Executive Summary

The City of Dayton Fire Department contracted with *Fitch & Associates* to objectively evaluate the operations, deployment, and staffing of the fire department. The department was motivated by the desire to ensure that the current level of performance was meeting the communities demand for service now and into the future. Fitch & Associates has completed an evaluation of the department utilizing four years of historical data between 2019 and 2022. The evaluation included comprehensive quantitative data and Geographic Information System (GIS) analyses to determine the distribution, concentration, and reliability of fixed and mobile response forces. An assessment of the operation of the department was also evaluated. This executive summary highlights the most substantive recommendations and alternatives developed for the department.

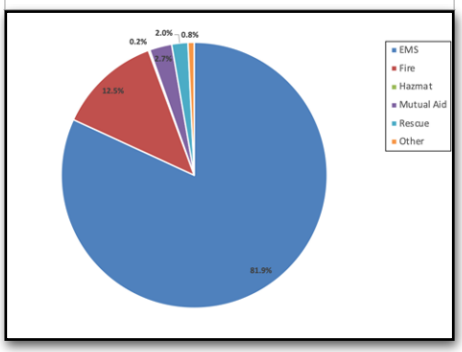
Overall the department provides a good, reliable service to the community. There are opportunities that have been identified to provide a more effective, reliable service to the community. The department provides service to the community with a primarily paid-on-call workforce with the exception of the career fire chief.

One of the biggest opportunities for the department is to ensure that it adapts as the community develops. The community is positioned to transition from a rural to a suburban community when considering population density. The department is well positioned to cover the northern portion of the community, yet the southern portion of the community is where much of the development is slated to occur. A second topic for consideration is monitoring and adjusting the staffing model of the department as the demands grow and challenges of recruiting and retaining paid-on-call firefighters grow.

Top Five Priorities

1. Improve data collection and quality assurance.
2. Develop a strategic implementation plan for fire station 3.
3. Consider adding a full-time assistant chief and fire inspector/fire marshal as funding is available.
4. Monitor effectiveness of staffing model and potentially shift to a duty crew.
5. Evaluate multi-purpose vehicles.

2022 Total Number of Incidents: 459



Citywide Future

The 2040 Comprehensive Plan for the City of Dayton, MN outlines the current and projected future demographics, infrastructure, and development within the community. This plan is helpful in determining the future needs of the fire department. Determining the exact demand of the fire department into the future depends on numerous variables. Some of the variables include the types of development that occurs within the city. For example, a senior apartment complex will have a higher risk and demand for the fire department services compared to a market rate apartment complex. The Comprehensive Plan is helpful in determining the need for fixed facilities, water supply, and types of risk the department may need to be prepared to mitigate.

The 2040 Comprehensive Plan identified population projections for 2020 at 5,900, 2030 at 7,900 and 2040 at 10,400. Based on the census information the 2020 population was reported to be 7,262 which is 1,362 higher than projected. The current projection from the Dayton Community Development data places the 2023 population of Dayton at 10,295 which is much closer to the 2040 population projection than the 2030 projection. Based on the current rate of growth, Dayton will far exceed its current population projections. Using the 2010 and 2020 census population data the 2023 Dayton Community Development data a projection was created. This projection places the population of Dayton at 12,206 in 2030 and 16,095 in 2040. Depending on the type of population growth that occurs the impact on the demand for the fire department services can vary drastically. If there is not initial significant growth in the fire department demand as the population develops, the department will experience the growth over the long term as the infrastructure, housing, and population ages.

Population Projections

Year	Comp Plan	Projection	Difference
2010	4,617	N/A	N/A
2020	5,900	7,262	1,362
2023	N/A	10,295*	N/A
2030	7,900	*12,206*	*3,208*
2040	10,400	*16,095*	*3,991*
2050	N/A	*19,985*	N/A

Italics are projections based on 2010, 2020, and 2023 population.
* Based on City of Dayton Community Development numbers provided by city staff and using the Metropolitan Council 2020 figure of 2.96 people per household

2040 Comprehensive Plan Community Forecast

Forecast Year	Population	Households	Employment
2010	4,617	1,619	921
2018	6,072	2,158	1,230
2020	5,900	2,200	2,000
2030	7,900	3,200	2,490
2040	10,400	4,400	3,000

*Note: The table above represents the Hennepin County part of Dayton. There is a northwest corner of Dayton in Wright County with an addition 19 households, 54 population and 0 jobs.

Citywide Future

The National Fire Academy has identified eight high risk populations that are likely to drive the risk and demand for the fire department. These populations include:

- Older adults
- Younger children
- People with disabilities
- People who smoke
- Low-income groups
- Ethnic minority groups
- Low-education groups
- College students

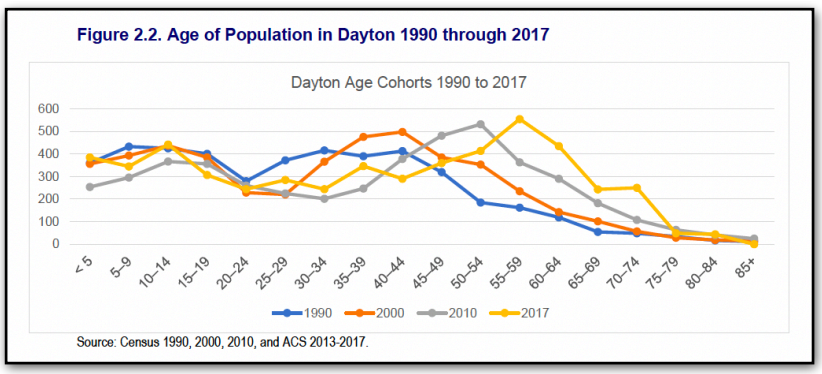
Figure 2.2 in the city of Dayton 2040 Comprehensive Plan shows the age of the population increasing since 1990. This aging population will likely increase the fire and EMS service demand in the next ten years. In 2017, the largest population group was 55-59. That population group is now 62-66 years old. The figure shows that Dayton has not experienced a significant amount of the population being age 75 or older.

The community has a mix of municipal water supply and private wells. This requires the fire department to be prepared to provide its own water supply in the event of a fire, with equipment such as a water tender. As the community develops, there will be less area where water must be hauled to provide fire suppression services. The municipal water supply in the northwest corner of the community has a pressurized water tank that holds 1,000 gallons of water. One thousand gallons of water is not enough water to supply any significant fire suppression effort. In order to affect a fire suppression effort in the northwest corner of the city will require the fire department to bring water to the scene with water tenders.

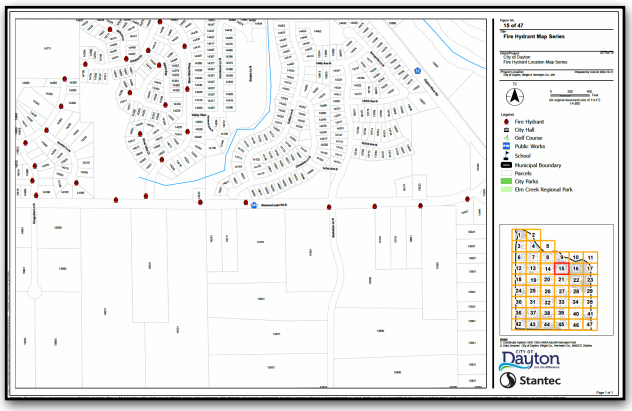
Observations

1. Dayton, MN is a developing community.
2. The development is at a steady pace.
3. Only part of the community has fire hydrants and municipal water supply.
4. The municipal water supply in the northwest corner of Dayton has no capacity to provide emergency responders with an immediate high water flow.

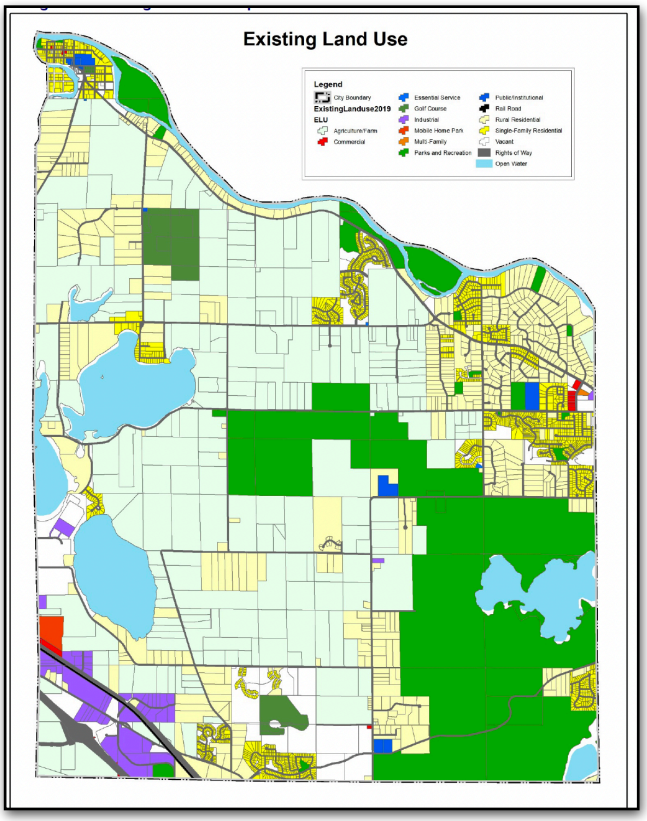
Age of Population 1990 through 2017

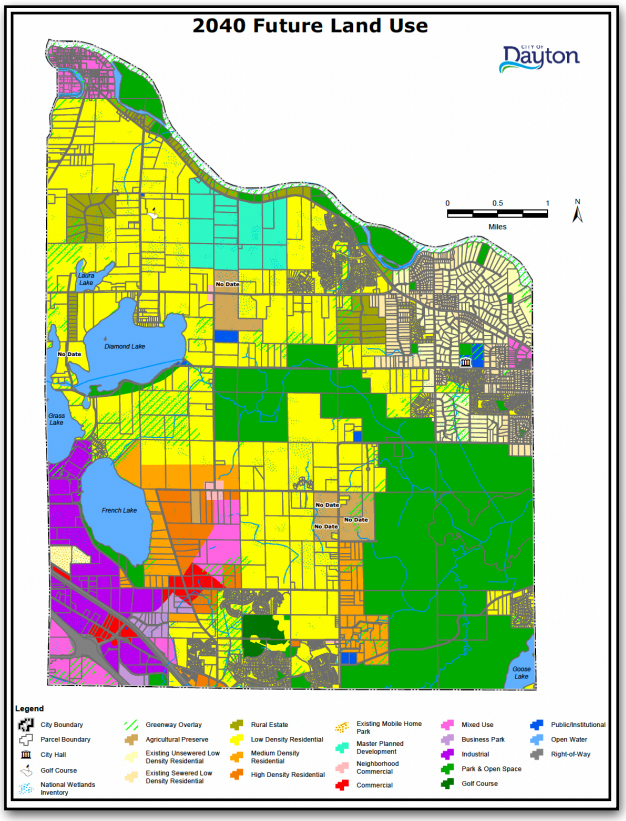


Fire Hydrant Map Section



Citywide Future





Community Forecast

Observations

1. Dayton's development appears to be aimed at keeping a primarily residential community with areas of commercial, industrial, mixed-use and a small high-density residential area.

2. The development is anticipated to occur over the next three decades leading to a steady growth strategy.

3. There are limited north/south transportation network options currently which challenge a timely response to the southern portion of the community.

4. The 2040 comprehensive plan estimates a population of 10,400 while the growth rate of Dayton since 2010 project the population is closer to 16,095 or 5,695 higher than the comprehensive plan.

