

JANUARY 2026

CITY OF MANTECA, CA

STANDARDS OF COVER



Manteca Fire Department

STANDARDS OF COVER



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Executive Summary

The City of Manteca, CA, Fire Department (MFD) has experienced significant population growth, resulting in increased calls for EMS, fire, rescue, and other emergency services.

As more citizens move into the service area, often into newly constructed multi-generational single-family homes, public safety services have not kept pace with growth. One bit of good news is that these new homes feature the latest in residential life-safety systems, especially fire sprinklers.

In addition to residential growth, the City has seen the construction of large commercial structures, primarily logistics fulfillment occupancies. These take advantage of the City's strategic locations along important transportation corridors.

City leaders understand the funding challenges of meeting the needs of a growing population, responding to calls for service, and addressing external community threats.

In 2024, the Council authorized Measure Q, a 3/4 cent sales tax increase, to be placed on the ballot for voter approval. The community expressed its support with the passage of Measure Q. This sales tax measure raises over \$10 million annually for critical city services.

The measure passed in November 2024, and the City has begun to realize this new revenue.

For several years, impact fees did not keep pace with the service needs, including fire stations, fleet, and personnel. Current City leadership seeks to update impact fees to reflect current costs. These impact fees are intended for infrastructure improvements, including fire stations and apparatus.

The City retained *FITCH* to evaluate current community risk, MFD performance, and deployment. This evaluation supports the strategic key priorities.

Evaluations and recommendations in this study include a strategic planning and recommendation framework to provide the City with a path forward, particularly regarding the best use of new revenue and whether to invest in personnel, fleet, or facilities.

Finally, a comprehensive assessment of the City's fire and EMS service delivery was completed using an objective, data-driven process.

The City Council, staff, and the MFD should be commended for their dedication to the community and its citizens, often with constrained resources.

Focus Areas

1. The MFD should adopt a system of measures to ensure accountability to the desired performance objectives.
2. The MFD should establish a system of measures to transparently identify system needs and future investments in personnel, fleet, and fire stations.
3. Consider additional staffing and stations to meet the department's 4-minute travel time benchmark.
4. Establish a program that uses fire managers to reduce Turnout Time to 90 seconds or less, 90% of the time, for all calls for service.
5. Establish and monitor expectations with the Primary and Secondary Public Safety Answering Points (PSAP/SPSAP) to improve Call Processing and Dispatch Time.

Manteca Fire Department



High-Level System Description, Stakeholder Feedback, Risk Assessment, Performance, and System Resiliency

Manteca Fire Department



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Documentation of Area Characteristics

The Manteca Fire Department (MFD) is a full-service municipal fire department providing all-hazards emergency response and community risk reduction services for the City of Manteca, California. Services include fire suppression, emergency medical services (EMS), hazardous materials response, water rescue, emergency management, fire prevention, inspections, plan review, public education, code enforcement, and post-fire investigation.

The City of Manteca is located in San Joaquin County in California's Central Valley and encompasses approximately 21.4 square miles. The city serves an estimated population of approximately 94,000 residents and has experienced sustained growth over the past decade. Manteca functions as a rapidly developing suburban community within the greater Stockton–Lodi–Tracy regional corridor.



Manteca's terrain is generally flat, with elevations below 100 feet above sea level, and reflects typical Central Valley conditions. The city experiences a Mediterranean climate characterized by hot, dry summers and cool, wet winters. Seasonal hazards include extreme heat, heavy rainfall, dense tule fog, and localized flooding, all of which can affect transportation systems, infrastructure, and emergency response operations.

Land use within the city includes residential neighborhoods, large-scale housing developments, commercial and retail centers, hospitality and entertainment venues, and light industrial and logistics facilities. Manteca is located at the intersection of major roadway, rail, and regional transportation corridors, contributing to a diverse emergency risk profile that includes high-occupancy structures, transportation incidents, and hazardous materials exposure.

The community is demographically diverse and family-oriented, with a median age of approximately 37. Household sizes exceed the national average, reflecting multigenerational living patterns. Vulnerable populations include elderly residents, individuals with limited mobility or transportation access, and residents living in high-density or rapidly developing areas.

Manteca adds approximately 700 new households annually, resulting in continued demand for emergency services and infrastructure. Ongoing residential and commercial development, combined with environmental and transportation-related hazards, underscores the importance of a well-resourced and adaptable fire and emergency response system to protect life and property within a dynamic and growing community.

Manteca Fire Department



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Overview of the Current EMS System Design

In the City of Manteca, EMS services are provided through a public-private partnership with Manteca District Ambulance Services (Manteca Ambulance). The County of San Joaquin authorizes Manteca Ambulance to serve Zone D for emergency medical services, including advanced life support (ALS) first response, assessment, treatment, and transportation to definitive care.

EMS services are also supplemented by the fire department's basic life support (BLS) first response capabilities for assessment and treatment, and assistance with patient transportation when needed. EMS calls represents 84% of the fire department's total volume. In 2024, the department, in conjunction with the San Joaquin EMS Agency, implemented a call-reduction program in which the MFD stopped responding to low-acuity EMS calls, including Alpha and Omega calls.

The public-private partnership is designed to maximize efficiency across two distinct EMS system models: Readiness and Demand.

Readiness Model

In public policy, the costs of services in the public interest, such as essential public safety services, are generally funded by the public. In this example, the city's general fund supports the fire department's readiness and availability to respond to all-hazards, including EMS. The cost of readiness includes the availability of resources, regardless of how often the public requests services. Therefore, in a readiness model, the fire department has a more robust resource allocation, with the capacity to respond to any citizen or visitor to the city as a public good or in the public interest. Readiness costs are typically higher due to limited production capacity.

Demand Model

In contrast, the utilization of patient transport services may be better categorized as an individual benefit. For example, Mrs. Smith's medical emergency, while very important, may not have a public utility as it is an individual benefit. Therefore, service costs are typically funded by the user rather than the public at large. This allows the ambulance to allocate resources more closely aligned with service requests, resulting in a much better return on investment.

In combination, the public bears the burden of funding the system's resource availability (fire department/general fund), and individual users bear the cost recovery burden (user fees). The fire department's capacity to respond to EMS calls, both by severity and as a safety net when ambulances are resource-constrained, moderates transport service costs and leverages the benefits of both models.

In other words, this is the framework for providing a valid first response, stop-the-clock, and/or treat and release charge master.

Aligning City Resources to Risks

Typically, in an integrated EMS system, such as in Manteca, reliance on fire department first responses is associated with the timeliness of the first response relative to the timeliness of transport-capable units. For example, if the service expectation was to arrive in 6 minutes, but the ambulance doesn't arrive until 12 minutes, then there may be a more robust reliance on the fire department's first response to get to the patient's side, assess, treat, and stabilize, prior to the ambulance arrival.

Recommendation

The city should have considerable flexibility to consider the number of fire department resources assigned to EMS calls by clinical severity.

Manteca Fire Department



Legal Basis

Fire protection and emergency services within the City of Manteca are provided under the authority granted to general law cities by the California Constitution, the California Government Code, and the California Health and Safety Code. The Manteca Fire Department (MFD) is established by the City Council and operates under the administrative direction of the City Manager.

MFD's authority includes fire suppression, emergency medical services, hazardous materials response, rescue operations, fire prevention, code enforcement, public education, and emergency management. Fire prevention and life safety activities are conducted in accordance with the California Fire Code, as adopted and amended by the City of Manteca Municipal Code, and enforced by the Fire Department.

Emergency medical services are provided pursuant to the California Emergency Medical Services Act and under the oversight of the San Joaquin County Emergency Medical Services Agency (EMS Agency). MFD personnel operate at approved certification levels and in compliance with state and county EMS protocols.

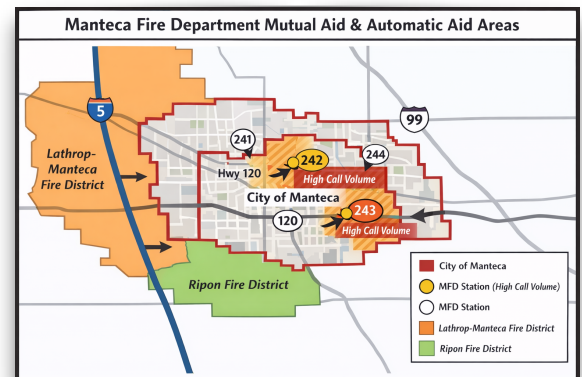
The City of Manteca is also authorized to enter into cooperative agreements with neighboring jurisdictions, counties, special districts, and state agencies to ensure effective delivery of emergency services and regional coordination.

Automatic/Mutual Aid

The Manteca Fire Department (MFD) participates in automatic aid and mutual aid agreements to ensure effective emergency response for incidents that exceed local capabilities or occur near jurisdictional boundaries. These agreements support fire suppression, emergency medical services, rescue operations, hazardous materials incidents, and extended or complex emergencies.

MFD maintains local mutual-aid agreements with adjoining fire agencies, including the Lathrop-Manteca Fire District and the Ripon Fire District. The agreement with the Lathrop-Manteca Fire District was executed in 1995, and the agreements with the Ripon Fire District and French Camp Fire District were executed in January 2026. These agreements provide for coordinated response, shared resources, and operational support when the closest or most appropriate unit is located outside city limits.

In addition to local agreements, MFD participates in the California Statewide Master Mutual Aid Agreement, administered by the California Office of Emergency Services (CalOES). This system allows MFD to request and provide resources through the standardized statewide mutual aid framework during major incidents, disasters, or multi-jurisdictional events.



Since the 2023–2024 reporting period, Manteca has experienced a notable increase in the use of outside aid. The highest volume of assisted responses has been related to motor vehicle accidents, with Stations 242 and 243 receiving the greatest frequency of outside agency support. These trends highlight the operational importance of automatic and mutual aid agreements in maintaining effective response coverage

Manteca Fire Department



Summary of Stakeholder Feedback

Stakeholders were provided the opportunity to meet with the FITCH team on September 2 and 3, 2025. In total, eight group interviews were conducted with chief officers, the city manager, key city directors and staff, and the Manteca Professional Firefighters Executive Board.

FITCH used various techniques to gather feedback, including one-on-one and small-group interviews (both in-person and virtual), document review, and financial analysis. The interviews aimed to gather information and perspectives from fire agency staff and others who support the fire and EMS agencies. Questions were designed to solicit background information, subjective and objective observations, ideas for efficiency improvements, and methodologies to better serve the City.

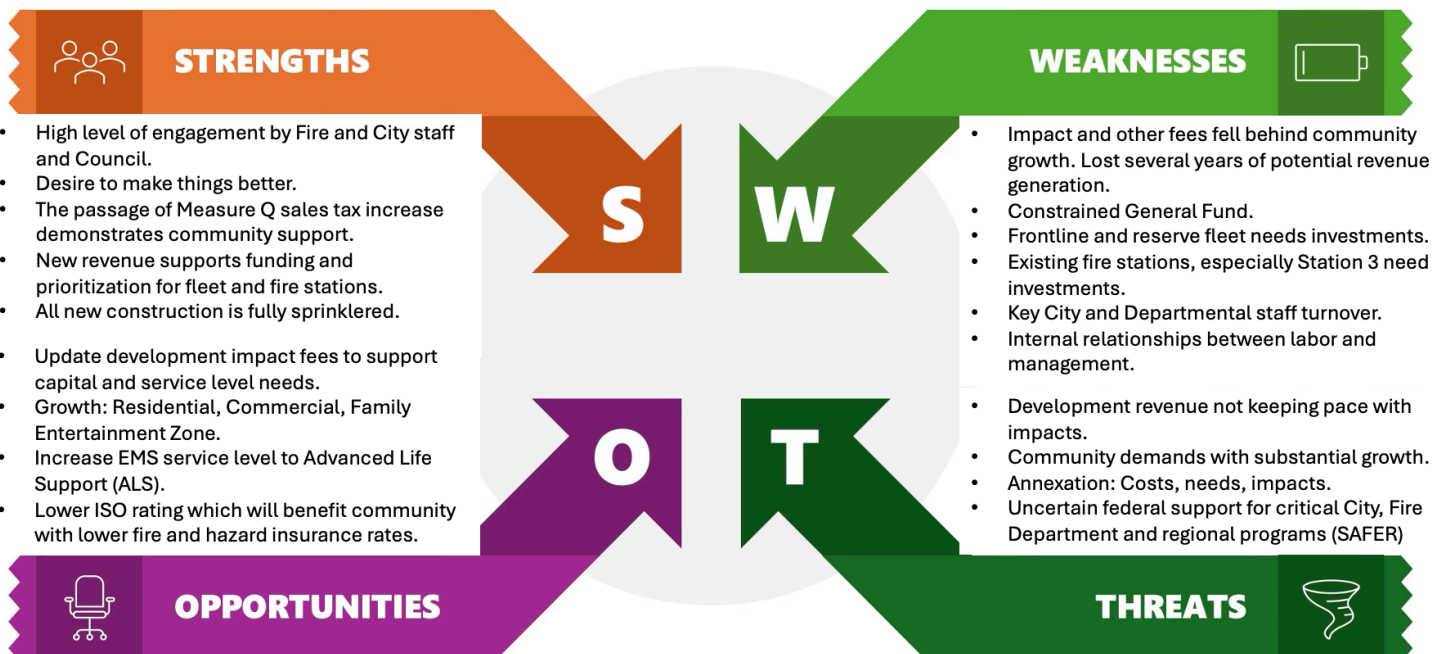
Observations

In total, 48 City and MFD staff members from multiple City Departments provided stakeholder input for this process.

The SWOT analysis below is an anonymous summary of key themes.

Fire Command Staff	Executive Board, Manteca Professional Firefighters	City Manager, City Manager's Office Staff	Finance Department Staff
Development Services Staff	Economic Development Staff	Fire Prevention Staff	Interim and new Fire Chief

Stakeholder Input



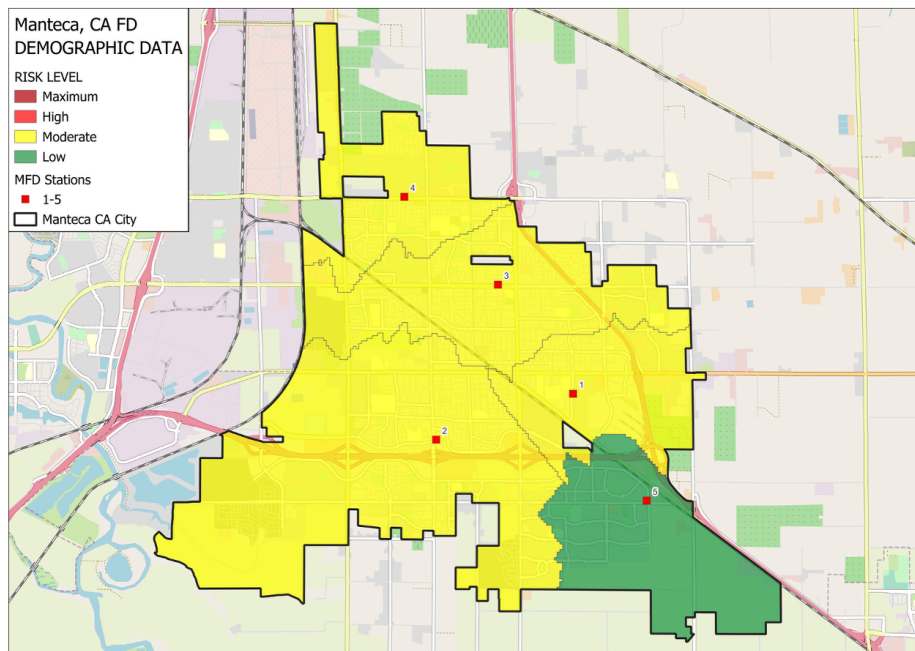
Manteca Fire Department



Community Risk Assessment

To study the unique features of Manteca, the department utilized a comprehensive two-part documented and adopted methodology that organizes response areas into geographical planning zones. The first is by the department's entire response area. The second utilized a more gradual assessment of station demand zones (FDZ).

Each demand zone has a first-due department. These FDZs have specific resource allocation strategies based on calculated risks. From an emergency response standpoint, the department is divided into five FDZs, each with a dedicated fire department. The FDZs are not divided equally in terms of demographics and population density.



Socioeconomic and Demographic Risks

FDZs were utilized to assess each planning zone for risks that inform response time performance objectives. The risk assessment process utilizes socioeconomic variables, such as median household income and unemployment, as well as demographic variables such as population density and median age. Other variables considered included square mileage and the percentage of homes greater than 55 years old.

Recommendation

MFD should develop a process to capture occupancy-level risks (building level) and incorporate specific occupancy ratings into the overall risk assessment process and risk matrices.

Variables of Risk

All variables measured at the FDZ level

- Population density
- Square mileage of each FDZ
- Median age of residents
- Median household income
- Unemployment rate
- Percentage of homes greater than 55 years old
- Community demand
- Call Concurrency

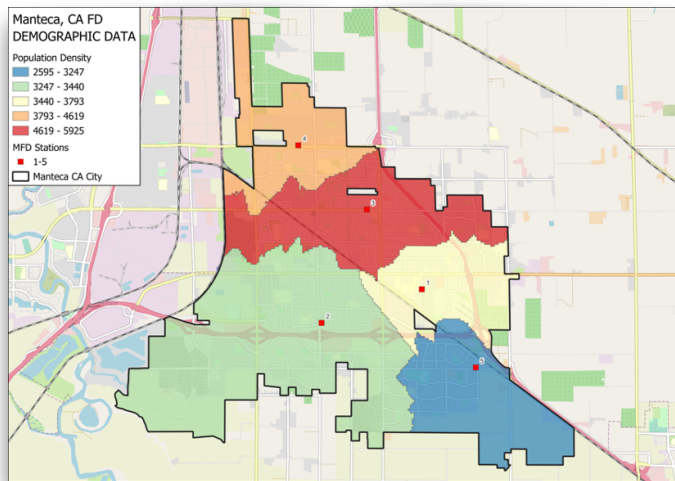


Manteca Fire Department

Economic and Demographic Assessment by FDZ

5-Station Configuration

The population for each first due station was evaluated for Manteca Fire Department. Station 243's service boundary has the highest population density within the department. The lowest population density is in Stations 245's service boundaries.

