Hygiene Fire Protection District

Colorado

Agency Evaluation and Risk Analysis

December 2015

Emergency Services Consulting International

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Acknowledgments

Emergency Services Consulting International (ESCI) would like to acknowledge that without the assistance and support of Fire Chief Chad Bollacker, the Board of Directors, and personnel of the Hygiene Fire Protection District, this project could not have been successfully completed.

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Executive Summary

Emergency Services Consulting International (ESCI) was engaged by Hygiene Fire Protection District to complete an Agency Evaluation and Risk Analysis in mid-2015. This report is the culmination of that process. The evaluation will assist the District in future planning and provision of comprehensive emergency services to the citizens of Hygiene and the surrounding area. The reader will find that the report evaluates current conditions; projects future growth and service demand; and provides recommendations to enhance current services and to continue to provide an appropriate level of service to the community in the coming years.

ESCI thanks the Hygiene Fire Protection District Board of Directors, the Fire Chief, and the staff of the HFPD for their cooperation and assistance in the preparation of this report. All involved were candid in their comments and provided a tremendous amount of essential information.

The report begins with an Evaluation of Current Conditions, which provides a snapshot in time of the organization as it was found when ESCI completed its initial fieldwork in the summer of 2015, and establishes an informational baseline from which the balance of the Agency Evaluation and Risk Analysis is developed.

Evaluation of Current Conditions

An Evaluation of Current Conditions is documented in seven survey sections, reviewing the HFPD organizational composition, management components, staffing and personnel management, training and fire prevention programs, service delivery, and capital assets and infrastructure. Each component of the evaluation includes an introductory explanation of the subject area and a discussion of desirable outcomes and identified best practices.

Following the general information about each element, specific observations and analysis of any significant issues or conditions pertinent to the topic are discussed. Observations are supported by data collected during the information gathering process, through analysis of the collected data, and from the collective emergency services experience of the ESCI project team.

Criterion used to evaluate the Fire District has been developed over many years. These gauges include relevant guidelines from national accreditation criteria, the National Fire Protection Association (NFPA) standards, federal and state mandates for fire and EMS systems, recommendations by various organizations such as the Center for Public Safety Excellence (CPSE), and generally accepted best practices within the fire and EMS industry.

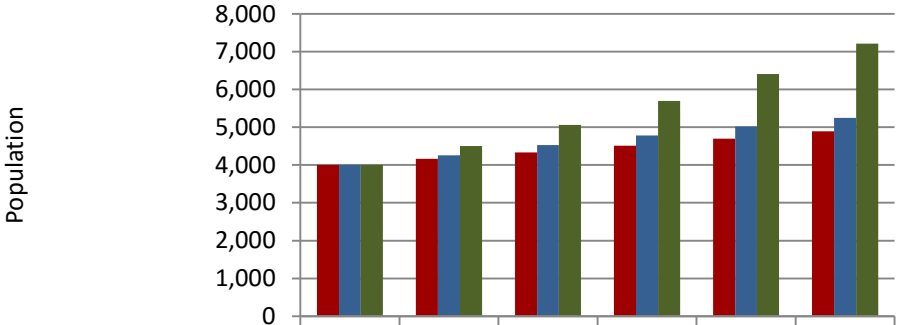
In completing the evaluation phase, the ESCI found a well-managed fire district that is undergoing a process of growth and positive evolution. Because the Fire Chief is already implementing many changes, some of the recommendations found in this report may already be under way. The elected officials, Fire Chief, and members of HFPD have good reason to be proud of the quality of their organization and how effectively it is moving forward.

The following discusses some of the key findings:

Current and Future Service Demand

Because future service demand for fire protection services is largely dependent on changes to the population in and around the service area, it is desirable to evaluate the population trends present in the District. ESCI did so with the following findings:

HFPD Study Area Population Projection, 2015-2040

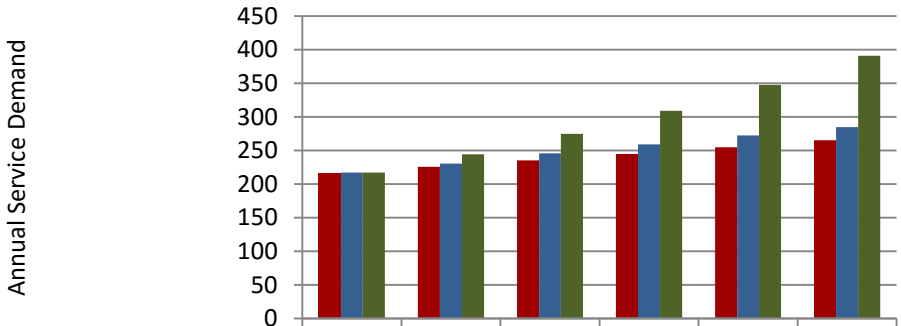


	2015	2020	2025	2030	2035	2040
DOLA (Unincorporated Boulder County)	4,000	4,164	4,335	4,512	4,697	4,890
DOLA (Boulder County)	4,000	4,253	4,530	4,779	5,022	5,248
Historical Census Trend (Boulder County)	4,000	4,500	5,063	5,695	6,407	7,208

In the projections displayed, ESCI starts with the current estimated population estimate of the HFPD service area and then applies the projected growth rate for each of the projections to this number. The DOLA projection for Boulder County uses varying growth rates for each of the five-year periods displayed. The Unincorporated Boulder County and Census Trend projections employ constant annual growth rates (.82 percent and 2.5 percent). The three projections demonstrate the population of the study area increasing from approximately 4,000 currently to anywhere from 4,890 to 7,208 over the next 25 years.

When translated to future service demand, ESCI projects that HFPD's response workload can be expected as follows:

HFPD Study Area Service Demand Projections, 2015-2040



	2015	2020	2025	2030	2035	2040
DOLA (Unincorporated Boulder County)	217	226	235	245	255	265
DOLA (Boulder County)	217	231	246	259	272	285
Historical Census Trend (Boulder County)	217	244	275	309	348	391

Based on population growth, service demand within the HFPD service area will continue to rise over the next 25 years. Service demand based on the two DOLA projections demonstrate a moderate increase, with service demand increasing by 22 to 24 percent over the next 25 years. The more aggressive Census Trend projection predicts future service demand growing by approximately 88 percent during the same period.

Service Delivery and Response Performance

Response performance criteria and actual service delivery performance are analyzed in the Service Delivery and Response Performance section, providing information with which the District can develop future deployment methodologies and identify desired levels of response performance and staffing.

Approximately 62 percent of the road network within the District is within six minutes' travel or less of the HFPD station. Nearly the entire road network is within ten minutes' travel of the fire station. Compliance with criteria from the Insurance Services Organization (ISO) was analyzed as well. Analysis of the GIS data reveals that approximately 85 percent of the structures within the study area are within five miles' travel of the HFPD station.

A summary of total response time (which includes dispatch processing time, turnout time, and travel time) is shown in the figure below.

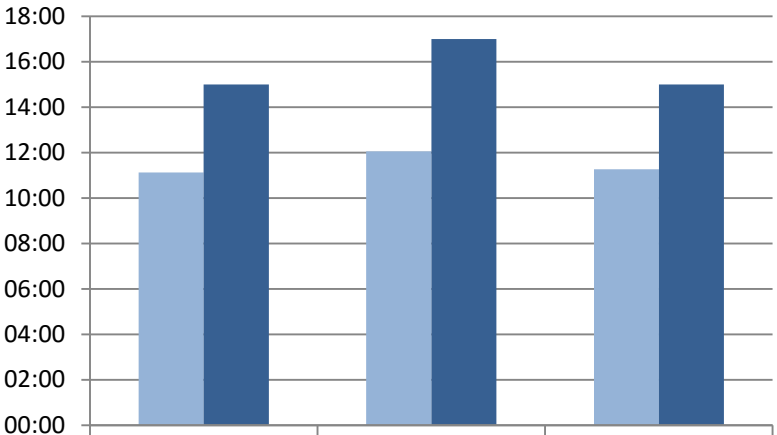
HFPD Overall Response Time Performance, 2013-2014

HFPD Emergency Response Performance-Dispatched to Arrival	
Average	80th Percentile
11:15	15:00

On average, the first HFPD apparatus arrived at 2013 through 2014 emergency incidents in 11 minutes, 15 seconds (50.5 percent); for 80 percent of emergencies, the first apparatus arrived in 15 minutes or less.

The following figure illustrates HFPD emergency response time performance summarized by incident category. This is discussed in detail in the body of the report.

Hygiene FPD Response Time Performance, 2013-2014



	EMS	Fire	Other
Average	11:08	12:03	11:16
80th Percentile	15:00	17:00	15:00

Findings and Recommendations

Short- and mid-term recommendation are discussed next. The initiatives identified and explained are ranked by priority as follows:

- Priority 1 – Items Involving Immediate Internal Safety Concerns
- Priority 2 – Considerations That May Present Legal or Financial Exposure
- Priority 3 – Matters That Address a Service Delivery Issue
- Priority 4 – Considerations to Enhance the Delivery of a Service
- Priority 5 – An Important Thing to Do

The report contains over thirty short and mid-term recommendations, segregated into the categories listed above. The majority are operational and service delivery related observations and, importantly, none are indicative of immediate safety concerns.

The report continues by discussing additional future concerns, including:

- Essential Future Financial Concerns
- Exploration of Regional Cooperation Opportunities

The Hygiene Fire Protection District is and will continue to be challenged to meet current and forecasted needs. The information provided in this report offers a great deal of information with which to develop future planning regarding deployment of resources and guidance moving forward. The organization, now

armed with an insight into the future of the District's fire and EMS needs, is well positioned for making the decisions that are in the best interest of the citizens that they serve.

Evaluation of Current Conditions

Emergency Services Consulting International (ESCI) begins this report with an Evaluation of Current Conditions, which provides a comprehensive appraisal of the Hygiene Fire Protection District (referred to herein as "Hygiene FPD," "HFPD," "the District," or "the Fire District"), as it was found upon ESCI's completion of fieldwork and data collection, completed in the summer of 2015.

ESCI bases this evaluation on data provided by the agency and collected in the course of ESCI's fieldwork. The information is mirrored against a combination of Colorado State laws and regulations, National Fire Protection Association (NFPA) standards, Commission on Fire Accreditation International (CFAI) self-assessment criteria, health and safety requirements, federal and state mandates relative to emergency services, and generally accepted best practices within the emergency services community, as well as the experience of ESCI's consultants.[1]

Each section in the following report provides the reader with general information about that element, as well as observations and analyses of any significant issues or conditions that are pertinent. Recommendations are found in the right hand column of each table and supporting explanation is provided below each table section, where needed. The evaluation begins with a baseline review of the agency's organizational composition.

ORGANIZATIONAL OVERVIEW

The Organizational Overview component provides a summary of the agency's composition, discussing its configuration and the services that it provides. Data provided by Hygiene FPD staff, as well as both internal and external stakeholders, was combined with information collected in the course of ESCI's fieldwork to develop the following overview.

The purpose of this section is two-fold. First, it verifies the accuracy of baseline information along with ESCI's understanding of the agency's composition. This provides the foundation from which the Organizational Evaluation is developed. Secondly, the overview serves as a reference for the reader who may not be fully familiar with the details of the District's operations. Where appropriate, ESCI includes recommended modifications to current observations based on industry standards and best practices.

Although sometimes referred to as the Hygiene Fire Department, the agency is not a municipal fire department. Rather, it is established as a Fire Protection District, as outlined in Colorado Revised Statutes Title 32. The District boundaries do not include any cities or municipalities, with the exception of some small portions of the City of Longmont, which fall within the District.

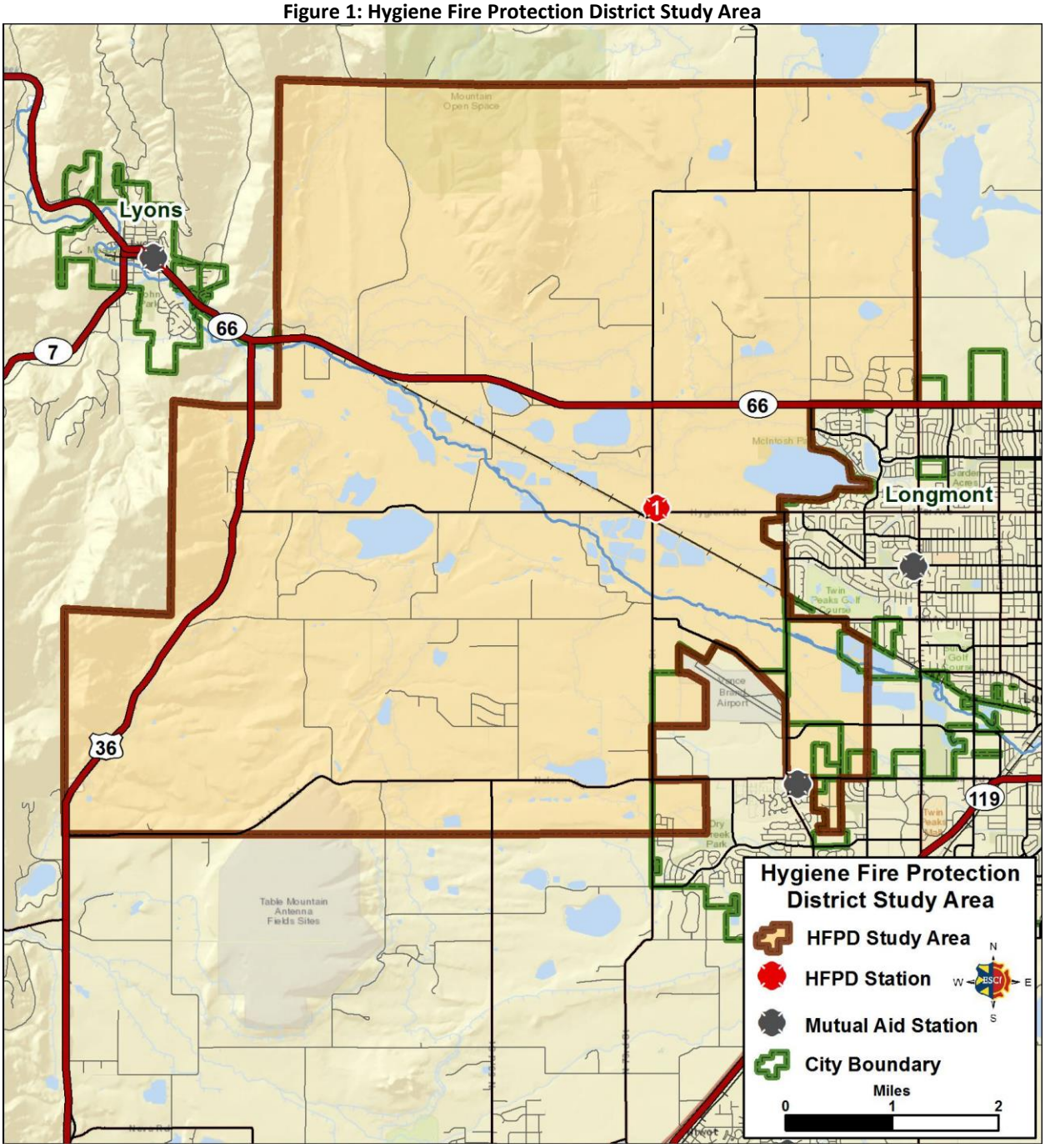
ESCI notes that the term "department" has differing meanings in the study area. Specifically, an association of volunteer members is in place, which is also referred to as "the department" in some

[1] The CFAI organization is now a subsection of the Center for Public Safety Excellence (CPSE) but maintains its prime function of accrediting fire agencies.

instances. However, that group is a separate association of the volunteer membership. It does not serve in an administrative or governance capacity, and serves exclusively as a fraternal association. ESCI uses the term fire department in a generic sense in some occurrences within the report. This refers to any organization whose primary purpose is public fire protection and does not refer to the Hygiene volunteer association that is sometimes referred to as the "fire department." The observations, analyses, and recommendations in this report are addressed exclusively to the legally organized fire and EMS agency that is the Hygiene Fire Protection District.

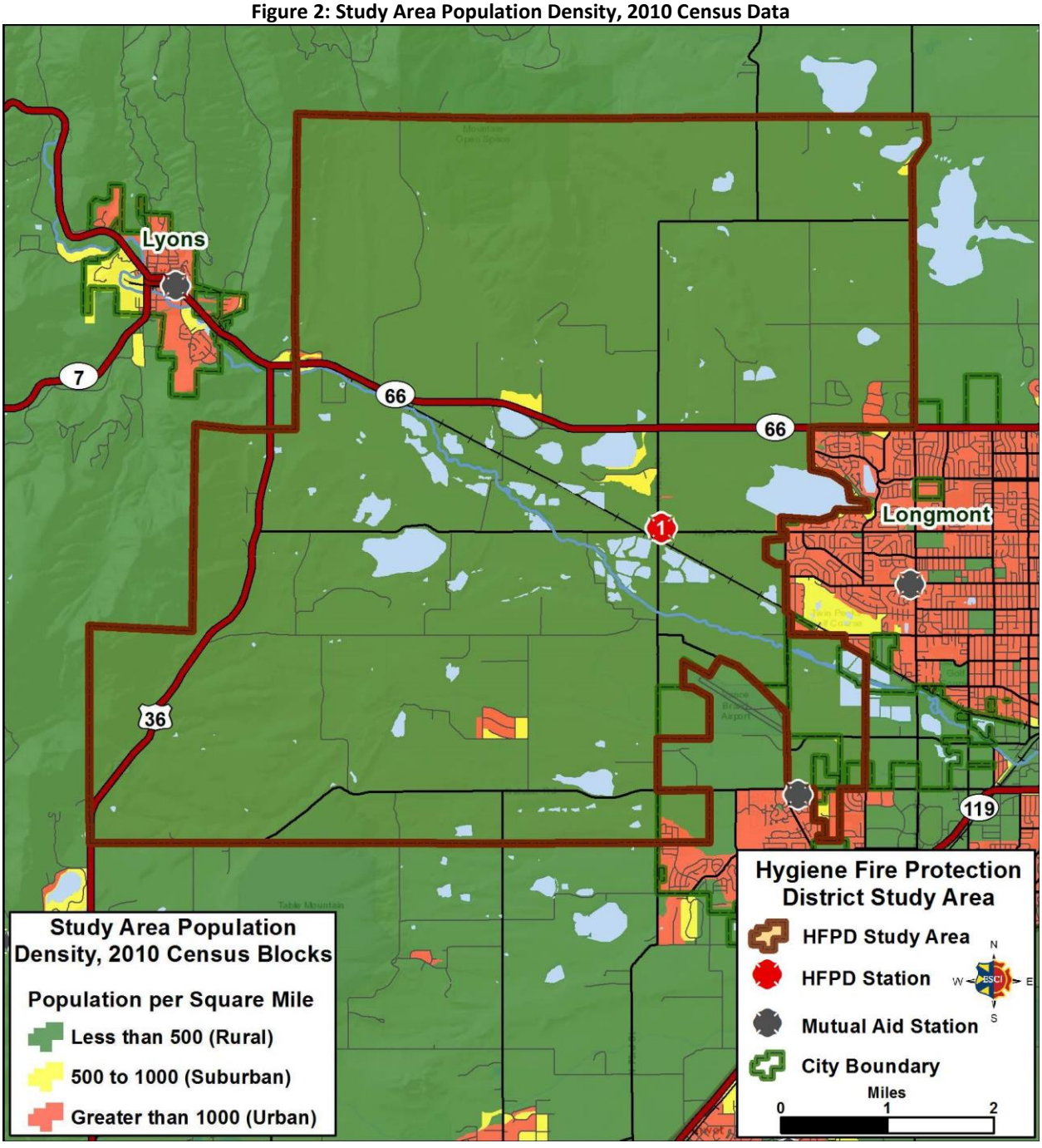
The following figure reflects the study area.

Figure 1: Hygiene Fire Protection District Study Area



The Fire District's service area encompasses approximately 43.5 square miles, based on ESCI's mapping analysis. The service area population consists of approximately 4,000, based on client estimates. The District's population is dispersed at a density of less than 500 per square mile, as shown in the following figure.

Figure 2: Study Area Population Density, 2010 Census Data



The service area is classified as rural, with an overall population per square mile of approximately 93.

Governance

The very basis of any service provided by governmental or quasi-governmental agencies lies within the policies that give that agency the responsibility and authority upon which to act. In most governmental agencies, including Hygiene FPD, those policies lie within the charters, ordinances, and other governing documents adopted by the agency. The following figure provides a general overview of the Hygiene Fire Protection District's governance and lines of authority elements.

Figure 3: Survey Table – Governance

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
Governance and Lines of Authority		
A. Governing body	Five-member Board of Directors	
i) head of governing body	Board Chair – Scott Snyder	
ii) key employee of governing body	Fire Chief	
iii) meetings	Second Wednesday of each month at 7:00 PM	
B. Elected official authority defined	Based on Special Districts Association guidance only. No current policy manual.	Develop Board of Directors bylaws and agency policy manual in consultation with a legal advisor.
C. Fire Chief position		
i) hired by contract	At-will employee	
ii) term of contract	N/A	Establish an employment contract between the Board and Fire Chief to define expectations of both parties.
iii) periodic performance evaluation	Annual performance evaluation is completed. Scheduled for May of each year.	Maintain the practice of conducting an annual performance evaluation on the Fire Chief.
D. Fire Chief/authority defined	Only per state statute and job description	
E. Policy and administrative roles defined	Only per state statute and job description	
Attributes of Successful Organizations		
A. Policy, rules, guiding documents	SOPs define policy related procedures. SOGs are also in place and are operationally focused. Volunteer Bylaws are in place but very outdated. Some crossover with SOPs.	Separate Fire District SOPs as Policy manual to avoid confusion with SOGs. Combine elements of bylaws with policy, if applicable.
i) process for revision provided	Anyone can submit a SOP then a committee reviews it prior to Fire Chief review; then members review and Fire Chief approves and implements the SOP.	Complete an ongoing review and update of SOPs and SOGs on a 3-year rotating basis.
B. Legal counsel maintained		
i) consultation available	Attorney was retained by an agreement but none currently contracted.	Retain legal counsel that can be called upon on an as needed basis (see footnote on the next page).
ii) labor counsel	N/A	

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
C. Financial controls		
i) financial control system	District income and expenses tracked by Board treasurer.	
ii) financial review	No annual audit	
iii) auditor	No external audit is performed. Obtained state exemption per 29-1-604, C.R.S.	Conduct an external accountant review of District finances every two or three years.
iv) frequency of review	N/A	
D. Governing body minutes maintained	Maintained	
i) availability of minutes	Board meeting minutes are posted on the District's website.	

Discussion

Although generally referred to as the Hygiene Fire Department, the agency is not a department within a city or other municipality. Rather, the agency is organized, and properly titled as a Fire Protection District, established under the guidance of Colorado Revised Statute, Title 32, as a Special District. An association of volunteer membership is also in place, as discussed earlier. However, the association, while sometimes referenced as "the department" is not a governing or administrative component of the Fire District operations. Even so, there may be some crossover between District governance and the role of the volunteer group, specifically concerning personnel discipline. The issue is discussed in the following report section.

ESCI recommends the following key documents to guide the District's daily functions: A set of by-laws should be developed that define how the Board will operate. Likewise, a policy manual for Board-developed policies should be established. These documents will keep the operation of the Board consistent even with changing members over the course of several years. Using the Colorado Special District Association materials for guidance is a good start, but should not be a substitute for the Board adopting its own documents. ESCI recommends that the Board work with an attorney to draft its by-laws.

ESCI further recommends that the District retain an attorney familiar with special district law to advise the Board. It is important to maintain a relationship with an attorney or firm to have a ready source of answers when issues arise.[2]

While an audit is not required if a state exemption is granted, it is prudent to have an accountant's review of financial information every two to three years. An audit is a formal analysis governed by Governmental Accounting Standards Board (GASB) standards. A review is an accountant's examination of the financial records to assure that they are completed properly. This is not required by law but it demonstrates a good

[2] Subsequent to ESCI's initial fieldwork and data collection, the District retained legal counsel, addressing the above recommendations.

faith effort to assure that correct procedures are being followed. This will be a strong position if the Board is ever challenged concerning financial matters.

ESCI recommends that the Standard Operating Guidelines, and Policies and Procedures for District operations be reviewed every three years. This is best achieved via a rotating review to ensure that the workload is distributed. The review can be delegated to different personnel so that a fresh perspective is provided each time. The Hygiene FPD is off to a good start in the reviewing process, but more work lies ahead.

Key Recommendations:

- Develop District Board by-laws.
- Retain an attorney knowledgeable in special district law. (Note: Completed prior to completion of this report).
- Complete a financial review by an external accountant every two to three years.
- Create system for routine review of Standard Operating Guidelines, and Policies and Procedures.

Organizational Design

The structural design of an emergency services agency is vitally important to its ability to deliver service in an efficient and timely manner while providing the necessary level of safety and security to the members of the organization, whether career, paid-on-call, or volunteer. During an emergency, an individual's ability to supervise multiple personnel is diminished thus industry standards recommend a span of control of four to six operational personnel under each Line Supervisor (Officer) during stressed situations. This is a recommendation carried forward from military history and has shown to be effective in emergency service situations.

In addition, employees tend to be more efficient when they know to whom they report and when they have a single point of contact for supervision and direction. A recent research project conducted by the Columbia University, Northwestern University, and University of Queensland, Australia, found that,

> …when there are tasks that require teamwork, people get more done when there are leaders and followers. Without a clear chain of command, members often become sidetracked with grabbing power and lose track of the task at hand.[3]

The following figure summarizes the organizational design components of Hygiene Fire Protection District:

Figure 4: Survey Table – Organizational Design

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
Organizational Structure		
A. Structure type	Traditional top-down hierarchy	
B. Descriptions of all jobs maintained	Fire Chief and Assistant Chief job descriptions are in place. Captain and Lieutenant descriptions are outdated.	Create or update job descriptions for all positions.
i) job descriptions updated	No formal process	
C. Employment agreements	None	
Chain of Command		
A. Defined Chain of command	Defined by organizational chart, posted in the office.	
B. Span of control	4:1 span of control per organizational chart	
C. Hiring/Firing authority	Fire Chief can terminate for flagrant violations; Fire Chief can dismiss for not attending training; The Volunteer Association President can discipline for non-attendance; vote of Association.	Place all hiring and termination authority of volunteers under the Fire Chief.

[3] "Why Hierarchies are Good for Productivity," *Inc*. September 2012, p 26.

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
Formation and History		
A. Organization formed	1960	
B. History maintained	Working on a more formal process to maintain the history.	
i) Individual or group responsible	Not defined; Fire Chief doing so as time allows.	