Efficacy of EMS Response Time Objectives

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

Observations

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

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

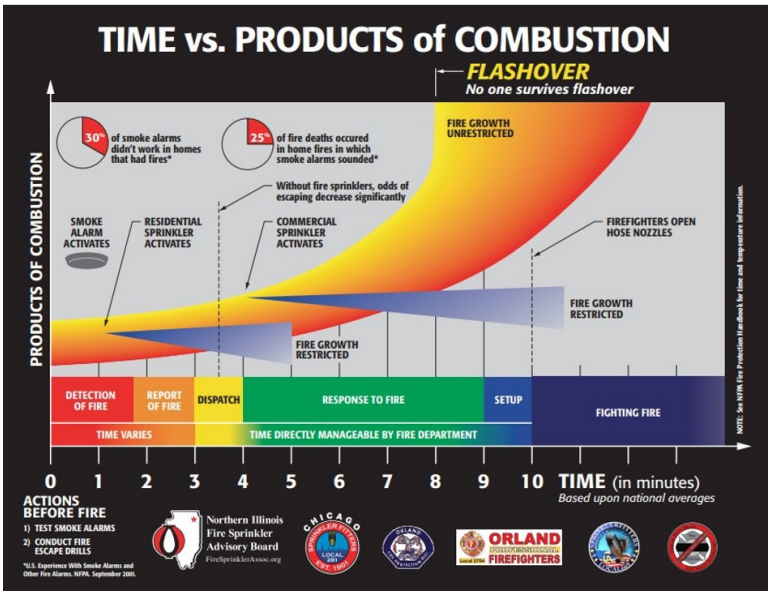
Author	Density	Sample Size	Response Time Threshold	Does Response Time Impact Patient Outcome
Blackwell (2002)	ALS Urban	5,424	5 minutes	Yes < 5 minutes; No > 5 minutes
Pons (2005)	ALS Urban	9,559	4 minutes & 8 minutes	No < 8 minutes; Yes < 4 minutes in intermediate/high risk of mortality
Blackwell (2009)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

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

Response Time Considerations for the Modern Fire Environment

The number one priority with structural fire incidents is to save lives followed by the minimization of property damage. A direct relationship exists between the timeliness of the response and the survivability of unprotected occupants and property damage. The most identifiable point of fire behavior is flashover.

Flashover is the point in fire growth where the contents of an entire area, including the smoke, reach their ignition temperature, resulting in a rapid-fire growth rendering the area un-survivable by civilians and untenable for firefighters. Best practices would result in the fire department arriving and attacking the fire prior to the point of flashover. A representation of the **traditional time temperature curve** and the cascade of events is provided. (below)



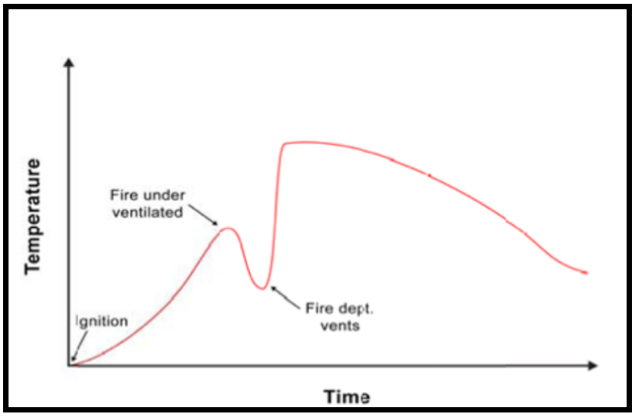
Observations

Conservatively, the total elapsed time from the ignition of the fire until active fire fighting would need to be 8 minutes or less.

Currently, the DFD total response time is ~12 minutes.

Continuous staffing strategies would improve overall performance.

Recent studies by Underwriter's Laboratories (UL) have found that **flashover occurs within four minutes in a modern fire environment** in compartment fires such as structure fires. In addition, the UL research has identified an updated time temperature curve due to fires being ventilation-controlled rather than fuel-controlled, as represented in the traditional time temperature curve. (below) While this ventilation-controlled environment continues to provide a high risk to unprotected occupants to smoke and high heat, it does provide some advantages to property conservation efforts, as water may be applied to the fire prior to ventilation and the subsequent flashover.



The research conducted by UL and the National Institute of Standards and Technology (NIST) have found that the modern fire environment with synthetic materials (plastics and hydrocarbons) and improved energy efficient insulated structures achieve flashover in 4 minutes after ignition as compared to legacy materials (hard wood, natural fibers, etc) would not flashover for more than 29 minutes.

Response Time Overview

When an incident occurs there are a number of steps that are taken to get the fire department to the incident scene. The first step is for the incident to be discovered (Incident Timeline Table Item B). Discovering the incident must occur whether it is a fire, medical, or other type of incident. The department has the least amount of control over the incident discovery time.
Once the incident is discovered, 911 is called (Incident Timeline Table Item C). 911 calls are sent to the Hennepin County Sheriff's Office Dispatch Center. The dispatch center confirms the address of the incident, asks the caller questions to determine the type of incident, and then notifies the appropriate resources of the incident (Incident Timeline Table Item D). The best practice times for dispatch centers is to answer the 911 phone call within 10 seconds 95% of the time and to process the incident within 60 seconds 90% of the time. Processing the incident at the dispatch center includes the address confirmation, incident type determination, and notification of the appropriate resources.

With the current paid-on-call fire department response model the next step requires staff to drive to the fire station in their personal vehicle (Incident Timeline Table Item E). The firefighters park their personal vehicles, go inside the fire station, pick up their fire gear, and board an apparatus. Currently firefighters can live up to ten minutes away from the fire station.

Once enough firefighters arrive at the fire station the firefighters need to obtain their fire gear, don their equipment, and board the fire apparatus (Incident Timeline Table Item F). The fire apparatus then leaves the fire station to respond to the incident scene (Incident Timeline Table Item G). Firefighters are allowed to live up to ten minutes from the fire station. With an eight minute drive time to the incident scene from the fire station, the response time could be at least eighteen minutes if the firefighters that live ten minutes from the fire station are needed to respond to the incident.

As the fire apparatus arrives on the incident scene the response time measure ends (Incident Timeline Table Item H). A wholistic response time measures from the 911 call time until the fire apparatus arrives at the incident scene (Incident Timeline Table Items C-H). The firefighters then set up for the operation. If that is a medical incident it may be bringing medical gear from the fire apparatus to the patients side. For a fire incident that would include positioning the fire apparatus and deploying hose lines to the location of the fire.

Any other staffing model would decrease the maximum turnout time (time between Incident Timeline Table Items D-G) from over ten minutes to under two minutes. The reason for this dramatic decrease in the turnout time is by eliminating the time it takes firefighters to drive to the fire station. This could be accomplished through numerous different staffing models that are spoken to later in the report.

Incident Timeline-1

	Current Model	Staffed Model
A	Incident Occurs	Incident Occurs
B	Incident Discovered	Incident Discovered
C	911 Called	911 Called
D	Fire Department Notified	Fire Department Notified
E	Firefighters Drive to Fire Station	
F	Firefighters Board Apparatus	Firefighters Board Apparatus
G	Fire Unit Drives to Incident	Fire Unit Drives to Incident
H	Fire Unit Arrives at Incident	Fire Unit Arrives at Incident
I	Fire Unit Set Up for Operation	Fire Unit Set Up for Operation
J	Incident Mitigated	Incident Mitigated

Industry Standard Response Times

Response Timeline

	Response Time Marker
A	Incident Occurs
B	Incident Discovered
C	911 Called
D	Fire Department Notified
E	Firefighters Drive to Fire Station
F	Firefighters Board Apparatus
G	Fire Unit Drives to Incident
H	Fire Unit Arrives at Incident
I	Fire Unit Set Up for Operation
J	Incident Mitigated

Response Time

Industry Standard Comparable Measures

Total Response Time Measure	Time (Minutes)	Population Sq/ Mi
Current Average	12:54	310
Current 90th Percentile	12:00	310
NFPA 1720 - Rural 80%	14:00	< 500
NFPA 1720 - Suburban 80%	10:00	500-1000
NFPA 1710 - Suburban	6:24	500-1000

A response time is most commonly and comprehensively measured from the 911 call time (Response Timeline C) through the fire unit arriving at the incident (Response Timeline H). Measuring from 911 call until the fire unit arriving at the incident is how most industry standard comparables are measured. Currently Dayton's average response time is 12 minutes and 54 seconds. The 90th percentile response time is 12:00 minutes. 90th percentile helps determine the amount of reliability within the response system. The 90th percentile shows the response time that nine out of ten residents will be receive or better.

The National Fire Protection Association (NFPA) 1720 is the "Standard on Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments." This standard applies to fire departments who are staffed by volunteer or combination fire departments. The only fire departments that do not fall into the NFPA 1720 standard are those who are staffed by all career full-time fire department staff.

The NFPA 1720 stratifies the response time standard based on the population density using residents per square mile. Currently Dayton falls into the NFPA 1720 rural response time as the population per square mile is 310 which is below the threshold of 500 people per square mile. The rural response standard states the fire department should get six responders on scene within 14 minutes 80 percent of the time. Currently the department is getting the first arriving unit on scene within 12 minutes.

As the city of Dayton continues to develop it is likely the department will be considered in the suburban response time standard which states there should be ten responders on scene within ten minutes 80 percent of the time. The threshold for the suburban classification is based on 500-1000 people per square mile. Based on the US Census geography defining the city of Dayton as 23.42 square miles the suburban threshold will be met when the population reaches 11,710. It is likely based on the current population trend that the suburban threshold will be by 2030.

Fire Department Response Times

The Dayton Fire Department currently has an average response time of 12 minutes and 54 seconds. The department also has a 90th percentile response time of 12 minutes. Currently the department is best aligned with the NFPA 1720 rural response time standard. The development of the city will bring the department to NFPA 1720 suburban response time standard.

When looking at the response times and maps of Dayton, the service to the south end of the city is where the most elongated response times occur. The south end of the city is also where the 2040 plan shows the greatest growth. In order to meet the suburban response time standard the department will likely need a fire station in the southern portion of the community and a potentially a change in the staffing model.

The city and department have the most control over the staffing model and fixed facilities which affect the response time. Those two factors can be levers to reducing the response time of the fire department.

Pages 33 through 38 of the data report provide some visuals and discuss the available research on the impacts of a response time. Communities have latitude to establish their own response time expectations for fire department response.

Observations

1. Dayton is currently considered a rural community and meets the NFPA 1720 industry standard.
2. As the community develops, Dayton will likely be classified as a suburban community. The industry standards for a suburban community have shorter response times and the current fire department staffing model will not meet those standards.

2022 90th Percentile Response Times

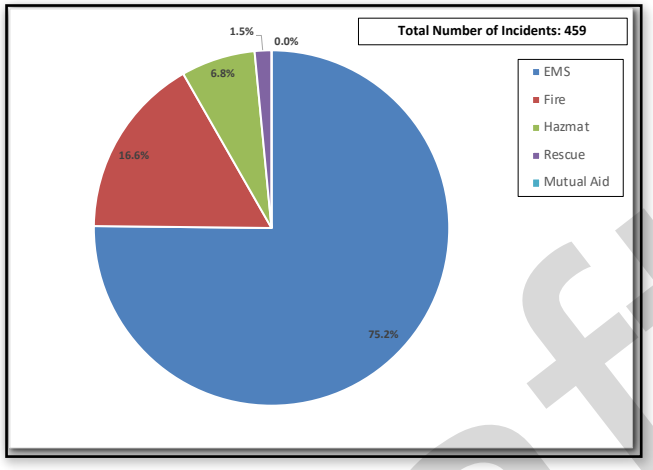
Program	Dispatch Time (Minutes)	Turnout Time (Minutes)	Travel Time (Minutes)	Response Time (Minutes)	Sample Size
EMS	9.4	—	8.1	11.1	336
Fire	12.6	—	5.6	10.8	67
Hazmat	12.6	—	7.0	14.1	29
Mutual Aid	—	—	—	—	0
Rescue	—	—	—	—	6
Total	**11.5**	**—**	**6.9**	**12.0**	**438**

Research has demonstrated that the overwhelming majority of requests for EMS are not time sensitive between five minutes and 11 minutes for emergency responses and 13 minutes for non-emergency responses.[1] The 12-minute upper threshold is only the upper limit of the available research and is not a clinically significant time measure, as patients were not found to have a significantly different clinical outcome when the 12-minute threshold was exceeded.[2]

[1] Blackwell, T.H., & Kaufman, J.S. (April 2002). Response time effectiveness: Comparison of response time and survival in an urban emergency medical services system. *Academic Emergency Medicine,* 9(4): 289-295.
[2] Blackwell, T.H., et al. (Oct-Dec 2009). Lack of association between prehospital response times and patient outcomes. *Prehospital Emergency Care,* 13(4): 444-450.

