state line. 98 enters the city of Semmes and expands into a five-lane boulevard. Heading southeast traffic increases as commuters join regional truck traffic leading into the city of Mobile. The five-lane arterial meets Interstate 65 at a folded diamond interchange opposite the CN Railroad. U.S. 98 shifts onto Spring Hill Avenue 0.6 miles from I-65 and Sprin-

ghill Avenue continues U.S. 98 east through the City into the Bankhead Tunnel. The Mobile River crossing opened to traffic as a toll facility on February 20, 1941.

Hazardous cargo is prohibited from being transported through either tunnel system in the city (Bankhead, Wallace). Hazardous cargo routes are established to direct hazardous material transports to cross the Mobile River via the Cochrane bridge (I-165).

The state docks at the Port of Mobile is the only deep-water port in Alabama. It was ranked by the United States Army Corps of Engineers as the 9th largest port by tonnage in the nation with a

trade volume of 64.3 million tons. The port is located in Downtown Mobile along the Mobile River where it empties into Mobile Bay. The container, general cargo and bulk facilities have immediate access to two interstate systems and five Class I railroads.

The City of Mobile, Alabama Cruise Terminal offers year- round cruise options as the home port for Carnival Caribbean cruises.

With the quantity of goods imported and exported through the Port of Mobile, the rail system within the City is extensive with most major railways operating within the City, these include the Alabama & Gulf Coast Railroad, Burlington Northern Santa Fe, Canadian National, CSX, Kansas City Southern, Norfolk Southern, and CG Railway.

## Climate

Mobile is one of the nation's wettest cities. Rainfall occurs fairly evenly throughout the year. Summers are hot

and muggy; winters are mild. Mobile averages only nineteen days each year at or below freezing temperatures. The following image illustrates the average temperatures and rainfall amounts in the Mobile area.





#### Average annual temperature, 68° F



*Figure 3: Average Temperature* 



#### **Average Annual Precipitation: 66 inches**

Figure 4: Average Rainfall

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# 1.2 Community-Wide Risk

The intent of this risk assessment is to be a useful tool for the Mobile Fire-Rescue Department to rate the risk, determine vulnerability, and predict the adverse impact of disasters and emergencies. A comprehensive risk assessment provides a guide to developing policy or action-based recommendations to manage incidents. This assessment is one element of a comprehensive emergency management program that incorporates mitigation, preparedness, response, and recovery. Emergency Operations Plans, as well as standard operating procedures, round-out a comprehensive program to manage hazards.

Emergency management in the City of Mobile is a responsibility of the Department of Public Safety, which serves as the primary coordinating agency for citywide emergency readiness activities to meet the threats posed by various hazards. In cooperation with other state and county offices and agencies, the Department has developed this analysis of the primary risks that may threaten both lives and property.

To help categorize risks, analysis was conducted utilizing three major groups based primarily on the categories recommended in the Federal Emergency Management Agency's Comprehensive Preparedness Guide 101. The categories are Natural, Human Caused and Technological.

A hazard identification and risk assessment consist of three elements –establishing threat and hazard profiles, assessment of vulnerability related to each threat or hazard, and consequences expected should an incident occur. Research for this assessment involved the collection of both historical and statistical data, including review of available literature and interviews with professionals in various disciplines at the state and local level. Information was then systematically analyzed for potential risk value. Composite risk values are calculated based on scores for several factors under each of the three elements.

Total Risk Values (Probability x Consequence) provides the numerical score, the hazard profile, vulnerability, and overall risk total for each hazard.

Threat and Hazard Profiles were determined based on: Frequency, Duration, Speed of Onset, and Magnitude. Vulnerability is determined based on impacts to: Business, Humans, Property, and the Environment. The consequence analysis further estimates the impacts to people, property, and the environment by evaluating impacts to the Public, First Responders, Business Continuity, Public Confidence, Economy, Facilities/Infrastructure, and the Environment (estimated remediation required).

These factors were considered for an average occurrence of the hazard, not an incidence of catastrophic occurrence. The resulting risk total values allow hazards to be compared against each other to obtain a prioritization of hazards. The threats and hazards identified, and risk values determined in this report are used for planning purposes only.

# General Overview of Hazards in Mobile

The most damaging hazards/events in Mobile are hazardous materials incidents and hurricanes. Other severe weather events, such as flooding and tornados, have also led to costly recovery actions. Ice storms can take a great toll, especially in regards to travel, infrastructure, and power and communication lines. When an ice storm strikes, roads can turn deadly, leaving schools and businesses closed.

Activities associated with humankind also have their effects such as conflagration fires which represent high economic impact to costly resources.

Passenger and cargo airlines continue to cover the city's airspace daily and railway accidents remain a matter of concern in areas of high traffic density. Like other hazards, transportation events may not occur regularly, but as an area with a high density of air or rail traffic Mobile should weigh the potential of a transportation emergency.

Since 1998, nearly 20 major emergency events in Mobile have received a Presidential Declaration of Disaster. From a strictly numerical standpoint, inflationary labor and material trends have caused overall recovery costs to rise. Each new event is more costly to the city than its predecessors.

As national mutual aid between states and municipalities grows, our city may have to respond to hazards not necessarily associated with Mobile. Most recently, Mobile Fire-Rescue has sent personnel and equipment to Texas, Louisiana, Mississippi, Florida, and Northern Alabama in response to EMAC requests.

#### Profile

All geographical and political subdivisions are vulnerable to some form of natural, technological, or other hazard. The effects of these hazards (regardless of type or size) will vary due to geography, climate or land use. Examination of the City's characteristics provides a better understanding of these hazards and their associated risks.

Mobile covers more than 180 square miles of land area and bodies of water. Known for its bustling seaport and thriving seafood industry, the city sits in the extreme southwestern corner of the state with a population of more than 192,000 people. Mobile is bordered on the east by Mobile Bay and the Mobile-Tensaw River Delta - the largest inland delta in the nation; on the south by the Gulf of Mexico and on the west by Mississippi.

Mobile is served by four major railroads; BNSF, CSX, Canadian National IC and Norfolk Southern and a fifth short line railroad the Central Gulf Railway a rail ferry service to Coatzacoalcos Mexico. Additionally, the Alabama State Docks operates the terminal railroad, providing linkages between all railroads and the Port of Mobile.

Two major interstate highways converge in Mobile, with I-10 extending to the east to Jacksonville, Florida, and west, to Los Angeles, California, while I-65 extends from Mobile in a northerly direction to Chicago, Illinois. Major metropolitan areas such as Atlanta, Charlotte, Houston, Memphis, Nashville, Tampa, Jacksonville, and Orlando, are all within 600 miles (10 hours) of Mobile. Mobile's new I-165 spur connects I-65 and I-10, thereby connecting downtown Mobile directly to I-65 which greatly enhances access to the downtown area, and provides a much quicker route for traffic heading east to Florida.

Mobile Regional Airport sees more than 600,000 passengers per year and the downtown airport at Brookley handles air cargo flights and a high volume of general aviation traffic.

Because of the abundance of natural resources, well-developed infrastructure and overall quality of life, Mobile is home for a significant number of chemical manufacturing facilities and is poised to become a major center of activity for the aerospace industry.

## Historical Disaster Review

Since its founding in 1702, the City of Mobile has dealt with many disasters varying in origins and effects. The more noteworthy of these, which resulted in loss of life or economic damages within the last 20 years, are listed in Figure 1. City Presidential Disaster Declarations below.

Date	Туре	Event Name	Declaration #
2020	Hurricane	Zeta	DR4573
2020	Hurricane	Sally	DR4563
2017	Hurricane	Irma	EM3389
2017	Hurricane	Nate	EM3394
2016	Severe Storm/Flooding	N/A	DR4251
2014	Severe Storm/Flooding	N/A	DR4176
2011	Severe Storm/Flooding	N/A	DR1971
2009	Tornado/Flooding	N/A	DR1860
2009	Tropical Storm	Ida	DR1866
2008	Hurricane	Gustav	DR1789
2008	Hurricane	lke	DR1797
2005	Hurricane	Dennis	DR1593
2005	Hurricane	Katrina	DR1605
2004	Hurricane	lvan	DR1549
2003	Severe Storm/Flooding	N/A	DR1466
2002	Tropical Storm	Isidore	DR1438
2001	Severe Storm/Flooding	N/A	DR1362
2000	Winter Storm	N/A	DR1317
2000	Severe Storm/Flooding	N/A	DR1322
1998	Hurricane	George	DR1250

Table 1. City Presidential Disaster Declarations (1998-2018)

Source: FEMA Disaster Declaration Catalog

The previous figure shows some of the historically serious events occurring since 1998 by events but not property damages or other costs. These incidents have affected both people and property. Gubernatorial Declarations have often been used for a number of other events, not qualifying for federal assistance via Presidential Declarations, as "Emergencies" or "Disasters." This process serves to initiate coordinated state response efforts for areas requiring assistance beyond local capabilities.

## Detailed Hazard Overview

### Natural Hazards – Meteorological

#### Flood, Flash Flood

Mobile can experience three types of floods. Flash (A fast rising of streams or rivers after heavy rain); Urban and Small Stream (An overflow of storm sewers and streams after a heavy rainfall); and Coastal (Floods along the Bay, often associated with storm surge from tropical systems).

Floods (Total Risk = 141) are the result of intense local rainfall and usually last a few hours. Normally, little warning precedes flash flooding. Although often confined to specific drainage systems or geographic regions, floods can pose a threat to neighborhoods and potentially thousands of residents in many areas of the city.

Protective actions (evacuation/sheltering) may deplete both material and fiscal resources. Floodwaters have also damaged key infrastructure elements (roads, bridges and sanitary facilities). Infrastructure damages may also lead to an increase in infectious diseases in some affected areas. Other collateral problems include power outages and transportation delays. The costs in labor, time and monies for flood-related mitigation and preparation actions may also be exceedingly high.

Since 1998, flooding events related to severe storms and tropical activity have accounted for 18 of the 19 Presidential Declarations for the City.

#### Windstorm, Tornadoes

Windstorms and Tornadoes (Total Risk = 75) are another natural hazard to the city. These violent, rotary windstorms often accompany or follow severe thunderstorms and tropical systems. They may occur at any time of the year with unpredictable, severe effects. In Mobile, tornadoes more frequent occur in association with tropical storms and hurricanes. However, other severe storm associated winds, not classified as tornadoes, may be almost as violent and damaging. Tornadoes and windstorms have a high potential to cause loss of life, damage or destroy property, and overwhelm local response capabilities.

Tornado effects vary according to wind-speed, duration on the ground, and topography. From 1950 to 2017, the National Weather Service reported 85 tornado touchdowns in Mobile.

As in the case of floods, the costs and duration of recovery may extend over years. Windstorms and tornadoes are not typically associated with causing environmental problems, though they have the ability to create massive amounts of woody debris and construction debris, which requires coordination with environmental regulators, haulers and landfills.

#### Snow, Ice, Hail and Sleet

Snow/Ice Storm (Total Risk = 176) are weather-related threats to the city. These include snowfall with extreme cold and ice, or a combination of the three.

Although rare, winter storms have occurred in the city; January 2018, December 2017, January 2014, and January 1977. Due to the rarity of these events, the city is often ill prepared for adequate response. In addition to structural and power line damages, these storms have a potential for collateral effects; isolation and economic disruption (from roadway and business closings)

## Natural Hazards – Biological

#### **Public Health Emergency**

Public Health Emergency (Total Risk = 243) which includes emerging diseases, such as Ebola, smallpox, anthrax, West Nile Virus, foot and mouth disease, Severe Acute Respiratory Syndrome (SARS), Pandemic Influenza, are becoming increasingly prevalent on the world stage. The impacts of Pandemic Influenza, Ebola and other viruses have become a planning priority for the state as well as at the federal level. Likewise, certain health conditions such as the Methicillin-resistant Staphylococcus aureus (MRSA) staph infection are coming to prevalence in the media.

A pandemic outbreak has the potential to infect large numbers of citizens, which could easily overwhelm the health care system in the city, and impact the personnel needed to respond and recover from such an event. A pandemic outbreak could also jeopardize essential functions by causing high levels of absenteeism in critical services areas. Large numbers of people would likely become ill or expire. Examples such as the 1918/19 Influenza Pandemic demonstrate the potential for loss of human life and significant impacts on society.

Diseases which cause widespread human deaths would have an impact on the environment in terms of the disposal of human remains and the handling of bio-hazardous waste. Environmental and regulatory factors would have to be evaluated in the disposal of both human remains and bio-hazardous waste.

Diseases which cause widespread deaths of animals, both captive and wild, would have an effect on public health and the environment in terms of disposal of the carcasses. Whether the infected animals are buried, burned or left in place, a large quantity and concentration of carcasses may impact air, soil and groundwater.

#### Human-caused – Accidental

#### **Structure Fire**

Urban Fire (Total Risk = 56) ranks fairly high as a human-caused hazard, primarily due to its impact on people. Structural fires pose many of the same environmental challenges of building collapse with an added immediate impact to the atmosphere. Depending on what materials are in the structure, it is possible that air quality could deteriorate for an unknown length of time and pose an immediate threat to life and long term threat to well-being.

#### **Hazardous Materials**

Hazardous Materials (Total Risk = 90) incidents are a common form of accidental threat to Mobile, occurring often. A hazardous materials spill can be the result of human negligence, an intentional act, or a natural hazard. Human negligence occurs predominantly during the manufacture, transport, or storage of the hazardous material. An intentional act would be considered either a terrorist act, criminal act, or act of vandalism. A hazardous materials spill can be a secondary effect of a natural hazard (e.g., flooding, or severe weather).

Environmental impacts - Although major chemical accidents and spills seem most threatening, it is the smaller, more routine accidents and spills that have a greater impact on humans, wildlife, economy, and environment. Some of the most common spills involve tanker trucks and railroad tankers containing gasoline, chlorine, or other industrial chemicals. The National Environmental Law Center reported that 34,500 accidents involving toxic chemicals were reported to the EPA's Emergency Response and Notification System between 1988 and 1992, meaning that on average, a toxic chemical accident was reported nineteen times a day in the United States, or nearly once every hour.

### Human Caused Hazards – Intentional

#### **Terrorism (CBRNE)**

Terrorism incidents, involving CBRNE - (Total Risk = 590), are ranked as the highest human-caused intentional hazard. The Federal Bureau of Investigation (FBI) defines terrorism incidents as the "…unlawful use of force or violence against persons or property to intimidate, or coerce a government, civilian population, or any segment thereof in the furtherance of political and social objectives." The victims of terrorism may not always, however, be the intended, or most concerned, elements of society.

Although events such as the World Trade Center Bombing/Destruction (1993 & 2001) and Oklahoma City bombing (1995) did not occur in Mobile, the threat, real or implied, to employ terrorism in this city, remains. Threats often involved the employment of Weapons of Mass Destruction (WMD), to include bombs and pathogens, and can be directed at targets in both rural and urban-industrial settings.

One of the most dangerous emerging threats to our country is the criminal and terrorist use of Improvised Explosive Devices (IEDs). IEDs have the potential to make a lethal impact, with relatively low-tech skills needed to produce them. IEDs have been the weapon of choice for foreign terrorists since the first World Trade Center attack in 1993 and for domestic terrorists since the Oklahoma City bombing in 1995. This threat has expanded to include both Vehicle-born Improvised Explosive Devices (VBIEDs) and small arms attacks.

Natural Hazards	
Biological	Public Health Emergency
Meteorological	Winter Weather (Snow, Ice) Flooding Hurricane Temperature Extremes Tornado Thunderstorm
Human Caused Intentional	Aircraft Incident Civil Disturbance IT System Security Breach Utility Disruption IT Infrastructure Disruption Mass Communication Disruption Terrorism (CBRNE)
Accidental/Technological	Accidental Hazmat Release Fire Mass Causality Incident

Table 2. Threats and Hazards Identified

## Example Hazard Scenarios

Each type of hazard that could affect the City will have varying consequences based on the severity of the event. For instance, the consequences of a hurricane to the impact factors in this analysis would differ greatly based on the magnitude of the hurricane scenario being considered. For hazards that have historically occurred in the City, the scenarios considered as part of this consequence analysis were developed based on the magnitude of events that have actually occurred. Following is a list of the hazard events used to evaluate the consequences of each hazard.

Table .	3.	Example	Hazard	Scenario	<i><b>2</b>S</i>
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Hazard Type	Event Date
Flood	March 1990
Tornado	December 2012
Ice Storm	January 2014
Mass Casualty (Ammonia Leak)	August 2010
Officer involved shooting	June 2016
Storage Facility Fire	April 2019
Bay Way multi-car Accident	March 1995
Sunset Limited Rail Disaster	September 1993
Cyber Attack (Mobile Housing Board)	September 2018

#### Flood

March 1990: Heavy rainfall occurred from March 15-17, with totals of 8 to 16 inches producing record or near-record flooding along several rivers in the southern two-thirds of Alabama. Extensive damage occurred to streets, roads and bridges, and several major highways were closed. More than 6,000 people were forced to leave their homes.

#### Windstorm, Tornado

Christmas Day, 2012, a large EF-2 tornado tore through the center of Mobile, causing significant damage and injuring several people. The storm came perilously close to being a disaster.

Around sunset, a strong supercell came ashore in south-central Mobile County. The National Weather Service issued a tornado warning for Mobile amid growing concern that the rotation was getting stronger.

The storm caused more than one million dollars in damage and injured several people. The event could have been much, much worse given that it went through Mobile proper.



If the tornado had touched down a few blocks to the west or to the east, we would have seen far greater damage and possibly some serious injuries or fatalities.

#### Snow, Ice, Hail, Sleet

Conditions started going downhill early on January 28, 2014. Freezing rain began in Mobile by approximately 9 am with ice accumulation observed on vehicles. Much of Interstate 10 was closed to east and west traffic, as well as others to and from inland areas. Bridges were also closed due to ice, and the lack of deicing equipment and chemicals forced the city to rely entirely on sand spreaders retrofitted to dump trucks.

#### **Hazardous Material**

August 2010, more than 120 people were sickened by the leak of ammonia at the Millard Refrigerated Services plant in Theodore. Hospital officials in Mobile said 29 people were admitted, including four in intensive care. Scores of people were forced to remain in their homes and at a school after the leak was reported.

#### Risk Assessment Analysis Process

#### Methodology

A hazard identification and risk assessment consists of three elements –establishing threat and hazard profiles, assessment of vulnerability related to each threat or hazard, and consequences expected should an incident occur. Research for this assessment involved the collection of both historical and statistical data, including review of available literature and interviews with pro-

fessionals in various disciplines at the local-level and at the state-level. Information was then systematically analyzed for potential risk value. Composite risk values are calculated based on scores for several factors under each of the three elements.

Threats and Hazards Identified lists the threats and hazards identified and as they were consolidated for planning purposes.

Total Risk Values (Probability x Consequence) provides the numerical score, the hazard profile, vulnerability, and overall risk total for each hazard. The hazards are categorized primarily by FEMA's Comprehensive Preparedness Guide 101.

Threat and Hazard Profiles were determined based on: Frequency, Duration, Speed of Onset, and Magnitude. Vulnerability is determined based on impacts to: Business, Humans, Property, and the Environment. The consequence analysis further estimates the impacts to people, property and the environment by evaluating impacts to: the Public, First Responders, Business Continuity, Public Confidence, Economy, Facilities/Infrastructure, and the Environment (estimated remediation required).

Generally, these factors were considered for an average occurrence of the hazard, not an incidence of catastrophic occurrence. The resulting risk total values allow hazards to be compared against each other to obtain a prioritization of hazards. The threats and hazards identified and risk values determined in this report are used for planning purposes only.

## Factors for Threat and Hazard Profiles

Frequency. A key factor in the risk of a particular hazard is the frequency with which it occurs. Some hazards have been relatively frequent while others were only sporadic. For this hazard analysis, the frequency with which an event occurs is based on historical reports and query of subject matter experts from various state and local authorities as well as the number of large local events and Disaster Declarations associated with the hazard agent. Using these criteria provides a wider variety of hazards than utilizing presidential declarations alone.

4	Highly Likely	Near 100% probability in next year.
3	Likely	10 and 100% probability in next year, or at least one chance in 10 years
2	Possible	Between 1 to 10% probability in the next year, or at least 1 in the next 100 years.
1	Unlikely	<1% probability in next 100 years.

Duration may be defined as "time on the ground" or the time-period of response to a hazard or event. Duration, therefore, may not always be indicative of the degree of damage, but it remains an important planning factor.

5	Excessive	More than 30 Days
4	Long	7 to 30 Days
3	Medium	1 to 7 Days
2	Short	12 to 24 Hours
1	Minimum	Less than 12 Hours

Speed of Onset may affect all other factors due to lack of warning or time to prepare for impact. The lead-time required protecting lives and property varies greatly with each event. For instance, a slow moving hurricane may allow time to evacuate residents and begin response measures, but hazardous materials incident can occur with little to no warning.

4	No Notice	Minimum to No Warning
3	Short	6 to 12 Hours
2	Medium	12-24 Hours
1	Extended	Over 24 Hours

Magnitude is the geographic dispersion of the hazard. For instance, comparing the number of areas impacted by a flood versus a transportation accident involving hazardous materials.

4	Catastrophic	More than 50% of City Impacted
3	Critical	25 to 50% of City Impacted
2	Limited	10 to 25% of City Impacted
1	Localized	Less than 10% of City Impacted

## Factors for Vulnerability

Impact on Business refers to enduring economic impact of the hazard on the community by an event.

4	Complete shutdown of critical facilities for 30 days or more
3	Complete shutdown of critical facilities for at least 2 Weeks
2	Complete shutdown of critical facilities for 1 Week
1	Complete shutdown of critical facilities for less than 24 Hours

Impact on Humans. This factor relates to the number of lives potentially lost to a particular hazard.

4	High	Multiple Deaths
3	Medium	Multiple Severe Injuries
2	Low	Some Injuries
1	Minimum	Minor Injuries

Impact on Property. This factor relates to the amount of property potentially lost to a particular hazard agent. This factor can vary based on economics, geographic amount owned, and demographics of the particular area of the city.

4	High	More than 50% of property severely damaged
3	Medium	More than 25% of property severely damaged
2	Low	More than 10% of property severely damaged
1	Minimum	Less than 10% of property severely damaged

Impact on Environment. This factor considers the impacts from the hazard event to the air, water, land, and biota.

4	High	Catastrophic Impacts to the environment as a result of the event and/or cascading effects. Environmental impacts would have immediate and long term health effects to people. Significant resources required for remediation.
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3	Medium	Localized and temporary Impacts to the environment as a result of the event and/or cascading effects. No immediate health threat to people and environmental remediation would restore the environment to acceptable limits.
2	Low	Impact to the environment would be minimal and only require a local response.
1	Minimum	Impact to the environment would not require remediation.

The impact categories considered for each hazard reflect broad impact categories in a nationally recognized consequence analysis standard. Each hazard was evaluated by subject matter experts using the high, medium, and low criteria (a rating of 4 represents "catastrophic impact" for each category, reserved for the most severe incidents) and the results are summarized in the Consequence Analysis Summary. Following is a brief description of some of the factors considered when determining how to rate the impact for each of the hazards.

## Factors for Consequence Analysis

Public. This category considers the overall impact to citizens caused by the hazard. The short and long term impacts caused by the hazard were considered in addition to efforts at the State and local level to mitigate, prepare for, respond to and recover from the event. The ranking is a general reflection of the City's resilience to the hazard being evaluated.

3	High	Impacts to the public would likely exceed City and State resources and necessitate Federal assistance. Impacts would include multiple casualties.
2	Medium	Impacts to the public would likely not exceed State resources. Some casualties and injuries would occur.
1	Low	Impacts to the public would be managed at the City level.

First Responders. This category considers the impact of the hazard event to police, fire, EMT, emergency management and other State and local officials that respond to the event. The threats to the health and safety of first responders posed by the hazard were considered in addition to staffing, training, and overall preparedness of first responders.

3	High	Extreme threat posed to first responders, which would likely exceed local and State resources.
2	Medium	Significant threat posed to first responders, but would likely not exceed State and local resources.
1	Low	Threat posed by hazard would be managed at the local level.

