



Camas-Washougal Fire Department *Washington*



MASTER PLAN DRAFT FOR CLIENT REVIEW

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All members ESCI interacted with were professional, positive, and devoted to CWFD. Members and leadership were motivated to make the organization and community an even better place to work and live. The consultant team onsite truly enjoyed working with the group.

In addition, we would like to thank the East County Fire & Rescue Board of Commissioners and their Fire Chief for making themselves available for interviews to discuss this master plan and its potential impact on their partnership with Camas-Washougal Fire Department.

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City of Washougal Mayor and Council

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-and-

The men and women of CWFD who made this study possible,
and who serve the community with tireless energy and professionalism.

Executive Summary

On March 5, 2019, Camas-Washougal Fire Department (CWFD) engaged Emergency Services Consulting International (ESCI) to conduct an emergency service master plan for the agency, which serves two cities. After the department gathered the information and data requested by ESCI in preparation for the study, the project team arrived in Camas and Washougal to conduct a site visit to validate information and interview stakeholders. The stakeholder interviews with City Council members occurred over a period of three weeks to accommodate individual schedules, but the primary site visit occurred during the week of May 21, 2019, and included four ESCI team members, with two working remotely on GIS and data analysis.

PURPOSE AND APPROACH

The purpose of a master plan for CWFD is to evaluate the agency in relation to the community's current risks, anticipate community growth (and therefore associated risk), and recommend steps to position the agency to address that growth in advance with appropriate resources and infrastructure. There was particular emphasis on future station locations. In short, a master plan keeps the agency from lagging behind community growth and development, maintaining or enhancing service as the community grows. It is an effective policy-making and budgeting tool as well. Knowing where and how the community will grow into the future and what CWFD will need in terms of policy and budget support to address it is a critical element of policymakers' deliberation.

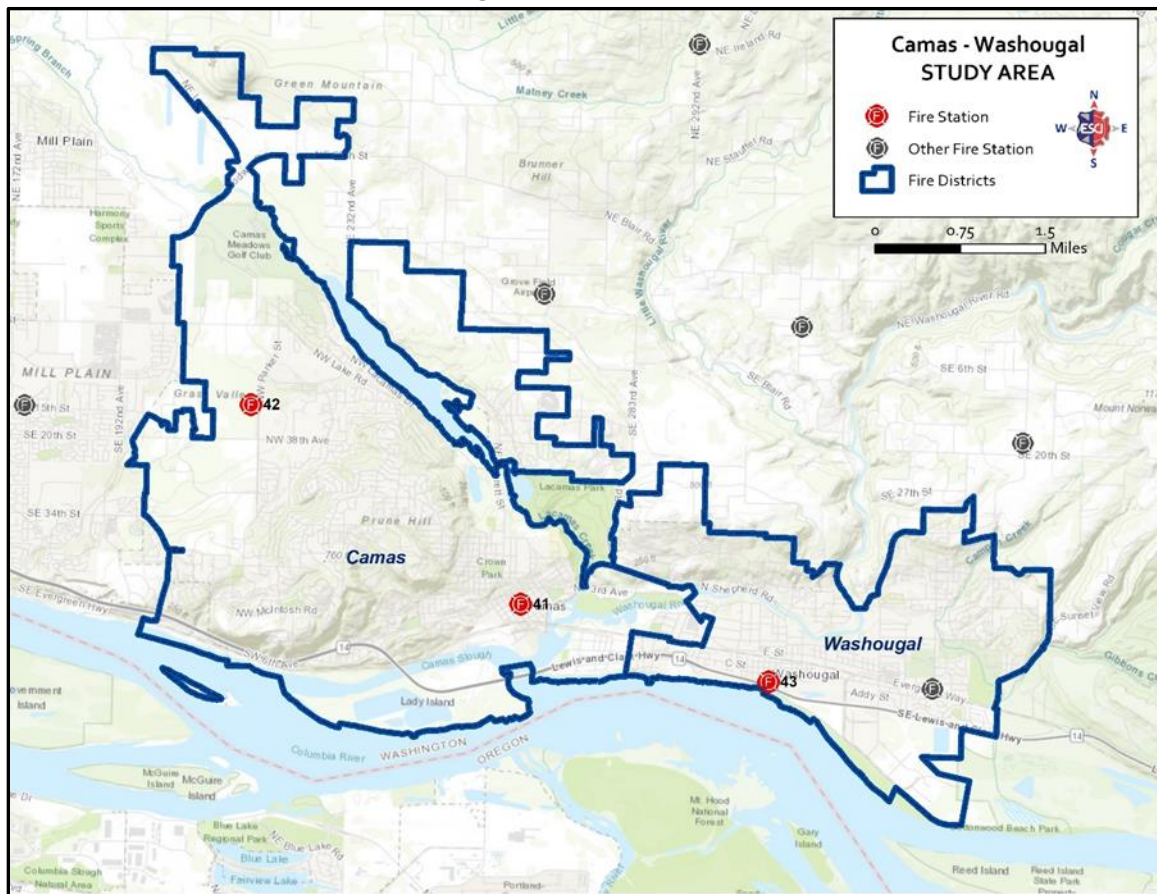
The first phase of this master plan was to gather needed baseline data, schedule and conduct interviews with key stakeholders, and generally obtain background on the fire department. This culminates with a site visit to validate the data provided and to obtain context for the information gathered. The second phase includes describing the current conditions and current service performance of CWFD. The purpose of this phase was to assess the agency's infrastructure, operations, and service delivery in comparison to industry standards and best practices, as well as to create a benchmark against which the options for future service delivery can be measured.

The third phase was to assess the potential future community conditions, service demand, and risks that the organization may be expected to serve. The purpose of this phase was to determine community growth projections and interpret the impact on emergency service planning and delivery. The fourth phase was to identify future service delivery system models, identifying the appropriate staffing levels to address the effectiveness of emergency incident actions. These are captured in short-, mid-, and long-term recommendations by ESCI. The resulting study provides strategies to meet the needs of the community now and into the foreseeable future, keeping pace with growth and addressing gaps in the existing system where possible.

EVALUATION OF CURRENT CONDITIONS

Camas-Washougal Fire Department is a relatively new combined organization. While both the Camas Fire Department and the Washougal Fire Department have cooperated with each other for more than 35 years on policy and service issues, they took the next step of integration by operating under a trial consolidation in April 2012. On December 4, 2013, the two agencies combined via an interlocal agreement (contract). The combined department is serving two growing cities, although at different paces and with different visions. It is an agency stronger together than separate, but challenged to meet the changing needs of the community in some aspects. There are elements of its legacy that need to be addressed, with facilities that are in need of upgrade or replacement, and the staffing of the department is excessively lean. The following figure illustrates the service area and deployment of fire stations throughout CWFD.

Camas-Washougal Fire Department Service Area

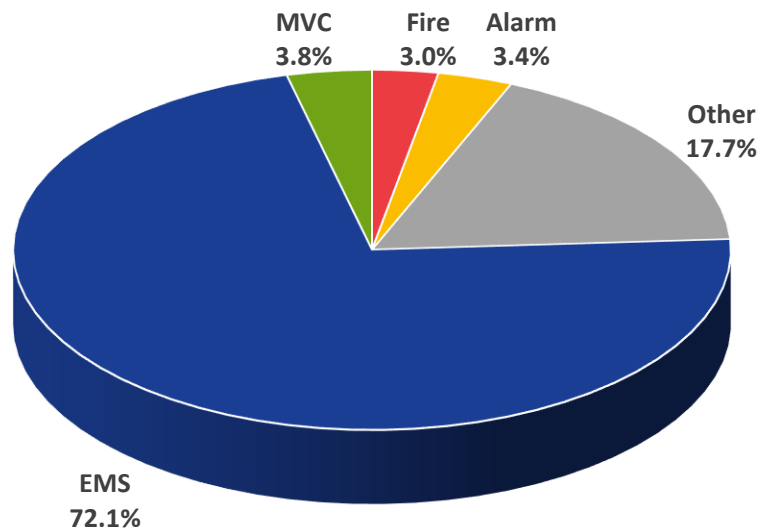


The red icons are fire stations owned and operated by CWFD. The grey fire station icons are owned and operated by mutual agencies surrounding CWFD.

Service Delivery and Response Performance

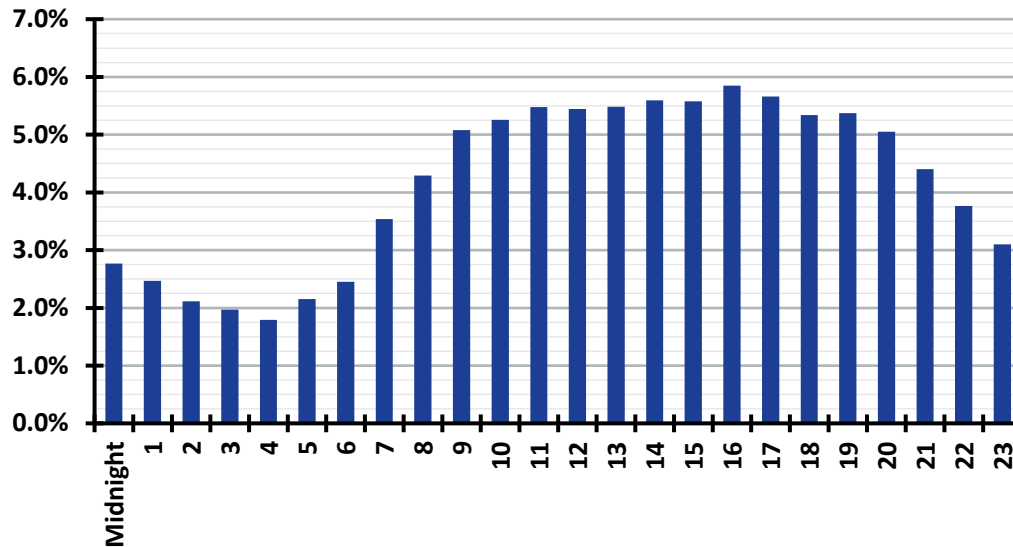
Some of the more granular data elements were not available to ESCI to analyze as it relates to response performance (turnout times) and workload distribution (demand by geographic zones). Where data was insufficient to analyze, ESCI commented. ESCI also made recommendations that would strengthen the data compilation efforts at CWFD, which allows the department to make more informed decisions going forward.

From 2014 to 2018, there was a total increase in service demand of 16%, with an average increase of 4% each year. During this period, fire incidents *decreased* by 6%, indicating that the other incident types make up a larger portion of the growth percentage. The calls by type for the same timeframe are illustrated in the following graphic.



Over the same period of time (2014–2018), there is less than a 2% variation month to month in demand for service, and less than a 1% variation day to day during the week in CWFD’s service area. Analysis of temporal variation by hour of day, however, does result in a very predictable pattern of emergency response demand. Emergency demand follows a pattern of human activity. As people sleep, emergency demand for service declines. As people awaken to prepare for the day, call volume increases. As people are active during the day, emergency demand peaks in the mid-afternoon. As the day comes to a close, people return home, settle down and prepare for sleep. Emergency demand begins to decline again until people are asleep, where demand is lowest. The pattern in CWFD is illustrated in the following figure.

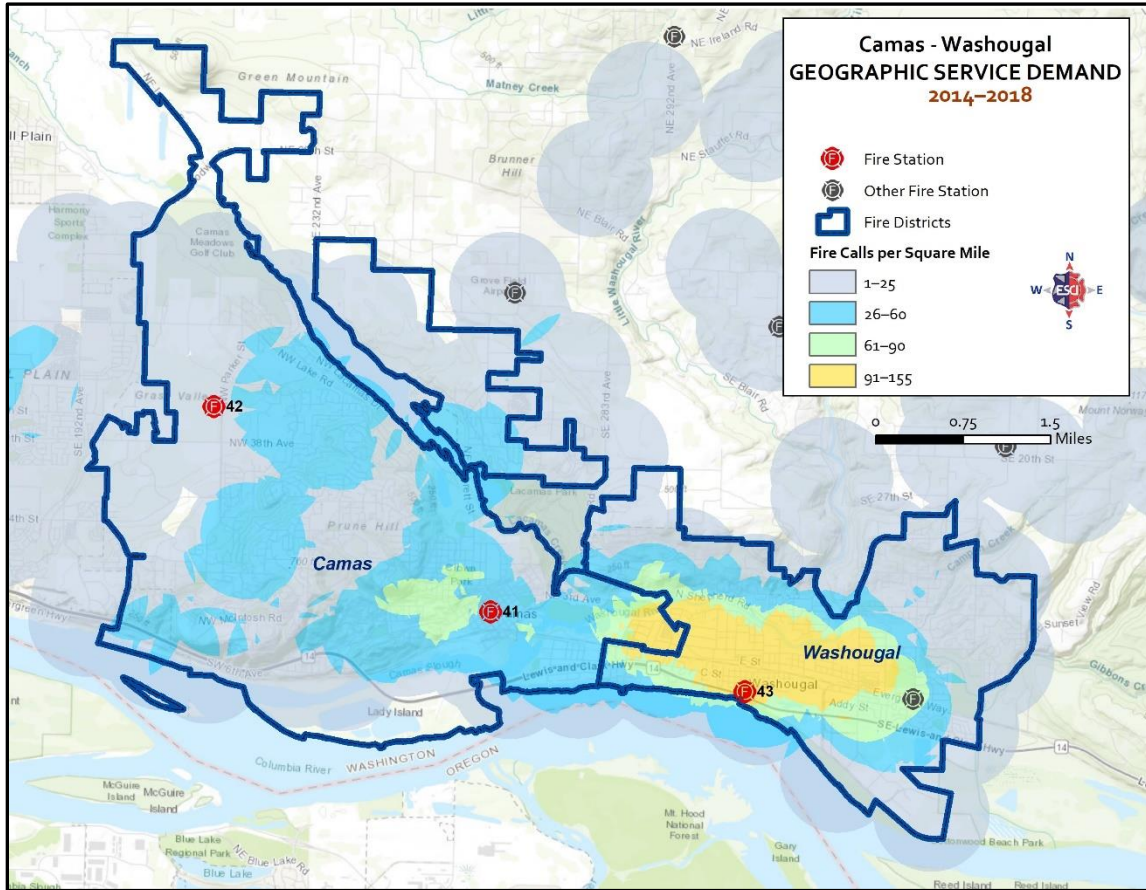
CWFD Service Demand by Hour of the Day, 2014–2018



Exceptions to this diurnal pattern exist in communities where heavy industry dominates the workforce with day-, swing-, and graveyard shifts, which disrupts the normal pattern. This is not the case in CWFD. This is an important factor since a clear pattern of peak demand for services exists, thus allowing for the use of “Peak Demand Units” to supplement the 24-hour shift that represents the standing army. Peak Demand Units (PDUs) can take pressure off of the busiest emergency response crews and are discussed in greater length in the *Mid-Term Strategies* section.

Call volume (service demand) in CWFD is moderately high but not alarmingly so. The following graphic illustrates the geographical location of calls per square mile in a heat map. It reflects the highest call density in Washougal’s downtown area with a smaller concentration of equally high call volume on Camas’ east side. The call volume radiates out and dissipates from these two “hot spots.”

CWFD Service Demand Distribution, Fires (2014–2018)

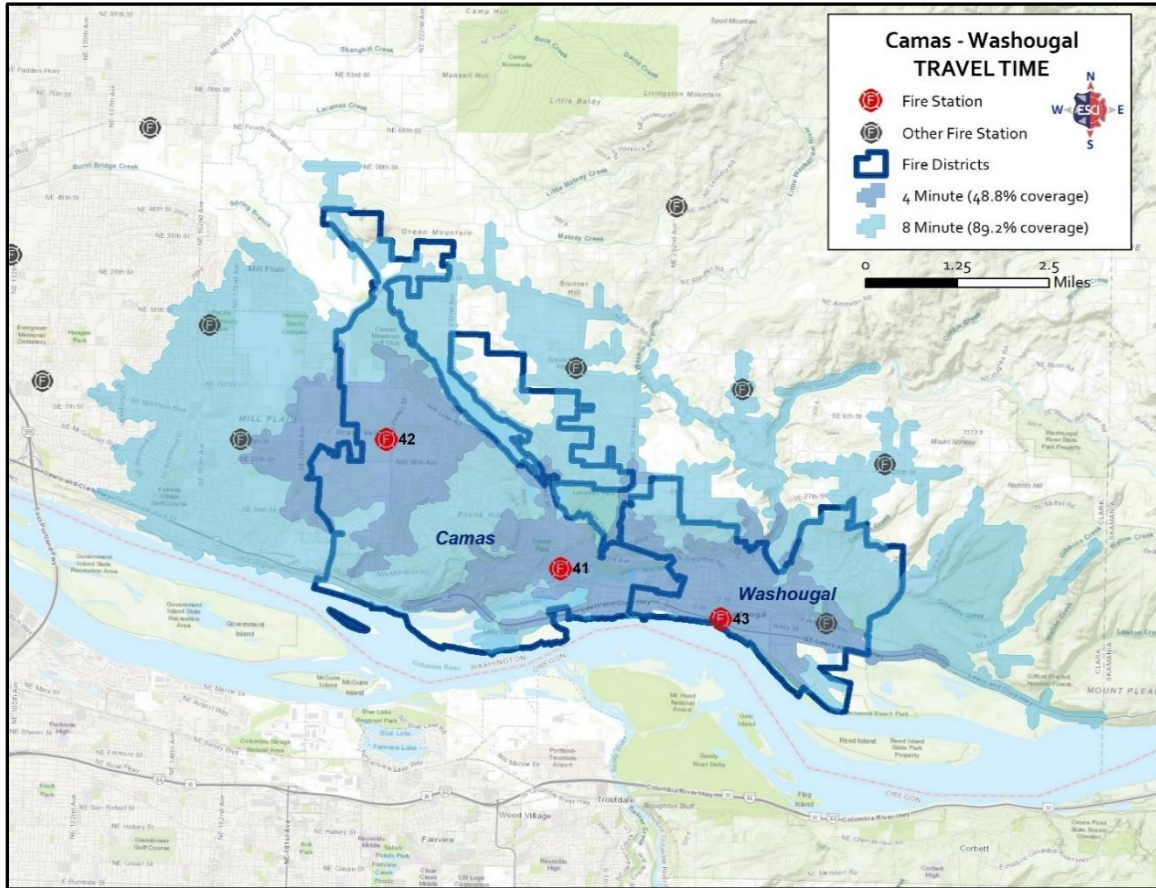


The “hot spot” for fires occurs in Washougal’s downtown area, with a small amount in the extreme eastern edge of Camas.

Fire service industry best practices documents such as the National Fire Protection Association (NFPA) 1710 Standard for Career Fire Departments specify that career staffed, urban fire departments should deploy resources such that 90% of emergency service demand can be reached in 4 minutes’ travel time or less.¹ Additionally, NFPA 1710 recommends that a full first alarm assignment should arrive in eight minutes’ travel time or less at a fire suppression incident (measured at the 90th percentile). The Washington Surveying & Rating Bureau (WSRB) also uses these timestamps when conducting a Public Protection Class rate. The following figure illustrates travel time capability from existing fire stations at 4 minutes and eight minutes. The map does not reflect actual response performance, but theoretical capability assuming all units are in quarters and ready for immediate response.

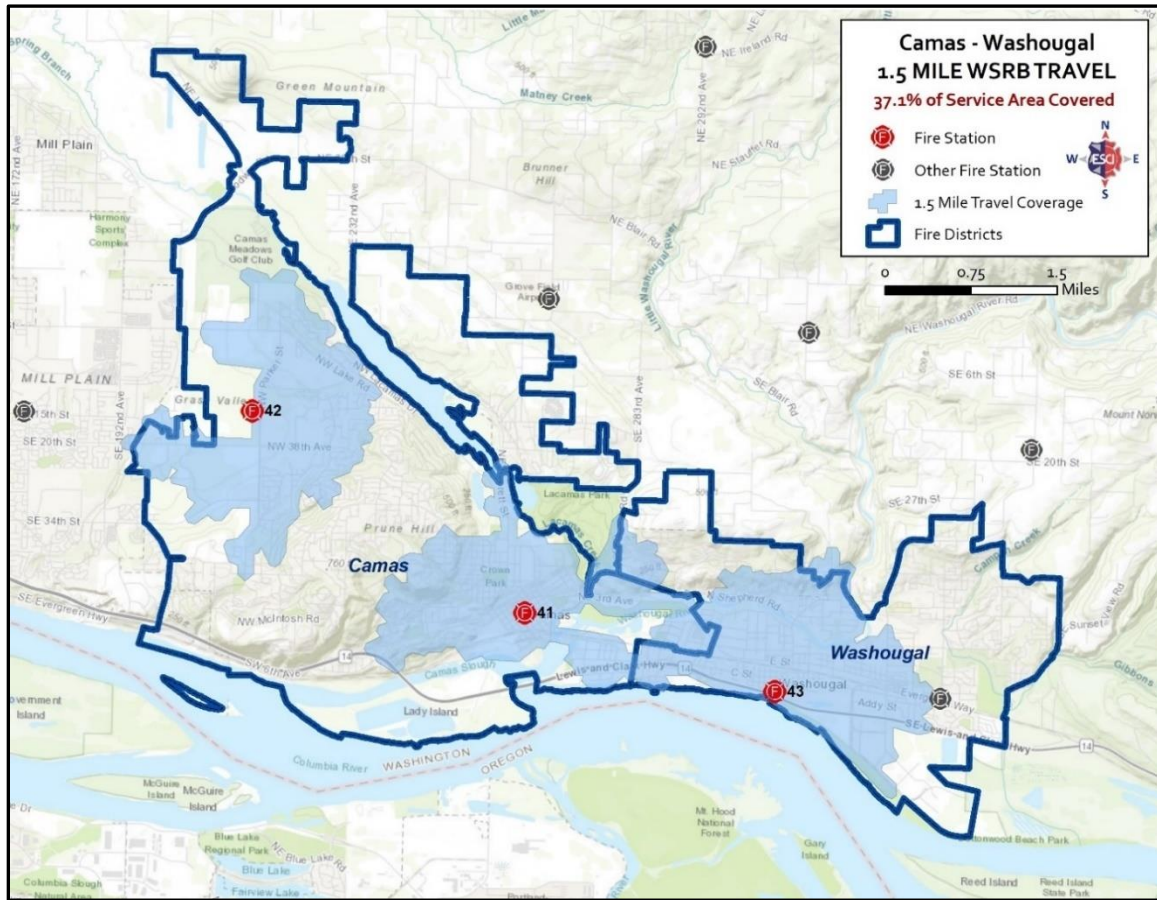
¹ NFPA 1710: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments* (National Fire Protection Association, 2016).

Study Area Travel Time Model for Fire Stations, NFPA 1710 Criteria



While NFPA 1710 establishes response performance criteria primarily based on **time** (response time and its various subelements), the WSRB also grades fire departments on their ability to deliver fire services based on **distance** from existing, credible fire stations. A fire engine must be within 1.5 miles of a property to be given credit. They will also calculate whether an agency can provide an NFPA 1710 compliant response time, and will use whichever is most advantageous to the agency. The following graphic illustrates travel distance for fire engines.

Study Area Travel Distance Model for Fire Engines, WSRB Criteria



Given either time-based (NFPA 1710) or distance-based (WSRB) criteria, the existing distribution of fire stations falls short in the Prune Hill, Northshore/Green Mountain, southeastern Lacamas Lake, Northwest Washougal, and east Washougal areas.

The following figure reflects that between 2014 and 2018, almost 30% of the time there were two or more separate, simultaneous responses occurring in CWFD.

CWFD Concurrent Incidents, 2014–2018

Concurrent Incidents in Progress	Number of Incidents	Percent of Total Incidents
Single Incident	13,329	70.79%
Two Incidents	4,029	21.40%
Three Incidents	1,114	5.92%
Four Incidents	279	1.48%
Five Incidents	57	0.30%
More than Five Incidents	20	0.11%

Another indicator of the response system strain is the unit hour utilization rate. Unit Hour Utilization (UHU) describes the amount of time that a unit is not available for response because it is already committed to another incident. The larger the number, the greater its utilization and the less available it is for assignment to subsequent calls for service. UHU rates are expressed as a percentage of the total hours committed in a year.

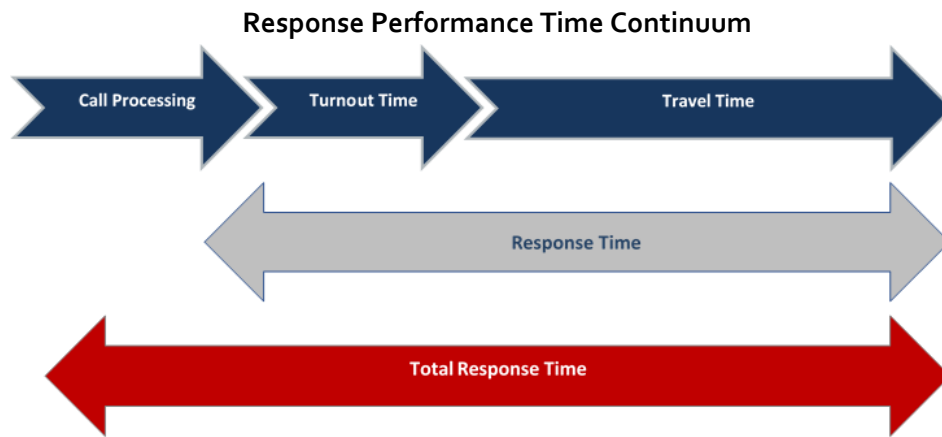
The following graphic highlights the CWFD response units in the system, how many incidents they were dispatched to, the total amount of time they were committed to those incidents, the average amount of time the unit was committed to each incident, and the unit hour utilization. A unit hour utilization rate of 30% is unsustainable, requiring additional unit hours provided to the system. None of the units in the CWFD system are approaching a dangerous level of utilization.

CWFD Unit Hour Utilization, 2018

Unit	Unit Responses	Average Time Committed	UHU
BC41	484	0:21:08	1.95%
E41	1,509	0:20:05	5.77%
E42	496	0:12:36	1.19%
E43	1,862	0:22:06	7.83%
E44	96	0:20:52	0.38%
E46	60	0:15:49	0.18%
FM42	46	0:53:04	0.46%
M41	1,431	0:56:55	15.49%
M42	491	0:50:52	4.75%
M43	1,579	1:00:49	18.27%
M44	273	0:49:40	2.58%
M45	186	0:38:26	1.36%

Unit reliability is an important predictor of response performance. The analysis of the NFIRS data and CRESA's CAD data does not provide for calculating reliability, and CWFD does not break the response area down to small, discreet response zones that allows for calculation of actual calls for service by demand zone. Thus, the station reliability rate cannot be determined with existing data. However, ESCI "reverse-engineered" the data to determine the calls for service for a potential new station at Ingle and Goodwin Road and for the Station 95/east Washougal areas to establish trigger points for these potential stations becoming operational, which is described in the discussion for each of those strategies.

CWFD response performance is based on three components of time—call processing (dispatch center), turnout (fire station), and travel (responding unit and street network). Most fire departments focus on response time, which is the combination of turnout time and travel time. Total response time adds the dispatch center time element. This system of measurement is best described graphically as follows.



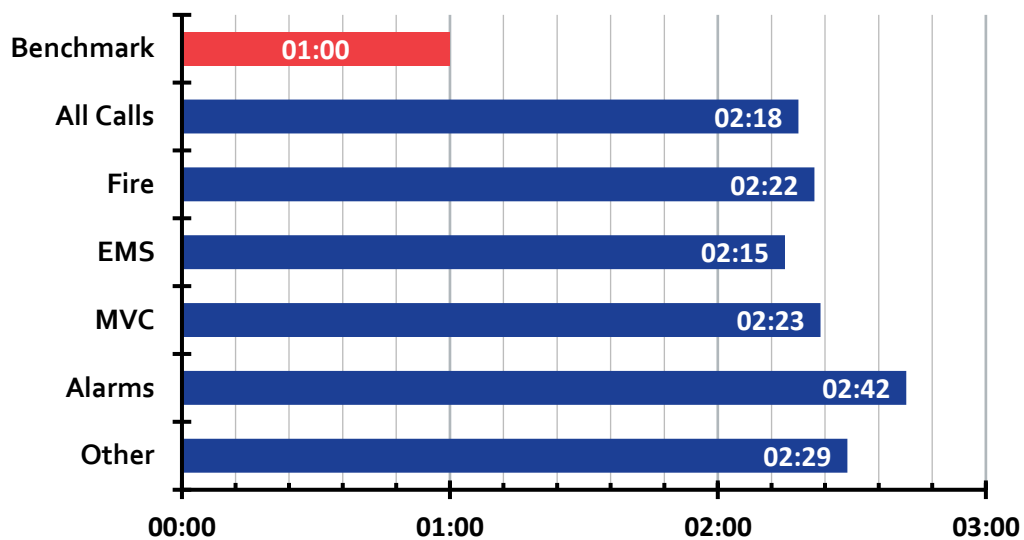
There are national consensus standards for each of these timed elements. They are summarized below.

NFPA 1710 Standards for Fire/EMS Responses

Response Interval	NFPA/CFAI Recommendations
Call Processing	60 seconds or less at 90%
Turnout Time	60 seconds or less at 90%
Travel Time	240 seconds

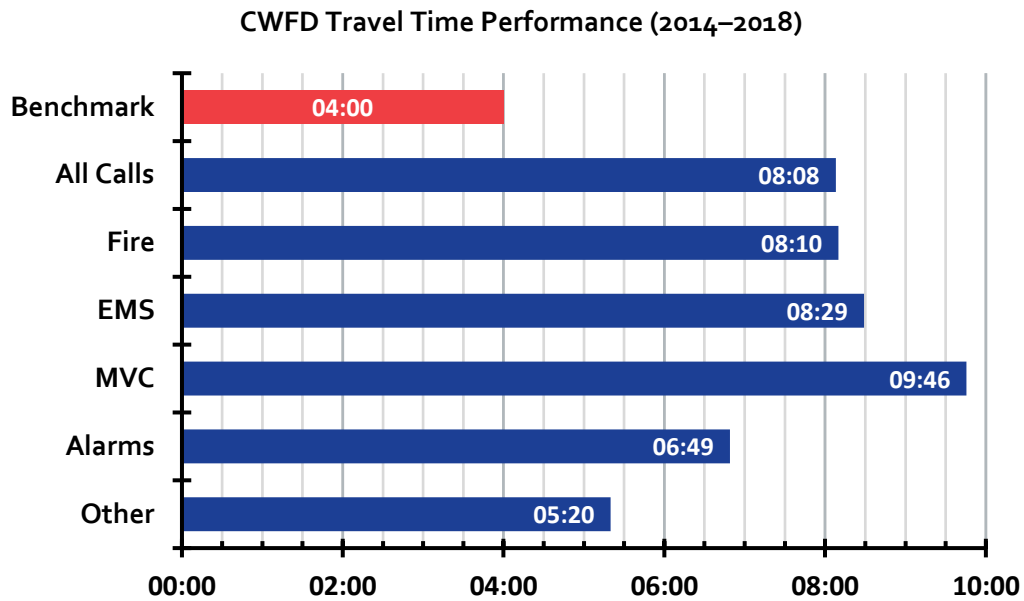
CRESA data provided to ESCI did not include call processing time, therefore this report will focus on Response Time, not Total Response Time. ESCI recommends that CWFD work with CRESA to include this data element in its performance reporting.

CWFD Turnout Time Performance, 90th Percentile (2014–2018)



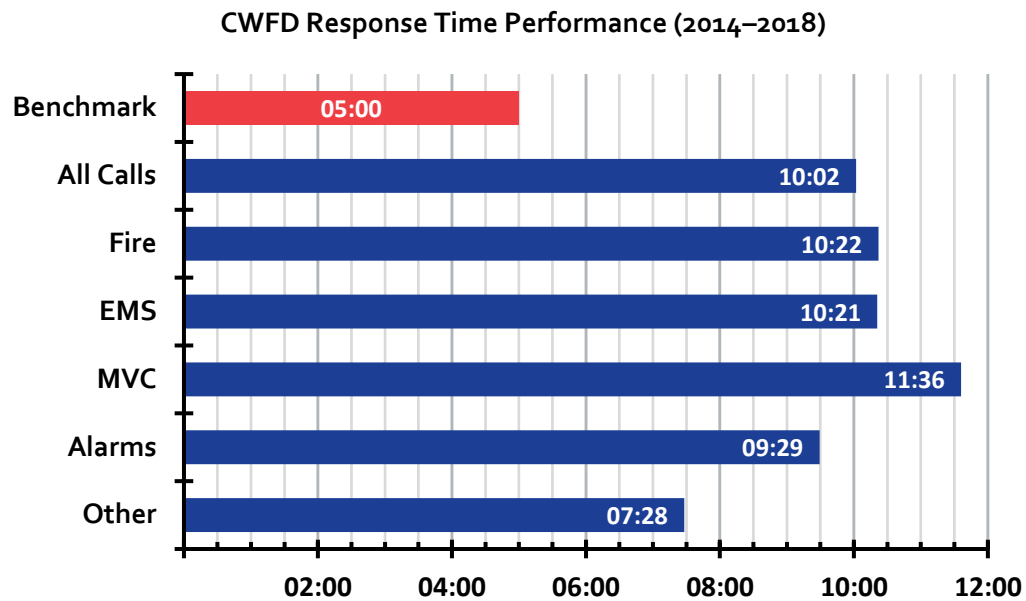
CWFD enters data into the incident reporting software in a manner that makes it difficult to quantify turnout time (not differentiating between emergency and nonemergent calls in the report), thus it is difficult to extract nonemergent calls from the data set to ensure a clean result. However, ESCI extracted the data using assumptions identified in this report, and identified that CWFD has a slow turnout time compared to the industry standard. There are structural reasons turnout can be delayed, but much of it can be crew driven.

Travel time is potentially the longest component of total response time. Factors that may impact travel time are the geographic distance from stations to the incident and traffic pattern changes based on time of day, industry, railways, etc.



For analysis of the travel time performance, there was one incident with a travel time greater than 1 hour which appeared to be an invalid value and was excluded. The graphic above illustrates the travel time performance for CWFD with an overall performance of 8 minutes, 8 seconds—slightly more than double the expected performance. When analyzing travel performance by incident type, the values ranged from 5 minutes, 20 seconds for other incidents to 9 minutes, 46 seconds for motor vehicle collisions.

When turnout time and travel time are combined, this is expressed as response time with an expected performance of 5 minutes or less. This is perhaps one of the most often tracked and reported response time performance measures, as it is comprised of components under direct control of the department. As this combines both measures, it is also impacted by the issues identified within those individual measures. For analysis of the response time performance, there were a total of three incidents with a response time greater than 1 hour which appeared to be invalid values and were excluded. The following graphic illustrates the response time performance for CWFD with an overall performance of 10 minutes, 2 seconds—slightly more than double the expected performance. When analyzing response time performance by incident type, the values ranged from 7 minutes, 28 seconds for other to 11 minutes, 36 seconds for motor vehicle collisions.



The NFPA 1710 standard specifies that the effective response force (ERF) assignment for each of the response types handled in a jurisdiction (as an initial first alarm response) should arrive within eight minutes’ travel time, 90% of the time (90th percentile). For example, a routine 2,000-square-foot house fire requires 15 personnel to arrive within eight minutes’ travel time, according to NFPA 1710 (16 if a ladder truck is also deployed). The following graphic identifies the total number of personnel expected to arrive on a structure fire (by type of structure) within eight minutes’ travel.

NFPA 1710 Effective Response Force by Building Type

NFPA 1710 Structure Type	Single-Family Dwelling ¹	Open-Air Strip Mall ²	Apartments ³	High-Rise ⁴
Total Personnel Required:	15	28	28	43

¹ Typical 2,000-square-foot, two-story, single-family dwelling without basement, and no exposures.

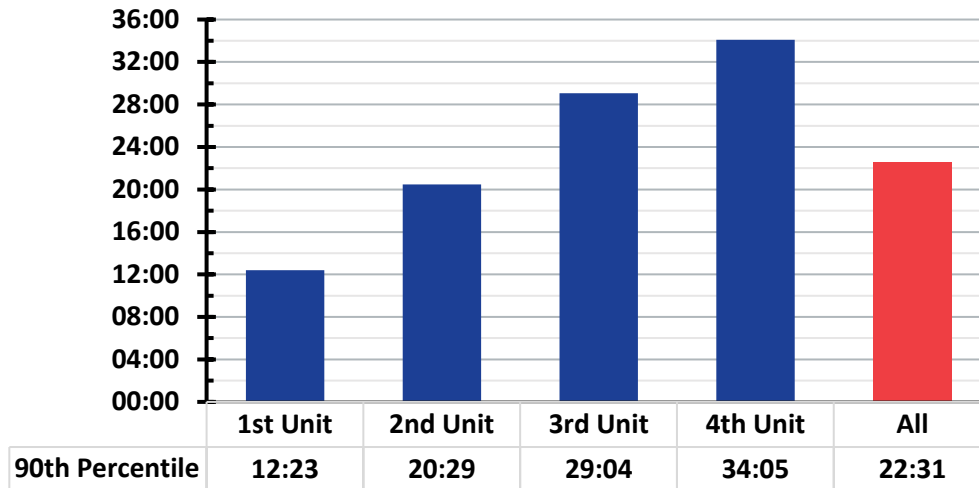
² Typical open-air strip mall/shopping center ranging from 13,000–96,000 square feet.

³ Typical 1,200-square-foot apartment within a three-story, garden-style apartment building.

⁴ Building with the highest floor greater than 75 feet above the lowest level of fire department vehicle access.

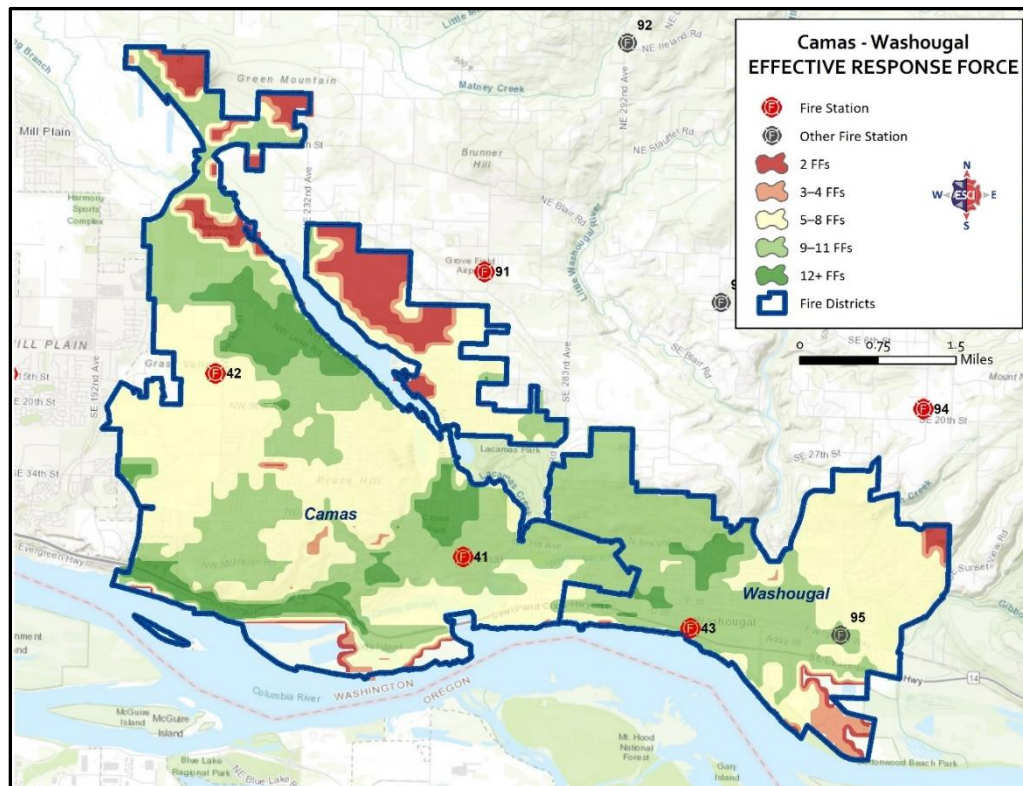
Based on response data from 2014 through 2018, the following graphic lists the order of arrival of fire apparatus on structure fires.

