Strategic Review of the Fire Department MUNICIPALITY OF ANCHORAGE, ALASKA



November 2013

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1. INTRODUCTION AND EXECUTIVE SUMMARY

The Matrix Consulting Group was retained by the Municipality of Anchorage to conduct a strategic review of the Anchorage Fire Department, which included an extensive review of management, staffing and other services. In reaching the concluding point of the study, the project team has assembled this report, which summarizes our findings, conclusions, and recommendations where appropriate. This study was conducted with cooperation and assistance of the Municipality of Anchorage and the full support of the members of the Anchorage Fire Department.

In this study of the Anchorage Fire Department (AFD), the project team utilized a wide variety of data collection and analytical techniques. The project team conducted the following data collection and analytical activities:

- The project team began an intensive process of interviewing personnel in every fire department division and collecting a wide variety of data designed to document workloads and service levels.
- Staff members at every rank and in every function were interviewed in either a one-on-one or small group setting. All staff had the opportunity to provide input into the study through an anonymous online survey. This included personnel in operations, support, dispatch, and from the Municipality.
- The project team also compared organizational structure and staffing levels, as well as certain operational and service delivery areas with comparable fire departments.
- The fire department was compared to a series of best management practices developed by the Matrix Consulting Group. This process was used to identify issues on a wide range of topics in the fire department, as well as a process by which positive aspects of the fire department could be identified.
- The project team collected detailed workload statistics for primary functional areas, including calls for service from the computer aided dispatch / records management system, budget documents and other statistical reports.

Throughout the performance audit process, the project team reviewed interim deliverables, including the findings and issues, with the project steering committee, which consisted of members of AFD and municipal management.

2. EXECUTIVE SUMMARY

The members of the Anchorage Fire Department were instrumental during the process for conducting this study. From making themselves available for interviews to responding to requests for data during the process, it was clear the agency employs members who have a great deal of pride in the organization and a desire to provide excellent fire and EMS services to the municipality. The project team has prepared a summary of the key findings, conclusions and recommendations to be found in this final report. While not inclusive of all findings and recommendations, this does illustrate key findings and those with cost impacts to the municipality and department.

The following table provides a summary of recommendations. This was developed in order to provide the agency with a quick guide to what can be found in the report.

Finding	Recommendation	Fiscal Impact	Timing
#1			
The current organizational	Though the project team	\$262,439	Immediate
structure of the Anchorage Fire	reviewed several organizational		
Department addresses the key	alternatives, we do not		
needs, goals and objectives of	recommend any change to the		
the Department. There are no	command staff structure in the		
issues in the current	Department.		
organizational structure that			
impact key factors such as	We do recommend the Fire		
clarity of authority, span of	Marshal position be permanently		
control, checks and balances	filled and upgraded to a Deputy		
and ease of workflow. There	Chief rank consistent with the		
are issues with levels of	other divisional leaders, that and		
responsibility for command staff	a Fire Inspector be upgraded to		
members or the integration of	a supervisor position to improve		
support and operational	the span of control in Fire		
functions.	Prevention.		

Finding	Finding Recommendation		Timing
#2 A review of the command staff positions in the Fire Department shows that there are no opportunities to convert sworn positions to non-sworn.	Maintain the current staffing of sworn positions in the AFD command staff.	None	None
#3 The agency does an excellent job at initial training and ongoing training of line personnel, but there is a gap for newly promoted Battalion-level command officers.	Develop and implement a new chief management-training program.	None	Within next fiscal year
#4 The AFD has adopted a single performance standard for responding to fire and EMS incidents. The current standard is a four-minute response for the first due fire apparatus, and an eight-minute response for the first due ALS unit.	The Fire Department should evaluate the effectiveness of the single standard and consider adopting service level objectives based on risk and population density of the area served. The AFD should then publish these response time goals to remain transparent to the community.	Reduced demand for additional stations where four-minute standard cannot be met.	Within next year
#5 Call processing times are longer than best practices by a significant margin. Currently, high priority calls are processed in 159 seconds on high priority fire calls and 183 seconds on EMS calls as compared to the best practice standard of 60 seconds. Performance is currently measured only on cardiac arrest and structure fire calls. The project team recommends tracking performance on all high priority calls at the 90 th percentile.	The Department should focus on improving dispatch-processing times and continually monitor performance to improve the overall effective response to emergencies.	None	Immediate
#6 The Fire Department has established a 90 second turnout goal for responding to high priority calls for service. The agency is slightly out of compliance with the goal responding within 94 seconds to 90% of high priority fire calls and 112 seconds on EMS calls from notification.	The Department should continue to focus on improving reflex times as this is within the control of the department and immediately improves overall effective response to emergencies.	None	Ongoing

Finding	Recommendation	Fiscal Impact	Timing
#7 The Fire Department regularly audits response time data and posts the data on the agency SharePoint site.	The Fire Department should continue to regularly audit response time data to ensure information is being accurately captures and keep personnel informed of their performance as compared to the established standards.	None	Ongoing
#8 The Fire Department has sufficient ambulance resources in total. However, geographic and workload issues impact the ability of the Department to deliver effective service at all times and in all areas of the Municipality.	Consider staffing Medic 2 as a peak hour response unit with personnel from two of the four-person staffed apparatus.	None	Once negotiated and put in CBA
#9 Current minimum staffing is well supported by current staffing.	The current deployment of personnel is adequate to meet the minimum staffing plan.	None	None
#10 Future growth in the Anchorage will have workload impacts, particularly in the north and downtown areas. This growth will generate additional calls for service for both fire and EMS responses.	Ultimately, this growth will require the deployment of two (2) more ambulances and one (1) more engine in strategic locations (including existing stations). This does not include the relocation of Stations 3 and 9. This includes one new station (Station 2) in the mid-town area to house these units.	Apparatus Capital: \$1,635,000 Annual: \$4,520,407	Within the next ten years

Finding	Recommendation	Fiscal Impact	Timing
#11 The coordination of training in the Fire Department is currently disjointed and could benefit from a published annual schedule.	Ensure Company Officers are aware of and utilize the Sharepoint site for coordinating the use of the training tower and props for Company training drills.	None	As soon as possible.
	Continue to develop and adopt formal training objectives to be used during company drills. Continue to assign Captains to serve as Platoon Training		Ongoing Within the next year
	Officers, but place them on a 40- hour workweek to improve their overall utilization. This will allow the number of PTOs needed to drop from three to two.		Within next
	Battalion Chiefs regularly train with the companies assigned to their area.		fiscal year.
#12 The Fire Department is pursuing a number of information technology programs and projects at this time. There is no formal coordination with the Police Department or Municipal IT Department.	Form an IT committee with representatives from the Fire, Police, and Municipal IT Department to meet and discuss upcoming IT projects beyond the interaction through the current procurement process to ensure there is formal coordination with the Police Department on IT projects.	None	As soon as possible.
#13 The current fleet is adequate and is replaced on a timely basis, but there is no formal schedule for the replacement of apparatus.	Develop a formal apparatus and vehicle replacement schedule based on years of use or mileage.	None	Within next year
#14 The current number of reserve apparatus is adequate as it is slightly higher than the one reserve unit for every four front- line units.	Continue with the current ratios of reserve apparatus to front-line equipment.	None	Within next one to two years.
#15 The Special Operations Functions handled by the Anchorage fire department are appropriately staffed and operated.	The Department should continue to staff the Heavy Rescue full- time and staff the remaining special operation functions with cross staffing from station personnel.	None	Ongoing

Finding	Recommendation	Fiscal Impact	Timing
#16 Fire Prevention Personnel are currently unable to conduct maintenance inspections beyond those mandated by the State.	The AFD should implement a Company Inspection Program for inspecting low and moderate risk occupancies a minimum of once every three years.	None	Within next fiscal year.
#17 There is inadequate support for the lone Fire Investigator when cause and origin investigations are required	Actively train an adequate number of shift personnel to assist in the determination of cause and origin of fires. This will allow the Fire Investigator to focus more on follow-up and prosecution of suspicious and arson fires.	None	As soon as possible.
#18 The current fire education program is lacking for an agency the size of Anchorage and should be staffed with dedicated personnel.	Increase the involvement of front line companies in providing public education programming in their first due areas. Authorize two public education specialists.	None \$240,000 ongoing	As soon as possible.
#19 The Municipality currently has an excellent ISO classification of two (2) for areas within five (5)miles of a fire station. Rural / Areas outside the five mile requirement are classified as a ten (10) since they do not meet the requirements for ISO rating.	The Municipality should work to maintain their ISO 2 rating.	None	Ongoing

The agency has a plan to change the number and staffing of stations. The following table illustrates the plan for adding/relocating stations in the coming years and

the types of apparatus planned to be located at each station.

Station	Address	Personnel	Engines	Ambulance	Truck
1	122 E. 4 th Avenue	10-13	1	1	1
2	Midtown	5-6	1	1	
3	Relocated	5-6	1	1	
4	4350 MacInnes St	8-10	1	1	
5	2207 McRae Rd	8-10	1	1	1
6	1301 Patterson St	5-6	1	1	
7	8735 Jewel Lake Rd	5-6	1	1	
8	6151 O'Malley Rd	4	1		
9	Relocated	6-7	1	1	
10	14861 Mountain Air Dr	4	1		
11	16630 Eagle River Rd	10	1	1	1
12	7920 Homer Dr	6-7	1	1	1
14	4501 Campbell Airstrip Rd	4-5	1		
15	11301 Southport Dr	3-4	1		
16	University Campus	4			1
Total		87-102	14	10	5

Proposed Station Plan

As shown above, the proposed station plan will require an additional two (2) personnel to staff the additional ambulance to be located at the proposed mid-town station (#2).

2. ORGANIZATION AND MANAGEMENT

This chapter focuses on the organizational structure of the Fire Department and the resulting management and support staffing. This chapter also focuses on the key management systems utilized by the Fire Department for overseeing operations and support services in the Department.

1. CURRENT ORGANIZATIONAL STRUCTURE

The Anchorage Fire Department is currently organized into three primary organizational units. These units are depicted in the organizational chart shown below. The paragraphs that follow the organization chart provide a description of the current organizational structure and identify several key issues with the current organizational approach.



- The Fire Chief directly supervises two Deputy Chiefs and the Fire Marshal.
- A Deputy Chief runs the Operations Division, which encompasses line operations (Shift Operations) as well as EMS, and Training. An Assistant Chief reporting to the Deputy Chief runs each of these three areas.
- Similarly, the Administration Division is run by a Deputy Chief who oversee many of the support functions of the Department including: Finance, Dispatch, Fleet Maintenance, Data Systems and the Contractor responsible for Wildfire Mitigation.
- The Fire Marshal oversees the fire prevention, investigation and community right to know (CRTK) efforts of the Department.

• Note that the Fire Marshal position is currently filled by an interim employee and has been for four (4) years.

The current organizational structure of the Fire Department can be viewed as consistent with a traditional allocation of roles, responsibilities and authority with a Fire Department command staff. The current approach to organizing services recognizes several key principals, which are summarized in the following section.

2. PRINCIPALS AND CRITERIA OF A SOUND ORGANIZATIONAL STRUCTURE

In order to evaluate the organizational structure of the Anchorage Fire Department, the project team first needed to identify the criteria by which the organizational structure would be judged. These criteria were developed by the members of the project team based on our experience with a wide range of organizational models. The following paragraphs give those a description of each of those criteria:

- Accountability and responsibility is clearly identified: The organizational model must be consistent with the concept that clear lines of authority and decision making are essential for any organization to achieve excellence. Areas of responsibility are clearly delineated and points of accountability are readily identifiable.
- **Span of control or communication is optimal:** Effective organizations are structured so that lines of communication are identifiable and where there are multiple reporting relationships, responsibility for communication and control are clearly identified and understood.
- There are essential checks and balances in place where necessary: As it relates to this project, checks and balances are necessary in the area of clinical performance review as opposed to operational performance review. Effective EMS organizations are able to maintain a constructive and remedial focus on clinical issues while maintaining formal organizational discipline in the operational arena.

- Structure is based on task requirements and workflow, as opposed to specialized skills of individual members: There is a tendency in some organizations to organize work patterns around the specific passions or skills of individual members. This results in high friction levels among group members.
- Similarly titled positions have similar responsibilities and levels of accountability: The organization should be structured such that decision making authority and the possibility for decisions to impact the organization in a strategic way are all found at similar levels of the hierarchy.
- Support functions are logically grouped and do not, through this grouping, create additional layers of oversight: Organizational structures should group support functions together, separated from operations, only when the scale and scope of the operation requires it.

The section that follows provides our analysis of the current organizational

structure and opportunities for improvement.

3. THE CURRENT ORGANIZATIONAL STRUCTURE LARGELY MEETS THE CRITERIA FOR AN EFFECTIVE ORGANIZATION.

The following chart provides a graphical assessment of the current organizational

structure. Note that the " $\sqrt{}$ " marks in a box indicate that the organizational unit meets

the criteria described in the preceding section of the report, while an "x" indicates the

structure does not meet the criteria.

Organizational Unit	Authority	Span of Control	Checks and Balances	Based on Work Flow	Similar Titles / Similar Duties	Support Integrated into Ops
Office of the Fire Chief	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Operations Division	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark
Fire Operations	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark
EMS Operations	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark
Training	\checkmark	\checkmark	\checkmark	Х	\checkmark	\checkmark
Administration Division	\checkmark	\checkmark	\checkmark			

Organizational Unit	Authority	Span of Control	Checks and Balances	Based on Work Flow	Similar Titles / Similar Duties	Support Integrated into Ops
Finance	,	,	,	,	,	,
					\checkmark	
Dispatch						
	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Shop						
	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Data Systems						
	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Fire Marshal						
	\checkmark	Х	\checkmark	\checkmark	Х	\checkmark
Inspections						
	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Investigations						
	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
CRTK						
	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark

The paragraphs that follow provide a summary of the project team's findings and

conclusions regarding the current organizational structure of the Fire Department:

- The overall organizational structure of the Fire Department effectively represents the primary mission and the administrative necessities of the Department.
- The Fire Marshal position is in the budget of the Fire Department, but is not funded and has not been filled in recent years. The position is currently staffed in an acting capacity.
- Accountability for key elements of service delivery is generally found at the level of Assistant Fire Chief (e.g., Fire Operations, EMS and Training). No major issues are evident.
- The organizational structure is not built upon the specific interests of any individual(s), but rather is focused on a logical collection of assignments and functions. No major issues are evident.
- Responsibility is consistently divided among personnel with similar ranks within the overall organizational structure of the Fire Department with the exception of the Fire Marshal position – which is classified as an Assistant Chief versus a Deputy Chief consistent with the other Division Managers. No other major issues are evident.

- The Platoon Training Officer (PTO) positions are staffed by shift Captains that rotate into these positions for a limited time (typically six to 12 months) as "career development" opportunities. These positions coordinate training activities for the AFD and other agencies that utilize the training facilities. The positions work the same 24-hour shift schedule as shift personnel. The rationale for staffing these positions on the 24-hour schedule is that eight (8) hour positions are difficult to fill and the PTOs respond to incidents after hours to assist the incident commander. The PTOs provide little, if any, hands-on training to personnel in the agency, and are focused on coordinating and organizing training – which typically occurs during normal business hours.
- In our review of operations, the project team did not identify any major disconnect between operations and support functions that could be addressed simply by reorganizing units within the Divisions.
- Lines of authority are generally clear within the Department. There are no major issues regarding responsibility, authority or accountability within the current structure.
- Spans of control are appropriate for senior staff with 1:3 and 1:4 ratios for the Deputy Chiefs and the Assistant Chiefs in each Division. The Fire Marshal has nine (9) direct reports, which is high for this level in the organization.
- Checks and balances are established in a number of locations in the organizational structure:
 - EMS providers report through the Shift Operations chain of command. Quality Control is provided by EMS Battalion Chiefs and the EMS Assistant Chief.
 - Training is delivered by a number of organizational units but overseen by the Training unit. However, it is clear from our review that the roles of the Platoon Training Officers need to be more clearly defined to be more fiscally responsible.
 - Financial issues all pass through Finance for payment, approval, purchasing, etc.
 - Workflow is well supported by the current organizational structure. Operational, support and finance issues flow within their respective Divisions.

The following section considers the organizational options available to the Fire

Department.

4. THERE ARE OPTIONS FOR IMPROVING OPERATIONAL OVERSIGHT IN THE FIRE DEPARTMENT THAT SHOULD BE CONSIDERED FOR IMPLEMENTATION.

Even though there are no major issues with the current organizational approach,

the project team recognized opportunities for improvement in two aspects in Fire

Prevention. These include the following changes:

- Permanently fill the Fire Marshal position and upgrade the position to the level of Deputy Chief in order to be consistent with the organizational structure of titles and responsibility.
- Upgrade one Inspector position to serve as a unit supervisor for the inspections function to improve the overall span of control of the Fire Marshal to 1:3 to be consistent with the other Deputy Chief positions.

The following table provides the project team's assessment of these changes:

Option / Element	Permanently Fill Fire Marshal Position	Upgrade one Inspector Position to Serve as a Unit Supervisor
Benefits	 Additional promotional opportunity for Assistant Chiefs. Additional sworn command staff capacity within the command structure. Brings consistency to the organizational structure. No change to the current level of command staff positions. 	 Promotional opportunity for Inspectors. Improves span of control of the Fire Marshal position. Improved supervision and oversight of the inspection function.
Challenges	 Increased staffing cost for the Fire Marshal position. 	 Increased staffing costs to upgrade the position.
Staff Impact	 +1 Deputy Chief -1 Assistant Chief (Currently not funded) 	 +1 Senior Captain equivalent rank (Inspector) -1 Fire Inspector
Fiscal Impact	+ \$129,669 + 65% = \$213,954	+ \$118,637 + 65% = \$195,751 - \$89,252 + 65% = (\$147,266) Net change: \$48,485

Recommendation: The Fire Department should permanently fill the Fire Marshal Position, upgrading it to the Deputy Chief level and should promote one Inspector to serve as a supervisor in the Inspection Unit. Total annual cost including salaries and benefits is \$262,439

5. THERE ARE NO CIVILIANIZATION OPPORTUNITIES WITHIN THE COMMAND STAFF.

In addition, the project team examined the possibility that several positions in the

Fire Department that are currently uniform or "sworn" positions could be civilianized.

These were evaluated using a set of formal criteria, including the following:

- Does the position require skills, experience or training which can only be obtained from having firefighting background? Or, to the contrary, are there skills required that are typically obtained from having a background other than firefighting?
- Does the position supervise or routinely give orders to "sworn" personnel?
- Does the position have operational oversight at any point?

- Would civilianization make the position more difficult or expensive to fill?
- Would civilianization impact the effectiveness of the position within the command structure of the Fire Department?