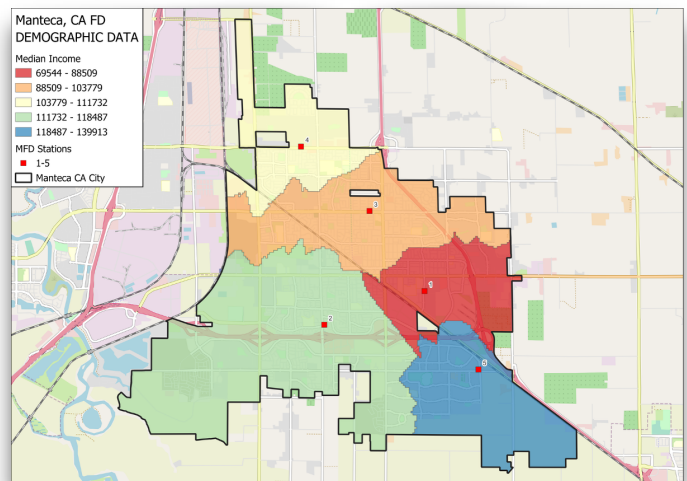


Research has demonstrated a relationship between age and use of EMS and fire services, or the events leading to the need for EMS and fire services, wherein use and need tend to be highest among older adults, as compared to those in younger age groups.

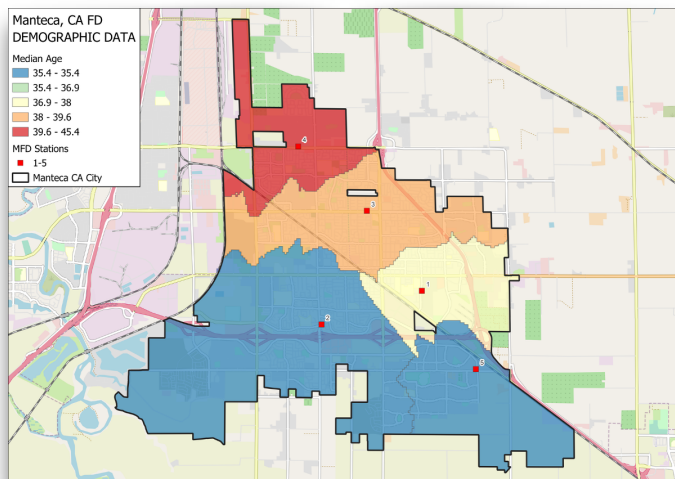
Recommendation

It is recommended that the department continues to monitor socioeconomic and demographic variables correlated with changes in risk.

For Example, older adults (e.g., 65 years and older) or the elderly (e.g., 85 years and older) have been found to experience higher rates of burns, falls, fires, and fire-related injuries or death, and have higher rates of ambulance transport and use of EMS, in general. The elderly are also one of the most vulnerable groups during and following disasters such as hurricanes, tornadoes, and earthquakes.



Based on U.S. Census Bureau data for 2019-2023, adjusted for 2023 dollars, median household income for the City of Manteca, CA was \$94,718.





Manteca Fire Department

FDZ Level Risk - 5-Station Configuration

Fire Demand Zones (FDZs) were assigned an overall risk level classification of low, moderate, high, or maximum based on the resulting value of the risk matrices.

Ultimately, Stations 241-244 were classified as a moderate-risk stations (yellow). Station 245 was classified as a low-risk zone.

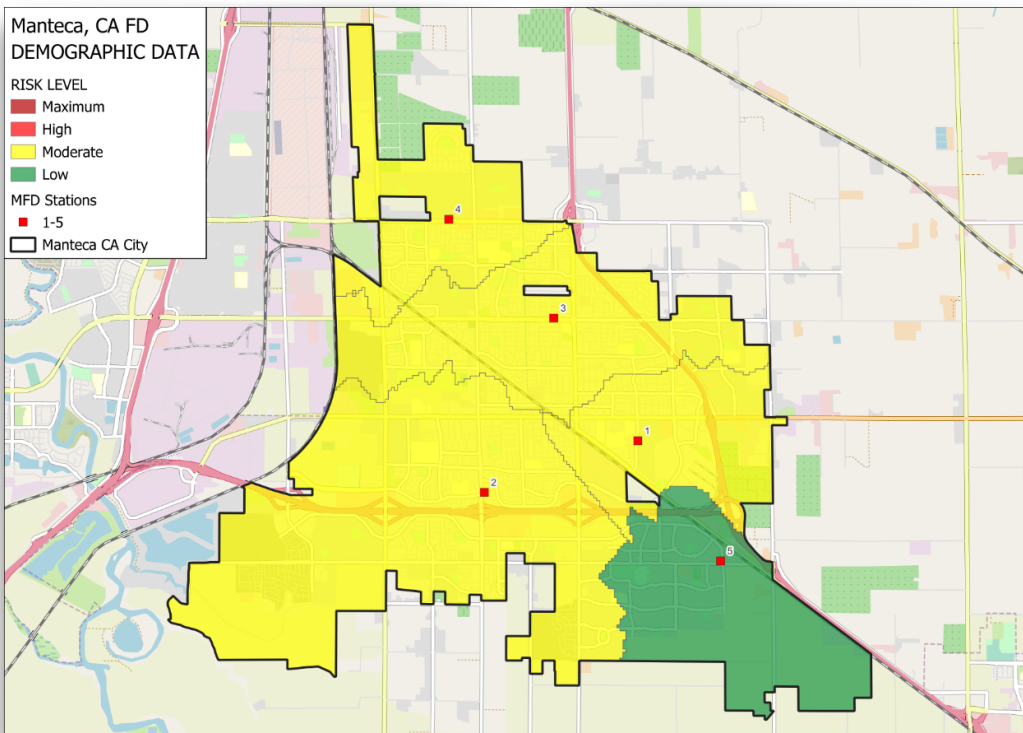
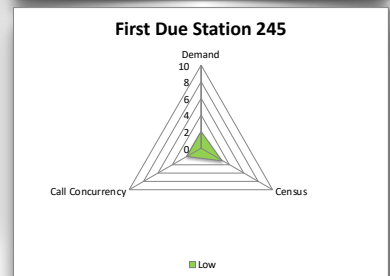
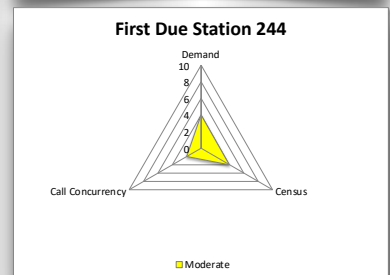
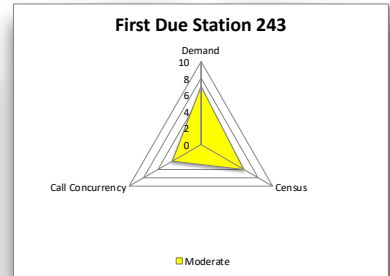
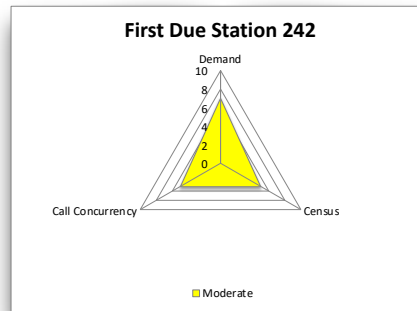
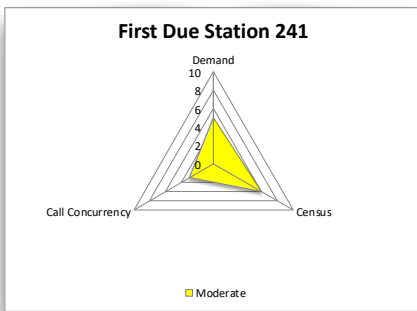
Finally, 3-dimensional models were created to evaluate each FDZs unique risk profile.

Recommendation

Stations 241 through 244 in Manteca are rated moderate-risk station areas or fire demand zones.

Station 245 is rated as low.

Therefore, from a risk-based viewpoint, the policy group has objective data to manage where risk can be reasonably assumed.



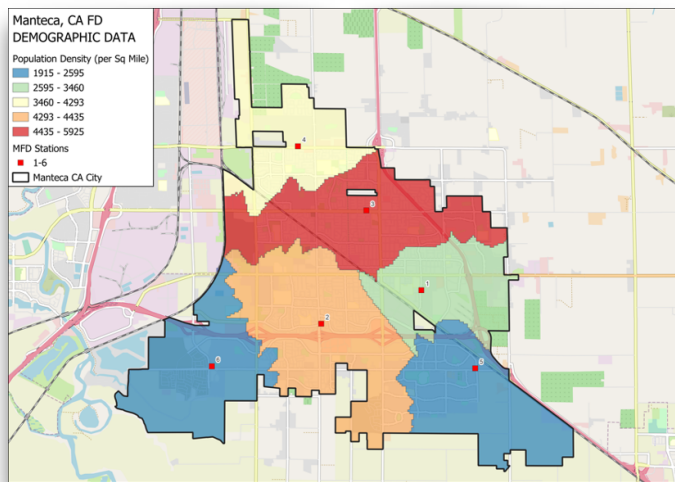


Manteca Fire Department

Economic and Demographic Assessment by FDZ

6-Station Configuration

The population for each first due station was evaluated for Manteca Fire Department. Station 243's service boundaries have the highest population density within the department. The lowest population density is in Stations 245 and 246 service boundaries.

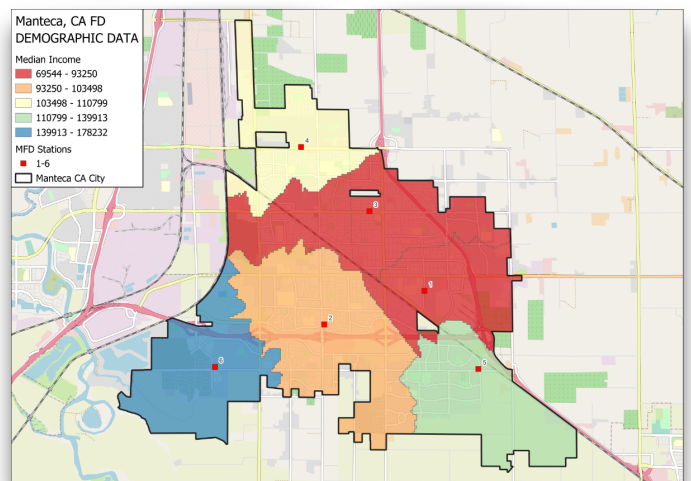
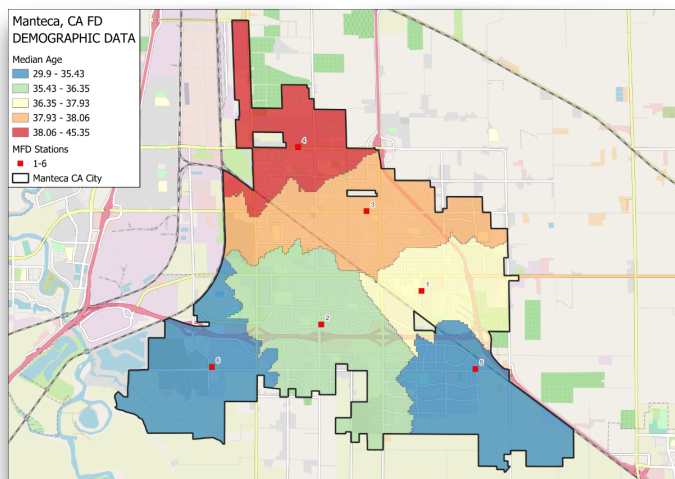


Research has demonstrated a relationship between age and use of EMS and fire services, or the events leading to the need for EMS and fire services, wherein use and need tend to be highest among older adults, as compared to those in younger age groups.

Recommendation

It is recommended that the department continues to monitor socioeconomic and demographic variables correlated with changes in risk.

For Example, older adults (e.g., 65 years and older) or the elderly (e.g., 85 years and older) have been found to experience higher rates of burns, falls, fires, and fire-related injuries or death, and have higher rates of ambulance transport and use of EMS, in general. The elderly are also one of the most vulnerable groups during and following disasters such as hurricanes, tornadoes, and earthquakes.



Based on U.S. Census Bureau data for 2019-2023, adjusted for 2023 dollars, median household income for the City of Manteca, CA was \$94,718.



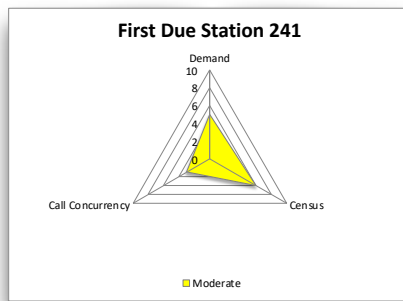
Manteca Fire Department

FDZ Level Risk - 6-Station Configuration

Fire Demand Zones (FDZs) were assigned an overall risk level classification of low, moderate, high, or maximum based on the resulting value of the risk matrices.

Ultimately, Stations 241-244 were classified as a moderate-risk stations (yellow). Stations 245 and 246 were classified as low-risk zones.

Finally, 3-dimensional models were created to evaluate each FDZs unique risk profile.

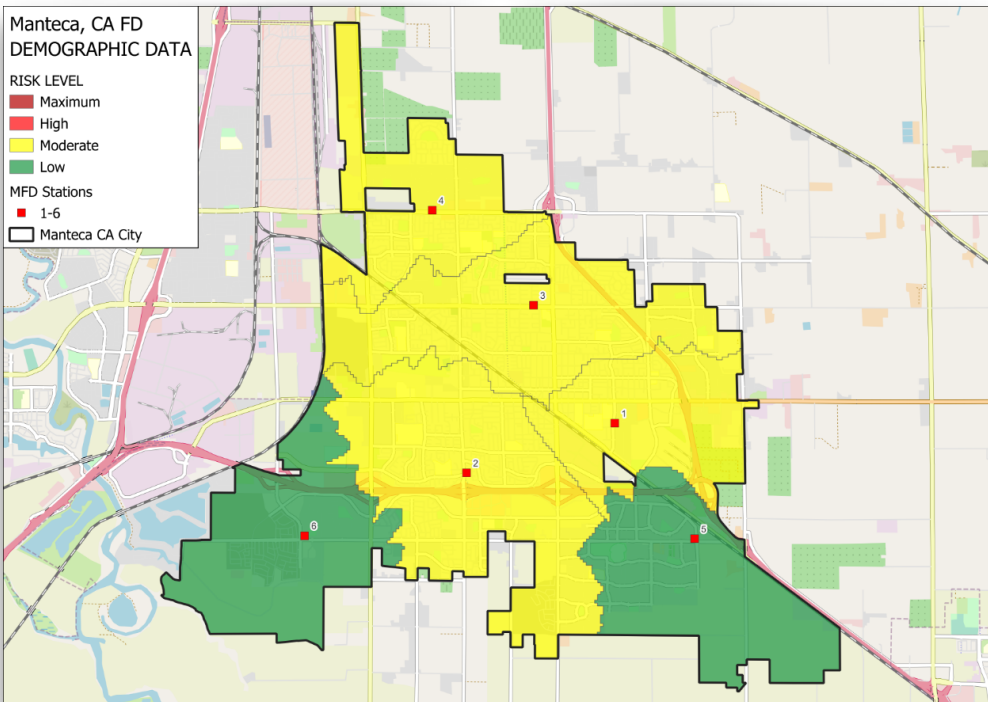
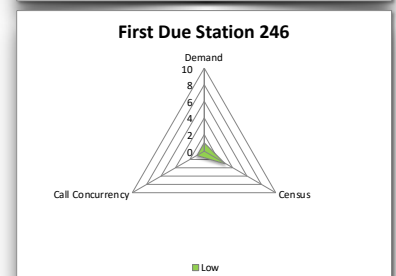
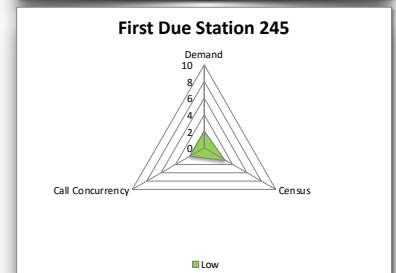
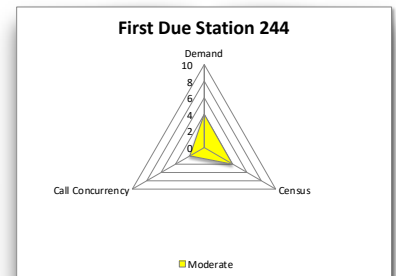
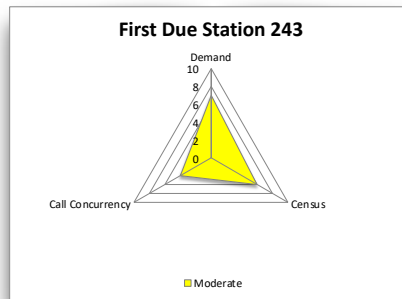
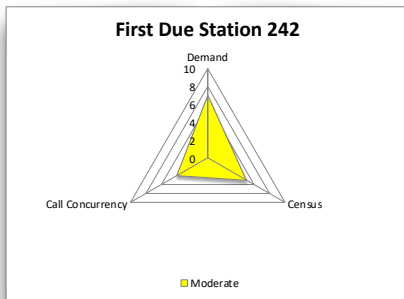


Recommendation

Stations 241 through 244 in Manteca are rated moderate-risk station areas or fire demand zones.

Stations 245 and 246 are rated as low.

Therefore, from a risk-based viewpoint, the policy group has objective data to manage where risk can be reasonably assumed.



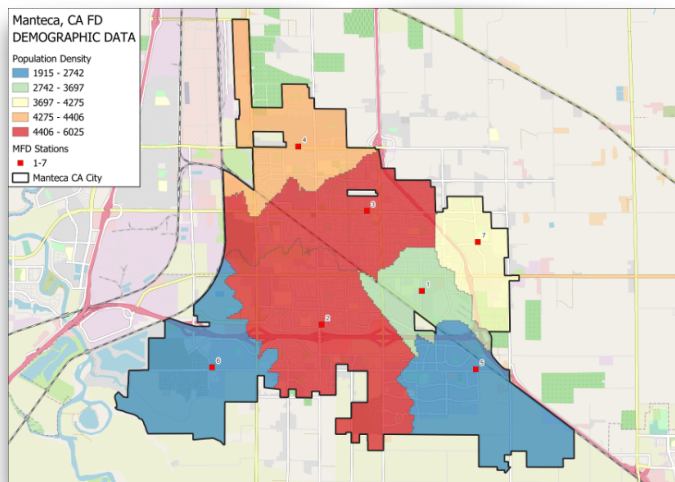


Manteca Fire Department

Economic and Demographic Assessment by FDZ

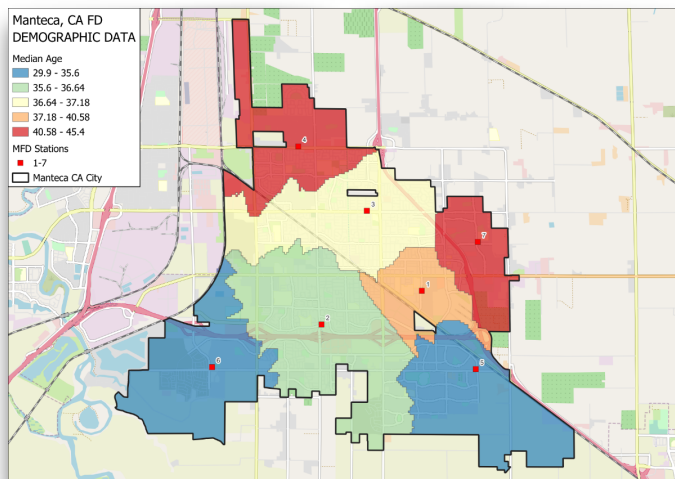
7- Station Configuration

The population for each first due station was evaluated for Manteca Fire Department. Stations 242 and 243's service boundaries have the highest population density within the department. The lowest population density is in Stations 245 and 246 service boundaries.