CWFD Structure Fires, Order of Arrival (2014–2018)



The next graphic shows the concentration of firefighters that are possible assuming all units and personnel are in quarters and available for a response, and routine mutual aid is relied upon.

CWFD Effective Response Force, 8 Minute Travel



The previous map demonstrates that CWFD personnel, assisted by mutual aid agencies, cannot achieve an effective response force for a typical 2,000-square-foot, two-story, single-family dwelling without basement, and no exposures in eight minutes’ travel. The dark green areas are able to assemble 12 or more personnel within eight minutes if the mutual aid agencies are dispatched immediately along with the initial dispatch.

SHORT-TERM STRATEGIES

All recommended strategies at the end of this report range from minor considerations regarding operational changes to major recommendations that likely require significant investment or policy change. Under each section of this report recommendations are listed in gray boxes and summarized at the end of the report. All of those recommendations are grouped into the following categories and are considered short-term (one to two years):

- Priority 1—Internal Safety Concerns (4 strategies)
- Priority 2—Legal or Financial Exposure (9 strategies)
- Priority 3—Address a Service Delivery Issue (3 strategies)
- Priority 4—Enhance the Delivery of Services (0 strategies)
- Priority 5—An Important Thing To Do (23 strategies)

MID-TERM STRATEGIES

The mid-term strategies (three to five years) are described in greater detail under the Mid-Term Strategies heading at the end of this report. They are briefly described here as follows:

Implement a Peak Demand Unit

A two-person, 12-hour staffed unit augments existing response units and can also serve to cover units taken out of service for training. This reduces overtime incurred for training, increases effective response forces for half of the shifts it is deployed, and adds flexibility to the system in that the unit can be deployed anywhere in the system without compromising service to the community.

Volunteer Program Recruitment & Retention

CWFD currently has 15 volunteer personnel in the department. They train and serve on 12-hour shifts with career personnel, augmenting their staffing levels. The department has been criticized for having a volunteer program in name only, allowing it to degrade by neglect. ESCI saw no evidence of this while on site, however we also saw no champion for the program. This report lists numerous strategies to improve the recruitment and retention of volunteer personnel. ESCI recommends, in addition to the many strategies listed for recruitment and retention, that a SAFER Grant be applied for to hire a Volunteer Recruitment and Retention Officer, whose primary duty is the care and feeding of the volunteer program.

Implement a Community Risk Reduction Program

The fire service is increasingly moving to a concept nationally called Community Risk Reduction (CRR). CRR is an integrated approach to risk management that marries emergency operations and prevention strategies into a more cohesive approach to reducing risks in any community. It includes the fire department partnering with the community, non-profit organizations, and any private sector agencies with a nexus to an identified community risk.

Ladder Truck

The Washington Surveying and Rating Bureau (WSRB) has established criteria that determines, among other things, when a fire department needs a ladder truck. In the 2018 rerating of the CWFD, the WSRB determined that CWFD is required to have a ladder truck, since there are "... at least five buildings with a required fire flow of 4,000 gallons per minute or more, and/or 3 stories (35 feet) in height." CWFD was given 121 deficiency points in that rerating for the lack of a ladder truck. ESCI believes that if CWFD acquires a ladder truck, it can be a cross-staffed unit for quite some time, or could be staffed with volunteer personnel if trained adequately to operate it.

LONG-TERM STRATEGIES

The long-term strategies (greater than five years) are described in greater detail under the Long-Term Strategies heading at the end of this report. They are briefly described here as follows:

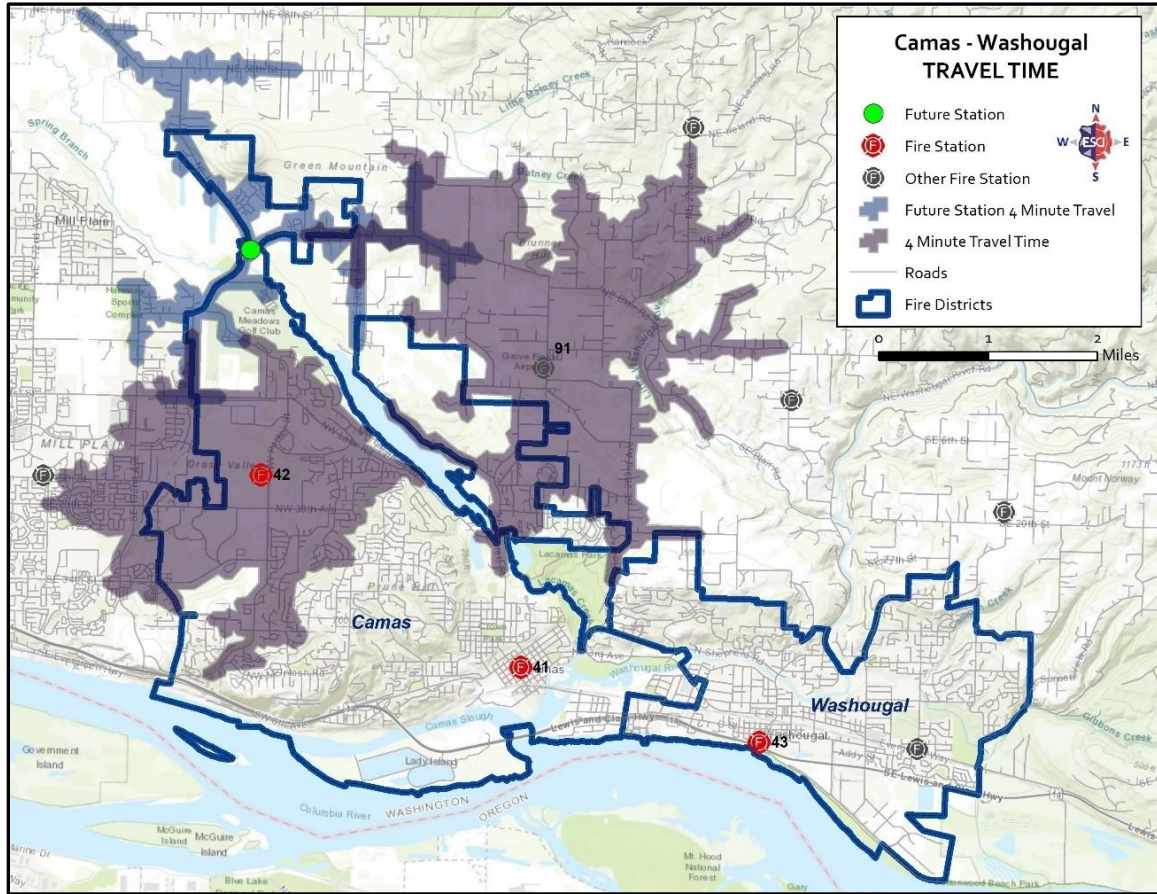
Future New Stations

There are currently gaps in response coverage in several swaths of both Camas and Washougal. In addition, projection of population, development, and service demand patterns suggests that future service demand for CWFD will increase in currently undeveloped areas. This report recommends a new station be constructed, two existing stations be prepared for relocation, and one station acquired from East County Fire & Rescue (ECFR). The details are as follows.

Northshore/Green Mountain Area

The proposed location will serve upwards of 2,500 new buildings (mostly residential, but some commercial) as well as the existing housing in place today. This area is not well served (within a 4-minute travel time) by either Station 42 or Station 91, the next closest station to the area. Approximately one-and-a-half acres should be acquired within a quarter-mile of the intersection of Ingle Road and Goodwin Road for the future siting of the station. The following map depicts the added capability of a new station in this area.

Proposed Future Fire Station (Ingle Rd./Goodwin Rd. Intersection)

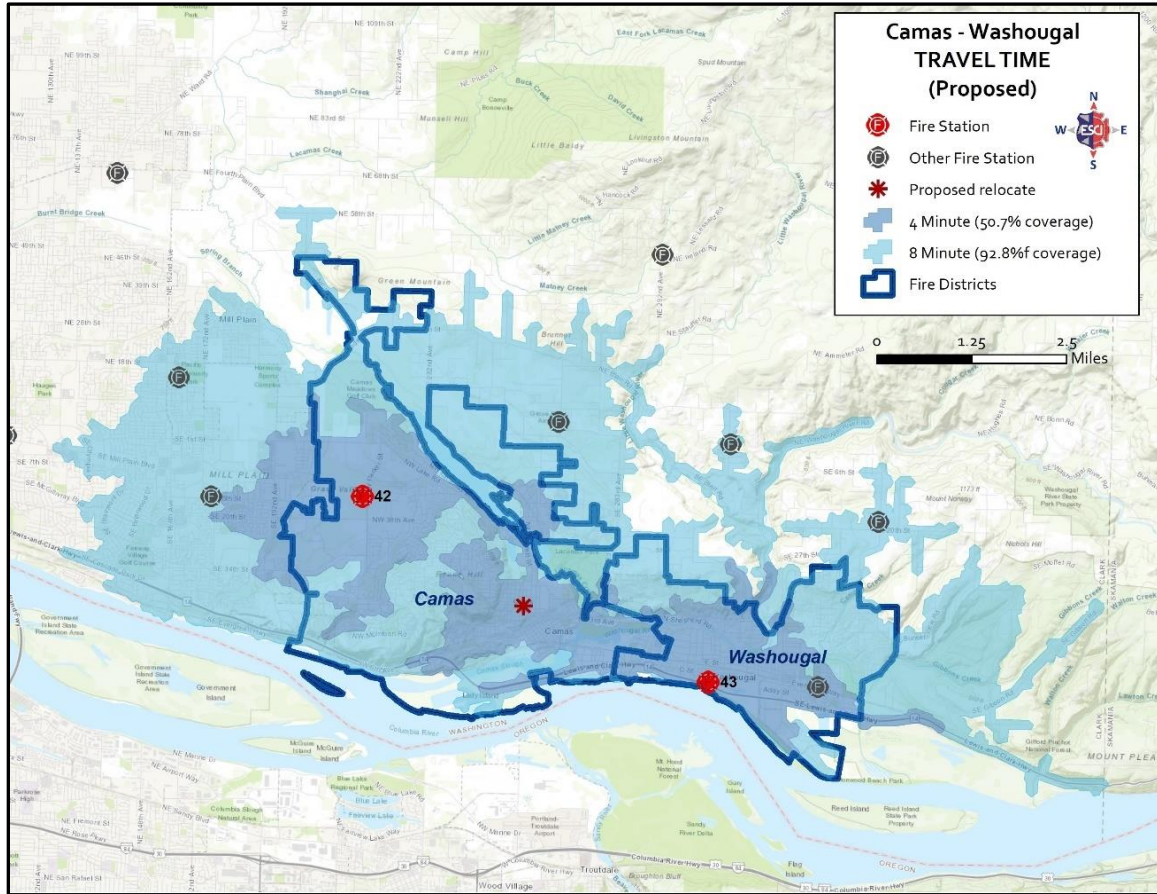


Calls for service in the area that would be served by this station are currently at 44 in 2018, which is less than 1% of the department’s total calls for service. Once call volume reaches approximately 500, construction should begin, along with staging the purchase of a fire engine and staffing to operate it.

Relocation of Station 41

Prune Hill and the southeast side of Lacamas Lake are both currently underserved. Prune Hill is already substantially developed, while the area southeast of Lacamas Lake is slated to receive significant medium and high density residential, commercial, and industry (further north) development according to the *Camas 2035 Comprehensive Plan*. Station 41 shares service on Prune Hill with Station 42 from a travel time standpoint, but is the only practical CWFD station to serve the area southeast of Lacamas Lake. Given that this move only improves the system-wide travel time by 2%, this relocation should be considered as an alternative to a significant remodel of the existing facility. The following map depicts the added capability of a new station in this area.

Proposed Relocation of Station 41 (Crown Park Area)

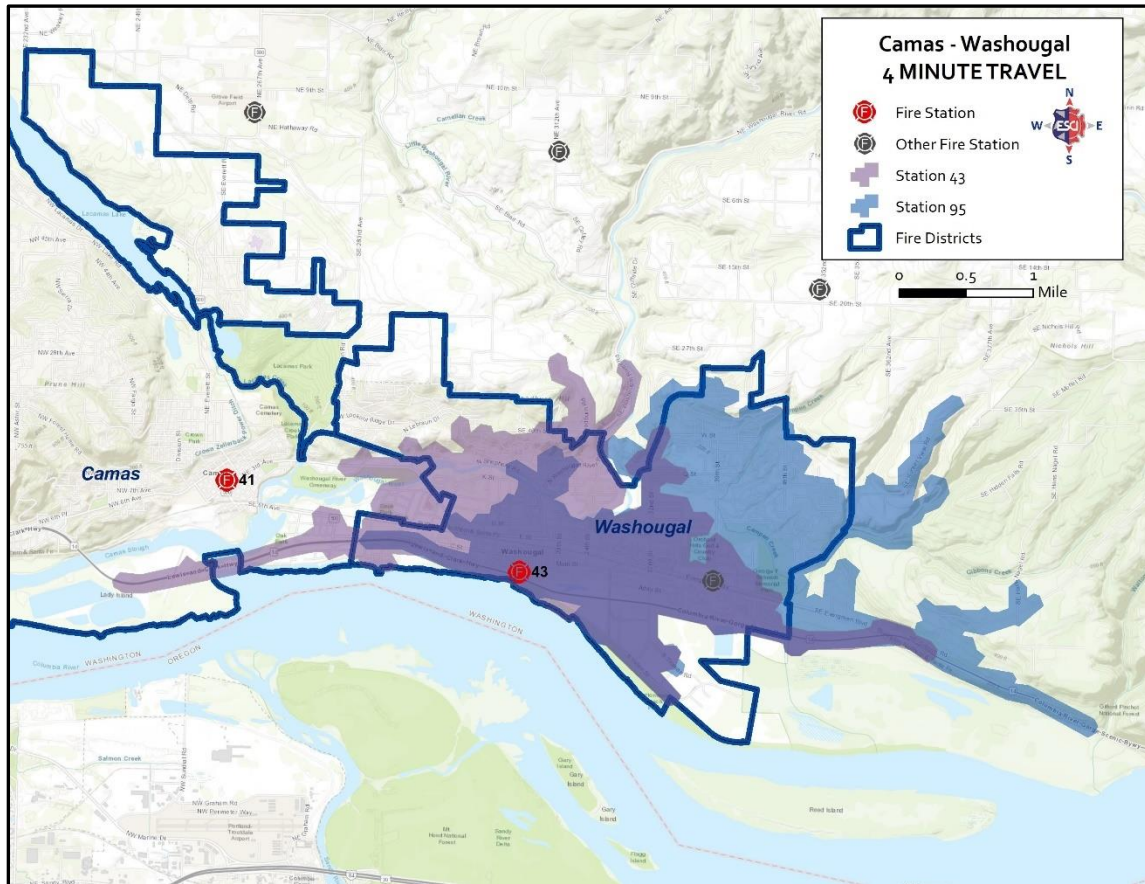


An alternative to relocation of Station 41 is to contract with East County Fire & Rescue Station 91 to serve the southeast side of Lacamas Lake. This alternative does not address the gap on Prune Hill.

East Washougal

Washougal is well served by Station 43, with only the northwest corner and northeast areas of the city outside of a four-minute travel time. In 2018, the northeast corner of the city had the highest prevalence of long response times of the entire CWFD service area. Coincidentally, ECFR has an unstaffed station on the east end of the city (Station 95, 211 39th Street). Response from that station provides excellent coverage to the northeast end of Washougal, with appropriate overlapping coverage to the rest of Washougal, as illustrated in the following map.

Coverage from Station 95 to East Washougal

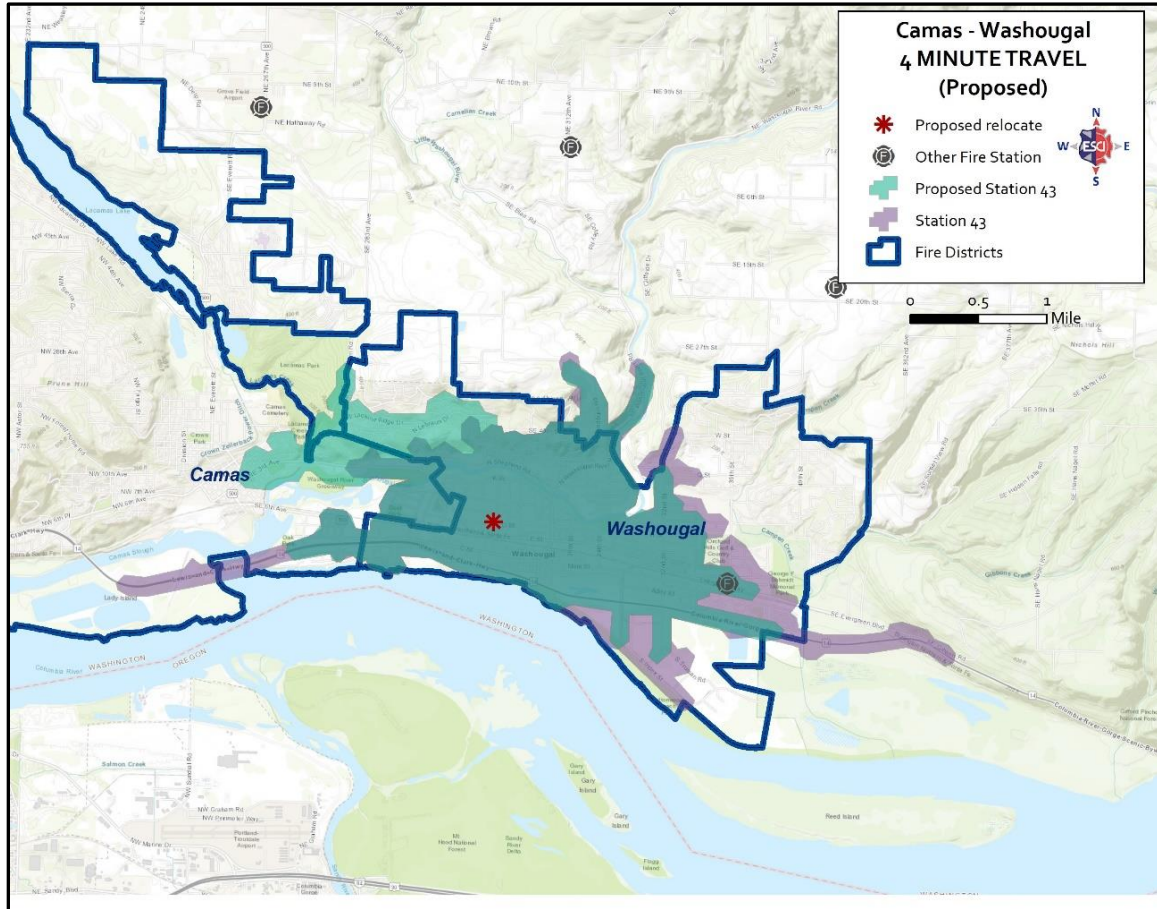


The area that would be served by Station 95 (which is outside of Station 43's four-minute travel) received 985 calls in 2018, which is 32% of the department's total calls for service. ESCI recommends CWFD consider purchasing Station 95 from ECFR and initially staffing it with volunteer personnel. This is a high call volume for a purely volunteer staffing configuration to sustain. Consideration should be given to assigning career staff to the station sooner rather than later, for fear of burning out the volunteers and compromising service to the community as a result. Alternatively, CWFD could negotiate with ECFR to serve that area on the department's behalf as a transitional step to CWFD staffing it and operating it, initially with volunteers, then ultimately with career personnel.

Relocation of Station 43

By addressing the east end of Washougal, the opportunity presents itself to also relocate Station 43 north to improve coverage to the northwest area. This improvement is not required at this time, but at the point in time that Station 43 is to be remodeled (it is in fair condition at this time), rather than remodeling it, ESCI recommends CWFD consider relocating the station north to the area near G Street and 9th Street. As with the new proposed station in the Northshore/Green Mountain, location within a quarter mile of that intersection is ideal, and the property should be approximately 1.5 acres. This relocation should be considered as an alternative to a significant remodel of the existing facility. The following map illustrates the travel time improvement to the northwest.

Proposed Relocation of Station 43 (G Street & 9th Street Area)



The proposed relocation sacrifices response to the east, which would be covered by Station 95, and shifts response toward the northwest, improving that underserved area. Thus, this optional relocation should not occur unless and until the Station 95 option is exercised.

CONCLUSION

The Camas-Washougal Fire Department is made up of interrelated parts. Movement of one element (station or unit) causes impacts, positive or negative, to the remaining system. Implementation of these improvements must be done with a great deal of forethought for unintended impacts. They must be staged properly. None of the long term station improvements is required immediately. However, there are some preliminary steps (acquiring land for a future fire station) that can and should be taken soon to avoid difficulties or higher costs later.

Ensuring sound data compilation and analysis will enable quality decision-making going forward. This is specifically addressed within the recommendations of this report.

Current Conditions

This phase of the study identifies the current conditions in place as of the site visit for ESCI (May 2019). ESCI recognizes that organizations rarely stay in one place and are constantly evolving, however, it is not practical to update the study as the department changes. Attempting to do this is futile. Thus, ESCI wants to make clear that this study reflects a snapshot in time.

This portion of the study provides recommendations for improvement in current services delivered to the community. The evaluation and analysis of data and other information are based significantly on the internal data provided by Camas-Washougal Fire Department (CWFD), City and County demographic information, Clark Regional Emergency Services Agency (CRESA), and other external sources. The current conditions are compared to industry best practices when available, including National Fire Protection Association (NFPA) standards, Commission on Fire Accreditation International (CFAI) self-assessment criteria, health and safety requirements, national mandates relative to emergency services, and generally accepted best practices within the emergency services community.²

Each section in the following report provides the reader with general information about that element as well as observations and analysis of any significant issues or conditions that are present. Observations are supported by site visit validation of data provided by the client to the extent practical. Finally, specific recommendations are included to address identified issues or to take advantage of opportunities that exist.

Finally, ESCI recognizes that it is evaluating one fire department, but that the fire department serves two cities for all fire department services, and an additional fire district for ALS response and transport, all via contracts. While beyond the scope of work for a Master Plan, ESCI provides some insight into more permanent integration arrangements as an appendix to this report.

ORGANIZATION OVERVIEW

The following section is a general description of the cities of Camas and Washougal (Washington), the governance and management structure as it pertains to the fire department, the Camas-Washougal Fire Department (CWFD), and the various components that comprise fire suppression and Emergency Medical Services (EMS) that are within the CWFD purview.

² The CFAI organization is now a subsection of the Center for Public Safety Excellence (CPSE) but maintains its prime function of accrediting fire agencies.

Interlocal Agreement

While both the Camas Fire Department and the Washougal Fire Department have cooperated with each other for more than 35 years on policy and service issues, they took the next step of integration by operating under a trial consolidation in April 2012. On December 4, 2013, the two agencies combined via an interlocal agreement (contract). The contract intends for greater economies of scale and efficiencies together than the two can provide independently. The contract expires on December 31, 2023, and contains certain termination provisions, but renews for an additional ten years absent 24-month notice by one party to the other of the intent to terminate the agreement. The contract requires that certain services are provided and that certain levels of service be maintained.

The two parties have transferred Washougal employees to Camas, and identified that staffing configuration be, at minimum, 11 personnel on duty, four of which must be paramedic certified. The 11 personnel are assigned as follows:

Station 41

1 Battalion Chief
2 personnel on Engine 41
2 personnel on Medic 41
(includes 1 paramedic)

Station 42

2 personnel cross-staffing
Engine 42 & Medic 42
(includes 1 paramedic)

Station 43

2 personnel on Engine 43
2 personnel on Medic 43
(includes 1 paramedic)

Camas is contractually obligated in the agreement to administer services to the combined service area and employ all personnel. Camas City Council provides policy direction and governance for fire, EMS, and ALS transport services. The agreement calls for the formation of a Joint Policy Advisory Committee (JPAC) made up of three Washougal City Council members appointed by the Washougal Mayor and three Camas City Council members appointed by the Camas Mayor. The JPAC must be convened at least once per year to review the services set forth in the agreement, but should also convene to consider potential amendments to the agreement or address unforeseen issues that affect the services provided by CWFD or the agreement.

Administration

The City of Camas is a code city with a Mayor-Council form of government. A professional City Administrator serves under the Mayor to assist with administrative and policy-related duties. The City Administrator shall assist the Mayor in the performance of her duties and shall do all things required by the Mayor to assist in the administration of the business of the City government. The City Administrator shall oversee and supervise the various City departments as directed by the Mayor, and shall assist in the coordination of City business between the City Council and various City officers and departments.³ RCW 35A regulates the City statutorily.

³ Camas, Washington Municipal Code, Chapter 2.06 – City Administrator, Section 2.06.020 – Duties.

The City of Washougal is also a code city, but with a Council-Manager form of government. The Council-Manager form consists of an elected City Council, which is responsible for policymaking, and a professional City Manager, appointed by the Council, who is responsible for administration. The City Manager provides policy advice, directs the daily operations of city government, handles personnel functions (including the power to appoint and remove employees), and is responsible for preparing the City budget. Under the Council-Manager statutes, the City Council is prohibited from interfering with the Manager's administration. The City Manager, however, is directly accountable to and can be removed by a majority vote of the Council at any time. RCW 35A regulates the City statutorily.

The Fire Chief is responsible for the operation of the department, subject to the approval and under the direction of the Mayor of Camas. Among other things, the Chief is required to formulate and enforce rules and regulations to govern the department personnel, activities, and equipment; conduct suitable drills or instructions in the operation of handling equipment, first-aid rescue work, salvage, a study of buildings in the city, fire prevention, water supplies, and all other matters generally considered essential to good [firefighting skills] and safety of life and property; assist the proper authorities in suppressing the crime of arson by investigating or causing to be investigated the cause, origin, circumstance of all fires; and maintain complete records of all fires, inspections, apparatus and equipment, personnel, and other information concerning the work of the department.⁴

According to the Camas, Washington Municipal Code, Chapter 2.11, Appointment and Removal of Police Chief and Fire Chief, the Fire Chief is appointed by the Mayor subject to confirmation by a majority of the City Council. The Fire Chief may not be removed except for just cause (generally misconduct or negligence) once the probationary period has been successfully completed. The Fire Chief is given an annual performance evaluation. The Fire Chief's supervisory span of control is 1:7, which is at the top edge of an effective span of control based on industry standards and best practices. The Fire Chief has hiring and firing authority, subject to due process, civil service, and/or collective bargaining agreement discipline guidelines.

Agency Description

Camas-Washougal Fire Department serves the municipalities of the City of Camas and the City of Washougal, which collectively covers more than 20-square-miles and serves approximately 23,845 citizens in Camas (U.S. Census Bureau estimate, 2018) and 16,049 citizens in Washougal (U.S. Census Bureau estimate, 2018) for a combined 39,894 population for fire and EMS services. In addition, CWFD serves East County Fire & Rescue for Emergency Medical Services, Advanced Life Support (ALS) ambulance transportation. This expands the service area boundary (for ambulance transportation) to greater than 80-square-miles, serving an additional 10,362 citizens for a combined total of 49,404 citizens for the wider ALS service area.

⁴ Camas, Washington Municipal Code, Chapter 2.16 – Fire Department, Section 2.16.050 – Chief—Powers and Duties

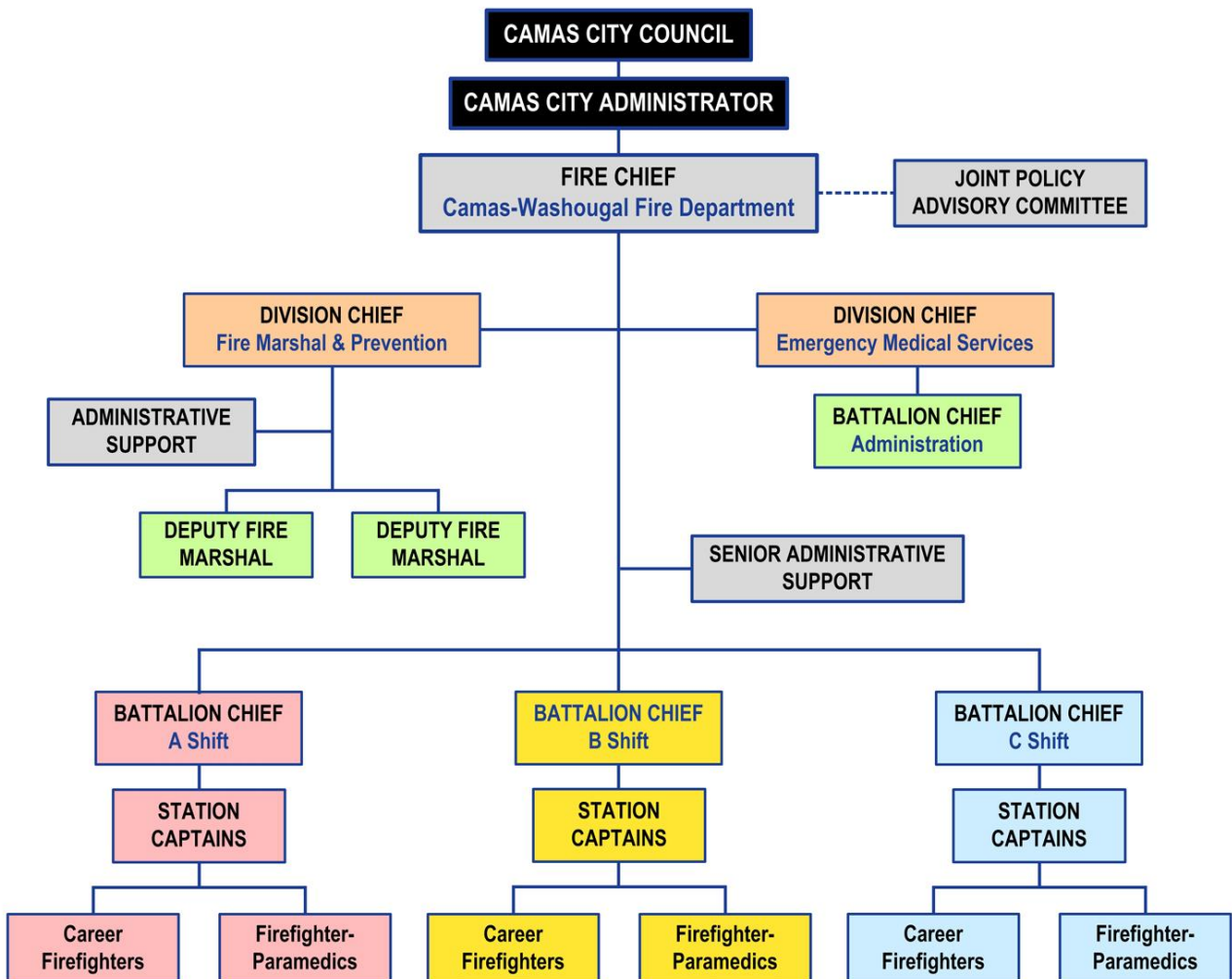
According to the U.S. Census Bureau, Camas has 7,072 residential units and 1,938 businesses. Washougal has 5,673 residential units and 982 businesses. Therefore, Camas is more heavily commercial, which increases the tax base but also poses a greater threat from fire loss. Washougal, by contrast, is much more heavily residential, and therefore poses a higher EMS demand rate and fire fatality risk.

The department is served from three fire stations and three front-line fire engines. Each station also has a medic unit, but one, Medic 42 is cross-staffed with Engine 42, meaning that the two personnel at the station will take whichever unit the dispatched call requires. While this may seem efficient, the unit left behind represents an unsourced risk. This shifts that secondary burden to another unit in CWFD or to a mutual aid agency. This is discussed in greater detail in the *Service Delivery and Performance* section of this report.

Organizational Structure

CWFD has a somewhat traditional organizational hierarchy, albeit light on operational personnel. Figure 1 represents the current organization chart for CWFD.

Figure 1: Camas-Washougal Fire Department Organization Chart



Services Provided by CWFD

As a small urban fire department, CWFD provides a typical array of emergency services. They include:

- Fire Suppression
- EMS 1st Response
- ALS Transportation
- Low Angle Rescue & Vehicle Extrication

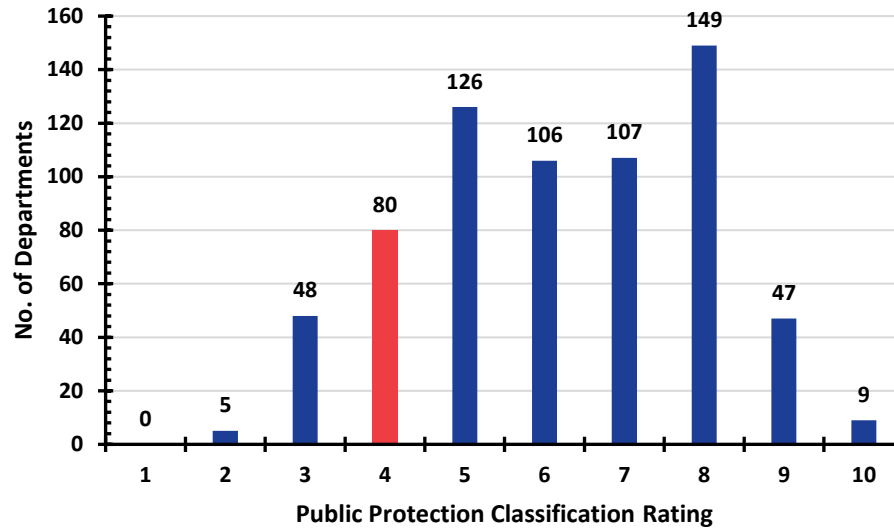
Initial response is also provided to high angle rescue, confined space rescue, trench rescue, water rescue, and hazardous materials responses, but the technical response (certified technicians who specialize in these specific risks) are provided by regional agencies that provide these services.

Camas and Washougal are evaluated as two distinct risk groups for Washington Surveying and Rating Bureau (WSRB) Public Protection Classification purposes but share the assessment for the fire department's capabilities. Both cities were upgraded in 2018 from a Class 5 to a Class 4 rating, benefitting commercial properties in both cities by likely lowering their insurance premiums.

As described by the WSRB, "WSRB evaluates all Washington communities for their fire protection/suppression capability using a schedule approved by the Washington State Office of the Insurance Commissioner. WSRB assigns each community a Protection Class of 1 through 10, where 1 indicates exemplary fire protection capabilities, and 10 indicates the capabilities, if any, are insufficient for insurance credit. The Protection Class evaluation process recognizes the efforts of communities to provide fire-protection services for citizens and property owners. Many insurance companies use Protection Classes to help establish fair premiums for fire insurance—generally offering lower premiums in communities with better protection. By classifying communities' ability to suppress fires, WSRB helps communities accurately evaluate their fire-protection services."

The following figure reflects how the Public Protection Classifications are distributed across the State of Washington for 2018.

Figure 2: Public Protection Classification Distribution in Washington State, 2018



It is important to recognize that the WSRB is in the property risk and protection assessment business. To that end, they do not evaluate EMS risk or services, nor do they provide any credit for having such a service.

Community Demographics

The demographics of the population can affect the amount of service demand and the nature of risk within a community. In urban cities like both Camas and Washougal, several factors have been identified that place groups of people at risk. An NFPA report has identified the groups that face a higher risk of being injured or killed in a fire from 2011 through 2015 (the latest available statistics):⁵

- An average of 2,510 people died and 12,300 more were non-fatally injured per year in home fires. These fires caused 80% of all fire deaths and 78% of all reported fire injuries in this five-year period.
- Although people 85 and over had the highest rate of fire death and injuries per million population, they only account for 2% of the population.
- Children under 15 accounted for 12% of the home fire fatalities and 10% of the injuries. Children under five account for 6% of the deaths and 4% of the injuries. Children below the age of 5 are now at a statistically lower risk of fire death than people over 45.
- While smoking materials were the leading cause of home fire deaths overall, this was true only for people in the 45–84 age groups.
- Heating was the leading cause of fire deaths in the under 5 and the 5–9 age groups.
- Males were more likely to be killed or injured in home fires than females and accounted for larger percentages of the victims (57% of the deaths and 54% of the injuries).

⁵ Ahrens, Marty. "Home Fire Victims by Age and Gender." *National Fire Protection Association*, Dec. 2018, p. 1.

According to the 2017 U.S. Census Bureau five-year estimate, a considerable number of the residents of Camas and Washougal are in one or more of these at-risk population groups.

Figure 3: Camas Census Estimate by Age and Gender, 2017

Age	Total	Percent	Male	Percent Male	Female	Percent Female
Under 5 years	1,136	5.1%	615	5.6%	521	4.7%
5 to 9 years	1,625	7.4%	816	7.5%	809	7.2%
10 to 14 years	2,228	10.1%	1,246	11.4%	982	8.8%
15 to 19 years	2,048	9.3%	934	8.6%	1,114	10.0%
20 to 24 years	834	3.8%	479	4.4%	355	3.2%
25 to 29 years	872	3.9%	433	4.0%	439	3.9%
30 to 34 years	915	4.1%	357	3.3%	558	5.0%
35 to 39 years	1,641	7.4%	732	6.7%	909	8.1%
40 to 44 years	2,059	9.3%	1,010	9.3%	1,049	9.4%
45 to 49 years	1,988	9.0%	971	8.9%	1,017	9.1%
50 to 54 years	1,728	7.8%	797	7.3%	931	8.3%
55 to 59 years	1,515	6.9%	856	7.9%	659	5.9%
60 to 64 years	971	4.4%	450	4.1%	521	4.7%
65 to 69 years	919	4.2%	452	4.1%	467	4.2%
70 to 74 years	707	3.2%	365	3.3%	342	3.1%
75 to 79 years	393	1.8%	153	1.4%	240	2.1%
80 to 84 years	287	1.3%	114	1.0%	173	1.5%
85 years and over	220	1.0%	124	1.1%	96	0.9%

Figure 4: Washougal Census Estimate by Age and Gender, 2017

Age	Total	Percent	Male	Percent Male	Female	Percent Female
Under 5 years	1,049	6.9%	559	7.3%	490	6.4%
5 to 9 years	1,123	7.4%	598	7.8%	525	6.9%
10 to 14 years	860	5.6%	500	6.6%	360	4.7%
15 to 19 years	1,106	7.3%	692	9.1%	414	5.4%
20 to 24 years	929	6.1%	452	5.9%	477	6.3%
25 to 29 years	786	5.2%	325	4.3%	461	6.1%
30 to 34 years	884	5.8%	365	4.8%	519	6.8%
35 to 39 years	1,073	7.0%	470	6.2%	603	7.9%
40 to 44 years	1,029	6.8%	630	8.3%	399	5.2%
45 to 49 years	955	6.3%	449	5.9%	506	6.6%
50 to 54 years	1,236	8.1%	588	7.7%	648	8.5%
55 to 59 years	1,187	7.8%	558	7.3%	629	8.3%
60 to 64 years	955	6.3%	531	7.0%	424	5.6%
65 to 69 years	777	5.1%	313	4.1%	464	6.1%
70 to 74 years	550	3.6%	249	3.3%	301	4.0%
75 to 79 years	284	1.9%	193	2.5%	91	1.2%
80 to 84 years	241	1.6%	66	0.9%	175	2.3%
85 years and over	217	1.4%	87	1.1%	130	1.7%

While there are risk factors by demographic category for fire casualties, there is no doubt that demographic factors also affect the demand for EMS services as it relates to ALS transport systems, such as CWFD. The effect of what is commonly referred to as the “Silver Tsunami,” the euphemism for the aging of Baby Boomers, will likely exponentially increase demand for emergency medical services into the future.