Community Demand for Service

Dayton's largest driver of demand for service is Emergency Medical Services (EMS) accounting for 75.2 percent of the 2022 demand. In *FITCH's* experience, most departments are experiencing 70-80 percent of their calls for service being EMS related. Fire calls are the next greatest driver with 16.6 percent of the calls for service. There was no mutual aid reported and rescue accounted for 1.5 percent of the calls for service.



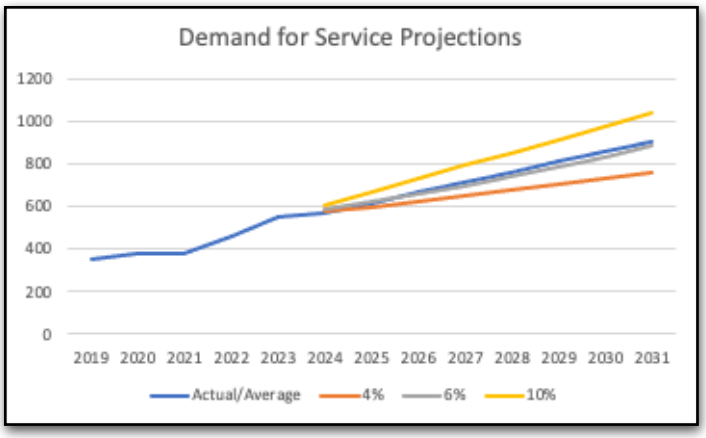
Observations

1. 75% of the communities demand for services is related to medical emergencies.
2. The type of development that occurs within the city may impact the rate at which the communities demand for fire service will increase.
3. Future community demand is projected to be approximately 700 calls for service in 2030 based on historical demand trends.

Future Demand for Service

DFD's demand for service is likely to continue to grow. This demand will likely grow the greatest in the EMS program. In *FITCH's* experience, many departments are experiencing a 3-7 percent year over year increase in demand for service. Much of the demand is attributed to aging within a community which will naturally increase the demand for EMS. The other driver of demand for service is likely attributed to high-risk populations such as those identified by the National Fire Academy(1):

- Older adults
- Younger children
- People with disabilities (physical or mental)
- People who smoke
- Low-income groups
- Ethnic minority groups
- Low-education groups
- College students



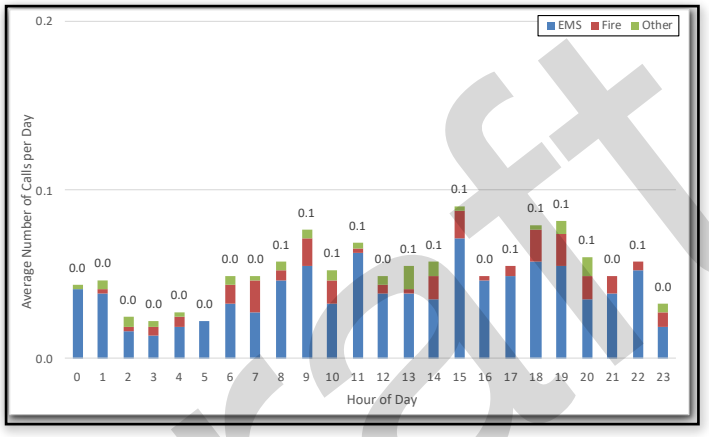
The demand for service over the next decade will likely increase the demand where the department is handling closer to two calls per day.

(1) National Fire Academy, Applications of Community Risk Reduction Student Manual 1st Edition, 6th Printing-April 2021, SM 3-10

Evaluating the Current System

The current system design includes having DFD responding to and providing EMS first response along with the Police Department to all EMS incidents within Dayton. The EMS incidents represent over 75 percent of the community demand for the department's service. The majority of both fire and EMS incidents occur during the daytime and evening hours when most members of the community are awake.

Service Demand by Hour



Observations

1. The highest demand for service occurs between 8am and 8pm.
2. The lowest average paid-on-call staff turnout is during the 7am-3pm Monday-Friday.

While the highest demand for service occurs during the waking hours, these are also the hours with the least amount of fire staff turning out for calls. This is a common occurrence as many paid-on-call staff have full-time jobs that are Monday through Friday during the day. The difference in demand for service and availability of paid-on-call fire staff can lead to reliability challenges. Currently, the department is able to meet the demand for service reliably. It is likely that in the future the department will experience weekday daytime reliability challenges.

Fire Staff Turnout by Day of Week and Hour of Day

	23:00-02:59	3:00-6:59	7:00-10:59	11:00-14:59	15:00-18:59	19:00-22:59
Sunday	5.5	7.5	7.5	7.7	8	8.8
Monday	5.9	4.4	5.4	4.5	7.5	11.3
Tuesday	9	7	5	4	8.5	13
Wednesday	6.1	4.4	4.7	4.5	8.3	11.9
Thursday	7.9	8.3	3.2	4.5	12.6	18.5
Friday	5.2	6.2	6.8	4.9	7.6	8.3
Saturday	6.3	7	7.1	7.2	7.4	6.8

Evaluating the Current System

The current system alerts both fire stations and all of the fire staff for any calls for service regardless on the number of staff needed to mitigate the incident. This is a common practice with paid-on-call departments as they are not able to guarantee how many staff will respond when alerted to an incident. Unit Rescue 21 was the first arriving unit on the most incidents with an average travel time of 4.3 minutes.

First Unit Arrival

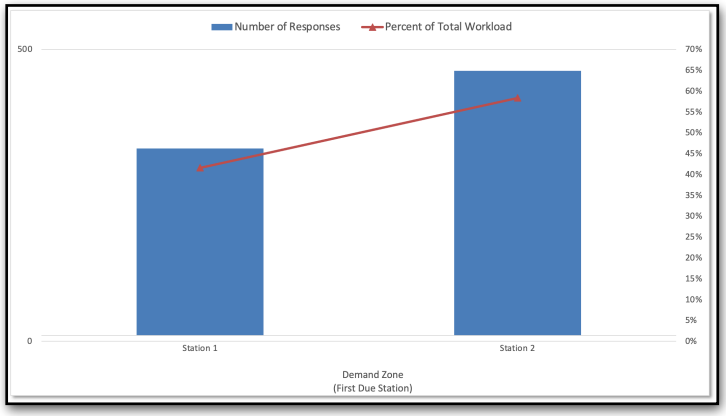
Unit Type	Travel Time (Minutes)	Number of First Arrivals	Number of First Arrivals with Travel Times
Captain	--	2	2
Chief 1	6.1	73	62
Engine 11	5.5	25	21
Engine 21	5.3	46	41
Rescue 11	3.5	60	50
Rescue 21	4.3	201	154
Utility	4.9	29	18
Total	**4.9**	**437**	**348**

Observations

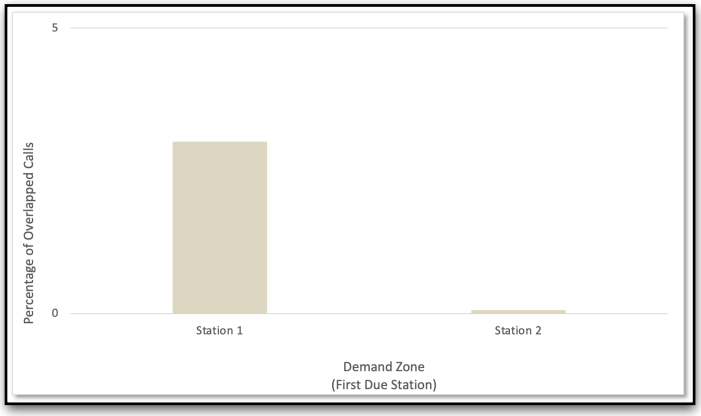
1. The average travel time of the first arriving unit is 4.9 minutes.
2. Fire Station 2 is closest to approximately 58% of the calls for service.
3. Overlapped calls are a rare occurrence with 3% at Station 2 and 0.5% at Station 1. This allows the department to focus on the first call for service.

Demand by Fire Station

Workload by Primary Fire Station



Concurrent Calls by Fire Station



Fire Station 2 shoulders almost two thirds of the service demand while Fire Station 1 experiences under 40 percent of the service demand. The demand for service is low enough that both stations experience very low concurrent calls for service (multiple calls at one time) with Station 1 at three percent and Station 2 at 0.5 percent. With the low overlapped call volume, the department can focus on being prepared to respond to single call for service and rely on mutual aid if needed for the rare occurrence of a concurrent call for service.

Geographical Demand

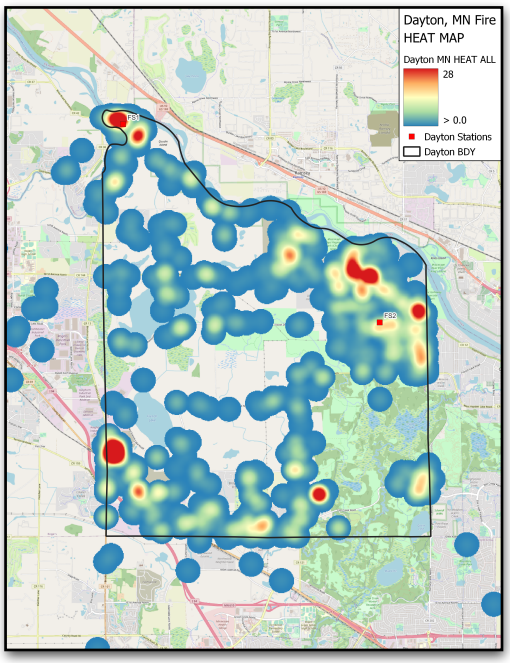
The department experiences a geographically disparate demand for service. The corners of the service area tend to have the greatest concentration of demand for service (2022 Incident Heat Map). Given the current transportation network with limited north/south roadways, this leads to an elongation of travel times particularly for the southern portion of the city (8-Minute Drive Time Current Stations). As the community develops, the concentration of demand for service may become more consistent throughout the community. There are also areas that are difficult to access from within the community, such as the southeast corner.

The city of Dayton 2040 Comprehensive Plan identifies development in the southern portion of the community. The southwestern portion of the community is the most challenging for the fire department to reach in its current fire station configuration. The current fire station configuration also has a significant amount of overlap on the very northern portion of the city with an eight minute drive time.

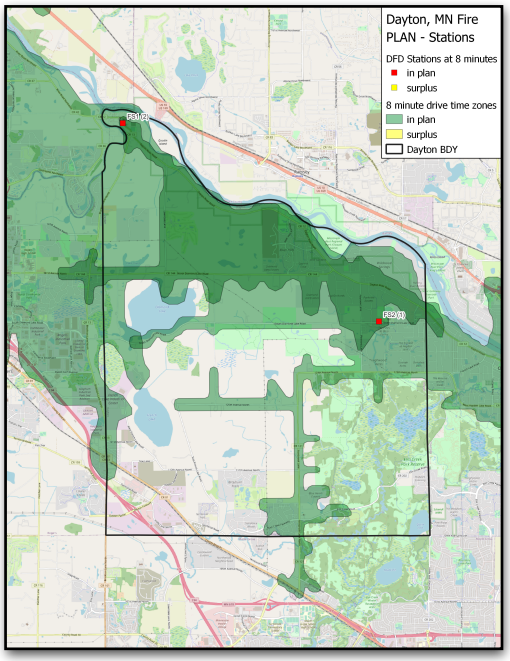
Of note Zanzibar Lane is described as a “highway:unclassified” in the TIGER GIS base maps which are used for the drive time modeling. Zanzibar Lane also has a feature class of “A41 Local, neighborhood, and rural road, city street, unseparated.” When running the drive time modeling the GIS did not find an incident response that would have been served by Zanzibar Lane. This would help explain why there is no connection of the response time coverage area on Zanzibar Lane between 125th Avenue North and South Diamond Lake Road. Zanzibar Lane was recently paved and as the community develops this route may become a route the fire department can use to get to the southwest corner of the city.

The GIS analysis was run in the ESRI platform as well and the response map covered Zanzibar Lane. With the ESRI GIS analysis there was not change in the call capture numbers within the designated drive time. While the visual analysis was inconsistent between the two GIS platforms, it will likely become more consistent now that Zanzibar Lane is paved and more GIS maps are picking up the change in road conditions.