Continuity of Operations. This category considers the impact of the hazard event to City government's ability to continue or reestablish essential services.

3	High	Impacts to essential functions as a result of the hazard event and/or cascading effects would be catastrophic. This failure would have an immediate cascading effect to public services.
2	Medium	Impacts to essential functions as the result of the hazard event and/or cascading effects would be significant, but localized and temporary.
1	Low	Impact to essential functions would be minimal.

Facilities/Infrastructure. This category considers the impacts of the hazard event to the built environment.

3	High	The hazard event would result in catastrophic damages to the built environment. Damage to the built environment would have cascading and long term effects. Impacts would strain resources and require extensive long term recovery efforts.
2	Medium	The hazard event would result in significant damages to the built environment and likely require the need for external resources to effectively recover.
1	Low	Effects to the built environment would be limited and likely not exceed the response and recovery efforts at the local level.

Economy. This category considers the impact to the City economy from the hazard event.

3	High	Cost to respond and recover from the event would quickly exceed the amount budgeted in the State Disaster Relief Fund requiring federal resources.
2	Medium	Cost to respond and recover from the event would likely not exceed the amount bud- geted in the State Disaster Relief Fund.
1	Low	Cost to respond and recover from the event would likely not exceed local resources.

Environment (est. remediation). This category considers the overall impact to the citizens of the City caused by the hazard. The short and long term impacts caused by the hazard were considered in addition to efforts at the State and local level to mitigate, prepare for, respond to and recover from the event. The ranking is a general reflection of the City's resilience to the hazard being evaluated.

3	High	Impacts to the environment as the result of the hazard event and/or cascading effects would be catastrophic. Environmental impacts would have immediate and long term health effects to people. Significant resources would be required for environmental remediation.
2	Medium	Impacts to the environment as the result of the hazard event and/or cascading effects would be localized and temporary. There would be no immediate health threat to people and environmental remediation would restore the environment to acceptable limits.
1	Low	Impact to the environment would be minimal.

Public Confidence. This category considers the impact a hazard event of each type could have on the public's confidence in the government and emergency management community.

3	High	Significant negative impact. Downturn in public trust for the government's ability to respond to or recover from disaster.
2	Medium	Some negative impact. Public trust is eroded but recoverable as the recovery ensues.
1	Low	Little or no impact on the public trust.

## Calculating Total Risk

Threat/Hazard Value (T) = (Duration + Speed of Onset + Frequency + Magnitude)/1.7 where 1.7 is a normalizing factor to adjust the scores to the model used in the FEMA Critical Asset Risk Management MGT-315, October 2016

Vulnerability Rating (V) – Compare the calculated vulnerability (below) to the table provided by FEMA to determine the vulnerability rating, which is used for final calculation and plotting on the risk graph.

Vulnerability Score = (Business + Human + Property + Environment)/2.2 where 2.2 is a normalizing factor to adjust scores to the 35 point scale for vulnerability ratings in FEMA Critical Asset Risk Management MGT-315, October 2016.

Vulnerability Score	Rating
0-2	1
3-5	2
6-8	3
9-11	4
12-14	5
15-17	6
18-20	7
21-23	8
24-26	9
27-29	10
30-32	11
33-35	12

Table 4. Vulnerability Ratings

Consequence Value (C) = sum of scores for each of the seven factors described in the Consequence Analysis section above divided by 2 to adjust scoring of six local factors vs three factors used in FEMA Critical Asset Risk Management MGT-315, October 2016. Hazard and vulnerability are used to calculate an overall Probability (P), which is then multiplied by Consequence to assign a Total Risk Value.

Probability  $(P) = T \times V$ 

Total Risk =  $P \times C$ 

The table below provides the calculated results for each of the risk measures above. Throughout the series of calculations, the spreadsheet functions round the values to integers for ease of display. This compounds the rounding error and presents data totals which appear to be "miscalculated." For this reason, the table should be viewed as representative values rather than attempting to re-create the totals through the calculations.

# Data Summary and Hazard Ranking

Hazard	Total Risk Value	Probabil- ity Value (P)	Conse- quence Value (C)	Threat/ Hazard Value (T)	Vulnerabili- ty Rating (V)
Natural	Hazards -	Meteorologi	cal		
Flooding	141	23.5	6	6.47	3.64
Hurricane	417	41.7	10	7.06	5.91
Snow/Ice	176	23.5	7.5	6.47	3.64
Tornado	75	21.4	3.5	5.88	3.64
Temperature Extremes	118	26.2	4.5	8.24	3.18
Severe Thunderstorm	47	11.8	4	6.47	1.82
Natur	al Hazard	s - Biological			
Public Health Emergency	243	34.8	7	7.65	4.55
Human Cau	sed – Acc	idental/Inten	tional		
Electrical Grid Failure	148	17.4	8.5	7.65	2.27
Mass Communications Failure	112	16	7	7.06	2.27
Water Supply Failure	144	19.3	7.5	7.06	2.73
Aircraft Incident	67	19.3	3.5	5.29	3.64
IT Disruption	96	17.4	5.5	7.65	2.27
Huma	n Caused	- Intentional			
Terrorism	590	56.1	10.5	8.24	6.82
Civil Disturbance	112	22.5	5	7.06	3.18
Huma	in Causec	l - Accidental			
Mass Casualty Incident (Trauma)	59	16.8	3.5	5.29	3.18
Hazmat Release	90	22.5	4	7.06	3.18
Structure Fire	56	16	3.5	5.88	2.73

#### Table 5. Total Risk Values (Probability x Consequence) Ranked within Hazard Grouping

The relative severity of risk is graphically represented by plotting the Probability and Consequence Values as in the following figure.

## Hazards Ranked by Total Risk Value

- 1. Terrorism
- 2. Hurricane
- 3. Public Health
- 4. Snow Ice
- 5. Electrical Grid Failure
- 6. Water Failure
- 7. Flood



Source: FEMA Critical Asset Risk Management MGT-315, October 2016

- 8. Temperature Extreme
- 9. Communications Fail
- 10. Civil Disturbance
- 11. IT Security
- 12. IT Infrastructure
- 13. Hazmat
- 14. Tornado
- 15. Aircraft
- 16. Mass Casualty
- 17. Fire
- 18. Thunderstorm

# 1.3 Risk Assessment Methodology

The following data were used in the form of GIS map layers to assess the level and type of risk within the Department's jurisdiction and individual planning zones.

#### Table 6. Risk Assessment Data Matrix

Risk Assessment Factor	Category	Rationale
Major Employers	Community Consequence	Incidents affecting the structure or the welfare of occupants may re- quire long term or permanent closure resulting in loss of productivity that may impact the local economy.
Infrastructure	Community Consequence	Incidents at these locations may have some level of impact on the continuity of government or services throughout the community.
Hospitals	Community Consequence	Incidents at these locations affecting the structure or the welfare of occupants may have an impact on the availability of medical care for the community.
Historic Landmarks	Community Consequence	Location posing a potential historic or cultural lose to the community
Residential Areas	Community Consequence	Some incidents in residential structures will lead to the need for relo- cation of individuals/families, with the impact increasing as more of these structures are affected.
Schools	Agency Impact	Special needs populations, increased difficulty in evacuation and rescue.
Fire Hydrants/Water Mains	Agency Impact	Available water supply for firefighting and decontamination.
Fire Protection Systems	Agency Impact	Earlier detection and/or suppression of fire can positively impact fire incident mitigation efforts.
High Rise Buildings	Agency Impact	Buildings over eight stories and beyond the reach of aerial ladders requiring additional resources.
Target Hazards	Agency Impact	Target hazards are locally defined occupancies that pose specific risks to occupants and the fire service responders.
Station Drive Times	Agency Impact	Number of minutes from nearest station based on street network and speed limits impacting the distribution of response to incidents.
Assembly Occupan- cies	Agency Impact	Major assembly locations resulting in increased difficulty in evacua- tion and rescue.
Effective Response Force	Agency Impact	Number of personnel available in eight minutes' drive time from neighboring stations.
Flood Zones/Water- ways	Probability	Areas identified as flood zones have an increased likelihood of water rescue incidents.
Populated Areas	Probability	Increased likelihood of emergency incidents in populated areas in correlation to human factors in incident cause.
Poverty Levels	Probability	Community correlation between low poverty levels and fire and med- ical rates.
Populations Over 65	Probability	Community correlation between elderly populations and fire and medical rates.
Agency Incident History	Probability	Incident history calculated from number of fire incidents per unit area; increased likelihood incidents in future based on past history.
Industrial Areas	Probability	Industrial areas are more likely to employ processes that involve haz- ardous materials and pose a risk of need of specialized rescue.
Exposures	Probability	The heat effect from a structure fire which may cause ignition or dam- age to an exposed building or its contents.

# Community Safety and Remediation Programs

Mobile Fire-Rescue conducts the following safety and remediation programs within its jurisdiction:

- Company Inspection Operations personnel conduct annual inspections of all commercial businesses within our jurisdiction. These inspections serve multiple purposes; they allow personnel to become familiar with the structures within their respective first-in response area, they serve to gather valuable information about changes in construction, interior layouts, and occupancy, and they allow the Department to utilize line personnel as force multiplier in support of our inspection bureau.
- Permitting All commercial permits for new construction and major renovation within the City of Mobile require a plans review be conducted prior to issuance by the Department's Fire Prevention Bureau and periodic inspection by to be performed during the construction phase.
- Community Outreach Programs The Department distributes and installs smoke detectors throughout the jurisdiction with a focus on areas identified as most susceptible to fire related emergencies. Additionally, the Department conducts periodic Citizen Academies which allows citizens to learn more about the department and fire safety issues.
- Community Education In conjunction with the local school system, the Department provides in person fire safety education programs annually as well as providing materials for teachers to utilize in the classroom. The Department also provides adult education to multiple sites within the community on an annual basis.
- Community Risk Reduction The Department, in partnership with local churches and political leaders, conducts door-to-door public education events in areas of recent fire activity that includes smoke detector inspections/installations.

## Community Fire Protection and Detection Systems

All commercial occupancies within the Department's jurisdiction are inspected annually by operations personnel. Existing fire protection and detection systems information is collected as part of these inspections. Life Safety discrepancies found are reported to the Fire Prevention Bureau through the Collector App for follow-up. Commercial properties identified as large loss occupancies receive direct inspections from assigned bureau personnel as well as operational units.

## **Population Categories**

The Department's jurisdiction is divided into planning zones which correlate to the station primary response areas.

• Population density within each planning zone were taken from 2010 U.S. Census block data. Due to covid delays, 2020 data has yet to be released. Once the 2020 data is available the planning zone information will be updated to reflect changes.

- Consideration was given to the fact that census data only tracks residential areas and does not consider commercial properties, time of day, or day of week.
- Planning zones were examined using multiple factors that drive response demand including:
  - Total Population
  - Daytime Population
  - Works/Residents
  - Age, Race, Gender
  - Economic Factors
  - Education Levels
  - Age of Construction
  - At Risk Populations
- Mobile serves as the main economic engine for this region of the Gulf Coast. As such, the population of fluctuates dependent on time of day and day of week as commuters from neighboring cities and counties flood in for work and return home in the evenings.

Because of this daily population movement some planning zone will have a different density score for workdays versus evenings and weekends.

## 1.4 Community Loss/Save Information

Table 7. Fire Inclaents by Property 1	гуре
---------------------------------------	------

	1 - As- sembly	2 - Edu- cational	3-Health Care, De- tention & Correction	4 - Resi- dential	5 - Mer- cantile, Business	6-Indus- trial, Utility, Defense, Agriculture, Mining	7 - Man- ufac- turing, Process- ing	8 - Stor- age	9 - Out- side or Special Property	10 - Common Values
2020	7	1	1	180	10			8	3	
2021	5		1	177	8		1	7		1
2022	9	1	1	168	10	1	1	9	2	

Table 8. Incident Loss by Calendar Year

Year	Property Loss	Contents Loss	Pre-Property Value	Pre-Con- tents Value	% property lost vs saved	% contents loss vs saved
2020	\$19,477,535	\$18,453,617	\$67,038,987	\$29,588,557	29%	62%
2021	\$22,658,033	\$12,794,053	\$74,312,679	\$31,755,342	30%	40%
2022	\$22,606,470	\$7,534,900	\$284,728,833	\$47,490,254	8%	16%

Table 9. Fire Incidents by Area of Origin

	Assem- bly	Func- tion Areas	Means of Egress	Other Area of Origin	Service Areas	Service, Equip- ment Areas	Storage Areas	Structural Areas	Technical Process- ing Areas	Transpor- tation, Vehicle Areas
2020	27	165	8	33	9	8	21	34	2	4
2021	24	225	12	38	13	6	18	36	1	1
2022	28	195	21	31	16	12	17	51	2	4

Table 10. Incidents Confined to Area of Origin

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2020	67%	67%	85%	62%	71%	70%	59%	81%	76%	81%	77%	83%
2021	83%	79%	85%	76%	76%	82%	75%	62%	81%	70%	84%	66%
2022	78%	78%	84%	93%	81%	81%	86%	83%	72%	79%	66%	85%

For example:

If you look at the house next door and it appears (in your opinion) to be valued at 100K. The house you are working has sustained 50% of fire damage.

The amount of fire damage of the house you are working should be listed as 50K (structural damage). If the house is fully furnished then the content estimate can be half of the structural fire damage of the house, which would be an additional 25K.

Total Fire Damage Loss – structure & content = 75,000.00. This is an example of an estimate and not scientific. This general formula is consistent with the best practices and to my knowledge, has never been disputed.

Table 11. Percentage of Cardiac Arrest Patients with Return of Spontaneous Circulation

Year	Percentage
2020	27%
2021	25%
2022	27%

## 1.5 Risk by Response Category

Table 12. Incident Counts By Year And Type

NFIRS Category	2021	2021	2022
Total Calls	35,271	37,806	38,033
1 - Fire	1,459	1,192	1,267
2 - Overpressure Rupture, Explosion, Overheat (No Fire)	10	19	12
3 - Rescue & Emergency Medical Service Incident	22,364	24,988	24,988
4 - Hazardous Condition (No Fire)	774	480	536
5 - Service Call	3,521	3,695	4,154
6 - Good Intent Call	4,842	5,316	4,729
7 - False Alarm & False Call	2,154	2,027	2,254
8 - Severe Weather & Natural Disaster	53	8	19
9 - Special Incident Type	94	81	74

Time	1 - Fire	2 - Overpressure Rupture, Explosion, Overheat (No Fire)	3 - Rescue & Emergency Medical Service Incident	4 - Hazardous Condition (No Fire)	5 - Service Call	6 - Good Intent Call	7 - False Alarm & False Call	8 - Severe Weather & Natu- ral Disaster	9 - Special Incident Type	Grand Total
12-1am	24		670	10	127	111	66	2	4	1,014
1-2am	34		643	6	110	103	46		1	943
2-3am	26		568	7	89	81	47	1		819
3-4am	21		487	6	108	83	53	1		759
4-5am	27		487	9	80	68	47		3	721
5-6am	24		546	19	122	78	49	1	1	840
6-7am	35		705	6	114	125	58		4	1,047
7-8am	39		917	20	163	170	87		5	1,401
8-9am	53		1,066	22	207	250	113			1,711
9-10am	39		1,149	27	197	228	130		2	1,772
10-11am	57	2	1,263	33	197	262	164		3	1,981
11-12pm	62		1,387	27	195	246	119	1	5	2,042
12-1pm	79	1	1,390	35	214	259	122		3	2,103
1-2pm	74		1,418	23	220	270	133	2	4	2,144
2-3pm	67	2	1,448	31	231	259	134	1	4	2,177
3-4pm	83		1,528	26	226	313	98		4	2,278
4-5pm	86	1	1,440	30	218	273	111	1	4	2,164
5-6pm	87		1,387	26	208	271	111		3	2,093
6-7pm	79	2	1,365	39	222	268	112		7	2,094
7-8pm	63	1	1,287	38	216	261	113	5	4	1,988
8-9pm	79		1,135	23	202	235	87	1	3	1,765
9-10pm	52		1,062	35	180	202	99	1	8	1,639
10-11pm	40	1	867	23	174	165	84	2	1	1,357
11-12am	37	2	773	15	134	148	71		1	1,181
Total	1,267	12	24,988	536	4,154	4,729	2,254	19	74	38,033

Table 13. Incident Count By Call Type And Time Of Day For 2022

	District 1 District 2								District 3			Dist	rict 4						
Time	03 Central Station	08 Melton Station	09 Husband Station	11 Willett Station	21 Reid Station	07 Seelhorst Station	16 Lathan Station	19 McCosker Station	20 Petrey Station	28 Berger Station	12 Crichton Station	14 Toulminville Station	18 Springhill Station	23 Sirmon Station	01 Freeman Station	06 Edwards Station	22 Tapia Station	26 Public Safety Complex	Grand Total
12-1am	103	43	37	43	7	26	93	74	31	14	81	65	34	91	52	81	105	33	1,013
1-2	111	44	38	31	7	25	79	66	25	20	76	67	23	84	59	76	81	31	943
2-3	87	42	23	23	2	14	47	53	37	24	84	60	20	86	44	66	87	20	819
3-4	66	35	20	26	5	16	62	57	25	18	58	57	22	65	57	63	70	37	759
4-5	72	33	24	25	3	21	57	62	22	20	61	45	15	74	40	59	63	25	721
5-6	93	44	26	27	3	27	68	57	25	22	77	52	19	65	57	64	83	31	840
6-7	117	47	29	27	9	40	69	97	29	29	96	78	29	73	54	78	105	41	1,047
7-8	134	58	52	38	10	44	105	103	35	40	114	92	49	112	108	104	137	66	1,401
8-9	138	86	57	78	13	37	115	123	47	30	158	104	70	155	112	134	170	82	1,709
9-10	152	12	58	76	14	53	126	100	44	39	1//	144	56	152	111	129	184	79	1,766
10-11	219	103	66	78	19	52	124	137	55	35	196	124	57	168	123	149	192	80	1,977
12 1000	186	102	79 72	70	1/	51	130	159	49	46	217	131	62 56	174	105	142	228	90	2,038
12-1pm	109	99	72	22	12	55	140	1/3	60	47	222	130	50	195	114	143	215	101	2,096
1-2	1/1	00	09	00 66	20	27	122	172	62	41	211	150	64	199	120	145	240	101	2,129
2-5	193	129	94	82	20	47 65	123	175	67	38	234	1/6	73	2/1	118	155	232	109	2,101
4-5	181	108	96	75	15	80	147	164	45	38	228	157	62	167	116	153	223	91	2,201
5-6	169	95	59	61	13	64	135	149	70	53	214	128	64	186	126	129	255	106	2.076
6-7	182	94	50	61	6	42	177	166	63	59	209	142	71	175	127	144	219	88	2.075
7-8	180	76	66	73	14	44	145	129	56	36	169	146	66	210	117	150	190	93	1.960
8-9	153	74	74	73	8	44	115	129	60	33	140	126	38	166	100	124	185	95	1,737
9-10	134	61	57	69	10	54	140	118	56	38	137	116	41	130	115	121	161	76	1,634
10-11	134	74	41	51	7	32	105	105	51	17	114	101	30	130	70	98	133	62	1,355
11-12	123	43	37	43	4	33	108	94	43	22	92	71	33	108	82	100	114	29	1,179
Total	3,455	1,771	1,307	1,339	262	1,023	2,699	2,789	1,128	804	3,586	2,577	1,122	3,391	2,243	2,755	3,916	1,675	37,842

Table 14. Incident Count By Station And Time Of Day For 2022

# Structural Fire Incidents

MFRD responds to all types of fire suppression incidents within its assigned jurisdiction and in neighboring jurisdictions through mutual aid requests. Due to the wide variety of fire suppression

events, fires classified under this category for the purposes of the CRA-SOC are only those involving structures. All other fire related incidents are classified as other for the purpose of clarity.

Table 15. Fire Incidents By Type 2022

Basic Incident Type	Count
1112 - Residential House Fire	176
118 - Trash or rubbish fire, contained	160
113 - Cooking fire, confined to container	74
111 - Building fire	57
1111 - Apartment Fire	55
112 - Fires in structure other than in a building	15
121 - Fire in mobile home used as fixed residence	8
114 - Chimney or flue fire, confined to chimney or flue	4
120 - Fire in mobile prop. used as a fixed struc., other	3
122 - Fire in motor home, camper, recreational vehicle	3
123 - Fire in portable building, fixed location	3
116 - Fuel burner/boiler malfunction, fire confined	1
117 - Commercial Compactor fire, confined to rubbish	1
Grand Total	560

## **Emergency Medical Incidents**

MFRD provides paramedic and advanced life support (ALS) ambulance services to the jurisdiction. A medical director oversees the operation of the department's ALS service to ensure high quality service is delivered. MFRD maintains 11 full time ambulances for ALS services and contracts with two private ambulance services to provide basic life support (BLS) ambulances for the jurisdiction.

Table 16. Emergency Medical Incidents By Type 2022

Basic Incident Type	Count
321 - EMS call, excluding vehicle accident with injury	10,902
3212 - EMS call, excluding vehicle accident with injury with MFRD ALS Unit	6,374
320 - Emergency medical service, other	2,958
324 - Motor vehicle accident with no injuries.	1,328
3211 - EMS call, excluding vehicle accident with injury, with BLS Unit	1,038
322 - Motor vehicle accident with injuries	520
3111 - Medical assist, assist EMS crew of BLS Unit	508
311 - Medical assist, assist EMS crew	372
3221 - Motor vehicle accident with injuries, with BLS Unit	360
3222 - Motor vehicle accident with injuries, with MFRD ALS Unit	344
3112 - Medical assist, assist EMS crew of County EMS	120
323 - Motor vehicle/pedestrian accident (MV Ped)	50
Grand Total	24,874

# Hazardous Materials Incidents

All MFRD are trained to the hazardous materials operations level as part of their initial certification. Additionally, all sworn members are required to complete annual continuing education in hazardous materials. The department has a dedicated hazardous materials response unit that is cross staffed by an engine and ladder crew that are required to maintain hazardous materials technician level training as part of their assignment. In the event of a hazardous materials incident, the closes unit is dispatched along with the hazardous materials team and unit.

Basic Incident Type	Count
412 - Gas leak (natural gas or LPG)	141
411 - Gasoline or other flammable liquid spill	27
424 - Carbon monoxide incident	21
413 - Oil or other combustible liquid spill	9
422 - Chemical spill or leak	4
421 - Chemical hazard (no spill or leak)	3
410 - Combustible/flammable gas/liquid condition, other	1
420 - Toxic condition, other	1
Grand Total	207

Table	17.	Hazmat	Incidents	Bv	Type	2022
					-21	

## Technical Rescue Incidents

MFRD serves as the host agency for the State of Alabama Type I Urban Search and Rescue Team. Member of this program serve as mutual aid responders for inter and intra state mutual aid responders as well as providing technical rescue coverage for the jurisdiction. The department has a fully equipped heavy rescue apparatus that is cross staffed by an engine and ladder crew and available for dispatch. Services provided include rope rescue, confined space rescue, trench rescue, flood water rescue, swift water rescue, structural collapse rescue, and machinery extrication. All members assigned to a technical rescue station are trained to the technician level in each discipline.