As told by Dr. Thomas Gill of the Yale Center on Aging, “...by 2050, people over 65 will represent more than 20% of the population, up from 15% today. That shift may not sound significant, but it represents about 40 million additional Medicare-age patients flooding the already beleaguered U.S. healthcare system. This flood, the so-called ‘Silver Tsunami’ will be driven partially by advances in medicine that are helping people live longer, but also by the Baby Boomers, people born during the population spike after World II who are reaching old age.”⁶

The healthcare system in the United States is in flux and depending upon its evolution, may have currently unforeseeable ramifications to pre-hospital care. However, the aging population, the growth of those over age 65 as a percent of the total population, and the increasing life expectancy all contribute to known, significant increases in demands for service.

A study conducted in North Carolina in 2010 evaluated the effect of an aging population on the pre-hospital EMS system as a predictor of future system demand. The salient point of the study is made in the abstract, which states, “Visits [to Emergency Departments] by individuals 65 years of age or older accounted for 14.7% of all visits and 38.3% of all EMS transports to the Emergency Department. For those patients aged 85 years and older, EMS was the most common mode of Emergency Department arrival (60.6%). We estimate that by 2030, total EMS transports to North Carolina Emergency Departments will increase by 47%. Patients 65 years of age and older are projected to account for 70% of this increase and to compose 49% of all EMS transports by 2030. The proportion of patients using EMS to reach North Carolina Emergency Departments increases steadily with age. By 2030, older patients will account for approximately half of EMS transports to North Carolina Emergency Departments.”⁷

A similar study was conducted in Halifax, Canada, in 2015 and drew similar conclusions. Indeed, the abstract states, “We confirmed the increasingly high rate of EMS use with age to be consistent with other industrialized populations.”⁸ Empirical evidence suggests that as society’s population ages, with Baby Boomers making up an increasing percentage of the total population, the EMS systems nationally will bear an increasing burden in EMS transportation. The large study in North Carolina (n = 2,743,221) is perhaps the best predictor of future EMS demand nationally. Given North Carolina’s findings, it reasonable to expect that Camas-Washougal will experience similar demand growth.

⁶ Rx: *The Quiet Revolution, What the ‘Silver Tsunami’ Means for U.S. Health Care: An Interview with Thomas Gill of the Yale Center on Aging.* <https://rxfilm.org/problems/silver-tsunami-united-states-healthcare-thomas-gill-yale-center-on-aging-interview/> acquired from website 6-22-19.

⁷ Platts-Mills, Timothy F., et al. “Emergency Medical Services Use by the Elderly: Analysis of a Statewide Database.” *Prehospital Emergency Care*, vol. 14, no. 3, 2010, pp. 329–333., doi:10.3109/10903127.2010.481759.

⁸ Goldstein, Judah, et al. “The Epidemiology of Prehospital Emergency Responses for Older Adults in a Provincial EMS System.” *Cjem*, vol. 17, no. 5, 2015, pp. 491–496., doi:10.1017/cem.2015.20.

MANAGEMENT COMPONENTS

Effective fire department management is a complicated and expanding challenge for today's fire service leaders. Balancing community expectations, employee demands, expanding safety standards, and constrained financial resources places tremendous pressure on fire departments and fire districts across the country. Today's healthy fire departments have faced these challenges by establishing collaborative and efficient organizational structures, identifying (and working towards) a common vision, staying abreast of new technologies and methods, supporting and evaluating a competent workforce, helping staff succeed and promote, and effectively communicating agency mission, performance, and future needs. This section of the report deals with the elements typically found in the management structure of an organization and the CWFD processes.

Mission, Vision, and Values

CWFD has a mission statement as follows:

"To provide the highest quality service to our community through the protection and preservation of life and property."

The mission statement is a footer on the cover of the annual reports dating back to 2016, however is absent prior to that. The department has no vision statement nor a set of organizational values established. Goals are not evident in the annual report. An organization must have a mission, vision, and values established to coordinate effort at all levels of the organization in a cohesive direction. A mission statement succinctly states an organizations fundamental purpose for existing. A vision statement is intended to be aspirational and declares an organization's intent in the near future (typically five years), and a set of organizational values state how the members of the organization will conduct themselves and treat each other on the journey to achieving the vision. These three foundational elements are further supported by a plan, complete with goals and objectives established and communicated, and metrics in place to measure effectiveness or achievement. These elements are typically compiled into a strategic plan. The typical strategic planning process includes the following elements:

- Internal and external environmental scan (SWOT Analysis)
- Mission, vision, and values
- Initiatives, goals, and subordinate objectives with performance metrics or outcome statements
- Timelines assigned to each objective
- The manager assigned to each initiative
- Responsible persons assigned to coordinate the achievement of each objective

A strategic plan establishes timelines for the goals and objectives to be accomplished, and empowers the appropriate personnel to complete assigned objectives. Effective strategic plan implementation monitors workflow progress, adjusts timelines as required, and holds assignees accountable for their progress (or lack thereof). CWFD does not have these elements in place, either separately (except for the mission statement), or as a combined strategic plan.

When asked, the Fire Chief identified four critical priorities for the fire department from his perspective. They are:

1. Eliminate cross-staffing at Station 42.
2. Planning for expansion in Northshore/Green Mountain (this Master Plan addresses this).
3. Eventual addition of three-person engine companies.
4. Sustainable funding model/continuous decline of ambulance revenues.

Regulatory Documents

Organizations that operate efficiently are typically governed by clear guidance that lay the foundation for effective organizational culture. These policies set the boundaries for both expected and acceptable behavior, while not discouraging creativity and self-motivation.

An effective set of fire department rules and guidelines should, at a minimum, include two primary types:

1. **Administrative Rules.** This section contains the rules with which personnel in the organization are required to comply. Administrative Rules, by definition, require certain actions or behaviors in all situations. These administrative rules should complement city policies in place for peer departments, explaining in details any deviations that are necessary due to the unique mission of the fire department. These rules should be adopted or approved by either policy-makers or the key appointed officials for the city since the Fire Chief is also subject to them. However, the approving person or entity should then delegate authority to the Chief for their enforcement and administration below his level. The Administrative Rules should govern all fire department personnel, whether career or volunteer. Where rules require different application or provisions for different classifications of members, these differences should be clearly indicated and explained in writing. Specifically, the administrative rules should contain sections which at a minimum address:
 - Complaint filing process
 - Public records access and retention
 - Contracting and purchasing authority
 - Safety and loss prevention
 - Respiratory protection program
 - Hazard communication program
 - Harassment and discrimination
 - Personnel appointment and promotion
 - Personal conduct, disciplinary, and grievance procedures
 - Uniforms and personal appearance

2. **Standard Operating Guidelines (SOGs).** This section should contain “street-level” operational standards of practice for fire department personnel. SOGs are different from Administrative Rules in that variances are allowed in unique or unusual circumstances where strict application of the SOG would be less effective. The document should provide for a program of regular, systematic updating to assure it remains current, practical, and relevant. SOGs should be developed, approved, and enforced under the direction of the Fire Chief.

Ongoing review and revision of these documents is important. The first item in a fire department manual should include the process by which CWFD rules and guidelines are to be revised. Ideally, one-third of the regulatory documents should be reviewed each year, so the entire set is reviewed over a three-year period.

The policies of CWFD have recently been transitioned to Lexipol; a subscription and training service that develops and provides customized, comprehensive risk management policies. Lexipol is highly rated by the fire service nationally, and is considered an industry best practice. It ensures contemporary regulation of emergency services based on recent court cases and legal trends. Far from a “plug-and-play” system, Lexipol works with the client to address unique risks the agency faces based on its circumstances.

Department Communication

Of the major methods of routine communication within a fire department, most are utilized in CWFD. The typical methods of communication internally are listed below, and those which are utilized by the department are in bold:

- **Regularly scheduled Fire Department staff meetings, with written staff meeting minutes**
- **Memoranda (e-mails)**
- **Member newsletters (infrequent)**
- Agency Intranet
- Member forums (all-hands meetings)
- **Open door policy**
- **Vertical communication path clearly identified (organization chart for Chain of Command)**

ESCI was not able to review staff meeting minutes, and recommend they be kept and distributed as an accountability mechanism going forward. Information is often disseminated via e-mail (electronic memoranda). To effectively rely on this method, all personnel must be regularly reviewing their email account for this information. An added level of accountability should include Battalion Chiefs and or Company Officers reviewing these memoranda with crew meetings regularly. An open-door policy is practiced by the Fire Chief. This is an effective means of communication and should be continued and encouraged.

The Department's external communication with the community is less than robust. Of the typical methods used by contemporary fire departments, few are used by CWFD. The typical methods of communication externally are listed below, and those which are utilized by the Department are in bold:

- Community newsletter (broader city effort-not specific to CWFD)
- **Department website** (not as informative as it could be)
- **Advisory committee(s)**
- **Formal complaint process in place** (as part of the city policy)
- Community survey used (not fire department specific, but included in global city survey)

The fire department website is a very passive way to communicate with the public and requires citizens to take action to become aware of department information. The advisory committee mentioned by the Fire Chief is the JPAC, which is made up of internal city stakeholders. A citizen advisory committee with a less formal structure, could prove valuable as a Fire Chief's sounding board.

Documents & Security

Both cities comply with legal requirements for public records requests, therefore the CWFD does as well. The department has a Health Insurance Portability and Accountability Act (HIPAA) Compliance Officer assigned to ensure confidentiality of patient records and compliance of the regulations. Hard copies of other sensitive or protected records are on file in a secure file drawer. Electronic records are stored on the computer and are backed up off-site.

Facilities are locked when not in use and lockable vehicles are expected to be secured by the user of the vehicle when parked outside (staff vehicles). Response apparatus are stored in the apparatus bays of stations that are secured. The stations are secured with combination locks; these combinations must be changed at least annually to prevent unauthorized access to facilities and equipment by former members of the department.

CWFD does not have a complete inventory control system in place and does not conduct an annual inventory of attractive assets. The department should define attractive assets by policy, such as, "equipment items that fall below the capitalization threshold of \$5,000 and are not included in the department's capital replacement plan." An annual inventorying of these valuables is not regularly performed to account for the assets. Centralizing purchases within the cities can ensure all attractive assets are tagged and listed on the inventory, facilitating an accurate list from which to conduct annual physical inventories.

Annual reports are provided to the City Councils, which include a financial report, a management report, an operational report. The annual report also includes progress reports by major division, significant accomplishments, and analysis of response performance data. The annual report is a requirement of the contract with Washougal, and is also provided to the general public via posting on the fire department's website. ESCI recommends a more robust release of these reports by providing electronic versions of the report to key stakeholders in the community or links to the electronic report provided within the city newsletter or utility bills.

Key records kept in the department include incident reports, patient care reports, exposure reports, and self-contained breathing apparatus testing records. Gas monitors are calibrated internally and is a user-enabled task.

Other records or testing of critical systems are provided by contractors outside of the department. They include hose testing, ladder testing, pump testing, cascade system breathing air sample testing, and vehicle maintenance records. This is a standard and appropriate practice for small agencies lacking the staffing levels to conduct these tests independently.

RECOMMENDATIONS:

- Establish a strategic plan.
- Keep minutes of staff meetings and distribute to all personnel for added transparency and accountability.
- Define attractive assets as part of the department's policies.
- Establish, conduct, and maintain an annual inventory of attractive assets.

FIRE DEPARTMENT PLANNING

The fire service nationally creates and gathers large volumes of data in the performance of its duties, both from emergency response activities and in preparation for and anticipation of large-scale disasters. However, many of these same organizations do not analyze the data sufficiently to evaluate the effectiveness and adjust as necessary to become more effective or efficient. Accurately analyzed data provides fire service leaders with information from which to make key decisions and develop effective plans. The fire service has many different plans and planning functions that should be included in any fire department but are often set aside for higher priority issues. This can lead to disastrous consequences.

There are many categories of planning fire departments should employ. Key planning efforts include:

- Response Performance Planning (Standards of Cover; RCW 35A.92)
- Community Risk Assessment (CRA) Planning (Standards of Cover; stand-alone CRA)
- Community Risk Reduction (CRR) Planning (stand-alone CRR plan)
- Community Growth Planning (Master Plan; Growth Management Plan)
- Target Hazard Response Planning (Tactical Planning)
- Resource Planning
 - Staffing (Master Plan; Growth Management Plan; trigger points & projections for retirements, hiring, promotions)
 - Equipment (Master Plan; trigger points & projections for retirement, replacement, acquisition)
 - Facilities (Master Plan; Growth Management Plan; trigger points for land acquisition, construction, expansion)
 - Finances (Master Plan; revenue and expense projections)
- Succession Planning (Key leadership trait identification & development)
- Organizational Work Planning (Strategic Plan; goal & objective setting with timelines & assignments)

Response Performance Planning

This type of planning develops a community profile, evaluates the resources available to the fire department and the transportation network used to respond to emergencies, and establishes a set of response performance objectives. The intent is to help the community understand what they can reasonably expect from its fire department during emergencies. It also provides the fire department an opportunity to educate and inform the elected officials about actual limitations to its capabilities. This allows the policy-makers to balance risk and cost for the community. While this can be done internally by many fire departments, it is usually a labor-intensive endeavor. RCW 35A.92 identifies the key performance metrics a community should use, but is not a substitute for local policy-makers to make informed cost-benefit decisions.

A Standards of Cover is an industry best practice for the fire service nationally. It combines a community risk assessment with the elements of response performance planning, ensuring that components such as a critical task analysis, distribution and concentration of resources, and agency-specific service level objectives are combined to establish an effective response to emergencies. The purpose for completing such a document is to assist the agency in ensuring a safe and effective response force for fire suppression, emergency medical services, and specialty response situations.

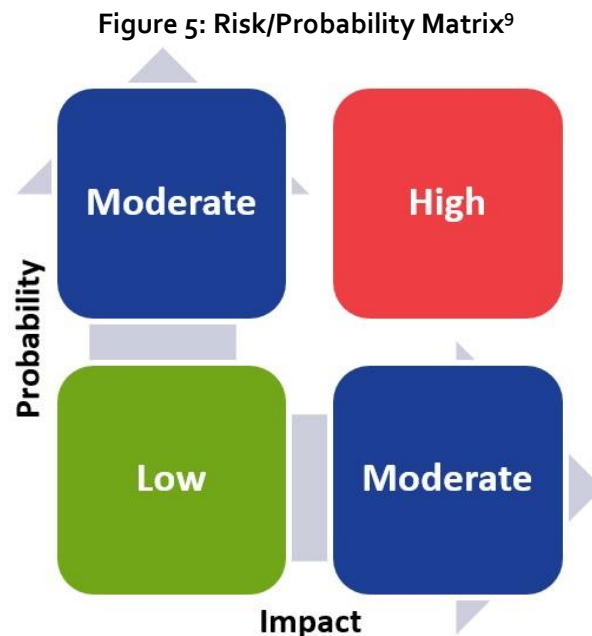
In the 2015 Annual Report, CWFD published an internally created document referred to as a Standards of Cover. It does not include a community risk assessment, and does not address numerous elements normally contained within a Standards of Cover. While it is titled a Standards of Cover, it is more accurately a compliance document for RCW 35A.92, *Fire Departments—Performance Measures*. ESCI recommends programming into the planning horizon the establishment of a Center for Public Safety Excellence (CPSE), 6th Edition compliant *Community Risk Assessment: Standards of Cover*.

RECOMMENDATION:

- Plan for the development of a Center for Public Safety Excellence (CPSE), 6th Edition compliant *Community Risk Assessment: Standards of Cover*.

Community Risk Assessment Planning

As emergency response agencies, fire departments must thoroughly understand their community risks. These risks must be quantified. There are numerous risk/consequence- or risk/probability matrices available; but regardless of the labels on the axes, they usually fall into one of the quadrants in the following figure.



⁹ "Risk Impact/Probability Chart: Learning to Prioritize Risks." Risk Impact/Probability Chart. N.p., n.d. Web. 22 June 2016.

As the risk is quantified generally into one of the four quadrants, a decision is made based on the level of risk. Communities cannot create a zero chance of a risk, which would indicate there is no risk. Likewise, there cannot be a 100% chance of a risk, since that would make it a certainty, not a risk. Every community must come to grips with an acceptable level of risk, recognizing that it is improbable, impractical, and unaffordable to eliminate risk in a community. Using a matrix helps fire department officials determine approximately where the line is between an acceptable and unacceptable risk. It is important to note that for the individuals directly involved in an incident, it is never considered an acceptable risk. The quadrants in the previous figure may be defined as follows.

- **Low impact/low probability:** Risks in the bottom left corner are low level, with acceptable consequences if the incident occurs. These can often be considered acceptable risk and require no further action.
- **Low impact/high probability:** Risks in the top left corner are moderate level—if the incident happens, the fire department can usually handle it with existing resources. However, effort should be given to reduce the likelihood that these incidents occur. This is where community risk reduction strategies pay significant dividends to a community.
- **High impact/low probability:** Risks in the bottom right corner are high level if they do occur, but they are very unlikely to happen. Risks in this quadrant are prime candidates for training and contingency planning. A fire department may spend time and energy preparing for such an incident and may even acquire specialized equipment and other non-staff resources to prepare for this risk. These risks also lend themselves well to community risk reduction strategies, such as public education, community engagement, and code enforcement.
- **High impact/high probability:** Risks toward the top right corner are critical. These should be the highest priorities for the fire department and for the community. Aggressive action is required, such as staffing for these risks, equipping for these risks, and engaging the community in risk reduction and preparedness.

Once the community risks are identified and appropriately categorized, plans of action are developed consistent with their category.

These risks can be building specific, neighborhood specific, citywide, or even regional. The *Clark County Comprehensive Emergency Management Plan* should be incorporated into the risk assessment for CWFD, and can be a significant resource for the department in developing a risk assessment.

RECOMMENDATION:

- If a CPSE 6th Edition compliant *Community Risk Assessment: Standards of Cover* is not created, develop a stand-alone Community Risk Assessment.

Community Risk Reduction Planning

CRR is defined as a process to identify and prioritize local risks, followed by the integrated and strategic investment of resources (emergency response and prevention) to reduce their occurrence and impact. Much of the current literature and training materials suggest that Community Risk Reduction programs use a six-step approach towards development. Figure 6 depicts these steps.



Community risk reduction is not a new concept for the fire service. Fire departments have been actively involved in fire prevention for many years through public education, building inspections and other activities. Although there is no specific blueprint for developing CRR plans in U.S. fire departments, there are some common and essential steps. Ultimately, the CRR plan will be unique to each fire department, based on the types of risks for that particular community.

Not only will a CRR plan be different for each fire department, but depending on the size of the agency it will vary from station to station. The risks in one station's area may be vastly different than an adjoining station based on various factors including demographics, type of residences (multi- or single-family homes), or commercial areas. Essentially, the fire service exists not only to respond to emergency incidents, but also to proactively prevent or mitigate the impact of such incidents within their communities. CRR provides a more focused approach to reducing specific risks. In addition, a comprehensive CRR program involving community partners, firefighters, and other staff, can result in an organizational culture that recognizes the importance of reducing risks within a community. It is important that fire service leaders, its firefighters, and other staff begin to shift their thinking towards reducing and mitigating risks, as this will ultimately be expected by their communities and elected officials.

In its simplest form, a CRR plan combines the results of a community risk assessment with local historical response data analysis and trends and identifies strategies to reduce the risk or reduce the consequences of a risk manifesting itself within the community.

RECOMMENDATION:

- Develop and adopt a Community Risk Reduction plan.

Community Growth Planning

Community growth planning for a fire department focuses on three things: land use planning/zoning, population density and projections, and current fire department resource capability. Washington State has enacted the Growth Management Act (GMA), a series of state statutes, first adopted in 1990, that requires fast-growing cities and counties to develop a comprehensive plan to manage their population growth. Camas and Washougal both comply with the provisions of the GMA, therefore development will be consistent with current zoning and land uses within their respective plans. Further, the population of that development can be anticipated and projected.

Since a roadmap for growth within the cities of Camas and Washougal has been created, the fire department and elected leaders have the information necessary to grow the CWFD's resources wisely and incrementally to absorb the impact of community growth. CWFD's capacity is already limited (see *Service Delivery & Performance* section of this report), so growth will only exacerbate those limitations.

ESCI conducted interviews with the Community Development Directors for both the City of Camas (Mr. Phil Bourquin) and the City of Washougal (Mr. Mitch Kneipp). The results show two divergent trajectories for growth.

In the City of Camas, the recent history reflects consistent growth at an increasing rate. Between 2014 and 2017, Camas saw an average of 235 homes constructed per year. In 2018, there were 275 homes added to the city inventory, and in 2019, the number increased to an estimated 550 homes (includes condominiums and apartments) at the mid-point of the year. Existing plans include approximately 2,500 housing units on the north end of Lacamas Lake (Northshore/Green Mountain) and an additional approximately 2,500 in-fill units distributed throughout the city. The current Camas population is estimated at just under 25,000. According to the 2035 Comprehensive Plan, the population for Camas is projected to be 34,098, or approximately 37% over 2019 (this projection was created in 2015). Existing building height restrictions are 35 feet for residential properties and between 65 and 100 feet for commercial structures.

The *Camas 2035 Comprehensive Plan* identifies within its vision statement, "...a variety of businesses that offer stable employment opportunities and family wage jobs in the medical and high-tech fields. Camas is a gateway to nature and recreational opportunities, leading to a robust tourism industry. Professional office, medical, and industrial uses will typify western Camas, with retail businesses supporting the large campus firms. The north shore area will fulfill the employment and retail needs of the growing population on the northeast side, and reduce trips outside of the city."

A current large employer operating in Camas plans to add two more buildings (towers) representing approximately 50,000-square-feet of added commercial floor space and employing approximately 1,400 more employees that are considered high paying jobs. This one project will generate significant employment, a substantial increase to the tax base, and likely increased higher end housing needs. It also has the potential to negatively impact CWFD's response capability and WSRB rating, given its undersized staffing capability, low depth of resources, and the absence of any aerial device.

Camas's population projection (2015–2035 Comprehensive Plan) is 34,098 by 2035 (+37%).

Washougal has a different philosophy on growth. The *Washougal 2035* Comprehensive Plan states that, “Washougal can fulfill the 20-year forecasted population and employment needs within the existing urban growth boundary; therefore, Washougal is not seeking an urban growth boundary expansion as part of this periodic Comprehensive Plan update process.” After significant effort to gather community input for a common vision for the city, the feedback reflected:

- A desire for a variety of housing types in the Northwest UGA while maintaining the rural feel of the area;
- Limited commercial or retail uses would be appropriate, but did not want large employment centers in the Northwest UGA;
- Parks and trail connectivity are important, as well as the potential for community-serving uses, such as a community center;
- The Northeast UGA participants wanted to see a variety of housing types but only limited employment-related uses;
- Participants expressed a desire for community spaces and parks and trails and thought some small, neighborhood-retail uses could be appropriate;
- Workshop participants made it clear that Washougal City Center needs to take advantage of its natural setting and proximity to the Gorge, the Columbia and Washougal Rivers, the wildlife refuge, and other natural amenities.

The plan reports that participants expressed the need for a vision to knit Washougal together and create a new identity. In short, the desired vision is to maximize natural amenities, maintain a rural feel in the northern portions of the city and retain a small town feel downtown, but with convenient retail amenities to serve the city residents. Indeed, the city is reflecting that sentiment. The majority of Washougal is zoned urban low density residential, with town center designation in the center of the city and general commercial zoning on the north side of Evergreen Way/E Street and the west end of State Route 14 on both sides. Heavy industry is limited to the port area on the south side of State Route 14 along the Columbia River, buffered by parks and open space.

Growth in the city has been limited, with an estimated 281 homes to be added in the northwest area of the city in the near to mid-term. Most of the growth in the city will be infill, and that will be limited. Industrial growth is primarily contained in the Port of Camas-Washougal along the banks of the Columbia River within Washougal. The port has 120 acres of land ready for development, where they anticipate an approximately 50,000-square-foot warehouse-type construction to occur. Commercial growth is anticipated along E Street, the waterfront, and the City will soon begin working on a subarea plan with a possible planned action ordinance for its Town Center Districts. This planning process will look at ways to increase population and employment within these downtown districts.

Washougal’s current building height restriction is 35 feet for residential properties and up to 75 feet for commercial structures. The existing maximum building height in the Town Center districts is 55 feet; however, as part of the subarea plan work there may be some discussion about increasing the height.

Washougal’s population projection (2015–2035 Comprehensive Plan) is 22,374 by 2035 (+39%).

RECOMMENDATION:

- CWFD administration must be actively involved in any comprehensive plan amendment discussion to provide information on the unforeseen or unintended consequences of design or density (access problems and fire spread potential) and increased building height (increased deficiency for lacking a ladder truck).

Target Hazard Response Planning

In many instances, high-risk facilities within a jurisdiction are preplanned in the event of an incident occurring there. By focusing on these specific risks—or target hazards—fire personnel become very familiar with these facilities, understanding what risks each of these facilities pose and what features the building has that can be used to gain a tactical advantage, such as area separation walls or built-in fire deluge systems.

For those buildings that have been identified as target hazards, CWFD should develop a short-form, one-page pre-incident “site plan” that is accessible by the crews on the scene (a tactical worksheet specific to that building). Further, those worksheets should be used in drills to get all personnel familiar with the target hazards and what considerations should be in play during an incident. Crews should spend any down time conducting walk-throughs of these facilities and discussing hypothetical scenarios to avoid surprises during an actual incident there.

In addition to the short-form tactical worksheets, more complex, detailed site-specific information can be compiled in advance of an incident and kept electronically, accessible by incident commanders during a sustained emergency incident or accessible to training personnel for tabletop exercises.

RECOMMENDATION:

- Develop response plans and tactical worksheets for target hazards, and training on them regularly.

Resource Planning

Resource planning is a heading under which numerous subject areas fall. Those resources include staffing, apparatus and equipment, facilities, and finances.

Staffing

As a city fire department, the staffing should be planned for in coordination with Human Resources. In order to conduct an effective staffing plan, CWFD must address the following elements:

- Identify the minimum number of personnel by rank, by certification, and by location/unit for each shift. This is done to comply with response targets, critical task analyses, alarm assignments, and response performance goals, as well as any city policies or collective bargaining agreements. A Standards of Cover that includes a critical task analysis for each major risk type will help determine the number of resources necessary to mitigate foreseeable incidents. Adopted performance goals (in compliance with RCW 35A.92) will also help identify minimum staffing levels. Finally, determine if collective bargaining agreements identify minimum staffing levels.
- Factor in leave usage (discretionary and unscheduled) staffing levels on each shift. Discretionary, or scheduled leave, should be balanced across the entire year to spread the exposure evenly and increase consistency of staffing levels. Unscheduled leave (sick leave, disability leave, FMLA) should be viewed historically, identifying trends and average leave usage year-to-year. The mean unscheduled leave usage should be factored into the leave numbers to identify what additional leave factor should be calculated. Finally, by determining the total scheduled leave and unscheduled factor into the shift scheduling can inform the proper number of employees to assign to a shift, thereby reducing overtime exposure.
- Determine retirement eligibility for each member of the department on shift to anticipate large groups of turnover, which helps determine whether a recruit class will need to be hired or individual firefighters will need to be brought in. Asking retirement eligible members to provide an informal, nonbinding expression of their intent should become a routine annual process, not one fraught with concern over being viewed as encouragement to retire. If done routinely and annually, everyone will know it is not an attempt to cause retirements, but an effort to plan ahead.
- If Camas considers the implementation of the four-platoon schedule, using debit days to balance out the staff leave exposure or reduce overtime is a valuable commodity. While it is likely management's desire to control 100% of the debit days, it will undoubtedly be labor's desire to control 100% of the debit days. Landing in the middle and controlling half still provides a potentially significant offset of leave exposure or overtime risk.

Apparatus & Equipment

Fire department apparatus must be reliably operated when a response is called for 100% of the time without fail. This requires a high level of maintenance and assurance that each unit will operate as intended every time. As can be appreciated, this is an expensive endeavor. NFPA 1911: *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles* provides guidance for the effective lifespan of apparatus that calls for apparatus to be maintained in front line service for no more than 15 years, and should not be kept in reserve status for more than an additional ten years. According to Annex D of this standard, "Apparatus that were not manufactured to the applicable NFPA fire apparatus standards or that are over 25 years old should be replaced." ESCI supports Annex D of these standards as they relate to replacement schedules (or refurbishment) for heavy fire apparatus (engines, tenders, and ladder trucks). Lighter duty response vehicles, such as brush units, medic units, or support vehicles are not required to meet the replacement criteria in Annex D.

The intent behind Annex D is to maintain firefighter safety. Apparatus manufacturers comply with the NFPA standard each year. With changes to the standard every few years, improvements such as lighting, visibility, crew compartment safety, rollover protection, harnessing of passengers, and other safety systems are added. Annex D recognizes that an older fleet that has not been upgraded to meet current NFPA standards pose a greater risk than newer apparatus. A retrofitted apparatus that has been upgraded may meet the intent of NFPA 1911 and Annex D. Annex D is only guidance, not a mandate, and is included in this report as Appendix B.

Jurisdictions are often unaware of criteria that can be used to establish an apparatus replacement plan that factors in usage, mileage, and general mechanical reliability rather than exclusively relying on a hard date. The following figure illustrates a process whereby an agency can assign a scale to determine when a unit is approaching the end of its frontline life cycle.

Figure 7: Apparatus Replacement Criteria

Evaluation Components	Points Assignment Criteria	
Age	One point for every year of chronological age, based on in-service date.	
Miles/Hours	One point for each 10,000 miles or 1,000 hours.	
Service	1, 3, or 5 points are assigned based on the type of service a unit receives. For instance, fire pumpers would be given a five because it is classified as severe duty service.	
Condition	This category takes into consideration body condition, rust interior condition, accident history, anticipated repairs, ect. The better the condition the lower the points assignment.	
Reliability	Points are assigned as 1, 3, or 5 depending on the frequency that a vehicle is in the shop for repair. For example, a 5 would be assigned to a vehicle in the shop two or more times per month on average, while a 1 would be assigned to a vehicle in the shop an average of once every three months or less.	
Point Ranges	Condition Rating	Condition Description
Under 18 points	Condition I	Excellent
18 to 22 points	Condition II	Good
23 to 27 points	Condition III	Consider Replacement
28 points or higher	Condition IV	Immediate Replacement

In addition to apparatus replacement schedules, there is expensive capital equipment carried on the apparatus and also need to be reflected in a replacement schedule. This includes medical equipment, such as defibrillator-monitors and power stretchers, and firefighting equipment such as self-contained breathing apparatus and ruggedized portable radios. An expected service life can be obtained from manufacturers of these various types of equipment.

In developing an apparatus and equipment replacement plan, the criteria for replacement must be established. The price point for the apparatus and equipment must be determined, along with a price escalator to project how much money will be required to purchase replacement vehicles and equipment once they have reached the end of their useful lives. Each year, that price escalation factor should be evaluated against the actual price increases that year and the replacement schedule trued up. When apparatus is retired, there is usually a nominal return for the salvage value of the sale. Proceeds from this should also be reinvested into the apparatus and equipment fund.

Funding the replacement schedule is also key to an effective plan. It provides little value to know when a unit must be replaced when there are no funds available to actually replace it. Therefore, a policy decision must be made. Are funds set aside from the fire department budget or the city general fund each year to adequately implement the replacement schedule as apparatus and equipment reach the end of their useful life? Do we intend to bond/finance the replacement of a large portion of the fleet? If so, can it or should it coincide with facility needs?

Anticipating the need for new types of apparatus is also key to effective apparatus and equipment planning. For example, CWFD is in need of a ladder truck, given the number of high fire flow building and taller buildings with access issues. Knowing when such apparatus should be added to the fleet and how it will be staffed is critical. In this case, looking to the Washington Surveying and Rating Bureau (WSRB) for grading criteria is an excellent source. Within the grading schedule of the WSRB, deficiency points are assigned for gaps in capability. The greater the need for aerial apparatus (ladder trucks), the more deficiency points are assigned. This can contribute to a decline in rating and ultimately an increase on commercial insurance premiums for businesses in the community. The criteria for requiring or adding a ladder company is as follows:

"A ladder truck is required when a community has at least five buildings with a required fire flow of 4,000 gpm or greater and/or three stories (35 feet) in height." —WSRB

The CWFD currently meets the criteria for needing a ladder truck. The department received 121 deficiency points (0 credit) for a ladder truck in the 2018 rerating, which is greater than 10% of the total fire department deficiency points assigned.

Facilities

By using the results of the staffing and apparatus planning, an assessment of the facilities and their ability to handle any growth in those areas is an important next step in planning consideration. Facility condition is another important factor, especially when the facilities are considered a critical infrastructure that helps ensure community resiliency after a disaster. Seismic upgrades should be considered when conducting a remodel or addition to an existing building.

Older stations do not always accommodate newer fire apparatus, so careful evaluation of width, height at the bay doors, and depth into the bay should be considered. In addition to crew quarters, ADA accessibility, apparatus size, LEED building certification, and general condition of the stations, heavy maintenance should be considered. This includes HVAC system maintenance, roof analysis and repair, ramp concrete crack or pothole repair, energy efficiency audits, and bay drains.

New facilities should be planned for in response to Community Growth Planning and Master Planning. GIS mapping of travel times to proposed annexation areas or added thoroughfares will help identify proper locations for a future fire station. Securing land for such eventuality is less expensive when done before development occurs. The land can sit vacant until such time as call volumes begin to warrant construction of a new station. Generally, a fire station should be within 4 minutes travel distance of properties it is intended to protect. Further, call volume growth should be a primary trigger for action. Currently, CWFD has an area that is zoned for business park; medium and multi-family high density housing; commercial and industrial development. It is destined for a more intense level of development with a mix of shops, services, and public spaces. This area is generally surrounding the north portion of Lacamas Lake. Currently, the area has a low call volume. As development occurs and call volume increases, the need for another fire station in this underserved area becomes increasingly apparent. Specific recommendations for responding to this growth can be found in the *Strategies* section of this report.

Finances

Obviously critical is the funding to respond to any planned needs, whether staffing (ongoing cost), apparatus and equipment (episodic), or facilities (infrequent). A Fire Chief who invests in detailed planning and partnering with allied departments or agencies make the need easy to identify. Collaborating with the Finance Director for a city is critical.

Developing the expense side of the financial plan is fairly straightforward but can be tedious. Staging the expenses so the spikes and dips are limited can be an art form. Developing strategies to generate the revenue necessary to fund these new or added expenses normally consists of choices the elected officials must grapple with. If the financial plan for the fire department is thorough and well thought out, complete with details, contingencies, and predictable consequences for failure to act, the Fire Chief has significantly increased the likelihood that the elected officials will seek ways to fund the plans.

An industry best practice is to include the fire department's needs (indeed, all of public safety) in the city capital facilities plan and financial projections (revenue and expense) through the life of the plan (2035). This helps the agency prepare for foreseeable growth challenges and identifies contingencies in the event funding mechanisms fail to adequately deliver. Establishing a healthy emergency reserve fund also hedges against the unforeseen fiscal calamities, such as a deep recession. An example of such a plan for fire departments can be found at North Whatcom Fire & Rescue.

Every eight years, Washington State's Growth Management Act requires that cities and counties update their Comprehensive Plans. Less extensive revisions are allowed through the docketing process and County-initiated amendment proposals in the years between the major update cycle. It is important that the CWFD be at the table for each of these major and minor plan amendments.

RECOMMENDATIONS:

- Develop a staffing plan that factors in:
 - Minimum number of personnel by rank, by certification, and by location/unit for each shift.
 - Leave usage (discretionary and unscheduled) staffing levels on each shift.
 - Retirement eligible members on shift to anticipate large turnover.
- Adopt an apparatus replacement plan that:
 - Establishes a funding mechanism or philosophy for replacement of retiring apparatus.
 - Includes equipment, such as self-contained breathing apparatus, cardiac monitors, extrication equipment, cascade systems, and radio systems.
- Establish a capital improvement plan that:
 - Addresses existing facility improvements.
- Develop a financial forecast to reflect the staffing, apparatus, and capital facilities financial needs.

Succession Planning

The fire service nationally has been slow to address or implement succession planning in its fire departments. In the private sector, succession planning is expected where the knowledge, skills, and abilities of the chief executive officer are critical to the success of the organization. It is equally true in the public sector. The following are key steps to developing a succession plan:

- Identify the agency's critical positions, functions, skills, processes, and systems
- Develop a list of critical success factors
- Identify past, current, and expected levels of performance
- Identify and categorize gaps (urgency, gravity, short-, medium-, or long-term)
- Develop ideal candidate profile (given the results listed above)
- Determine if an internal candidate has potential to meet criteria
- Develop mentoring plan

It is important that the incumbent CEO (or other position) buys into the plan, unless the organization intends to diverge from the current path. If a new path is desired, a member of the policy-makers or an outside "loaned executive" may be required to act as coach/mentor for an internal successor. It is also critical that the potential successor be informed whether ascension to the CEO position is a *fait accompli* or if candidates must compete.

RECOMMENDATION:

- Develop a succession plan for the Fire Chief position.

Organizational Work Planning

An organizational work plan is essentially a strategic plan. The strategic planning process results in a three-to-five-year work plan, intended to guide the work effort of the entire organization toward a common set of goals and objectives. The process includes representation from every major interest group in the organization. Each person in the department should feel that their interests are represented by someone in attendance on the planning team.

Typically, all members of the department are invited to submit responses to an electronic survey, which includes their individual, anonymous feedback on a SWOT (Strengths, Weaknesses, Opportunities, and Threats) Analysis well in advance of a planning workshop. Each member completes the survey, with the results (summarized) are shared with the planning team prior to their work beginning.