Research has demonstrated a relationship between age and use of EMS and fire services, or the events leading to the need for EMS and fire services, wherein use and need tend to be highest among older adults, as compared to those in younger age groups.

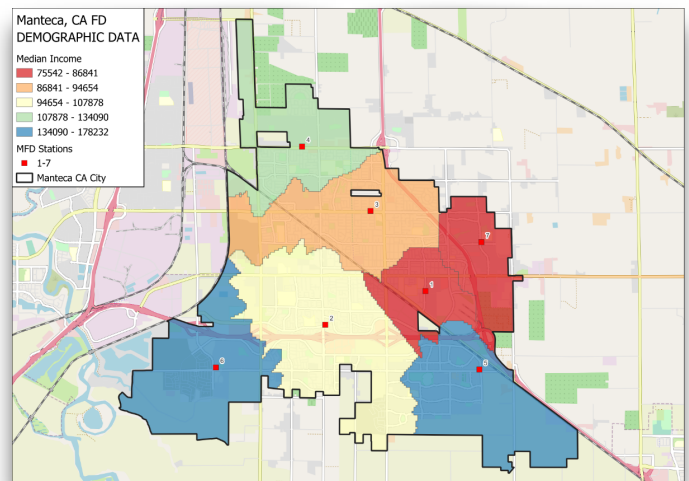
For Example, older adults (e.g., 65 years and older) or the elderly (e.g., 85 years and older) have been found to experience higher rates of burns, falls, fires, and fire-related injuries or death, and have higher rates of ambulance transport and use of EMS, in general. The elderly are also one of the most vulnerable groups during and following disasters such as hurricanes, tornadoes, and earthquakes.



Recommendation

Only the 7-station configuration will achieve the Department's and NFPA 1710 4-minute travel time benchmark.

It is recommended that the department continues to monitor socioeconomic and demographic variables correlated with changes in risk.



Based on U.S. Census Bureau data for 2019-2023, adjusted for 2023 dollars, median household income for the City of Manteca, CA was \$94,718.

Manteca Fire Department



FDZ Level Risk - 7-Station Configuration

Fire Demand Zones (FDZs) were assigned an overall risk level classification of low, moderate, high, or maximum based on the resulting value of the risk matrices.

Ultimately, Stations 241-244 and 247 were classified as a moderate-risk stations (yellow). Stations 245 and 246 were classified as a low-risk zones (green).

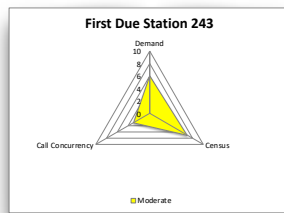
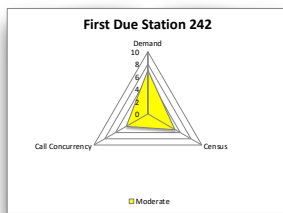
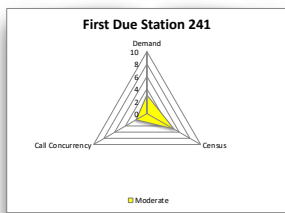
Finally, 3-dimensional models were created to evaluate each FDZs unique risk profile.

Recommendation

Five of the Manteca stations are rated moderate-risk station areas or fire demand zones.

Two are rated as low risk.

Therefore, from a risk-based viewpoint, the policy group has objective data to manage where risk can be reasonably assumed.



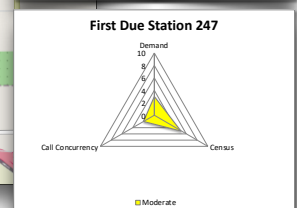
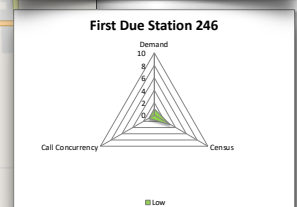
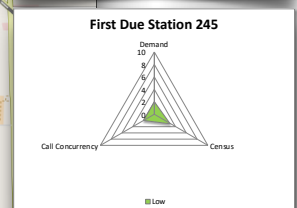
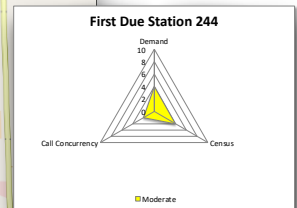
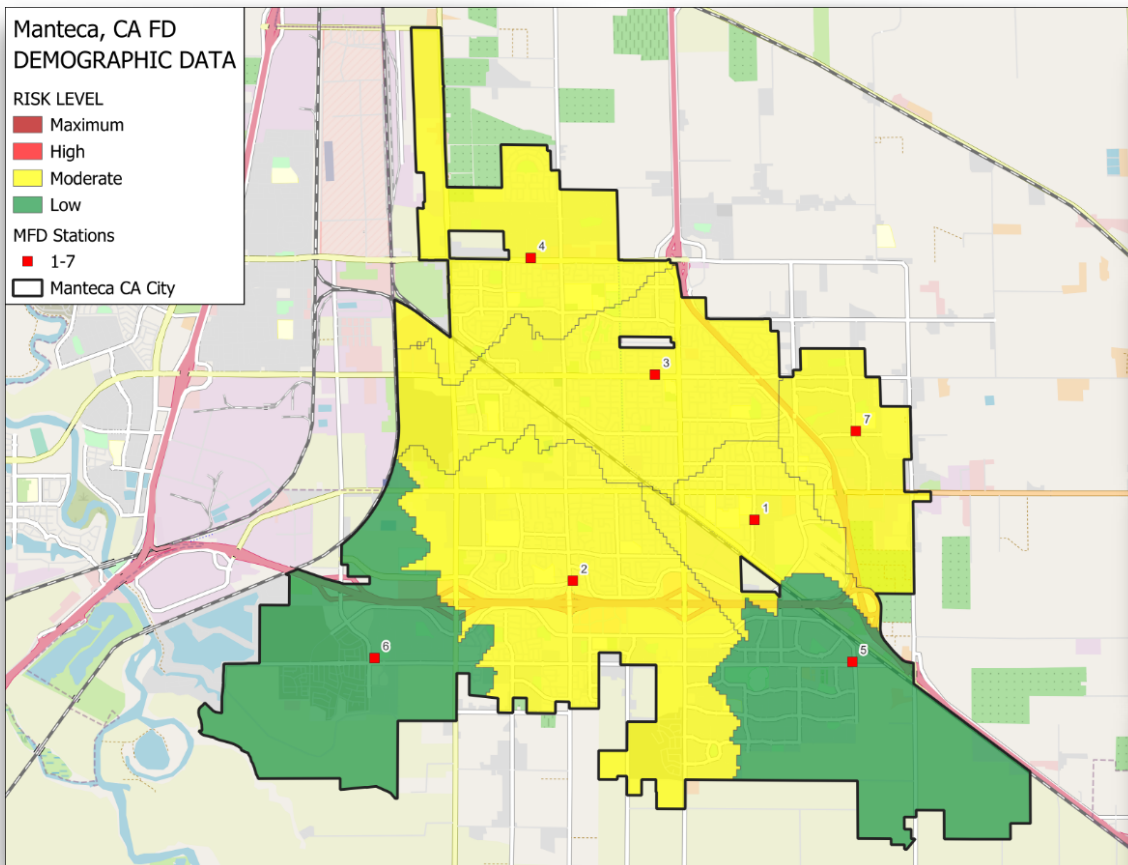
Manteca, CA FD
DEMOGRAPHIC DATA

RISK LEVEL

- Maximum
- High
- Moderate
- Low

MFD Stations

- 1-7
- Manteca CA City

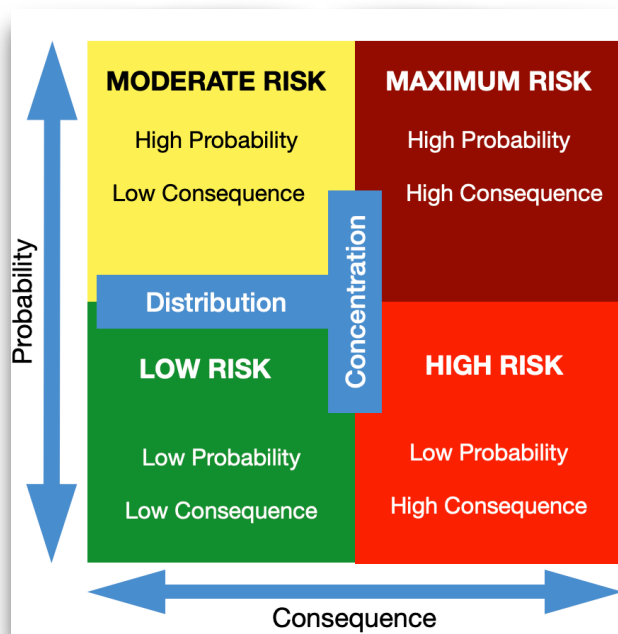




Manteca Fire Department

Correlated Risks

Risks may be divided into correlated and uncorrelated risks. All previous risk analyses have been primarily based on uncorrelated risks such as single unique events for EMS or a single property structure fire. Risks were calculated based on socioeconomic and demographic factors that may contribute to unique events. All previous analyses utilized a robust quantitative approach to leasing risk using a 3-axis, 3-dimensional Heron formula.



However, correlated risks occur with much less frequency and were assessed using a 2-dimensional probability and consequence model. Example of correlated risks would include more regional or system wide events such as natural hazards and pandemics.

Recommendation

The department is encouraged to continue to annually review risk severities that are more appropriately defined by the two-dimensional risk assessment process.

At least annually, MFD should assess the potential impact of external influences that can significantly impact its performance and operations.



Results of the correlated risk assessment process are provided below. The data represent the prioritized risks identified by the agencies and are included in the 2023 San Joaquin County Hazard Mitigation Action Plan.

Low Risk	Moderate Risk	High Risk
Land Subsidence	Flood, Excessive Rain	Levee Break
Terrorism, WMD	Tornado, Thunder Storms	Hazardous Materials
Wildland Fire	Ground Contamination	Weather: Heat, Dense Fog
Dam Break	Climate Change	Animal Pests
	Drought	



Manteca Fire Department

Historical Service Demands

Historical service demands were evaluated by calendar year and classified by program areas of Fire, EMS, Hazmat, Rescue and Unknown.

Considering all calls that occurred within Manteca as well as all calls that Manteca agencies provided to areas outside of Manteca, the total call volume has averaged between 28.4 and 29.8 calls per day.

CAD Program and Call Type ²	Reporting Period ¹		
	2022-23	2023-24	2024-25
EMS	8,664	8,872	9,226
Breathing Problem	909	796	910
Cardiac and Stroke	910	950	1,004
Fall and Injury	1,548	1,581	1,720
Illness and Other	2,336	2,442	2,373
Lift Assist	462	522	597
MVA	659	626	625
Overdose and Psychiatric	370	338	269
Seizure and Unconsciousness	1,091	1,232	1,252
Transfer	379	385	476
Fire	1,546	1,461	1,444
Dumpster Fire	43	49	34
Fill Quarters	0	0	2
Fire Alarm	542	480	480
Fire Other	107	81	85
Grass Fire	75	97	170
Hazardous Condition	182	144	135
Outdoor Fire	275	283	237
Public Assist	198	192	180
Structure Fire	74	74	74
Vehicle Fire	40	54	45
Unknown	10	7	2
Hazmat	161	233	188
Hazmat	161	233	188
Rescue	4	14	14
Rescue	4	14	14
Unknown	0	0	1
Unknown	0	0	1
Total	10,375	10,580	10,873
Average Calls per Day³	28.4	28.9	29.8
YoY Growth	N/A	2.0%	2.8%

Observations

Evaluating calendar years 2020-2024, the number of daily calls averaged between 28 and 30 calls per day.

EMS accounted for 84.9% of all incidents with Fire accounting for 13.3%.

Hazmat and Rescue accounted for less than 2%.

In total call volume, the equivalency was between 10,375 incidents and 10,873 incidents.

Consistent with the national experience, the majority of incidents occurred within the Emergency Medical Services (EMS) program area. In 2024-25, EMS accounted for 9,226 of the 10,873 total unique incidents, or 84.9%.

Conversely, the fire program accounted for 1,444 incidents out of the 10,873, or 13.3%.

The hazardous materials, rescue programs and unknown collectively account for less than 2% of the overall incidents. This is a consistent finding compared to other like agencies.



Manteca Fire Department

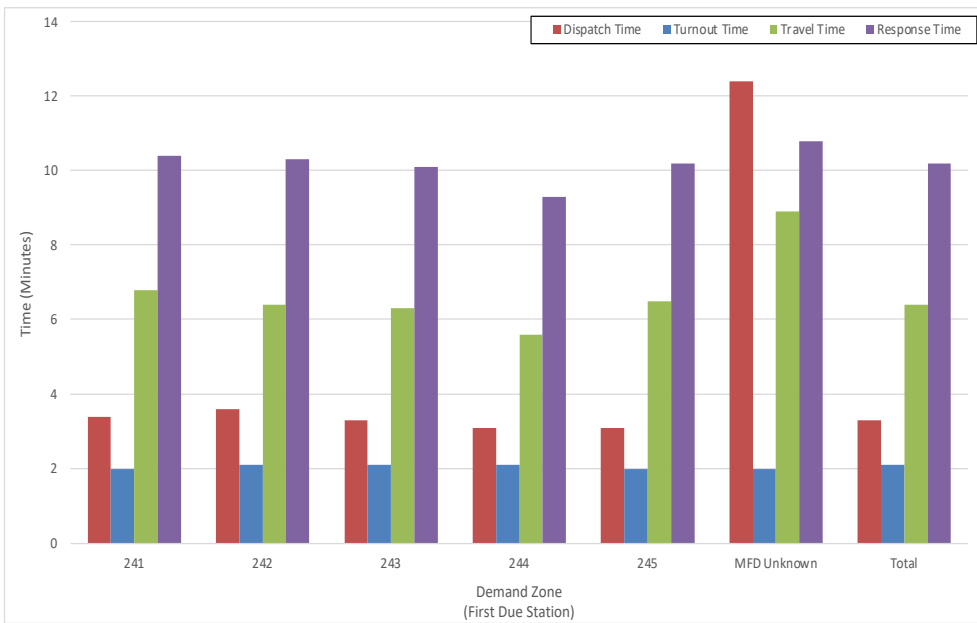
Distribution Study

Response time elements are evaluated by FDZ. All of the FDZs provide a travel time between approximately 5.6 to 8.9 minutes at the 90th percentile. The shortest travel time was at Station 244 at 5.6 minutes.

Observation

A five-station configuration can achieve ~93% coverage within 5-minutes travel time.

A two-station configuration can achieve ~97% coverage within 8-minutes travel time.

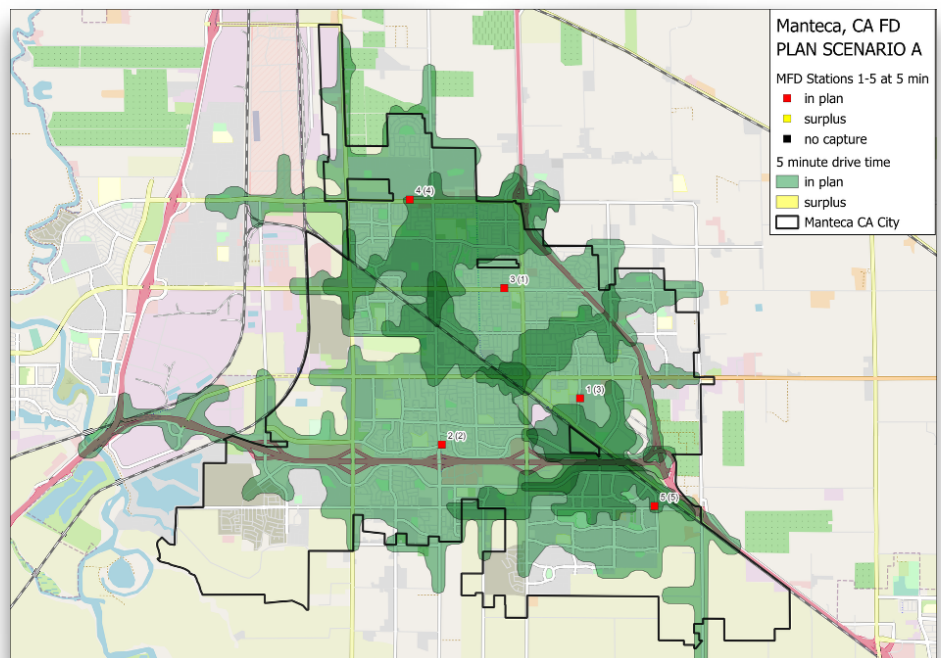


5-Minute Travel Time

GIS analyses validated that a five-station configuration can achieve ~93% coverage within 5-minutes travel time.

The current Manteca Fire Department Station Bleed Map for 5-Minute Travel Time – All Calls

Any successively darker shades of green indicate that more than one station can service the area within 5 minutes.