#### Table 18. Technical Rescue Incidents By Type 2022

Basic Incident Type	Count
353 - Removal of victim(s) from stalled elevator	36
381 - Rescue or EMS standby	29
352 - Extrication of victim(s) from vehicle	7
350 - Extrication, rescue, other	6
341 - Search for person on land	4
340 - Search for lost person, other	2
356 - High-angle rescue	2
360 - Water & ice-related rescue, other	2
371 - Electrocution or potential electrocution	2
342 - Search for person in water	1
365 - Watercraft rescue	1
Grand Total	92

# Other Emergency Incidents

### Table 19. Other Emergency Incidents By Type 2022

Basic Incident Type	Count
130 - Mobile property (vehicle) fire, other	43
131 - Passenger vehicle fire	157
132 - Road freight or transport vehicle fire	10
133 - Rail vehicle fire	1
134 - Water vehicle fire	3
138 - Off-road vehicle or heavy equipment fire	6
140 - Natural vegetation fire, other	22
141 - Forest, woods or wildland fire	22
142 - Brush or brush-and-grass mixture fire	111
143 - Grass fire	48
150 - Outside rubbish fire, other	63
151 - Outside rubbish, trash or waste fire	145
152 - Garbage dump or sanitary landfill fire	1
153 - Construction or demolition landfill fire	2
154 - Dumpster or other outside trash receptacle fire	30
155 - Outside stationary compactor/compacted trash fire	1
160 - Special outside fire, other	20
161 - Outside storage fire	8
162 - Outside equipment fire	14
221 - Overpressure rupture of air or gas pipe/pipeline	2
240 - Explosion (no fire), other	4
243 - Fireworks explosion (no fire)	1
251 - Excessive heat, scorch burns with no ignition	5
440 - Electrical wiring/equipment problem, other	122

Basic Incident Type	Count
441 - Heat from short circuit (wiring), defective/worn	8
442 - Overheated motor	5
444 - Power line down	70
445 - Arcing, shorted electrical equipment	76
451 - Biological hazard, confirmed or suspected	1
460 - Accident, potential accident, other	18
461 - Building or structure weakened or collapsed	5
462 - Aircraft standby	8
463 - Vehicle accident, general cleanup	11
480 - Attempted burning, illegal action, other	4
481 - Attempt to burn	1
510 - Person in distress, other	165
511 - Lock-out	25
512 - Ring or jewelry removal	4
520 - Water problem, other	29
521 - Water evacuation	2
522 - Water or steam leak	21
531 - Smoke or odor removal	64
540 - Animal problem, other	1
541 - Animal problem	1
542 - Animal rescue	1
550 - Public service assistance, other	2,086
551 - Assist police or other governmental agency	245
552 - Police matter	444
553 - Public service	325
554 - Assist invalid	664
555 - Defective elevator, no occupants	6
561 - Unauthorized burning	69
571 - Cover assignment, standby, moveup	1
611 - Dispatched and cancelled en route	3,615
621 - Wrong location	3
622 - No incident found on arrival at dispatch address	734
631 - Authorized controlled burning	1
641 - Vicinity alarm (incident in other location)	7
650 - Steam, other gas mistaken for smoke, other	13
651 - Smoke scare, odor of smoke	246
652 - Steam, vapor, fog or dust thought to be smoke	17
653 - Smoke from barbecue, tar kettle	5
661 - EMS call, party transported by non-fire agency	74
671 - HazMat release investigation w/no HazMat	11
672 - Biological hazard investigation, none found	1
710 - Malicious, mischievous false call, other	102

Basic Incident Type	Count
711 - Municipal alarm system, malicious false alarm	113
712 - Direct tie to FD, malicious false alarm	7
713 - Telephone, malicious false alarm	19
714 - Central station, malicious false alarm	12
715 - Local alarm system, malicious false alarm	70
721 - Bomb scare - no bomb	13
730 - System malfunction, other	68
731 - Sprinkler activation due to malfunction	13
733 - Smoke detector activation due to malfunction	84
734 - Heat detector activation due to malfunction	1
735 - Alarm system sounded due to malfunction	425
736 - CO detector activation due to malfunction	20
740 - Unintentional transmission of alarm, other	389
741 - Sprinkler activation, no fire - unintentional	19
742 - Extinguishing system activation	5
743 - Smoke detector activation, no fire - unintentional	135
744 - Detector activation, no fire - unintentional	82
745 - Alarm system activation, no fire - unintentional	643
746 - Carbon monoxide detector activation, no CO	33
751 - Biological hazard, malicious false report	1
800 - Severe weather or natural disaster, other	4
812 - Flood assessment	1
814 - Lightning strike (no fire)	13
815 - Severe weather or natural disaster standby	1
900 - Special type of incident, other	49
911 - Citizen complaint	25
Not Reported	3
Grand Total	12,278

# 1.6 Risk by Demand Zone

# Planning Zone methodology

Mobile Fire-Rescue's planning zone closely model our existing station response zone with minor adjustments, so that they coincide with city planning zones and census tracks. These zones represent the areas closest to a station by drive time using a geographic information system that considers speed limits, one-way streets, and intersections. Calls for service were examined within each zone to determine the overall impact each zone has on provided services. The examination considered several factors:

- Type of call
- Time of day
- Day of week
- Response times
- Response outcomes
- Unit availability within their assigned zone

Additionally, in assessing the risk within each planning zone, MFRD looked at:

- Geographic characteristics
- Demographic characteristics
- Building types
- Infrastructure

Responses within each planning zone are listed by incident type and are independent of the unit that responded. The availability assessment represents the percentage of incidents within each planning zone that were covered by the primary unit assigned. Unless otherwise noted, all data is from 2022.



Planning zone counts: The incident counts within each planning zone are divided into 9 service types based on NFIRS reporting requirements.

Availability: Best response outcomes are achieved when units are available to cover the responses within their assigned planning zone. However, many factors can impact unit availability such as run volume within the zone, training, and mechanical issues. The MFRD views availability as the percentage of call for service that were covered by the unit assigned to that zone, regardless of order of arrival.

The following factors are considered when calculating unit availability:

- CAD software dispatches utilizing GPS locators. This sometimes causes outside units to be recommended for calls when they are passing through another unit's zone even if the unit is available.
- Zone call volume
- Neighboring zones call volume
- Number of units assigned to a zone

The department's jurisdiction is divided into four (4) fire districts. Each district is comprised of 4 to 5 planning zones with either single company or multi-company stations assigned to each zone.

District 1 represents the downtown area of the city and serves mostly older construction structures. It has a healthy mix of commercial and residential structures and includes the most highrise and governmental buildings of any district. Three of the jurisdiction's five hospitals are located within this district, including the level one trauma center.

- Central Station (Engine 3, Truck 4, Rescue 3)
- Melton Station (District 1 Chief, Engine 8, Rescue 8)
- Reid Station (Engine 21)
- Husband Station (Engine 9)
- Willett Station (Engine 11, Engine 2, Fireboat 2)

District 2 is located in the southwestern portion of the jurisdiction. While this district is mostly residential and light commercial, it also covers the largest petrol/chemical industrial area of the jurisdiction.

Petrey Station (Engine 20)

- Seelhorst Station (District 2 Chief, Engine 7, Truck 10, Haz-Mat 15)
- Lathan Station (Engine 16, Truck 24, Rescue 24)
- McCosker Station (Engine 19, Rescue 19)
- Berger Station (Engine 28, Rescue 28)

District 3 is located in the northwestern portion of the jurisdiction. This area is mostly older construction residential and light commercial.

- Sirmon Station (Engine 23, Rescue 23)
- Crichton Station (District 3 Deputy Chief, Engine 12, Truck 17, Rescue 12, Heavy Rescue 25)
- Springhill Station (Engine 18)

• Toulminville Station (Engine 14, Rescue 14)

District 4 is located in the extreme western portion of the jurisdiction. This area is mostly new construction residential and light commercial. It also covers portions of the police jurisdiction. These are areas outside the city limits but within 1.5 miles that have no other existing fire service the department is required to cover under state law.

- Freeman Station (Engine 1, Rescue 1)
- Tapia Station (Engine 22, Truck 5, Rescue 22)
- Public Safety Complex (Engine 26, Truck 27, Rescue 26)
- Edwards Station (Engine 6 Rescue 6)



# **Central Station #3**

DISTRICT 1 701 St Francis St Mobile AL 36602	EQUIPMENT Engine 3, Rescue 3, Truck 4	POPULATION Total: 7,719 Daytime: 24,62	ZO Highrise	DNE MAKEUP e/Governmental/ Industrial
Calls f	or Service	2020	2021	2022
Т	OTAL	3,729	4,109	4,293
Fire		148	153	170
Overpressure Rupture, Explos	ion, Overheat (No Fire)	2	4	3
Rescue & Emergency Medical	Service Incident	2,608	2,877	3,024

Fire	148	153	170
Overpressure Rupture, Explosion, Overheat (No Fire)	2	4	3
Rescue & Emergency Medical Service Incident	2,608	2,877	3,024
Hazardous Condition (No Fire)	48	51	60
Service Call	188	224	275
Good Intent Call	524	570	483
False Alarm & False Call	201	226	273
Severe Weather & Natural Disaster	8	1	3
Special Incident Type	2	3	2



Interstate Acres 8,009 4,535 Acres - Land Major Roads Acres - Water 3,473 Minor Roads Railroad - Linear Miles 117 RailRoad Roads Interstate - Linear Miles 16 Fire Planning Zone Roads Major - Linear Miles 21 Roads Minor - Linear Miles 81 Mobile City Limits



Drive Time in Minutes



N



Fire Planning Zone
Mobile City Limits

Drive time in Minutes

- ----- Less than 1
- \_\_\_\_\_ 1 2
- \_\_\_\_\_ 2 3 \_\_\_\_\_ 3 - 4
- <del>------</del> 5 +





Historic Site Interstate 0 Fire Station 0 Major Roads Police Station Minor Roads Û School Locations RailRoad 血 High Rise Building Streams Parks **Government Buildings** Hospital Fire Planning Zone Airport Mobile City Limits

Acres	8,009
Acres - Land	4,535
Acres - Water	3,473
Railroad - Linear Miles	117
Roads Interstate - Line	ar Miles 16
Roads Major - Linear N	Ailes 21
Roads Minor - Linear M	Ailes 81


Structure Exposure Risk

Print Date: 4/7/2021



MEDIUM 10-30 feet HIGH <10 feet

# Medium Risk Sturctures	1,541
# High Risk Sturctures	1,615



Mobile City Limits

Structure Land Use

- Government
- Industrial
- Multi-Rresidential
- Multi-Use
- Residential
- School

# Structures - Commercial	851
# Structures - Government	133
# Structures - Industrial	447
# Structures - Multi-Residential	359
# Structures - Multi-Use	75
# Structures - Residential	1,970
# Structures - School	35

Flood Zones



### 2020 Flood Zones



0.2 PCT ANNUAL CHANCE FLOOD HAZARD 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD



Print Date: 4/5/2021

## **FIRE CENTRAL STATION 3**



### **INSIDE CITY LIMITS**



# POPULATION (2022)

7.719 Total Population

24,620 Daytime Population

- 20.752 3,868 1,967.1 Daytime Population Daytime Population: Daytime Population: Density (Per Sq Mile) Workers Residents 1,986 5.416 42
  - Black/African White Population Other Race American Population Population 46.5

39.6 3.736 3,983 Male Median Male Female Median Female Population Age Population

42.5 Median Black Age

41.8 Median White Age

47.3 Median White Female Age

46.0

Median Black

Female Age

39.3 Median White Male

Age

39.5

Median Black Male

Aqe

Age





**Total Businesses** 

Total Employees





# **Melton Station #8**

Severe Weather & Natural Disaster

**Special Incident Type** 

DISTRICT 1 57 S Lafayette St Mobile AL 36604	EQUIPMENT Engine 8, Rescue 8, Technical Rescue 8, Wa- ter Rescue 8, District 1	POPULATION Total: 7,836 Daytime: 11,085	ZO Resi 9 C	NE MAKEUP dential/Light ommercial
Calls f	or Service	2020	2021	2022
Т	OTAL	3,432	3,950	3,967
Fire		257	263	255
Overpressure Rupture, Explos	ion, Overheat (No Fire)		6	1
Rescue & Emergency Medica	I Service Incident	2,293	2,693	2,798
Hazardous Condition (No Fire	)	81	58	62
Service Call		174	213	205
Good Intent Call		436	537	440
False Alarm & False Call		178	173	199



Interstate	Acres	1,499
—— Maior Roads	Acres - Land	1,492
Minor Roads	Acres - Water	7
	Railroad - Linear Miles	0
RailRoad	Roads Interstate - Linear Miles	0
Fire Planning Zone	Roads Major - Linear Miles	9
Mobile City Limits	Roads Minor - Linear Miles	42



Mobile City Limits

### Drive time in Minutes

- Less than 1
- 1 2
- 2 3 - 3 - 4
- 4 5
  - 5 +















### 2020 Flood Zones



1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD



## **FIRE STATION 8 MELTON**



**INSIDE CITY LIMITS** 



# POPULATION (2022)

7,836 Total Population

11.089 Daytime Population



37.1 Median Black Age

40.5 Median White Age

42.4 Median White Female Age

38.2

Median Black

Female Age

Median White Male Age

39.0

36.2

Median Black Male

Aqe



\*\*\*\*\*\*\*\*\*\*\* 73% White Collar ė (d) (d) 15% Blue Collar Unemployment 144 13% Services INCOME \$58.893 \$40.240 Median Household Per Capita Median Net Income Income HOUSEHOLD INCOME 0 200 400 7.4% 200000+ 150000-199999 5.6% 100000-149999 75000-99999 10.5%

50000-74999

**FMPI OYMENT** 



# **BUSINESS**



4 9%

Rate

\$64,783

Worth

600

17.0%

17.1%

Bachelor's/Grad/Prof



# Households Receiving Food Stamps/SNAP

\$750,000

\$1,000,000+

<\$50,000

\$150,000

\$250,000

\$400,000



# **Husband Station #9**

		A II	and the
DISTRICT 1 1000 S Houston St Mobile AL 36604	EQUIPMENT Engine 9	POPULATION Total: 7,108 Daytime: 6,241	ZONE MAKEUP Residential/Light Commercial

Calls for Service	2020	2021	2022
TOTAL	1,901	1,653	1,850
Fire	203	184	194
Overpressure Rupture, Explosion, Overheat (No Fire)	2	2	1
Rescue & Emergency Medical Service Incident	1,096	940	1,029
Hazardous Condition (No Fire)	67	37	57
Service Call	124	134	206
Good Intent Call	304	266	256
False Alarm & False Call	99	81	103
Severe Weather & Natural Disaster	4	1	
Special Incident Type	2	8	4



- ----- Interstate
- —— Major Roads
- Minor Roads
- ----- RailRoad
- Fire Planning Zone
- Mobile City Limits

Acres	1,387
Acres - Land	1,382
Acres - Water	4
Railroad - Linear Miles	1
Roads Interstate - Linear Miles	0
Roads Major - Linear Miles	8
Roads Minor - Linear Miles	45



**Drive Time in Minutes** 





Fire Planning Zone Mobile City Limits

### Drive time in Minutes

- Less than 1
- \_\_\_\_\_ 2 3
- \_\_\_\_\_ 3 4
- ------ 4 5 ------ 5 +





- Historic Site
  Fire Station
  Police Station
  School Locations
  High Rise Building
  Government Buildings
  Hospital
  Airport
- Interstate
- Major Roads
- Minor Roads
- RailRoad
- Streams
- Parks
- Fire Planning Zone
- Mobile City Limits

Acres	1,387
Acres - Land	1,382
Acres - Water	4
Railroad - Linear Miles	1
Roads Interstate - Linear Miles	0
Roads Major - Linear Miles	8
Roads Minor - Linear Miles	45











Print Date: 4/5/2021



### 2020 Flood Zones



1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

0.2 PCT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD



## **FIRE STATION 9 HUSBAND**



### **INSIDE CITY LIMITS**



# POPULATION (2022)

7,108 Total Population

6.241 Daytime Population

1,978 4,263 2,879.2 Daytime Population Daytime Population: Daytime Population: Density (Per Sq Mile) Residents Workers 5,611 1,147 64 Black/African White Population Other Race American Population Population 34.9 3.742 38.6 3,367 Male Median Male Female Median Female Population Age Population Age

35.7 Median Black Age

41.8 Median White Age Female Age

Female Age 44.3 Median White

37.7

Median Black

39.9 Median White Male Age

33.3

Median Black Male

Aqe





Adults 18 to 6460.7% Children 17 & under<sup>23.7%</sup>

266 Total Businesses

2.137 Total Employees



Source: These infographics contains data provided by American Community Survey (ACS), Esri, Esri and Bureau of Labor Statistics, Esri-Data Axle. The vintage of the data is 2016-2020 & 2022 – 2020 geography.

100



# Willett Station #11

Severe Weather & Natural Disaster

**Special Incident Type** 

DISTRICT 1 1004 S Broad St Mobile AL 36603	EQUIPMENT Engine 11, Engine 2, Fireboat 2	POPULATION Total: 5,417 Daytime: 9,180	ZO Resi Commo	DNE MAKEUP idential/Light ercial/Industrial
Calls f	or Service	2020	2021	2022
TOTAL		1,824	1,668	1,574
Fire		144	140	129
Overpressure Rupture, Explos	ion, Overheat (No Fire)	0	6	1
Rescue & Emergency Medical	Service Incident	1,027	948	895
Hazardous Condition (No Fire)	)	67	37	38
Service Call		170	187	178
Good Intent Call		263	246	204
False Alarm & False Call		150	100	123



Acres	14,639
Acres - Land	3,332
Acres - Water	11,306
Railroad - Linear Miles	25
Roads Interstate - Linear Miles	9
Roads Major - Linear Miles	6
Roads Minor - Linear Miles	65
	Acres Acres - Land Acres - Water Railroad - Linear Miles Roads Interstate - Linear Miles Roads Major - Linear Miles Roads Minor - Linear Miles



### **Drive Time in Minutes**



N



- \_\_\_\_\_ 3 4
- \_\_\_\_\_ 4 5
  - 5 +












## Flood Zones





### 2020 Flood Zones



0.2 PCT ANNUAL CHANCE FLOOD HAZARD

1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD



## FIRE STATION 11 WILLETT



#### INSIDE CITY LIMITS

# POPULATION (2022)

5,417 Total Population 9,180 Daytime Population

- 5,488 3.692 401.3 Daytime Population Density (Per Sq Mile) Daytime Population: Daytime Population: Workers Residents 4,878 313 18 Black/African White Population Other Race American Population Population
  - 2,499 30.1 2,919 36.7 Male Median Male Female Median Female Population Age Population Age

32.4 Median Black Age

51.4 Median White Age

55.2 Median White Female Age

35.2

Median Black

Female Age

47.0 Median White Male

Age

29.1

Median Black Male

Age





Total Businesses

Total Employees





# **Reid Station #21**

DISTRICT 1 512 Stimrad Rd Mobile AL 36610	EQUIPMENT Engine 21	POPULATION Total: 1,335 Daytime: 3,396	ZONE MAKEUP Residential/Light Commercial/Industrial

Calls for Service	2020	2021	2022
TOTAL	424	402	400
Fire	51	47	38
Overpressure Rupture, Explosion, Overheat (No Fire)	213	209	188
Rescue & Emergency Medical Service Incident	18	10	9
Hazardous Condition (No Fire)	40	38	51
Service Call	63	72	74
Good Intent Call	35	23	38
False Alarm & False Call	1	0	0
Severe Weather & Natural Disaster	2	3	2
Special Incident Type	0	1	2



- ----- Interstate
- —— Major Roads
- Minor Roads
- ---- RailRoad
- Fire Planning Zone
- Mobile City Limits

Acres	15,465
Acres - Land	12,716
Acres - Water	2,748
Railroad - Linear Miles	33
Roads Interstate - Linear Miles	2
Roads Major - Linear Miles	7
Roads Minor - Linear Miles	20



Fire Planning Zone
Mobile City Limits

## Drive time in Minutes

- ----- Less than 1
- \_\_\_\_\_ 2 3 \_\_\_\_\_ 3 - 4
- \_\_\_\_\_ 4 5
- <del>-----</del> 5 +





Historic Site 0 Interstate 0 Fire Station Major Roads Police Station Minor Roads Û RailRoad School Locations 血 High Rise Building Streams **Government Buildings** Parks Hospital Fire Planning Zone Airport Mobile City Limits

Acres	15,465
Acres - Land	12,716
Acres - Water	2,748
Railroad - Linear Miles	33
Roads Interstate - Linear Miles	2
Roads Major - Linear Miles	7
Roads Minor - Linear Miles	20





LINDEVELOPED
UNDEVELOPED

# Parcel Acres - Commercial	112
# Parcel Acres - Industrial	4,358
# Parcel Acres - Residential	694
# Parcel Acres - Undeveloped	8416
# Parcels - Commercial	66
# Parcels - Industrial	245
# Parcels - Residential	620
# Parcels - Undeveloped	494
Parcel Improved Value - Commercial	\$19,331,600
Parcel Improved Value - Industrial	\$175,996,700
Parcel Improved Value - Residential	\$12,636,000
Parcel Improved Value - Undeveloped	\$25,900



Mobile City Limits

Structure Exposure Risk LOW >30 feet MEDIUM 10-30 feet

HIGH <10 feet

# Low Risk Sturctures	416
# Medium Risk Sturctures	495
# High Risk Sturctures	423



Mobile City Limits

Commercial Government

- Industrial
- Multi-Rresidential
- Multi-Use
- Residential
- School

# Structures - Commercial	60
# Structures - Government	7
# Structures - Industrial	440
# Structures - Multi-Residential	63
# Structures - Multi-Use	3
# Structures - Residential	541
# Structures - School	5





N



### 2020 Flood Zones



1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

0.2 PCT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD



## **FIRE STATION 21 REID**



INSIDE CITY LIMITS



# POPULATION (2022)

1,335 Total Population 3,396 Daytime Population

2.298 1.098 140.5 Daytime Population Daytime Population: Daytime Population: Density (Per Sq Mile) Workers Residents 773 514 7 Black/African White Population Other Race American Population Population 500 34.3 36.3 835 Male Median Male Female Median Female Population Age Population Age

33.0

Median Black

Female Age

40.8

Median White

Female Age

32.2 Median Black Age

37.9 Median White Age 31.9 Median Black Male Age

37.0 Median White Male Age









# **Seelhorst Station #7**

# 

DISTRICT 2 5525 Commerce Blvd E Mobile AL 36619



EQUIPMENT Engine 7, Truck 10, Hazmat 15, District 2 代大林

POPULATION Total: 2,092/1,050<sup>°</sup> Daytime: 7,165/575<sup>°</sup> , **1** 1

ZONE MAKEUP Residential/Light Commercial/Industrial

Calls for Service	2020	2021	2022
TOTAL	1,431	1,527	1,513
Fire	177	171	200
Overpressure Rupture, Explosion, Overheat (No Fire)	1	2	
Rescue & Emergency Medical Service Incident	779	816	773
Hazardous Condition (No Fire)	31	37	44
Service Call	85	116	140
Good Intent Call	248	303	242
False Alarm & False Call	101	78	107
Severe Weather & Natural Disaster	2		1
Special Incident Type	7	4	6

\* Outside of city limit in jurisdiction zone



Interstate	Acres	5,806
—— Maior Roads	Acres - Land	5,586
Minor Roads RailRoad	Acres - Water	220
	Railroad - Linear Miles	9
	Roads Interstate - Linear Miles	15
Fire Planning Zone	Roads Major - Linear Miles	12
Mobile City Limits	Roads Minor - Linear Miles	41







Parks

Hospital

Airport

Fire Planning Zone

Mobile City Limits

41

Roads Minor - Linear Miles









### 2020 Flood Zones

0.2 PCT ANNUAL CHANCE FLOOD HAZARD

1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

📕 Mobile City Limits

## FIRE STATION 7 SEELHORST



#### INSIDE CITY LIMITS

# POPULATION (2022)

2,092 Total Population 7,165 Daytime Population

789.7 6,112 1,053 Daytime Population Daytime Population: Daytime Population: Density (Per Sq Mile) Workers Residents 84 1,837 27 Black/African White Population Other Race American Population Population 1.072 49.0 1,020 47.0 Male Median Male Female Median Female Population Age Population Age

29.2 Median Black Age

50.6

Median White Age

Female Age 51.1 Median White Female Age

30.0

Median Black

28.8 Median Black Male Age

50.1 Median White Male Age









Interstate	Acres	1,971
—— Major Roads	Acres - Land	1,532
Minor Roads	Acres - Water	439
RailRoad	Railroad - Linear Miles	0
	Roads Interstate - Linear Miles	0
Fire Planning Zone	Roads Major - Linear Miles	0
Mobile City Limits	Roads Minor - Linear Miles	10