The project team examined the organizational structure of the Fire Department

and identified several positions that could be considered for civilianization. These

include the following:

- Assistant Chief Fire Prevention
- Assistant Chief Fire Operations
- Assistant Chief Training

The following table provides a summary of the project team's findings relative to

Position	Fire Skills Required	Supervision of Sworn	Operational Oversight	Difficult to Fill Position	Impact in Organization	Civilianization Candidate?
Assistant Chief Fire Prevention		\checkmark	\checkmark	\checkmark	\checkmark	
Assistant Chief Fire Operations	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	
Assistant Chief of EMS		\checkmark	\checkmark	\checkmark	\checkmark	
Assistant Chief Training	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	

these criteria for each of the positions:

The table, above, highlights several issues with respect to civilianization

opportunities that exist in the Fire Department:

• While the Assistant Chief for Fire Prevention (Fire Marshal) could provide an opportunity for civilianization, this position is a critical one for the Fire Department's mission to provide for life and safety in the community. The position would be difficult to fill with a qualified civilian. **This position should not be civilianized.**

- The Assistant Chief of Fire Operations provides direct supervision and oversight of the fire operations function of the Department. All direct reports are sworn Battalion Chiefs. The person in this position is involved in the development of firefighting policies and procedures and must have direct knowledge of current fire fighting practices. **This position should not be civilianized.**
- The Assistant Chief of EMS is responsible for overseeing the emergency medical operations of a fire-based EMS system. While there are civilian EMS agencies that have similar positions, there are none in the Anchorage area; attracting a civilian candidate could prove difficult. The position also supervises sworn EMS Battalion Chiefs and must possess knowledge of the operations of a fire-based EMS system. **This position should not be civilianized**.
- The mission assigned to the Assistant Chief for Training is to ensure that the personnel of the Fire Department are providing service at the very highest level of skill, preparedness and safety. This position has direct supervisory responsibility for Safety Officers and Platoon Training Officers, and directly oversees a wide range of programs and educational opportunities that directly impact the operations of the Fire Department. This position should not be civilianized.

In all, the project team believes that the Fire Department should not consider the

civilianization of any command level positions in the organization.

Recommendation: The Fire Department should continue with the current staffing of sworn personnel in the command level positions.

6. MANAGEMENT SYSTEMS IN A FIRE AND EMS ORGANIZATION SHOULD ADDRESS OPERATIONAL AND SUPPORT FUNCTIONS IN SUFFICIENT DETAIL TO ALLOW FOR KEY MANAGEMENT DECISIONS TO BE MADE USING DATA.

This section addresses the key management and information systems that

should be in place within a modern fire agency such as the Anchorage Fire Department.

The project team examined key management systems relating in the Department.

These systems are critical to ensuring that the Department operates both effectively and

efficiently. The key elements of a successful management system for a fire agency

include the following:

- **Formal Interaction** Does the management team interact in formal meetings (set times, regular schedule, with agendas, etc.)? Are different groups of managers brought together to focus on key issues, to communicate general issues, to work on budget information, etc.?
- Utilization of Data in Decision Making Does the department make use of the data collected from calls, quality assurance reviews, inspections, etc. to make informed decisions? Are analytical methods regularly employed to make decisions regarding deployment, budgetary expenditures, etc.? Is there a culture of decision making using analysis rather than anecdotal information? Are there sufficient staff resources to support analytical decision making?
- Accountability Mechanisms Is there a mechanism in place by which staff can be held accountable for assignments made? Do these systems provide for accountability the same way throughout the organization?
- Formal Policies, Procedures and Protocols Are key policies, procedures and protocols formally documented? Are they regularly reviewed and updated? Does the review of these key documents involve a broadly based group? Are policies and procedures widely available to all staff? Are staff members held accountable for compliance? Is there a formal "professional standards" function within the department?
- **Management Training** Do the municipality and the department provide formal training to officers as they are promoted and as part of their continuing education? Do officers receive advanced tactical training, risk management training, personnel policy updates, etc.?
- **Utilization of Technology** Does the fire department make maximum use of technology to enhance effectiveness and efficiency? Are current investments being used effectively? Has the department planned to adopt technology in the future that will enhance services of management of services?

The project team has the following observations and findings regarding the

management of the Anchorage Fire Department:

- The management team meets on a regular schedule (weekly) and in appropriate sub-groups in order to cover a wide variety of general and specific issues. Managers and supervisors hold similar meetings in the operational Divisions. Minutes are kept at command staff meetings. The AFD publishes an agenda in advance of all command staff meetings.
- Data is used to make financial decisions and the budget is closely monitored by the agency.

- Data is used to make operational decisions. The project team found that the command staff actively tracks key performance indicators (i.e., dispatch processing time, turnout time and travel time, etc.).
- The AFD uses data-focused efforts, including the use of GIS software to evaluate station location and unit deployment, dispatching the closest available unit, and dispersing call volume more equally among EMS units.
- The Fire Department is currently in the process of reviewing and updating policies and procedures. The newly hired Assistant Chief of Operations under the direction of the Deputy Chief of Operations is leading this effort. There have been numerous policy revisions issued in the past couple of years through memorandums, which has caused confusion at the operational level. The timely review and revisions of these policies should remain a priority for the agency and include input from all levels of the organization.
- The Fire Department continues to push technology investment. Recent additions include a live status board in each facility and cameras installed on battalion chief vehicles. Issues include:
 - Lack of planning with the Municipal IT department, outside of the procurement process, and prior to technology investments, which results in support and compatibility issues if the system capabilities are not fully vetted prior to the decision to make IT purchases.
 - Lack of work with the Anchorage Police Department to coordinate and manage the joint technology opportunities.
- There are a number of training opportunities available to staff at all levels. The Training Division, EMS Division, and others offer a range of educational and skills development options.
- The Fire Department does not currently maintain a "command college" for Battalion Chiefs and above. However, staff is encouraged to make use of internal and external opportunities, including but not limited to the National Fire Academy and their Executive Fire Officer program so long as no overtime or backfilling of positions is required. Additional support for new chief-level officers would be appropriate – particularly focused on personnel, risk management and other key management skills not typically covered as part of company officer training. The Municipality should ensure that adequate funds are provided in the annual budget to invest in training for command-level personnel commensurate with their responsibilities to lead the organization.
- The Fire Department is engaged in a number of projects focused on enhancing the utilization of technology in the field and in the administration of the Department. Examples of key investments include the following:

- Use of traffic signal pre-emption system for emergency response. This system enables units to be prioritized through signals, reduces the risk of emergency vehicle collisions at intersections and provides for enhanced vehicle routing.
- Implementation of status boards at all locations to allow personnel to have knowledge of current incidents being worked by the agency and the status of apparatus.
- Installation cameras on each of the Battalion Chief vehicles, which can be viewed on the status boards to allow command staff members to view active responses and emergency scenes.
- Implementation of a "First Watch" program, which provides real time, updates to the performance of the EMS system in Anchorage and how well the agency is meeting performance indicators at any given time of the day.

The project team recommends that the Fire Department undertake the following

actions to make improvements in management and oversight:

- Consider the development of a 40-hour "Command Academy" that covers key personnel, finance, and risk management issues.
- Continue with the process of information systems enhancement already underway in the Department.

Recommendation: The Department should take steps to improve new-chief management training.

The next chapter of the report discusses the evaluation of the Operations

Division of the Anchorage Fire Department.

3. EMERGENCY OPERATIONS

This chapter discusses the project team's analysis and findings related to

emergency operations within the Anchorage Fire Department. Key questions addressed

in this chapter include the following:

- Have the Municipality and the Fire Department adopted service level objectives that target effective and efficient service levels?
- Is the Fire Department capable of meeting adopted or recommended service level objectives? Where are there gaps and/or areas of duplication?
- Does the Fire Department have the resources needed to provide targeted service levels?
- Overall, how can the Fire Department improve current and future emergency operations services?

Each of these questions is addressed in the following sections.

1. THE ANCHORAGE FIRE DEPARTMENT HAS ADOPTED SERVICE LEVEL STANDARDS

The adoption of performance standards for fire and EMS response is a critical first step in the evaluation of service levels and staffing alternatives. While there are national standards that can be employed to evaluate fire and EMS service delivery, each community must identify the key risks and necessary level of protection it needs based on its own unique circumstances. Once these performance standards are established, a community can assess its performance and determine if current resources support the desired level of service.

(1) Efforts to "Standardize" Service Level Objectives Are Based on Fire Growth Behavior and Research on Cardiac Arrest.

Nationwide, a great deal of effort and research has been put into developing performance objectives for the delivery of fire and EMS services. This effort is critical for agencies making decisions about deployment and location of emergency resources. The objectives promoted for fire/rescue and EMS have their basis in research that has been conducted into two critical issues:

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

The following chart shows a typical "flashover" curve for interior structure fires.

The point in time represented by the occurrence of "flashover" is critical because it defines when all of the contents of a room become involved in the fire. This is also the point at which a fire typically shifts from a "room and contents" fire to a "structure" fire – involving a wider area of the building and posing a potential risk to the structures surrounding the original location of the fire.

Generalized Flashover Curve



Note that this graphic depicts a fire from the moment of inception – not from the moment that a fire is detected or reported. This demonstrates the critical importance of early detection and fast reporting, as well as the significance of rapid dispatch of responding units. This also shows the critical need for a rapid (and sufficiently staffed) initial response – by quickly initiating the attack on a fire, "flashover" can be averted. The points below describe the major changes that occur at a fire when "flashover" occurs:

- It is the end of time for effective search and rescue in a room involved in the fire. It means likely death of any person trapped in the room – either civilian or firefighter.
- After this point in a fire is reached, portable extinguishers can no longer have a successful impact on controlling the blaze. Only larger hand-lines will have enough water supply to affect a fire after this point.
- The fire has reached the end of the "growth" phase and has entered the fully developed phase. During this phase, every combustible object is subject to the full impact of the fire.

• This also signals the changeover from "contents" to "structure" fire. This is also the beginning of collapse danger for the structure. Structural collapse begins to become a major risk at this point, mounting to highest risk during the decay stage of the fire (after the fire has been extinguished).

It should be noted that not every fire will reach flashover - and that not every fire

will "wait" for the eight-minute mark to reach flashover. A quickly responding fire crew

can do things to prevent or delay the occurrence of flashover. These options include:

- Application of portable extinguisher or other "fast attack" methodology.
- Venting the room to allow hot gases to escape before they can cause the ignition of other materials in the room.
- Not venting a room under some circumstances this will actually stifle a fire and prevent flashover from occurring.

Each of these techniques requires the rapid response of appropriately trained fire suppression individuals that can safely initiate these actions. In the absence of automatic fire suppression systems, access to interior fires can again be limited by a safety requirement related to staffing levels. Industry standards and OSHA regulations require the presence of at least 2-firefighters on the exterior of a building before entry can be made to a structure in which the environment has been contaminated by a fire. In the absence of a threat to life demanding immediate rescue, interior fire suppression operations are limited to the extent a fire service delivery system can staff to assure a minimum of four people actively involved in firefighting operations. The second issue to consider is the delivery of emergency medical services. One of the primary factors in the design of emergency medical systems is the ability to deliver basic CPR and defibrillation to the victims of cardiac arrest. The following graphic demonstrates the survivability of cardiac patients as related to time from onset:



This graph illustrates that the chances of survival of cardiac arrest diminish approximately 10% for each minute that passes before the initiation of CPR and/or defibrillation. These dynamics are the result of extensive studies of the survivability of patients suffering from cardiac arrest. While the demand for services in EMS is wide ranging, the survival rates for full arrests are often utilized as benchmarks for response time standards, as they are more readily evaluated because of the ease in defining patient outcomes (a patient either survives or does not).

This research results in the recommended objective of provision of basic life support (BLS) within four minutes of notification, and the provision of advanced life support (ALS) within eight minutes of notification. The goal is to provide BLS within six minutes of the onset of the incident (including detection, dispatch and travel time) and ALS within ten minutes. This is often used as the foundation for a two-tier system where fire resources function as first responders with additional (ALS) assistance provided by responding ambulance units and personnel, as is currently the practice in Anchorage.

Additional recent research is beginning to demonstrate the impact and efficacy of rapid deployment of automated external defibrillators (AED) to cardiac arrests. This research – conducted in King County (WA), Houston (TX), and as part of the OPALS (Ontario Pre-Hospital ALS) study in Ontario, Canada – shows that the AED can be the largest single contributor to the successful outcome of a cardiac arrest – particularly when accompanied by early delivery of CPR. It is also important to note that these medical research efforts have been focused on a small fraction of the emergency responses handled by typical EMS systems – non-cardiac events make up the large majority of EMS and total system responses, and this research does not attempt to address the need for such rapid (and expensive) intervention on these events.

Communities and first responders have utilized the results of these research efforts, often on their own with no single reference, to develop local response time and other performance objectives. However, there are now three major sources of information to which responders and local policy makers can refer when determining the most appropriate response objectives for their community:

- The Insurance Services Office (ISO) provides basic information regarding distances between fire stations. However, this "objective" does little to recognize the unique nature of every community's road network, population, calls for service, call density, etc.
- The National Fire Protection Association (NFPA) promulgated a documented entitled: "NFPA 1710: Objective for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments." This document (NFPA 1710) was published in 2001 and generated a great deal of dialogue and debate which is still on-going.

 The Commission on Fire Accreditation International (CFAI), in its "Standards of Cover" manual, places the responsibility for identifying "appropriate" response objectives on the locality. These objectives should be developed following a comprehensive exercise in which the risks and hazards in the community are compared to the likelihood of their occurrence.

While each of these efforts provides a reference point for communities to follow,

only NFPA 1710 and CFAI offers any specificity. It is important to note that the performance objectives (in terms of response times) provided in the NFPA 1710 document are derived from the basic research previously described above, while the CFAI standards allow the agency to establish performance objectives based on local population and risk factors. CFAI also allows for a range from baseline (acceptable) to benchmark (best practice) in their performance objectives, which provides flexibility to communities as they strive to achieve performance objectives. A comparison of these performance objectives is described in the following table:

Performance Objective	NFPA 1710 (90%)	CFAI (90%)
Call processing (dispatch) time / Call answered to units dispatched	• 60 seconds	60 seconds (Benchmark)90 seconds (Baseline)
Turnout Time (units en route) / Unit dispatched to time en route to the emergency.	• 60 seconds	 80 seconds (Benchmark) Fire 60 seconds (Benchmark) EMS 90 seconds (Baseline) Fire & EMS

Performance Objective	NFPA 1710 (90%)	CFAI (90%)
Travel time / Time en route until arrival at emergency scene.	 Four (4) minutes for first unit / Fire Eight (8) minutes for first alarm / Fire assignment. Four (4) minutes fist responder / EMS Eight (8) minutes ALS unit / EMS 	 Metropolitan/Urban (2,000+ per square mile) Four (4) minutes for first unit (Benchmark) Eight (8) minutes for second unit / fistalarm assignment 5:12 for first unit (Baseline) 10:24 for second unit / first alarm assignment (Baseline) Suburban (1,000 – 2,000 per square mile) Five (5) minutes for first unit (Benchmark) Eight (8) minutes second unit (Benchmark) Ten (10) minutes first alarm assignment (Benchmark) 6:30 first unit (Baseline) 10:24 second unit (Baseline) 10:24 second unit (Baseline) 13 minutes first alarm assignment (Baseline) Ten (10) minutes for first unit (Benchmark) Ten (10) minutes for first unit (Baseline) Ten (10) minutes for first unit (Benchmark) 14 minutes for second unit / first alarm assignment (Benchmark) 13 minutes for first unit (Baseline 18:12 for second unit / first alarm assignment (Baseline) Wilderness (no public / private road access No performance standards
		established

It is important to note the "and / or" found in the initial response objective statement for NFPA 1710. This indicates that a system would meet the intent of the standard if it can reasonably plan to deliver either the single unit, four minute travel time standard, the first alarm, eight minute travel time standard, or both. It should also be noted that it is implied that the total time allotted is additive with each successive event in NFPA 1710, but each event is evaluated individually in the CFAI model. For example, in NFPA 1710 a system that arrived on-scene in six minutes or less, 90% of the time (from time of call) would be in compliance – even if the dispatch or turnout time was longer than a minute (though that should clearly be improved).

It is also critical to note that these time objectives apply to emergency calls for service – there is nothing in NFPA 1710 or CFAI that suggests that communities cannot establish a differential response to calls for service determined to be non-emergency in nature. A second element of the NFPA 1710 performance objectives addresses unit and total response staffing. These objectives are described in NFPA 1710 as follows:

- Engine and truck companies should be staffed with a minimum of four personnel (sections 5.2.2.1.1 and 5.2.2.2).
- Section A.3.3.8 defines a company as either a single unit or multiple units, which operate together once they arrive on the fire ground.
- A total initial response is defined (in section 5.2.3.2.2) as having a total of 15 people (if an aerial is utilized) for 90% of calls. This is broken down as follows:
 - One (1) incident commander.
 - One (1) on the primary supply line and hydrant.
 - Four (4) to handle the primary and backup attack lines.
 - Two (2) operating in support of the attack lines, performing forcible entry.
 - Two (2) assigned to victim search and rescue.

- Two (2) assigned to ventilation.
- One (1) assigned to operate the aerial device.
- Two (2) to establish an initial rapid intervention team.
- If an incident is determined to require additional resources, the fire department should have as an objective the ability to respond with:
 - Additional units as needed (through its own resources or via automatic and mutual aid).
 - Assignment of two (2) additional personnel to the rapid intervention team.
 - Assignment of one (1) as an incident safety officer.

It is interesting to note that the four person companies discussed in some areas of NFPA 1710 are not maintained in the description of primary tasks to be accomplished on the fire ground – recognition that the requirements of the response in the field are dynamic and do not fit neatly into size and shape of any particular response configuration. These objectives apply to the initial and follow-up response for reported structure fires. The document does not suggest that this response be mounted for all incidents.

CFAI also recognizes the importance of deploying an effective response force, but does not require the four-person staffing of engine and truck companies; rather they base staffing on the number of personnel needed to be effective on the fire ground. They base this on the types of risk to which the agency is responding and the number of personnel required to perform the critical fire ground tasks. The following table shows the effective response force by risk type.