If external stakeholders are given an opportunity to provide feedback (ESCI recommends this), citizens are provided with an opportunity to provide feedback in a facilitated session. This facilitated citizen forum should solicit their expectations of the fire department. The results of this forum are shared with the internal planning team to ground the participants in meeting the customers' needs.

A planning meeting should then be convened to identify and develop the following elements:

- Mission, Vision, and Values
- SWOT Analysis trends
- Strategic Initiatives
- Goals and Objectives
- Timelines
- Personnel responsible for follow-through

It is important to avoid front-loading the plan. Instead, the timelines should maintain a relatively balanced workload over the life of the plan. The plan, once adopted, must be briefed to all personnel and regularly reviewed for progress. Momentum must be maintained during the life of the plan, and the plan should be updated annually to keep it contemporary.

CWFD does not have a current strategic plan, which would help all personnel to know the direction of the department. Developing a strategic plan would also help the department achieve what it intends to do based on the plan.

RECOMMENDATION:

- Develop and adopt a strategic plan.

CAPITAL FACILITIES AND APPARATUS

Capital assets include all facilities, apparatus, and key equipment used on the apparatus dedicated to achieving the mission of the fire department. The single most expensive infrastructure elements in the fire department are facilities and apparatus. Because of this expense, planning must be developed to address replacement, refurbishment, and maintenance. The funding of these elements is difficult to absorb for most agencies in a single year, thus a multi-year funding strategy or funding source must be identified. The replacement or refurbishment must be planned far enough ahead of actual expense to allow the agency time to acquire the funds necessary to implement the plan. The current replacement/refurbishment plan for CWFD facilities has not been updated recently.

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.

Facilities

Each of the three CWFD stations was visited on May 21, 2019. The visit included a walk-through of each building with focus on construction, building condition, building amenities, and visible problems or issues. The apparatus assigned to each station were inventoried and rated for condition. The fire facilities for the CWFD range from poor to excellent condition. The guidance ESCI uses to determine a station’s condition are illustrated in the following figure.

Figure 8: Facilities Condition Definitions

Excellent	Like new condition. No visible structural defects. The facility is clean and well maintained. Interior layout is conducive to function with no unnecessary impediments to the apparatus bays or offices. No significant defect history. Building design and construction matches building purpose. Age is typically ≤ 10 years.
Good	The exterior has a good appearance with minor or no defects. Clean lines, good work flow design, and only minor wear of the building interior. Roof and apparatus apron are in good working order, absent any significant full thickness cracks or crumbling of apron surface or visible roof patches or leaks. Building design and construction matches building purpose. Age is typically ≤ 20 years.
Fair	The building appears to be structurally sound with weathered appearance and minor to moderate non-structural defects. Interior condition shows normal wear and tear, but flows effectively to the apparatus bay or offices. Mechanical systems are in working order. Building design and construction may not match building purpose well. Showing increasing age-related maintenance, but with no critical defects. Age is typically 30 years or more.
Poor	The building appears to be cosmetically weathered and worn with potentially structural defects, although not imminently dangerous or unsafe. Large, multiple full-thickness cracks and crumbling of concrete on apron may exist. Roof may have evidence of leaking and/or multiple repairs. The interior is poorly maintained or showing signs of advanced deterioration with moderate to significant non-structural defects. Problematic age-related maintenance or major defects are evident. May not be well suited to its intended purpose. Age is typically ≥ 40 years.

Station 41 is located in downtown Camas and serves as the headquarters station. The administrative offices are located at Station 41. The Fire Marshal's Office is located in a separate building on the same city block. Camas City Hall is attached to the fire station. Station 41 was constructed in the 1960s and has been remodeled a few times. The building does not meet current earthquake standards. Cracks in the masonry walls of the apparatus bay are visible. The apparatus bays are back-in only. There is no direct exhaust capture system. The living quarters are small and office space is limited. The building can house up to six firefighters 24 hours per day. There is no dedicated training room. A workout room is located in a difficult to access basement. There is no room for a personal protective equipment extractor. The building is protected by an automatic fire sprinkler system. The building is cramped, obsolete, and considered to be in poor condition.

Station 42 is located in the northwest area of the jurisdiction. The area has been rural, but is experiencing residential, industrial, and commercial growth. The station was built in 2001 and is in excellent condition. The station was well designed for personnel living quarters, apparatus access and parking, and training facilities. The apparatus bays are drive-through. There is no personal protective equipment extractor on site. There is no direct exhaust capture system. The station can house five firefighters, 24-hours-per-day. Seismic safety of the building was built to the 2001 standards. The building is protected by an automatic fire sprinkler system. The site is large and provides opportunity for expansion in the future. The building is considered to be in good to excellent condition.

Station 43 is located in Washougal near the downtown area and State Highway 14. The Butler pole building station was originally built in 1974. The building was the headquarters station for the City of Washougal, before the CWFD merger. The building does not have an automatic fire sprinkler system. There is no direct exhaust capture system. There is no personal protective equipment extractor on site. The station has one drive-through apparatus bay, and four back-in bays. The building is considered to be in fair condition.

The following is an assessment of the capital facilities and lists apparatus and equipment assigned at these CWFD facilities.

Figure 9: Camas-Washougal Fire Station 41


Station Name/Number:		CWFD Station #41				
Address/Physical Location:		616 NE 4th Ave, Camas, WA 98607				
		General Description: Fire Station 41 is located in the downtown area of the City of Camas. The building is attached to City Hall. The building was originally constructed in the 1960s. It is well cared for, but is obsolete for delivering current fire and EMS services. The building does not meet current earthquake safety standards. There is a large crack in one of the exterior walls. Living quarters are small and office space is limited. There is no dedicated training room at this station. Current furniture is in usable condition.				
Structure						
Construction Type		Cinder block and concrete				
Date of Construction		Original construction in 1960s. Interior remodel in 2012.				
Seismic Protection		No				
Auxiliary Power		Yes				
General Condition		Poor				
Number of Apparatus Bays		0	Drive-through bays	4	Back-in bays	
Special Considerations (ADA, etc.)		No ADA access to fire station area.				
Square Footage						
Facilities Available						
Separate Rooms/Dormitory/Other		6	Rooms	6	Beds	Beeds in dormitory
Maximum Station Staffing Capability		6				
Exercise/Workout Facilities		In basement of attached City Hall.				
Kitchen Facilities		Yes				
Individual Lockers/Storage Assigned		Yes				
Shower Facilities		Yes				
Training/Meeting Rooms		No				
Washer/Dryer		Yes. The station does not have a PPE extractor.				
Safety & Security						
Sprinklers		Yes				
Smoke Detection		Yes				
Decontamination/Biohazard Disposal		Yes				
Security		Door code from exterior, but free access from City Hall Offices.				
Apparatus Exhaust System		Yes. Upon door opening; electric fans. No positive connection exhaust system.				
Apparatus Call Sign		Minimum Staffing		Comments		
BC41		1				
E41		2 CS		CS = cross-staffed		
M41		2				
M44		2 CS		CS = cross-staffed		

Figure 10: Camas-Washougal Fire Station 42



Station Name/Number:		CWFD Station #42				
Address/Physical Location:		4321 NW Parker St, Camas, WA 98607				
		General Description:				
		This fire station is located in the growing northwest area of the city. The station was well designed for personnel living quarters, apparatus parking, and training facilities. The training room and training tower on-site are well used by in-house and neighboring recruit and other specialized training. The site is large and provides options for expansion in the future. Appliances and furnishings appear to be good and in usable condition.				
Structure						
Construction Type		Light weight/wood frame				
Date of Construction		2001				
Seismic Protection		Built to code at time of completion.				
Auxiliary Power		Yes				
General Condition		Good				
Number of Apparatus Bays		3	Drive-through bays	0	Back-in bays	
Special Considerations (ADA, etc.)		ADA compliant				
Square Footage		11822				
Facilities Available						
Separate Rooms/Dormitory/Other		5	Bedrooms	5	Beds	Beds in dormitory
Maximum Station Staffing Capability		5				
Exercise/Workout Facilities		Yes				
Kitchen Facilities		Yes				
Individual Lockers/Storage Assigned		Yes				
Shower Facilities		Yes				
Training/Meeting Rooms		Yes				
Washer/Dryer		Yes. No PPE extractor on site.				
Safety & Security						
Sprinklers		Yes				
Smoke Detection		Yes				
Decontamination/Biohazard Disposal		Yes				
Security		Coded exterior doors				
Apparatus Exhaust System		Upon door opening, electric fans. No positive connection exhaust system.				
Apparatus Call Sign		Minimum Staffing		Comments		
E42		2 CS		CS = cross-staffed		
M42		2 CS		CS = cross-staffed		
E46				Reserve		

Figure 11: Camas-Washougal Fire Station 43

Station Name/Number:	CWFD Station #43				
Address/Physical Location:	1400 A Street, Washougal, WA 98671				
	General Description:				
	This fire station is located in the City of Washougal commercial area. This is a good location for access to Hwy. 14 and the downtown area. The building formerly housed the Washougal Fire Department offices. The building is in fair condition and well cared for by staff.				
Structure					
Construction Type	Butler pole building				
Date of Construction	1974				
Seismic Protection	No				
Auxiliary Power	Yes, diesel.				
General Condition	Fair				
Number of Apparatus Bays	1	Drive-through bays	4	Back-in bays	
Special Considerations (ADA, etc.)	Non-ADA compliant				
Square Footage	11260				
Facilities Available					
Separate Rooms/Dormitory/Other	6	Bedrooms	6	Beds	Beds in dormitory
Maximum Station Staffing Capability	6				
Exercise/Workout Facilities	Yes				
Kitchen Facilities	Yes				
Individual Lockers/Storage Assigned	Yes				
Shower Facilities	Yes				
Training/Meeting Rooms	Yes				
Washer/Dryer	Yes. No PPE extractor on site.				
Safety & Security					
Sprinklers	No				
Smoke Detection	Yes				
Decontamination/Biohazard Disposal	Yes				
Security	Coded doors to exterior				
Apparatus Exhaust System	Upon door opening, electric fans. No positive connection exhaust system.				
Apparatus Call Sign	Minimum Staffing	Comments			
E43	2	Only engine without dedicated ALS			
M43	2				
E44	2	Volunteer engine/Reserve			
M45		Reserve			

Common Facility Issues

None of the fire stations are equipped with personal Protective Equipment (PPE) extractors. Many forms of cancer are becoming increasingly identified as job-related exposure, and protective equipment that has been contaminated with many of these cancer-causing fire byproducts is a potential cause. Extractors are needed at each station. Alternatively, obtaining back-up PPE for each member and hiring a service to decontaminate gear within 24 hours is an option.

None of the fire stations have direct exhaust capture systems. All fire stations should have direct capture exhausts systems installed as funding is secured.

RECOMMENDATIONS:

- Install PPE Extractors at each fire station. Alternatively, obtain back-up PPE for each member and hire a service to decontaminate gear.
- Install direct exhaust capture systems at fire station as funding is secured.
- Update and implement a building replacement and refurbishment plan.
 - Seismically retrofit each fire station that remains in the system.

Apparatus

The apparatus serving frontline duty were evaluated simultaneous to the facility assessment. CWFD maintains a fleet of response vehicles that are aging, but well maintained. The overall condition of the fleet was found to be fair to good. The average age of the frontline fire engines is 7 years old. Frontline ambulances average 3.5 years old and frontline brush trucks average 22 years old. The overall mileage and hours on the fire engines appear to be normal for the age and use. The ambulances are accumulating high mileage and are replaced more often as needed. The ambulances and engines have Automatic Vehicle Location (AVL) technology, allowing CRESA to dispatch the closest unit to an incident without regard to the station assignments based on GPS coordinates.

The Washington Surveying and Rating Bureau has established criteria for certain fire suppression resources to be available for fire suppression purposes. Failure to do so warrants receiving deficiency points, affecting the overall Public Protection Classification, which can effect fire insurance premiums for businesses and potentially residential properties. Within these requirements, the WSRB has determined that the CWFD is required to have a ladder truck, since there are "...at least five buildings with a required fire flow of 4,000 gallons per minute or more, and/or 3 stories (35 feet) in height."

ESCI believes this can be a cross-staffed unit. Given the *Camas 2035* Comprehensive Plan identifies the potential for 100-foot building height, a ladder truck capable of serving that height of building is advisable. Alternatively, establish an automatic aid agreement with Vancouver Fire Department for ladder truck services to CWFD target hazards requiring one. Finally, consider limiting building height to reduce the reach required by a ladder truck, which has a direct bearing on the expense of that apparatus. CWFD received 121 deficiency points for failure to have a ladder truck (or automatic aid that provides one) in the 2018 WSRB rating.

The following figure lists the current emergency response vehicles in CWFD.

Figure 12: Camas-Washougal Fire Department Apparatus

Radio	Unit	Type	Chassis	Mfr.	Year	Condition	Mileage	Other Features
N/A	031	Parade Engine	ALF	ALF	1929	Fair	Unknown	Antique
E46	315	Engine (R)	ALF	ALF	2003	Fair	70,724	1,500gpm/750gal
E42	378	Engine (R)	Spartan	BME	2009	Fair	60,345	1,500gpm/750gal
E44	409	Engine	Sutphen	Sutphen	2004	Fair	53,114	1,500gpm/750gal
E43	410	Engine	Sutphen	Sutphen	2010	Fair	72,397	1,500gpm/640gal
E41	465	Engine	Pierce	Pierce	2016	Good	16,579	1,500gpm/750gal
B42	219	Brush	Chevy	Chevy	1993	Fair	12,375	125gpm/325gal
B41	415	Brush	Chevy	Chevy	1994	Fair	43,156	60gpm/250gal
B43	416	Brush	Ford	Ford	2004	Fair	38,568	300gpm/500gal
M45	382	Medic	GMC	Medtec	2009	Fair	114,154	
M44	412	Medic	Ford	Braun	2009	Poor	152,456	
M42	404	Medic	Ford	Braun	2013	Fair	105,654	
M43	440	Medic	Ford	Braun	2014	Fair	142,503	
M41	456	Medic	Ford	Braun	2016	Good	63,838	

ESCI noted during the visit that CWFD does not have a current Apparatus Replacement Schedule, however there is an Apparatus Specification Committee made up of staff members. The Apparatus Specification Committee is in the beginning stages of developing specifications for a new brush truck.

RECOMMENDATIONS:

- Establish an automatic aid agreement with Vancouver Fire Department to provide a ladder truck to target hazards requiring one. Alternatively, seek VFD expertise to assist in developing appropriate specifications for purchase of a ladder truck that suits the risk profile of CWFD.

STAFFING & PERSONNEL

Many emergency services organizations rightfully consider their employees as their most valuable asset. Managing personnel to achieve maximum efficiency, professionalism, and personal satisfaction is art as much as science. Consistency, fairness, safety, and opportunities for personal and professional growth are key values in a healthy management culture. These values are even more important when the organization relies on the participation and support of a “volunteer” workforce. Volunteer personnel may leave if they do not feel valued and/or experience personal satisfaction from their participation.

Several national organizations recommend standards to address staffing issues. The *Occupational Health & Safety Administration (OSHA) Respiratory Protection Standard*, and the *National Fire Protection Association (NFPA) Standard 1710 or 1720*; (whichever is applicable) are frequently cited as authoritative documents.^{10,11,12} In addition, the *Center for Public Safety Excellence (CPSE)* publishes benchmarks for the number of personnel recommended on an emergency scene for various levels of risk.

An appropriate balance of administration and support staff, compared to operational resources and service levels, is an important consideration to achieving organizational success. It is important to remember that key administrative and logistical support positions are critical in maintaining an efficient and effective fire department. With that said, it is important to note that the department consolidated operations with the Washougal Fire Department—via a contract for service—in July 2011, to improve overall efficiency and service to the public in both jurisdictions.

Personnel Policies & Processes

CWFD was surveyed to determine the administrative components used in managing its employees. CWFD maintains a 160-section online personnel policy manual through *Lexipol®*, which is available to all new employees upon hire. The department maintains and securely archives personnel records, including injury and accident reports and medical and exposure records (maintained by the EMS Division Chief). Personnel records, including discipline, medical, and fire department administrative records are maintained by the Camas Administrative Services Director.

Ensuring the health and safety of employees should be a high priority in any business or government organization. Many fire service organizations offer proactive wellness programs designed to promote and support healthy lifestyles in an attempt to ward-off illness and injury. Many of these programs also support mental health wellness, which is even more important for those working in emergency services. The following figure summarizes the survey results.

¹⁰ OSHA Standard 1910.134(g)(4)

¹¹ NFPA 1710: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, to the Public by Career Fire Departments*; National Fire Protection Association

¹² 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*; NFPA

Figure 13: Health, Safety, & Counseling Services

Services Provided	Camas-Washougal Fire
Medical standards established	Yes
Medical exam frequency	Offered annually, but not required
Safety Committee established	Yes
Critical Incident Stress Debriefing	Yes
Employee Assistance Program	Yes

Medical Assessments

A 10-year review (1994–2004) of firefighter line-of-duty death statistics revealed 45% were the result of heart disease.¹³ In 2010, the *National Institute for Occupational Safety & Health* (NIOSH) conducted a study of the prevalence of cancer in 30,000 firefighters.¹⁴ The study concluded firefighters have a 14% greater risk of contracting cancer compared to the general population. Lastly, NFPA 1582: *Standard on Comprehensive Occupational Medical Program for Fire Departments* defines the necessary components of an occupational medical program to ensure the safety and health of firefighters.¹⁵

While CWFD has established medical standards, and requires a comprehensive medical examination after being conditionally hired, it does not require an annual fit-for-duty physical examination.

Confirming that firefighters are medically fit to meet the strenuous duties associated with emergency response and fireground tasks is paramount, regardless of age. In addition, state and federal law mandates respiratory medical assessment, clearance, and fit-testing for anyone required to wear a respirator. *CFR 1910.134(e)(1)* requires that employees obtain a medical clearance from a physician or other licensed healthcare professional before they can wear a respirator (including N95, N100, P100, and HEPA respirators), and must be annually fit-tested.

Firefighter Hiring & Selection Processes

Recruiting, selecting, and retaining firefighters takes a considerable investment of time, effort, and money to ensure high-quality individuals are employed with the organization. While becoming a firefighter is one of the most sought-after careers in the nation, selecting the best candidates that fit within the department and its culture requires deliberate and comprehensive evaluation. The following figure summarizes the hiring process components used by CWFD.

¹³ Respiratory Protection Standard 29 CFR 1910.134; Occupational Health & Safety Administration

¹⁴ Findings from a study of cancer among U.S. Firefighters, National Institute of Occupational Safety & Health, July 2016.

¹⁵ NFPA 1582 Standard on Comprehensive Occupational Medical Program for Fire Departments; NFPA.

Figure 14: Hiring Process Components

Hiring Process Components	Camas-Washougal Fire
Recruitment Program	No
Qualifications check	Yes
Reference check	Yes
Background check	Yes
Physical agility standards	Proprietary test
Knowledge testing	Depends on position
Interview	Yes
Medical exam required	Yes
Psychological exam required	Yes

Camas-Washougal Fire Hiring Process

The CWFD employee hiring process is governed by a Civil Service Board and Commissioner. Career firefighter candidates apply through the City of Camas Administrative Services Department. On average, approximately 45 applications are received, which are then screened by the department to ensure applicants meet the minimum qualifications. Two lists—entry level firefighter/paramedic list and lateral firefighter/paramedic lists are maintained annually. Applicants must have either Washington State or National Registry paramedic certification. Volunteer candidates apply directly through the CWFD. The City administers a written exam purchased through *Cooperative Personnel Services Incorporated*®. The passing score of the written exam is 70%. All candidates who pass the written exam are invited to participate in a timed physical agility assessment, comprised of the following components:

- 35-foot ladder climb (not timed)
- Hose bundle carry to 4th floor
- Hose hoist up to 4th floor, then carry hose bundle down 4 stories
- 75-foot rescue dummy drag
- 75-foot hose pull
- 24-foot ladder extension raise
- 5-inch hose roll and unroll

The department sets up the course and allows candidates to practice the various stations and complete the course one time before the formal assessment day. This assessment is loosely based on the *Firefighter Combat Challenge*® (FCC) format. The FCC is a timed competitive event where participants race against each other in completing a series of fireground tasks, some of them similar to what is noted above.

Candidates must complete all stations within 5 minutes, 30 seconds (with the exception of the ladder climb). Once a candidate successfully completes this assessment, they participate in a panel interview with five career officers and firefighter/paramedics. The oral interview scoring is used to rank the candidates for suitability in the department, and ability to perform the job. The ranked list is then forwarded to the *Civil Service Commission* for approval, and is good for one year.

Upon offer of conditional employment, the candidate(s) must successfully pass a background check, psychological assessment, and a basic medical examination that includes a pulmonary function test to ensure medical ability to safely wear a respirator.

Candidates applying for volunteer firefighter positions undergo a slightly different selection process. Applications are accepted in January, and a department orientation presentation is delivered. Applicants who remain interested in volunteering take an in-house created written test, comprised of general knowledge questions. All candidates who pass the written test participate in a panel interview, comprised of volunteer firefighters and the Administrative Battalion Chief. Selected applicants—typically four to five a year—must undergo the same physical agility test, medical examination, and psychological assessment as new hire candidates.

Hiring Process Discussion

Over the past few years, the hiring practices in fire departments across the country have been challenged by allegations of bias and discrimination. For example, the New York City Fire Department's and Los Angeles Fire Department's new hire testing practices were questioned, resulting in the suspension of the hiring process and revocation of some conditional job offers. Outside experts were brought in to analyze historical hiring outcomes, existing hiring administrative procedures, and subsequently make recommendations for improvement.¹⁶ As a result, significant changes were made, at great expense, to ensure a fair and impartial hiring process.

Regarding physical agility testing for entry level firefighters, past legal challenges alleging discrimination and unfair administration in testing led to the creation of the Candidate Physical Agility Test (CPAT). The City of Chicago faced this reality in 2011, when several female firefighter and paramedic candidates filed a federal lawsuit, claiming the department's in-house created physical agility testing process was discriminatory against women.¹⁷ The lawsuits were settled after the city spent millions in settlements and legal fees, and the City now requires a current CPAT card to apply for the department.

The CPAT program, created jointly by the *IAFF* and *IAFC* in the late 1990s, has been scientifically and legally vetted, and is now considered the standard in fairly assessing a candidate's physical abilities to perform basic fireground tasks.

¹⁶ Recommendations for Improving the Recruiting & Hiring of Los Angeles Firefighters, Rand Corp., 2015.

¹⁷ Chicago Sun Times, October 31, 2016.

Many jurisdictions find the CPAT program difficult to adopt, due to the extensive, and often expensive, performance requirements for licensing. As a result, and depending on location, CPAT-licensed departments or educational institutions that conduct the test may not be readily available. However, in the Portland Metropolitan area, CPAT programs are available for prospective applicants who wish to secure a CPAT card.

RECOMMENDATION:

- Consider eliminating the internally conducted physical agility test, and require applicants to obtain a CPAT card that documents successful completion of the CPAT within 6 months to 1 year prior to applying for employment.

Union Agreements

CWFD Operations personnel are represented by *International Association of Firefighters* (IAFF) Local 2444. The collective bargaining agreement (CBA) expires in December 2019. Non-uniformed full-time administrative employees are represented by the Camas Public Employees Association.

Prior to 2011, Washougal firefighters had their own IAFF Local, and worked under a separate bargaining agreement. With the consolidation of Camas and Washougal firefighters in 2011, the two CBAs were homogenized, and the Washougal firefighters moved into Local 2444. While the amalgamation of IAFF locals can often be tedious and controversial, it appears this transition was fairly smooth, and may have been due to the fact that Local 2444 previously assisted Washougal in routine contract negotiations.

Administrative Support Staffing

No progressive fire department can operate without strong and expert administrative support. Efficient management and administration require personnel with specific administrative and technical skills to effectively support the organization's core mission. The following figure and descriptions summarize the department's various uniformed and civilian administrative and support positions.

Figure 15: Administrative and Support-Uniformed Staff Positions

Staff Positions	CWFD
Fire Chief	1
Division Chiefs	2
Administrative Battalion Chief	1
Deputy Fire Marshals	2
Total Uniformed Administrative/Staff:	6
Percent of Admin/Support Staff to Total Staff:	11%

The Administrative Battalion Chief position is responsible for the department's training program. Because of its small size, CWFD has only two civilian administrative support personnel. This does not include Finance Department personnel who perform ambulance billing tasks, or other City administrative personnel who support fire department administrative activities.

Administrative Staffing Discussion

Analyzing the ratio of administrative and support positions to the total operational positions of a fire Department facilitates an understanding of the relative number of resources committed to this important function. The level of administrative uniformed and civilian support staff in CWFD is very low. ESCI recognizes that many of the required administrative duties for the fire department are likely supported by other City departments, including but not limited to; Finance, Public Works/Fleet, Human Resources/Administrative Services, and the City Attorney. With that said, it is important to note that the lack of “bench depth” in department administration may result in the crippling of normal operations if an administrative employee becomes unavailable for work for an extended period of time. This can also be exacerbated if uniformed administrative employees are required to routinely respond to emergency incidents as part of their regular work activities.

Career Operations Staffing

ESCI evaluated the type and number of career and volunteer operations staff positions. The following figure summarizes the number of career operations positions in CWFD.

Figure 16: Career Operations Staff Positions

Operations Positions	CWFD
Battalion Chief	3
Captain/EMT-IV	1
Captain/Paramedic	7
Firefighter/EMT-IV	13
Firefighter/Paramedic	27
Total Operations Positions:	51
Percent Officers to Firefighters:	21%

CWFD Operations personnel work a 24-hours on, 48-hours off shift rotation schedule. To reduce the annual average workweek hours, an additional shift off (known as a “Kelly Day”) is scheduled every seventh shift. Employees chose their Kelly Day by seniority each year, before vacations are scheduled. The current collective bargaining agreement stipulates that up to five operations personnel on the same shift can schedule owed time off (vacation and compensatory time), and be off at the same time. Scheduling Kelly Days on weekends is generally prohibited. The following figure summarizes the shift schedule, FLSA work period, and average scheduled hours for operations employees.

Figure 17: Operations Staff Work Schedule

Benefits Description	CWFD
Shift Rotation	24-on/48-off
Average Workweek Hours	48 hours
FLSA Work Period	21 days
Total Annual Hours	2,496 hours
Shift Start Time	0700 hours
Kelly Days Per Year	17

ESCI calculated the theoretical total number of full-time employees required to meet the various average leave hours used by employees in 2018, and compared the results to the current number of operations employees assigned to 24-hour staffed units. This calculation was done understanding that several years ago brief efforts were made to reduce overtime expense related to leave usage by adding a temporary “floater” position to reduce overtime exposure. ESCI understands efforts have previously been undertaken to add personnel to provide overtime relief coverage, and that this position was discontinued after a year.

The analysis compared the average available scheduled weekly work hours per employee, subtracted the average various leave types—based on 2018 historical leave-use data—and calculated sick and vacation relief factors. ESCI then multiplied the number of personnel needed to cover a single position at 24-hours daily, with the relief factor, to determine the total number of employees required to meet daily minimum staffing. This did not take into account personnel working less than a 24-hour shift schedule (e.g., peak-demand staffed units). The following figure summarizes the results of these calculations.

Figure 18: Theoretical Relief Factor Calculation (2018)

Relief Factor	CWFD
Sick Leave	1.19
Vacation Leave	1.28
Total Relief Factor:	1.33

The total leave factors were multiplied by the number of personnel needed to cover one 24-hour position. The following figure compares the theoretical number of positions needed with the current number of employees assigned to the work schedules.

Figure 19: Camas-Washougal Fire Calculated Operational Staff Shortage/Overage

No. Positions Required 24/7	Total No. Operations FTEs	Theoretical No. FTEs	Shortage/Overage
11	51	51	0

Work Schedule & Staffing Discussion

As shown previously, the number of total CWFD career operations staff is theoretically sufficient to cover scheduled and unscheduled leaves. ESCI understands previous efforts to add permanent “floater” positions were unsuccessful.

Reconciling the results of this staffing resource analysis with current staffing levels and resource allocation strategies in CWFD should be approached carefully. In ESCI’s experience, the theoretical analysis does not necessarily take into account an organization’s inherent flexibility and resources, which can potentially be leveraged to reduce workload and personnel costs. Nor does it take into consideration the ongoing costs of providing the various benefits to full-time employees. Full-time employee benefit expenses must be considered when analyzing the cost of adding full-time employees versus using overtime.

CWFD’s current collective bargaining agreement (CBA) allows an administratively assigned Battalion Chief to move into a shift operations assignment between July and September each year to provide vacation relief for shift assigned Battalion Chiefs. While this shift in assignments helps to reduce potential overtime exposure, it likely comes at the expense of programmatic responsibilities related to the administrative assignment, especially given the expectation that this position responds to support the shift Battalion Chief during certain types of emergency incidents. ESCI also notes that Battalion Chiefs have first right of refusal for any vacant Battalion Chief shifts, after which a qualified—and available—acting Battalion Chief (Captain) may be used to fill the vacancy.

Shift Schedule Discussion

The 24-hour shift remains the predominant schedule for fire departments across the United States. However, some fire departments have transitioned to a 48-hour shift. The 48-hour shift is an especially attractive shift schedule if employees must commute from long distances due to high housing costs, low housing inventory, or other demographic factors. However, the 48-hour schedule has been questioned due to concerns about sleep deprivation and safety impacts during the latter portion of the 48-hour shift. ESCI understands that this shift schedule is not desirable by department administration or the union. ESCI does not recommend this shift.

As noted previously, CWFD theoretically has enough operations personnel to provide coverage for scheduled and unscheduled leaves—especially given the number of Kelly Days assigned. However, a review of 2018 overtime hours revealed an average of 285 annual additional hours worked per employee to cover vacancies (an average of 5.5 additional hours per week). One employee worked 788 hours (an average of 15 additional hours per week). The use of routine overtime to cover for scheduled and unscheduled leaves should be carefully scrutinized, especially from a worker fatigue perspective of employees who are allowed to work up to 60 hours straight. Additionally, it likely reduces the percentage of time that an engine company can be staffed with at least three personnel.

ESCI understands that, given the number of Kelly Days assigned and the shift workload, adequate time for training and other non-emergency support activities, along with increased overtime, has become a significant issue for fire department administration and the union. Given this, the union is suggesting transitioning from a three-platoon schedule—24 on duty, 48 off duty—to a four-platoon schedule where employees work 24 on duty, 24 off duty, 24 on duty, 96 off duty. This schedule results in a 42-hour average workweek. In a four-platoon system, employees would be redistributed from each of the three platoons to staff a fourth platoon. Kelly Days would be eliminated, as the work schedule results in only a 42-hour workweek. However, employees currently work an average 48-hour workweek. This means employees would need to work additional shifts (commonly called “debit days”) to meet their contracted work obligation annually.

Under this proposal, employees would owe approximately twelve 24-hour debit days per year that could be worked by backfilling for vacations, sick relief, scheduled training, or paid off by applying owed vacation or compensatory time.

The four-platoon schedule concept proposed by the union was developed using the following rules:

- Only one Captain per shift can be scheduled off for vacation/compensatory time.
- No more than two employees can be scheduled off on any given shift.
- No consideration was given to balancing out employees by seniority on each shift (to equalize owed vacation shifts).
- The FLSA work period moves from 21 days to 27 days
- Debit days are pre-scheduled in a consistent pattern throughout the year.

Under the proposed schedule, the average annual hours worked, including the 12 debit days, results in a net 1.5-hour monthly hours reduction, or approximately 18 hours annually per employee. Under the union’s proposal the total annual hours worked per employee would be reduced from 2,496 to 2,478 hours. This is due to the fact that the current average 48-hour workweek does not divide evenly in a four-platoon schedule.

The union estimates this reduction, coupled with the shifting of personnel to the fourth shift would require the addition of two firefighter positions.

Departments that operate under a four-platoon system use a variety of methods in managing the owed debit time. Examples include:

- Allow employees to apply their accrued vacation/compensatory hours to the owed debit time (thereby reducing leave liability);
- Allow employees to pick their debit shift schedule;
- Require a certain number of hours be worked in a training environment;
- Require debit days to be assigned by management to address/reduce overtime exposure;
- A combination of employer-selected and employee-selected debit day assignments.

These options are only a few of the considerations that would need to be carefully addressed in moving to a new work schedule, as the current work schedule is incorporated in various scheduling and department administrative procedures. Some of the basic issues that would need to be addressed by the department and union include, but are not limited to:

- Agreeing on the average annual work hours (number of debit days owed).
- Identifying cost and impact of adding additional Captain positions for the new shift.
- Identifying debit day assignment rules.
- Modifying vacation scheduling rules.
- Creating rules for debit time payback.
- Modifying the station assignment selection process.
- Identifying impacts and necessary rule changes for shift trades.

Obviously, shifting from a three-platoon to a four-platoon system poses potentially significant logistical and financial challenges that will need to be carefully addressed through administrative planning and collective bargaining, with the impacts carefully scrutinized. Understanding this, ESCI believes consideration should be given to implementing the new schedule on a trial basis, and closely monitor the impacts of the new schedule to determine if it is sustainable in the long-term.

Worker Fatigue

In looking at worker fatigue, and the impacts on safety, ESCI references *Federal Motor Carrier Safety Administration* (FMCSA) regulations. This agency aggressively regulates and monitors commercial transportation workers, including commercial pilots, railroad workers, long-haul truck drivers, and ship workers due to fatigue concerns. With regard to long-haul truck and passenger carrying drivers, there are very restrictive rules in place to address potential driver fatigue. ESCI highlights these specific requirements because fire and EMS employees routinely drive emergency vehicles in all types of weather conditions—often for extended periods (long-distance interfacility transfers, for example).

The following figure is a summary of the rules for truck drivers. This is presented to provide context on the level of the federal government’s concern on driver fatigue.¹⁸

¹⁸ 349 Code of Federal Register 395.1-5.

Figure 20: Commercial Driver Rules for Work Hours

Property Carrying Drivers	Passenger Carrying Drivers
11-Hour Driving Limit May drive a maximum of 11 hours after 10 consecutive hours off-duty.	10-Hour Driving Limit May drive a maximum of 10 hours after 8 consecutive hours off-duty.
14-Hour Limit May not drive beyond the 14th consecutive hour after coming on duty, following 10 consecutive hours off-duty. Off-duty time does not extend the 14-hour period.	15-Hour Limit May not drive after having been on duty for 15 hours, following 8 consecutive hours off-duty. Off-duty time is not included in the 15-hour period.
Rest Breaks May drive only if 8 hours or less have passed since end of the driver's last off-duty or sleeper berth period of at least 30 minutes.	60/70-Hour Limit May not drive after 60/70 hours on duty in 7/8 consecutive days.

As noted in the preceding figure, the focus is not only on the length of the work periods, but also *the length of the off-duty/rest periods*. Given the reliance on hiring back overtime as a primary means of covering scheduled absences (vacation, Kelly Days, scheduled training, etc.), and the average amount of overtime worked by employees on an annual basis, firefighter fatigue and burnout should be viewed as a legitimate concern within CWFD. With that said, ESCI recognizes that the CBA requires at least 12-hours off duty time after a 60-hour consecutive work period.

Volunteer Operations Staffing

CWFD incorporates a volunteer firefighter program to augment response capabilities. Volunteers are required to work at least one 12-hour shift a month, and receive points for shift worked, certifications maintained, and participation in training and other department sanctioned activities. These points are added up monthly for stipend payments. Volunteers do not typically respond to the station for emergency response, unless it is a large and/or extended incident, and anecdotal information gathered during the site visit indicates that most volunteers meet only the minimum requirements to qualify for stipend payments. There is also a small number of auxiliary volunteers who provide specialized emergency scene support services, including firefighter rehabilitation and family and emotional support services.

Effective Response Force Analysis

In addition to reviewing the total number of operations staff available to the department, ESCI also reviewed its daily staffing levels, and compared them to national consensus standards related to providing sufficient personnel and resources to quickly mitigate emergency incidents—specifically, structure fires and critical EMS situations. ESCI focused on their ability to mobilize an *Effective Response Force* (EFR) to mitigate structure fires or other complex and dynamic emergencies.

Critical Task Analysis

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 the 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 actions, the incident commander must prioritize the tasks and complete some in chronological order. These tasks include command; scene safety; search and rescue; fire attack; water supply; pump operation; ventilation; and back-up/rapid intervention. An initial full-alarm assignment should provide for the following:

- Establishment of incident command outside of the hazard area for the coordination and direction of the initial full-alarm assignment. A minimum of one individual shall be dedicated to this task.
- Establishment of an uninterrupted water supply of a minimum 400 GPM for 30 minutes. Supply line(s) shall be maintained by an operator who shall ensure uninterrupted water flow application.
- Establishment of an effective water-flow application rate of 300 GPM from two handlines; each of which shall have a minimum of 100 GPM. Each attack and backup line shall be operated by a minimum of two individuals to effectively and safely maintain the line.
- Provision of one support person for each attack and backup line, deployed to provide hydrant hookup and to assist in line lays, utility control, and forcible entry.
- A minimum of a single-victim search and rescue team shall be part of the initial full alarm assignment. Each search and rescue team shall consist of a minimum of two individuals.
- A minimum of one ventilation team shall be part of the initial full alarm assignment. Each ventilation team shall consist of a minimum of two individuals.
- If an aerial device is used in operations, one person shall function as an aerial operator who shall maintain primary control of the aerial device at all times.
- Establishment of an IRIC (Initial Rapid Intervention Company, Rapid Intervention Team) that shall consist of a minimum of two properly equipped and trained individuals.

A sample critical tasking analysis for the number of emergency workers required for various levels of risk is summarized as follows.

Figure 21: Sample Critical Task Staffing Need Based on Level of Risk

Critical Task	Maximum Risk	High Risk	Moderate Risk	Low Risk
Attack line	4	4	4	2
Search and rescue	4	2	2	
Ventilation	4	2	2	
Backup line/rapid intervention ²	4	3	2	2
Pump operator	1	2	1	1
Water supply	1	1	1	
Utilities support	1	1	1	
Command/safety ³	2	2	2	1
Forcible entry ¹	0			
Salvage ¹	0			
Overhaul	1			
Communication	1			
Chief's aide	1	1		
Operations section Chief	1	1		
Logistics	1			
Planning	1			
Staging ¹	1			
Rehabilitation	1	1		
Division/group supervisors ¹	2			
High-rise evacuation ¹	10			
Stairwell support ¹	10			
Total Required:	51	20	15	4-6

¹At maximum and high-risk fires, additional personnel may be needed for these tasks.

²Backup line may not be required for certain incidents.

³Can often be handled by the first due officer.

Delivering enough personnel to the scene to accomplish the various tasks required to mitigate an emergency is essential, and many of these tasks must be completed quickly. However, it should be noted that not all of the tasks listed need to be completed simultaneously.

Typically, structure fires are the most labor-intensive incidents. As shown in the preceding figure, national criteria recommend at least 15 personnel should arrive at the scene of a fire in a single-family residence, so as to ensure safe and effective operations. Even more personnel may be required as dictated by the size of the building, incident complexity, and/or special hazards that may be encountered.