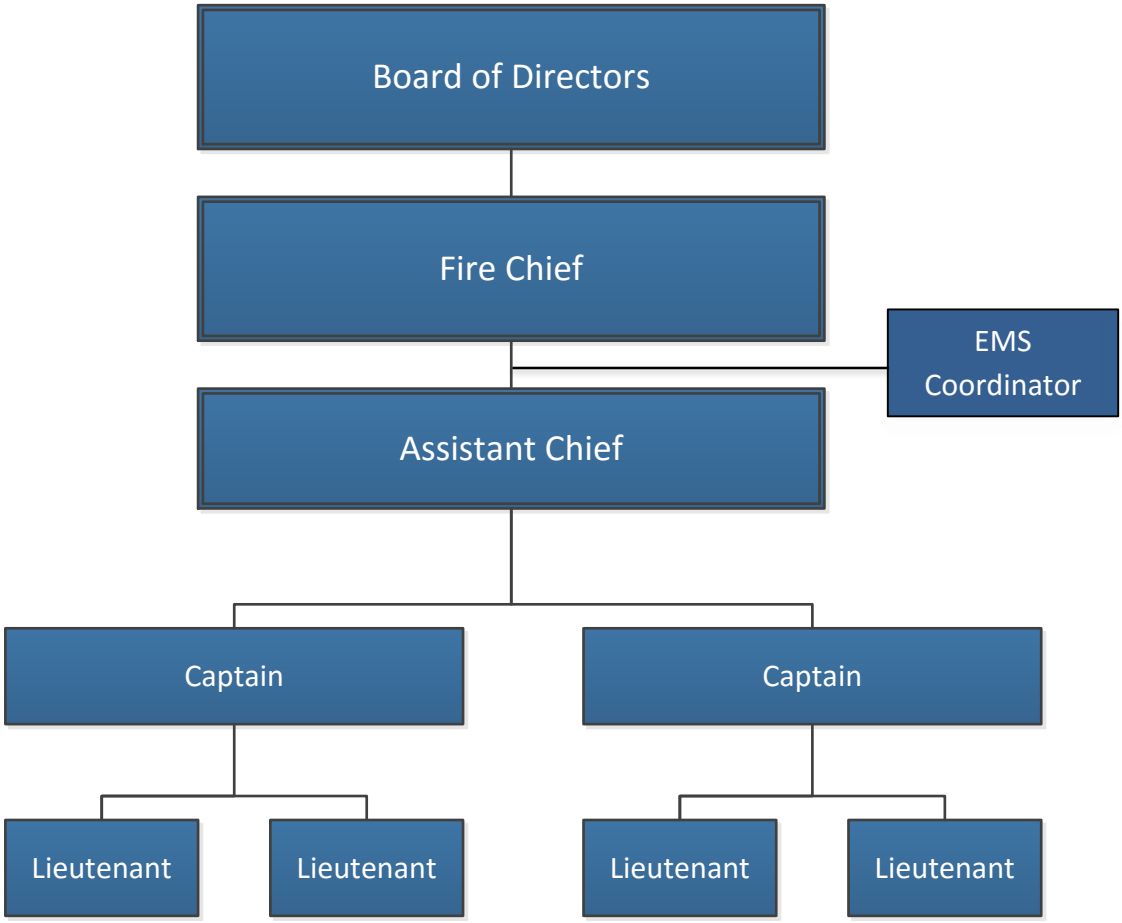
Discussion

The Hygiene Fire Protection District's organizational structure is a typical and traditional top-down hierarchy. The span of control with direct reports is adequate at this time to make this structure work. However, numerous responsibilities are placed on the Fire Chief, either by the Board or by the Chief himself. It is common for the Fire Chief in a primarily volunteer or combination department to take on additional responsibilities as there is no one to whom to delegate them. Often the paid Chief feels obligated to carry the load and not shift the load to others who are volunteer. The workload on the Fire Chief should be monitored. The Chief should delegate to others in the organization and be supported by the Board in this matter.

Organizational Structure

To operate effectively, the structure of a Fire District needs to be clearly defined in the form of an organizational chart. The chart institutionalizes the agency's hierarchy, identifies roles, and, most importantly, reporting authority. The organizational chart also helps to assure that communication flows appropriately, as well as limiting opportunities to circumvent the reporting structure. The Hygiene FPD has a clearly defined organizational structure that is posted clearly for all members to see.

Figure 5: HFPD Organizational Chart



Governance and Decision Making

From a governance and decision making standpoint, this organizational design makes sense for the size of the organization. The organization functions as a Colorado Special District under the statutory specifications as found in Colorado Revised Statutes Title 32. The Board has responsibility for strategic direction, hiring and managing the Fire Chief, approving budgets, and certifying the taxation rate. The operational functions of the District have been delegated to the Fire Chief to manage. This is the desired organization, and it appears to be the current state of the District's governance.

The organizational structure as shown in the preceding chart is expandable for growth in the numbers of personnel. As the number of Firefighters grows, so should the number of Captains and Lieutenants. To assure that this can happen, management must develop personnel to fill these leadership positions. The District will need to create a process for this professional development and share it with current and aspiring Officers.

ESCI recommends that the Hygiene Fire Protection District Board establish an employment agreement with the Fire Chief. This should be done with advice of legal counsel and define the responsibilities of both the Fire Chief and the organization in this relationship. The Board has conducted the first annual evaluation of the Fire Chief and the practice should be continued on an ongoing basis.

A valuable process is to define with the Fire Chief the priorities for accomplishment in the following year. Chief Bollacker has made a great start in laying out his five-year plan. This can be used as the basis for an action plan for the year. The plan should be ratified by the Board and adopted. During the year, other priorities may be added to the plan by agreement, by either the Chief or the Board. At the end of the year, which is a good time to talk about the priorities and workload, the Fire Chief should submit the status of the annual priorities to the Board for review and set the priorities for the upcoming year. The annual evaluation of the Chief is then based on concrete accomplishments and will be more effective for both the Chief and Board.

The District appears to have a convoluted means of disciplining volunteers. The Fire Chief is responsible for discipline in the event of a flagrant violation, whereas other discipline is the responsibility of the President of the volunteer organization. ESCI recommends that all discipline be the responsibility of the Fire Chief. Doing so keeps the chain of command clear and allows the Board members to have oversight of anything that could reflect poorly on the organization, since the Fire Chief works for them. This is not to imply that the Board should be involved in discipline, but it has the ability to hold the Fire Chief, as its agent, accountable to deal with matters requiring correction. The matter is discussed in additional detail in the Personnel Management section of this report.

Personnel Management, Selection, and Disciplinary Practices

Whether for career employees or volunteers, an Employee Handbook or a set of Policies and Procedures devoted to defining workplace expectations is essential. The District has not yet developed such a document; however, the Fire Chief has undertaken the task of producing one. The final product should define what the employees/volunteers can and should expect from the District and, conversely, what the District expects from them. Particularly, a Code of Conduct should be included, based on the values of the

organization, the community, and potential liability issues. Sample policies are available as examples or an attorney can provide a template form. As this is being done, it is a good time to more clearly define, and to solidify, the responsibility for discipline within the office of the Fire Chief.

A codification of the way volunteers are selected for membership with the District is also important. The hiring committee should have a distinct procedure which clearly defines the requirements. This will assure consistency between candidates and from one process to the next.

Key Recommendations:

- Create an employment agreement with the Fire Chief.
- Define with the Fire Chief the priorities for accomplishment in the following year.
- Assign all disciplinary responsibility to the Fire Chief.
- Develop an Employee/Volunteer Handbook, or a set of Policies and Procedures, devoted to defining the workplace expectations.

Service Area and Infrastructure

The size and composition of a fire department's service area affects the type and number of personnel, fire stations, and vehicles that are needed to provide services efficiently. Sometimes complex decisions need to be made regarding the deployment strategies employed to properly position resources based on land area, geography, risk, and similar factors. Following is a summary of the Hygiene FPD service area and service infrastructure resources.

Figure 6: Survey Table – Service Area and Infrastructure

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
General Description of Agency		
A. Agency type	Fire Protection District as defined by Title 32 in State statute.	
B. Area, square miles	43.5 square miles, per ESCI GIS calculations.	
C. Headquarters	Hygiene Station 1	
D. Fire stations	1	
E. Other facilities	Member of Boulder County regional training center; District has a burn trailer at the Cemex facility.	
D. Population served	4,000 (estimated by client)	
Service Delivery Infrastructure		
F. Emergency vehicles		
i) engines	2	
ii) engine, reserve	1[4]	
iii) ladder truck	0	
iv) ambulance	0	
v) ambulance, reserve	0	
vi) Quick Response Unit	1	
vii) water tender	2	
viii) brush	2	
xi) rescue	Zodiac boat	
ISO rating	6/9 last rated in 2002	
H. Total fire district personnel, uniformed and civilian	36 total authorized positions	
i) administrative and support personnel, full-time	1 Fire Chief	
ii) administrative and support personnel, volunteer	1 Assistant Chief, 2 Captains, 4 Lieutenants; all have some administrative responsibility as well.	
iii) operational personnel, full-time	1 Fire Chief	
iv) operational personnel, volunteer	35	

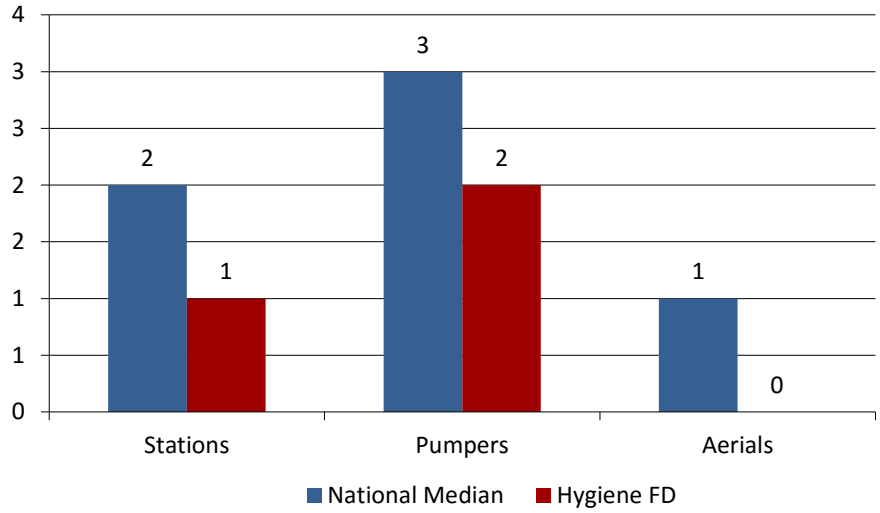
[4] Being removed from service. Chief indicates the engine is in need of replacement due to age and a faulty pump.

Discussion

Hygiene FPD operates out of one fire station. This station is located in a central and eastern position within the District and, while a more centralized location may be preferable, adequately covers the service area. More discussion of the effectiveness of location and response performance is provided in the Service Delivery and Performance section of this report.

In the following chart, a comparison of fire stations, pumpers (engines) and aerial trucks is provided, mirrored against National Median data.

Figure 7: Capital Asset Comparison



Relative to national comparators, the Hygiene Fire Protection District has fewer fire stations, pumpers, and aerials than similar sized organizations, based on population.

Budgets and Finance

No emergency services agency, whether municipal or fire protection district, can survive without adequate funding. This funding, which may come from a variety of sources such as ad valorem taxes, fundraisers, donations, etc., forms the basis from which the agency is able to purchase the necessary equipment to fulfill its mission. Without adequate funding that is also sustainable, an organization is destined for failure. In the current economy, most communities are searching for ways to reduce expenditures while maintaining levels of service. Simultaneously, emergency services organizations are finding it increasingly difficult to deliver the services that the community desires and are asking for more funding to adequately supply the expected levels of services.

Listed below is a summary of Hygiene FPD's revenues, operating budget, and debt. The representations presented here illustrate total budget including personnel, supplies/materials, and capital expenditures—information that will be used in future analyses in this report.

Figure 8: Survey Table – Operating Budget and Financial Resources

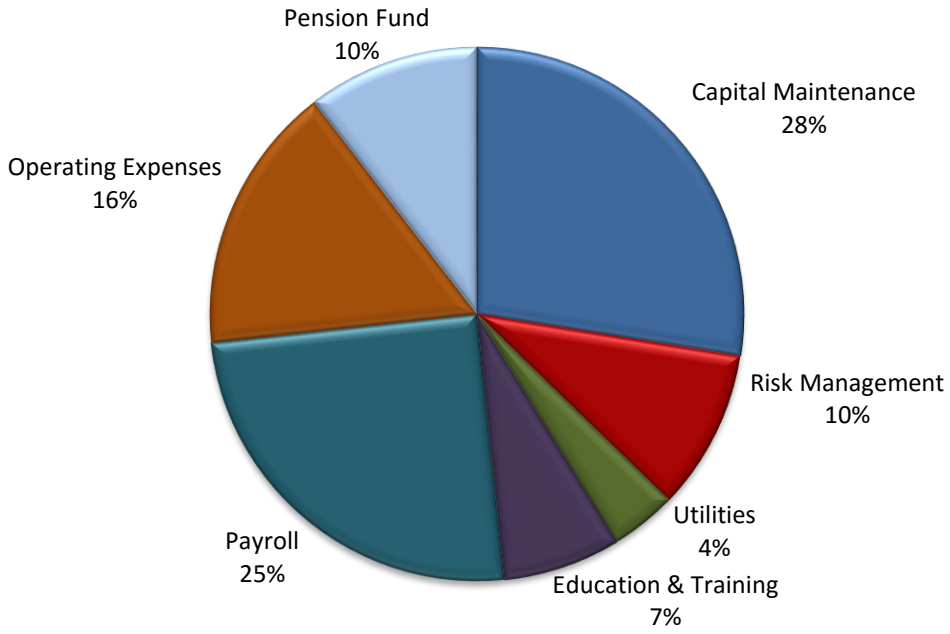
Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
Finance Overview		
A. Designated fiscal year	Calendar Year	
B. Assessed property value, FY 2014 for 2015 revenue	64,325,828	
C. Revised current year general operating fund budget	$276,963	
D. General fund property tax, city levy – current budget year	$263,672	
i) levy rate (FY 2008 through 2012)	4.099 mills	$32,163 (.5 mills) dedicated for volunteer pension; volunteer pension is $300 per year at 20 years of service.
E. Bonds	None	
i) levy rate		
F. Other tax levy, public safety	None	
i) levy rate		

Financial Review

In 2015, the 4.099 mill levy resulted in revenue of $263,672. In the following figure, the 2015 expenditures show the budget grouped into similar type items. For instance, insurance and attorney costs are grouped into risk management. It is sometimes good to do this to see the budget differently. While one could argue that all expenditures are discretionary, it is instructive to look at those items that are required for a good business operation. For instance, the non-discretionary items of risk management, volunteer pension, utilities, fuel, and maintenance of buildings and apparatus results in 52 percent of the budget. Certainly, there are items within operating expenses and payroll that might be considered non-discretionary as well. For example, training is a very important aspect of assuring a competent response force. If not competent, they present additional risk and the fire department loses credibility with the community.

ESCI believes that Hygiene FPD appropriately devotes its budget on essential items that provide for the best service possible for the citizens.

Figure 9: 2015 Expenditures



Expenditures are roughly equally divided between payroll and capital maintenance, followed by operating expenses, pension fund, and risk management.

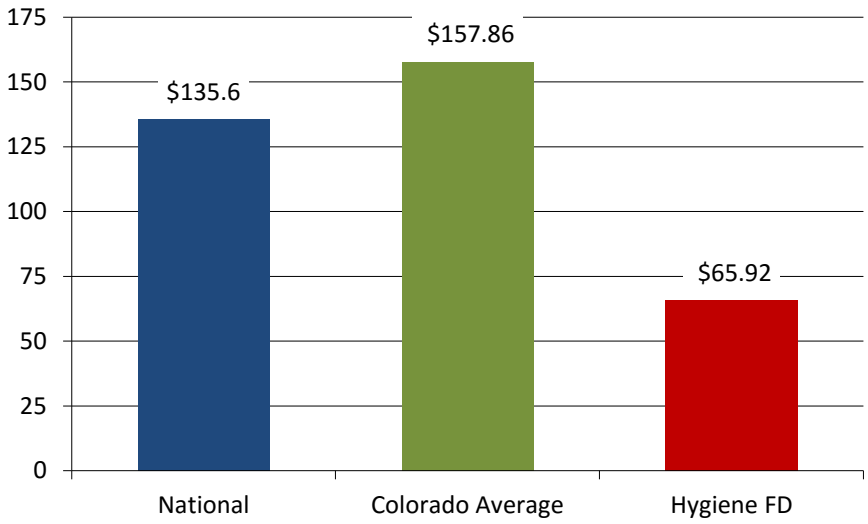
It is important to note that the mill levy of 4.099 mills is lower than most levies among fire districts in Colorado. A study of mill levies for fire districts within Colorado identified the median value for all departments is 6.774 mills.[5] The mean of all levies is 7.259 mills. As evident, the Hygiene FPD levy is considerably below these. Of the 342 fire departments considered in the study, Hygiene's mill levy is in the bottom third.

Cost per capita is another value to be considered. In the following figure, the per capita cost is compared with both national and Colorado averages.[6]

[5] From information supplied from the Division of Local Governments, Colorado Department of Local Affairs. Only departments that have a levy or part of a levy dedicated to operations were used for this analysis.

[6] Based on *2012 NFPA Fire Department Profile Report* and *2013 NFPA Fire Loss Report*. Benchmark data available through National Fire Protection Association (NFPA) is based on population and does not consider geographical size or population density of the area. Concerning costs per capita, the data does not delineate between volunteer or

Figure 10: Cost per Capita Comparison



Hygiene FPD's cost per capita falls well below the both national and Colorado comparison data.

The mill levy comparison reveals a low rate compared to other agencies, which is reinforced by the comparison of cost per capita. Both factors indicate that HFPD is providing service to its citizens at a very low cost. However, sustaining effective service delivery at such a low cost to the taxpayers will prove to be challenging to the organization as it moves forward and meets future obstacles. ESCI recommends that HFPD review current and future financial projections, attempt to forecast future needs, and evaluate the need to seek increased funding in the future by increasing the mill levy rate. More discussion on sustainability for Hygiene FPD is in the Future Considerations section of this report.

Key Recommendation:

- Review and evaluate the future funding needs to sustain operations and consider whether an increased mill levy is necessary.

career departments, nor does it segregate departments heavily involved in the provision of emergency medical services, particularly transport service, which can increase departmental costs dramatically.

Emergency Response Type and Frequency

HFPD responded to 202 requests for assistance from the citizens of the District in the 2014 reporting year. As is typically found, the vast majority of incidents are of an emergency medical nature. HFPD's emergency calls for 2014 are listed in the following figure.

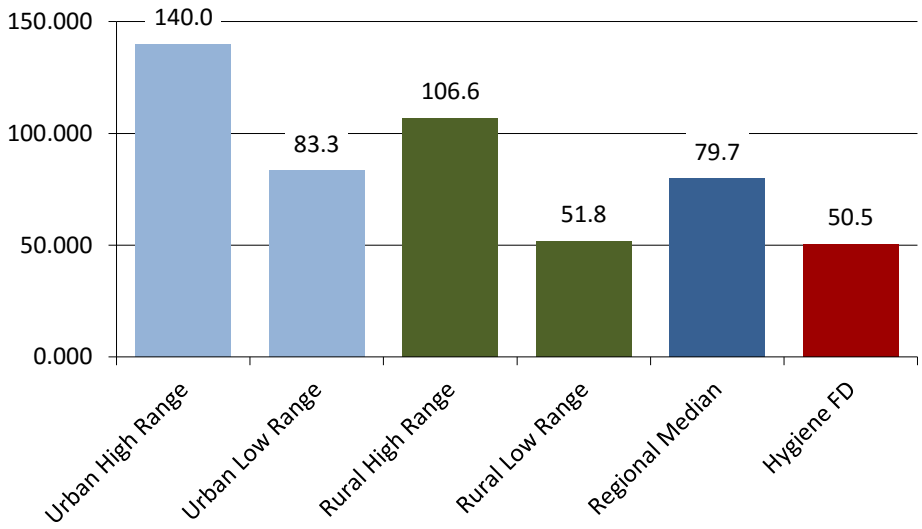
Figure 11: Survey Table – Emergency Response Type and Frequency – 2014 Data

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
Incidents		
A. Fire	21	
i) value of property exposed to fire, 2012	$28,000	
ii) value of property lost to fire, 2012	$28,000	
B. Rupture or explosion	-	
C. EMS/rescue	144	
D. Number of EMS transports	0	
E. Hazardous condition	6	
F. Service call	6	
G. Good intent call	7	
H. False call	15	
I. Severe weather	1	
J. Other	2	
K. Total	202	

Discussion

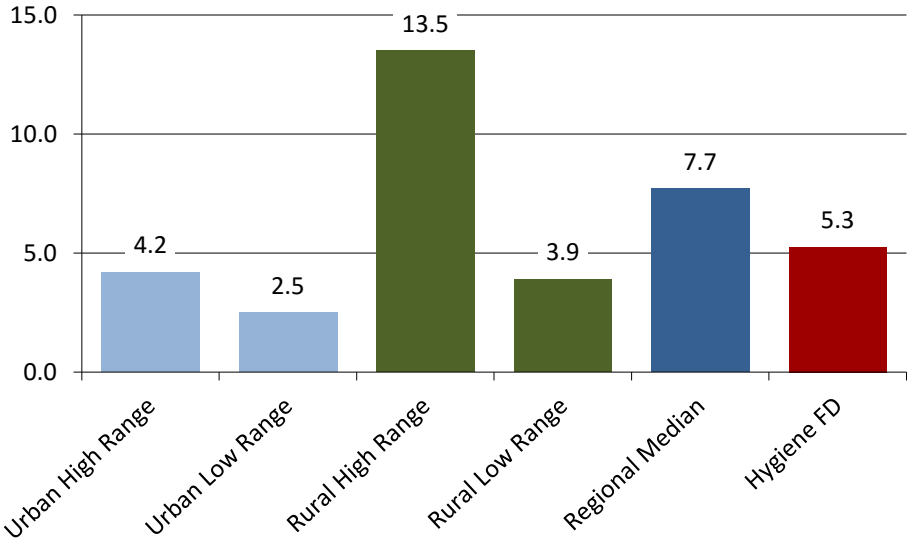
ESCI compared the number of total emergency incidents to which HFPD responded in calendar year 2014 to a variety of regional comparators based on data provided by the National Fire Protection Association (NFPA), shown in the following figure.

Figure 12: Total Incidents per 1,000 Population



In total emergency incidents, the study area falls in the lower of the comparative range categories and very closely to the rural low range median. A similar comparison is offered in the following figure, this considers only fires that occurred in Hygiene's jurisdiction again based on a per 1,000 population basis.

Figure 13: Fires per 1,000 Population



Discussion

Sixty-nine percent of 2014 incidents involved response to medical emergencies. Colorado departments report between 50 to 80 percent medical calls in a given year. Hygiene's experience is within those parameters. Twenty-one of the 202 incidents, or 10.4 percent, were reported as fires in 2014. The Service Delivery and Performance section of this report provides additional detail on emergency response, service delivery effectiveness, and response performance.

The rate of fires is lower than the regional (West) and falls between the rural low and high range categories. Incident frequency is highly variable based on multiple factors and, in this instance, is likely influenced by the fact that, with only 21 fires in the 2014 data set, the sampling is very small and easily skewed.

MANAGEMENT COMPONENTS

Effective fire department management is a common challenge for fire service leaders. Today's fire department must address management complexities that include an effective organizational structure, staffing for adequacy of response, maintenance of personnel competencies, a qualified work force, effective equipment and apparatus and last, but not least, financial sustainability for the future.

To be effective, the management of a fire department needs to be based on a number of components. It appears that the Hygiene FPD is taking steps to respond to these management needs. It also appears that this has not historically been done in a manner that is documentable. The recent hiring of a full time Fire Chief has allowed many functions necessary for effective management to begin. There has not been a formal Strategic Plan completed, which would be a key factor to success; nevertheless, portions of what would be in the plan have been or are being accomplished.

Foundational Management Elements

The development of baseline management components in an organization enables it to move forward in an organized and effective manner. In the absence of foundational management elements, the organization will tend to operate in a random and generally ineffective manner.

When core management elements are in place, they serve to align effort and inform all members of the following:

- The purpose of the organization (*mission*).
- Where the organization is going (*vision*).
- How the members will treat each other and their customers (*values or guiding principles*).
- How the organization will achieve the desired future state (*goals and objectives*).
- How soon these goals and objectives should be accomplished (*timelines* and *priorities* for each component of the effort).
- Each person's role in accomplishing that future state (*work assignments*).

The following figure reviews Hygiene FPD's baseline management components.

Figure 14: Survey Table – Foundational Elements

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
Mission, Vision, Strategic Planning, Goals, and Objectives		
A. Mission statement adopted	Developed by Fire Chief	Develop an organizational mission statement as a component of a Strategic Planning process.
i) Displayed	Posted on the website	
ii) Periodic review	Informally only	
B. Vision established and communicated	Developed by Fire Chief	
C. Values of staff established	Developed by Fire Chief	

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
D. Strategic or Master Plan	No Strategic or Master Plan has been completed.	Undertake a structured Strategic Planning process.
i) Adopted by elected officials	N/A	Upon completion, formally adopt the Strategic Plan.
ii) Published and available	N/A	
iii) Periodic review	N/A	
E. Agency goals and objectives established	Not formally	
i) Date developed	N/A	
ii) Periodic review	N/A	
iii) Tied to division/personnel performance statements/plans	N/A	
iv) Objectives linked to programs	N/A	
v) Performance objectives established	N/A	
F. Code of Ethics established	None – but currently under development.	Establish a Code of Ethics, whether in the Employee Manual or Policies and Procedures.

Discussion

Hygiene FPD has the mission, vision, and values statements in place and are published on the Hygiene FPD website. These have been created by the Fire Chief. The approach is acceptable and better than not having them at all. However, a better process, particularly with the values statement, is to involve members of the organization in the process of developing the document. The values statement can be pivotal in correcting behavior that does not reflect the values. It is important to have full concurrence on the stated values. Additionally, all three must be stated clearly and reflective of the highest ideals of the fire service.

ESCI was advised that the Board has also created a mission statement. The Board should work with staff to establish a single mission statement for the organization for the reasons provided here.

The current mission statement reads:

> *To prevent or minimize the loss of life, damage to the environment and loss of property from the adverse effects of fire, medical emergencies, and hazardous conditions.*

The mission statement is the anchor that keeps an organization from drifting and explains why the agency exists. Some statements also address how the mission will be completed, i.e. with the most effective use of the resources available, or by the safest way possible. Sometimes it is important to the organization to reference other things. The Hygiene FPD statement defines the District as responding to fire, medical emergencies, and hazardous conditions for the purpose of saving lives, and preventing damage to property and the environment. The mission can have a limiting factor if the organization is asked to take on a new function that is outside their mission. Additionally, this can be a good thing to prevent the agency from trying to do too many things.

The current vision statement is as follows:

- *We will strive to be role models in the community and leaders in our profession.*
- *We are committed to providing the best public service through innovative training, education, and equipment.*
- *We will take the Fire Department into the future through productive teamwork, open and honest communication, and participative decision-making throughout the organization.*
- *We are committed to our values, mission, and dedicated to our fire service profession.*

The current values statement is as follows:

- *Teamwork: Working together to achieve common goals.*
- *Integrity: Committed to the highest standard of moral and ethical conduct.*
- *Excellence: Demanding the best from ourselves and others.*

These three documents are also the basis for the production of a Strategic Plan. The Strategic Plan defines (in light of the mission, vision, and values) what needs to be accomplished (goals and priorities) in the next five years, the interim steps to be taken (objectives), who is responsible (work assignments), and when (timelines) each assignment is to be completed. The Strategic Plan is typically designed for a three to five year window into the future and is considered a best practice for an agency. It is notable that the Fire Chief has created a plan for things that need to be accomplished over the next few years; however, a Board-adopted Strategic Plan would be of even greater value.

A Strategic Plan guides and focuses all members of the District on the priorities of the entire organization, ensuring every member is pulling in the same direction. Adoption of the Strategic Plan by the policy-makers (the Board), ensures alignment from the very top of the organization to the newest member. The annual action plan and the annual budget should support the goals, objectives, and work assignments for that year.

ESCI can assist with facilitation of the strategic planning process, as needed.

Key Recommendations:

- Undertake a formal strategic planning process.
- Upon completion, have the Strategic Plan adopted by the Board.
- Establish a Code of Conduct that is consistent with the values of the District.