2022 Incident Heat Map



8-Minute Drive Time
Current Stations



Geographical Demand

The industry standards base their response time categories on population density. Population density does not always equate to service demand within the community. To evaluate Urban/ Suburban/Rural density levels of demand for service *FITCH* utilizes a risk map to evaluate incident activity. This model is helpful in making decisions not only based on population density but actual demand for service. The community is divided into 1km squares to evaluate the incident density. The table below explains the demand criteria for each categorization:

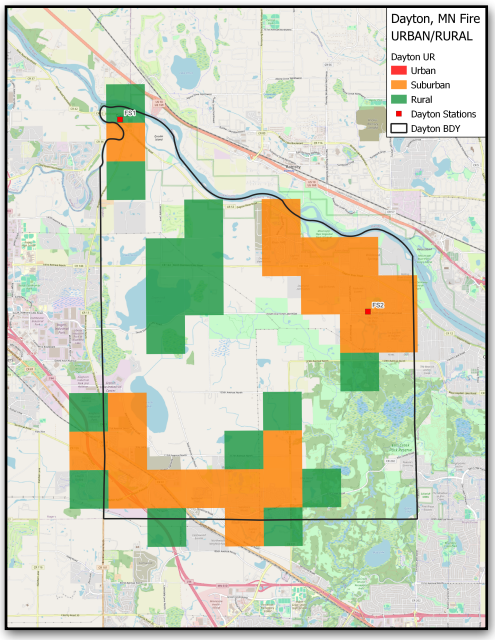
Demand Base Risk Map Definitions

Category	Incident Demand	Adjacent Incident Demand	Map Color Coding
Rural	.5 calls per month or less	.25 calls per month	Green
Suburban	.51-.199 calls per month	.26-.99 calls per month	Orange
Urban	2+ calls per month	1 call per month	Red

The demand based risk map analysis found that much of the geography does not meet the demand for service threshold to be considered rural. The analysis also found a mix of suburban and rural demand density throughout the community. Much of the most distant response area from the current two fire stations is considered suburban. None of the areas within the community have a demand for service that meet the urban density.

This analysis can help create context for policy makers to determine the appropriate level of service for the community. It is likely that based on future development plans that the community will see more suburban area and some urban areas once full developed.

2022 Demand Based Risk Map

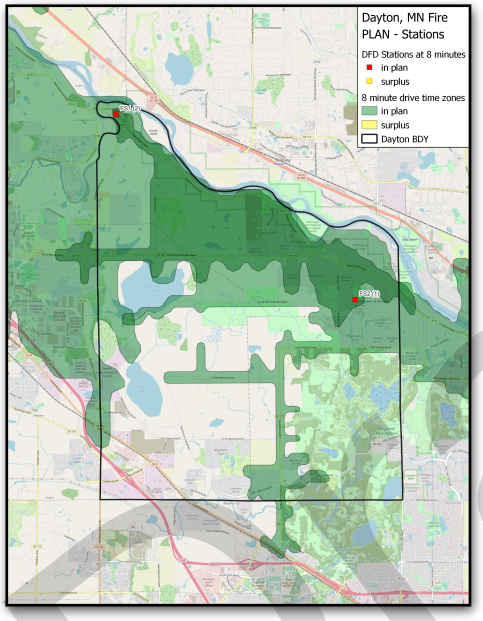


Observations

1. Service demand is highest in the corners of the community.
2. The community is still considered rural by population density.
3. There is a limited north/south road network.
4. Much of the denser development is slated for southern portion of the community.
5. Portions of the area are difficult to access from within the community.

Fixed Facilities

Currently DFD operates from two fixed facilities located within the community. Both fire stations are staffed with paid-on-call firefighters who respond from home when they are notified of a call for service. The only career staff member of the department is the Fire Chief. The current configuration is able to provide an 8-minute drive time to over 72 percent of the demand for service within the community. The map below shows the geographic coverage with an 8-minute drive time from each of the two stations. The table below shows the capture rate within an eight minute drive time. Fire Station 2 alone is able to reach 57.50 percent of the calls for service within an 8-minute drive time. Fire Station 1 can capture an additional 15.11 percent of the calls for service within that 8-minute drive time.



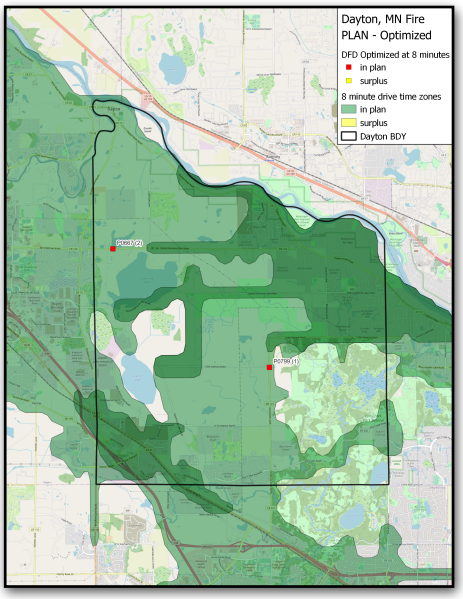
Observations

1. 72 percent of incidents can be reached with an 8-minute drive time.
2. The current two fire stations are located in the north end of the community.
3. With optimized station locations, up to 23 percent more calls for service can be reached in an 8-minute drive time.

Current 8-Minute 2 Fire Station Drive Time

Rank	Station	Station Capture	Percent Capture
1	FS 2	1,039	57.50%
2	FS 1	273	72.61%

An optimized GIS analysis was completed. This analysis removed any limitations on where to locate a fire station within the community and does not account for the current fire stations. This analysis revealed that two optimally located fire stations within the community could reach over 96 percent of the calls for service within an eight-minute drive time. The analysis does not take into account the location of the paid-on-call staff or the future development that could change the location of the community's demand. The importance of this analysis is to show that, long term, the community could be served by two strategically located fire stations.

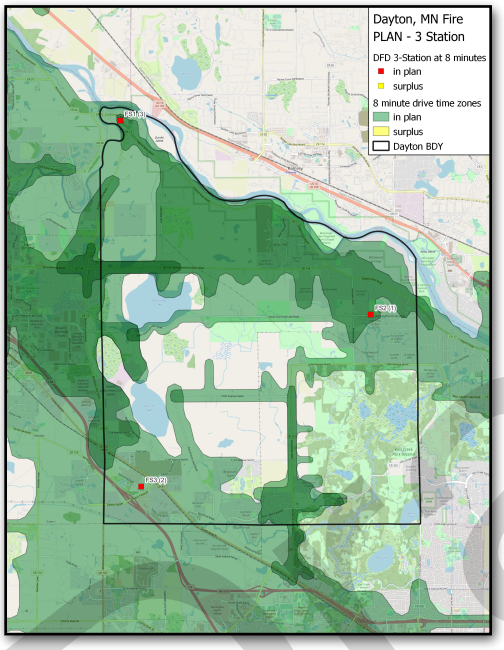


Optimized 8-Minute 2 Fire Station Arrangement

Rank	Location	Station Capture	Percent Capture
1	Fernbrook/125 St	1,433	79.30%
2	Diamond Lake/ Xanathus	303	96.07%

Strategically Adding a Fixed Facilities

With the addition of a third fire station in the southwest portion of the community, almost 18 percent more of the service demand can be reached within an 8-minute drive time. The drive time captured with three stations within an 8-minute drive time increases from 72.61 to 90.20 percent. This percentage will likely increase as much of the development is in southern portion of the community where a third station would be located. This analysis used the existing two fire stations and a third fire station located on the 18000 block of Territorial Road.



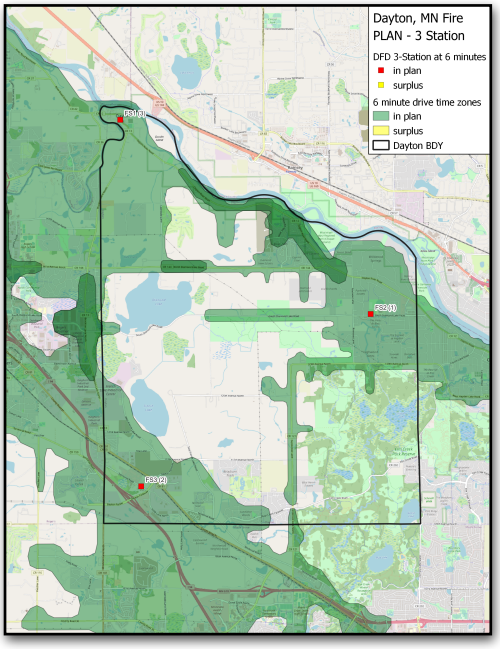
Observations

1. A third fire station may bring 18 percent more responses within an 8-minute drive time.
2. A third fire station would also allow more responses to be reached within a 6-minute drive time compared to the current arrangement.

8-Minute Drive Time 3 Fire Station

Rank	Station	Station Capture	Percent Capture
1	FS 2	1,039	57.50%
2	FS 3	492	84.73%
3	FS 1	99	90.20%

It is also notable that a higher percentage of incidents will be reached within a 6-minute drive time with a three station arrangement. Besides the drive time, the other significant variable in the current system is the turnout time which is the time from when the department is notified of an incident to when a unit is driving towards the incident. In a paid-on-call department; that turnout time is inclusive of the amount of time it takes for the staff to drive to the fire station and assemble to respond on the apparatus.



6-Minute Drive Time 3 Fire Stations

Rank	Station	Station Capture	Percent Capture
1	FS 2	810	44.83%
2	FS 3	442	69.29%
3	FS 1	215	81.18%

Strategically Adding a Fixed Facility

If the city determines that adding an additional fixed facility would benefit achieving the desired service level within the community, there are a number of steps that *FITCH* would recommend be considered.

1. Land Procurement - Determining the appropriate location for the facility is important as it will be a long term investment. The location should be considered based on the future development within the community, as a facility's useful life is usually multiple decades. It would be prudent to consider the long term staffing model of the fire department as well. With the current model of paid-on-call staffing, it is important that a fire station is located close to the residential developments where the staff resides. If there is a desire to move to a paid staffing model, whether that is duty crew, part-time or career staff, the location of the fire station may be best suited based on the future service demand and access to key roadways.

2. Pilot Facility - Once land is procured it would be beneficial to build a small facility to pilot a new fire station and ensure you are able to recruit enough staff to operate the new fire station. A small facility that would hold one or two vehicles and basic operational supplies such as fire gear would work to pilot an additional facility. This facility could be used for a few years until there is stability in the operation of the additional fire station. If the pilot is successful a larger more permanent structure can be designed and built. Once the permanent fire station is built the pilot facility could be used for storage or other city purposes.

3. Staffing - Adding a new fire station will require additional staff to provide service from that station. Finding a way to engage the community around the new fire station to start recruiting and ensuring you have adequate staff for that station would be helpful to ensure the station's success. In *FITCH*'s experience, at least 12 paid-on-call staff members should be located at a fire station to ensure a response is likely to occur from that fire station. A goal for staffing a paid-on-call station is usually around 20-25 paid-on-call staff to increase the reliability and to accommodate for the turnover and training. It would be important to add the paid-on-call staff to the department before a permanent fire station is built. It is also important to consider the leadership at the new fire station. Each fire station should have its own line level leadership such as Lieutenants or Captains. It is best practice to not have brand new fire staff operating in those leadership capacities and to have more seasoned staff with at least three years experience with a best practice being closer to five years experience. In order to set the future staff up for success, start the onboarding process of future leaders at least three years before the either the pilot or permanent fire station is set to open. An option would be to have the future leaders operate from one of the other two fire stations during until a pilot facility is opened.

4. Training - It will take time to onboard new fire staff and get them trained to an entry level capacity. Generally, that can take approximately one year to complete the initial training of new firefighters and EMTs. In addition to the initial training the firefighters will have ongoing training with the existing fire department staff.

5. Design Permanent Facility - Once a pilot fire station is established and stable designing a permanent fire station would be prudent. The permanent fire station should have additional capacity for vehicles and personnel as well as incorporating health, wellness, and training features. This design can take up to a year depending on the level of involvement with the design the city desires.

6. Build Permanent Facility - Upon completion of the facility design construction can be started. Usually construction takes at least a year to complete.

