Public Safety Strategic Plan and Operations Assessment

CEDAR HILL, TEXAS

For City Council consideration on December 12, 2023

November 27, 2023

matrix consulting group

Table of Contents

1. Introduction and Executive Summary

The Matrix Consulting Group was retained by the City of Cedar Hill to conduct a Public Safety Strategic Plan and Operations Assessment, and this final report provides the analysis and findings of that effort.

1. Background and Scope of the Study

This study was commissioned to provide an independent and objective assessment of the Police and Fire Departments' staffing needs based on the work that staff in each function was handling at appropriate levels of service and management. The scope of the study was comprehensive, with a focus on each function within the Cedar Hill Police and Fire Departments. The objectives of the study are as follows:

- **Current operations and services** for all functions within the Police and Fire Departments, including analysis of workloads, service levels, staffing, scheduling, and deployment.
- **Comparison of current services and service levels** to identify areas of improvement needed to achieve efficiencies.
- **Current staffing needs** for all functions to handle law enforcement workloads in the City based on a factual assessment of all operations.
- **Growth**, examining current growth trends and develop staffing projections.

In summary, this study is designed to ensure that the Cedar Hill Police and Fire Departments have appropriate and justifiable staffing levels at this time and has projections for future staffing needs.

2. Methodology Used to Conduct the Study

The project team utilized several approaches to fully understand the service environment and issues relevant to the study, including the following:

- **Virtual and on-site interviews** with the leadership, other managers, unit supervisors and many staff in the Police and Fire Departments.
- **Data Collection** across a every service area in order to enable extensive and objective analysis.
- **Stakeholder Input**. Both a community survey and employee survey were utilized for this assessment. The community survey gauged the attitudes and perceptions of Cedar Hill community members regarding the services provided by its Public

Safety services. The Police and Fire Departments each had employee surveys to gauge the attitudes of employees in various topics about the departments and serving the community.

- **Iterative and Interactive Process** in which the project team first understood the current organization and service delivery system, identified issues, and assessed current staffing needs. Throughout the process, findings and interim deliverables were reviewed with the department and with City management.

This final report represents the culmination of this process, presenting the results of our analysis, including specific recommendations for the department on staffing, deployment, and other relevant issues.

3. Community Input

A community survey was made available for community member response in an online format. Both an English and Spanish version of the survey was provided to community members. A total of 290 community members responded to the survey. While many of the topics are expanded upon in the Community Survey located in Appendix A, the following highlights are of note.

- There is a general community satisfaction with the Cedar Hill Police and Fire Departments in terms of the services rendered.
- Of those individuals who have requested police and fire services in recent years, there is a high level of satisfaction with timelines and capability of the responding officers.
- Burglaries, and theft, issues related to juveniles, and crime related to City growth are the three most pertinent crime issues according to City residents.
- Responses were positive about the CHFD handling of testing and other services related to the COVID 19 pandemic according to City residents.
- Respondents were also positive about the effectiveness of public education programs provided by the Fire Department.

4. Employee Input

The police department employee survey was made available to all employees in an online format. Of the 89 total invitations sent to CHPD employees, there were a total of 80 responses received by the project team, resulting in a response rate of 90%[1]. While many

[1] This is a comparatively excellent response rate.

of these topics are expanded upon in the Police Department Employee Survey located in Appendix B, the following highlights are of note.

- Employees indicate positive attitudes toward their relationships with both the Cedar Hill community and City government.
- However, employees indicate negative attitudes towards the current staffing levels of the department and feel that it is impacting services provided.
- Employees indicate positive attitudes regarding the Tri-City Jail.
- Employees indicate dissatisfaction with the current firearms facility and current training facility in their ability to both foster effective training exercises as well as its ability to facilitate future employee growth.
- Employees indicate positive attitudes towards the internal operations and organizational structure of CHPD.
- Employees indicate a desire for more sufficient information to be provided via dispatch to facilitate effective services provided.
- Employees indicate positive attitudes towards the current training practices.
- Employees indicate positive attitudes towards the technologies and resources provided to them.

The Fire Department employee survey was made available to all employees in an online format. Of the 75 total invitations sent to CHFD employees, there were a total of 52 responses received by the project team, resulting in a response rate of 69%. While many of these topics are expanded upon in the Fire Department Employee Survey located in Appendix C, the following highlights are of note.

- Employees express positive attitudes towards their relationships with the Cedar Hill community and City government.
- Employees agree that they provide a high level of service to the community of Cedar Hill.
- Employees indicate that their current fire apparatus and fire equipment is well maintained and that they have adequate technology to perform their duties.

The chapters of the report, which follow, provide the project team's analysis of the Department, its management and services. At the conclusion of the report, we provide a summary of the recommendations.

5. Public Safety Services in Context

A study such as this one necessarily focuses on improvement needs and the potential for change. As a result, many of the positive things that a department achieves does not stand out. Cedar Hill's public safety services have excelled at managing change and innovation. Regionalization particularly is an example for not only for police and fire but for many city services. Just a few of the examples of the positive attributes include:

- Being a partner in the Southwest Regional Communications Center. This allowed a boundary drop to be initiated using a closest unit response for emergencies with the neighboring cities of DeSoto and Duncanville.
- Being a partner in a regional short-term holding facility with DeSoto and Lancaster.
- Sharing the services of a regional Training Chief with the cities of DeSoto and Duncanville.
- Using a regional approach to fire investigations using four cities to provide services during off duty hours.
- It is unusual for a police department of its size to dedicate the level proactive resources in a unit like the Police and Community Team (PACT). These staff work with the community on problem solving and partnerships to maintain neighborhood health.
- There is a closest unit response system in place for fire service calls.
- Sharing the services of a regional Emergency Management Coordinator with the cities of DeSoto, Duncanville and Lancaster.
- Enhancing the smoke detector program using Citizens Academy alumni to assist with the program.
- Both the Police and Fire Departments have improved minority representation of their employees over the past 8 years.

It is also noteworthy that the community supports its public safety services in state-of-the-art equipment and technology (including radios and information systems) as well as apparatus and vehicles.

These positive attributes are described in more depth in the following report.

These changes have occurred in a period of rapid growth with will extend deep into the future. As a result, the need for this kind of management thinking and innovation will continue well into the future. Future change has a great foundation upon which to build in Cedar Hill.

Police Department Assessment

1. Organizational Structure

This chapter provides an analysis and evaluation of the current organizational structure of the Cedar Hill Police Department. It also identifies the improvement opportunities and the team's suggestions where applicable. In reviewing the immediate and long-range needs of the police department, the project team focused on the organization's vision and mission statements.

Vision
To be a premier law enforcement agency that is trusted and respected by all to make Cedar Hill the safest community in Texas.

Mission
To provide the highest quality of service that promotes and maintains a safe environment in partnership with the community consistent with our values.

An organizational structure is designed as an approach to facilitating organizational management. As such, there are structures for a certain sized organization that achieve that goal better than others. An organizational structure should properly illustrate the following major department functions:

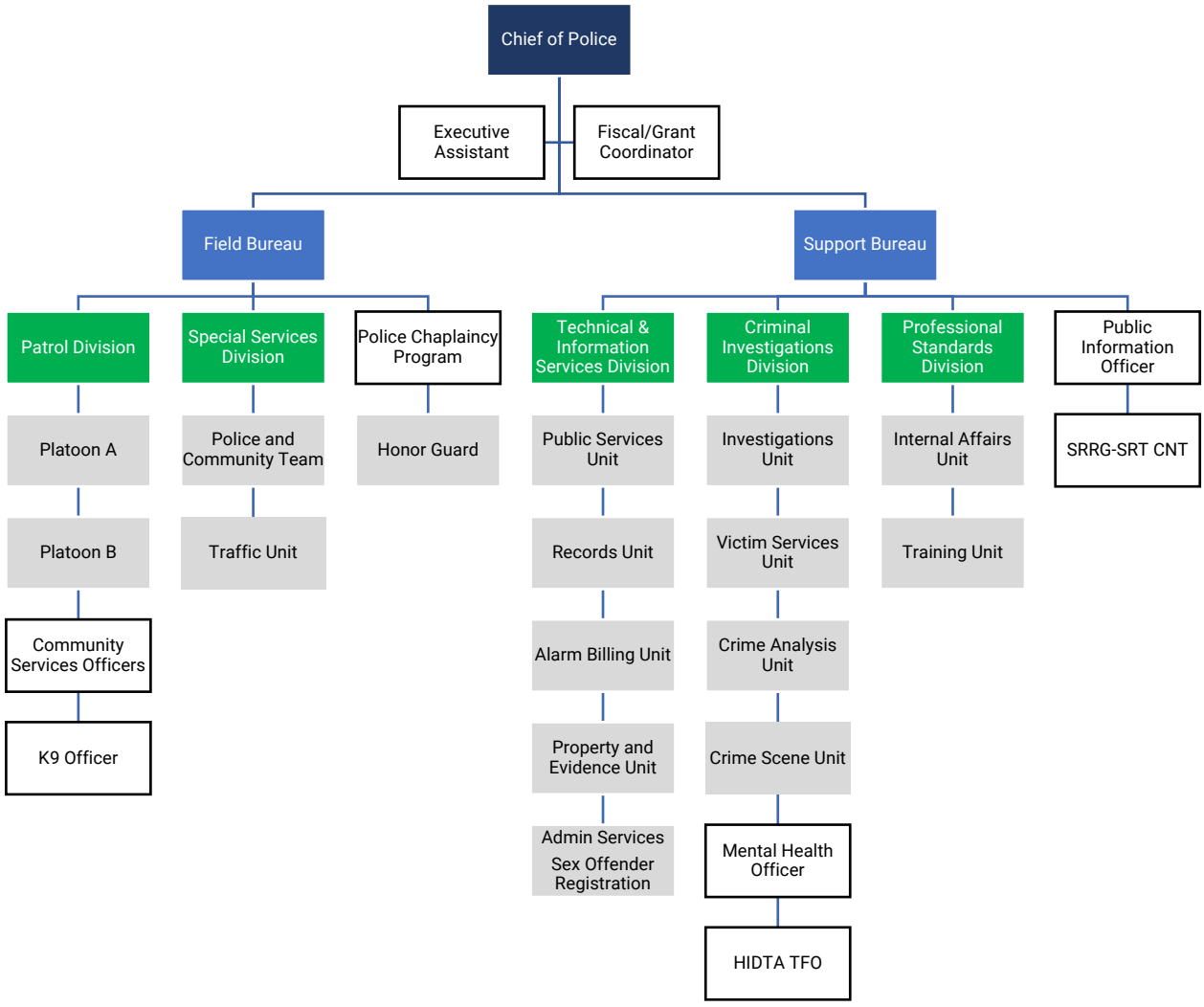
- Apportion the workload among members and units according to a logical plan.
- Ensure that lines of authority and responsibility are definite and direct as possible.
- Specify a unity of command throughout, leaving no question about which orders should be followed.
- Assign responsibility and authority, and if responsibility is delegated, the delegator is held responsible.
- Coordinate efforts in order to work harmoniously to accomplish the department mission.

Achieving an organizational structure that is 'right' for an organization needs to consider several factors including the complexity of an organization, the need for accountability and accessibility of key managers, the experience and history of an organization, and cost.

A proper organizational structure should also ensure unity of command and proper supervisory span of control. While this span of control may vary depending on several factors, a typical department's span of control is three to five at the top level of the

organization and is often broader at the lower levels. An effective organizational structure should ensure supervisors are not spread to thinly across the department.

1. Cedar Hill Police Department Current Organizational Structure



There are advantages and disadvantages associated with Cedar Hill's current organizational structure. The advantages of the Department's structure include:

- It pushes down authority and responsibility for key management roles deep into the organization, at least to the levels of Sergeant and Corporal.
- Collateral duty responsibilities are allocated to other managers and supervisors helps to prepare them for promotion.

However, there are also disadvantages to this structure, including:

- Spans of control vary – for example there are varying spans of control within the Sergeant and Corporal ranks, such as one Sergeant has 8 direct reports while another Sergeant has two, while a Corporal has 3.
- The Administrative Services Unit Corporal supervises community services officers who work in the field.
- Functions, such as the HIDTA Sergeant do not fall under a specific supervisor within the chain of command.
- The K9 Officer works in a field assignment but has a chain of command that does not.
- Collateral duties may be assigned without regard to equalizing workloads among managers and supervisors.
- Both the patrol division and the special services division personnel work with the community in the field but are in separate commands.
- Span of control/communication issues with officers who work patrol and assigned to traffic unit part time (as schedule permits).

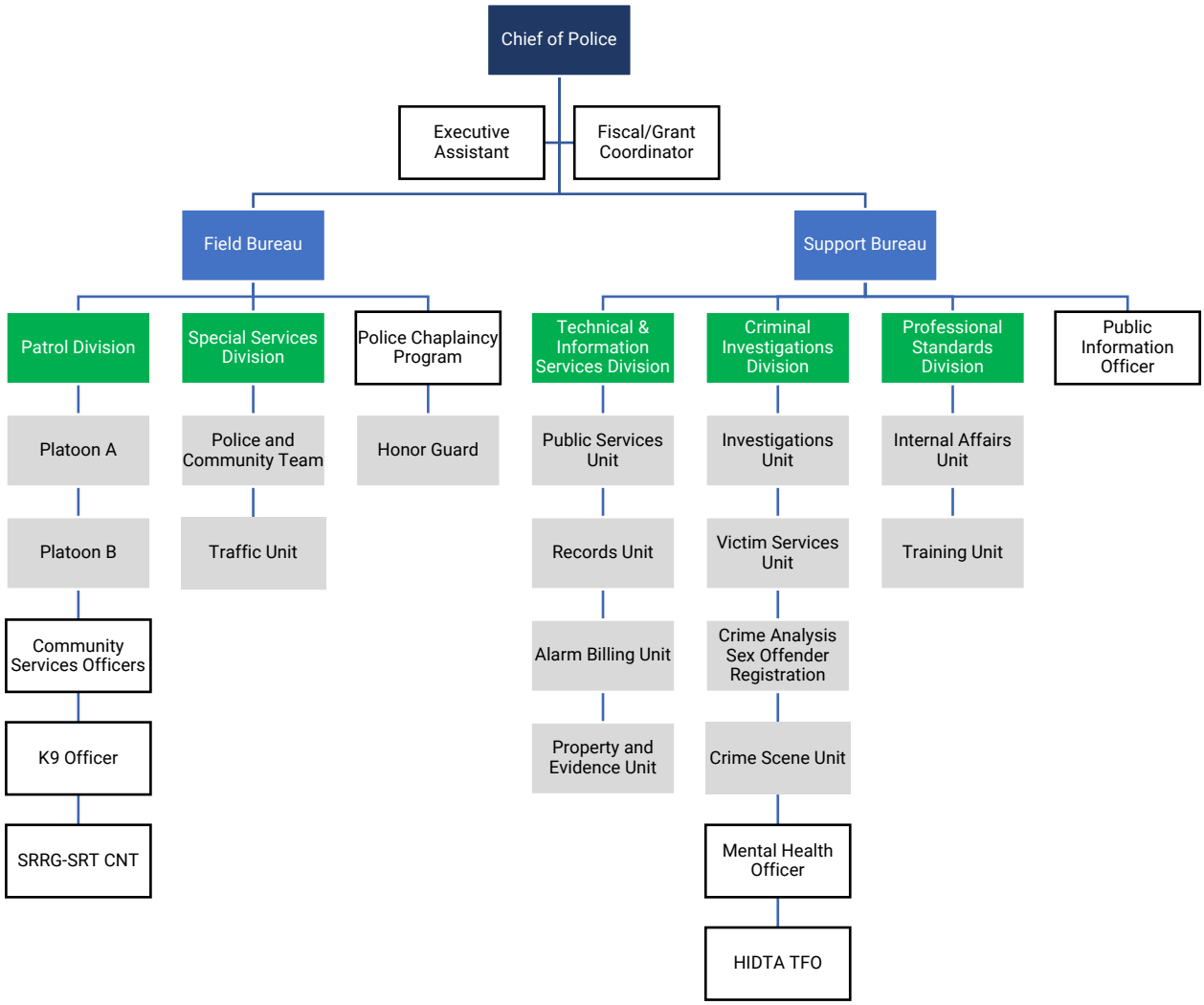
These issues are significant and largely counter the advantages of the current structure. The disparate spans of control are also significant.

2. Alternative Organizational Structure

The project team has developed an alternative organizational structure for consideration. This alternative organization structure:

- Addresses the issues identified above.
- Utilizes existing management and supervisory staff to full capacity.
- Fills supervisory gaps in the organization.
- Aligns field personnel into same division.

The alternative organizational structure is shown below:

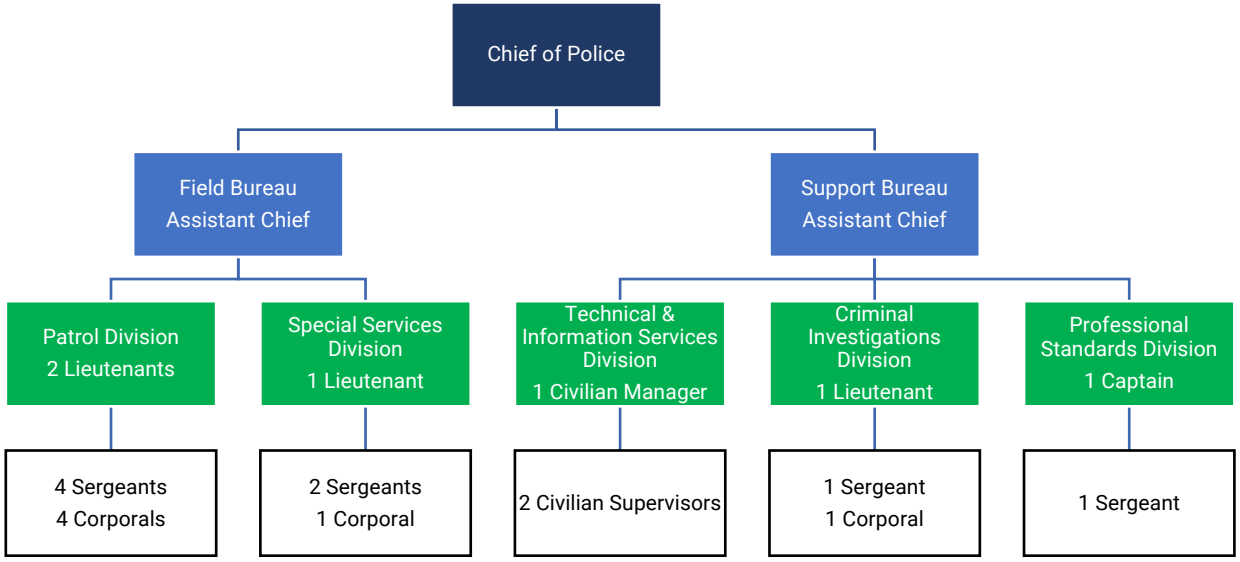


3. Alternative Mid-Manager and Supervisor Organizational Structure

Depicted below is an alternative organizational structure highlighting mid-level managers and supervisors for consideration. This alternative organizational structure coordinates efforts to work harmoniously to accomplish the department's mission. This alternative organizational structure:

- Replaces the technical and information services division lieutenant with a civilian manager when appropriate. This division is currently staffed entirely with civilian employees.
- The department may transfer this lieutenant position to another division or eliminate the position all together in order to establish other positions. Given the current span of control within the Technical and Information Services Division, an additional civilian supervisor is also warranted.

- In the alternative organizational structure, the project team has identified that the community services officers would be better served within the patrol division. The current administrative services unit Corporal serves largely in an administrative role. These administrative duties may be transferred to a civilian employee.
- This Corporal position may be transferred to another division such as criminal investigations in order to improve current span of control within this division.



Recommendation:

Consider a functional reorganization of the department in order to better align functions and create more consistent spans of control and responsibilities.

2. Field Bureau

The Field Bureau is comprised of the Patrol Division and the Criminal Investigations Division. Staff is comprised of a combination of sworn and non-sworn personnel. The Field Bureau is led by an Assistant Chief.

1. Patrol Division

The Patrol Division currently consists of an A Platoon and a B Platoon who work 12-hour shifts. Each platoon has a day shift which begins at 0600 hours and a night shift which begins at 1800 hours. Each officer works an additional 8-hour shift one time during a two-week period and has a 3-day weekend every other weekend.

Each platoon is led by a Lieutenant who serves as the Watch Commander and provides shift oversight. Each Lieutenant is supported by two Sergeants who serve as first-line supervisors and two Corporals who assist with first-line supervisor duties as needed.

A Platoon		**B Platoon**	
Lieutenant		Lieutenant	
Day Shift	**Night Shift**	**Day Shift**	**Night Shift**
1 Sergeant	1 Sergeant	1 Sergeant	1 Sergeant
1 Corporal	1 Corporal	1 Corporal	1 Corporal
8 Officers	8 Officers	8 Officers	8 Officers

The City of Cedar Hill is divided into 5 separate patrol beats, of which officers are assigned to during a shift. Minimum staffing is 5 officer positions and one supervisor position per shift.

(1) Operational Review

The following sections review patrol division operations and makes recommendations for change, where warranted.

(1.1) Crime Reduction Strategies

Proactive policing involves employing strategies to prevent crime and to address the root causes of crime rather than only responding to calls for service. A typical crime prevention and reduction strategy utilizes multileveled strategies in order to address social and physical incivilities associated with crime in neighborhoods.

As mentioned previously, the Cedar Hill Police Department's mission focuses on

promoting and maintaining a safe environment in partnernship with the community consistent with the department's values. Employee interviews indicate that the organization is effective at developing positive community partnerships. The Cedar Hill Police Department leverages these parternships in order to develop an effective crime prevention and reduction strategy moving forward. While developing this effective strategy, a focus should also be placed on the effects this strategy will have on policing, the evaluation of the organization in the community, potential abuses of police authority, and the equitable application of police services to all citizens.

Interviews with staff at all levels in patrol indicate that while these principles are in place, there is no coherent strategy to direct proactive time to address problems in the community.

Recommendation:

Develop a comprehensive strategic crime reduction strategy in partnership with the community.

(1.2) Crime Analysis

Effective crime analysis focuses on the study of criminal incidents; the identification and analysis of patterns, trends, and problems; and the dissemination of information that helps a police agency develop tactics and strategies to solve patterns, trends, and problems. Crime analysis draws on a variety of different types of data, including crime data, to gain a better understanding of criminal activity, and to develop more effective means of combating crime and preventing victimization.

As an effective crime prevention and reduction strategy is developed, a focus on effective crime analysis should also be included. By analyzing numerous sources of information, a well-trained crime analyst can provide useful information to assist the organization's decision makers to reduce and prevent crime. A clear and equal focus should be placed on tactical, strategic, and administrative analysis moving forward.

While the Department has such a position, the use of the crime analysis to direct a problem oriented policing strategy could be improved.

Recommendation:

Develop the organization's crime analysis capabilities to include tactical, strategic, and administrative analysis.

(1.3) Management/First-line Supervisor Roles

Operations within any police organization cannot exist without effective management and supervison of staff at the activities in which they are involved. The first-line supervisor in the patrol division is one the most critical positions to its success. In the era of community policing, police organizations are encouraged to promote line-officer latitude in order to address community problems. To afford this line-officer latitude, first-line supervisor responsibilities and tasks must be concrete.

The Cedar Hill Police Department utilizes both Sergeant and Corporal supervisory ranks. Employee interviews indicate that the roles of Sergeants and Corporals often overlap, and in practice are blurred and inconsistent. There are also overlapping duties involving Lieutenants and first line supervisors. These issues are summarized, as follows:

- Sergeants and Corporals often duplicate roles as first line supervisors.
- Lieutenants perform first line supervisor functions at times; such as conducting line level employee evaluations and scheduling.
- Lieutenants currently perform watch commander duties; but Lieutenants work different schedules than the rest of their platoons.
- While reporting to two direct supervisors at the same time, lines of authority and responsibility are not definite or direct.
- At times, coordination of efforts and expectations are inconsistant due to the lack of defined job responsibilities and tasks concerning Corporal position.

At times, utilizing both the Sergeant rank and Corporal rank has caused organizational issues associated with the span of control, unity of command, and management/first-line supervisor overlap. A clear delineation of duties and assignments of all supervisory personnel should be established. Employee interviews indicate an inconsistency in how patrol Sergeants utilize Corporals while both are on duty. While one Sergeant may utilize the Corporal as a second on duty first-line supervisor, another Sergeant will assign the Corporal to normal patrol officer duties. This has created an inconsistent balance in patrol officer workload.

The following matrix provides suggestions for the responsibilities and tasks for Lieutenants, Sergeants, and Corporal positions within the patrol division. These suggestions and responsibilities should only be used as a guide and expanded upon as needed in order to meet the department's mission, as well as the specific employee's supervisory tasks and assignment.

Position	Job Responsibilities and Tasks
Lieutenant	• Reports directly to the Field Bureau Assistant Chief. • Supervises the immediate supervisors in their chain of command. • Oversees divisional operations and ensures adequate staffing. • Works closely with the Assistant Chief and assists on tasks and projects. • When appropriate, responds to major incidents; coordinates employee and inter-agency responses as needed. • When appropriate, coordinates with other management personnel when a multiple divisional or governmental response is required. • Liaison with other government entities when needed. • Monitors performance/productivity standards to ensure policy compliance. • Reviews and develops policies and procedures, goals and objectives. • Keeps chain of command informed of significant or newsworthy incidents. • Works on other special projects as assigned.
Sergeant	• Report to the Lieutenant. • Supervises Corporals and Police Officers to ensure department resources are being utilized properly to address problems in the city. • When appropriate, act as the Watch Commander for their shift in the absence of a Lieutenant. • Develops and manages the work schedule; approves leave requests. • Oversees daily operations to ensure adequate staffing. • Identifies issues and problems requiring proactive police attention and develops directed efforts to address these issues. • Ensures that Officers daily work assignments and reports are completed. • When appropriate, responds to routine and major incidents; coordinates employee responses as needed. • Keeps the chain of command informed of significant incidents. • Reviews written work and reports of Officers. • When appropriate, coordinates with other supervisors when a multiple unit or divisional response is required. • Conducts reviews of employee performance in the field and written work. • Trains, counsels, mentors, and audits employees' performance; takes corrective or disciplinary action. • Some Sergeants also have collateral responsibilities.
Corporals	• In the absence of the Sergeant, a Corporal is the shift supervisor and responsible for the supervisory activities described above. • When both a Sergeant and a Corporal are on duty the Corporal is responsible for direct work duties as performed by a line level employee. • Some Corporals also have collateral responsibilities.

Recommendation:

Define specific duties at the Lieutenant, Sergeant, and Corporal ranks within the patrol division.

(2) Patrol Workload Analysis

The following sections provide analysis of patrol workload and other issues relating to the effectiveness of field services.

(2.1) CAD Analysis Methodology

Our project team has calculated the community-generated workload of the department by analyzing incident records in the computer aided dispatch (CAD) database, covering the entirety of calendar year 2021.

For incidents to be identified as community-generated calls for service and included in our analysis of patrol, each of the following conditions needed to be met:

- The incident must have been unique.
- The incident must have been first created in calendar year 2021.
- The incident must have involved at least one officer assigned to patrol, as identified by the individual unit codes of each response to the call.
- The incident type of the event must have sufficiently corresponded to a community-generated event. Call types that could be identified with a high level of certainty as being either self-initiated (e.g., traffic stops) or other kinds of activity generated by the department (e.g., directed patrol) are not counted as community-generated calls for service.
- There must have been no major irregularities or issues with the data recorded for the incident that would prevent sufficient analysis, such as having no unit code or lack of any time stamps.

After filtering through the data using the methodology outlined above, the remaining incidents represent the community-generated calls for service handled by CHPD patrol units.

An additional dataset, 'Out of Service' CAD data for the same period as the call for service data, was examined to directly measure administrative tasks. Throughout the entire year of data used, each officer averages approximately 71 minutes per shift on these tasks. This was moderately lower than the 90 minutes per shift we use as a normative estimate in our studies, and so we concluded that the Out of Service data does not adequately capture all time spent on administrative tasks. Thus, the higher normative estimate was used instead.

It is also worth underscoring that this analysis is focused narrowly on patrol officers, examining their workload compared to their capacity (availability) to handle it. **Consequently, only calls handled by patrol officers is included within the figures presented in the following sections. As a result of these assumptions, the resulting community generated calls for service total utilized in the analysis below (18,135 calls) is a lower figure than the published annual statistics utilized by CHPD administration in analyzing their 2021 calls for service workloads (21,294 calls).**

(2.2) Calls for Service by Hour and Weekday

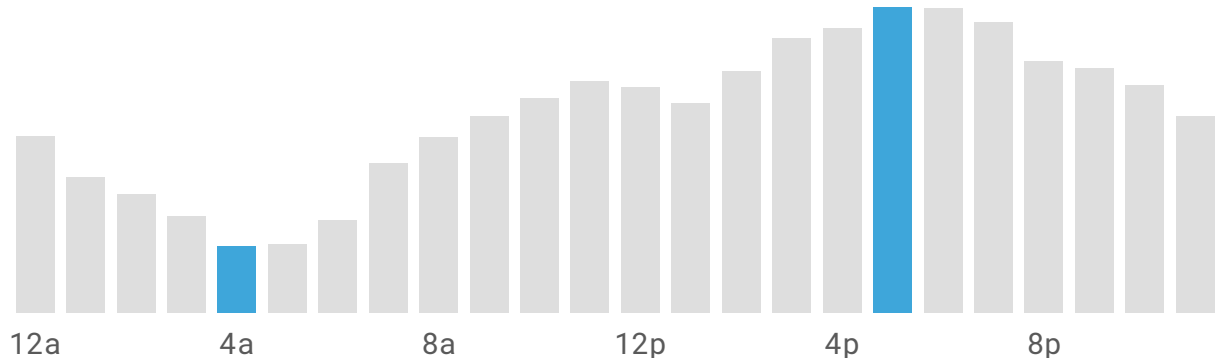
The following table displays the total number of calls for service handled by patrol units by each hour and day of the week:

Calls for Service by Hour and Weekday

Hour	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
12a	164	78	55	59	81	128	104	669
1am	137	57	55	51	70	62	82	514
2am	89	52	48	38	64	68	90	449
3am	73	44	30	35	55	49	79	365
4am	38	35	34	25	39	46	36	253
5am	53	33	32	36	37	28	43	262
6am	53	54	44	44	52	57	46	350
7am	49	99	93	80	92	76	78	567
8am	80	105	95	90	98	109	88	665
9am	88	122	94	101	106	129	105	745
10am	113	135	120	96	107	113	131	815
11am	116	118	111	122	124	119	169	879
12pm	121	111	125	110	122	125	143	857
1pm	105	113	125	113	106	118	117	797
2pm	114	151	151	134	118	130	120	918
3pm	125	165	151	138	138	162	162	1,041
4pm	116	171	164	153	149	178	148	1,079
5pm	163	215	161	158	173	141	150	1,161
6pm	154	156	156	164	170	182	174	1,156
7pm	135	130	182	148	158	163	186	1,102
8pm	133	126	118	139	142	164	132	954
9pm	160	117	113	128	120	139	151	928
10pm	156	87	108	90	108	149	165	863
11pm	116	75	77	91	95	121	171	746
Total	2,651	2,549	2,442	2,343	2,524	2,756	2,870	**18,135**[2]

[2] As noted previously, the call for service figures only include calls handled by patrol officers, resulting in a lower total than the figure presented in the 2021 CHPD annual report (21,294).

Call for Service Activity by Hour



Calls for service follow an unusual pattern, with activity levels relatively low during the morning and peaking during the evening. Most communities that are comparable in size to Cedar Hill show more of a 'plateau' centered around the day, with 4:00PM – 7:00PM rarely representing the peak.

(2.3) Calls for Service by Month

The following table displays calls for service totals by month, showing seasonal variation as a percentage difference from the quarterly average:

Calls for Service by Month

Month	# of CFS	Seasonal +/-
Jan	1,349	
Feb	1,415	-8.0%
Mar	1,405	
Apr	1,402	
May	1,443	-4.6%
Jun	1,478	
Jul	1,758	
Aug	1,583	+7.1%
Sep	1,516	
Oct	1,631	
Nov	1,593	+5.6%
Dec	1,562	
Total	**18,135**	

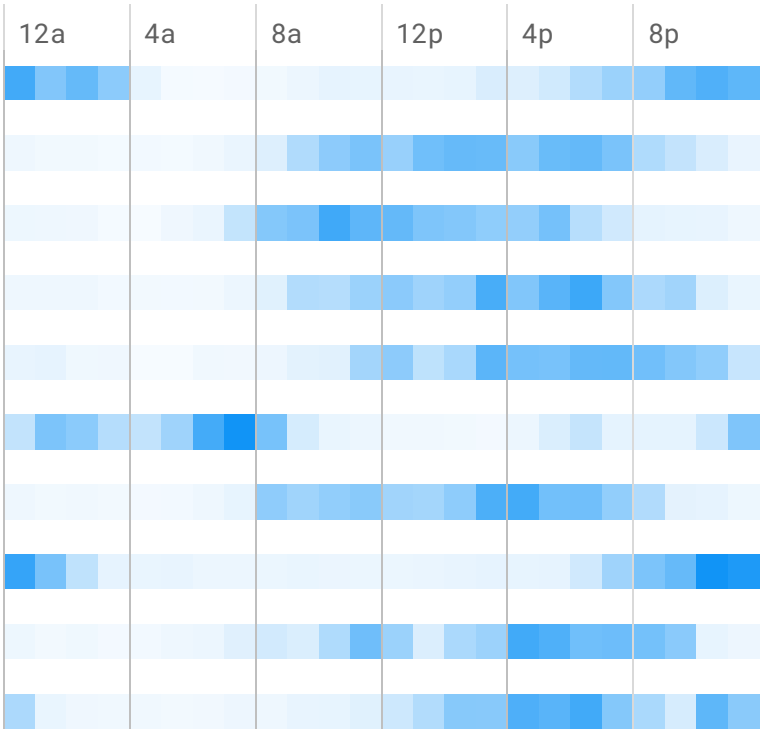
Seasonality in call activity is relatively pronounced, with winter months showing far fewer calls than summer months. While this is typical, it is not common for fall months to have significantly higher activity than spring months.

(2.4) Most Common Types of Calls for Service

The following table provides the ten most common incident categories of calls for service handled by patrol units over the last year, as well as the average call handling time (HT)[3] for each:

Most Common Call for Service Categories

Incident Type	# CFS	HT
SUSP. ACT.	1,795	21.4
MEET COMP/OFF	1,626	25.3
ALARM RES.	1,205	13.3
WELFARE CHECK	1,190	30.0
DIST. VERBAL	1,101	28.4
ALARM BUS.	772	10.9
FOLLOW UP	686	36.1
DIST. MINOR	636	14.3
TRAFFIC HZRD	633	22.5
DIST. MAJOR	560	55.1
All Other Types	7,931	33.0
Total	**18,135**	**28.2**



The increased call activity during the nighttime hours appears partly attributable to suspicious activity calls, as well as disturbances and traffic hazards, which occur in far greater numbers during the evening hours than at other times.

[3] Handling time is defined as the total time in which a patrol unit was assigned to an incident. It is calculated as the difference between the recorded time stamps the unit being dispatched and cleared from the incident.

(2.5) Call for Service Response Time by Priority Level

The following table displays call for service statistics by priority level (0 through 7), showing the distribution of calls by response time[4], as well as presenting the median response time for each priority level category:

Call for Service Response Time by Priority Level*

Priority Level	# CFS	Median RT	RT Distribution
0	630	15.1	
1	1,088	12.1	
2	7,813	11.6	
3	2,210	18.2	
4	2,018	27.6	
5	2,985	20.8	
6	1,164	31.5	
7	203	51.3	

* Note that figures are based on final call classifications which could result in differences in how calls were actually responded to.

Median response times are relatively low, even for lower priority calls for service. Priority level 2 is the most frequent response priority of 2021 CAD data at CHPD, with a total of 7,813 calls for service. This priority level has a median response time of 11.6 minutes.

(3) Analysis of Patrol Resource Needs

Analysis of the community-generated workload handled by patrol units is at the core of analyzing field staffing needs. Developing an understanding of where, when, and what types of calls are received provides a detailed account of the service needs of the

[4] Response time is defined in this report as the duration between the call creation timestamp and the arrival time stamp for the first patrol units on the scene.

community, and by measuring the time used in responding and handling these calls, the staffing requirements for meeting the community's service needs can then be determined.

To provide a high level of service, it is not enough for patrol units to function as call responders. Instead, officers must have sufficient time outside of community-driven workload to proactively address public safety issues, conduct problem-oriented policing, and perform other self-directed engagement activities within the service environment. As a result, patrol staffing needs are calculated not only from a standpoint of the capacity of current resources to handle workloads, but also their ability to provide a certain level of service beyond responding to calls.

With this focus in mind, the following sections examine process used by the project team to determine the patrol resource needs of the Cedar Hill Police Department based on current workloads, staff availability, and service level objectives.

(3.1) Overview of the Resource Needs Analysis

An objective and accurate assessment of patrol staffing requires analysis of the following three factors:

i. The number of community-generated workload hours handled by patrol.

ii. The total number of hours that patrol is on-duty and able to handle those workloads, based on current staffing numbers and net availability factors (e.g., leave, administrative time, etc.).

iii. The remaining amount of time that patrol has to be proactive, which can also be referred to as "proactive" time.

This study defines the result of this process as, **patrol proactivity**, or the percentage of patrol units' time in which they are *available and on-duty* that is *not* spent responding to community-generated calls for service. This calculation can also be expressed visually as an equation:

$$\frac{\text{Total Net Available Hours} - \text{Total CFS Workload Hours}}{\text{Total Net Available Hours}} = \%\ \text{Proactivity}$$

The result of this equation is the overall level of proactivity in patrol, which in turn provides a model for the ability of patrol units to be proactive given current resources and

community-generated workloads. There are some qualifications to this, which include the following:

- Optimal proactivity levels are a generalized target, and a single percentage should be applied to every agency. The actual needs of an individual department vary based on several factors, including:
  - Other resources the department has to proactively engage with the community and address issues, such as a dedicated proactive unit.
  - Community expectations and ability to support a certain level of service.
  - Whether fluctuations in the workload levels throughout the day require additional or fewer resources to be staffed to provide adequate coverage.
- Sufficient proactivity at an overall level does not guarantee, based on workload patterns, and deployment schedules, that resources are sufficient throughout all times of the day and week.

Overall, based upon the previous experience of project staff at MCG, a department the size of CHPD should generally target an overall proactivity level of 40% to 45% as an effective benchmark of patrol coverage.

(3.2) Patrol Unit Staffing and Net Availability

The Cedar Hill Police Department follows a 4-on, 3-off shift configuration that assigns personnel to 4 teams on a fixed basis with fixed workdays. CHPD utilizes a platoon system that assigns personnel to either Platoon A or Platoon B, corresponding with the off days that patrol units are assigned. The following table outlines this schedule, showing the number of positions, by position type, that are assigned to each shift team (including those on long-term and injury leave, but excluding vacancies), with the days worked by each team shown in darker-shaded cells:

Patrol Shift Configuration *(Current Staffing Levels)*[5]

			Week 1							Week 2							# Pers. Ass.	
Platoon	Start	End	S	M	T	W	Th	F	Sa	S	M	T	W	Th	F	Sa	Ofc.	Corp.
A – Days	0600	1800															6	1
	0500	1700															1	
A – Nights	1800	0600															6	1
	1700	0500															1	
B – Days	0600	1800															6	1
	0500	1700															1	
B – Nights	1800	0600															6	1
	1700	0500															1	

While the table provides the scheduled staffing levels, it does not reflect the numbers that are actually on-duty and available to work on at any given time. Out of the 2,080 hours per year that each patrol unit is scheduled to work in a year (excluding overtime), a large percentage is not actually spent on-duty and available in the field.

As a result, it is critical to understand the amount of time that patrol units are on leave – including vacation, sick, injury, military, or any other type of leave – as well as any hours dedicated to on-duty court or training time, and all time spent on administrative tasks such as attending shift briefings. The impact of each of these factors is determined through a combination of calculations made from CHPD data and estimates based on the experience of the project team, which are then subtracted from the base number of annual work hours per position. The result represents the total **net available hours** of patrol units, or the time in which they are on-duty and available to complete workloads and other activities in the field:

Net availability represents the green-shaded segment, representing what is left after deducting for categories such as leave.

[5] Figures displayed in the table also include those in injury and long-term leave, but exclude permanent vacancies in which the position slot is actually open.

The table below outlines the calculation process in detail, outlining how each contributing factor is calculated:

Factors Used to Calculate Patrol Net Availability

Work Hours Per Year

The total number of scheduled work hours for patrol units, without factoring in leave, training, or anything else that takes patrol units away from normal on-duty work. This factor forms the base number from which other availability factors are subtracted from.

Base number: **2,080 scheduled work hours per year**

Total Leave Hours (subtracted from total work hours per year)

Includes all types of leave, as well as injuries and military leave – anything that would cause patrol units that are normally scheduled to work on a specific day to instead not be on duty. As a result, this category excludes on-duty training, administrative time, and on-duty court time.

Calculated from CHPD data: **251 hours of leave per year**

On-Duty Court Time (subtracted from total work hours per year)

The total number of hours that each patrol unit spends per year attending court while on duty, including transit time. Court attendance while on overtime is not included in the figure. Without any data recording on-duty court time specifically for patrol units, the number of hours is estimated based on the experience of the project team.

Estimated: **20 hours of on-duty court time per year**

On-Duty Training Time (subtracted from total work hours per year)

The total number of hours spent per year in training that are completed while on-duty and not on overtime.

Estimated: **46 hours of on-duty training time per year**

Administrative Time (subtracted from total work hours per year)

The total number of hours per year spent completing administrative tasks while on-duty, including briefing, meal breaks, and various other activities.

The number is calculated as an estimate by multiplying 90 minutes of time per shift times the number of shifts actually worked by patrol units in a year after factoring out the shifts that are not worked as a result of leave being taken.

An additional dataset, 'Out of Service' CAD data for the same period, was examined to directly measure this time. The data contains time patrol units log meal breaks, report writing time, and various administrative tasks. On average, using data for the entire year by comparing time stamps from when each activity began and ended, each patrol unit was out of service for approximately 71 minutes per shift.