Management Documents and Processes

Similarly, an organization should establish appropriate documentation, policies, procedures, and identification of internal and external issues that affect the agency. It should also establish processes to address the flow of information and communication within the Fire District as well as with its constituents.

Figure 15: Survey Table – Foundational Documents and Processes

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
Availability of SOPs, Rules and Regulations, Policies		
A. Copies of rules provided	Volunteer bylaws only. Chief is currently developing an employee manual to address personnel, hiring, etc. Currently under development.	Complete the development of an Employee Manual.
i) last date reviewed	Under review/revisions currently	
B. Copies of SOGs or guidelines available	SOGs and SOPs currently being developed—partially complete. Posted in library of Emergency Reporting System software.	Complete the development of Standard Operating Guidelines.
i) regular update	As needed	Establish a process of regularly scheduled review and update of SOGs.
ii) process for development of new SOGs	Process is defined in SOPs	
iii) SOGs used in training evolutions	Incorporated into routine training	
C. Policy manual available	No. An Employee Manual is under development. SOPs are to be transitioned to a policy manual.	Complete the development of the Employee Manual that is currently under way.
i) reviewed for consistency	Currently under way	
ii) reviewed for legal mandates	No	
iii) training on policies provided	Planned	
Internal Identification of Critical Issues		
A. Critical issues are identified		
i) First critical issue	Daytime response capacity	
ii) Second critical issue	Apparatus and small equipment replacement	
iii) Third critical issue	Loss of District area to annexations	
Internal Identification of Challenges for the Future		
A. Challenges are identified		
i) First challenge	Maintaining daytime response over long term	
ii) Second challenge	Funding for future growth or maintenance	
iii) Third challenge	None identified	

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
Internal and External Communications		
A. Internal communications		
i) Regularly scheduled staff meetings	Dinner meetings with Officers; not regularly scheduled. Business meetings are monthly with all members and minutes are retained.	
ii) Written staff meeting minutes	No; generates a to do list.	
iii) Memos	Typically via emails	Be sure these are not immediate response if notifying for meetings.
iv) Member newsletter	No	
v) Member forums	None formally	
vi) Open door policy	Yes	
vii) Bulletin board	Yes	
viii) Vertical communication path clearly identified	Defined by organizational chart and posted	
ix) E-mail	Used routinely	
x) Employee mail boxes	Yes	
xi) Voice mail	Fire Chief, Officers, Assistant Chief, have voice mailboxes, plus one general voice mailbox.	
xii) issues taskforce	No	
B. External communications		
i) Community newsletter	Two completed recently. Posted on website and mailed.	
ii) Website	Active website is in place	
iii) Advisory committee(s)	None	
iv) Complaint process	No defined process. Processed by the Fire Chief.	Define a process for anyone in the organization to take a complaint or request from citizens.
vi) Social media (Facebook/Twitter)	Facebook is used actively. Twitter page information is dated.	
vii) Community survey	None, but being considered	
viii) Local community planning organizations	Participates with Hygiene Community Association regarding event planning. Offering kids' movie night; birthday parties; wellness fair, CPR and First Aid classes.	
ix) Focus groups	None	

Discussion

A review of HFPD's foundational documents finds that there are policy and procedure elements that are missing and of critical importance. Commendably, however, the Fire Chief has recognized the need and has made significant progress toward the development of an Employee Manual, along with revising and completing organizational Standard Operating Guidelines. These foundational elements are essential to the effective operation of the Fire District as well as for its protection from potential liability and, most

importantly, assurance of the safety of its responders. ESCI commends the Chief for his efforts and recommends that completion of these items be given the highest priority.

Internal Identification of Critical Issues

All of the stakeholders interviewed identified critical issues that were nearly the same, although not necessarily in the same order. The issues revolved around daytime response capacity, maintaining updated apparatus, upgrading training, and funding issues including city annexations of higher value properties excluding them from the Hygiene Fire Protection District.

RESPONSE TIME

The number of volunteers needed to sustain an adequate response is dealt with elsewhere in this report, but it is apparent that the changing demographics of the District may result in fewer individuals available to serve as volunteers. Residents who work outside of the District—many for long hours, or in jobs that require them to travel for extended periods—are not as prone to volunteer their services, particularly with the Fire District. In addition, Firefighters require high levels of training and certification not mandatory in other community organizations. The volunteer who lives and works within the District is becoming scarce. The challenge is to accept the new reality and decide how to work with it.

There have been community concerns over paid personnel, particularly the hiring of a full-time paid Chief in April 2014, in order to do what the volunteers have done in the Fire District for the 55 years since its inception. Over that time many things have changed, among them the demographics cited above, as well as the increased numbers of medical incidents versus fire calls. Both fire and medical services now require higher standards of training and certification. Ours is an increasingly litigious society where individuals or insurance companies are no longer reluctant to sue Firefighters. The busy residents may not even know that their fire department is volunteer-based and in need of Firefighters. All of these factors make maintaining District resident volunteers very difficult.

Without Firefighters in the station at all times ready to respond, due to the previously discussed reasons, turnout times are extended, which affects response times. The Board, as representatives of the citizens, needs to decide: what is an acceptable turnout and response time for *our* community?

FUNDING

This segues into the second critical issue—funding. Funding and sustainability are similar issues. Funding in a special district is primarily property tax-based. In a usual scenario, as the demand for volunteer, paid-on-call, or career personnel grows, there is a commensurate growth of homes and businesses within the district. The Hygiene Fire Protection District is not seeing the high rate of growth for a number of reasons, resulting in a problem for supplying current needs in the budget, but also for sustainability of the District. This sustainability issue is discussed in detail in the Future Considerations section of this report.

Finally, county land use requirements discourage high-density housing growth into rural areas. Lack of high-density housing discourages the need for businesses catering to the population in the higher number of homes. Common wisdom is that commercial development pays about four times the taxes for the service it demands. This is particularly true in Colorado where the commercial properties pay greater than

three times (29 percent) that of residential properties (7.96 percent) of the same value. The additional revenue paid by commercial properties helps fund the higher demand of higher density housing.

Internal and External Communications

Hygiene FPD, as a primarily volunteer organization, is challenged to keep everyone knowing what is going on in the organization. This is especially important when there are shift volunteers who may not be at the station on a frequent basis. While the volunteer meetings provide excellent face-to-face communication, not everyone is able to attend every meeting. Having minutes or notes taken and published should be sufficient to keep everyone informed. The District should keep Officers informed so that they can answer any questions from their crewmembers. Further, it is important that the Chief apprise all Officers of any changes. Officers should have the opportunity to discuss changes prior to implementation within the organization. The Officer meetings over dinner are excellent opportunities to discuss issues in a less formal venue, but there should be a consistent meeting schedule depending on the rapidity of changes.

I Am Responding© (IAR) is a valuable tool for notifying personnel of meetings as well as incidents. However, comments heard from some stakeholders indicated that sometimes the IAR notification of meetings or trainings comes too late to plan to attend. Timely notification is important.

Consistent service delivery is dependent on standardized rules, regulations, and policies that guide appropriate behavior and accountability. These guiding documents are vital to success and consistency. They can affect the competency of response and help meet the expectations of the citizens served by the Hygiene FPD. As mentioned previously, there must be a schedule to review and update SOGs and Policy and Procedures. New policies are currently under design.

Keeping in touch with the community is sometimes difficult to achieve, although Hygiene FPD has some excellent programs in place to stay central to the community life. Working with the Hygiene Community Association and offering kids' movie night, birthday parties, wellness fair, CPR and First Aid classes, as is being done today, are excellent ways to stay in touch and offer a service to the community.

Key Recommendations:

- Complete the Employee Handbook.
- Set up a process for scheduled on-going revision of the Standard Operating Guidelines.
- Define a process for anyone in the organization to take a complaint or request from citizens.

Record Keeping and Documentation

In any organization, documentation of activities is of paramount concern. The following table reviews the practices that are in place in the Hygiene FPD.

Figure 16: Survey Table – Record Keeping and Documentation

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
Document Control		
A. Process for public access established	No formal process.	Establish a defined public records access process.
B. Hard copy files protected	Locked in Chief's office.	
C. Computer files backed up	Chief's computer only on external hard drive.	Establish off-site and/or cloud based computer backups.
Security		
A. Building security	Combination locks	
B. Office security	Locked when unoccupied	
C. Computer security	Password protected	
D. Capital inventory maintained	No, but in process.	Complete development of a capital inventory and depreciation system.
i) Asset security system used	Under development – ongoing.	
ii) Inventory interval	Planned to be annual	Complete the development of an asset inventory system.
E. Monetary controls used		
i) Cash access controls	$100 petty cash is kept on hand, reconciled by the Treasurer.	Assure that appropriate cash accounting practices are in place.
ii) Debit card controls	Two cards, reconciled monthly by Board Treasurer.	
iii) Purchasing controls	No purchase order process except for medical supplies.	Assure that an appropriate process is in place for authorizing purchases.
Reporting and Records		
A. Records kept by computer		
i) Type of platform	Windows based	
B. Periodic report to elected officials		
i) Financial report	District income and expenses presented monthly to Board by Board Treasurer.	
ii) Management report	Monthly Chief's Report to Board	
iii) Operational report	Monthly Chief's Report to Board	
iv) Distributed to others	Included in meeting minutes posted on the website	
C. Annual report produced		
i) Distributed to others	No annual report. Two recent public newsletters.	Consider development of an annual report to the Board and the community.
ii) Analysis of data provided	Some data analysis completed on call types; no response time analysis.	

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
D. Required records maintained		
i) Incident reports	Completed	
ii) Patient care reports	Completed	
iii) Exposure records	Completed	
iv) SCBA[7] testing	Completed annually by outside contractor.	
v) Hose	Completed annually in-house.	
vi) Ladder	Completed annually, contracted.	
vii) Pump	Completed annually, contracted.	
Information Technology		
A. Computer platform	Windows based	
B. Maintenance/IT support provided by	In-house IT support	
C. Computer security	Access is password protected	

Discussion

Generally, HFPD has implemented internal security measures that are appropriate for an agency of its size. The doors have locks to secure the buildings, with personal codes for each Firefighter and Board member. Important files are physically secured, however, computer files are not backed up off-site. ESCI recommends that HFPD back-up computer files either in a cloud system or by physical back up, and store at an off-site location. As with all systems, additional protective measures would serve to enhance the security of critical documents and assets.

HFPD tracks spending for minor items by the purchasing card system or the use of a small petty cash fund. The Board Treasurer reconciles purchases appropriately to financial statements.

An inventory of major capital assets is needed to track and depreciate the assets that Hygiene FPD owns and where they are located. It is understood that this inventory is being developed and should be completed.

Key Recommendations:

- Back up computer files to an off-site location.
- Complete inventory of capital assets.

[7] Self-Contained Breathing Apparatus.

STAFFING AND PERSONNEL MANAGEMENT

An organization's most valuable asset is its people. It is important that an organization pay special attention to managing human resources in a manner that achieves maximum productivity while ensuring a high level of job satisfaction for the individual. Consistent management practices combined with a safe working environment, fair treatment, opportunity for input, and recognition of the work force's commitment and sacrifice are key components affecting job satisfaction. This section provides an overview of the Hygiene FPD's staffing configuration and management practices.

Administrative and Support Staffing

One of the primary responsibilities of a fire department's administration is to ensure that the operational segment of the organization has the ability and means to respond to and mitigate emergencies in a safe and efficient manner. An effective administration and support services system is critical to the success of a fire agency.

Like any other part of a municipal or special district fire agency, administration and support need appropriate resources to function properly. By analyzing the administrative and support positions within an organization, we can create a common understanding of the relative resources committed to this function compared to industry best practices and similar organizations. The appropriate balance of administration and support compared to operational resources and service levels is critical to the success of the department in accomplishing its mission and responsibilities.

The following figure reviews the administration and organizational support structure of the Hygiene FPD.

Figure 17: Survey Table – Administrative and Support Staffing

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
Administration and Other Support Staff		
A. Fire Chief	1 fulltime paid Chief	
B. Assistant Chief	1 volunteer Assistant Chief with some administrative duties assigned – hiring volunteers and testing work	
C. Captains	2 volunteer positions authorized but currently vacant. Positions have some administrative duties – Training, building, and vehicles.	
D. Lieutenants	2 volunteer positions, 4 authorized. With some administrative duties assigned. Squad leaders assigned to train their team. Also serve as Assistant Training Officer or Wildland Coordinator	
E. EMS Coordinator	1 volunteer EMS Coordinator. Assignment QA medical report, medical trainings, medical supplies, and certifications.	
F. Training	Training Captain/Lieutenant	
G. EMS	Physician Advisor Longmont United Hospital Review cases	
H. Fire Investigator	One volunteer is a paid Fire Investigator for another agency – if not available will use MAFIT (Multi Agencies Fire Investigation Team)	
I. Fire Inspector	Jeff Webb (Boulder Rural) contracts with the HFPD to Fire Code review of building plans; Fire Chief does annual inspections	
J. Administrative Secretary	Contract employee takes Board meeting minutes; Fire Chief working on getting volunteer to help with administrative work	
K. Mechanic	Contract with Fire Apparatus Service Specialists	
L. Total administrative & support staff	1	
M. Percent administrative & support to total	3%	1/36

Discussion

As with most smaller fire departments that do not have a large complement of paid personnel, the administrative tasks fall, as other duties as assigned, to those involved with emergency response as well. This includes the Fire Chief (even though compensated) as well as the volunteer Officers. The various administrative functions such as the "selection and hiring" of volunteers, vehicle and building/grounds maintenance, and training are delegated to the Officers. In the absence of other dedicated support personnel, the approach is appropriate and is a good use of available resources.

If emergency response gets to the level where there is no time to fulfill these functions, additional personnel may be needed. In addition, having administrative support for the Fire Chief allows him time to work on issues that demand his attention and that others cannot do for him. This will make his time more effective. Additionally, those functions that need additional expertise or time are being contracted out, which is an efficient way of handling things such as plans review, inspections, and taking of Board minutes.

The use of citizen volunteers who are not involved with emergency response is another effective way to save money and use expertise of the community. Possibilities for assistance exist in further administrative help, building or vehicle maintenance, and public education/community awareness. Often, retired individuals with a great deal of expertise are willing to support their local fire department. A byproduct is the fostering of more community ambassadors for the organization.

The one primary administrative position—the Fire Chief—represents only three percent of the entire District's staffing. This ratio is low compared to other agencies, based on ESCI's experience.

Key Recommendation:

- Provide administrative support to the Fire Chief, either in the form of a paid position or a non-emergency responder citizen volunteer.

Emergency Response Staffing

It takes an adequate and properly trained staff of emergency responders to put the appropriate emergency apparatus and equipment to its best use in mitigating incidents. Insufficient staffing at an operational scene decreases the effectiveness of the response and increases the risk of injury to all individuals involved. Hygiene FPD is at a point where the ability to assemble the necessary number of personnel to meet the growing EMS and fire call volume may be negatively affected by the unavailability of volunteer responders.

Tasks that must be performed at a fire can be broken down into two key components—life safety and fire flow. Life safety tasks are based on the number of building occupants and their location, status, and ability to take self-preservation action. Life safety related tasks involve search, rescue, and evacuation of victims. The fire flow component involves delivering sufficient water to extinguish the fire and create an environment within the building that allows entry by Firefighters.

The number and types of tasks needing simultaneous action will dictate the minimum number of Firefighters required to combat different types of fires. In the absence of adequate personnel to perform concurrent action, the command Officer must prioritize the tasks and complete some in sequential order, rather than concurrently. These tasks include:

- Command
- Scene safety
- Search and rescue
- Fire attack
- Water supply
- Pump operation
- Ventilation
- Back-up/rapid intervention

The first 15 minutes is the most crucial period in the suppression of a fire. If the Firefighters or automatic fire sprinklers can apply water effectively during the early stages, loss can be substantially limited. How effectively and efficiently Firefighters perform during this period has a significant impact on the overall outcome of the event. This general concept is applicable to rescue and medical situations as well as fire. Critical tasks must be conducted in a timely manner in order to control a fire or to treat a patient. The Hygiene FPD is responsible for assuring that responding companies are capable of performing all of the described tasks in a prompt, efficient, and safe manner.

There are nationally recognized standards that recommend the adequate response for volunteer departments. The recommended minimum staffing numbers and maximum response times for a volunteer department are as follows:[8]

[8] *NFPA 1720: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments*, 2014 Ed.

Figure 18: NFPA Staffing by Response Zone

Demand Zone	Demographics	Minimum Staff to Respond	Response Time (minutes)	Meets Objective (%)
Urban area	>1000 people/mi^2	15	9	80
Suburban area	500-1000 people/mi^2	10	10	80
Rural area	<500 people/mi^2	6	14	80
Remote area	Travel distance ≥ 8 miles	4	Dependent on travel distance	90

It is important to note that the preceding figure is based on response to a low hazard occupancy specifically, a 2,000 square foot, two-story, single family home, without basement and exposures. Response to a larger home or commercial occupancy will require additional personnel. If the additional personnel are not available on initial dispatch then there must be planning for off-duty call back systems, and mutual or automatic aid from neighboring departments. ESCI describes the emergency response staffing of Hygiene FPD in the following figure:

Figure 19: Survey Table – Emergency Response Staffing

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
Emergency Service Staff		
A. Fire Chief	1	
B. Assistant Chief	1	
C. Captain	2	
D. Lieutenant	2 (2 additional positions created but not currently filled)	
E. Firefighters	21	
F. Reserve Firefighters	7	
G. Total operational staff	34	
H. Fire district total	36	
I. Percent of operational Officers to Firefighters	21%	
Operational Services		
A. Reserve scheduling methodology	Reserves schedule themselves 2 weeks in advance; 3 max on shifts; M-F 8 hours 0600–0900 start; Evening 1700–2100 start and Weekends 12 hours	
i) Length of normal duty period	M–F 8 hours; Sat–Sun. 12 hours	
ii) FLSA period	N/A	
iii) Residency requirements	Not for reserves	
B. Operational services		
i) Fire suppression	Yes	
ii) EMS/rescue, first response	Yes	
iii) EMS, advanced life support	No	
iv) Specialized rescue	Yes. Firefighters are trained in swift water rescue and ice rescue.	
v) Fire prevention inspections	Yes	
vi) Emergency management	No	
vii) Public education	Yes	

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
viii) Hazardous materials response (level)	Yes. Awareness level	
C. Volunteer services		
i) Chaplain	None; county services	
ii) Civilian administrative volunteer	None; working on it	
Responsibilities and Activity Levels of Personnel		
A. Assignment of routine duties:		
i) By position	Not generally	
ii) By areas of personal interest	Strengths and weaknesses. Or interest in a specific area.	
B. Special duties assigned by:		
i) Duty assignment	SCBA Uniforms Gear/PPE Grounds Maintenance	
C. Work groups/Committees		
i) EMS quality management	None	
ii) Chaplain	None	
iii) Training	None	
iv) Safety	None	
v) Building development	None	
vi) Standards/SOGs	SOG committee; Hiring committee; Truck Committee for brush truck specifying; Engine design committee; PR committee;	

Discussion

HFPD's emergency response staffing is comprised of both "traditional volunteers" (those community individuals that live or work in the District) and reserves (those volunteers that sign up for shifts in order to primarily gain experience in the fire service). This combination serves the interest of the District to provide the necessary staffing. The challenge of a shift program is administrating it and assuring the level of training necessary to operate effectively and safely. The combination of traditional and shift reserves is the best option for a volunteer organization. It offers the advantage of quicker turnout similar to a career-staffed agency without the cost of salaries and benefits.

The Insurance Services Office (ISO) assumes that volunteers are not available for every response. ISO gives credit for one responder for every three rostered volunteers. Scheduled on-duty personnel are considered the same as having a career person on duty.

As mentioned before, the operational personnel take on administrative duties by being the persons responsible for a functional aspect of the District or serving on a committee. Operating in this manner is efficient and helps members to be more involved. The involvement adds energy to the organization.

The ratio of Officers to Firefighters falls within an acceptable range. Typically, there is a one-to-four or five ratio of Officers to Firefighters, a reasonable span of control.

Referring back to Figure 18, the number of Firefighters necessary for a fire response in a rural environment is suggested as six by NFPA 1720. Using the ratio of one available volunteer for every three on roster means the minimum number of volunteer personnel that should be on the roster is 18 (minus any on-shift personnel) (6 X 3 = 18). This would be the minimum as most volunteer departments have more on the roster than actively participate. Current staffing—with reserves and volunteers—is appropriate for an effective firefighting force for the moderate-sized residential home. Larger homes and target hazards may require additional personnel. The District should have enough personnel on roster to staff a typical incident.

FIRE AND EMS TRAINING DELIVERY

Providing safe and effective fire and emergency services requires a well-trained workforce. Training and education of personnel are critical functions for every agency. Without good quality, comprehensive training programs, emergency outcomes are compromised and emergency personnel are at risk.

> One of the most important jobs in any department is the thorough training of personnel. The personnel have the right to demand good training and the department has the obligation to provide it.[9]

Initial training of newly hired Firefighters is essential, requiring a structured recruit training and testing process. Beyond introductory training, personnel need to be actively engaged on a regular basis and tested regularly to ensure skills and knowledge are maintained. To accomplish this task, agencies must either have a sufficient number of instructors within their own organization or be able to tap those resources elsewhere. Training sessions should be formal and follow a prescribed lesson plan that meets specific objectives. In addition, a safety Officer should be dedicated to all training sessions that involve manipulative exercises.

In the following sections, ESCI reviews Hygiene FPD training practices, compares them to national standards and best practices, and recommends modifications where appropriate.

General Training Competencies

For training to be fully effective, it should be based on established standards. There is a variety of sources for training standards. Hygiene FPD uses the National Fire Protection Association (NFPA), International Fire Service Training Association (IFSTA), and Colorado State established Job Performance Requirements (JPRs) as the bases for its fire suppression training practices. National Emergency Medical Services standards and the District's Medical Director protocols are used as the baseline for medical training coursework. These are good standards to utilize.

9 Klinoff, Robert. *Introduction to Fire Protection*, Delmar Publishers, 1997. New York, NV.

Figure 20: Survey Table – General Training Competencies

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
General Training Competency		
A. Incident command system	I100, I200, IS700, and IS800	
B. Accountability procedures	Yes, certifications tracked.	
C. Policy and procedures	Training on new ones	
D. Safety procedures	Yes	
E. Recruit training	Task book completion in 12 months; fire academy preparation; Academy through Boulder County Regional Training Academy.	
F. Special rescue (high angle, confined space, etc.)	Yes	
G. Hazardous materials	Operations level trained	
H. Wildland firefighting	All Firefighters trained to 130/190; Red Card qualified only if deployable.	
I. Vehicle extrication	Yes	
J. Defensive driving	The EVOC driver training is used as provided through the insurer. Drivers are then put through an in-house training that uses the State Driver Operator JPRs.	
K. Use and care of small tools	Yes, under fire training.	
L. Radio communications & dispatch protocol?	Fire training	
M. EMS skills and protocol	CPR & EMR required EMT optional; with Firefighter paying tuition but reimbursed after successful completion, along with a signed agreement to serve the District for at least 2 years.	

Discussion

A review of the competency areas that are included in Hygiene FPD's fire related training program shows a commitment to training. Hygiene FPD does a good job monitoring the certification levels that each Firefighter maintains. The District monitors training hours attended; documents provided show a total of about 600 hours of training delivered last year. At approximately 30 personnel, that equates to about 20 hours annually per member. This number is low and will be discussed later in this section. The state pension program sets a minimum of 36 hours per year.

There is not a structured training plan necessary to cover the baseline subject areas adequately. This is not meant to demean the significant effort of having multiple training opportunities each month. Often insufficient personnel are available at any one training to have a functional hands-on training experience. The training that is given is ad hoc, based on attending personnel needs. This is a good fall back plan but lacks the ability to support a coherent strategy.

ESCI recommends that HFPD develop a training plan so that each member receives all of the training necessary to cover needed basic competency levels within each year. This plan should follow the State's Job Required Proficiencies for Firefighter 1 or Driver/Operator. It will also be important to document hours in the training records, building a training profile for each member. Documentation is important to prevent District liability for issues involving safety and Fire District operations. Non-basic competency topics can be injected into the trainings or in additional training sessions. It is important not to train for the least qualified volunteer but to raise the level of all volunteers above the basics. Four mandatory annual trainings that deal with the Incident Command System, live fire burn, automobile extrication, and wildland refresher will help to assure competency. Try to incorporate as many proficiencies into these four trainings so that the volunteers attending the mandatory classes will gain the necessary knowledge.

Key Recommendations:

- Develop a specific training plan to assure that each volunteer receives all of the training necessary to cover the basic competency level within one year.
- Require mandatory basic competency trainings for all Firefighters.

Training Program Management and Administration

To function effectively, a training program needs to be managed effectively. Administrative program support is also essential, though it is often weakly addressed. Effective administration is the development of training planning, goals and defined objectives, and delivery of educational content.

The next figure reviews the Hygiene FPD training program administration and management practices.

Figure 21: Survey Table – Training Program Administration and Management

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
Training Administration		
A. Director of training program	Lieutenant assigned	
i) EMS Training	Hospital offered and District provided	
B. Education or background	New York City area fire department member; Suffolk County	
C. Program Goals and objectives identified	No	
D. Governing body support and concurrence	Yes	
E. Personnel knowledge and understanding	New people are nearly 100% FF1 or in the process	
Recordkeeping		
A. Individual training files maintained	Yes	
B. Records and files computerized	Yes	
C. Daily training records	Each session	
D. Company training records	District/Squad	
E. Lesson plans used	Lesson plans not used consistently; drills are devised based on number of personnel there and needs of those personnel.	
F. Pre-fire planning included in training	Occasionally	

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
Administrative Priority		
A. Budget (2016) allocated to training	$22K	
B. Using certified instructors	For some types in-house and external agencies	
C. Annual training report produced	Annual report by individuals recording both in-house (Type 1) 24hrs minimum required and outside training (Type 2) 12hrs max including EMS.	
D. Adequate training space/facilities and equipment	District has classroom, driver training, drafting ponds. Boulder County Regional Training Academy for propane training and confined space rescue. Concrete plant (Cemex) burn room training.	
E. Maintenance of training facilities	Adequate	
Training Program Clerical Support		
A. Administrative secretary support	None	
B. Computerized records software used?	Yes	

Discussion

The Hygiene FPD training program operates under the oversight of a Lieutenant who is also responsible for a squad. This training program coordinator has former experience as a volunteer from another agency. He works with no administrative support or other assistance with coursework delivery. ESCI recommends that he be able to attend the Training Officer Program at the National Fire Academy, or at least attend some of the NFA off-campus classes, which will give him additional insights on running an effective training program.

The training budget is about seven percent of the total District budget. Training is an important aspect of any fire department but will tend to have a higher commitment for a volunteer organization due to the lack of money dedicated to salaries and the need to train new personnel on a continuous basis.

The budget dollars are used for the internal training of members, as well as sending personnel to external educational opportunities. External trainings are important in order to bring back the latest concepts and research to the District. Trainees can be asked to present what they learned when they return, as part of the District commitment to educate them. Currently, external trainings are only used for recruit academy and EMS, both of which are important activities. External training could also be expanded for other opportunities.

Besides the Lieutenant tasked with the training program, the other Lieutenant presents a class each month. Others, such as the Fire Chief, also participate in presenting the trainings. This is a positive plan but still is limited on the amount of time allotted for development new curriculum. Hygiene FPD is lacking defined lesson plans for all trainings. These take time to develop but once completed can be used multiple times. Hygiene FPD should cooperate with other neighboring fire departments to share training lesson plans and instructors. This reduces the demand on the Hygiene FPD personnel to do all the training and it brings the agencies together with similar training and protocols.