The fire service assesses the relative risk of properties and occurrences based on a number of factors. Properties with high fire-risk often require greater numbers of personnel and apparatus to effectively mitigate the fire emergency. Staffing and deployment decisions should be made with consideration of the level of risk involved. The level-of-risk categories used by CFAI are as follows:

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

Due to the small size of the department and the low staffing on a per unit basis, CWFD's alarm assignments are the same for the various types of structure fire responses (single family residential through high-risk commercial)—4 engines (1 of which is a mutual aid engine), and 1 Battalion Chief, with up to 14 personnel (maximum of 11 from CWFD). However, this assumes all units are available for response, and not already committed on other incidents.

Effective Response Force Discussion

Because of the limited daily operations staffing in CWFD, it is clear the department is unable to muster an effective response force with career personnel for anything other than a low-risk incident on its own, and therefore rely on volunteer response and mutual aid with ECFR and the Vancouver Fire Department for structure fire incidents. This observation is not meant to denigrate the abilities or professionalism of these career and volunteer responders. Rather, it is meant to highlight the very limited initial response capabilities and capacity to respond to significant and/or concurrent incidents.

ESCI noted that the City was fined by Washington State Labor and Industries Department (L&I) in 2018 as a result of actions taken by a first arriving two-person engine company crew in rescuing a person trapped in a residential structure fire. The disadvantages and potential safety issues related to two-person minimum staffing on engine companies was identified in ESCI's 2017 *Camas-Washougal/East County Fire & Rescue Assessment of the EMS Delivery System*.¹⁹ In the report, ESCI noted the following:

While ESCI recognizes the City's financial constraints, engine companies staffed with two personnel are far from ideal. While many fire departments are unable to afford four-person engine companies, many do provide a minimum of three-person staffing; thus permitting the first-arriving engine company to perform known emergent rescues at structure fires.

¹⁹ ESCI, *Camas-Washougal/East County Fire & Rescue Assessment of EMS Delivery System*, June 2017.

As a result of the L&I ruling, ESCI understands that a CWFD crew of less than three is now formally prohibited from entering an Immediately Dangerous to Life and Health (IDLH) environment, where at least one properly equipped firefighter is standing by to effect rescue of the entry team while the other two firefighters initiating rescue of a known-to-be-trapped occupant.

The practice of staffing and deploying a structural fire engine or ladder truck with only two firefighters should be revisited. *Washington Administrative Code 296-305-05002(4)* identifies the fireground staffing requirements for performing a rescue in a working structure fire:

Initial attack operations must be organized to ensure that if, on arrival at the emergency scene, responders find a known rescue situation where immediate action could prevent the loss of life or serious injury, such action must only be permitted when no less than three personnel (2-in/1-out) are present and equipped to provide emergency assistance or rescue of the team entering the hot zone.

It should be noted that this requirement does not mandate minimum staffing on apparatus. Rather, it only identifies the number of personnel that must be present and equipped to render assistance if necessary. Other responders who arrive separately may fulfill this requirement, as long as they are on the scene together before rescue is attempted. However, ESCI does recommend staffing levels that ensure three-person engine companies on all CWFD engines.

RECOMMENDATIONS:

- Add additional operations staff to bolster daily staffing and reduce the overall use of overtime on any given shift in the following sequence.
 - add 2.66 FTE per shift to Station 42 to eliminate cross-staffing
 - add 1.33 FTE per shift to Station 43 to increase Engine staffing to three
 - add 1.33 FTE per shift to Station 41 to increase Engine staffing to three
 - add 1.33 FTE per shift to Station 42 to increase Engine staffing to three
 - alternatively, round down to the next whole number FTE per shift for each of the above recommendations and cover the remaining fractions with overtime.
- Revise the vacation scheduling process to limit the number of personnel who can be assigned off at the same time.

SERVICE DELIVERY & PERFORMANCE

The most important aspect of any emergency services agency is its ability to deliver services when requested. This section of the report evaluates the current and historical service delivery elements of:

- Service demand
- Resource distribution
- Resource concentration
- Workload and reliability
- Response performance
- Mutual and automatic aid

The discussion begins with a summary of the current service delivery and performance elements that are in place at CWFD.

Service Demand

Incident Type Analysis

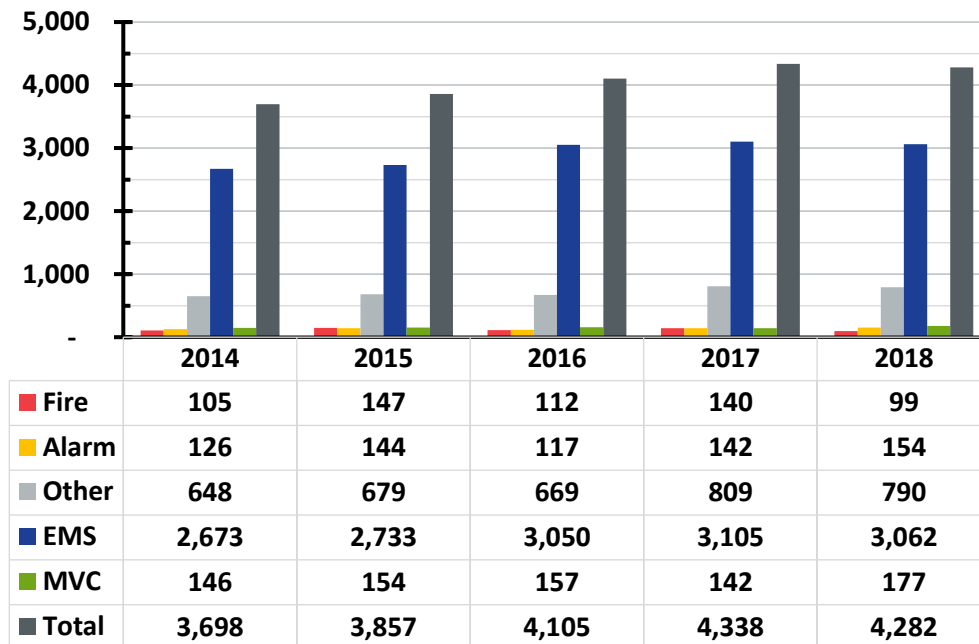
While service demand can be measured simply as the number of incidents within a given time period, seeing that same demand categorized by incident type provides policy-makers the ability to assess current demand and plan for future demand. The National Fire Incident Reporting System (NFIRS) has developed a classification system to categorize various types of incidents. These codes identify the various types of incidents to which the fire department responds and allows the fire department to document the full range of incidents it handles. This information can be used to analyze the frequency of different types of incidents, provide insight on fire and other incident problems, and identify training needs. The codes are three digits and are grouped into series by the first digit as illustrated in the figure below.

Figure 22: NFIRS Incident Types

Incident Series	Incident Heading
100-Series	Fires
200-Series	Overpressure Rupture, Explosion, Overheat (No Fire)
300-Series	Rescue and Emergency Medical Service (EMS) Incidents
400-Series	Hazardous Condition (No Fire)
500-Series	Service Call
600-Series	Cancelled, Good Intent
700-Series	False Alarm, False Call
800-Series	Severe Weather, Natural Disaster
900-Series	Special Incident Type

The following figure provides an historical overview of incidents as based upon the classification system established by the National Fire Incident Reporting System (NFIRS). For purposes of this analysis, NFIRS 200-series, 400-series, 500-series, 600-series, 800-series, and 900-series incidents are combined into the “Other” category.

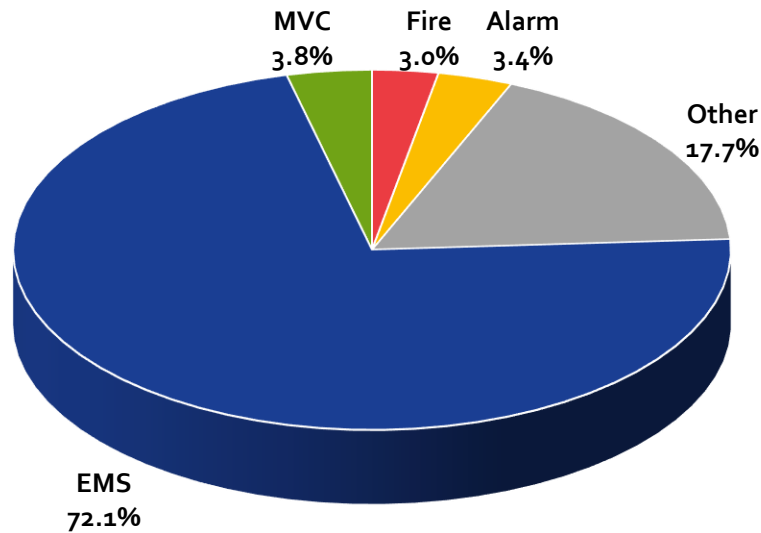
Figure 23: CWFD Service Demand by NFIRS Incident Type (2014–2018)



From 2014 to 2018, there was a total increase in service demand of 16%, with an average increase of 4% each year. In analyzing the individual incident types over the study period—fire incidents decreased by 6%, alarms incidents increased by 22%, other incidents increased by 22%, EMS incidents increased by 15%, and MVC (motor vehicle collision) incidents increased by 21%. Leadership should also evaluate the trend after the close of 2019 to see if the increase continues or if there is another decrease in service demand as there was from 2017 to 2018. Consideration should also include that the rate of increase for EMS incidents and MVC incidents is significantly greater than the overall average. These factors should be part of planning resources for future service demand.

While Figure 23 provides a view of incident types over each year, Figure 24 provides the same data from the perspective of all calls for the study period illustrated by incident type. The pattern presented of EMS related incidents as compared to fire and other non-EMS incidents follows the pattern found in similar departments throughout the nation.

Figure 24: CWFD Service Demand by NFIRS Incident Type (2014–2018)

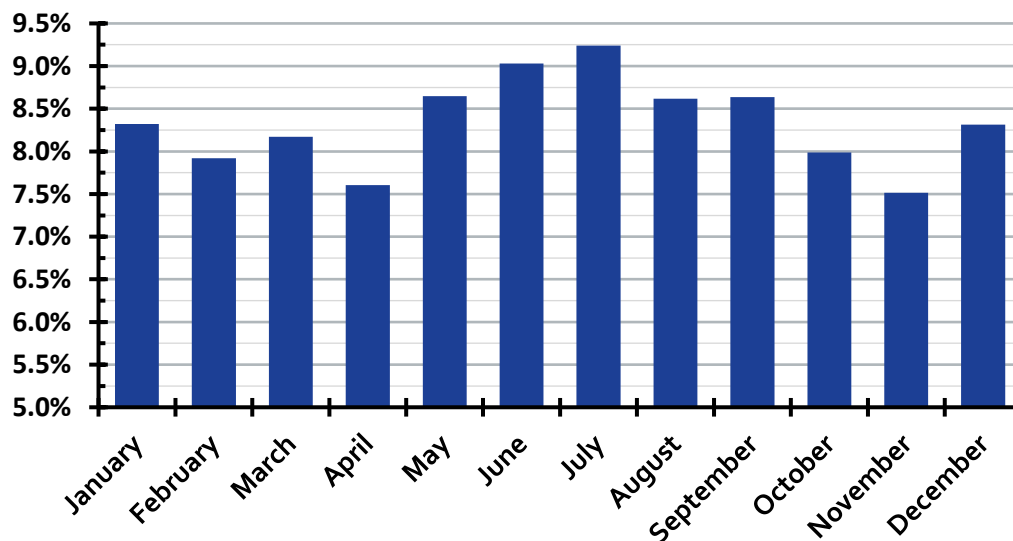


Temporal Analysis

Another important component of service delivery and performance is the temporal analysis of historical data. Understanding the service demand as it relates to various temporal components enables department leadership to develop a balance between service demand and scheduling non-response activities such as training and maintenance.

Figure 25 shows temporal variation by month. Each month is represented by the number of incidents occurring in that month compared to the total number of incidents that occurred January 2014 through December 2018. These are presented as percentages relative to total service demand that occurred during the study period.

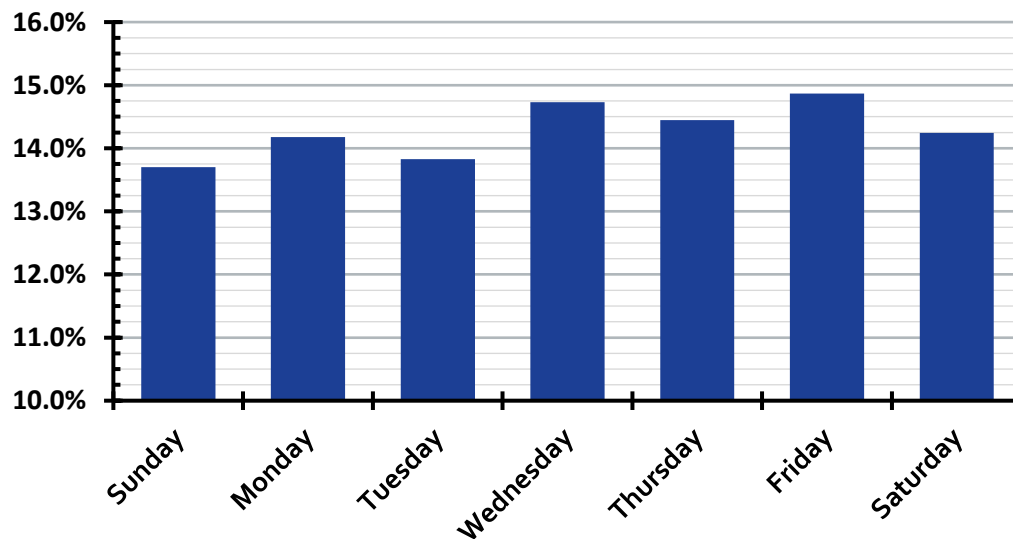
Figure 25: CWFD Service Demand by Month (2014–2018)



The greatest demand for service occurs in July with an overall decrease in demand into November—the month with the lowest demand for service. Service demand then fluctuates for the subsequent months with a final increase beginning in May. The greater demand for service occurring during the summer months may correlate with the increase of summer activities and influx of tourists from local metropolitan areas and other locations.

The next component of the temporal analysis is by day of the week. As with the demand by month, the demand by day of the week is displayed based on the relative frequency of occurrence throughout the study period.

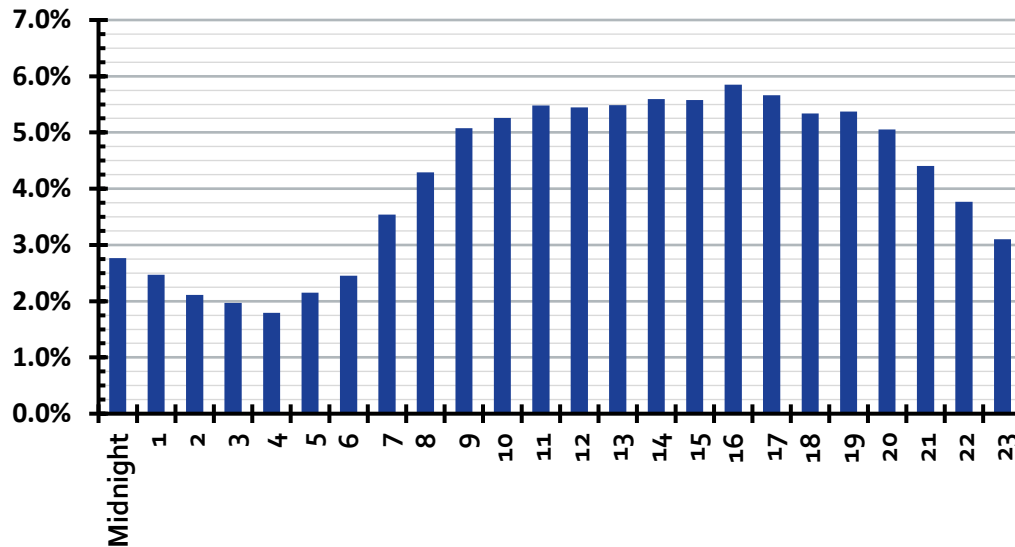
Figure 26: CWFD Service Demand by Day of Week (2014–2018)



The greatest demand for service occurs on Friday with the lowest demand occurring on Sunday. The remaining days of the week fluctuate between those two levels—within a range of 1%. Comparatively, the demand for service does not change significantly from day-to-day—other than the larger demand on Wednesday and Friday.

The final component of the temporal analysis is by time of day. The following figure provides the relative frequency of incidents within a specific time of day during the study period.

Figure 27: CWFD Service Demand by Time of Day (2014–2018)



As the population awakens and begins to prepare for the day, the demand for service increases in the morning hours of 6:00 a.m. It continues to steadily increase until 4:00 p.m. with the greatest demand occurring for several hours in the late afternoon. Then, as the population begins movement back to their homes and settle in for the evening, the demand for service decreases until it reaches its lowest point at 4:00 a.m. Not only is this the pattern for incidents overall, it also is the same pattern for emergency medical service incidents when separated from the whole.

While service demand is lowest during those early morning hours, it should be noted that the majority of fatal residential fires occur most frequently late at night or early in the morning. Based on findings from a national study, residential fatal fires were highest between 1:00 a.m. to 2:00 a.m., and 4:00 a.m. to 5:00 a.m. The 8-hour peak period (11 p.m. to 7 a.m.) accounted for 48% of residential fatal fires.²⁰

Resource Distribution Analysis

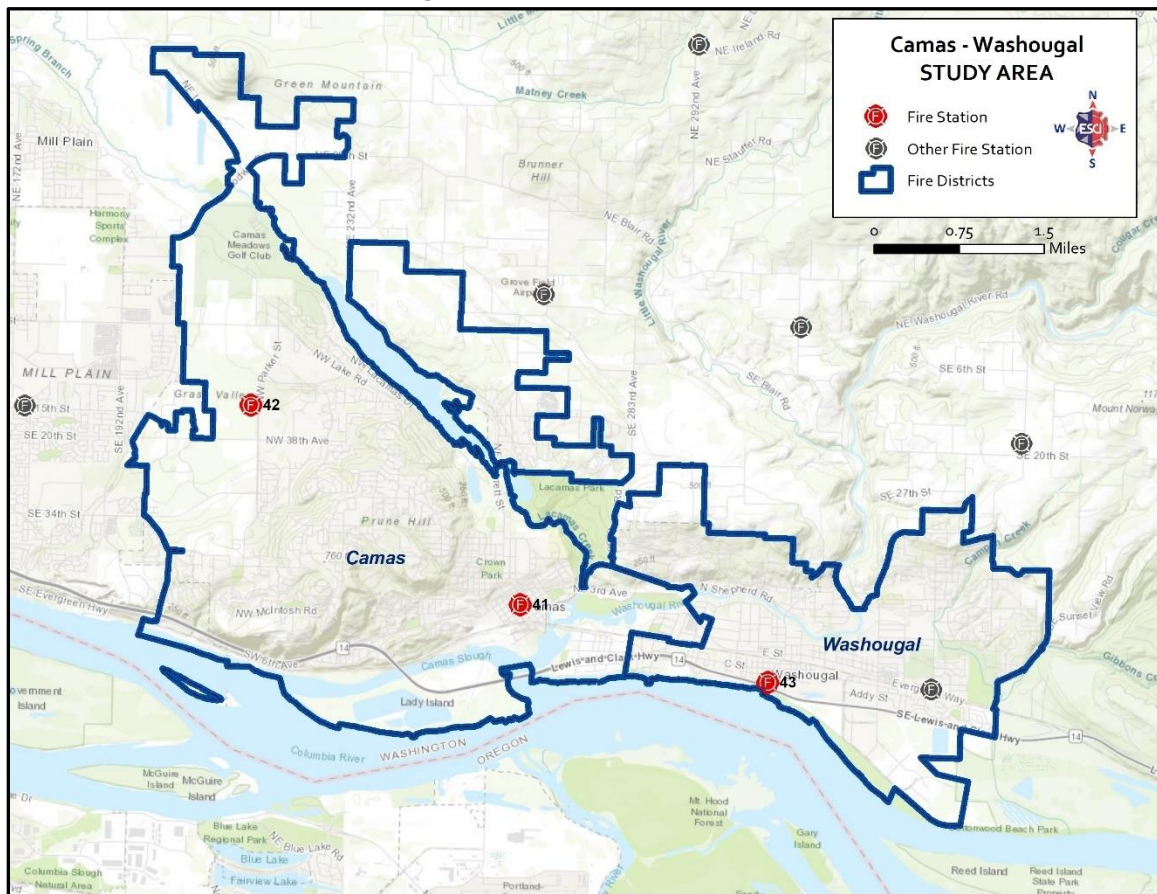
Temporal analysis of service demand presents a singular view of response capabilities. Another view that provides a greater depth of understanding is achieved through analysis of the geographic distribution of resources and how that relates to providing service to the community.

For each of the following figures, the actual boundary used for the CWFD service area has been reduced to the shoreline in order to best represent actual travel times and distances. Percentages of cover for each figure is based on the revised boundary rather than the actual boundary which extends into the Columbia River.

²⁰ Fatal Fires in Residential Buildings (2014–2016), Topical Fire Report Series Volume 19, Issue 1 /June 18, U.S. Department of Homeland Security, U.S. Fire Administration, National Fire Data Center.

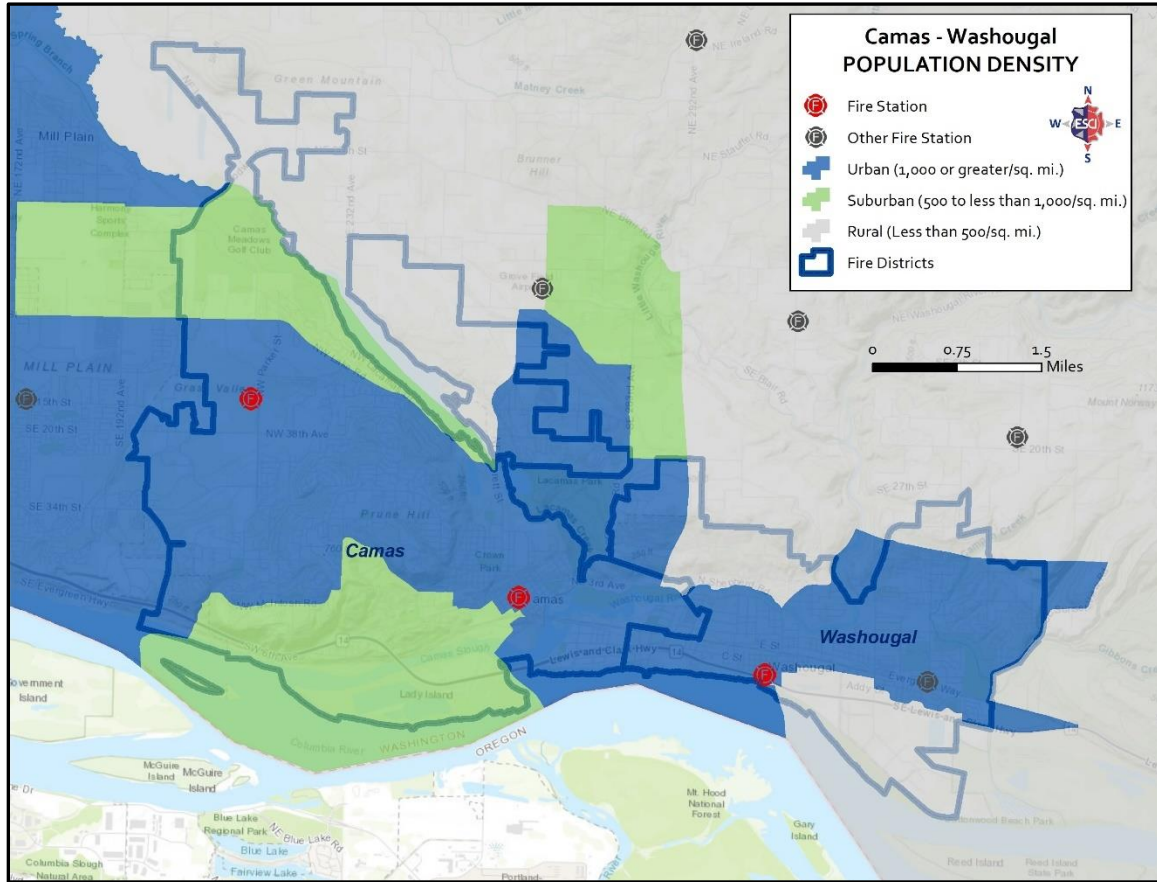
Camas-Washougal Fire Department provides service to the City of Camas and the City of Washougal. Figure 28 illustrates the primary service area.

Figure 28: CWFD Service Area



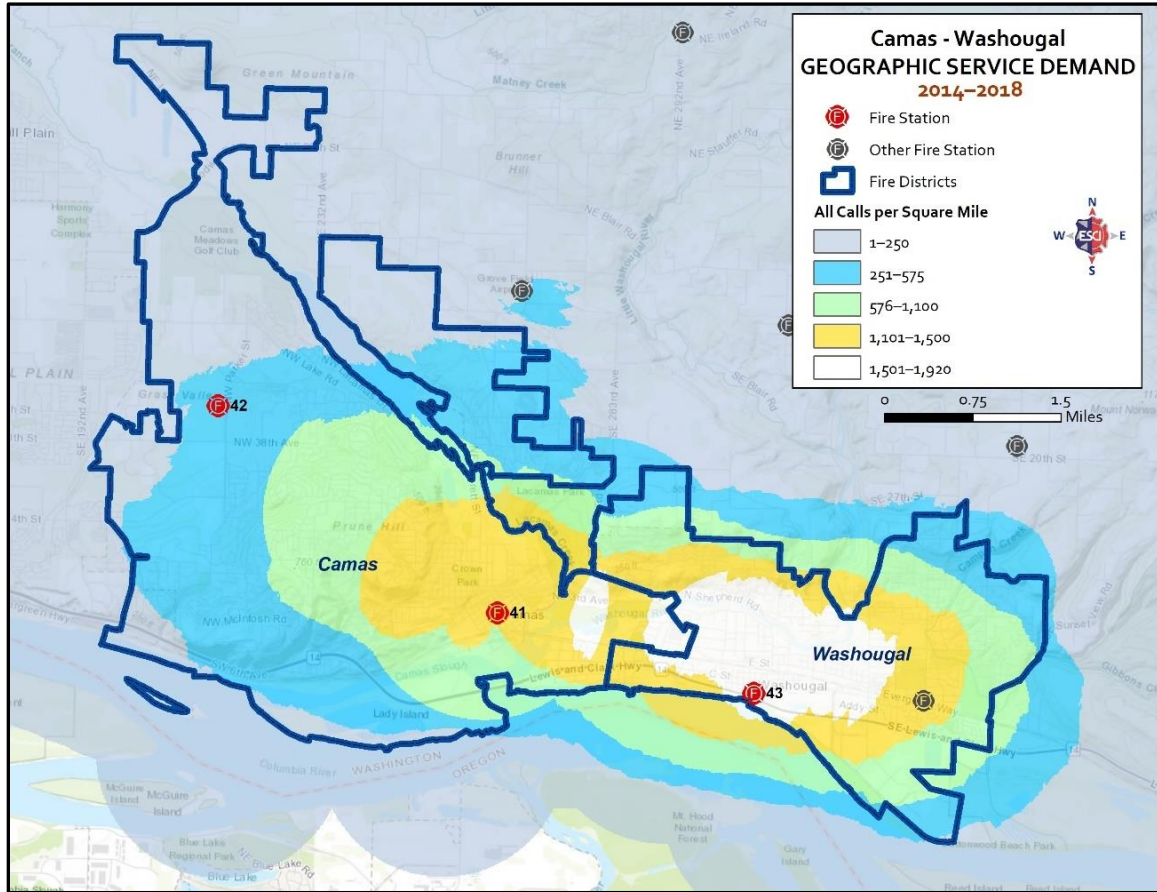
Not only does the physical geography of the service area impact the demand for service, but the density of population in those areas has a large impact. The following figure illustrates the population density for the CWFD service area. As illustrated, the majority of the service area is considered to be of urban population density, with some areas of suburban within the City of Camas and some areas of rural within the City of Washougal.

Figure 29: CWFD Population Density



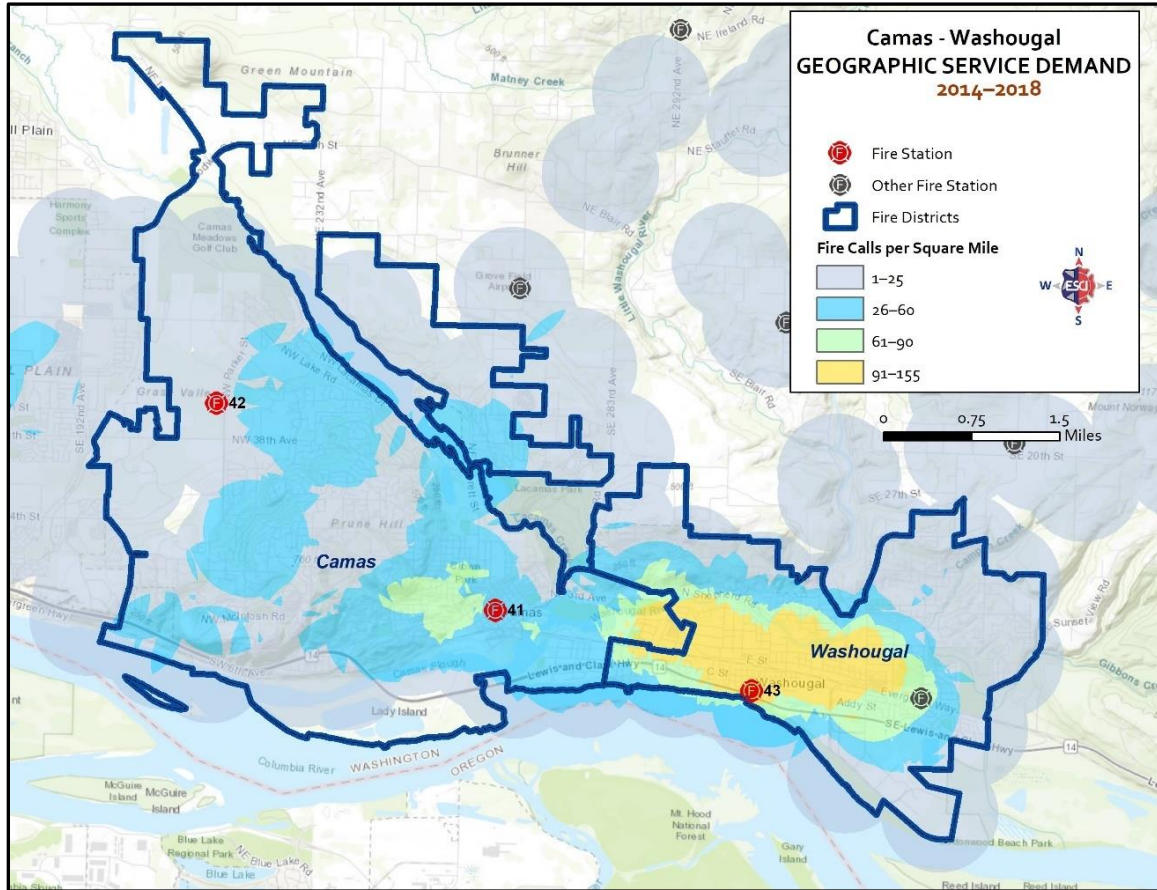
ESCI utilized geographic information systems software (GIS) to plot the location of incidents within the CWFD service area for calendar years 2014 through 2018 and calculated the mathematical density of incidents (incidents per square mile) in the study area.

Figure 30: CWFD Geographic Service Demand—All Incidents (2014–2018)



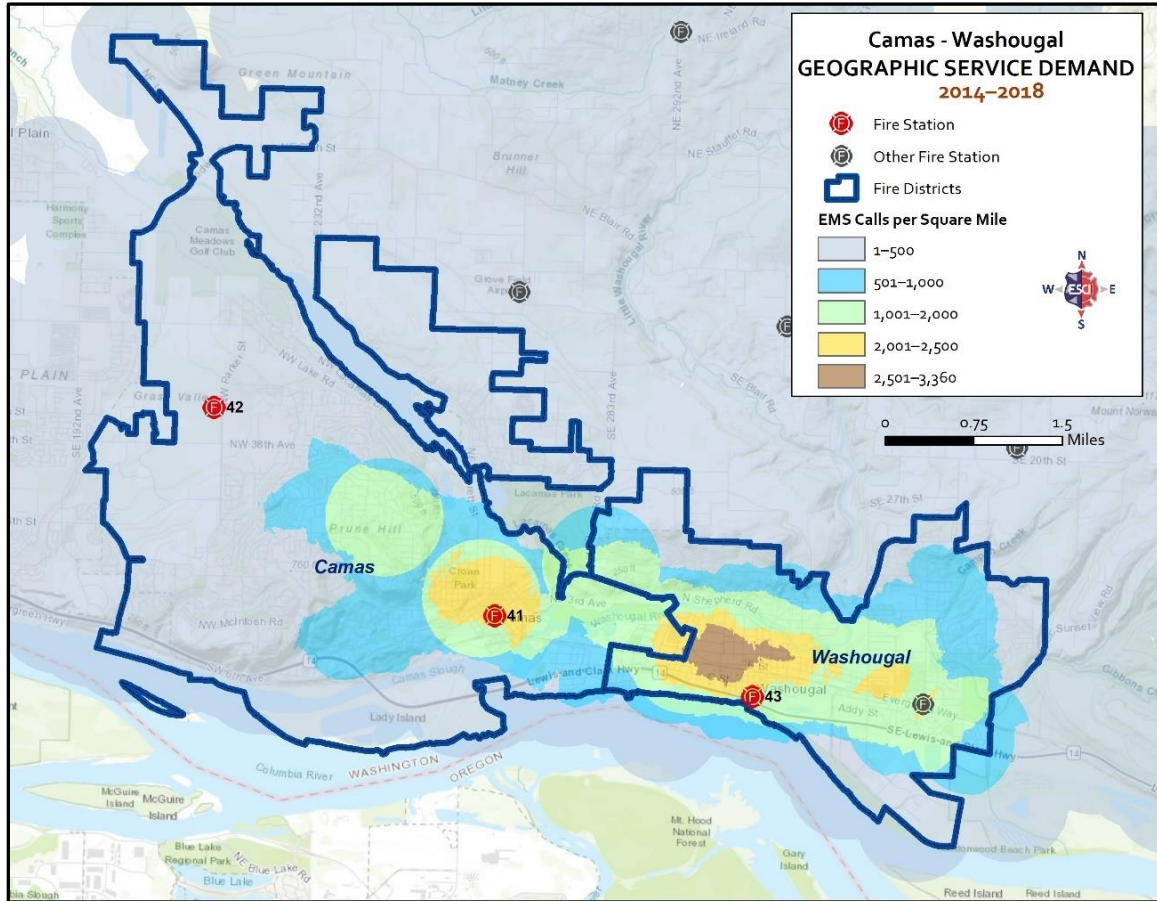
The greatest density of incidents occurs in the City of Washougal near Station 43 and moving north. The further from that location, the density of incidents decreases—with the lowest density occurring in the western regions of the City of Camas. When compared to the prior image, it demonstrates that the greater demand for service occurs in the areas of higher population density.

Figure 31: Geographic Service Demand—Fire Incidents (2014–2018)



Breaking out just the fire incidents illustrates a pattern that is consistent with the overall incident density. The greater number of incidents occur in the City of Washougal near Station 43 and areas to the north. As with the overall geographic service demand, fire incidents also occur in greater frequency within the areas of higher population density.

Figure 32: Geographic Service Demand—EMS (2014–2018)



EMS incidents appear to follow the similar pattern of the overall incident density. While the greater incident density occurs in the area of Station 43, there is also a center of density near Station 41 in the City of Camas. This may be a key factor in determining the need for resource deployment for units that respond to EMS incidents. As with the overall geographic service demand, EMS incidents also occur in greater frequency within the areas of higher population density.

WSRB Distribution

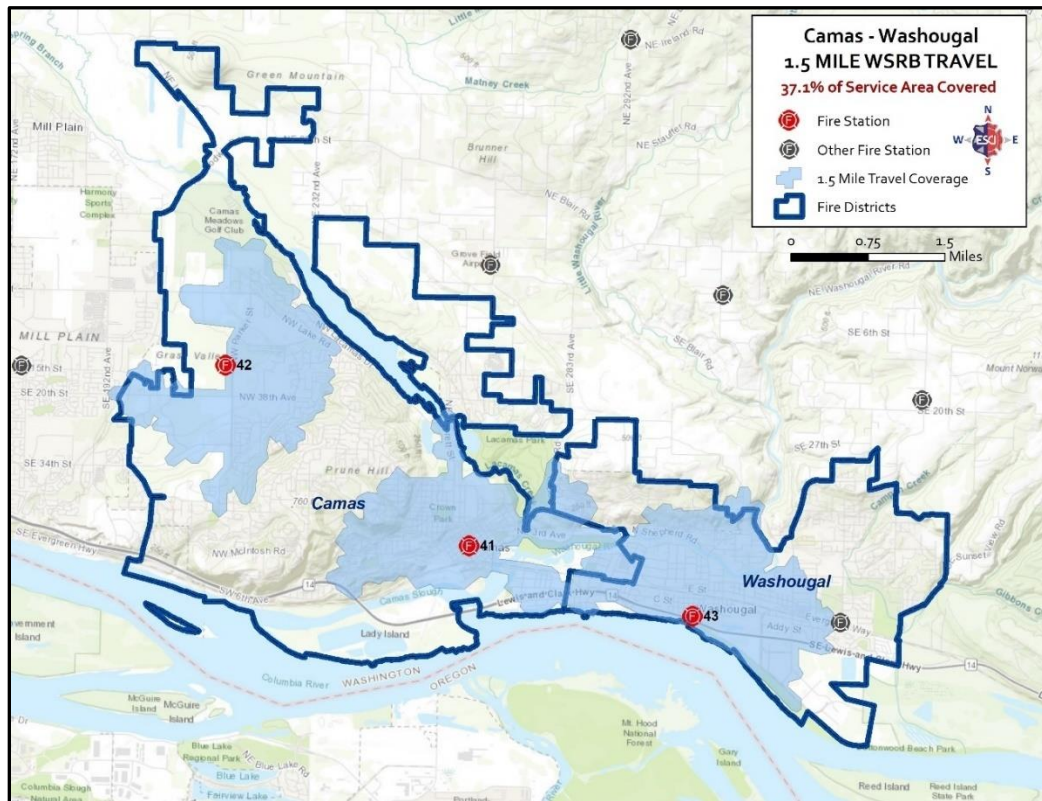
The Washington Surveying & Rating Bureau (WSRB) is an insurance industry organization that evaluates fire protection for communities across the State of Washington. WSRB assesses all areas of fire protection as broken down into four major categories including emergency communications, fire department, water supply, and community risk reduction. Following an on-site evaluation, an WSRB rating, or specifically, a Public Protection Classification (PPC®) number is assigned to the community ranging from 1 (best protection) to 10 (no ratable protection). The PPC® score is developed using the Fire Suppression Rating Schedule (FSRS), which outlines sub-categories of each of the four major areas of grading, detailing the specific requirements for each area of evaluation.