Given that this is much lower than the typical 90-minute figure we use normatively, it was assumed by the project team that the Out of Service Data does not fully capture all administrative and report writing time. Thus, the 90-minute estimate was used instead, which equates to 229 hours of administrative time per year.

Estimated: **229 hours of administrative time per year**

Total Net Available Hours

After subtracting the previous factors from the total work hours per year, the remaining hours comprise the total *net available hours* for patrol units – the time in which they are available to work after accounting for all leave, on-duty training, court, and administrative time. Net availability can also be expressed as a percentage of the base number of work hours per year.

For corporals, this percentage is then multiplied against the total. This is because corporals function as officers unless the sergeant is off duty, meaning that the probability of a sergeant *not* being on duty is the proportion of time that their net availability must be reduced by.

Calculated by subtracting the previously listed factors from the base number:
1,534 net available hours per patrol officer
1,132 net available hours per patrol corporal

The following table summarizes this calculation process, displaying how each net availability factor contributes to the overall net availability of patrol units by position type:

Calculation of Patrol Unit Net Availability

		Officer	Corporal
Base Annual Work Hours		2,080	2,080
Total Leave Hours	-	251	251
On-Duty Training Hours	-	46	46
On-Duty Court Time Hours	-	20	20
Administrative Hours	-	229	229
Net Availability Modifier		*1.00x*	*0.74x*
Net Available Hours Per Officer	=	1,534	1,132
Number of Patrol Units	×	*28*	*4*
Total Net Available Hours	=	**42,963**	**4,528**

Overall, the 32 positions (4 Corporals and 28 Officers) combine for a total of 47,490 net available hours per year, representing the time in which they are on duty and able to respond to community-generated incidents and be proactive.

(3.3) Overview of Call for Service Workload Factors

The previous chapter of the report examined various trends in patrol workload, including variations by time of day and of week, common incident types, as well as several other methods. This section advances this analysis, detailing the full extent of the resource demands that these incidents create for responding patrol personnel.

Each call for service represents a certain amount of workload, much of which is not captured within the handling time of the primary unit. Some of these factors can be calculated directly from data provided by the department, while others must be estimated due to limitations in their measurability.

The following table outlines the factors that must be considered in order to capture the full scope of community-generated workload, and provides an explanation of the process used to calculate each factor:

Factors Used to Calculate Total Patrol Workload

Number of Community-Generated Calls for Service

Data obtained from an export of CAD data covering a period of an entire year that has been analyzed and filtered in order to determine the number and characteristics of all community-generated activity handled by patrol units.

The calculation process used to develop this number has been summarized in previous sections.

As discussed earlier in this chapter, **this analysis focuses solely on calls handled by patrol officers**. As a result of this and other assumptions designed to isolate community-generated events, the resulting community generated calls for service total utilized in the analysis below (18,135 calls) is a lower figure than the published annual statistics utilized by CHPD administration in analyzing their 2021 calls for service workloads (21,294 calls).

Calculated from CHPD data: **18,135 community-generated calls for service**

Primary Unit Handling Time

The time used by the primary unit to handle a community-generated call for service, including time spent traveling to the scene of the incident and the duration of on-scene time. For each incident, this number is calculated as the difference between 'call cleared' time stamp and the 'unit dispatched' time stamp.

In the experience of the project team, the average handling time is typically between 30 and 42 minutes in agencies where time spent writing reports and transporting/booking prisoners is *not* included within the recorded CAD data time stamps.

The resulting 28.2 minutes of primary unit handling time per call for service falls approximately at the bottom threshold of the expected primary unit handling time seen by MCG project staff.

Calculated from CHPD data: **28.2 minutes of handling time per call for service**

Number of Backup Unit Responses

The total number of backup unit responses to community-generated calls for service. This number often varies based on the severity of the call, as well as the geographical density of the area being served.

This number can also be expressed as the *rate* of backup unit responses to calls for service and is inclusive of any additional backup units beyond the first.

Calculated from CHPD data: **1.08 backup units per call for service**

Backup Unit Handling Time (multiplied by the rate)

The handling time for backup units responding to calls for service is calculated using the same process that was used for primary units, representing the time from the unit being dispatched to the unit clearing the call.

Because calls featuring backup unit responses tend to be more severe, and consequently often require higher workloads for personnel on-scene, the average backup unit handling time is actually higher than the overall average for primary units, resulting in an overall average of 43.6 minutes per backup unit response.

Calculated from CHPD data: **43.6 minutes of handling time per backup unit**

Number of Reports Written

The total number of reports and other assignments relating to calls for service that have been completed by patrol units, estimated at one report written for every three calls for service. This includes any supporting work completed by backup units.

In this case, the number has been estimated based on the experience of the project team.

Estimated/calculated from CHPD data: **0.33 reports written per call for service**

Report Writing Time (multiplied by the report writing rate)

The average amount of time it takes to complete a report or other assignment in relation to a call for service. Without any data detailing this specifically, report writing time must be estimated based on the experience of the project team. It is assumed

that 45 minutes are spent per written report, including the time spent by backup units on supporting work assignments.

Estimated: **45.0 minutes per report**

Total Workload Per Call for Service

The total time involved in handling a community-generated call for service, including the factors calculated for primary and backup unit handling time, reporting writing time, and jail transport/booking time.

The product of multiplying this value by the calls for service total at each hour and day of the week is the number of hours of community-generated workload handled by patrol units – equating to approximately 27,279 total hours in 2021.

Calculated from previously listed factors: **90.3 total minutes of workload per call for service**

Each of the factors summarized in this section contribute to the overall picture of patrol workload – the total number of hours required for patrol units to handle community-generated calls for service, including primary and backup unit handling times, report writing time, and jail transport time.

These factors are summarized in the following table:

Summary of CFS Workload Factors

Total Calls for Service	**18,135**	31%
Avg. Primary Unit Handling Time	28.2 min.	
Backup Units Per CFS	**1.08**	52%
Avg. Backup Unit Handling Time	43.6 min.	
Reports Written Per CFS	**0.33**	17%
Time Per Report	45.0 min.	
Avg. Workload Per Call	90.3 min.	
Total Workload	**27,279 hrs.**	

Overall, each call represents an average workload of 90.3 minutes, including all time spent by the primary unit handling the call, the time spent by any backup units attached

to the call, as well as any reports or other assignments completed in relation to the incident.

(3.4) Calculation of Overall Patrol Proactivity

Using the results of the analysis of both patrol workloads and staff availability, it is now possible to determine the remaining time in which patrol units can function proactively. The result can then function as a barometer from which to gauge the capacity of current resources to handle call workload demands, given objectives for meeting a certain service level.

The following table shows the calculation process used by the project team to determine overall proactivity levels, representing the percentage of time that patrol units have available outside of handling community-generated workloads:

Calculation of Overall Patrol Proactivity

Total Patrol Net Available Hours		47,490
Total Patrol Workload Hours	–	27,279
Resulting # of Proactive Hours	=	20,211
Divided by Total Net Available Hours	÷	47,490
Overall Proactive Time Level	=	**42.6%**

At 42.6%, there is adequate proactive time for CHPD patrol units to provide a high level of service to their community. This level is above the targeted minimum threshold of 40% and indicates that there is sufficient staffing capacity at an overall level to be highly proactive, it is just short of the target goal of 45%, which represents upper end of the 40-45% target range.

The following chart shows this analysis at a more detailed level, providing proactivity levels in four-hour blocks throughout the week:

Proactivity by Hour and Weekday

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Overall
2am–6am	63%	77%	81%	77%	77%	66%	50%	**70%**
6am–10am	56%	49%	51%	67%	58%	50%	58%	**56%**
10am–2pm	41%	41%	36%	46%	27%	28%	40%	**37%**
2pm–6pm	20%	25%	18%	30%	14%	25%	20%	**22%**
6pm–10pm	22%	33%	33%	28%	30%	25%	20%	**27%**
10pm–2am	23%	58%	60%	51%	47%	40%	32%	**44%**
Overall	37%	47%	47%	50%	42%	39%	37%	**43%**

As shown in the chart above, there is sufficient proactive time available throughout the late evening time to early morning hours (2200 to 1000). However, there are consistent deficiencies throughout the afternoon and early evening hours, beginning around 1400. This indicates that insufficient staff are deployed during these times. Given the proactive time level of 43%, the issues in part could be attributed to the efficiency of the current shift schedule, which deploys approximately equal numbers of officers by shift – despite differing levels of workload at night versus the daytime hours.

(3.5) Accounting for the Impact of Turnover

To adequately determine staffing needs, it is also important to consider the number of vacancies that currently exist within a department, as well as the rate of turnover. An agency will never be fully staffed, as there will always be vacancies occurring as a result of a variety of factors (e.g., retirement, terminations, etc.). When these separation events occur, it takes a significant amount of time to recruit a new position, complete the hiring process, run an academy, and complete an FTO program before said recruit becomes an on-duty officer. Given this consideration, agencies must hire above the number of staff needed to provide an adequate level of service.

The amount of 'buffer' that an agency requires should be based upon the historical rate of attrition. Attrition calculations can take a variety of forms – if it is assumed that most vacancies are carried in patrol staffing, a vacancy at the officer level in any other area of the organization would consequently remove one officer from regular patrol duties.

Likewise, promotions would have the same effect, in that they create an open position slot in patrol. Given these considerations, the turnover rate is defined in this report as the average percentage of sworn personnel positions that separate from the department (whether from resignation, retirement, termination, or another reason).

Turnover calculations that are utilized for the staffing model encompass all sworn personnel because patrol units are generally the backbone of the organization. A large majority, if not all, new officers are placed on patrol upon successful completion of the department's FTO program, and it is there from which officers are reassigned to other units or promoted out. As a result, any separation elsewhere in the organization has a cascading effect.

Not included, however, are individuals that separate from the department while in the academy or FTO program. Nor does the analysis count these positions as being part of current patrol staffing. The reason for this is the point in calculating the turnover rate is to determine how many positions needed to be brough onboard as full, on-duty employees in order to replace those that are lost. While academy and FTO attrition rates influence recruitment goals and academy sizes, it does not help inform how many active employees will separate each year.

Calculations of sworn personnel attrition are portrayed in the following table:

CHPD Sworn Personnel Turnover, 2018 – 2021

Year	# Sep.
2018	8
2019	4
2020	3
2021	6
Average Annual Separations	**5.25**

As shown, the average annual separation total of all sworn personnel is 5.25 positions, accounting for *7.3% turnover* of all budgeted sworn personnel positions at Cedar Hill PD.

Given these considerations, **an additional 7.3% *authorized* (budgeted) positions should be added on top of the actual number currently filled (actual) positions in order to account for turnover** while maintaining the ability to meet the targeted proactivity level (discussed below). The resulting figure can then be rounded to the nearest whole number, assuming that positions cannot be added fractionally. This is based on the historical turnover rates for CHPD, including resignations and retirements of all types. It is also worth noting that the number of officers needed without turnover is fractional, as it is an intermediate step in the calculation process.

As mentioned in Section 3.1, the targeted proactivity level across agencies varies due to several factors (e.g., resource requirements, community expectations, workload fluctuations, etc.); however, MCG project staff recommend targeted proactivity levels of 40% to 45%. As such, the established target proactivity level for this analysis was set at a minimum of 40% proactive time, which a goal of reaching 45%. These calculations are shown in the following table:

Calculation of Patrol Unit Staffing Needs

Total Workload Hours		27,279
Proactive Time Target (Minimum)		40%
Proactive Time Target (Target)		45%
Staffed Hours Needed	=	49,599
Net Available Hours Per Corporal (x4)		*1,132*
Remaining Staffed Hours Needed		45,071
Net Available Hours Per Officer	÷	1,534
Turnover Factor	+	7.3%
Patrol Corporals Needed		**4**
Patrol Officers Needed to Reach 45%	=	**32**

The department currently has 32 officer positions budgeted, which is equal to the number recommended. Consequently, at current level of workload, the department has sufficient authorized strength to reach the target of 45% proactive time.

Recommendation:

At current levels of workload and rates of turnover, the department has sufficient authorized positions in patrol to provide high levels of service. As growth impacts occur over the next decade, additional staffing will be needed.

(4) Self-Initiated Activity by Hour and Weekday

Self-initiated activity displays different hourly trends compared to community-generated calls for service, as illustrated in the following table which portrays officer-initiated activities just for units assigned to patrol:

Self-Initiated Activity by Hour and Weekday

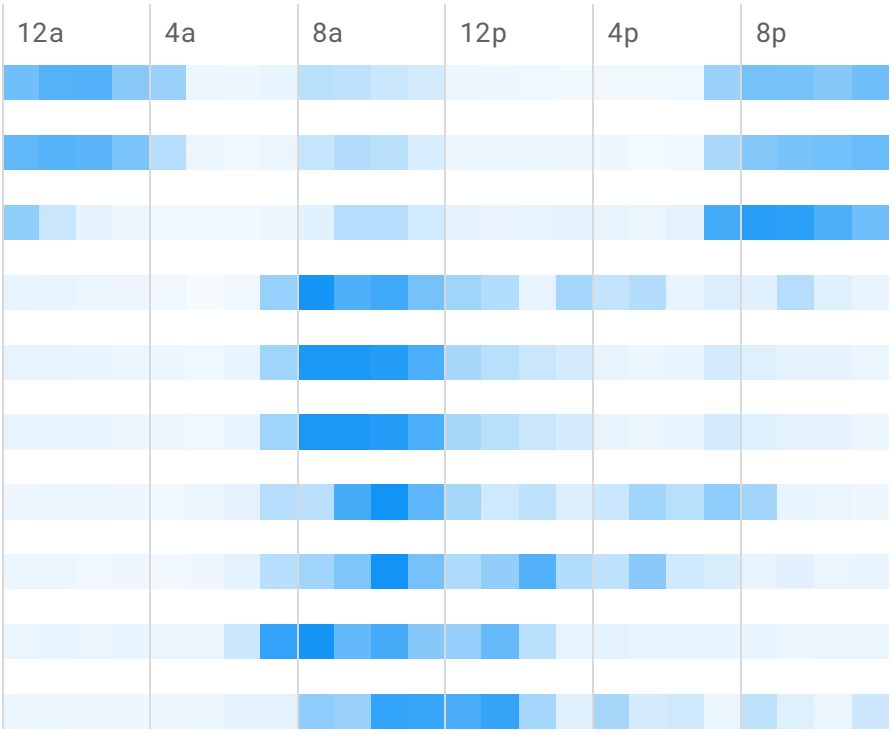
Hour	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
1am	233	290	317	336	318	311	231	2,036
2am	186	298	312	311	343	298	229	1,977
3am	184	205	279	200	295	259	200	1,622
4am	145	142	269	141	271	260	165	1,393
5am	62	120	176	92	77	75	59	661
6am	103	153	163	6	36	16	80	557
7am	199	216	214	92	101	58	159	1,039
8am	317	302	265	219	190	169	216	1,678
9am	270	290	329	232	210	180	256	1,767
10am	266	282	269	239	257	223	204	1,740
11am	254	265	216	203	216	197	173	1,524
12pm	153	147	116	153	148	162	132	1,011
1pm	167	149	114	126	139	149	155	999
2pm	126	124	112	128	143	146	142	921
3pm	160	134	88	145	122	115	141	905
4pm	155	137	92	158	121	75	149	887
5pm	97	99	58	156	101	108	102	721
6pm	90	100	94	78	107	126	111	706
7pm	325	306	249	290	331	324	260	2,085
8pm	316	350	300	343	370	275	274	2,228
9pm	331	413	369	272	315	267	259	2,226
10pm	359	415	362	239	252	236	223	2,086
11pm	356	411	383	245	250	231	211	2,087
Total	5,038	5,629	5,507	4,737	5,036	4,582	4,367	**34,896**

Self-initiated activity trends differ markedly from call for service trends in that incidents are largely concentrated on the night shift teams on Sunday, Monday, and Tuesday nights (and into the following mornings).

Unlike community-generated calls for service, self-initiated activity is typically more concentrated over a few call types:

Most Common Categories of Self-Initiated Activity

Incident Type	# CFS	HT
PATROL: BUS.	12,575	13.9
PATROL: NEIGH.	12,206	10.8
TRAFFIC STOP	6,932	13.7
EXTRA PATROL	1,348	15.1
PATROL: O.O.SQU.	588	17.1
OTHER/N.A.	292	35.7
FOLLOW UP	215	32.1
BUSINESS CONTACT	194	14.7
MEET COMP/OFF	89	30.6
DIRECTED PATROL	80	13.0
All Other Types	377	28.4
Total	**34,896**	**13.4**



Self-initiated activity categories are largely divided by day and night shift. Almost all traffic stops are conducted by the night shift, whereas directed patrol, extra patrol, and similar activity is concentrated during day shift hours.

Recommendation:

Maintain current staffing level but evaluate alternative deployment strategies, including staggered start times.

3. Criminal Investigations Division

The Criminal Investigations Division consists of an Investigative Unit, the Crime Analysis Unit/Sex Offender Registration, the Victim Services Unit, the Crime Scene Unit, and a Mental Health Officer. The Division is managed by a Lieutenant who oversees all division operations and provides employee oversight.

(1) Investigative Unit

The Investigative Unit consists of 1 Sergeant, 7 Detectives (8 authorized), 1 Investigative Aid, 1 Civilian Investigator, and 1 Digital Media Coordinator. The day-to-day operations of the unit are supervised by the Sergeant who assigns and reviews investigative cases.

Detectives are assigned cases as generalists, though they may be assigned specific cases based on their expertise. The Investigative Unit conducts follow-up on cases reported to patrol, conducts crime scene processing, and performs other operations in support of the Police Department. Detectives either work an 8 hour/5-day shift or a 10 hour/4-day shift.

The Investigative Aid performs administrative functions as well as assists with case preparation for future criminal prosecution. The Civilian Investigator completes administrative paperwork associated with patrol division arrests (jail work outs as defined by the department). The Digital Media Coordinator prepares body-worn camera evidence for future prosecution and assists with jail work outs.

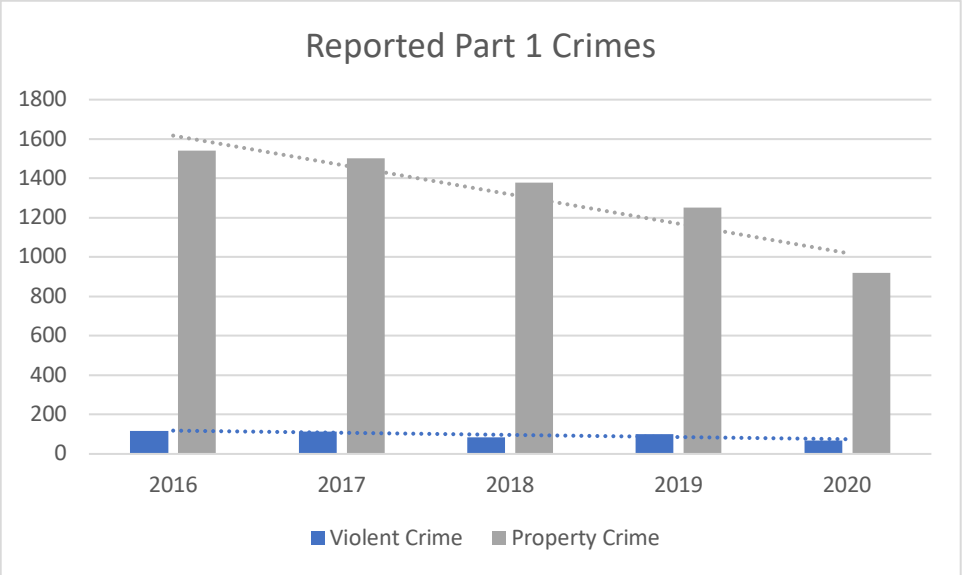
(1.1) Investigations Workload Analysis

In reviewing investigative units, it is important to understand the amount of reported crime as this directly impacts potential caseloads. Most agencies report their crime statistics to the Federal Bureau of Investigation (FBI) for purposes of tracking crime nationally. There are two types of crimes reported to the FBI, part 1 and part 2. Part 1 are the most serious types of violent and property crime. Part 1 crime includes: homicide, rape, robbery, aggravated assault, burglary, larceny-theft, motor vehicle theft and arson. Part 2 crimes includes: simple assault, forgery, fraud, vandalism, weapons possession, prostitution, driving while intoxicated, etc.

The following table shows UCR reported Part 1 crime for the years 2016 through 2020 (note the FBI did not release 2021 crime data for populations under 100,000).

		2016	2017	2018	2019	2020
Violent Crime		116	114	85	99	69
Criminal Homicide		2	1	1	4	4
Rape		10	23	18	12	12
Robbery		50	41	27	24	12
Aggravated Assault		54	49	39	59	41
Property Crime		1541	1502	1379	1252	920
Burglary		207	153	118	76	80
Larceny-Theft		1240	1251	1162	1097	744
Motor Vehicle Theft		94	98	99	79	96
Arson		2	2	2	2	0
Violent Crime	**-14.66%**					
Property Crime	**-18.75%**					

As can be seen by the preceding chart, reported violent crime and property crime have seen an overall decrease between the years 2016 and 2020. The following chart displays the same information graphically.



As the chart demonstrates, reported violent and property crime has decreased within the five-year period.

(1.2) Case Clearance Rates

Case clearance rates can be an important factor in managing and staffing investigative positions. The FBI posts annual reported Part 1 crimes and cases cleared by arrest or by exceptional means. Though there are several factors that can affect case clearance rates, it can provide valuable insight into investigative processes and staffing.

The FBI tracks case clearance rates for approximately 14,000 law enforcement agencies across the United States and provides both the national average clearance rates and more specific clearance rates by city/town/county population. The table below presents the nation clearance rates for all reporting agencies and for cities with a population similar to Cedar Hill in 2020.

	% of Violent Crime Cleared	% of Property Crime Cleared
Avg. All Agencies	45.5%	17.2%
Avg. Cities 50,000 to 99,999	48.7%	22.2%
Cedar Hill, TX	**50.7%**	**17.5%**

As the table indicates, Cedar Hill is more successful at clearing violent crime cases and less successful at clearing property crime cases than comparable agencies.

(1.3) Caseload Data

The Cedar Hill Police Department provided the project team with a spreadsheet from their RMS database that is used for tracking investigative caseloads for the years of 2019 through 2021. Each of these crimes were sorted into broader crime categories for analysis. The following table summarizes yearly investigative caseloads by crime category. These figures only consider detectives specifically assigned to the investigative unit.

	2019	2020	2021	Total
Burglary/Property Crimes	851	565	417	1,833
Domestic Violence	91	91	102	284
Financial Crimes	165	165	165	495
General Crimes	399	328	311	1,038
Homicide	2	3	2	7
Person Crimes	136	62	88	286
Runaway/Missing Person	3	4	4	11
Sexual Assault	1	12	22	35

The following tables detail each crime category and detective caseloads for the entire three-year period.

Burglary/Property Crimes	
Burglary Habitation (unlawful entry-no force)	22
Burglary Habitation intend other felony	5
Burglary of Building	56
Burglary of Coin Operated/Collection Machine	1
Burglary of Habitation	28
Burglary of Habitation (attempt only – forcible entry)	1

Burglary of Vehicle (all other theft)	2
Burglary of Vehicle (from a motor vehicle)	161
Burglary of Vehicle (parts and accessories only)	5
Criminal Mischief <$100 OR substantial inconvenience	15
Criminal Mischief >=$100<$750	145
Criminal Mischief >=$2,500<$30K	29
Criminal Mischief >=$30K<$150K	2
Criminal Mischief >=$750<$2,500	69
Criminal Mischief/Impair/Interrupt Pub Service	2
Reckless Damage or Destruction	13
Tamper/Fabricate Phys Evid W/Intend to Impair	1
Theft Controlled Substance <$150K (from building)	1
Theft of Firearm	57
Theft of Material Alum/Bronze/Copper/Brass <$20K	4
Theft of Serv >=$100<$750	12
Theft of Serv< $100	9
Theft of Serv >=$750<$2,500	1
Theft Prop<$100 W/ Previous Conviction	2
Theft Prop>=$100<$750 ENH IAT	2
Theft Prop<$2,500 2/More Previous Conviction	23
Theft Prop>=$100<$750	463
Theft Prop>=$2,500<$30K	156
Theft Prop>=$30K<$150K	12
Theft Prop>=$300K	2
Theft Prop>=$750<$2,500	282
Theft Prop>=$150K<$300K	1
Theft Under $100	235
Theft Mail<= 10 Addresses	13
Theft Mail ID Info<= 10 Addresses IAT	1
	Total 1,833

Domestic Violence	
Aggravated Assault Date/Family/House w/weapons/SBI	5
Aggravated Assault w/deadly Weapon Family/House	13
Aggravated Assault Causes SBI/Family/House	1
Assault By Threats – Family Violence	10
Assault Causes Bodily Injury Family Member	77
Assault Family/House Member Impede Breath/Circulation	29
Assault Family/Household Member w/previous conviction	3
Assault Family Violence (Offensive Contact)	141
Continuous Violence Against the Family	3
Terroristic Threat of Family/Household	2
	Total 284

Financial Crimes	
Claim Lottery Prize Fraud>$200<=$10K	2
Credit Card or Debit Card Abuse	95
Credit Card or Debit Abuse Elderly	4
Financial Abuse Elderly>=$2500<$30K	1
Forgery Financial Instrument	25
Forgery Govt/National Inst/Money/Security	8
Forgery To Defraud or Harm of Another	4
Forgery Financial Instrument>=$2500<$30K IAT	1
Forgery Financial Instrument >=$750<$2500 IAT	1
Fraud Destroy Removal Concealment Writing	1
Fraud Finance Statement Forged	1
Fraud Possession/Use Credit or Debit Card<5	9
Fraud Use/Possession Identifying Infor # Items 50 or More	1
Fraud Use/Possession of ID Identifying Info # of items 10 < 50	1
Fraud Use/Possession of Identifying Info # Items < 5 Elderly	18
Fraud Use/Poss. of Identifying Info # Items 10 < 50 Elderly	1
Fraud Use/Possession of ID Info # Of Items < 5	316
Fraud Use/Poss. Of Identifying Info # Of Items 5 < 10	4
Misappropriated FIDUC/Financial Property >=$30K<$150K	1
Money Laundering >=$2,500<$30K	1
	Total 495

General Crimes	
Abandon Endanger Child Int/Know/Reck/Crim Neg (Family/Legal Guardian)	5
Abandon Endanger Child W/ Intent to Return (Family/Legal Guardian)	1
Accident Involving Damage to Vehicle<$200	19
Accident Involving Damage to Vehicle>=$200	91
Accident Involving Injury	9
Bigamy	1
Computer Security Breach	1
Criminal Simulation	1
Criminal Trespass	15
Criminal Trespass in Habit/Shelter/Superfund/Infrastructure	3
Cruelty to Livestock Animals Physical Abuse	1
Deadly Conduct	5
Deadly Conduct Discharge Firearm	6
Disorderly Conduct (Discharge Firearm Across Road)	1
Disorderly Conduct (Fighting)	1
Disorderly Conduct Discharge/Display Firearm	1
Driving Under the Influence of Alcohol by a Minor	1
Driving While Intoxicated	9

Driving While Intoxicated 2nd	3
Driving While Intoxicated BAC >=0.15	3
Driving While Intoxicated/Open Container	1
Driving While Intoxicated W/Child Under 15yoa	1
Duty On Striking Fixture/Hwy Landscape (Under $200)	4
Duty On Striking Fixture/Hwy Landscape>=$200	13
Duty On Striking Unattended Vehicle (Damage Under $200)	5
Duty On Striking Unattended Vehicle (Damages $200 and Over)	21
Emergency Detention/Mental Illness/Risk of Harm	4
Escape From Custody	1
Evading Arrest Det. W/Vehicle	21
Evading Arrest Detention	9
Exploitation of Child/Elderly/Disabled	2
Fail To Identify Fugitive Intent Give False Info	8
Fail To Identify Giving False/Fictitious Info	1
Failed To Secure Firearm from Child	1
False Alarm or Report Emergency	2
Graffiti Pecuniary Loss <$100	1
Graffiti Pecuniary Loss>=$100<$750	3
Graffiti Pecuniary Loss>=$2,500<$30K	1
Harassment	18
Illegal Dump=> 500 LBS < 1000 LBS OR =>100CFT<200CFT	2
Illegal Dumping> 5LBS < 500LBS OR > 5GAL < 100CFT	1
Indecency W/ Child Sexual Contact	8
Indecent Assault (Fondling)	1
Indecent Assault (Contact/Bodily Fluids)	1
Indecent Exposure	5
Info Only – Accidental Shooting	4
Info Only – Adult Protective Services Referrals	8
Info Only – Arson, Criminal Misch, Other Property Damage or Destruction	2
Info Only – Assaultive Offenses	7
Info Only – Child Protective Services Referrals	6
Info Only – Civil Matter	2
Info Only – Computer Crimes	14
Info Only – Deceased Person	26
Info Only – Disorderly Conduct and Related Offenses	2
Info Only – Drugs/Narcotics Information	4
Info Only – Family Problem	14
Info Only – Found Property	1
Infor Only – Fraud	58
Info Only – Juvenile Matter	1
Info Only – Recovered Stolen Property or Vehicle	10

Info Only – Neighborhood Problem	2
Info Only – Lost Property	15
Info Only – Medical Emergency	1
Info Only – Offenses Against the Family	1
Info Only – Seized/Confiscated Property – No Charges Filed	3
Info Only – Sex Offenses	14
Info Only – Suicide/Attempted Suicide	7
Info Only – Suspicious Activity	7
Info Only – Suspicious Person and/or Vehicle	4
Info Only – Theft	20
Info Only – Traffic Crash	4
Info Only – Weapons	3
Info Only – Welfare Concern	2
Injury Child/Elderly/Disable W/ Int Bodily Injury	4
Injury Child/Elderly/Disable W/ Int SBI/Mental	1
Injury Child/Elderly/Disable Reckless Bodily Injury	1
Interfere W/ Emergency Req for Assistance	15
interfere W/ Emergency Req for Assistance with Previous Conviction	1
Intoxication Assault W/ Vehicle SBI	1
Interference With Child Custody	3
Invasive Visual Recording	3
Leave Unattended Child in Motor Vehicle	1
Man Del CS PG 1 < 1G	2
Man Del CS PG 1 >=4G<200G	1
Man Del CS PG 1-B >=1G<4G DFZ HE IAT 481.1123	1
Online Impersonation-Name/Persona Create Page (Harm/Defra)	2
Online Solicit of a Minor Under 14	1
Open Container (Possess in Motor Vehicle)	1
Poss. CS PG 1 <1G	3
Poss. CS PG 1 >=1G<4G	1
Poss. CS PG 1 >=4G<200G	5
Poss. CS PG 2 < 1G (All Others, Barbiturates, Benzedrine)	1
Poss. CS PG 2 >= 1G<4G	2
Poss. CS PG 33 < 28G	1
Poss. CS PG1 <1G DFZ IAT 481.115	1
Poss. Dangerous Drug	3
Poss. Marijuana <2OZ	1
Poss. Marijuana>2OZ<=4OZ	1
Poss. Marijuana >4OZ<=5LBS	4
Poss. Drug Paraphernalia	182
Possess, Purchase, Consume, accept Cig/Ecig/Tob Product Under 21	1
Poss. W/ Intent to Promote Child Pornography	5

Poss. Of Child Pornography	1
Public Intoxication	10
Publish/Threat to Publish Intimate Visual Material	2
Purchase/Furnish Alcohol to a Minor	1
Reckless Damage or Destruction	4
Resist Arrest Search or Transport	4
Resist Arrest Search or Transport Deadly Weapon – Firearm	1
Sex Abuse of Child Continuous: Victim under 14 (fondling)	1
Sexual Perf. Child<14 Employ/Induce/Authorize	1
Terroristic Threat Reaction Emergency Agency	1
Terroristic Threat Cause Fear of Imminent SBI	2
Sale/Distribute/Display Harmful Material to Minor	1
Unauthorized Use of Vehicle	170
Unauthorized Use of Vehicle – Truck/Bus	2
Unauthorized Use of Vehicle – Other Agency Stolen	2
Unlawful Carrying Weapon	8
Unlawful Installation of Tracking Device	2
Unlawful Electronic Transmission of Sexually Explicit Visual Material	1
Unlawful Possession Firearm by Felon	5
Unlawful Restraint	4
Violation Bond/Protective Order	11
Violation Bond/Protective Order 2+ Times W/1-12 MO	1
	Total 1,038

Homicide	
Capital Murder of Person under 10 YOA	1
Murder	6
	Total 7

Persons Crimes	
Aggravated Assault Against Public Servant	1
Aggravated Assault Causing Serious Bodily Injury	2
Aggravated Assault MV Discharge Firearm	1
Aggravated Assault with Deadly Weapon	40
Aggravated Robbery	34
Arson Causing Bodily Injury/Death (Arson)	1
Arson Causing Bodily Injury/Death (Death)	2
Arson Causing Bodily Injury/Death (SBI)	1
Assault (Offensive Contact)	59
Assault by Threats	11
Assault Causing Bodily Injury	38
Assault of Pregnant Person	5
Assault Peace Officer/Judge	1

Criminal Trespass in Habit/Shelter/INFSTRT	1
Deadly Conduct	4
Deadly Conduct Display/Discharge Firearm	2
Discharge Firearm in Certain Municipalities	2
Disorderly Conduct (Discharge firearm across road)	1
Disorderly Conduct (offensive actions-various)	1
Evading arrest DET w/vehicle	15
Evading arrest Detention	3
Harassment	23
Harassment – Repeated Electronic Communication	7
Harassment (By Threats)	1
Indecency w/ a child exposes	1
Indecency w/a child sexual contact	1
Injury Child/Elderly/Disabled with Intent Bodily Injury	2
Robbery	7
Stalking	3
Terroristic Threats Cause Fear of Imminent SBI	4
Theft from Person	12
	Total 286

Runaway/Missing Person	
Missing Person – Adult	8
Missing Child	2
Runaway	1
	Total 11

Sexual Assault	
Sexual Assault (Penetration)	17
Sexual Assault (Contact/No Penetration)	3
Sexual Assault Child (Contact)	3
Sexual Assault Child (Rape)	2
Aggravated Sexual Assault (Rape)	3
Sexual Assault (Sodomy)	1
Aggravated Sexual Assault Child (Rape)	4
Aggravated Sexual Assault Child (Contact)	1
Sex Abuse of Child Continuous: Victim Under 14 (Rape)	1

(1.4) Calculation of Detective Net Availability

Before determining availability and staffing needs, it is important to first review the number of net available hours detectives are available to conduct investigations. To conduct this analysis, it is critical to understand the amount of time that detectives are on leave – including vacation, sick, injury, military, or any other type of leave – as well as hours dedicated to on-duty court or training time, and time spent on administrative tasks.

The impact of each of these factors is determined through a combination of calculations made from Cedar Hill Police Department data and estimates based on the experience of the project team, which are then subtracted from the base number of annual work hours per position. The result represents the total **net available hours** of detectives and other positions, or the time in which they are on-duty and available to complete workloads and other activities in the field. Net availability for detectives is different from patrol because of court and administrative responsibilities. The table below outlines this process in detail, outlining how each contributing factor is calculated:

Factors Used to Calculate Detective Net Availability

Work Hours Per Year

The total number of scheduled work hours for detectives, without factoring in leave, training, or anything else that takes detectives away from normal on-duty work. This factor forms the base number from which other availability factors are subtracted from.

Base number: **2,080 scheduled work hours per year**

Total Leave Hours (subtracted from total work hours per year)

Includes all types of leave, including injuries and military leave – anything that would cause detectives that are normally scheduled to work on a specific day to instead not be on duty. This category also includes all training hours. The below figure is an average of three years of leave and training hours for detectives. This category excludes administrative time and on-duty court time.

From CHPD Data: **306.5**

On-Duty Training Time (subtracted from total work hours per year)

The total number of hours spent per year in training that are completed while on-duty and not on overtime. The Cedar Hill data combined both the total leave hours and the on-duty training time together (see above total number).

From CHPD Data: N/A

On-Duty Court Time (subtracted from total work hours per year)

The total number of hours that each detective spends per year attending court while on duty, including transit time. Court attendance while on overtime is not included in the figure.

Without any data recording on-duty court time specifically for detectives, the number of hours is estimated based on the experience of the project team.

Estimated: **120 hours of on-duty court time per year**

Administrative Time (subtracted from net available hours after leave, court and training hours deducted)

The total number of hours per year spent completing administrative tasks on-duty, including staff meetings, returning phone calls, emails, and various other activities.

This is calculated as an estimated 20% of net work hours after other deductions.

Estimated: **317 hours of administrative time per year**

Total Net Available Hours

After subtracting the previous factors from the total work hours per year, the remaining hours comprise the total *net available hours* for detectives – the time in which they are available to work after accounting for all leave, on-duty training, court, and administrative time. Net availability can also be expressed as a percentage of the base number of work hours per year.

Calculated by subtracting the previously listed factors from the base number:
1,336.5 net available hours per detective

The following table summarizes this calculation process, displaying how each net availability factor contributes to the overall net availability of detectives.

Calculation Process		
Base Annual Hours		2,080
Total Leave/Training Hours	-	306.5
On-Duty Court Time Hours	-	120
Administrative Hours	-	317
Net Available Hours Per Detective	=	**1,336.5**
Number of Detective positions	x	7
Total net available hours		9,355.5

Overall, the detective has approximately **9,355.5** net available hours for the three-year period, representing the total time in which they are able to conduct investigations. These hours will be used in the following sections to analyze detective caseloads.

(1.5) Caseload Hours

Not all investigative cases require the same number of investigative hours, for example a homicide investigation requires more investigative time (and resources) than a burglary. To factor for this, Matrix Consulting Group developed several case type investigative caseload work hours. These were developed through dozens of studies and interviews with detective working cases. The following case type caseload workload hours were used to calculate staff resource needs. It develops an assessment of total caseloads by type of case, though recognizing that Cedar Hill detectives work all cases as assigned.

(1.6) Homicide

Homicide cases are among the most complex and time-consuming investigations that are conducted. These cases receive a high level of scrutiny and therefore almost all investigative techniques are used. Additionally, because of their complexity they are typically handled by a group of detectives and additional resources are often used. The following table shows a breakdown of approximate caseload hours for a homicide case or officer involved shooting:

Task	Processes Involved	Approximate Time	% of Time Completed
DNA	Evidence to Crime Lab	4 hours	100%
Crime Scene Material	Evidence to Property Control	4 hours	100%
Cell Phones	Cell Phone Downloads, with some taking longer than others.	30 hours	100%
Video	Review of video recovered from scene and BWC	40 hours	100%
Social Media/Electronic Records/Physical location	Warrants/Subpoenas/Review of Evidence Obtained.	60 hours	100%
Location Data	Warrants/Subpoenas/Review of Evidence Obtained.	40 hours	100%
Surveillance	Surveillance, including locating suspect and report writing.	10 hours	100%

Task	Processes Involved	Approximate Time	% of Time Completed
Postmortem Exam	Autopsy performed by ME (Detectives observe and consult)	6 hours	100%
Victim / Witness Interview(s)	Interview(s), including report writing.	40 hours	100%
Suspect Interview(s)	Interview(s), including report writing.	12 hours	50%
Jail Call Monitoring	Listen to calls, write reports.	20 Hours	100%
Consult with DA	Conduct follow up, write additional reports.	10 hours	100%
Total		281 hours- *If all tasks completed*	
	On Average	**275 hours**	

This list is not all inclusive and does not contain all elements and not every homicide will have the same amount of evidence or interviews conducted. Included in these hours is the assumption that detectives will be using RMS searches, social media searches, checking association files, receiving informant information and other investigative techniques (trackers, cell tower data, etc.), if available. It also assumed that detectives work as a team and not all investigative hours will be worked by a single detective (These are hours for lead detective only). Many cases will not require the number of hours listed, but some cases may require significantly more.

Using the case time estimates and the percentage of the time that each subtask is completed, this translates to approximately **275.0 hours** allotted per solvable case.

Additionally, on average most departments assign a team of other detectives to assist during the early stages of a homicide investigation which represents approximately 40 hours per investigator assigned.

(1.7) Person Crimes

Person crimes cases are treated more seriously by the judicial system and tend to have more witnesses and evidence requiring more time in interviews and recovering and processing evidence than property crimes. Approximate case hours were developed through numerous interviews with detectives:

Task	Processes Involved	Approximate Time	% of Time Completed
DNA	Evidence to crime lab, includes submission and report.	3 hours	10%
Crime Scene Material	Evidence to property control, inspection, and report writing.	4 hours	30%
Cell Phones	Cell phone downloads, with some taking longer than others.	10 hours	50%
Video	Review of video recovered from scene and BWC, report writing.	10 hours	50%
Social Media/ Elec. Records	Warrants/subpoenas, including submission and report.	10 hours	20%
Location Data	Warrants/subpoenas, including submission and report.	20 hours	20%
Surveillance	Surveillance, including locating suspect and report writing.	10 hours	10%
Victim / Witness Interview(s)	Interview(s), including report writing.	2 hours	100%
Suspect Interview(s)	Interview(s), including report writing.	2 hours	50%
Jail Call Monitoring	Listen to calls, report writing.	10 hours	10%
Consult with DA	Conduct follow up, write additional reports.	1 hours	20%
Total	*If all tasks completed:*	*82.0 hours*	
	On average:	22.6 hours	

This list is not all inclusive and does not contain all elements of an investigation and not every case will have same amount of evidence or interviews conducted. Included in these hours is the assumption that detectives will be using RMS searches, checking association files, receiving informant information, and other investigative techniques (trackers, cell tower data, etc.), if available. Many cases will not require the number of hours listed, but some cases may require significantly more.

Based on the percentage for how often each subtask is completed, each solvable case equates to an average of approximately **22.6 hours**.