Hygiene FPD keeps good records regarding training; and the District, to document the ongoing activity, publishes an annual report.

A difficult issue for any volunteer department is minimum training requirements. While recognizing that it is difficult for volunteers who leave work and family commitments to attend all training sessions, it is essential that responders be competent, for their safety and the safety of those around them. Reading about topics can be very effective, but many of the Firefighter skills require muscle memory; that is, having the same correct reaction based on manipulative repetition.

Insufficient minimum requirements for personnel training results in a lack of adequate skills that are needed for the protection of the individual and others on the team. While Hygiene FPD has minimum trainings requirements, they do not seem to be adequately enforced. It is unfair to have a stated standard and not enforce it equally. Those who attend trainings give up family time or rearrange their schedules to do so, while others are not willing to make the commitment. Being a volunteer Firefighter is not like being a volunteer for other community organizations—it requires a sacrificial commitment. That said, the District should provide enough options that if someone misses one training, they have other opportunities.

Key Recommendation:

- Enforce volunteer minimum training attendance requirements.

Training Resources, Scheduling, and Methodology

In order to deliver effective training to fire and EMS personnel, some resources are necessary to arm the trainer with the tools needed to provide adequate educational content. In addition to tools, effective methodologies must be employed for delivery to be sufficient to meet District needs.

Figure 22: Survey Table – Training Resources, Scheduling, and Methodology

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
Training Facilities and Resources		
A. Training facilities (tower, props, pits)	As a part of the Boulder County Regional Training Academy (BCRTA) can use facilities; District's burn trailer located at Cemex plant	
i) live fire prop	BCRTA	
ii) fire and driving grounds	BCRTA	
B. Classroom facilities		
C. VCR, projectors, computer simulations	Adequate equipment is at Station 1	
D. Books, magazines, instructional materials	Adequate library is at Station 1	
Training Procedures Manual		
A. Manual developed and used	Use Division of Fire Prevention and Control's certification criteria	
B. IFSTA manuals used	Firefighter training manuals and power points for Firefighter levels 1 and 2	
Training Scheduling		
A. Career training schedule	N/A	
B. Volunteer training schedule	Monthly have two squad trainings and one District-wide training and EMS training	
C. Minimum training hours, competencies	36 hours	
Methodology Used for Training		
A. Manipulative	Yes	
B. Task performances	Yes	
C. Annual training hours	Approximately 600 person-hours	
D. Use of lesson plans	Some not all	
E. Night drills	Yes	
F. Multi-agency drills	Yes	
G. Inter-station drills	N/A	
H. Physical standards or requirements	Physical agility testing required during applicant testing. HFPD is planning for health physicals.	
I. Annual performance evaluation conducted	EMS side only; planning for evaluations for fire training.	

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
J. Employee Development program	Not yet developed but working on Officer candidate pre-promotional exam classes; IFSTA Fire Officer 1 on-line classes; then shadowed on scene for ICS.	
Operations and Performance		
A. Disaster drills conducted	No; some members have participated in county drills; vaccine administration at fairgrounds.	
B. Attention to safety	Assign one person as Safety Officer on drills; assign a Safety Officer on all scenes and one person for accountability.	
C. Post incident critique (After Action Review)	Larger calls and fatalities are reviewed as well as trainings	
D. Priority by management toward training	Yes; good percentage of budget dedicated to training.	

Discussion

ESCI commends Hygiene FPD for its strong commitment to training. It is evident that Hygiene FPD is dedicated to assuring that all personnel are trained to operate safely on the emergency scene. There are three trainings available each month, two led by the squad leaders and one overall District training. It is obvious that there is now a commitment to Officer growth but most of the programs are under development. The current direction in training and for personnel development are right on target but not fully developed. There are a number of programs that demand time that is limited due the volunteer nature of the members.

Key Recommendations:

- Conduct four mandatory trainings annually that deal with the Incident Command System, live fire burn, auto extrication, and wildland refresher.
- Develop a specific training plan for each volunteer to receive all of the basic competency level training within one year.
- Send Training Officer to the Training Officer Program at the National Fire Academy or to NFA off-campus classes.
- Cooperate with neighboring departments to share training lesson plans and instructors.
- Enforce training minimums with all individuals.

FIRE PREVENTION AND PUBLIC EDUCATION PROGRAMS

An aggressive risk management program, through active fire and life safety services, is a fire department's best opportunity to minimize the losses and human trauma associated with fires and other community risks.

> The National Fire Protection Association recommends a multifaceted, coordinated risk reduction process at the community level to address local risks. This requires engaging all segments of the community, identifying the highest priority risks, and then developing and implementing strategies designed to mitigate the risks.[10]

A fire department needs to review and understand the importance of fire prevention and public education, appreciating their role in the planning process of a community with diversified zoning including residential, commercial, and industrial properties.

The fundamental components of an effective fire prevention program are listed in the following table, accompanied by the elements needed to address each component.

Figure 23: Fire Prevention Program Components

Fire Prevention Program Components	Elements Needed to Address Program Components
Fire Code Enforcement	Proposed construction and plans review New construction inspections Existing structure/occupancy inspections Internal protection systems design review Storage and handling of hazardous materials
Public Fire and Life Safety Education	Public education Specialized education Juvenile fire setter intervention Prevention information dissemination
Fire Cause Investigation	Fire cause and origin determination Fire death investigation Arson investigation and prosecution

Some of these fundamental components are mandated by the Colorado State Statutes for Fire Protection Districts. The statutory responsibility of a special district Fire Chief is defined in CRS 32-1-1002(3)b.(I) through (V), which requires enforcement of laws related to prevention of fires and the suppression of arson, by inspecting all buildings other than private structures, and investigating the causes of all fires.

[10] Kirtley, Edward, *Fire Protection Handbook*, 20th Edition, 2008, NFPA, Quincy, MA.

Fire and Life Safety Code Enforcement

The most effective way to combat fires is to prevent them. A strong fire prevention program, based on locally identified risk and relevant codes and ordinances, reduces loss of property, life, and the personal and community-wide disruption that accompanies a catastrophic fire.

The demographics of the Hygiene FPD is primarily residential with a small amount of commercial. The demands therefore on fire prevention dedicated to the fire code enforcement is relatively small and has been contracted out. ESCI believes this is the best use of District resources. Hiring an individual who must maintain currency in the field and codes would be costly. The Fire Chief and Officers should maintain familiarity with what the fire codes require to be able to answer routine questions. Technical questions or questions about specific occupancies or processes should be referred to the contract fire marshal.

Figure 24: Fire Prevention Code Enforcement

Fire Prevention and Public Education Programs-Observations		
Survey Components	**Hygiene Fire Protection District Observations**	**Comments and Recommendations**
Code Enforcement		
A. Fire codes adopted	International Fire Code adopted	
i) Code used – year/version	2012, updating to 2015.	Adopt the 2015 edition of the International Fire Code.
B. Local codes or ordinances adopted, amendments	None	
C. Sprinkler ordinance in place	None	
New Construction Inspections and Involvement		
A. Consulted in proposed new construction	Yes	
B. Perform fire and life safety plan review	Contracted to Jeff Webb, Boulder Rural FPD, coordinated with Chief.	
C. Sign-off on new construction	Signature required for building permit issuance	
D. Charges for inspections or reviews	Yes	

Discussion

The Hygiene FPD has adopted the 2012 edition of the International Fire Code. Fire code enforcement and administration is the responsibility of the Fire Chief. The routine operation of fire and life safety plans review is contracted to the Fire Marshal from the Boulder Rural Fire District.

Fire codes are revised and a new version published every three years. The adopted code is the 2012 edition. It is common for the adoption of the latest code to occur a couple of years after the publication is revised, but it is also important to stay up to date on code adoption, as the International Fire Code and the International Building Code are companions. If the building jurisdiction is operating under a different code, it causes potential conflict between the requirements. Adoption of the most current fire code version is advised.

New Construction Plan Review and Inspection

An essential component of a fire prevention program is new construction plan reviews. When a new building is proposed within the Fire District's boundary, the District will have the responsibility to protect the structure for the life of the building. The Hygiene FPD has a fundamental interest and duty to ensure all buildings within its jurisdiction are properly constructed.

Existing Occupancy Inspection Program

Existing property inspections, to find and eliminate potential life hazards, are an essential part of the overall fire protection system. These efforts are most effective when completed by individuals having the proper combination of training and experience, and when completed with appropriate frequency.

Figure 25: Existing Occupancy Inspection Program

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
General Inspection Program		
A. Perform existing occupancy inspections	Completes limited life safety inspections in commercial occupancies. Suppression systems inspected by contract inspector.	
B. Special risk inspections	Completed by contract inspector.	
C. Storage tank inspections	No	
D. Key-box entry program in place	Knox Box system required in commercial occupancies.	
E. Hydrant flow records maintained	City of Longmont, Left Hand Water District, but flow testing in the latter is lacking.	
F. Self-inspection program in place	No	
G. Frequency of inspections	Goal of completing all commercial inspections annually.	
H. Citation process in place and formally documented/adopted	None	
i) Court-cited to	N/A	
I. Inspections computerized	Tracked in ERS Software.	
J. Community feedback system in place	No	
K. Number of personnel devoted to program	Fire Chief only, balance of work is contracted.	
L. Fees for specialty inspections	Fees charged for contracted inspections.	

Discussion

Hygiene FPD provides existing occupancy inspections for approximately 40 buildings. The target is for all commercial occupancies to be inspected annually. The responsibility falls on the Fire Chief to accomplish the routine inspections. The advantage of having the Fire Chief perform inspections is the increased interaction among the business community, churches, and schools. However, with the Fire Chief's current responsibilities and workload, it may be more effective to delegate some of this to a part time employee who is qualified to complete inspections.

Fire and Life Safety Public Education Program

The focus of fire and life safety education is to minimize the number of potentially life threatening emergencies and to train the community to take appropriate actions when an emergency does occur. Life and fire safety education provides the best chance for minimizing the effects of fire, injury, and illness to the community. Public education outreach in the Hygiene FPD is outlined in the following figure.

Figure 26: Fire Safety and Public Education

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
Fire Safety and Public Education		
A. Public education/Information Officer in place	Fire Chief and public relations committee; annual school fire education for the kindergarten class; birthday parties.	
B. Feedback instrument used	No	
C. Public education in the following areas:		
i) Calling 9-1-1	Yes	
ii) EDITH (exit drills in the home)	Yes, cooperate with Longmont with the fire escape house.	
iii) Smoke alarm program	Seeking grant funding for smoke alarm program; Will change batteries on call as needed.	
iv) Fire safety (heating equipment, chimney, electrical equipment, kitchen/cooking, etc.)	Incorporated into outreach based on age range.	
v) Injury prevention (falls, burns/scalding, bike helmets, drowning, etc.)	No defined programs except that child car seat checks are done by appointment.	
vi) Fire extinguisher use	Propane training prop for community events.	
vii) Fire brigade training	N/A	
viii) Elderly care and safety	No	
ix) Curriculum used in schools	N/A	
x) Baby-sitting classes offered	No	
xi) CPR courses, blood pressure checks offered	Provide CPR and First Aid classes; blood pressure checks during community events and by request.	
D. Publications available to public	Limited supplies; topics large animal rescue and fire bans.	
E. Bilingual information available	No	
F. Annual report distributed to community	No	Provide an annual report for the community regarding public education.
G. Juvenile fire setter program offered	Not official program; juvenile fire setter video and materials on hand.	
H. Wildland interface education offered	Community Wildfire Protection Program video	

Discussion

Based on the size of the District, Hygiene FPD does an excellent job of providing many forms of public fire and life safety education to the community. The priority placed on providing these types of opportunities is unusual for a small agency. Despite only one career person dedicated to public outreach staffing, it is commendable that many different forms of education exist within the District.

The area of public fire and life safety education is evolving. In the past, fire departments were primarily emergency response agencies with little interest in preventing losses. Alternatively, the agency may have practiced a shotgun approach to doing public fire and life safety education, i.e. a little bit of effort was put into many different programs without much success.

The current trend in public fire protection is to practice community risk reduction. This type of program is able to use limited funding and personnel to accomplish the most good. It is done by analyzing the types of risk prevalent in the District and creating a strategy to reduce the probability of an incident occurring. By looking at the types of buildings and population demographics, along with analysis of the prior years' response data, a picture develops of what is likely to happen based on history and the risk attributed to that type of occupancy. When a community risk reduction (CRR) analysis is completed, this focuses the fire and life safety education on what is the most likely scenario to happen. When an analysis is completed, it is important not to overlook EMS issues. It may be that an elderly community member having a heart attack at home is the most common scenario. So in order to use limited resources effectively, a fire department might sponsor some CPR courses for community residents attempting to increase the number of "saves" through effective CPR administered prior to the fire department or ambulance arrival.

The Hygiene Fire Chief is currently accomplishing public education and outreach with the assistance of a public relations committee. This area could benefit from non-firefighting volunteers or administrative volunteers. Retired schoolteachers are an example of individuals who could provide a positive impact with limited training needs. Often an individual in the organization, who understands the need, will volunteer to oversee public education and provide leadership to people that will serve.

Key Recommendation:

- Target public education based on demonstrated community risk.

Fire Cause and Origin Investigation

Accurately determining the cause of a fire is an essential element of a fire prevention program. When fires are set intentionally, identification and/or prosecution of the responsible offender is critical in preventing additional fires and potential loss of life. Further, if the cause of fires is accidental, it is also of great importance because understanding how accidental fires start is the most effective way to identify appropriate fire prevention and public education measures to prevent a recurrence.

Figure 27: Fire Investigation

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
Fire Investigation		
A. Fire origin and cause determination	Initially completed by the company Officer or Fire Chief. If in question, referred to the Multi Agency Fire Investigation Team (MAFIT).	
B. Arson investigation and prosecution	Processed cooperatively through MAFIT.	
i) Arson investigation training provided	Basic training to all personnel. Chief is receiving additional training through MAFIT.	
C. Person responsible for investigations	Fire Chief	
D. Local FIT membership (fire investigation team)	MAFIT – Roughly 15 fire agencies, ATF, CBI, Boulder County Sheriff Deputies, and a few from other local law enforcement agencies (includes 3 deputies with fire investigations training).	
E. Process for handling juvenile suspects	Processed via County Juvenile Court	
F. Liaison with law enforcement	Fire Chief and via MAFIT	
G. Scene control practices in place	Yes	
H. Photographer available	As needed	
I. Adequate and appropriate equipment issued/supplied	Available with MAFIT	
J. Evidence collection process in place	Via MAFIT	
K. Reports and records of all incidents made	Recorded electronically and filed in hard copy, secured.	
L. File, record, and evidence security	Processed via County Juvenile Court	
Pre Incident Planning		
A. Pre-plans completed	Some completed, not all occupancies.	
B. Frequency of review	As needed basis or if change is observed	
C. Accessibility of plans	Located in ERS software in occupancy section; older in binders on engines; accessible on scene in Fire Chief vehicle.	

Survey Components	Hygiene Fire Protection District Observations	Comments and Recommendations
Statistical Collection and Analysis		
A. Records kept by computer	Yes	
i) Type of operating platform	Windows based	
ii) Software used	Emergency Records Systems software	
B. Information collected in the following areas:		
i) Fire incidents	Recorded	
ii) Time of day and day of week	Recorded	
iii) Method of alarm (how received)	Recorded	
iv) Dispatch times	Recorded	
v) Response times	Recorded	
C. Information analyzed & used for planning	Reviewed in developing annual newsletter	
D. Reports made & distributed	Annual newsletter	
E. FTEs used in data collection & analysis	Fire Chief	

Discussion

Hygiene FPD complies with the legal requirement and works cooperatively with other agencies to bring the appropriate expertise to the fire scene investigation and follow-up through the judicial system. Fire investigation starts with the on-scene observations that is the responsibility of the Fire Chief. This could be a problem if the Fire Chief is not present on that particular call. Back up in the form of another Officer should be available to do the preliminary investigation. This position should also have the responsibility to have an investigator respond to the scene.

Fire investigations, even when not suspicious in origin, are very important. Hygiene FPD encodes the investigation data into the Colorado NFIRS (National Fire Incident Reporting System). Colorado Division of Fire Prevention and Control passes this information to the national database. By analyzing a large amount of data, one can identify specific causes of fires. These appliances, vehicles, and building systems that have defects are recalled by Consumer Product Safety Commission or by the company before more fires can occur. The results of fire investigation data, if used accordingly, can identify public education focus areas, the need for code modifications, and adjustment of fire deployment and training at the local department level. An effective fire cause determination program can define and help mitigate the community fire problem.

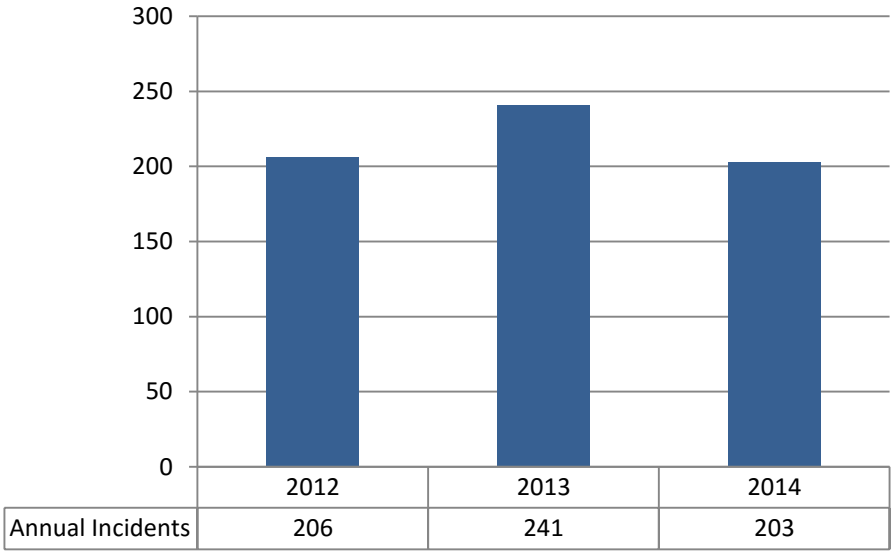
SERVICE DELIVERY AND PERFORMANCE

The most publicly visible aspect of an emergency services organization is service delivery and performance. The public wants to know that resources are available and can respond quickly when called for assistance. Fire jurisdictions compare themselves against their peers and published industry best practices and standards, to assure that resources are deployed in a manner that meets the needs of the constituents of the fire jurisdiction. This report section reviews the critical components of service delivery including demand, distribution, concentration, reliability, and response performance within the Hygiene Fire Protection District (HFPD) service area.

Service Demand Analysis

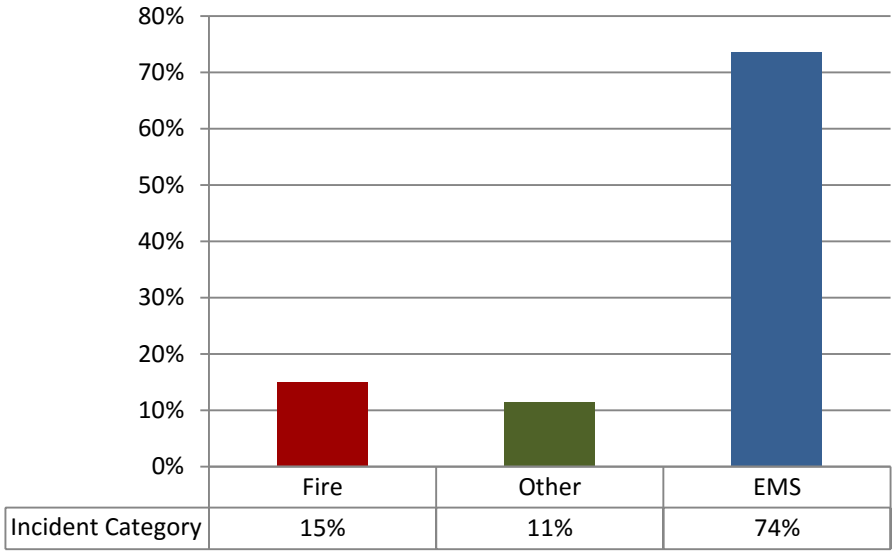
In the demand analysis, ESCI reviews current and historical service demand by type and temporal variation in the HFPD service area. Geographic information system (GIS) software is used to provide a geographic display of demand within the study area. National Fire Incident Reporting System (NFIRS) data collected in the HFPD records management software is used for this analysis.

Figure 28: Study Area Historical Service Demand, 2012-2014



According to the HFPD incident data, service demand varied during the three years displayed in the previous figure. Service demand increased by nearly 17 percent between 2012 and 2013; and decreased by a similar amount in 2014. The following figure summarizes total service demand for 2012 through 2014 by incident category.

Figure 29: Study Area Service Demand by Category, 2012-2014



	Fire	Other	EMS
Incident Category	15%	11%	74%

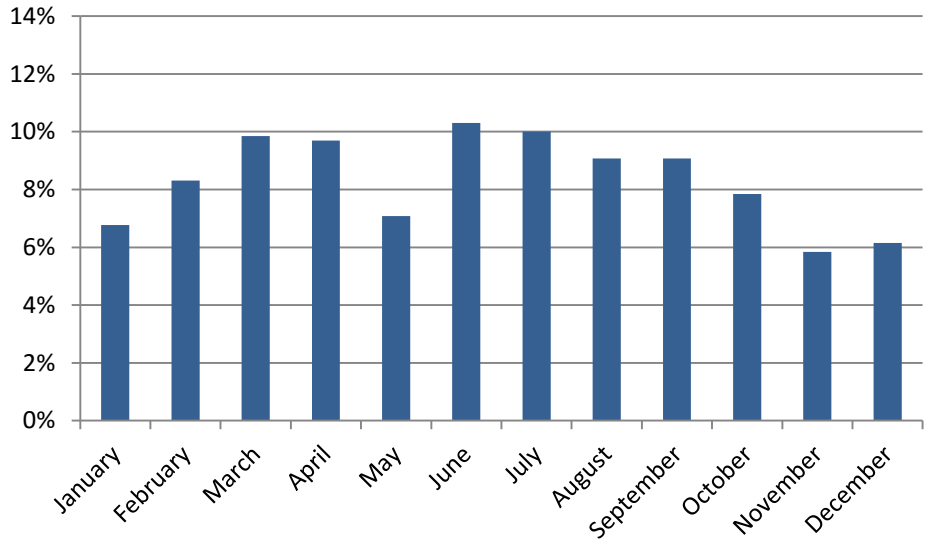
In the preceding figure, "Fire" refers to any incident dispatched as a fire (structure fires, wildland fires, and other fires not categorized). "EMS" includes all calls for medical assistance, including motor vehicle accidents. The "Other" category includes incidents such as smoke investigations, false alarms, hazardous material spills, controlled burning investigations, weather related incidents, cancelled calls, and incidents not otherwise specified.

Fire incidents represent 15 percent of HFPD service demand. Medical incidents make up approximately 74 percent of incidents, and those categorized as "Other" comprise nearly 11 percent of historical service demand. The percentages displayed above are comparable to those of similar sized fire jurisdictions in the region and nationally.

Temporal Variation

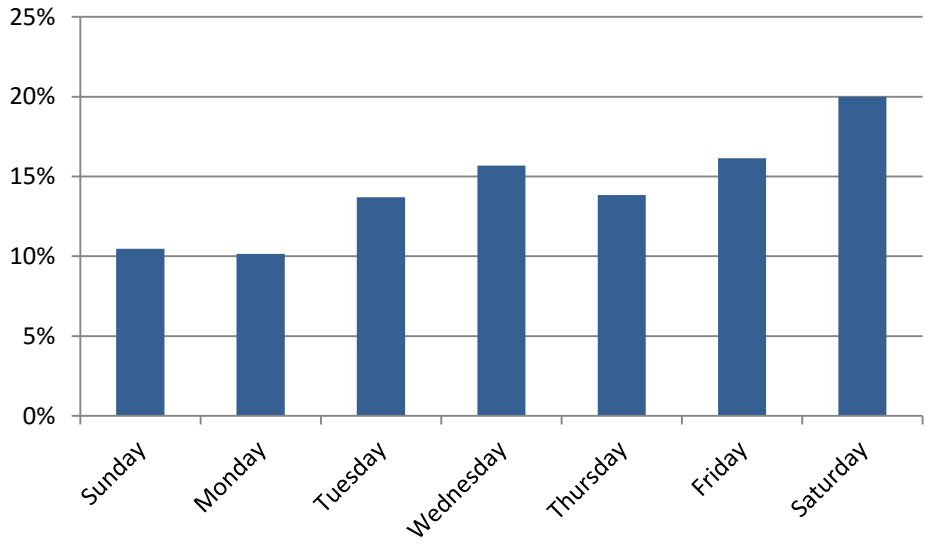
Service demand is not static, and HFPD's workload varies by temporal variation. The following figures illustrate how HFPD service demand varied by month, day of week, and hour of day from 2012-2014 in order to identify any periods of time that pose significantly different risks and hazards. This analysis begins by evaluating service demand by month.

Figure 30: Study Area Service Demand by Month of the Year, 2012-2014



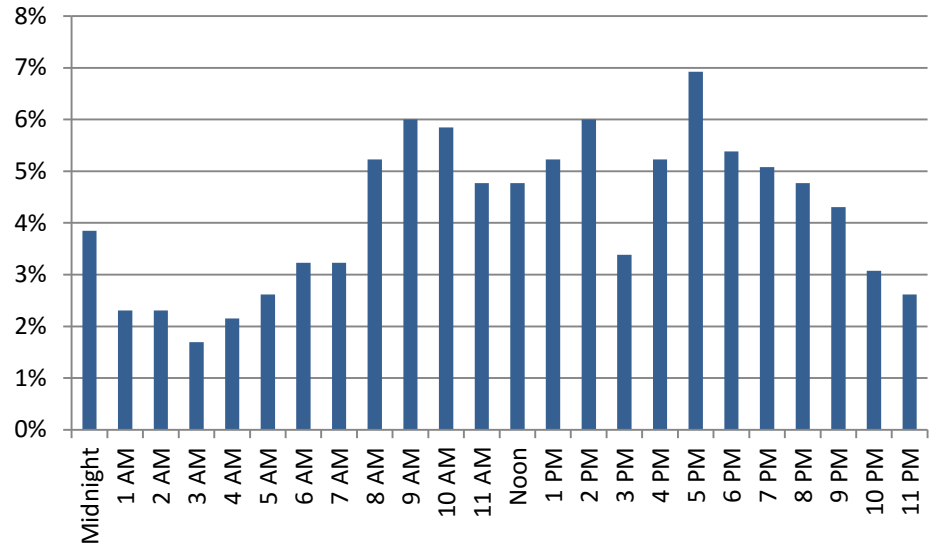
Monthly service demand varies in the HFPD service area. November and December demonstrate the lowest service demand, while June and July demonstrate the highest service demand. The next figure examines service demand by day of the week.

Figure 31: Study Area Service Demand by Day of the Week



In this figure, Friday and Saturday display the highest service demand. The lowest number of incidents occurred on Sundays or Mondays. The following figure summarizes 2012 through 2014 service demand by hour of the day.