Manteca Fire Department

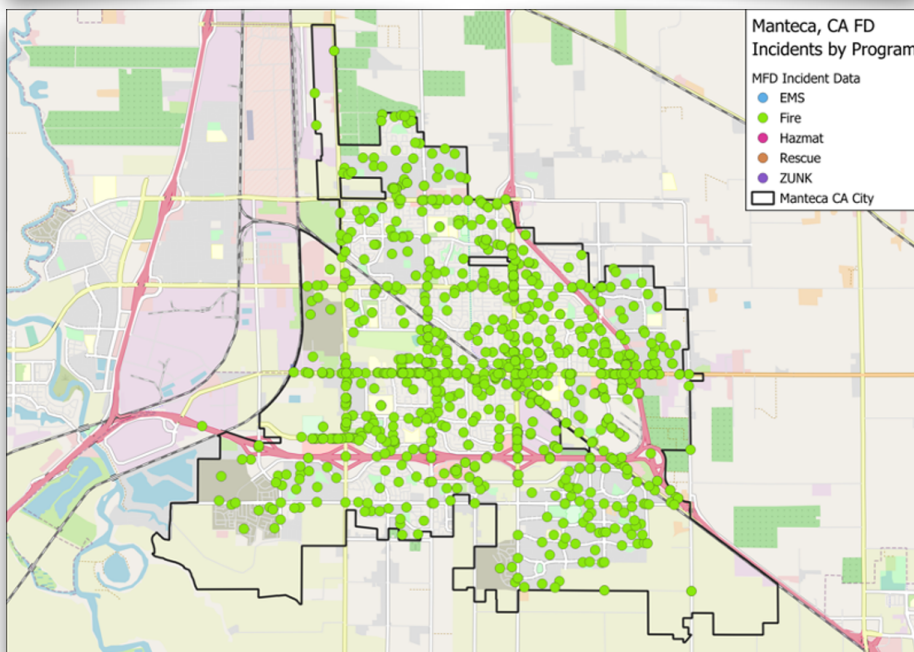
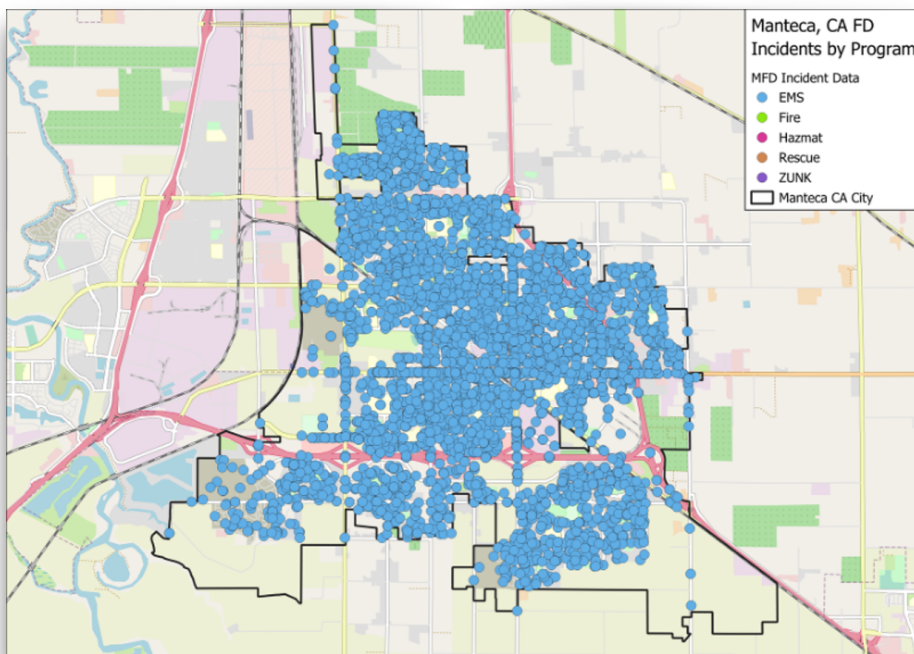
Concentration Study

Incidents were geocoded and mapped to illustrate where incidents were both distributed throughout the communities as well as identify concentrations of incidents. As expected, at 84.9% of the total requests for service, the EMS incidents had multiple areas of higher concentrations (below). At a high-level the highest concentrations of EMS incidents are in the center of the city.

Observations

The distribution of incidents would require a similar number of station locations to cover both Fire and EMS incidents.

However, the concentration of incidents allows the city to tailor the concentration of resources to meet the community demand.



The concentration of fire incidents (left) follows an expected pattern where the majority of incidents occur within the developed areas and specifically in the center of the city and the northern border.

Overall, the distribution of incidents would require a similar number of station locations to cover both Fire and EMS incidents. However, the concentration of incidents allows the county to tailor the concentration of resources to meet the community demand.

Manteca Fire Department



Assessing System Resiliency

Overlapped or simultaneous calls are defined as another call being received in a jurisdiction or demand zone while one or more calls are already ongoing for the same jurisdiction or demand zone. For example, if there is an ongoing call in a jurisdiction wherein all units have not yet been cleared, and one or more requests for service subsequently occur in the jurisdiction, the subsequent call or calls would be captured as overlapping.

Understanding the percentage of overlapped calls may help to determine the number of units to staff to meet the needs of each demand zone. In general, the larger the call volume for a demand zone, the greater the likelihood of overlapped calls occurring.

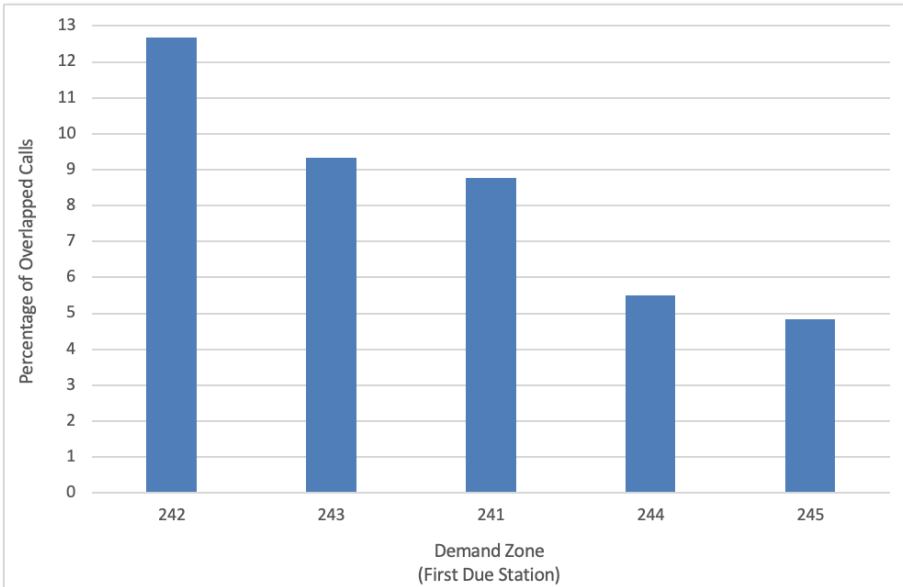
The distribution of the demand throughout the day will impact the chance of having overlapped calls. Additionally, the duration of a call plays a significant role; the longer it takes to clear a request, the greater the likelihood of having an overlapping request.

Recommendations

Continue planning for fire station locations and infrastructure to meet the demand of a growing community.

Increases in population density and locations may serve to eventually require a greater concentration and distribution of resources to meet the demand.

Any zones with greater than or equal to 30% call concurrency rates should have at least two resources assigned.



During 2024-25, Station 242's demand zone experienced the highest percentage of overlapped calls at 12.7%, followed by Station 243's demand zone at 9.3%.

Demand Zone (First Due Station)	Overlapped Calls	Total Calls	Percentage of Overlapped Calls
241	187	2,131	8.8
242	404	3,188	12.7
243	258	2,766	9.3
244	90	1,636	5.5
245	51	1,053	4.8

Manteca Fire Department



Assessing System Resiliency

Unit Hour Utilization (UHU) is an objective measure of time on task for deployed resources. The county is as busy as other similarly sized departments that provide first response EMS, Fire, Hazmat, Rescue and Unknown.

Unit response volume and busy time analyses included all Manteca Fire Department (MFD) units designated by the MFD leadership team as valid units. UHU calculations are also reported for all MFD station areas, assuming a single 24-hour resource for each station area.

This assessment was completed in this manner to overcome challenges in the data collection regarding apparatus that are temporarily assigned to stations other than their “home” station. In other words, the the UHU values below are for all activity within the first due response zone regardless of which units ran the call. This best reflects the personnel’s workload and utilization regardless of which apparatus was utilized at the time.

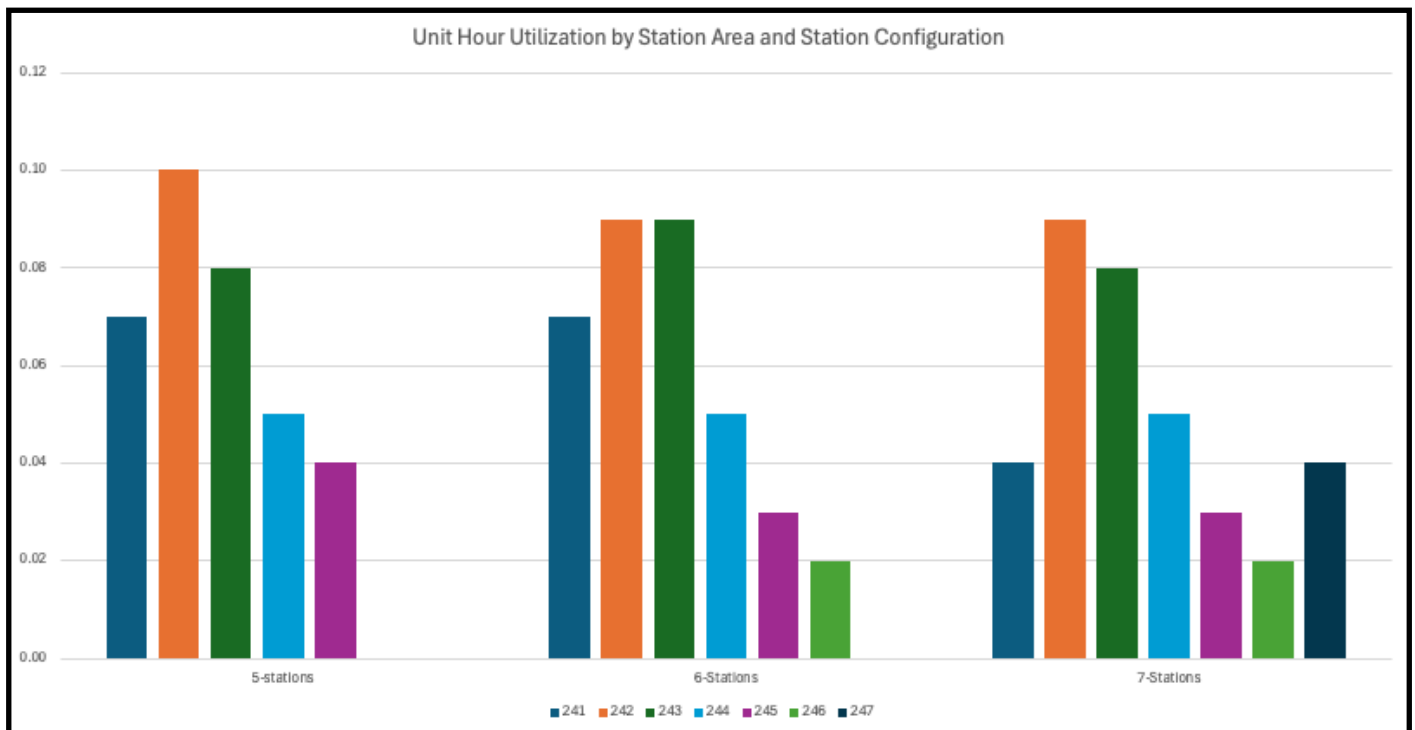
Additional staffed stations, and greater depth of resources, will have a positive impact and cost avoidance benefit of reinvesting strictly due to workload.

Observation

FITCH recommends that an upper unit utilization threshold of approximately 0.15, or 15%, would be considered best practice for large apparatus.

All MFD units and cross-staffed teams had UHU values <.15 during 2024.

Adding units for Stations 6 and 7 in the future has a positive impact on UHU and will insulate the city from reinvestment strictly due to workload.

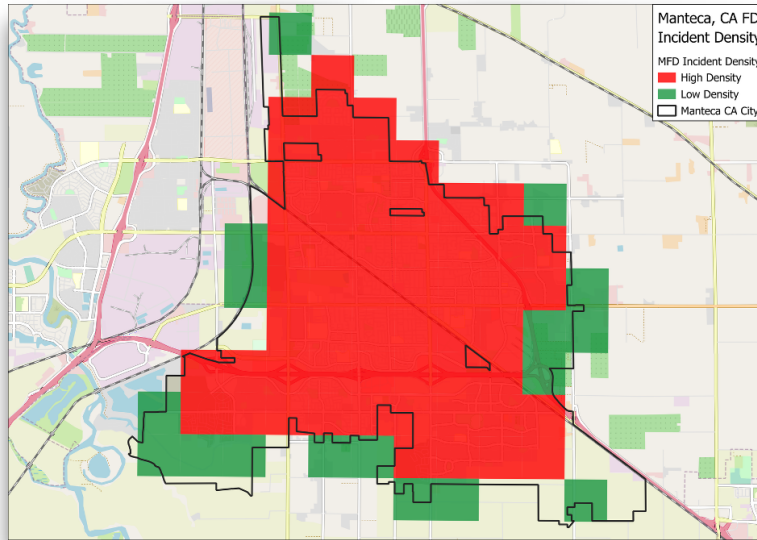




Manteca Fire Department

Commensurate Risk Model and Projected Growth

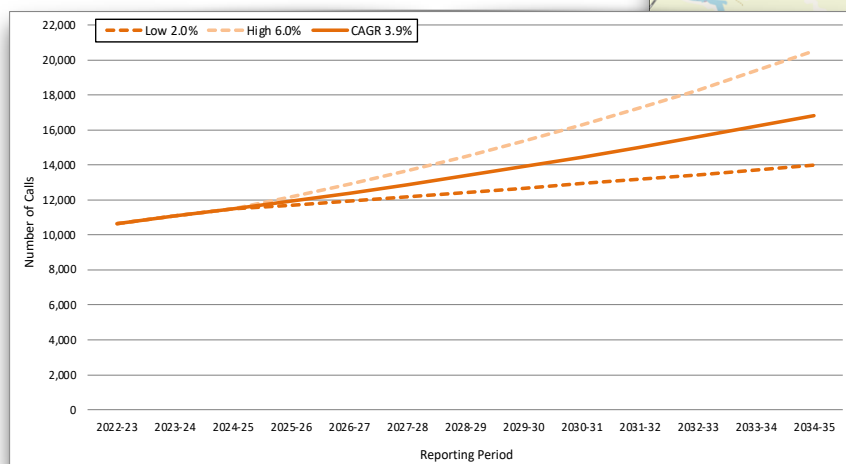
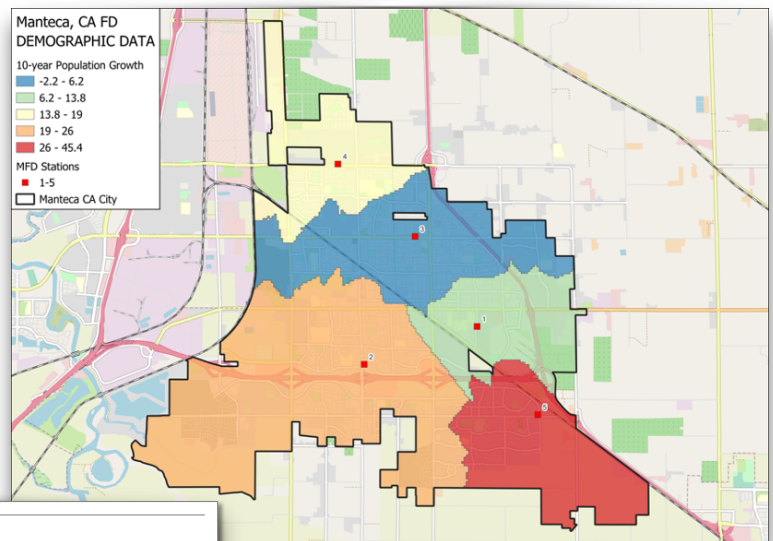
The call density analysis calculates the relative concentration of incidents based on approximately 0.5 geographic areas and at least half of the adjacent 0.5 grids. The assessment is based on call density and not population. The red areas are designated as high-density service areas and green areas are low-density.



Recommendation

It is recommended that the department continue to monitor changes in the environment related to population growth and increased community demand.

Population growth projections through 2034-35 were evaluated by FDZ. Station 245 is projected to have positive growth of up to 45.4%. Station 243 has the least projected growth (-2.2%-6.2%). The departments station planning efforts are well-aligned with projected growth.



The available data set included three reporting periods of data, representing FY 2023-24 to 2024-25. Calls for MFD services increased by an average growth rate of 3.9% per year. The figure depicts observed call volume during the last five-year reporting periods and various hypothetical growth scenarios through 2034-35.

Manteca Fire Department



Measuring Response Time Performance

The Cascade of Events

The cascade of events is the sum of the individual elements of time beginning with a state of normalcy and continuing until normalcy is once again restored through the mitigation of the event. The elements of time that are important to the ultimate outcome of a structure fire or critical medical emergency begin with the initiation of the event. For example, the first onset of chest pain begins the biological and scientific time clock for heart damage, irrespective of when 911 is notified.

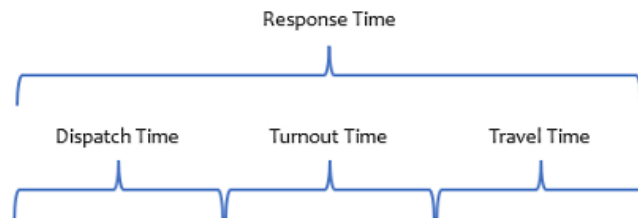
Similarly, a fire may begin and burn undetected for a period of time before the fire department is notified. The emergency response system does not have control over the time interval for recognition or the choice to request assistance. Therefore, the department utilizes quantifiable “hard” data points to measure and manage system performance. These elements include dispatch time (or call processing time), turnout time, travel time, and total response time.

Dispatch Time (or call processing time) is the element of time measured between when 911 answers the 911 call (or call received date and time), processes the information, and subsequently dispatches departmental units.

Turnout Time is the element of time that is measured between the time the unit is dispatched to the emergency incident, and the time when the unit is en route to the call.

Travel Time is the element of time between when a unit went en route, or began to travel to the incident, and the unit’s arrival on scene.

Total **Response Time** is the total time required to arrive on scene beginning with 911 answering the phone request for service and the time that the unit arrives on scene.