(1.8) Sex Assault

Sex Assault and crimes against children are even more complex cases that are treated more seriously by the judicial system; they tend to have less witnesses, thus requiring more time in interviews and recovery and processing of evidence than other person crimes. The following chart describes approximate investigative times for sex crimes:

Task	Processes Involved	Approximate Time	% of Time Completed
DNA	Evidence to crime lab, includes submission and report.	2 hours	50%
Crime Scene Material	Evidence to property control, inspection, and report writing.	2 hours	50%
Cell Phones	Cell phone downloads, with some taking longer than others.	4 hours	40%
Video	Review of video recovered from scene and BWC, report writing.	4 hours	50%
Social Media/ Elec. Records	Warrants/subpoenas, including submission and report.	10 hours	20%
Location Data	Warrants/subpoenas, including submission and report.	20 hours	40%
Surveillance	Surveillance, including locating suspect and report writing.	10 hours	20%
Sex Assault Kit	Sex Assault exam including report.	6 Hours	90%
Victim / Witness Interviews	Interview(s), including report writing.	2 hours	100%
Suspect	Interview(s), including report writing.	2 hours	50%
Jail Call Monitoring	Listen to calls, report writing.	2 hours	40%
Consult with DA	Review case, perform follow up, includes report writing.	1 hours	20%
Total	*If all tasks completed:*	*65.0 hours*	
	On average:	26.6 hours	

This list is not all inclusive and does not contain all elements of all investigations. Not every case will have same amount of evidence or interviews conducted. Included in these

hours is the assumption that detectives will be using RMS searches, checking association files, receiving informant information and other investigative techniques (trackers, cell tower data, etc.), if available. Many cases will not require the number of hours listed, but some cases may require significantly more.

Using the above work hour estimates and the percentage of the time that each subtask is completed, this translates to approximately **26.6 hours** per solvable case.

(1.9) Internet Crimes Against Children (ICAC)

Internet Crimes Against Children are complex investigative cases which rely heavily on digital forensic evidence that requires unique processes. These cases are treated more seriously by the judicial system; they tend to have less witnesses, thus requiring more time in interviews and recovery and processing of evidence than other crimes. The following chart describes approximate investigative times for sex crimes:

Task	Processes Involved	Approximate Time	% of Time Completed
Cell Phones	Cell phone downloads, with some taking longer than others.	4 hours	30%
Video	Review of video recovered from scene and BWC, report writing.	4 hours	30%
Social Media/ Elec. Records	Warrants/subpoenas, including submission and report.	6 hours	20%
Location Data	Warrants/subpoenas, including submission and report.	20 hours	30%
Surveillance	Surveillance, including locating suspect and report writing.	10 hours	20%
Document / Digital Evidence Review	Review/ recover images, files, and write reports.	30 Hours	100%
Victim / Witness Interviews	Interview(s), including report writing.	2 hours	50%
Suspect	Suspect interview(s), including report.	2 hours	50%
Jail Call Monitoring	Listen to calls, report writing.	4 hours	10%
Consult with DA	Review case, perform follow up, includes report writing.	4 hours	10%

Task	Processes Involved	Approximate Time	% of Time Completed
Total	*If all tasks completed:*	*86.0 hours*	
	On average:	44.4 hours	

This list is not all inclusive and does not contain all elements and not every sex assault case will have same amount of evidence or interviews conducted. Included in these hours is the assumption that detectives will be using RMS searches, checking association files, receiving informant information and other investigative techniques (trackers, cell tower data, etc.), if available. Many cases will not require the number of hours listed, but some cases may require significantly more.

Using the above work hour estimates and the percentage of the time that each subtask is completed, this translates to approximately **44.4 hours** per solvable case.

(1.10) Burglary / Property Crime

Burglary / Property Crimes are typically less complex investigative cases than person crimes and generally require less investigative time or resources. These cases are treated less seriously by the judicial system, and they tend to have less witnesses. The following chart describes approximate investigative times for Burglary / Property Crimes:

Task	Processes Involved	Approximate Time	% of Time Completed
DNA	Evidence to crime lab, includes submission and report.	2 hours	20%
Crime Scene Material	Evidence to property control, inspection, and report writing.	2 hours	20%
Cell Phones	Cell phone downloads, with some taking longer than others.	4 hours	50%
Video	Review of video recovered from scene and BWC, report writing.	2 hours	50%
Social Media/ Elec. Records	Warrants/subpoenas, including submission and report.	6 hours	30%
Location Data	Warrants/subpoenas, including submission and report.	20 hours	40%

Task	Processes Involved	Approximate Time	% of Time Completed
Surveillance	Surveillance, including locating suspect and report writing.	10 hours	20%
Victim / Witness Interviews	Interview(s), including report writing.	1 hours	50%
Suspect Interview	Interview(s), including report writing.	1 hours	50%
Jail Call Monitoring	Listen to calls, report writing.	2 hours	10%
Consult with DA	Review case, perform follow up, includes report writing.	1 hours	10%
Total	*If all tasks completed:*	*51.0 hours*	
	On average:	16.9 hours	

This list is not all inclusive and does not contain all elements of all investigations. Not every case will have same amount of evidence or interviews conducted. Included in these hours is the assumption that detectives will be using RMS searches, checking association files, receiving informant information and other investigative techniques (trackers, cell tower data, etc.), if available. Many cases will not require the number of hours listed, but some cases may require significantly more.

Using the above work hour estimates and the percentage of the time that each subtask is completed, this translates to approximately **16.9 hours** per solvable case.

(1.11) Financial Crimes

Financial crimes are exceedingly difficult cases to pursue and typically take longer to investigate as much of the evidence has to be subpoenaed or obtained with a search warrant. In addition, much of the evidence belongs to financial institutions and detectives must wait for them to comply with legal requests for information before they can proceed, and this can take weeks to months depending on the type and amount of data requested. They also tend to have much lower solvability rates (approximately 50% less solvable than person crimes). These types of cases typically do not require a detective to respond to a scene and are often handled as follow up a day or more after the occurrence. The following chart details processes and times associated with financial crimes:

Task	Processes Involved	Approximate Time	% of Time Completed
Document / Digital Evidence Review	Review/ recover financial data, files, and write reports.	12 hours	100%
Video	Review of video recovered from scene and BWC, report writing.	4 hours	10%
Social Media/ Elec. Records	Warrants/subpoenas, including submission and report.	8 hours	10%
Cell Phone / computer evidence	Warrants/subpoenas, including submission and report.	8 hours	50%
Location Data	Warrants/subpoenas, including submission and report.	20 hours	50%
Victim / Witness Interview(s)	Interview(s), including report writing.	2 hours	100%
Suspect Interview(s)	Interview(s), including report writing.	2 hours	20%
Total	*If all tasks completed:*	*56.0 hours*	
	On average:	29.6 hours	

This list is not all inclusive and does not contain all elements of all investigations. Not every case will have same amount of evidence or interviews conducted. Included in these hours is the assumption that detectives will be using RMS searches, checking association files, receiving informant information and other investigative techniques (trackers, cell tower data, etc.), if available. Many cases will not require the number of hours listed, but some cases may require significantly more.

Using the above work hour estimates and the percentage of the time that each subtask is completed, this translates to approximately **29.6 hours** per solvable case.

(1.12) Domestic Assault

Domestic Assault cases are generally less investigative intense the victim and suspect are known; however, they do require some investigation for successful prosecution. The following chart describes approximate investigative times for these cases:

Task	Processes Involved	Approximate Time	% of Time Completed
DNA	Evidence to crime lab, includes submission and report.	2 hours	20%
Crime Scene Material	Evidence to property control, inspection, and report writing.	2 hours	10%
Cell Phones	Cell phone downloads, with some taking longer than others.	4 hours	50%
Video	Review of video recovered from scene and BWC, report writing.	2 hours	100%
Social Media/ Elec. Records	Warrants/subpoenas, including submission and report.	4 hours	20%
Surveillance	Surveillance, including locating suspect and report writing.	2 hours	20%
Victim / Witness Interviews	Interview(s), including report writing.	2 hours	100%
Suspect Interview	Interview(s), including report writing.	2 hours	50%
Jail Call Monitoring	Listen to calls, report writing.	2 hours	10%
Consult with DA	Review case, perform follow up, includes report writing.	1 hours	10%
Total	*If all tasks completed:*	*21.0 hours*	
	On average:	8.7 hours	

This list is not all inclusive and does not contain all elements of all investigations. Not every case will have same amount of evidence or interviews conducted. Included in these hours is the assumption that detectives will be using RMS searches, checking association files, receiving informant information and other investigative techniques (trackers, cell tower data, etc.), if available. Many cases will not require the number of hours listed, but some cases may require significantly more.

Using the above work hour estimates and the percentage of the time that each subtask is completed, this translates to approximately **8.7 hours** per solvable case.

(1.13) Missing / Runaway

Missing / Runaway cases typical involve interviewing reporting party, last person to have seen them, checking last known locations, close friends and relatives and entering information into teletype. Depending on leads and investigation required by law or agency policy these cases range from 2 to 4 hours with an average of about **3 hours**.

(1.14) General Crimes / Officer Assist

General crimes / officer assists can vary greatly depending on the type of crime or assistance needed. These cases are typically lower-level crimes where some follow up is needed or an officer needs assistance with a case they are working. This can include assisting with a cell phone download, social media or open sources search, warrant preparation or other investigative techniques. Depending on the type of crime and investigative need these cases take between 4 and 8 hours with an average of **6 hours**.

(1.15) Caseload Workload Hours Analysis

To determine the caseload the project team reviewed the crimes investigated by detectives for the years 2019, 2020, and 2021. As mentioned earlier, these crimes were assigned to eight different crime categories. The following table details the criminal investigations division caseload associated with work hours.

CID Caseload	3-year total	Investigative Hours
Burglary/Property Crimes	1,833	30,978
Domestic Violence	284	2,470.8
Financial Crimes	495	14,652
General Crimes	1,038	6,228
Homicide	7	1,925
Person Crimes	286	6,463.6
Runaway/Missing Person	11	33
Sexual Assault	35	931
Total		**63,681.4**

As the table above indicates, the caseload assigned represents approximately 63,681.4 hours.

There are currently a total of 7 detective positions assigned to work cases. This figure does not include the CID Lieutenant and Sergeant, who occasionally assign themselves certain cases which take very short time frames to complete. Using the previous calculation of net available caseload hours and the average three-year caseload total, the number of detectives needed to investigate the caseload can be determined.

Calculation of Detective Staffing Needs		
3 Year Caseload Hours		63,681.4
Divided by total net available hours for 7 Detectives (10,899)	÷	9,355.5
Number of Detectives Needed	=	6.8

As the chart indicates, the number of detectives recommended to work the assigned caseload hours assigned is 6.8. There are 7 detectives assigned with 8 authorized.

The department was unable to provide the project team with individual detective case load assignments for the 2019 – 2021 period. As such, it is unable to determine which types of cases the CID lieutenant and sergeant investigated, as well as the total number. An assumption is made that if the 8th detective position is filled, the CID lieutenant and sergeant will not have assigned cases. Therefore, the staffing level of 8 authorized detectives remains the same.

Recommendation:

Maintain current authorized staffing level of 8 authorized Detectives.

(1.16) Follow-up of Patrol Arrest Case Reports (Jail Workouts)

Criminal Investigations Division employees are responsible for processing patrol arrest paperwork for future prosecution. This process includes constructing a cover sheet, identifying evidence if appropriate, reviews body-worn camera footage when needed, and ensures officer arrest reports are complete. This task is assigned full time to the Civilian Investigator. Both the Digital Media Coordinator and the Investigative Aid assist with these tasks as well. There are no task times recorded for these activities. The task time is dependent on the type of arrest being processed and the thoroughness of the arrest report and completed paperwork.

A time task analysis was not performed. The following table shows the number of patrol arrest case reports processed for prosecution by Criminal Investigations Division staff.

CID Civilian Employee "Jail Workouts"		
2019	**2020**	**2021**
1642	1002	787

Recommendation:

The current structure of processing patrol arrest paperwork should be evaluated and streamlined. The administrative tasks may be better accomplished within the Technical and Services Support Division, as well as performed by the Officer who initiates the arrest.

(2) Crime Analysis Unit / Sex Offender Registration

One Crime Analyst is assigned to the Crime Analyst/Sex Offender Notification Unit. Duties related to the sex offender registration include managing sex offenders located within the Cedar Hill municipality, processing sex offenders as needed and completing notification paperwork. Crime analysis duties include running daily logs of crime and police calls for service at city apartment complexes, monthly patrol officer statistics, monthly crime snapshots, monthly patrol officer statistics, and traffic crash locations.

The Cedar Hill Police Department crime analyst also performs crime reporting duties for the DeSoto, Texas Police Department.

Recommendation:

Maintain current authorized staffing level. However, expand Crime Analyst duties and capabilities in order to incorporate crime analysis into department's crime reduction strategies.

(3) Victim Services Unit

One Victim Assistance Coordinator is assigned to the Victim Services Unit. The coordinator assists victims of crime with court proceedings, paperwork, and victim compensation.

The Victim Assistance Coordinator was recently hired by the department. An evaluation of this position should be performed in order to determine if all crime victims are receiving the care necessary and a victim-centered approach has been incorporated into the overall policing strategy. A regional approach to victim services should also be evaluated. This regional approach to victim services will allow multiple jurisdictions to pool resources in order to form and share services if dedicated funding is not supported by the individual agency.

Recommendation:

Maintain current authorized staffing level. Evaluate a regional approach to providing victim services.

(4) Crime Scene Unit

One forensics manager is assigned to the Crime Scene Unit. The forensics manager

responds and processes major crime scene evidence when needed. Duties also include basic forensics functions and transport evidence to various region labs as needed.

The below table depicts crime scene call outs for the years 2021 and 2020. The total call out time denotes the total number of hours spent on these crime scenes for the year. This total number does not include crime scenes responded to during the forensic manager's regular shift; therefore, the forensic manager received overtime pay for these hours.

Crime Scene Call Outs

Year	Total Call Outs	Total Call Out Time
2021	62	270.5
2020	69	284

According to the data supplied, during the above two-year period, the forensics manager was called out approximately 1.25 times each week during scheduled time off, for a total of 131 times. These callouts amounted to 554.50 hours at an overtime pay rate. This position does not receive "on call" pay.

While working this high number of overtime hours may be sustainable for a short period of time, there is a high likelihood of work burnout, employee turnover, and work product deficiencies. These issues are compounded given the nature of the job tasks and work environment.

The following table depicts the total number of lab appointments for 2021 and 2020. Lab appointments consist of the forensics manager transporting evidence to labs in either Plano, Dallas, Arlington, or Garland, Texas. It is estimated that the total drive time (round trip) for each lab appointment is two hours.

Lab Appointments

Year	Total Lab Appointments
2020	123
2021	124

The forensics manager spent 246 hours driving to lab appointments in 2020 and 248 hours in 2021. As mentioned previously in the review, a police department employee's baseline number of work hours in one year is 2,080 (without factoring in leave, training, or anything else that takes an employee from normal on-duty work). Taking the baseline number of hours into consideration, 11.8% of available workhours were dedicated to driving to lab appointments in 2020 and 11.9% in 2021. These figures are likely higher when factoring in leave, training, and other things which may take an employee from

normal on-duty work.

Adding a second employee to the crime scene unit is advantageous. Expecting an employee to work a high rate of overtime hours each year is not sustainable. This lack of sustainability is compounded by the nature of the job tasks, work environment, and the employee's family. This lack of sustainability is also compounded by the position not receiving "on call" pay. Scheduling in order to alleviate the current number of overtime hours at a potential cost savings to the department may be recognized. Currently, when the forensic manager is not available, the department must rely on other area agencies for assistance. As mentioned earlier, the forensic manager spends a large amount of time driving to area laboratories. These duties would be shared allowing for improved time management and improved work product.

An evaluation of regionalizing the crime scene unit function should be explored. This evaluation should be guided by feasibility, potential for cost savings, increased personnel opportunities, and an increase in consistency and efficiency. This regional approach will allow multiple jurisdictions to pool resources in order to form and share services if dedicated funding is not supported by the individual agency.

Recommendation:

Add 1 crime scene unit employee for a total of 1 Forensics Manager and 1 employee. Evaluate the feasibility of participating in a regional crime scene unit.

(5) Mental Health Officer

During the staffing analysis, the department added a grant funded Mental Health Officer position to the Criminal Investigations Division. This Officer is a member of the Regional Crisis Assessment Resource Engagement (CARE) Team.

The Regional CARE Team is a multi-disciplinary team which provides free community behavioral health support to individuals and their families. Participating cities include Cedar Hill, DeSoto, Duncanville, Glenn Heights, and Lancaster. This team assists individuals, families, and support systems experiencing behavioral health needs in navigating, understanding, and utilizing appropriate community referral sources. The team provides prevention and follow-up support, education, self-advocacy, and diversion opportunities. The CARE Team is a valuable resource for citizens and those officers handling someone experiencing a mental health crisis.

3. Support Bureau

The Support Bureau is led by an Assistant Chief and is comprised of the Technical and Information Services Division, Special Services Division, and the Professional Standards Division. Also contained within the Support Bureau is the Special Response Team Officer, the HIDTA Task Force Officer, the K9 Officer, and the Public Information Officer. Staff is comprised of a combination of sworn and non-sworn personnel.

1. Technical and Information Services Division

The Technical and Information Services Division consists of the Public Services Unit, Records Unit, Alarm Billing Unit, Property/Evidence Unit, and Administrative Services Unit. The division is managed by a Lieutenant, supported by a Corporal and Civilian Supervisor.

(1) Division Management

The Technical and Information Services Division Lieutenant also has the following collateral duties assigned:

- Public safety software system administrator
- Manages all software IT tickets
- Troubleshoot body-worn cameras, laptops, and computers
- Data/statistics for department annual report
- Monthly crime statistics for CID
- Department website statistics
- City policy review board member

The Technical and Information Services Division is composed primarily of civilian employees. The functions assigned to this division are support and administrative in nature. Utilizing a Civilian Manager instead of a sworn police officer position will be cost efficient and free this sworn position for critical police functions. This is especially important when taking future organizational needs into account.

When fully staffed, the Civilian Supervisor supervises 5 Public Service Officers, 4 Records Clerks, 1 Alarm Billing Unit Coordinator, and 1 Property/Evidence Coordinator. These 11 employees have different job functions and work different shifts. Adding another civilian supervisor working a different schedule will ensure a smaller span of control and allow

for more supervisory coverage.

Recommendation:

Replace Lieutenant position with a Civilian Manager position.

Add 1 Civilian Supervisor position for a total of two.

(2) Public Services Unit

The Public Services Unit currently has 3 Public Services Officers (PSO) (authorized 5) who are supervised by the Civilian Supervisor. The PSOs work either 10 hour/4 days a week shift or 8 hour/5 days a week shift. The Public Services Unit provides 24 hours/7 days a week coverage at the department and provides customer service at the public desk.

Four Public Service Officers (one PSO recently transferred to another position within the department), and the Supervisor recorded assigned tasks for a fifteen-day period. A total of **4,738** tasks were performed during this period. There are no task times recorded for these tasks. The following table indicates the total number of tasks for this period.

Fifteen Day Task Totals	
TCIC/NCI Entries	918
Front Desk Assists	550
Phone/Radio/Email Requests	1,032
Reporting System (Zeurcher)	1,138
Open Fox System	1,100
Total	**4,738**

Using the above task totals, the following table indicates a daily average for each task during this fifteen-day period.

Daily Task Average	
TCIC/NCI Entries	61
Front Desk Assists	36.6
Phone/Radio/Email Requests	68.8
Reporting System (Zeurcher)	75.9
Open Fox System	73.3
Total	**315.6**

As the following table shows, on average each of the five employees (including supervisor) completed **63.4** tasks during the fifteen-day record period.

Calculation of Daily Tasks Per Employee		
Average number of daily tasks		317.6
Divided by total number of employees	÷	5
Number of daily tasks per employee	=	**63.4 tasks**

Recommendation:

Maintain current authorized staffing level of 5 Public Safety Officers.

Explore alternative scheduling options in order to insure adequate coverage.

(3) Records Unit

The Records Unit has an authorized total of two full time Clerks and two part time Clerks who are supervised by the civilian supervisor. The full-time clerks work Monday through Thursday, 10- hours shifts. The part time clerk typically works varied hours for a total of 20 hours each week. Currently, one full time clerk also performs the duties of the Alarm Billing Coordinator, and one full time clerk performs the duties of the Property Room Coordinator.

The four records clerks recorded assigned tasks for a fifteen-day period. A total of **2,563** tasks were performed during this period. There are no task times recorded for these tasks. The following table indicates the total number of tasks for this period.

15 Day Task Totals	
Various Administrative Tasks	895
Officer Report Review & Audits	679
Customer Assists	328
Report/Paperwork Processing and Filing	110
Open Records Requests/BWC Requests	307
Criminal Background Checks	79
UCR	47
Records Retention	118
Total	**2,563**

Using the above task totals, the following table indicates a daily average for each task during this fifteen-day period.

Daily Task Average	
Various Administrative Tasks	59.7
Officer Report Review & Audits	45.2
Customer Assists	21.9
Report/Paperwork Processing and Filing	7.3
Open Records Requests/BWC Requests	20.4
Criminal Background Checks	5.3
UCR	3.1
Records Retention	1.2

As the following table shows, on average each of the four employees completed **41** tasks each day during the fifteen-day record period.

Calculation of Daily Tasks Per Employee		
Average number of daily tasks		164.1
Divided by total number of employees	÷	4
Number of daily tasks per employee	=	**41.0**

As noted, a records clerk completed an average of forty-one tasks each day during the fifteen-day period. Each of these tasks vary in complexity and length of time to complete. Given the very nature of these tasks, the length of time to complete also may differ from day to day. For instance, a body-worn camera request will vary given the length and complexity of the incident which was recorded. If a certain task requires more time than expected, other tasks are not completed. Employee Interviews revealed that many tasks are continuously delayed for days until there is time to complete. This constant delay in tasks is often a cause of workflow issues, mistakes, and several items within a task not being completed correctly or completed at all. Employee interviews also revealed that many tasks are consistently backlogged due to current staffing levels.

During this current evaluation, a second part time position was added to the records unit. Once this part time records clerk is hired, an additional evaluation should occur in order to determine if it solves current workflow issues.

Recommendation:

Maintain current authorized staffing level. Once a second part time Records Clerk is hired, evaluate to ensure current workflow issues have been addressed.

(4) Alarm Billing Unit

The Alarm Billing Unit consists of a Coordinator who is supervised by the Civilian Supervisor. The Coordinator works a Monday through Thursday, 10-hour shift schedule. Until recently, the Alarm Billing Coordinator was also assigned records unit duties.

The Alarm Billing Coordinator recorded assigned tasks for a fifteen-day period (while also assigned records clerk duties). A total of 658 tasks were performed during this period. There are no task times recorded for these tasks. The following table indicates the total number of tasks for this period.

Alarm Billing Coordinator Duties	
False Alarm Processing	135
False Alarm Audits	188
False Alarm Hearings	33
False Alarm Renewals	274
Mail Returns/Letters	20
New Permit Processing	7
Refunds	1
Total	**658**

No daily average was analyzed due to the alarm billing coordinator only working in this capacity part time currently.

Recommendation:

Maintain current authorized staffing of 1 full time Alarm Billing Coordinator.

(5) Property and Evidence Unit

The Property and Evidence Unit consists of a Coordinator who is supervised by the Civilian Supervisor. The Coordinator works a Monday through Thursday, 10-hour shift schedule. Until recently, the Property and Evidence Coordinator was assigned Records Unit duties as well. The following property and evidence duties are assigned:

- Process evidence
- Detective requests
- Gather evidence for various labs
- Enter evidence into computer system
- Maintain evidence room

The Coordinator estimates that on average approximately twenty pieces of evidence are processed into the property room each week. This will vary depending on police workload and each individual case assigned.

The Technical and Information Services Division Lieutenant performs a random audit of evidence every ninety days. A full audit of the evidence and property room is completed each year.

Recommendations:

Maintain current authorized staffing level of 1 full time Property/Evidence Clerk.

Ensure random and yearly property room audits continue by Division Management.

Transfer oversight of yearly property room audit to the Internal Affairs Unit.

(6) Administrative Services Unit

The Administrative Services Unit consists of three full time Community Services Officers (CSO) and are supervised by a Corporal.

The Administrative Services Unit Corporal performs immediate supervisor tasks such as CSO scheduling and other administrative tasks. The Corporal also has the following tasks assigned:

- Texas Law Enforcement Agency Best Practices Accreditation Program Coordinator
- Police fleet management
- Body-worn camera administrator
- Policy review

Many citizens calls for police service do not require a sworn police officer to enforce laws. For this reason, many agencies use non-sworn positions for a variety of functions which have been traditionally performed by police officers. The Cedar Hill Police department has employed community services officers since 2009. The department's Community Services Officer program is used in order to support crime prevention, investigations, and other responses where full police powers are unnecessary. The program also allows patrol officers to participate in problem solving and community engagement activities.

One community service officer works a Monday through Friday, 8am-4pm shift, one works a Sunday through Wednesday, 9am-7pm shift, and the other works a Wednesday through Saturday, 10am-8pm shift. The following tasks are assigned:

- Support patrol officers in field
- Handle calls for service with no suspect on scene (excluding assault cases, traffic crashes, and runaway juveniles)
- Online reports
- Crime scene processing
- Abandoned vehicles
- Traffic control (as needed)
- Special events (as needed)

Community Services Officers on average complete three to five police reports each day. On average one-thousand reports are generated each year by the Community Services Unit.

The Community Services Officers spend a majority of their workday in the field supporting patrol officers. In the current organizational structure, patrol supervisors dictate many of the functions a Community Services Officer performs while in the field, but do not have formal supervisory oversight. Proper supervisory oversight is paramount given the nature of the community service officer's job functions and tasks while in the field. Transferring Community Services Officers to the Patrol Division will ensure proper supervisory oversight is achieved. Community Services Officers may be placed into each platoon and under the direct supervision of a Sergeant or Corporal. Placing all field personnel in the same division will also improve continuity, performance, and resource management.

As discussed in the organizational structure section of this report, the Corporal position may then be utilized in a sworn police officer position such as in the criminal Investigations Division or other sworn Police Officer functions.

Recommendations:

Maintain current authorized staffing of 3 Community Services Officers. Transfer CSO unit to the Patrol Division; place into each platoon and under direct supervision of a Patrol Sergeant or Corporal.

Transfer Corporal position into a position supervising sworn Police Officers.

2. Special Services Division

The Special Services Division consists of the Police and Community Services Unit and the Traffic Unit. The Division is managed by a Lieutenant. The Lieutenant works a Tuesday through Friday, 10-hour shift.

The current organizational structure places the Special Services Division under the Support Bureau. As mentioned in the Organizational Structure chapter of this report, both the Community Services Unit and the Traffic Unit are uniformed police functions. Although these units primarily serve in roles outside of traditional patrol functions, they remain first responders in many incidents. Aligning all first responders into the same bureau will assist in better resource management and continuity.

Recommendation:

Transfer Special Services Division into Field Bureau.

(1) Police and Community Team

In 2012, voters in Cedar Hill approved a ballot measure which allowed the City to create a Crime Control and Prevention District (CCPD). This allowed for a portion of existing sales tax revenue to be designated to fund community safety and crime prevention initiatives, to include the Police and Community Team (PACT). In 2017, citizens voted to extend the CCPD for an additional fifteen years. The Police and Community Team (PACT) consists of one Sergeant, one Corporal, and four officers.

The Police and Community Team's core functions are described as the following:

- Engage in Community Oriented Policing to deliver the highest quality of police services in partnership with community members.
- Promote community, government, and police partnerships; proactive problem solving and community engagement to address causes of crime, fear of crime, and community issues.
- Work directly with crime watch groups, other city departments, businesses, CHISD Police, community groups and citizens in providing information, crime prevention techniques, and resolving community crime concerns.
- Demonstrate that proactive policing helps prevent crimes and engages citizens in keeping the city safe.
- Meet the requirements of a community-related crime prevention strategy for a police-community and school-police cooperation programs.

The United States Department of Justice defines community policing as a philosophy which promotes organizational strategies that support the systemic use of partnerships and problem-solving techniques to proactively address the immediate conditions that give rise to public safety issues such as crime, social disorder, and fear of crime.

The Police and Community Team's core functions emphasize these community policing concepts. The three key components of community policing are community partnerships, organizational transformation, and problem solving. These three key components can also be seen within the team's core functions.

In 2014, a Presidential Task Force on 21st Century Policing was created in order to strengthen community policing and trust among law enforcement officers and the communities they serve. One key task force recommendation focused on community policing and the need for police organizations to develop and adopt policies and strategies which reinforce the importance of community engagement in managing public safety. It is clear to the project team that the citizens of Cedar Hill and it's Police

Department have been committed to a police and community partnership for many years. Evidence of a continuing commitment is demonstrated through the 2017 citizen vote extending the CCPD an additional fifteen-years, and the numerous community engagement events and programs each year.

The following tasks, community engagement events, and programs are assigned to the Unit each year:

- Neighborhood walks with the Chief program
- Career Day at Cedar Hill schools
- Cooking for hospital residents at Ronald McDonald House
- Senior Safety Fair
- Texas Youth Advisory Commission
- CRASE courses
- Cedar Hill block party
- Town Hall meeting security
- Easter weekend festivities
- Earth Day
- COP volunteer banquet
- Bi-annual DEA drug take back
- Bi-annual citizens police academy
- Annual police memorial
- Head of the Hills security
- Youth Summit
- Citizen Police Academy
- Veterans Cookout
- Back to School event
- National Night Out
- Country Day
- Scare on the Square
- Thanksgiving Dinner for seniors
- COPS Christmas gift wrapping
- Holiday on the Hill
- Library reading for children

- Coffee with a cop
- Lunch stop with a cop at area schools
- Daycare meet and greet
- Creative arts festival
- Neighborhood crime watch meetings
- Holiday Patrols
- Patrol duties (as needed)
- Residential and Burglary site security surveys
- Next-door crime prevention
- Neighborhood block parties
- Red Ribbon week
- Taste of Cedar Hill
- Martin Luther King Day celebration and security
- Public tours
- Child safety seat inspections
- Bikes and Badges program
- Check on a senior program
- Citizens on patrol program
- Camera registration program
- H.O.M.E. program
- Food pantries for seniors delivery program
- LEAD Council
- Lock it up for domestic violence program
- Crime prevention program

Although there are no task times recorded for these activities, each task can be expected to last several hours, an entire shift, or several weeks depending on the program at the time. It can also be expected that many of these tasks require several hours of preparation and follow-up.

Currently, the Police and Community Unit does not track activities and an officer's dedicated time to each program. The Department should ensure that these activities are tracked. This will ensure officers are accountable for individual projects. Tracking overall unit projects will enhance the department's overall community policing philosophy and transparency in the Cedar Hill community.

Recommendation:

Maintain current authorized staffing level in the Police and Community Team. Utilize RMS or another system in order to track daily duties more consistently.

(2) Traffic Unit

The Traffic Unit consists of one Sergeant, two full time Commercial Motor Vehicle Enforcement Officers, and two full time Motor Officers (effective October 1, 2022). Currently, there are two part-time Motor Officers assigned to the Patrol Division and are only available to the Traffic Unit when patrol staffing allows.

The Commercial Motor Vehicle Enforcement Officers work Monday through Friday. One works a 7am-3pm shift and the other works a 9am-5pm shift. 90% of these Officers' salaries and equipment are paid through a state commercial motor vehicle enforcement grant.

Currently, speeding complaints are handled through a dispatched call for service. If the traffic unit is not available, the complaint is handled by the Patrol Division. When Motor Officers are available, targeted enforcement occurs as time permits.

The project team calculated the community-generated workload of the department by analyzing incident records in the computer aided dispatch (CAD) database, covering the entirety of calendar year 2021. These calls for service included traffic related complaints and vehicle crashes. An increase in traffic hazards during the nighttime hours was partly attributable to an increase in call activity. There is no indication these calls for service affected the Patrol Division's overall performance in a negative manner. While this may be the case, the Traffic Unit can utilize the two Motor Officers during this time frame to address traffic hazard related calls for service.

Motor vehicle crashes are one of the leading causes of death in the United States and most crashes are preventable. As growth in and around the Cedar Hill region continues, a dedicated traffic safety program should be established. Dedicated traffic programs increase awareness for traffic safety and change risky driving behaviors, thereby preventing vehicle crashes. High visibility enforcement is a universal traffic safety approach designed to create deterrence and change unlawful traffic behaviors. High visibility enforcement combines highly visible and proactive law enforcement targeting a specific traffic safety issue. Police efforts should be combined with visibility elements and a public strategy to educate the public and promote voluntary compliance with traffic laws.

Establishing a dedicated traffic safety program cannot be accomplished through part

time Officers with non-traffic related primary functions. A successful program requires full time Officers dedicated towards enforcement efforts and public education. A dedicated traffic safety program can now be implemented with the addition of the two full time Motor Officers.

Recommendations:

Establish a dedicated traffic safety program in conjunction with the additional two full-time Motor Officers (effective October 1, 2022).

Maintain current authorized staffing level of 1 full time Sergeant and 4 full time Officers (2 Commercial Vehicle Enforcement Officers and 2 full time Motor Officers).

3. Professional Standards Division

The Professional Standards Division consists of the Internal Affairs Unit and the Training and Hiring Unit. The division is managed by a Captain. The Captain works a Monday through Thursday, 10-hour shift.

(1) Internal Affairs Unit

The Captain is responsible for conducting major internal affairs investigations (level 1 investigations). Minor complaints and personnel issues are sent to the employee's Lieutenant or Sergeant. When this occurs, the Internal Affairs Unit continues overall oversight of all investigations. When needed, the training Sergeant assists with investigations. The Internal Affairs Unit's office is located outside of the police station.

In order to remain transparent with its community, the department publishes yearly reports related to racial profiling, uses of force, pursuits, and internal affairs complaints. Each of these reports are posted on the department's website.

The below chart details complaints initiated by both citizens as well as department members, and investigative findings in 2021:

Complaints Investigated (2021)

Complaint Type	Internal	External
Discourtesy	1	6
Vehicle Operation	8	
Dishonesty	1	
Damaged Property	4	
Neglect of Duty	1	
Body Camera Violation	9	
Conduct Unbecoming		1
Traffic		1
Excessive Force	1	1
Improper Tactics/Procedures	5	2
Pursuit Policy Violation	2	
Insubordination	1	
Total	**33**	**11**

Investigative Findings (2021)

	Total	
Exonerated	3	1
Sustained	33	1
Not Sustained	1	1
Unfounded	1	2
Administratively Closed	5	
Total	**43**	

Recommendation:

Maintain current authorized staffing level.

(2) Training and Hiring Unit

The Training Unit consists of 1 Sergeant. The Sergeant is responsible for the management of the department's police officer in-service training and the FTO program. Newly hired police officers attend a regional police academy. The department does not assist in the management of this academy. As a member of the Texas Law Enforcement Agency, Best Practices Accreditation Program, the department is required to complete yearly training.

The Sergeant conducts background investigations for newly hired employees. When needed, a Police Officer from another division is temporarily transferred to the unit.

Recommendation:

Maintain current authorized staffing level.

(3) K9 Officer

The Training Sergeant supervises the department's K9 Officer. The Training Sergeant completes administrative duties concerning the K9 Officer. The K9 Officer reports directly to a patrol shift supervisor when working. The K9 Officer works a 5pm – 5am shift and conducts a minimum of sixteen hours of training each month. The K9 Officer is also called to other jurisdictions in the area to assist other departments when needed.

In the current organizational structure, patrol supervisors dictate many of the functions the K9 Officer performs while in the field, but do not have formal supervisory oversight. Proper supervisory oversight is paramount given the K9 Officer's job tasks and responsibilities with the canine. Placing the K9 Officer under the direct supervision of a Patrol Sergeant or Corporal will ensure proper oversight, continuity, and management.

Recommendation:

Maintain current authorized staffing level. Place K9 Officer into Patrol Division under direct supervision of a Patrol Sergeant or Corporal.

4. Staffing Projections

The previous chapters detailed current staffing needs for the Cedar Hill Police Department based on current service levels and job tasks. The following chapter builds upon current staffing needs by forecasting future staffing needs based upon assumed growth and development trends through the year 2032.

1. Data Collected to Conduct the Projections Analysis

A critical component of the analysis is understanding of past and future development trends in the city. Cedar Hill has experienced steady growth over the last 10 years, and they do not have official population projections. Therefore, the project team was tasked with developing their own population projections based on future buildout scenarios, past residential development trends, and availability of buildable land in the City. To be able to individually forecast population and service needs a variety of data sources were used to construct an interrelated series of estimates.

The project team collected data from several sources to project both population and service needs over the next decade, including the following:

- 2010 U.S. Census data at the individual block level, which includes both population and housing unit figures.
- 2019 American Community Survey (ACS) prepared by the U.S. Census Bureau at the block group level of geography, including estimates for population and housing units.
- 2020 population estimates from the U.S. Census Bureau.
- Municipal and extra territorial jurisdiction (ETJ) boundary GIS layers.
- Current and future land use GIS layers.
- Other GIS base layer data to better understand geography, such as roads, topography, and hydrology.
- Computer aided dispatch data covering calendar year 2021.
- UCR Part I crime data for the year 2021.
- Assumption of maximum buildout of 31,958 residential unit (Planning Department provided).
- Average of 3.0 residents per residential unit.
- Maximum build-out population of 95,184 residents.

The latter of these served as the central guide for the population forecasts, providing total population forecasts for Cedar Hills through 2032.

2. Projected Population Methodological

While the data collected includes a variety of information that is critical to determine future service needs, the most important component was the historical calls for service data and future population buildout scenarios. The maximum residential buildout data was used as the primary basis for determining projected population and tempering them over the foreseeable future. The following steps was used to project future population for the City.

- Extrapolated the population changes from 2010 to 2020 to project the 10 – year residential growth. 2020 U.S Census Bureau census data was used as the basepoint for projecting population in Cedar Hill.
- Population projections were separated based on the availability of developable/redevelopable residentially zoned areas within the City limits.
- Applied the average of 3.0 individuals per housing unit.
- Multiplied housing units by 3.0 occupants to project population annually through 2032.

These steps were utilized to project the housing units and subsequent population annually through 2032. The following table summarizes the population projection patrol beat.

Population Projections

Area	2022	2027	2032
Beat 1	11,595	11,606	12,327
Beat 2	11,926	13,257	14,153
Beat 3	13,441	15,514	16,592
Beat 4	12,451	13,525	14,423
Beat 5	1,388	1,388	1,474
Total	**50,801**	**55,290**	**58,969**

The population of Cedar Hill is projected to increase from 50,801 in 2022 to 58,969 in 2032. This is a population increase of 16.1% or 8,168 residents over the next 10 years.

3. Analysis of Projected Service Needs

The following sections build upon the analysis of expected development and residential growth to examine its effects on patrol resources and all departmental staffing

resources. It begins with a summary of the projections and how these projections should be utilized – less as year-based expectations and more in line with city development and the experience of police workloads.

(1) Viewing Staffing Projections as Threshold-Based Triggers

Growth estimates are not set in stone and can vary extensively as development activity changes over the next decade. A recession, for instance, could dramatically slow growth. Unexpected land acquisitions could also alter estimated growth timeframes. Thus, it is important to consider a range of options for determining how the department should adapt to growth in the community.

Population and calls for service are estimated in annual increments, but are expressed in this report in five-year intervals for simplicity, as shown below:

Projected Population and Calls for Service

	2022	2027	2032
Population	50,801	55,290	58,969
Calls for Service	18,401	19,728	21,025

Given that the projections for call for service growth are tied to population growth, the staffing projections made in this report can be extrapolated solely based off population growth. In other words, **rather than using specific years as timeframes for when staff additions could be made, the department and city can make those additions based off population thresholds alone**.

The staffing projections at specific timeframes approximately correspond to the following population figures:

- 2022 staffing projections: **51,000** population
- 2027 staffing projections: **55,000** population
- 2032 staffing projections: **59,000** population

At these staffing levels, the staffing additions for the corresponding years should be made, regardless of the year it is.

Recommendations:

The staffing recommendations slated for 2027 should be made once the city reaches a population of 55,000.

The staffing recommendations slated for 2032 should be made once the city reaches a population of 59,000.

These projections are explained in the following subsections.

(2) Call for Service Projections

Call for service projections can be made from past calls for service data for the prior years. Call activity can change over years, but they remain stable based on population and development type. It should be noted an increase/decrease in calls for service does not directly correspond to a need to increase or decrease staffing as each officer responds to a percentage of calls for service and any increase/decrease would be spread among existing personnel.

The project team analyzed the calls for service based on patrol beat within the City. Understanding that each geographic area and/or subdivision is unique and that the calls for service is predicated on many variables. This analysis was used to project calls for service in current developed areas along with areas that are undeveloped. The following table summarizes the projected change in calls for service by subdivision and geographic area. Calls for service was projected based on the current ratio of calls for service per population ratio by service area.

Call For Service Growth*

Area	2022	2027	2032
Beat 1	2,979	2,982	3,167
Beat 2	4,222	4,693	5,010
Beat 3	3,707	4,279	4,576
Beat 4	3,251	3,532	3,766
Beat 5	4,243	4,243	4,506
Total	**18,401**	**19,728**	**21,025**

* Estimates of years based on population projections.

As seen in the previous table each patrol beat has different levels of calls for service changes based on the potential for future growth and build out. Overall, calls for service are expected to increase from 18,401 in 2022 to 21,025 in 2032. This is an increase of 14.3%.

(3) Patrol Staffing Projections

As detailed in the Patrol analysis chapter, proactivity (or % of proactive time) is the primary metric used to evaluate resource needs at the officer level. Following the analysis of calculating total patrol workload hours and net available hours spent on duty per officer

position, patrol staffing needs can be determined by setting a target level of proactivity.

Smaller departments generally have a higher proactive time to account for officer safety, and limited availability of other proactive resources (e.g., traffic unit, POP unit, narcotics task force, etc.). A minimum proactive level of 45% is recommended for Cedar Hill, which is based off the current proactive time and staffing analysis.

Another important factor in this analysis is the rate of turnover (sworn personnel only), which is defined as the rate at which patrol officer positions become vacant through attrition. In determining staffing needs, this represents the 'buffer' that must be staffed for in order to provide the targeted level of service as vacancies occur. The historic turnover rate was 7.3%. At a turnover rate of 7.3%, patrol unit positions should be staffed at least 7.3% higher than they would otherwise if position slots were always filled and never became vacant.