	Maximum		Moderate	
Critical Task	Risk	High Risk	Risk	Low Risk
Attack Line	4	4 4		2
Search and Rescue	4	2 2		0
Ventilation	4	2 2		0
Backup Line	2	2 2		2
Rapid Intervention	2	2 0		0
Pump Operator	1	1 1		1
Water Supply	1*	1*	1*	1*
Support (Utilities)	1*	1*	1*	1*
Command	1	1	1	1
Safety Officer	1	1	1	1
Salvage/Overhaul	2	0	0**	0
Command Aid	1	1 0		0
Operations Chief	1	1 0		0
Logistics	1	0	0	0
Planning	1	0	0	0
Staging Officer	1	1	0	0
Rehabilitation	1	1	0	0
Division Supervisors	2	1	0	0
High-rise Evacuation	10	0	0	0
Stairwell Support	10	0	0	0
Total Personnel	50-51	21-22	14-15	8-9

It is essential for a response plan to be in place in order to be able to deliver a sufficient number of personnel to the scene to accomplish the critical tasks. Structure fires are the most labor-intensive incidents, and depending on weather conditions can require additional personnel to maintain an effective operation. The majority of risks in the Municipality will fall into the high and moderate categories as these risk categories describe risks from a typical single family home to unprotected multi-family housing and high concentration areas as in the downtown and developing midtown areas. It is important to note that Anchorage also has a considerable number of occupancies that fall into the special risk category, such as those storing large quantities of hazardous materials, hospitals, government buildings, and the occupancies in the Port. The following table provides a brief description of risk categories by occupancy type:

 Moderate Detached single family dwellings Older multi-family dwellings easily reached with pre-connected attack lines Railroad facilities Mobile homes Industrial or commercial occupancies under 10,000 sq. ft without high fire load Aircraft on airport property Loss of life or property limited to occupancy 	 High Concentrations of older multi-family dwellings Multi-family dwellings that are more than two stories tall and require major hose deployment Buildings with low occupant load, but with high concentrations of fuel load or hazardous materials Aircraft off airport property Mercantile facilities Built-up areas with high concentrations of property with substantial risk of life loss, severe financial impact upon the community or the potential for unusual damage to the property or the environment
 Low Automobile fires Carbon monoxide calls Grass and low fuel type fires Single patient EMS calls Automobile accidents or industrial accidents Tractor trailer fires Storage sheds Out buildings Detached garages 	 Special Risk Apartment complexes over 25,000 sq. ft. Government or infrastructure risks Hospitals Nursing Homes Industrial complexes with fire flows of more than 3,500 gpm Refineries and warehouses Vacant/abandoned structures All building where available water supply is less than projected fire flow

As the size of structure, complexity of the incident, or life safety risks increases, so does the risk category. For this reason, high occupancy and unprotected structures fall into the high-risk category. This will include assemblies, schools, and high-rise and mid-rise occupancies.

The Anchorage Fire Department currently operates from 13 fire stations, each

located within municipality limits:

Station	Address	Personnel	Engines	Ambulance	Truck	Specialty
1	122 E. 4 th Avenue	14-17	2	1	1	Hazardous Materials
	1100 Airport					Urban Search &
3	Heights	8-10	1	1	1	Rescue
4	4350 MacInnes St	8-10	1	1		Rescue & Dive/Water
5	2207 McRae Rd	8-10	1	1	1	Ladder Maintenance
6	1301 Patterson St	5-6	1	1		None
	8735 Jewel Lake					
7	Rd	5-6	1	1		Sewing/Turnout Repair
8	6151 O'Malley Rd	4	1			Air Resources
						Front country / Rope
9	1148 Huffman Rd	6-7	1	1		Rescue
	14861 Mountain					
10	Air Dr	4	1			None
	16630 Eagle River					
11	Rd	10	1	1	1	Swift Water Rescue
						Small Tools /
12	7920 Homer Dr	6-7	1	1	1	Equipment
	4501 Campbell					
14	Airstrip Rd	4-5	1			Wildland Operations
	11301 Southport					
15	Dr	3-4	1			Hose Testing

A total of 105 line personnel are scheduled each day to respond to emergency calls for service in the Municipality. The total minimum staffing is 97. At current minimum daily staffing levels, AFD has 97 personnel available for immediate response to all emergencies. If fully staffed the daily workforce can be as high as a maximum of 105 personnel. As part of the staffing plan included in the bargaining agreement, a minimum of eight (8) truck or engine companies are required to be staffed with a minimum of four (4) personnel. As shown above this staffing level will allow an effective response force to be deployed to any risk category in the municipality.

Anchorage is unique in the fact that mutual and automatic aid are not readily available to provide immediate assistance for emergency events in the core of the municipality, therefore they have a staffing model which ensures they provide an immediate an effective response to emergency incidents. (2) The Municipality of Anchorage Should Formally Adopt Locally Defined Service Level Objectives Based on the Service Area of the First Due Station.

The Anchorage Fire Department has adopted a single service standard for all

areas of the Municipality. The AFD analyzes dispatch CAD data to measure

performance against several targets for high priority incidents (Cardiac Arrest and

Structure Fires) including:

- Calls received and transferred from police dispatch (30 seconds, 90% of the time).
- Call dispatched by fire dispatchers "call processing" (60 seconds, 90% of the time).
- Firefighters respond from time of dispatch "turnout time" (90 seconds, 90% of the time).
- First emergency unit arrives at scene "travel time" (four (4) minutes, 90% of the time)
- ALS unit arrives on the scene (eight (8) minutes, 90% of the time)

As shown above, the Department generally follows NFPA 1710 guidelines in developing its performance metrics with the exception of the turnout time, which has a 90-second goal.

While these are excellent goals, the agency is currently unable to achieve their stated objectives. The Municipality and the Fire Department should identify appropriate service levels targets and formally adopt objectives, which fit the unique nature of Anchorage. While the project team believes the standards utilized by the AFD are appropriate for the Metropolitan and Urban areas of the municipality, the team also believes that suburban, rural, and wilderness areas should not be bound to such strict travel time standards. Therefore, the project team recommends the Municipality and
AFD adopt standards based on the density of the area served by each of the stations, as a single standard will require more stations and has significant financial implications to maintain the higher staffing levels.

The following map illustrates the population density of the municipality:



Population Density - Anchorage, AK

As shown in the map above, the core of the municipality falls into the metropolitan/urban density description, but there are large areas outside the core that would be considered suburban and rural based on population density. These areas also have significantly less risk than the core of the municipality. The areas served by stations 8, 10, and 14 are largely suburban/rural and the majority of the service area of the Eagle River station is rural with the central area being more densely populated.

Recommendation: The Municipality and the AFD should formally adopt service level objectives based on the risks and population density of the area and publicly publish response time goals by area. While travel time targets should be locally determined, the project team believes the Municipality should continue with the one-minute dispatch processing time and 90 second turnout time for 90% of high priority emergency calls.

2. THE DEPARTMENT IS NOT MEETING STATED RESPONSE TIME OBJECTIVES

The project team utilized two methods to assess the Department's performance against response time objectives. The first utilizes a GIS model to evaluate the potential response capabilities given current station locations and unit deployment. The second utilizes actual call for service data to calculate the percentage of incidents responded to within the stated objectives. The two approaches are utilized to compare potential and actual response capabilities and to identify potential response impediments, such as concurrent calls for service, poor reflex times, workload, extended drive times, traffic, etc.

(1) The Department's Current Response System is Well Designed to Provide a High Level of Service to the Municipality of Anchorage.

Matrix Consulting Group utilized GIS (geographic information systems)

technology to evaluate unit deployment, station locations, and Anchorage Fire

Department's ability to meet the response targets. The GIS analysis is based on a

number of steps and assumptions including the following:

- An up to date street centerline file was obtained from the AFD which contains detailed information on local roads, arterials, restrict access roads, speed limits and address ranges. The project team used the following assumptions in assigning speed limits:
- Station locations were matched to the street file and verified. Unit and personnel deployment information was attached to each station location.
- The response time objectives discussed in the previous section were utilized to show predicted travel times for first due (engines) and ALS response times. The project team utilized the four (4) minute and eight (8) minute travel time standards for initial response, ALS response, and structure fire response.
- Maps and statistics were generated which demonstrate the projected response capabilities of the current station network.

The first map, below, shows the distribution of calls for service within the

Municipality. Calls are categorized by level of density, or calls per square mile, to

identify those areas with the heaviest call volume. Evaluating call for service patterns is

useful in assessing the location of the Department's fire stations.



2012 CAD Call Density - Anchorage, AK

MUNICIPALITY OF ANCHORAGE, ALASKA Strategic Review of the Fire Department

As shown above, the busiest areas of the municipality are those within the areas with the highest population density as shown in the earlier map. The clustering of stations in the high volume call areas indicates that stations are generally located in the areas with the highest call volume. The next two maps, below, show the potential engine response (first responder) within four (4) minutes of drive time from current station locations:



Engine Response Times - Existing Stations

As shown above, the Department is able to provide at least one (1) unit within four (4) minutes of drive time to the vast majority of the Municipality. The areas where the predicted first-due engine company's response time is longer than four (4) minutes of travel time are large open land (park) areas and areas with lower population densities.

The map illustrates the predicted ambulance response capabilities at eight (8) minutes of drive time from the stations currently housing ALS ambulances.



Medic Response Times - Existing Stations

Note that again, the concentration of personnel and units in the busiest areas of the municipality – near the downtown area. Note also that an ALS ambulance can reach the majority of the municipality in eight (8) minutes drive time.

In addition to the maps above, the GIS model utilized by the project team provides detailed statistics on current response capabilities of the Department to place apparatus on a scene that reflects the first due for moderate-risk and high-risk incidents. The first map illustrates the location of structure fire calls in 2012, the second map the ability of the current system to place three (3) engines, one (1) truck and one (1) ambulance on an emergency scene (moderate risk) based on current station locations. The third map illustrates the ability of the current system to place six (6) engines, two (2) trucks, and two (2) ambulances on an emergency scene (high risk) based on current station locations:



2012 CAD Fire Call Density - Anchorage, AK



Coverage by 3 Engines, 1 Medic & 1 Truck - Current Stations



Coverage by 6 Engines, 2 Medics & 2 Trucks - Current Stations

As shown above, the AFD is capable of placing the required apparatus on scene in the areas where the majority of the structure fire calls occur.

The tables below provide information on the number of calls for service during 2012 and how many units responded to the calls. This is important in evaluating the ability of the department to handle multiple calls for service at the same time or large-scale incidents. These data are shown below:

No. of Units	No. of Calls	Percentage
1 Unit	13,325	40.2%
2 Units	14,864	45.1%
3 Units	3,077	9.3%
4 Units	789	2.4%
5 Units	216	0.7%
6 Units	67	0.2%
7 Units	32	0.1%
8 Units	40	0.1%
9 Units	23	0.1%
10 or more Units	611	1.9%
Total	32,935	100%

2012	Unit	Response	es per	Call
	• • • • • •		00 p 0.	••••

The following points summarize the information presented in the table above:

- Note that the total number of calls utilized in the analysis was 32,935. This number represents the total number of calls in Anchorage to which a unit was dispatched. The number is higher than the annual call count by 320, as it includes calls where outside units also responded.
- 94.6% of the calls for service require three (3) or fewer units to respond to mitigate the emergency call. This indicates that AFD has appropriate resources available to handle multiple calls for service or large-scale incidents.

The project team also evaluated call concurrence at AFD to determine the

likelihood of multiple calls occurring at the same time. The following table illustrates the

call concurrence in 2012:

Concurrent Calls	Number of Instances	Percent of Instances
1	7311	22.04%
2	10397	31.35%
3	8062	24.31%
4	4388	13.23%
5	1849	5.58%
6	685	2.07%
7+	473	1.43%
Grand		
Total	33165	100.00%

The information above only relates to the calls for service requiring an engine, ambulance, or truck company response from AFD and includes responses outside the municipality to assist other agencies. The reason these units are chosen is they are the units most affected by call concurrence and the ability to deploy an effective response force. As shown above, approximately 91% of the calls for service occur in frequency where four or less calls for service are occurring at the same time. Taking into account that the typical call requires three (3) units or less, it is reasonable to conclude that typically AFD will have 12 or fewer units engaged in providing emergency services at any given hour of the day. However, there was a single occurrence in the analysis where as many as 28 units were engaged in providing emergency services at one time. The analysis indicates that the current station configuration and apparatus allocation is capable of providing effective response to the municipality.

(2) While GIS Analysis Shows that the Station Network Is Well Designed, Actual Call for Service Data Indicates the Department Is Not Meeting Adopted Performance Standards.

As previously stated, the AFD has adopted a single performance standard for high priority calls for service (structure fire and cardiac arrest calls). These are recorded as "code red" incidents in the CAD system, but there are also other calls recorded as "code red" that are high priority due to the immediate risk to life or property. The project team believes these calls should be included in the reporting of performance standards. It is important to note that the CAD data does not track the time related to the police department processing the 9-1-1 call and transferring it to the fire department. The agency began tracking this information for cardiac arrest and structure fire calls in 2012, which indicated 55% of these calls are transferred within 30 seconds of receipt, well below the target of 90%.

The results of these analyses show the following performance:

AFD Response Time Performance – 2012

Call Processing 90%	Turnout 90%	Travel 90%
2:39	1:34	5:21

As shown in the table above, the Anchorage Fire Department is currently not meeting established performance standards at 90% for code red calls. Dispatch processing time is 1 minute 39 seconds longer than established goals, turnout time four (4) seconds longer than the goal and travel time 1 minute 21 seconds longer than the goal of 4:00.

According to agency records, the following fractile performance occurred in 2012 regarding structure fire and cardiac arrest calls:

Function	Goal / 90%	Results
Call transferred from PD Dispatch	30 seconds	55%
Call Dispatched by Fire Dispatch	60 seconds	46%
Firefighter "Turnout"	90 seconds	73%
1 st Unit Arrival	4 minutes	77%

As shown above, during 2012, Dispatch time for emergency calls for service was two minutes and thirty-nine seconds. Reflex time was just over the goal of one minute thirty seconds. The drive time to these calls was five minutes and twenty-one seconds. It is important to note that the project team utilized data from the Department's CAD database. Instances where there were missing times were excluded from the analysis.

The project team next evaluated ALS ambulance unit response times. A target of eight (8) minutes of drive time, plus one (1) minute of dispatch and 1:30 of reflex time was used to evaluate performance. The information was calculated for code red calls where EMS units responded:

Anchorage Fire Department First ALS Ambulance Dispatch to On-Scene

Goal / 90%	Dispatch < 60 sec.	Turnout < 90 sec	Travel	< 540 sec
Actual Performance / 90%	183 seconds	112 Seconds		466 seconds

As shown above, the Department is performing at an average above the goal of reaching 90% of high priority EMS responses within eight (8) minutes with a 90% performance of 7:46. As with overall performance, the agency is not meeting dispatch or turnout time expectations with 90% performance at 183 seconds and 112 seconds, respectfully, on high priority EMS calls.

Overall, while the current response network is well designed to provide consistent response coverage to the municipality, actual response times indicate that there may be impediments to response. The Department is not meeting several of the targets including dispatch processing, reflex time, and overall travel time. This is likely due to the level of workload currently handled by the Department. However, the

Department is meeting targets for ALS travel time targets. Based on this information,

the project team makes the following recommendations:

Recommendation: The Department should focus on improving dispatch processing times. Current performance is well outside best practices and impacts the Department's ability to effectively respond to emergency incidents.

Recommendation: The Department should continue to focus on improving reflex times. This response time element is within the control of the Department and can immediately improve response times.

Recommendation: The Department should regularly audit response time data captured by the CAD and RMS system to ensure that critical response time data – dispatch processing times, reflex times, travel times, and clear times are being accurately captured and personnel are aware of their performance compared to established standards.

3. WHILE THE DEPARTMENT GENERALLY HAS SUFFICIENT LINE STAFF RESOURCES TO HANDLE WORKLOAD OVERALL, WORKLOAD IS NOT DISTRIBUTED EVENLY.

The project team considered some potential reasons for the extended response

times achieved by the Fire Department. The first section discusses differences in

projected and actual response times achieved by the AFD.

(1) Workload Levels Are Highest In the Central Areas of Anchorage.

Recall from the previous sections that projected response capabilities are different from actual response times. One way to explain extended response times is the fact that units are responding from outside the response area where the call for service occurs. As AFD has implemented a procedure for closest unit response where if a unit is available for a call and closer than the unit designated for response in the area, the closer unit is dispatched, this information is not a true indication that increased travel times occurred due to the out of area response. The following table shows these data:

Engine	Calls	Within	Outside
E01	2664	68%	32%
E02	3123	69%	31%
E03	3183	76%	24%
E04	3096	65%	35%
E05	2951	82%	18%
E06	2679	87%	13%
E07	1333	80%	20%
E08	528	74%	26%
E09	1178	83%	17%
E10	308	65%	35%
E11	917	93%	7%
E12	1799	72%	28%
E14	1624	57%	43%
E15	606	52%	48%
Grand			
Total	25,989	74%	26%

Vehicle	Calls	Within	Outside
M01	5085	33%	67%
M02	52	38%	62%
M03	4554	50%	50%
M04	4157	43%	57%
M05	3746	62%	38%
M06	3503	60%	40%
M07	1910	49%	51%
M09	1677	49%	51%
M11	881	85%	15%
M12	2548	47%	53%
Grand			
Total	28,113	50%	50%

As shown, above, approximately 26% of the engine company responses occur outside the assigned district of the station, while this could impact travel times it is not clear as the location of the unit at the time of dispatch is unknown. Ambulances cover multiple station areas as they are equally distributed inside and outside of their assigned station area. This in combination with the success in meeting the current eight (8) minute travel time goal indicates the ambulances are distributed appropriately. However, it is likely that this level of response coverage is not enough to meet current workloads. The project team examined the call frequency by unit to determine if there was sufficient capacity in the current system to effectively respond to the call demand. According to industry best practices, the following unit/station call loading can determine if increased capacity is needed in the system.

- Single-Unit Station 3,500 calls per year
- Two-Unit Station 8,760 calls per year
- Three-Unit Station 14,000 calls per year

The table below shows the total number of calls for each primary response unit during 2012:

Unit / Station	Number of Responses
Station 1	11,772
Engine 1	2,664
Medic 1	5,085
Truck 1	848
Engine 2	3,123
Medic 2*	52
Station 3	8,948
Engine 3	3,183
Medic 3	4,554
Truck 3	1,211
Station 4	8,515
Engine 4	3,096
Medic 4	4,157
Rescue 4	1,262
Station 5	7,618
Engine 5	2,951
Medic 5	3,746
Truck 5	921
Station 6	6,182
Engine 6	2,679
Medic 6	3,503
Station7	3,243
Engine 7	1,333
Medic 7	1,910
Station 8	528
Engine 8	528
Station 9	2,855
Engine 9	1,178
Medic 9	1,677

Unit / Station	Number of Responses
Station 10	308
Engine 10	308
Station 11	2,073
Engine 11	917
Medic 11	881
Truck 11	275
Station 12	5,183
Engine 12	1,799
Medic 12	2,548
Truck 12	836
Station 14	1,624
Engine 14	1,624
Station 15	606
Engine 15	606

• Medic 2 is only staffed when staffing levels allow

As shown above, the current station/unit configuration is within thresholds for the number of responses occurring based on apparatus housed at each station. Several ambulances are well above 4,000 calls, with Medics 1, 3, and 4 all responding to over 4,000 calls. This may indicate that there are times at which the EMS system is beyond reliability thresholds and may need to be expanded. The need for additional ambulances will be explored more fully in the next section.