Figure 32: Study Area Service Demand by Hour of the Day, 2012-2014

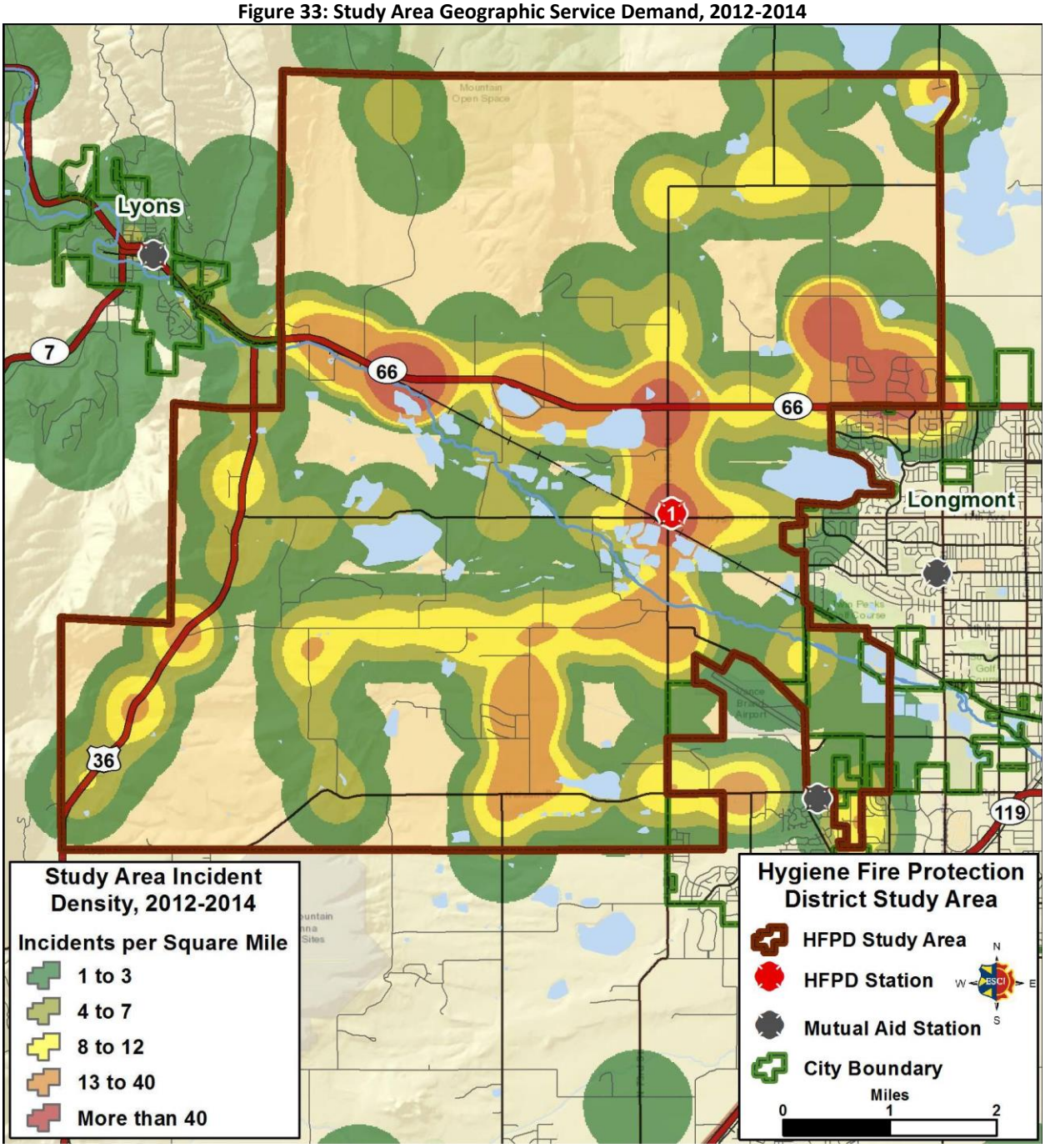


Generally, service demand correlates with the activity of people, with demand increasing during the workday and decreasing in the evening and early morning hours. Approximately 64 percent of the HFPD service demand displayed in the previous figure occurred between 8 AM and 8 PM. Fire jurisdictions such as HFPD that utilize volunteer personnel, may experience staffing issues during the workday when demand is highest and volunteer availability is the lowest.

Geographic Service Demand

In addition to the temporal analysis of workload, it is useful to examine the geographic distribution of service demand. ESCI uses geographic information systems software (GIS) to plot the location of incidents within the HFPD study area, for 2012 through 2014; and calculates the mathematical density of incidents in the study area.

Figure 33: Study Area Geographic Service Demand, 2012-2014

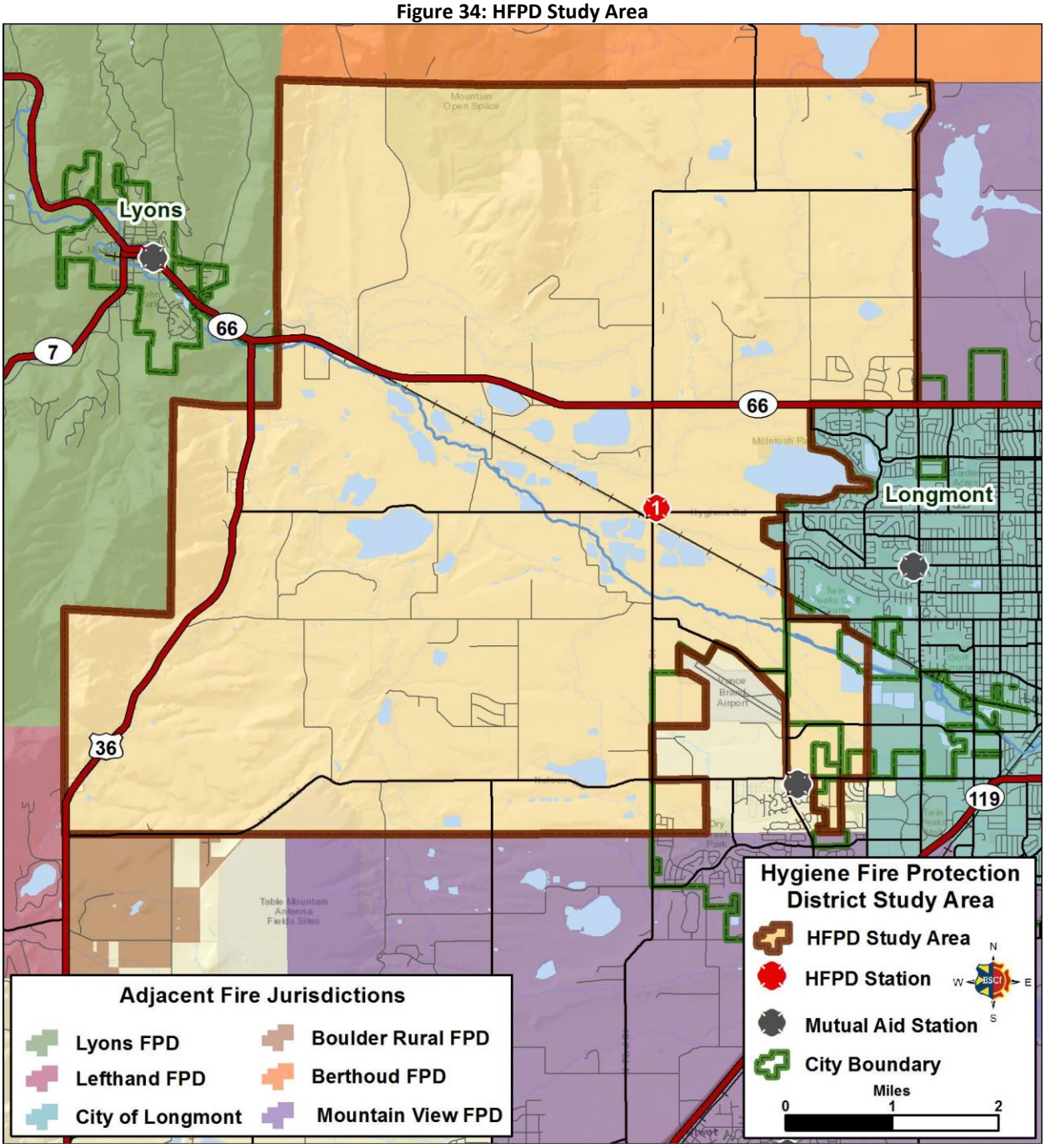


Service demand is distributed throughout the HFPD service area. As seen in the preceding figure, Highway 66 demonstrates the greatest incident density. The Prairie Knoll and Anwaha Manor areas, east of N 87th Street also demonstrate a greater number of incidents in the figure.

Resource Distribution Analysis

The distribution analysis presents an overview of the current distribution of Fire District resources within the HFPD service area. Figure 34 displays the HFPD study area and the adjacent fire jurisdictions.

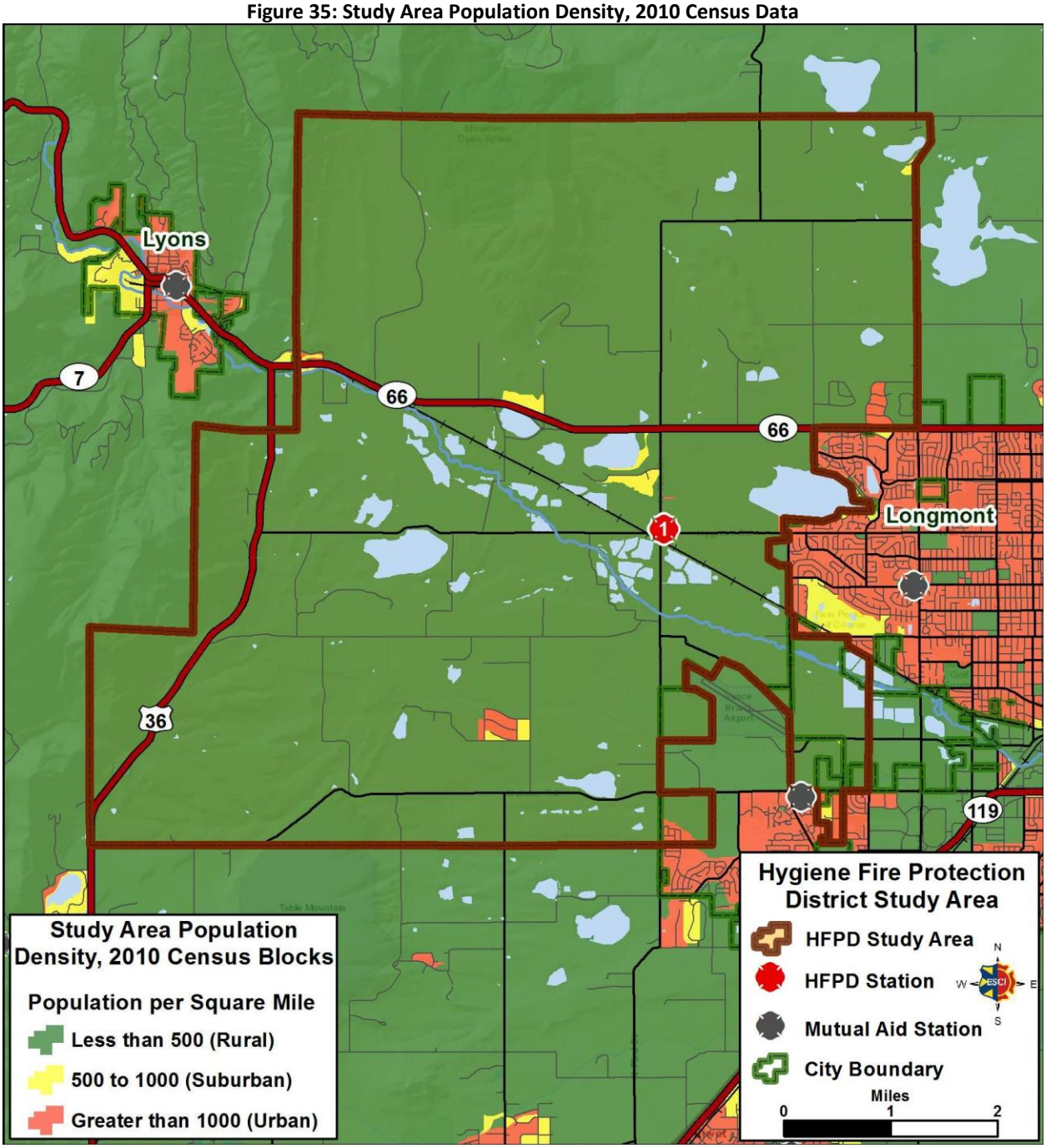
Figure 34: HFPD Study Area



ESCI calculates the size of the study area as approximately 43.5 square miles. HFPD operates from a single fire station located in the unincorporated community of Hygiene. Highway 66 is the main transportation route through the District and runs east to west through the service area. ESCI notes that there are portions of the HFPD service area that overlap the boundaries of the City of Longmont in the area around the airport. The GIS data provided does not appear to reflect annexations of portions of the Fire District into Longmont in this area. ESCI recommends that HFPD work with the Boulder County Assessor's Office and the County GIS department to confirm the taxing District boundary.

The following figure uses 2010 Census Bureau data to display population density in the study area.

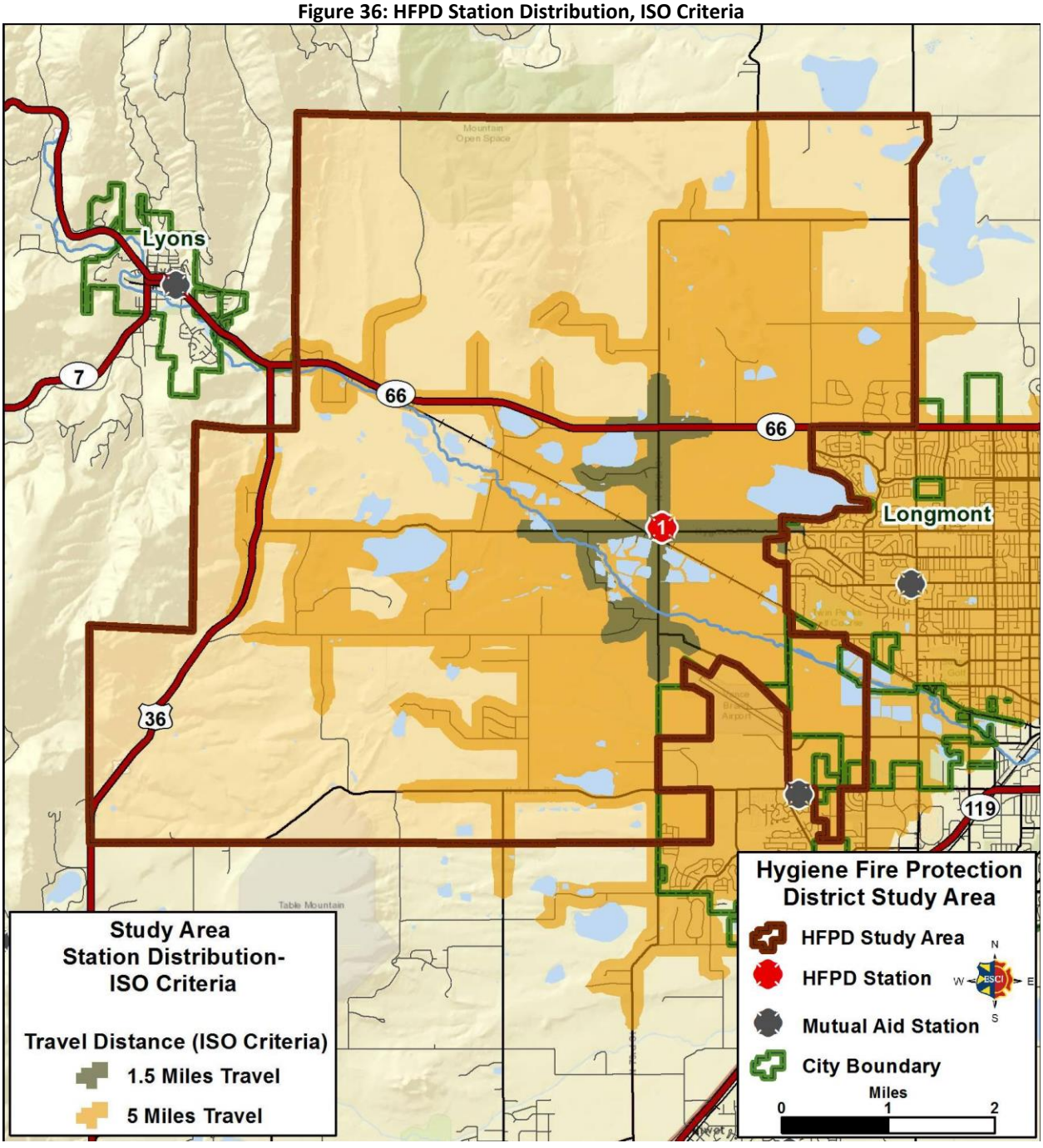
Figure 35: Study Area Population Density, 2010 Census Data



This figure demonstrates the rural nature of the HFPD service area. Several small areas of a higher population density are scattered throughout the service area. The City of Longmont to the east and the incorporated Town of Lyons to the west display the highest concentration of population in the area around the service area. HFPD estimates the population of the District as approximately 4,000; with an area of 43.5 square miles in the District, the overall population density is approximately 93 individuals per square mile.

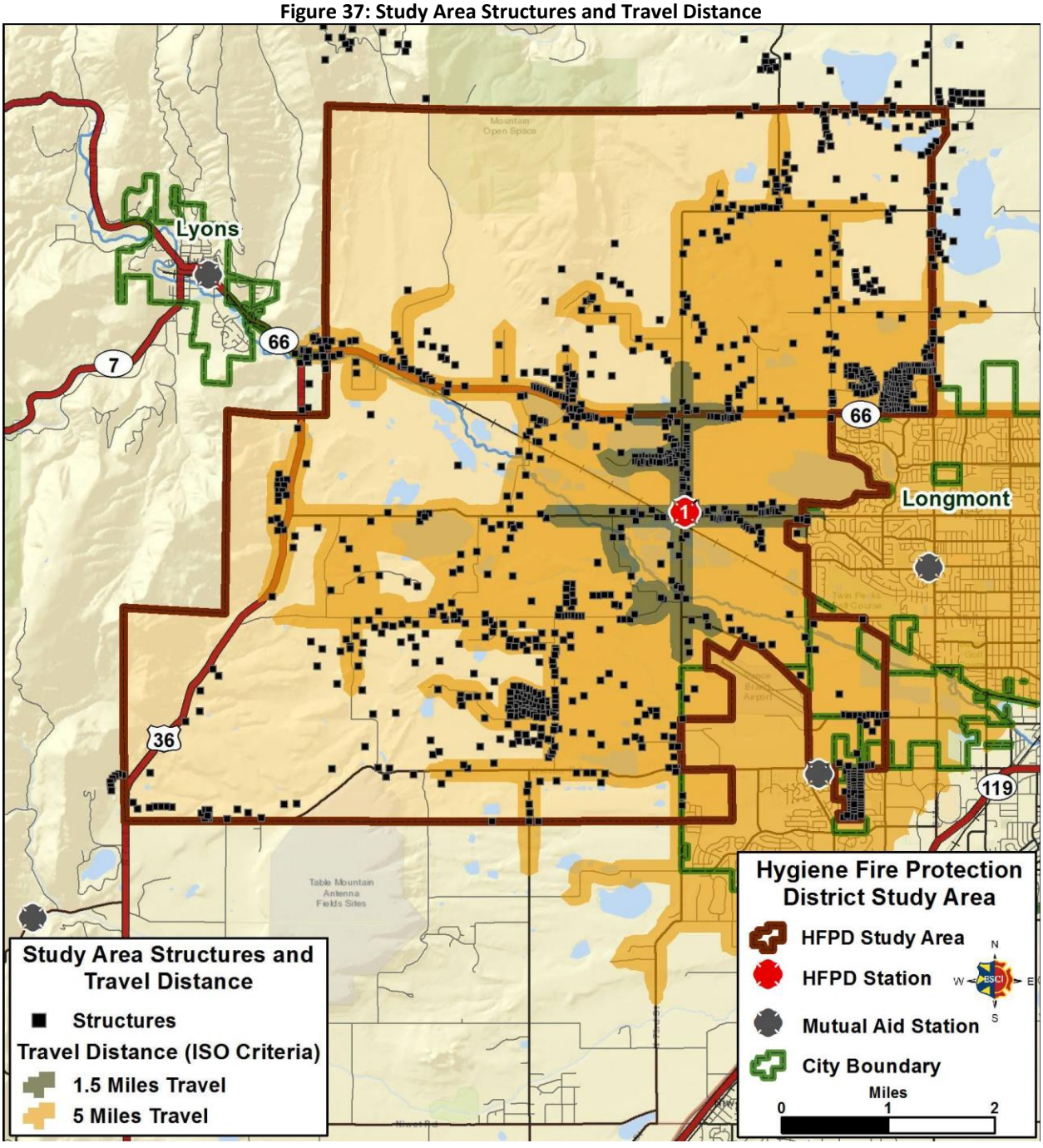
The Insurance Services Organization (ISO) is a national insurance industry organization that evaluates fire protection for communities across the country. A jurisdiction's ISO rating is an important factor when considering fire station and apparatus distribution, since it can affect the cost of fire insurance for individuals and businesses. To receive maximum credit for station and apparatus distribution, ISO recommends that in urban areas, all "built upon" areas in a community be within 1.5 road miles of an engine company. Additionally, ISO states that a structure must be within five miles of a fire station to receive any fire protection rating for insurance purposes. The next set of figures examine current HFPD station and apparatus distribution based on credentialing criteria for the Insurance Services Organization (ISO).

Figure 36: HFPD Station Distribution, ISO Criteria



Based on this model, 82 percent of the road network within the HFPD service area is within five miles of the single HFPD fire station located at Hygiene Road and North 75th Street. In the following figure, ESCI utilizes GIS data from Boulder County to display structure locations and the travel distance model.

Figure 37: Study Area Structures and Travel Distance

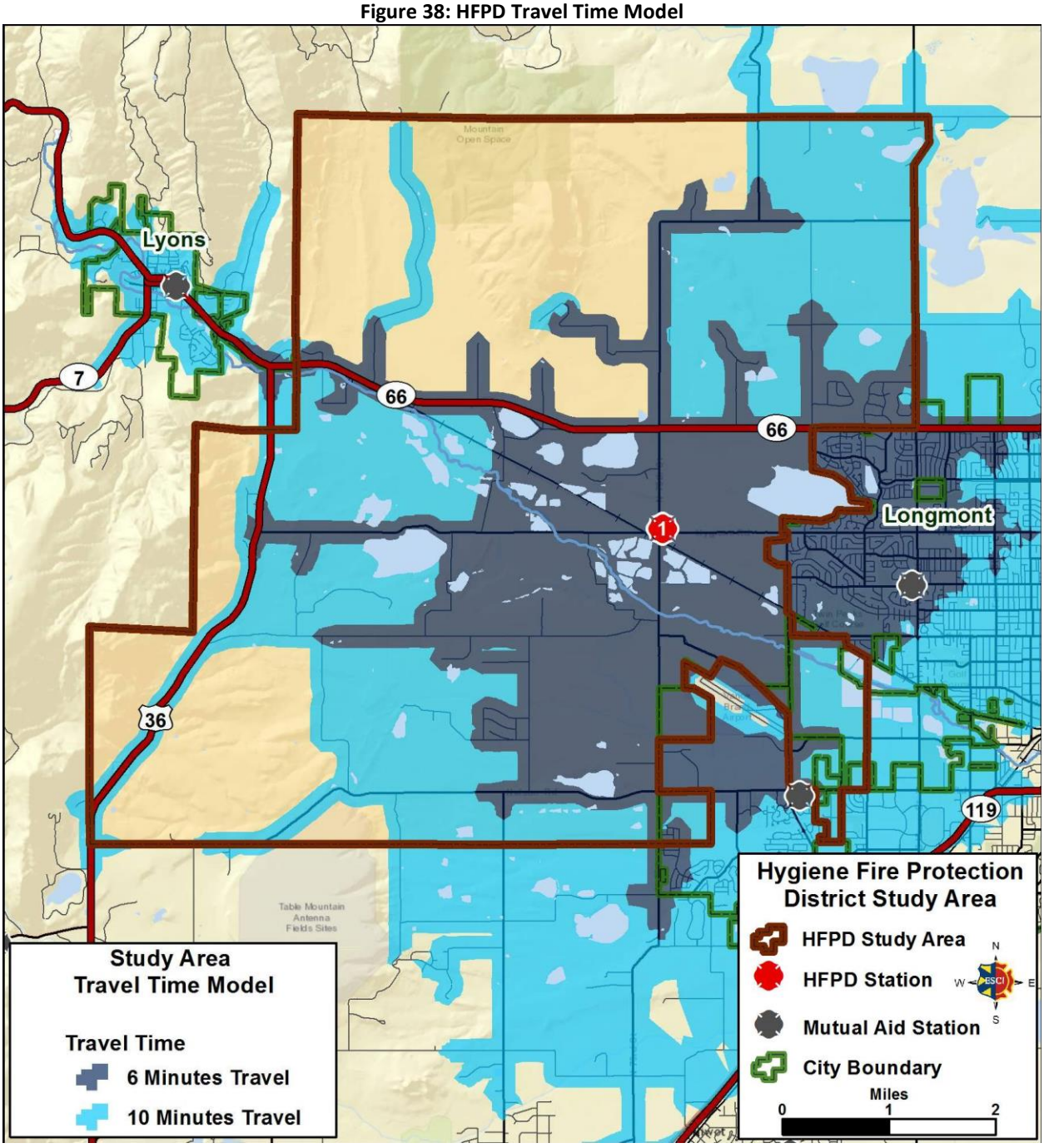


Analysis of the GIS data reveals that approximately 85 percent of the structures within the study area are within five miles travel of the HFPD station. Given the rural nature and size of the service area, the HFPD station is well located to serve the needs of the District, based on the ISO criteria.

The ISO Public Protection Classification criteria only address fire suppression activity and are primarily concerned with geographic coverage of property. Equally important are the travel time required to respond from a fire station to a call for service and the percentage of current service demand (any type of incident) that can be reached in a certain amount of time.