Given a target service level of 45%, which is **based off maintaining the current level of service** (i.e., current proactive time level), and a turnover rate of 7.3%, the following tables calculates patrol officer staffing needs through the year 2032 given projected increases to call for service workloads:

Projected Patrol Officer Staffing Needs*

	2022	2027	2032
Total Workload Per CFS	90.3 min	90.3 min	90.3 min
# of Calls for Service	18,401	19,728	21,025
Total Workload Hours	27,694	29,691	31,643
Net Availability Hours Per Officer	1,534	1,534	1,534
Net Availability Hours Per Corporal	1,132	1,132	1,132
Overall Proactivity Target	45%	45%	45%
% Turnover Per Year	7.4%	7.4%	7.4%
Patrol Corporals Required	**4**	**4**	**4**
Patrol Officers Required	**32**[6]	**35**	**37**
+/– Officer Positions *(From 2022 Budget)*	**–**	**+3**	**+5**

* Estimates of years based on population projections.

[6] Based off of current authorized numbers

A total of 41 patrol units are needed by 2032, split between 37 officers and 4 corporals. This represents an increase of five authorized (budgeted) positions compared to the 2022 budget.

The number of patrol sergeants and corporals needed in 10 years will remain the same as there are total of two supervisors assigned per squad. Based on a total of 37 officers, this equates to between 9 and 10 officers per shift, resulting in a supervisory span of control of around 1:5 if sergeants and corporals share supervisory duties.

(4) Comprehensive Staffing Projections

The service need projections have provided the basis of the methodology used to determine staffing needs of core functions that scale directly with service needs, including patrol officers and sergeants. From this important foundation, the staffing needs for every other department function are then able to be developed. It is critical that the process of developing projections for the entire department be done position by position, rather than scale the department as a whole, given that the factors contributing to an individual position's staffing needs are unique and different from those of another position.

As detailed previously in the chapter, five primary scaling factors are involved in determining how the staffing needs for an individual role change as growth occurs in the jurisdiction. The needs for an individual position may be based on:

- Service needs and related workloads (e.g., patrol staffing scales to call for service workloads).
- Relationship to workloads created by other positions (e.g., records workloads increasing with patrol staffing.
- Spans of control and management responsibilities (e.g., patrol sergeant staffing is set by achieving a targeted span of control).
- Size of command/division or organization (e.g., human resources staffing needs based on number of positions in the department they support).
- Non-scalable (e.g., there is only one chief of police).

Using these scaling factors, the projection analysis determines the staffing levels needed over the next ten years. The following pages contain this analysis, provided an overview of the projection factors utilized for each position in calculating needs through the year 2032. Again, these are estimates based on population projections.

Position	Projection Factors	2022 Auth.	2022 Rec.	2027	2032
Office of the Chief					
Chief	Executive Position, does not scale.	1	1	1	1
Executive Assistant	Support position, does not scale.	1	1	1	1
Fiscal/Grant Coordinator	Based on Workload, but generally one per Department.	1	1	1	1
Chief Subtotal		*3*	*3*	*3*	*3*
Field Bureau					
Assistant Chief	Executive Position, does not scale.	1	1	1	1
Lieutenant (Patrol)	Executive position, does not scale.	2	2	2	2
Lieutenant (CID)	Executive position, does not scale.	1	1	1	1
Sergeant (Patrol)	Scales based on span of control (1:8)	4	4	4	4
Sergeant (CID)	Scales based on span of control (1:8)	1	1	2	2
Corporal (Patrol)	Scales based on span of control (1:8)	4	4	4	4
Officer (Patrol)	Scales to calls for service and proactive time thresholds.	32	32	35	37
Officer (CID – Mental Health)	Elected priority, scales on desire of PD.	1	1	1	1
Detective	Scales based on investigative caseload	8	8	9	10
Civilian Investigator	Based on Workload	1	1	1	1
Investigative Aid	Based on Workload	1	1	1	1
Digital Media Coordinator	Elected priority, scales on desire of PD.	1	1	1	1
Crime Analyst/Sex Offender	Based on Workload	1	1	1	1
Victim Assistance Coordinator	Elected priority, one per department.	1	1	1	1
Forensics Manager	Supervisor, one per team.	1	1	1	1
Crime Scene Unit Employee	Based on crime scenes processed.	0	1	1	1
Field Bureau Subtotal		*60*	*61*	*66*	*69*

Position	Projection Factors	2022 Auth.	2022 Rec.	2027	2032
Support Bureau					
Assistant Chief	Executive position, does not scale.	1	1	1	1
Captain	Executive position, does not scale.	1	1	1	1
Lieutenant (Special Services)	Executive position, one per team/unit.	1	1	1	1
Lieutenant (Tech & Info)	Executive position, one per team/unit.	1	0	0	0
Sergeant (Traffic)	Scales based on span of control (1:8)	1	1	1	1
Sergeant (Special Services)	Scales based on span of control (1:8)	1	1	1	1
Sergeant (Prof. Standards)	Unique position, one per PD.	1	1	1	1
Sergeant (HIDTA Task Force)	Elected position, scales based on desired service level.	1	1	1	1
Corporal (Tech & Info)	Scales based on span of control (1:8)	1	1	1	1
Corporal (Special Services)	Scales based on span of control (1:8)	1	1	1	1
Officer (Traffic)	Elected position, scales based on desired service level.	4	4	4	4
Officer (K9)	Elected position, scales based on desired service level.	1	1	1	1
Officer (Special Services)	Elected service, scales based on desired service level.	4	4	4	4
Civilian Manager	Scales based on span of control (1:8)	0	1	1	1
Civilian Supervisor	Supervisory position, based on span of control.	1	2	2	2
Community Services Officer	Elected priority, scales on desired service level and CFS workload.	3	3	3	4
Public Services Officer	Elected priority, scales on desired service level and CFS workload.	5	5	5	6
Records Clerk (full time)	Based on Workload	2	2	2	2
Records Clerk (part time - 20/hr week)	Based on Workload	2	2	2	2
Property/Evidence Coordinator	Unique position, one per PD.	1	1	1	1
Alarm Billing Coordinator	Unique position, one per PD.	1	1	1	1
Support Bureau Subtotal		*34*	*35*	*35*	*37*

Position	Projection Factors	2022 Auth.	2022 Rec.	2027	2032
Police Department Total		**97**	**99**	**104**	**109**

A total of 109 positions are recommended by 2032 given current development estimates and the actual experience of workloads. This is an increase of 12 authorized positions compared to the number that is currently budgeted in 2022. Most of the staffing increases are in Field Services, specifically patrol.

(5) Projection Trigger Points

Police services are different from the fire service in one important respect – for field services (i.e., patrol versus suppression) deployments are dynamic rather than fixed. For other police functions, management of processes are as important as workloads. As a result, development of 'trigger points' for adding staff are more limited. For patrol, an appropriate trigger point would be utilizing 'proactive time' as we have in this report.

Trigger Point for Patrol

Choices	Optimal Target	Minimum Target
Maintaining high levels of proactivity in patrol	45%	40%

5. Summary of Recommendations

The following table provide a comprehensive list of the recommendations made in the report.

Organizational Structure
Consider a functional reorganization of the department in order to better align functions and create more consistent spans of control and responsibilities.
Field Bureau
Develop a comprehensive strategic crime reduction strategy in partnership with the community.
Develop the organization's crime analysis capabilities to include tactical, strategic, and administrative analysis.
Define specific duties at the Lieutenant, Sergeant, and Corporal ranks within the patrol division.
At current levels of workload and rates of turnover, the department has sufficient authorized positions in patrol to provide high levels of service. As growth impacts occur over the next decade, additional staffing will be needed.
Maintain current authorized staffing levels in the patrol division. Evaluate alternative deployment strategies, including staggered start times.
Maintain current authorized staffing level of 8 Detectives in the Criminal Investigations Division.
The current structure of processing patrol arrest paperwork performed by the Civilian Investigator in the Criminal Investigations Division should be evaluated and streamlined.
Maintain current authorized staffing level of 1 Crime Analyst in the Crime Analysis Unit. Expand Crime Analyst duties and capabilities in order to incorporate crime analysis into department's crime reduction strategies as mentioned above.
Maintain current authorized staffing level of 1 Victim Assistance Coordinator in the Victim Services Unit. Evaluate a regional approach to providing victim services.
Add 1 crime scene unit employee in the Crime Scene Unit. Evaluate a regional approach to providing crime scene services.
Support Bureau
Add 1 Civilian Manager position in the Technical and Information Services Division in order to replace the Lieutenant position.

Add 1 Civilian Supervisor position in the Technical and Information Services Division in order to improve current span of control.

Maintain current authorized staffing level of 2 full time Clerks and 2 part time Clerks in the Records Unit. Once the second part time employee is hired, evaluate to ensure current workflow issues have been addressed.

Maintain current authorized staffing level of 1 full time Alarm Billing Coordinator in the Alarm Billing Unit.

Maintain current authorized staffing level of 1 full time Property/Evidence Coordinator in the Property/Evidence Unit.

Ensure random property room audits continue by division management. Transfer yearly audit duties to the internal affairs unit.

Maintain current authorized staffing level of 3 Community Services Officers. Transfer the CSO unit to the patrol division to improve first-line supervision and coordination.

Transfer Corporal position from the Technical and Information Services Division into a role supervising sworn police officers.

Transfer Special Services Division into the Field Bureau.

Maintain current authorized staffing level of 1 Sergeant, 1 Corporal, and 4 Officers in the Police and Community Team. Utilize RMS or another system in order to track daily duties consistently.

Establish a dedicated traffic safety program in conjunction with the additional two full-time motor officers (effective October 1, 2022).

Maintain current authorized staffing level of 1 full time Sergeant and 4 full time Officers (2 Commercial Vehicle Enforcement Officers and 2 full time Motor Officers – effective October 1, 2022).

Maintain current authorized staffing level of 1 Captain and 1 Sergeant in the Professional Standards Division.

Transfer K9 Officer into Patrol Division under direct supervision of patrol Sergeant or Corporal.

Projections

In order to provide the same level of service that is provided now as growth occurs, the department must add 12 authorized positions by 2032 over the current budgeted number, for a total of 109 authorized positions. The timeframe for these additions should be adjusted based on population thresholds.

The staffing recommendations slated for 2027 should be made once the city reaches a population of 55,000.

The staffing recommendations slated for 2032 should be made once the city reaches a population of 59,000.

Using projected growth in population and calls for service, a staffing summary projections table was developed. Calculations used to develop future staffing needs is detailed in the staffing projections chapter of this report.

Fire Department Assessment

1. Organizational Structure

This chapter provides an analysis and evaluation of the current organizational structure of the Cedar Hill Fire Department. It also identifies the improvement opportunities and the team's suggestions where applicable. In reviewing the immediate and long-range needs of the Fire Department, the project team focused on the organization's vision, mission, and values statements.

Vision
To be nationally recognized for the care and service we provide to the community. We are known as a department that values our employees for their innovation, dedication, and compassion.

Mission
The Mission of the Cedar Hill Fire Department is to protect lives and property through compassionate and professional emergency response and community engagement.

Core Values
Respect, Integrity, Courage, Honor

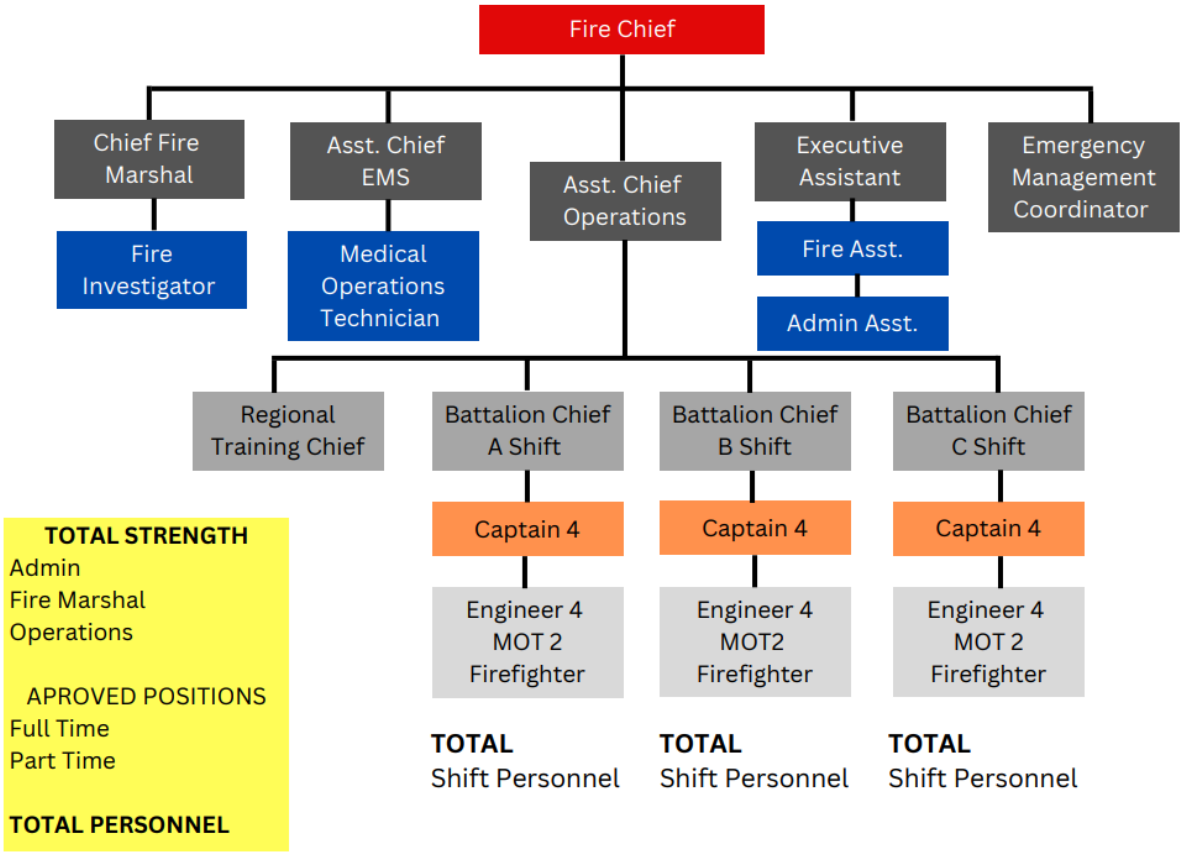
An organizational structure is designed as an approach to facilitating organizational management. As such, there are structures for a certain sized organization that achieve that goal better than others. An organizational structure should properly illustrate the following major department functions:

- Apportion the workload among members and units according to a logical plan.
- Ensure that lines of authority and responsibility are definite and direct as possible.
- Specify a unity of command throughout, leaving no question about which orders should be followed.
- Assign responsibility and authority, and if responsibility is delegated, the delegator is held responsible.
- Coordinate efforts in order to work harmoniously to accomplish the department mission.

Achieving an organizational structure that is 'right' for an organization needs to consider several factors including the complexity of an organization, the need for accountability and accessibility of key managers, the experience and history of an organization, and cost.

A proper organizational structure should also ensure unity of command and proper supervisory span of control. While this span of control may vary depending on several factors, a typical department's span of control is three to five at the top level of the organization and is often broader at the lower levels. An effective organizational structure should ensure supervisors are not spread too thinly across the department.

Cedar Hill Fire Department Current Organizational Structure



The Cedar Hill Fire Department's current organizational structure has proper unity of command and supervisory span of control. The advantages of the Department's structure include:

- It pushes down authority and responsibility for key management roles deep into the organization, at least to the levels of Captain and Engineer/Paramedic.
- Collateral duty responsibilities are allocated to other managers and supervisors helps to prepare them for promotion.

- Spans of control are consistent at four (4) personnel for Battalion Chiefs and five (5) for Captains.

Organizational Summary:

Continue to utilize the current organizational structure in the Fire Department and add additional supervisors when spans of control exceed 7 personnel.

There are administrative constraints for adding administrative and support personnel discussed later in the report, as the current administrative headquarters are in station 211 and the space constraints make expansion of administrative areas difficult. Several opportunities were discussed with two most viable being relocating fire administration or constructing a joint police and fire administration building. A recent survey was completed of Fire Departments with an Insurance Services Office rating of 1 in the Dallas/Ft. Worth region identifying staffing ratios for administrative positions versus operations personnel. This "best practice" survey identified that 1 administrative position was needed for each 7 operations personnel. This ratio provided the needed support for departments desiring to maintain this ISO status and provide a community engaged fire department. Cedar Hill Fire Department currently has 1 administrative personnel to every 12 operation's personnel. The number of administrative personnel includes total staff assigned to administration, prevention, EMS and support services.

To further support the Vision of the Fire Department to be "Nationally Recognized", the Fire Department should explore the concept of seeking international accreditation through the Center for Public Safety Excellence (CPSE). This process ensures a fire department is adhering to best practice for core competencies and provide services and serves as tool for continual improvement into the future.

The benefits to accreditation are numerous and include:

- Self-Assessment to identify the strengths and weaknesses of the Department
- Moving the organization to a performance-based system
- Increased focus on outcomes versus outputs
- Continual quality improvement aligned with industry best practices.

The steps to achieve accreditation through CPSE include the following:

- **Registered Agency** – Strategic Plan, Community Risk Assessment and Standards of Cover Document (3 Years)

- **Applicant Agency** – Preparation of Self-Assessment Manual and writing responses to categories, criteria, core competencies and performance indicators (18 months)
- **Candidate Agency** – Document upload, review and onsite visit, Commission Hearing (6 months – 1 year).
- **Accredited Agency** – Awarded for a five (5) year period.

The use of an accreditation coordinator to support this effort would be needed. As the position develops, additional duties such as grant application and management and data analysis and reporting can be added responsibilities.

There is also limited administrative support for the Fire Department and division leadership is often tasked with duties and responsibilities should be pushed down in the organization. The Assistant Chief of EMS for example is using Medical Operations Technicians (MOT), which are shift personnel assigned to support the EMS mission. This has limitations as these personnel only work every third day and have a different direct report, which could impact priorities of assigned tasks. The MOTs also serve as field training officers for the department. While this provides a dual pathway of promoting to a shift officer position or transitioning to the Assistant EMS Chief position, there is no direct report to assist with day-to-day administrative and EMS supervisory needs as part of the administrative functions in the Department.

Recommendations:

The project team recommends the following additions to the administrative structure as space becomes available to ensure these positions have an appropriate space to work from. Additional detail is included in sections of the report related to each functional area.

- Use the ISO staffing survey as a model for adding future administrative and staff personnel.
- Add an EMS Captain to support EMS administration.
- Begin the process of applying to become a candidate agency for accreditation through the Center for Public Safety Excellence.
- Add Administrative staff to serve as an Accreditation Coordinator, Grant Manager and reimbursement specialist. This can be a sworn or civilian position as both options have proven successful in other agencies.
- Add a Risk Reduction Coordinator to support the fire prevention and risk reduction efforts

2. Operations

The Operations Division is comprised of the personnel responsible for emergency response services in the Department. Staff is comprised of sworn personnel. The Operations Division is led by the Assistant Fire Chief.

1. Demographics

Cedar Hill is in southwest Dallas County and northwest Ellis County approximately 16 miles southwest of downtown Dallas along the eastern shores of Joe Pool Lake and Cedar Hill State Park.

Today the City of Cedar Hill encompasses approximately 35.88 square miles with an estimated population of 49,148, according to the 2020 US Census Bureau estimate. This creates a population density of approximately 1,370 people per square mile. US Highway 67 transects the City from northeast to southwest and is major arterial triggering growth in the City.

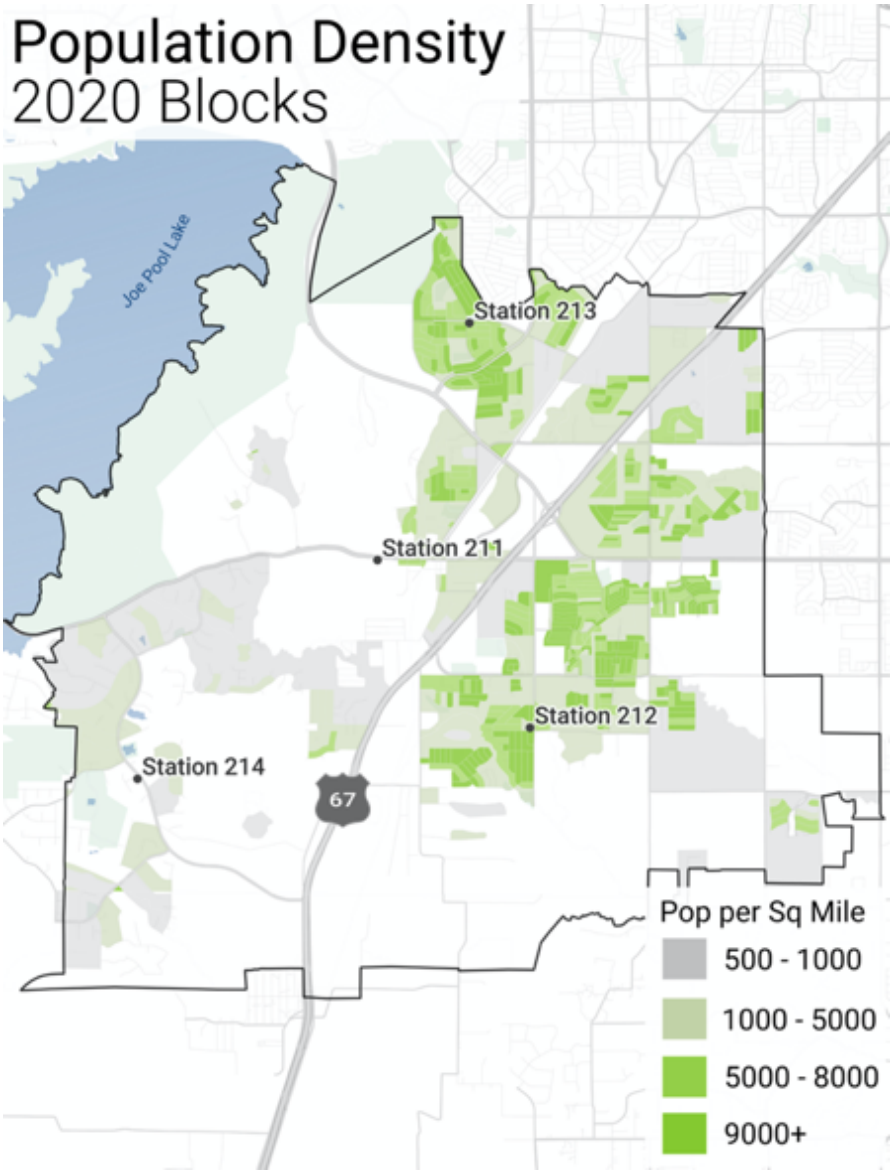
The following table illustrates the demographic profile of Cedar Hill and changes that have occurred since the 2010 Census.

Cedar Hill Demographics

US Census Bureau	2010	2015	2020
Estimated Population	45,028	47,089	49,148
Median Age	32.6	34.3	34.1
Children Under Age 5	8.6%	7.6%	6.5%
Children Ages 5 to 19 years	25.6%	25.7%	25.5%
Persons Aged 20 to 59 years	55.7%	53.6%	53.6%
Persons Aged 60 and Over	10.1%	13.3%	14.4%
Employment Sectors:			
Education, Health Care, Soc. Svc.	22.8%	25.4%	22.5%
Retail Trade	10.7%	10.7%	12.1%
Professional, Scientific, Mgmt.	9.4%	9.7%	10.5%
Finance, Insurance, Real Estate	9.1%	10.5%	8.2%
Entertainment, Recreation, Food	8.0%	7.8%	8.4%
Construction	4.8%	4.8%	4.3%
Manufacturing	8.8%	7.4%	7.3%
Transportation, Warehousing, Util.	8.6%	7.9%	11.1%
Public Administration	5.2%	4.8%	4.4%
Other Services	5.2%	4.7%	5.7%
Wholesale	2.6%	3.4%	2.8%
Information	4.5%	2.5%	2.2%
Agriculture, Forestry, Fishing	0.3%	0.5%	0.5%

As illustrated above, the population of Cedar Hill has increased by 4,120 residents since 2010 for a growth rate of 9.1% over the ten-year period. This equates to an average annual growth rate of 0.9%. It is also important to note that the population over age 60 increased 4.3% over the 20-year period. These changes in demographics can impact service needs as an aging population typically increases the need for emergency medical services.

The following map provides a view of population density by block groups using 2020 data.

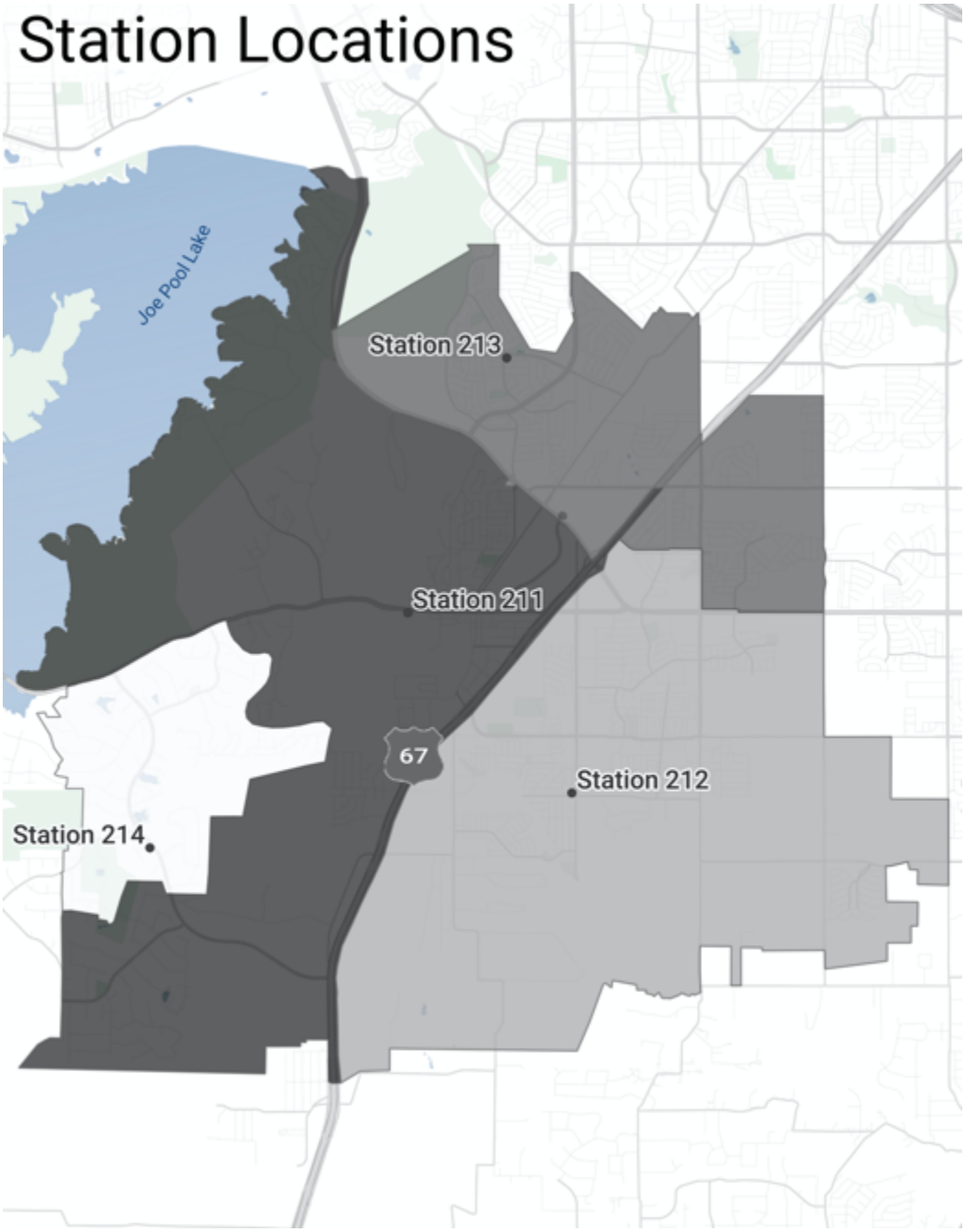


Population Density is highest in the northern and eastern/central portions of the city. Western and southern areas have lower population densities.

2. Physical Resources

Operationally the fire department provides services from four (4) fire stations located in the City.

The following map illustrates the current locations of the fire stations and response boundaries in Cedar Hill.



The City has also entered into automatic aid agreements with the cities of DeSoto and Duncanville and use the closest unit response to emergency incidents regardless of what city the emergency is located in. This ensures a rapid response to emergency calls in each of the three (3) cities as the closest unit is dispatched to mitigate the emergency. There is also a mutual aid agreement with City of Grand Prairie. The following table illustrates the location of the stations from these cities that typically provide assistance in Cedar Hill

City	Station	Address	Staffing
DeSoto	261	261 E Wintergreen Rd	Quint (3), Medic (2), BC (1)
DeSoto	262	206 S Parks	Engine (3), Medic (2)
DeSoto	263	1301 W Pleasant Run Rd	Engine (3), Medic (2)
Duncanville	271	323 W Camp Wisdom Rd	Engine (3), Medic (2)
Duncanville	272	1530 S Main St	Quint (3), Medic (2), BC (1)
Grand Prairie	10	2645 S Grand Peninsula Dr.	Engine (3), Medic (2)

The Cedar Hill Fire Department utilizes career personnel, working 24 hours on and 48 hours off for staffing of the department. As is typical for career departments each apparatus has a minimum staff required to operate. There are 24 personnel assigned to each of the three (3) shifts with 19 personnel assigned as minimum staffing for the four (4) fire stations. This staffing plan ensures there is adequate staffing to meet minimum staffing requirements when staff takes planned and unplanned leave such as vacation, sick time, and compensatory time leave. The following tables illustrate the stations, apparatus assigned and minimum staffing levels for each of the fire stations in Cedar Hill.

Fire Station 211

1212 West Belt Line Road

Description of Use	Serves as the administration and central fire station. This station provides service to the central sections of the City including the retail center along the J Elmer Weaver Parkway				
Apparatus Space	Four bay drive through				
Assigned Apparatus	Unit ID	Year	Description	Type	Minimum Staffing
	Tower 211	2020	Pierce Ascendant	Aerial Platform	3
	Medic 211	2020	Ford F450 Demers	ALS Ambulance	2
	BC 210	2019	Ford F350	Command	1
	Rescue 211	2021	Pierce	Heavy Rescue	

Fire Station 212

1098 South Clark Road

Description of Use	Located in the southwestern section of the City providing service to the south and central areas of the City.
Apparatus Space	Three Bay drive through

Assigned Apparatus

Unit ID	Year	Description	Type	Minimum Staffing
Engine 212	2016	Pierce Dash	Type I Engine	3
Medic 212	2019	Ford F-450 Demers	ALS Ambulance	2

Fire Station 213

1430 High Pointe Lane

Description of Use	This facility is in the northern section of the City servicing the northern areas including several large subdivisions and neighborhoods.
Apparatus Space	Two Bay drive through

Assigned Apparatus

Unit ID	Year	Description	Type	Minimum Staffing
Engine 213	2012	Pierce Dash	Type I Engine	3
Medic 213	2019	Ford F-450 Demers	ALS Ambulance	2
Brush 213	2019	Ford F450	Type VI Brush	

Fire Station 214

1205 Lake Ridge Parkway

Description of Use	Providing service to the southwest sections of the City and supporting response to other the southern sections of the City.
Apparatus Space	Three Bay drive through

Assigned Apparatus

Unit ID	Year	Description	Type	Minimum Staffing
Engine 214	2008	Pierce Velocity	Type I Engine	3
AMBUS 211	2012	Bus	Mass Casualty	
TIFMAS E3-64	2011	Ford 4x4	Type VI Engine	

As part of the assessment, project team members toured the existing stations to evaluate the condition and availability for personnel operational safety and effectiveness from each facility. Overall, the stations were well maintained and in good condition and provided a safe place for personnel to operate from.

Station 212 is an older station, constructed in 1979 and in need of significant remodeling and updating mechanical systems or construction of a new station. The current station location serves the community well as it is in an area experiencing high call demand and

can provide an initial response to these areas and the area in the southeastern portion of the City expected to experience growth in the near term. There is also an opportunity to construct a new station on the same site as the City owns 5 acres adjoining the current station, which would allow construction to occur while the current station remains in operation. A complete facility assessment and plan should be completed by a licensed architect to allow a full cost benefit of each option.

Recommendation:

A complete facility assessment and plan should be completed by a licensed architect to allow a full cost benefit of each option.

3. Fleet and Apparatus

The Cedar Hill Fire Department's current fleet of apparatus is state of the art with most vehicles and apparatus being with-in their acceptable lifespan. These apparatus include engines, ambulances, command vehicles, a heavy rescue, and brush trucks. Support vehicles include administration staff vehicles, an off-road OHV, and an Ambus for mass casualty incidents. The fire service has traditionally used the engine/quint service delivery model to provide effective transportation of personnel and equipment to emergency scenes. These large, expensive vehicles are also used for non-emergency responses and service calls. As call volume increases, fuel and maintenance costs have become a budgetary challenge for the fire service.

Current apparatus build-out times are 3-5 years from design to completion and delivery and costs are increasing at approximately 20% per year. This has led to communities seeking other means of delivering traditional services and adding alternative service vehicles for a more efficient delivery method. Cedar Hill has budgeted for a "blocking apparatus" in the upcoming budget to protect emergency workers on highway emergencies, including motor vehicle accidents, while still being able to conduct rescue operations. This lessens the likelihood of an aerial apparatus being struck while working these scenes.

Recommendation:

Implement alternative vehicles to respond to non-emergency and service calls to decrease the maintenance, fuel costs, and extend life span of the larger fleet vehicles.

4. Emergency Service System Dynamics

In making decisions about the emergency services system, it is important to understand the science behind the location of resources, the deployment strategies of those resources, and other factors necessary to form an effective emergency services system. For many years, the Insurance Services Office (ISO) had set the standard for deployment through their Public Protection Classification system (PPC). This system was designed to provide insurers a basis for setting insurance rates and to limit their exposure to large losses and catastrophic events. Cedar Hill has achieved an ISO PPC score of 1, which is the highest score available in the 1-10 rating system.

Nationally, a great deal of effort and research has been put into developing performance objectives for the delivery of fire and emergency medical services. This effort is critical for local government decision making about deployment and location of emergency resources. Objectives for Fire/Rescue and EMS providers have been derived from research conducted in two critical areas:

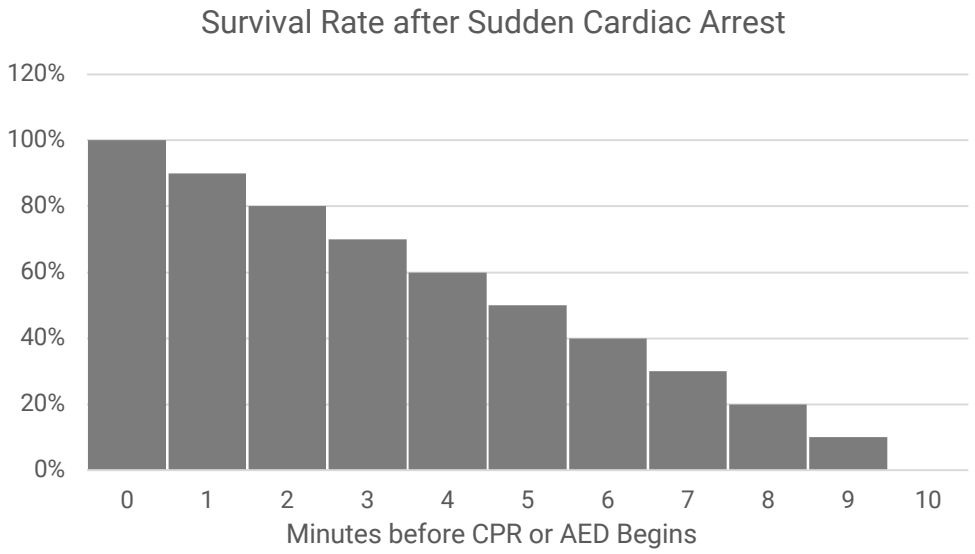
- What is the impact of the passage of time on survivability for victims of cardiac arrest?
- What is the key point in a fire's "life" for gaining control of the blaze while minimizing the impact on the structure of origin and on structures around it?

(1) Emergency Medical Services

Emergency medical services are a significant part of the emergency services system. Not only are these types of calls rising but are also wide-ranging in terms of the type and complexity of the calls that services are receiving. As a part of the overall healthcare system, the design of emergency medical response services systems must incorporate appropriate care in a time-sensitive manner.

From a scientific position, the American Heart Association states that brain and permanent death starts to occur 4 to 6 minutes following cardiac arrest. Trauma events are also at the forefront of time-sensitive response. In 2015, a national awareness program was launched called "Stop the Bleed".

For perspective, the following graph illustrates the survivability of cardiac patients related to the time onset:



The graph illustrates the chances of survival of sudden cardiac arrest diminish approximately 10% for each minute that passes before the initiation of CPR and/or defibrillation. These dynamics are the result of extensive studies of the survivability of patients suffering from cardiac arrest.

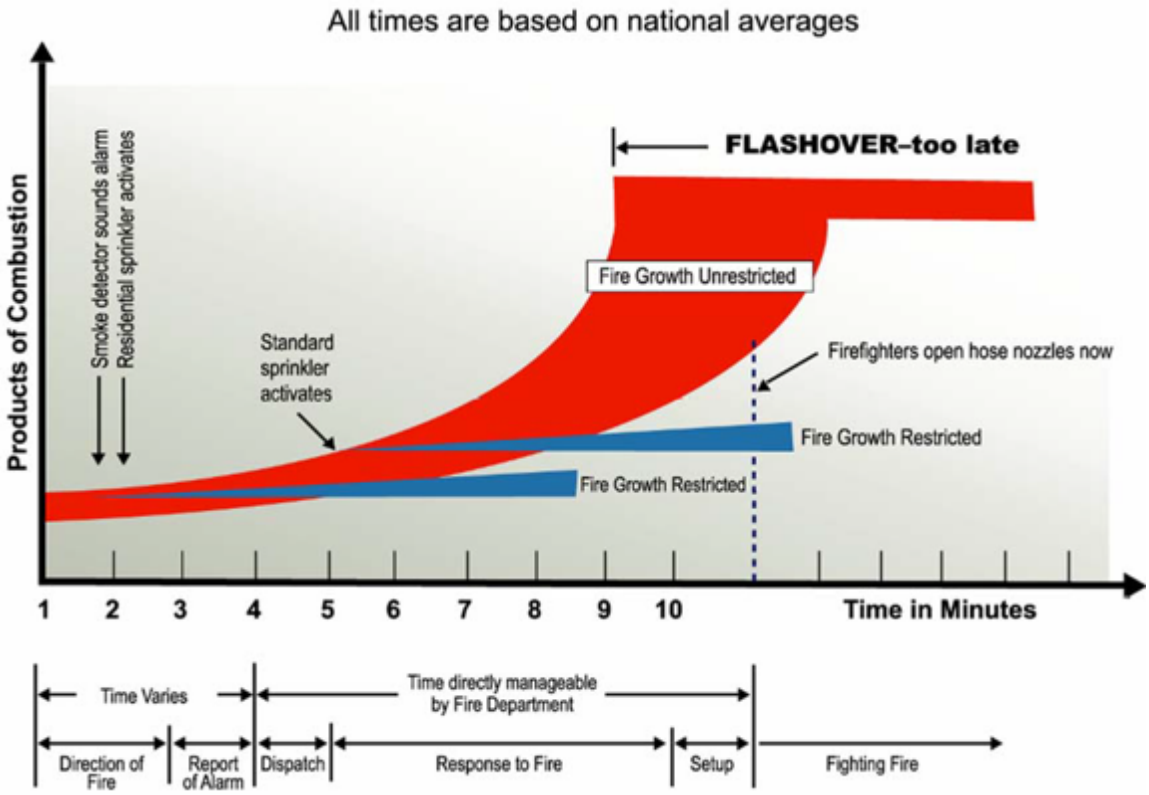
While the demand for services in EMS is wide-ranging, the survival rates for full arrests are often utilized as benchmarks for response time standards as they are more readily evaluated because of the ease in defining patient outcomes (a patient either survives or does not). This research results in the recommended objective of provision of basic life support (BLS) within 4-minutes of notification, and the provision of advanced life support (ALS) within 8 minutes of notification.

Considering the response time continuum, including dispatching personnel, turnout time and travel time the response time goal for emergency services is to provide Basic Life Support (BLS) within 6 minutes of the onset of the incident (including detection, dispatch, and travel time) and Advanced Life Support (ALS) within 10 minutes. This is often used as the foundation for a two-tier system where fire resources function as first responders with additional (ALS) assistance provided by responding ambulance units and personnel.

(2) Fire Suppression Services

Much like emergency medical services, the goal of fire suppression systems is to save lives and minimize property damage. Every structure fire goes through the same process of development. The growth of that fire is dependent on many factors including fuel loads, the types of materials, and the area involved. There is one point, “flashover”, that is identifiable and serves as a benchmark for the response of resources.

The chart that follows, illustrates the traditional "flashover" curve for interior structure fires. The point in time represented by the occurrence of "flashover" is critical because it defines when all the contents of a room become involved in the fire. Once this occurs, the space becomes untenable for firefighters and un-survivable for any occupants. With the rapid expansion of the fire, there is additional risk to other areas of the structure and potentially to any structures or wildland areas surrounding the original location of the fire.



Note that this illustration depicts a fire from the moment of inception – not from the moment that a fire is detected or reported. This demonstrates the importance of early detection and fast reporting as well as rapid dispatch of responding units. This also shows the critical need for a rapid (and sufficiently staffed) initial response – by quickly initiating the attack on a fire, "flashover" can be averted.