Strategically Adding a Fixed Facility

7. Equipment - Ensuring that the staff have the equipment needed will be vital to the stations operation. This equipment can include the fire gear for new staff, additional self-contained breathing apparatus (SCBA), radios, thermal imager, gear extractor and medical equipment to name a few of the items.

8. Fleet - Additional fire apparatus will likely be necessary to ensure all three fire stations are adequately equipped to respond to calls for service. An additional fire engine or a quint (combination fire engine/ ladder truck) would ensure each of the three stations have a primary fire engine to respond, leaving one fire engine available as a back up when one of the fire apparatus is unavailable while being maintained or repaired. Speciality fleet items may be requested from neighboring agencies through mutual-aid or auto-aid until a large enough need arises and the resources are available to purchase and maintain those pieces of equipment. Currently, many manufactures are about three years from order to delivery time on fire apparatus, which may impact the timeframe the city wants to consider placing an order for any additional apparatus.

9. Operations - The size of the facility may want to be considered based on the future operations of the fire department. Whether the station has sleeping facilities and the number and size of apparatus bays are key considerations. A new fire station also has the ability to incorporate additional health and safety components that the existing fire stations do not have due to their age. The addition of a third station also has the opportunity to enhance the efficiency of the operation if thoroughly planned for implementation. Stations could be alerted individually instead of having all of the stations responding to an incident that only requires a four staff members.

Fixed Facilities Summary

Observations

1. Current fire stations have some of the health and safety features such as direct exhaust capture systems from the vehicles and gear washer/extractors.
2. Neither fire station has sleeping quarters that could house staff overnight.
3. Neither fire station has the fire gear stored in a separate room from the vehicles bays.
4. Both fire stations have very little room between the fire apparatus. Vehicles are very close in the apparatus bays.
5. Both fire stations are attached to other city operations which allow multiple-use spaces in the facility.
6. The department has no dedicated training space for skill based fire training.

Short-Term Recommendations (1-3 years)

1. Consider purchasing land and building a pilot facility for a Fire Station 3 in the southern area of the community.
2. Engage the community to determine the available paid-on-call staff for a new Station 3.
3. Onboard new staff in the southern area of the community that could be the leadership of the new Fire Station 3.
4. Continue to maintain the existing two fire stations to ensure they serve the community into the future.

Mid-Term Recommendation (4-7 years)

Consider designing and building a Fire Station 3 once there is adequate funding and paid-on-call staff resources available. The type and amount of development in the southern portion of the community should be considered to determine the appropriate timing of a third fire station. Cost at least $12 million in 2024.

Long-Term Recommendation (8+ years)

The existing two fire facilities will likely need a remodel to meet the future demand and operation of the department as resources are available. The remodel may include an addition to meet a different model of service and an opportunity to include components such as training and additional health and safety features. A best practice option would be to consolidate the two existing stations into a geographically centralized northern fire station.

Personnel

The current organization of the DFD uses primarily paid-on-call staff and a full-time Fire Chief. The paid-on-call staff respond to incidents from home when their pager is alerted to an incident. When staff respond they drive their personal vehicle to the fire station to board a fire response vehicle then respond to the incident scene. It is expected that paid-on-call staff respond when they are available and to attend a minimum percentage of the calls for service. Currently Fire Station 1 has 13 paid-on-call firefighters and Fire Station 2 has 16 paid-on-call firefighters to cover all emergency response within the community 24 hours a day, seven days a week.

The current operation pages all of the staff for a call for service regardless of the type of incident or number of staff needed to respond to the incident. This is a common practice in paid-on-call fire departments as you are not guaranteed how many staff will respond when you alert them to a call for service. This leaves the department with more responders at the fire station than it needs for some calls for service.

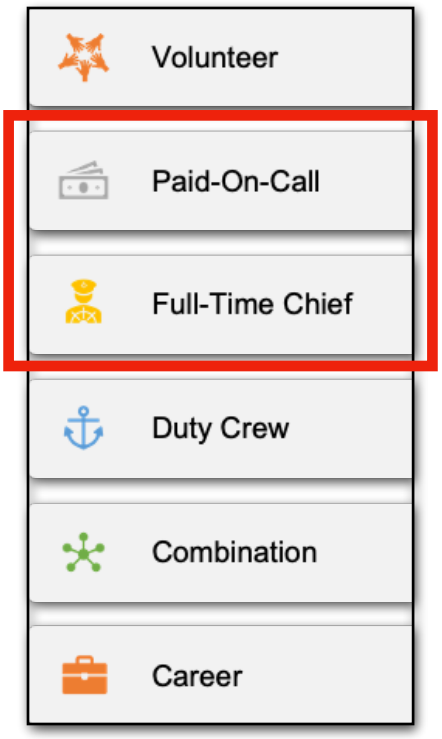
Another consideration is the time of day that the majority of the paid-on-call staff are available. Earlier in the report it compared the average number of staff responding by time of day and day of week. Many of the paid-on-call staff work a traditional workweek at their full-time job and are unavailable to respond to calls for service within the community. This is usually the first place a volunteer or paid-on-call department starts to see a decrease in the reliability of response. The department is not currently seeing a lack of reliability, but with an average of 3.4 to 5 personnel responding to weekday daytime responses, it is likely the department will see weekday daytime reliability challenges in the near future.

Many volunteer and paid-on-call departments experience recruitment and retention challenges. There are many reasons this occurs but it is widely reported across the country as a challenge. A recently released report from the United State Fire Administration on the Recruitment and Retention for the Volunteer Emergency Services (FA-361) shows that from 1984 to 2020 there has been a 25% decrease in volunteer firefighters across the country. Some of the reasons reported externally for the recruitment and retention challenges include: reduction in available time to volunteer, more dual income households, less businesses allowing workers to leave for fire calls during work hours, and employees who commute further to work. Internally, some of the dynamics include: increasing demand for service, increasing training requirements, and health risks. It is usually not just one of the challenges, but multiple, that keep residents from volunteering at their local fire department. It is also notable that it usually takes 12-18 months to get firefighters their initial training completed.

Observations

1. DFD primary uses paid-on-call staff to respond to calls for service.
2. The only full-time staff member is the Fire Chief.
3. Recruitment and retention challenges are a national trend that many departments are experiencing.

Fire Staffing Continuum



US Fire Administration, Recruitment and Retention for Emergency Services, May 2023. https://www.usfa.fema.gov/downloads/pdf/publications/retention-and-recruitment-for-volunteer-emergency-services.pdf

Personnel (cont.)

It will be important that the city plans for alternative staffing models in the event that the paid-on-call staff are unable to meet the community demand for service. With the lowest number of paid-on-call staff responding during the day during the week considering the addition of full-time staff during that timeframe would be prudent. Besides the Fire Chief the next two full-time positions that would prove to be beneficial would be to add a Fire Marshal or Fire Inspector and an Assistant Fire Chief. The Fire Marshal or Fire Inspector can be responsible for construction plan review and fire inspections while being available to respond to emergency incidents during the day during the week. The Assistant Fire Chief position can be responsible for training and logistics. The Assistant Fire Chief would work during the day during the week and be available to respond to emergency incidents during that day during the week as well. With addition of the two full-time positions you could ensure that at least two of the three are available to respond to emergency incidents while accomplishing other important work for the department.

Planning and implementing a duty crew would be the next natural step in the staffing continuum. Most departments implement a duty crew incrementally starting with a few hours a day and slowly increasing the coverage. Departments have tried to start with weekday daytime duty crews and many of those programs have struggled as those are the same hours when you have the least number of paid-on-call staff members available to work on the duty crew. Another limitation of a duty crew program is the fire stations are not equipped to handle staffing sleeping overnight at the fire stations. With the planned addition of two full-time staff members who can help cover weekday daytime hours, a duty crew may be best served in the evenings and weekend daytime hours.

Following the implementation of the duty crew, it would be recommended to reconfigure the dispatching protocols. The changes would allow the duty crew to be alerted for calls that don't need more than two or three responders to handle such as most medical calls and fire alarms. This would allow you to reduce the need to call out all of the paid-on-call staff for more serious calls for service when the duty crew or full-time staff are available. Another benefit to the duty crew program is that it allows paid-on-call staff to schedule their time and receive credit toward the minimum call percentage that is required. An hourly pay rate would need to be established for the duty crew as many paid-on-call staff are paid by the call and not the hour. There are many steps to successfully implementing a duty crew model. One of the first steps to implementing a duty crew model should be to solicit input and implementation planning assistance from the current paid-on-call staff.

Widening the recruitment geography would be possible with the full implementation of the duty crew. The geographic distance of the paid-on-call staff becomes less important as you can rely on the duty crew for the initial response. Departments have reported mixed results with the widening of the recruitment geography. With the complete removal of the geographic distance for recruiting new fire staff members, it eliminates the connection to the community which can decrease the desire to be involved in community events for the department, and at times the loyalty to the department. As many fire departments are hiring part-time staff, it is not uncommon for firefighters to work multiple part-time firefighter jobs at multiple fire departments across the metro area until they can obtain a full-time job.

There are rapidly changing dynamics within the fire industry and within Minnesota, particularly in the metro area, with more departments moving down the fire staffing continuum rapidly. Many departments have implemented either duty crews or full-time staff over the past five years. This can exacerbate the recruitment and retention challenges of the department regardless of the staffing model that is operated.

It would be prudent for the City of Dayton to establish reserve funds that are available for a fire department staffing transition if the current system becomes unreliable sooner than anticipated or there is a critical failure of the current staffing system.

Personnel Summary

Observations

1. Currently there are 29 staff within the fire department.
2. The lowest turnout of paid-on-call staff occurs during the day during the week.
3. Neither fire station can accommodate staff overnight.

Short-Term Recommendations (1-3 years)

1. Implement two additional full-time staff (Fire Marshal/Fire Inspector and Assistant Fire Chief). Approximately $120,000-$150,000 each.
2. Determine the interest in paid-on-call staff in the southern portion of the community. Onboard those interested to start building capacity and experience for a third fire station.
3. Solicit input and start planning for the implementation of a duty crew during select hours of the day. Implementation of the duty crew may be a short-or mid-term timeframe for implementation based on available resources and need. Approximately $219,000 per 24/7 position at $25 per hour.
4. The city should establish reserve funds that would be available if the current staffing system becomes unreliable and the fire department staffing needs to transition to a more reliable model sooner than anticipated.

Mid-Term Recommendations (4-7 years)

1. Implement or expand duty-crew hours as needed to maintain a reliable response.
2. Prepare stations to accommodate overnight staff.

Long-Term Recommendations (8+ years)

1. Plan for 24/7 duty crews.
2. Evaluate the need for additional full-time staff.

As the department looks to plan for duty-crew model implementation, some important context to consider is the minimum hours that will be required to be worked. If a paid-on-call staff member is required to work an average of 12 hours a week, it will take 14 paid-on-call staff to cover one seat of an emergency response vehicle 24/7. It would take 42 staff to cover one three person response vehicle.

Dispatch Center Operations

The fire department is dispatched by Hennepin County Sheriffs Office 911 Dispatch Division. This dispatch center is a consolidated dispatch center that provides services to over 50 public safety agencies within Hennepin County. The city and fire department have no control over the dispatch center but the dispatch center is a vital part of the departments operation. Hennepin County's dispatch center handles over 600,000 calls annually, of which 36,000 were fire-related calls for service. All of the fire departments who are dispatched by Hennepin County are on one fire channel, with second fire channel available for emergency situations. The dispatch center operates in a two stage model where one tele-communicator answers the 911 call and a different tele-communicator dispatches the fire department resources. This two-stage model is a best practice in dispatch centers of this size.

Observations

1. The dispatch center dispatches for over 50 agencies.
2. They operate in a two stage model.
3. Many of the best practices are in place and others are being worked on.
4. Tele-communicator recruitment and retention is reported to be a challenge like many dispatch centers.

A site visit of the dispatch center allowed *FITCH* staff to meet with the dispatch center director. *FITCH* found that the dispatch center has many of the modern technologies, redundancies and operational processes. Many of the best practices that were not in place are being worked on, such as the implementation of auto alerting of fire departments once the tele-communicator takes the 911 call. This auto alerting is best practices and reduces the need for a tele-communicator to manually alert the fire department, saving time and increasing consistency.