The overall calls per hour can also be a performance indicator as there may be times during peak call loads that agency resources are stretched. The following table illustrates the calls per hour for the AFD in 2012:

Hour	Total Calls	Avg./Hour
0000	1010	2.77
0100	943	2.58
0200	839	2.30
0300	736	2.02
0400	720	1.97
0500	767	2.10
0600	931	2.55
0700	1147	3.14
0800	1243	3.41
0900	1355	3.71
1000	1525	4.18

Anchorage Fire Department 2012 Calls for Service by Hour of Day

Hour	Total Calls	Avg./Hour
1100	1609	4.41
1200	1745	4.78
1300	1731	4.74
1400	1682	4.61
1500	1821	4.99
1600	1914	5.24
1700	1744	4.78
1800	1786	4.89
1900	1745	4.78
2000	1629	4.46
2100	1465	4.01
2200	1362	3.73
2300	1165	3.19
Total	32,614	3.72

As shown above, the Department responds to an average of approximately four

(4) calls each hour per day. 1500 to 1800 is the busiest time for the Department; during

which time they typically handle five (5) or more calls on average each hour. Each of

these calls typically requires more than one unit to respond.

The following points highlight the information above:

- The Department made 59,455 apparatus runs during 2012 for an average of 163 unit responses per day. Based on a total of 32,614 calls in 2012, this results in an average of 1.8 units sent per call.
- Five of the nine ambulance units handle the bulk of the Department workload Medic 2 is only staffed when there are adequate numbers of personnel available. Medic 1, Medic 3, Medic 4, Medic 5, and Medic 6 handle the bulk of the ambulance workload. These units handle almost 75% of the ambulance unit workload, and each make 3,500 or more runs annually.
- Engines 2, 3, and 4 are the busiest engine companies, averaging approximately 8.6 call per day each.
- Truck 3 is the busiest truck company, averaging approximately 3.3 runs per day.

Overall, emergency response workload is distributed unevenly throughout the

Department with stations 1, 3, and 4 bearing the largest workloads. This level of

workload, particularly for the five busiest medic units, can lead to staff exhaustion and

increased turnover.

There are several options that the Department may explore in order to address

the high workload levels, including:

- Utilize truck companies as first due companies for medical and other rescue calls. One approach would be to split the first due area for busy multi- company stations (e.g. Station 1, Station 3, Station 4, Station 5). This would create a medical response area for both engine units and truck units.
- Staffing Medic 2 as a floating, peak-time unit to handle some of the workload experienced by Medic 1 and Medic 3 (due to the close proximity of these stations).

These options will be further addressed at the end of this section.

(2) The Number of Ambulances Required Exceeds Current Unit Deployment During Peak Call Hour.

The project team also examined the number of medic units that are required

based on the system demand in 2012. This analysis incorporates a number of

assumptions and data elements including the following:

- Average EMS calls demand by hour. Note that 2012 calls for service data were utilized.
- Average time needed to handle an EMS call by ambulance units. The project team utilized an average handling time of one (1) hour for each call for service. This figure is based on an average call handling time for medic units of just over 40 minutes, plus an additional 20 minutes needed for decontamination, clean up, and re-supply of medical equipment and supplies.
- Variance in hourly ambulance workload: The project team applied two standard deviations of hourly call demand to the average time needed to handle workload within a given hour. Applying this figure ensures that 95% of the variations in EMS workload can be handled.

As shown in the previous section, there are several ambulance units that

responded to over 3,500 calls for service last year, with Medic 1 responding to over

5,000 calls.

These data and assumptions were utilized to evaluate ambulance workload

demand within the municipality. The calculation is shown below:

Hour	CFS	Avg/Hour	Handling	Units Req.
0000	980	2.68	2.68	5.37
0100	899	2.46	2.46	4.93
0200	844	2.31	2.31	4.62
0300	761	2.08	2.08	4.17
0400	643	1.76	1.76	3.52
0500	596	1.63	1.63	3.27
0600	657	1.80	1.80	3.60
0700	754	2.07	2.07	4.13
0800	959	2.63	2.63	5.25
0900	1,044	2.86	2.86	5.72
1000	1,197	3.28	3.28	6.56
1100	1,355	3.71	3.71	7.42
1200	1,423	3.90	3.90	7.80
1300	1,539	4.22	4.22	8.43
1400	1,492	4.09	4.09	8.18
1500	1,492	4.09	4.09	8.18
1600	1,571	4.30	4.30	8.61
1700	1,691	4.63	4.63	9.27
1800	1,496	4.10	4.10	8.20
1900	1,469	4.02	4.02	8.05
2000	1,507	4.13	4.13	8.26
2100	1,383	3.79	3.79	7.58
2200	1,205	3.30	3.30	6.60
2300	1,156	3.17	3.17	6.33
Total	28,113	77.02	77.02	6.42

Anchorage Fire Department Ambulance Unit Demand Analysis

The following points summarize the information in the table above:

- As shown above, seven (7) ambulance units are needed to handle the overall current EMS workload.
- The number of ambulance units needed per hour varies significantly from 3.3 units needed during the hour of 0500 to 0600 to 9.3 units needed during the hours from 1700 to 1800.
- During the hours between 1700 to 1800, the demand for ambulances fractionally exceeds the current deployment of ambulances.

As shown above, ambulance unit deployment is generally in-line with workload

demand. However, there are times during the day where demand exceeds capacity.

(3) The Department Should Consider Modifying the Current Approach to Emergency Medical Response.

The AFD currently uses a closest unit response determination at the dispatch center for deciding which units to send to a call, regardless of the designated response area for a station or unit. This method utilizes technology to ensure the unit with the fastest predicted response time is dispatched. The agency has, however, designated response areas for each station. These areas were dedicated based on assumption that the respective station would have the fastest response time. The agency is also utilizing technology to dispatch lower call volume resources to low priority incidents where response times can be extended due to no immediate threat to loss of life or property. This is another proactive attempt to more equally distribute workload among the agency resources. Yet another option may offer a better balance of workload for ambulance units. The risks and benefits of this option is evaluated in the table below:

Option	Benefit	Risk
Option One Utilize peak hour floating paramedic or ambulance units to help with workload in busiest areas – the peak hour staffing of Medic 2 at Station 1 is an option.	Reduce workload currently handled the busiest ambulance unit. Decrease wear and tear on large engine units.	Staffing of eight 4-person minimum units would need to be renegotiated to allow six (6) four (4) person units during peak times to staff the additional ambulance. Note that this unit would be available to respond to fire incidents to allow the same manpower to be present on incidents, gear can be carried on the ambulance. Arrival would simply occur in a different apparatus. Requires negotiation with Union to allow the reduction in four (4) person units.

Based on the risks and benefits of the option above, the project team believes the department should pursue the option initially by staffing Medic 2 as a peak hour resource with existing personnel to alleviate the excessive workload on the busiest ambulance units. This will balance workload between units and stations, as well as provide additional time for personnel to train, conduct fire inspections, prepare pre-fire plans, and perform other activities. Should workload levels remain high, or response times begin to deteriorate, the Municipality should consider adding an additional fulltime ambulance. The addition of a full-time ambulance may also be required if the Union is unwilling to negotiate the use of existing personnel to staff the ambulance during peak call times.

Recommendation: The Department should continue to utilize technology to dispatch the closest unit to emergency calls.

Recommendation: The Department should consider staffing Medic 2 as a peakhour ambulance unit to provide additional coverage to the busiest areas of the municipality. The staffing should be done using two (2) of the personnel staffing the eight units required to have a four (4) person minimum staffing after negotiating this issue with the Union. If the Union will not negotiate this option, additional staffing should be considered to fully staff Medic 2.

4. BASED ON CURRENT MINIMUM STAFFING REQUIREMENTS, THE DEPARTMENT HAS SUFFICIENT PERSONNEL FOR DAILY OPERATIONS.

The project team evaluated the Department's ability to meet its current minimum

staffing plan based on authorized staffing. A number of factors need to be considered

when developing minimum staffing requirements including the following:

- Daily minimum staffing needs per unit. The Anchorage Fire Department staffs each of its engine and truck companies, with three (3) personnel consisting of one (1) Captain/Senior Captain, one (1) Apparatus Operator, and one (1) Firefighter-EMT / Paramedics. Note that Paramedic staffing is not a requirement for engine and truck companies. The current approach is to ensure adequate paramedics on each shift to allow personnel to rotate off the ambulance to avoid burnout. There is also a requirement that eight (8) units (trucks or engines) be staffed with a minimum staffing of four personnel, but there is no requirement as to which units, therefore for the calculations we randomly placed the 8 additional required personnel.
- Shift schedule and average number of hours worked per week. Operations personnel are assigned to one of three platoons and work an average 59-hour workweek (3,068 hours annually). As a result, a shift factor of three (3) was utilized for 24 hour coverage.
- Use of leave and average personnel availability. The project team collected use of leave data for operations personnel 2012. Based on the data, shift personnel were available approximately 90% of scheduled hours after considering vacation, sick leave, military leave, and other leaves. These data were extracted from the Department's People Soft system.
- Each of these elements is used to calculate the total number of personnel needed to meet the Department's current staffing plan. Note that one position requires 3.3 FTEs to provide 24-hour coverage (1 x 3 shifts / .90)

The table, below, shows the current number of units utilized by the AFD and the

minimum number of personnel, by classification, needed for daily operations.

MUNICIPALITY OF ANCHORAGE, ALASKA Strategic Review of the Fire Department

Unit	Minimum Unit Staffing / Day			Number Positions Needed for 24-hour Coverage					
onn	Captain	A/O	FF/EMT	FF/P	Captain	A/O	FF/EMT	FF/P	Total
Engine 1	1	1	2	0	3.3	3.3	6.6	0	13.2
Medic 1	0	0	0	2	0	0	0	6.6	6.6
Engine 2	1	1	2	0	3.3	3.3	6.6	0	13.2
Medic 2	0	0	0	0	0	0	0	0	0
Truck 1	1	1	2	0	3.3	3.3	6.6	0	13.2
Engine 3	1	1	2	0	3.3	3.3	6.6	0	13.2
Medic 3	0	0	0	2	0	0	0	6.6	6.6
Truck 3	1	1	2	0	3.3	3.3	6.6	0	13.2
Engine 4	1	1	1	0	3.3	3.3	3.3	0	9.9
Medic 4	0	0	0	2	0	0	0	6.6	6.6
Rescue 4	1	1	2	0	3.3	3.3	6.6	0	13.2
Engine 5	1	1	2	0	3.3	3.3	6.6	0	13.2
Truck 5	1	1	1	0	3.3	3.3	3.3	0	9.9
Medic 5	0	0	0	2	0	0	0	6.6	6.6
Engine 6	1	1	1	0	3.3	3.3	3.3	0	9.9
Medic 6	0	0	0	2	0	0	0	6.6	6.6
Engine 7	1	1	1	0	3.3	3.3	3.3	0	9.9
Medic 7	0	0	0	2	0	0	0	6.6	6.6
Engine 8	1	1	2	0	3.3	3.3	6.6	0	13.2
Tender 8	0	1	0	0	0	3.3	0	0	3.3
Engine 9	1	1	1	0	3.3	3.3	3.3	0	9.9
Medic 9	0	0	0	2	0	0	0	6.6	6.6
Tender 9	0	1	0	0	0	3.3	0	0	3.3
Engine 10	1	1	1	0	3.3	3.3	3.3	0	9.9
Tender 10	0	1	0	0	0	3.3	0	0	3.3
Engine 11	1	1	1	0	3.3	3.3	3.3	0	9.9
Truck 11	1	1	1	0	3.3	3.3	3.3	0	9.9
Tender 11	0	1	0	0	0	3.3	0	0	3.3
Medic 11	0	0	0	2	0	0	0	6.6	6.6
Engine 12	1	1	1	0	3.3	3.3	3.3	0	9.9
Truck 12	1	1	1	0	3.3	3.3	3.3	0	9.9
Medic 12	0	0	0	2	0	0	0	6.6	6.6
Engine 14	1	1	1	0	3.3	3.3	3.3	0	9.9
Tender 14	0	1	0	0	0	3.3	0	0	3.3
Engine 15	1	1	1	0	3.3	3.3	3.3	0	9.9
Total	20	25	28	18	66	82.5	92.4	59.4	300.3

As shown above, based on the AFD's staffing plan, approximately 66 Captains, 83 Apparatus Operators, 93 Firefighter/EMTs, and 60 Firefighter Paramedics are needed, for a total of 301 personnel, when rounded up, to staff emergency apparatus and 315 including the Fire Battalion Chiefs and Safety Officers. The table, below, shows the number of current authorized positions in the Department's fiscal year (FY) 13 budget:

Position	Authorized
Battalion Chief	12
Safety Officers	3
Captain / Sr. Captain	66
Apparatus Operator	75
Firefighter / Firefighter Paramedic	159
Total	315

Anchorage Fire Department FY 13 Authorized Operations Positions

The following points summarize the preceding analysis:

- As shown in the previous table, the Department needs 66 Captain/Sr. Captain positions to provide 24-hour coverage. The Department is at present allocated 66 positions. The current approach is to utilize overtime and acting positions to cover Captain vacancies due to use of leave.
- The Department needs a total of 83 Apparatus Operator positions to provide 24hour coverage. The Department is currently allocated 75 positions.
- The Department needs a total of 153 Firefighter / Firefighter Paramedic positions and is currently allocated 159 positions. This number is required in order to meet the obligation in the contract to rotate paramedics on and off the ambulances.
- The table below summarizes the differences between needed and authorized positions:

Position	Needed	Authorized	Difference
Shift Captain	66	66	0
Apparatus Operator	83	75	(8)
FF/EMT	93	105	12
FF/Para	60	54	(6)
Total	302	300	(2)

As shown above the current staffing is in line with actual staffing needs in Anchorage. When additional apparatus operators are needed the positions are filled with firefighters qualified to step-up and serve in an acting apparatus operator capacity. It is common for Fire Departments to utilize overtime to cover position vacancies due to leave and turnover, particularly for supervisory positions (i.e. Battalion Chief and Captain). Using overtime results in significant savings, due to the difference between the premium paid in overtime (50%) and the cost of benefits (typically greater than 50%). In Anchorage, the cost of benefits for operations personnel is approximately 64% of mid-point salary. This means that approximately 14% of each position's cost is saved by using overtime.

- The Department should ensure that personnel who are on the Acting assignment list have proper supervisor training. As a guide, elements of NFPA Fire Officer I and II should be utilized to develop this training.
- The Department should designate the busiest engine companies as the four person units and rotate "floating staff" to ensure adequate personnel staffing on these units.
- The Department should consider rotating personnel who work extended hours and staff the busiest units, to less busy stations and units in the system.

Recommendation: Overall, the Department does not need to modify its current approach to meeting its minimum-staffing plan.

5. FUTURE GROWTH WILL IMPACT RESOURCE NEEDS WITHIN EMERGENCY OPERATIONS.

This section discusses the impact of future growth on emergency response needs within the municipality. While the Municipality of Anchorage and surrounding areas are expected to experience significant growth over the next 15 years, the municipality has essentially reached its bounds laterally, and growth will be in the form of mid-rise and high-rise buildings constructed under current building codes, which will improve their fire safety. Based on available population projections from the State of Alaska, the municipality is expected to grow from the current estimated population of 298,610 by approximately 47,500 residents by the year 2025. At the same time, according to the Anchorage Economic Development Corp., job growth will continue to be strong in the area. The following table is a summary of these population projections from the State of Alaska:

Source	Year: 2010 Anchorage	Projected in 2025 Anchorage
Alaska Department of Labor	293,237	343,086

As shown above, Anchorage is estimated to grow by an average of 1% each year over the next 15 years. The current plans are projecting the highest growth in the midtown area of Anchorage.

Using these growth projections, the project team estimated the impact on fire department workloads over the next 10 to 15 years. Note that the project team used the following assumptions in developing workload estimates:

- Calls for service and apparatus runs will increase at the rate of experience in the previous five years over the projection period.
- Since it is difficult to predict the exact timing of population growth, and therefore workload, it was assumed that growth rates would occur evenly throughout the ten to 15 year period.

As shown in the previous section of this report, the Department's current station network is well designed to provide timely response from existing stations. However, projected growth rates suggest that increased workloads will impact the Department's ability to effectively respond to several types of incidents, including: multiple simultaneous calls for service (i.e. concurrency), multiple large scale events (structure fires, mass casualty events, high risk target incidents), and continual increases in demand for emergency medical services. The table below shows the estimated increase/decrease in workload over the next ten to 15 years, based on historical trends over the previous five (5) years and the population growth projections above:

	2012 Burga	2022 Dupo	2027 Bure
Call Type	Runs	Runs	Runs
Emergency Medical	21,372	27,784	31,952
Fire	735	809	849
Service Calls	7,371	10,319	12,383
Hazardous Conditions	787	944	991
False Alarms	2,350	2,505	2,588
Total	32,615	41,511	48,763

Projected Workload by Unit, 2022 to 2027

The following points highlight the information in the above table:

- Based on estimated growth rates, the agency is estimated to make over 133 runs per day, or approximately 48,763 responses annually. This is 44 more calls per day than handled by the agency in 2012 (89 calls).
- The largest workload increase will be in emergency medical calls, where it is expected that the agency will run approximately 88 calls per day. This is 33 more EMS calls per day than was handled by the agency in 2012 (55 calls).

The Municipality and the Fire Department should monitor development over the

next two to three years. If development and population growth proceeds as projected,

the Municipality and Fire Department should plan for the following additional personnel

and apparatus resources:

- The construction of the Midtown station (Station 2) and the full time staffing of Medic 2.
- Peak time staffing of an additional ambulance(s) as needed.
- The addition of an engine company in the downtown (Station 1) location to replace Engine 2, which will be relocated to the midtown station.

The project team estimated the costs of adding the additional units recommended

above. These figures are shown below:

Ambulance Unit – Element	Cost
Ambulance (estimated)	\$290,000
Number Needed	2
Total Vehicle Cost	\$580,000
One-time FF costs (training, supplies, equipment (\$15,000/FF)	\$195,000
Total One-time costs	\$775,000
Firefighter/Paramedic Salary	\$103,677
Firefighter/Paramedic Benefits	\$67,390
Total Firefighter/Paramedic Cost	\$171,067
Number Needed (2 FF/P * 3 Shifts * 2 Units / 90% Availability)	13
Subtotal	\$2,223,481
Equipment, training, supplies, etc per FF – on-going	\$8,000
One time costs (equipment, supplies, training, etc.)	\$775,000
Total Firefighter Cost – ongoing	\$2,327,481

Engine Unit – Element	Cost
Engine (estimated)	\$650,000
Number Needed	1
Total Vehicle Cost	\$650,000
One-time equipment, supplies, training, costs (@\$15,000/FF)	\$195,000
Total one-time costs	\$845,000
Captain: Salary & Benefits	\$186,262
AO / Driver: Salary & Benefits	\$167,643
Firefighter/EMT: Salary & Benefits	\$146,749
Captains needed (1 per shift)	3
AO/Driver per unit (1 per shift / 90% availability)	3
FF/EMT/Paramedic unit (2 per shift / 90% availability)	7
Personnel Cost	\$2,088,926
Equipment, supplies, training - on-going (@\$8,000/FF)	\$104,000
On-going costs	\$2,192,926

As shown above, the estimated cost of two (2) additional ambulance units is approximately \$775,000 in one-time costs and \$2.33 million in on-going costs. The estimated cost of one (1) additional engine unit is approximately \$845,000 in one-time costs and \$2.19 million in on-going costs. Note that vehicle costs will vary significantly based on specifications and vendors.