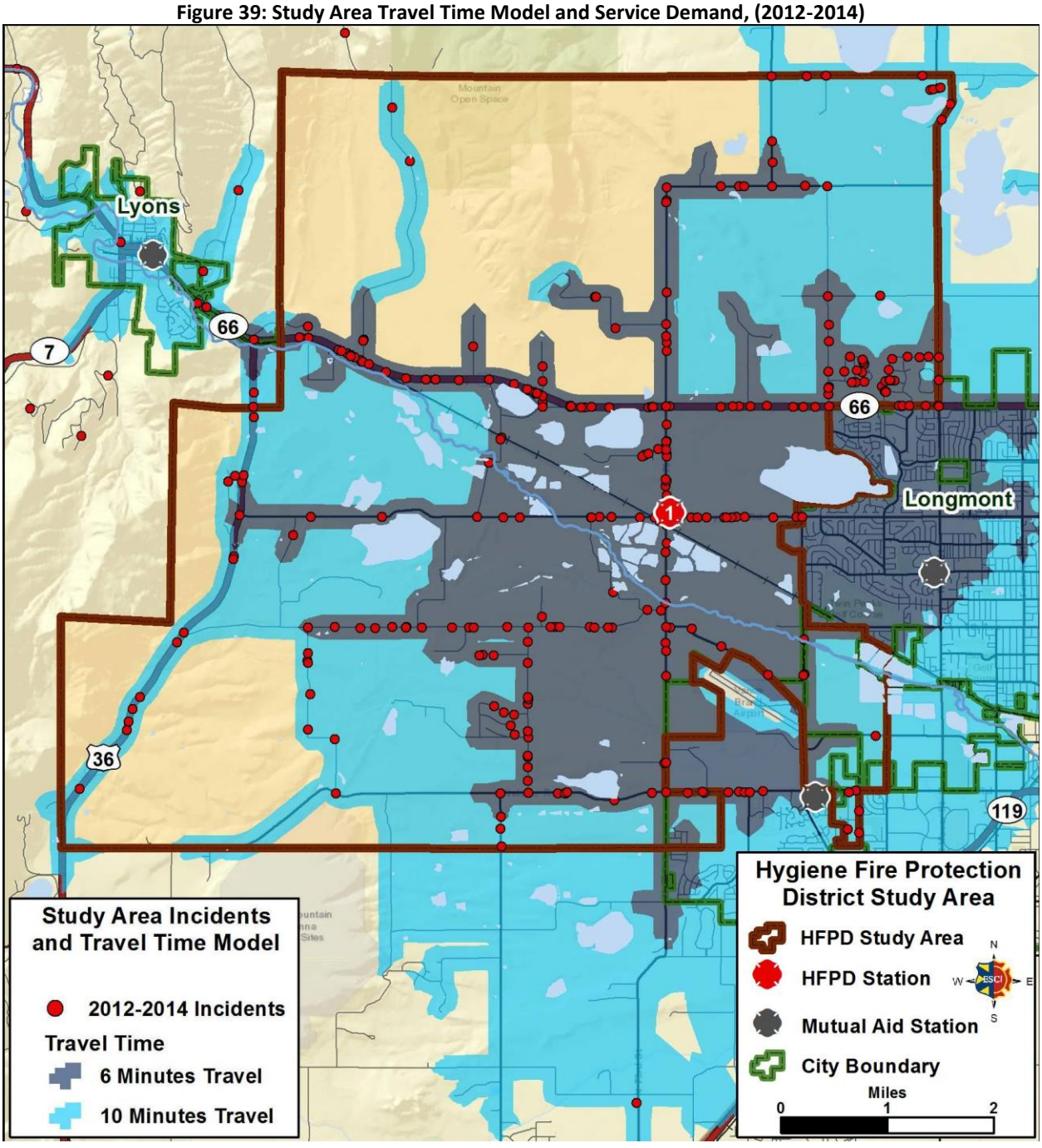
The following figures present a travel time model from the current HFPD station over the existing road network. Travel time is calculated using the posted speed limit and is adjusted for negotiating turns, intersections, and non-connected travel routes.

Figure 38: HFPD Travel Time Model



Approximately 62 percent of the road network within the study area is within six minutes travel or less of the HFPD station. Nearly the entire road network is within ten minutes travel of the fire station. The next figure displays the 2012 through 2014 incident locations and the travel time model to compare travel time capability to service demand.

Figure 39: Study Area Travel Time Model and Service Demand, (2012-2014)



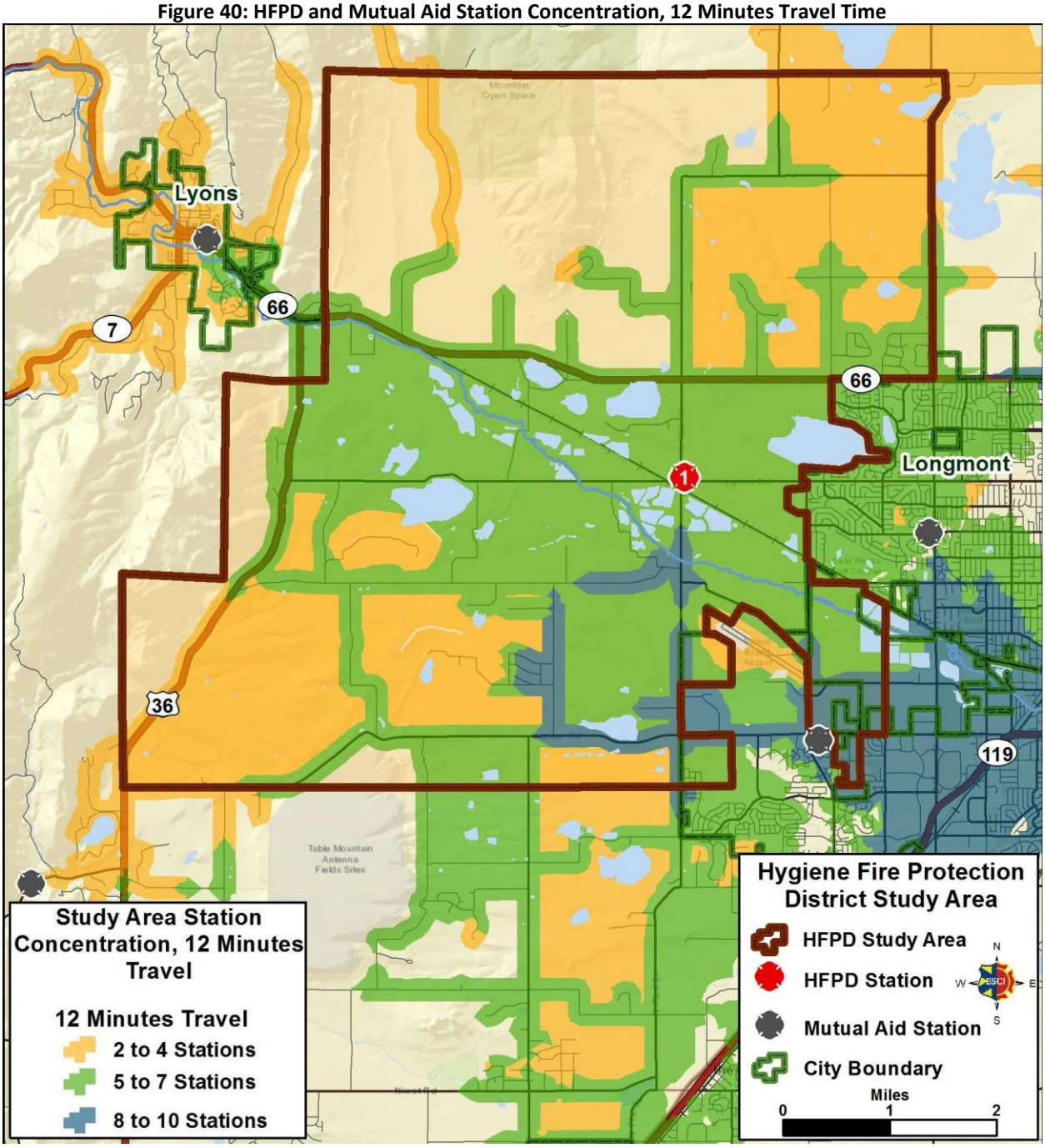
GIS analysis reveals that approximately 88 percent of the incidents displayed in the preceding figure occurred within six minutes travel or less of the HFPD station. All incidents inside the service area are within 10 minutes travel time of the HFPD station. Note that this analysis only measures travel time capability; and does not demonstrate actual response performance. Actual response performance is discussed in the Response Performance Analysis.

Resource Concentration Analysis

Accepted firefighting procedures call for the arrival of the entire initial assignment (sufficient apparatus and personnel to effectively deal with an emergency based on its level of risk) within a reasonable amount of time.[11] This is to ensure that enough people and equipment arrive soon enough to safely control a fire or mitigate any emergency before there is substantial damage or injury. HFPD operates from a single station; and relies on additional volunteer personnel and mutual aid resources to assemble multiple apparatus at the scene of incidents beyond the capabilities of a single apparatus. The following figure illustrates the concentration of HFPD and mutual aid resources within 12 minutes travel or less throughout the HFPD study area.

11 See: *NFPA 1720, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments* (National Fire Protection Association 2014); and the Commission on Fire Accreditation (CFAI) Standards of Cover, 5th Edition.

Figure 40: HFPD and Mutual Aid Station Concentration, 12 Minutes Travel Time



This figure demonstrates that all of the developed portions of the study area are within 12 minutes travel of two to four fire stations (HFPD and mutual aid) in 12 minutes travel or less. The majority of the study area is within 12 minutes travel of five to seven fire stations. The area around North 75th Street and Nelson Road can be reached in 12 minutes or less by eight to ten fire stations. This figure also illustrates the important role that mutual aid resources play in emergency operations in the HFPD study area. Mutual and automatic aid is discussed further in the Mutual and Automatic Aid Analysis.

Response Reliability Analysis

The workload of emergency response units can be a factor in response time performance. Concurrent incidents or the amount of time units are committed to an incident can affect a jurisdiction's ability to muster sufficient resources to respond to additional emergencies. The following figure demonstrates the percentage of concurrent (simultaneous) incidents experienced by HFPD in 2014.

Figure 41: HFPD Concurrent Incidents, 2014

Concurrent Incidents	Percentage
Single Incident	97.5%
2	1.99%
3	0.5%

Over 97 percent of HFPD 2014 service demand occurred as a single event. Approximately 2.5 percent of incidents occurred while at least one other incident was in progress. The percentage of concurrent incidents is similar to that of comparable fire jurisdictions.

It is also useful to evaluate how busy an organization is relative to the total amount of available time. This is known as unit hour utilization (UHU). UHU is calculated by measuring the amount of time individual apparatus are committed to an incident and dividing the result by the total number of hours in a year (8,760). The following figure illustrates the unit hour utilization rate for HFPD apparatus in 2014, expressed as a percentage of total hours in the year.

Figure 42: HFPD Unit Hour Utilization (UHU), 2014

Apparatus	Apparatus Type	Average Time Committed	Total Time Committed	UHU
2801	Structural Engine	1:15:20	11:18:00	0.13%
2803	Structural Engine	54:33	77:16:35	0.88%
2821	EMS QRV	47:31	62:34:00	0.71%
2830	Brush Engine	1:00:25	12:05:00	0.14%
2831	Brush Engine	1:00:42	20:14:00	0.23%
2840	Water Tender	1:10:17	8:12:00	0.09%
2841	Water Tender	1:49:30	7:18:00	0.08%
2861	Command Vehicle (POV)[12]	56:19	68:30:54	0.78%
POV	Private Vehicle	49:42	55:30:00	0.63%
All Apparatus		54:15	325:31:29	3.72%

Combined, HFPD apparatus were committed to an incident approximately 325.5 hours or 3.7 percent of the time in 2014. Engine 2803, EMS 2821, and Command 2861 demonstrate the highest UHU rates for HFPD apparatus. The average time an individual apparatus was committed to an incident varies; overall HFPD apparatus spent slightly less than one hour (54:15) committed per incident. In ESCI's experience,

[12] POV: Privately Operated Vehicle. The Fire Chief drives his own vehicle for District use. Best practice is to provide a District-owned vehicle.

HFPD unit hour utilization is not at a level that would negatively affect response performance. Note that this analysis only looks at incident activity and does not measure the amount of time dedicated to training, public education and events, station duties, or additional duties as assigned.

Response Performance Analysis

Perhaps the most publicly visible component of an emergency services delivery system is that of response performance. Policy makers and citizens want to know how quickly they can expect to receive emergency services. In the performance analysis, ESCI examines emergency response performance within the HFPD service area. The data for this analysis is 2013 through 2014 incidents extracted from the District's records management software (RMS) and the Boulder County Regional Dispatch Center. ESCI removed non-emergent incidents, incidents outside the actual HFPD boundary, incidents cancelled prior to arrival, data outliers, and invalid data points from the data set. Response time is measured from the time HFPD units are dispatched to the arrival of the first unit on scene. ESCI generates average and 80th percentile response times for these incidents. The use of percentile calculations for response performance follows industry best practices and is considered a more accurate measure of performance than "average" calculations.

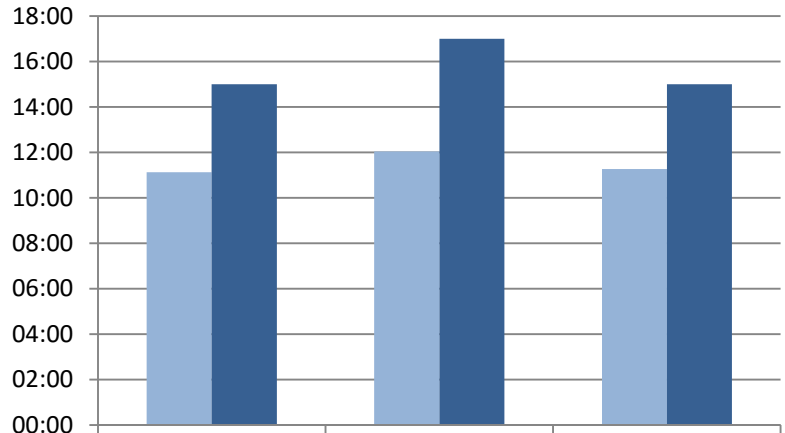
The most important reason for not using the "average" to measure response performance or establish performance goals is that it may not accurately reflect the performance for the entire data set and may be skewed by data outliers. One extremely good or bad value can skew the "average" for the entire data set. Percentile measurements are a better measure of performance since they show that the large majority of the data set has achieved a particular level of performance. For instance, response performance measured at the 80th percentile demonstrates that the first apparatus arrived at 80 percent of incidents in the stated time or less. The reader can compare this to the desired performance objective to determine the degree of success in achieving the goal. The following figure illustrates the average and 80th percentile response time performance for 2013-2014 emergency incidents within the HFPD study area.

Figure 43: HFPD Overall Response Time Performance, 2013-2014

HFPD Emergency Response Performance-Dispatched to Arrival	
Average	80th Percentile
11:15	15:00

On average, the first HFPD apparatus arrived at emergency incidents (2013 through 2014) in 11 minutes, 15 seconds (50.5 percent); for 80 percent of emergencies, the first apparatus arrived in 15 minutes or less. The following figure illustrates HFPD emergency response performance summarized by incident category.

Figure 44: HFPD Response Performance by Category, 2013-2014

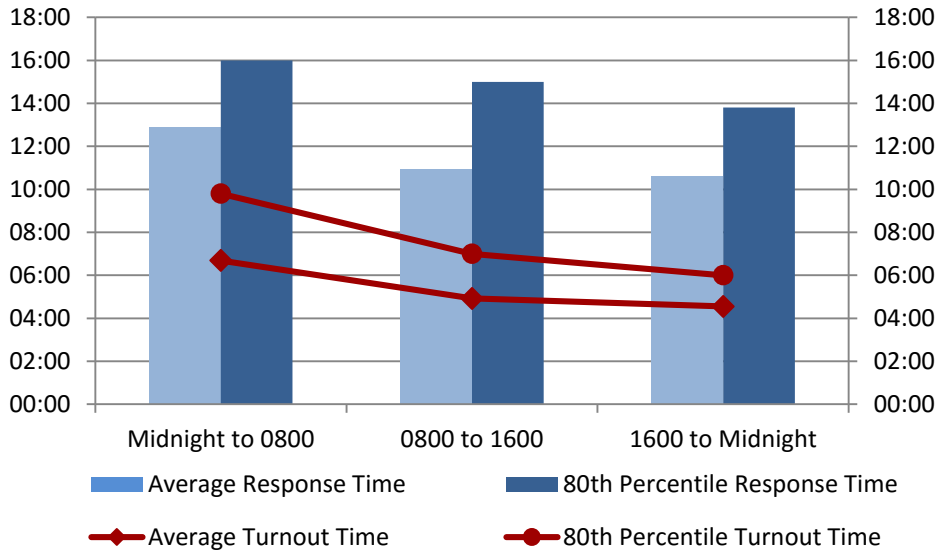


	EMS	Fire	Other
Average	11:08	12:03	11:16
80th Percentile	15:00	17:00	15:00

In the preceding figure, "Fire" refers to any incident coded as a fire in the incident data. The "EMS" category includes all calls for medical service including MVAs and rescues; and the "Other" category refers to incidents such as hazmat, false alarms, service calls, or weather related incidents. Response time performance varies by incident category. Factors such as donning protective equipment prior to leaving the station for fire responses, waiting for specialized equipment for a particular incident, or waiting for an adequate number of personnel to staff apparatus are possible causes.

The next figure examines HFPD emergency response performance by time of day. ESCI also displays turnout time performance; turnout time is the interval from when the Fire District is notified of an emergency to when the first apparatus goes en route to the incident.

Figure 45: HFPD Response Performance by Time of Day, 2013-2014



Response performance varies throughout the day. Generally, the longest response times occur during the early morning hours between midnight and 0800. This corresponds to when volunteer personnel must awaken and respond to the fire station to staff apparatus. Response time performance improves during the day; and the period from 1600 to midnight displays the best response performance. The period from 1600 in the afternoon to midnight matches the time when volunteer personnel are more likely to be not working and more available to respond. Note that turnout time performance correlates directly to the total response performance for each of the periods displayed in the previous figure.

The pattern displayed in the preceding figure demonstrates the importance of recording and tracking all of the components of response performance. It is difficult for fire district leaders to identify how to improve response performance if there is no data showing where deficiencies exist. Total response time is comprised of several different components:

- Call Processing Time – The amount of time between when a dispatcher answers the 911 call and resources are dispatched.
- Turnout Time – The time interval between when units are notified of the incident and when the apparatus are en route.
- Travel Time – The amount of time the responding unit actually spends travelling to the incident.
- Total Response Time – Total Response Time equals the combination of "Processing Time," "Turnout Time," and "Travel Time."

Note that many fire jurisdictions do not include Call Processing Time as part of their measurement of total response time. However, industry best practices such as the Center for Public Safety Excellence/Commission on Fire Accreditation (CPSE/CFAI) Standards of Cover, 5th Edition recommend that Call Processing Time be included as part of Total Response Time.

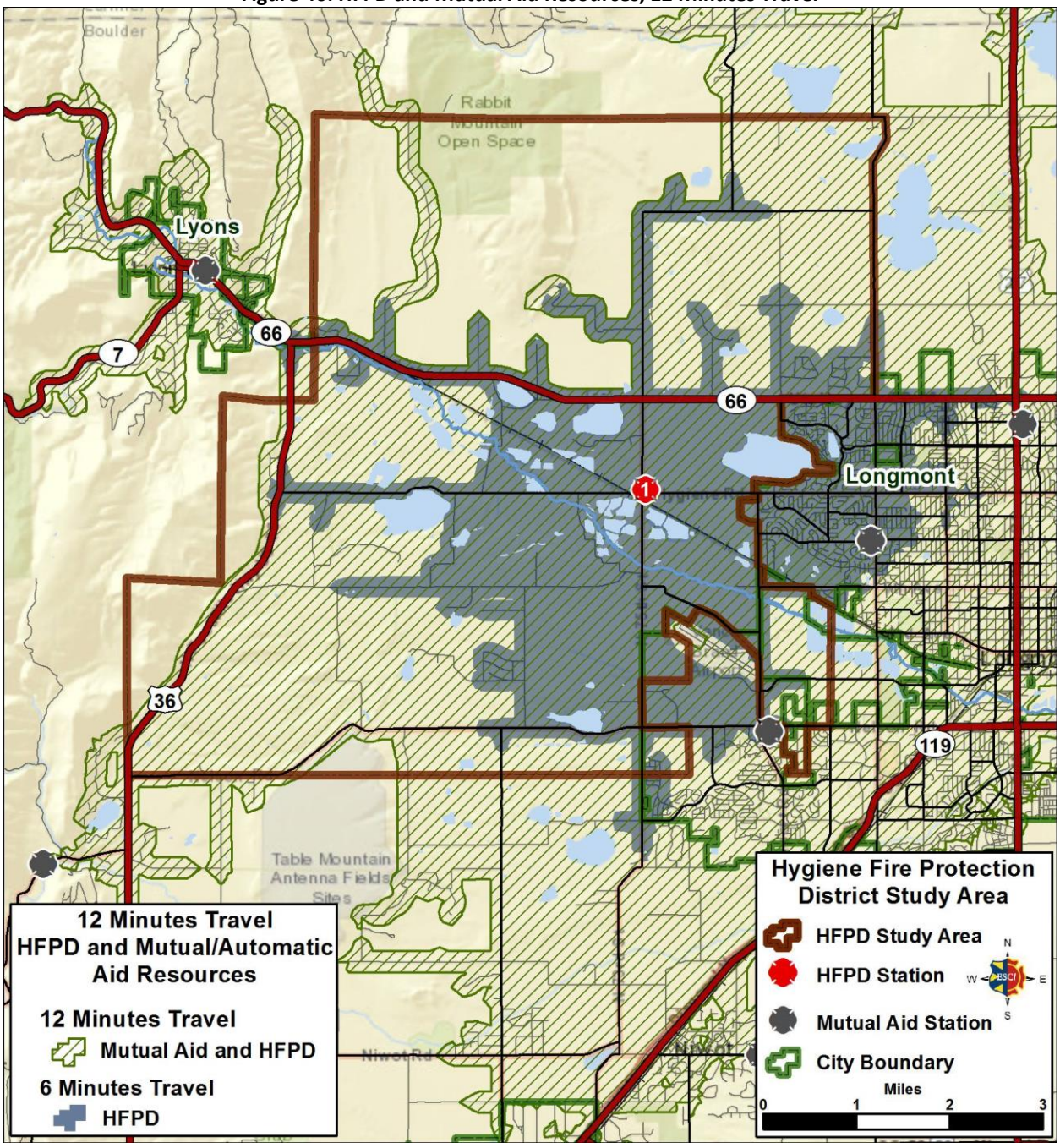
ESCI notes that HFPD utilizes a modern, well-designed records management software (Emergency Reporting) to collect incident data. However, incomplete data prevents ESCI from performing a thorough analysis of response performance. HFPD has identified difficulty with the interface between the 911 center and the reporting software as the probable cause of the incomplete data. ESCI recommends that HFPD work with the reporting software vendor and the 911 center to insure that complete and accurate incident data is received from the 911 center. In addition, HFPD should insure that all HFPD personnel responsible for writing incident reports are trained to properly enter incident records.

Mutual and Automatic Aid Systems

Fire jurisdictions commonly use mutual or automatic aid agreements to share resources for the mutual benefit of all the parties involved in the agreements. These agreements allow jurisdictions to request the resources of other jurisdictions in order to mitigate an emergency that threatens lives or property. Fire departments typically employ mutual aid on an "as needed" basis where units are called for and specified one by one through the Incident Commander. Automatic aid agreements differ from mutual aid agreements in that under certain mutually agreed upon criteria, resources from the assisting agency are automatically dispatched as part of the initial response.

HFPD participates in the Boulder County Emergency Plan and has signed mutual/automatic aid agreements with the neighboring fire jurisdictions. The following figure demonstrates the portions of the HFPD study area within 12 minutes travel of mutual aid/automatic aid resources from neighboring fire jurisdictions. The neighboring fire jurisdictions include: Lyons FPD, Longmont FD, Mountain View Fire and Rescue, Berthoud FPD, Boulder Rural FPD, and Lefthand FPD.

Figure 46: HFPD and Mutual Aid Resources, 12 Minutes Travel



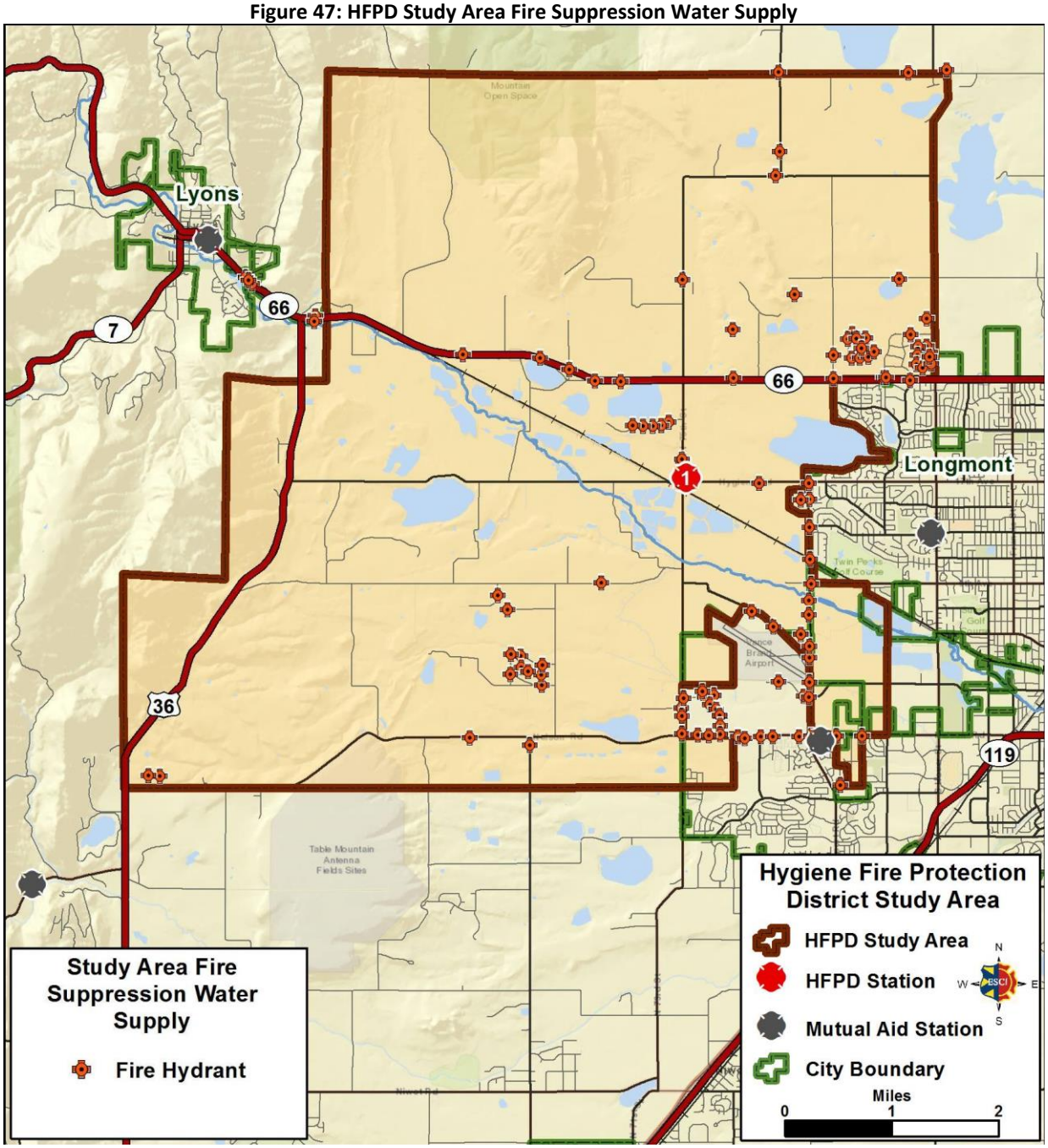
This figure illustrates that all of the current road network and service area is within 12 minutes travel (or less) of the HFPD station and anywhere from two to seven mutual aid stations. As discussed in the Concentration Analysis, HFPD relies on mutual or automatic aid resources (both apparatus and personnel) from neighboring jurisdictions to mitigate emergencies within the HFPD service area. HFPD incorporates automatic aid responses in dispatch protocols to ensure that adequate resources are part of the initial response. During 2014, HFPD received mutual or automatic aid 94 times and provided aid 19 times.

Mutual or automatic aid provides a cost effective method to ensure that adequate resources are available to mitigate emergencies safely and effectively. Hygiene Fire Protection District appropriately incorporates mutual and automatic aid into emergency operations. ESCI encourages HFPD to pursue and strengthen aid agreements with neighboring fire jurisdictions. For example, consider entering into "dropped border" automatic aid agreements to serve areas where a neighboring jurisdiction's fire station is closer than the HFPD station. This ensures that the closest available emergency resource responds to an emergency incident; and can improve emergency response time performance in portions of the HFPD service area that experience extended travel times.