Incident Number	Call Type	Unit ID	Call Received Date and Time	Unit Dispatch Date and Time	Unit En Route Date and Time	Unit Arrival Date and Time	Unit Clear Date and Time
24-9458	Fall	AMB1	2024-12-30 18:19:35	2024-12-30 18:20:08	2024-12-30 18:21:01	2024-12-30 18:26:36	2024-12-30 18:58:44
24-9458	Fall	ENG1	2024-12-30 18:19:35	2024-12-30 18:21:19	2024-12-30 18:22:07	2024-12-30 18:27:47	2024-12-30 18:30:44
24-9459	Vehicle Fire	AMB1	2024-12-31 05:30:14	2024-12-31 05:31:26	2024-12-31 05:32:33	2024-12-31 05:38:38	2024-12-31 05:59:42
24-9459	Vehicle Fire	ENG1	2024-12-31 05:30:14	2024-12-31 05:31:26	2024-12-31 05:32:41	2024-12-31 05:37:32	2024-12-31 06:52:42
24-9459	Vehicle Fire	T2	2024-12-31 05:30:14	2024-12-31 05:31:40	2024-12-31 05:33:37	2024-12-31 05:39:19	2024-12-31 06:59:36
24-9460	MVA	AMB1	2024-12-31 10:33:57	2024-12-31 10:35:09	2024-12-31 10:36:40	2024-12-31 10:46:32	2024-12-31 11:35:13
24-9460	MVA	ENG1	2024-12-31 10:33:57	2024-12-31 10:35:19	2024-12-31 10:37:59	2024-12-31 10:42:30	2024-12-31 11:42:26
24-9460	MVA	R2	2024-12-31 10:33:57	2024-12-31 10:35:10	2024-12-31 10:36:49	2024-12-31 10:41:56	2024-12-31 11:25:13

Manteca Fire Department



Efficacy of Response Time Objectives

A sensitivity to response time has long been a primary driver of EMS system design and resourcing. The prevailing result is an institutional belief that faster is better, where patient outcomes positively correlate with response times. A 1979 study out of King County, Washington, became a foundational piece for developing NFPA 1710 and the CFAI Accreditation Standards. The study concluded that BLS delivered in 4 minutes and ALS delivered within 8 minutes, which positively correlated with patient outcomes. Thus, this set the bar for the standards still influencing system design today. However, the King County study only focused on non-traumatic sudden cardiac arrest (SCA), yet its standards were extrapolated to all call types. A follow-up study by Weaver et al. (1984) became the foundation for the 90th percentile standard of 8 minutes 59 seconds adopted by the American Ambulance Association (AAA). Again, this study focused on witnessed SCA presenting with V-Fib, yet the standard was extrapolated to all call types.

Observations

Evidenced-based clinical research coalesces around a response time of 5 minutes or less to have a statistically significant impact on the risk of mortality for the small proportion of high-acuity incidents.

Response time changes above 6 minutes have limited clinical return on investment and are largely a policy decision.

Much has changed in EMS since these studies, including an expanded body of research regarding the influence of response time on patient outcomes. Empirical research has expanded the scope to include a much wider representation of call types and responses while still considering response times compared to patient outcomes. The culmination of the research indicates that the threshold for response time to influence patient outcome resides around the 5-minute mark. In other words, if a system cannot respond in less than 5 minutes, they are unlikely to positively influence patient outcomes by purchasing any level of performance that cannot meet 5 minutes. However, it is important to recognize that the 5-minute threshold is associated with high-acuity incidents that account for a small proportion of the total calls. A summary of the relevant research is provided below.

Author	Density	Sample Size	Response Time Threshold	Does Response Time Impact Patient Outcome
Blackwell (2002)	ALS Urban	5,424	5 minutes	Yes < 5 minutes; No > 5 minutes
Pons (2005)	ALS Urban	9,559	4 minutes & 8 minutes	No < 8 minutes; Yes < 4 minutes in intermediate/high risk of mortality
Blackwell (2009)	ALS Urban; BLS MFR	746	10:59	No > or < 10:59
Blanchard (2012)	ALS Urban	7,760	8 minutes	No > or < 8 minutes
Weiss (2013)	Metro/Urban and Rural	559	N/A Continuous Variable	No relationship between time and clinical outcomes
Pons (2002)	ALS Urban	3,490	8 minutes	No > or < 8 minutes after controlling for severity of injury
Newgard (2010)	ALS Urban	3,656	4 minutes & 8 minutes and Golden Hour	No time intervals were statistically related to mortality including response time, on-scene time, transport time, or total EMS time
Band (2014)	ALS Urban; BLS MFR	4,122	N/A Continuous Variable	Adjusted for severity of injury, no significant difference between PD and EMS. In patients with severe injuries, gunshot, or stabbing more likely to survive if transported by POLICE.

Additional research has examined the efficacy of emergency, or lights and sirens, responses. While emergency responses do produce statistically quicker responses and transports, very few have clinical implications for patient outcomes. Studies also found that emergency responses were warranted in less than 10% of ambulance transports, and hospitals didn't utilize the time savings created upon arrival to the emergency department. At the same time, community risk increases with emergency responses as units navigate against the established traffic practices. Research has shown that most accidents involving emergency vehicles occur while they are responding lights and sirens.



Manteca Fire Department

Historical Response Time Performance

An assessment was completed to compare the current performance experienced within Manteca to the national consensus guidelines from the National Fire Protection Association (NFPA), the Commission on Fire Accreditation International (CFAI), and our observed national best practices.

Overall, the performance is challenged to meet national best practices and but has opportunities for incremental improvement.



Specifically, the department is encouraged to better align turnout time with the national recommendations of 1.0 minutes for EMS incidents and 1.5 minutes for all non-EMS incidents. Overall, a best practice would be 1.5 minutes or less for 90% of all incidents. This level of improvement is generally under management’s control and is a low to no-cost option to improve.

Recommendation

The Manteca Fire Department should measure all elements of the response time continuum at the 90th percentile for each program area.

The department should adopt operations and performance objectives for the system.

While the travel time performance is not specifically aligned with either the NFPA standard or the CFAI guidance, the response time performance is contextually reasonable with national best practices.

As reinforced throughout this report, there is considerable flexibility in the policy group’s freedom to establish local expectations for service and the adoption of any national standards.

Performance Category	Guidance (Minutes)	Manteca (Minutes)	Rating	Assessment of Current Performance
Dispatch Time/Call Processing				
NFPA 1710/1225	1.10	3.2	Substantive Opportunity for Improvement	Substantive Opportunity for Improvement; Performance is 1:12 over nationally observed best practices
CFAI	1.00			
National Observed Best Practice	2.00			
Turnout Time				
NFPA 1710 (EMS)	1.00	2.1	Opportunity for Improvement	Opportunity for Improvement: Performance could meet nationally observed best practices with a 36 second improvement
NFPA 1710 (Fire Related)	1.50			
CFAI	1.33			
National Observed Best Practice	1.50			
Travel Time				
NFPA 1710 (EMS - ALS Level)	8.00	6.4	Good	Good; aligned with an above average fire department performance. Policy should establish desired independent performance objectives or national standard such as NFPA 1710
NFPA 1710 (EMS BLS and Fire Related)	4.00			
CFAI	5.20			
Rural Areas	13.00			
National Observed Best Practice	≤9.0			

Manteca Fire Department



Station Location Analyses Utilizing the Current Five Station Configuration and A 6-Station and 7-Station Configuration



Manteca Fire Department

Five Fire Station Locations Study - 4 Minutes

5-Station Configuration

Comprehensive analyses were completed regarding fire and rescue station locations for various travel time alternatives. These strategies provided the department with the greatest flexibility to transparently establish the desired service levels and plan for the investment to accomplish operational initiatives.

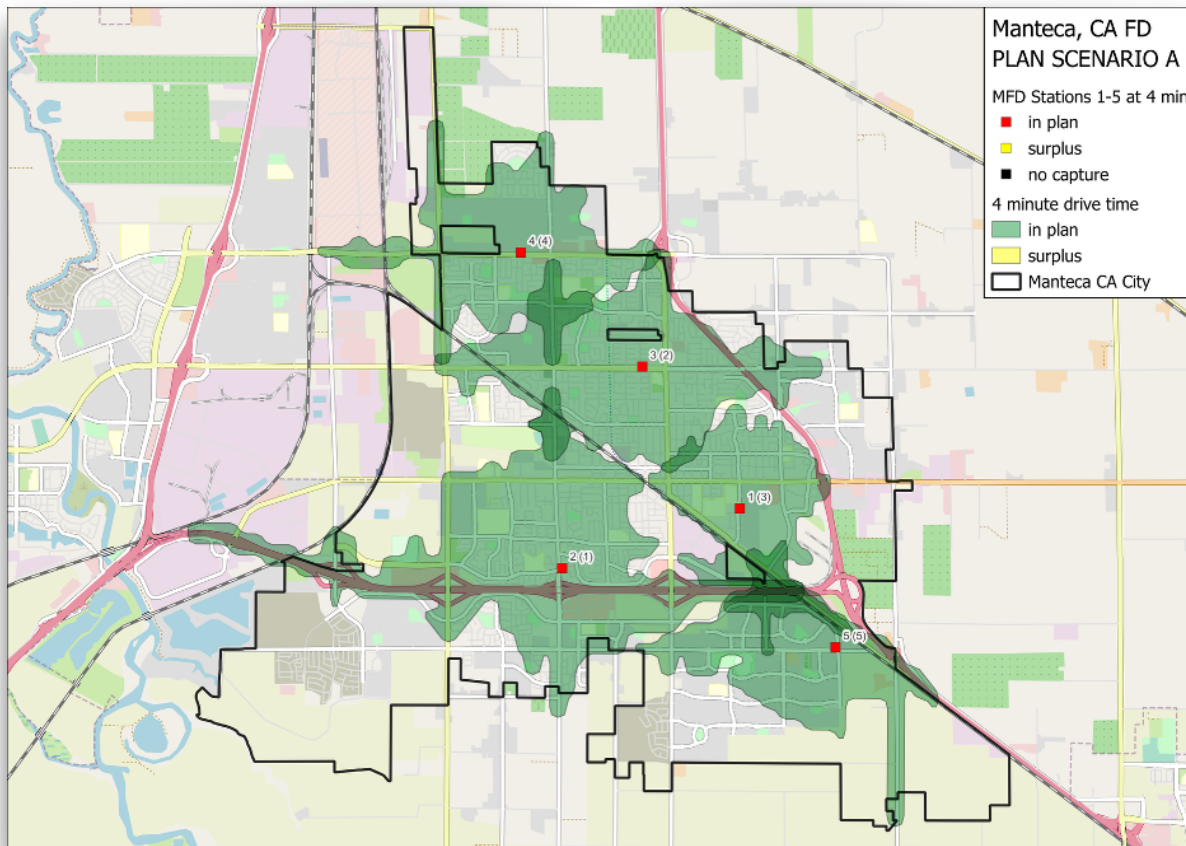
Analyses within this study have validated that the department has utilized a well-developed station location process that has resulted in fire station locations that are reasonably well-aligned with risks.

The GIS report provided location analysis that included configurations for all calls in Fire Demand Zones and Staffed Stations, for the following travel times: 4, 5, 6, and 8 minute travel times.

Observation

Results suggest that with 5 staffed stations, ~80% of calls can be responded to within 4 minutes or less of travel time.

The Commission on Fire Accreditation International (CFAI) historically had recognized a 5-minute and 20 second travel time for urban populations.

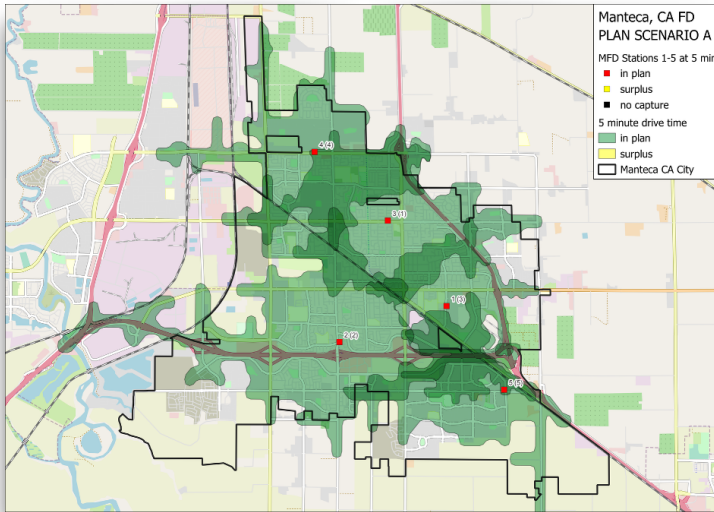


GIS analyses of the efficacy of a 4-minute travel time confirms that 79.65% of the incidents could be covered within 4 minutes from a 5 Manteca Fire Department staffed station configuration.



Manteca Fire Department

Five Fire Station Locations - 5-, 6-, and 8-Minutes



5-MINUTE TRAVEL TIME

An assessment of the efficacy of a 5-minute travel time confirms that 93.36% of the incidents could be covered within 5 minutes from the 5 Manteca Fire Department staffed stations.

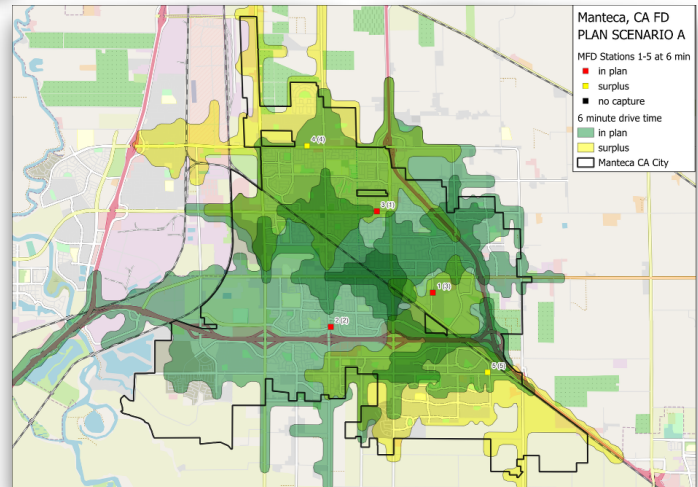
Recommendation

The department should adopt a desired performance objective and plan for the capital and human resources necessary for implementation.

6-MINUTE TRAVEL TIME

An assessment of the efficacy of a 5-minute travel time confirms that 98.13% of the incidents could be covered within 5 minutes from the 5 Manteca Fire Department staffed stations.

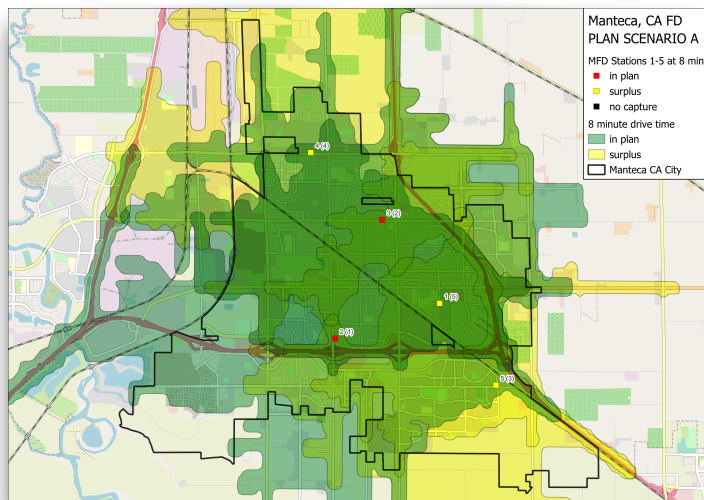
As resources are constrained, a three station configuration could maintain the 6-minute travel time for ~91% of the incidents.



8-MINUTE TRAVEL TIME

An assessment of the efficacy of an 8-minute travel time confirms that ~99% of the incidents could be covered within 8 minutes from a 5 Manteca Fire Department staffed station configuration.

As resources are drawn down, a two station configuration could maintain the 8-minutes at 97%.





Manteca Fire Department

Six Fire Station Location Study - 4 Minutes

6-Station Configuration

Comprehensive analyses were completed regarding fire and rescue station locations for various travel time alternatives. These strategies provided the department with the greatest flexibility to transparently establish the desired service levels and plan for the investment to accomplish operational initiatives.

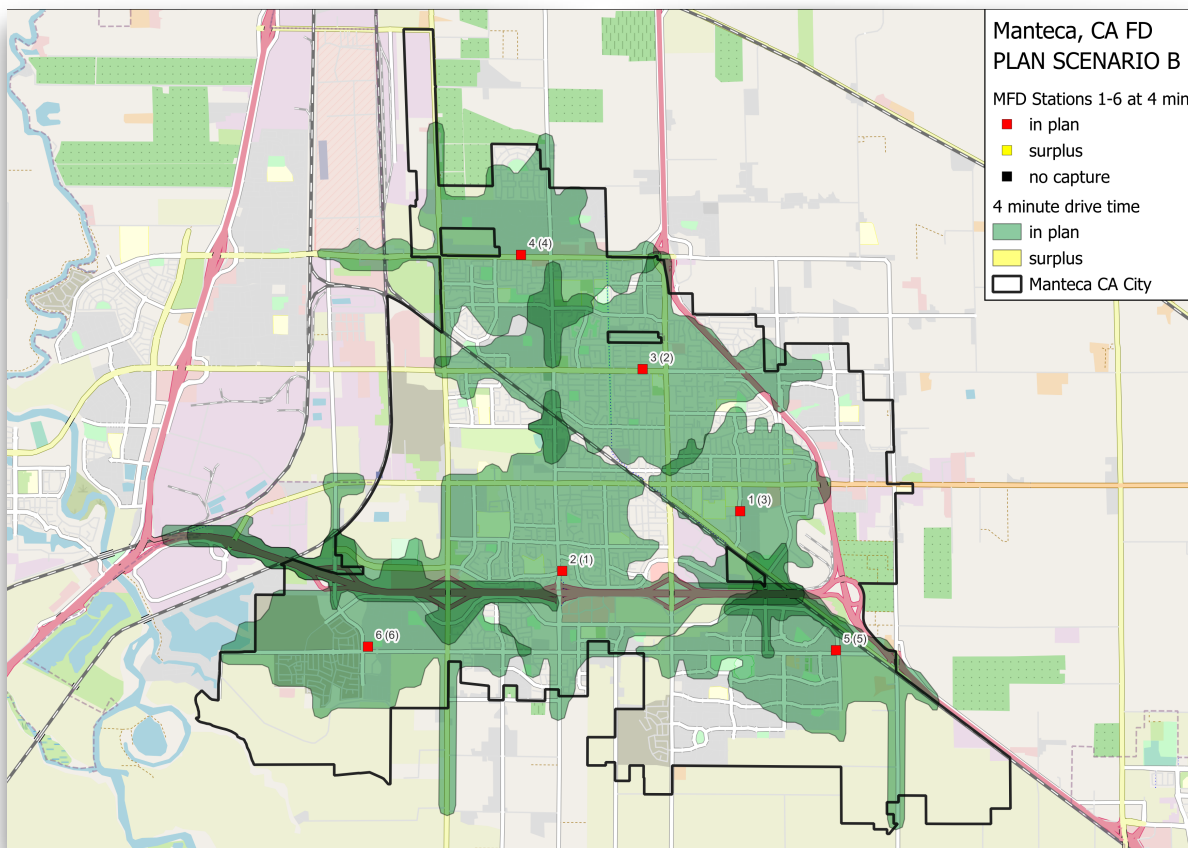
Analyses within this study have validated that the department has utilized a well-developed station location process that has resulted in fire station locations that are reasonably well-aligned with risks.

The GIS report provided location analysis that included configurations for all calls in Fire Demand Zones and Staffed Stations, for the following travel times: 4, 5, 6, and 8 minute travel times.