Drive Time in Minutes



N



Fire Planning Zone
Mobile City Limits

Drive time in Minutes

- ----- Less than 1
- \_\_\_\_\_ 3 4
- - 5 +





•	Historic Site	Interstate	Acres
0	Fire Station	—— Major Roads	Acres - Land
0	Police Station	Minor Roads	Acres - Water
血	School Locations	RailRoad	Railroad - Linear Miles
	High Rise Building	Streams	Roads Interstate - Linear Miles
	Government Buildings	Parks	Roads Major - Linear Miles
	Hospital	Eire Planning Zone	Roads Minor - Linear Miles
	Airport	Mobile City Limits	

1,971











### 2020 Flood Zones



0.2 PCT ANNUAL CHANCE FLOOD HAZARD 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD



## **FIRE STATION 7 SEELHORST**



### **OUTSIDE CITY LIMITS**



# POPULATION (2022)

1.050 Total Population

118

Daytime Population:

Workers

575 Daytime Population

457 186.7 Daytime Population: Residents

# Daytime Population Density (Per Sq Mile)

72 856 16 Black/African White Population Other Race American Population

#### Population 493 44.0 47.6 557 Median Male Female Median Female

31.9

Population

Male Population

30.3

48.2

Median White Age

Median Black Median Black Age Female Age

Age

50.3 Median White Female Age

## 25.0 Median Black Male Aqe

Age

46.0 Median White Male Age



## **FMPI OYMENT** \*\*\*\*\*\*\*\*\*\*\* 65%

#### White Collar **à à à à à** Blue Collar

**i i** Services 25%

10%

1.6% Unemployment Rate

## INCOME





\$364,868 Median Net Worth







26%

Graduate

12%

No High

School

Diploma



College



Bachelor's/Grad/Prof Degree

# **BUSINESS**



169 Total Employees



## FIRE STATION 7 SEELHORST

INSIDE AND OUTSIDE CITY LIMITS





Total Employees

**Total Businesses**




## Lathan Station #16

DISTRICT 2 1951 S Maryvale St Mobile AL 36605	EQUIPMENT Engine 16, Truck 24, Rescue 24	POPULATION Total: 10,719 Daytime: 9,137	Z Res	ONE MAKEUP sidential/Light Commercial
Calls f	or Service	2020	2021	2022
Т	OTAL	3,961	4,177	4,009
Fire		231	193	206
Overpressure Rupture, Explosion, Overheat (No Fire)		0	7	2
Rescue & Emergency Medical Service Incident		2,774	3,042	2,883
Hazardous Condition (No Fire)		91	54	73
Service Call		326	270	309
Good Intent Call		407	504	405
False Alarm & False Call		125	103	120

Severe Weather & Natural Disaster

**Special Incident Type** 



Interstate	Acres	4,027
—— Maior Roads	Acres - Land	3,645
— Minor Roads	Acres - Water	381
	Railroad - Linear Miles	4
RailRoad	Roads Interstate - Linear Miles	12
Fire Planning Zone	Roads Major - Linear Miles	9
Mobile City Limits	Roads Minor - Linear Miles	62



Drive Time in Minutes

Print Date: 4/7/2021



- \_\_\_\_\_ 3 4
- <del>-----</del> 5 +







Aaraa	4 0 0 7
Acres	4,027
Acres - Land	3,645
Acres - Water	381
Railroad - Linear Miles	4
Roads Interstate - Linear Miles	12
Roads Major - Linear Miles	9
Roads Minor - Linear Miles	62









22

65

arciet

Flood Zones



### 2020 Flood Zones

Mccullogh Creek

- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD
- COASTAL 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD



#### **FIRE STATION 16 LATHAN**



#### **INSIDE CITY LIMITS**

### POPULATION (2022)

10,719 Total Population

9.137 Daytime Population

1,451.9 2,462 6,675 Daytime Population Daytime Population: Daytime Population: Density (Per Sq Mile) Workers Residents 1,910 8,242 118 Black/African White Population Other Race American Population Population 32.3 5.717 37.1 5,001 Male Median Male Female Median Female Population Age Population Age

33.9

Median Black

Female Age

Female Age

31.0 Median Black Age

56.8

58.2 Median White Median White Age

27.8 Median Black Male Age

55.6 Median White Male Age





Source: These infographics contains data provided by American Community Survey (ACS), Esri, Esri and Bureau of Labor Statistics, Esri-Data Axle. The vintage of the data is 2016-2020 & 2022 – 2020 geography.





## **McCosker Station #19**

DISTRICT 2 1275 Azalea Rd Mobile AL 36693	EQUIPMENT Engine 19, Rescue 19	POPULATION Total: 15,357 Daytime: 18,520	J Z( Res 0 (	DNE MAKEUP idential/Light Commercial
Calls f	or Service	2020	2021	2022
Т	OTAL	3,037	3,423	3,408
Fire		180	133	161
Overpressure Rupture, Explosion, Overheat (No Fire)		1	4	1
Rescue & Emergency Medical Service Incident		2 033	2 350	2 307

rile	100	133	TOT
Overpressure Rupture, Explosion, Overheat (No Fire)	1	4	1
Rescue & Emergency Medical Service Incident	2,033	2,350	2,397
Hazardous Condition (No Fire)	48	38	50
Service Call	223	269	278
Good Intent Call	439	488	385
False Alarm & False Call	95	135	128
Severe Weather & Natural Disaster	14	0	2
Special Incident Type	4	6	6



7,406 Interstate Acres 7,077 Acres - Land Major Roads Acres - Water 329 Minor Roads Railroad - Linear Miles 2 RailRoad Roads Interstate - Linear Miles 11 Fire Planning Zone Roads Major - Linear Miles 20 Roads Minor - Linear Miles 85 Mobile City Limits



**Drive Time in Minutes** 



N



- 2 3 3 - 4
- \_\_\_\_\_ 4 5





Historic Site 0 Interstate 0 Fire Station Major Roads Police Station Minor Roads Û School Locations RailRoad 血 High Rise Building Streams Parks **Government Buildings** Fire Planning Zone Hospital Mobile City Limits Airport

Acres	7,406
Acres - Land	7,077
Acres - Water	329
Railroad - Linear Miles	2
Roads Interstate - Linear Miles	11
Roads Major - Linear Miles	20
Roads Minor - Linear Miles	85









Fire Planning Zone 19





#### 2020 Flood Zones



1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD



#### FIRE STATION 19 MCCOSKER



#### **INSIDE CITY LIMITS**

#### POPULATION (2022)

15,357 Total Population

18,520 Daytime Population



#### 38.7 8.112 42.6 7,246 Male Median Male Female Median Female Population Age Population Age

30.2

31.6 Median Black Median Black Age Female Age

55.1 Median White Age

57.1 Median White Female Age

52.2 Median White Male Age

28.1

Median Black Male

Age



#### **FMPI OYMENT** \*\*\*\*\*\*\*\*\*\*\* 66% White Collar 4 2% **N**N N N N N 22% Blue Collar Unemployment 12% Rate INCOME



<u>i a a</u>

Services





#### HOUSEHOLD INCOME



**EDUCATION** 

No High School Diploma

9%

High School Graduate

30% Some College

Bachelor's/Grad/Prof Degree

#### **BUSINESS**



9.887

**Total Businesses** 

Total Employees





## **Petrey Station #20**

### 

DISTRICT 2 3471 Dauphin Island Pkwy Mobile AL 36605



EQUIPMENT Engine 20, Marine 20

# 快大帅

POPULATION Total: 11,446/1,435<sup>•</sup> Daytime: 9,426/1,614<sup>•</sup> , **1**11

ZONE MAKEUP Residential/Light Commercial

Calls for Service	2020	2021	2022
TOTAL	1,350	1,352	1,259
Fire	108	82	82
Overpressure Rupture, Explosion, Overheat (No Fire)	1	1	1
Rescue & Emergency Medical Service Incident	827	932	801
Hazardous Condition (No Fire)	41	13	29
Service Call	188	129	133
Good Intent Call	125	141	160
False Alarm & False Call	56	50	51
Severe Weather & Natural Disaster	0	0	0
Special Incident Type	4	4	2

\* Outside of city limit in jurisdiction zone



- Interstate
  Major Roads
  Minor Roads
- ---- RailRoad
- Eire Planning Zone
- Mobile City Limits

Acres	12,365
Acres - Land	4,668
Acres - Water	7,697
Railroad - Linear Miles	0
Roads Interstate - Linear Miles	0
Roads Major - Linear Miles	4
Roads Minor - Linear Miles	62



— 4 - 5 — 5 +









HIGH <10 feet

# Low Risk Sturctures	2,249
# Medium Risk Sturctures	2,397
# High Risk Sturctures	723





#### 2020 Flood Zones



0.2 PCT ANNUAL CHANCE FLOOD HAZARD

1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD



#### **FIRE STATION 20 PETREY**



INSIDE CITY LIMITS



### POPULATION (2022)

8,793 Total Population 6,466 Daytime Population

1,155 Daytime Populatior Workers	5,3 n: Daytime P Resic	11 opulation: dents	334.6 Daytime Population Density (Per Sq Mile)
4,956	3,19	95	172
Black/African American Population	White Pop	oulation	Other Race Population
4,159	38.9	4,634	40.2
Male Population	Median Male Age	Female Population	Median Female Age
31.8	32.	.6	30.8

31.8 Median Black Age

55.2 Median White Age 56.9 Median White

Female Age

Median Black

Female Age

53.2 Median White Male Age

Median Black Male

Age



#### **EMPLOYMENT** \*\*\*\*\*\*\*\*\*\*\* 55% White Collar 5.5% 29% Blue Collar Unemployment \* \* \* \* 16% Rate Services INCOME \$42,803 \$26,545 \$63.810 Median Household Per Capita Median Net Income Income Worth HOUSEHOLD INCOME 200 400 600 0 3.5% 200000+ 150000-199999 4.9% 100000-149999 9.0% 75000-99999 7.6% 50000-74999 18.5% 35000-49999 16.6% 25000-34999 13.9% 15000-24999 10.4% 0-14999 15.7% **EDUCATION** 41% 29% No High 22% School High School Some Bachelor's/Grad/Prof

### Graduate College BUSINESS



1,051

Degree

Diploma



178



- —— Interstate
- —— Major Roads
- Minor Roads
- ----- RailRoad
- Fire Planning Zone
- Mobile City Limits

Acres	14,199
Acres - Land	2,710
Acres - Water	11,489
Railroad - Linear Miles	5
Roads Interstate - Linear Miles	0
Roads Major - Linear Miles	4
Roads Minor - Linear Miles	18














#### 2020 Flood Zones



0.2 PCT ANNUAL CHANCE FLOOD HAZARD

1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

186

🔲 Mobile City Limits 

### **FIRE STATION 20 PETREY**

#### INSIDE AND OUTSIDE CITY LIMITS





Total Businesses

Total Employees





## **Berger Station #28**

∰∰	

DISTRICT 2 7050 Old Military Rd Theodore AL 36582



EQUIPMENT Engine 28, Rescue 28, Brush 28, Water Rescue 28 POPULATION Total: 1,573 Daytime: 4,873

代大帅

**11**10

ZONE MAKEUP Residential/Light Commercial/Industrial

Calls for Service	2020	2021	2022
TOTAL	1,029	1,223	1,161
Fire	59	59	67
Overpressure Rupture, Explosion, Overheat (No Fire)	0	0	0
Rescue & Emergency Medical Service Incident	763	935	883
Hazardous Condition (No Fire)	16	14	8
Service Call	43	46	40
Good Intent Call	107	142	115
False Alarm & False Call	35	26	47
Severe Weather & Natural Disaster	4	0	0
Special Incident Type	2	1	1



Interstate	Acres	3,835
—— Maior Roads	Acres - Land	3,805
Minor Boads	Acres - Water	29
	Railroad - Linear Miles	9
RailRoad	Roads Interstate - Linear Miles	3
Fire Planning Zone	Roads Major - Linear Miles	13
Mobile City Limits	Roads Minor - Linear Miles	21















#### 2020 Flood Zones

0.2 PCT ANNUAL CHANCE FLOOD HAZARD

1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD



### **FIRE STATION 28 BERGER**



#### **INSIDE CITY LIMITS**

## POPULATION (2022)

1,573 Total Population

3,924

Daytime Population:

Workers

4.873 Daytime Population





Median Female

Age



American Population Population 36.8 829 37.7 744

38.6

39.6

Female

Population

Male Population

38.4 Median Black Age

Median Black

Median Male

Age

38.6 Median White Median White Age Female Age

Female Age Aqe

37.4 Median White Male Age

38.0

Median Black Male



#### **FMPI OYMENT** \*\*\*\*\*\*\*\*\*\*\* 44% White Collar 6.2% 37% Blue Collar Unemployment \* \* \* \* \* \* \* 19% Rate Services INCOME \$40.980 \$21,864 \$61,157 Median Household Per Capita Median Net Income Income Worth HOUSEHOLD INCOME 0 40 80 120 160 200000+ 1.3% 150000-199999 2.5% 100000-149999 7.6% 75000-99999 5.0% 24.6% 50000-74999 35000-49999 17.6% 25000-34999 10.9% 15000-24999 18.7% 0-14999 11.8% **EDUCATION** 13% 27% 42% 18% No High School High School Bachelor's/Grad/Prof Some Diploma Graduate Degree College **BUSINESS**

Total Businesses

343

4.019 Total Employees





## **Crichton Station #12**

DISTRICT 3 200 Davenport Ave Mobile AL 36607



EQUIPMENT Engine 12, Rescue 12, Truck 17, Heavy Rescue 25, District 3, Rehab 1

# 代大帅

POPULATION Total: 10,460 Daytime: 15,482 and in

ZONE MAKEUP Residential/Light Commercial

Calls for Service	2020	2021	2022
TOTAL	4,215	4,703	4,924
Fire	347	326	352
Overpressure Rupture, Explosion, Overheat (No Fire)	1	6	3
Rescue & Emergency Medical Service Incident	2,625	3,086	3,102
Hazardous Condition (No Fire)	97	78	104
Service Call	332	350	449
Good Intent Call	558	597	586
False Alarm & False Call	233	254	319
Severe Weather & Natural Disaster	6	0	0
Special Incident Type	16	6	9



- ----- Interstate
- —— Major Roads
- Minor Roads
- ----- RailRoad
- Fire Planning Zone
- Mobile City Limits

710700	Conductive and the second
Acres - Land	3,182
Acres - Water	17
Railroad - Linear Miles	8
Roads Interstate - Linear Miles	5
Roads Major - Linear Miles	8
Roads Minor - Linear Miles	70







Roads Minor - Linear Miles

70

**Government Buildings** 

Hospital

Airport

- Fire Planning Zone
- Mobile City Limits





# Medium Risk Sturctures	3,438
# High Risk Sturctures	1,412



Residential

School

<sup>#</sup> Structures - Residential 4,098



#### 2020 Flood Zones



0.2 PCT ANNUAL CHANCE FLOOD HAZARD 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

### FIRE STATION 12 CRICHTON



#### INSIDE CITY LIMITS

## POPULATION (2022)

10,460 Total Population 15,482 Daytime Population

9.031 6,451 3.095.9 Daytime Population Daytime Population: Daytime Population: Density (Per Sq Mile) Workers Residents 7,347 2,609 59 Black/African White Population Other Race American Population Population 39.6 5.587 43.3 4,873 Male Median Male Female Median Female Population Age Population Age

40.2 Median Black Age

44.9 Median White Age 46.7 Median White

Female Age

42.7

Median Black

Female Age

43.8 Median White Male Age

38.0

Median Black Male

Aqe









# **Toulminville Station #14**

**Good Intent Call** 

False Alarm & False Call

**Special Incident Type** 

Severe Weather & Natural Disaster

DISTRICT 3 2062 Dr MLK Ave Mobile AL 36617	EQUIPMENT Engine 14, Rescue 14	アOPULATION Total: 9,681 Daytime: 9,533	Z Res	DNE MAKEUP sidential/Light Commercial
Calls f	or Service	2020	2021	2022
1	OTAL	2,711	2,907	3,122
Fire		127	128	105
Overpressure Rupture, Explosion, Overheat (No Fire)		1	3	1
Rescue & Emergency Medical Service Incident		1,807	2,010	2,207
Hazardous Condition (No Fire)		34	32	29
Service Call	294	232	239	



Interstate	Acres	2,599
—— Maior Roads	Acres - Land	2,524
— Minor Roads	Acres - Water	75
	Railroad - Linear Miles	2
RailRoad	Roads Interstate - Linear Miles	5
Fire Planning Zone	Roads Major - Linear Miles	4
Mobile City Limits	Roads Minor - Linear Miles	63

Fire Planning Zone 14

**Drive Time in Minutes** 

Print Date: 4/7/2021


















### 2020 Flood Zones

- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD
- COASTAL 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD



## **FIRE STATION 14 TOULMINVILLE**



### **INSIDE CITY LIMITS**

# POPULATION (2022)

6.769

9.681 Total Population

2.764

9.533 Daytime Population

2,346.7

Daytime Population Daytime Population: Daytime Population: Density (Per Sq Mile) Residents Workers 9,135 190 39 Black/African White Population Other Race American Population Population

39.6 5.309 4,372 Male Median Male Female Median Female

Population

Age

Population

44.5 Median Black Age

Median White Age

Female Age 41.8

44.4 Median White Female Age

48.0

Median Black

Median Black Male Aqe

39.8

47.8

Age

39.1 Median White Male Age





Total Employees





# **Springhill Station #18**

DISTRICT 3 700 Museum Dr Mobile AL 36618	EQUIPMENT Engine 18	POPULATION Total: 15,733 Daytime: 16,719	ZO Res 9 C	NE MAKEUP idential/Light commercial
Calls f	or Service	2020	2021	2022
Т	OTAL	1,555	1,631	1,759
Fire		137	141	147
Overpressure Rupture, Explosion, Overheat (No Fire)		1	3	1
Rescue & Emergency Medical Service Incident		847	853	836
Hazardous Condition (No Fire)		52	47	51

Service Call

**Good Intent Call** 

False Alarm & False Call

**Special Incident Type** 

Severe Weather & Natural Disaster



Interstate	Acres	7,283
—— Maior Roads	Acres - Land	7,184
Minor Poods	Acres - Water	98
Millol Roads	Railroad - Linear Miles	3
RailRoad	Roads Interstate - Linear Miles	5
Eire Planning Zone	Roads Major - Linear Miles	28
Mobile City Limits	Roads Minor - Linear Miles	88



Fire Planning Zone 18

## Drive Time in Minutes



N



- 2 - 3 - 3 - 4 - 4 - 5 - 5 +





Roads Major - Linear Miles

Roads Minor - Linear Miles

28

88

- Fire Planning Zone
- Mobile City Limits

**Government Buildings** 

Hospital

Airport

Parks







Fire Planning Zone 18

Flood Zones

Print Date: 4/5/2021

Fire Planning Zone

Mobile City Limits



## 2020 Flood Zones



1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

## FIRE STATION 18 SPRINGHILL



INSIDE CITY LIMITS



# POPULATION (2022)

15,733 Total Population 16,719 Daytime Population

<mark>8,161</mark> Daytime Population Workers	8,55 n: Daytime P Resic	58 opulation: dents	1,469.1 Daytime Population Density (Per Sq Mile
5,857	8,83	31	201
Black/African American Population	White Pop	oulation	Other Race Population
7,368 Male Population	36.0 Median Male Age	8,365 Female Population	38.8 Median Female Age

31.2 Median Black Age

44.5 Median White Age 47.3 Median White

Female Age

32.6

Median Black

Female Age

41.8 Median White Male Age

29.2

Median Black Male

Age



#### **FMPI OYMENT** \*\*\*\*\*\*\*\*\*\*\* 76% White Collar 4.2% ė/ ė/ ė 14% Blue Collar Unemployment <u>ia</u> ia 10% Rate Services INCOME \$60.495 \$37.232 \$118,130 Median Household Per Capita Median Net Income Income Worth HOUSEHOLD INCOME 400 800 0 1,200 8.5% 200000+ 150000-199999 7.8% 100000-149999 14.0% 75000-99999 11.0% 17.9% 50000-74999 35000-49999 13.6% 25000-34999 7.4% 15000-24999 8.5% 11.3% 0-14999 **EDUCATION** 5% 21% 22% 52% No High School High School Bachelor's/Grad/Prof Some Diploma Graduate Degree College **BUSINESS** 7,350 628

Total Businesses



Source: These infographics contains data provided by American Community Survey (ACS), Esri, Esri and Bureau of Labor Statistics, Esri-Data Axle. The vintage of the data is 2016-2020 & 2022 – 2020 geography. 234



# Sirmon Station #23

DISTRICT 3 2711 Airport Blvd Mobile AL 36606	EQUIPMENT Engine 23, Rescue 23	POPULATION Total: 10,887 Daytime: 18,92	ZO Resi 6 C	ZONE MAKEUP Residential/Light Commercial	
Calls	or Service	2020	2021	2022	
1	OTAL	3,908	4,257	4,279	
Fire		229	197	181	
Overpressure Rupture, Explosion, Overheat (No Fire)		1	3	1	
Rescue & Emergency Medical Service Incident		2,604	2,879	2,921	
Hazardous Condition (No Fire)		78	42	31	

Rescue & Emergency Medical Service Incident	2,604	2,879	2,921
Hazardous Condition (No Fire)	78	42	31
Service Call	293	310	330
Good Intent Call	498	568	541
False Alarm & False Call	198	251	269
Severe Weather & Natural Disaster	3	1	0
Special Incident Type	4	6	5



Interstate	Acres	2,819
—— Maior Roads	Acres - Land	2,809
Minor Poads	Acres - Water	10
Millior Roads	Railroad - Linear Miles	1
RailRoad	Roads Interstate - Linear Miles	6
E Fire Planning Zone	Roads Major - Linear Miles	11
Mobile City Limits	Roads Minor - Linear Miles	65







Fire Planning Zone Mobile City Limits

#### Drive time in Minutes

- Less than 1
- 1 2
- 2 3
- 3 4
- 4 5 - 5 +

237





- Fire Station
  Police Station
  School Locations
  High Rise Building
  Government Buildings
  Hospital
  Airport
- Major Roads
- Minor Roads
- RailRoad
- Streams
- Parks
- Fire Planning Zone
- Mobile City Limits

Acres	2,819
Acres - Land	2,809
Acres - Water	10
Railroad - Linear Miles	1
Roads Interstate - Linear Miles	6
Roads Major - Linear Miles	11
Roads Minor - Linear Miles	65









Mobile City Limits

Structure Exposure Ris LOW >30 feet MEDIUM 10-30 feet

HIGH <10 feet

# Low Risk Sturctures	823
# Medium Risk Sturctures	3,343
# High Risk Sturctures	1,200









### 2020 Flood Zones

- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD
- COASTAL 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD



## **FIRE STATION 23 SIRMON**



**INSIDE CITY LIMITS** 



30.1

Median Black Male

Aqe

43.0

Median White Male

Age

# POPULATION (2022)

10.887 Total Population

18,926 Daytime Population

13,664 5,262 4.295.7 Daytime Population Daytime Population: Daytime Population: Density (Per Sq Mile) Workers Residents 5.448 4,544 208 Black/African White Population Other Race American Population Population 35.4 5.672 38.1 5,215 Male Median Male Female Median Female Population Age Population Age

31.7 Median Black Age

45.3

Female Age 47.6 Median White Age

Median White Female Age

33.0

Median Black









# **Freeman Station #1**

DISTRICT 4 6801 Overlook Rd Mobile AL 36618	EQUIPMENT Engine 1, Rescue 1, Brush 1	POPULATION Total: 13,979/2,4 Daytime: 11,038/3	.094* C	ZONE MAKEUP Residential/Light Commercial	
Calls fo	or Service	2020	2021	2022	
TOTAL		1,297	1,718	1,721	
Fire		52	69	74	
Overpressure Rupture, Explosion, Overheat (No Fire)		0	0	0	
Rescue & Emergency Medical Service Incident		1,114	1,479	1,492	
Hazardous Condition (No Fire)		9	10	10	
Service Call		33	35	37	
Good Intent Call		77	112	100	
False Alarm & False Call		8	12	7	
Severe Weather & Natural Disaster		2	1	0	