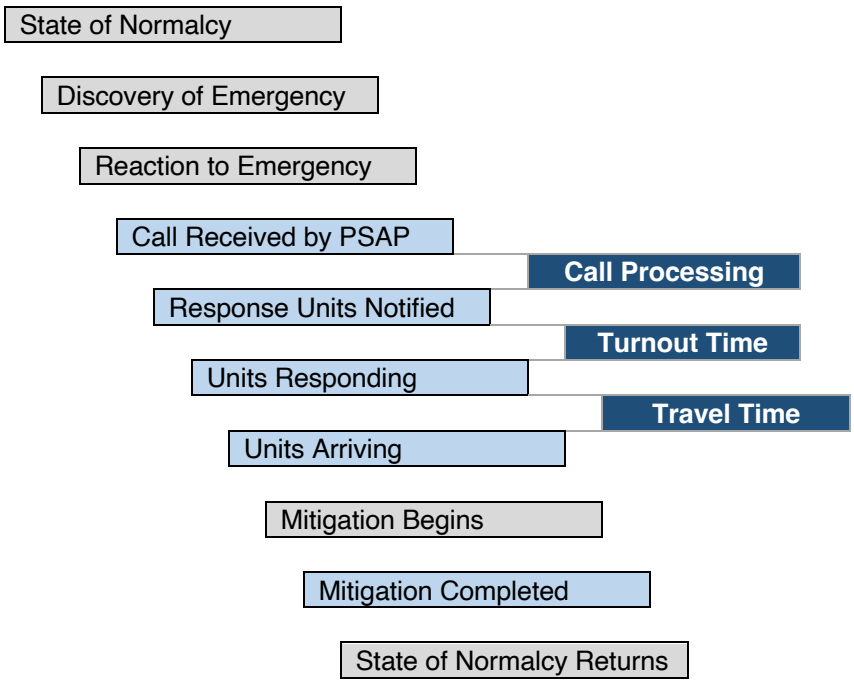
It should be noted that not every fire will reach flashover – and not every fire will "wait" for the 8-minute mark to reach flashover. In fact, research conducted in 2010 by the Underwriter Laboratories determined the increased use of synthetic materials in the home has created faster flashover times to less than 4 minutes in some tests. Modern home furnishings made of foam, plastics, or other petroleum-based products have increased the available fuel load for a fire. Additionally, construction techniques and components have increased the efficiency of homes but has added new dimensions to fire growth.

(3) National Response Time Criteria

The expression of response time has changed. In years past, the measurement was expressed as an average of time. This essentially represents how the system or department is performing 50% of the time and is not a true reflection of how a department is performing. With the research that has been performed in developing performance standards and practices, the use of fractal time has become the best practice in the measurement and presentation of response time components. Fractal response time measures how often (as a percent of calls) a department can perform within each response time component. The National Fire Protection Association (NFPA) and the Center for Public Safety Excellence (CPSE) use the 90th percentile as the standard to meet for benchmark and baseline criteria. Benchmark measurements are described as the industry best practice. Baseline measurements are described as the actual performance of the organization.

Response time to an emergency or call for assistance has been broken down into measurable and non-measurable segments. The response time continuum begins when the state of normalcy changes to a recognizable emergency. The following chart outlines the cascade of events that occurs once an emergency starts or is recognized. Those highlighted points represent hard data or that which is quantitative versus soft data or that which is subjective and unknown.

Response Time Continuum



The highlighted points in the chart above represent three segments that can be used for evaluation: call processing, turnout time, and travel time. Each of these components represent a different point in the response time continuum and through their measurement and evaluation areas for improvement can be identified. Below are the definitions for the three components:

- Call Processing is defined as beginning when the call taker answers the call and ends with the dispatching of appropriate emergency services units.
- Turnout Time is defined as beginning when the emergency services unit receives the call and is on the apparatus responding (wheels rolling) to the call.
- Travel Time is defined as beginning when the apparatus and personnel begin the response (wheels rolling) and ends once on location of the emergency (wheels stopped).

There are four nationally recognized models used to measure performance of the fire protection system and each have their own set of performance measurements based on different aspects of the community served.

- NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments last published in 2020.
- NFPA 1720 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments last published in 2020.
- Center for Public Safety Excellence (CPSE) Fire and Emergency Service Self-Assessment Manual last published in 2015 and Community Risk Assessment and Standard of Cover last published in 2016.
- Insurance Services Office (ISO) updated their Fire Suppression Rating Schedule in 2012 to allow the systematic performance evaluation of responses for their distribution and concentration ratings.

To further define response time components there are benchmark performance objectives and current performance.

- Benchmark performance objectives are those values or standards that represent superior performance or best practice. These are also defined as goals to which an organization strives to meet.

- Baseline performance are those values or standards that represent actual performance based on past data and history. In terms of response time, the baseline performance is generally based on three to five years of data.

(4) Effective Response Force

There are several tasks, which must occur simultaneously to adequately combat different types of fires. The absence of adequate personnel to perform these tasks requires each task to be prioritized and completed in chronological order. These fire ground tasks include command, scene safety, search and rescue, water supply, fire attack, pump operations, ventilation, back up, and rapid intervention.

An initial full alarm assignment should be able to provide personnel to accomplish the following tasks:

- Establish incident command outside of the hazard area. This will allow coordination and direction of the incoming emergency response personnel and apparatus. A minimum of one person should be dedicated to this task.
- Establish an uninterrupted water supply of at least 400 gallons per minute for 30 minutes. Once established the supply line can be maintained by the pump operator to ensure uninterrupted water supply. A minimum of one person is assigned to this task that can then assume support role.
- Establish an effective water flow rate of 300 gallons per minute. This will be supplied to a minimum of two hand lines each operating at a minimum flow of 100 gallons per minute. Each hand line must have two individuals assigned with one serving as the attack line and the other as a back-up line.
- Provision of one support person to handle the hydrant hookup, utility control, forcible entry, and assist in deploying fire hose lines.
- Establish a search and rescue team. Each team will consist of a minimum of two.
- Establish a ventilation team. Each team will consist of a minimum of two personnel.
- Establish an initial rapid intervention team (RIT). Each RIT team shall consist of a minimum of two properly trained and equipped personnel.

Critical tasking will vary depending on the size and nature of the incident. The Center for Public Safety Excellence (CPSE) provides a suggestive list of tasks that need to be completed at a fire situation based on the risk. A similar list is provided within the NFPA 1710 document. The CPSE analysis, from the 8th edition, is summarized in the table below showing the minimum required personnel to mitigate the initial emergency response requirements by occupancy risk:

Critical Tasks for the Effective and Efficient Control of Structural Fires

Critical Task	Maximum Risk	High Risk	Moderate Risk	Low Risk
Attack Line	4	4	4	2
Search and Rescue	4	2	2	0
Ventilation	4	2	2	0
Backup Line	2	2	2	2
Rapid Intervention	2	2	2	0
Pump Operator	1	1	1	1
Water Supply	1*	1*	1*	1*
Support (Utilities)	1*	1*	1*	1*
Command	1	1	1	1
Safety Officer	1	1	1	1
Salvage/Overhaul	2	0	0**	0
Command Aid	1	1	0	0
Operations Chief	1	1	0	0
Logistics	1	0	0	0
Planning	1	0	0	0
Staging Officer	1	1	0	0
Rehabilitation	1	1	0	0
Division Supervisors	2	1	0	0
High-rise Evacuation	10	0	0	0
Stairwell Support	10	0	0	0
Total Personnel	**50 – 51**	**21 – 22**	**16 – 17**	**8 – 9**

*Tasks can be performed by the same individual. **Task can be performed by the attack crew

Adding to the critical tasks and staffing issues is the OSHA requirement of two in – two out in 1910.134(g)(4). These regulations state that if entry into an Immediately Dangerous to Life and Health (IDLH) atmosphere is necessary, two firefighters must enter together and remain in contact with each other. In addition, there must be two firefighters located outside the IDLH atmosphere for potential rescue if needed. This is a mandatory requirement.

Daily minimum staffing of the Cedar Hill Fire Department is 19 career personnel, of which 6 are assigned to emergency medical units, leaving 12 assigned to fire suppression units and 1 assigned to a command position. Based on the critical task guidelines above, a moderate risk occupancy, including small businesses or a single-story multi-family dwelling, would require all the on-duty fire suppression personnel, the Battalion Chief and one (1) EMS unit as the minimum response force. For a maximum risk, such as the new hospital buildings being constructed in the City, it would completely deplete the on-duty personnel and require the use of automatic and mutual aid from other fire departments in the area. With the current boundary drop and existing automatic and mutual aid

agreements in place, Cedar Hill has positioned itself to ensure emergency incidents requiring more than what is required to mitigate typical events can be deployed and assembled in a timely manner. This is another benefit of the regional dispatch center as they can immediately contact automatic aid partners based on pre-designed dispatch protocols based on the type of emergency requiring mitigation.

The concept of an effective response force carries through for other response types by the Fire Department. The tables below outline the critical tasks for an effective response force for those response types.

Critical Tasks for Hazardous Materials

Critical Task	High Risk	Low Risk
Command/Safety	2	1
Liaison	1	1
Decontamination	4	4
Research Support	2	1
Team Leader, Entry Team, Backup Team	6	6
Total Personnel	**15**	**13**

Critical Tasks for Initial Wildland Urban Interface Fires

Critical Task	No Hydrants	With Hydrants
Command/Safety	1	1
Pump Operations	1	1
Attack Line	2	2
Structure Protection	3	2
Water Supply	1	0
Tender Operator	2	0
Exposure Lines	2	0
Total Personnel	**12**	**6**

Critical Tasks for Technical Rescue Operations

Critical Task	Swift Water	High/Low Angle	Confined Space
Command/Safety	1	1	2
Rescue Team	3	2	2
Backup Team	2	2	2
Patient Care	2	2	2
Rope Tender	2	0	0
Upstream Spotter	2	0	0
Downstream Safety	2	0	0
Rigger	0	1	1
Attendant	0	1	1
Ground Support	0	4	4
Edge Person	0	1	0
Shoring	0	0	0
Total Personnel	**14**	**14**	**14**

The previous tables illustrate the needs for a sampling of hazardous materials, wildland urban interface, and technical rescue incidents and there are numerous other response types. Each of the technical rescue incidents will require similar numbers of personnel or more depending on the complexity of the incident. Further, many of the positions require personnel to be certified in those positions or that discipline.

As with the emergency services system, an effective response force is needed for the effective and efficient delivery of emergency medical services. A task analysis for emergency medical calls analyzes three different types of calls or patient conditions. These three types of calls usually require the most effort on the part of the response team. Other calls or patient types can generally be handled with two or three personnel. Many times, especially in trauma calls, there are multiple patients. The following table outlines the tasks for handling these critical patients and the number of responders it may require for a successful outcome. It is important to note that some tasks are accomplished by the same personnel, so the total is not simple addition of the positions noted.

Critical Tasks for Effective Patient Care

Critical Task	Cardiac Arrest	Stroke	Multi-System Trauma
Patient Assessment	2 per patient	2 per patient	2 per patient
Airway Management/Intubation	2 per patient	2 per patient	2 per patient
Cardiac Defibrillation	1	N/A	N/A
CPR	1	N/A	N/A
EKG Monitoring	1	1	1
IV/Pharmacology	1	1	1
Splint/Bandage/Immobilization	N/A	N/A	1
Patient Lifting/Packaging	2 – 4	2 – 4	2 – 4
Medical Information Collection	1	1	1
Total per Patient	**6 - 8**	**5 - 7**	**6 - 8**

Critical Tasks for Motor Vehicle Accidents

Critical Task	No Entrapment	With Entrapment
Scene Management / Documentation	1	
Patent Care / Extrication	2	
Command / Safety		1
Scene Management		1
EMS Crew (from previous table)		6
Extrication		3
Pump Operator / Suppression Line		2
Vehicle Stabilization	2	2
Total Personnel	**5**	**16**

4. Community Developed Standards

As noted previously there are four nationally recognized models to use to design and improve a fire protection system in our communities. Each model is based on different aspects of a community from population density, the type of fire department, and the road miles in the area.

The applicability for the NFPA models is based on the definitions of the fire department servicing the community.

NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments was last published in 2020.

> *Defines a career fire department as one that utilizes full-time or full-time equivalent (FTE) station-based personnel immediately available to comprise at least 50 percent of an initial full alarm assignment.*

NFPA 1720 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments was last published in 2020.

- Defines a combination fire department as one having emergency service personnel comprising less than 85 percent majority of either volunteer or career membership.
- Defines a volunteer fire department as one having volunteer emergency service personnel comprising 85 percent or greater of its department membership.
- Defines four demographic components based on population density as urban, suburban, rural, and remote.

ISO continues to use their standard 1.5-mile and 2.5-mile criteria for engine company and ladder company placement. Although they now accept a systematic performance evaluation that demonstrates the department can meet the time constraints outlined in NFPA 1710.

Appendix A contained in the NFPA 1710 document provides additional information and background as it pertains to service delivery objectives for the jurisdiction as follows:

> *"There can be incidents or areas where the response criteria are affected by circumstances such as response personnel who are not on duty, unstaffed fire station facilities, natural barriers, traffic congestion, insufficient water supply, and density of population or property. The reduced level of service should be documented in the written organizational statement by the percentage of incidents and geographical areas for which the total response time criteria are achieved.*
>
> *Additional service delivery performance objectives should be established by the AHJ for occupancies other than those identified within the standard for benchmark single-family dwellings. Factors to be considered include specific response areas (i.e., suburban, rural, and wilderness) and occupancy hazards."*

This passage acknowledges the authority having jurisdiction (AHJ), in this case the City of Cedar Hill, is responsible for determining the level of service to be provided by its fire department. Considerations for the level of service include, but not limited to, the way the fire department responds, travel time, staffing, emergency calls versus non-emergency calls, roadways, financial resources, and those calls involving different occupancies. The levels of service provided to the city should be written and documented so the residents of the city know and understand the expectations of the emergency services system.

Previously the Center for Public Safety Excellence had defined benchmark and baseline response times for each of the three components. These baseline performance

objectives were derived from the benchmark response times to a lesser 70% of the benchmark. They have since determined they are not a standard making organization and decided to leave the establishment of benchmark response time standards to others and allow departments seeking accreditation to adopt local baseline performance standards. Their body of work is significant and has been used by numerous communities across the country to assist with determining what baseline services should be for a community.

The definitions for the criteria of each service area are defined in the following table. CPSE also gives a community a range of acceptable performance standards from "Baseline", minimally accepted performance or to "Benchmark", fully compliant with best practices. CPSE had previously set the following performance standards for urban, suburban, and rural areas:

Service Area / Population Density Response Travel Time Standards

	1st Unit	2nd Unit	1st Alarm Balance	Performance
Urban: Population density of over 1,000 per square mile				
Benchmark	4 minutes	8 minutes	8 minutes	90%
Baseline	5 minutes/12 seconds	10 minutes 24 seconds	10 minutes/24 seconds	90%
Suburban: Population density between 500 and 1,000 per square mile				
Benchmark	5 minutes	8 minutes	10 minutes	90%
Baseline	6 minutes/30 seconds	10 minutes/24 seconds	13 minutes	90%
Rural: Population density of less than 500 per square mile				
Benchmark	10 minutes	14 minutes	14 minutes	90%
Baseline	13 minutes	18 minutes/12 seconds	18 minutes/12 seconds	90%

These CPSE guidelines offer the most appropriate and comprehensive performance objectives in terms of travel time components for the distribution and concentration of resources.

As the authority having jurisdiction, the City of Cedar Hill, should provide an organizational statement establishing the levels of service the emergency services system will provide. The CPSE provides a template for developing such a statement. It should be stressed that a one-size fits all approach does not address the issues within the various areas or the types of response and calls for service. A city adopted organizational statement can address those issues such as the travel time, response type to a call for service such as an auto accident, medical call, or structure fire. In crafting the organizational statement any of the sections from the NFPA standards, CPSE guidelines, or the ISO documentation can be utilized as a basis for determining the levels of service and performance objectives of the Fire Department.

The organizational statement should also provide direction and guidance for any future expansion of the Fire Department and the City. Growth in Cedar Hill is expected to continue until a potential maximum build-out population of 95,184 residents. Having the organizational statement, which provides for guidance and direction, will allow Cedar Hill to plan for the needs of the emergency services system. As well this organizational statement will provide a pathway for the Fire Department to transition to an organization that is responsive to changes in the City as further development occurs.

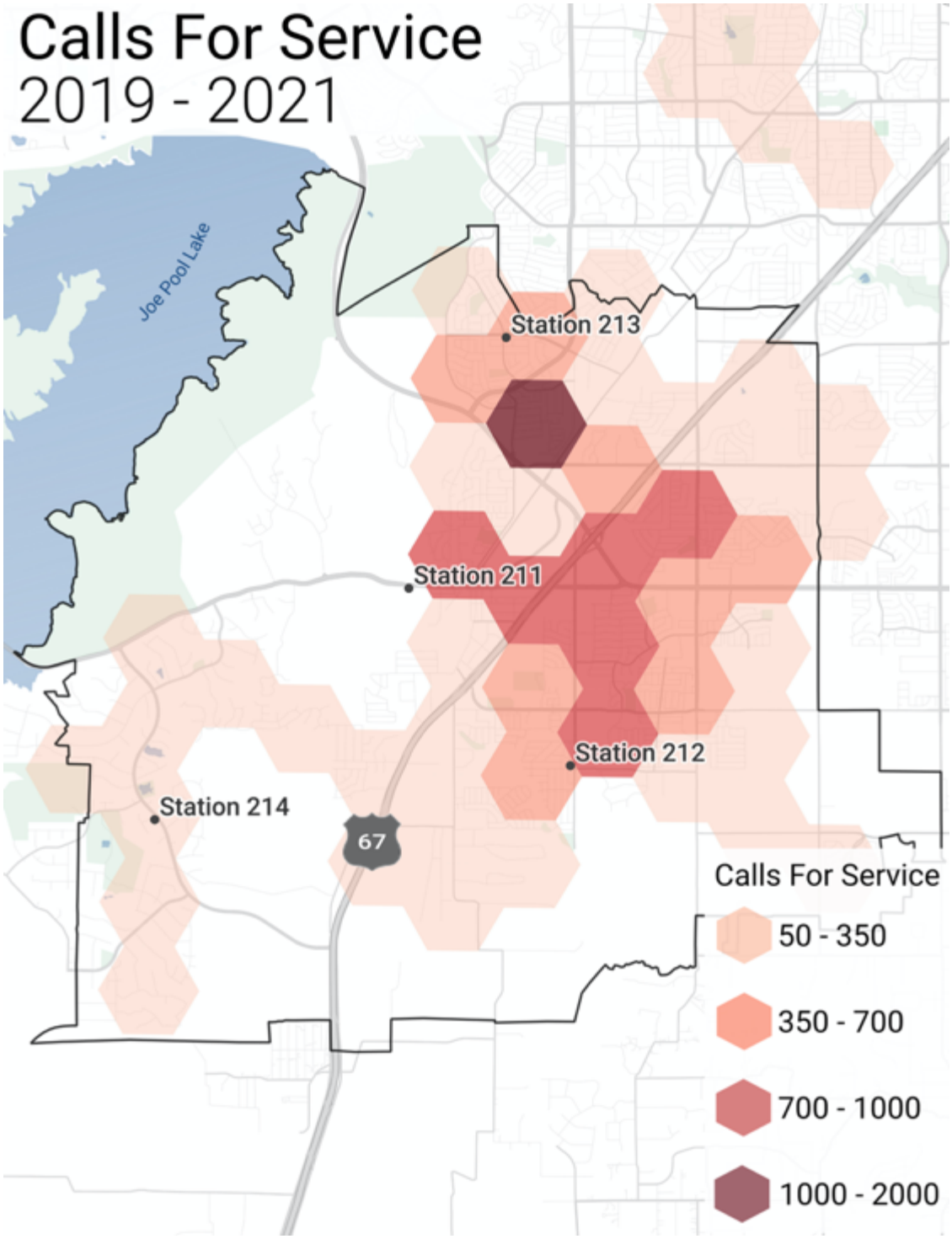
Current budget documents used by the City identify a 6-minute trave time standard for emergency calls for service. The City and Fire Department should formally adopt this standard and use it as a trigger point for adding resources when development occurs that cannot be reached by the Fire Department or automatic aid partner in 6-minutes 90% of the time. It is important to note that only high priority emergency calls (immediate threat to life or property) should be used in the analysis of travel time performance, non-emergency calls should not be considered in this analysis.

Recommendation:

Formally adopt a 6-minute travel time standard for arrival of the first-due apparatus 90% of the time for emergency calls.

5. Emergency Services Workload

The Fire Department responds to emergency and non-emergency calls for service. The following map illustrates the location of calls for service for the Fire Department as provided from the computer-aided dispatch (CAD) data for the years 2019 - 2021. When the data is examined from this map, it is important to note that while the majority of calls for service are on the east side of Highway 67, only one (1) of the four (4) fire stations serving Cedar Hill is located east of Highway 67. For concurrent calls in this area that requires and out of district response from a station west of Highway 67 or an Automatic Aid partner.



As illustrated, there is a heavy volume of calls in the northern and central east sections of the City. The calls for service density largely matches the population density in terms of driving call demand.

The following table illustrates the number of calls by type over the same 3-year period.

2019-2021 Calls by Type

	2019	2020	2021	Total	Pct.
Auto Accidents	399	328	353	1,080	5.6%
Medical Calls	3,518	3,771	4,658	11,947	62.2%
Total Medical and Auto Accidents	3,917	4,099	5,011	13,027	67.9%
Fire Alarm - Activation	246	187	292	725	3.8%
Fire Alarm - False	3	5	11	19	0.1%
Fire Alarm - Malfunction	37	50	112	199	1.0%
Mutual Aid/Move Up Calls	138	92	142	372	1.9%
Other Type Fire	21	22	21	64	0.3%
Smoke Scare	31	30	26	87	0.5%
Structure Fire	91	47	67	205	1.1%
Vegetation/Brush/Debris Fires	34	52	50	136	0.7%
Vehicle Fire	28	12	21	61	0.3%
All Fire Calls	629	497	742	1,868	9.7%
Rescue Calls - Extrication	3	12	6	21	0.1%
Rescue Calls - Other	12	15	14	41	0.2%
Rescue Calls - Search	1	3	1	5	0.0%
Rescue Calls - Water	0	1	0	1	0.0%
All Rescue Calls	16	31	21	68	0.4%
Overpressure/Rupture/Overheat	12	8	19	39	0.2%
Dispatched and Canceled	457	519	850	1,826	9.5%
Good Intent Calls	86	70	107	263	1.4%
Unclassified Calls	9	2	0	11	0.1%
Hazardous Materials	0	1	3	4	0.0%
Hazardous Condition	133	110	163	406	2.1%
Severe Weather Alerts	0	5	4	9	0.0%
Service Calls	375	408	894	1,677	8.7%
Other Type of Calls	1,072	1,123	2,040	4,235	22.1%
Total Calls for Service	**5,634**	**5,750**	**7,814**	**19,198**	

As illustrated above, automobile accidents and medical calls account for approximately 67% of the call demand, while service calls account for 23% and fire calls 9%.

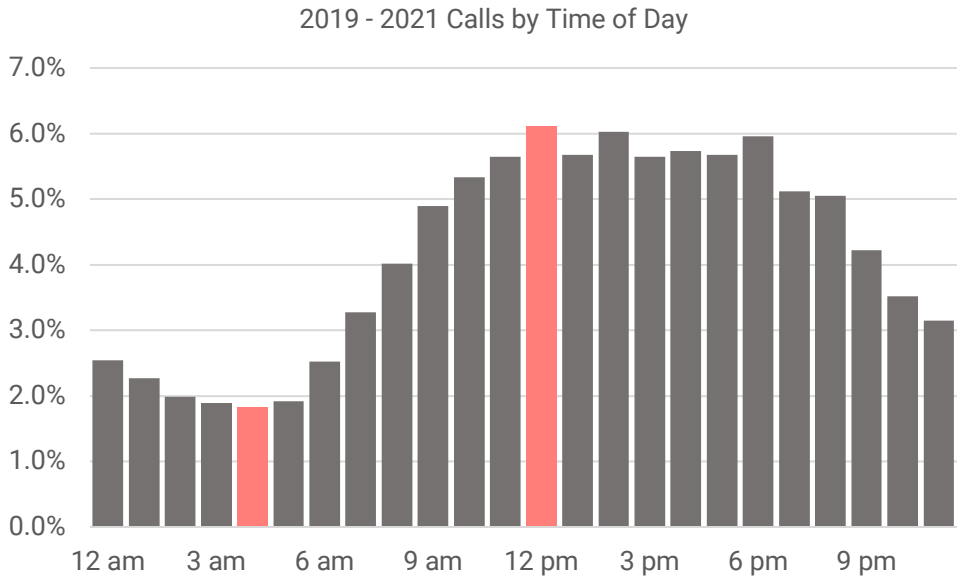
The next table illustrates call demand by day of week and time of day.

Calls for Service by Hour and Weekday – 2019 - 2021

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
12 am	0.4%	0.4%	0.2%	0.4%	0.3%	0.4%	0.4%	2.5%
1 am	0.3%	0.3%	0.4%	0.3%	0.3%	0.3%	0.4%	2.3%
2 am	0.3%	0.3%	0.2%	0.3%	0.3%	0.2%	0.3%	2.0%
3 am	0.3%	0.3%	0.3%	0.2%	0.3%	0.3%	0.2%	1.9%
4 am	0.3%	0.2%	0.3%	0.2%	0.2%	0.2%	0.3%	1.8%
5 am	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.2%	1.9%
6 am	0.3%	0.4%	0.4%	0.4%	0.3%	0.4%	0.3%	2.5%
7 am	0.3%	0.5%	0.5%	0.6%	0.5%	0.6%	0.4%	3.3%
8 am	0.4%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	4.0%
9 am	0.6%	0.8%	0.7%	0.9%	0.8%	0.6%	0.6%	4.9%
10 am	0.6%	0.8%	0.9%	0.8%	0.7%	0.8%	0.7%	5.3%
11 am	0.7%	0.7%	0.8%	0.9%	0.8%	0.9%	0.8%	5.6%
12 pm	0.9%	0.9%	0.9%	0.9%	0.8%	1.0%	0.7%	6.1%
1 pm	0.8%	0.9%	0.8%	0.9%	0.8%	0.8%	0.7%	5.7%
2 pm	0.7%	0.9%	0.9%	0.9%	0.9%	0.9%	0.8%	6.0%
3 pm	0.7%	0.8%	0.8%	0.9%	0.8%	0.9%	0.8%	5.6%
4 pm	0.7%	0.8%	0.9%	0.9%	0.9%	0.8%	0.8%	5.7%
5 pm	0.7%	0.8%	0.8%	0.9%	0.9%	0.8%	0.8%	5.7%
6 pm	0.9%	0.8%	0.8%	0.9%	0.8%	0.8%	0.9%	6.0%
7 pm	0.7%	0.8%	0.7%	0.8%	0.8%	0.7%	0.7%	5.1%
8 pm	0.7%	0.8%	0.7%	0.7%	0.8%	0.6%	0.8%	5.1%
9 pm	0.6%	0.6%	0.5%	0.6%	0.7%	0.7%	0.6%	4.2%
10 pm	0.6%	0.4%	0.5%	0.4%	0.5%	0.6%	0.6%	3.5%
11 pm	0.4%	0.4%	0.4%	0.4%	0.5%	0.5%	0.6%	3.2%

As illustrated above, call demand is highest from the 9:00 am hour through the 8:00 pm hour and peaks at the 12:00 noon hour. Call demand slows at 9:00 pm and is slowest in the overnight hours, with 4:00 am having the lowest call demand.

The next chart shows the call demand from a different perspective.



(1) Fire and EMS Workload Analysis

The following sections compare and evaluate the current deployment and performance of the Cedar Hill Fire Department as it relates to the benchmark performance objectives recommended for the fire industry.

CAD Analysis Methodology

Computer Aided Dispatch (CAD) data for 2019, 2020, and 2021 was examined and evaluated. The data is not without issues such as coding problems, transcription errors, and equipment failures. The project team used the following mechanism to address these issues.

Only qualified data is used to calculate response time and any related components. To be considered the data must meet the following criteria:

- The incident must have been unique.
- The incident must have involved at least one Fire Department unit being dispatched to the call.
- Calls that are missing data are not used in the computations for call processing, turnout time, travel time, or call duration.
- Any call with usually long times (call processing times over 5 minutes or turnout times over 10 minutes) or times sorted incorrectly (arrived before dispatch time) were removed.

- Non-emergency responses are removed; only emergency responses are included.

After filtering the data using the methodology outlined above, the remaining incidents represent the response time for calls for service handled by the Fire Department.

(2) Call Processing

This section is focused on the analysis of call processing, which is the time from the receipt of an emergency until a fire or EMS unit is dispatched to the call.

(2.1) Performance Standards

Emergency communications are provided by the Southwest Regional Communications Center (SWRCC) for the Cedar Hill Fire Department. This center handles the dispatching of fire suppression, emergency medical services, and rescue calls. NFPA 1221 Standard for the Installation, Maintenance and Use of Emergency Services Communications Systems establishes the call processing benchmarks as outlined in the following chart.

Component	Target	Performance
Calls Answered	Within 15 seconds	90%
	Within 20 seconds	95%
Call Processing	Within 60 seconds	90%
Call Processing for: * Language Translation * TTY/TDD Device Services * Hazardous Materials * Technical Rescue * Text Message * Calls Received during a Disaster * Unable to Determine Location	These types of calls are exempt from the call processing time illustrated above.	

Both CPSE and ISO use the 60 second call processing time benchmark performance objective as outlined in NFPA 1221 for their requirements.

(2.2) System Performance

The table below summarizes the performance of the Southwest Regional Emergency Communications Center.

All Emergency Calls – 90th Percentile Times		2019	2020	2021	Benchmark
Call Processing	Pick-up to Dispatch	1:08	1:48	1:44	1:00

In 2020, the Southwest Regional Communications Center implemented the Zuercher computer aided dispatch (CAD) system. As illustrated above, the Southwest Regional

Communications Center is taking longer than best practice to process Fire and EMS calls. The call processing time increased from 1:08 in 2019 to 1:44 in 2021. This is 44 seconds above the best practice target of 1:00 established by NFPA 1211. The implementation of the zuercher CAD system had a negative impact on call processing times, which impacts the total response time experienced by the caller. Formally establishing a performance standard of 1-minute 90% of the time for processing emergency fire and EMS calls and continually monitoring and reporting on the performance of the Communications Center will improve the system performance by reducing the time needed to process emergency calls and notifying personnel that an emergency exists. To the caller, this improvement ensures that emergency personnel arrive more quickly as time is not delayed talking to the caller prior to sending emergency personnel to mitigate the situation.

There was a recent environmental analysis of the SWRCC conducted by Berry Dunn McNeil & Parker, LLC (BerryDunn). In this analysis, it was noted that the current Computer Aided Dispatch (CAD) / Records Management System (RMS) does not meet the needs of the fire departments as it is not capable of handling multiple jurisdictions and department and offers little functionality to the fire service. These CAD/RMS limitations are a contributing factor to the increasing call processing and overall response times as noted above.

Recommendation:

Work with the Southwest Regional Emergency Communication Center to develop a request for proposal and specifications to acquire a new computer aided dispatch system that will achieve the 1-minute goal established by NFPA 1211.

(3) Turnout Time

This section focuses on the performance of turnout time, which is the time that begins when the Fire Department receives the call from dispatch until a unit goes enroute to the call (wheels rolling).

(3.1) Performance Standards

Industry standards for turnout time performance are established in NFPA 1710. There is no standard used for establishing an agencies Insurance Services Organization (ISO) rating. As part of the accreditation process, the Center for Public Safety Excellence (CPSE) uses the same criteria as found in NFPA 1710. The following tables provides a comparison between the three models for benchmark performance objectives.

Turnout Time – Benchmark Performance Objectives

Call Type	NFPA 1710	ISO	CPSE
Emergency Medical Calls	60 seconds or less 90% of the time	No Requirement	60 seconds or less 90% of the time
Fire or Special Operations Calls	80 seconds or less 90% of the time	No Requirement	80 seconds or less 90% of the time

(3.2) System Performance

The table below illustrates the performance for the units in the Cedar Hill related to turnout time for emergency calls.

All Emergency Calls – 90th Percentile Times			2019	2020	2021	Benchmark
Turnout Time	1st Unit	Medical Calls	0:00	1:56	2:00	1:00
		Fire Calls	0:00	2:08	2:22	1:20

All times shown is the 90th percentile time for each of the three years. The benchmark performance objective time shown to the right represents industry best practice. As shown, turnout time for medical and fire calls were not recorded in 2019 and could not be evaluated. For the years 2020 and 2021, both fire and EMS calls were over the benchmark objective. Turnout times for both fire and EMS calls increased from 2020 to 2021.

Recommendations:

Develop a plan to improve the turnout time performance to both fire and EMS Calls.

Develop a system to analyze and report monthly on turnout time performance by shift and station.

(4) Distribution of Resources

Distribution is the measure of getting initial resources to an emergency to begin mitigation efforts. This is measured in a variety of ways including percentage of square miles, percentage of road miles and travel time. The Insurance Services Office (ISO) has used road miles for many years advocating one and a half miles for an engine company and two and a half miles for a ladder company. With the advent of GIS technology and improved computer aided dispatch (CAD) systems, the use of actual travel time is another more accurate measure for the distribution of resources.

(4.1) Performance Standards

Travel time is a measurable time segment that begins when the apparatus and personnel begin the response (wheels rolling) and ends once on location of the emergency (wheels

stopped). It is the most appropriate measurement available for the distribution of resources that has a proven record of success. NFPA, ISO and CPSE have established different benchmark standards for travel time performance. The table that follows illustrates the standards for benchmark travel time performance from each of the organizations of the emergency services system.

First Arriving Unit - Benchmark Performance Objectives

Demand Zone	Demographics	NFPA 1710	ISO	CPSE
Urban	Greater than 1,000 per sq. mile	4 minutes or less 90% of the time.	1.5 road miles in the built-upon area	4 minutes or less 90% of the time
Suburban	500 - 1,000 per sq. mile	4 minutes or less 90% of the time.	1.5 road miles in the built-upon area	5 minutes or less 90% of the time
Rural Area	Less than 500 per sq. mile	4 minutes or less 90% of the time.	1.5 road miles in the built-upon area	10 minutes or less 90% of the time
Remote Area	Travel Distance greater than / equal to 8 miles	4 minutes or less 90% of the time.	1.5 road miles in the built-upon area	No Requirement

There are several notable items contained in the previous table. NFPA 1710 does not address the various demographics or population densities. CPSE addresses the travel time for the various demographics with differing travel times based on population density and ISO only addresses the built upon area defined as those areas with fire hydrants available. Most communities find the NFPA 1710 standard difficult to achieve as it is the same regardless of population density and unique community characteristics. Using the CPSE standard allows for variation in travel time performance based on population density. It is also important to note that CPSE allows a community to adopt a local standard (baseline) based on the performance of the emergency response system over the previous three (3) years.

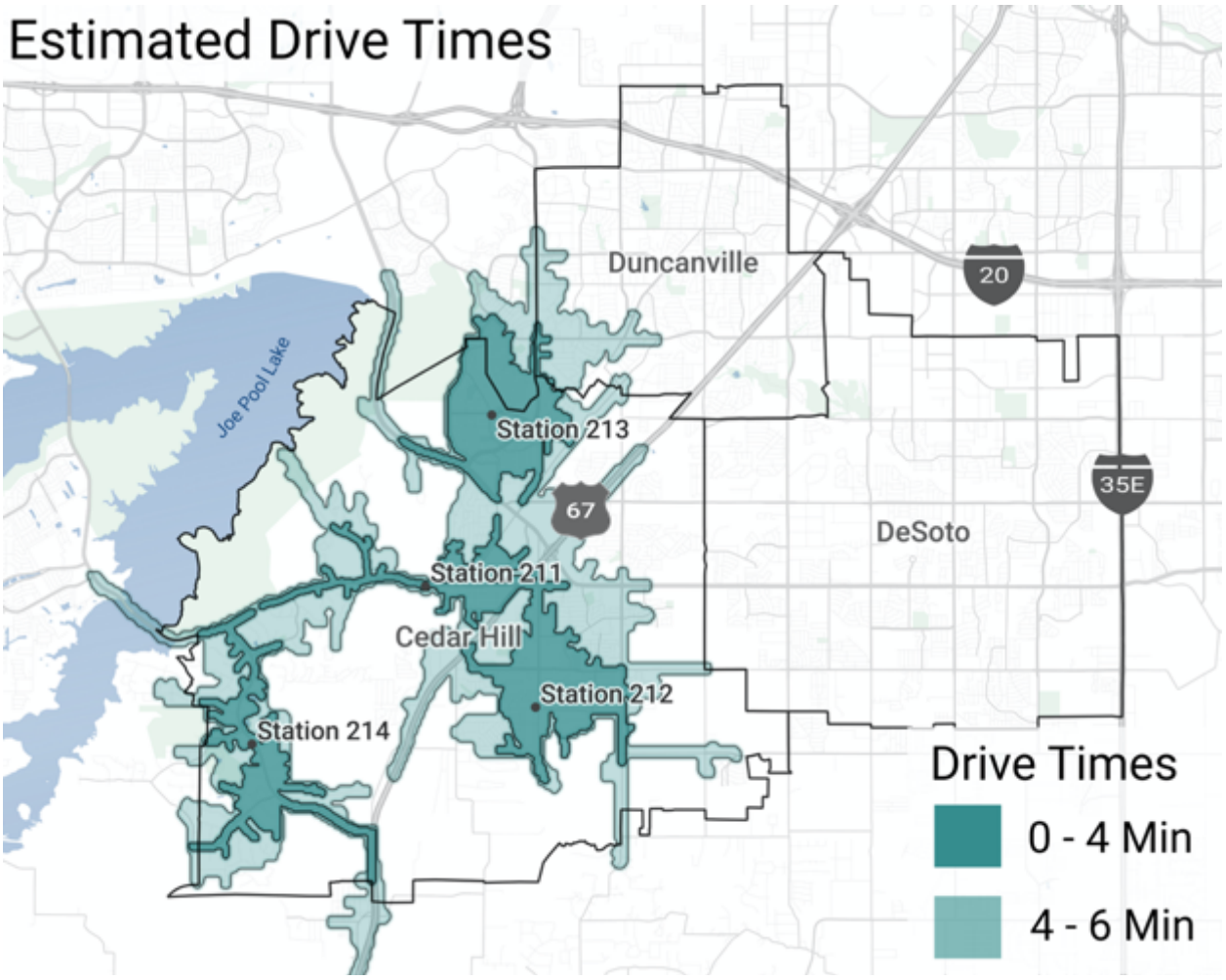
(4.2) System Performance

Cedar Hill is in the urban demographic definition with an overall population density 1,339 residents per square mile, however there are areas in the City that fit the suburban density requirement. The table that follows illustrates the travel time for the urban demographic as compared to the recommended benchmark performance objectives as represented by National Fire Protection Agency (NFPA) Standard 1710.

All Emergency Calls – 90th Percentile Times			2019	2020	2021	Benchmark
Travel Time	1st Unit Distribution	Urban	0:00	7:11	7:59	4:00

As with the previous performance elements, travel time for 2019 could not be calculated. For 2021, the travel time performance is 7 minutes 59 seconds, which is 4 minutes over the benchmark performance objective for urban communities. It is important to note that travel times have increased 48 seconds from 2020 to 2021. Again, this may be attributed to the CAD/RMS issues previously discussed and the system performance should be routinely analyzed to see if there is a travel time issue, or the issue is proper documentation of system performance by the SWRCC.

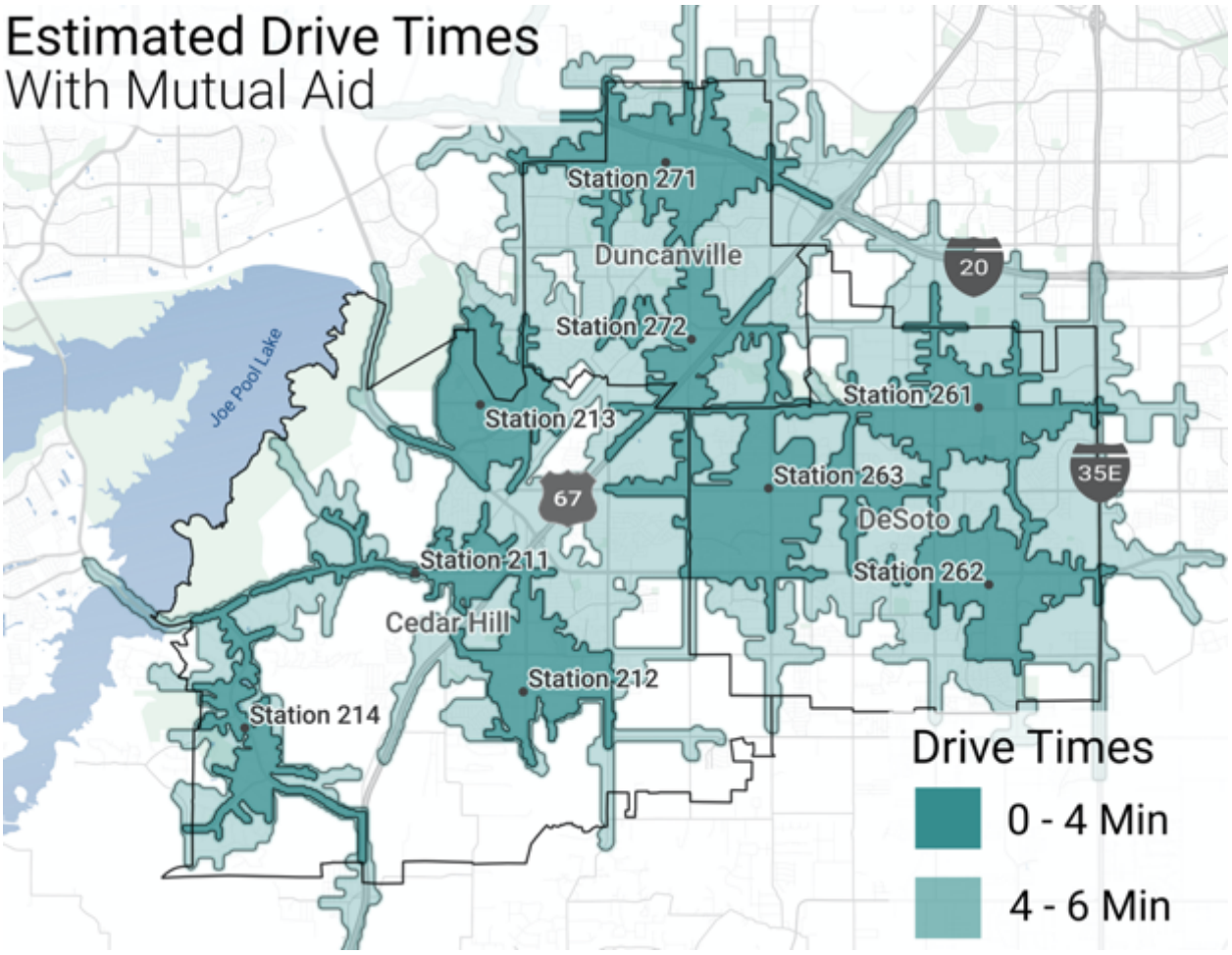
For a visual perspective the following map illustrates four and six-minute travel time expectations using the existing fire stations within the City.