Observation

Results suggest that with 5 staffed stations, ~83% of calls can be responded to within 4 minutes or less travel time.

The Commission on Fire Accreditation International (CFAI) historically had recognized a 5-minute and 20 second travel time for urban populations.

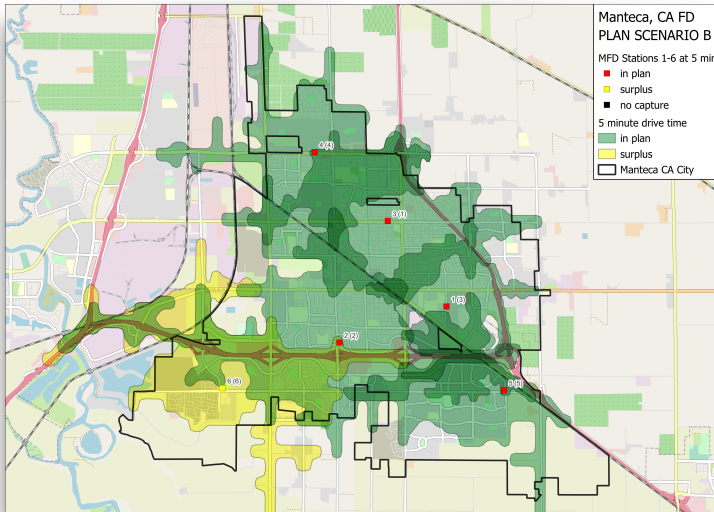


GIS analyses of the efficacy of a 4-minute travel time confirms that 82.75% of the incidents could be covered within 4 minutes from a 6 Manteca Fire Department staffed station configuration.



Manteca Fire Department

Six Fire Station Locations - 5-, 6-, and 8-Minutes



5-MINUTE TRAVEL TIME

An assessment of the efficacy of a 5-minute travel time confirms that 95.01% of the incidents could be covered within 5 minutes from the 6 Manteca Fire Department staffed stations.

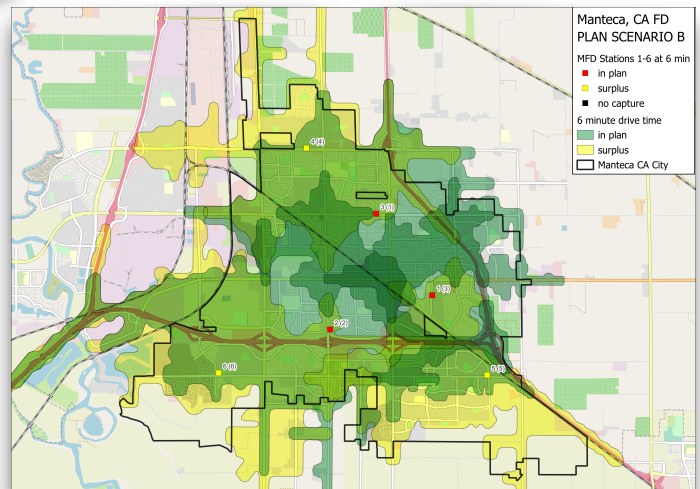
Recommendation

The department should adopt a desired performance objective and plan for the capital and human resources necessary for implementation.

6-MINUTE TRAVEL TIME

An assessment of the efficacy of a 6-minute travel time confirms that 98.42% of the incidents could be covered within 6 minutes from the 6 Manteca Fire Department staffed stations.

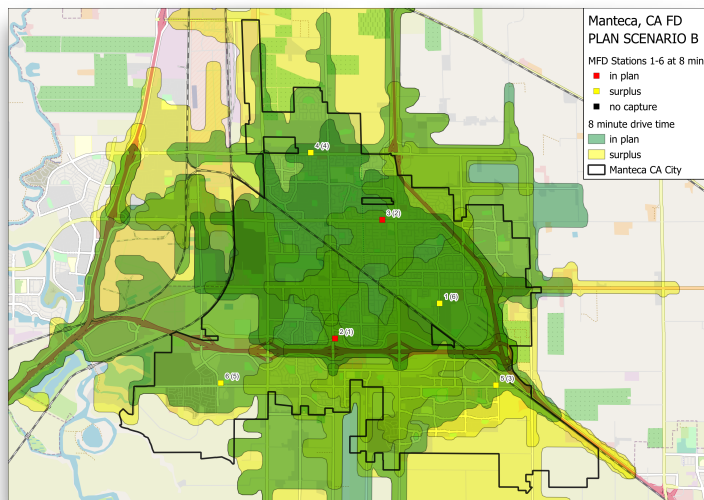
As resources are constrained, a three station configuration could maintain the 6-minute travel time at ~91%.



8-MINUTE TRAVEL TIME

An assessment of the efficacy of an 8-minute travel time confirms that ~99% of the incidents could be covered within 8 minutes from a 6 Manteca Fire Department staffed station configuration.

As resources are drawn down, a two station configuration could maintain the 8-minute travel time at 97%.





Manteca Fire Department

Seven Fire Station Locations Study - 4 Minutes

7-Station Configuration

Comprehensive analyses were completed regarding fire and rescue station locations for various travel time alternatives. These strategies provided the department with the greatest flexibility to transparently establish the desired service levels and plan for the investment to accomplish operational initiatives.

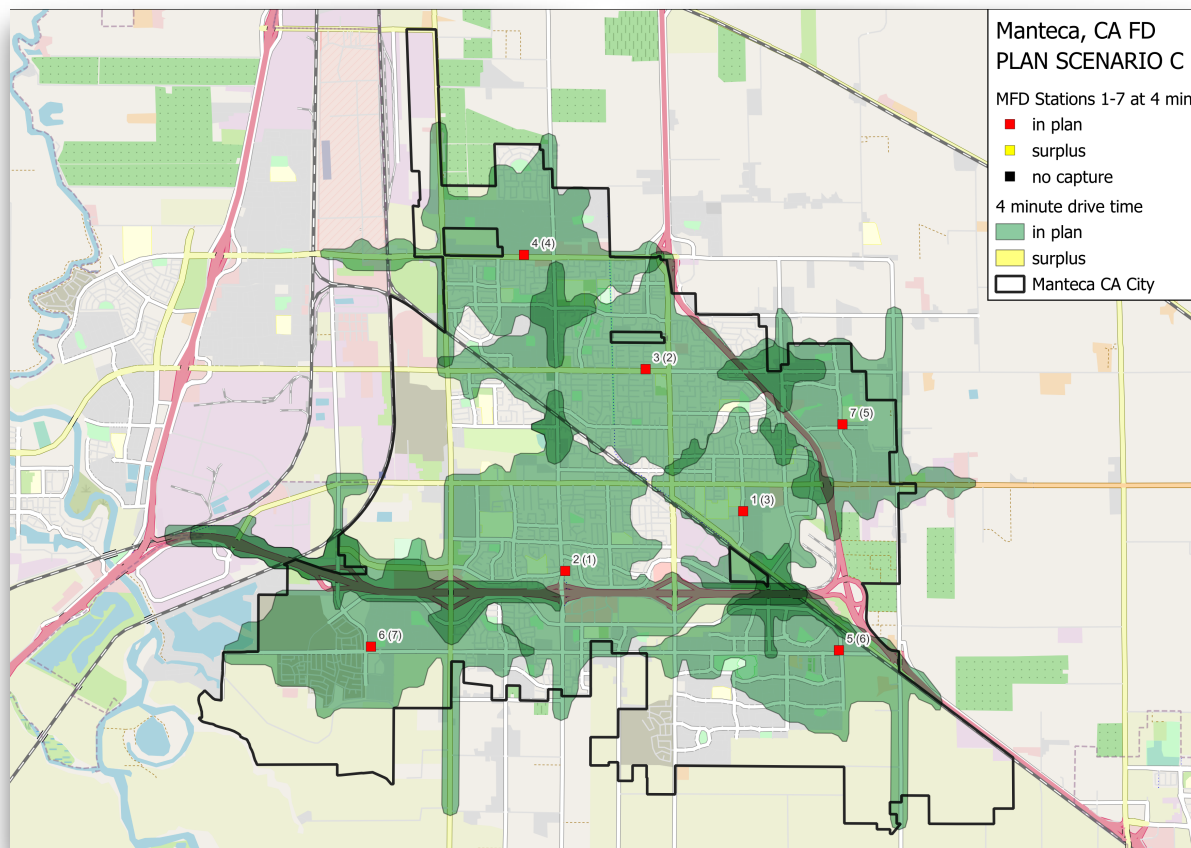
Analyses within this study have validated that the department has utilized a well-developed station location process that has resulted in fire station locations that are reasonably well-aligned with risks.

The GIS report provided location analysis that included configurations for all calls in Fire Demand Zones and Staffed Stations, for the following travel times: 4, 5, 6, and 8 minute travel times.

Observation

Results suggest that with 5 staffed stations, ~89% of calls can be responded to within 4 minutes or less travel time.

The Commission on Fire Accreditation International (CFAI) historically had recognized a 5-minute and 20 second travel time for urban populations.

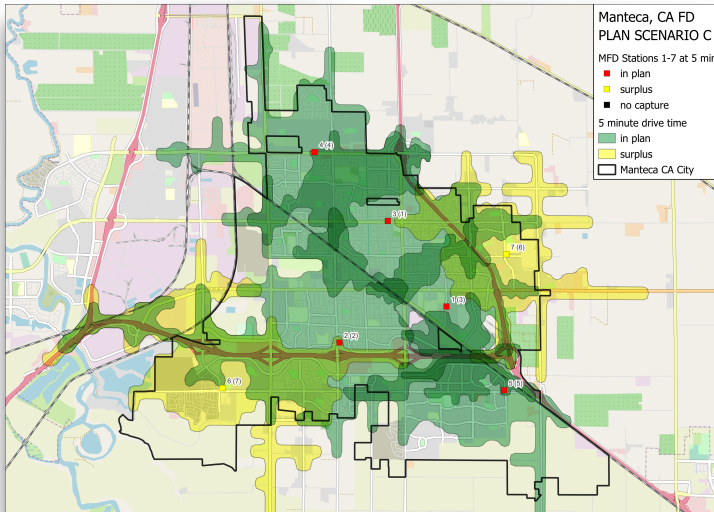


GIS analyses of the efficacy of a 4-minute travel time confirms that 88.88% of the incidents could be covered within 4 minutes from a 7 Manteca Fire Department staffed station configuration.



Manteca Fire Department

Seven Fire Station Locations - 5-, 6-, and 8-Minutes



5-MINUTE TRAVEL TIME

An assessment of the efficacy of a 5-minute travel time confirms that 96.9% of the incidents could be covered within 5 minutes from the 7 Manteca Fire Department staffed stations.

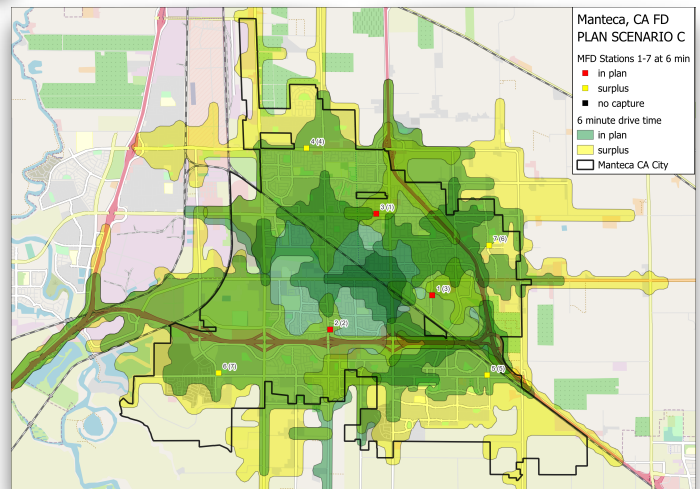
Recommendation

The department should adopt a desired performance objective and plan for the capital and human resources necessary for implementation.

6-MINUTE TRAVEL TIME

An assessment of the efficacy of a 6-minute travel time confirms that 98.88% of the incidents could be covered within 6 minutes from the 7 Manteca Fire Department staffed stations.

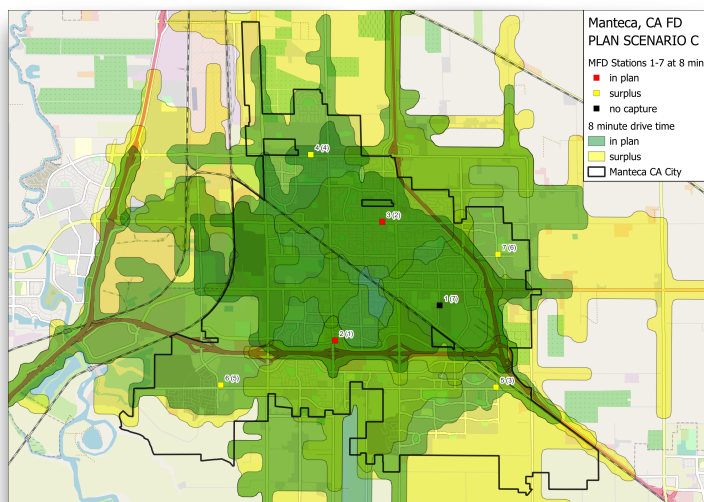
As resources are constrained, a three station configuration could maintain the 6-minute travel time at ~91%.



8-MINUTE TRAVEL TIME

An assessment of the efficacy of an 8-minute travel time confirms that ~99% of the incidents could be covered within 8 minutes from a 7 Manteca Fire Department staffed station configuration.

As resources are drawn down, a two station configuration could maintain the 8-minute travel time at 97%.



Manteca Fire Department



Concentration Study Revisited for ERF

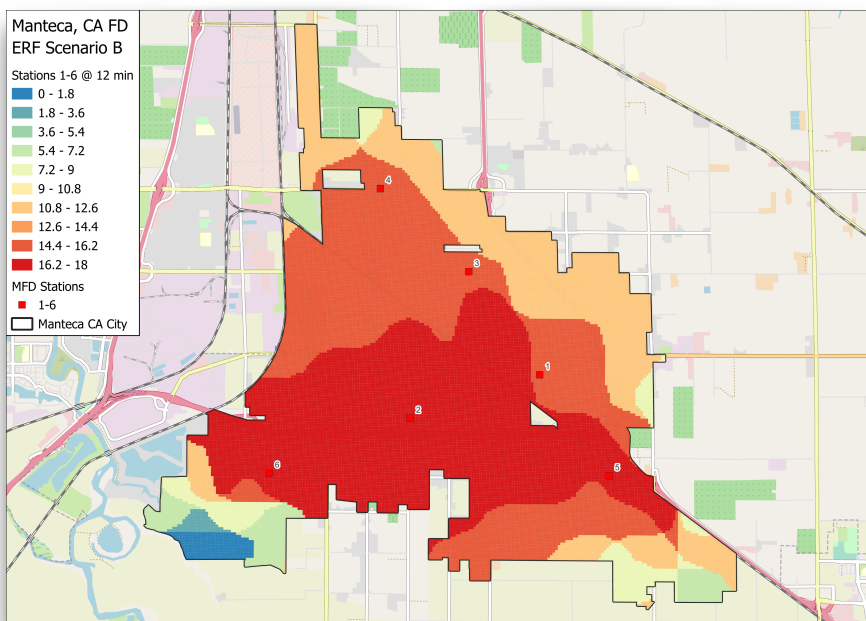
The previous analyses for first due coverage of the 5-, 6-, and 7-station configurations also consider the current call volume that exists in each fire station area. Therefore, one limitation to the assessment is if new development is occurring, or is planned to occur, but hasn't caused a commensurate increase in calls yet.

This analysis revisits the concentration study and compares a hypothetical 15-person Effective Response Force (ERF) to cover the geography, irrespective of the call volume, across the various station configurations.

Observations

A seven station configuration can achieve a 15-person ERF within 12 minutes travel time at the 90th percentile.

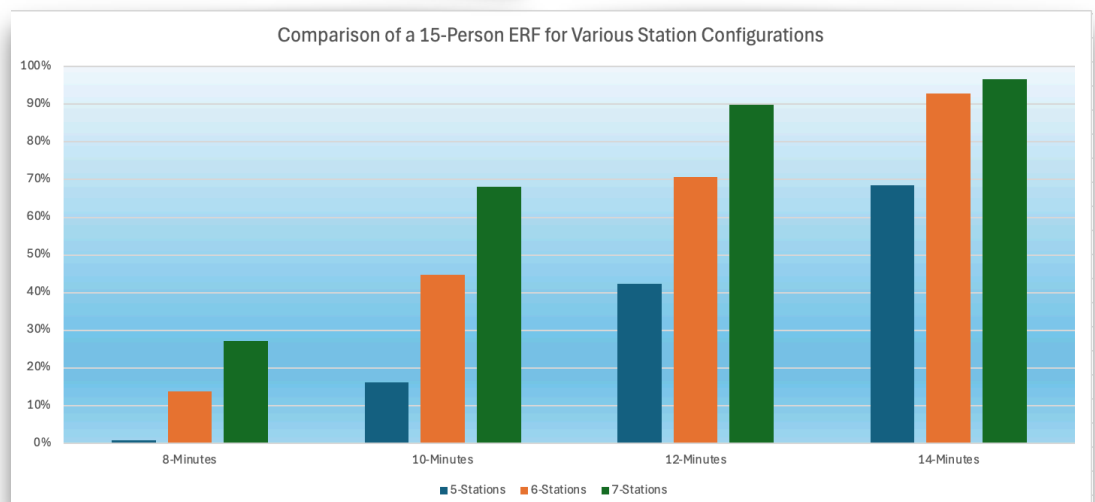
The six and seven station configurations significantly approve ERF capabilities.



As discussed previously, NFPA 1710 identifies the desired first due response time at 4-minutes travel time to 90% of the incidents or more. It is anticipated that a 7-station configuration will achieve 90% coverage once fully implemented. A 6-station configuration is estimated to achieve approximately 83% coverage.

In addition, NFPA 1710 identifies that the desired ERF (or balance of the first alarm) should arrive within 8-minutes travel time to 90% of the incidents.

Analyses provided below demonstrates a significant improvement in the ability to achieve an ERF at all time increments with the 6th and 7th stations. The 90th percentile is achieved at 12-minutes with a 7-station configuration and at both a 6 and 7 station configuration at 14-mintues.



Manteca Fire Department



ISO Considerations for Improvement

Manteca Fire Department



State and National ISO Comparisons

The Insurance Services Organization (ISO) provides some comparison for the frequency with which agencies are classified across the various Public Protection Classifications (PPC). It is recognized, that there are nuances to the ultimate PPC rating in each community, the summary provided by ISO does provide some comparative value to communities to understand their overall PPC rating versus the national experience and within Connecticut.

Willington's current PPC rating is a 3/3Y. For these comparison purposes we will refer to it as a 3. Class 5 is the most frequently assigned classification across the United States.