Special Incident Type

\* Outside of city limit in jurisdiction zone

1

0

2



7,045 Interstate Acres 7,022 Acres - Land Major Roads Acres - Water 22 Minor Roads Railroad - Linear Miles 1 RailRoad Roads Interstate - Linear Miles 0 Fire Planning Zone Roads Major - Linear Miles 25 Roads Minor - Linear Miles 85 Mobile City Limits



Fire Planning Zone 1

## **Drive Time in Minutes**

Print Date: 4/7/2021

N







- Police Station
- School Locations
  High Rise Building

Airport

- Government Buildings Hospital
- Parks
  - Mobile City Limits

Minor Roads

RailRoad

Streams

Acres	7,045
Acres - Land	7,022
Acres - Water	22
Railroad - Linear Miles	1
Roads Interstate - Linear Miles	0
Roads Major - Linear Miles	25
Roads Minor - Linear Miles	85





-	IVILDI		10-30	1
	HIGH	<1	0 feet	

# Low Risk Sturctures	2,241
# Medium Risk Sturctures	3,679
# High Risk Sturctures	620


School

# Structures - School

253

24





Mobile City Limits



#### 2020 Flood Zones



1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

# FIRE STATION 1 LLOYD J FREEMAN



#### **INSIDE CITY LIMITS**

Age

54.3

Median White Male

Age

# POPULATION (2022)

13,979 Total Population

11.038 Daytime Population

2,845 Daytime Populatior Workers	8,19 n: Daytime Po Resid	93 opulation: lents	1,002.6 Daytime Population Density (Per Sq Mile
10,009	3,07	76	199
Black/African American Population	White Pop	oulation	Other Race Population
6,578	35.9	7,400	39.8
Male Population	Median Male Age	Female Population	Median Female Age
34.1	35.	6	32.3

Median Black Median Black Age Median Black Male Female Age 61.1

58.1

Median White Age

Median White Female Age

Population by Age Seniors 65+17.6% Adults 18 to 6460.3% Children 17 & under<sup>22.1%</sup>







Interstate	Acres	1,790
—— Maior Roads	Acres - Land	1,778
Minor Roads	Acres - Water	11
	Railroad - Linear Miles	0
RailRoad	Roads Interstate - Linear Miles	0
Fire Planning Zone	Roads Major - Linear Miles	7
Mobile City Limits	Roads Minor - Linear Miles	13





N



Fire Planning Zone
Mobile City Limits

#### Drive time in Minutes

- Less than 1
- \_\_\_\_\_ 1 2
- \_\_\_\_\_ 2 3
- \_\_\_\_\_ 3 4
- 4 5 — 5 +















📕 Mobile City Limits



#### 2020 Flood Zones



1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

# FIRE STATION 1 LLOYD J FREEMAN



#### **OUTSIDE CITY LIMITS**

# POPULATION (2022)

1.349

2.408 Total Population

1,745

3.094 Daytime Population

1,105.8

Daytime Population Daytime Population: Daytime Population: Density (Per Sq Mile) Workers Residents 1,394 860 37 Black/African White Population Other Race American Population Population 38.3 1,209 42.8 1,199 Male Median Male Female Median Female Population Age Population Age

37.4

Median Black

Female Age

Female Age

35.9 Median Black Age

53.4

56.4 Median White Median White Age

34.1 Median Black Male Aqe

50.0 Median White Male Age





Total Businesses



266

# FIRE STATION 1 LLOYD J FREEMAN

#### INSIDE AND OUTSIDE CITY LIMITS





**FMPI OYMENT** 

58%

3.924

Total Employees



268



# **Edwards Station #6**

#### 代大帅 **DISTRICT 4 EQUIPMENT** POPULATION **ZONE MAKEUP** Engine 6, Rescue 6 Total: 25,377/6,067\* **Residential/Light 2525 Hillcrest Road** Daytime: 19,226/5,075\* Mobile AL 36609 Commercial **Calls for Service** 2020 2022 2021 TOTAL 1,297 1,718 1,721 52 69 Fire 74 0 Overpressure Rupture, Explosion, Overheat (No Fire) 0 0

Rescue & Emergency Medical Service Incident	1,114	1,479	1,492
Hazardous Condition (No Fire)	9	10	10
Service Call	33	35	37
Good Intent Call	77	112	100
False Alarm & False Call	8	12	7
Severe Weather & Natural Disaster	2	1	0
Special Incident Type	2	0	1

\* Outside of city limit in jurisdiction zone



- ----- Major Roads
- Minor Roads
- ---- RailRoad
- Fire Planning Zone
- Mobile City Limits

Acres	6,909
Acres - Land	6,883
Acres - Water	26
Railroad - Linear Miles	0
Roads Interstate - Linear Miles	0
Roads Major - Linear Miles	22
Roads Minor - Linear Miles	96



#### **Drive Time in Minutes**





Fire Planning Zone
Mobile City Limits

#### Drive time in Minutes

- Less than 1
- 2 3 3 - 4
- - 5 +





- Police Station
- School Locations
- High Rise Building Government Buildings
  - Hospital Airport

- Major Roads
   Minor Roads
- RailRoad
- Streams
- Parks
- Fire Planning Zone
- Mobile City Limits

1 tor o o	0,000
Acres - Land	6,883
Acres - Water	26
Railroad - Linear Miles	0
Roads Interstate - Linear Miles	0
Roads Major - Linear Miles	22
Roads Minor - Linear Miles	96





Fire Planning Zone Mobile City Limits

Structure Exposure Risk

MEDIUM 10-30 feet HIGH <10 feet

# Low Risk Sturctures	2,739
# Medium Risk Sturctures	5,437
# High Risk Sturctures	1,244



- Multi-Rresidential
- Multi-Use
- Residential
  - School

# Structures - Multi-Use

2

52

7,656



### Flood Zones





#### 2020 Flood Zones



1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD



# FIRE STATION 6 EDWARDS



INSIDE CITY LIMITS



# POPULATION (2022)

25,377 Total Population 19,226 Daytime Population

6,683 12,543 1,780.7 Daytime Population Daytime Population: Daytime Population: Density (Per Sq Mile) Workers Residents 7,266 15,256 422 Black/African White Population Other Race American Population Population 13.244 44.9 12,133 39.9 Male Median Male Female Median Female Population Age Population Age 35.7 37.1 34.0 Median Black Median Black Age Median Black Male

49.7 Median White Age Me

<mark>52.4</mark> Median White Female Age

Female Age

46.3 Median White Male Age

Age









Interstate	Acres	2,416
—— Maior Roads	Acres - Land	2,386
Minor Poads	Acres - Water	30
Willion Roads	Railroad - Linear Miles	0
RailRoad	Roads Interstate - Linear Miles	0
Fire Planning Zone	Roads Major - Linear Miles	12
Mobile City Limits	Roads Minor - Linear Miles	21



Drive Time in Minutes

















Flood Zones





#### 2020 Flood Zones



Mot

Fire Planning Zone

- 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD
- COASTAL 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

# **FIRE STATION 6 EDWARDS**



#### OUTSIDE CITY LIMITS



# POPULATION (2022)

6,067 Total Population 5,075 Daytime Population

1,344.0



Median Black Age

48.3 Median White Age 47.8 Median White

Female Age

Median Black

Female Age

49.0 Median White Male Age

Median Black Male

Aqe



#### **FMPI OYMENT** \*\*\*\*\*\*\*\*\*\*\* 82% White Collar 2.8% ė, ė 12% Blue Collar Unemployment i. 6% Rate Services INCOME \$94.881 \$46,374 \$273.912 Median Household Per Capita Median Net Income Income Worth HOUSEHOLD INCOME 0 100 200 300 400 500 т 9.3% 200000+ 17.5% 150000-199999 100000-149999 20.6% 75000-99999 15.9% 10.8% 50000-74999 35000-49999 13.6% 25000-34999 3.8% 15000-24999 6.7% 0-14999 1.9% **EDUCATION** 4% 32% 36% No High School High School Bachelor's/Grad/Prof Some Diploma Graduate Degree College **BUSINESS** 201 1.635

Total Employees


### **FIRE STATION 6 EDWARDS**

INSIDE AND OUTSIDE CITY LIMITS



### Unemployment 7% Rate INCOME \$40,990 \$122,246 Per Capita Median Net Income Worth HOUSEHOLD INCOME 1,000 2,000 3,000 . 7.1% 9.4% 15.3% 12.3% 19.6% 12.9% 6.8% 7.8% 8.8% **EDUCATION** 30% 24% 42% High School Bachelor's/Grad/Prof Some Graduate Degree College

**FMPI OYMENT** 

74%

19%

3.1%

### **BUSINESS**

6.615 Total Employees





# **Tapia Station #22**

DISTRICT 4 4710 Airport Blvd Mobile AL 36608	EQUIPMENT Engine 22, Rescue 22, Truck 5, Sprint 5	POPULATION Total: 31,112 Daytime: 43,96	ZO Resi 9 C	NE MAKEUP dential/Light ommercial
Calls for Service		2020	2021	2022
TOTAL		4,519	5,143	4,984
Fire		254	207	244
Overpressure Rupture, Explosion, Overheat (No Fire)		2	5	3
Rescue & Emergency Medical Service Incident		2,776	3,434	3,318

Hazardous Condition (No Fire) Service Call **Good Intent Call** False Alarm & False Call Severe Weather & Natural Disaster **Special Incident Type** 



- ----- Interstate
- —— Major Roads
- Minor Roads
- ---- RailRoad
- Fire Planning Zone
- Mobile City Limits

Acres	6,425
Acres - Land	6,389
Acres - Water	36
Railroad - Linear Miles	0
Roads Interstate - Linear Miles	4
Roads Major - Linear Miles	25
Roads Minor - Linear Miles	107



**Drive Time in Minutes** 



N



Fire Planning Zone
Mobile City Limits

Г

### Drive time in Minutes

- Less than 1
- 1 2
- \_\_\_\_\_ 2 3
- \_\_\_\_\_ 3 4













Flood Zones



Fire Planning Zone

Mobile City Limits



### 2020 Flood Zones



1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

0.2 PCT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

### FIRE STATION 22 TAPIA



### INSIDE CITY LIMITS

## POPULATION (2022)

31,112 Total Population 43,969 Daytime Population



39.7 Median White Age 42.8 Median White Female Age Age 37.5

Median White Male Age



#### **FMPI OYMENT** \*\*\*\*\*\*\*\*\*\*\* 70% White Collar 4.6% in in in 16% Blue Collar Unemployment <u>i i i</u> 14% Rate Services INCOME \$47.068 \$32,108 \$16,406 Median Household Per Capita Median Net Income Income Worth HOUSEHOLD INCOME 0 1,000 2,000 4.0% 200000+ 150000-199999 3.9% 100000-149999 12.5% 75000-99999 11.1% 50000-74999 16.2% 35000-49999 15.1% 25000-34999 11.2% 15000-24999 11.0% 14.9% 0-14999 **EDUCATION** 6% 30% 24% 41% No High School High School Bachelor's/Grad/Prof Some Diploma Graduate Degree College

## BUSINESS



25.598

Total Employees

ses



302



# **Public Safety Complex #26**

## 

DISTRICT 4 8080 Airport Blvd Mobile AL 36608



EQUIPMENT Engine 26, Truck 27, Sprint 27, Water Tanker 36, District 4

## 代大帅

POPULATION Total: 876/25,167\* Daytime: 6,663/18,018\* л<sup>6</sup>1,

ZONE MAKEUP Residential/Light Commercial

Calls for Service	2020	2021	2022
TOTAL	4,519	5,143	4,984
Fire	254	207	244
Overpressure Rupture, Explosion, Overheat (No Fire)	2	5	3
Rescue & Emergency Medical Service Incident	2,776	3,434	3,318
Hazardous Condition (No Fire)	95	79	92
Service Call	439	500	468
Good Intent Call	670	675	597
False Alarm & False Call	257	239	256
Severe Weather & Natural Disaster	8	2	1
Special Incident Type	18	2	5

\* Outside of city limit in jurisdiction zone



Interstate Acres 3,900 3,891 Acres - Land Major Roads Acres - Water 8 Minor Roads Railroad - Linear Miles 0 RailRoad Roads Interstate - Linear Miles 0 Fire Planning Zone Roads Major - Linear Miles 11 Roads Minor - Linear Miles 14 Mobile City Limits



Mobile City Limits

### Drive time in Minutes

- Less than 1
- 1 2
- 2 3
- 3 4
- 4 5 - 5 +





- Police Station
- School Locations
- High Rise Building Government Buildings
  - Hospital
    - Airport

- Major Roads — Minor Roads
- RailRoad
- Streams
- Parks
- Fire Planning Zone
- Mobile City Limits

Acres	3,900
Acres - Land	3,891
Acres - Water	8
Railroad - Linear Miles	0
Roads Interstate - Linear Miles	0
Roads Major - Linear Miles	11
Roads Minor - Linear Miles	14









### 2020 Flood Zones

0.2 PCT ANNUAL CHANCE FLOOD HAZARD

1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD



### FIRE STATION 26 PUBLIC SAFETY COMPLEX



### **EMPLOYMENT** \*\*\*\*\*\*\*\*\*\* 71% White Collar 2 99 ġ ġ ġ ġ 20% Blue Collar Unemployment 10% Rate Services INCOME \$53.869 \$29.004 \$55 752 Median Household Per Capita Median Net Income Income Worth HOUSEHOLD INCOME 0 20 40 60 80 200000+ 1.2% 150000-199999 6.9% 100000-149999 15.9% 75000-99999 7.8% 50000-74999 23.7% 35000-49999 17.4% 25000-34999 6.6% 15000-24999 5.7% 0-14999 15.0% **EDUCATION** 7% 37% No High 29% School High School Some Bachelor's/Grad/Prof Diploma Graduate College Degree **BUSINESS** 405 5,542 Total Businesses Total Employees

Adults 18 to 6459.8%

Children 17 & under<sup>24.6%</sup>





Interstate Acres 11,717 Acres - Land 11,116 Major Roads Acres - Water 600 Minor Roads 0 Railroad - Linear Miles RailRoad 0 Roads Interstate - Linear Miles Fire Planning Zone Roads Major - Linear Miles 31 Roads Minor - Linear Miles 109 Mobile City Limits

Fire Planning Zone 26A





Fire Planning ZoneMobile City Limits

Drive time in Minutes

- Less than 1
- 1 2
- 2 3 3 - 4





Historic Site 0 Interstate 0 Fire Station Major Roads **Police Station** Minor Roads Û RailRoad School Locations 血 High Rise Building Streams **Government Buildings** Parks Hospital Fire Planning Zone Airport Mobile City Limits

Acres	11,717
Acres - Land	11,116
Acres - Water	600
Railroad - Linear Miles	0
Roads Interstate - Linear Miles	0
Roads Major - Linear Miles	31
Roads Minor - Linear Miles	109



Fire Planning Zone 26A

Structure Exposure Risk



N



Fire Planning Zone
Mobile City Limits

Structure Exposure Risk

LOW >30 feet MEDIUM 10-30 feet HIGH <10 feet

# Low Risk Sturctures	4,268
# Medium Risk Sturctures	5,005
# High Risk Sturctures	1,413



Fire Planning Zone 26A

Flood Zones





### 2020 Flood Zones

0.2 PCT ANNUAL CHANCE FLOOD HAZARD

1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD

COASTAL - 1.0 PERCENT ANNUAL CHANCE FLOOD HAZARD



### FIRE STATION 26 PUBLIC SAFETY



### OUTSIDE CITY LIMITS



## POPULATION (2022)

25,167 Total Population 18,018 Daytime Population

12,867 984.1 5,151 Daytime Population Daytime Population: Daytime Population: Density (Per Sq Mile) Residents Workers 5,153 16,713 534 Black/African White Population Other Race American Population Population 36.7 13,088 39.2 12,078 Male Median Male Female Median Female Population Age Population Age

31.8 Median Black Age

42.5

Median White Age

Median Black Female Age 43.9

32.7

Median White Female Age 30.2 Median Black Male Age

41.1 Median White Male Age



### **FMPI OYMENT** \*\*\*\*\*\*\*\*\*\*\* 68% White Collar 4.8% **à à à à** 21% Blue Collar Unemployment <u>à à</u> 10% Rate Services INCOME \$67.256 \$34,125 \$145.029 Median Household Per Capita Median Net Income Income Worth HOUSEHOLD INCOME 2,000 0 1,000 5.1% 200000+ 150000-199999 8.3% 100000-149999 17.6% 75000-99999 13.9% 21.9% 50000-74999 35000-49999 11.9% 25000-34999 6.8% 15000-24999 7.1% 7.4% 0-14999 **EDUCATION** 7% 29% 32% 31% No High School High School Bachelor's/Grad/Prof Some Diploma Graduate Degree College **BUSINESS** 398 3.570

Total Employees



### FIRE STATION 26 PUBLIC SAFETY COMPLEX

INSIDE AND OUTSIDE CITY LIMITS

**FMPI OYMENT** 

68%

21%

10%

4.8%

Unemployment

Rate

\$140,800

Median Net

Worth

2,000

17.6%

22.0%

31%

Bachelor's/Grad/Prof

Degree

9.112

Total Employees

13.7%

12.1%

30%

Some

College




# 2. Standard of Cover

# 2.1 Contributing Factors

# **MFRD** History

As the oldest city in Alabama, Mobile was founded as the capital of colonial French Louisiana in 1702 and has a rich past spanning centuries. French, British, Creole, Catholic, Greek, and African legacies have affected everything from architecture to cuisine, creating a miniature melting pot in the Port city.

In 1819, Alabama became the 22<sup>nd</sup> state in the Union. As Mobile began to organize more it became apparent that there was a significant need to protect life and property. The first volunteer fire department was formed in that same year, 1819,



with the creation of Creole Steam Fire Company No. 1 and followed closely by Neptune Engine Fire Company No. 2.

A city ordinance in 1825 called for the election of 12 Fire Wardens annually, who would supervise the extinguishment of fires. Starting in 1839 and for years to come April 9<sup>th</sup> would become the Fireman's Day Parade and would even rival the popularity of the famous Mardi Gras for a few years. In 1873 the first fire alarm telegraph was received.

With all the great Mobile Fire Department milestones of the 1800's the most important one was on September 1, 1888, with the adaptation of Mobile's first paid fire department. The department would comprise of one hook and ladder truck, three steam engines, three hose carriages in reserve, eleven horses, eleven sets of harnesses, eighteen men and the first Fire Chief, Matthew E. Sloan at the helm to lead them.

The early 1900's saw some great advancements as well as the honored recognition of winning the fastest responding department in the state in 1901. In 1923, MFD was able to boast an incred-



ible achievement of its time, becoming an all-motorized department, retiring its last horse drawn carriage. With another leap forward, MFD began installing radios in the first fire trucks in 1950.

The late 1900's was marked with incredible departmental advancements. In 1962, the Bureau of Fire Prevention was created. Then the Paramedic program was established in 1975, the Hazardous Material Unit in 1985, High Angle and Confined Space Res-



cue Team in 1992, Urban Search and Rescue Team (USAR), Alabama Task Force One in 2002, and a Homeland Security/Special Operations Unit in 2006.

In the last few years, Mobile Fire Rescue has added 10 new fire engines and 3 new ladder trucks. On top of that we have built 4 new fire stations, expanded are supply offices to a 25,000 square foot warehouse, and submitted plans for building a brand-new state of the art training center and burn tower. However, all this pales in comparison to how incredible it was

to see all of our personnel come together and work towards the single goal of becoming an ISO 1 rated department. In 2018, we joined the 0.71% of all departments surveyed to gain a 1 rating.

With such a long and storied history of achievements and advancements we still believe the best that Mobile Fire Rescue has to offer is still yet to come. We continue to push the technological boundaries to make are responses quicker and give our firefighters more information en route so they are better prepared for any emergency that may arise. We continue to advance with gear that's more responsive and training that's more comprehensive. We intend to make every effort to give our personnel the advantage in all aspects of the job. Mobile Fire Rescues mission is to continue to live up to our long-standing history of extraordinary service to community with top-of-the-line equipment and highly trained crews.

# Mobile Fire-Rescue Department Milestones

1839	Two major conflagrations occurred this year just two days apart. The first destroyed eleven squares or forty-four blocks. The second destroyed the Planters
	and Merchants Bank, Madison House, New Hotel and the Post Office.
1940	The City enters into a contract with Albert Stein to supply water to the City. This
1040	is considered to be Mobile's first successful public water system.
1072	Mobile received its first Fire Alarm Telegraph. This system was an old system
1873	purchased from Syracuse, New York.
1888	The City of Mobile establishes its First Paid Professional Fire Department.
1923	Last Horse drawn Apparatus retired and replaced with all Motorized equipment.
1939	Civil Service Board created by State Law.
1961	MFD Hires first Black Firefighter.
1962	Bureau of Fire Prevention established.
1065	Work schedule changed from 72 hours per week to 56 hours.
1903	MFD Commissions first Fire Boat
	Training Center and Drill Tower Built.

1971	Integrated Fire Department.		
1975	Established Paramedic Program.		
1985	Hazardous Materials Company/Unit Established.		
1097	Computer Aided Dispatching Established.		
1987	First Female Firefighter hired		
1088	MFD Celebrates Centennial.		
1700	First fully enclosed fire apparatus purchased.		
1989	Incident Command System adopted.		
1991	New Ambulances Purchased and ALS Transport by Firemedics begins.		
1992	Technical Rescue Team established.		
1993	Amtrak Disaster, 47 people killed.		
1994	800 Megahertz Trunking Radio System Installed.		
1998	New Station 1 Opened.		
1999	New Station 7 Opened.		
2002	Urban Search & Rescue Team (USAR) Alabama Task Force 1 Established.		
2003	"Matt Sloan" Station 2 Closed and Torn Down.		
2004	Wellness/Fitness Program Implemented		
2005	USAR Takes delivery of two new tractor trailer rigs and one bus.		
	New Fireboat "Phoenix" Commissioned.		
2006	New Homeland Security/Special Operations Division created.		
2000	Central Station Historical room opened on 2nd floor.		
	Natural gas generators installed at stations.		
2007	Citizens Academy program begins.		
	District 4 reactivated bringing back the number of fire districts in the city to four		
2008	once again.		
	New 24' rigid hull inflatable (RHI) boat placed on duty.		
	Firefighters Safety Foundation established.		
2000	Bureau of Fire Prevention and Supply move into new 25 thousand square foot		
2009	warehouse/office Complex.		
	Drive Cams placed in venicles.		
2011	Station 26, Public Safety Complex opened		
2012	Station 28, Berger Station opened		
2018	Christened \$3.1M Crichton Station 12 in Crichton Community		

2018	Achieved Class-1 rating from Insurance Services Office (ISO)
2010	Partners with Veterans Recovery Resources, implementing peer support teams,
2019	focusing on stress management and positive mental health
2020	Mobile Airport Authority announces transition to private fire/rescue staffing at
2020	airports, officially ending contract with MFRD
2021	Grand-opening for Station 18 in Spring Hill community, replacing previously
2021	demolished station (Aug 2019)

# Department Organization and Staffing

The department's origins can be traced back to 1819 when the city organized its first volunteer fire department. In 1825 a city ordinance was adopted that called for the election of 12 Fire Wardens annually, who would supervise the extinguishment of fires. Then on September 01, 1888, the City of Mobile's formed its first paid fire department. The services provided by the department have expanded over its 202-year history transforming it into the all-hazards organization it is today.



The governmental structure of the city has also evolved over this same time period. Resulting in the current Mayor-Council form of government we currently operate under. Since 1985 the government of Mobile has consisted of a mayor and a seven-member city council. The mayor is elected at-large, and the council members are elected from each of the seven-city council single-member districts. A supermajority of five votes is required to conduct council business. This form of city government was chosen by the voters after the previous form of government, which had three city commissioners, each elected at-large, was ruled in 1975 to dilute the minority vote and violate the Voting Rights Act. Under the administrative direction of the Mayor, the Fire Chief manages the fire department through a subordinate executive staff.