For EMS calls the dispatch center takes the 911 call and transfers the caller to the transporting EMS agency for pre-arrival instructions such as CPR or airway obstruction assistance. There is not currently a computer aided dispatch (CAD) integration between dispatch center. This requires the tele-communicator to call between dispatch centers with any call for service or updates, rather than leveraging technology that would automatically communicate between systems. For example North Memorial Ambulance Service is responsible for approximately 40,000 calls for service from Hennepin County Dispatch Center. The tele-communicator must make a phone call to make North Memorial aware of the incident. If there are updates, such as the patients condition when first responders arrive, another phone call must be made. This manual phone call process is time consuming and can create unnecessary and unintentional human errors. Hennepin County Dispatch is working on implementing the CAD to CAD integration between agencies.

Hennepin County Dispatch also reports that they don't have a formal quality assurance (QA) process due to staffing levels. A QA process is important to ensure that timeliness, accuracy, and procedures are followed. The dispatch center also lacks a standardized call taking protocol. A standardized call taking protocol is important so tele-communicators are consistent in how 911 calls are answered and classified to ensure the appropriate resources are sent to the incident scene. It is a best practice to have a call taking protocol for the tele-communicators.

Within Hennepin County Dispatch, fire departments set up alarm assignments that dispatches resources based on the call type and geography. This allows the fire department to preset automatic aid and mutual aid from neighboring agencies. For example when a structure fire is dispatched in an area of Dayton without municipal water supply, water tankers are automatically dispatched from neighboring agencies to assist.

The dispatch center reports a 1:30-2:00 minute call processing time. Tele-communicators are trained to work on the fire channel after about 2 years of experience. Approximately half of the staff is trained for fire channel operations.

Dispatch Operations Summary

Observations

1. Dayton Fire Department dispatches all staff for every call for service.
2. There is not a call taking protocol for tele-communicators to use.
3. There is not a formal quality assurance program for tele-communicators.
4. The city and department do not control or own the dispatch center but the dispatch center is vital to the department's operation.

Short-Term Recommendations (1-3 years)

1. Work to dispatch Dayton Fire Department by units instead of the generic department alert. This will help to improve the response time and call processing data.
2. Add an alert that will just notify the full-time staff when they are working for calls for service that do not need more than two to three responders, once the additional sworn full-time staff are implemented.
3. Advocate for call-taking protocols and quality assurance at the dispatch center.
4. Monitor call-taking times and process to identify opportunities for improvement.

Mid-Term Recommendation (4-7 years)

Ensure CAD to CAD integrations with other agencies that may respond to Dayton.

Long-Term Recommendation (8+ years)

Evaluate the implementation of future technology to improve processes and communication between the 911 call, tele-communicators and public safety responders.

Fleet

The current fleet is housed between the two fire stations. Given the current arrangement of the two fire stations there is no additional room to house any additional apparatus. The apparatus are very tightly parked in the current fire stations. Vehicles have to be moved at times in order to get the correct apparatus out of the station to respond to the emergency incident. Any addition to the fleet would require additional apparatus bay space at one of the fire stations.

A fleet replacement schedule shows the vehicles are planned to be replaced between 10 and 20 years. The current fleet has a third fire engine, which ensures that there is a backup fire engine when either front line fire engine is unavailable due to things like maintenance. The current grass rigs are combination units that respond to both grass fires and medical incidents. The grass rigs have equipment that allows the department to use the vehicle for both types of incidents.

While considering adding a Fire Station 3, there are investments related to right-sizing the fleet to accommodate the third station. An additional fire engine is likely the biggest investment outside of the building itself. Currently, the lead times on fire apparatus can be up to four years based on the type of apparatus, specifications, and manufacturer.

As the community develops and additional multi-story buildings are built, procuring an aerial apparatus will be needed. The community is transitioning from a rural to a suburban community. Most suburban communities have an aerial apparatus to ensure the fire department can maximize their access to multi-story buildings.

There may be an opportunity to combine a few vehicles when considering replacement and purchasing of apparatus. For example, the next fire engine could be a quint, which combines a ladder truck and fire engine, rather than purchasing two separate vehicles. Outside of the Fire Chief Pick Up, the vehicle utilization is low enough that combined vehicles when feasible may help create efficiency while ensuring the department is equipped to meet the community service demand. A combined fire engine and rescue truck could be purchased when the next fire engine is due to be replaced.

Current Fleet

Apparatus Type	Current	W/FS 3	Replacement Years
Engine	3	3	20
Ladder	0	0	20
Grass Rig	2	2	20
Heavy Rescue	1	1	10
Boat	2	2	10
Tanker	1	1	20
SUV	2	2	10
UTV	1	1	

Fleet

A best practice fleet ensures that the department has the vehicles needed to effectively provide service to the community in a reliable fashion. For rare incidents it is common for departments to rely on mutual-aid or regional response teams for those speciality resources. Some examples include rehab trucks with air compressors, specialized rescue (confined space, high angle rope rescue, trench collapse, and structural collapse), and hazardous materials mitigation.

A best practice replacement plan for a departments fleet includes more variables other than the age of the vehicle. The industry standards recommend that vehicles are not used for more than 20 years. There are many changes over 20 years from the safety features on the emergency vehicle to the types of incidents the department is responding to. Therefore it is prudent to ensure vehicles are replaced within the 20 year timeframe. To determine if a vehicle needs to be replaced before the 20 year timeframe the following variables could be considered:

- Age of vehicle
- Miles/Hours
- Reliability
- Maintenance and Repair Costs
- Condition of Vehicle (rust, accidents, anticipated repairs)

The following table has the best practice fleet that would anticipate the addition of two full-time staff and a third fire station. The additional SUVs ensure that Fire Marshal/Fire Inspector and Assistant Chief have SUV response vehicles. Replacement years are suggested to be the longest the vehicle should be in the fleet while using the variables above to determine if the vehicle should be replaced sooner.

Observations

1. The current fleet is tightly housed between two fire stations.
2. There is a replacement schedule based on age of vehicle.
3. Replacement is solely based on age of the vehicle.
4. Grass rigs are used for both grass fires and medical responses.
5. Additional vehicles will be needed for Fire Station 3.
6. Current utilization of vehicles is low enough to consider combination vehicles.
7. There is a need for an aerial apparatus as the community develops and more multi-story buildings are built.

Best Practice Fleet

Apparatus Type	Current	Future	Replacement Years
Engine	3	3	20
Quint	0	1	20
Grass Rig	2	2	20
Heavy Rescue	1	0	N/A
Boat	2	2	15
Tanker	1	1	20
SUV	2	5	10
UTV	1	1	15

Fleet Summary

Short-Term Recommendations (1-3 years)

1. Evaluate the need for a ladder truck and additional fire engine versus a combined quint (combination ladder and engine). Engine $1-1.2 million, Ladder $2-2.5 million, Quint $1.8-2.2 million with a 2-4 year lead time.
2. Consider purchasing the apparatus for Fire Station 3 once a construction plan is identified. Some of the fire apparatus have a longer lead time than building construction.
3. Consider adjusting fleet replacement schedules to include additional variables such as vehicle reliability, cost of ownership and condition.

Mid-Term Recommendation (4-7 years)

Consider replacing the heavy rescue and fire engine with one dual role apparatus.

Long-Term Recommendation (8+ years)

Re-evaluate the size of the fleet if the department is able to return to a two station model by building a combined northern fire station.

Equipment

A fire department uses a significant amount of equipment to successfully carry out its mission. This equipment includes items like protective fire gear, self-contained breathing apparatus (SCBA), and automated external defibrillators (AEDs). All of the equipment has a life cycle which could be based on a number of factors including:

- Age
- Industry standard
- Use
- Reliability
- Obsolescence
- Cost of ownership
- Surplus due to change in approach to service provision
- New safety features

Observations

1. The department is well equipped.
2. There is health and safety equipment at both stations.
3. If a third station is added, additional equipment will need to be procured.

Of important note, the department has items dedicated to the health and safety of the fire staff to include gear washers and direct capture exhaust systems. These types of equipment help provide a safer working environment by reducing exposure to known toxins to firefighters.

When approaching equipment purchasing and replacement, it is important to evaluate options for procurement, specifications and future use of the equipment. Having a methodic approach to equipment replacement will ensure the effective and efficient use of those resources into the future. For example, you could buy SCBA's at a lower cost under a current standard when a new standard is coming out the following year. You may have a lower purchase cost but the life span of SCBA's may be shortened since they were purchased at the end of a standard cycle. Another consideration is how many SCBA's you need to own and operate based on the staffing model.

If a third station were to be added, additional equipment would need to be procured to operate that additional fire station. If it is a transient or short amount of time that three stations would be operated as a new consolidated central north fire station was built, some equipment may not need to be purchased. An example may be that gear extractor could be used at another fire station until the department was operating at a two fire stations model again. Other equipment is driven more based on the staffing or fleet size such as fire gear, radios, or thermal imagers.

Equipment Replacement

Equipment Type	Current	W/FS 3	Replacement Years
Extrication	2	3	20
SCBA Compressor	2	3	20
Gas Detectors	5	6	4
SCBA		TBD	15
Gear Washer	2	TBD	20
AEDs	5	TBD	10
LUCAS CPR	2	3	10
Thermal Imager	3	4	8
Fire Gear	30	TBD	10

Equipment Summary

Short-Term Recommendations (1-3 years)

1. A comprehensive list of equipment and replacement schedule should be established.
2. A list of equipment needed for a Fire Station 3 should be developed, including lead times for procurement.

Training

Training is a critical component of a fire department to ensure firefighters have the knowledge, skills, and abilities to provide service to the community. This training is key to keeping both the public and firefighters safe during a response. There are a number of references within the fire services regarding training. The most prominent is the National Fire Protection Association (NFPA) which has standards and job performance requirements (JPRs) for each position within the fire department. Another reference is the Insurance Service Office (ISO) that rates fire services. There are also opportunities to obtain training and certifications for many of the roles and responsibilities within a fire department. Training is even more important for DFD as it has a less tenured staff than previously and the only way to prepare these firefighters for success is by robust training evaluations.

Observations

1. The department requires members to attend 66% of the training in a quarter.
2. There are opportunities for the department to modernize its training program.
3. There is no dedicated training space and while the department continues to have less experienced staff that need additional training opportunities to ensure competence.

DFD requires all department members to attend 66% of the training sessions in any given quarter. Many volunteer or paid-on-call fire departments focus their training requirements on the number of hours of training completed by staff member and the percentage of training. Training a volunteer or paid-on-call workforce is challenging for a number of reasons. One reason is the number of staff members that are showing up to a training session can be unpredictable. When setting up a training session and not knowing how many people to plan for creates planning and logistics challenges. Another challenge is providing training to a wide variety of staff experience at the same training session. An important last example is creating a training schedule that works for volunteers or paid-on-call staff. For example a firefighter who works their full-time job on the evening shift may not be able to attend trainings in the evenings when most volunteer or paid-on-call staff are available but that firefighter is available during the daytime to respond to emergencies when the least number of volunteer or paid-on-call staff are available.

A best practice for providing a modern and high-performing training program includes leveraging a hybrid approach. This hybrid approach includes using both in-person and virtual training components. This allows the fire department staff to complete much of the didactic training online at a time and place of their own convenience. That leaves the in person training time to focus on more hands on tactile training and competency evaluation.

A second step to the hybrid approach includes placing less emphasis on the number of hours of training and more of a focus on competency based training. The competency based training has more focus on ensuring each individual firefighter is able to complete each job performance requirement. A competency based training program can also be created for each role and responsibility within the department. For example a training program can be created for firefighter, apparatus operator, and fire officer for the different roles and responsibilities. In order to successfully implement a best practice model there needs to be clear expectations and communication. Some of the best practices to implementing a competency based approach include creating operating guidelines, task books, and how-to videos that are all in alignment.

Currently there is no dedicated training space. This requires the department to try to makeshift the fire station or another facility to practice skills in an unrealistic environment. For example practicing ground ladders, neither station has a second story or windows that the ladder can be set to rescue a victim. Practicing the ground ladders at the fire station can lead to damage of the exterior of the fire station.