Note also that the addition of these units to the Department's response network will require the construction of the proposed mid-town station to house these units. The Department is currently in the process of planning for the relocation of some of its stations, as well as planning for additional stations. These changes include the following:

- The relocation of the Mountain View station, station 3, farther north and east.
- The relocation of station 9, farther south and east.
- The addition of a station (station 2) in the mid-town area.
- The addition of a station on the campus of the University of Alaska, Anchorage.

The map on the following page shows the locations of each of these proposed changes. Based on these proposals and the need for additional units and additional space over the next ten to fifteen years, the project team makes the following recommendations:

- As indicated in a previous section, the Department should continue with plans to construct the mid-town station and fully staff Medic 2.
- The proposed relocation of Station 3 is consistent with service levels objectives, and will potentially improve service to higher call sections in the area.
- The proposed relocation of Station 9 is consistent with service level objectives and will improve the underutilization of Station 15.

Funds for the site acquisition and construction of Stations 3 and 9 have been provided to the Municipality via a State of Alaska grant. The land has been acquired and zoning has been approved for the location of the fire stations on the proposed sites.

It is also worth noting that the Department is considering dividing the personnel in Station 3 and moving the truck company to a single station located on the University Campus, as noted above. The project team does not agree with the plan to split this multi-company station, as the workload improvements noted earlier require the truck company to become a more integral part of the response plan for this station.

The projected cost for construction of a station to house the current personnel and apparatus at a new location is \$5 - 8 million according to the agency. Constructing two smaller stations would cost \$4 - 6 million each. These estimates should be refined, as site location and design factors will ultimately determine the cost to build one larger as compared to two smaller stations. Despite the potential additional construction costs, the agency and Municipality should weigh the additional maintenance and upkeep associated with two facilities as compared to one.

Recommendation: The Municipality and the Fire Department should monitor development over the next two - five years. Should development continue to proceed as expected, the Municipality should plan for additional personnel and equipment for emergency response, including two (2) additional ambulance units and one (1) additional engine company. The estimated costs of each of these recommendations are \$1.62 million in one-time costs for apparatus and equipment and \$4.52 million in on-going costs.



Engine Response Times - Proposed Stations

1 in = 6 miles



Medic Response Times - Proposed Stations



Truck Response Times - Existing Stations Less #3 & #9 Adding Proposed #3 & #9

1 in = 6 miles
4. SUPPORT SERVICES

This chapter focuses on the various support services provided from within the Fire Department. The first section addresses in-service training issues.

1. DEVELOPMENT AND COORDINATION OF THE DEPARTMENT'S IN SERVICE TRAINING PROGRAM CAN BE IMPROVED.

The Fire Department currently provides initial and on-going fire, rescue, and emergency medical training through the Training Division. The Training Division provides initial academy training to new recruits at the Anchorage Fire Training Center, as well as ongoing training for fire personnel. The Division is also responsible for developing curriculum for ongoing fire, rescue and EMS training. An Assistant Chief oversees the Training Division. Three Captains are assigned as "Platoon Training Officers" on a six (6) month to one (1) year rotation in order to provide on-going training support to company officers.

The Department's training program is based on NFPA Firefighter and Alaska State medical training requirements. All training hours are documented and maintained by the Training Division. Records provided to the project team illustrate that the agency is meeting training regulations compliant with national standards and regulations. Ongoing company training is mostly left to company officers with some multi-company training occurring when Captains arrange and schedule sessions through the Training Division.

There are a number of steps that the Department can continue to take to improve the effectiveness of the in-service training program, including:

- Continuing the development of ongoing fire, rescue, and emergency medical training exercises for use by Company Officers. Exercises should be performance-based and require that crews complete an exercise while meeting minimum standards. For example, NFPA 1410 has a number of training evolutions that require fire companies to perform hose lays, pump operations, and other activities within specified time limits. Given the infrequent use of these skills by fire companies (e.g. working structure fires represent a very small proportion of calls for service), it is critical that the Department develop minimum performance standards.
- Ensure all Company Officers are aware of and that they utilize the master schedule on the SharePoint site for use of the training towers and props to better coordinate and schedule training drills. This would eliminate the need for calling the Platoon Training Officers to determine availability when companies wish to utilize the training center.
- Develop a program for company officers to provide formal feedback from incident reviews to the Training Division. This will allow training drills to be constructed from actual experiences in Anchorage. Currently, memos with "lessons learned" are distributed in the agency, but no formal training outcome things learned on emergency scenes.
- The schedule utilized for the Platoon Training Officers results in underutilization of these positions. Existing Captain positions are utilized to staff these training positions with personnel volunteering and rotating on a six – 12 month basis. The personnel continue to work the 24-hour shift schedule, resulting in underutilization in the evening and overnight hours. The rational is that these personnel would respond to emergency calls after-hours to assist command on critical incidents. In 2012 the Platoon Training Officers responded to a total of 289 incidents between the hours of 1800 and 0800. They averaged 16 minutes of committed scene time each shift.
- Battalion Chiefs are not consistently participating in multi-company training evolutions. During these drills, the company officers designate personnel to serve as the incident commander, but during real incidents, the Battalion Chief is dispatched and serves in this role. The training and development of Battalion Chiefs would be enhanced from more consistent participation in multi-company drills for companies in their response area.

Recommendation: Improve the coordination between the various divisions of the Department. Continue to develop and adopt formal training objectives for company officers to enhance the skills development and maintenance for staff.

Recommendation: Develop a program for Company Officer to provide formal feedback from incident reviews to the Training Division to be used in the development of Company drills.

Recommendation: Assign two (2) Captains (Platoon Training Officers) to the Training Division on a 40-hour workweek schedule to improve the utilization of the Platoon Training Officer position.

Recommendation: Ensure Battalion Chiefs regular attend multi-company training drills to enhance their readiness for handing emergency incidents.

2. THE DEPARTMENT IS WORKING ON A NUMBER OF IT PROJECTS THAT WILL ENHANCE MANAGEMENT AND OPERATIONS.

The Fire Department is currently working on a number of projects that will

improve the management and operations of the Department. These projects include:

- A planned upgrade of the Department records management system to FDM.
- The purchase and installation of mobile data computers (MDCs) in emergency apparatus and command vehicles. This includes a link to the new RMS and CAD system, which will provide incident information, location history, and potentially include pre-fire plans and other important information.
- The purchase and installation of an electronic document content management system.

As shown above, the Department has a number of projects that are either currently in progress, or planned for the near future. Currently, the Department uses three (3) full-time personnel to coordinate, implement and test IT projects in the agency.

While the Department has shown excellent progress in being a leader in the use and adoption of technology, there is concern from the Municipal IT Department that adequate coordination does not exist between the Police and Fire Departments on IT implementation – especially where similar or identical platforms could be utilized. There is also concern that items are purchased prior to a complete and thorough review of compatibility with existing Municipal IT infrastructure. To improve the coordination and implementation of IT projects beyond the current centralized procurement process, the recommends:

- The agency should form a committee that meets quarterly to review upcoming IT initiatives in the Municipal, Fire, and Police Departments.
- These discussions should include a description of the project and the business case for the implementation of the new technology. This would also include a general description of key specifications / technical requirements for the project.
- These discussions should also include a description of the resources needed to develop and implement the new technology including: hardware, software, and staff hours needed.
- This committee should produce an estimated timeline for completion of the project as well as key deliverables / milestones.
- This committee should identify the priority of the project in relation to other current or planned technology upgrades in the Municipality.

These planning meetings can be utilized for project management purposes and

as an opportunity for all stakeholders to understand the current proposed technology

plans of the other Departments in the Municipality. These updates should include both

major projects requiring significant investments or use of outside resources and smaller

ones that are handled in-house. The meeting should include routine maintenance,

simple repairs, or small fixes requiring limited time and resources. The Department

should assign data systems supervisor to represent them at these meetings.

Recommendation: The Department should work with the Police and Municipal IT Departments to form a committee that meets quarterly to identify the business case for each IT project, estimated personnel and equipment costs, timelines, and priority. This plan will help the Municipality more effectively manage resources needed for future technology projects and ensure that like projects planned by the Police and Fire Departments can be coordinated when appropriate.

3. WHILE THE AFD HAS BEEN EFFECTIVE AT REPLACING VEHICLES, THE DEPARTMENT SHOULD FORMALIZE REPLACEMENT SCHEDULE.

The project team evaluated the number, age, and replacement program for each

of the vehicles used by the Department. The table, below, describes the number and

age of vehicles used by the AFD:

	Frontline/ Reserve/				In-service	
Number	Cross Staffed	Year	Make	Model	date	Miles
7330	Cross Staffed	1997	FRGHTLINER	AMBULANCE	3/20/97	48,309
7540	Cross Staffed	1993	INTRNATNL	PUMPER	3/20/93	9,435
7342	Cross Staffed	2000	FORD AMB	F450	3/20/00	88,649
7332	Cross Staffed	1997	FRGHTLINER	AMBULANCE	3/20/97	74,352
7431	Cross Staffed	2003	EXCEL	HAZ-MAT	3/20/03	11,620
7612	Cross Staffed	1992	FRGHTLINER	TENDER	3/20/92	27,133
7333	Cross Staffed	1997	FRGHTLINER	AMBULANCE	3/20/97	110,320
7500	Cross Staffed	2005	FORD	MINI PUMPER	3/20/05	10,805
7604	Frontline	2003	EXCEL	TENDER	3/20/03	27,912
7611	Frontline	1992	FRGHTLINER	TENDER	3/20/92	35,626
7610	Frontline	1994	FRGHTLINER	TENDER	3/20/94	42,417
7609	Frontline	2003	EXCEL	TENDER	3/20/03	32,421
7618	Frontline	2003	EXCEL	TENDER	3/20/03	24,102
7722	Frontline	2010	AERIAL	105' STICK	3/15/11	19,980
7712	Frontline	2000	AERIAL	75' STICK	3/20/00	107,185
7755	Frontline	2012	AERIAL	100'PLATFOR	2/11/13	7,193
				М		,
7723	Frontline	2005	AERIAL	100' PLATFRM	3/20/03	60,193
7705	Frontline	1998	AERIAL	100'PLATFOR	3/20/98	77,587
				М		
7429	Frontline	2003	EXCEL	RESCUE	3/20/03	68,420
7324	Frontline	2012	TAYLOR	FORD F450	1/8/13	14,439
7321	Frontline	2007	NORTH STAR	FRD F450	3/20/07	102,863
				AMB		
7312	Frontline	2007	NORTH STAR	FRD F450	3/20/07	142,059
				AMB		
7307	Frontline	2012	TAYLOR	FORD F450	1/18/13	15,731
7306	Frontline	2008	NORTH STAR	FRD F450	3/20/08	115,144
7045	Free pálice e	2000			2/20/09	100.010
7315	Fronuine	2008	NURINSIAR		3/20/06	123,219
7323	Frontline	2012	TAYLOR	FORD F450	12/18/12	16 061
7301	Frontline	2008		FRD F450	3/20/08	120 788
/001		2000		AMB	0/20/00	120,100
7515	Frontline	2007	EXCEL	PUMPER 2WD	3/20/07	42.334
7514	Frontline	2004	EXCEL	PUMPER 4WD	3/20/04	87.728
7524	Frontline	2007	EXCEL	PUMPER 2WD	3/20/07	65.130
7522	Frontline	2007	EXCEL	PUMPER 4WD	3/20/07	43,783
7510	Frontline	2004	EXCEL	PUMPER 4WD	3/20/04	53,161
7509	Frontline	2005	EXCEL	PUMPER 4WD	3/20/05	89.305
7508	Frontline	2012	PREDATOR	PUMPER 4WD	1/24/12	10,886
7507	Frontline	2007	EXCEL	PUMPER 2WD	3/20/07	54.805
7506	Frontline	2004	EXCEL	PUMPER 4WD	3/20/04	109,918
7545	Frontline	2003	EXCEL	PUMPER 2WD	3/20/03	78,765
7504	Frontline	2005	EXCEL	PUMPER 4WD	3/20/05	107,176
7503	Frontline	2003	EXCEL	PUMPER 2WD	3/20/03	75.526
7502	Frontline	2012	PREDATOR	PUMPER 2WD	1/24/12	14.484
7551	Frontline	2003	EXCEL	PUMPER 2WD	3/20/03	68,260
7219	Frontline	2001	CHEVROLET	K3500 P/U	3/20/01	25.795
7218	Frontline	2001	CHEVROLET	K3500 P/U	3/20/01	27.014

	Frontline/ Reserve/				In-service	
Number	Cross Staffed	Year	Make	Model	date	Miles
7614	Reserve	1992	FRGHTLINER	TENDER	3/20/92	37,980
7531	Reserve	1992	PUMPER	2WD	3/20/92	167,146
7715	Reserve	1999	AERIAL	95' PLATFORM	3/20/99	97,621
7703	Reserve	1992	AERIAL	110' STICK	3/20/92	90,034
7326	Reserve	2003	FORD AMB	F450	3/20/03	146,608
7303	Reserve	2004	FORD AMB	F550	3/20/04	170,941
7322	Reserve	2001	FORD AMB	F450	3/20/01	192,782
7304	Reserve	2004	FORD AMB	F550	3/20/04	129,358
7511	Reserve	1994	PUMPER	4WD	3/20/94	111,477
7533	Reserve	1992	PUMPER	2WD	3/20/92	162,502
7538	Reserve	1992	PUMPER	4WD	3/20/92	108,590
7539	Reserve	1992	PUMPER	4WD	3/20/92	144,070
7536	Reserve	1992	PUMPER	4WD	3/20/92	179,676
7309	wrecked/in for repair	2008	NORTH STAR	FRD F450	3/20/08	86,697
				AMB		ŗ
7608		1983	FORD	TENDER	3/20/83	34,608
7220		1986	CHEVROLET	K3500 P/U	3/20/86	44,470
7409		1992	TRAILER	TRAILER	3/20/92	0
7410		1992	DECON TRLR	TRAILER	3/20/92	0
7421		1992	WATERCRAFT	WAVE	3/20/92	0
				RUNNER		
7411		1993	BOAT	NAIAD BOAT	3/20/93	0
7422		1993	WATERCRAFT	WAVE	3/20/93	0
				RUNNER		
7426		1993	BOAT TRLR	TRAILER	3/20/93	0
7209		1994	FORD	F 150 4X4	3/20/94	70,745
7126		1995	CHEVROLET	LUMINA	3/20/95	78,750
7127		1995	CHEVROLET	LUMINA	3/20/95	115,639
7131		1998	FORD	EXPEDITION	3/20/98	127,263
7132		1998	FORD	EXPEDITION	3/20/98	128,575
7133		1998	FORD	EXPEDITION	3/20/98	121,342
7134		1998	FORD	EXPEDITION	3/20/98	153,201
7232		1998	FORD	EXPEDITION	3/20/98	106,431
7405		1974	TRAILER	TRAILER	1/1/99	0
7413		1999	ATV	6X6	3/20/99	134
7420		1994	TRAILER	TRAILER	3/20/99	0
7427		1999	FORKLIFT	6000K	3/20/99	868
7552		1999	HUMMER	H1 BRUSH	3/20/99	12,089
7345		2000	FORD	F450	3/20/00	94,507
7224		2000	FORD	EXCURSION	3/20/00	109,287
7425		2000	BOAT TRLR	TRAILER	3/20/00	0
7344		2001	FORD	F450	3/20/01	86,354
7206		2001	CHEVROLET	SUBURBAN25 00	3/20/01	127,597
7208		2001	CHEVROLET	SUBURBAN25 00	3/20/01	139,571
7211		2001	CHEVROLET	K3500 P/U	3/20/01	45,970
7402		2001	CARGO TRLR	TRAILER	3/20/01	0
7423		2001	TRAILER	TRAILER	3/20/01	0
7226		2002	FORD	F350 4X4	3/20/02	40,227

	Frontline/ Reserve/				In-service	
Number	Cross Staffed	Year	Make	Model	date	Miles
7227		2002	FORD	F350 4X4	3/20/02	32,590
7298		2002	FORD	E 450	3/20/02	193,005
7299		2002	FORD	E 450	3/20/02	196,473
7207		2003	FORD	F350 4X4	3/20/03	28,119
7221		2003	FORD	F350 4X4	3/20/03	78,224
7228		2003	CHEVROLET	SUBURBAN25	3/20/03	99,718
				00		
7441		2003	TRAILER	TRAILER	3/20/03	0
				WAVE		
7407		2004	TRAILER	TRAILER	3/20/04	0
7412		2004	TRAILER	TRAILER	3/20/04	0
7135		2005	FORD	EXPEDITION	3/20/05	94,242
7140		2005	FORD	ESCAPE	3/20/05	54,324
7141		2005	FORD	ESCAPE	3/20/05	31,145
7142		2005	FORD	ESCAPE	3/20/05	21,896
7143		2005	FORD	ESCAPE	3/20/05	31,114
7144		2005	FORD	ESCAPE	3/20/05	35,002
7145		2005	FORD	ESCAPE	3/20/05	19,376
7146		2005	FORD	ESCAPE	3/20/05	38,935
7148		2005	FORD	ESCAPE	3/20/05	35,108
7149		2005	FORD	ESCAPE	3/20/05	53,587
7150		2005	FORD	EXPEDITION	3/20/05	53,054
7151		2005	FORD	EXPEDITION	3/20/05	46,377
7152		2006	FORD	EXPEDITION	3/20/05	65,074
7153		2006	FORD	EXPEDITION	3/20/05	60,522
7229		2005	CHEVROLET	SUBURBAN25 00	3/20/05	112,146
7230		2005	CHEVROLET	SUBURBAN25 00	3/20/05	126,482
7231		2005	CHEVROLET	SUBURBAN25 00	3/20/05	105,007
7434		2005	ATV	6X6	3/20/05	0
7435		2005	TRAILER	TRAILER	3/20/05	0
7436		2005	TRAILER	TRAILER	3/20/05	0
7438		2005	TRAILER	TRAILER	3/20/05	0
7448		2005	BOAT TRLR	TRAILER	3/20/05	0
7457		2005	COMMANDO C	BOAT	3/20/05	0
7201		2006	FORD	F350 4X4	3/20/06	4,812
7447		2006	HRB BOAT	BOAT	3/20/06	0
7154		2007	FORD	EXPEDITION	3/20/07	67,837
7414		2007	ATV	4X4	3/20/07	0
7449		2007	EXP 600	SNOW MACHINE	3/20/07	112
7450		2007	EXP 600	SNOW MACHINE	3/20/07	135
7424		2009	WINNEBAGO	MOBILE CMND	1/25/10	3,884
7251		2011	CHEVROLET	SUBURBAN25 00	9/9/11	28,476
7254		2011	CHEVROLET	SUBURBAN25 00	9/23/11	27,727

	Frontline/ Reserve/				In-service	
Number	Cross Staffed	Year	Make	Model	date	Miles
7253		2011	CHEVROLET	SUBURBAN25	10/14/11	34,108
				00		
7252		2011	CHEVROLET	SUBURBAN25	11/2/11	31,311
				00		
7202		2011	FORD	F350 4X4	1/19/12	80
7203		2011	FORD	F350 4X4	1/19/12	80
7205		2012	FORD	F350 4X4	6/12/12	13,125
7400		2012	BOAT	BOAT	8/11/12	3
7403		2012	BOAT TRLR	TRAILER	8/11/12	0
7256		2012	CHEVROLET	SUBURBAN25	10/10/12	7,988
				00		
7255		2012	CHEVROLET	SUBURBAN25	1/16/13	5,777
				00		
7415		2013	WATERCRAFT		4/15/13	0
7416		2013	WATERCRAFT		4/15/13	0
7417		2012	TRAILER	TRAILER	4/15/13	0

Based the information in the table above, the project team determined the average age and average utilization for each front-line class of vehicles utilized by the Department. These data are shown in the following table:

Vehicle Type	Number	Avg. Age	Average Total Mileage	Avg. Miles per Year	Replacement Target
Ambulance	8	3.7	81,288	21,969	N/A
Engine	14	7.5	64,376	8,583	15
Truck	5	6.5	45.949	7.069	15
Tender	5	8.1	32.496	4.012	N/A
Rescue	1	10.5	68,420	6,516	N/A

The following points highlight the information above:

- The average age and mileage of the front-line ambulance fleet is 3.7 years and 81,288 miles.
- The average age and mileage of the front-line engine fleet is 7.5 years and 9,197 miles.
- The average age and mileage of the front-line ladder trucks is 6.5 years and 45,949 miles.