# MFRD Resource Types and Staffing

# Table 21. Staffing

Resource Type	Description	Number of Units	Staffing Per Unit	Full-Time On-Duty Staffing
Deputy Chief	SUV	3	1	1
District Chief	SUV	9	1	3
Engine Company	1500 GPM	19	Min: 3 Max: 4	57 – 76*
Ladder Company	3 Platform 3 Stick	6	Min: 3 Max: 4	18-24*
Ambulance	ALS Transport	11	2 Para- medics	22
Hazmat	E-One	1	Min: 2 Max: 4	8**
Technical Rescue	E-One	2	Min: 2 Max: 4	8**
Marine Response	1 Suppression 1 Transport/Rescue	2	Min: 2 Max: 4	8**
Water Rescue	Flood Water Truck	2	Min: 2 Max: 4	8**
Brush Trucks (Wildland)	4 Wheel Drive/ with pump	2	1	6
Tanker	2000 Gal	1	1	3
Sprint EMS Vehicles	Quick Response Unit	2		
Cascade Unit	Trailer Unit	1	0	0
Rehab/ Mobile Command	Ford F59	1	0	0
Foam Supply	Trailer	1	0	0
Reserve District Vehicles	SUV	4	0	0
Mini Pumper (Reserve)	F550	2	0	0
Reserve Pumpers	E-One	7	0	0
Reserve Ladders	E-One	2	0	0
Reserve Ambulances	ALS Transports	7	0	0
TOTAL		85		110 - 135

\*Engine and Ladder Staffing fluctuates daily based on staffing/overtime / \*\*Units are cross manned and available for dispatch

# 2.2 Consistent Provision of Services Across the Jurisdiction

The Mobile Fire-Rescue Department is committed to providing the highest level of services in an equitable fashion to all areas we serve. In order to quantify the services provided the department measures its performance against established benchmarks.

# Service Provision Methodology

Conducting a community risk assessment allows the department to develop an accurate picture of the levels, types, and locations of risks within the jurisdiction. The standard of cover process allows us to analyze resource availability to handle the identified risks. The department utilized a five-step procedure to approach this task:

- 1. Conduct a critical task analysis for each type of service provided at each risk level
- 2. Measure baseline performance for each type of service provided at each risk level across the entire jurisdiction and within each individual planning zone.
- 3. Determine baseline objectives for each type of service provided at each risk level.
- 4. Analyze performance against established benchmarks
- 5. Develop goals and objectives to address identified deficiencies.

# 2.3 Deployment Considerations

# Computer Aided Dispatch System (CAD)

The Mobile County Communications District (MCCD) houses call takers and dispatch centers for all public safety agencies within the county. The City of Mobile maintains its own dispatchers for both police and fire within this facility and a third unit processes all calls for service within the county, but outside of the City's jurisdiction. The 911 center uses Intergraph software to receive emergency calls, create events and route the appropriate agency(s). This software uses GPS location and time travel estimates to recommend unit response. Unit capability is also tracked and considered in the dispatch process.

# **Unit Types and Staffing**

The Deputy Chief Unit is staffed with one certified firefighter

The District Chief Units are staffed with one certified firefighter

Rescue Units (ALS Ambulances) are staffed with two certified firefighters, both paramedics

Ladder Companies are staffed with a minimum of three certified firefighters

Engine Companies are staffed with a minimum of three certified firefighters

On-Duty Investigator position is staffed with one certified firefighter

All specialized units (Hazmat, Technical Rescue, Marine Response, Water Rescue, Wildland) are cross staffed with the crews assigned to the station in which they are housed. All personnel assigned to these units are trained and certified in the specialized skills for that particular discipline.

Resource Type	Num- ber of Units	Mini- mum Staffing	Personnel	Apparatus Capacity
Pumper	19	3	Officer, Driver, Firefighter	Minimum 1500 GPM with 500G Booster
Ladder	6	3	Officer, Driver, Firefighter	3 Sticks/ 3 Platforms
Ambulance	11	2	Paramedics	ALS Transport
District Chief	3	1	District Chief	Command Vehicle
Deputy Chief	1	1	Shift Deputy	Command Vehicle
Investigator	1	1	Investigator	Command Vehicle

# Table 22. Staffing

#### **Response Levels**

- Single Resource Incident (Low) Events that are minor in intensity. Can be effectively managed by a single resource and crew.
- Double Resource Incident (Low-Moderate) Events that are minor to moderate in

intensity. Can be effectively managed by two resources and crews.

- Full Response Incident (Moderate-High) Events that are moderate to high in intensity and require three to six resources and crews to effectively managed.
- Multi-Alarm Response (High-Maximum) Events that are high to maximum in intensity and require two full response assignments or greater.

# Table 22. Response Plan

Risk Level	Response Level	Response Plan	
Low Risk	Single Response	1 Unit Engine Ambulance	
	Double Response	2 Units 1 Engine, 1 Ambulance	
Moderate Risk	Full Response	<b>3 to 6 Units</b> 1-3 Engines 1-Ladder 1-2 Ambulances 1 District Chief	
High Risk	Full Response Plus	<b>6 to 8 Units</b> 1-5 Engines 1-2 Ladders 2 or More Ambulances 2 District Chiefs	
Maximum Risk	Multi-Alarm	<b>11 or More Units</b> 6 or More Engines 2 or More Ladders 2 or More Ambulances 2 or More District Chiefs	

# Resiliency

Resiliency is the ability of a system or organization to respond to or recover readily from a crisis or disruptive event. By planning for system resiliency, the MFRD can ensure daily operations are maintained during major events that stress resource availability.

Resiliency consists of three major components:

- *Resistance:* The ability to deploy only the resources necessary to safely mitigate on incident
- *Absorption:* The ability to quickly add resources during times of heavy call volume or high magnitude events.
- *Restoration:* The ability to quickly return to normalcy by placing units back in service.

MFRD manages resiliency through a combination of response policy and the CAD dispatch system. Resistance is managed by the stepped approach to resource use based on initial information and on-scene reports from responding units. Depending on the information received the initial dispatch can be single, double or full. Multi-alarms can only be called for by an on-scene unit to ensure staging is appropriately managed. Absorption is accomplished by upgrading responses once on-scene unit have completed a size-up of the incident and determined additional resources will be required to mitigate the event. The system has the ability to conduct a full or partial off duty call back and to activate reserve apparatus to increase on-scene resources or backfill stations until the incident is under control. Reserve apparatus are maintained in an operational state of readiness and can be staffed with callback personnel.

The time and order of restoration is done at the discretion of the incident commander and prompted during command debriefings. Relocated companies are tracked by the communications center and are returned to their own primary response area as coverage is restored. Preparing the crew, apparatus, and equipment to a condition to allow for the return to in-service status is prioritized once units are released from the incident.

# 2.4 Critical Task Analysis

# **Fire Suppression**

# Low Resource Fire Incidents

Low resource fires usually involve the response of single fire units with pump capabilities. These types of fire incidents should normally be minor in intensity, size or scope and effectively handled by one company. Low resource fires usually involve brush, dumpster, or vehicles fires with no exposure threats to structures. The following tables depicts the critical tasking and staff necessary for mitigation and the resources assigned to low resource fires incidents.

Tables 23 & 24. Critical Task Analysis for Low Resource Fire Incidents

Critical Task	Minimum Personnel
Command	1
Pump Operator	1
Attack Line	1
Total Personnel Needed	3
Units Dispatched	Personnel
Engine Company (1)	3
Total Personnel Dispatched	3

# **Moderate Resource Fire Incidents**

Moderate resource fires typically involve the response of a primary first response assignment. These types of incidents are usually confined to a single room or involve only contents. Moderate resource fires usually involve single family residences with little risk of extension to surrounding exposures. The following tables depict the critical tasking and staff necessary for mitigation and the resources assigned to moderate resource fire incidents.

Tables 25 & 26. Critical Task Analysis for Moderate Resource Fire Incidents

Critical Task	Minimum Personnel
Command/Accountability	1
Safety/Monitoring	1
Fire Attack/Water Supply	3
Utilities/Ventilation/Ground Ladders	3
Search & Rescue/Forcible Entry	2
Back-Up Line	2
RIC	3
Total Personnel Needed	15

Units Dispatched	Personnel
District Chief (2)	2
Engine Company (3)	9
Ladder Truck (1)	3
Ambulance (1)	2
Total Personnel Dispatched	16

# **High Resource Fire Incidents**

Like moderate resource fires, high resource fires also involve an initial full primary alarm assignment, but with the addition of one engine, one ladder truck, and one ambulance. High resource fires have the potential to involve an entire structure and exposures. Often, high resource fires will involve the request for additional alarm assignments, though those additional resources are not reflected in the Critical Task Analysis. The following tables depict the critical tasking and staff necessary for mitigation and the resources assigned to high resource fire incidents.

Tables 27 & 28. Critical Task Analysis for High Resource Fire Incidents

Critical Task	Minimum Personnel
Command	1
Accountability/Safety	1
Water Supply	2
Fire Attack	4
Back-Up Line	2
Utilities/Ventilation/Ground Ladders	4
Search & Rescue/Forcible Entry	4
RIC	4
Medical/Rehab	2
Total Personnel Needed	24

Units Dispatched	Personnel
District Chief (2)	2
Engine Company (4)	12
Ladder Truck (2)	6
Ambulance (2)	4
Total Personnel Dispatched	24

**Maximum Resource Fire Incidents** 

Maximum resource fire incidents involve high resource fires incident responses with additional alarm assignments. This may also include the recalling of off-duty personnel and staffing reserve apparatus as additional companies to maintain sufficient coverage across the jurisdiction. The following tables depict the critical tasking and staff necessary for mitigation and the resources assigned to maximum resource fire incidents.

Tables 29 & 30. Critical Task Analysis for Maximum Risk Fire Incidents

Critical Task	Minimum Personnel
Command	2
Accountability/Safety	1
Water Supply	2
Fire Attack	6
Back-Up Line	2
Utilities/Ventilation/Ground Ladders	4
Search & Rescue/Forcible Entry	4
RIC	4
Medical/Rehab	2
Total Personnel Needed	27

Units Dispatched	Personnel
District Chief (3)	3
Engine Company (5)	15
Ladder Truck (2)	6
Ambulance (2)	4
Total Personnel Dispatched	28

# **Emergency Medical Incidents**

All MFRD certified firefighters are required to be at a minimum, National Registry licensed EMTs. Personnel assigned to rescue units (ambulances) are licensed to the paramedic level. As a fire department-based EMS provider MFRD focuses on Advanced Life Support calls and contracts with private service providers to cover most BLS calls. However, most BLS calls still receive an engine company response and can be upgraded as needed.

#### Low Resource EMS Incidents

Low resource EMS events involve the response of a single unit with appropriate EMS training and equipment for the type of call at dispatch. These types of are of a size or scope that can be ef-

fectively handled by one unit. Low resource EMS incidents usually involve minor injuries, falls, or public assistance events. The following tables depicts the critical tasking and staff necessary for mitigation and the resources assigned to low resource EMS incidents.

Tables 31 & 32. Critical Task Analysis for Low Resource EMS Incidents

Critical Task	Minimum Personnel
Treatment	1
Administrative	1
Total Personnel Needed	2

Units Dispatched	Personnel
Engine or Ambulance	2-3
Total Personnel Dispatched	2-3

#### **Moderate Resource EMS Incidents**

Moderate resource EMS events typically require the dispatch of the closest fire suppression and ALS transport units. These types of incidents usually involve a single critical patient. The following tables depict the critical tasking and staff necessary for mitigation and the resources assigned to moderate resource EMS incident.

Table 33 & 34. Critical Task Analysis for Moderate Resource EMS Incidents

Critical Task	Minimum Personnel
Command	1
Treatment	2
Administrative	1
Transport	1
Total Personnel Needed	5

Units Dispatched	Personnel
Engine Company (1)	3
Ambulance (1)	2
Total Personnel Dispatched	5

# **High Resource EMS Incidents**

High resource EMS incidents usually involve several injured/ill patients or involve patients separated by geographical restriction that require multiple site operations. These type incidents require, when not pre-identified during dispatch, an upgrade to a primary response, *(see moder-ate resource fire incident)*. High resource EMS incidents have the potential to involve both ALS and BLS level patients. Often, high resource EMS events will involve the request for additional alarm assignments, though those additional resources are not reflected in the Critical Task Analysis. The following tables depict the critical tasking and staff necessary for mitigating most high resource EMS events and the resources assigned during initial dispatch.

Tables 25 & 26	Critical	Tack Anal	vois for	High I	Dagaturaa	EMC	Incidents
<i>Tubles 33 &amp; 30.</i>	Criticai	Iusk Anui	ysis jor	ingn i	Resource	LIVID	inciaenis

Critical Task	Minimum Personnel
Command	1
Accountability/Safety	1
Treatment	4
Triage	2
Transport	2
Total Personnel Needed	10

Units Dispatched	Personnel
District Chief (2)	2
Engine Company (3)	9
Ambulance (2)	4
Total Personnel Dispatched	15

#### **Maximum Resource EMS Incidents**

Maximum resource medical emergencies are events that require enough resources to triage, treat, and transport multiple patients or may require complex rescues. Many of these incidents may be of size and/or complexity to require a multi-alarm response similar to a large structure fire. These types of events may also include the recalling of off-duty personnel and staffing reserve apparatus as additional companies to maintain sufficient coverage across the jurisdiction. The following tables depict the critical tasking and staff necessary for mitigation and the resources assigned to maximum resource EMS incidents.

Tables 37 & 38. Critical Task Analysis for Maximum Resource EMS Incidents

Critical Task	Minimum Personnel
Command	2
Accountability/Safety	1
Staging	1
Treatment	14
Triage	3
Transport	4
Medical/Rehab	2
Total Personnel Needed	27

Units Dispatched	Personnel
District Chief (3)	3
Engine Company (4)	12
Ladder Truck (1)	3
Ambulance (2)	4
BLS Unit (3)	6
Total Personnel Dispatched	28

# **Hazardous Materials Incidents**

#### Low Resource Hazardous Material Incidents

Limited emergencies that can be controlled by a single unit response. Incidents that are confined to a small area and do not require evacuation measures outside of the structure or immediate area. These incidents do not require greater than level C protection.

Tables 39 & 40. Critical Task Analysis for Low Resource Hazmat Incidents

Critical Task	Minimum Personnel
Command/Safety	1
Mitigation	2
Total Personnel Needed	3

Units Dispatched	Personnel
Engine	3-4
Total Personnel Dispatched	3-4

# **Moderate Resource Hazardous Materials Incidents**

Limited emergency incident that can be controlled by a full response. The incident is confined to a small area and does not require evacuation measures outside of the immediate area. These incidents do not require greater than level C protection.

Tables 41 & 42. Critical Task Analysis for Moderate Resource Hazmat Incidents

Critical Task	Minimum Personnel
Command/Accountability	1
Safety	1
Water Supply	2
Mitigation	2
Decontamination	2
Rehab	2
Monitoring	1
Total Personnel Needed	11

Units Dispatched	Personnel
District Chief	1
Engine Company (2)	6-8
Ambulance (1)	2
Ladder Truck	3-4
Total Personnel Dispatched	11-14

#### **High Resource Hazardous Materials Incidents**

Incidents involving greater hazards or larger area which poses an increased threat to life, property, the environment, or economic stability. May require limited evacuation of the surrounding area or shelter in place orders. Level B or A protective equipment may be necessary to mitigate.

Tables 43 & 44. Critical Task Analysis for High Resource Hazmat Incidents

Critical Task	Minimum Personnel
Command	1
Safety	1
Accountability	1
Water Supply	4
Mitigation	4
Decontamination	2
Rehab	2
Monitoring	1
Research	2
Evacuation	2
Total Personnel Needed	20

Units Dispatched	Personnel
District Chief (2)	2
Engine Company (4)	12-16
Ambulance (2)	4
Ladder Truck	3-4
Total Personnel Dispatched	21-24

#### Maximum Resource Hazmat Incidents

Incidents involving an extremely hazardous substance (EHS) or large geographic area which pose an extreme threat to the community and will require large area evacuations. Level A and B protective equipment may be necessary to mitigate.

Tables 45 & 46. Critical Task Analysis for Maximum Resource Hazmat Incidents

Critical Task	Minimum Personnel
Command	1
Safety	1
Accountability	1
Water Supply	4
Entry Team	4
Entry Team Support	2
Rapid Intervention Team	2
Decontamination	2
Medical Evacuation	2
Rehab	4
Monitoring	1
Research	2
Evacuation	2
Total Personnel Needed	28

Units Dispatched	Personnel
District Chief (2)	2
Staff Support (4)	4
Engine Company (5)	15-20
Ambulance (2)	4
Ladder Truck (2)	6-8
Total Personnel Dispatched	31-38

# **Technical Rescue Incidents**

Technical rescue covers multiple disciplines that require specialized training and equipment. MFRD has a dedicated technical rescue program and is the host agency for the State of Alabama's Type I Urban Search and Rescue Team.

# Low Resource Technical Rescue Incidents

Minor rescue situations that can be handled by a standard engine or ladder company.

Tables 47 & 48. Critical Task Analysis for Low Resource Technical Rescue Incidents

Critical Task	Minimum Personnel
Command/Safety	1
Rescue	2
Total Personnel Needed	3

Units Dispatched	Personnel
Engine/Ladder	3-4
Total Personnel Dispatched	3-4

# **Moderate Resource Technical Rescue Incidents**

Rescue can be accomplished with a double resource response. Incident may require specialized equipment.

Tables 49 & 50. Critical Task Analysis for Moderate Resource Technical Rescue Incidents

Critical Task	Minimum Personnel
Command/Safety	1
Rescue	2
Medical	2
Scene Control	2
Total Personnel Needed	7

Units Dispatched	Personnel
District Chief	1
Engine (1)	3-4
Ladder (1)	3-4
Ambulance (1)	2
Total Personnel Dispatched	9-11

# **High Resource Technical Rescue Incidents**

Complex rescue incidents that require higher levels of training and equipment. This type of incident will require specialized technical rescue units.

Tables 51 & 52. Critical Task Analysis for High Resource Technical Rescue Incidents

Critical Task	Minimum Personnel
Command	1
Safety/Accountability	2
Operations Officer	1
Entry Team	2
Back-up Team	2
Medical	2
Monitoring	1
Equipment set-up	4
Total Personnel Needed	15

Units Dispatched	Personnel
District Chief	1
Engine (2)	6-8
Technical Rescue Unit	4
Ladder (1)	3-4
Ambulance (1)	2
Staff Support	2
Total Personnel Dispatched	18-21

# Maximum Resource Technical Rescue Incidents

Rescue conditions involving severe hazards, mass casualties, or large areas. These types of incidents require large scale efforts and may require multiple operational periods.

Critical Task	Minimum Personnel
Command	1
Safety/Accountability	2
Operations Officer	1
Squads (4)	16
Medical	6
Logistics	4
Hazard Control	4
Search	4
Communications	2
Planning	2
Total Personnel Needed	42

Units Dispatched	Personnel
District Chief	1
Engine (2)	6-8
Technical Rescue Unit	4
Ladder (1)	3-4
Ambulance (2)	4
US&R Support	36
Total Personnel Dispatched	54-57

# **Marine/Shipboard Incidents**

#### Low Resource Marine/Shipboard Incidents

Low resource marine/shipboard incidents involve the response of one chief officer and the nearest pumper or truck company. Vehicles in surface water and vessels accessible by land are considered low resource incidents. The following table displays the critical tasking needs for low resource water rescues.

Tables 55 & 56. Critical Task Analysis for Low Resource Marine/Shipboard Incidents

Critical Task	Minimum Personnel
Command/Safety	1
Driver/Operator	1
Rescue	2
Total Personnel Needed	4

Units Dispatched	Personnel
District Chief	1
Engine/Ladder	3-4
Total Personnel Dispatched	4-5

## **Moderate Resource Marine/Shipboard Incidents**

Moderate resource Marine/Shipboard rescues are considered search and rescue operations conducted from the water. These operations are conducted using Marine 20 and Fire Boat 2. The following table displays the minimum response model for moderate resource water incidents.

Tables 57 & 58. Critical Task Analysis for Moderate Resource Marine/Shipboard Incidents

Critical Task	Minimum Personnel
Command/Safety	2
Boat Pilot	1
Boat crew member	3
Rescue	3
Boat Operator	1
Total Personnel Needed	10

Units Dispatched	Personnel
District Chief	1
Fire Boat 2	3-4
Engine Company	3-4
Marine 20	3-4
Total Personnel Dispatched	10-13

# **High Resource Marine/Shipboard Incidents**

High resource Marine/Shipboard are considered incidents that require resources from land and water. These incidents require a full first alarm response as well as moderate level Marine/Shipboard Incident response. The incidents are typically pleasure craft fires at docks or shorelines. The following tables depict minimum response personnel for high resource Water/Rescue Incidents.

Tables 59 & 60. Critical Task Analysis for High Resource Marine/Shipboard Incidents

Critical Task	Minimum Personnel
Command/Safety	2
Boat Pilot	1
Boat Operator	1
Rescue	5
Suppression	12
Medical	2
Total Personnel Needed	23

Units Dispatched	Personnel
District Chief (2)	2
Fire Boat 2 w/engine crew	6-8
Marine 20	3-4
Engine (3)	9-12
Ladder (1)	3-4
Ambulance	2
Total Personnel Needed	25-32

# Maximum Resource Marine/Shipboard Incidents

Maximum resource Marine/Shipboard incidents are those requiring a second alarm response or greater and require the use of water assets. Typically, the incident also requires coordination with the Captain of the Port, United States Coast Guard, Tug USA, and other outside agencies. These incidents consist of shipping vessels, cruise liners, and other large vessels in the Mobile River or the Port. The table below displays the MFRD resources for these types of responses.

Tables 61 & 62. Critical Task Analysis for Maximum Resource Marine/Shipboard Incidents

Critical Task	Minimum Personnel
Command	2
Accountability/Safety	1
Boat Pilot	1
Boat Operator	1
Water Rescue/suppression	6
Engine/Ladder Companies	14
Medical	2
Rehab	1
Total Personnel Needed	28

Units Dispatched	Personnel
District Chief (2)	2
Fire Boat 2	3-4
Marine 20	3-4
Engine Companies (4)	12-16
Ladder Trucks (2)	6-8
Ambulance	2
Total Personnel Dispatched	28-36

# 2.5 Baseline Performance

# Performance Monitoring Methodology

# **Response Metrics**

Standard performance methodology measures the dispatch to arrival time for first unit on scene and the arrival of an effective response force (ERF).

The first unit is responsible for establishing command, performing size-up, providing an initial report, and directing other in coming companies.

Effective response force measures the time of arrival of the resources identified in the critical task analysis documented earlier in the Standards of Cover.

## **Total Response Time Components**

MFRD measures baseline performance in terms of total response time, which is the time it takes from the receipt of the call until the first unit arrives on-scene. Total response time is measured for all dispatched units from first arriving to all units on-scene. Total response time is composed of call-processing time, dispatch to enroute, and enroute to arrival.

*Call-processing* is the time from receipt of the 911 call for service to the time of first unit dispatched. This time is measured for all calls for service.

*Dispatch to enroute* time is the time from when the initial dispatch is received until the unit checks enroute. This time is measured for all dispatched units.

*Travel time* is the time from when a unit checks enroute until the unit reports on-scene. This time is measured for all dispatched units.

# Table 63. Total Response Time

TOTAL RESPONSE TIME			
Call Processing Time Dispetch to Encoute Dispetch to Arrivel			
Call Taker Time	Dispatch Time	Dispatch to Enroute	Dispatch to Arrival

# **Hazard Types**

Based on the guidance provided by the Community Risk Assessment Standard of Cover manual and the calls for service the department typically receives for its service area, MFRD evaluated emergency response performance in four service areas: Fire Suppression, Emergency Medical, Hazardous Materials, and Technical Rescue. The remained of the calls have been categorized as other. This one done utilizing the NFIRS incident codes for each incident.

#### **Risk Levels**

Risk for each type of incident is expressed in terms of low, moderate, high, and maximum based on the resource allocation necessary to mitigate the incident. The meaning of these categories is defined in the Critical Task Analysis section of this document.