This map illustrates the fire stations used by the Cedar Hill Fire Department to serve the City. The four-minute travel time represents a best practice standard using NFPA 1710 guidelines. The six-minute trave time is illustrated to show how using a locally developed

baseline performance objective, as reported in budget documents, and as allowed by CPSE, for travel time may impact future facility needs.

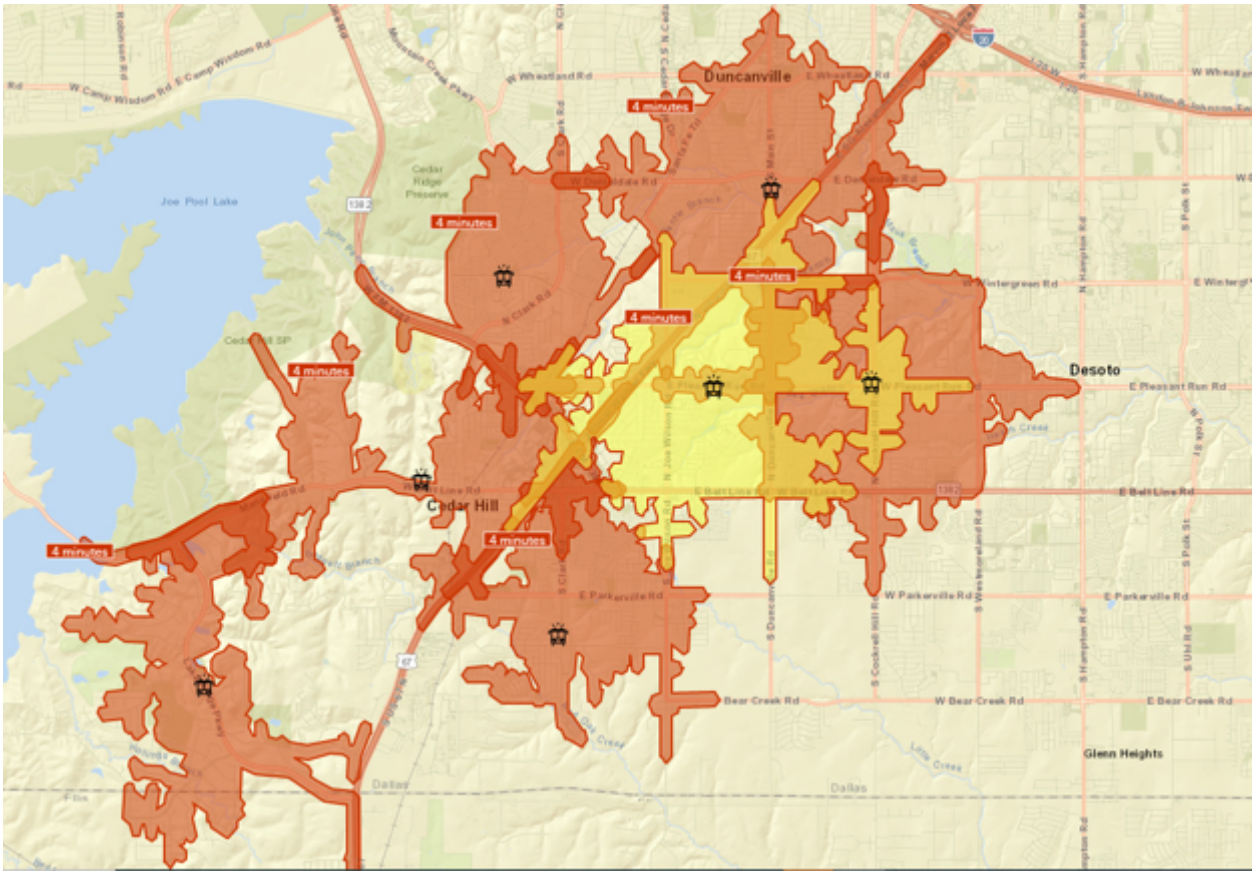
As noted earlier, Cedar Hill has an automatic aid agreement with the cities of Desoto and Duncanville which allows the closest unit to be dispatched to an emergency regardless of what community the call is located in. This is an industry best practice and should continue. Having this type of agreement lessens the need to construct additional facilities as neighboring communities with stations near city borders can quickly arrive at emergencies in Cedar Hill. The following map illustrates the expected travel time performance using automatic aid stations to illustrate how they can impact first unit arrival on an emergency scene:



As illustrated above, while the use of automatic aid partners improves the coverage of initial response time performance, there is a gap in the high call demand and growth corridor along Highway 67 in the northeastern portion of the City. There is also a gap in

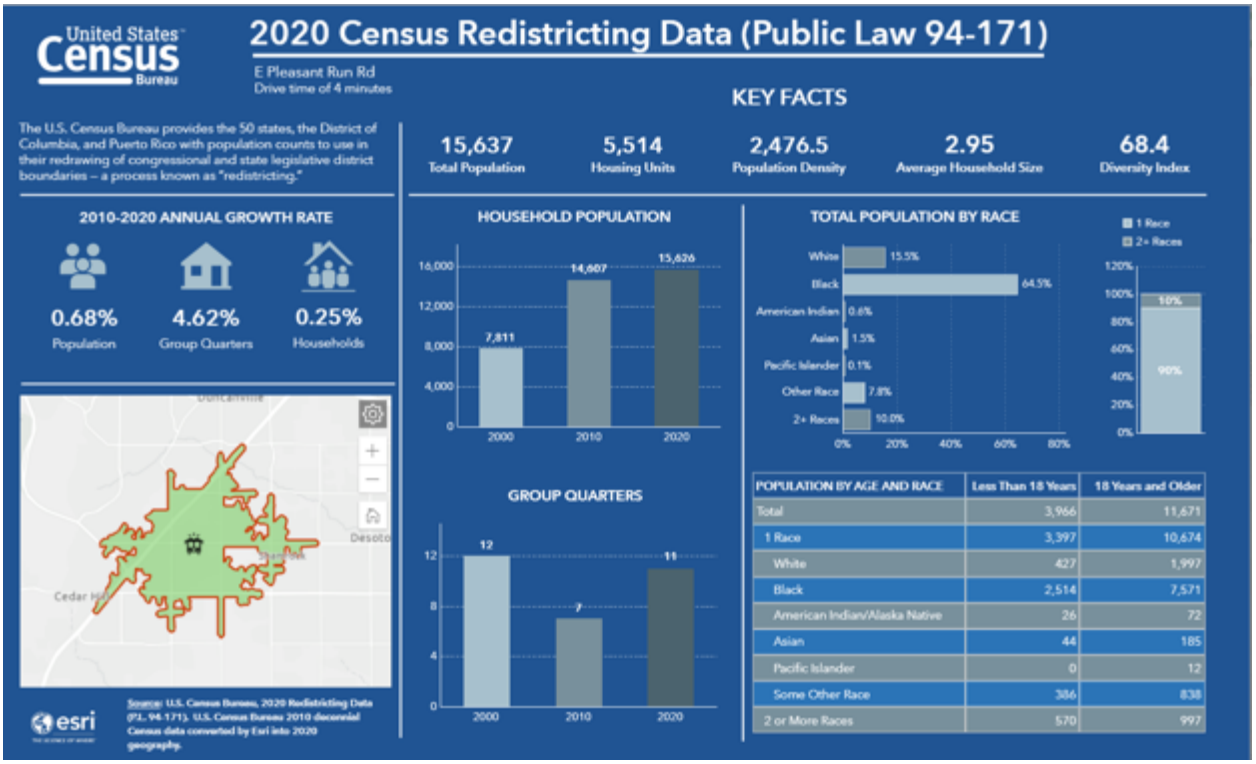
the southeastern portion of the city, which is expected to experience high residential growth in the coming years.

The following maps illustrate the system improvements with the addition of a station in the area Pleasant Run Road and North Joe Wilson Road.

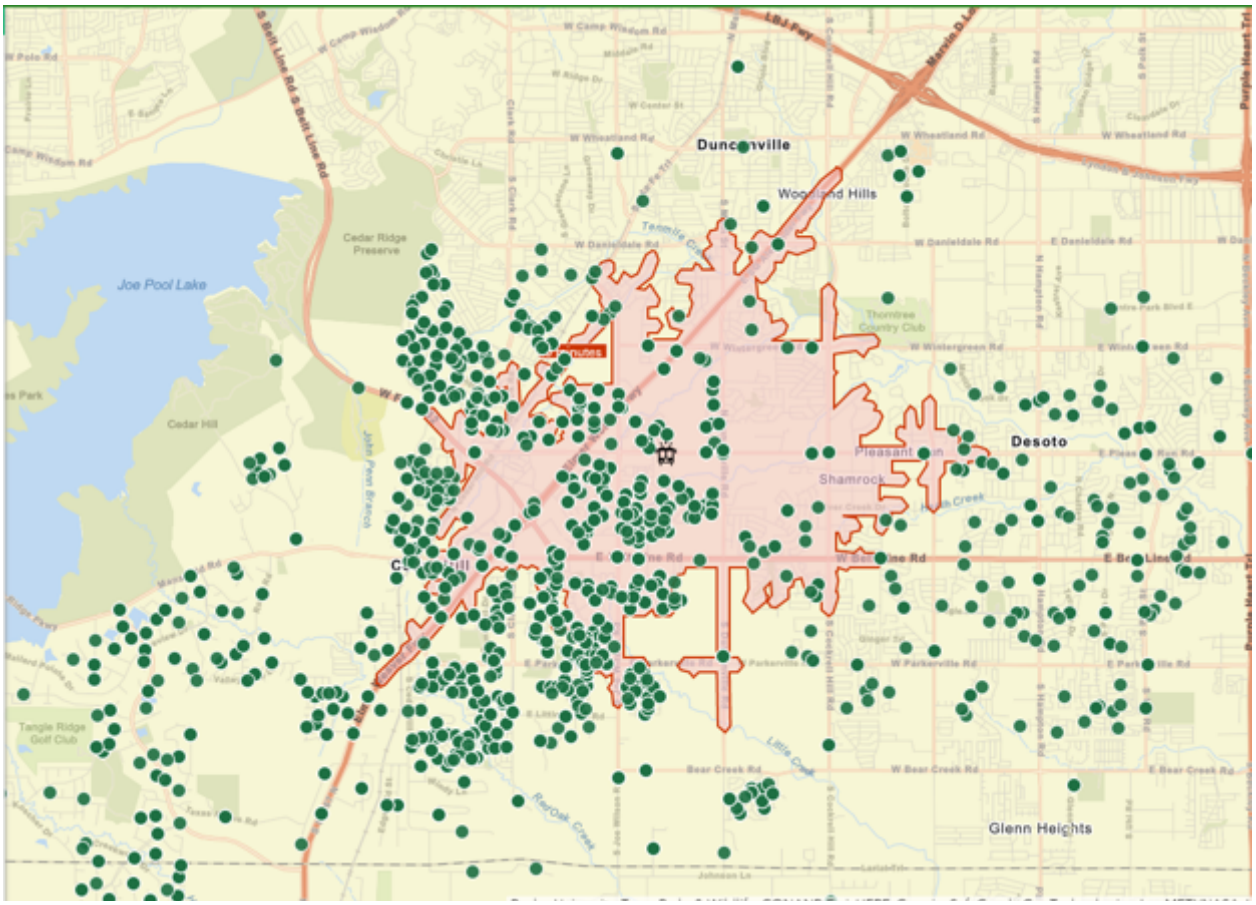


As illustrated above, the area highlighted in yellow represents the current gap in coverage in the northeastern area of Cedar Hill. The areas highlighted in orange represent the 4-minute travel time capability from the current stations.

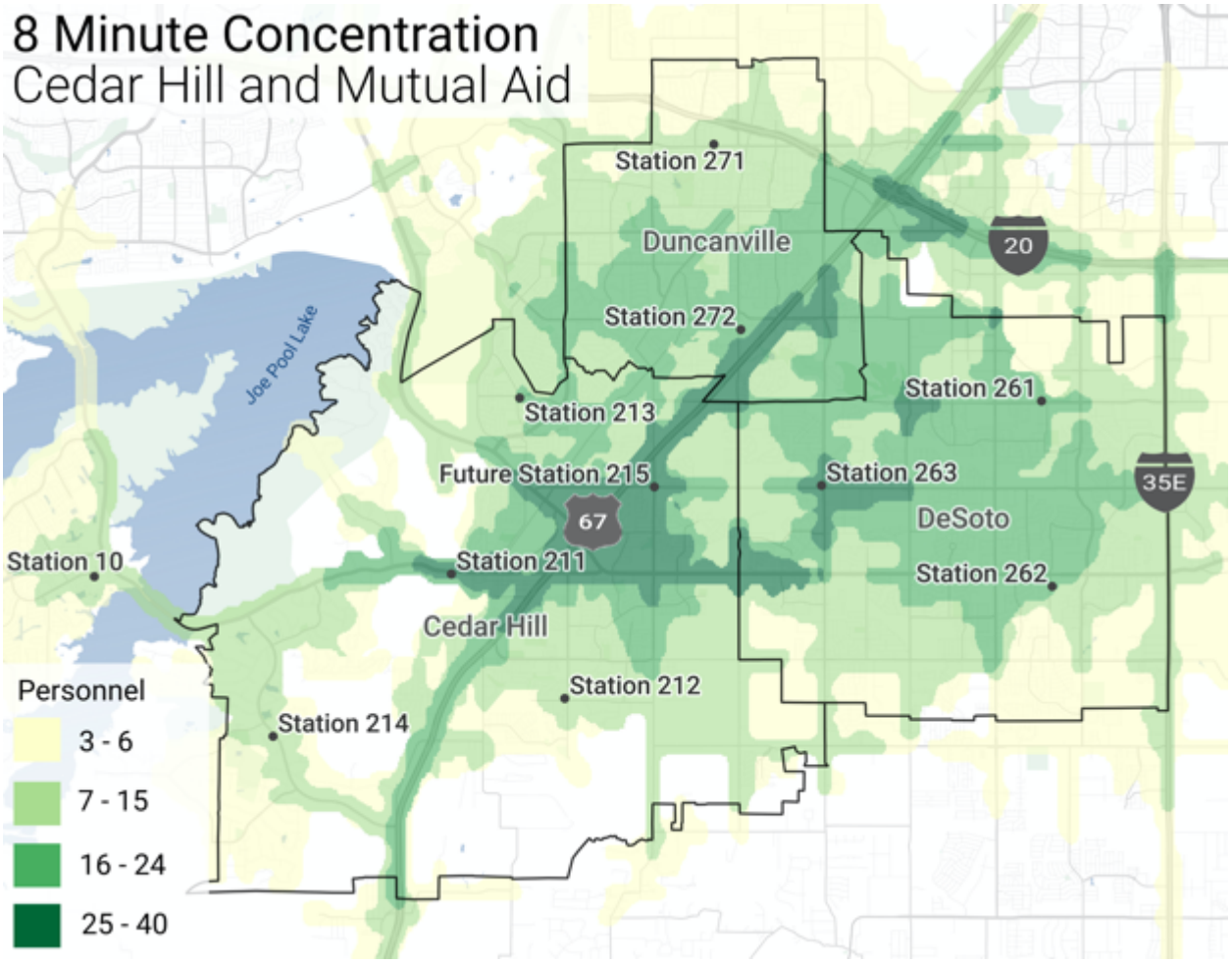
The illustration below is a snapshot of the demographics located within the 4-minute travel time area of a new station located in the yellow highlighted area in the previous map.



The next illustration is the 2021 calls for service of the Cedar Hill Fire Department overlaid on a map. The pink highlighted area represents the current gap in coverage. The dots represent address points of calls with one dot for every address that had a call for service. Multiple calls at the same address would still only be represented with one dot. When analyzed, the majority of the responses to calls in the highlighted area were outside recommended response times due to travel distances from the current stations.



The final map illustrates the number of personnel expected to reach an emergency scene in 8 minutes travel time when considering automatic and mutual aid assistance.



Recommendation:

Begin planning for the design and construction of the planned future fire station 215 in the area of Pleasant Run Road and North Joe Wilson Road to improve initial response time performance to at or below the 6-minute target in this high call demand area.

Begin the planning and design of a replacement station 212 at the location of the existing station, keeping station 212 in-service during the build process. Future use for the existing station 212 should become part of the City's long-range facility plan.

(5) Concentration of Resources

Concentration of resources is generally described as the ability of the emergency services system to get the appropriate number of personnel and resources to the scene of an emergency within a prescribed time to effectively mitigate the incident. There are two segments to this component – the first is the arrival of second suppression apparatus and

the second is the arrival of an effective response force both of which use travel time as the measurement.

(5.1) Performance Standards

As noted, there are two segments to the concentration of resources, the first segment uses travel time for the second arriving fire suppression apparatus. The second segment involves the number of personnel that can be placed on an emergency scene in each amount of time. Again, these two segments represent the most appropriate measurement available for the concentration of resources and these measurements has a proven record of success nationally.

(5.2) Second Arriving Suppression Apparatus

Travel time is the primary measurement for the second arriving fire suppression unit. The following table summarizes the differing viewpoints for the travel time of the second arriving unit.

Demand Zone	Demographics	NFPA 1710	ISO	CPSE
Urban	Greater than 1,000 per sq. mile	6 minutes or less 90% of the time	No time or mileage requirement	8 minutes or less 90% of the time
Suburban	500 – 1,000 per sq. mile	6 minutes or less 90% of the time	No time or mileage requirement	8 minutes or less 90% of the time
Rural Area	Less than 500 per sq. mile	6 minutes or less 90% of the time	No time or mileage requirement	14 minutes or less 90% of the time
Remote Area	Travel Distance greater than / equal to 8 miles	6 minutes or less 90% of the time	No time or mileage requirement	No Requirement

As can be noted in the previous table, CPSE and NFPA 1710 have requirements for the second arriving apparatus, ISO is silent on this topic.

(5.3) First Alarm Assignment

Travel time and number of personnel arriving at the scene of an emergency is the measurement for the first alarm assignment. The next table illustrates the travel time for the first alarm assignment.

Demand Zone	Demographics	NFPA 1710	ISO	CPSE
Urban	Greater than 1,000 per sq. mile	8 minutes or less 90% of the time	No time or mileage requirement	8 minutes or less 90% of the time
Suburban	500 – 1,000 per sq. mile	8 minutes or less 90% of the time	No time or mileage requirement	10 minutes or less 90% of the time
Rural Area	Less than 500 per sq. mile	8 minutes or less 90% of the time	No time or mileage requirement	14 minutes or less 90% of the time
Remote Area	Travel Distance greater than / equal to 8 miles	8 minutes or less 90% of the time	No time or mileage requirement	No Requirement

In the previous table, a moderate risk structure fire is used as the basis for the benchmark performance objectives.

As mentioned previously, the second part of the concentration of resource arrival time concerns the number of personnel arriving with the first alarm assignment. The next table summarizes NFPA, ISO, and CPSE standards for the number of personnel arriving for a first alarm assignment for a single-family dwelling.

Demand Zone	Demographics	NFPA 1710	ISO	CPSE
Urban	Greater than 1,000 per sq. mile	16 personnel	No specific requirement	16 personnel
Suburban	500 – 1,000 per sq. mile	16 personnel	No specific requirement	16 personnel
Rural	Less than 500 per sq. mile	16 personnel	No specific requirement	16 personnel
Remote	Travel Distance greater than / equal to 8 miles	16 personnel	No specific requirement	16 personnel

As illustrated, ISO does not specify the number of personnel that is expected or anticipated to arrive, and instead provides points for the personnel – meaning the more on-duty personnel the more points are added to the overall evaluation. NFPA 1710 and CPSE base their personnel requirements on creating an effective response force using critical tasking.

(5.4) System Performance

The next table illustrates the performance of each travel time element for structure fires in Cedar Hill in 2019 – 2021.

Structure Fires – 90th Percentile Times		2019	2020	2021	Cedar Hill Baseline	Benchmark
Travel Time	1st Unit – Distribution		5:29	6:38	5:53	4:00
	2nd Arriving – Suppression Unit		8:41	11:12	9:42	6:00
	ERF – Concentration			12:29	12:29	8:00
		N = 0	n = 1	n = 1	n = 1	

As noted previously there were no enroute or arrival times available in 2019 and there was only one (1) structure fire with these time elements recorded in 2020, others were either missing enroute, arrival times or both. This makes evaluating 2nd unit arrival and effective response force concentration for those two years impossible. Therefore, the baseline performance capability is based only on 2021 data. In addition, as only call received and arrival times were available in 2019, the following table illustrates the total response time when all components are added together for each calendar year.

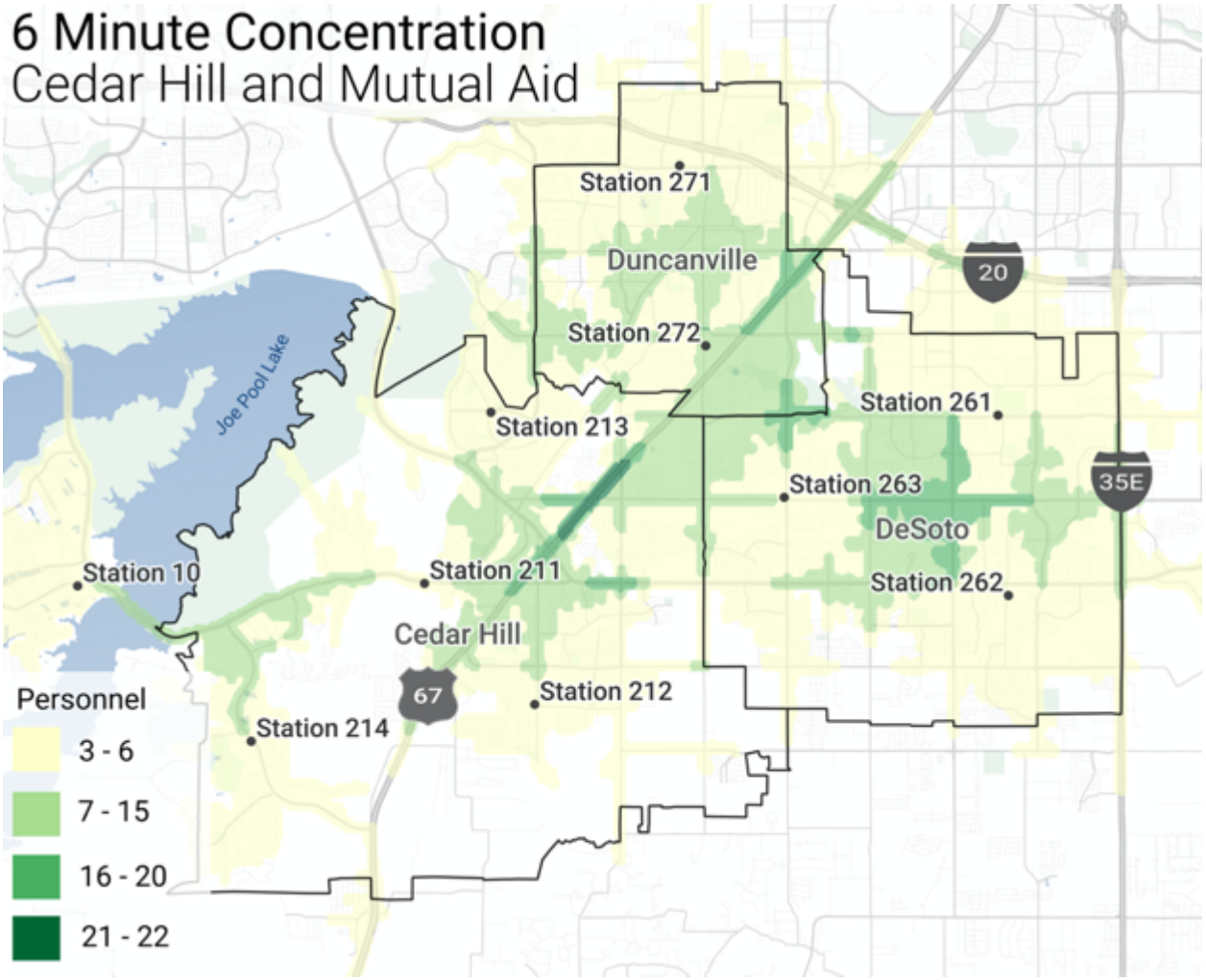
Cedar Hill Fire Department							
All Emergency Calls – 90th Percentile Times			2019 - 2021	2019	2020	2021	Benchmark
Total Response	1st Unit Distribution	Urban	8:38	8:04	8:25	8:48	6:20

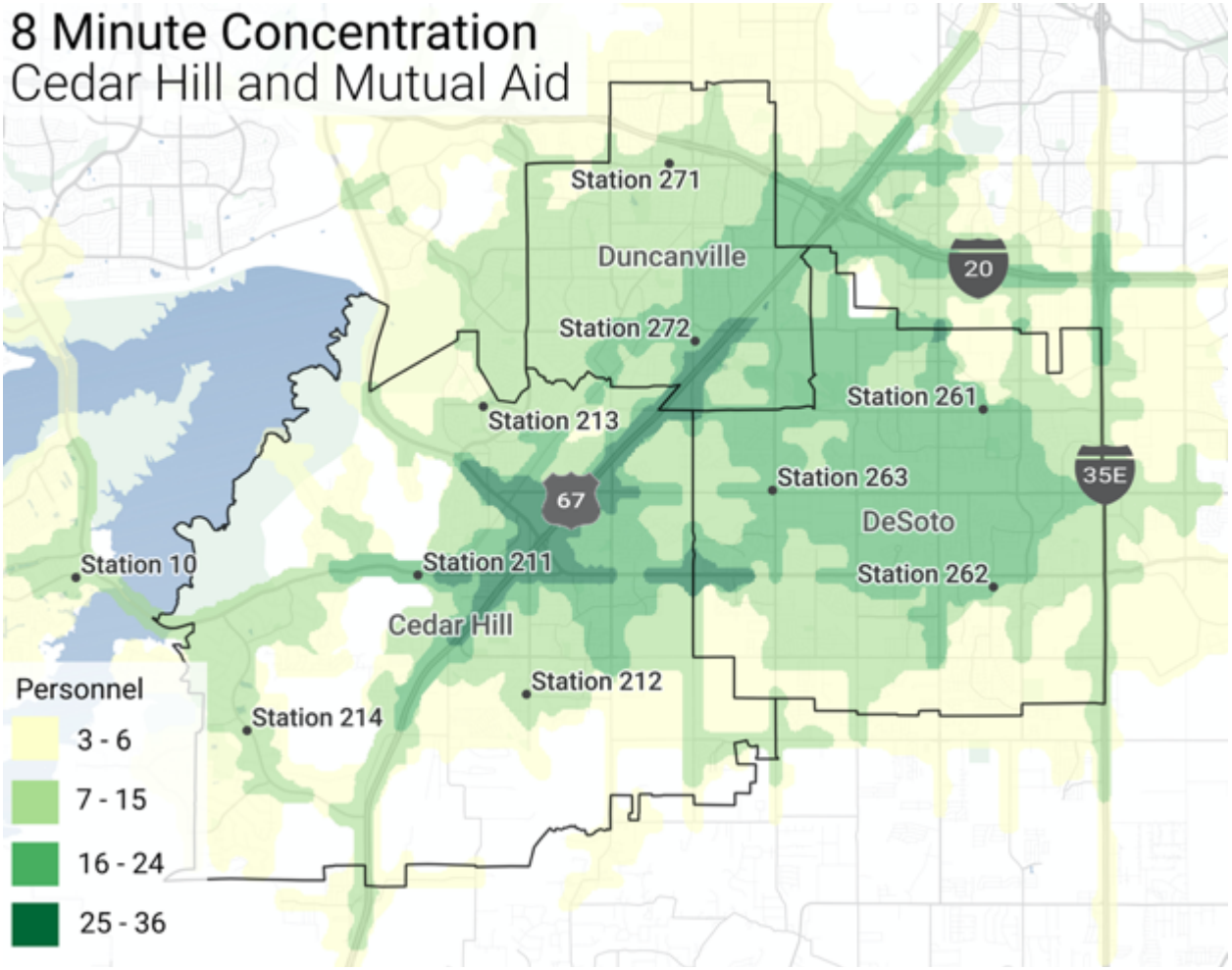
As illustrated, the total response time has increased steadily from 2019 – 2021, increasing 44 seconds over the three-year period.

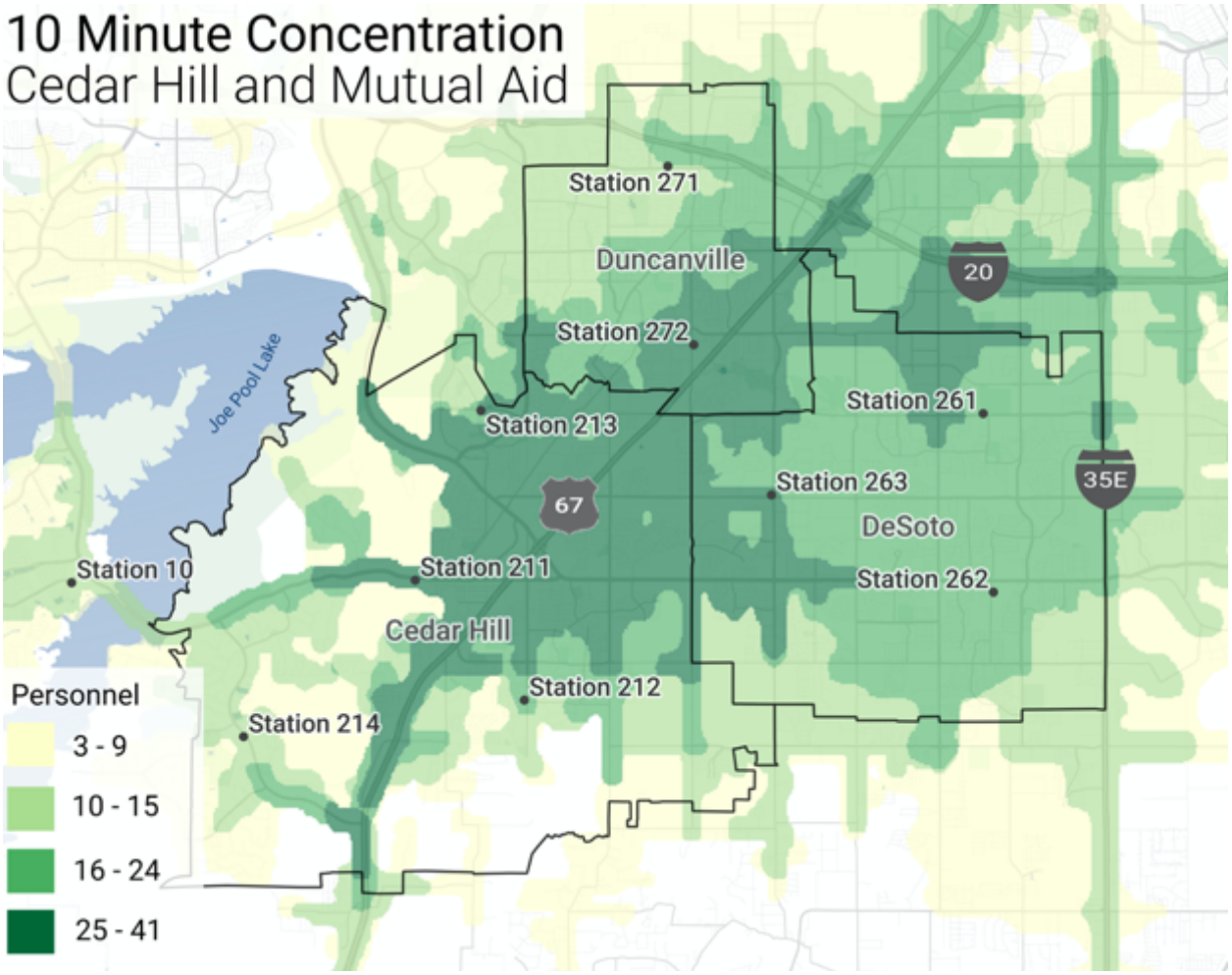
Recommendation:

Work with the Southwest Regional Communications Center to ensure all time stamps are accurately captured for all emergency calls for service.

The following maps illustrate the expected number of personnel that can reach the scene of an emergency using automatic and mutual aid partners in 6, 8 and 10 minutes


6 Minute Concentration
Cedar Hill and Mutual Aid
Station 271
Duncanville
20
Station 272
Joe Pool Lake
Station 213
Station 261
Station 263
35E
DeSoto
Station 10
Station 211
Station 262
Cedar Hill
67
Station 212
Station 214
Personnel
3 - 6
7 - 15
16 - 20
21 - 22


8 Minute Concentration
Cedar Hill and Mutual Aid
Station 271
Duncanville
20
Station 272
Station 261
Station 213
Station 263
35E
67
DeSoto
Station 10
Station 211
Station 262
Cedar Hill
Station 212
Station 214
Personnel
3 - 6
7 - 15
16 - 24
25 - 36



As illustrated above, with the use of automatic and mutual aid there is still a gap in forming an effective response force of at least 16 personnel within 8 minutes in the high call demand areas, which further emphasizes the need for an additional station in the area of Pleasant Run Road and North Joe Wilson Road. When a 10-minute travel time standard is used this coverage improves with the highest call demand areas able to achieve a force of at least 25 personnel if all units are available for response.

(6) System Reliability

The concept of distribution and concentration of resources can be influenced by other contributing factors including unit utilization and concurrent calls for service. This section examines these elements.

(6.1) Unit Utilization

Unit utilization is a factor in determining whether there is an appropriate emergency services system response. For purposes of this analysis, unit utilization is calculated by

taking the total hours the unit is committed to incidents for the year divided by the total hours in a year. Expressed as a percentage, it identifies the amount of time the unit is committed but more importantly the amount of time the unit is available.

In 2016, Henrico County, Virginia conducted a study of unit utilization. Through their study they developed a scale to identify the community impact on travel time and availability of their emergency medical units.[7] The following table illustrates how unit utilization impacts the system reliability.

Factor	Indicator	Description
16% to 24%	Ideal Commitment Range	Personnel can maintain training requirements and physical fitness and can consistently achieve response time benchmarks. Units are available to the community more than 75 percent of the day. Units below 0.16 should be evaluated for more efficient use as additional operating capacity is available.
25%	System Stress	Community availability and unit sustainability are not questioned. First-due units are responding to their assigned community 75 percent of the time, and response benchmarks are rarely missed. At this level, agency leaders must understand that commitment factor increases are imminent. The community this unit serves will begin to see increasingly longer response times as neighboring stations send apparatus during one out of four calls.
26% to 29%	Evaluation Range	In this range, the community served will experience delayed incident responses. Just under 30 percent of the day, first-due ambulances are unavailable; thus, neighboring responders will likely exceed goals. Agency leadership should immediately begin identifying funding sources to provide relief. At this range, commitment factors are only expected to increase.
30% or more	Line in the Sand	Not Sustainable: Commitment Threshold – shows our community has less than a 70 percent chance of timely emergency service and immediate relief is vital. Personnel assigned to units at or exceeding 0.3 may show signs of fatigue and burnout and may be at increased risk of errors. Required training and physical fitness sessions are not consistently completed.

As illustrated above, when utilization is below 25% the system is operating well. At 25% utilization there is stress on the system due to the reduced reliability of a first responding unit responding from the service area of the emergency. When utilization is between 25% and 30% it is time to evaluate the need for additional emergency response resources and at 30% or more the system is not sustainable and additional units should be added to reduce system strain.

The following table illustrates the unit utilization in Cedar Hill:

[7] https://www.fireengineering.com/apparatus-equipment/how-busy-is-busy/#gref

Unit Utilization – Cedar Hill

Unit	2019			2020			2021		
	Duration	Pct. of Time	Avg.	Duration	Pct. of Time	Avg.	Duration	Pct. of Time	Avg.
Medic 212	675:22:37	7.7%	0:49:11	1283:48:51	14.7%	0:40:16	1580:20:49	18.0%	0:40:33
Medic 213	462:18:25	5.3%	0:49:37	999:40:42	11.4%	0:46:00	1169:52:40	13.4%	0:43:56
Medic 211	501:25:20	5.7%	0:52:52	831:19:02	9.5%	0:41:15	1097:52:52	12.5%	0:43:22
Engine 212	339:24:29	3.9%	0:26:46	453:36:11	5.2%	0:17:43	668:17:37	7.6%	0:17:44
Engine 213	283:39:07	3.2%	0:31:59	443:40:36	5.1%	0:23:06	441:59:15	5.0%	0:18:04
Tower 211	0:00:00	0.0%	0:00:00	133:46:56	1.5%	0:17:34	373:24:46	4.3%	0:18:54
Engine 214	129:17:08	1.5%	0:57:53	127:38:23	1.5%	0:25:58	147:35:40	1.7%	0:21:05
BC 210	84:09:00	1.0%	0:37:58	83:02:47	0.9%	0:24:40	112:15:10	1.3%	0:23:53

Generally, the unit utilization is not an issue until it begins to reach 20% to 25% and/or if it begins to interfere with the travel time of the unit. In 2021, the highest unit hour utilization was Medic 212 at 18%, which is still below the level where additional units would be needed to offset demand for services. Utilization rates have continued to increase steadily since 2019, especially for the medic units.

The peak hour utilization was also analyzed to determine system strain during peak call demand hours. The following table illustrates this analysis:

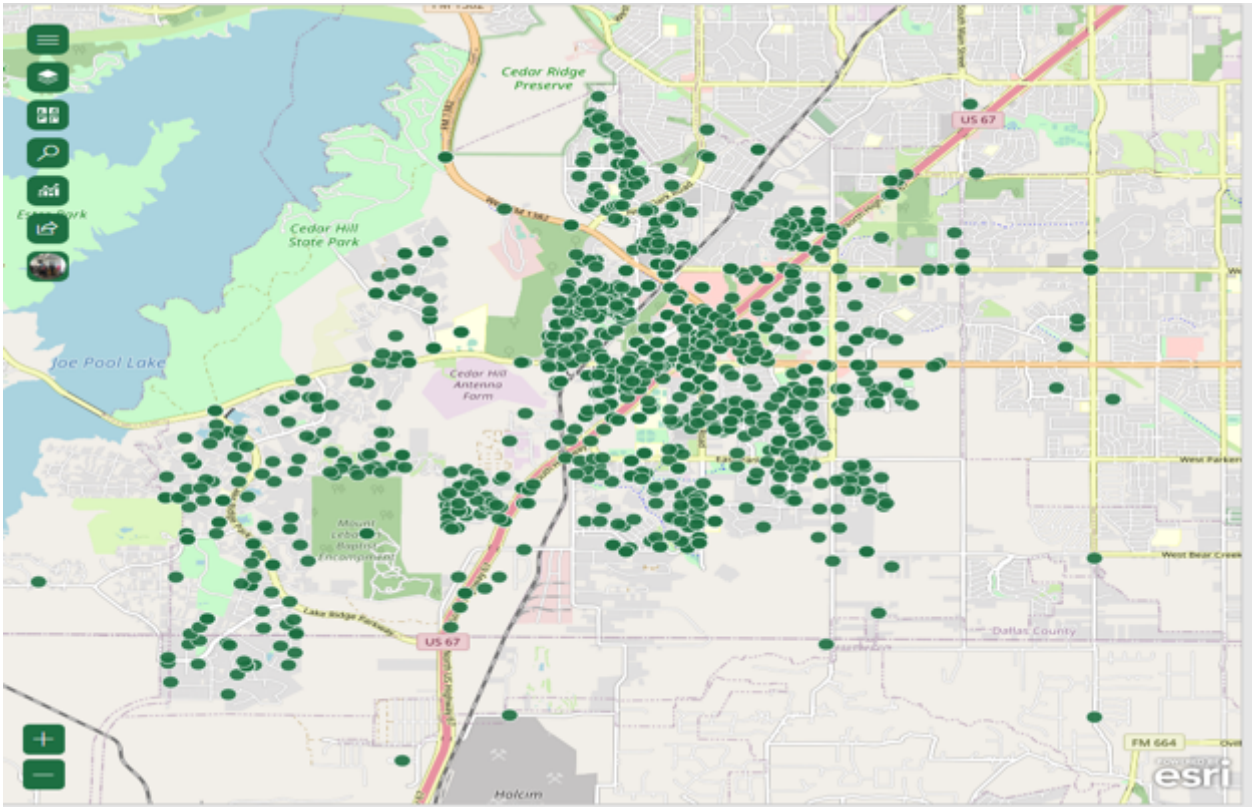
Unit Utilization – Medical Units 7 am – 7 pm

Unit	2019			2020			2021		
	Duration	Pct. of Time	Avg.	Duration	Pct. of Time	Avg.	Duration	Pct. of Time	Avg.
Medic 212	358:37:51	8.2%	0:43:02	775:45:10	17.7%	0:40:35	938:30:10	21.4%	0:40:17
Medic 213	305:36:56	7.0%	0:48:08	603:09:31	13.8%	0:45:04	749:55:55	17.1%	0:43:11
Medic 211	275:37:45	6.3%	0:42:51	533:47:28	12.2%	0:40:48	715:22:19	16.3%	0:42:25

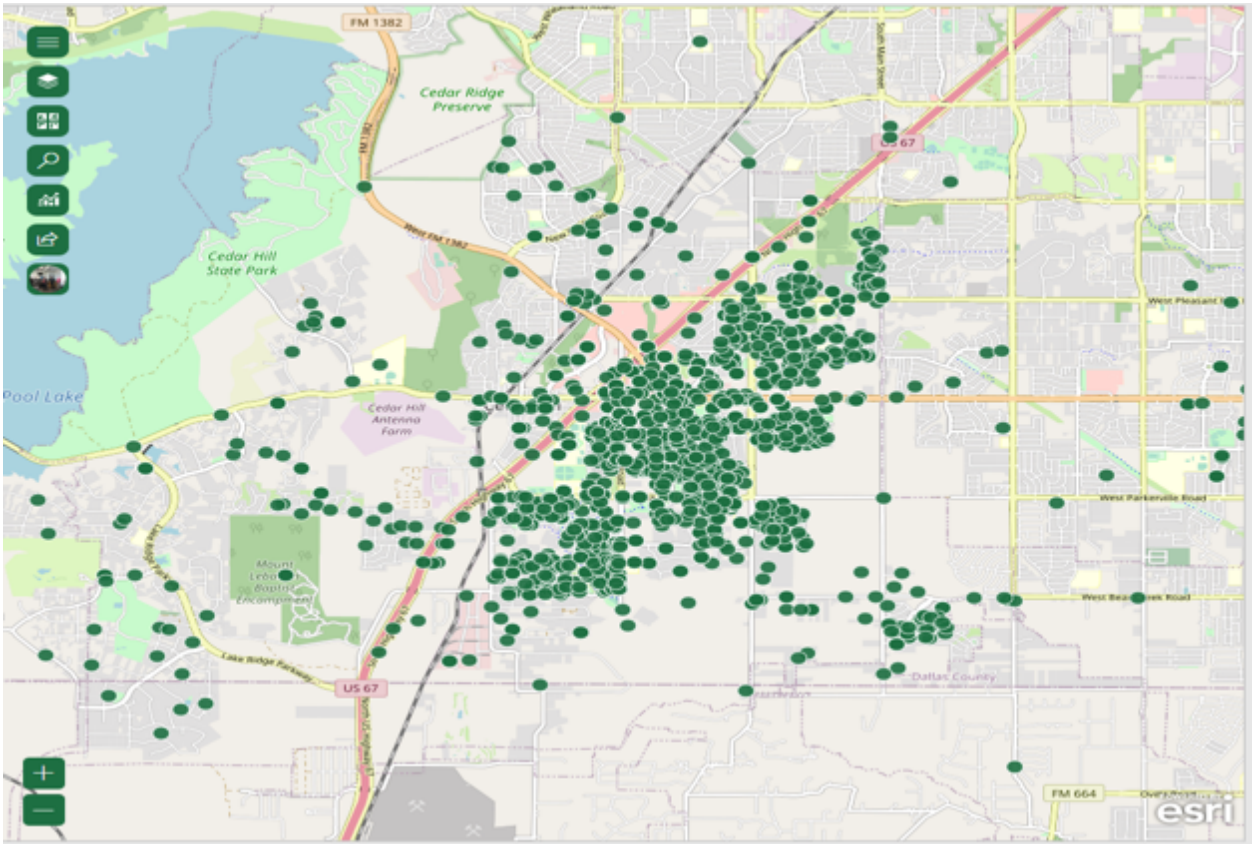
As illustrated above, peak time utilization of Medic 212 is over 20%, but below 25% so there is no immediate need for an additional medic unit. The trend in increased utilization should continue to be examined as an additional unit may be required in the next couple of years. The regional nature of this pattern was also discussed with the automatic aid partners and there is support for a peak time EMS unit that could be shared by the communities of Cedar Hill, Desoto, and Duncanville. Data was provided to the project team to further illustrate that regional demand on EMS units in DeSoto and Duncanville.