Training Summary

Having appropriate training space is even more important as the department has less experienced firefighters that need additional training opportunities to ensure an adequate level of competence is present when an emergency incident occurs. A new firefighter takes up to 18 months to complete their entry level training. It is also notable that Dayton does not have a water supply system that would allow firefighters to train flowing water without affecting residents and businesses.

Most modern fire facilities include training features within the fire station with the exception of a live fire training facility. With adequate planning almost all fire skills can be accomplished at a well designed fire station. The more convenient the training is made to the fire staff, the more likely the training features will be used by the fire staff. Live fire training is best accomplished in a dedicated live fire training facility as it is difficult to incorporate all of the safety features of a fire station with a live fire training facility.

Sample Department Training Schedule

Dayton 2024 Training Schedule

Day	Date	Location	Time	# of Hours	Topic	Lead
Thur	4-Jan	DFD	19:00-22:00	3	Haz-Mat Deep Dive Four Gas Monitor	Kirk Maroushek
Thur	18-Jan	DFD	19:00-22:00	3	Emergencies in Heavy-Content Buildings	Century College
Thur	1-Feb	DFD	19:00-22:00	3	The Importance of Good Report Writing	Jeff St. Martin HCFIT
Thur	15-Feb	DFD	19:00-22:00	3	EMS Training	Brian Junkin North Memoria
Thur	7-Mar	DFD	19:00-22:00	3	New Tanker Training	MaQueen
Thur	28-Mar	DFD	19:00-22:00	3	North EMR Refresher	North Memorial
Thur	4-Apr	DFD	19:00-22:00	3	Building Preplans	Jason Elasky
Thur	18-Apr	DFD	19:00-22:00	3	North EMR Refresher	North Memorial
Thur	2-May	DFD	19:00-22:00	3	Know Your SCBA	Century College
Thur	16-May	DFD	19:00-22:00	3	Minnesota State Fire Marshal's Sprinkler Trailer	MN State Fire Marshal's Offic
Saturday	1-Jun	DFD	07:00-15:00	8	Live Burn	Gary Hendrickson

Short-Term Recommendations (1-3 years)

1. Maximize the hybrid approach to delivering training content.
2. Consider implementing a competency-based training program.
3. Ensure training is provided specific to each responsibility in accordance with industry best practices.
4. Ensure alignment between policies/guidelines, training, and competency checks.
5. Identify a training facility to ensure staff are able to train in a realistic and safe environment

Mid-Term Recommendation (4-7 years)

Evaluate and adjust training program based on changing risks within the community.

Considerations for Fire Prevention

DFD currently uses contracted fire inspection services from a private contractor. The current private contractor provides inspection services to many local units of government. While this service provides the important service to the community, it does not connect back to the fire department. Each fire inspection is an opportunity to capture pre-planing information that is vital for the fire department when responding to an emergency incident. This is also an important connection between the inspector and fire department when evaluating a construction plan, not only for code compliance but also emergency response. There are many areas of the fire code that leave discretion up to the authority having jurisdiction, which is the local fire official. This is an opportunity to work with a building owner, developer and architect to determine which tradeoffs work for both the owner and fire department to build a safe building that allows for an effective fire response.

The department would be served by prioritizing the hiring of a fire inspector or fire marshal. The city is witnessing the construction of numerous large commercial and industrial buildings. At the time of construction is the best opportunity to ensure a building is constructed with fire protection features that work effectively for a fire response. Hiring a fire inspector and fire marshal would allow someone dedicated to implementing a community risk reduction program. Plan reviews could be contracted to a subject matter expert out when it is a complex development or there is a high workload.

The first phase of implementation of a community risk reduction program is to inventory and assess the community risk. The four steps to inventorying and assessing community risk are:
- Inventorying the community, which includes identifying all of the structures within the community, fire systems within the structures, and current fire code compliance.
- A risk assessment should be completed while inventorying the community based on life hazards, property loss, and potential impact to the environment and community.
- Analyzing the inventory should be used to determine impacts and trends.
- Then prioritizing the risk based on life hazards, property loss, and impact on the environment and community.

The second phase of community risk implementation is to identify the appropriate mitigating strategies. There are five common mitigation strategies with the first four being proactive and the last option being the responsive safety net:
- Education - Educating a specific target audience can help reduce risk. Some examples include educating seniors on fall prevention or apartment managers common impactful fire code violations.
- Enforcement - Enforcement generally is about gaining compliance with fire code and/or local ordinances. The best practice approach is to start with education for first violations unless there is an egregious life safety risk present.
- Engineering - Engineering controls can include programs like installing fire stops above stoves to control cooking fires or ensuring fire doors close when a fire alarm sounds.
- Economic incentives - These incentives could be both incentives or disincentives. An incentive might be waiving a permit or inspection fee if no code violations are found. A disincentive could be an escalating fee for multiple false fire alarms within a year.
- Emergency response - Emergency response is a post incident mitigation strategy. This is usually costly both in the response and the loss that is created by an incident.

The most effective community risk reduction program focuses on reducing occurrences or decreasing the impact of the risks.

The last phase of the community risk reduction program is to implement the necessary policy and procedures. This phase may include council level policy decisions such as ordinance changes or a fee schedule adoption. Much of this phase will include operational level policy and procedure development and implementation.

Fire Prevention Summary

Observations

1. Current fire inspections and plan reviews are provided by a private provider.
2. The pre-incident plan information and operational impacts of plan reviews do not appear to be part of the current approach to fire inspections and plan review.

Short-Term Recommendations (1-3 years)

1. Consider hiring a fire inspector or fire marshal as funding becomes available.
2. Implement a comprehensive community risk reduction program.
3. Evaluate and implement a pre-incident plan program that ensures all responders have access to important information about the buildings they are responding to.

Mid-Term Recommendation (4-7 years)

Reevaluate the risk within the community and adjust risk reduction and response programs as needed.

Administration

The fire department currently operates with one full-time fire chief and the remainder of the staff is paid-on-call. There are five paid-on-call officer positions. Currently there is one officer position filled at Fire Station 1.

The department has signed up with an online policy manual provider. Only a couple of the policies have been established and communicated to the entire department. An example of a policy would be to have a guideline on alarm assignments and which apparatus should respond to each type of incident. This would be helpful for staff to have clarity in expectations. The online policy manual has a template to start from but requires work to personalize many of the templates to meet the departments needs.

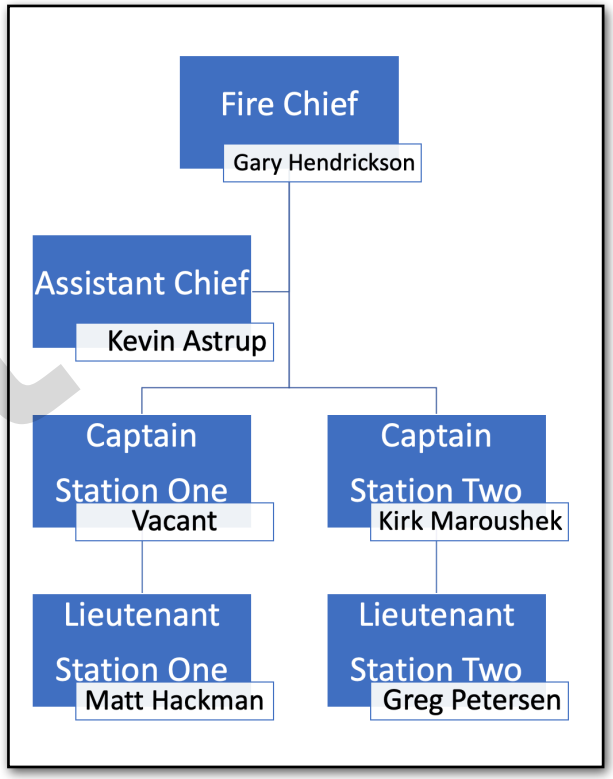
As an organization moves to a best practice model, it is important that staff are involved in that change. Change needs to occur at a rate that is digestible and bought into by the staff. One way to increase staff engagement is to create a committee that has firefighters and fire officers on it that work to identify and implement change to improve the organization. When staff at all levels of the organization are consulted on issues and engaged in resolving on the issues there is usually a better outcome and buy in.

Looking towards the future, bolstering the administrative function of the fire department is important to helping support the current paid-on-call model. Having one full-time staff member responsible for all the administrative functions becomes challenging. Adding a full-time assistant chief as funding is available would assist in splitting up the duties of the administrative function. Many departments use the assistant chief as the training officer and keep the fire chief focused on the strategic level operation of the fire department.

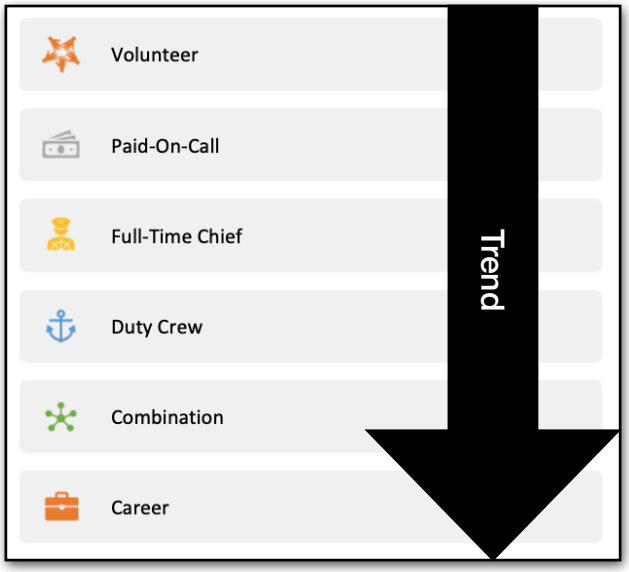
Adding a full-time assistant chief and a fire inspector or fire marshal would also assist in providing additional coverage for emergency responses during the daytime weekday hours where the lowest number of responders are currently able to respond. Fire departments are somewhere on the staffing continuum and it is common for fire departments to move toward adding full-time staff. Some of the first full-time staff in a paid-on-call fire department are commonly chiefs and inspectors.

A regulatory item of note is that Federal OSHA recently published an 800+ page update to the regulation for fire and EMS departments. There may be a resource and administrative impact based on what the final OSHA rules get adopted in the short-term.

Current Dayton Fire Department Organizational Chart



Fire Department Staffing Continuum



Administration Summary

Observations

1. There is currently a full-time fire chief and five paid-on-call officer positions.
2. There is one paid-on-call officer positions filled at Fire Station 1.

Short-Term Recommendations (1-3 years)

1. Work to develop officers at Fire Station 1.
2. Develop a policy and procedure model that meets current fire service regulations and expectations.
3. Implement a committee to provide input and assist with implementing change within the department.
4. Consider adding a full-time assistant chief when funding becomes available.
5. Consider adding a civilian administrative assistant when funding becomes available.

Mid-Term Recommendation (4-7 years)

Create a strategic plan to evaluate priorities for the next 3-5 years.

Long-Term Recommendation (8+ years)

Evaluate staffing model and sustainable future service delivery to the community.

Data

Data is vital to the current and future operation of the fire department. It is important that data is not only collected but there is quality assurance of the data. That data is used to inform decisions both within the department and at the policy level. Data can also be used to provide transparency of service provided to the community.

There are many sources of data that are important to modern fire departments. Some of the data sources include:

- Construction plans and reviews
- Fire inspection and permit records
- County assessor office data
- GIS
- Computer aided dispatch from Hennepin County
- Records management of fire and EMS responses
- Training records
- Firefighter turnout data

Currently Dayton Fire Department gets only limited information from the Computer Aided Dispatch (CAD) system Hennepin County Sheriffs Office 911 Center directly imported into the department's records management system. This requires department staff to manually enter information such as response date/times and responding units. The manual translation of that information can lead to incomplete data and errors being made inadvertently. A best practice is to have the information directly fed into the departments records management system.

The use of quality data is imperative to making informed decisions on how to provide reliable and effective fire and EMS services to the community. During this operational review it became apparent that the data system within the department likely does not serve the department and city as well as it could. It did not appear that there is a robust data set with fire, EMS, staffing, and fire prevention data that can be easily evaluated.