#### System Wide Performance Monitoring

#### All Fire Suppression Incidents:

The total response time for the arrival of the first due unit, staffed with minimum 3 fire personnel, is: 9 minutes and 43 seconds in all areas.

# All Fire Suppression Incidents use the following NFIRS Codes

• 111 - Building fire

- 1111 Apartment Fire
- 1112 Residential House Fire
- 112 Fires in structure other than in a building
- 113 Cooking fire, confined to container
- 114 Chimney or flue fire, confined to chimney or flue
- 115 Incinerator overload or malfunction, fire confined
- 116 Fuel burner/boiler malfunction, fire confined
- 117 Commercial Compactor fire, confined to rubbish
- 118 Trash or rubbish fire, contained
- 120 Fire in mobile prop. used as a fixed struc., other
- 121 Fire in mobile home used as fixed residence
- 122 Fire in motor home, camper, recreational vehicle
- 123 Fire in portable building, fixed location
- 130 Mobile property (vehicle) fire, other
- 131 Passenger vehicle fire
- 132 Road freight or transport vehicle fire
- 133 Rail vehicle fire
- 135 Aircraft fire
- 136 Self-propelled motor home or recreational vehicle
- 137 Camper or recreational vehicle (RV) fire
- 138 Off-road vehicle or heavy equipment fire
- 140 Natural vegetation fire, other
- 141 Forest, woods or wildland fire
- 142 Brush or brush-and-grass mixture fire
- 143 Grass fire
- 150 Outside rubbish fire, other
- 151 Outside rubbish, trash or waste fire
- 152 Garbage dump or sanitary landfill fire
- 153 Construction or demolition landfill fire
- 154 Dumpster or other outside trash receptacle fire
- 155 Outside stationary compactor/compacted trash fire
- 160 Special outside fire, other
- 161 Outside storage fire
- 162 Outside equipment fire
- 163 Outside gas or vapor combustion explosion
- 164 Outside mailbox fire
- 170 Cultivated vegetation, crop fire, other
- 171 Cultivated grain or crop fire
- 172 Cultivated orchard or vineyard fire
- 173 Cultivated trees or nursery stock fire

	-					
Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Pick-up to Dispatch	00:50	00:48	00:45	00:54	01:04
Turnout Time	Turnout Time - 1st Unit	02:05	02:03	02:04	02:08	01:20
Travel Time	1st Unit Distribution	07:46	07:45	07:40	07:46	04:00
	ERF Concentration	07:46	07:45	07:40	07:46	04:00
Total Response Time	1st Unit on Scene Distribution	09:43 (n=2,807)	09:50 (n=1,096)	09:28 (n=1,001)	09:43 (n=710)	06:24
	ERF Concentration	09:43 (n=2,807)	09:50 (n=1,096)	09:28 (n=1,001)	09:43 (n=710)	06:24

Table 64Fire Low Risk (Department Wide) 90th Percentile Times - Baseline Performance

Data Source: ImageTrend Continuum—"Fire Low Resource (Department Wide)"

#### **Moderate Risk Incidents:**

The total response time for the arrival of the effective response force (ERF), staffed with minimum 15 fire personnel is: 14 minutes and 43 seconds in all areas.

#### Table 65

Fire Moderate Risk (Department Wide) 90th Percentile Times - Baseline Performance

Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Pick-up to Dispatch	01:01	01:15	01:17	00:58	01:04
Turnout Time	Turnout Time - 1st Unit	02:15	02:05	02:14	02:25	01:20
	1st Unit Distribution	06:03	06:24	05:53	05:48	04:00
Traver Time	ERF Concentration	12:37	12:30	12:32	12:45	10:00
Total	1st Unit on Scene Distribution	08:01 (n=672)	08:03 (n=257)	07:42 (n=230)	07:53 (n=185)	06:24
кеsponse Time	ERF Concentration	14:43 (n=627)	14:19 (n=237)	14:59 (n=217)	14:41 (n=173)	12:24

Data Source: ImageTrend Continuum—"Fire Moderate Risk (Department Wide)"

#### **High Risk Incidents:**

The total response time for the arrival of the ERF, staffed with minimum 20 fire personnel is: 21 minutes and 7 seconds in all areas.

Fire High R	Fire High Risk (Department Wide) 90th Percentile Times - Baseline Performance								
Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark			
Alarm Handling	Pick-up to Dispatch	00:57	01:02	00:53	00:58	01:04			
Turnout Time	Turnout Time - 1st Unit	02:16	02:10	02:17	02:19	01:20			
Travel Time	1st Unit Distribution	05:46	06:22	05:19	05:44	04:00			
	ERF Concentration	14:07	13:16	14:10	14:15	14:00			
Total Response Time	1st Unit on Scene Distribution	07:51 (n=384)	08:04 (n=138)	07:31 (n=145)	07:41 (n=101)	06:24			
	ERF Concentration	21:07 (n=322)	21:06 (n=118)	20:37 (n=122)	21:24 (n=82)	16:24			

# Table 66 Fire High Risk (Department Wide) 90th Percentile Times - Baseline Performance

Data Source: ImageTrend Continuum—"Fire High Risk (Department Wide)"

#### Maximum Risk Incidents:

The total response time for the arrival of the ERF, staffed with minimum 26 fire personnel is: 24 minutes and 18 seconds in all areas.

#### Table 67

#### Fire Maximum Risk (Department Wide) 90th Percentile Times - Baseline Performance

Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Pick-up to Dispatch	01:06	01:02	01:31	00:54	01:04
Turnout Time	Turnout Time - 1st Unit	02:27	02:30	02:26	02:15	01:20
Travel Time	1st Unit Distribution	05:54	07:19	04:24	05:16	04:00
	ERF Concentration	23:31	23:30	19:10	24:43	20:00
Total Response Time	1st Unit on Scene Distribution	08:32 (n=64)	08:35 (n=25)	07:32 (n=24)	08:31 (n=15)	06:24
	ERF Concentration	24:18 (n=42)	24:48 (n=18)	20:14 (n=12)	25:51 (n=12)	22:24

Data Source: ImageTrend Continuum—"Fire Maximum Risk (Department Wide)"

#### **Emergency Medical Services**

#### All Emergency Medical Services Incidents:

The total response time for the arrival of the first-due unit, staffed with minimum 3 fire personnel is: 10 minutes and 8 seconds in all areas.

#### All Emergency Medical Incidents use the following NFIRS Codes

• 311 - Medical assist, assist EMS crew

- 3111 Medical assist, assist EMS crew of BLS Unit
- 3112 Medical assist, assist EMS crew of County EMS
- 320 Emergency medical service, other
- 321 EMS call, excluding vehicle accident with injury
- 3211 EMS call, excluding vehicle accident with injury, with BLS Unit
- 3212 EMS call, excluding vehicle accident with injury with MFRD ALS Unit
- 322 Motor vehicle accident with injuries
- 3221 Motor vehicle accident with injuries, with BLS Unit
- 3222 Motor vehicle accident with injuries, with MFRD ALS Unit
- 323 Motor vehicle/pedestrian accident (MV Ped)
- 324 Motor vehicle accident with no injuries.

#### Table 68

#### EMS Low Risk (Department Wide) 90th Percentile Times - Baseline Performance

Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Pick-up to Dispatch	01:36	01:41	01:46	01:14	01:30
Turnout Time	Turnout Time - 1st Unit	02:05	02:02	02:07	02:06	01:00
Turnel Time e	1st Unit Distribution	07:53	07:56	07:53	07:48	04:00
Traver Time	ERF Concentration	07:53	07:56	07:53	07:48	04:00
Total	1st Unit on Scene Distribution	10:07 (n=51,917)	10:06 (n=20,763)	10:15 (n=20,938)	09:59 (n=10,216)	06:30
Response Time	ERF Concentration	10:08 (n=51,851)	10:06 (n=20,720)	10:15 (n=20,919)	09:59 (n=10,212)	06:30

Data Source: *ImageTrend Continuum*—"EMS Low Risk (Department Wide)"

#### **Moderate Risk Incidents:**

The total response time for the arrival of the effective response force (ERF), staffed with minimum 4 fire personnel and 1 paramedic is: 15 minutes and 56 seconds in all areas.

Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Pick-up to Dispatch	01:14	01:15	01:20	01:08	01:30
Turnout Time	Turnout Time - 1st Unit	02:04	02:01	02:06	02:05	01:00
Travel Time	1st Unit Distribution	07:19	07:19	07:22	07:14	04:00
	ERF Concentration	10:58	11:01	11:03	10:43	08:00
Total Response Time (TRT)	1st Unit on Scene Distribution	09:51 (n=28,226)	09:49 (n=11,026)	10:00 (n=11,740)	09:37 (n=5,460)	06:30
	ERF Concentration	15:56 (n=28,339)	16:47 (n=11,093)	15:48 (n=11,781)	14:28 (n=5,465)	10:30

*Table 69* EMS Moderate Risk (Department Wide) 90th Percentile Times - Baseline Performance

Data Source: ImageTrend Continuum—"EMS Moderate Risk (Department Wide)"

# **High Risk Incidents:**

The total response time for the arrival of the ERF, staffed with minimum 8 fire personnel and 2 paramedics is: 24 minutes and 45 seconds in all areas.

#### Table 70

EMS High Risk (Department Wide) 90th Percentile Times - Baseline Performance

Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Pick-up to Dispatch	02:10	02:22	01:41	02:15	01:30
Turnout Time	Turnout Time - 1st Unit	02:10	01:57	02:11	02:24	01:00
<b>T</b>	1st Unit Distribution	07:13	06:47	07:15	07:29	04:00
ITavel IIIIe	ERF Concentration	16:45	16:45	16:40	16:58	12:00
Total	1st Unit on Scene Distribution	10:29 (n=509)	10:16 (n=200)	10:29 (n=222)	10:44 (n=87)	06:30
Response Time	ERF Concentration	24:45 (n=469)	25:26 (n=187)	24:38 (n=200)	22:59 (n=82)	14:30

Data Source: *ImageTrend Continuum*—"EMS High Risk (Department Wide)"

# **Maximum Risk Incidents:**

The total response time for the arrival of the ERF, staffed with minimum 17 fire personnel and 4 paramedics is: 36 minutes and 27 seconds in all areas.

Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Pick-up to Dispatch	00:37	01:39	01:26	01:07	01:30
Turnout Time	Turnout Time - 1st Unit	02:15	01:45	02:33	01:42	01:00
Travel Time	1st Unit Distribution	08:04	09:45	06:16	05:23	04:00
	ERF Concentration	27:30	25:42	27:33	00:00	14:00
Total Response Time (TRT)	1st Unit on Scene Distribution	13:50 (n=9)	15:08 (n=5)	08:24 (n=3)	07:42 (n=1)	06:30
	ERF Concentration	36:27 (n=6)	36:35 (n=3)	33:40 (n=2)	34:05 (n=1)	16:30

Table 71EMS Maximum Risk (Department Wide) 90th Percentile Times - Baseline Performance

Data Source: ImageTrend Continuum—"EMS Maximum Risk (Department Wide)"

#### **Hazardous Materials**

#### All Hazardous Materials Incidents:

The total response time for the arrival of the first due unit, staffed with minimum 3 fire personnel, is: 11 minutes and 6 seconds in all areas.

#### All Hazmat Incidents use the following NFIRS Codes

- 410 Combustible/flammable gas/liquid condition, other
- 411 Gasoline or other flammable liquid spill
- 412 Gas leak (natural gas or LPG)
- 413 Oil or other combustible liquid spill
- 420 Toxic condition, other
- 421 Chemical hazard (no spill or leak)
- 422 Chemical spill or leak
- 423 Refrigeration leak
- 424 Carbon monoxide incident
- 430 Radioactive condition, other
- 431 Radiation leak, radioactive material

Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Pick-up to Dispatch	01:08	01:06	01:19	00:56	01:04
Turnout Time	Turnout Time - 1st Unit	01:53	01:48	01:54	01:55	01:20
Travel Time	1st Unit Distribution	08:39	08:35	08:11	08:58	04:00
	ERF Concentration	08:39	08:35	08:11	08:58	04:00
Total Response Time	1st Unit on Scene Distribution	10:57 (n=423)	10:14 (n=184)	11:01 (n=159)	11:43 (n=80)	06:24
	ERF Concentration	11:06 (n=422)	10:19 (n=183)	11:08 (n=159)	11:44 (n=80)	06:24

Table 72Hazmat Low Risk (Department Wide) 90th Percentile Times - Baseline Performance

Data Source: ImageTrend Continuum—"Hazmat Low Risk (Department Wide)"

#### **Moderate Risk Incidents:**

The total response time for the arrival of the effective response force (ERF), staffed with minimum 11 fire personnel is: 31 minutes and 28 seconds in all areas.

#### Table 73

Hazmat Moderate Risk (Department Wide) 90th Percentile Times - Baseline Performance

Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Pick-up to Dispatch	01:45	02:34	01:45	01:04	01:04
Turnout Time	Turnout Time - 1st Unit	01:53	01:45	01:56	01:35	01:20
Travel Time	1st Unit Distribution	06:29	06:11	07:19	05:51	04:00
	ERF Concentration	15:57	18:45	15:32	07:54	10:00
Total Response Time (TRT)	1st Unit on Scene Distribution	09:55 (n=45)	07:56 (n=21)	10:21 (n=19)	07:31 (n=5)	06:24
	ERF Concentration	31:28 (n=43)	27:11 (n=19)	32:17 (n=19)	26:19 (n=5)	12:24

Data Source: ImageTrend Continuum—"Hazmat Moderate Risk (Department Wide)"

#### **High Risk Incidents:**

The total response time for the arrival of the ERF, staffed with minimum 20 fire personnel is: no data for high risk incidents.

That the	azinat high kisk (Department Wate) sourr ereentile hintes - Baseline r erformanee							
Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark		
Alarm Handling	Pick-up to Dispatch					01:04		
Turnout Time	Turnout Time - 1st Unit					01:20		
	1st Unit Distribution					04:00		
inaver fille	ERF Concentration					25:00		
Total Response Time (TRT)	1st Unit on Scene Distribution					06:24		
	ERF Concentration					27:24		

Table 74Hazmat High Risk (Department Wide) 90th Percentile Times - Baseline Performance

Data Source: ImageTrend Continuum—"Hazmat High Risk (Department Wide)"

#### **Maximum Risk Incidents:**

The total response time for the arrival of the ERF, staffed with minimum 25 fire personnel is: no data for maximum risk incidents.

# Table 75

#### Hazmat Maximum Risk (Department Wide) 90th Percentile Times - Baseline Performance

Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Pick-up to Dispatch	00:00	00:00	00:00	00:00	01:04
Turnout Time	Turnout Time - 1st Unit					01:20
Travel Time	1st Unit Distribution					04:00
	ERF Concentration					34:00
Total Response Time (TRT)	1st Unit on Scene Distribution					06:24
	ERF Concentration					36:24

Data Source: ImageTrend Continuum—"Hazmat Maximum Risk (Department Wide)"

#### **Technical Rescue**

#### All Technical Rescue Incidents:

The total response time for the arrival of the first due unit, staffed with minimum 3 fire personnel, is: 10 minutes and 29 seconds in all areas.

#### All Technical Rescue Incidents use the following NFIRS Codes

• 340 - Search for lost person, other

- 341 Search for person on land
- 343 Search for person underground
- 350 Extrication, rescue, other
- 351 Extrication of victim(s) from building/structure
- 352 Extrication of victim(s) from vehicle
- 353 Removal of victim(s) from stalled elevator
- 354 Trench/below-grade rescue
- 355 Confined space rescue
- 356 High-angle rescue
- 357 Extrication of victim(s) from machinery
- 370 Electrical rescue, other
- 371 Electrocution or potential electrocution
- 372 Trapped by power lines
- 381 Rescue or EMS standby

#### Table 76

#### Technical Rescue Low Risk (Department Wide) 90th Percentile Times - Baseline Performance

Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Pick-up to Dispatch	01:12	01:12	01:02	01:13	01:04
Turnout Time	Turnout Time Turnout Time - 1st Unit		01:55	02:12	01:53	01:20
TravelTime	1st Unit Distribution	07:24	06:24	07:24	08:12	04:00
Haver fille	ERF Concentration	07:24	06:24	07:24	08:12	04:00
Total	1st Unit on Scene Distribution	10:32 (n=239)	10:10 (n=67)	10:30 (n=96)	11:02 (n=76)	06:24
Response Time	ERF Concentration	10:29 (n=228)	09:42 (n=63)	10:32 (n=91)	10:36 (n=74)	06:24

Data Source: ImageTrend Continuum—"Technical Rescue Low Risk (Department Wide)"

#### **Moderate Risk Incidents:**

The total response time for the arrival of the effective response force (ERF), staffed with minimum 5 fire personnel is: 13 minutes and 42 seconds in all areas.

Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Pick-up to Dispatch	02:47	02:25	01:19	03:04	01:04
Turnout Time Turnout Time - 1st Unit		01:59	01:56	02:12	01:51	01:20
Travel Time	1st Unit Distribution	06:27	06:27	05:49	07:33	04:00
	ERF Concentration	11:39	09:04	11:32	15:10	10:00
Total Response Time	1st Unit on Scene Distribution	10:29 (n=90)	10:10 (n=30)	09:16 (n=42)	13:37 (n=18)	06:24
	ERF Concentration	13:42 (n=90)	10:54 (n=30)	12:20 (n=42)	23:20 (n=18)	12:24

*Table 77* Technical Rescue Moderate Risk (Department Wide) 90th Percentile Times - Baseline Performance

Data Source: ImageTrend Continuum—"Technical Rescue Moderate Risk (Department Wide)"

#### **High Risk Incidents:**

The total response time for the arrival of the ERF, staffed with minimum 12 fire personnel is: 19 minutes and 0 seconds in all areas.

#### Table 78

Technical Rescue High Risk (Department Wide) 90th Percentile Times - Baseline Performance

Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Pick-up to Dispatch	02:16	02:57	01:19	00:38	01:04
Turnout Time	Turnout Time Turnout Time - 1st Unit		01:06	02:18	01:48	01:20
Travel Time	1st Unit Distribution	06:30	10:35	05:15	05:15	04:00
Travel Time	ERF Concentration	21:18	11:42	23:34	17:57	25:00
Total	1st Unit on Scene Distribution	09:47 (n=13)	12:34 (n=3)	07:21 (n=6)	06:55 (n=4)	06:24
Time (TRT)	ERF Concentration	19:00 (n=13)	12:42 (n=3)	19:55 (n=6)	18:55 (n=4)	27:24

Data Source: ImageTrend Continuum—"Technical Rescue High Risk (Department Wide)"

#### **Maximum Risk Incidents:**

The total response time for the arrival of the ERF, staffed with minimum 22 fire personnel is: 15 minutes and 26 seconds in all areas.

#### Table 79

Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Pick-up to Dispatch	00:47			00:47	01:04
Turnout Time	Turnout Time - 1st Unit	01:37			01:37	01:20
TravalTime	1st Unit Distribution	05:25			05:25	04:00
Travel Time	ERF Concentration	14:22			14:22	34:00
Total	1st Unit on Scene Distribution	07:17 (n=1)			07:17 (n=1)	06:24
Time (TRT)	ERF Concentration	15:26 (n=1)			15:26 (n=1)	36:24

Technical Rescue Maximum Risk (Department Wide) 90th Percentile Times - Baseline Performa	ince
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Data Source: ImageTrend Continuum—"Technical Rescue Maximum Risk (Department Wide)"

# Marine/Shipboard

# All Marine/Shipboard Incidents:

The total response time for the arrival of the first due unit, staffed with minimum 3 fire personnel, is: 10 minutes and 22 seconds in all areas.

# All Marine/Shipboard Incidents use the following NFIRS Codes

- 342 Search for Person in water
- 360 Water & ice-related rescue, other
- 361 Swimming/recreational water areas rescue
- 363 Swift water rescue
- 364 Surf rescue
- 365 Watercraft rescue
- 134 Water vehicle fire

Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Alarm Pick-up to Dispatch Handling		00:55	00:51	00:47	01:04
Turnout Time	Turnout Time - 1st Unit	02:00	01:30	01:49	02:16	01:20
Travel Time	1st Unit Distribution	09:59	07:10	09:16	10:21	04:00
	ERF Concentration	09:58	07:10	09:04	10:21	04:00
Total	1st Unit on Scene Distribution	10:22 (n=17)	09:35 (n=6)	11:47 (n=5)	09:38 (n=6)	06:24
Time (TRT)	ERF Concentration	10:22 (n=18)	09:35 (n=6)	11:33 (n=6)	09:38 (n=6)	06:24

 Table 80

 Marine/Shipboard Low Risk (Department Wide) 90th Percentile Times - Baseline Performance

Data Source: ImageTrend Continuum—"Marine/Shipboard Low Resource (Department Wide)"

#### **Moderate Risk Incidents:**

The total response time for the arrival of the effective response force (ERF), staffed with minimum 10 fire personnel is: 12 minutes and 7 seconds in all areas.

#### Table 81

#### Marine/Shipboard Moderate Risk (Department Wide) 90th Percentile Times - Baseline Performance

Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Pick-up to Dispatch	01:05	01:40	01:32	00:59	01:04
Turnout Time	Turnout Time Turnout Time - 1st Unit		01:38	01:41	02:28	01:20
Travel Time	1st Unit Distribution	12:10	05:10	07:45	15:08	04:00
Travel Time	ERF Concentration	37:29	09:57	09:06	39:35	10:00
Total	1st Unit on Scene Distribution	12:42 (n=9)	08:55 (n=2)	09:44 (n=2)	17:22 (n=5)	06:24
Time (TRT)	ERF Concentration	38:35 (n=9)	12:35 (n=2)	10:30 (n=2)	40:27 (n=5)	12:24

Data Source: ImageTrend Continuum—"Marine/Shipboard Moderate Resource (Department Wide)"

#### **High Risk Incidents:**

The total response time for the arrival of the ERF, staffed with minimum 23 fire personnel is: 37 minutes and 4 seconds in all areas.

Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Pick-up to Dispatch	01:20	01:43	01:59	01:15	01:04
Turnout Time	Turnout Time - 1st Unit	02:19	01:34	01:41	02:28	01:20
Travel Time	1st Unit Distribution	09:12	04:01	07:45	09:30	04:00
	ERF Concentration	36:00	12:03	16:22	36:25	25:00
Total	1st Unit on Scene Distribution	10:18 (n=6)	06:49 (n=1)	09:44 (n=2)	10:04 (n=3)	06:24
Time (TRT)	ERF Concentration	37:04 (n=5)	13:43 (n=1)	17:46 (n=2)	37:36 (n=2)	27:24

 Table 82

 Marine/Shipboard High Risk (Department Wide) 90th Percentile Times - Baseline Performance

Data Source: ImageTrend Continuum—"Marine/Shipboard Moderate Resource (Department Wide)"

#### **Maximum Risk Incidents:**

The total response time for the arrival of the ERF, staffed with minimum 28 fire personnel is: 44 minutes and 8 seconds in all areas.