A community's WSRB rating is an important factor when considering fire station and apparatus concentration, distribution, and deployment due to its effect on the cost of fire insurance for the residents and businesses. To receive maximum credit for station and apparatus distribution, WSRB evaluates the percentage of the community (contiguously built upon area) that is within specific distances of fire stations, central water supply access (fire hydrants), engine/pumper companies, and aerial/ladder apparatus.

Travel Distance from a Fire Station

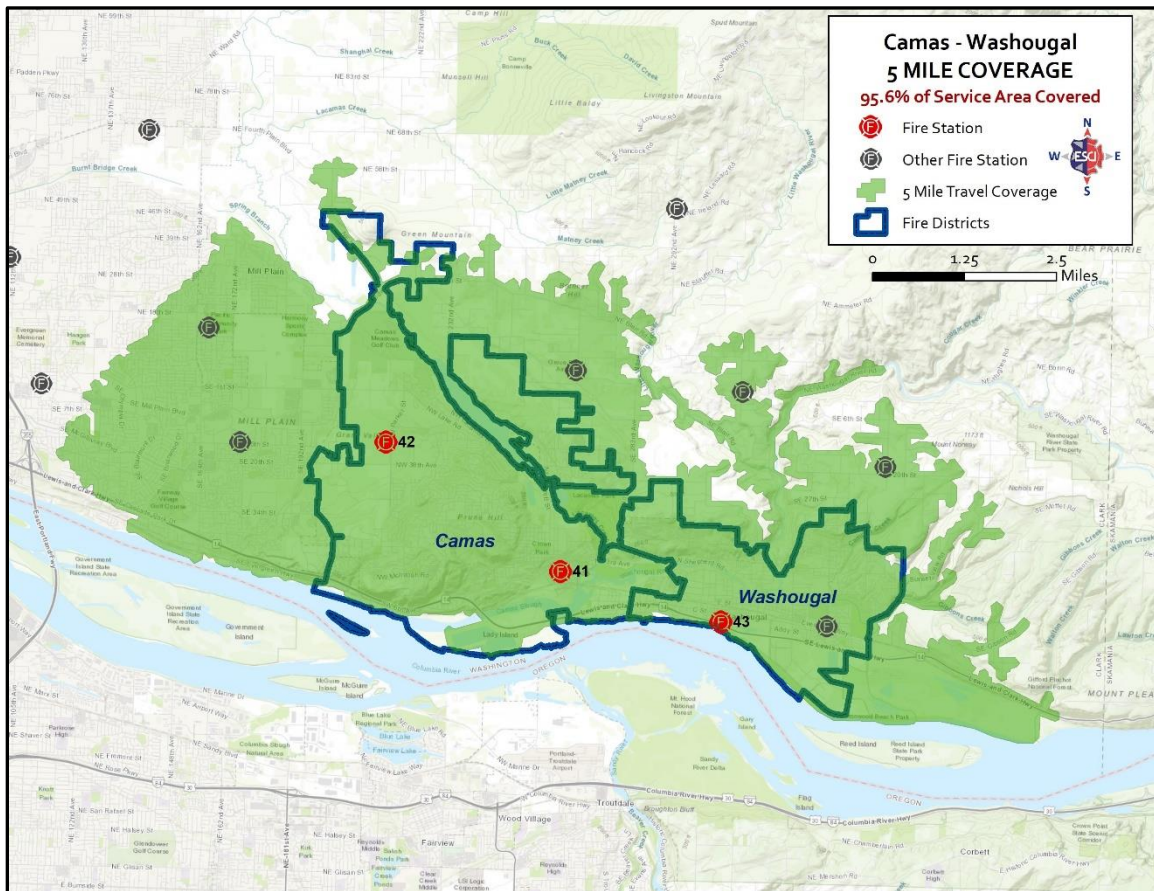
The first travel component evaluated by WSRB is the percentage of the service area that falls within 1.5-mile travel distance of a staffed fire station. The following figure illustrates the 1.5-mile travel distance from existing stations within the CWFD service area, with 37.1% of the service area within the 1.5-miles of a staffed station.

Figure 33: CWFD WSRB 1.5-Mile Travel Distance



The next travel component evaluated by WSRB is the percentage of service area that falls within the 5-mile travel distance of a staffed fire station. The following figure illustrates the 5-mile travel distance within the study area. As illustrated, 95.6% of the service area falls within the 5-mile requirement.

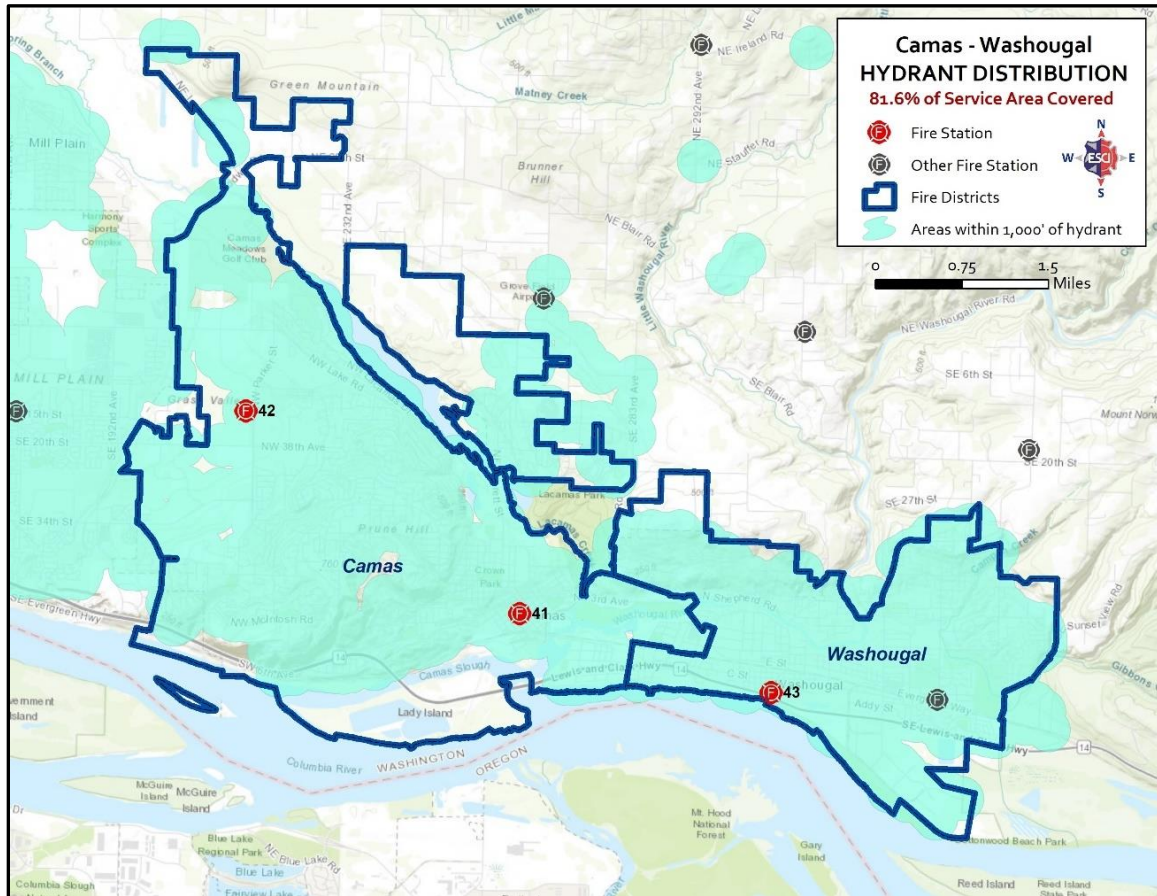
Figure 34: CWFD 5-Mile WSRB Travel Distance



Water Supply Distribution

WSRB evaluates a community's availability of a sufficient water supply, which is critical for the extinguishment of fires. Included in this evaluation is the geographic location and distribution of fire hydrants. Structures outside a 1,000-foot radius of a fire hydrant are subject to a lower Public Protection Classification® rating than areas with adequate hydrant coverage, thus signifying limited fire protection. Exceptions are made when a fire department can show that either a dry hydrant or a suitable water tender operation is possible to provide the needed volume of water for fire suppression activities for a specific period. The following figure illustrates that 81.6% of the service area falls within 1,000 feet of a fire hydrant.

Figure 35: CWFD Hydrant Coverage

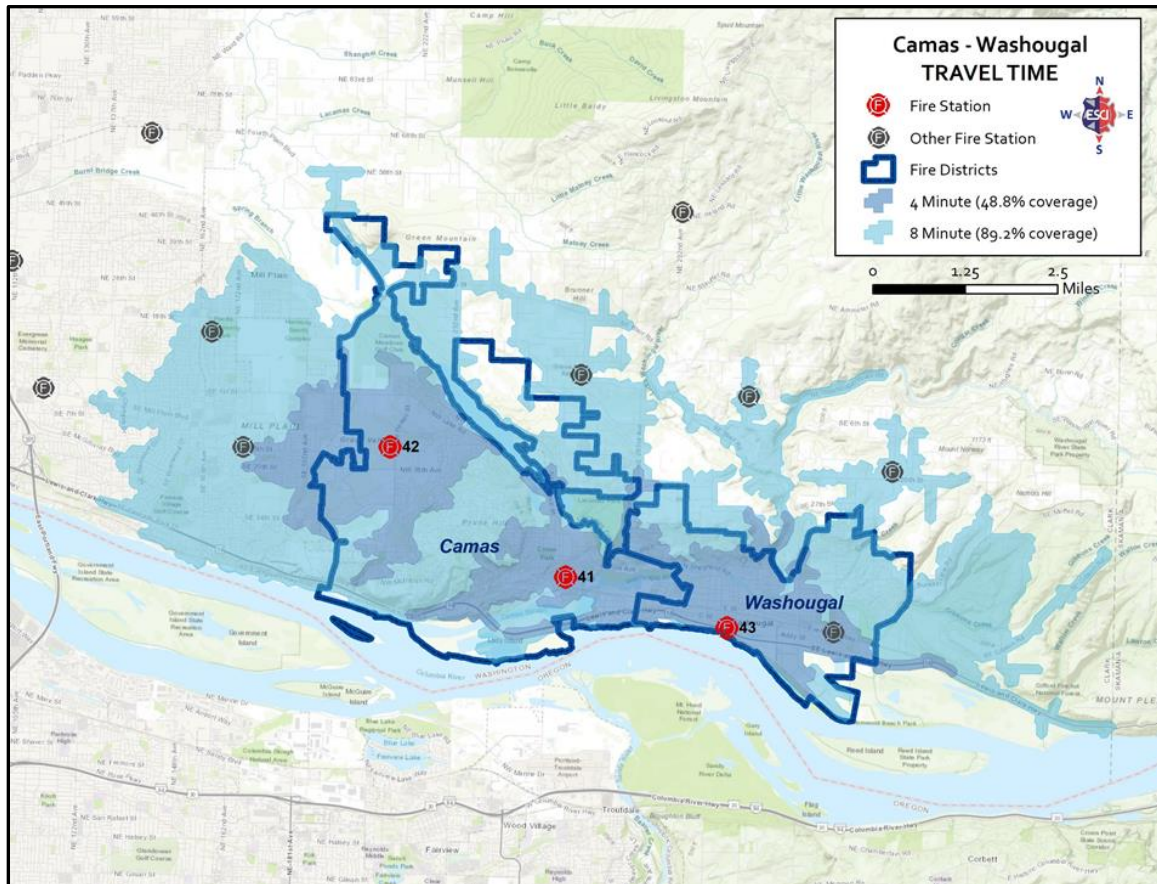


NFPA Distribution

National Fire Protection Association (NFPA) standards and the Center for Public Safety Excellence (CPSE) accreditation of fire departments both evaluate response time criteria for purposes of analyzing resource distribution. For low/medium hazard incidents, the first unit should arrive within 4 minutes and the full assignment should arrive within 8 minutes. Travel time is calculated using the posted speed limit and adjusted for negotiating turns, intersections, and one-way streets.

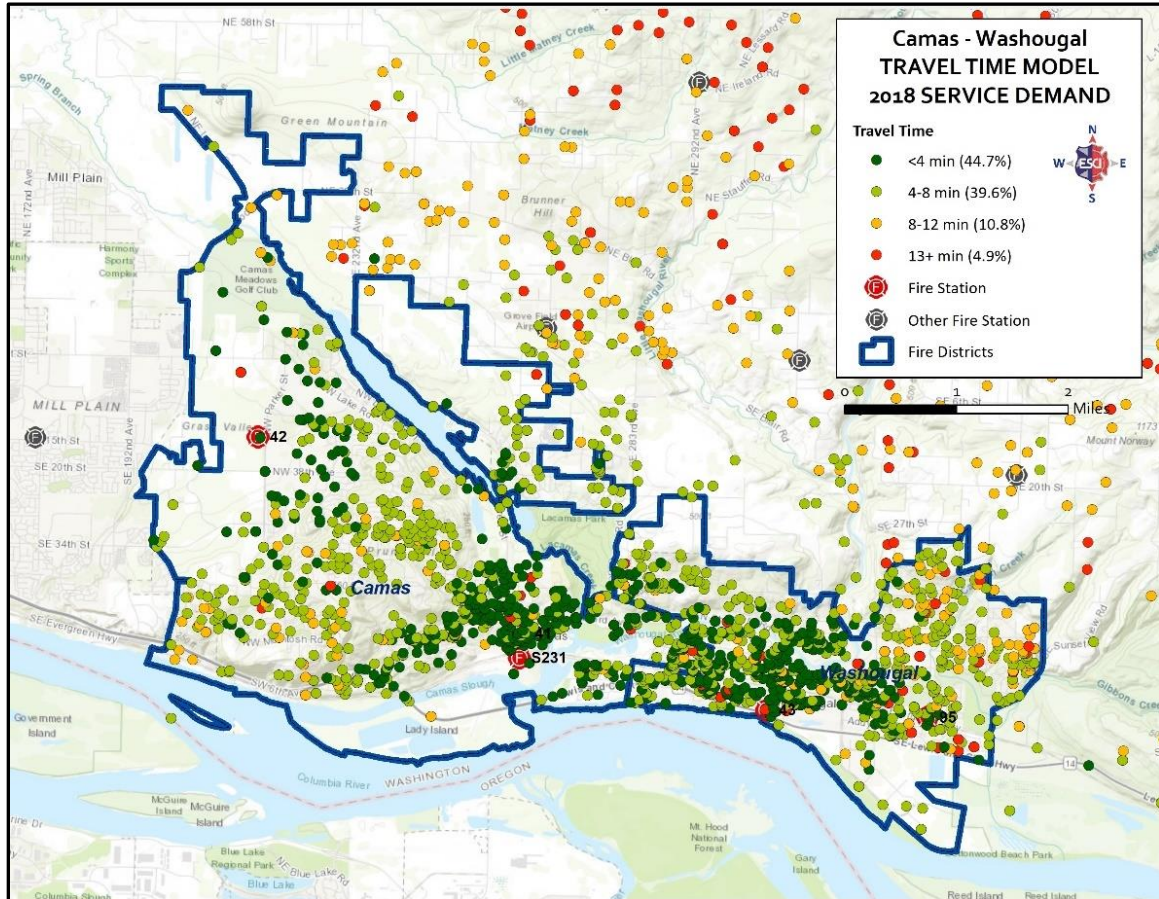
The following figure presents a travel time model from the current station locations over the existing road network. As illustrated, 48.8% of the service area falls within 4 minutes of a fire station and 89.2% falls within 8 minutes of a fire station.

Figure 36: CWFD 4-Minute/8-Minute Travel Time



While Figure 36 presents the geographic analysis of the travel time, it is also important to analyze that against actual incident data. The following figure presents the 2018 incident data for CWFD with actual response times illustrated by colors. The percentages of actual travel for the 4-minute and 8-minute categories are similar to the percentage as previously displayed in the travel time figures.

Figure 37: CWFD Actual Travel Time (2018)



Workload and Response Reliability

The ability of a department to provide reliable service to the community is impacted by workload and call concurrency. Workload refers to the amount of work a particular unit incurs and may be measured in number of calls or time spent on calls. Call concurrency refers to the number of incidents occurring at the same time within a jurisdiction.

Unit Hour Utilization

While number of calls presents a view of workload, the greater value is provided by analyzing the amount of time spent on calls by units. This measure is referred to as unit hour utilization and represents the amount of time in service that a unit is assigned to response activities.

While there are limited formal performance measures to use as a target measure, in May 2016, Henrico County (VA) Division of Fire published an article after studying their department's EMS workload.²¹ As a result of the study, Henrico County Division of Fire developed a general commitment factor scale for their department. The next figure is a summary of the findings as it relates to commitment factors.

Figure 38: Commitment Factors as Developed by Henrico County (VA) Division of Fire, 2016

Factor	Indication	Description
16%–24%	Ideal Commitment Range	Personnel can maintain training requirements and physical fitness and can consistently achieve response time benchmarks. Units are available to the community more than 75% of the day.
25%	System Stress	Community availability and unit sustainability are not questioned. First-due units are responding to their assigned community 75% of the time, and response benchmarks are rarely missed.
26%–29%	Evaluation Range	The community served will experience delayed incident responses. Just under 30% of the day, first-due ambulances are unavailable; thus, neighboring responders will likely exceed goals.
30%	"Line in the Sand"	Not Sustainable: Commitment Threshold—community has less than a 70% chance of timely emergency service and immediate relief is vital. Personnel assigned to units at or exceeding 0.3 may show signs of fatigue and burnout and may be at increased risk of errors. Required training and physical fitness sessions are not consistently completed.

The following figure illustrates the UHU for CWFD units in 2018, expressed as a percentage of the total hours in the year. The number of responses and average time committed to incidents is displayed as well. M41 and M43 have the greatest workload at 15.49% and 18.27%, respectively. While both units are still in the ideal commitment range, leadership should continue to monitor and consider increasing call volume on these units each year. This may be one factor to consider for implementation of additional resources to respond to incidents or reallocation of workload amongst other units. The remaining units are well below excessive levels.

²¹ How Busy Is Busy?; Retrieved from <https://www.fireengineering.com/articles/print/volume-169/issue-5/departments/fireems/how-busy-is-busy.html>.

Figure 39: CWFD Unit Hour Utilization (2018)

Unit	Unit Responses	Average Time Committed	UHU
BC41	484	0:21:08	1.95%
E41	1,509	0:20:05	5.77%
E42	496	0:12:36	1.19%
E43	1,862	0:22:06	7.83%
E44	96	0:20:52	0.38%
E46	60	0:15:49	0.18%
FM42	46	0:53:04	0.46%
M41	1,431	0:56:55	15.49%
M42	491	0:50:52	4.75%
M43	1,579	1:00:49	18.27%
M44	273	0:49:40	2.58%
M45	186	0:38:26	1.36%

It is important to acknowledge that while the two busiest medic units are not excessively busy, the staffing configuration at CWFD and their role in transportation of patients leaves the remainder of their response area significantly diminished in response capability. There are inadequate resources remaining in the response area during that patient transportation period.

Call Concurrency

It is also useful to examine response reliability by analyzing the frequency of simultaneous incidents, reducing the number of units available to handle incidents. While there is no specific standard to which this can be compared, this provides insight as to the ability of the department to have sufficient resources for incidents before requesting mutual aid and automatic aid resources. As the number of concurrent incidents increases, the ability to meet response time standards may decrease. Analysis of the 2014–2018 incident data is shown in the next figure.

Figure 40: CWFD Call Concurrency, 2014–2018

Concurrent Incidents in Progress	Number of Incidents	Percent of Total Incidents
Single Incident	13,329	70.79%
Two Incidents	4,029	21.40%
Three Incidents	1,114	5.92%
Four Incidents	279	1.48%
Five Incidents	57	0.30%
More than Five Incidents	20	0.11%

The majority of incidents (70.79%) occur as an isolated incident. However, with over 27% of the incidents occurring two- or three-at-a-time, the exposure is high for system degradation or failure given the total number of available resources available within CWFD. This may require significant reliance upon mutual aid agencies, potentially causing an imbalance in assistance relied upon versus assistance provided.

Response Performance

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 order for policy makers and citizens to make informed decisions concerning response performance, it is essential that jurisdictions record and report the various components of the jurisdiction's current performance.

In analyzing response performance, ESCI generates percentile measurements of response time performance. The use of percentile measurement using the components of response time follows industry best practices. The best practices are derived by the Center for Public Safety Excellence (CPSE) and the National Fire Protection Association (NFPA) 1710: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*.

The "average" measure is a commonly used descriptive statistic also called the mean of a data set. The most important reason for not using the average for performance standards is that it may not accurately reflect the performance for the entire data set and may be skewed by outliers, especially in small data sets. One extremely good or bad value can skew the average for the entire data set.

The "median" measure is another acceptable method of analyzing performance. This method identifies the value at the middle of a data set and thus tends to not be as strongly influenced by data outliers.

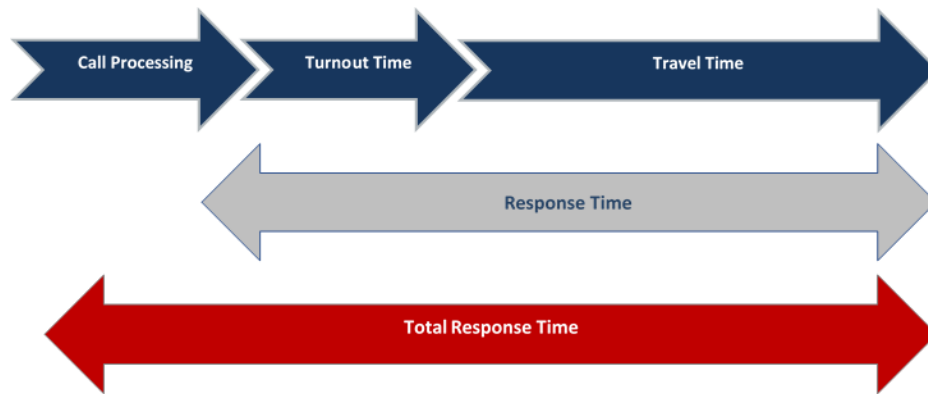
Percentile measurements are the best measure of performance because they show that most of the data set has achieved a particular level of performance. The 90th percentile means that 10% of the values are greater than the value stated, and all other data are at or below this level. This can be compared to the desired performance objective to determine the degree of success in achieving the goal.

As this report progresses through the performance analysis, it is important to keep in mind that each component of response performance is not cumulative. Each is analyzed as an individual component, and the point at which the fractile percentile is calculated exists in a set of data unto itself.

The *response time continuum*—the time between when the caller dials 911 and when assistance arrives—is comprised of several components:

- **Call Processing Time**—The time between a dispatcher getting the call and the resources being dispatched.
- **Turnout Time**—The time between unit notification of the incident and when they are responding.
- **Travel Time**—The time the responding unit spends on the road to the incident
- **Response Time**—A combination of turnout time and travel time, the most commonly used measure of fire department response performance.
- **Total Response Time**—The time from when the 911 call is answered until the dispatched unit arrives on the scene.

Figure 41: Response Time Continuum



Total response time is the amount of time a resident or business waits for resources to arrive at the scene of an emergency beginning when they first placed a 911 call. This process begins for the fire department once the appropriate unit is dispatched by the communications center. The NFPA standard for alarm handling and call processing is derived from NFPA 1221: *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems* and provides for communication centers to have alarm handling time of not more than 15 seconds, 90% of the time and not more than 20 seconds, 95% of the time. Additionally, NFPA 1221 requires the processing of the call to occur within 64 seconds, 90% of the time for high-priority incidents. Similarly, NFPA 1710 requires the call processing time to be 60 seconds or less, 90% of the time.

Figure 42: NFPA 1710 Standards for Fire/EMS Responses

Response Interval	NFPA/CAI Recommendations
Call Processing	60 seconds or less at 90%
Turnout Time	60 seconds or less at 90%
Travel Time	240 seconds

Tracking the individual components of response time enables jurisdictions to identify deficiencies and areas for improvement. In addition, knowledge of current performance for the response time components is an essential element of developing response goals and standards that are relevant and achievable. Fire service best practices recommend that fire jurisdictions monitor and report the components of total response time.²² Washington State further requires establishing, monitoring, and measuring response performance by statute.²³

²² NFPA 1710: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*; Center for Public Safety Excellence, *Community Risk Assessment: Standards of Cover, 6th Edition*.

²³ RCW 35A.92, Fire departments—Performance measures.

For the purposes of the analysis of each performance component the follows, the incidents in the data set provided by CWFD/CRESA were not identified as to emergency or non-emergency response. Thus, all incidents—except those with data errors—are included in the analysis. CWFD should work with CRESA to ensure all appropriate data fields are brought into the NFIRS incident software from the dispatch center software—to include the priority of response. Ongoing analysis should focus on these performance components as they relate to emergency responses.

Call Processing Performance

Call processing performance generally falls under the control of the dispatch center. CWFD units are dispatched by the Clark Regional Emergency Services Agency (CRESA). The data provided by CRESA did not include the timestamp to document when the dispatcher received the call so call processing performance was not included in this analysis.

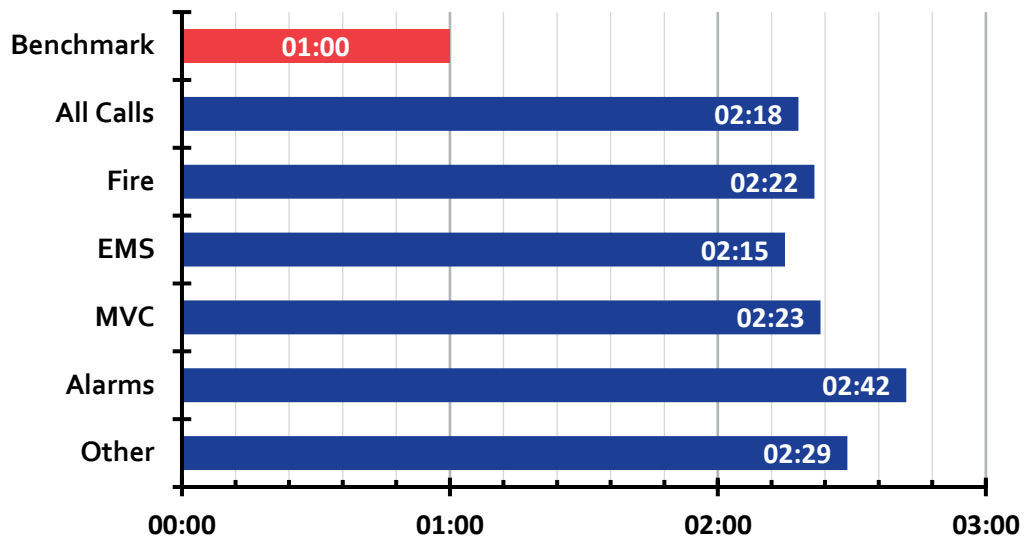
Turnout Time Performance

The ability to quickly react to the notice of alarm and begin responding to an incident is the first component that is under the direct control of the fire department personnel. Turnout is the time it takes personnel to receive the dispatch information, move to the appropriate apparatus, and proceed to the incident. NFPA 1710 specifies that turnout time performance should be 60 seconds (01:00) or less, measured at the 90th percentile for incidents other than fire and special operations.²⁴ For those incidents, turnout time performance should be 1 minute, 20 seconds (1:20) or less, measured at the 90th percentile.

For analysis of the turnout time performance, there were a total of six incidents with a turnout time greater than 9 minutes which appeared to be invalid values and were excluded. The following figure illustrates the turnout time performance for CWFD with an overall performance of 2 minutes, 18 seconds—well over double of the expected performance. When analyzed by incident types, turnout performance ranged from 2 minutes, 15 seconds for EMS incidents to 2 minutes, 42 seconds for alarm incidents. Leadership should evaluate any factors which may be impacting the ability of personnel to meet the expected standard. This may include station design that may delay movement to the apparatus bays, location of safety equipment to be donned prior to response, etc.

²⁴ NFPA 1710: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments.*

Figure 43: CWFD Turnout Time Performance, 90th Percentile (2014–2018)

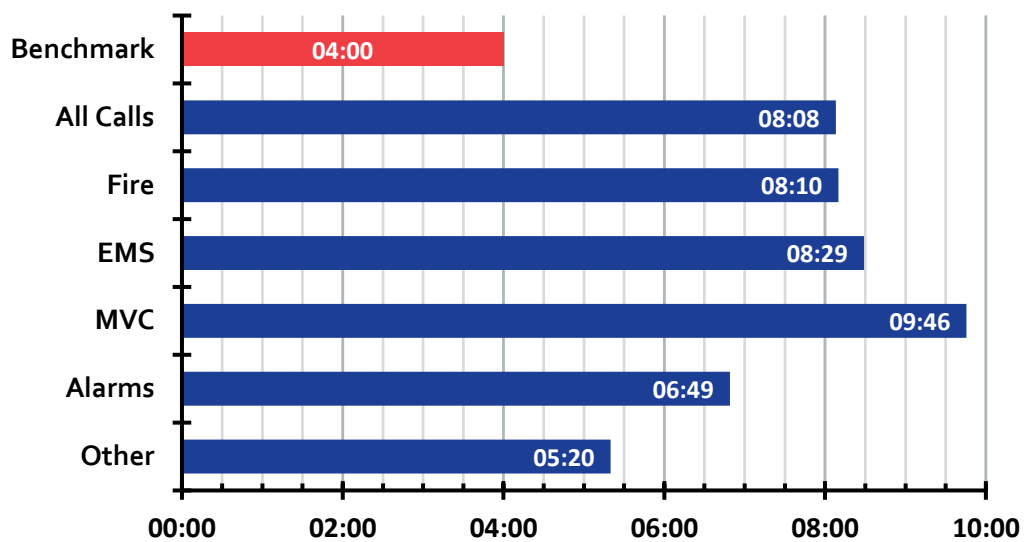


Travel Time Performance

Travel time is potentially the longest component of total response time. Factors that may impact travel time are the geographic distance from stations to the incident and traffic pattern changes based on time of day, industry, railways, etc.

For analysis of the travel time performance, there was one incident with a travel time greater than 1 hour which appeared to be an invalid value and was excluded. The following figure illustrates the travel time performance for CWFD with an overall performance of 8 minutes, 8 seconds—slightly more than double of the expected performance. When analyzing travel performance by incident type, the values ranged from 5 minutes, 20 seconds for other incidents to 9 minutes, 46 seconds for motor vehicle collisions.

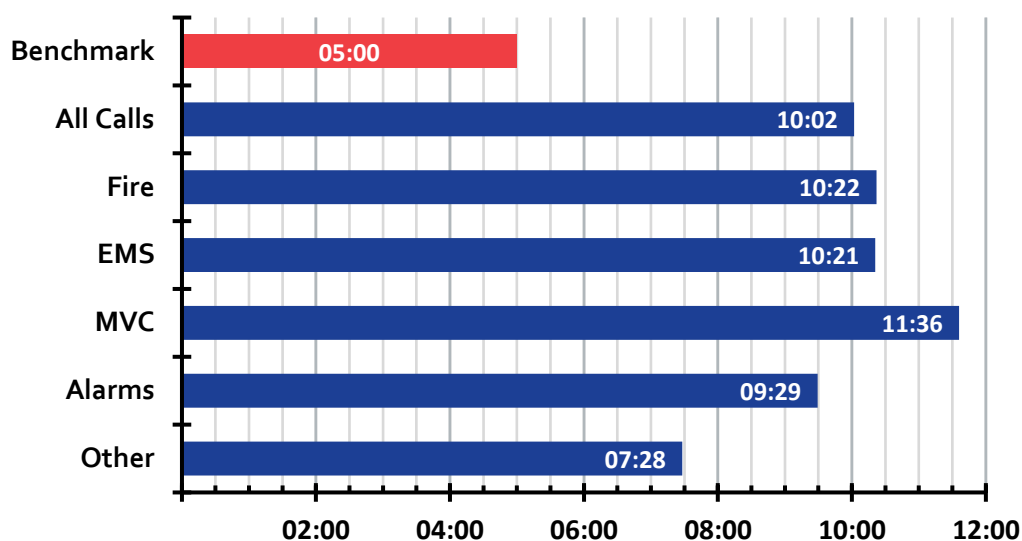
Figure 44: CWFD Travel Time Performance (2014–2018)



Response Time Performance

When turnout time and travel time are combined, this is expressed as response time with an expected performance of 5 minutes or less. This is perhaps one of the most often tracked and reported response time performance measures, as it is comprised of components under direct control of the department. As this combines both measures, it is also impacted by the issues identified within those individual measures. For analysis of the response time performance, there were a total of three incidents with a response time greater than 1 hour which appeared to be invalid values and were excluded. The following figure illustrates the response time performance for CWFD with an overall performance of 10 minutes, 2 seconds—slightly more than double the expected performance. When analyzing response time performance by incident type, the values ranged from 7 minutes, 28 seconds for other to 11 minutes, 36 seconds for motor vehicle collisions.

Figure 45: CWFD Response Time Performance (2014–2018)



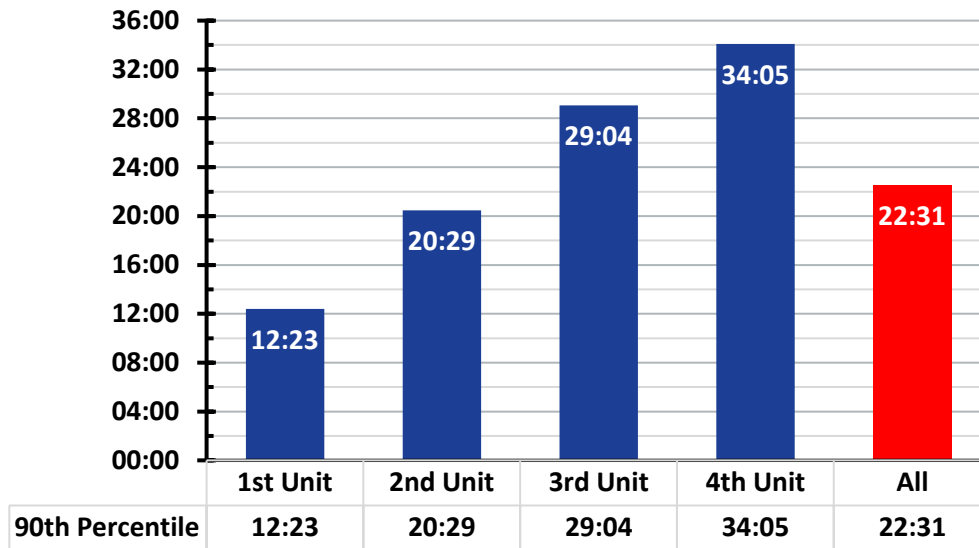
Response Time Performance for Structure Fires

Standard 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, referred to as Effective Response Force) within a specified amount of time. 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. In this analysis, ESCI examines CWFD's ability to assemble multiple resources across the service area in a timely manner.

Response performance for the order of arrival of the first five units arriving to structure fires was analyzed for incidents occurring between 2014 and 2018 using the data provided by CWFD and CRESA. Due to the small data set of NFIRS incident type 111-112 (building fires and fire in a structure, other than in a building), this analysis includes all NFIRS types 111-123 (adds numerous subtypes of fires within or involving a structure, even when the original design was not intended as a fixed structure).

Additionally, only fire suppression units were used—Command Officers and supplemental units were not included. To be measured, the unit had to have an on-scene timestamp. The measurement used was the response time—turnout plus travel, meaning the time from the verbal dispatch until arrival on-scene.

Figure 46: CWFD Structure Fire, Order of Arrival (2014–2018)

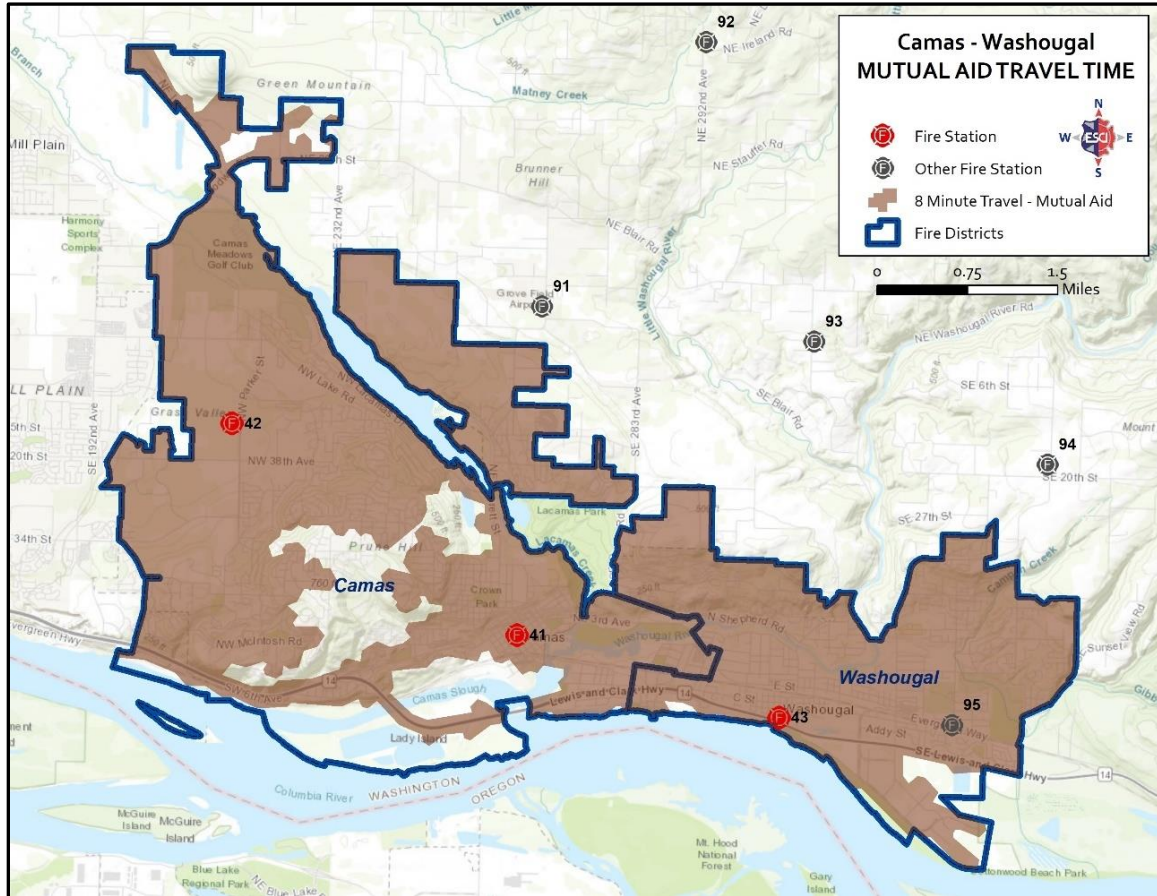


Mutual & Automatic Aid

Communities have traditionally forged limited agreements to share resources under circumstances of extreme emergencies or disasters. These agreements, known as mutual aid agreements, allow one community to request the resources of another in order to mitigate an emergency or disaster that threatens lives or property. Mutual aid is typically employed on an “as-needed” basis where units are called for and specified one by one through an 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. These agreements facilitate closest unit dispatch to emergencies in boundary areas and allow for the dispatch of additional apparatus and personnel to specific predefined emergencies.