The following maps illustrate the locations of calls for service for each ambulance. Each dot point represents a single address and may signify a single response or multiple responses to the address. Calls on the east side of Highway 67 and in the area of the proposed fire station 215 represent a large portion of the emergency medical responses.

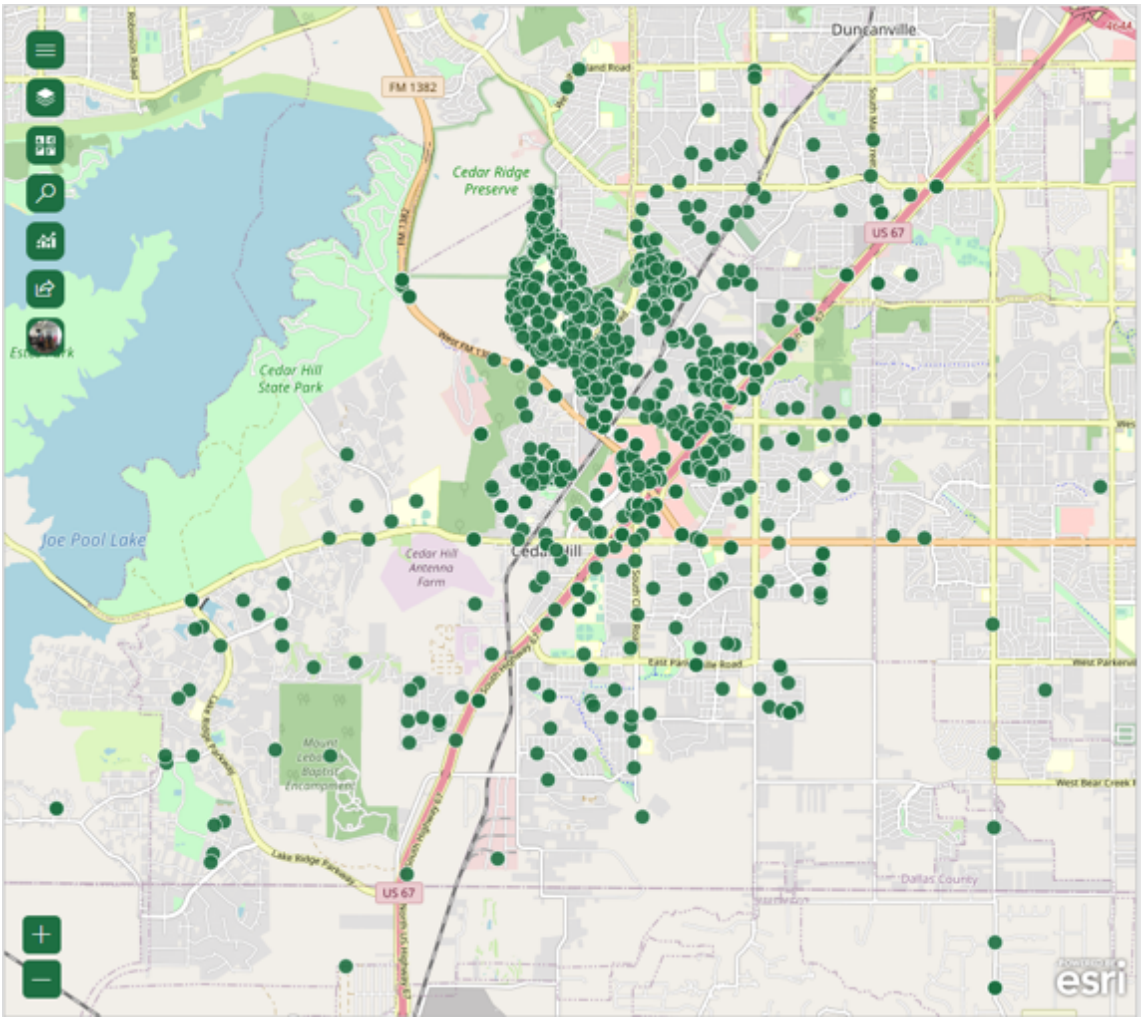
Medic 211 – 2021 Calls for Service



Medic 212 – 2021 Calls for Service



Medic 213 – 2021 Calls for Service



The following tables illustrate the EMS call demand in DeSoto and Duncanville over the past three (3) years.

DeSoto EMS Responses by Year

Unit	2019	2020	2021
M261	2,297	2,360	2,625
M262	2,515	2,443	2,881
M263	2,234	2,120	2,758
M267	46	8	2
Total	**7,092**	**6,931**	**8,266**

Duncanville EMS Responses by Year

Unit	2019	2020	2021
M271	2,592	2,546	2,922
M272	2,901	2,590	2,986
Total	**5,493**	**5,136**	**5,908**

As illustrated above, both DeSoto and Duncanville are experiencing an increased demand for EMS services with DeSoto demand increasing 16.6% and Duncanville demand increasing 7.6% since 2019.

In terms of unit availability, the following are the utilization rates for the EMS Units in DeSoto and Duncanville in 2021.

DeSoto EMS Unit Utilization Rate 2021

Unit	Hours Used	Utilization Rate
M261	1,769	20.1%
M262	2,029	23.2%
M263	1,997	22.8%

Duncanville EMS Unit Utilization Rate 2021

Unit	Hours Used	Utilization Rate
M271	2,026	23.1%
M272	2,074	23.7%

As was the case in Cedar Hill, the automatic aid agencies are also experiencing utilization rates over 20%, which shows a regional strain on unit availability in the EMS response system.

(6.2) Concurrent Calls

It is common for an emergency services system to have multiple requests for service occurring simultaneously. The larger the system the more frequently this will occur and with the appropriate resources this can be handled efficiently.

Calls	2019	2020	2021	Total	%
1	2,050	2,239	2,401	6,690	34.99%
2	1,824	1,870	2,345	6,039	31.59%
3	976	962	1,525	3,463	18.11%
4	490	406	756	1,652	8.64%
5	192	142	329	663	3.47%

6+	145	100	366	611	3.20%
Total	**5,677**	**5,719**	**7,722**	**19,118**	**100%**

As illustrated above, 35% of the time there is one emergency call occurring when units are engaged on an emergency call. 32% there are two calls occurring simultaneously and 18% of time three calls at the same time. The remaining 15% involve four (4) or more calls at the same time. Typically, emergency calls involve more than one unit to respond to effectively mitigate the emergency, therefore there are times when the Cedar Hill system is completed strained, and resources exhausted due to emergency call demand. This can explain the increase in travel time performance, as call concurrence often results in units responding from outside their first due area which prolongs travel times. This may also explain the strain realized on the EMS system as these calls represent 68% of service demand over the past three (3) years.

To assist with the increased service demands and ensure the Department can adapt to changing situations, the City should adopt a flexible staffing model by adding two (2) personnel to the daily shift staffing model, allowing Department leadership to adjust the service model based on trends or changes in City dynamics. Staffing needs and trends that can be positively impacted by implementing this model include the following:

- Supplementing fire response based on fire station staffing levels, reducing the need to use overtime to backfill vacant positions
- Serve as a first responder unit to reduce wear and tear on heavy apparatus
- Offset ambulance utilization rates during peak hour staffing needs
- Respond to weather related emergencies such as ice storms, flooding, etc.
- Maintain readiness and response during drought or conditions favorable for wildland fires
- Pandemic or other responses outside the scope of normal emergency services
- Ensuring appropriate staffing for dedicated units required for special events, sporting venues and other City activities
- Serving as community paramedics and/or providing staffing for behavior response unit.

Recommendation:

Adopt a flexible staffing model that will add 2 personnel to the daily staffing of each shift to allow Department leadership to adjust the service model and daily staffed apparatus based on trends and city dynamics.

6. Emergency Medical Services

Emergency Medical Services provided by fire departments have continued to evolve over the years. Recent trends have included the formation of Community Health Programs. Currently Cedar Hill has an Assistant EMS Chief with six (6) recently implemented Medical Operation Technicians (MOT's) overseeing all components of the EMS system for the City. The duties and responsibilities of this position include:

- Coordination of EMS training
- Managing community training programs for CPR, AED and stop the bleed
- Ensuring compliance with the Quality Assurance/Quality Improvement requirements set by the Medical Director
- Ordering EMS equipment and supplies
- Serving as the Healthcare information Privacy Protection Act officer
- Working as a liaison with the Medical Director
- Managing ePCR and asset tracking programs
- Managing the infectious disease program
- Conducting new personnel EMS orientation
- Conducting EMT and Paramedic recertification and skill audits
- Statewide coordinator for AMBUS requests
- Contract management for EMS
- 1st responder resiliency program oversight for State and Federal Grant (9 cities)
- All responses to declared pandemics for testing, prevention, and administration
- Administration of community clinics

As illustrated by the vast array of responsibilities of the EMS Assistant Chief, Cedar Hill has already moved in the direction of administering and providing community health programs. The next step is to ensure appropriate support to the Assistance Chief and continued evolvement of the Community Paramedicine program.

The program can evolve to address the increasing calls for service and the medical needs of individuals abusing the emergency medical services system. Partnering with other services in the City and County, such as the new hospital once it is complete and operational, the program can be designed to reduce the number of calls for service and to help those individuals in receiving the medical assistance they may need. The goal of such a program is to reduce the number of EMS calls for service, reduce strain on the hospital emergency room and ensure individuals are provided access to non-emergency services to fulfill their needs. Long term this reduces the need for additional ambulances and EMS personnel for emergency response.

Hiring a Community Paramedic or including this program into the flexible staffing model will allow the City to create a collaborative effort with social services to ensure the resident receives and is directed to the appropriate resource. The addition of a community paramedic will seamlessly integrate with the community social work program already in place with Parkland Hospital. As a team, the community paramedic and Parkland social worker can identify available social services to connect community members to appropriate resources.

Recommendations:

Add an EMS Captain to the EMS Division to assist in supporting the Assistant Chief and managing current EMS program needs.

Develop a plan for implementing a Community Paramedicine Program and hire a Community Paramedic to implement the plan.

Work with the DeSoto and Duncanville Fire Department leadership on the implementation of regional peak demand time EMS transport medics based on trends and call demand.

3. Essential Functions

The primary purpose of the Cedar Hill Fire Department is to respond to and mitigate fire and medical emergencies in the City. To support these responses, there are a variety of other functions and responsibilities the Fire Department must perform such as fire prevention, training, and emergency management. Historically the fire service has been tasked only with fire suppression however, in the past few decades there have been changes that now entails a fire protection system to provide all-risk services to the community. These changes have resulted in fire departments taking on responsibility for technical and heavy rescue, hazardous materials response, emergency medical service delivery and community health initiatives. In Cedar Hill training shares a regional training chief with Desoto and Duncanville and an emergency management coordinator with Duncanville, Desoto and Lancaster are part of an interlocal agreement between the participating cities. These areas will be discussed further in the Regionalization Chapter.

Fire Prevention

Fire prevention and loss control is the first defense against unwanted fires. The goal of any fire prevention program is to prevent the fire from occurring, prevent the loss of life, reduce the severity of a fire if one does occur, and if a fire does occur to enable the fire suppression forces to perform their tasks more effectively. These goals are accomplished through pre-planning, fire code compliance inspections, public education, community risk reduction programs and the plan review before a building is built.

Plans for new developments and commercial buildings are reviewed by the Fire Department in conjunction with the Development Review Committee (DRC) not only to ensure code compliance but also to ensure access and water supplies are adequate. As well, there are fire protection systems and other specialized systems that require closer scrutiny and inspections to ensure they are fully code compliant.

(1) Division Management

The Fire Prevention division is led by the Fire Marshal and employs one (1) Fire Inspector. The key duties of this division include:

- Education and enforcement of the City Council approved fire code ordinance.
- Advising property owners, developers, and City staff members of fire code requirements.
- Attendance at weekly new construction meetings with developers, project managers, and various trade contractors (fire protection systems, electrical, and

mechanical).

- New construction inspections and conducting acceptance tests of new fire protection systems
- Oversee ongoing inspections of commercial occupancies to include, schools, hospitals, and public facilities
- Commercial plan review turnaround in 72 hours of submittal
- Investigation of fires with unknown causes
- Manage the development and delivery of public education efforts, including
  - School Fire Prevention Training (Life and Fire Safety Team and Fire Prevention Month)
  - Citizens Fire Academy
  - Teen Fire Academy
  - Fire Explorer Program
  - Fresh Start Juvenile Fire Setter Program
  - Coordination of Fire Department outreach programs during Thanksgiving and Christmas
- Management of Knox Box system to ensure immediate access to all sprinkled and commercial occupancies with fire alarm systems.
- The Fire Marshal also has collateral duties to include:
  - Conducting background investigations on new employee applicants
  - Investigating internal complaints on Fire Department personnel
  - Serving on the City Development Review Committee Team
  - Serving on the ad Hoch committee for the Texas Fire Marshal Association.

(2) Division Workload

The following table illustrates the tasks undertaken by the Fire Prevention Division over the past two fiscal years:

Fire Prevention Activities FY 20 - 21

Activity	FY20	FY21
CO Inspections	61	64
Plan Review	208	260
Permits Issued	65	54
Commercial Fire Inspections	387*	560*
Fire Investigations	7	22
School Prevention Programs	8	0
Citizen Fire Academy**	0	0
Teen Fire Academy**	0	0

*Number reduced to only essential businesses due to COVID 19 restrictions, all company inspections cancelled/limited
**Classes cancelled due to COVID 19 restrictions

As illustrated above, COVID 19 reduced the typical workload of Fire Prevention personnel due to restrictions. During this time, they conducted additional activities, including:

- Producing and updating COVID 19 safety messages
- COVID 19 Safety Planning and weekly check up with senior living communities
- Review, revision and approval of Government Center, Recreational Center, and Library COVID 19 reopening plans
- Developed an emergency safety plan for Bridges Safe House
- COVID 19 vaccine clinic at Fair Park
- COVID 19 vaccine deployment

Using the number of buildings to be inspected as a workload indicator varies by agency. This is because as the complexity and size of the occupancies vary, each will require a different amount of time to inspect properly. Target workloads are based on our experience working with hundreds of agencies across the United States. Cedar Hill has divided their buildings by occupancy type with the Fire Prevention personnel responsible for the more complex and higher hazard occupancies such as public assembly and institutional/educational occupancies and shift personnel responsible for lower risk occupancies in their district. The Fire Prevention personnel divide their inspections using east and west of Hwy 67 as the border. The Department currently has a goal established of inspecting all commercial occupancies annually but is experiencing a delay due to the time for conducting appropriate inspections and it is taking over 18 months to complete all inspections required to occur in the City annually.

The following table illustrates the inspection schedule for the fire prevention inspections

Inspection Schedule

Month	Occupancy
January	Restaurants
February	High Hazard Warehouse
March	Day Care Centers and Churches
April	Miscellaneous Occupancies
May	Baptist Encampment
June	Public Schools
July	Private Schools
August	Multi-Family Occupancies
September	Foster / Group Homes
October	City Buildings
November	Miscellaneous Occupancies
December	Miscellaneous Occupancies

The following table illustrates the number of occupancies in the City and the expected staffing to conduct appropriate inspections on these occupancies:

Fire Safety Inspection Target Staffing

	Occupancies	Target per Staff	Current Staff	Staff Needed
Inspections	1,842	400	1.5*	4.61
Follow-Up Inspections	276	500		0.55
Total Inspections	**2,118**			**5.16**

* 1.5 staffing is used due to the other duties of the Fire Marshal.

There are approximately 1,842 occupancies to be inspected and it is estimated an average rate of 15% of those will require follow-up inspections for corrections of violations. Using 300 inspections per year for each inspector and to include follow-up inspections, the needed staffing is six (6) inspectors to handle the workload.

As noted earlier the Cedar Hill Fire Department is utilizing 12 shift personnel to assist in inspections, which is a best practice and increases the efficiency of staff time. It is estimated that shift personnel can conduct approximately 800 occupancies inspections per year, or 200 per station. This reduces the total of inspections for Fire Prevention personnel to 1,042. Using the same factor as above the required inspectors required in Cedar Hill is 3. To reduce this number further, the Department can amend the inspection frequency of commercial occupancies to annual inspections of high-risk occupancies, occupancies with built-in fire protection systems and occupancies with high life loss risk such as hospitals, schools, jails, restaurants, bars, and large assembly occupancies. General office and low risk occupancies could move to an inspection schedule of every other year.

Factoring the other duties assigned to this division and the desired direction to move from providing only fire prevention services to becoming a full-service community risk reduction unit, the following staffing changes are recommended in Fire Prevention. The changes will also improve the inspection time to achieve the inspection timelines established by the Department and ensure the Fire Marshal is available to meet the 72-hour plan review goal from time of submittal while effectively managing, evaluating, and implementing customer focused fire prevention processes.

Recommendations:

Increase fire inspector staffing to a total of 2 fire inspectors.

Reduce the Fire Marshal's role in conducting on-going inspections to allow more focus on new development and implementation of a more customer focused fire prevention process for citizens, developers, and stakeholders.

Evaluate the current inspection software to ensure it meets the needs of both fire prevention inspectors and shift personnel while conducting inspections.

Develop a community risk reduction plan that addresses fire and non-fire risks in the community that can benefit from educational or mitigation efforts.

Add a community risk reduction/inspector position to execute the plan and assist with required inspections as needed.

4. Staffing Projections

The previous chapters detailed current staffing needs for the Cedar Hill Fire Department based on current service levels and job tasks. The following chapter builds upon current staffing needs by forecasting future staffing needs based upon assumed growth and development trends through the year 2032.

1. Data Collected to Conduct the Projections Analysis

A critical component of the analysis is understanding of past and future development trends in the city. Cedar Hill has experienced steady growth over the last 10 years, and they do not have official population projections. Therefore, the project team was tasked with developing their own population projections based on future buildout scenarios, past residential development trends, and availability of buildable land in the City. To be able to individually forecast population and service needs a variety of data sources were used to construct an interrelated series of estimates.

The project team collected data from several sources to project both population and service needs over the next decade, including the following:

- 2010 U.S. Census data at the individual block level, which includes both population and housing unit figures.
- 2019 American Community Survey (ACS) prepared by the U.S. Census Bureau at the block group level of geography, including estimates for population and housing units.
- 2020 population estimates from the U.S. Census Bureau.
- Municipal and extra territorial jurisdiction (ETJ) boundary GIS layers.
- Current and future land use GIS layers.
- Other GIS base layer data to better understand geography, such as roads, topography, and hydrology.
- Computer aided dispatch data covering calendar years 2019 - 2021.
- Assumption of maximum buildout of 31,958 residential unit (Planning Department provided).
- Average of 3.0 residents per residential unit.
- Maximum build-out population of 95,184 residents.

The latter of these served as the central guide for the population forecasts, providing total population forecasts for Cedar Hills through 2032.

2. Projected Population Methodological

While the data collected includes a variety of information that is critical to determine future service needs, the most important component was the historical calls for service data and future population buildout scenarios. The maximum residential buildout data was used as the primary basis for determining projected population and tempering them over the foreseeable future. The following steps was used to project future population for the City.

- Extrapolated the population changes from 2010 to 2020 to project the 10 – year residential growth. 2020 U.S Census Bureau census data was used as the basepoint for projecting population in Cedar Hill.
- Population projections were separated based on the availability of developable/re-developable residentially zoned areas within the City limits.
- Applied the average of 3.0 individuals per housing unit.
- Multiplied housing units by 3.0 occupants to project population annually through 2032.

These steps were utilized to project the housing units and subsequent population annually through 2032. The following table summarizes the population projections.

Population Projections

2022	2027	2032
50,801	55,290	58,969

The population of Cedar Hill is projected to increase from 50,801 in 2022 to 58,969 in 2032. This is a population increase of 16.1% or 8,168 residents over the next 10 years.

3. Analysis of Projected Service Needs

The following sections build upon the analysis of expected development and residential growth to examine its effects on Fire Department operational resources.

(1) Calls for Service Projections

Calls for service projections can be made from past calls for service data for the prior years. Calls for service can change over years, but they remain stable based on population and development type. It should be noted an increase/decrease in calls for service does not directly correspond to a need to increase or decrease staffing as each station is responsible for covering a specific district. The increase in call demand will impact unit

utilization and drive the need for additional units/stations to support the emergency response system.

The project team analyzed the calls for service based on patrol beat within the City. Understanding that each geographic area and/or subdivision is unique and that the calls for service is predicated on many variables. This analysis was used to project calls for service in current developed areas along with areas that are undeveloped. The following table summarizes the projected change in calls for service by subdivision and geographic area. Calls for service was projected based on the current ratio of calls for service per population level.

Calls For Service Growth

Service Area	2021	2027	2032
Fire Calls	742	807	861
EMS Calls	4,658	5,068	5,408
Other Calls	2,061	2,242	2,392
Total	**7,814**	**8,117**	**8,661**

As seen in the previous table overall, calls for service are expected to increase from 7,814 in 2022 to 8,661 in 2032. This is an increase of 10.8%.

(2) Operations Projections

As detailed in the Operations chapter, there will be a need for an additional fire station to be constructed to serve an area both east and west of Hwy 67 that is experiencing and will continue to experience growth and has a gap in response time reliability for first due units. This area currently has first due unit response time challenges and difficulty developing an effective response force within 8 minutes travel time.

The station is in an area that will eventually require an engine, truck, and ambulance to maximize effectiveness of service and ensure the current ISO rating can be maintained due to the height and size of planned development in the area. Initially the station should be staffed with personnel that can cross-staff an engine and truck company and additional staffing added for an ambulance at a time when current EMS utilization units exceed 25% and further 24-hour capacity is needed to support the EMS system.

There will also be the need to begin planning for a station to serve the southeast portion of the City. There may be opportunities for a joint station or cost sharing options to reduce the financial impact of this station by working with the City of DeSoto as GIS analysis indicated a gap in service that covers both southeast Cedar Hill and northwest DeSoto.

(3) Comprehensive Staffing Projections

The service need projections have provided the basis of the methodology used to determine staffing needs of core functions that scale directly with service needs, including operations and support personnel. From this important foundation, the staffing needs for every other department function are then able to be developed. It is critical that the process of developing projections for the entire department be done position by position, rather than scale the department, given that the factors contributing to an individual position's staffing needs are unique and different from those of another position.

(4) Projection Trigger Points

As detailed previously in the chapter, five primary scaling factors are involved in determining how the staffing needs for an individual role change as growth occurs in the jurisdiction. The needs for an individual position may be based on:

- Service needs and related workloads (e.g., Fire Inspector scales to call for service workloads).
- Fixed position staffing (Fixed daily staffing requirements for engines, trucks, and ambulances).
- Spans of control and management responsibilities (e.g., patrol sergeant staffing is set by achieving a targeted span of control).
- Size of command/division or organization (e.g., human resources staffing needs based on number of positions in the department they support).
- Non-scalable (e.g., there is only one Fire Chief).

Using these scaling factors, the projection analysis determines the staffing levels needed over the next ten years. The City should use these guidelines as well as trigger points such as unit utilization and travel time performance to ensure staffing adjustments are planned for and occur as the trigger points are realized.

The following trigger points are designed to allow officials to determine when the need occurs for additional staff or resources to continue to provide effective emergency service delivery. These were developed as part of the Center for Public Safety Excellence Standards of Cover preparation guide but adapted to fit the 6-minute recommended travel time standard.

Trigger Points for New Fire Stations

Choices	Distance	Response Time	Percent of Calls	Building Inventory
Maintain status quo	All risks within 1.5 miles of the existing station(s)	First due units within 6 minutes 90% of the Time	100% of calls in district	Existing inventory and infill
Temporary facilities or minimal staffing additions	Risks 1.5 to 3.0 miles from existing station(s)	First due units exceed 6 minutes travel time 10% of the time	More than 10% of calls in other districts	New building inventory has similar risk distribution to existing conditions
Permanent station needed	Risk locations are over 4 miles from an existing station	First due units exceed 6 minutes travel time over 20% of the time	More than 25% of calls are in other districts	New building inventory has increased 35%
Permanent station essential	Outlying risks are over 5 miles from an existing station	First due units exceed 6 minutes travel time 30% or more of the time	More than 35% of calls are in other districts	New building inventory has increase 50%

Recommendation:

To provide the same level of service that is provided now as growth occurs and implement improvement noted in this report and time staffing additions as trigger points for additional resource needs are realized.

6. Summary of Recommendations

The project team met with the leadership of the Fire Department to determine the strategic direction of the Fire Department based on the data, city dynamics, stakeholder input and best practices in fire and EMS service delivery.

The strategic objective chosen to best meet the needs of the community was coined “The Big 12”. The following list illustrates the priorities of the Fire Department in achieving “The Big 12”.

THE BIG 12

1. New Fire Station 215
2. Comprehensive Facility Assessment
3. Adoption of Dispatch and Responsive Performance Plan
4. Adoption of Flexible Staffing Model for future growth
5. Replacement of current Computer Aided Dispatch System
6. Beginning the Fire Service Accreditation Program
7. Beginning a Formal Community Risk Assessment Program
8. Develop an EMS Captain Position
9. Implement a Community Paramedic Outreach Program
10. Develop and Alternative Vehicle Response Plan
11. Develop a Regional Inter-Agency Master Plan
12. Conduct a Site Study and Plan for a Regional Training Center

In order to achieve the previous objectives, the following guiding statement was developed.

Our success will hinge on our ability to adhere to the following:

- Moving the dial as system dynamics change
- Remaining focused, but flexible
- Keeping it simple and clear
- Recognizing this is the starting point

The following table provide a comprehensive list of the recommendations made in the

report.

Administration

Continue to utilize the current organizational structure in the Fire Department and add additional supervisors when spans of control exceed 7 personnel.

Add an EMS Captain position to support the administration of the EMS system.

Adopt the ISO Class 1 administrative staffing model to support the many critical fire department operational objectives.

Add an administrative staff position to assist with the functions of Accreditation Coordinator, Grant Manager and Reimbursement Specialist. Begin the process of applying to become a candidate agency for accreditation through the CPSE.

Operations

A complete facility assessment and plan should be completed by a licensed architect to allow a full cost benefit of each option.

Implement as needed alternative vehicles to respond to non-emergency and service calls to decrease the maintenance, fuel costs, and extend life span of the larger fleet vehicles.

Formally adopt a 6-minute travel time standard for arrival of the first-due apparatus 90% of the time for emergency calls.

Work with the Southwest Regional Emergency Communication Center to improve call processing times to achieve the 1-minute goal established by NFPA 1211.

Develop a plan to improve the turnout time performance to both fire and EMS Calls.

Develop a system to analyze and report monthly on turnout time performance by shift and station.

Adopt a flexible staffing model that will add 2 personnel to the daily staffing of each shift to allow Department leadership to adjust the service model and daily staffed apparatus based on trends and city dynamics.

Begin planning for design and construction of the planned future station 215 in the area of Pleasant Run Road and North Joe Wilson Road to improve initial response time performance in this high call demand area along Highway 67.

Work with the Regional Communications Center to ensure all time stamps are accurately captured for all emergency calls for service.

Add an EMS Captain to the EMS Division to assist in supporting the Assistant Chief and managing current EMS program needs.

Develop a plan for implementing a Community Paramedicine Program and hire a Community Paramedic to implement the plan.

Essential Services

Increase fire inspector staffing to a total of 2 fire inspectors.

Reduce the Fire Marshal's role in conducting on-going inspections to allow more focus on new development and implementation of a more customer focused fire prevention process for citizens, developers, and stakeholders.

Evaluate the current inspection software to ensure it meets the needs of both fire prevention inspectors and shift personnel while conducting inspections.

Develop a community risk reduction plan that addresses fire and non-fire risks in the community that can benefit from educational or mitigation efforts.

Add a community risk reduction/inspector position to execute the plan and assist with required inspections as needed.

Projections

To provide the same level of service that is provided now as growth occurs and implement improvement noted in this report and time staffing additions as trigger points for additional resource needs are realized.

Regionalization Opportunities

Regionalization Opportunities

Increasingly, public safety agencies around the country have turned to a shared services model both for direct and support services. Regionalization offers many service advantages – for example, improving service by pooling resources. Regionalization may also yield both short- and long-term cost savings. For example, participating agencies may spread costs across larger operations, increase purchasing power, and reduce the need for capital improvement projects. There are also many challenges to regionalization and proper planning and discussion with all stakeholders must occur.

Successful regionalization efforts have typically seen an equitable sharing of benefits and costs, a common vision of desired outcomes, a strong commitment, and strong leadership. Several factors inhibit success such as a lack of support from upper management, weak leadership, soft commitment, wavering vision and goals, weak financial support, and a fundamental resistance to change.

Certain regionalization of facilities and functions currently exist in the region, such as the Southwest Regional Communications Center, the Tri-City Jail, the Tri-City Animal Shelter and Adoption Center, and the Southern Regional Response Group. There are non-public safety examples of shared services in the region too. Each of these entailed years of work to determine the best approach to operate, govern and to share costs equitably.

1. Regional Public Safety Training Center

An immediate candidate for regionalization would be a regional training center which could be utilized both for police and fire services. However, this function would also be the costliest and requiring greater planning and coordination among participants.

A regional public safety training facility is a multi-use training facility used to provide a safe training and learning environment for emergency first responders. A typical facility operates under and inter-local agreement between participating agencies. Such a facility will provide training resources, educational programs, and state-of-the-art facilities. Facilities may include the following:

- Classrooms
- Offices
- Defensive tactics training room
- Computer labs

- Chemistry labs
- Conference rooms
- Burn building
- Four-wheel drive/Rough terrain course
- Shooting ranges
- Confined space training
- Emergency vehicle operations course (EVOC)
- Residential structures with streets
- Collapsed Space
- Hazmat, rail cars

Facilities may also be made available for use by non-partnering agencies and certain sectors of the general public for a fee in order to assist with cost savings.

2. Regionalization of Police Functions

The regionalization of certain police functions may also be of benefit to participating agencies. An assessment of short term and potential long-range options should be made by the regional committee to determine the feasibility of each regionalization opportunity.

(1) Short Term Options

The following current Cedar Hill Police Department functions should be assessed in order to determine the feasibility of regionalization with other area jurisdictions:

- Crime Analysis
- Sex offender notification Unit
- Victim Services
- Crime Scene unit

(2) Future Police Functions

Addressing future policing functions is often difficult as many different variables are to be considered such as future population growth and future economic stability. The

following functions should be assessed in order to determine the feasibility of future regionalization with other jurisdictions:

- Police academy
- Gang Unit
- Violent Crimes Unit
- Repeat Offender Unit
- Human Trafficking Unit
- Crime lab
- Records Unit

3. Regionalization of Fire and EMS Functions

The regionalization of certain Fire and EMS functions may also be of benefit to participating agencies. An assessment of short term and potential long-range options should be made by the regional committee in order to determine the feasibility of each regionalization opportunity.

(1) Short Term Options

The following options should be assessed in order to determine the feasibility of regionalization with other area jurisdictions:

- **Peak Time Emergency Medical Unit**

  The concept of this service would be to explore interest in sharing the cost of a peak time ambulance to alleviate strain on the EMS system during peak call hours. This would reduce the need for several cities to add full time benefited personnel to staff an ambulance only needed during peak hours.

  The concept would be to enter an interlocal agreement similar to the one used for the Training Chief and Emergency Management Coordinator and use cost sharing equally for the purchase of an ambulance and related supplies and equipment. This cost would be shared equally with the partner agencies. Staffing responsibility would rotate between the participating communities using overtime personnel to staff the unit during those peak identified hours, typically 7a – 7p or 8a – 8p. EMS bill would be done using existing ePCR systems and the agency paying for the personnel staffing would bill and retain revenue for the peak time unit. This is similar to the automatic aid system today where when a Cedar Hill

ambulance responds to Desoto and transports a patient, Cedar bills the patient and retains the revenue.

- **Joint Entry Examinations**

  The concept of this resource sharing would be to host a joint written and practical testing for new firefighter/paramedics. Applicants could choose one or all agencies as potential employers. The agencies would benefit from an increased applicant pool and only having to conduct one written and physical agility test. Candidates also benefit as they only have to test once for multiple agencies versus testing several times which takes hours to complete.

[a] The cities of Cedar Hill and Duncanville have been working together to implement a regional freeway blocker program. This uses a blocker vehicle, which has been approved in the FY2023 budget to protect emergency service workers on freeway incidents to ensure they have a safe area to provide needed services while reducing the threat of a vehicle collision occurring during the active emergency scene.

(2) Future Fire and EMS Functions

Addressing future fire and EMS functions is often difficult as many different variables are to be considered such as future population growth and future economic stability. The following functions should be assessed in order to determine the feasibility of future regionalization with other jurisdictions:

- **Joint Fire Academy**

  If the concept of a joint training center comes to fruition, a natural next step would be to hold joint fire academies for the training of newly hired personnel. This would also line up with the joint entry examination concept as all personnel would be tested, background checks completed and a mutually agreed upon start date for an academy can be developed to train the successful candidates.

- **Regional Fleet Services**

  The maintenance of Fire and EMS apparatus and fleet vehicles is a considerable expense for fire departments. The current fleet size in Cedar Hill does not support a dedicated maintenance facility or mechanic specialty trained in maintaining emergency response apparatus. Partnering with other agencies could make this a viable option for reducing the labor costs associated with outsourcing fleet and apparatus maintenance. This service can be complete at an existing fleet maintenance location in one of the communities if there is space available for

maintaining large apparatus. A second option could be the construction of a shared facility at the joint training center if one is developed.

- **Joint Fire Station**

  In the future there may be an opportunity for a joint fire station with DeSoto to cover the southeast portion of the City as development continues in this area. DeSoto is experiencing growth in the northwest portion of their City, which makes this a possible option. The project team is currently working with the City of DeSoto on a fire station feasibility study and will further explore this option as part of that project.

4. Governance and Cost Sharing Models

While exploring regional approaches to both facilities and services, a regional governing approach should be explored. This regional governance should establish operational, executive, and management structures which provide for partnering agencies to actively participate in the ongoing administration and management of the facility or service. A similar approach is currently in place between Cedar Hill, Duncanville, and DeSoto through an interlocal cooperation agreement for regional dispatch.

Moreover, an approach to sharing costs needs to be determined for the shared services selected. Because there may be different agencies participating in different services, cost estimates cannot be developed. However, the structure should be similar (for example, based on population as a percentage against costs).

Recommendation:

An exploratory committee consisting of Cedar Hill, DeSoto, Duncanville, and Lancaster be established to evaluate the feasibility of expanding nominal regionalization of certain public safety facilities and services. An initial assessment needs to be made of which agency or agencies would participate for which services, and at what levels.

5. Diversity in Hiring

Nationally there is a great deal of attention on the lack of diversity in public safety. Public safety agencies, such as police and fire departments, should reflect the diversity of the communities they serve. However, many of these agencies still face challenges in recruiting and retaining a diverse workforce. In fact, the Commission on Accreditation for Law Enforcement Agencies (CALEA) has a standard related to agencies reflecting the community they serve. Standards 31.2.1, 31.2.2 and 31.2.3 require an analysis of the

workforce, recruitment plan and Equal Employment Opportunity Plan to address deficiencies in the diversity of the police workforce.

One of the main reasons for this lack of diversity is the historical underrepresentation of certain communities in public safety professions. Minority communities, including African Americans, Hispanics, and women, have often faced barriers and discrimination in accessing these careers. This has resulted in a predominantly white and male workforce in many public safety agencies.

The lack of diversity in public safety has negative consequences for both the agencies and the communities they serve. It can lead to a lack of trust and confidence in law enforcement and other public safety institutions among minority communities. This can further exacerbate existing tensions and hinder effective community policing efforts.

Moreover, a lack of diversity in public safety agencies can limit their ability to effectively respond to the needs of diverse communities. Different communities have unique cultural, linguistic, and social needs that may require specific approaches and strategies. Without a diverse workforce, agencies may struggle to understand and address these needs appropriately.

To address this issue, proactive measures need to be taken to increase diversity in public safety agencies. This includes targeted recruitment efforts in minority communities, providing resources and support for underrepresented individuals to pursue careers in public safety, and creating inclusive and supportive work environments that value diversity.

Additionally, agencies should implement cultural competency training programs to ensure that all personnel have the necessary skills and understanding to work effectively with diverse populations. This can help bridge the gap between law enforcement and the communities they serve, fostering better relationships and improving public safety outcomes.

To address diversity, the City of Cedar Hill is taking intentional steps to better serve their communities, build trust, and improve overall public safety outcomes. These efforts will be made to break down barriers and increase representation of underrepresented groups in these professions. The following is the Public Safety Diversity Statement for the City:

The City of Cedar Hill stays committed to fostering a culture of inclusivity and diversity within the field of public safety. We believe that a diverse workforce is essential for effectively serving our communities and ensuring public safety for all.

We recognize that diversity encompasses a wide range of characteristics, including but not limited to race, ethnicity, gender, sexual orientation, age, disability, and socio-economic background. By embracing and valuing these differences, we create an environment that encourages the sharing of unique perspectives, experiences, and ideas. We understand that diversity strengthens our ability to address the complex challenges faced by our communities and enhances our capacity to provide equitable services.

To promote diversity within our organization, we are committed to:

1. Recruitment and Retention: Actively seeking out and recruiting individuals from diverse backgrounds to ensure a broad representation of experiences and perspectives within our workforce. We strive to provide equal opportunities for all qualified candidates and are dedicated to retaining a diverse and inclusive team.

2. Cultural Competency: Providing ongoing training and development opportunities to enhance cultural competency among our staff. This includes fostering an understanding of diverse cultures, beliefs, and practices to better serve the diverse needs of the communities we protect.

3. Inclusive Policies and Practices: Implementing policies, practices, and procedures that promote fairness, equity, and inclusivity within our organization. We work to eliminate biases and discriminatory practices in all aspects of our operations, from recruitment and hiring to promotions and assignments.

4. Community Engagement: Actively engaging with our diverse communities to build trust, foster positive relationships, and ensure that our services are accessible and equitable for all. We value community input and collaboration to better understand and address the specific needs and concerns of different populations.

5. Accountability and Continuous Improvement: Regularly assessing our progress in promoting diversity and inclusion, setting measurable goals, and holding ourselves accountable. We are committed to continuously improving our efforts and adapting to the evolving needs of our communities.

These efforts have proven to be effective in increasing the diversity of both the police and fire departments in Cedar Hill since 2015. The 2015 and 2023 diversity numbers are shown in the following table:

Workforce Diversity

	2015	2023	Change
Fire Department	14% Minority	24% Minority	↑ **10%**
Police Department	31% Minority	42.5% Minority	↑ **11.5%**

As illustrated above, the Fire Department has increased minority representation 10% the past eight (8) years while the Police Department has increased minority representation 11.5%.

Appendices

Appendix A – Cedar Hill Community Survey / Police

Introduction

The scope of work for the Public Safety Organizational Assessment included a survey to gauge the attitudes and perceptions of community members regarding the services provided by the department. MCG developed this community survey with input from the City Manager's Office and public safety administration and it was made available online. Outreach efforts were also coordinated at community events (iPads were available to facilitate the completion of this survey). A version of this survey was translated into Spanish for those members of the Cedar Hill community who are Spanish speakers[8]. These efforts resulted in a total of 290 responses[9].

The following sections summarize the responses regarding the Police Department.

Executive Summary and Key Highlights

While many of these topics are expanded upon in the following sections, there are several key takeaways to note:

- There is general satisfaction with the Cedar Hill Police Department in terms of their services rendered.
  - Of those individuals who have requested police services in recent years, there is a high level of satisfaction with timeliness and capability of responding officers.
  - Burglaries and theft, issues relating to juveniles, and crime related to City growth are the three most pertinent crime issues according to City residents.
  - Although gang issues are not in the top three most pertinent crime issues among most residents, those who do think it is an issue feel it has gotten worse to some degree over the past several years.