#### Table 83

#### Marine/Shipboard Maximum Risk (Department Wide) 90th Percentile Times - Baseline Performance

Metric	Specific Metric	2020 - 2022	2022	2021	2020	Bench- mark
Alarm Handling	Pick-up to Dispatch	01:42	01:40			01:04
Turnout Time	Turnout Time - 1st Unit	01:34	01:34			01:20
TravalTime	1st Unit Distribution	04:01	04:01			04:00
Travel Time	ERF Concentration	00:00	00:00			34:00
Total	1st Unit on Scene Distribution	06:49 (n=1)	06:49 (n=1)			06:24
Time (TRT)	ERF Concentration	44:08 (n=1)	44:08 (n=1)			36:24

Data Source: ImageTrend Continuum—"Marine/Shipboard Maximum Resource (Department Wide)"

# Fire Incidents by Zone

# Table 84

Fire Risk Matrix (Incidents by risk level across zones)

Zone	Low	Moderate	High	Maximum	Total
Outside of Zones	5	1	1	1	8
1	34	8	11	_	53
3	24	8	8	3	43
6	24	6	4	1	35
7	9	1	_	_	10
8	16	3	4	1	24
9	26	3	4	2	35
11	13	11	9	_	33
12	37	4	7	2	50
14	18	5	4	1	28
16	24	18	8	2	52
18	18	6	2	_	26
19	46	9	7	2	64
20	39	4	7	2	52
21	7	1	1	_	9
22	37	9	8	2	56
23	39	6	4	1	50
26	53	12	8	5	78
28	17	4	—	—	21
Grand Total	486	119	97	25	727

Data Source: ImageTrend Report Writer




# EMS Incidents Risk Level by Zone

### Table 85

EMS Risk Matrix (Incidents by risk level across zones)

Zone	Low	Moderate	High	Maximum	Total
Outside of Zones	20	8	1	—	29
1	1,118	586	2	_	1,706
3	1,976	884	37	1	2,898
6	1,508	783	7	_	2,298
7	290	168	11	_	469
8	1,027	504	7	_	1,538
9	856	411	8	2	1,277
11	1,250	627	3	_	1,880
12	1,368	631	16	_	2,015
14	1,535	805	11	_	2,351
16	1,292	688	12	_	1,992
18	1,097	530	7	_	1,634
19	2,055	997	11	_	3,063
20	870	526	16	_	1,412
21	142	80	1	1	224
22	2,308	1,072	15	_	3,395
23	1,923	731	6	1	2,661
26	751	348	21	_	1,120
28	569	301	6	_	876
Grand Total	21,955	10,680	198	5	32,838

## Map of 2022 EMS Incidents by Zone



# Hazmat Incidents by Zone

### Table 86

#### Hazmat Risk Matrix (Incidents by risk level across zones)

Zone	Low	Moderate	High	Maximum	Total
Outside of Zones	1	2	—	—	3
1	6	1	_	—	7
3	10	3		_	13
6	16	_		_	16
7		_		_	0
8	2	2		_	4
9	9	1		_	10
11	1	—	_	—	1
12	9	3	_	—	12
14	3	_		_	3
16	6	_		_	6
18	3	1		_	4
19	15	2		_	17
20	7	_		_	7
21	2	_	_	_	2
22	11	3		_	14
23	4	1		_	5
26	5	2		—	7
28	2	_		—	2
Grand Total	112	21	0	0	133





# Technical Rescue Incidents by Zone

#### Table 87

Tech Rescue Risk Matrix (Incidents by risk level across zones)

Zone	Low	Moderate	High	Maximum	Total
Outside of Zones	—	—	—	—	0
1	1	1	_	_	2
3	7	12	1	_	20
6	2	1		_	3
7	1	1		_	2
8	_	1	_	_	1
9	_	_	1	_	1
11	_	_		_	0
12	12	1		_	13
14	_	_		_	0
16	6	4		_	10
18	1	1		_	2
19	4	2		_	6
20	1	_		_	1
21	_	_		_	0
22	5	_		_	5
23	6	1	1	_	8
26	_	2	_	_	2
28	1	—	—	—	1
Grand Total	47	27	3	0	77





# Marine/Shipboard Incidents by Zone

### Table 88

#### Tech Rescue Risk Matrix (Incidents by risk level across zones)

Zone	Low	Moderate	High	Maximum	Total
Outside of Zones	—	—	—	—	0
1	1	—	_	—	1
3	_	1		1	2
6	_	_	_	_	0
7	_	_	_	_	0
8	_	_	_	_	0
9	_	_	_	_	0
11	_	_	_	_	0
12	2	_	_	_	2
14	_	_	_	_	0
16	_	_	_	_	0
18	_	_	_	_	0
19	_	_	_	_	0
20	_	_	_	_	0
21	_	_		_	0
22	_	_	_	_	0
23	_	_	_	_	0
26	_	_	_	—	0
28	_	_	_	—	0
Grand Total	3	1	0	1	5

# Map of 2022 Marine/Shipboard Incidents by Zone



## 2.6 Benchmark Objectives

The objective of benchmarking is to use the data gathered in your benchmarking process to identify areas where improvements can be made by determining which areas of the jurisdiction are achieving benchmarks objectives and by measuring the quality services and performance of individual units. The objective is to use the data gathered in your benchmarking process to identify areas where improvements can be made by:

- Which areas of the jurisdiction are achieving highest and lowest performance levels.
- Comparing other departments processes and strategies against your own.
- Using the information, you gather from your analyses and comparisons, to implement changes that will improve performance and services.

As part of the standards of cover process, the department has adopted nationally recognized benchmark response objectives for fire suppression, emergency medical, hazardous material, and technical rescue incidents. These include *NFPA 1710, Standard for the Organization and Deploy-ment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments, 2020 edition, NFPA 1221, Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems, 2019 edition, as well as the recommendations of the Center for Public Safety Excellence in the CFAI: Community Risk Assessment/Standard of Cover, 10<sup>th</sup> edition, and the CFAI: Fire and Emergency Service Self-Assessment Manual, 10<sup>th</sup> edition. Response times are measured against these established minimum standards for the entire jurisdiction and within each established planning zone.* 

### **All Calls for Service**

### **Call Processing Performance Objectives**

Emergency medical calls will be dispatched within one minute and thirty seconds or less at the ninetieth percentile. All other calls for service will be dispatched within one minute and four seconds or less at the ninetieth percentile.

#### **Muster Time Performance Objectives**

For emergency medical calls for service, muster times for all responding units will be one minute or less at the ninetieth percentile. All other calls for service, all responding units will have muster times of one minute or less at the ninetieth percentile.

#### **Fire Suppression Services**

The total response time for the first arriving unit shall be 6 minutes 24 seconds for the ninetieth percentile. The first arriving unit shall be staffed with a minimum of 3 certified firefighters and be capable of providing 1500 gallons per minute pump capacity, initiating command, advancing an attach line, establishing a water supply, rescuing victims, and protecting exposures.

The total response time for an effective response force for moderate resource fire suppression events shall be 10 minutes 24 seconds for the ninetieth percentile. The effective response force shall consist of a minimum of 15 certified firefighters and be capable of initiating command, advancing attach lines and back-up lines, establishing rapid intervention team, providing forcible entry, utility control, salvage, overhaul, ventilation, search and rescue, establishing a water sup-

ply, rescuing victims, and protecting exposures.

The total response time for an effective response force for high resource fire suppression events shall be 14 minutes 24 seconds for the ninetieth percentile. The effective response force shall consist of a minimum of 20 certified firefighters and be capable of performing all the tasks included above with the addition of providing elevated streams.

The total response time for an effective response force for maximum resource fire suppression events shall be 24 minutes 24 seconds for the ninetieth percentile. The effective response force shall consist of a minimum of 26 certified firefighters and be capable of performing all associated firefighting duties.

#### **Emergency Medical Services**

The total response time for the first arriving unit shall be 6 minutes 30 seconds for the ninetieth percentile. The first arriving unit shall be staffed with a minimum of 2 certified firefighters and be capable of assessing scene safety, performing size-up, initial patient assessment, obtaining vitals and medical history, initiating mitigation efforts, and assisting with patient packaging.

The total response time for an effective response force for moderate resource emergency medical events shall be 10 minutes 30 seconds for the ninetieth percentile. The effective response force shall consist of a minimum of 4 certified firefighters and 1 paramedic and be capable of performing all the tasks included above.

The total response time for an effective response force for high resource emergency medical events shall be 14 minutes 30 seconds for the ninetieth percentile. The effective response force shall consist of a minimum of 8 certified firefighters and 2 paramedics and be capable of performing all the tasks included above.

The total response time for an effective response force for maximum resource emergency medical events shall be 20 minutes 30 seconds for the ninetieth percentile. The effective response force shall consist of a minimum of 17 certified firefighters and 4 paramedics and be capable of performing all the tasks included above.

#### **Hazardous Materials Services**

The total response time for the first arriving unit shall be 6 minutes 24 seconds for the ninetieth percentile. The first arriving unit shall be staffed with a minimum of 3 certified firefighters and be capable of assessing scene safety, performing size-up, determining the need for additional resources, and establishing hot, warm, and cold zones.

The total response time for an effective response force for moderate resource hazardous materials events shall be 12 minutes 24 seconds for the ninetieth percentile. The effective response force shall be dependent on the severity of the incident and shall have an assigned safety officer.

The total response time for an effective response force for high resource hazardous materials events shall be 27 minutes 24 seconds for the ninetieth percentile. The effective response force shall be dependent on the severity of the incident and shall have an assigned safety officer.

The total response time for an effective response force for maximum resource hazardous mate-

rials events shall be 36 minutes 24 seconds for the ninetieth percentile. The effective response force shall be dependent on the severity of the incident and shall have an assigned safety officer.

For all calls requiring the activation of the Department's Hazardous Materials Response Team, the dispatch to arrival time for the response team shall be 15 minutes.

#### **Technical Rescue Services**

The total response time for the first arriving unit shall be 6 minutes 24 seconds for the ninetieth percentile. The first arriving unit shall be staffed with a minimum of 3 certified firefighters and be capable of assessing scene safety, performing size-up, determining the need for additional resources, and establishing the type of technical rescue services needed.

The total response time for an effective response force for moderate resource technical rescue events shall be 12 minutes 24 seconds for the ninetieth percentile. The effective response force shall be dependent on the severity of the incident and shall have an assigned safety officer.

The total response time for an effective response force for high resource technical rescue events shall be 27 minutes 24 seconds for the ninetieth percentile. The effective response force shall be dependent on the severity of the incident and shall have an assigned safety officer.

The total response time for an effective response force for maximum resource technical rescue events shall be 36 minutes 24 seconds for the ninetieth percentile. The effective response force shall be dependent on the severity of the incident and shall have an assigned safety officer.

For all calls requiring the activation of the Department's Technical Rescue Response Team, the dispatch to arrival time for the response team shall be 15 minutes.

### Marine/Shipboard Services

The total response time for marine and water rescue may be extended due to the deployment of water assets. Fire Boat 2 is staffed by Engine 2 which must travel via Engine 2 to the Fire Boat 2 to be underway. Marine 20 is staged at a near by boat dock. Low resource marine/shipboard incidents are mitigated without the use of either water asset, which allows response times to be shorter. Moderate responses and above require extended total response times. For low resource marine/shipboard incidents the first arriving unit shall be staffed with a minimum of one district chief and three certified fire fighters trained to the awareness and operations level of surface water rescue and be capable of assessing scene safety, performing size up, determining the need for additional resources, and establishing a plan of mitigation. Moderate marine/shipboard incidents require a minimum of 3 certified firefighters trained at the level of Surface Water Awareness and Operations, one of which is licensed to operate the vessel for Marine 20. Fireboat 2 requires a minimum of six certified firefighters, two of which are trained to the level of Marine Firefighter I and one firefighter licensed by the United States Coast Guard as a boat pilot.

The total response time for a first arriving unit to a low resource marine/shipboard incident shall be 6 minutes 24 seconds for the ninetieth percentile. Total response time for the effective response force for moderate marine/shipboard incidents should be 22 minutes and 24 seconds for the ninetieth percentile. These times are extended due to travel time to the vessel and the travel restrictions of low wake zones in and around the docks.

The total response time for an effective response for for high marine/shipboard incidents should be 27 minutes and 24 seconds. These times are extended due to travel time to the vessel and the travel restrictions of low wake zones in and around the docks.

The total response time for an effective response for for maximum marine/shipboard incidents should be 36 minutes and 24 seconds. These times are extended due to travel time to the vessel and the travel restrictions of low wake zones in and around the docks.

Measured at the 90th Percentile		Fire Incidents	Emergency Medical Incidents	Hazmat Incidents	Tech Rescue Incidents	Marine/ Shipboard Incidents
Call Processing	Pick-up to Dispatch	1:04	1:30	1:04	1:04	1:04
Turnout	Turnout Time 1st In	1:20	1:00	1:20	1:20	1:20
Travel	Travel Time 1st In	4:00	4:00	4:00	4:00	4:00
	Travel Time Moderate ERF	8:00	8:00	10:00	10:00	20:00
	Travel Time for High ERF	12:00	12:00	25:00	25:00	25:00
	Travel Time Maximum ERF	22:00	18:00	34:00	34:00	34:00
Total Response Time	Total Response Time 1st In	6:24	6:30	6:24	6:24	6:24
	Total Response Time Moderate ERF	10:24	10:30	12:24	12:24	22:24
	Total Response Time High ERF	14:24	14:30	27:24	27:24	27:24
	Total Response Time Maximum ERF	24:24	20:30	36:24	36:24	36:24

Table 89. Benchmark Objectives

## 2.7 Evaluation of Performance

The department is committed to an ongoing effort of improvement which will allow us to provide the highest quality of services to our customers in the most cost efficient and effective means possible. While improvements can come about through major paradigm shifts or new inventions, the department understands that small incremental data driven changes will have the greatest impact. As such, the department focuses on the following five core continuous improvement principles:

- Employee ideas are valuable
- Incremental improvements are typically inexpensive to implement
- Employees take ownership and are involved in improvement
- Improvement is reflective
- Improvement is measurable and potentially repeatable

The standards of cover outlined in this document represent the department's efforts to quantify current performance and develop actions to ensure future improvements. These standards will be reviewed and updated annually, and the information will be incorporated into the department's budget and strategic planning processes.

#### **Evaluation Methodology**

Once the Planning Division has completed the SOC analysis, a system wide evaluation is conducted to identify system effectiveness in accomplishing performance measures identified in the department's strategic initiative #8 (Response Service) of the Strategic Plan. This is accomplished by conducting a SWOT analysis (strengths, weaknesses, opportunities, and threats) based on the system wide evaluation.

The departments strengths and weaknesses are determined through the evaluation of the system wide performance. From there, performance gaps are identified, and possible solutions are then identified as a scenario. These solutions are used to improve system wide efficiency and effectiveness. The department looks at external forces for which the department has limited control as opportunities and threats.

The department uses a four-step review to assess the identified scenarios or alternatives.

- 1. Technical review Will be comprised of staff and field personnel. Will assess the results and provide recommendations.
- 2. Operational review Will be comprised of staff and field personnel. Will assess the safety and operational impact of scenarios or recommendations.
- 3. Fiscal review Will be comprised of staff personnel. Conduct a cost-benefit analysis.
- 4. Policy review Will be comprised of staff and field personnel. Addresses issues with impact of scenarios or recommendations on current operational guidelines or policies.

The results of the four-step process will be presented as recommendations in a final report.

#### Fire Performance Evaluation

Table 9	), Fire 🛛	411 Risk L	evels (De	partment	Wide)	Performanc	e Evaluation	2022

	Total Incidents with an ERF	% of Total Incidents with an ERF	% Alarm Handling Bench- mark Met (1:04)	% of 1st Unit Turn- out Time Bench- mark Met (1:20)	% of 1st Unit Trav- el Time Bench- mark Met (4:00)	% ERF Time Be (BM	<sup>=</sup> Travel enchmark I) Met	% of 1st Unit Total Re- sponse Time Benchmark Met (6:24)	% EF Respo Benchr M	RF Total nse Time nark (BM) Met
Low	1,124	97.91%	100%	66.03%	42.23%	4:00	42.23%	55.87%	6:24	55.87%
Mod.	258	22.47%	85%	67.06%	43.90%	10:00	70%	58.48%	12:24	81.93%
High	135	11.76%	100%	67.06%	43.90%	14:00	93.42%	58.48%	16:24	65.55%
Max.	24	2.09%	100%	67.06%	43.90%	20:00	63.16%	58.48%	22:24	72.22%

Data Source: ImageTrend Continuum—Combined datasets: "Fire ---- Risk (Department Wide)"

	Total Incidents with an ERF	% of Total Incidents with an ERF	% Alarm Handling Bench- mark Met (1:30)	% of 1st Unit Turn- out Time Bench- mark Met (1:00)	% of 1st Unit Trav- el Time Bench- mark Met (4:00)	% ERI Time Be (BN BM	<sup>–</sup> Travel enchmark I) Met	% of 1st Unit Total Re- sponse Time Benchmark Met (6:30)	% EF Respo Benchr M	RF Total nse Time nark (BM) Met
Low	21,730	98.06%	88%	42.85%	36.96%	4:00	36.80%	52.66%	6:30	52.54%
Mod.	11,127	50.21%	100%	42.85%	36.96%	8:00	71.31%	51.35%	10:30	70.97%
High	206	0.83%	42%	42.09%	35.50%	12:00	66.87%	48.82%	14:30	58.62%
Max.	4	0.02%	90%	42.09%	35.50%	14:00	50%	47.91%	16:30	33.33%

Table 91, EMS All Risk Levels (Department Wide) Performance Evaluation 2022

Data Source: ImageTrend Continuum—Combined datasets: "EMS ---- Risk (Department Wide)"

Table 92, Hazmat All Risk Levels (Department Wide) Performance Evaluation 2022

	Total Incidents with an ERF	% of Total Incidents with an ERF	% Alarm Handling Bench- mark Met (1:04)	% of 1st Unit Turn- out Time Bench- mark Met (1:20)	% of 1st Unit Trav- el Time Bench- mark Met (4:00)	% ERI Time Be (BN BM	F Travel enchmark l) Met	% of 1st Unit Total Re- sponse Time Benchmark Met (6:24)	% EF Respo Benchr BM	RF Total nse Time nark (BM) Met
Low	202	97.58%	97%	71.64%	33.16%	4:00	32.65%	44.06%	6:24	43.28%
Mod.	21	10.14%	40%	71.64%	33.16%	10:00	66.67%	44.06%	12:24	73.68%
High	-	_	_	-	_	25:00	-	-	27:24	-
Max.	-	-	-	-	-	34:00	-	-	36:24	-

Data Source: ImageTrend Continuum—Combined datasets: "Hazmat ---- Risk (Department Wide)"

	Total Incidents with an ERF	% of Total Incidents with an ERF	% Alarm Handling Bench- mark Met (1:04)	% of 1st Unit Turn- out Time Bench- mark Met (1:20)	% of 1st Unit Trav- el Time Bench- mark Met (4:00)	% ERI Time Be (BN BM	F Travel enchmark I) Met	% of 1st Unit Total Re- sponse Time Benchmark Met (6:24)	% EF Respo Benchr B	RF Total nse Time nark (BM) Met
Low	75	81.52%	87%	62.82%	45.95%	4:00	48.57%	61.54%	6:24	63.01%
Mod.	33	35.87%	75%	62.82%	45.95%	10:00	93.94%	61.54%	12:24	93.94%
High	3	3.26%	58%	62.82%	45.95%	25:00	100%	61.54%	27:24	100%
Max.	_	_	_	_	_	34:00	-	_	36:24	-

Data Source: ImageTrend Continuum—Combined datasets: "Technical Rescue ---- Risk (Department Wide)"

	Total Incidents with an ERF	% of Total Incidents with an ERF	% Alarm Handling Bench- mark Met (1:04)	% of 1st Unit Turn- out Time Bench- mark Met (1:20)	% of 1st Unit Trav- el Time Bench- mark Met (4:00)	% ERF Travel Time Benchmark (BM) Met		% of 1st Unit Total Re- sponse Time Benchmark Met (6:24)	% EF Respo Benchr M	RF Total nse Time nark (BM) Met
Low	6	85.71%	%	66.67%	0%	4:00	0%	16.67%	6:24	16.67%
Mod.	2	28.57%		71.43%	16.67%	10:00	50%	33.33%	12:24	50%
High	1	14.29%	_	71.43%	16.67%	25:00	100%	33.33%	27:24	100%
Max.	1	14.29%	-	71.43%	16.67%	34:00	0%	33.33%	36:24	0%

Table 94, Marine/Shipboard All Risk Levels (Department Wide) Performance Evaluation 2022

Data Source: ImageTrend Continuum—Combined datasets: "Marine/Shipboard ---- Risk (Department Wide)"

#### Recommendations

The intent of the analysis conducted in this process was to provide the administration with the information necessary to effect real and positive change to the level of service the department provides and allow it to accomplish its mission more effectively and efficiently. Based on the finding from this analysis, the following recommendation were developed:

#### **Risk assessment**

• The department needs to develop improved target hazard identification and inspection system.

#### Deployment

- Evaluate zones with poor response times to identify causes and develop mitigation strategies
- Conduct traffic study in poorly served areas
- Re-evaluate dispatch protocols to ensure resource optimization'
- Develop training schedule based on planning zone demands

#### **Performance measurements**

- Evaluate muster times by unit/shift/station/time of call, in addition to planning zones.
- Develop system to monitor street maintenance and improvement to enable better rout planning
- Evaluate goals on a quarterly basis
- Improve loss/save data collection
- Add block group level to CAD data to allow for more focused data analysis
- Improved data entry training for personnel

## 2.8 Plan for Maintaining and Improving Response Capabilities

As fire service expectations evolve, the department has been required to take an all-hazards approach to response capabilities. These increased responsibilities create constant stress on emergency service systems. As such, the department has had to evolve over the course of its existence to meet these new demands. As the primary responder to emergencies within our jurisdiction the department must continue to explore innovative way to maximize our existing resource to not only maintain our current capabilities but improve the services provided to the citizens of the

community.

The Mobile Fire-Rescue Department strives to acquire and maintain the latest apparatus and equipment available. Additionally, the department trains personnel to the highest national standards and aggressively works to maintain employee knowledge, skills, and abilities through continuing education.



The department has been able to explore innovations while ensuring minimum standards and core competencies are sustained. By working with the community, the department has been able to maintain a positive public image and the focus on core competencies has enabled the department to achieve and maintain an ISO I classification.

Despite past successes, the department knows it is far from perfect and there is

plenty of room for improvement. To achieve this the department must be committed to a culture of continuous improvement. The development of this standard of cover is a first step in quantifying the department's current performance and establishing a plan for subsequent improvement. These standards will be evaluated and updated annually and will be used in part to drive the strategic planning process.

The annual review process will begin in the first quarter each year with a review and update to the CRA/SOC document. The department will include response demands within each planning zone and any changes in demographics as part of the evaluation. The results will be compared to previous years to identify improvement or retrogression and potential contributing factors. Information gathered during CRA/SOC evaluation will be utilized to update the FESSAM and be included in the development of the annual budget. A second CRA/SOC Review will be conducted in the third quarter of each year to determine any if areas of retrogression are still trending negatively. Action items will be developed to address identified negative tends and any associated costs will be included in the final budget amendments. The department will utilize annual review reports and recommended actions to update the strategic plan and compile the annual compliance report in the final quarter of each year.

# 3 Appendices

## Appendix A: References

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## Appendix B: Glossary

AHA	American Heart Association
AED	Automated External Defibrillator
CAD	Computer Aided Dispatch
CPSE	Center for Public Safety Excellence
CRA	Community Risk Assessment
FESSAM	Fire and Emergency Service Self-Assessment Manual
GIS	Geographic Information System
Jurisdiction	The territory over which authority is exercised.
MAWSS	Mobile Area Water and Sewer System
МССД	Mobile County Communications District
MFRD	Mobile Fire-Rescue Department
Muster Time	Portion of emergency response time from unit dispatch to enroute
Mitigation	The act of making a condition or consequence less severe.
Performance Measures	The process of collecting, analyzing and/or reporting information regarding the performance of an individual, group, organization, system, or component.
Preparedness	Planning, training, and equipping for events that cannot be mitigated.
Prevention	To keep from occurring; avert; hinder.
Recovery	Restoration or return to any former and better state or condition.
Response	Actions preformed in an effort to prevent further loss or damage.

SOC	Standard of Cover
Stakeholder	Any person, group, or organization that has an interest in or expecta- tion of an organization.
Strategic Goal	A broad target that defines the result or achievement toward which effort is directed.
Strategic Initiative	The means through which an organization translates its goals and visions into practice.
Strategic Objective	A specific, measurable accomplishment required to realize the successful completion of a goal.
Strategic Plan	A long-range planning document that defines the mission of an orga- nization and broadly identifies how it will be accomplished.
Strategic Planning	The continuous and systematic process whereby and organization makes decisions about its future, develops plans and procedures to achieve that future, and determines how success will be measured.
Strategy	A plan or methodology for achieving a goal.
Vision	An idealized view of an achievable future.
S.W.O.T Analysis	A strategic planning technique used to help an organization identify strengths, weaknesses, opportunities, and threats related to project planning.