- The average age and mileage of the front-line tenders is 8.1 years and 32,496 miles.
- The age and mileage of the front-line rescue unit is 10.5 years and 68,420 miles.

The project team also evaluated the ratio of reserve vehicles to front-line vehicles. The following table shows the number of front-line units to reserve units:

Туре	Front Line	Reserve	Ratio
Engine	14	6	1: 2.3
Ladder	5	2	1: 2.5
Ambulance	8	5	1: 1.6
Total	43	15	1: 2.86

As shown above, the ratio of reserves to front line units varies from one (1) reserve to 1.16 front line vehicles for ambulance units to one (1) reserve to 2.5 front line units for trucks. The number of reserve units is appropriate for the agency. A good indicator is that there is minimum of one reserve for every four front-line units. At this ratio, four (4) reserve engines are needed, one (1) truck and two (2) ambulances.

Recommendation: The Department should continue with the current ratios of reserve to front-line equipment.

5. SPECIAL OPERATIONS

This chapter discusses the project team's analysis and findings related to the Special Operations functions within the Anchorage Fire Department. Key questions addressed in this chapter include the following:

- Do the Special Operations Functions adequately meet the needs of the Municipality?
- Is there a need for the specialty operation?
- Are the specialty resources deployed appropriately?

Each of these questions is addressed in the following sections. The first section,

that follows, discusses organizational structure and staffing:

1. THE ANCHORAGE FIRE DEPARTMENT PROVIDES SEVERAL SPECIALIZED OPERATION FUNCTIONS.

The AFD operates several full-time and part-time special operation teams to ensure they are able to be a full service (all risk) provider of emergency services to the Municipality. The following are the special operation teams reviewed as part of this study.

- Hazardous Materials (Cross-staffed, station 1)
- Urban Search and Rescue (Cross-staffed, station 3)
- Heavy Rescue (Full-Time, station 4)
- Swift Water Rescue (Cross-staffed, station 11)
- Mass Casualty (Cross-staffed, station 15)
- Technical Rescue (Cross-staffed, station 9)

As shown above, the only full-time specialty unit staffed by the AFD is the Heavy Rescue Unit at Station 4. The remaining teams are cross-staffed with personnel from the station assigned to be proficient in the additional duties required to effectively mitigate emergencies requiring the specialty training.

The following table illustrates the number of responses for the specialty units in 2012:

Responses
190
0
1,262
16
0
4
1,465

As shown above, the Heavy Rescue team is by far the busiest of the specialized operations, handling over 1,200 runs per year. This workload supports the need for a full-time team focused on heavy rescue, as these incidents are often longer in duration and the daily average of three (3) calls per day results in effective use of their time.

The remaining specialized operations functions would typically be handled by a regional team due to the low frequency of events to allow for cost sharing, but in Anchorage and the immediate surrounding areas, there are no suitable partners to form regional teams. Therefore, the AFD must train a sufficient number of personnel to handle these types of incidents that may occur in the municipality.

The fact that Anchorage is served by an international airport makes the need for mass casualty incidents readily apparent. The risk of earthquakes in the area justifies the need for the USAR and mass casualty teams. The presence of high and mid-rise commercial occupancies makes the need for high-angle (technical) rescue services a viable need. The presence of the port and the various petroleum products and other hazardous cargo that are shipped into the municipality daily merits an adequately trained hazardous materials team to control the release of hazardous chemicals until they can be fully cleaned. These risks are present in each of the areas where teams are deployed – in the immediate response area or in the municipality as a whole.

Based on the review of the workload, it is the opinion of the project team that the risks present in the municipality warrant the types of specialized operations provided by the Anchorage Fire Department. They have appropriately cross-staffed teams where risk exists, but low frequency of events to ensure operational readiness.

Recommendation: The Department should continue to staff the Heavy Rescue Unit full-time and the remaining special operations with cross staffing from station personnel.

6. FIRE PREVENTION

This section discusses a number of issues related to the organization, staffing, and needs of the Fire Prevention Division.

1. THE FIRE MARSHAL POSITION SHOULD BE PERMANENTLY FILLED.

The largest issue facing the Fire Prevention Division is the lack of permanent leadership. As discussed in Chapter 1 of this report, the project team recommends immediately filling the Fire Marshal position with a permanent full-time employee.

There is also an issue of span of control as the Fire Marshal has nine (9) direct reports. The Project team believes this is too broad a span of control, and an existing inspector position should be upgraded (as discussed in Chapter 1).

2. THE FIRE PREVENTION DIVISION HANDLES ENFORCEMENT, INVESTIGATIONS, PLAN REVIEW AND THE COMMUNITY RIGHT TO KNOW PROGRAM.

The Fire Prevention Division employs four (4) personnel to conduct maintenance inspections and one (1) inspector to handle Certificate of Occupancy (CO) inspections. These inspection personnel are primarily focused on building inspections: State Mandated inspections (every two years) and CO inspections. These include facilities requiring a license to operate such as liquor stores, Child Care facilities, Adult Care facilities, high occupancy buildings, and assembly occupations. There are no inspections currently occurring on other types of commercial occupancies, as the CO inspections and State Mandated inspections occupy the time of the fire prevention inspection staff. There is also no company inspection program in the AFD. The main focus of the Prevention Division has been on ensuring that high-risk occupancies and new construction are inspected.

In order to conduct plan reviews with the Building Department, the Division also employs two additional inspectors: one who focuses on life provisions of the Fire Code, and the other on suppression systems inspections. A desk audit conducted during our interview indicated the following pending reviews for each of these two inspectors:

Fire Prevention Plan Review

Inspection Type	Pending	Oldest	Newest	Average
Fire / Life Safety Plan Review	28	31 days	1 day	8.4 days
Fire System Review	12	11 days	1 day	5.6 days
Total	40	31 days	1 day	7 days

The following table illustrates the workload for 2012 in the Fire Prevention Division:

Туре	Number
Plan Review Architectural	1,024
Plan Review Systems	407
CO Inspections	1,318
Annual Inspections	3,189
Fire Investigations	66

A single Fire Investigator is responsible for conducting investigations of suspicious fires in the municipality. Typically, the Company Officer determines if the fire is suspicious and whether the Fire Investigator should be called to the scene for additional investigation. While this may be adequate to handle case follow-up and prosecution, there is the need for additional trained personnel to assist with the digging of a fire scene to determine the cause and origin.

Recommendation: The AFD should implement a Company Inspection program for the inspection of low to moderate risk occupancies that fall outside the State Mandated inspection schedule. These occupancies should be inspected a minimum of once every three years in conjunction with the Quick Action Plans (QAP) developed by line personnel. Recommendation: The AFD should actively train an adequate number of shift personnel in cause and origin identification in order to assist the Fire Investigator with determining the cause of suspicious fires. The Fire Investigator should focus on the follow-up and prosecution of fires determined to be suspicious or arson.

3. THE PREVENTION BUREAU SHOULD IMPROVE COORDINATION OF FIRE PREVENTION EFFORTS IN EMERGENCY OPERATIONS.

Station interviews with line personnel indicated that fire companies do not routinely perform pre-fire plans or tactical surveys, nor do they conduct company inspections. In addition, these interviews revealed that fire companies were not wellsupported or trained to conduct fire code inspections. The Department should ensure that emergency operations personnel have adequate training to perform these inspections. A Captain should be placed in charge of the company inspection program and should take the lead in developing guidelines and providing training to personnel.

The Department has a program for companies to conduct "Quick Action Plans" (QAP) to develop basic pre-fire planning information on commercial occupancies. Currently two (2) Battalion Chiefs oversee this program and assign six (6) new commercial structures each year for companies to develop a QAP for. The Community Right to Know Office enters these into the agency database. During the assessment, there was an ongoing push to bring existing QAPs up to date due to inconsistent entry from a previous contractor.

Fire code violations discovered during the development of these plans are not communicated to inspection personnel for follow-up. These pre-fire plans are essential for effectively responding to fire, rescue, and EMS emergencies. Given the rapid pace of re-development within Anchorage, the Department should ensure that new and renovated buildings are surveyed to capture important changes in site access,

construction, suppression systems, utility locations, and other issues. Based on the workload discussed in the previous chapter, the project team recommends that the development of pre-fire plans for high-risk occupancies be assigned to ladder companies in each Battalion with support from engine companies. The Prevention Division should continue to enter theses plans into the database to ensure that they are completed and a common approach is taken in documenting these them. The Captain assigned to coordinating the engine company inspection program should be made responsible for ensuring that pre-fire plans are completed and uniformly done.

Recommendation: The Department should ensure that line personnel have proper training to perform fire code inspections.

4. THE DEPARTMENT CAN ENHANCE THE CURRENT PUBLIC EDUCATION PROGRAMMING.

The Fire Department currently has no staff members assigned to manage and provide public education programming to the Municipality of Anchorage. The Department provides a number of programs including the juvenile fire setter program, fire prevention and safety presentations to schools, various fire safety presentations upon request and has an active Explorer Program. The Explorer Program is run through the Training Division with all other public education efforts occurring when requested from the public. Given the size of the service population, number of schools, hospitals, and diversity of groups residing within the municipality, having no dedicated personnel to coordinate public education programming is insufficient. The Department should have two civilian personnel authorized to coordinate and expand the public education programing within the Department. It is estimated that these positions will cost approximately \$120,000 in salaries and benefits each. These positions can be used to increase the number of presentations to high-risk groups (i.e. schools, nursing homes, Day Cares etc.) as well as develop additional programming including:

- Educational programs aimed at areas that have a history of arson and high emergency medical system utilization.
- Expanding the smoke detector maintenance awareness program in the municipality.
- Developing fire safety educational material in different languages.
- Developing partnerships with community groups, universities, and other public safety providers to identify high risk groups and develop programming.

While support should continue to be provided by emergency operations

personnel, it is unrealistic to expect that a comprehensive public education program can

be developed without additional staff resources. As the municipality continues to grow

and emergency workload continues to increase, risk reduction strategies, such as public

education, will become even more important.

Recommendation: The Municipality should authorize an additional two civilian positions to support public education efforts. It is estimated that these two positions will each cost approximately \$120,000 in salaries and benefits and \$5,000 in on-going training, equipment, computer, and other supply costs. Additional costs of \$30,000 per vehicle or \$60,000 total and 8,000 in initial training, equipment, costs, or \$16,000 will also be required.

5. THE MUNICIPALITY CURRENTLY HAS AN EXCELLENT ISO RATING.

The Anchorage Area currently has an ISO public protection classification of two (2), for homes within five (5) miles of a recognized fire station. Homes located outside the five-mile range are classified as a ten (10), indicating that the fire suppression program for that area does not meet minimum criteria established by ISO. The ISO rating of two (2) is an excellent classification. The discussion of a lowered ISO public protection classification (PPC) and its impact on insurance rates is often overstated. In fact in 2001, State Farm abandoned the use of ISO classification in the calculation of rates and instead utilizes a formula based on local risk and regional risk, a trend many other insurance companies have followed. For the insurance agencies that utilize ISO in determining homeowner rates, it is only one tool in the process. The insurance companies establish the rates (premiums) they charge to their policyholders, which depend upon many factors including fire loss experience in an area, underwriting guidelines, and the marketing strategy for an area.

The fact that Anchorage has a strong ISO classification indicates that, given parity in all other factors, there would not be a significant saving in insurance premiums for homeowners or businesses due to an improved classification rating. Also, the infrastructure (water supply) costs associated with improving the rating often greatly outweigh any potential savings for homeowners. Insurance companies establish premium rates for commercial and industrial occupancies individually based on the type of business being conducted, presence of fire detection, and automatic fire suppression systems, etc. Based on this information, the idea of lowering the ISO rating is not a viable option for Anchorage as a method for lowering fire protection costs for the community.

The following graph depicts the current distribution of communities by Public Protection Classification (PPC) class nationally as reported by ISO. As shown with a current PPC of two (2), Anchorage enjoys an excellent rating, with only 57 communities nationwide having a higher PPC Class rating than Anchorage.



Recommendation: The Municipality should work to maintain their current ISO rating.

APPENDIX A – DESCRIPTIVE PROFILE OF THE FIRE DEPARTMENT

This profile provides summary information regarding the current organization and operation of the Anchorage Fire Department (AFD), which serves as the context for the performance and management study. The various types of data were developed through interviews with AFD management and personnel, tours of stations and the Fire Department's response area, review of available documents and records, as well as access to computerized records and data sets. This profile provides information that will be utilized by the project team to analyze workloads, organization, management and service levels provided by the AFD. The organization of this profile is as follows:

- Organization and Staffing
- Department Budget
- Emergency Operations Daily Staffing
- Personnel Costs and Overtime Utilization
- Fire Department Roles and Responsibilities
- Fire Department Workloads and Response Times

The first section that follows provides the general overview of the Anchorage Fire Department, including its organization and authorized staffing.

1. ORGANIZATION OF THE ANCHORAGE FIRE DEPARTMENT

The Anchorage Fire Department provides response to fires, emergency medical emergencies, hazardous materials incidents, natural and man-made disasters, mutual aid assistance to neighboring departments and related emergencies in an effort to reduce life and property loss. The Department also provides specialized rescue

operations, making them an all hazard response agency. In addition, the Fire Department inspects businesses and properties, assists with code enforcement, and conducts public education programs. There are three functional areas in the Fire Department: Fire Administration, Fire Operations and the Fire Marshal Office.

The organization chart on the next page shows the current organizational structure of the Anchorage Fire Department when all 389 authorized positions are filled:



The table, which follows, shows the number of authorized positions, as well as

the current number of vacancies within the Anchorage Fire Department:

Position	EV 2012	Current	Vecent
Fosition Fire Chief	1		vacant
Doputy Fire Chief	2	ו ר	0
Applie Chief	2	2	0
Fire Marshal	3	3	1
	1	1	1
	1	1	0
Administrative Assistant	1	1	0
Finance Manager	1		0
Payroll Supervisor*	1	0	0
	1	1	0
Contracts/EMS Billing	1	1	0
Billing Clerk	2	2	0
Medical Supply Clerk	1	1	0
Procurement	1	1	0
Dispatch Manager	1	1	0
Lead Dispatcher	4	4	0
Dispatcher	16	15	1
Shop Foreman	1	1	0
Mechanic	6	6	0
Office Associate	1	1	0
Data Systems Manager	1	1	0
Data Analysts	2	2	0
RMS Specialist	1	1	0
Inspector	7	7	0
Investigator	1	1	0
Office Associate	2	2	0
Battalion Chief	12	12	0
Senior Captain	13	13	0
Captain	53	53	0
Engineer	75	75	0
Firefighter/FF EMP	169	159**	0
Safety Officer	3	3	0
Training Specialist	1	1	0
Video Center Tech	1	1	0
Total	388	375	2

Anchorage Fire Department Authorized Positions FY12

* Position eliminated in 2013

* *End of SAFER Grant resulted in loss of 10 positions

The following points highlight the information presented above:

 The current number of authorized positions is 375 and includes 2 vacancies.
 The current vacancies do not include the recently filled Operations Assistant Chief position.

- There are currently three (3) Captains that serve as Platoon Training Officers.
- One (1) Office Associate assigned to the Fire Marshal Office serves as the Community Right to Know officer.

The next section provides a summary of the AFD's current budgets for 2010 -

2012.

2. DEPARTMENT BUDGET

The table, below, shows the AFD budgets for FY 2010 - FY 2012:

	FY 2010	FY 2011	FY 2012	12 v 11
Category	Actual	Revised	Approved	% Change
Personnel	52,503,283	57,469,157	62,003,685	7.89%
Supplies	1,896,261	2,232,700	1,914,700	(14.24%)
Travel	14,824	20,000	20,000	0%
Contract/Other Services	17,029,209	17,199,466	16,750,335	(2.61%)
Deb Service/Depreciation	3,570,858	4,494,741	4,769,221	6.11%
Equipment, Furnishings	660,533	362,700	362,700	0%
TOTAL Direct Cost	75,674,969	81,778,764	85,820,641	4.94%

Anchorage Fire Department FY 2010 - FY 2012 Budget Comparison by Category

Anchorage Fire Department FY 2010 - FY 2012 Budget Comparison by Division

	FY 2010	FY 2011	FY 2012	12 v 11
Division	Actual	Revised	Approved	% Change
Administration	4,485,195	4,375,348	4,194,081	(4.14%)
Emergency Operations	61,320,164	68,369,258	73,332,587	7.26%
Office of the Fire Chief	587,562	320,303	320,465	0.05%
Police & Fire Retirement	9,282,048	8,713,855	7,973,508	(8.50%)
TOTAL Direct Cost	75,674,969	81,778,764	85,820,641	4.94%

As shown above, the FY 2012 approved budget is \$85.83 million. This is approximately 4.9% above the revised budget for FY 2011 and 13.4% above FY2010 actual expenditures.

3. OPERATIONS DAILY STAFFING

The Anchorage Fire Department currently operations from 13 fire stations, each

located within Municipal limits.