CWFD currently has mutual aid agreements with Vancouver Fire Department (located west of the CWFD service area) and East County Fire & Rescue (located north of the CWFD service area). There are currently no automatic aid agreements between CWFD and other agencies. The following figure illustrates the 8-minute travel distance provided from mutual aid stations.

Figure 47: CWFD Mutual Aid Agency 8-Minute Travel



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.²⁵ 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. This is commonly referred to as effective response force (ERF). The following figure illustrates the minimum staffing recommended for response to a single-family residential structure fire. As the size of the structure increases the demand for the appropriate number of personnel also increases.

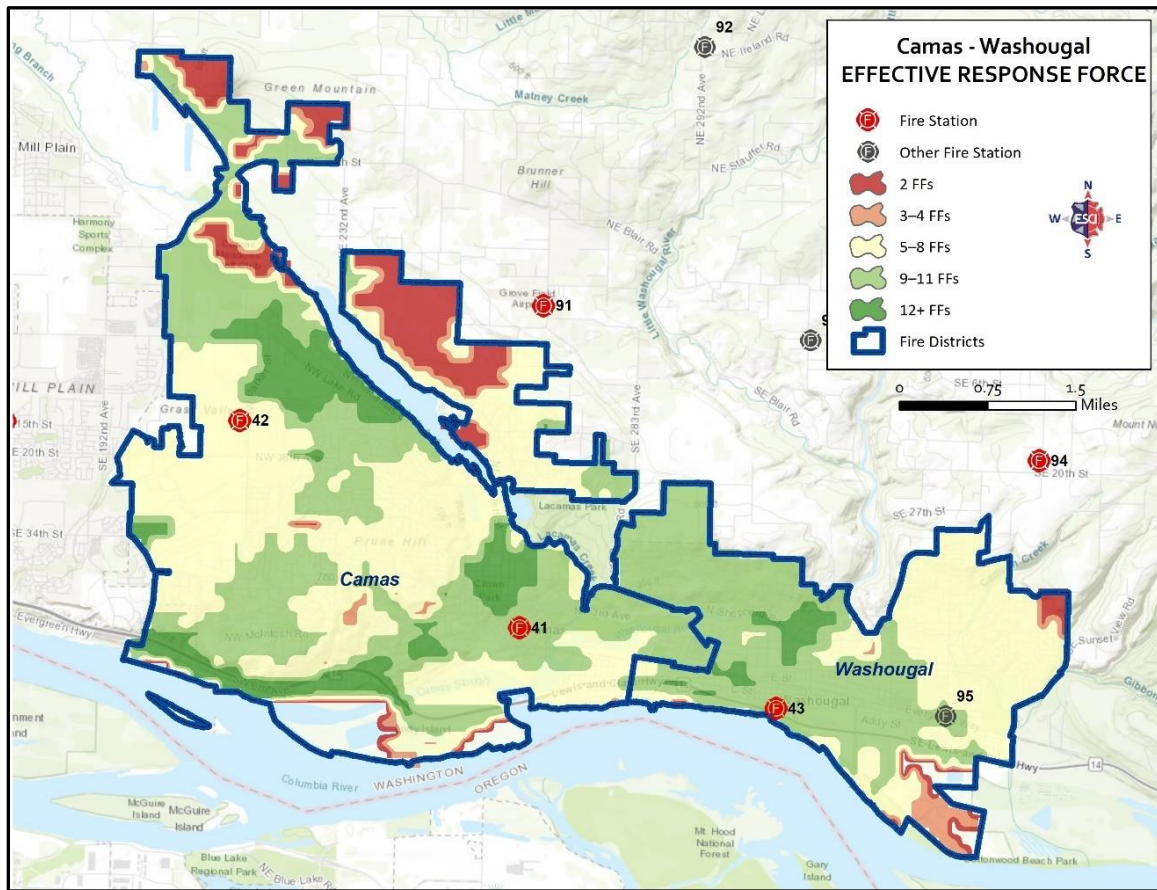
²⁵ NFPA 1710: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*; and the Commission on Fire Accreditation (CFAI) *Standards of Cover, 6th Edition*.

Figure 48: NFPA 1710 Initial Alarm Assignment—Residential

Initial Full Alarm Assignment—2,000 SF Residential Structure Fire	
Command	1
Apparatus Operator	1
Handlines (2 members on each)	4
Support Members	2
Victim Search & Rescue Team	2
Ground Ladders/Ventilation	2
Aerial Operator (if ladder used)	(1)
Initial Rapid Intervention Team	4
Total	16 (17)

CWFD daily staffing includes 10 station personnel and a Battalion Chief. Without mutual aid resources, CWFD would be unable to meet the initial alarm assignment for structure fires of any size. Thus, the following figure illustrates the effective response force for the CWFD service area—utilizing CWFD apparatus/personnel as well as apparatus/personnel through mutual aid agreements. The data illustrated in the figure does not include the responding Battalion Chief.

Figure 49: Effective Response Force including Mutual Aid Personnel



This can also be presented as percentage of the service area as illustrated in the following figure.

Figure 50: Effective Response Force including Mutual Aid, Personnel by Percent

Effective Response Force	Percentage of Service Area
2 Firefighters	8%
3-4 Firefighters	2%
5-8 Firefighters	42%
9-11 Firefighters	38%
12 or More Firefighters	10%

Only 10% of the CWFD service area approaches (but still falls short of) the minimum number of personnel required for a residential structure fire, including mutual aid resources. Those areas are small pockets north and west of Station 41, northeast of Station 42, north and west of Station 43, and paralleling the Columbia River in western half of Camas along SR 14.

RECOMMENDATIONS:

- Utilize a station zone layer in the CAD or NFIRS software to determine reliability within each zone. (Answers the question: Did that zone's unit handle the call or did another station have to handle?)
- Ensure documentation of whether an incident is dispatched as emergency or non-emergency. This can be done within CAD or the NFIRS reporting system. This would allow response performance measures to be trended based on emergency responses only.
- Work with CRESA to ensure time stamp is captured for receipt of the call by the dispatcher. This is needed to trend the performance for call processing time.
- Address lag in turnout time performance. Ensure time stamp is captured accurately for every unit and separated from non-emergent calls.

TRAINING

Providing safe and effective fire and emergency services requires a well-trained workforce. Initial and on-going training and education is critical for agency effectiveness and safety. A complete training program reduces the risk of injury and death for emergency responders and the community.

Initial training of newly hired firefighters is essential, requiring a structured recruit training and testing process, after which regular ongoing verifiable training must be conducted to ensure knowledge and skill competency. Providing high quality training requires dedicating significant internal training resources, and/or contracting for these services from outside agencies and providers. Training sessions should be formal and follow written lesson plans with specific objectives.

In the following section, ESCI reviews the Camas-Washougal Fire Department training program, general training competency, training methodology, training operations and performance, training administration and budget, training facilities and resources, recordkeeping, and personnel trained.

General Training Competency

Standardized training based on national and state standards is critical to providing quality emergency response training, consistent emergency field operations, and safety of all personnel. The Camas-Washougal Fire Department references a variety of training standards, specifically: the National Fire Protection Association (NFPA), the Blue Card Incident Command Certification Program, the International Fire Service Accreditation Congress (IFSAC), the International Fire Service Training Association (IFSTA), the regulations and standards included in the Safety Standards for Firefighters (Washington Administrative Code, Chapter 296-305), the standards for the fire service as identified by the Washington Surveying and Rating Bureau (WSRB), and locally adopted Standard Operating Guidelines. CWFD also follows the annual EMS training requirements and certifications as administered by the County Medical Program Director.

All of the Captains and Battalion Chiefs at CWFD are Blue Card certified to the Incident Commander level. Two of the Battalion Chiefs are certified Blue Card Trainers. All personnel are trained to Blue Card standards. Personnel also have the option of certifying as Blue Card trained Firefighters by taking a 50-hour on-line course at a cost of \$400.00. The department reimburses personnel when they complete the certification.

All response personnel participate in TargetSolutions, the on-line training software program. TargetSolutions provides more than 250 annual hours of fire and EMS online continuing education. The program also is used to track training and mandatory compliance tasks. The Administrative Battalion Chief makes additional quarterly assignments to address department specific training needs. The quarterly assignments include Washington Administrative Code (WAC) requirements such as ladder operations, use of Self-Contained-Breathing Apparatus, and apparatus pump operations. Other assignments include hands-off training such as asbestos awareness, hearing conservation, and introduction to wildland firefighting. Some custom in-house lesson plans have been added to TargetSolutions. Multi-company drills are assigned once per quarter. All personnel are trained to IFSAC Hazardous Material Awareness and Operations levels.

Standard Operating Guidelines direct safety procedures and accountability procedures. The department has recently signed a contract with Lexipol. Lexipol provides state specific policies vetted by public safety attorneys and fire service professionals. The service provides continual updates in response to legislation, case law, and evolving best practices. The guidelines are accessible 24 hours per day on a web-based platform with mobile application. The transfer of existing guidelines has been a tedious and time-consuming process. Members of the union local are involved in the review process before adoption. The recent L&I ruling on structure fire response procedures at CWFD is being addressed in the new guidelines. The department is currently working on identifying gaps in policy. Considering the recent L&I issues and fine related to policy and Standard Operating Guidelines, this project needs to be a top department focus.

All personnel participate in required wildland firefighting training, but not to the Red Card level. Red Card certification is optional. Personnel have the option to earn Red Cards and respond on state mobilizations. CWFD currently has twelve personnel with various levels of Red Card certification. Nine of the Red Card certified personnel are career personnel.

Initial EMS training is completed prior to hire or start of a Volunteer Firefighter assignment. The Medical Program Director provides continuing Medical Education (CME). Paramedics are provided the Paramedic Continuing Education Program (PCEP) to maintain their certifications. The monthly On-going Training and Evaluation Program (OTEP) is provided to volunteer and other EMT personnel to maintain their EMS certification. The EMS Division Chief or his designee provides consistent Basic Life Support and Advanced Life Support skills practice.

Much of the training on shift is interrupted with emergency calls and medical transports. It is often difficult to complete a drill during the 24-hour shift. The Administrative Battalion Chief struggles with this issue as he tries to keep personnel meeting department training standards. The department continues to look for ways to solve this issue. One idea discussed by the Administrative Battalion Chief is to call back off-duty personnel to cover on-duty personnel during their required training sessions. This would allow the on-duty personnel to complete the training on time and not fall behind training standards. The impact on the budget could be cost prohibitive.

CWFD used to send recruit personnel to the State Fire Academy in North Bend, WA. The State Academy is temporarily closed for remodel. There are no other recruit academies available in the state this year, but five new recruits were hired by CWFD in 2019. To address the recruit academy need, CWFD created an in-house Recruit Academy this year. The academy has been created in cooperation with Portland Community College and the Longview Fire Department. A total of nine recruits are participating in the program at Station 42. Instructors from CWFD, Longview Fire, and Portland Community College provide the instruction. Live fire training takes place at the Marine and Environmental Research Training Station (MERTS) facility in Astoria, Oregon. The State of Washington reimburses the department \$2,000 for each firefighter completing the recruit academy. The Academy is 13 weeks long and provides the same certification formerly provided by the State Fire Academy.

Training Methodology

The Administrative Battalion Chief makes quarterly assignments for all crews to complete manipulative skills and task performance. Annual fire and EMS training hour requirements follow Washington Administrative Code (WAC) and Washington Surveying and Rating Bureau standards. Annual EMS training hours exceed the Paramedic Continuing Education Program (PCEP) and On-going Training and Evaluation Program (OTEP) minimum requirements. Skill sheets created in-house and commercially are used as guidelines for lesson plans. Multi-agency drills and inter-station drills are completed quarterly. The department holds an annual earthquake or disaster drill. The department is currently working on an Active Shooter Drill with the Camas Police Department. Since the closure of the Concordia College FEMA training program, unified command training has been impacted. The goal is to continue to encourage law enforcement to join in training with the fire department on unified command.

The department has set a goal of completing one nighttime multi-company drill per year, which is currently in negotiations with the union. Pre-Incident plans are used for training purposes when available.

Training Operations and Performance

Safety briefings are completed prior to all drills. The department training manual has been created by department staff and is incorporated with TargetSolutions. Post incident analysis is led by the on-shift Battalion Chief and is given to the crews as soon as possible. This is an important element to continuous improvement, addressing incident errors in a near real-time period and sharing lessons learned in a non-punitive setting.

Training Administration and Budget

The Administrative Battalion Chief is responsible for administering the training program, including the development of the annual training plan. The Battalion Chief completes an Annual Training Report. Training goals and objectives are released at the beginning of each quarter. All personnel are expected to complete 100% of the quarterly assignments. The EMS Division Chief is responsible for the EMS training program.

According to the current collective bargaining agreement, the Administrative Battalion Chief can only administer the training program; he cannot provide the training instruction. Only on-duty personnel can provide the training. A Training Captain position has been left unfilled for four years, apparently due to funding issues. A Training Captain could instruct personnel and help deliver a consistent training program. The Captain could clean up TargetSolutions records and keep the reporting up to date. With the addition of a Training Captain, the Administrative Battalion Chief could address long-range planning, budget issues and other needs of the program.

During the summer months (July 1 to October 1), the Administrative Battalion Chief provides shift coverage for summer vacations. This takes away from the training program focus and much of the training program goes on hold during these months. There is no dedicated Training Program Administrative Assistant.

Filling the Training Captain position would help address these issues. Alternatively, the fire department could consider opening the collective bargaining agreement to discuss allowing the Administrative Battalion Chief the ability to provide training instruction. Funds planned for hiring the Training Captain could be moved to suppression to provide one additional line person on shift, and for hiring one Administrative Assistant to perform clerical and record-keeping tasks.

It appears that the Administrative Battalion Chief has limited input in developing the Training Budget. His input to the training budget is necessary in identifying current and long-range training needs. The Training Budget for 2019 is \$54,540. This is an increase of approximately 5% over the 2018 budget. Expenses include office and operating supplies (training props, food, books), travel (hotels, meals, mileage, Fire Academy room and board), instructor fees, and miscellaneous expenses (training registrations, Fire Department Training Network, Clark County Fire Training Association dues). The Training Budget funds none of the overtime related to training.

The Fire Chief must approve each training or drill that generates overtime. The fire department budget currently has a line item for all overtime, but does not specifically breakout training related overtime. The Fire Chief estimates that training related overtime was as follows:

- 2017—\$14,310
- 2018—\$13,439
- 2019—\$24,437 (through July, high due to a fire academy)

Training Facilities and Resources

Station 42 was designed with a center for training classes and drills. Training office space and a classroom are located inside Station 42. The facility is well designed for fire service training classes. Audio-visual updates are needed to keep up with technology improvements, including the laptop computer.

A four-story tower and training ground are located on the exterior of Station 42. The training grounds include a forcible entry prop, a bailout prop, hose pull prop, and ladder prop. Live fire props include a propane pan and Class B fuel pan. The training grounds were well designed for large fire operation and emergency apparatus driving drills.

The tower needs preventative maintenance. The glulam beams that hold the roof prop in place need to be replaced due to rot. The bolts that tie all of the floors to the exterior walls need to be sandblasted and repainted. Repairs will be a one-time cost. The total price to make these repairs has been estimated by in-house personnel to be \$20,000 to \$30,000. A written estimate from a private contractor would clarify the anticipated cost of repairs. The \$37,552 budgeted in the 2019 Budget for Fire Station 42, Fire Station 43, and Training Tower and prop maintenance may not be adequate to cover all of the building repair.

The Administrative Battalion Chief has proposed obtaining the proper equipment to complete physical ability testing in house rather than hiring out this responsibility. Currently, discussion is under way administratively to consider purchasing the necessary equipment to provide physical ability testing internally, which is viewed as part of the training responsibility. Currently, CWFD obtains these services from Public Safety Testing, a private company that conducts testing throughout the northwest for fire departments. ESCI cautions that along with purchasing the equipment necessary to conduct the testing internally, the department would also own the liability associated with conducting these tests internally. If the result of a test were challenged, CWFD would have to defend any allegations of disparate impact or lack of job-relatedness for any components of the test.

Recordkeeping

The Administrative Battalion Chief is responsible for maintaining all training records. Training records and files are kept on computer files and individual training files are kept in the TargetSolutions software. All daily training and company training records are also kept in the TargetSolutions file. Fire, EMS, and all other certifications are tracked in TargetSolutions, with paper copies of all certifications kept in each member's personnel files. Only Captains and Battalion Chiefs are authorized to enter training activities in the electronic records, but all personnel can access Target Solution to review their individual training records for compliance.

Personnel Trained

Forty-seven career personnel and 10 to 15 volunteers are trained each year. The Administrative Battalion Chief is responsible for ensuring that this training is accomplished. In 2019 an additional five career personnel are completing the recruit academy. The five recruits will fill vacancies created by reassignments and anticipated retirements. TargetSolutions reports indicate that 3,420 hours of training were recorded in 2018, which amounts to just over 55 hours of training per person on average. The EMS Division Chief monitors additional EMS training hours separately. Additional hours of training for Emergency Vehicle Incident Prevention and Hazardous Materials training are not included in the total hours.

The Administrative Battalion Chief has gathered information on Student Firefighter Internship Programs in Clark County. His purpose is to find and train additional candidates for future career positions at the Camas-Washougal Fire Department. The programs provide training and certification for college students interested in a career in the fire or EMS field. Interns are required to work assigned duty shifts on a rotational basis each month, in exchange for tuition reimbursement and a monthly stipend. Intern firefighters respond on emergency calls with the career firefighters. This is a project he will continue to consider as part of a long-term training plan.

RECOMMENDATIONS:

- Include the Administrative Battalion Chief in developing the annual training budget.
- Negotiate a change to the collective bargaining agreement to allow the Administrative Battalion Chief the opportunity to instruct training.
 - Consider bargaining to transfer the training captain vacant FTE to suppression and fill for line staffing enhancement.
- Focus on the Lexipol project to update Standard Operating Guidelines.
- Update audio-visual and technology needs at Station 42 for training.
- Obtain competitive quotes for station and training tower maintenance and amend the budget accordingly.
- Evaluate the cost of contracted entry level testing versus the cost of purchasing, maintaining, and administering firefighter candidate testing and defending against potential disparate impacts or job-relatedness claims.
- Schedule training during non-peak emergency demand times.
 - Consider alternatives to overtime for regular, ongoing manipulative skills training (see peak demand unit discussion in this report's recommendations).
- Break out the overtime budget to include overtime to conduct on duty training.
- Continue to advocate for Unified Command training with local law enforcement.

FIRE PREVENTION

An aggressive fire and life safety services program is essential for a fire department seeking to minimize life and property losses associated with fires and other community risks. Fire departments need to understand the importance of their role in providing fire prevention and public fire education as part of the planning process to reduce community risk. The Camas-Washougal Fire Department has a robust, full-service Fire Marshal's Office.

Administration

The Fire Marshal's Office is staffed with one Fire Marshal, two Deputy Fire Marshals, and one Administrative Assistant. One of the two Deputy Fire Marshals has just recently been appointed.

Code Enforcement

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

The cities of Camas and Washougal have adopted the 2015 International Fire Code, the 2015 International Building Code, the 2015 International Mechanical Code, and the 2014 NFPA Standards. The cities have also adopted State of Washington regulations and some local ordinances. Both cities have adopted progressive fire sprinkler ordinances. All new residential occupancies are required to be equipped with automatic fire sprinkler systems. This is an industry best practice and one the entire community should hold up as an example for the rest of the State of Washington to emulate.

General Inspection Program

The Fire Marshal's Office conducts new and existing occupancy inspections. Existing occupancy inspections include assembly, business, factory, industrial, mercantile, storage, multi-family, and institutional occupancies. The jurisdiction has an estimated 600 commercial occupancies. The recent addition of a second Deputy Fire Marshal increases the planned occupancy inspection goal to about 250 per year. The goal is to inspect all occupancies every two years. Schools and high hazard occupancies are inspected annually. In addition to new construction, the frequency of existing occupancy inspections is by request, complaint, or is based on occupancy type. Inspections are computerized in the field using Streamline software.

If an inspection is completed and violations are found, the building occupant is given 30 days to correct the violation unless it poses an immediate life-threatening situation. Those violations are corrected immediately before the Fire Marshal's Office staff member leaves the premises. A re-inspection occurs after the initial 30 days, followed by a second and final re-inspection if needed. If compliance is not achieved by the final re-inspection, an administrative citation can be issued. The citation informs the business owner that repeated attempts to gain compliance has been unsuccessful. Administrative citations may continue to be issued until compliance is achieved or the matter is referred to legal counsel for legal action. The occupant or business owner has the right to appeal. The process is codified. The Fire Marshal has a history of working with owners to gain compliance without citation, and reports that legal action is extremely rare.

The Camas Building Department collects the fees for inspections. The fire department does not utilize tenant self-inspections of low hazard occupancies because the Fire Marshal has determined them to be ineffective. The low hazard occupancy inspections are completed once every two years. Storage tanks are inspected annually by the Fire Marshal's Office. The department does not utilize engine company personnel to perform engine company occupancy inspections. The department studied the idea and determined that an engine company inspection program would not be appropriate for Camas-Washougal Fire Department. Occasionally a third-party expert is called in to complete an inspection or plan review for a specialized or unusual occupancy, when the proposed occupancy use exceeds the code training and certification of staff. The office also maintains fire hydrant flow records.

The excellent fire prevention program, and program records, has made a considerable contribution to the Class 4 rating earned with the Washington Surveying and Rating (WSRB) for the cities of Camas and Washougal.

New Construction

An essential component of a fire prevention program is new construction plan reviews. The fire department has the responsibility to protect the structure for the life of the building. The fire department has a fundamental interest and duty to ensure all buildings within the jurisdiction are properly constructed and protected.

The Camas-Washougal Fire Marshal's Office is responsible for reviewing and approving all new construction projects. A Deputy Fire Marshal is assigned to review adherence to applicable fire codes and ordinances. He reviews and approves the construction plans. The Deputy Fire Marshal consults with the owner and/or builder on all proposed new construction projects, occupancy remodels, and proposed tenant improvements and changes, signing off the projects upon completion.

Fire Safety and Public Education

The Camas-Washougal Fire Department provides some Fire Safety and Public Education for the community. The department provides education on the proper procedures to call 911; Exit Drills in the Home (EDITH) training; provides free smoke detectors and general fire safety classes; injury prevention classes (such as falls, burns, use of bicycle helmets); presentations on the proper use of fire extinguishers; CPR courses; and provides free Blood Pressure checks. The Fire Marshal's Office confirms the presence of carbon monoxide detectors in all new construction. The fire department responds to carbon monoxide alarms and checks suspected malfunctioning detectors upon request. Two personnel are also trained as juvenile firesetter counselors.

In addition, the Fire Marshal's Office streamlines access issues in an emergency for operational personnel by enforcing a key box requirement on buildings with a sprinkler system, an alarm system, or difficult to access residential properties.

Fire Cause Determination

Fire Cause Determination is the responsibility of the Camas-Washougal Fire Marshal and the Camas and Washougal Police Departments. Fire crimes are prosecuted by the Police Department. The Fire Marshal is certified as a Fire Investigator. One Deputy Fire Marshal is trained to National Fire Protection Association and National Fire Academy standards. The International Association of Arson Investigators certifies the Fire Marshal and one Deputy Fire Marshal Fire as Fire Scene Photographers. An evidence collection process is in policy form and is rigidly followed. Evidence, reports, and records of all investigations are kept in secure storage at the Fire Marshal's Office.

Statistical Collection and Analysis

All Fire Marshal's Office records are computerized. Information collected include fire incident location and cause, time and date, dispatch times, response times, and how the alarm was received. The data that is compiled is not being analyzed and should be analyzed regularly for trends. Incident location, time, and response performance information should be reported internally on a quarterly basis for any operational adjustments that might need to be made. Incident cause and alarm notification data should be used to inform public education and outreach efforts to address any specific abuses of the system or address user confusion. Trends that are identified can be fed into the Community Risk Reduction plan as discussed next.

Planning and Risk Reduction

A Community Risk Assessment (CRA) has not been completed in recent years. There is no Community Risk Reduction (CRR) Plan in place. Conducting a Community Risk Assessment specifically quantifies the risks posed within the community. Once quantified, a plan can be developed that targets the risks specifically. The advantage to this approach is that it uses limited resources to address targeted, higher risks in the community versus theoretical risks that if manifested may or may not produce significant consequences. Further, actual incident trends can be factored into the CRR plan to help address community education gaps or other definitive steps that can be taken to reduce community risk. This is discussed in greater detail in the *Mid-Term Strategies* section of this report.

RECOMMENDATIONS:

- Make necessary improvements in software programs for the Fire Marshal's Office.
- Complete a Community Risk Assessment and develop a Community Risk Reduction Plan.

EMERGENCY MEDICAL SERVICES

High performance EMS systems today require not only highly skilled providers, state of the art equipment, and advanced medical procedures, they also require strong support systems and oversight to ensure high quality and compassionate patient care. The following descriptions review the key CWFD EMS support components.

Physician Oversight

Each county in Washington State has a designated pre-hospital Medical Program Director (MPD). All CWFD EMS personnel practice under the authority of the Clark County MPD, Dr. Lynn Wittwer. The MPD's authority is granted under Washington Administrative Code (WAC) 246-976-920, which outlines the roles and responsibilities of the MPD, role of "on-line" and "off-line" medical control, authorization of written patient care protocols, and local EMS training requirements. Dr. Wittwer is a board-certified emergency physician, and as MPD has served the county and state for over three decades with distinction.

EMS Continuing Education

Providing consistent, contemporary, and compassionate pre-hospital medical care requires high quality initial and ongoing education. This is especially important given the time-critical and dynamic nature of trauma and medical situations faced by EMS responders, especially in low call volume areas where providers may evaluate and treat a limited number of patients. As a result, periodic training and skills evaluation is essential to ensure responders deliver competent patient care.

EMS training program administration, and much of the continuing education training, is provided by the EMS Division Chief. In addition, a group of firefighter/paramedics are designated Field Training Officers (FTO), who oversee the field instruction and evaluation of newly certified paramedics.

In CWFD, the periodic training for firefighter/EMTs is delivered through a county-wide program called *Ongoing Training and Evaluation Program* (OTEP). The OTEP program incorporates all Washington State Continuing Medical Education (CME) mandates including all topics must be completed during the three-year certification cycle. OTEP also includes required practical skills evaluations, which must be conducted by approved and specially trained OTEP evaluators. A web-based EMS education program, *TargetSolutions*® is used to deliver verifiable EMS educational topics. The program also tracks completed training for compliance and documentation purposes.

CWFD paramedics, and some EMTs, participate in a more advanced version of OTEP that includes ongoing training and certifications in *Advanced Cardiac Life Support* (ACLS), *Prehospital Trauma Life Support* (PHTLS), and *Pediatric Advanced Life Support* (PALS). Additionally, they must attend monthly MPD approved continuing education classes on contemporary EMS topics, and participate in advanced skills training and evaluations. These classes, open to all Clark County paramedics, are typically three hours long, with the first two hours devoted to a specific EMS topic, and the last hour focused on reviewing related cases. These sessions are recorded and uploaded into the *TargetSolutions*® database for those who are unable to attend. The ALS OTEP program meets the paramedic continuing education requirements of the *National Registry for Emergency Medical Technicians* (NREMT).

EMS Quality Management

In high performing EMS systems, EMS training is just one component in what is commonly referred to as a *Quality Improvement (QI)*, *Continuous Quality Improvement (CQI)*, *Total Quality Management (TQM)*, and/or *Quality Assurance (QA)* program. A QI program uses a holistic approach in continually assessing, measuring, and modifying the EMS program to improve service delivery.

A county-wide QI/QA committee comprised of agency representatives from the various county EMS providers and the MPD meet monthly to discuss topics for EMS education, equipment research results, and other topics of interest.

Today, many EMS systems only analyze operational performance parameters, such as EMS unit response times, on-scene times for critical trauma patients, and time spent at the hospital. However, progressive EMS systems are now tracking and evaluating additional parameters, including but not limited to patient outcomes, patient perceptions, compliance with treatment protocols, success of certain patient procedures, and quality of documentation, just to name a few.

Much of this change is now being driven by changes in federal law, which mandates that medical providers measure system performance and cost-effectiveness of clinical care. The federal government's Medicare program, along with other "payer" organizations are transitioning to provider reimbursements based on evidence-based patient care. Furthermore, the national healthcare system has adopted the *Institute for Healthcare Improvement's (IHI)* "Triple Aim" initiative, which is based on three concepts; Improve individual patient health, improve community health, and improve patient satisfaction—all while reducing healthcare costs.

As a healthcare industry, EMS has resisted adopting these approaches. Some of this can be attributed to not being formally recognized as health-care providers in the traditional sense, and/or lack of funding to procure and implement the necessary administrative resources. This is especially true in publicly funded EMS systems.

In implementing a progressive QI program, the following minimal components/concepts should be included:

- *Review of electronic patient care reports (ePCR)*—for compliance with treatment protocols, treatment success, and accurate documentation. In addition, certain EMS call types can be further reviewed and quantified to identify treatment and outcome trends. This information can then be used in an educational setting to improve treatment modalities and system performance
- *Analysis of Key Performance Indicators (KPI)*—also known as performance metrics—against regional, state, or national standards. Washington State EMS provider agencies are encouraged to use the Department of Health's *EMS Key Performance Indicators*.
- *Prompt investigation and remediation of patient care and/or system errors*—coordinated with an agency's risk-management program. Investigation of unusual occurrences and sentinel events is critical for risk-management purposes. EMS provider agencies often receive complaints or inquiries regarding perceived clinical errors and customer service issues. These complaints can be generated by hospitals, physicians, and citizens.

- *Patient surveys*—that allow for feedback on their perceptions and feelings about the care they received. The survey results—good and bad—can then be used to identify misperceptions, outstanding patient care, and/or significant negative feelings that can be quickly followed up by agency administrators. It is anticipated that formal survey programs will eventually be mandated for EMS systems, with customer satisfaction results being factored into reimbursement rates. Currently, CWFD has not implemented a formal EMS quality improvement program. However, the department has implemented some of the key components of a QI program. Implementation of a more comprehensive CWFD EMS QI program will require additional staff time and potentially more resources.

CWFD's QA program includes a review and evaluation of ePCRs of all high-priority patient transports, after which they are forwarded to the MPD for additional review. CWFD reviews a limited number of significant clinical performance measures, including paramedic intubation success rates, ST-Elevation Myocardial Infarction (STEMI) recognition and treatment outcomes, and cardiac arrest outcomes. Limited staff and resources, and problems with the current ePCR system, have kept CWFD from utilizing a wider range of the state KPIs.

One unique aspect of the QI process in Clark County and CWFD is the use of *FirstPass*®, a real-time computer program that monitors in real time data originating in the PSAP and completed ePCRs. The program algorithms compare user data with established dispatch and medical protocols, and immediately flags anomalies, transport of critical patients, and advanced life support performed, all considered important KPIs to assess. This information is then reviewed by the respective agency QI representative to determine if there was an error in protocols. Significant errors and all critical care calls are then reviewed by the MPD for follow up as necessary.

Additionally, all patient care "refusals" and non-transport incidents are reviewed for treatment protocol compliance, along with thoroughness of documentation. Both situations can result in increased liability risk for the department, and therefore must be closely monitored to ensure the appropriateness of the outcome.

While CWFD does not survey patients after treatment, they do encourage prompt self-reporting of significant clinical issues and negative patient interactions/events. When an individual performance issue is identified, the EMS Division Chief has a wide range of options available, including coaching, retraining, evaluation, and/or discipline. The FTOs are also a resource for resolving performance issues. In significant situations, the MPD may be brought into the remediation process to determine the best course of action.

Records Management

CWFD uses RescueNet FireRMS® (ZOLL® Medical Corporation) for fire and EMS incident documentation. The CWFD Records Management System (RMS) meets current *National Fire Incident Reporting System* (NFIRS) and National Emergency Medical Services Information System (NEMSIS) reporting standards. Patient care data is entered into desktop and/or tablet PC's. However, the information cannot be electronically transferred to either the receiving hospital, or to the state for statistical analysis. CWFD also uses the *Pulsara*® mobile platform to notify and deliver real-time patient information to key hospital staff during specific high acuity and time critical cases, such as STEMI and stroke emergencies. Again, this database does not interface with either the hospital database or FireRMS.

EMS Support Discussion

EMS billing is a highly specialized function, particularly when Medicare reimbursement is included. While it is beyond the scope of this report to analyze the billing function here, ESCI's experience has found that outside billing services have the process refined to maximize the revenue potential and reflect Medicare and other industry changes in near real time. Comparing existing collection rates to outsourced billing agencies will provide valuable information that may help determine whether outsourcing this service is cost effective.

According to Dr. Wittwer, CWFD EMS is highly regarded in the region for providing high quality patient care. CWFD providers are actively engaged in county-wide education and research efforts, and have a rigorous field training program to ensure new paramedics are adequately vetted and trained.

While the performance of CWFD's EMS providers is closely monitored and assessed from a clinical perspective, there is no formal process in place to routinely solicit feedback from patients related to their perceptions of the care they received and the competency of the paramedics and EMTs who took care of them. Customer perception of what constitutes high quality patient care can be vastly different than industry perceptions. Surveying perceptions and feelings is just as important as assessing adherence to protocols and on scene times, especially if a patient feels they had a bad experience. Examples of post-incident survey question topics can include patient perceptions of the following:

- Attitude and professionalism of the responders (including dispatchers)
- Level of reassurance-psychological care
- Physical care
- Helpfulness of the dispatcher, provide good/clear pre-arrival instructions
- Cleanliness of the equipment and vehicle
- Ride to hospital
- Treatment of pain
- Professionalism and helpfulness of billing staff

These perceptions are often graded on a sliding scale to identify the level of satisfaction or concern. In addition to the survey, agencies may include information about how their system operates, as many patients' first interaction with the 911 system is during a crisis event. Sharing system information after the incident can help prevent misunderstandings and potentially poor public relations for the agency.

The current status of the department incident RMS is concerning for three main reasons:

1. It does not interface with any of the local hospital patient records systems;
2. It does not interface with the Washington Emergency Medical Service Information System (WEMSIS); and,
3. The lack of interoperability results in onerous and duplicative data entry by responders and administrative staff.

Regarding the first issue, ESCI understands that the current hospital RMS systems will not interface with any of the most commonly used pre-hospital software systems. This has been an ongoing issue statewide, and it is not anticipated that a solution will be implemented anytime soon.

Specific to the second and third concerns, the department must first download, filter, and reformat data to be able to send it to the state for reporting purposes. Modern Fire/EMS RMS now include scalable report generation modules that allow for seamless submissions to state and federal agencies. WEMSIS reporting will soon become mandatory, making addressing this issue even more important.

Lastly, CWFD should be applauded for their implementation and support of the Pulsara® system. While use of the system results in duplicative data entry by responders, it appears to reduce the amount of time that a patient receives definitive care once they arrive in the emergency room. ESCI understands that Pulsara® does not currently interface with any EMS RMS program.

RECOMMENDATIONS:

- Implement a customer survey tool to identify patient care perceptions.
- Distribute survey results to key stakeholders, elected officials, and department members.
- Update or replace the current Fire RMS with a program that has the capacity, capability, and flexibility to interface with hospital records management systems.
 - Ensure the system can generate WEMSIS compliant reports.
- Continue use of the Pulsara® system.
- Compare collection rates from the internal billing process with outside agency billing provider collection rates to determine the most cost-effective method of billing and collection of ambulance services.

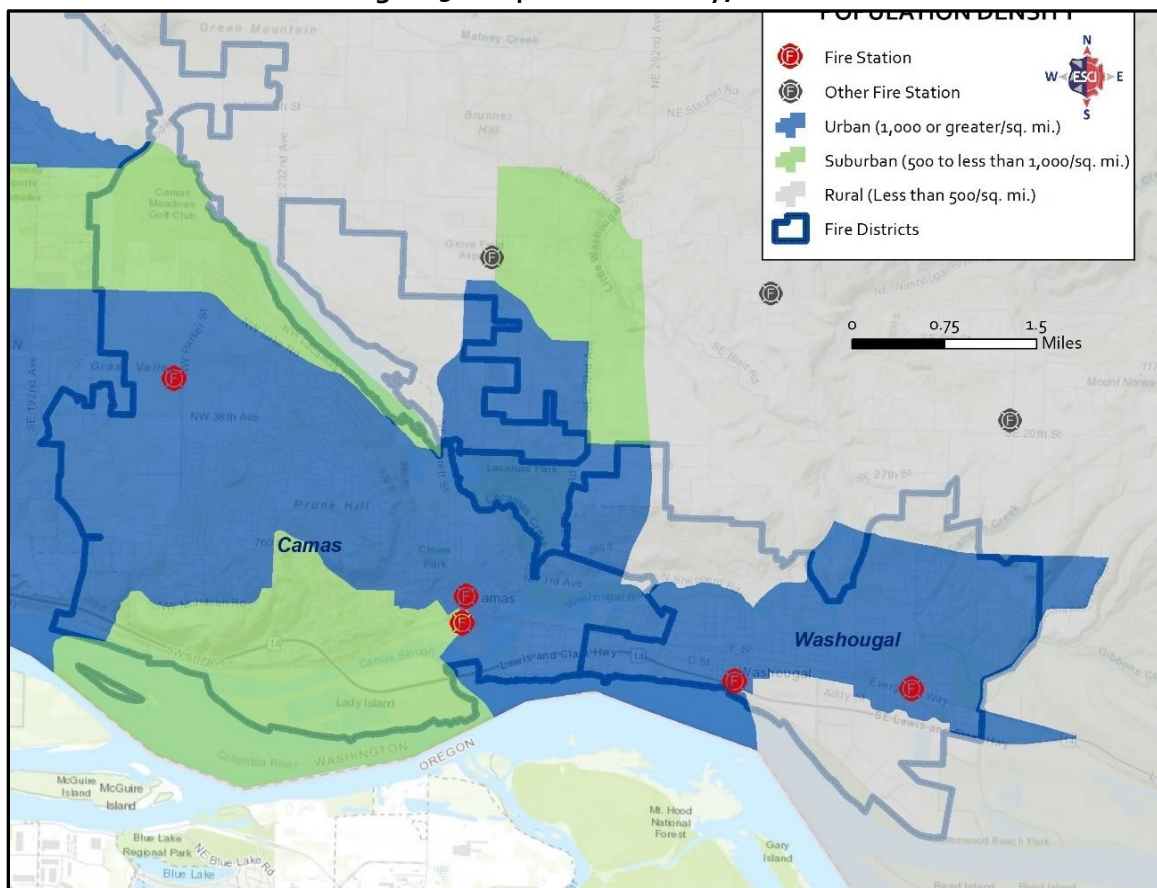
Future Projections

It is imperative that fire departments plan for future growth to stay ahead of the need for services. Since emergency response demand is directly tied to population, this section will project population growth and its effect on service demand.

POPULATION GROWTH PROJECTIONS

The CWFD primary service area encompasses the City of Camas and the City of Washougal located in Clark County Washington—the southernmost county in Washington. These two cities lay on the Washington side of the Columbia River—which forms the Washington-Oregon border in that region. Although Camas and Washougal are in the State of Washington, they are a part of the metropolitan area of Portland, Oregon. The following figure illustrates the population density for the CWFD primary service area.