Water Supply

HFPD serves a predominantly rural area, with no incorporated municipalities; however, portions of the District along Highway 66 (Ute Highway) and in the areas bordering Longmont have pressurized fire suppression water available from the City of Longmont. The following figure displays the portions of the study area where pressurized fire hydrants are available for fire suppression water supply.

Figure 47: HFPD Study Area Fire Suppression Water Supply



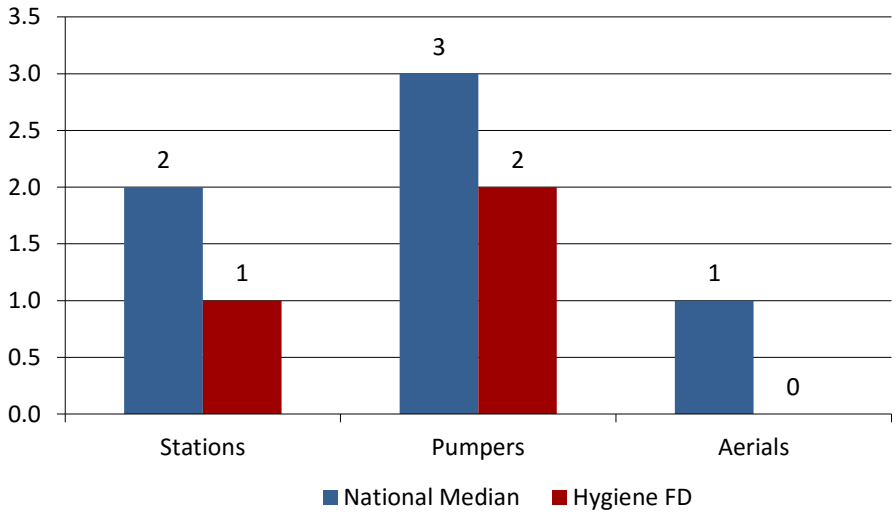
As displayed in this figure, there are a limited number of fire hydrants available for fire suppression in the service area. Hydrants are available along Airport Drive and Nelson Road (City of Longmont). Other fire hydrants are sparsely distributed along Highway 66 and in some of the subdivisions within the service area. These hydrants are operated and maintained by either the City of Longmont or private water providers in these areas. HFPD relies on rural water supply operations using water tenders to shuttle water to areas without adequate fire suppression water. Water supply availability and hydrant location information is incorporated in the HFPD dispatch protocols to ensure that the proper resources are included in the initial response to non-hydranted areas.

CAPITAL ASSETS AND ASSESSMENT OF CURRENT INFRASTRUCTURE

Regardless of an emergency service agency's financing, if appropriate capital equipment is not available for the use by responders, it is impossible for a fire department to deliver services effectively. Two primary capital assets that are essential to the provision of emergency response are facilities and apparatus (response vehicles). In the following pages, ESCI reviews Hygiene FPD's capital resources.

The HFPD maintains one fire station and thousands of dollars' worth of capital assets. The District needs to maintain or replace the assets, as necessary, to continue to provide service. A comparison of major capital assets, including fire engines, aerial ladder trucks, and fire stations is provided in the following figure.

Figure 48: Capital Assets per 1,000 Population



HFPD's major capital asset inventory falls slightly below, though close to, national medians for the region.

The analysis reflects differences in the service needs for Hygiene FPD compared to nationwide service needs. For example, the type of risk that Hygiene FPD has (i.e. not having tall or large buildings within the response area) would negate the need for an aerial apparatus.

Facilities

Appropriately designed and maintained facilities are critical to a fire department's ability to provide services in a timely manner and with appropriate deployment of assets. ESCI observed and reviewed the Hygiene FPD station. The findings are summarized in the following pages and any areas of concern observed are identified.

Figure 49: Hygiene Fire Protection District Station 1

Hygiene Fire Protection District's single fire station consists of four double-depth apparatus bays, all of back-in configuration. The station houses two fire engines, two water tenders, a brush vehicle, small boat, and retired fire engine.

The station was originally constructed in 1960 and the current apparatus bays were added in 2007. Sleeping for three responders is available in three single bedrooms, and two offices are present for administrative personnel.

Structure	
A. Construction type	Masonry block construction
B. Date Built	Originally built in 1960, with a large addition in 2007.
C. Seismic protection/energy audits	None
D. Auxiliary power	Automatic start generator is in place.
E. Condition	Fair, some portions are aging.
F. Special considerations (American with Disabilities Act of 1990 (ADA), mixed gender appropriate, storage, etc.)	Facility is not fully ADA compliant, nor is it configured for mixed gender use.
Facilities Available	
A. Exercise/workout	Exercise equipment is in the residential area.
B. Kitchen/dormitory	Kitchen is in the residential, as are three single sleeping rooms.
C. Lockers/showers	No lockers. Shower room adjacent to a single bathroom.
D. Training/meetings	A training/meeting room seats approximately 50.
E. Washer/dryer	None
Protection Systems	
A. Sprinkler system	The station is not protected by a fire sprinkler system.
B. Smoke detection	Smoke detection is present in the residential area only.
C. Security	Exterior doors are secured with combination locks.
D. Apparatus exhaust system	Vehicles are not equipped with exhaust removal systems. Bay does have CO sensors that will activate roof mounted exhaust fans.

Discussion

HFPD's station was found to be in good condition overall. It has been added to and modified periodically as the District's needs have changed and currently serves its purpose adequately. However, there is little room on the building's lot for future expansion.

It is likely that before long the District will need to consider the addition of 24-hour staffing, whether in the form of career personnel or using one of a variety of staffing options including paid on call, resident volunteer, and student intern programs. These may necessitate additional sleeping quarters. The District is encouraged to look toward future station expansion needs to identify options that will meet growing demands.

Apparatus

The Hygiene Fire Protection District maintains a fleet of response vehicles that are clearly well maintained. ESCI found the overall condition of the fleet to be good to very good, generally. An inventory of fire apparatus, configuration, and condition is provided below.

Figure 50: Hygiene FPD Apparatus Inventory

Apparatus Designation	Type	Year	Make / Model	Condition	Min. Staffing	Pump Capacity (GPM)	Tank Capacity (GAL)
2801	Pumper	2001	International Rosenbauer	Fair	2	1,250	1200
2803	Pumper	2010	International Rosenbauer	Good	2	1,250	750
2821	Medical QRV	1999	GMC Yukon	Fair to poor	1	N/A	N/A
2831	Brush	2006	Ford F550	Good	2	200	350
2840	Tender	2005	Peterbilt Rosenbauer	Good	1	300	1800
2841	Tender	2007	Peterbilt Rosenbauer	Good	1	300	1800
2853	Zodiac Boat			Fair	N/A	N/A	N/A
Out of Service							
2802	Pumper	1997	GMC Topkick	Poor	2	750	975
2830[13]	Brush	2003	Ford F550	Poor	2	200	400

Discussion

ESCI observed the District's vehicles to be well maintained and in good condition generally. However, it was also noted that the primary fire response vehicles are heavily loaded in terms of small equipment, and cabinet space is maximized. Future vehicle purchase considerations should include attention to equipment storage needs.

[13] Note: Unit 2830 was out of service at the time of ESCI's fieldwork and later restored to in-service status.

Apparatus Replacement Planning

Fire apparatus are typically unique pieces of equipment, often very customized to operate efficiently in a narrowly defined mission. A pumper may be designed such that the compartments fit specific equipment and tools, with virtually every space on the truck designated in advance for functionality. This same vehicle, with its specialized design, cannot be expected to function in a completely different capacity, such as a hazardous materials unit or a rescue squad. For this reason, fire apparatus is very expensive and offers little flexibility in use and reassignment. As a result, communities across the country have sought to achieve the longest life span possible for these vehicles.

Unfortunately, no mechanical piece of equipment can be expected to last forever. As a vehicle ages, repairs tend to become more frequent, parts more difficult to obtain, and downtime for repair increases. Given the emergency mission that is so critical to the community, this factor of downtime is one of the most frequently identified reasons for apparatus replacement.

Because of the large expense of fire apparatus, most communities find the need to plan for the cost of replacement. To do so properly, agencies often turn to the long-accepted practice of establishing a life cycle for the apparatus that result in a replacement date anticipated well in advance. Forward thinking organizations then set aside incremental funds during the life of the vehicle so replacement dollars are ready when needed.

HFPD does not maintain a formal schedule that places all apparatus on any specified replacement cycle from date of primary service. ESCI recommends that the District make an effort to develop a vehicle replacement schedule, including a funding strategy that will fully meet future needs. Below, ESCI provides a sample replacement schedule.

The replacement date assumes that vehicles will be placed in reserve status for five years prior to disposal. The following figure provides an example of vehicle useful life for developing future replacement plans. HFPD may elect to use differing values; these are offered as a typical example only.

Figure 51: Vehicle Replacement Useful Life

Description	Useful Life	Replacement Cost
Engine	20	$500,000
Aerial Ladder Truck	25	$950,000
Wildland Engine	15	$75,000
Rescue	15	$75,000
Water Tender	25	$300,000

Using this schedule of estimated lives and replacement cost, the following example vehicle replacement schedule was developed for HFPD.

Figure 52: Vehicle Replacement Plan Summary

Vehicle Number	Model Year	Useful Life	Replacement Year	Replacement Cost	Reserve Required@ 12/31/15	Annual Reserve Requirement
2801	2001	15	2016	$500,000	$466,667	$33,333
2803	2010	15	2025	$500,000	$166,667	$33,333
2821	1999	10	OVERDUE	$155,000	$155,000	N/A
2831	2006	15	2021	$140,000	$84,000	$9,333
2840	2005	15	2020	$340,000	$226,667	$22,667
2841	2007	15	2022	$340,000	$181,333	$22,667
2830	2003	15	2018	$140,000	$112,000	$9,333
2802	1996	15	OVERDUE	$500,000	$500,000	N/A
Total Requirements					**$1,892,334**	**$130,666**

If the schedule shown above was used by the District and *fully funded,* a current reserve amount of $1,892,334 would need to be on hand and each year $130,666 would need to be encumbered for future purchase of replacement vehicles. While it is not expected that these amounts can be readily dedicated in reserve funds, the example is provided as a planning tool and to emphasize the importance of planning for long-range capital replacement.

Key Recommendation:

- Develop a vehicle replacement schedule.

COMMUNITY RISK ANALYSIS

In this analysis, ESCI provides an overview of community risk based on changes to the population in the service area, current and future land use, and the nature of risk (both natural and man-made) present in the HFPD service area.

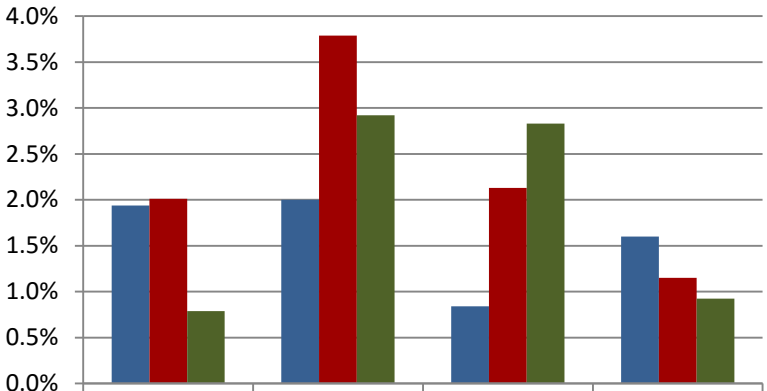
Population Growth and Future Service Demand

Future service demand for fire district services is largely dependent on changes to the population in and around the service area. It is desirable to evaluate the population history of the response area and attempt to predict how the population will change in the future. ESCI uses data from the United States Census Bureau and the Colorado Department of Local Affairs (State Demography Office) to examine population change in the Hygiene Fire Protection District service area.

Population History

Population and demographic data is not available specifically for fire districts in Colorado. However, data is available for Boulder County, Longmont, and Lyons. In the following figure, ESCI utilized United States decennial census data to demonstrate historical population change from 1980 through 2014.

Figure 53: Historical Population Growth (AAGR), US Census Data, 1980-2014



	1980 to1990	1990 to2000	2000 to2010	2010 to 2014
Boulder County	1.94%	2.00%	0.84%	1.60%
Longmont	2.01%	3.79%	2.13%	1.15%
Lyons	0.79%	2.92%	2.83%	0.93%

The preceding figure displays the average annual growth rate (AAGR) from 1980 through 2014. Average annual population growth varies for each of the jurisdictions displayed, but population change has remained positive. Overall, Boulder County grew by approximately 65 percent, Longmont by 110 percent, and Lyons by 85 percent during the period displayed. The next figure displays the 2014 Colorado State Demographer's population estimates for Boulder County, Longmont, and Lyons.

Figure 54: State Demography Office Population Estimates, 2014

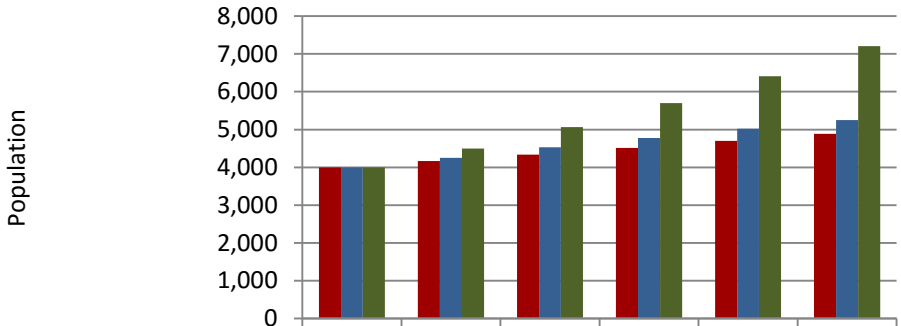
2014 Estimated Population	
Boulder County	313,718
Unincorporated Boulder County	44,988
Longmont	90,732
Lyons	1,946

Examination of the State Demography Office data reveals that while the overall population of Boulder County grew between 2010 and 2014, the population of the unincorporated portions of the county decreased slightly between 2013 and 2014. The population of Longmont grew at a moderate rate of approximately 1.26 percent annually between 2010 and 2014. Proximity to the approximately 91,000 residents and increased activity in Longmont may affect HFPD service demand to some degree. However, given current land use and zoning regulations, as the population of Longmont grows new development will be annexed into the city; and the responsibility of emergency services will most likely fall to the city.

Population Projections

Using population projections from the Department of Local Affairs (DOLA) State Demography Office and historical Census Bureau data, ESCI models three different population projections for the Hygiene Fire Protection District service area.

Figure 55: HFPD Study Area Population Projection, 2015-2040



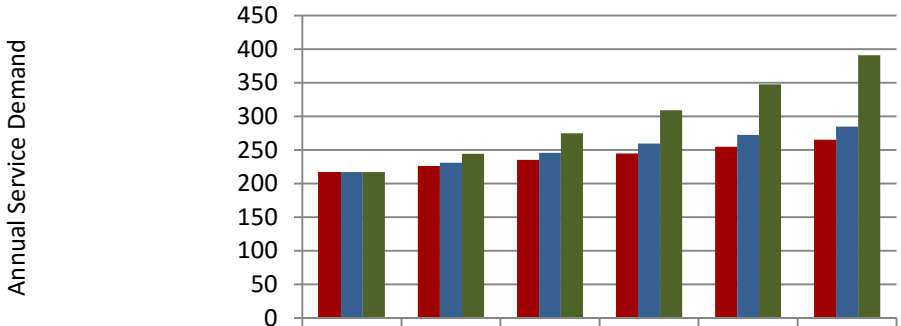
	2015	2020	2025	2030	2035	2040
DOLA (Unincorporated Boulder County)	4,000	4,164	4,335	4,512	4,697	4,890
DOLA (Boulder County)	4,000	4,253	4,530	4,779	5,022	5,248
Historical Census Trend (Boulder County)	4,000	4,500	5,063	5,695	6,407	7,208

In the projections displayed, ESCI starts with the current estimated population estimate of the HFPD service area and then applies the projected growth rate for each of the projections to this number. The DOLA projection for Boulder County uses varying growth rates for each of the five-year periods displayed. The Unincorporated Boulder County and Census Trend projections employ constant annual growth rates (.82 percent and 2.5 percent). The three projections demonstrate the population of the study area increasing from approximately 4,000 currently to anywhere from 4,890 to 7,208 over the next 25 years.

Future Service Demand Projections

For the purposes of this study, ESCI utilizes the population growth projections displayed in the previous figure and applies these to an incidents per capita rate derived from HFPD historical service demand. This information is employed to identify potential workload, based on population, through 2040.

Figure 56: HFPD Study Area Service Demand Projections, 2015-2040



	2015	2020	2025	2030	2035	2040
DOLA (Unincorporated Boulder County)	217	226	235	245	255	265
DOLA (Boulder County)	217	231	246	259	272	285
Historical Census Trend (Boulder County)	217	244	275	309	348	391

Based on population growth, service demand within the HFPD service area will continue to rise over the next 25 years. Service demand based on the two DOLA projections demonstrate a moderate increase, with service demand increasing by 22 to 24 percent over the next 25 years. The more aggressive Census Trend projection predicts future service demand growing by approximately 88 percent during the same period.

It is not the intent of this study to be a definitive authority for the projection of future population in the HFPD service area, but rather to base recommendations for future fire protection needs on a reasonable association with projected service demand. Since human activity is a primary driver of emergency service demand, it is important to have a population-based projection of the future size of the service area.

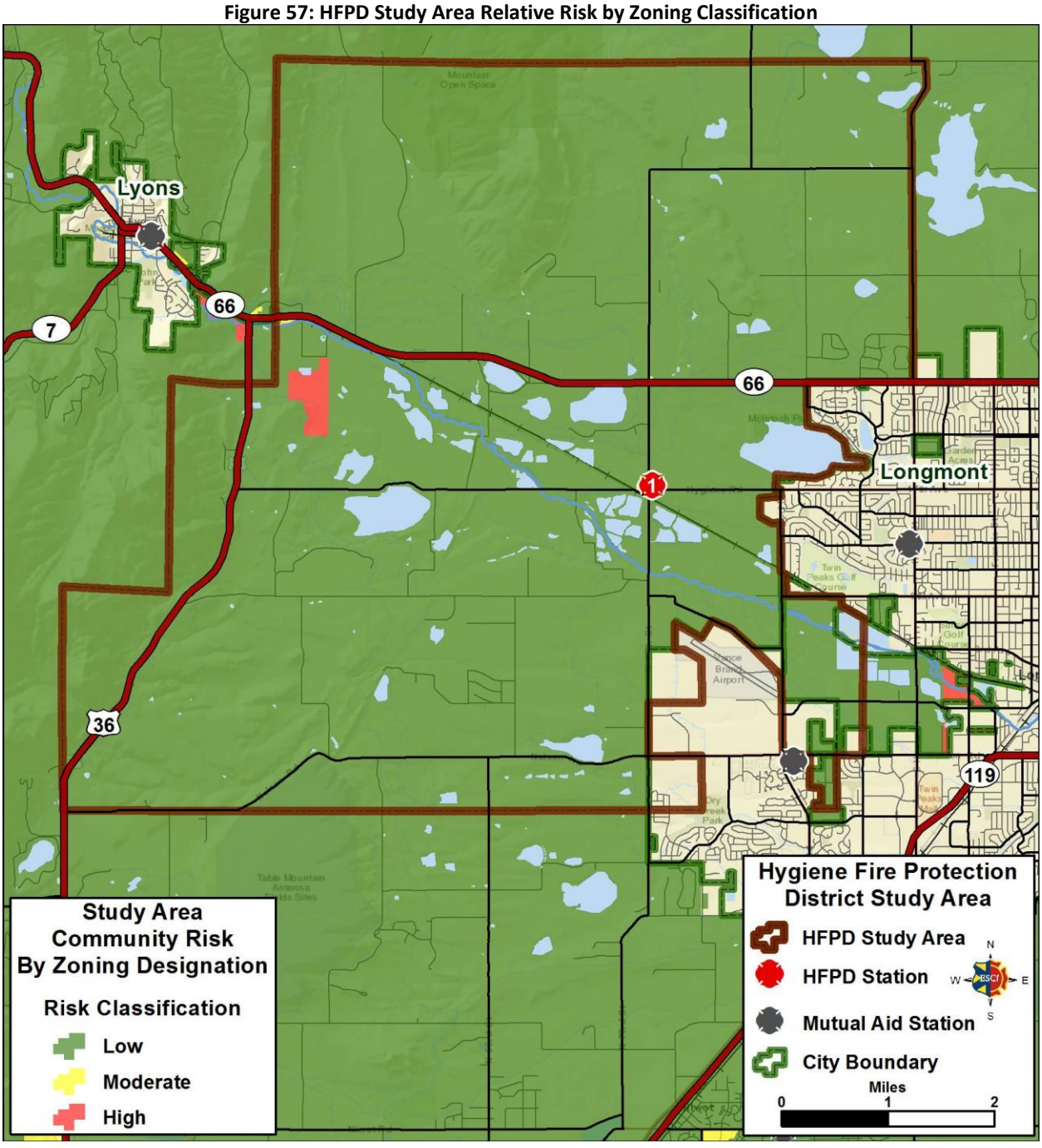
Zoning and Land Use Risk Categorization

ESCI uses GIS software and current property use classifications for Boulder County to examine zoning and land use within the HFPD service area. Risk is assigned to the classifications to present a view of relative community fire and life risk.

- Low Risk – Areas zoned and used for agricultural purposes, open space, low-density residential, and other low intensity uses.
- Moderate Risk – Areas zoned for medium-density single-family properties, small commercial and office uses, low-intensity retail sales, and equivalently sized business activities.
- High Risk – Higher-intensity business districts, mixed use areas, high-density residential, industrial, warehousing, and large mercantile centers.

The following figure displays relative community risk within the HFPD service area using the criteria listed.

Figure 57: HFPD Study Area Relative Risk by Zoning Classification

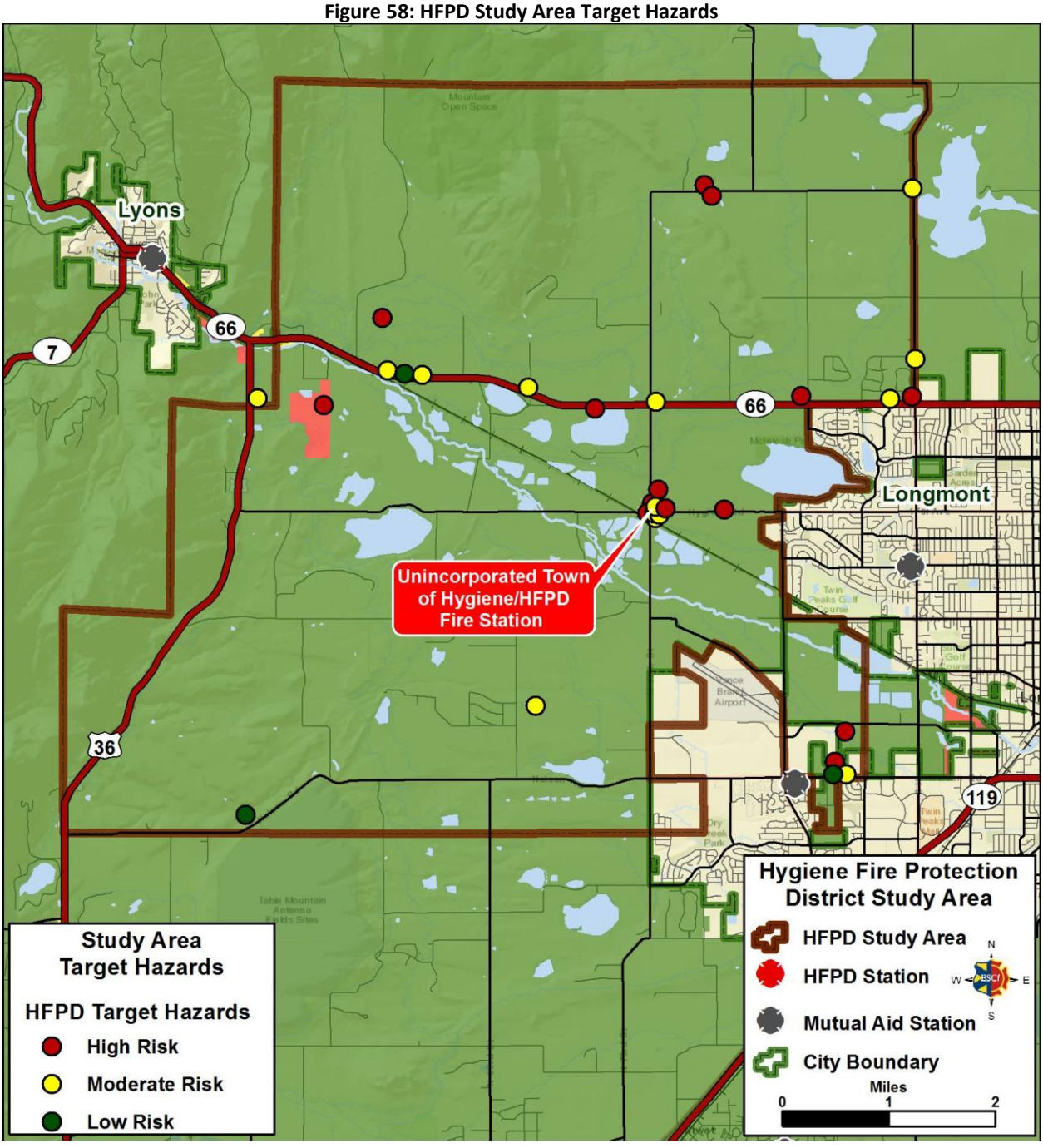


The majority of the HFPD service area is zoned as agricultural or open space. Residential areas are primarily zoned as low density rural residential. The area southeast of the Highway 66 and Highway 36 junction symbolized as high risk in the preceding figure; is zoned as General Industrial (Cemex facility).

Target Hazards

While the HFPD service area is predominantly classified as low risk by zoning or land use, there are higher risk properties present within the Fire District. The following figure uses information provided by HFPD to display target hazards within the service area.

Figure 58: HFPD Study Area Target Hazards



Target hazards are typically facilities such as schools, health care facilities, public buildings, and industrial facilities which present a higher level of fire risk or life safety. Commercial properties and infrastructure facilities where fire loss may have a significant impact on the community are also included. HFPD has appropriately identified and assigned a risk level to target hazards within the service area. ESCI commends the District's efforts and encourages HFPD to continue to identify target hazards and mitigate fire and life safety risk at these locations.

The next figure uses HFPD incident data to examine property use and 2014 incidents locations.