Station	Address	Personnel	Engines	Ambulance	Truck	Specialty
1	122 E. 4 th Avenue	14-17	2	1	1	Hazardous Materials
	1100 Airport					Urban Search &
3	Heights	8-10	1	1	1	Rescue
4	4350 MacInnes St	8-10	1	1		Rescue & Dive/Water
5	2207 McRae Rd	8-10	1	1	1	Ladder Maintenance
6	1301 Patterson St	5-6	1	1		None
	8735 Jewel Lake					
7	Rd	5-6	1	1		Sewing/Turnout Repair
8	6151 O'Malley Rd	4	1			Air Resources
						Front country / Rope
9	1148 Huffman Rd	6-7	1	1		Rescue
	14861 Mountain					
10	Air Dr	4	1			None
	16630 Eagle River					
11	Rd	10	1	1	1	Swift Water Rescue
						Small Tools /
12	7920 Homer Dr	6-7	1	1	1	Equipment
	4501 Campbell					
14	Airstrip Rd	4-5	1			Wildland Operations
	11301 Southport					
15	Dr	3-4	1			Hose Testing

A total of 105 line personnel are scheduled each day to staff units and respond to emergency incidents, with minimum staffing being 97.

The agency has a plan to change the number and staffing of stations. The following table illustrates the plan for adding/relocating stations in the coming years and the types of apparatus planned to be located at each station.

Station	Address	Personnel	Engines	Ambulance	Truck
1	122 E. 4 th Avenue	10-13	1	1	1
2	Midtown	5-6	1	1	
3	Relocated	5-6	1	1	
4	4350 MacInnes St	8-10	1	1	
5	2207 McRae Rd	8-10	1	1	1
6	1301 Patterson St	5-6	1	1	
7	8735 Jewel Lake Rd	5-6	1	1	
8	6151 O'Malley Rd	4	1		
9	Relocated	6-7	1	1	
10	14861 Mountain Air Dr	4	1		
11	16630 Eagle River Rd	10	1	1	1
12	7920 Homer Dr	6-7	1	1	1
14	4501 Campbell Airstrip Rd	4-5	1		
15	11301 Southport Dr	3-4	1		
16	University Campus	4			1
Total		87-102	14	10	5

Proposed Station Plan

As shown above, the proposed station plan will require an additional 2 personnel to staff the additional ambulance to be located at the proposed mid-town station (#2).

Personnel work 24-hour shifts on a rotating basis with 24 hours off after their first and second scheduled shift and 4 days off after their third shift. Shifts are scheduled to begin and end at 9:00 a.m. The rotation results in a 56-hour average FLSA workweek for shift personnel. The table, below, shows the shift rotation during the month of June 2013. All shifts are indicative of the oncoming shift at 9:00 am:

Anchorage Fire Department Pro forma Shift Schedule by Group June 2013

Sun	Mon	Tues	Wed	Thu	Fri	Sat
						А
В	A	В	С	В	С	А
С	A	В	А	В	С	В
С	A	С	А	В	А	В
С	В	С	А	С	А	В
А						

The next section provides information on personnel costs and use of leave.

4. PERSONNEL COSTS AND USE OF LEAVE

The project team collected salary data for the Fire Department. The table, below,

shows the average salary cost by position:

Position	Average
Fosition	Salary
	\$111,550
Deputy Fire Chief	\$105,092
Assistant Fire Chief	\$102,273
Fire Marshal	\$102,273
Administrative Services Assoc.	\$60,736
Finance Manager	\$87,110
Payroll Specialist	\$64,563
Lead Dispatcher	\$74,069
Dispatcher	\$69,514
Lead Mechanic	\$94,432
Mechanic	\$85,654
Office Associate	\$54,434
Data Systems Manager	\$88,379
Technology Analyst	\$67,610
Inspector	\$94,927
Investigator	\$96,387
Fire Battalion Chief	\$125,252
EMS Battalion Chief	\$126,681
Senior Captain	\$123,173
Captain	\$112,880
Engineer	\$101,602
Firefighter PM	\$103,677
Firefighter	\$88,939
Senior Admin Officer	\$76,734
Safety Officer	\$80,655
Training Specialist	\$112,880
Video Center Tech	\$84,968

Anchorage Fire Department Average Salaries by Position

5. FIRE DEPARTMENT ROLES AND RESPONSIBILITIES

The following table describes the key roles and responsibilities of personnel

within the Anchorage Fire Department.

Position / Classification	Authorized	Current	Key Roles and Responsibilities
Fire Chief	1	1	 Provides the executive management of the Fire Department, including the development of policies and procedures, providing leadership for future services, budget development, identifying service gaps, working with the elected officials and Municipal management to ensure that the AFD interests are considered. Provides education regarding how the AFD operates, what its services are, what the resource needs are. Supervises the Deputy Chiefs, Fire Marshal and Executive Assistant.
Executive Assistant	1	1	 Reports to the Fire Chief. Provides administrative support to the Fire Chief. Answers departmental administrative phones and directs callers to the correct location. Assists walk in customers as needed. Assists persons wishing to purchase t-shirts and view the Department museum as needed. Assists Chief with budget development, maintenance and other projects as assigned.

Position / Classification	Authorized	Current	Key Roles and Responsibilities
Deputy Chief	2	2	 Report to the Fire Chief. Administrative Deputy Chief Manages the administrative functions of the Department. Oversees finance, dispatch, shop, data systems and wildfire mitigation. Supervises the Finance Manager, Dispatch Manager, Shop Foreman, Data Systems Manager and Wildfire Mitigation Manager. Conducts grant research and secures grants for the agency. Attends meetings to represent department Serves as Fire Chief during the absence of the Chief. Emergency Operations Deputy Chief Manages the emergency operations for the agency. Supervise the Assistant Chiefs of EMS, Training and Operations. Assists in planning, organizing and administering the activities of the Department. Maintains and enforces discipline. Assists in developing the goals and objectives of the agency. Participates in personnel selection, development and promotions. Organizes departmental operations to achieve stated goals and objectives. Recommends changes in organization structure and methods of service delivery as necessary.

Position / Classification	Authorized	Current	Key Roles and Responsibilities
Assistant Chief	3	3	 Operations Report to Deputy Chief of Operations Supervise the Battalion Chiefs assigned to Fire Operations. Ensures assigned tasks are completed Serves as incident commander as needed. EMS Reports to the Deputy Chief of Operations Supervises the Battalion chiefs assigned to EMS. Conducts QA and QI on medical care provided Agency liaison with Medical Director Initiates new training requirements for Paramedics. Serves as Liaison with medical community in Anchorage. Handles departmental legal aspects. Ensures medication availability status is maintained in AFD intranet. Training Reports to the Deputy Chief of Operations Supervises the Platoon Training Officers, Safety Officers, Training Specialist, EMS training officer and support staff at the training center. Serves as training officer for the Department. Oversees the employee medical physical program. Coordinates development of lesson plans for station training topics. Ensures 1582 compliance Serves as liaison with the employee fitness committee.

Position / Classification	Authorized	Current	Key Roles and Responsibilities
Battalion Chief	12	12	 Fire Suppression Supervise the Sr. Captains and Captain on assigned shift. Ensure adequate staffing at assigned stations. Conduct daily briefing with assigned officers. Work 24 hour / 56-hour per week average shift schedule Conduct periodic station visits (twice each work cycle). Respond to emergencies requiring a Battalion Chief response for assigned response area. Handle disciplinary matters as required. Perform assigned administrative tasks. EMS Provide oversight of medical provided by field medics Conduct run review and QA/QI activities including direct feedback and developing and delivering training as required for determined individual and trends in underperformance. Work 24 hour / 56-hour per week average shift schedule Manage the BLS and ALS internship program. Handle patient complaints related to medical care. Issue narcotics and ensure compliance with narcotics policy. Coordinate bi-month paramedic shift meeting with Medical director. Facilitate clinical trials for new equipment, medical devices and procedures. Responds to all cardiac arrests, structure fires and serious medical incidents.
Sr. Captain Captain	13 53	13 53	 Senior Captain serves as the overall station supervisor, but functions as a Captain on assigned shift. Serve as shift supervisor with direct supervision of assigned engineers and firefighters. Work 24 hour / 56-hour per week average shift schedule Ensures crews are ready to perform according to adopted standards. Handle any needed disciplinary issues with personnel Serve as point of contact for the public at fire stations. Ensure stations are properly stocked and kept in order. Ensures assigned tasks, company training and quick action plans are accomplished on schedule.

Position / Classification	Authorized	Current	Key Roles and Responsibilities
Engineer Firefighter	75 169	75 159	 Assigned to one of 13 stations on an engine, ambulance or truck company. Work 24 hour / 56-hour per week average shift schedule Perform daily shift duties Participate in daily training drills and development of quick action plans. Respond to emergency calls for service. Maintain front-line and reserve apparatus at assigned station. Perform specialty tasks at assigned station.
Fire Marshal	0	1	 Position is being filled in an acting capacity by a Fire Inspector in a long-term acting capacity. Supervises seven (7) inspectors, (1) investigator and one (1) Office Associate. Provides overall management and direction to the fire prevention division. Mediates disputes between inspection personnel and contractors. Ensures billing is conducted in a timely fashion for inspection activities and process legal action against non-payers. Resolve complaints between architects, engineers, contractors and plan reviewers. Make final decisions related to code issues. Advise and consult with operations on any code issues which could effect emergency response. Manage prevention correspondence related to policy and code implementation. Train new inspectors assigned to unit (6 week program)
Fire Inspector	8	7	 Fire Inspectors report to the Fire Marshal Two (2) Inspectors are focused on conducting architectural and system plan reviews The systems inspector backs up for Certificate of Occupancy inspections as needed. One (1) Inspector conducts Certificate of Occupancy inspections related to new businesses and renovated properties requiring a CO inspection. Four (4) Inspectors are primarily focused on maintenance inspections for occupancies required by the State to be inspected annually or once every two years. One (1) inspector also handles complaint inspections, one (1) public education and all back up the CO Inspector when the number of CO inspector. Two (2) Inspectors also assist the lone Fire Investigator as needed.

Position / Classification	Authorized	Current	Key Roles and Responsibilities
Fire Investigator	1	1	 Reports to the Fire Marshal Investigates suspicious fires occurring in the Municipality. Handles the case management and prosecution of criminal fires from investigation and evidence collection through criminal prosecution. Writes supplemental reports on all investigated fires. Responds after-hours as requested by company officers, but is not designated as "on-call"
Shop Foreman	1	1	 Reports to the Administrative Deputy Chief Oversees the AFD fleet to ensure preventative and scheduled maintenance occurs Ensures all apparatus inspections and preventative maintenance are up to date Coordinates repair schedule to ensure high priority items are addressed Supervises six (6) mechanics and one Office Associate. Ensures required certifications are maintained by mechanics.
Mechanic	6	6	 Conducts preventative and routine maintenance on agency apparatus and vehicles. Conducts preventative and routine maintenance on agency small engine equipment. Responds to emergency scenes for emergency repairs on apparatus. Conducts preventative and routine maintenance on the local volunteer agency apparatus and vehicles on a contract basis.
Dispatch	21	20	Discussed in Separate Dispatch Profile
Finance Officer	1	1	 Reports to the Administration Deputy Chief Manages the operation and capital budgets for AFD Oversees departmental purchasing, contract administration, EMS billing, Payroll. Supervises payroll (2), Procurement/RMS (2), Contracts and EMS billing (1), Billing clerks (2) and Medical Supply clerk (1).
Payroll Specialist	1	1	 Process agency payroll for personnel in AFD Verify all staff hours in Telestaff Enter payroll into People Soft for Central Payroll

Position / Classification	Authorized	Current	Key Roles and Responsibilities
Contracts Billing Medical Supply	1 2 1	1 2 1	 Contracts oversee all contracts for the AFD and ensure compliance with contract terms. Billing reconciles the patient care report list from dispatch to current reports and reviews patient care reports for all transported patients to ensure ALS and BLS billing codes are correct, narrative matches services performed and any missing information is corrected prior to billing information being sent to the contract billing agency. Medical supply ensures the agency maintains an adequate stock of medical supplies, medications and equipment to operate the ALS ambulances in the Municipality. Ensures all AFD apparatus with medical supplies and equipment are properly stocked.
Procurement Clerk	1	1	 Prepare documentation for purchasing office supplies and other items for the AFD. Prepare requisitions, quotes, documentation and bid specifications as needed. Prepare documentation related to receipt of purchased good. Enter information to ensure vendors are paid by Municipality for goods and services received.
RMS Specialist	1	1	 Reports to the Finance Officer. Administers the Fire CAD and RMS systems. Conducts statistical analysis. Develops and produces reports for operational planning. Prepares reports related to information requests from the public. Provides technical support, troubleshooting and training for the Fire Department information systems. Assists with the development of the Department website. Assists in the procurement process involving PO's and vendors. Prepares monthly documentation for out of area response and false alarm billing.
Data Systems	3	3	 The Fire Information Systems Manager oversees the two other positions who serve as programmer / analysts. Develop in-house solutions for software packages Compile stats from data pulled from agency data sources Develop queries to allow information to be pulled from departmental databases Develop web based applications to allow real-time viewing of frequently used data sets. Oversee the CAD / RMS functions for the agency. Ensure hardware and software purchased meet agency needs and adapt for use in emergency vehicles and stations.

Position / Classification	Authorized	Current	Key Roles and Responsibilities
Office Associate	2	2	 One Associate is assigned to the Shop and one to the Fire Prevention Division. The Shop associate is responsible for coordinating preventative maintenance schedule with shift personnel, inputting purchase orders, ordering and receiving parts for the shop and answering phone calls and serving as receptionist for walk in issues. The Fire Prevention associate serves as the Agency Community Right to Know officer, oversees the agency Knox Box program, enters quick action plans into the computer and serves as the initial point of contact for the public at the Fire Prevention division.

6. FIRE DEPARTMENT EMERGENCY RESPONSE

The Anchorage Fire Department is an all hazard response agency. The Department responds to calls for service from 13 stations and serves as an ALS transport agency.

The following table serves as summary of the calls for service responded to by

the Anchorage Fire Department from 2010 – 2012:

Anchorage FD Calls For Service 2010 – 2012

Type of Call / Year	2010	2011	2012	Change 11 v 12
Emergency Medical	19,833	19,511	21,372	9.5%
Fire	739	814	735	(-9.8%)
Service Calls	6,729	7,054	7,371	4.5%
Hazardous Condition	523	559	787	40.8%
False Alarms	2,188	2,396	2,350	(2.1%)
Total	30,012	30,334	32,615	7.5%

As shown, Anchorage Fire Department responded to a total of 32,615 CFS during 2012, an increase of 7.5% over 2011 when the agency responded to 30,334 calls. Approximately 65.5% of the calls responded to were emergency medical calls. These calls will be used as a basis for further analysis to determine the effectiveness of AFD to place units on scene for emergency calls for service. The data indicates that AFD typically responds to approximately 89 calls for service per day. It is important to note that several calls will require more than one apparatus respond to handle the emergency nature of the call.

The following table shows the emergency calls by response apparatus type for AFD during 2012:

Unit / Station	Number of Responses	
Station 1	11,772	
Engine 1	2,664	
Medic 1	5,085	
Truck 1	848	
Engine 2	3,123	
Medic 2*	52	
Station 3	8,948	
Engine 3	3,183	
Medic 3	4,554	
Truck 3	1,211	
Station 4	8,515	
Engine 4	3,096	
Medic 4	4,157	
Rescue 4	1,262	
Station 5	7,618	
Engine 5	2,951	
Medic 5	3,746	
Truck 5	921	
Station 6	6,182	
Engine 6	2,679	
Medic 6	3,503	
Station7	3,243	
Engine 7	1,333	
Medic 7	1,910	
Station 8	528	
Engine 8	528	
Station 9	2,855	
Engine 9	1,178	
Medic 9	1,677	
Unit / Station	Number of Responses	
----------------	---------------------	
Station 10	308	
Engine 10	308	
Station 11	2,073	
Engine 11	917	
Medic 11	881	
Truck 11	275	
Station 12	5,183	
Engine 12	1,799	
Medic 12	2,548	
Truck 12	836	
Station 14	1,624	
Engine 14	1,624	
Station 15	606	
Engine 15	606	

• Medic 2 is only staffed when staffing levels allow

As shown, Engine 2 and Engine 3 are the busiest engine companies, while Medics 1 and 3 are the busiest ambulance companies. The truck companies are fairly consistently used with the exception of Truck 11, which responded to 192 incidents in 2012, far fewer than the other truck companies.

The following charts illustrate the calls by hour of day and day of week for the AFD in 2012.





As shown above, the AFD is busiest between the hour of 5:00 pm and 6:00 pm, responding to 1,914 calls for service during the timeframe in 2012 for an average of 5.24 calls each day between 5:00 and 6:00 pm. Saturday is the busiest day of the week with 4,877 calls for service or 93.8 calls on average per day on Saturday.

APPENDIX B – SUMMARY OF THE EMPLOYEE SURVEY

The Matrix Consulting Group developed and distributed an anonymous survey to the employees of the Anchorage Fire Department on July 8th, 2013. The following summary provides a snapshot of what was learned from the survey.

1. AN ANONYMOUS SURVEY WAS CIRCULATED TO ALL FIRE DEPARTMENT EMPLOYEES.

An anonymous survey was distributed to all members of the Anchorage Fire Department in order to give them an opportunity to share their opinions on the Department's 1) service to the Municipality, 2) management and administration, 3) organization, staffing, and operations, and 4) facilities and equipment. Respondents were asked to indicate the degree to which they agreed or disagreed with a series of statements, with their responses recorded on a scale from 1-10, 10 being "Strongly Agree" and 1 being "Strongly Disagree". For discussion purposes, responses will be grouped in terms of agreement (ranging from 7-10), disagreement (ranging from 1-3), and neutrality (ranging from 4-6).

The survey was distributed to 376 employees, of which 276 responded, for a response rate of 73.4%. The following table shows the breakdown of respondents by current assignment.

Current Assignment	Number of Respondents
Administration	9
Operations	230
Training	8
Dispatch	13
Prevention	7
Maintenance	6
Data Systems	3

The following sections summarize the results of the employee survey.

2. EMPLOYEES HAVE A VERY POSITIVE IMPRESSION OF THE DEPARTMENT'S SERVICE TO THE COMMUNITY.

The following questions were asked about the Anchorage Fire Department's service to the community. This table shows how employees responded to each question.

Statement	Agree	Neutral	Disagree
 Our fire department provides high quality service to the community. 	94%	4%	<1%
2. Our department provides high quality emergency medical service.	94%	4%	1%
3. The department provides effective fire prevention and public education.	53%	31%	14%
4. Residents view the fire department as a high priority.	91%	7%	<1%

- An overwhelming majority (over 80%) of respondents agreed with questions #1, #2, and #4, regarding the level of service to the community and the degree to which the community prioritizes the fire department. At least half of those who agreed with these statements did so strongly.
- A slim majority (53%) of respondents agreed with question #3, that the Department provides effective fire prevention and public education. 31% remained neutral, and 14% disagreed. Those who actually work in prevention were mostly neutral, with one negative response.