[8] There was a total of two (2) responses from the translated survey. These responses were combined with the English responses for analysis.
[9] Project staff inserted a filter question at the beginning of the survey to ensure that respondents either 1) lived or 2) worked within the City limits of Cedar Hill. A total of 16 respondents indicated that they did not meet one of these two criterion. They were eliminated from all subsequent analyses.

Demographics and Background Information

Over 40% of respondents have been residents of the City of Cedar Hill for 21 years or more; 69% have been residents for more than 10 years.

Length of Residency	%	#
Fewer than 3 years	6%	17
3 - 10 years	25%	73
11 - 20 years	29%	85
21 years or more	40%	115

Almost half (49%) of respondents indicate being White or Caucasian, followed by Black or African American (21%) and Hispanic or Latino (17%).

Race/Ethnicity	%	#
White or Caucasian	49%	117
Black or African American	21%	50
Hispanic or Latino	17%	41
Asian or Asian American	1%	2
American Indian or Alaska Native	0%	1
Native Hawaiian or other Pacific Islander	0%	0
Middle Eastern or North African	0%	0
Mixed race	5%	11
Prefer Not to Answer	7%	17

Police Satisfaction

The following matrices present results of multiple-choice questions asking respondents to indicate their level of agreement (i.e., Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD), or No Opinion (NO)) with the statements listed below. Results are presented with a shading of blue in correlation with the level of agreement (or disagreement) with the statements listed. The bolded percentage in each row indicates the highest response to the accompanying statement. Questions were asked in a positive manner to allow for identification of statements in which employees agreed or disagreed.

#	Statement	SA	A	D	SD	NO
1	I am satisfied with the overall performance of the Cedar Hill Police Department.	44%	44%	3%	4%	5%
2	I frequently see police patrols around the City.	31%	47%	16%	5%	2%
3	I feel safe when alone outdoors in Cedar Hill during the daytime.	38%	49%	7%	3%	3%
4	I feel safe when alone outdoors in Cedar Hill during the nighttime.	12%	40%	29%	9%	9%

Results indicate that citizens generally have very positive outlooks regarding their satisfaction with services provided by the police department.

To further our understanding of these important topics, project staff asked about whether respondents had requested police services in the past 2 years and their satisfaction with these responses. Results are below:

Service Request - Police	%	#
Yes	46%	119
No	54%	138

A total of 119 of the respondents to this survey indicated that they have made a request for police services in the past three years. The following questions regarding satisfaction with requested police services were only asked to those individuals who responded in the affirmative.

Timely Response	%
Yes	86%
No	14%

*Only respondents who indicated that they have requested services from CHPD were able to respond to this question.

Results show that individuals who requested police services in the past three years, 86% indicated that the police department had a timely response to their request. Further, 86% of respondents indicated that their problem was adequately address by responding officers.

Problems Addressed	%
Yes	86%
No	14%

*Only respondents who indicated that they have requested services from CHPD were able to respond to this question.

The last question asked of those who had requested police services in the past three years was regarding their perception of the effectiveness of CHPD officers with their request. Results indicate that over half of respondents (51%) thought CHPD was "Excellent", with another 32% thinking CHPD officers were "Good".

Services Perception - Police	%
Excellent	51%
Good	32%
Fair	14%
Poor	2%

*Only respondents who indicated that they have requested services from CHPD were able to respond to this question.

Resident Perceptions of Crime

Respondents were asked about their perception of changes in crime in the City in the past 5 years. Results are showed below:

Crime Perception	%	#
Getting much better	8%	20
Getting somewhat better	12%	31
Staying about the same	31%	79
Getting somewhat worse	28%	71
Getting much worse	12%	30
No Opinion	10%	25

Results show that most residents think that crime has either stayed the same (31%) or getting somewhat worse (28%) compared to the past 5 years. Overall, 40% of respondents indicate that they feel that crime is getting worse to some degree compared to only 20% of respondents who think that crime is getting better to some degree.

Respondents were asked to identify their top three public safety issues. The highest identified problem, as shown below, are burglaries and thefts (68%), Issues related to juveniles (35%), Increases in crime related to City growth (35%), and Drugs/Narcotics (27%) also received large numbers of responses.

Public Safety Issue	%	#*
Burglaries and theft	68%	175
Issues related to juveniles	35%	90
Increases in crime related to City growth	35%	89
Drugs/Narcotics	27%	70
Violent crime	23%	58
Traffic issues	22%	56
Domestic violence	16%	41
Disorderly conduct, noise	14%	35
Gang Activity	11%	29
Homelessness-related Issues	7%	19
Vandalism and graffiti	5%	12
I don't know/Have no opinion	5%	12
Other (please specify)	4%	10

*Respondents were able to select up to three.

Perceptions of Gang Activity in Cedar Hill

If respondents selected Gang Activity in the previous “Top 3 Public Safety Issues” question, a secondary set of two questions were asked to better gauge residents’ opinions regarding this.

Of the 29 respondents who indicated that Gang Activity was of their Top 3 Public Safety Issues, 28 responded to these additional questions. None of these residents indicated that gang activity has gotten better in the past 5 years, with a total of 64% of respondents indicating that they feel it has gotten worse to some degree. The remaining 36% think that it is a Top 3 Public Safety Issue, but the problem has remained the same.

Gang Perception	%	#*
Gotten much worse	25%	7
Gotten slightly worse	39%	11
Stayed the same	36%	10
Gotten better	0%	0
Gotten much better	0%	0

*Only respondents who indicated "Gang Activity" was one of the top 3 public safety issues were able to respond to this question.

These respondents were also asked to respond to the following statements relating to gang activity in Cedar Hill. Consensus shows that respondents feel that gang activity makes them feel unsafe during the night but largely have no opinions relating to other aspects of this issue.

#	Statement*	SA	A	D	SD	NO
1	Gang activity makes me feel unsafe in the community during the day.	18%	21%	21%	4%	36%
2	Gang activity makes me feel unsafe in the community during the nighttime.	46%	36%	0%	0%	18%
3	The Cedar Hill Police Department does an adequate job in addressing gang-related issues in the community.	7%	39%	11%	0%	43%

*Only respondents who indicated "Gang Activity" was one of the top 3 public safety issues were able to respond to this question.

Appendix B – Cedar Hill Community Survey / Fire

Introduction

The scope of work for the Public Safety Organizational Assessment included a survey to gauge the attitudes and perceptions of community members regarding the services provided by the department. MCG developed this community survey with input from the City Manager's Office and public safety administration and it was made available online. Outreach efforts were also coordinated at community events (iPads were available to facilitate the completion of this survey). A version of this survey was translated into Spanish for those members of the Cedar Hill community who are Spanish speakers[10]. These efforts resulted in a total of 290 responses[11].

The following sections summarize the responses regarding the Fire Department.

Executive Summary and Key Highlights

While many of these topics are expanded upon in the following sections, there are several key takeaways to note:

- There is general satisfaction with the Cedar Hill Fire Department in terms of their services rendered.
  - Of those individuals who have requested fire services in recent years, there is a high level of satisfaction with timeliness and capability of responding personnel.
  - Respondents were positive regarding the CHFD handling of testing and other services provided related to the COVID 19 pandemic.
  - Respondents were positive about the effectiveness of public education programs.

[10] There was a total of two (2) responses from the translated survey. These responses were combined with the English responses for analysis.
[11] Project staff inserted a filter question at the beginning of the survey to ensure that respondents either 1) lived or 2) worked within the City limits of Cedar Hill. A total of 16 respondents indicated that they did not meet one of these two criterion. They were eliminated from all subsequent analyses.

Demographics and Background Information

Over 40% of respondents have been residents of the City of Cedar Hill for 21 years or more; 69% have been residents for more than 10 years.

Length of Residency	%	#
Fewer than 3 years	6%	17
3 - 10 years	25%	73
11 - 20 years	29%	85
21 years or more	40%	115

Almost half (49%) of respondents indicate being White or Caucasian, followed by Black or African American (21%) and Hispanic or Latino (17%).

Race/Ethnicity	%	#
White or Caucasian	49%	117
Black or African American	21%	50
Hispanic or Latino	17%	41
Asian or Asian American	1%	2
American Indian or Alaska Native	0%	1
Native Hawaiian or other Pacific Islander	0%	0
Middle Eastern or North African	0%	0
Mixed race	5%	11
Prefer Not to Answer	7%	17

Fire Department Satisfaction

A series of questions were asked of respondents asking them to rate their experience or satisfaction with services provided by the Cedar Hill Fire Department. Overall responses indicate that residents have an overwhelming satisfaction with practices of CHFD, with high response rates of "Excellent" to most questions[12].

#	Statement	Excellent	Good	Fair	Poor	No Opinion
1	Your overall experience with the fire/EMS services in your community.	51%	20%	3%	0%	26%

[12] Responses of "No Opinion" in these instances likely relate to respondents not requesting services from CHFD. This is supported via the following table showing that only 28% of respondents have requested services from CHFD in the past two years.

2	The value of the fire services being delivered in my community.	52%	26%	3%	1%	19%
3	The overall direction of the Cedar Hill Fire Department is taking to provide services.	45%	29%	2%	1%	22%
4	The openness of the Fire Department to community input.	40%	24%	5%	1%	30%
5	How effectively money is being used for the fire services.	27%	19%	6%	2%	47%
6	How effectively CHFD engages with the youth in the community.	33%	22%	8%	3%	33%
7	How well CHFD has handled testing and providing other services throughout the COVID19 pandemic.	32%	21%	7%	2%	38%
8	How the effectiveness of CHFD fire education programs.	26%	24%	6%	3%	40%

28% of respondents indicated that they have requested services from the Fire Department in the past 2 years. Most respondents who had requested service for medical issues (77%) followed by services relating to a fire (25%).

Service Request - Fire	%	#
Yes	28%	68
No	72%	175

Services Requested - Fire	%	#
Fire	25%	16
Emergency Medical Services	77%	50
Public Service[13]	15%	10
Business fire pre-planning inspections	0%	0

Respondents who indicated that they had requested services from CHFD in the past two years were asked to rate their level of satisfaction with interactions with CHFD personnel relating to the following categories. Results are presented below:

#	Statement	Excellent	Good	Fair	Poor	No Opinion

[13] Smoke detector check, fire station tour, fire safety education by the fire department, etc.

1	Response time to your call for assistance.	65%	23%	5%	2%	6%
2	Knowledge of the fire personnel.	68%	18%	5%	2%	8%
3	Responsiveness of the fire personnel.	77%	15%	5%	0%	3%
4	Courtesy of the fire personnel.	80%	12%	5%	2%	2%
5	Your overall impression of the fire personnel.	76%	15%	2%	6%	2%

There is an overwhelming level of satisfaction with all interactions with the CHFD including response time, knowledge, responsiveness, courtesy, and the overall impression. Further, the overall effectiveness of CHFD personnel was asked separately. Responses are presented below:

Services Perception - Fire	%	#
Excellent	73%	48
Good	20%	13
Fair	8%	5
Poor	0%	0

A large majority of respondents (73%) who have requested fire services in the past two years indicate that the effectiveness services provided were “Excellent” with an additional 20% indicated that the services provided were “Good”.

Appendix C – Cedar Hill Police Department Survey

Introduction

The Matrix Consulting Group (MCG) was retained by the City of Cedar Hill (TX) to complete an Organizational Assessment of the Cedar Hill Police Department (EPD). The scope of work included a survey to gauge the attitudes of the employees of the department in various topics about the Department and serving the community. An employee survey is important in any police study, today.

Of the 89 total invitations sent to CHPD employees, there were a total of 80 responses (either partial or complete) received by the project team, resulting in a response rate of 90%[14]. The results of said employee survey are detailed in the following section.

Executive Summary and Key Highlights

While many of these topics are expanded upon in the following sections, there are several key takeaways to note:

- Employees indicate positive attitudes toward their relationships with both the Cedar Hill community and City government.
- However, employees indicate negative attitudes towards the current staffing levels of the department and feel that it is impacting services provided.
- Employees indicate positive attitudes regarding the Tri-City Jail.
- Employees indicate dissatisfaction with the current firearms facility and current training facility in their ability to both foster effective training exercises as well as its ability to facilitate future employee growth.
- Employees indicate positive attitudes towards the internal operations and organizational structure of CHPD.
- Employees indicate a desire for more sufficient information to be provided via dispatch to facilitate effective services provided.
- Employees indicate positive attitudes towards the current training practices o.
- Employees indicate positive attitudes towards the technologies and resources provided to them.

[14] This is a comparatively excellent response rate.

Employee Survey Results

The following sections show the results of the Police Employee Survey. Responses are organized into sections based on question topic.

Demographics and Background Information

Respondents were asked different demographic questions relating to their current rank, current assignment, and length of service with CHPD. The respondent pool contained a majority of sworn employees (77.5%) compared to civilian/professional employees (22.5%), as should be expected.

Employment Status	%	#
Sworn	77.5%	62
Civilian	22.5%	18
Total	**100.0%**	**80**

Employee Rank	%	#
Officer	55.0%	44
Sergeant	11.3%	9
Lieutenant or higher	11.3%	9
Civilian Employee	22.5%	18
Total	**100.0%**	**80**

Most respondents ranks were that of Officer (55%), followed by Civilian Employees (22.5%). Sergeants and those ranked Lieutenant or higher both had 9 responses per rank, resulting in 11.3% of responses, respectively.

Current Assignment	%	#
Office of the Chief	5.0%	4
Patrol	43.8%	35
Criminal Investigations	18.8%	15
Technical and Information Services	17.5%	14
Special Services	11.3%	9
Professional Standards	3.8%	3
Total	**100.0%**	**80**

The current assignments of the personnel are listed above, with a majority (43.8%) of these personnel being assigned to Patrol. The department's Criminal Investigations Division represented approximately 19% of respondents, while Technical and Information Services represented another 17.5% of the respondent pool.

Service-Related Questions

The following three sections represent employee responses to questions asking them to respond with their level of agreement to certain statements. The sections organize the topic/theme of the questions by the following categories: 1) Community Service and Operations, 2) Staffing, and 3) Training and Resources.

The following matrices present results of multiple-choice questions asking respondents to indicate their level of agreement (i.e., Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD), or No Opinion (NO)) with the statements listed below. Results are presented with a shading of blue in correlation with the level of agreement (or disagreement) with the statements listed. The bolded percentage in each row indicates the highest response to the accompanying statement. Questions were asked in a positive manner to allow for identification of statements in which employees agreed or disagreed.

Views on Service to the Community Service and Operations

The following section lists responses to questions relating to City and Community Perceptions within CHPD. This matrix of questions was asked to all respondents of the survey, regardless of their current assignment or employment status.

#	Statement	SA	A	D	SD	NO
1	The City does a good job of recognizing and anticipating the challenges we face.	12%	41%	26%	11%	11%
2	The Police Department is one of the top priorities of the City government.	20%	47%	19%	4%	9%
3	The citizens expect a high level of service to be provided by the Police Department.	70%	27%	0%	0%	3%
4	We are able to meet the expectations of the community in our response time to emergency / high priority incidents.	12%	58%	14%	3%	14%
5	In general, our Department has a good relationship with the community.	41%	57%	1%	0%	1%
6	"Community Policing" is a high priority for our Department.	43%	43%	4%	1%	8%
7	The current firearms range is adequate in facilitating effective training programs.	9%	26%	24%	15%	26%

#	Statement	SA	A	D	SD	NO
8	The current firearms range is adequate in facilitating future employee growth.	8%	22%	24%	19%	27%
9	The current employee workspace is adequate in facilitating future employee growth.	7%	35%	34%	18%	7%
10	The current briefing area is adequate in facilitating future employee growth.	14%	46%	12%	12%	16%
11	The Police Department operations are effective.	12%	50%	26%	4%	8%
12	Calls for service are dispatch in a timely manner.	7%	35%	22%	12%	24%
13	Dispatch personnel ensure adequate information is included in calls for services to ensure adequate police response.	1%	23%	18%	31%	27%
14	Tri-City Jail prisoner intake procedures allows transportation of prisoners to occur in a timely manner.	18%	46%	1%	4%	31%
15	The location of the Tri-City Jail allows transportation of prisoners to occur in a timely manner.	22%	47%	7%	4%	20%
16	Animal Services personnel response to scenes in a timely manner which allows for officers to return back to service quickly.	5%	31%	16%	16%	31%
17	The current organizational structure is appropriate for our department.	7%	42%	30%	8%	14%
18	Spans of control are adequate.	7%	34%	26%	4%	30%

All statements listed in the matrix above resulted in high levels of agreement, indicating that employees of CHPD have positive attitudes towards most general topics relating to CHPD. These positive attitudes include:

- Positive outlooks regarding the relationship between CHPD and the City government.
- Positive outlooks relating to the Cedar Hill community.
- Positive outlooks relating to CHPD operations and organizational structure as well as spans of control.
- Positive outlooks relating to the functionality of the Tri-City Jail facilities and current locale.

Opportunities for improvement are identified via the responses to statements 7, 8, 9, and 13 (bolded above). Responses to these statements are expanded upon below:
"The current firearms range is adequate in facilitating effective training programs."

Current Assignment	SA	A	D	SD
Patrol	15%	33%	27%	15%
Criminal Investigations	0%	21%	29%	14%
Technical and Information Services	8%	15%	8%	0%
Special Services	13%	38%	25%	13%
Professional Standards	0%	0%	50%	50%
All Employees	9%	26%	24%	15%

39% of respondents disagree (either disagree or strongly disagree) regarding the firearm facility's ability to provide effective training exercises. As shown above, these opinions differ based upon the current assignment of the respondent.

"The current firearms facility is adequate in facilitating future employee growth."

Current Assignment	SA	A	D	SD
Patrol	12%	33%	21%	24%
Criminal Investigations	0%	21%	29%	14%
Technical and Information Services	8%	8%	15%	0%
Special Services	13%	13%	38%	13%
Professional Standards	0%	0%	50%	50%
All Employees	8%	22%	24%	19%

43% of respondents disagree with the firearm facility's adequacy in facilitating future employee growth. All respondents other than those currently assigned to the Patrol division disagree with this statement.

"The current employee workspace is adequate in facilitating future employee growth."

Current Assignment	SA	A	D	SD
Patrol	9%	36%	27%	18%
Criminal Investigations	0%	29%	50%	21%
Technical and Information Services	8%	38%	54%	0%
Special Services	13%	50%	13%	13%
Professional Standards	0%	0%	0%	50%
All Employees	7%	35%	34%	18%

52% of respondents disagree that the current employee workspace is adequate for facilitating future employee growth. Results of this finding are consistent across most current assignments except for the Special Services Division.

“Dispatch personnel ensure adequate information is included in calls for services to ensure adequate police response.”

Current Assignment	SA	A	D	SD
Patrol	3%	24%	12%	39%
Criminal Investigations	0%	29%	29%	14%
Technical and Information Services	0%	23%	23%	15%
Special Services	0%	25%	13%	50%
Professional Standards	0%	0%	0%	50%
All Employees	1%	23%	18%	31%

49% of respondents disagree that dispatch personnel ensure adequate amounts of information is provided in calls for service requests to ensure adequate police response. These findings are consistent across respondent’s current assignment. 51% of respondents from the Patrol Division disagree with this statement, with 39% being in strong disagreement.

Views on Staffing

The following matrix asks CHPD employees to respond with their level of agreement to topics relating to the staffing of the Cedar Hill Police Department.

#	Statement	SA	A	D	SD	NO
1	We have adequate staffing in our Division to meet performance objectives.	3%	18 %	31 %	43 %	5%
2	We have adequate staffing in our Division to meet customer expectations.	4%	22 %	38 %	31 %	5%
3	Staff resources are adequate in my division/unit to meet the current demands of the city.	9%	27 %	36 %	20 %	7%
4	We have a manageable backlog of work in our Division.	7%	42 %	23 %	9%	19 %
5	We have the capacity to take on extra work in our Division.	4%	16 %	36 %	28 %	15 %
6	My workload negatively affects my personal and family responsibilities.	9%	23 %	38 %	18 %	12 %
7	I typically go into work early or stay late to meet workload demands.	14 %	39 %	34 %	3%	11 %
8	There has been a significant increase in my workload the past two (2) years.	20 %	42 %	20 %	4%	14 %
9	The department does a good job at retaining its employees.	11 %	26 %	38 %	12 %	14 %
10	Current staffing allows us to effectively perform our duties on emergency scenes.	3%	27 %	31 %	18 %	22 %
11	The current departmental staffing model works well.	8%	19 %	38 %	23 %	12 %
12	Overtime assignment policies ensure equal opportunities for overtime.	14 %	43 %	8%	9%	26 %
13	I am not required to work excessive amounts of overtime.	24 %	64 %	5%	0%	7%

A large majority of these statements resulted in employees with negative outlooks on many topics relating to staffing. Levels of agreement and positive outlooks were higher for questions relating to a manageable backlog of work, overtime assignment policies, and working excessive amounts of overtime.

Areas identified as having opportunities for improvement are found in statements 1 – 3, 5, and 7 – 11. These findings are expanded upon below:

"We have adequate staffing in our Division to meet performance objectives."'

Current Assignment	SA	A	D	SD
Patrol	3%	15%	27%	42%
Criminal Investigations	0%	7%	43%	50%
Technical and Information Services	0%	23%	54%	23%
Special Services	13%	25%	13%	50%
Professional Standards	0%	50%	0%	50%
All Employees	3%	18%	31%	43%

54% of respondents disagree (either disagree or strongly disagree) that there is adequate staff in their division/unit to meet performance objectives. This finding is relatively consistent throughout all current assignments.

"We have adequate staffing in our Division to meet customer expectations."

Current Assignment	SA	A	D	SD
Patrol	3%	21%	33%	30%
Criminal Investigations	0%	7%	64%	29%
Technical and Information Services	8%	31%	46%	15%
Special Services	13%	25%	13%	50%
Professional Standards	0%	50%	0%	50%
All Employees	4%	22%	38%	31%

69% of respondents disagree that there is adequate staffing in their division/unit to meeting customer expectations. Again, this finding is relatively consistent across all current assignments.

"Staff resources are adequate in my division/unit to meet the current demands of the city."

Current Assignment	SA	A	D	SD	NO
Patrol	6%	27%	33%	21%	12%
Criminal Investigations	0%	21%	64%	14%	0%
Technical and Information Services	23%	31%	38%	0%	8%
Special Services	13%	38%	0%	50%	0%
Professional Standards	0%	50%	0%	50%	0%
All Employees	9%	27%	36%	20%	7%

56% of employees believe that staff resources in their division/unit are inadequate in meeting the demands of the city. This finding is consistent in all current assignments.

"We have the capacity to take on extra work in our Division."

Current Assignment	SA	A	D	SD
Patrol	3%	21%	39%	21%
Criminal Investigations	0%	7%	36%	57%
Technical and Information Services	15%	15%	31%	8%
Special Services	0%	25%	38%	25%
Professional Standards	0%	0%	0%	50%
All Employees	4%	16%	36%	28%

64% of respondents disagree that there is capacity to take on extra work in their division/unit. This finding is relatively consistent across all current assignments.

"I typically go into work early or stay late to meet workload demands."

Current Assignment	SA	A	D	SD
Patrol	24%	36%	24%	0%
Criminal Investigations	0%	36%	57%	7%
Technical and Information Services	0%	38%	46%	8%
Special Services	0%	63%	25%	0%
Professional Standards	0%	0%	50%	0%
All Employees	14%	39%	34%	3%

53% of respondents indicate that they go into work early or stay at work late to manage their workload. This finding is most apparent from those respondents currently assigned to the Patrol Division (60%) and Special Services Division (63%).

"There has been a significant increase in my workload the past two (2) years."

Current Assignment	SA	A	D	SD
Patrol	18%	36%	24%	6%
Criminal Investigations	21%	64%	14%	0%
Technical and Information Services	31%	38%	8%	0%
Special Services	0%	38%	25%	13%
Professional Standards	0%	50%	50%	0%
All Employees	20%	42%	20%	4%

62% of respondents indicate that there has been an increase in their workload over the past two (2) years. This finding is relatively consistent across all current assignments. A large majority of respondents from the Criminal Investigations (85%), and the Technical and Information Services (69%) indicate having a significant increase in their workload over the past two years.

"The department does a good job at retaining its employees."

Current Assignment	SA	A	D	SD
Patrol	9%	21%	33%	21%
Criminal Investigations	7%	29%	64%	0%
Technical and Information Services	15%	38%	8%	8%
Special Services	13%	0%	88%	0%
Professional Standards	0%	0%	0%	50%
All Employees	11%	26%	38%	12%

Half of respondents (50%) disagree that the CHPD does an effective job retaining their employees. This finding is most apparent in the Patrol (54%), Criminal Investigations (64%), and Special Services (88%) Divisions.

"Current staffing allows us to effectively perform our duties on emergency scenes."

Current Assignment	SA	A	D	SD
Patrol	3%	27%	33%	21%
Criminal Investigations	0%	29%	43%	14%
Technical and Information Services	8%	31%	8%	8%
Special Services	0%	25%	50%	13%

Professional Standards	0%	0%	0%	50%
All Employees	3%	27%	31%	18%

49% of respondents disagree that current staffing levels allow for effective operations at emergency scenes. Increased disagreement with this statement is found in responses from those currently assigned to the Patrol (54%), Criminal Investigations (54%), and Special Services (63%) Divisions.

"The current departmental staffing model works well."

Current Assignment	SA	A	D	SD
Patrol	9%	12%	36%	30%
Criminal Investigations	0%	14%	50%	21%
Technical and Information Services	8%	38%	23%	8%
Special Services	13%	13%	63%	13%
Professional Standards	0%	0%	50%	50%
All Employees	8%	19%	38%	23%

61% of respondents disagree that the current department staffing model works well. This finding is consistent throughout the Patrol (66%), Criminal Investigations (71%), Special Services (76%), and Professional Standards (100%) Divisions.

Views on Training and Support

The following matrix asks CHPD employees to respond with their level of agreement to topics relating to topics of training and resources provided at the Cedar Hill Police Department. This matrix of questions was asked to all respondents of the survey, regardless of their current assignment or employment status.

#	Statement	SA	A	D	SD	NO
1	We are effective at training new employees to fit our service model.	9%	51%	26%	5%	8%
2	We are provided adequate technology resources to effectively perform our duties.	9%	57%	15%	15%	4%
3	Current training programs provide me with the necessary skills to effectively do my job.	8%	55%	26%	5%	5%

4	Current training facilities are adequate in facilitating effective training programs.	15%	34%	26%	12%	12%
5	We are provided adequate equipment (non-technology) to effectively complete our jobs.	18%	57%	18%	7%	1%
6	The department places a high value on training all personnel.	11%	41%	30%	12%	7%
7	Current training facilities are adequate in facilitating future employee growth.	8%	26%	28%	19%	19%

Most responses indicate positive attitudes or high levels of agreement with statements relating to training and resources provided. However, statement number 7 relating to training facilities exhibits a high level of disagreement. This finding is expanded upon below:

"Current training facilities are adequate in facilitating future employee growth."

Current Assignment	SA	A	D	SD	NO
Patrol	12%	27%	36%	18%	6%
Criminal Investigations	0%	36%	21%	21%	21%
Technical and Information Services	8%	15%	15%	8%	54%
Special Services	13%	38%	25%	13%	13%
Professional Standards	0%	0%	50%	50%	0%
All Employees	8%	26%	28%	19%	19%

47% of employees believe that the current training facilities are inadequate in facilitating future employee growth. This finding is consistent through most of all current assignments.

Views on Workloads

The following section further gauges employees' opinions of their workload and their ability to manage assigned tasks. Respondents were asked to select one of the four choices relating to their ability to manage their workload. Responses are provided in the following table.

Workload Attitude	%	#
I am always busy and can never catch up.	21.9%	16
I am often busy but can generally catch up.	43.8%	32

I have the right balance of work and time available to complete that work.	32.9%	24
I could easily handle more work given the available time.	1.4%	1

There was a total of 73 responses to this question regarding workload attitudes. Most employees indicated that they are often busy but can generally catch up (44%), while another 33% of employees indicate that they have the right balance of work and time available to complete that work. Approximately 22% of employees indicated that they are always busy and can never catch up. Workload attitudes differ by employee's current assignment. Results of this secondary analysis are presented below:

Current Assignment	I am always busy and can never catch up.	I am often busy but can generally catch up.	I have the right balance of work and time available to complete that work.	I could easily handle more work given the available time.
Patrol	3%	47%	50%	0%
Criminal Investigations	57%	29%	7%	7%
Technical and Information Services	31%	38%	31%	0%
Special Services	13%	63%	25%	0%
Professional Standards	0%	50%	50%	0%
All Employees	22%	44%	33%	1%

As shown above, most respondents from the Criminal Investigations (86%), Technical and Information Services (69%), Special Services (76%) Divisions indicate being either always or often busy with work.

Open-Ended Responses

At the conclusion of the employee survey, respondents were able to respond openly to three different topics: 1) the strengths of the Department, 2) the opportunities for improvement within the Department, and 3) provide any additional feedback that they wished to provide the project team. Responses were coded by project staff to different themes to provide a report to CHPD administration regarding these three topics. Results are presented below.

Strengths of the Department

Respondents were asked to present the project team with up to three strengths within CHPD. Responses indicated that they felt that the strengths of the Department lie within their ample supervisory staff and the fact that the employees of CHPD are team oriented. Another 10% of responses took the chance to exhibit that they felt understaffed at the Department, supporting results of staffing- and workload-related questions presented in previous sections.

Rank	Response Code
1	None
2	Ample Supervisory Staff
3	Team Oriented
4	Understaffed

*n=102

Opportunities for Improvement within the Department

Respondents were then asked to present the project team with up to three areas in which they saw opportunities for improvement within CHPD. An overwhelming majority of responses indicated that they wanted to see an addition in personnel to account for workload. Further, another 5% of responses indicated a desired increase in pay and to evaluate workload, while another 3.3% of responses related to more training for personnel.

Rank	Response
1	Add Personnel**
2	Increase Pay
3	Evaluate Workload
4	More Training

*n=121

**Of the 55 responses, 11 of them specifically mentioned adding civilian/professional personnel.

Additional Feedback

Respondents were able to provide project staff any additional feedback that they wished to share. Responses (n=47) all underscored previously mentioned areas of improvement that have been discussed in depth in previous sections of this report. No new topics were raised in these responses.

Appendix D – Cedar Hill Fire Department Survey

Introduction

The Matrix Consulting Group (MCG) was retained by the City of Cedar Hill (TX) to complete an Organizational Assessment of the Cedar Hill Fire Department (EPD). The scope of work included a survey to gauge the attitudes of the employees of the department in various topics about the Department and serving the community. An employee survey is important in any fire study, today.

Of the 75 total invitations sent to CHFD employees, there were a total of 52 responses (either partial or complete) received by the project team, resulting in a response rate of 69%. The results of said employee survey are detailed in the following section.

Executive Summary and Key Highlights

While many of these topics are expanded upon in the following sections, there are several key takeaways to note:

- Employees express positive attitudes towards their relationships with the Cedar Hill community and City government.
- Employees agree that they provide a high level of service to the community of Cedar Hill.
- Employees indicate that their current fire apparatus and fire equipment is well maintained and that they have adequate technology to perform their duties.
- Employees express negative opinions regarding the current staffing throughout the department.
- Employees express negative opinions regarding the current fire station locations.

Employee Survey Results

The following sections show the results of the Fire Department Employee Survey. Responses are organized into sections based on question topic.

Demographics and Background Information

Respondents were asked different demographic questions relating to their current rank, current assignment, and length of service with CHFD. As can be seen in the table below,

most employees (52%) hold the rank of firefighter/paramedic, with another 15% of respondents as an Engineer/Paramedic or Captain.

Current Rank	%	#
Battalion Chief and Above	13.5%	7
Captain	15.4%	8
Engineer/Paramedic	15.4%	8
Firefighter/Paramedic	51.9%	27
Civilian	3.9%	2
Total	100.0%	52

The table below indicates that 37% of respondents are currently assigned to Station 211, with another 25% at Station 213, 17% at Station 212, and 12% at Station 214. The remaining 10% of respondents are currently assigned to Administration/Prevention.

Current Assignment	%	#
Administration/Prevention	9.6%	5
Station 211	36.5%	19
Station 212	17.3%	9
Station 213	25.0%	13
Station 214	11.5%	6
Total	100.0%	52

The largest proportion of respondents (48%) have over 10 years of experience with CHFD, while remaining respondents are more likely to have less than 5 years of experience (33%) compared to between 5 and 10 years of experience (19%).

Length of Service	%	#
Less than 5 years	32.7%	17
5 - 10 years	19.2%	10
Over 10 years	48.1%	25
Total	100.0%	52

Service-Related Questions

The following three sections represent employee responses to questions asking them to respond with their level of agreement to certain statements on the services provided to the community. The sections organize the topic/theme of the questions by the following three categories: 1) City and Community Perceptions, 2) Equipment and Resources, and 3) the Internal Organization.

The following matrices present results of multiple-choice questions asking respondents to indicate their level of agreement (i.e., Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD), or No Opinion (NO)) with the statements listed below. Results are presented with a shading of blue in correlation with the level of agreement (or disagreement) with the statements listed. The bolded percentage in each row indicates the highest response to the accompanying statement. Questions were asked in a positive manner to allow for identification of statements in which employees agreed or disagreed.

Views on Service to the Community Service and City Support

The following section lists responses to questions relating to City and Community Perceptions within CHFD. This matrix of questions was asked to all respondents of the survey, regardless of their current assignment or employment status.

#	Statement	SA	A	D	SD	NO
1	Our Department provides a high level of service for the community.	73%	27%	0%	0%	0%
2	Residents view our Department as high priority.	67%	24%	2%	0%	6%
3	Our Department has positive relationships with our residents.	78%	22%	0%	0%	0%
4	Our approach to providing services improves the quality of life in the City of Cedar Hill.	71%	27%	2%	0%	0%
5	The Fire Department is one of the top priorities of the City government.	40%	38%	19%	0%	4%
6	The citizens expect a high level of service to be provided by the Fire Department.	86%	14%	0%	0%	0%
7	The City of Cedar Hill does a good job of recognizing and anticipating the challenges we face.	27%	41%	24%	2%	6%

There is an overwhelming consensus of positive attitudes throughout the Fire Department regarding their relationship with members of the community and city government. This should be viewed as a strength of the Department and something to build on.

Views on Equipment and Resources

The following matrix asks CHFD employees to respond to operational topics relating to the equipment and resources.

#	Statement	SA	A	D	SD	NO
1	Staff resources are adequate to meeting established performance objectives.	13%	15%	40%	33%	0%
2	Our fire apparatus is well maintained.	27%	51%	14%	4%	4%
3	Our fire equipment is well maintained.	40%	50%	6%	2%	2%
4	We are provided adequate technology resources to effectively perform our duties.	24%	49%	18%	6%	2%
5	The locations of our fire stations provide a safe workplace.	20%	53%	18%	6%	2%
6	Our fire stations are well maintained.	12%	33%	31%	18%	6%
7	Our fire stations meet the needs of the department.	8%	29%	40%	19%	4%

Responses indicate that employees have a consensus of agreement relating to the maintenance of fire apparatus and fire equipment, as well as the adequacy of their technology and the locations of their fire stations. Areas for improvement are found in responses to statements 1, 6, and 7. These results are listed and expanded upon below:

"Staff resources are adequate to meeting established performance objectives."

Current Assignment	SA	A	D	SD
Administration/Prevention	20%	20%	40%	20%
Station 211	16%	16%	42%	26%
Station 212	0%	11%	56%	33%
Station 213	20%	10%	20%	50%
Station 214	17%	17%	33%	33%
All Employees	13%	15%	40%	33%

73% of respondents disagree with the statement that staff resources are adequate to meet established performance objectives. This level of disagreement is found consistently throughout all current assignments at CHFD.

"Our fire stations are well maintained."

Current Assignment	SA	A	D	SD
Administration/Prevention	0%	20%	60%	20%
Station 211	5%	53%	21%	11%
Station 212	22%	11%	22%	44%
Station 213	27%	27%	36%	9%
Station 214	0%	33%	33%	17%
All Employees	12%	33%	31%	18%

49% of respondents disagree that the fire stations at CHFD are well maintained. This finding is consistent through all current assignments except for those currently assigned to Station 211, where 58% of respondents agree that fire is well maintained.

"Our fire stations meet the needs of the department."

Current Assignment	SA	A	D	SD
Administration/Prevention	20%	20%	40%	20%
Station 211	0%	47%	37%	16%
Station 212	11%	11%	33%	33%
Station 213	20%	10%	60%	10%
Station 214	0%	50%	17%	17%
All Employees	8%	29%	40%	19%

59% of respondents disagree that current fire stations meet the needs of the department. Most respondents from Administration/Prevention, Station 211, Station 212, and Station 213 disagree with this statement, while half of the respondents from Station 214 agree that their fire station meets the current needs of the department.

Views on Organization and Staffing

The following matrix asks CHFD employees to respond to topics relating to the internal operations of the Cedar Hill Fire Department.

#	Statement	SA	A	D	SD	NO
1	The current organizational structure is appropriate for our department.	13%	45%	19%	15%	9%
2	The supervision at emergency scenes is sufficient.	48%	42%	6%	2%	2%
3	Spans of control in the Fire Department are appropriate.	25%	54%	15%	6%	0%
4	Our department is adequately staffed to meet demands for services.	8%	15%	44%	33%	0%
5	Current apparatus staffing allows us to effectively perform our duties on emergency scenes.	6%	23%	35%	33%	2%
6	Our personnel work well with each other on calls for service to which they respond.	73%	21%	4%	0%	2%
7	The current shift staffing model works well.	15%	33%	27%	13%	13%
8	The work schedule negatively affects my personal and family responsibilities.	2%	23%	31%	35%	8%
9	The department does a good job at retaining its employees.	4%	50%	27%	6%	13%
10	Our department places a high value on Health and Wellness programs.	38%	46%	8%	4%	4%
11	Calls for service are dispatched in a timely manner.	27%	54%	15%	2%	2%
12	Dispatch personnel ensure adequate information is included in calls for service to ensure an adequate fire response.	10%	52%	23%	8%	6%
13	We have the appropriate apparatus to provide high levels of service.	35%	46%	13%	0%	6%
14	Our apparatus has the appropriate equipment to provide effective services.	42%	52%	2%	0%	4%
15	We receive the practical training we need to keep all of our skills high.	17%	54%	21%	6%	2%
16	Our department places a high value on ensuring proper training for field personnel.	27%	50%	17%	4%	2%
17	Training facilities are adequate for practical training evolutions and activities.	8%	13%	23%	50%	6%

Again, the overwhelming level of agreement and satisfaction of employees regarding topics of the internal organization and operations of CHFD is something to build on as an organization. Opportunities for improvement lay within the response to statements 4, 5, 8, and 17. Opportunities for improvement are listed and expanded upon below:

"Our department is adequately staffed to meet needs for services."

Current Assignment	SA	A	D	SD
Administration/Prevention	20%	40%	20%	20%
Station 211	5%	11%	53%	32%
Station 212	0%	11%	56%	33%
Station 213	20%	10%	20%	50%
Station 214	0%	17%	67%	17%
All Employees	8%	15%	44%	33%

77% of respondents disagree that there is adequate staffing in the department to meet demands for services. As shown below, the only current assignment in agreement with this statement are those currently assigned to Administration/Prevention.

"Current apparatus staffing allows us to effectively perform our duties on emergency scenes."

Current Assignment	SA	A	D	SD
Administration/Prevention	20%	60%	20%	0%
Station 211	5%	21%	47%	26%
Station 212	0%	33%	33%	22%
Station 213	10%	10%	30%	50%
Station 214	0%	0%	33%	67%
All Employees	6%	23%	35%	33%

68% of respondents disagree that the current apparatus staffing allows them to provide adequate services while on emergency scenes. Again, the only current assignment in agreement with this statement are from those respondents currently assigned to Administration/Prevention.

"Training facilities are adequate for practical training evolutions and activities."

Current Assignment	SA	A	D	SD
Administration/Prevention	20%	20%	0%	60%
Station 211	5%	11%	32%	47%
Station 212	0%	0%	22%	67%
Station 213	20%	10%	30%	40%
Station 214	0%	33%	17%	33%
All Employees	8%	13%	23%	50%

73% of respondents indicate disagreement with the statement indicating that training facilities are adequate to perform practical training evolutions and activities. Most respondents from all current assignments disagree with this statement.

Open-Ended Responses

At the conclusion of the employee survey, respondents were able to respond openly to three different topics: 1) the strengths of the Department, 2) the opportunities for improvement within the Department, and 3) provide any additional feedback that they wished to provide the project team. Responses were coded by project staff to different themes regarding these three topics. Results are presented below.

Strengths of the Department

The following responses are the top responses of employees at CHFD when asked to indicate what they felt were the strengths of the Department.

Rank	Response Code
1	Administration
2	Dedicated Personnel
3	Meets Minimums
4	Experience

*n=82

A total of 13.4% of responses indicated that the administration was a strength of the Department, followed by 12.2% of responses indicated that dedicated personnel and the Department's ability to meet minimum standards was a strength. Another strength of note was the experience of the employees of the Department (7.3%).

Opportunities for Improvement within the Department

As before, employees were asked to indicate their top three areas of improvement at CHFD. Results are listed and discussed below:

Rank	Response
1	More Staffing
2	Chief's Driver
3	EMS Staffing
4	Administrative Assistance

*n=103

An overwhelming majority of responses (45.6%) indicated that more staffing was an opportunity for improvement at CHFD, while another 9.7% of responses indicated that the addition of a Chief's Driver and increased EMS staffing were opportunities for improvement. Administrative assistance was also mentioned in 8.7% of responses.

Additional Feedback

When respondents were provided the opportunity to present any additional feedback to the project staff, respondents took the opportunity to reinforce statements that have previously been discussed in this report. Staff feel that they are understaffed compared to the constantly increasing call volumes, as well as the fact that stations and apparatus could be updated and maintained in a more feasible manner. No new topics of contention were brought forth by respondents in this section.

Rank	Response
1	Add Personnel**
2	Increase Pay
3	Evaluate Workload
4	More Training

*n=121
**Of the 55 responses, 11 of them specifically mentioned adding civilian/professional personnel.

Additional Feedback

Respondents were able to provide project staff any additional feedback that they wished to share. Responses (n=47) all underscored previously mentioned areas of improvement that have been discussed in depth in previous sections of this report. No new topics were raised in these responses.