In order to have quality data, there are a number of steps that must occur in order to be effective. The following steps can be a framework for effective data implementation:

1. Staff must understand the importance of the data collection and how the data will be used to improve decision making. Quality data starts with the line staff buying into the need to enter data accurately.
2. The department needs to have the technical resources to implement data collection and analysis. This step usually entails evaluating the current systems versus the needs to identify the gaps. Then the department can evaluate potential technology systems or resources to fill the gaps.
3. The implementation of the systems need to include writing specific processes and rules within the systems to ensure the data being collected is complete. An evaluation is then needed to find the effectiveness of the processes and rules and also determines if additional processes and rules need to be implemented. The implementation is iterative and ongoing. Many departments implement systems with little customization and evaluation following the rollout. This leaves the department using a small percentage of the systems capabilities. It is important that line staff through administration are part of this process.
4. Quality assurance of data collection needs to occur. Departments often may conduct clinical quality assurance (QA) to make sure the care provided to patients was appropriate. While the clinical QA is important, there also needs to be QA of the documentation on fire, EMS and fire prevention documentation. Without the QA on the documentation, most departments find themselves with many outliers when data analysis occurs. This steps ensures that you will have accurate data to inform decision making.

5. Analysis and reporting can occur once the data is in the system. This reporting can be used for many audiences. It is important that performance reporting is shared internally so staff can see the value of the data. The data analysis can be shared with administration and elected officials to inform policy decisions around fire and EMS service delivery. Just as important, the information can be used for public transparency and education on the services provided to the community.

Data Summary

Observations

1. It does not appear there is a robust data set with fire, EMS, staffing, and fire prevention data within the department.
2. Reporting is limited based on available data and administrative bandwidth.

Short-Term Recommendations (1-3 years)

1. Enhance the use of the records management system(s) within the department to collect and evaluate data as outlined.
2. Capture risk information during fire inspections, low acuity calls for service, and preplan activities.
3. Implement a full CAD to RMS interface to automatically download CAD data.
4. Implement data quality assurance to ensure data is complete and accurate.

Mid-Term Recommendation (4-7 years)

Aggregate and trend data following multiple years of comprehensive data collection.

Long-Term Recommendation (8+ years)

Evaluate systems to ensure they meet the department and community's needs for data collection, analysis, and reporting.

Observation Summary

Current Planning
1. Three full-time positions are planned over the next three years.
2. The current stations have multi-million dollar costs to keep operating.
3. Eight apparatus are planned for replacement/purchase totaling $5.9 million.

Citywide Future Plans
1. Dayton, MN is a developing community.
2. The development is at a steady pace.
3. Only part of the community has fire hydrants and municipal water supply.
4. The municipal water supply in the northwest corner of Dayton has limited capacity to provide emergency responders with an immediate high water flow.
5. Dayton's development appears to be aimed at keeping a primarily residential community with areas of commercial, industrial, mixed use and a small high-density residential area.
6. The development is anticipated to occur over the next three decades leading to a steady growth strategy.
7. There are limited north/south transportation network options currently which challenge a timely response to the southern portion of the community.
8. The 2040 comprehensive plan estimates a population of 10,400 while the growth rate of Dayton since 2010 project the population is closer to 16,095 or 5,695 higher than the comprehensive plan.

Fire Department Overview
1. Dayton is currently considered a rural community and meets the NFPA 1720 industry standard.
2. As the community develops, Dayton will likely be classified as a suburban community. The industry standards for a suburban community have shorter response times and the current fire department staffing model will not meet those standards.

Community Demand for Service
1. 75% of the communities demand for services is related to medical emergencies.
2. The type of development that occurs within the city may impact the rate at which the community's demand for fire service will increase.
3. Future community demand is projected to be approximately 700 calls for service in 2030 based on historical demand trends.

Evaluating the Current System
1. The highest demand for service occurs between 8am and 8pm.
2. The lowest average paid-on-call staff turnout is during the 7am-3pm Monday-Friday.
3. The average travel time of the first arriving unit is 4.9 minutes.
4. Fire Station 2 is closest to approximately 58% of the calls for service.
5. Overlapped calls are a rare occurrence with 3% at Station 2 and 0.5% at Station 1. This allows the department to focus on the first call for service.

Geographical Demand
1. Service demand is highest in the corners of the community.
2. The community is still considered rural.
3. There is a limited north/south road network.
4. Much of the denser development is slated for southern portion of the community.
5. Portions of the area are difficult to access from within the community.

Observation Summary (cont.)

Fixed Facilities

1. 72 percent of incidents can be reached with an 8-minute drive time.
2. The current two fire stations are located in the north end of the community.
3. With optimized station locations, up to 23 percent more calls for service can be reached in an 8-minute drive time.
4. A third fire station may bring 18 percent more responses within an 8-minute drive time.
5. A third fire station would also allow more responses to be reached within a 6-minute drive time compared to the current arrangement.
6. Current fire stations have some of the health and safety features such as direct exhaust capture systems from the vehicles and gear washer/extractors.
7. Neither fire station has sleeping quarters that could house staff overnight.
8. Neither fire station has the fire gear stored in a separate room from the vehicles bays.
9. Both fire stations have very little room between the fire apparatus and vehicles are very close in the apparatus bays.
10. Both fire stations are attached to other city operations which allow multiple-use spaces in the facility.
11. The department has no dedicated training space for skill based fire training.

Personnel

1. DFD primary uses paid-on-call staff to respond to calls for service.
2. The only full-time staff member is the Fire Chief.
3. Recruitment and retention challenges are a national trend that many departments are experiencing.
4. Currently there are 29 staff within the fire department.
5. The lowest turnout of paid-on-call staff occurs during the day during the week.
6. Neither fire station can accommodate staff overnight.

Dispatch Center Operations

1. The dispatch center dispatches for over 50 agencies.
2. They operate in a two stage model.
3. Many of the best practices are in place and others are being worked on.
4. Tele-communicator recruitment and retention is reported to be a challenge like many dispatch centers.
5. Dayton Fire Department dispatches all staff for every call for service.
6. There is not a call taking protocol for tele-communicators to use.
7. There is not a formal quality assurance program for tele-communicators.
8. The city and department do not control or own the dispatch center but the dispatch center is vital to the department's operation.

Fleet

1. The current fleet is tightly housed between two fire stations.
2. There is a replacement schedule based on age of vehicle.
3. Replacement is solely based on age of the vehicle.
4. Grass rigs are used for both grass fires and medical responses.
5. The long term plan identifies vehicles for Fire Station 3.
6. Current utilization of vehicles is low enough to consider combination vehicles.
7. There is a need for an aerial apparatus as the community develops and more multi-story buildings are built.

Equipment

1. The department is well equipped.
2. There is health and safety equipment at both stations.
3. If a third station is added, additional equipment will need to be procured.

Observation Summary (cont.)

Training

1. The department requires members to attend 66% of the training in a quarter.
2. There are opportunities for the department to modernize its training program.

Fire Prevention

1. Current fire inspections and plan reviews are provided by a private provider.
2. The pre-incident plan information and operational impacts of plan reviews do not appear to be part of the current approach to fire inspections and plan review.

Administration

1. There is currently a full-time fire chief and five paid-on-call officer positions.
2. There is only one paid-on-call officer positions filled at Fire Station 1.

Data

1. It does not appear there is a robust data set with fire, EMS, staffing, and fire prevention data within the department.
2. Reporting is limited based on available data and administrative bandwidth.

Short-Term Recommendations (1-3 years)

Fixed Facilities

1. Consider purchasing land and building a pilot facility for a Fire Station 3 in the southern area of the community.
2. Engage the community to determine the available paid-on-call staff for a new Station 3.
3. Onboard new staff in the southern area of the community that could be the leadership of the new Fire Station 3.
4. Continue to maintain the existing two fire stations to ensure they serve the community into the future.

Personnel

1. Implement two additional full-time staff (Fire Marshal/Fire Inspector and Assistant Fire Chief). Approximately $120,000-$150,000 each.
2. Determine the interest in paid-on-call staff in the southern portion of the community. Onboard those interested to start building capacity and experience for a third fire station.
3. Solicit input and start planning for the implementation of a duty crew during select hours of the day. Implementation of the duty may be a short or mid-term timeframe for implementation based on available resources and need. Approximately $219,000 per 24/7 position at $25 per hour.
4. The city should establish reserve funds that would be available if the current staffing system becomes unreliable and the fire department staffing needs to transition to a more reliable model sooner than anticipated.

Dispatch Operations

1. Work to dispatch Dayton Fire Department by units instead of the generic department alert. This will help to improve the response time and call processing data.
2. Once the additional sworn full-time staff are implemented, add an alert that will notify just the full-time staff when they are working for calls for service that do not need more than two to three responders.
3. Advocate for call-taking protocols and quality assurance at the dispatch center.
4. Monitor call-taking times and process to identify opportunities for improvement.

Fleet

1. Evaluate the need for a ladder truck and additional fire engine versus a combined quint (combination ladder and engine). Engine $1-1.2 million, Ladder $2-2.5 million, Quint $1.8-2.2 million with a 2-4 year lead time.
2. Consider purchasing the apparatus for Fire Station 3 once a construction plan is identified. Some of the fire apparatus have a longer lead time than building construction.
3. Consider adjusting fleet replacement schedules to include additional variables such as vehicle reliability, cost of ownership and condition.

Equipment

1. A comprehensive list of equipment and replacement schedule should be established.
2. A list of equipment needed for a Fire Station 3 should be developed, including lead times for procurement.

Training

1. Maximize the hybrid approach to delivering training content.
2. Consider implementing a competency based training program.
3. Ensure training is provided specific to each responsibility in accordance with industry best practices.
4. Ensure alignment between policies/guidelines, training, and competency checks.
5. Identify a training facility to ensure staff are able to train in a realistic and safe environment

Fire Prevention

1. Consider hiring a fire inspector or fire marshal as funding becomes available.
2. Implement a comprehensive community risk reduction program.
3. Evaluate and implement a pre-incident plan program that ensures all responders have access to important information about the buildings they are responding to.

Short-Term Recommendations (cont.)

Administration

1. Work to develop officers at Fire Station 1.
2. Develop a policy and procedure model that meets current fire service regulations and expectations.
3. Implement a committee to provide input and assist with implementing change within the department.
4. Consider adding a full-time assistant chief when funding becomes available.
5. Consider adding a civilian administrative assistant when funding becomes available.

Data

1. Enhance the use of the records management system(s) within the department to collect and evaluate data as outlined.
2. Capture risk information during fire inspections, low acuity calls for service, and preplan activities.
3. Implement a full CAD to RMS interface to automatically download CAD data.
4. Implement data quality assurance to ensure data is complete and accurate.

Mid-Term Recommendations (4-7 years)

Fixed Facilities

1. Consider designing and building a Fire Station 3 once there is adequate funding and paid-on-call staff resources available. The type and amount of development in the southern portion of the community should be considered to determine the appropriate timing of a third fire station. Cost at least $12 million in 2024.

Personnel

1. Implement or expand duty crew hours as needed to maintain a reliable response.
2. Prepare stations to accommodate overnight staff.

Dispatch Operations

Ensure CAD to CAD integrations with other agencies that may respond to Dayton.

Fleet

Consider replacing the heavy rescue and fire engine with one dual role apparatus.

Training

Evaluate and adjust training program based on changing risks within the community.

Fire Prevention

Reevaluate the risk within the community and adjust risk reduction and response programs as needed.

Administration

Create a strategic plan to evaluate priorities for the next 3-5 years.

Data

Aggregate and trend data following multiple years of comprehensive data collection.

Long-Term Recommendations (8+ years)

Fixed Facilities

1. The existing two fire facilities will likely need a remodel to meet the future demand and operation of the department as resources are available. The remodel may include an addition to meet a different model of service and an opportunity to include components such as training and additional health and safety features. A best practice option would be to consolidate the two existing stations into a geographically centralized northern fire station.

Personnel

1. Plan for 24/7 duty crews.
2. Evaluate the need for additional full-time staff.

Dispatch Operations

Evaluate the implementation of future technology to improve processes and communication between the 911 call, tele-communicators and public safety responders.

Fleet

Re-evaluate the size of the fleet if the department is able to return to a two station model by building a combined northern fire station.

Administration

Evaluate staffing model and sustainable future service delivery to the community.

Data

Evaluate systems to ensure they meet the department and communities needs for data collection, analysis, and reporting.