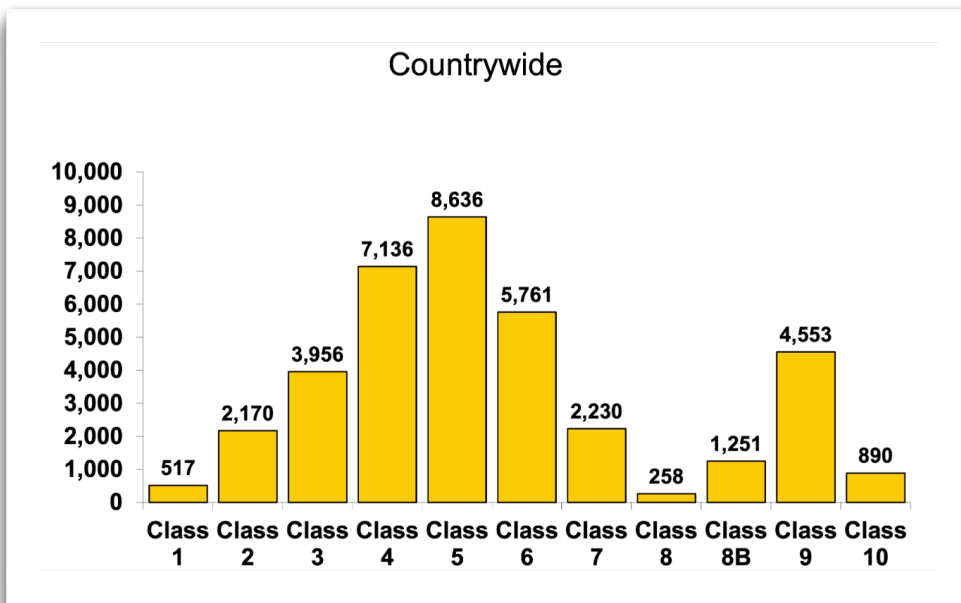
Observations

Within the State of California, Manteca's Class 3 rating is the most frequently assigned.

Fifty-three percent of the departments rated in were a Class 3 or better in California.

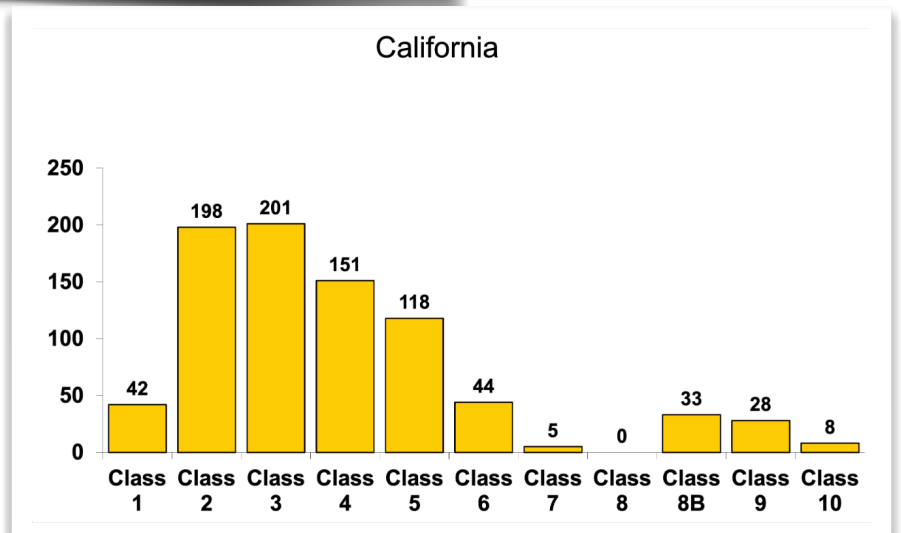
Independently, a Class 3 represents 24% of the rated departments.

Comparing Manteca's ISO's PPC rating of 3 within California, reveals that the most frequently assigned PPC rating is a Class 3.



Within California, 53% of the departments rated were a Class 3 or better. Independently, a Class 2 represents 24% of the rated departments.

Finally, 47% of the departments that were rated within California were rated lower than Manteca.



Manteca Fire Department



ISO Considerations for Improvement

The PPC rating from ISO includes 10 points for Emergency Communications, 50 points for the Fire Department, and another 40 points for Water Supply. Two adjustments are then made where an agency can earn up to 5.5 additional points for Community Risk Reduction activities and a negative “Divergence” value based on the relative difference between the Fire Department and Water Supply scores. Considering the PPC rating provided in the most recent 2025 evaluation, the fire department had a total of 73.88 points out of a possible 105.5, equating to a Class 3/3Y rating.

At 73.88 points, Manteca’s score is 6.12 points from the threshold of moving to a Class 2/2Y at 80 points. Conversely, the rating has the capacity to absorb up to 3.89 points before regressing to a 4/4Y. Therefore, it is recommended that Manteca focus on areas that have the greatest return on investment.

Addressing the municipal water supply, especially fire hydrant inspection and water flow testing, may be a long-term solution due the costs and other competing demands. However, several areas were identified where the fire department could benefit is outlined below.

If the policy choice is to maximize opportunities to improve the ISO rating, the following summary identifies areas that may have the greatest return on investment. The department may benefit from reevaluating the utilization of Quint apparatus to improve the *credit for ladder service* and the *credit for reserve ladder service*. The goal is to have a ladder truck within 2.5 miles of needed fire flows greater than 3,500 gpm and/or 3 story buildings.

Similarly, the *credit for deployment analysis* can be improved with the opening of new stations and the utilization of additional ladder service to ensure that the deployment analysis has improved results. The

credit for training has an opportunity for improvement that is typically utilize low investment strategies to maximize points. Specifically, the greatest area of improvement is in pre-fire planning.

The *credit for company personnel* would be improved by opening of the two new stations. Currently, ISO is providing credit for 16 personnel per day.

Observations

The fire department has opportunities for improvement within the most recent PPC Summary Rating Report.

The opening of additional stations and/or utilizing additional ladder-capable apparatus will improve multiple independent rating areas.

FRFS Feature	Earned Credit	Credit Available	Delta
Emergency Communications	9.2	10	0.8
Fire Department	32.41	50	17.59
Credit for Ladder Service	1.6	4	2.4
Credit for Reserve Ladder Service	0.21	0.5	0.29
Credit for Deployment Analysis	6.06	10	3.94
Credit for Company Personnel	6.67	15	8.33
Credit for Training	7.02	9	1.98
Water Supply	28.71	40	11.29
Community Risk Reduction	4.95	5.5	0.55
Total Credit	73.88	105.5	31.62

Manteca Fire Department



All-Hazards System Assessment



Manteca Fire Department

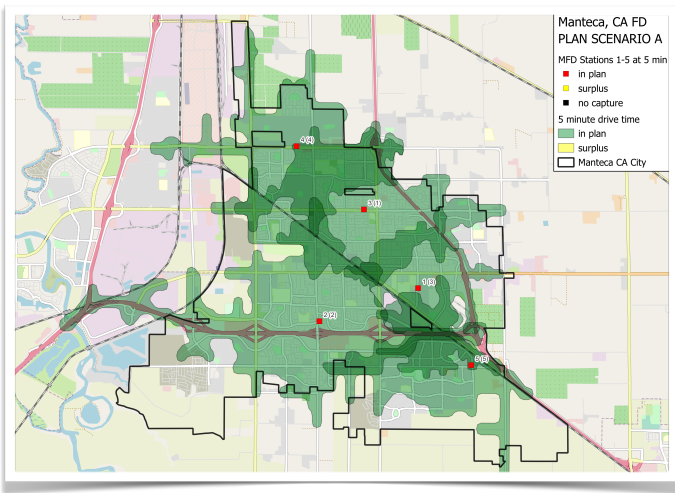
Assessment of the Current Deployment

The fire station location study presented previously demonstrated that the current 5-station configuration is well positioned to deliver a 5-minute travel time to ~93% of the incidents. However, if the goal is to meet the NFPA 1710 recommendation of a 4-minute travel time, then additional staffed stations are required.

Recommendation

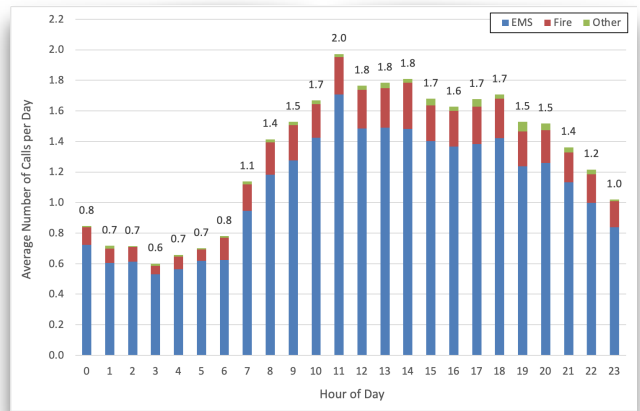
The department should consider additional resources to meet both the desired response time and the average call demand.

The all-hazards deployment is not sufficiently resourced to maintain response times that are aligned with the response time capabilities afforded by the number and locations of fire stations.

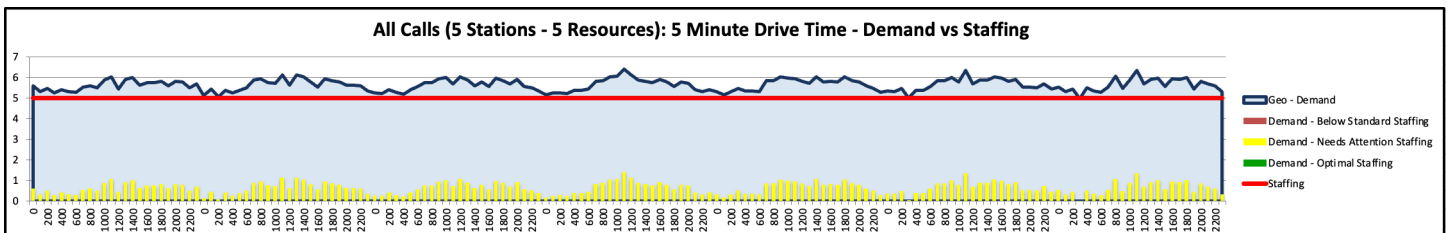


However, the department is actually performing at 6.4 minutes at the 90th percentile. This is ~1.5 minutes longer than the station locations should be providing due to the depth of the available resources. In other words, the lean resource allocation is insufficient to fully realize the desired return on investment of the current fixed facilities.

Understanding that the average demand throughout the peak of the day is approximately 1.8 calls per hour, the net available resources (5 units - 2 calls per hour = 3 available units) may be as low as 3 fire suppression units throughout the peak of the day without considering other management directed activities that impact availability.



The following staffing to demand assessment considers the current staffing to demand to meet a 5-minute travel time, and the actual call durations throughout each day of the week. The RED line indicates the deployed resources and the BLUE line indicates the combined demand for both response time compliance and the demand for resources. Results demonstrate that the resources are insufficient to both respond to calls and to deliver the desired response time throughout the peak of the day, every day of the week.



Manteca Fire Department



Improving Resource Allocation Strategies

Understanding the relationship that the resource allocations strategies have on the response time performance, availability, and limited return on the investment of the fixed facilities, analyses here focused on improvement.

A recommended solution to the current deployment is to add an additional staffed resource to Station 242. This will add the depth of resources to allow the station locations currently provided to perform as designed, at 5-minutes travel time.

In concert with the ISO assessment, having a second resource with aerial capability may provide a multi-faceted benefit to the department.

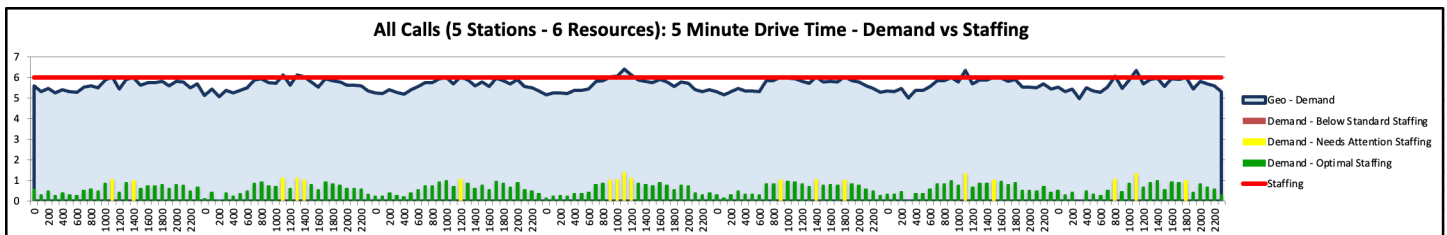
Adding One Additional Fire Suppression Resource (Aerial Capability)

This assessment was to add the minimum solution to improve the availability of fire suppression resources to realize an improved response time. This would require 6 staffed resources per day. This strategy would remain as a lean deployment, but provides for a reasonable assumption of risk. The system UHU would be 10.9% and would not need any near term reinvestment.

Recommendation

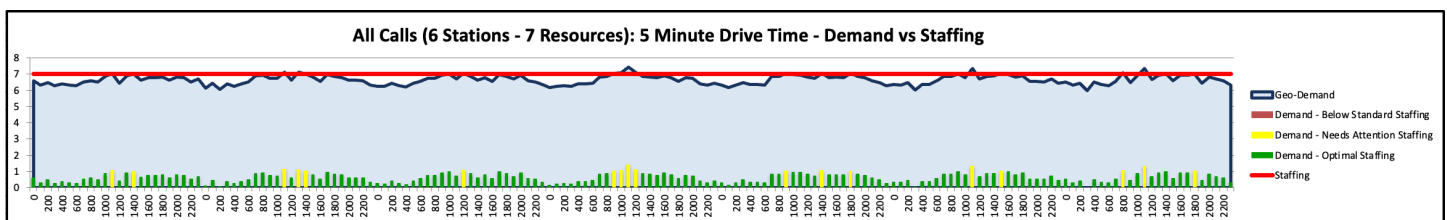
The department is encouraged to consider deploying one more resource than the station coverage.

In addition, if improving ISO ladder coverage is desired, the additional resources should have aerial capabilities.



Resource Allocation for a 6-Station Deployment Model (Aerial Capability)

This assessment was to add the minimum solution to improve the availability of fire suppression resources to realize an improved response time. This would require 7 staffed resources per day. This strategy would remain as a lean deployment, but provides for a reasonable assumption of risk. Similar to the previous alternative, the department may want to consider Quint apparatus with aerial capability if the desire is to improve ladder coverage through the ISO lens. The system UHU would be 9.4% and would not need any near term reinvestment.



Manteca Fire Department



Considerations for Meeting NFPA 1710

The fire station location study presented previously demonstrated that a 7-station configuration is well positioned to deliver a 4-minute travel time to ~89% of the incidents. Understanding that the GIS planning utilizes average road speeds and the department may exceed average road speeds and utilize alternative driving patterns, it is expected that the department outperform the GIS planning.

Recommendation

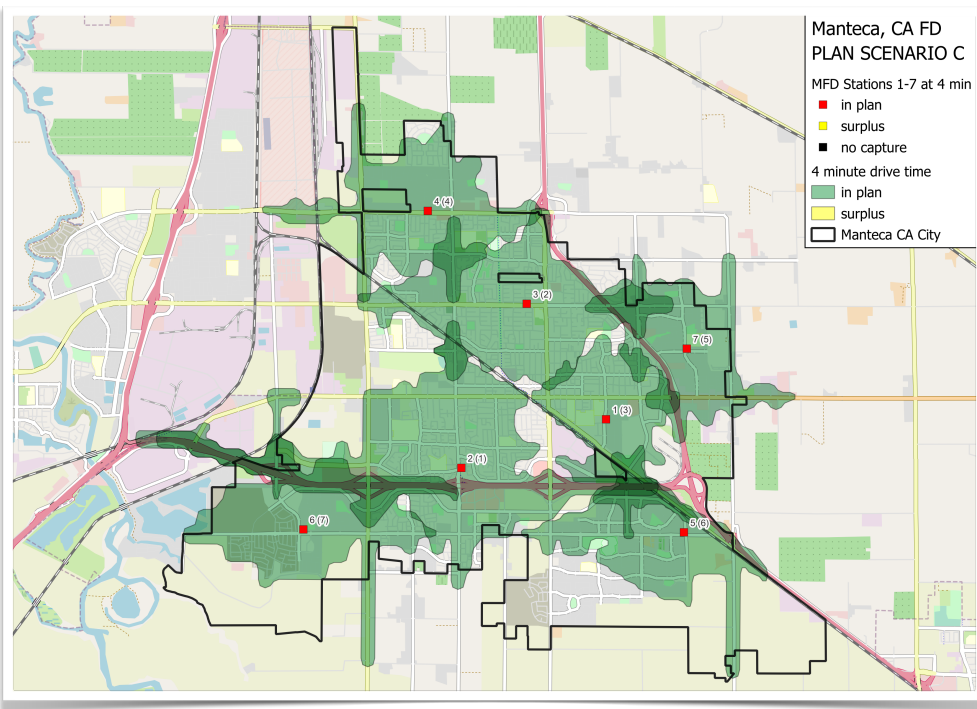
The department is encouraged to consider deploying one more resource than the station coverage.

In addition, if improving ISO ladder coverage is desired, the additional resources should have aerial capabilities.

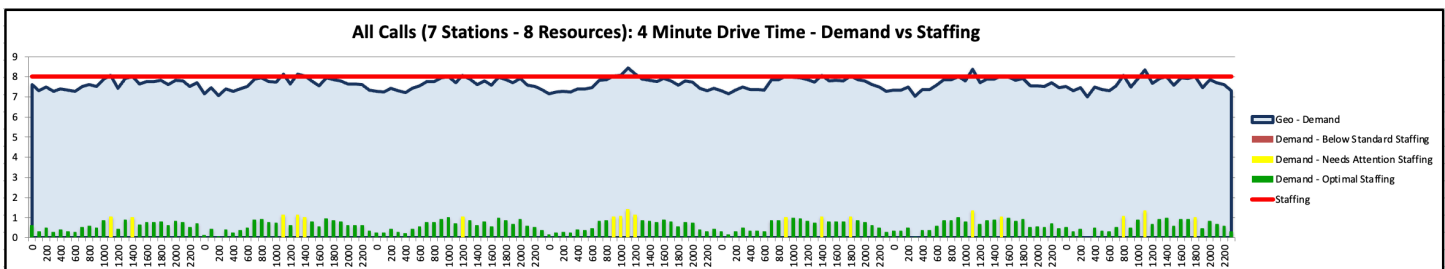
The 7-station configuration will meet the NFPA 1710 coverage for first arrivals.