In summary, the respondents believe the Department delivers a high level of

service and a reasonable level of prevention/public education to the community, and

that the community values the service the Department provides.

3. EMPLOYEES HAVE MIXED PERCEPTIONS OF THE DEPARTMENT'S MANAGEMENT AND ADMINISTRATION.

The following questions were asked about the Anchorage Fire Department's

management and administration. This table shows how employees responded to each

question.

Statement	Agree	Neutral	Disagree
5. Our department has a clear vision/direction for the future.	19%	34%	45%
6. As an employee, I understand the long-term goals of the	15%	36%	48%
department.			
7. Our department managers make important decisions in a	22%	33%	43%
timely manner.			
8. I am kept informed of important department information.	20%	34%	45%
9. My opinions are listened to in the department.	22%	32%	45%
10. My work performance expectations are made clear.	58%	29%	11%
11. When problems arise, they are resolved quickly.	26%	40%	32%
12. Staff are held accountable for their actions.	36%	30%	33%
13. Disciplinary actions occur in our department in a fair	23%	33%	41%
and consistent manner.			
14. Our department seems to be innovative and	48%	34%	17%
progressive.			
15. Our department does a good job planning and	42%	40%	16%
scheduling our shift assignments.			
16. I receive the proper training to be effective in my current	54%	31%	14%
assignment.			
17. Our standard operating guidelines are consistently	58%	29%	11%
followed.			

- Respondents expressed general disagreement (45% disagree) with statements #5, #6, and #7 regarding the clarity of the Department's vision and direction, and the decision-making of its leadership. 33-36% remained neutral on these statements, while less than 25% agreed. Of those who agreed, comparatively fewer were operations and firefighting personnel.
- Respondents expressed general disagreement (more than 40% disagree) with statements #8, and #9, regarding the degree to which employees are listened to and kept informed. 32-34% remained neutral on these statements, while less than 25% agreed. Of those who expressed an agreement level of 8 or above, a significantly lower percentage were operations and firefighting personnel.
- A slim majority of respondents (58%) agreed with statement #10, that work performance expectations are made clear. 29% remained neutral, and 11% disagreed.
- Opinions were divided on statement #11, that problems are resolved quickly when they arise. 26% agreed, 40% remained neutral, and 32% disagreed. Interestingly, over half of the Dispatch team disagreed strongly with this statement.
- Opinions were divided as well on statement #12, that staff are held accountable for their actions. 36% agreed, 30% remained neutral, and 33% disagreed.
- Respondents expressed general disagreement (41% disagree) with statement #13 that disciplinary actions occur in a fair and consistent manner. 33% remained neutral on this statement, while 23% agreed.

- Respondents expressed general agreement (48% agree) with statement #14, regarding the degree to which employees are listened to and kept informed. 32-34% remained neutral on these statements, while less than 25% agreed.
- Respondents expressed general agreement with statement #15, that the Department does a good job of planning and scheduling shift assignments. 42% agreed, 40% remained neutral, and 16% disagreed.
- A slim majority (54%) agreed with statement #16, that they receive the proper training to be effective in their current assignment. 31% remained neutral, and 14% disagreed.
- A slim majority (58%) agreed with statement #17, that standard operating guidelines are consistently followed. 29% remained neutral, and 11% disagreed.

In summary, respondents have mixed opinions about the management and administration of the Department. There was no strong majority of agreement or disagreement on any one statement. The Dispatch and Maintenance teams in particular expressed a significant level of discontentment (averaging less than a 5 in their responses) with the management and administration in these statements. Operations and firefighting personnel, too, averaged responses just over 5. Areas of dissatisfaction seem to be in the areas of goal-setting, the flow of information, and disciplinary consistency within the Department, while more agreement can be found in stating that procedures and expectations are clear, and that training is sufficient.

4. EMPLOYEES HAVE GENERALLY POSITIVE VIEWS OF THE DEPARTMENT'S ORGANIZATION, STAFFING, AND OPERATIONS.

The following questions were asked about the Anchorage Fire Department's organization, staffing, and operations. This table shows how employees responded to each question.

Statement	Agree	Neutral	Disagree
18. Staff resources are adequate to meet the current fire service needs of the municipality.	24%	31%	43%
19. Staff resources are adequate to meet the current EMS needs of the municipality.	15%	30%	53%
20. The staffing plan effectively utilized personnel available on each shift through flexible shift assignments.	23%	49%	22%
 During incidents, personnel are efficiently and effectively managed using the ICS. 	71%	22%	4%
22. The AFD effectively utilizes quality control practices (i.e. post-incident reviews, critiques, QA/QUC, etc.) to improve how we operate.	50%	30%	17%
23. Our response times to fire, emergency, and emergency medical incidents are good.	85%	12%	1%
24. We get out of our stations in response to emergency calls.	90%	8%	<1%
25. Dispatch information provided to us on incidents is accurate and timely.	69%	22%	6%
26. Our personnel work well with each other on calls for service to which they respond.	94%	4%	<1%
27. Our approach to pre-fire panning is effective.	47%	35%	13%
28. Safety is a high priority in the AFD.	81%	13%	2%
29. We receive the practical training we need to keep our skills high.	60%	26%	11%
30. Our company officers receive the training they need to be good leaders and trainers.	41%	34%	21%
31. Our department places a high priority on proper training for field personnel.	54%	29%	15%
32. The system of assigning 'ancillary duties' to stations is an effective one.	47%	35%	14%

- Respondents expressed general disagreement (43% disagreed) with statement #18, that the Department's resources are adequate to meet Anchorage's fire needs. 31% remained neutral, and 24% agreed.
- A slim majority (53%) disagreed with statement #19, that the Department's resources are adequate to meet Anchorage's EMS needs. 30% remained neutral, and 15% agreed.
- Opinions were mixed on statement #20, that the staffing plan effectively utilized personnel through flexible shifts. 23% agreed, and 22% disagreed, while the largest contingent (49%) remained neutral.
- A majority of respondents (71%) agreed with statement #21, that staff are effectively managed by ICS during incidents. 22% remained neutral, and 4% disagreed.
- Half of respondents (50%) agreed with statement #22, that the Department uses effective quality control measures to improve their performance. 30% remained neutral, and 17% disagreed.

- An overwhelming majority (over 80%) agreed with statements #23 and #24, regarding response times to emergency incidents and getting out of the station quickly. More than half of all employees responded with strong agreement (a 9 or 10).
- A majority of respondents (69%) agreed with statement #25, that dispatch information on incidents is accurate and timely. 22% remained neutral, and 6% disagreed.
- An overwhelming majority of respondents (94%) agreed with statement #26, that personnel work well together on the calls for service to which they respond. More than 2/3 of all responses were a 9 or 10.
- Respondents expressed general agreement (47% agreed) with statement #27, that pre-fire planning is effective. 35% remained neutral, and 13% disagreed.
- An overwhelming majority of respondents (81%) agreed with statement #28, that safety is a high priority in the Department.
- A majority of respondents (60%) agreed with statement #29, that they receive the practical training they need to keep their skills high. 26% remained neutral, and 11% disagreed.
- Respondents expressed general agreement (41% agreed) with statement #30, that station officers receive the training they need to be good leaders and trainers. 34% remained neutral, and 21% disagreed.
- A slim majority of respondents (54%) agreed with statement #31, that the Department places a priority on proper training for field personnel. 29% remained neutral, and 15% disagreed.
- Respondents expressed general agreement (47% agreed) that the system of assigning 'ancillary duties' to stations is an effective one. 35% remained neutral, and 14% disagreed.

In summary, impressions of the Department's organization, staffing, and operations are generally positive. They take pride in the speed and cooperation with which they respond to emergency incidents. The most pronounced concern in this section dealt with the staffing and resourcing of the Department – employees believe that they are under-resourced. Another area of concern is in training and pre-fire

prevention, where many respondents do not believe the Department is being as effective as it could be.

5. EMPLOYEES HAVE POSITIVE VIEWS OF THE DEPARTMENT'S EQUIPMENT AND FACILITIES.

The following questions were asked about the Anchorage Fire Department's

equipment and facilities. This table shows how employees responded to each question.

Statement	Agree	Neutral	Disagree
33. We have the equipment and apparatus to provide high levels of service.	75%	19%	4%
34. We are replacing our fire and EMS apparatus on an appropriate schedule.	54%	30%	13%
35. Our fire and EMS equipment is well-maintained.	74%	20%	4%
36. The locations of our fire stations are effective in meeting community needs.	79%	16%	3%
37. The physical condition of our fire stations is good.	79%	15%	4%

- A strong majority of respondents (74% and 75%) agreed with statements #33 and #35, regarding the adequacy of the Department's equipment/apparatus and the quality of its maintenance. For both statements, less than 20% remained neutral, while only 4% disagreed.
- A slim majority of respondents (54%) agreed with statement #34, that the Department replaces its fire and EMS equipment on an appropriate schedule. 30% remained neutral, and 13% disagreed.
- A strong majority of respondents (79%) agreed with statements #36 and #37, regarding the location and condition of the Department's fire stations. 15-16% remained neutral, while less than 5% disagreed.

In summary, employees have a very positive view of the Department's facilities

and equipment. Some employees are unsure that it is being replaced on an appropriate

schedule, but they generally agree that stations and equipment are in good condition.

6. NARRATIVE RESPONSE QUESTIONS

The survey asked respondents to answer three open-ended response questions.

The first asked, "Please indicate what you think are the most important strengths of the

Anchorage Fire Department." The themes of the most common responses are listed

below:

- High quality of front-line personnel
- Innovative, aggressive firefighting
- Good customer service
- Focus on safety
- Community Involvement
- Pride and professionalism
- Cooperation
- High quality equipment and apparatus

Employees believe that the strengths of the Department lie in the high quality and

dedicated professionalism of their front-line personnel, as well as their aggressive, innovative firefighting techniques, high quality equipment, and focus on safety. They are pleased with the customer service they provide, and in turn with the community's support for the Department.

The second question asked, "Please indicate what you believe are the most

important improvement opportunities facing the Anchorage Fire Department." The

themes of the most common responses are listed below:

- Lack of general vision/direction on part of administration
- Lack of transparency and trust between the Department and administration
- Inconsistencies/mistakes in pay checks
- Punitive approach to leadership
- Need for more staffing/resources, particularly for EMS
- Standardization of firefighting procedures
- Need for 4-person companies
- Inconsistency in training and discipline
- Dissatisfaction with AO 37

Respondents as a whole made a strong statement about their dissatisfaction with the current administration, stating that they do not believe the decisions being made are in the best interest of the Department. Another key issue is the staffing levels of the Department; many employees believe they are dangerously understaffed and would like to see better paramedic coverage and a return to 4-person units. Issues were also raised about the consistency and standardization of training, discipline, and firefighting procedures, and several employees brought up AO 37 as a source of staffing and retention problems.

The third question asked respondents to provide additional comments to the project team as they saw fit. Most responses expressed a general concern with the direction that the Department is taking in terms of upper management, citing a perceived lack of support for the needs of front-line firefighters. Employees expressed a desire for a consistent set of policies and procedures, rather than what they see as a repeatedly reactive, or "knee-jerk" management style. Morale seems to be low as a result. Many employees also reiterated their desire to see increases in staffing for firefighters and EMS personnel.

In summary, employees maintain a strong belief in the dedication and service of the front-line personnel, the facilities and operations of the Department, and in the community of Anchorage. They are frustrated, however, by the effect that recent management changes and practices have had on the Department, and are looking for consistency and a show of support for the line.

APPENDIX C – SUMMARY OF THE COMPARATIVE SURVEY

This survey finds that Anchorage differs from its peers in several significant aspects. The following graphs display the disparities between Anchorage and other similar cities in terms of scope of services, given the municipalities' sizes and areas of coverage.

City	Budgeted Expenditures	# Fire Stations	Total Dept. Personnel
Aurora, CO	\$37,127,924	15	327.0
Boise, ID	\$43,036,863	19	288.0
Colorado Springs, CO	\$57,703,032	21	479.8
Glendale, AZ	\$36,744,314	9	293.0
Henderson, NV	\$39,786,982	9	214.0
West Metro District, CO	\$56,538,985	15	335.0
Mesa, AZ	\$67,003,000	21	375.0
Modesto, CA	\$24,614,274	11	141.0
Spokane, WA	\$38,678,413	15	318.0
Tacoma, WA	\$124,795,717	15	389.5
Anchorage, AK	\$88,741,621	13	377.0
AVERAGE	\$55,888,284	15.0	309.5

• Anchorage is one of the highest spending municipalities of its size, exceeded only by Tacoma, WA.

- The budget expenditures for Anchorage are well above the average among the group
- The number of fire stations in Anchorage meets the average expectation as compared to others in this study.

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City	Engine Companies (min.)	Staff Per Engine	Ladder Trucks (min.)	Staff Per Ladder
Aurora, CO	14	Three	4	
Boise, ID	17	Three	3	Four
Colorado Springs, CO	20	Three	6	
Glendale, AZ	10	Three	2	
Henderson, NV	9	Four	2	
West Metro District, CO	13	Three	3	Four
Mesa, AZ		Four		Four
Modesto, CA	11	Three	2	
Spokane, WA	13	Three	5	Four
Tacoma, WA	13	Three	4	Three
Anchorage, AK	16	Three to Four	5	Four

- Only two of the fire departments, with the exception of Anchorage, use four staff per engine.
- Anchorage's number of engine companies is on the high end as compared to other cities in the study.

City	# of Working Fires	# of EMS Calls	EMS Calls / 1000	EMS Calls / Total CFS	Total CFS
Aurora, CO	802	27,118	80.8	71.68%	37,830
Boise, ID	542	12,566	59.8	66.74%	18,829
Colorado Springs, CO	803	36,188	84.9	66.23%	54,637
Glendale, AZ	1,080	21,191	91.9	82.10%	25,050
Henderson, NV	554	18,750	69.5	77.04%	24,339
West Metro District, CO		16,443	66.4	65.28%	25,188
Mesa, AZ		55,000	123.2	N/A	
Modesto, CA		15,750	77.7	70.00%	22,500
Spokane, WA	384	22,844	108.7	77.67%	29,412
Tacoma, WA	1,177	31,367	156.3	80.72%	38,859
Anchorage, AK	735	21,372	72.3	65.53%	32,615
AVERAGE	760	25,326	90.1	81.49%	31,900

• Anchorage handles well below the group's average rate of EMS calls per 1,000 people, in addition to the second-lowest proportion of EMS calls to total Calls for Service while retaining one of the largest ambulance fleets in the group.

City		EMS Services	ALS / BLS Capability
Aurora, CO	Mixed	Ambulance services are contracted out to Rural/Metro in a multi-year agreement	All firefighters are certified paramedics
Boise, ID	Mixed, Public	Transport services are largely handled by the Ada County Paramedics division, although in 2006 the Boise FD began placing their own certified paramedics in areas with slower EMS response times	4 ALS-equipped engines (27 paramedic-certified personnel) 13 BLS- equipped engines (221 certified EMTs)
Colorado Springs, CO	Mixed	Ambulance services are currently provided county-wide through American Medical Response– although the Colorado Springs City Council recently announced that it would not be renewing their contract	All firefighters are EMTs, most EMS response units include at least one paramedic-certified individual
Glendale, AZ	Joint Operations	Glendale Fire Department paramedic engines respond in conjunction with BLS ambulances–three of which are owned by the GFD and are leased to Southwest Ambulance, who operates 4 total paramedic units that are co-staffed with FD personnel	10 paramedic engine companies + 2 paramedic ladder trucks + 3 medic units + 1 Halo-151/Air Ambulance
Henderson, NV	Complete	Fire Department apparatus include transport capable paramedic units.	7 paramedic transport units; 9 fire engines + 2 truck companies + 1 heavy rescue unit are ALS-capable
West Metro District, CO	Complete	Ambulance and billing services are provided by the West Metro Fire Protection District	19 paramedic-staffed engines + 9 paramedic ambulances
Mesa, AZ	Mixed;	No transport, with limited paramedic capabilities	3 companies include a paramedic-firefighter position
Modesto, CA	Mixed	No transport, with limited paramedic capabilities	All firefighters are EMTs + 3 companies include paramedic

• Anchorage also retains one of the largest ambulance fleets in the group.

City	EMS Services		ALS / BLS Capability
Spokane, WA	Mixed	The Spokane City Fire Department provides a paramedic-level first response to EMS calls (and as of recently, not necessarily using an engine/ladder truck to do so), although ambulance transport services are contracted out to American Medical Response	52 certified paramedics, minimum staffing level of 8 firefighter-paramedic units (2 units with two paramedics)
Tacoma, WA	Mixed	Fire Department has transport-capable units, but is also served by Rural/Metro	All firefighters are either EMTs or have paramedic certification
Anchorage, AK	Joint Operations	Provides ALS and transport; these paramedics are cross-trained in fire suppression	

• Anchorage is one of few cities in the study with both private and public ambulance services. As a result, Anchorage has the greatest number of ambulances of any city in the study. The following graphs display this disparity:

City	Ambulance Units (min.)	Staff Per Ambulance
Aurora, CO		N/A
Boise, ID		Two
Colorado Springs, CO	2	N/A
Glendale, AZ	3	Two
Henderson, NV	7	Two
West Metro District, CO	9	Two
Mesa, AZ		N/A
Modesto, CA		N/A
Spokane, WA		Two
Tacoma, WA	5	Two
Anchorage, AK	9	Two

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City	Dispatch Format	
Aurora, CO	Consolidated 911	Police and Fire dispatch services operate through a consolidated municipal 911 emergency communications center.
Boise, ID	Consolidated 911	Dispatch functions for both Police and Fire services are consolidated into the Ada County Sheriff's Communication Center
Colorado Springs, CO	Consolidated 911	All emergency dispatch services are provided through the El Paso-Teller County Enhanced 911 Authority
Glendale, AZ	Consolidated Fire	Fire dispatch provided under the Maricopa County Automatic Aide dispatching system
Henderson, NV	Consolidated 911	Organized within the Henderson Police Department.
West Metro District, CO	Fire Department	Organized under the Communications Division of West Metro.
Mesa, AZ	Fire Department	Fire and police dispatch services recently de-consolidated (2010), with the new fire dispatch unit being staffed by a total of 22 FTE positions
Modesto, CA	Consolidated 911	Both police and fire calls taken by the Stanislaus Regional 911
Spokane, WA	Co-Located 911	Fire and Police dispatch services are located in the same communications center, but are organized separately
Tacoma, WA	Consolidated Fire	Units are dispatched through the joint regional fire dispatch center, which is operated with Central Pierce
Anchorage, AK	Fire Department	Separate

- Anchorage is one of the only cities in the study that has a dispatcher only for EMS/fire services. Typically, these dispatch services are combined with all other emergency services, or are consolidated regionally.
- Some municipalities also utilize a co-located format for dispatch services, such as Spokane WA.