Figure 59: Study Area Property Use and Incidents, 2014

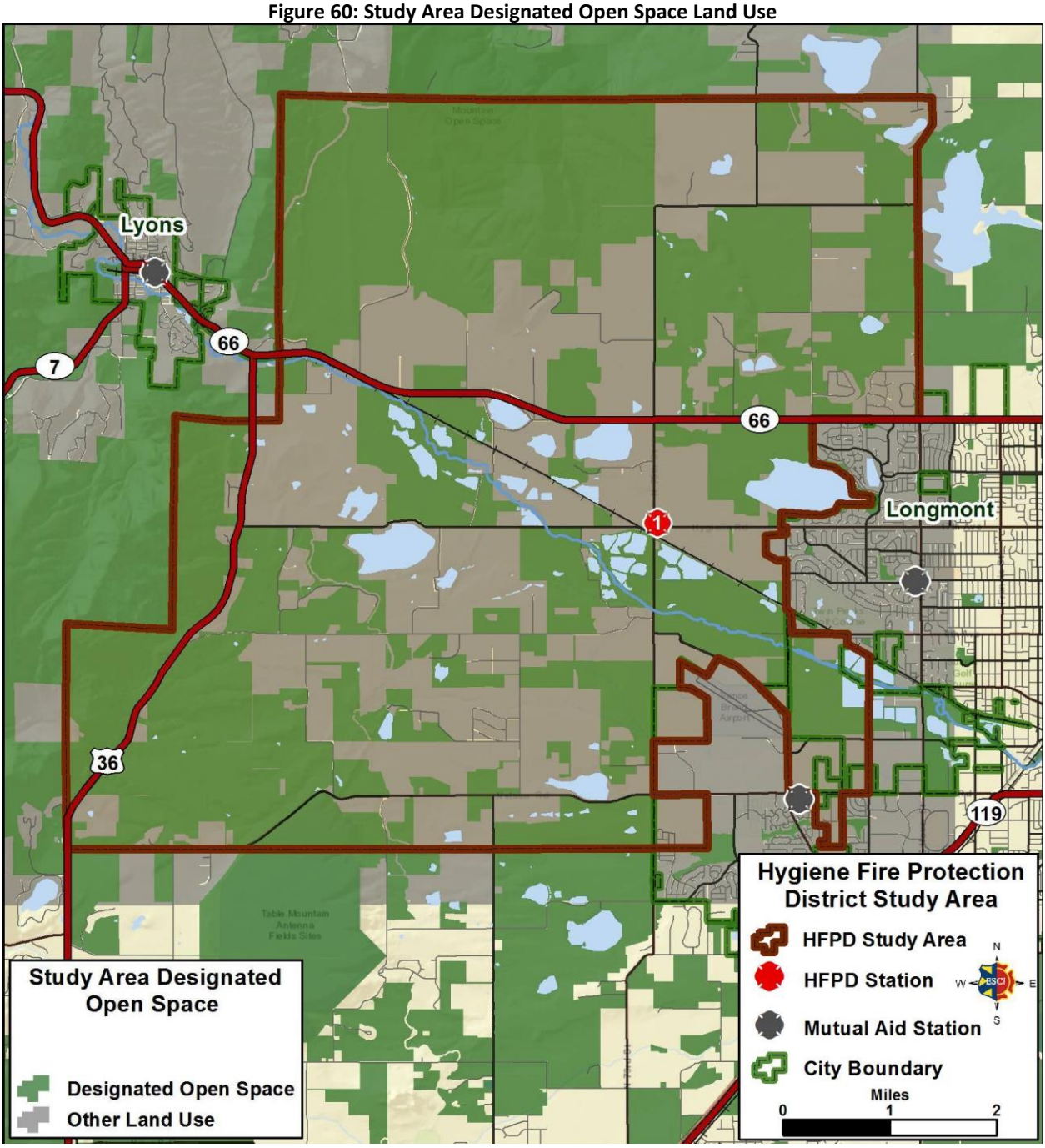
NFIRS Property Use Category	Percent of 2014 Incidents
1 – Assembly	2%
2 – Educational	1%
3 – Health Care, Detention & Correction	4%
4 – Residential	62%
5 – Mercantile, Business	2%
6 – Industrial, Utility, Agriculture, Mining	4%
8 – Storage	1%
9 – Outside Property, Highway, Residential Street	25%

In 2014, approximately 62 percent of HFPD service demand occurred in one or two family residential dwellings. Twenty-five percent of incidents occurred on the highways or streets within the HFPD service area. The remaining 13 percent of incidents occurred in the various other property use categories displayed above.

Future Land Use and Community Risk

Boulder County has adopted a comprehensive plan that provides a guideline for future growth and land use within the unincorporated portions of the county. The following figure demonstrates the land designated as open space in the Boulder County Comprehensive Plan.

Figure 60: Study Area Designated Open Space Land Use



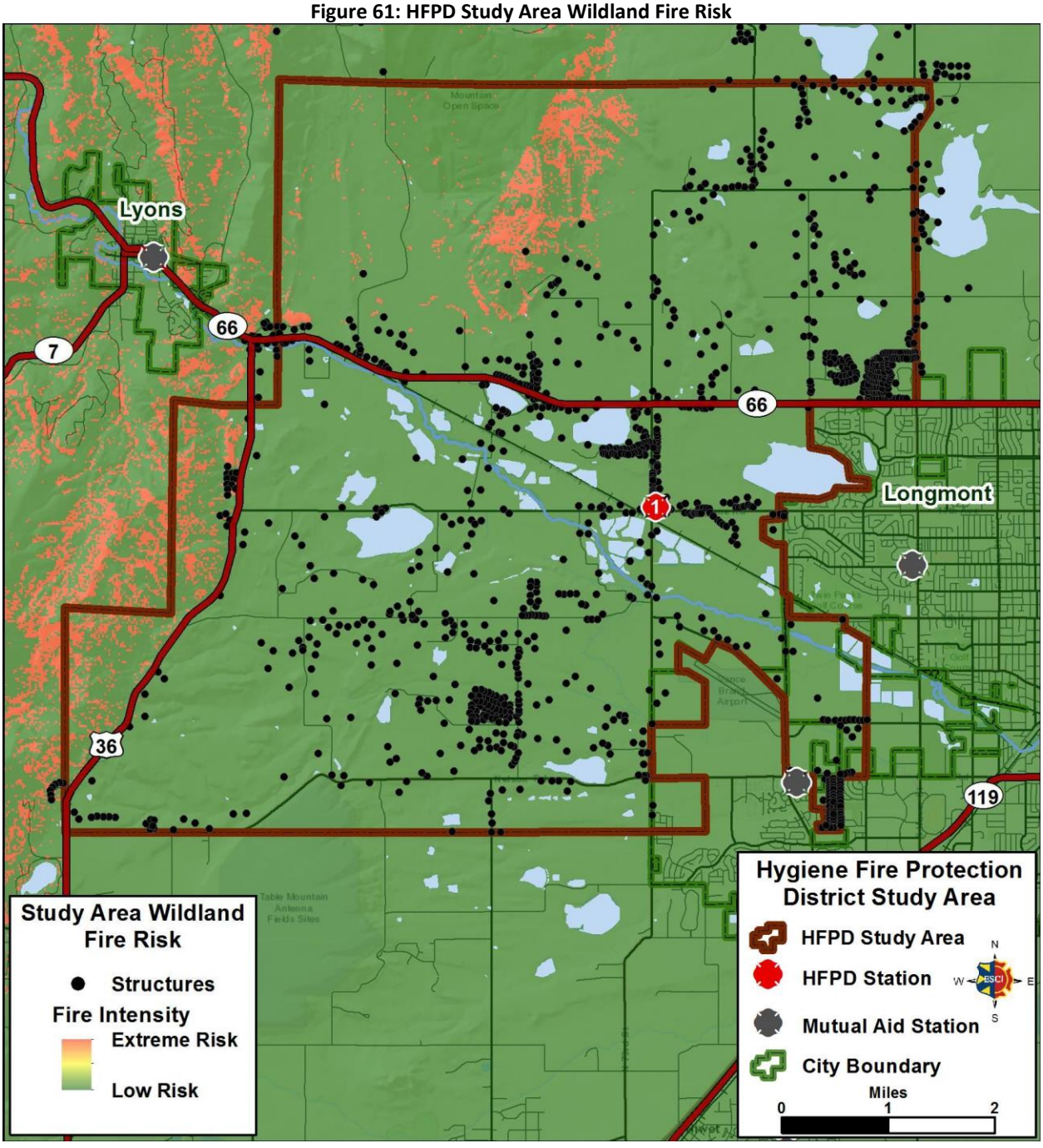
Examination of the GIS data reveals that the areas displayed as "Open Space" in this figure, represent approximately 25 square miles or approximately 56 percent of the HFPD service area. "Open Space" is defined in the Boulder County Comprehensive Plan as land intentionally left free from future development. It is unlikely, given the amount of land set aside as open space and the stated goal of the comprehensive plan to preserve the rural nature of the unincorporated portions of the county, that future development will significantly change the nature of risk present within the HFPD service area.

Geographic and Natural Risk Factors

The geography of a fire district's service area affects the nature of risk and the district's ability to respond to that risk. As discussed in the Service Delivery Analysis, the HFPD service area is largely agricultural, rural residential, and open land located on the valley floor between the City of Longmont and the foothills of the Front Range to the west. Highway 66 runs from east to west through the service area and Highway 36 runs from south to north along the western edge of the District. These highways (especially Highway 66) increase the occurrence of traffic related emergencies. There is also an increased risk of a hazardous materials incident or fuel spill due to truck traffic on the major transportation routes through the area. The rest of the transportation network within the service area is composed of primarily county two lane roads, with limited access and interconnectivity in some areas.

Like many fire jurisdictions in the Western United States, especially Colorado, wildland fire risk is a factor in the HFPD service area. The following figure uses GIS data from the Lyons FPD/Hygiene FPD Community Wildfire Protection Plan to examine wildland fire risk in and around the HFPD service area.

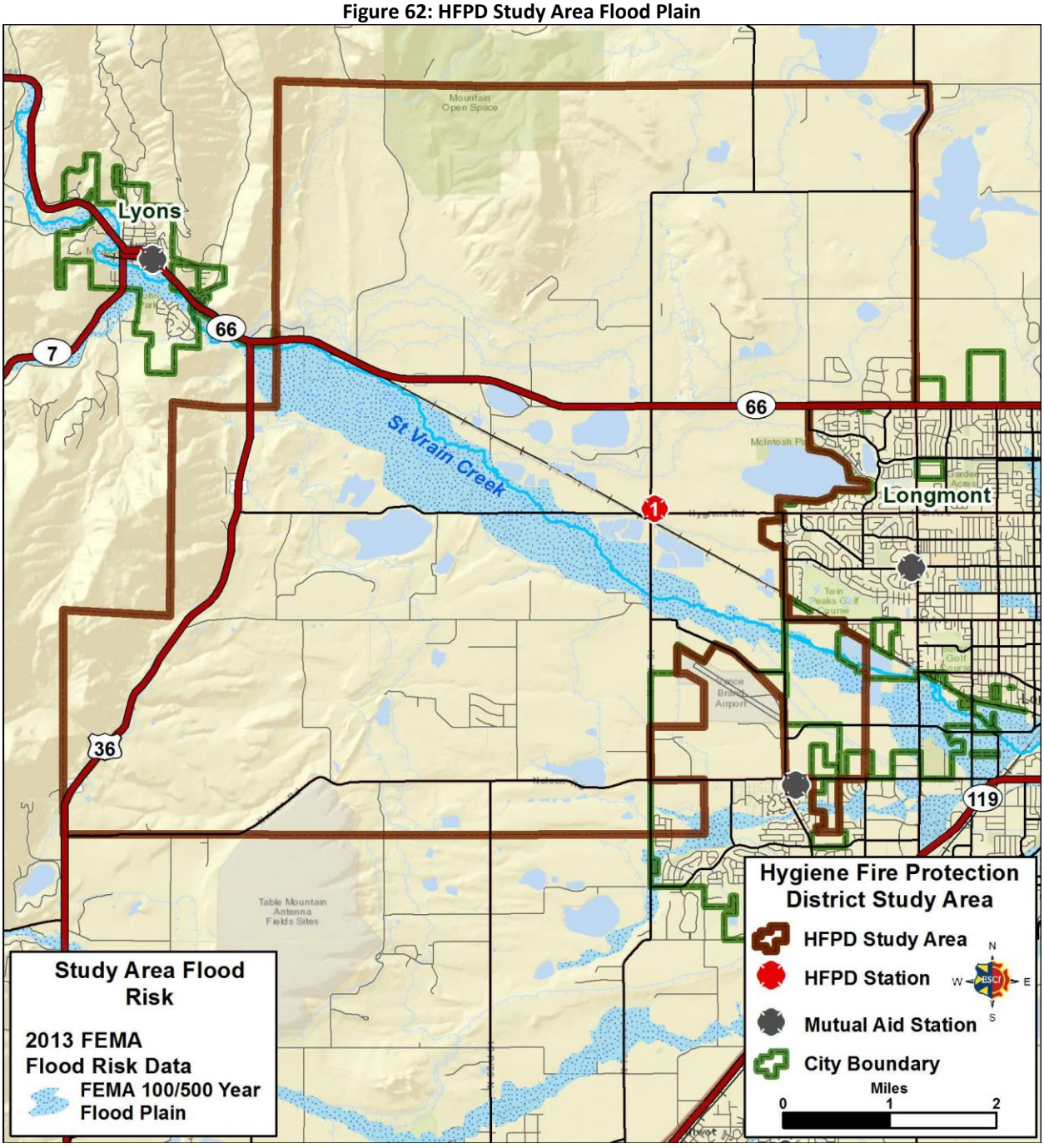
Figure 61: HFPD Study Area Wildland Fire Risk



The data in this figure uses slope and vegetation type to categorize wildland fire risk. As displayed, the Rabbit Mountain area and the Foot Hills area west of Highway 36 display substantial areas categorized as an extreme wildland fire risk. HFPD and the Lyons Fire Protection District participate in a regional Community Wildfire Protection Plan (CWPP). The goal of the CWPP is to identify wildfire hazards and risks in the Wildland Urban Interface (WUI) and develop a plan to reduce the hazards and risks identified. ESCI encourages HFPD to continue working cooperatively with the LFPD to reduce wildfire risk in the Hygiene and Lyons service areas.

There is significant flooding risk in the HFPD service area. St. Vrain Creek is a major drainage that runs from diagonally northwest to southeast through the service area. The following figure demonstrates the 100-year flood plain for St. Vrain Creek using Federal Emergency Management Agency (FEMA) data.

Figure 62: HFPD Study Area Flood Plain



During the September 2013 floods, extensive flooding occurred along St. Vrain Creek. Highway 66 was impassable due to flooding and bridge washouts near Lyons. Spring runoff annually causes localized flooding along St. Vrain Creek. There are also numerous bodies of open water on either side of the creek. These present an increased risk of water or ice rescue incidents. Federal, state, and county level emergency management agencies have spent considerable time and money improving flood mitigation planning in Boulder County since the September 2013 floods. ESCI encourages HFPD to take advantage of these resources.

Other Risk Factors

The Hygiene Fire Protection District is the first responder for hazardous materials incidents in the HFPD service area. There are no hazardous waste disposal sites or collection centers in the Hygiene area. However agricultural and industrial facilities use and store hazardous materials as part of daily operations. Hazardous material use and storage is highly regulated from the federal down to local level. ESCI notes that HFPD appropriately considers hazardous material use and storage when identifying and assigning a risk level to target hazards.

SHORT AND MID-TERM STRATEGIES

The previous sections of this report detail a considerable volume of observations, comments, and recommendations relating to Hygiene FPD management and operations. The process of understanding, prioritizing, and implementing the recommended enhancements can be daunting, simply due to the amount of work that may be involved. To help the organization navigate through the process, the following discussion further defines the short and mid-term priorities that ESCI has identified as the most important initially.

Short and Mid-Term Recommendations

ESCI continues with the following list that summarizes recommendations based on the agency evaluation contained within this report that are achievable in the short or mid-term; typically within a maximum of five years. These recommendations have been compiled into a prioritized list for easy reference. The prioritization system is as follows.

- *Priority 1 – Items Involving Immediate Internal Safety Concerns*
- *Priority 2 – Considerations That May Present Legal or Financial Exposure*
- *Priority 3 – Matters That Address a Service Delivery Issue*
- *Priority 4 – Considerations to Enhance the Delivery of a Service*
- *Priority 5 – A Good Thing to Do*

Priority 1 – Items Involving Immediate Internal Safety Concerns

The recommendation deals with an improvement or initiative that solves an issue affecting the safety of Firefighters and/or other personnel. These are not matters that simply make it easier to do a particular function but, in fact, change a currently unsafe situation into a safe one.

- ESCI did not identify comments and recommendations that were indicative of immediate internal safety concerns.

Priority 2 – Considerations That May Present Legal or Financial Exposure

The recommendation resolves a situation that is creating or has the potential to create an opportunity for legal action against the entity or its officials. It also may be a situation that could subject the entity to a significant expense.

- Develop Board by-laws.
- Retain an attorney knowledgeable in special district law.
- Conduct a financial review by outside accountant every two to three years.
- Create system for routine review of Standard Operating Guidelines and Policies and Procedures.
- Develop a vehicle replacement schedule.
- Create an employment agreement with the Fire Chief.
- Review the District's sustainability options.
- Review and evaluate future funding needs to sustain operations and consider whether an increased mill levy is necessary.
- Establish a Code of Conduct that is consistent with the values of the District.

- Complete the Employee Handbook.
- Create a system for the on-going revision of the Standard Operating Guidelines.

Priority 3 – Matters That Address a Service Delivery Issue

The recommendations address a service delivery situation that, while it does not create an immediate safety risk to personnel or the public, it does affect the District's ability to deliver service in accordance with its standards of performance. For example, adding a response unit to compensate for a growing response workload or delivering training needed to allow personnel to deal effectively with emergency responses already being encountered.

- Develop a specific training plan to assure that each volunteer receives all of the training necessary to cover the basic competency level within one year.
- Require mandatory basic competency trainings for all Firefighters.
- Enforce volunteer minimum training attendance requirements.
- Enforce training minimums with all individuals.

Priority 4 – Considerations to Enhance the Delivery of Services

Comments and recommendations that improve the delivery of a particular service. For example, relocating a fire station to improve response times to a particular part of town or adding a piece of equipment that will improve the delivery of a service.

- Define with the Fire Chief the priorities for accomplishment in the following year.
- Assign all disciplinary responsibility to the Fire Chief.
- Develop an employee/volunteer handbook or a set of policies and procedures devoted to defining workplace expectations.
- Send training Officer to the Training Officer Program at the National Fire Academy or to NFA off-campus classes.
- Undertake a formal strategic planning process, with the Board.
- Upon completion, have the Strategic Plan adopted by the Board.

Priority 5 – A Good Thing to Do

The recommendation does not fit within any of the above priorities, but is still worth doing and can enhance the District's morale and/or efficiency.

- Back up computer files to an off-site location.
- Complete inventory of capital assets.
- Provide administrative support to the Fire Chief, either in the form of a paid position or a non-combat citizen volunteer.
- Cooperate with other neighboring departments to share training lesson plans and instructors.
- Target public education initiatives based on demonstrated community risk.
- Define a process for anyone in the organization to take a complaint or request from citizens.

Additional Future Considerations

In addition to the above strategies, ESCI identified the following considerations as important for Hygiene Fire Protection District to consider as it looks to the future.

Essential Future Financial Considerations

As discussed under critical issues, since Hygiene is not an incorporated municipality, but located in the unincorporated county, probably will not have the development of either higher density housing or commercial properties. This is due to the Boulder County zoning regulations. The commercial properties occurring at the edge of Longmont are annexed into the city and will eventually be excluded from the District. Growth in the Hygiene area will probably develop from subdividing farms into 35-acre parcels that will typically develop as large rural homes. While this will increase the property tax base somewhat, it will not expand the base such as having commercial and higher density residential growth. For example, if a 35-acre parcel is developed with one home of perhaps a $1 million valuation instead of being developed at three homes per acre at a value of $350,000 per home; the difference in valuation is $1 million to $36.7 million. At a four mill tax levy that would be a difference of $31.84 to $11,701 in revenue to the District. Considering the potential number of 35 parcels, the potential of substantial revenue increases in the future is small.

Based on this growth potential, sustainability of the Fire District will be difficult. Revenue to sustain the District operations will be based on the amount of tax revenue that can be generated out of a stable or slightly increasing tax base. This slightly increasing revenue will occur due to property changing from agricultural to residential and due to the normal appreciation in all property values. A decision must be made as to what level of service the citizens desire and what level of revenue will it take to maintain that into the future. Based on the analysis that property values will be level or perhaps slightly positive, a mill levy that will support the desired level of service needs to be attained.

Raising taxes is not an enjoyable prospect to either the agency or the taxpayers. Another option for stretching resources is consolidation with other agencies that have more commercial growth potential over time. Consolidation or mergers can help in two ways. First is to reduce costs by sharing overhead expenses over a larger area, and second is to provide more resources that can be applied to any area of need. Better use of resources can be beneficial to the taxpayer as well as to the resident needing help. It is less probable that all the resources of a larger entity will be needed in one or multiple locations simultaneously. Statistically there will be an increased need for resources in one area at a time. Resources are then moved from other areas of the District to cover that need.

The unlikely growth in the Fire District has been discussed at some length. The lack of future growth in property values due to limited new construction and development should spur the Board to have conversations about the sustainability and viability of remaining a standalone district. ESCI recommends that HFPD give thought to future consolidations of a functional nature or mergers with surrounding districts.

Key Recommendation:

- Complete a careful Board review of the District's sustainability options.

EXPLORATION OF REGIONAL COOPERATION OPPORTUNITIES

It is broadly recognized that jurisdictional boundaries seldom constitute efficient and effective service delivery parameters. Citizens often recognize and appreciate regional approaches to service delivery as an all-too-rare example of governmental cooperation and efficiency. HFPD understands the value of cooperative service delivery approaches, as exemplified by its use of automatic and mutual aid, some joint training initiatives, and other collaborative efforts. However, regional cooperation could go further.

While this project is not a cooperative efforts feasibility study, ESCI notes that there are additional collaborative opportunities available to Hygiene Fire Protection District.

General Partnering Strategies

Potential efficiencies that may be gained from some form of cooperative service delivery can be categorized using an escalating level of cooperation between Hygiene FPD and one or more of its neighboring agencies. General partnering strategies fall in a range from remaining autonomous to the creation of an entirely new, merged, organization. The following is a general overview of the potentially available strategies only.

The following alternatives are available to fire districts in Colorado and may be considered for their applicability in the Hygiene area:

- Maintain Status Quo
- Contract for Services
- Fire Authority
- Merger
- Legal Consolidation
- Fire District-to-Fire District Merger (exclusion-inclusion)

The options are briefly defined as follows:

Status Quo

This is a do-nothing option. While typically viewed negatively, in some cases the best action is no action.

Contract for Services

A contract for services can be for limited, discreet functions, such as for administrative, clerical, HR, IT, or financial services; often referred to as an administrative consolidation. Alternatively, one agency can contract with another for larger support elements, such as training, fire prevention, logistics, central purchasing, or vehicle maintenance; often referred to as a functional consolidation. The primary services provided by a fire department or district can also be contracted, i.e., service delivery, often referred to as an operational consolidation. These consolidations are not legal terms and differ only in the scope of the contract. The process is the same for all three types of consolidation, the agencies sign a contract referred to as an intergovernmental agreement (IGA).

Fire Authority

The Colorado Constitution Article XIV, Section 18(2)a and the Colorado Revised Statutes 29-1-203 both allow for the provision of services through a cooperative agreement between governmental jurisdictions. Under these provisions two or more entities may provide a service that they are empowered to provide as a separate entity. This process is often used in situations where the two participating governments differ in type and revenue sources or where governments have differing rates of taxation. Example of the former is a municipality (sales tax funding) and a special district (property tax revenues) cooperating. An example of the latter is two special districts having differing mill levies.

Under the Authority model the partnering governments fund, through a formula, the provision of services. The Authority can contract back for employees from an agency (i.e., one agency has all the employees) or all the employees are transferred to the new Authority. Obligations and assets owned by the governments may be transferred to the Authority. Contracts also can be assigned to the Authority, which operates the services for the cooperating governments.

Merger

A merger is a complete combining of the participating fire jurisdictions into one agency. One or more fire districts are absorbed into and become part of the surviving district. There are two types of mergers: a legal consolidation and a fire district-to-fire district transfer, otherwise known as an inclusion-exclusion merger. Colorado Revised Statues Title 32, Section 32-1-102, Subsection (4), Legislative declaration states:

> The general assembly further declares that it is the policy of this state to provide for and encourage the consolidation of special districts and to provide the means therefore by simple procedures in order to prevent or reduce duplication, overlapping, and fragmentation of the functions and facilities of special districts; that such consolidation will better serve the people of this state; and that consolidated districts will result in reduced costs and increased efficiency of operation.

In other words, the Colorado legislature has determined that combining agencies for greater efficiency is good government, and has developed mechanisms to encourage agencies to capture those opportunities for efficiency.

Legal Consolidation

There exists a process for blending two fire districts into one consolidated district within the Colorado Revised Statutes CRS 32-1-602. A pre-consolidation agreement created by the districts should define the expectations for the resulting merger. One district passes a consolidation resolution proposing the consolidation due to the fact that

> …specified services of each of the districts may be operated effectively and economically as a consolidated district and that the public health, safety, prosperity, and general welfare of the inhabitants of the special districts initiating the consolidation will be better served by the consolidation of such districts or services.

Fire District-to-Fire District Merger (Exclusion/Inclusion)

A second method of merger exists within Colorado law. This process can be used if the districts' mill levies are equal at the time of the exclusion and inclusion, similar to the pre-consolidation agreement described above. The two district boards approve an Intergovernmental Agreement (IGA) that defines the expectations of both parties. The absorbing district approves a resolution that agrees to include all the properties from the other district. The district ultimately dissolved creates a resolution that agrees to exclude the properties in the district so that the properties can be included in the absorbing district. Both districts file a joint request for the exclusion-inclusion with the District Court. The Court will issue an Order of Exclusion and Inclusion. Upon completion of the process, the district, with all property excluded, files to dissolve the district. Legal counsel advises that two or three board members' residences should remain in the dissolving district to ensure eligible electors serve as board members and vote in the dissolution election.

All assets would become the merged districts assets and financial responsibilities, such as contracts and pensions, unless defined otherwise and agreed to prior. Bonded indebtedness would remain with the properties within the originating district and not be assumed by the greater taxpayers.

The above is a summary of possible alternatives only. Additional information and study would be necessary to determine the feasibility of one or more of these cooperative opportunities. However, ESCI finds that most, if not all, have the potential to result in positive benefits in the Hygiene area given the level of collaboration that is already present. Additional study and consideration of the opportunities is recommended.

Conclusion

ESCI believes the greatest challenges that Hygiene Fire Protection District faces are twofold. In the short term and into the future, the availability of volunteers and reserves will be difficult. Volunteers will become more scare for the demographical reasons stated in the report. Competition for individuals to serve as reserves will become stiff as many other fire departments vie for the same pool of candidates.

Financial sustainability of the District is the second challenge for the future. Growth in population is projected to be steady but gradual. The amount of dedicated open space and large tract residential development will preclude a strong increase in assessed valuation. While Hygiene is, and will be even more, an aesthetically pleasing location to live, the provision of fire and emergency medical services to the population needs to be carefully planned for sustainability.

Given the projection of low volume of calls into the future, it will be difficult for HFPD to justify a fully career-staffed department. Meeting the expectations of new residents while working with the combination of a low mill levy, relatively low assessed valuation, slow growth, and decreasing volunteer numbers will be the dilemma. Consolidation with another agency or agencies may be an answer to achieve sustainability. ESCI is available to assist the District with its strategic planning or evaluation of cooperative services opportunities, if desired.

When the project team began collecting information concerning the Hygiene fire and EMS services in June of 2015 it was evident that Hygiene Fire Protection District was operating effectively. It is important to note that while ESCI is hired to look critically at all areas for improvement opportunities, professionalism is also recognized. ESCI recognizes that some if not many of the recommendations will soon be completed due to the dedication of the career and volunteer staff. The team members understand that this report contains a large amount of information and ESCI would again like to thank Hygiene Fire Protection District, Fire Chief, Officers, Board members, and volunteers for their efforts in bringing this project to fruition. ESCI would also like to thank the various individuals and external organizations for their input, opinions, and candid conversations throughout this process. It is ESCI's sincere hope the information contained in this report is used to its fullest extent and the emergency services provided to the citizens of Hygiene Fire Protection District and the surrounding area will be improved by its implementation.

Appendices

APPENDIX A: TABLE OF FIGURES