Resource Allocation for a 7-Station Deployment Model (Aerial Capability)

This assessment was to add the minimum solution to improve the availability of fire suppression resources to meet NFPA 1710's 4-minute travel time.



This would require 8 staffed resources per day. This strategy would remain as a lean deployment, but provides for a reasonable assumption of risk. Similar to the previous alternative, the department may want to consider Quint apparatus with aerial capability if the desire is to improve ladder coverage through the ISO lens. The system UHU would be 8.2% and would not need any near term reinvestment.



Manteca Fire Department



System Administration, Process Considerations, and Implementation Strategies

Manteca Fire Department



Considerations for Outcome Measures

In addition to setting goals or benchmarks related to impact or outcome measures, systems typically set goals or benchmarks related to outputs or process measures due to the presumed or evidence-based relationship between the two measures. For example, it is assumed that a faster response time would be beneficial for structure fires.

Outputs or process measures are typically more easily evaluated, as the system exerts direct influence over their outputs and processes, and can oversee related data collection and management. Impact or outcome measures become more difficult to evaluate when data collection and management are outside the purview of the system, and interpretation of data must account for other intervening factors.

Beginning to consider outcome measures allows the agency to desensitize some of the assumed output and process measures. For example, if structure fires are held to the room of origin at the desired percentage of time, then department may not have to act immediately if the response time increased by 30 seconds over the previous year. It provides greater flexibility for the policy group to attempt to understand which variables are contributing and their root causes.

Nevertheless, systems are encouraged to move beyond goal setting or benchmarking and evaluation related to outputs or process measures, and consider ways that impact or outcome measures can be evaluated. (Example provided below)

Fire Suppression		
Measure	Benchmark Performance	Current Performance
Structure Fire Incident Rates		
Number of Structure Fire Fatalities per 100,000 residents	≤ 1.11	#
Number of Structure Fire Rescues per 100,000 residents	#	#
Fire Spread - Degree of Confinement - All Building Fires with Fire Spread		
Fire Confined to Building of Origin	%	%
Fire Confined to Floor of Origin	%	%
Fire Confined to Room of Origin	%	%
Time to Fire Confined (from FD arrival)	10:00	mm:ss
Fire Spread - Degree of Confinement - Residential Structures with Fire Spread		
Fire Confined to Room of Origin		
Fires Controlled by Fire Suppression Systems		
Percentage of Fires Extinguished by Fire Suppression Systems in Protected Buildings	90%	%
Preventable Fire Incidents		
Percentage of Fires Unpreventable	%	%
Building Fires in Commercial Occupancies		
Fire Confined to Room of Origin	%	%
Fire Loss as a Percentage of Total Protected Property Value <u>with</u> Fire Protection System	%	%
Fire Loss as a Percentage of Total Protected Property Value <u>without</u> Fire Protection System	%	%
Property Saved in Buildings with Fires		
Value of Property Saved in Dollars	\$	\$
Fire Loss as a Percentage of Total Protected Property Value	0.05%	%
Emergency Medical Services		
Percentage of cardiac arrest patients receiving resuscitative efforts where return on spontaneous circulation is achieved	≥ 50%	%
Percentage of overall cardiac arrest patients with survival to discharge from hospital	≥ 33%	%
Percentage of EMS responses where treatment is indicated, and condition is improved or stabilized	≥ 90%	%

Manteca Fire Department



Community Risk Reduction Strategies

Research has shown that the best opportunity to reduce loss of life and property destruction is to prevent these events before they occur. The term Community Risk Reduction (CRR) is an evolution and expansion of the core principles learned since the 1970s in fire prevention.

In fact, the department offers various programs to educate the public on risk reduction.

The table below provides an example list of the types of CRR and prevention process efforts that all contribute to reducing risk in the community. This is intended to demonstrate the general depth and breadth of the types of things to measure and link to outcomes when available. However, it is not intended to be overly prescriptive as the department should evaluate what elements would provide the greatest synergy between operational, fiscal, and strategic planning goals.

Recommendation

The department should adopt and codify community risk reduction and other prevention process efforts.

The department should consider adopting a set of community risk reduction and other preventative process efforts.

Community Risk Reduction and Other Preventative Process Efforts

Measure	Benchmark Performance	Current Performance
Fire Investigations Program		
Percentage of incendiary fire investigations that meet the elements for arson referred to the district attorney for prosecution	%	%
Percentage of fire investigations resulting in a classification of accidental, incendiary, that meet the elements for arson	%	%
Number of fire investigations conducted	#	#
Number of juveniles referred to the Youth Fire-Setter Intervention Program	#	#
Fire Code Compliance Program		
Percentage of fire protection system plan reviews completed within 5 business days of receipt	%	%
Percentage of identified high-risk commercial locations inspected by renewal date	%	%
Percentage of initial new construction inspections completed within 2 business days of request	%	%
Number of identified high-risk commercial locations inspected by renewal date	#	#
Number of requests for service completed (re-inspections, surveys, open records requests, training sessions, and monthly permits)	#	#
Public Safety Education Services Program		
Percentage of elementary public schools in city limits participating in CRR activities	100%	%
Percentage of youth referred to department that have previously attended the Youth Fire-Setter Intervention Program	%	%
Number of Fire Department public safety education participants served	#	#
Number of elementary students in the city limits participating in CRR activities	#	#
Number of Health and Safety sessions provided	#	#
Number of hours spent on CRR requests for service	#	#
Number of smoke alarms distributed to residents	#	#
Emergency Medical Services Program		
Number of MIH interventions completed	#	#



Manteca Fire Department

Adopting a System of Measures - Staffed Resources

However, it is still important to measure and manage the efficiencies of a well-run operation using a system of measures as presented in the table below. In this manner, the daily management continues in place, but the strict adherence to system design performance is secondary to the outcomes measures. For example, if response time increases and there is no change in outcomes then it would be purely a policy choice to act. Conversely, if the outcomes change, then the department leadership will turn to the system of measures and attempt to discern which of the variables or combination of variables may be contributing to the change in outcomes.

The summary of measures provided below include all aspects of time, apparatus staffing by type, relative risk ratings, and system resiliency measures such as reliability, call concurrency, workload, and unit hour utilization. For example, reliability should be at least 70% for each station and only if the reliability drops below the 70% threshold before considering a mitigation reaction. Similarly, call concurrency is credible until the call concurrency reaches 70%. In other words, only 30% of the calls are overlapping. Call concurrency is suggested as a per unit threshold unless the majority of calls are multi-unit responses. For example, if there are two units assigned to a station, the station level call concurrency can perform well at 60% or less for single unit responses. Finally, the cross-staffed strategy applies to an upper call volume threshold of no more than 1,500 calls per year (4 calls per day) and a call concurrency of 15% or less. Under these conditions, units can typically be cross-staffed.

The system of measures provided are not intended to be overly prescriptive. The department should adopt the system performance objectives internally and update as needed.

Recommendation

The department should adopt a system of measures to ensure accountability to the desired performance objectives.

Performance objectives are intended for any staffed resources.

In addition, the department should utilize a system of measures to transparently identify system needs and future investments.

Type of Measure	Performance Metric	Recommended Performance	Priority	Review Period
Station/Unit Performance	Turnout Time – EMS	≤1.0 Min at 90%	Emergent	Quarterly
	Turnout Time – All Other	≤1.5 Min at 90%	Emergent	Quarterly
	Travel Time	≤4 Min at 90%	Emergent	Quarterly
	Minimum Engine Staffing	≥3 Firefighters (Including Officer)	All Responses	Daily
	Minimum Aerial Staffing	≥3 Firefighters (Including Officer)	All Responses	Daily
System Design and Performance	Dispatch Time	≤2 Min at 90%	Emergent	Monthly
	Station Risk Rating	Increases in Risk		Annually
	Reliability	≥90%		Quarterly
	Call Concurrency	≤30% Per Unit		Quarterly
	Call Volume	3,000 – Initial 1,000 – Ongoing		Annually
	Unit Hour Utilization	≤0.15 on 24-hour Engines and Aerials ≤0.30 Maximum on 24-hour shifts		Quarterly
	Cross-Staffing at Unit Level	<1,500 annual calls and <15% Call Concurrency		Annually

Manteca Fire Department



Continuous Improvement and Annual Appraisal

This SOC document is designed to guide the department to continuously monitor performance, seek areas for improvement, and to clearly articulate service levels and performance to the community we have the privilege of serving. Therefore, the Fire Chief has established a Compliance Team to continuously monitor elements of this SOC and make recommendations for system adjustment or improvement quarterly.

Recommendation

The department adopt an annual appraisal process committed to continuous improvement.

Compliance Team and Responsibilities

The Compliance Team will consist of the following department members (TBD) and will have the responsibility of continuously monitoring changes in risk, community service demands and department performance in each program area, fire department demand zone, and/or risk category.

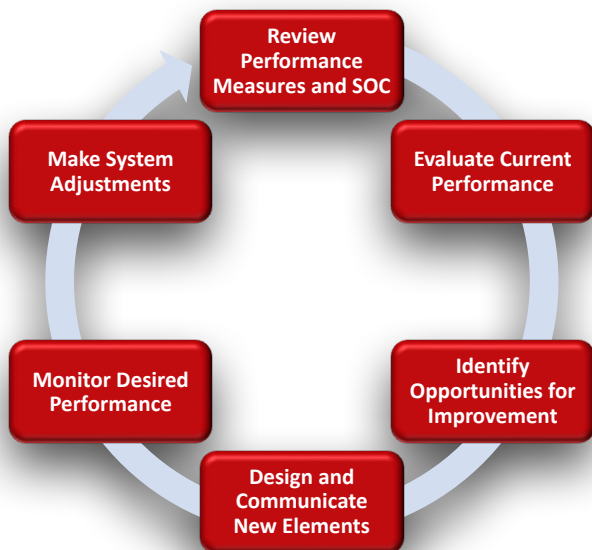
- Chair – Fire Chief or Designee
- Member – Community Risk Reduction
- Member – Operations
- Member – Administration
- Member – Finance

Performance Evaluation and Compliance Strategy

The Compliance Team will evaluate system performance by measuring first due unit performance at the 90th percentile quarterly and annually. In addition, the department will evaluate first due performance by each individual FDZ and by program area. Measures for the ERF by each program area, FDZ, and risk category will be evaluated annually. Annual reviews will be conducted in January of each year regarding the previous year. All response performance monitoring will exclusively evaluate emergency responses.

The Compliance Team will determine the strengths, weaknesses, opportunities, and challenges of the system performance annually and make recommendations for system adjustments to the Fire Chief. Finally, the team will annually update and evaluate the risk assessment matrices for relevancy and changes in community risk.

Ultimately, it is recommended that outcome measures are adopted and serve as the primary evaluation tool and that the traditional performance objectives and measures presented previously are utilized primarily as a management tool. In this manner, the department will not be overly sensitized to incremental changes in performance criteria if the outcomes continue to be met.





Manteca Fire Department

Community Driven Strategic Planning

Best practices support the concept that the fire department would benefit from a focused strategic planning exercise to help guide the next five-year period. Therefore, it is recommended that the fire department create a strategic plan for the fire department that would include results found in the CRA and SOC.

In *FITCH's* experience, the most successful strategic planning processes typically include a high level of involvement from key leaders, both formal and informal, from within the organization, such as the fire chief and labor group leadership, and external stakeholders and community members. While their participation is not required at each and every step, their buy-in along the way provides the highest chances of a successful planning effort for all stakeholders in the end.

At a high level, the process is intended to answer the following main questions:



Recommendation

It is recommended that the department conduct a community-driven strategic planning process to help guide the next three to five years that, at a minimum, include the results from this study.

An integral part of the strategic planning process is the completion of a SWOT analysis. SWOT stands for Strengths, Weaknesses, Opportunities, and Threats (SWOT).

The process is a broad-based stakeholder gap analysis where the Opportunities and Threats are more focused on external origins and Strengths and Weaknesses are more focused in internal origins.



The strategic planning process will assist the department in focusing on key initiatives for the next 5-year period.

Manteca Fire Department



Summary of Recommendations

The following recommendations were developed to maintain and improve capabilities, address gaps, and provide opportunities to improve service delivery. These are provided in order of convenience and are not represented by priority. All substantive recommendations were specifically identified throughout the report.

Recommendation 1	Adopt a system of measures to ensure accountability to the desired performance objectives.
Recommendation 2	Establish a system of measures to transparently identify system needs and future investments in personnel, fleet, and fire stations.
Recommendation 3	Consider additional staffing and stations to meet the department's 4-minute travel time benchmark.
Recommendation 4	Establish a program that uses fire managers to reduce Turnout Time to 90 seconds or less, 90% of the time, for all calls for service.
Recommendation 5	Establish and monitor expectations with the Primary and Secondary Public Safety Answering Points (PSAP/SPSAP) to improve Call Processing and Dispatch Time.
Recommendation 6	Develop a process to capture occupancy-level risks (building level) and incorporate specific occupancy ratings into the overall risk assessment process and risk matrices.
Recommendation 7	Monitor socioeconomic and demographic variables correlated with changes in risk.
Recommendation 8	Develop a process for the periodic assessment and validation of the risk categorization and classification processes.
Recommendation 9	Consider outcome measures in the periodic reassessment of the risk categorization and classification process.
Recommendation 10	At least annually, assess the potential impact of external influences that can significantly impact its performance and operations.
Recommendation 11	Continue planning for fire station locations and infrastructure to meet the demand of a growing community.
Recommendation 12	Measure all elements of the response time continuum at the 90th percentile for each program area.
Recommendation 13	Adopt a desired performance objective and plan for the capital and human resources necessary for implementation.
Recommendation 14	Opening additional stations and/or utilize additional ladder-capable apparatus to improve multiple independent rating (ISO) areas.
Recommendation 15	Consider additional resources to meet both the desired response time and the average call demand.

Manteca Fire Department



Summary of Recommendations

<p>Recommendation 16</p>	<p>The department should adopt and codify community risk reduction and other prevention process efforts.</p>
<p>Recommendation 17</p>	<p>The department adopt an annual appraisal process committed to continuous improvement.</p>
<p>Recommendation 18</p>	<p>It is recommended that the department conduct a community-driven strategic planning process to help guide the next three to five years that, at a minimum, include the results from this study.</p>





Manteca Fire Department

Appendices - Supporting Documents

Incremental investments and policies over the years will serve the City well as it considers future investments by providing a more measured long-term implementation plan. Recognizing the need for a long-term pathway, the

Recommendation

The City should consider a stair-stepped long-term implementation strategy to provide consistent and reliable services to the community that meet adopted service expectations.

Immediate Initiatives	<p>As part of the Fiscal Year 2026/27 Budget, update impact fee schedule to support increasing community demand and fire department capital needs</p> <p>Adopt a system of measures to ensure accountability to the desired performance objectives</p> <p>Establish a program that uses fire managers to reduce Turnout Time to 90 seconds or less, 90% of the time, for all calls for service</p> <p>Establish and monitor expectations with the Primary and Secondary Public Safety Answering Points (PSAP/SPSAP) to improve Call Processing and Dispatch Time</p> <p>At least annually, assess the potential impact of external influences that can significantly impact its performance and operations</p>
Short-Term Initiatives 1-3 Yrs	<p>Consider additional staffing, apparatus and stations to meet the department's 4-minute travel time benchmark (Fire Station 6, second Ladder/Quint)</p> <p>Establish a system of measures to transparently identify system needs and future investments in personnel, fleet, and fire stations</p> <p>Develop a process to capture occupancy-level risks (building level) and incorporate specific occupancy ratings into the overall risk assessment process and risk matrices</p> <p>Develop and implement strategy to increase ISO score</p> <p>Develop a process for the periodic assessment and validation of the risk categorization and classification processes</p> <p>Consider outcome measures in the periodic reassessment of the risk categorization and classification process</p>
Mid-Term Initiatives 4-8 Yrs	<p>Continue planning for fire station locations and infrastructure to meet the demand of a growing community (Fire Station 7)</p> <p>It is recommended that the department conduct a community-driven strategic planning process to help guide the next three to five years that, at a minimum, include the results from this study</p> <p>Monitor socioeconomic and demographic variables correlated with changes in risk</p> <p>Develop a process for the periodic assessment and validation of the risk categorization and classification processes</p> <p>The department should adopt and codify community risk reduction and other prevention process efforts</p> <p>Adopt a desired performance objective and plan for the capital and human resources necessary for implementation</p>
Long Term Initiatives 8-20 Yrs	<p>Monitor socioeconomic and demographic variables correlated with changes in risk</p> <p>Consider additional resources to meet both the desired response time and the average call demand</p>

following incremental strategies are presented for policy consideration.

The proposed stair-stepped implementation plan would include milestone investments that are relatively consistent across both the timeline and the additional general fund expenditures.

If adopted, the first milestone would be to increase impact fees to align with the community's and the fire department's capital needs.

Overall, the short-, mid-, and long-term implementations are providing a baseline of services to support 4-minute travel times.

The effectiveness of each milestone should be evaluated to ensure the desired return on investment.

Manteca Fire Department



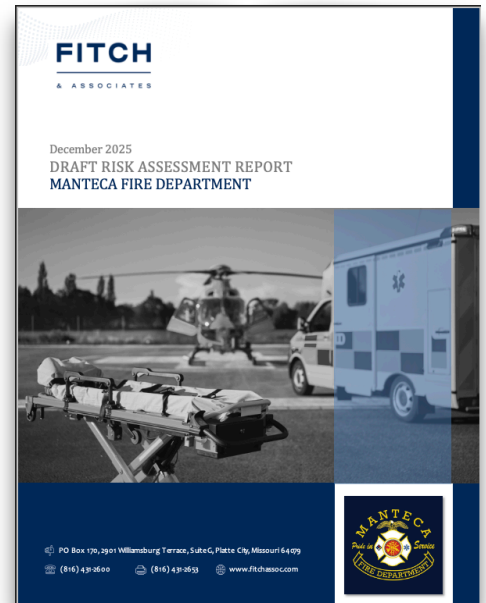
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January 2026

Appendices - Supporting Documents

The community risk assessment (CRA) is presented as a supporting document to provide greater detail and transparency into the risk assessment process.

This summary report provided the high-level substantive results of the community risk assessment. However, if greater detail is desired, please refer to the Community Risk Assessment report provided in the appendices.



The comprehensive quantitative data analysis is presented as a supporting document to provide greater detail and transparency into the historical performance of the fire department.

This summary report provided the high-level substantive results of the comprehensive data analysis. However, if greater detail is desired, please refer to the Data Analysis report provided in the appendices.



The comprehensive geospatial analysis (GIS) is presented as a supporting document to provide greater detail and transparency into the response time and fire station location study.

This summary report provided the high-level substantive results of the comprehensive data analysis. However, if greater detail is desired, please refer to the GIS Analysis report provided in the appendices.

Rosemount Fire Department, MN

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& ASSOCIATES