Figure 51: Population Density, CWFD



The demand for service may be impacted by multiple factors within the community—which also impact the nature and category of the community risks. Figure 52 illustrates several key service demand drivers within the demographics of CWFD’s service area.²⁶

Figure 52: CWFD Service Area Demographics

Demographic	Camas	Washougal	Clark County
Median Age	39.4	39.3	38.0
Median Household Income	\$101,167	\$76,998	\$67,832
Owner-Occupied Housing	77.1%	73.4%	65.8%
Individuals Without Health Insurance	5%	4.8%	7.7%
Personal Income Below Poverty Level	3.7%	9.1%	10.3%

Demand for service may be higher in communities with populations who have lower income levels and lack health insurance. In the case of the CWFD service area, a large majority of citizens are covered by health insurance and less than 10% of the population falls below the poverty level. When compared to Clark County as a whole, the population of the CWFD service area falls within a higher median household income range and a greater percentage are covered by health insurance.

The following figures are presented for each city and then combined into an overall view of the service area.

²⁶ The city demographic figures which follow are sourced from <https://factfinder.census.gov>.

Figure 53: City of Camas, 2010 Census Demographics

Age	Male	Female	Total	Percent
Under 5 years:	711	680	1,391	7.22%
5 to 9 years:	878	873	1,751	9.08%
10 to 14 years:	926	905	1,831	9.50%
15 to 17 years:	544	496	1,040	5.40%
18 and 19 years:	258	190	448	2.32%
20 years:	114	95	209	1.08%
21 years:	85	76	161	0.84%
22 to 24 years:	219	203	422	2.19%
25 to 29 years:	351	402	753	3.91%
30 to 34 years:	515	616	1,131	5.87%
35 to 39 years:	739	825	1,564	8.11%
40 to 44 years:	853	923	1,776	9.21%
45 to 49 years:	837	818	1,655	8.59%
50 to 54 years:	725	680	1,405	7.29%
55 to 59 years:	567	576	1,143	5.93%
60 and 61 years:	207	199	406	2.11%
62 to 64 years:	271	285	556	2.88%
65 and 66 years:	132	144	276	1.43%
67 to 69 years:	197	168	365	1.89%
70 to 74 years:	208	210	418	2.17%
75 to 79 years:	107	135	242	1.26%
80 to 84 years:	78	102	180	0.93%
85 years and over:	59	95	154	0.80%

Figure 54: City of Washougal, 2010 Census Demographics

Age	Male	Female	Total	Percent
Under 5 years:	529	523	1,052	7.47%
5 to 9 years:	537	513	1,050	7.45%
10 to 14 years:	564	510	1,074	7.63%
15 to 17 years:	326	285	611	4.34%
18 and 19 years:	200	168	368	2.61%
20 years:	65	77	142	1.01%
21 years:	90	63	153	1.09%
22 to 24 years:	216	215	431	3.06%
25 to 29 years:	405	455	860	6.11%
30 to 34 years:	471	563	1,034	7.34%
35 to 39 years:	578	550	1,128	8.01%
40 to 44 years:	496	455	951	6.75%
45 to 49 years:	527	544	1,071	7.60%
50 to 54 years:	502	496	998	7.09%
55 to 59 years:	492	520	1,012	7.18%
60 and 61 years:	167	160	327	2.32%
62 to 64 years:	189	217	406	2.88%
65 and 66 years:	116	121	237	1.68%
67 to 69 years:	134	159	293	2.08%
70 to 74 years:	153	134	287	2.04%
75 to 79 years:	114	146	260	1.85%
80 to 84 years:	74	90	164	1.16%
85 years and over:	63	113	176	1.25%

Figure 55: Combined 2010 Census Demographics

Age	Male	Female	Total	Percent
Under 5 years:	1,240	1,203	2,443	7.32%
5 to 9 years:	1,415	1,386	2,801	8.40%
10 to 14 years:	1,490	1,415	2,905	8.71%
15 to 17 years:	870	781	1,651	4.95%
18 and 19 years:	458	358	816	2.45%
20 years:	179	172	351	1.05%
21 years:	175	139	314	0.94%
22 to 24 years:	435	418	853	2.56%
25 to 29 years:	756	857	1,613	4.83%
30 to 34 years:	986	1,179	2,165	6.49%
35 to 39 years:	1,317	1,375	2,692	8.07%
40 to 44 years:	1,349	1,378	2,727	8.17%
45 to 49 years:	1,364	1,362	2,726	8.17%
50 to 54 years:	1,227	1,176	2,403	7.20%
55 to 59 years:	1,059	1,096	2,155	6.46%
60 and 61 years:	374	359	733	2.20%
62 to 64 years:	460	502	962	2.88%
65 and 66 years:	248	265	513	1.54%
67 to 69 years:	331	327	658	1.97%
70 to 74 years:	361	344	705	2.11%
75 to 79 years:	221	281	502	1.50%
80 to 84 years:	152	192	344	1.03%
85 years and over:	122	208	330	0.99%

Service demand within a community is also impacted by the age of the residents. One of the fastest growing populations within the United States are those 65 and older—a group that is three times more likely to access emergency medical services than other age groups. For the CWFD service area, in 2010, only 9.14% of the population fell within this age group. Projected estimates for the community are that this age group increased to approximately 11% in 2017, an increase of 1.75%. Based on that incremental increase, the impact to service demand is minimal at this time but is expected to continue to grow.

Historical Population Change

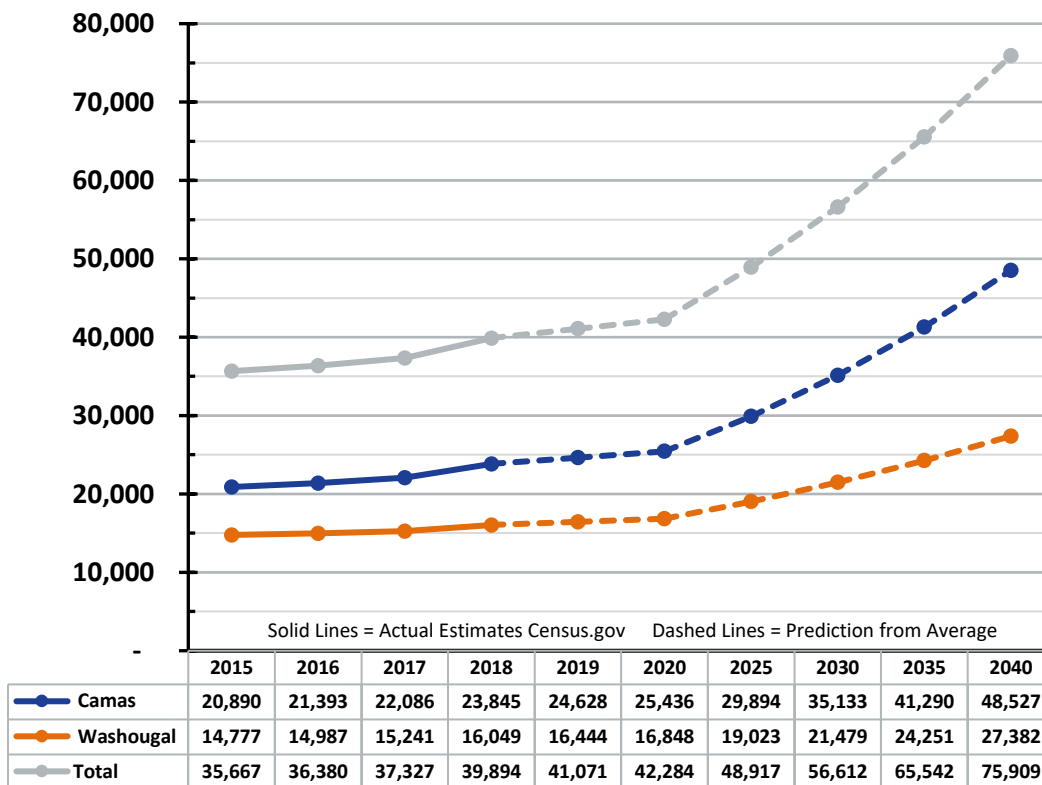
The following figure displays the historical population growth for each city. The City of Camas experienced a population growth annually that ranged from 2.11% to 7.96%—with an average growth rate of 3.28% per year. The City of Washougal experienced a population growth annually that ranged from 1.42% to 5.30%—with an average growth rate of 2.46% per year.

Figure 56: CWFD Population Estimates (2010–2018)

Year	Camas	Washougal	Combined
2010	18,438	13,223	31,661
2011	18,845	13,674	32,519
2012	19,483	14,031	33,514
2013	19,998	14,319	34,317
2014	20,458	14,563	35,021
2015	20,890	14,777	35,667
2016	21,393	14,987	36,380
2017	22,086	15,241	37,327
2018	23,845	16,049	39,894

Using the average annual growth rate for each municipality, the projected population estimates are illustrated in the following figure.

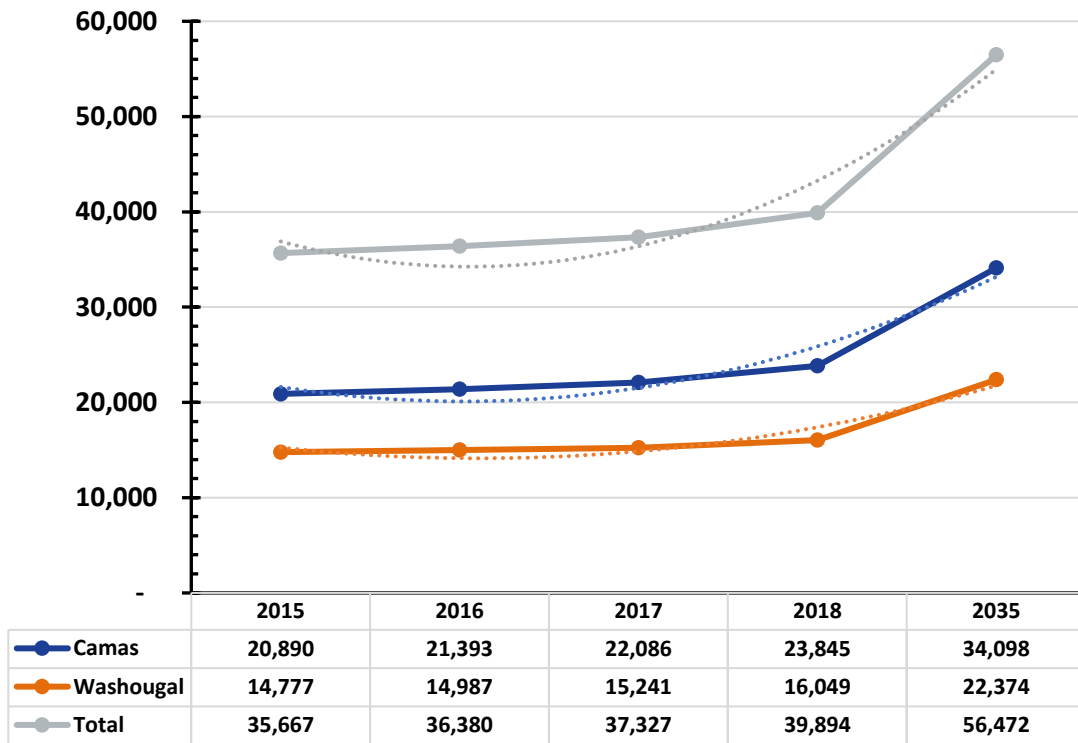
Figure 57: CWFD Service Area Population Growth Projections (2010–2040)



Comprehensive Plan Growth

While the foregoing figures are based on U.S. Census trends, the Washington State Growth Management Act and the compliant Comprehensive Plans for Camas and Washougal project minimum population growth. The *Camas 2035* Comprehensive Plan projects population growth to 34,098 by 2035. The *Washougal 2035* Comprehensive Plan projects population growth to 22,374 by 2035. Thus, the minimum growth trajectory is more conservative than the U.S. Census trends predict, as illustrated in the following figure.

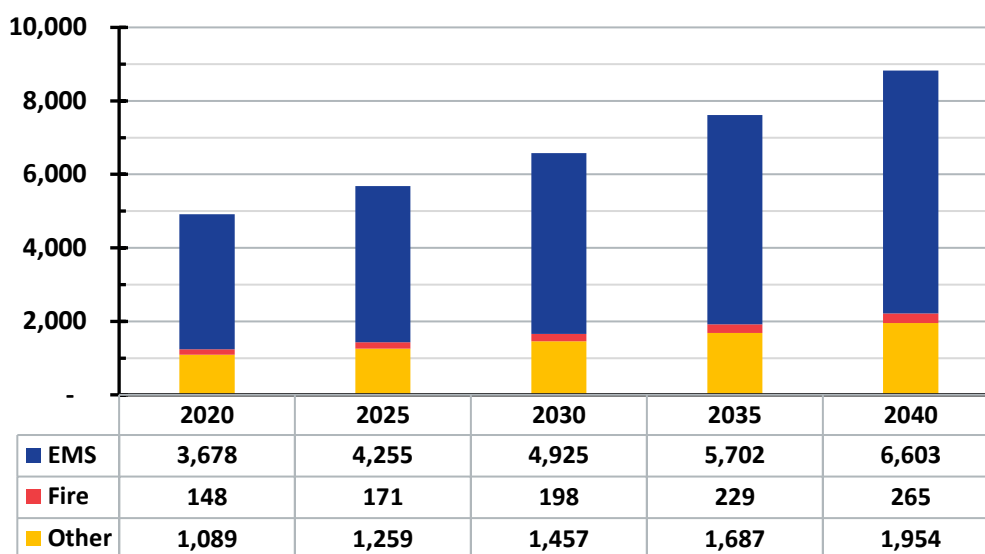
Figure 58: CWFD Service Area Population Projection, Comprehensive Plan 2035



SERVICE DEMAND PROJECTIONS

The current service demand per 1,000 population is determined by taking the annual number of responses and dividing by the population number in thousands. Looking at the estimated 2015 combined population of 35,667, the rate of total service demand is approximately 116 calls for service per 1,000 population. This is derived by looking at the 2014 through 2018 years and taking the average of service calls compared to the estimated 2015 population of the service area. Applying that same rate of total service demand (116/1,000) to the population projections illustrated previously, provides the projected mean service demand for CWFD as illustrated in the following figure.

Figure 59: CWFD Projected Service Demand (2020–2040)



As illustrated, the demand for service for emergency medical incidents comprises the greatest portion of the increased service demand (nearly 80% increase from 2020 to 2040). This projection is linear in fashion and does not factor the possible change in service demand due to the aging population. The effect of what is commonly referred to as the “Silver Tsunami,” a euphemism for the aging of Baby Boomers, will likely exponentially increase demand for emergency medical services into the future.

As told by Dr. Thomas Gill of the Yale Center on Aging, “...by 2050, people over 65 will represent more than 20% of the population, up from 15% today. That shift may not sound significant, but it represents about 40 million additional Medicare-age patients flooding the already beleaguered U.S. healthcare system. This flood, the so-called ‘Silver Tsunami’ will be driven partially by advances in medicine that are helping people live longer, but also by the Baby Boomers, people born during the population spike after World War II who are reaching old age.”²⁷

²⁷ Rx: *The Quiet Revolution, What the ‘Silver Tsunami’ Means for U.S. Health Care: An Interview with Thomas Gill of the Yale Center on Aging.* <https://rxfilm.org/problems/silver-tsunami-united-states-healthcare-thomas-gill-yale-center-on-aging-interview/> acquired from website 6-22-19.

The healthcare system in the United States is in flux and depending upon its evolution, may have currently unforeseeable ramifications to pre-hospital care. However, the aging population, the growth of those over age 65 as a percent of the total population, and the increasing life expectancy all contribute to known, significant increases in demands for service.

A study conducted in North Carolina in 2010 evaluated the effect of an aging population on the pre-hospital EMS system as a predictor of future system demand. The salient point of the study is made in the abstract, which states, "Visits [to Emergency Departments] by individuals 65 years of age or older accounted for 14.7% of all visits and 38.3% of all EMS transports to the Emergency Department. For those patients aged 85 years and older, EMS was the most common mode of Emergency Department arrival (60.6%). We estimate that by 2030, total EMS transports to North Carolina Emergency Departments will increase by 47%. Patients 65 years of age and older are projected to account for 70% of this increase and to compose 49% of all EMS transports by 2030. The proportion of patients using EMS to reach North Carolina Emergency Departments increases steadily with age. By 2030, older patients will account for approximately half of EMS transports to North Carolina Emergency Departments."²⁸

Empirical evidence suggests that as society's population ages, with Baby Boomers making up an increasing percentage of the total population, the EMS systems nationally will bear an increasing burden in EMS transportation. The large study in North Carolina (n = 2,743,221) is perhaps the best predictor of future EMS demand nationally. Given North Carolina's findings, it is reasonable to expect that Camas-Washougal will experience similar demand growth.

²⁸ Platts-Mills, Timothy F., et al. "Emergency Medical Services Use by the Elderly: Analysis of a Statewide Database." *Prehospital Emergency Care*, vol. 14, no. 3, 2010, pp. 329–333., doi:10.3109/10903127.2010.481759.

Strategic Recommendations

This report has developed a clear picture of the current conditions of the Camas-Washougal Fire Department as well as the various support services it relies upon to deliver those emergency services. Thus, this report also examines the conditions within each division. Further, this report projects anticipated drivers of service: population growth, community development, and the emergency demands that attend growth. From this analysis, numerous recommendations are included which ESCI believes enhances existing service delivery. Recommendations are also provided to address the anticipated effects of continuous community growth. It is self-evident that continuing to serve a growing community with static resources is a recipe for failure to achieve the mission. This is not to suggest that creative problem-solving has no role in facing the challenge of serving a growing community.

This report has numerous recommendations which are intended to enhance the current practices of the Camas-Washougal Fire Department. These recommendations reflect a continuous improvement mindset.

SHORT-TERM STRATEGIES

The following are short term recommendations and are the recommendations found throughout the report rolled up in one location here. Short term is defined here as one to two years. To categorize these recommendations into a priority list, they are inserted under the appropriate headings, defined as follows:

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 department personnel. These are not matters that simply make it easier to do a particular function but in fact render a currently unsafe situation safe.

Priority 2—Considerations That May Present Legal or Financial Exposure

The recommendation resolves a situation that is creating or is likely to create the opportunity for legal action against the department, the city, or its members. It also may be a situation that could subject the department to a significant expense, such as resolving a leaking underground storage tank.

Priority 3—Matters That Address a Service Delivery Issue

The recommendation addresses a service delivery situation that, while it does not create an immediate safety risk to personnel or the public, does affect the department's ability to deliver service in accordance with its standards of performance. For example, delivering training needed to allow personnel to deal effectively with emergency responses already being encountered.

Priority 4—Considerations to Enhance the Delivery of Services

The recommendation improves the delivery of a particular service. For example, adding a piece of equipment that will improve the delivery of a service.

Priority 5—An Important Thing to Do

The recommendation does not fit within any of the above priorities, but is still worth doing.

Priority 1—Internal Safety Concerns

1. Develop response plans and tactical worksheets for target hazards, and train on them regularly.
2. Install PPE Extractors at each fire station. Alternatively, obtain back-up PPE for each member and hire a service to decontaminate gear.
3. Install direct exhaust capture systems at fire station as funding is secured.
4. Seismically retrofit each fire station that remains in the system.

Priority 2—Legal or Financial Exposure

1. Consider eliminating the internally conducted physical agility test, and require applicants to obtain a CPAT card that documents successful completion of the CPAT within 6 months to 1 year prior to applying for employment.
2. Revise the vacation scheduling process to limit the number of personnel who can be assigned off at the same time.
3. Evaluate the cost of contracted entry level testing versus the cost of purchasing, maintaining, and administering firefighter candidate testing and defending against potential disparate impacts or job-relatedness claims.
4. Compare collection rates from the internal billing process with outside agency billing provider collection rates to determine the most cost-effective method of billing and collection of ambulance services.
5. Define attractive assets as part of the department's policies.
6. Establish, conduct, and maintain an annual inventory of attractive assets.
7. Adopt apparatus replacement plan that:
 - establishes a funding mechanism or philosophy for replacement of retiring apparatus.
 - includes equipment, such as self-contained breathing apparatus, cardiac monitors, extrication equipment, cascade systems, and radio systems.
8. Develop a financial forecast to reflect the Staffing, Apparatus, and Capital Facilities financial needs.
9. Update and implement a building replacement and refurbishment plan.

Priority 3—Address a Service Delivery Issue

1. Add additional operations staff to bolster daily staffing and reduce the overall use of overtime on any given shift in the following sequence:
 - add 2.66 FTE per shift to Station 42 to eliminate cross-staffing.
 - add 1.33 FTE per shift to Station 43 to increase Engine staffing to three.
 - add 1.33 FTE per shift to Station 41 to increase Engine staffing to three.
 - add 1.33 FTE per shift to Station 42 to increase Engine staffing to three.
 - alternatively, round down to the next whole number FTE per shift for each of the above recommendations and cover the remaining fractions with overtime.
2. Complete a Community Risk Assessment and develop a Community Risk Reduction Plan.
3. Establish an automatic aid agreement with Vancouver Fire Department (VFD) to provide a ladder truck to target hazards requiring one. Alternatively, seek VFD expertise to assist in developing appropriate specifications for purchase of a ladder truck that suits the risk profile of CWFD.

4. Develop a staffing plan that factors in:
 - minimum number of personnel by rank, by certification, and by location/unit for each shift.
 - leave usage (discretionary and unscheduled) staffing levels on each shift.
 - retirement eligible members on shift to anticipate large turnover.

Priority 4—Enhance the Delivery of Services

- None listed as Short-Term.

Priority 5—An Important Thing to Do

1. Utilize a station zone layer in the CAD or NFIRS software to determine reliability within each zone (Answers the question: Did that zone's unit handle the call or did another station have to handle?)
2. Ensure documentation of whether an incident is dispatched as emergency or non-emergency. This can be done within CAD or the NFIRS reporting system. This would allow response performance measures to be trended based on emergency responses only.
3. Work with CRESA to ensure time stamp is captured for receipt of the call by the dispatcher. This is needed to trend the performance for call processing time.
4. Address lag in turnout time performance. Ensure time stamp is captured accurately for every unit and separated from non-emergent calls.
5. Include the Administrative Battalion Chief in developing the annual training budget.
6. Negotiate a change to the collective bargaining agreement to allow the Administrative Battalion Chief the opportunity to instruct training.
 - Consider bargaining to transfer the training captain vacant FTE to suppression and fill for line staffing enhancement.
7. Focus on the Lexipol project to update Standard Operating Guidelines.
8. Update audio-visual and technology needs at Station 42 for training.
9. Obtain competitive quotes for station and training tower maintenance and amend the budget accordingly.
10. Schedule training during non-peak emergency demand times.
 - Consider alternatives to overtime for regular, ongoing manipulative skills training (see peak demand unit discussion in this report's recommendations).
11. Break out the overtime budget to include overtime to conduct on duty training.
12. Continue to advocate for Unified Command training with local law enforcement.
13. Make necessary improvements in software programs for the Fire Marshal's Office.
14. Implement a customer survey tool to identify patient care perceptions.
15. Distribute survey results to key stakeholders, elected officials, and department members.
16. Update or replace the current Fire RMS with a program that has the capacity, capability, and flexibility to interface with hospital records management systems.
17. Ensure the system can generate WEMSIS compliant reports.
18. Continue use of the Pulsara® system.
19. Establish a strategic plan.

20. Keep minutes of staff meetings and distribute to all personnel for added transparency and accountability.
21. Plan for the development of a Center for Public Safety Excellence (CPSE), 6th Edition compliant Community Risk Assessment: Standards of Cover.
22. CWFD administration must be actively involved in any comprehensive plan amendment discussions to provide information on the unforeseen or unintended consequences of design or density (access problems and fire spread potential) and increased building height (increased deficiency for lacking a ladder truck).
23. Develop a succession plan for the Fire Chief position.

MID-TERM STRATEGIES

The following are mid-term recommendations which are defined here as three to five years.

Implement a Peak Demand Unit

Staffing is typically a fire agency's single most expensive resource. Two significant factors that drive cost are the 24-hour nature of the demand for fire and EMS service and that firefighters typically travel in teams of three or four. Staffing a unit 24-hours per day, 365 days per year with a team of three or four firefighters to maintain a full response capability drives up cost. The rationale for staffing and deploying in this manner is the seemingly unpredictable nature of emergencies. However, data analysis identifies predictable patterns where risk can be managed more efficiently. Once a base emergency response capability is achieved throughout the 24-hour cycle, additional capacity can be gained with a more efficient, flexibly staffed, and deployed model. This efficient and effective model includes resources which augment the traditional deployment of response resources. This flexible unit follows the observable trends in emergency calls for service (demand) which dictates to a significant degree the distribution of that flexible resource. Implementing this flexible unit reduces response times where demand is high. These flexible resources are referred to as Peak Demand Units (PDUs) and they are deployed in a manner that mirrors the ebb and flow of emergency demand. A PDU has four major configuration variables: the unit itself, the crew make-up/size, the deployment purpose/philosophy, and deployment hours/geography.

PDUs are typically staffed and deployed during the most statistically busy times of the day and week, which make the unit less costly and more flexibly deployed, both by time of day and geographically. These units can be a fire engine that is Type 1 (a structure fire engine) or Type 6 (a brush fire engine) configuration, a medic unit, or a multi-purpose squad. Regardless of the type of vehicle it is, what makes it unique is the way it is deployed and staffed. PDUs can be staffed with a medical crew if that is its primary purpose, as a fire suppression crew, or both. It can be deployed during wildland fire season with a wildland fire crew. Regardless of staff capability, the staff can be obtained by hiring new personnel, by using callback crews on overtime, or converting a regularly assigned crew to a PDU. These concepts normally require bargaining the hours and working conditions under which the unit is staffed when a collective bargaining unit is affected.

PDUs are not only assigned as an additional resource based on statistically busy times and locations. They can also be used to manage gaps in coverage for units participating in training and could even be cooperatively staffed with a neighboring agency(s). A PDU could be only occasionally staffed for activities such as a scheduled event or routinely staffed for periods of peak demand. Adding PDUs as an *adjunct* to the base staffing patterns adds flexibility to fire department emergency operations. The advantages of these units are that they typically reduce maintenance cost of the units, are less expensive to purchase and to operate, are faster and more maneuverable, cost for staffing is approximately one-third the cost of staffing a traditional fire engine for twenty-four hours (depending on the staffing configuration of the PDU and its intended purpose), and can move from area to area to provide coverage, shedding the limitations of traditional fire station based deployment.

For the purpose of illustration, we assume a PDU is staffed by two personnel to handle peak demand for EMS responses. The unit would be made available for response 10 hours per day, four days per week, although it can be placed into service in any one of numerous work period configurations. We also assume the PDU is staffed with regularly assigned personnel who work a different schedule than the hours worked by shift firefighters.

Other possible configurations for staffing PDUs include but are not limited to:

- Staff a light rescue or Type 6 Engine (i.e., a brush fire unit) as a PDU with a firefighter/medic and a firefighter available 10 hours per day, seven days per week to focus on EMS responses and minor fires, reducing wear and tear on larger apparatus during busy hours of the week statistically.
- Staff a Type 1 Engine (a structure fire engine) as a PDU with a crew of three available 10 hours per day, four days a week. The staffed hours cover the hours for regular companies to rotate through the training center with the PDU moving to cover those companies involved in the training.
- Staff a medical rescue unit (an ambulance style vehicle or utility vehicle) as a PDU with two firefighters 12 hours per day, four days a week. The staffed hours would reflect the time of the day when the greatest number of calls for service typically occurs. The unit shifts by time of day to the geographic areas that reflect statistically high demand for service. The fire station that serves that area becomes the base for the PDU during those hours. The unit shifts when demand shifts.
- Staff a PDU of any type that addresses the PDUs primary mission with the appropriate complement of personnel needed eight hours per day, five days per week.

There are numerous key issues involved when considering the concept of operating a PDU. Discussions involving any changes to work schedules or working conditions for career personnel must be bargained with the appropriate firefighter union(s). The staff assigned to a PDU will also need to be included in on-going training activities. The agency must clearly define roles and responsibilities of the personnel on PDUs, whether regularly assigned to a PDU or rotated onto a PDU as part of a system-wide cycle. ESCI recommends rotating personnel on the PDU to maintain the FLSA 7k exemption for hours of work and to maintain firefighting skills. The roles and responsibilities should be clearly communicated to all personnel and not limited to just those assigned to a PDU. In the event that a PDU is cooperatively staffed (partnership with a neighboring agency), the personnel on the PDUs must be cross-trained to understand the operational structures and expectations of each host agency.

Recruitment & Retention of Volunteers

CWFD currently has 15 volunteer personnel in the department. They work a minimum of one 12-hour shift per month and maintain certifications as required by the state and receive training in accordance with WAC 296-305-05502 *Training and Member Development*, which is a section of the Safety Standards for Fire Fighters. While the training and certification standards are high, they are set by the Washington State Labor and Industries. The activity level required by CWFD is reasonable and consistent with other agencies of similar size and scope. Roles and responsibilities of volunteers must be clearly understood at all levels of the department and city, and training requirements must be supported. These roles and responsibilities should be clearly explained at every point of the selection and on-boarding processes so that new candidates know exactly what they are signing up for. Spouses and significant others should be welcomed to attend the orientation of new members to understand and support the candidacy and ongoing involvement of the new volunteer.

ESCI recommends that CWFD take the following steps to enhance volunteer recruitment and retention efforts.

Recruitment

- Recruitment must be conducted steadily throughout the year. Create an annual recruitment plan that includes special events, media activities, and contact with local businesses, civic groups, schools, and other community gatherings.
- Use current volunteers as ambassadors to recruit new volunteers. Studies have shown that the personal “ask” is what brings in new members. The International Association of Fire Chiefs (IAFC) manages the Volunteer Workforce Solutions (VWS) program that runs in partnership with the Virginia Fire Chiefs Association (VFCA) and the Connecticut Fire Chiefs Association (CFCA). In Virginia, George Mason University (GMU), conducted an online survey. In GMU’s report they noted, “According to the respondents, personal interaction with a firefighter is the overwhelming impetus to enlist.” Current personnel should be trained and up-to-date on departmental information and talking points for recruitment, with the realization that the best recruiters are current satisfied volunteers who relate their positive experiences and encourage others to become involved. Ensure that current volunteers act, speak and represent the department appropriately at all times; failure to do so could have negative impact on the public perception of the organization and potential recruits.
- Have current volunteers use their social media accounts to promote the need for volunteers. This is an easy and cost effective way to get the word out about the need for volunteers. National data (NVFC 2013 volunteer Fire Service Fact Sheet) shows that while the number of volunteer firefighters is declining nationally, the age of volunteer firefighters is increasing. There is a need to attract younger members and utilizing social media targets a younger demographic.

- Create a targeted recruitment campaign. Recruit new volunteers based on ideal characteristics that predict strong alignment with the fire service, such as loyalty, duty, respect for authority, high need for socialization, and physical fitness. Use GIS technology to assist in targeting the types of people that are more likely to become firefighters using segmentation studies. This is a service provided by Esri© (http://www.esri.com/data/esri_data/tapestry). Esri's Tapestry Segmentation provides its users with a tool to understand the lifestyles and life stages of consumers within a market or region, in this case within CWFD's service area. Tapestry Segmentation classifies U.S. residential neighborhoods into 67 unique market segments based on socioeconomic and demographic characteristics, and employs the notion that most volunteer firefighters have similar backgrounds and that people are attracted by similar tastes, need for security, peer identity, pride of affiliation, and a sense of place. After researching a volunteer's demographic and personal composition, he/she is placed within one of the 67 tapestry segments. Once the target audience and tapestry segmentation is understood, recruitment activities can be performed within the identified segments. CWFD can use this GIS technology to identify the types of activities that firefighters in the area enjoy and tailor recruitment around those types of activities (i.e., if the segmentation study shows they enjoy fishing, partner with a local sporting goods store to do a recruitment event or display a recruitment poster at that location). Some of the benefits/goals of utilizing GIS technology for recruitment include:
 - Holding recruitment functions in locations where desired candidates congregate.
 - Highlighting the aspects of service that appeal directly to potential firefighters in a specific area.
 - Directing advertising with the right message to the right audience at the right location.
 - Targeting direct mail or door-to-door canvassing in the areas where the most responsive recipients live.
 - Understanding the characteristics of a community's target (ideal) firefighters.
 - Analyzing the lifestyle characteristics of firefighters.
 - Determining where ideal and desired prospective firefighters live.
 - Discovering the untapped potential for recruits in specific areas.
 - Developing strategies to encourage firefighter candidates to enlist.
- Examine the length of the selection and on-boarding process. It should start earlier in the training process to get new volunteers engaged in responding quickly. A lengthy process is a deterrent. CWFD should capitalize on the initial excitement that compels someone to apply to become a volunteer; that excitement may dwindle if the process takes too long.
- Make sure the roles and responsibilities are clearly articulated throughout the entire selection and on-boarding process. It is best to repeat expectations over and over again to ensure understanding.
- Encourage recruits at the recruit trainings to refer friends/family. Hold a monthly prospective members meeting/recruitment night, making sure that recruitment nights events are advertised. Partner with local businesses to help support recruitment nights, for example, have a local restaurant bring in food and distribute coupons for future use to people that attend the recruitment night; this is a win-win for the fire department and the restaurant.

- Advertise the need for volunteers in local media. The GIS technology discussed earlier can also assist in identifying the types of media to target based on the profile of current firefighters.
- Utilize public education events, CPR and first aid classes to recruit volunteers and emphasize the importance of volunteers to the community. This is an excellent opportunity for the volunteers working these events to personally invite people to investigate CWFD's volunteer program and consider becoming a volunteer.
- Explore the possibility of a resident program where volunteers live in the station in return for running calls. Two examples of existing student live-in programs include Manheim Township Fire Rescue in Pennsylvania (<https://mtfr.net/live-in>) and College Park Volunteer Fire Department in Maryland (<https://www.cpvfd.org/recruitment/sackroom>). More detailed information is available on the noted websites.

Retention

- Ensure the level of required training reflects what tasks volunteers will actually be carrying out. Better define the roles and responsibilities of volunteers. According to the U.S. Fire Administration's Report: Retention and Recruitment for the Volunteer Emergency Services Challenges and Solutions": "Individuals are still willing to give their time to volunteer emergency services organizations provided the following:
 - The experience is rewarding and worth their time
 - The training requirements are not excessive
 - The time demands are adaptable and manageable
 - They are rewarded with a personal sense of value
 - There is good leadership minimizing conflict
 - There is ample support for the organization."²⁹
- Pay close attention to the morale of the volunteers. They will not stay where they are disgruntled and will be a impediment to recruiting new members.
- Establish a mentorship program for volunteers; tailor the program to help meet each volunteer's goals.
- Identify volunteer leadership. Many volunteers will leave the department is they sense a lack of leadership. There are SAFER Grants available to fund the hiring of a volunteer recruitment and retention officer.
 - Department leadership should consistently encourage a sense of belonging, achievement, increased responsibility, self-respect, challenge, recognition, reward, growth, and development.
- The Fire Chief should have continuous recruiting and retention as a key element of the job.
- Improve the community awareness of CWFD's volunteer program and its importance in the community. Use current volunteers to do this. It will also help with recruitment. Ask existing volunteers how they heard about the opportunity when they joined. It is likely that many have lived in the area for years before they realized the Department had a volunteer program.

²⁹ *Retention and Recruitment for the Volunteer Emergency Services—Challenges and Solutions*, U.S. Fire Administration, FA-310, May 2007.

- Recognize outstanding volunteers by highlighting them on the website, in newspaper articles, using social media, and similar public forums. This reinforces the retention effort for the outstanding volunteer and advertises the recruitment opportunity to the community.
- Maintain amicable relationships between volunteer and career personnel to achieve positive recruitment and retention efforts.

The authors of *Recruiting, Training, and Maintaining Volunteer Firefighters* state: "A program which is going to attract and keep good people must meet four basic criteria:

1. The program must meet individual needs.
2. The program must provide its membership with reward and recognition.
3. The program must provide adequate supervision and leadership.
4. The program must challenge members."³⁰

In the interest of full disclosure, the primary author of *Recruiting, Training, and Maintaining Volunteer Firefighters* is Jack W. Snook, founder of ESCI. He currently serves on the Board of Directors for ESCI, but receives no royalties or financial benefit from this citation, and the book is out of print.

Implement a Community Risk Reduction Program

The fire service is increasingly moving to a concept nationally called Community Risk Reduction (CRR). CRR is an integrated approach to risk management that marries emergency operations and prevention strategies into a more cohesive approach to reducing risks in any community. It includes the fire department partnering with the community, non-profit organizations, and any private sector agencies with a nexus to an identified community risk.

The concept starts with the fire department mining data to quantify community risk. Once the community risks have been identified, they are prioritized based on frequency of emergency service demand or consequence (to the victim, to the community, to the local economy). After prioritizing, strategies are developed to mitigate the risks. These strategies are incorporated into a CRR plan, which integrates resources across the fire department, partner agencies, and the community to implement the various strategies in a cohesive manner. After plan implementation, the results are reviewed to determine the impact on the risks. Adjustments are made, as necessary, based on the results and the process is refined and continuously re-implemented.

³⁰ Snook, Jack W., Jeffrey D. Johnson, and Dan C. Olsen, *Recruiting, Training, and Maintaining Volunteer Firefighters*, Third Edition, Jones and Bartlett Publishing/International Association of Fire Chiefs, 2006.

The risks are not limited to structure fires. They can include falls, drowning, interface exposure, disasters, or any risk requiring fire department response. Risk can also be localized by station area. Station captains, in collaboration with fire prevention staff and community groups, can develop and manage a station area-specific CRR plan as a subset of the fire department's plan. CRR lends itself well to a volunteer supported effort, led by competent professional leadership. CRR also includes public education for risk reduction. A prepared and informed community is a safer community.

Ladder Truck

As discussed in this report, the Washington Surveying and Rating Bureau has established criteria that determines, among other things, when a fire department needs a ladder truck. In the 2018 rerating of the CWFD, the WSRB determined that CWFD is required to have a ladder truck, since there are "... at least five buildings with a required fire flow of 4,000 gallons per minute or more, and/or 3 stories (35 feet) in height."

Given the *Camas 2035* Comprehensive Plan identifies the potential for 100-foot building height, a ladder truck capable of serving that height of building is advisable. Alternatively, CWFD could establish an automatic aid agreement with Vancouver Fire Department for ladder truck services to CWFD target hazards requiring one. Finally, consider limiting building height to reduce the reach required by a ladder truck, which has a direct bearing on the expense of that apparatus. CWFD received 121 deficiency points for failure to have a ladder truck (or automatic aid that provides one) in the 2018 WSRB rating.

ESCI believes that if CWFD acquires a ladder truck, it can be a cross-staffed unit for quite some time. Alternatively, it could be staffed with volunteer personnel if trained adequately to operate it.

LONG-TERM STRATEGIES

The following are long term recommendations which are defined here as longer than five years, but typically within ten. Circumstances may warrant longer than 10-year implementation of some initiatives.

Future Fire Stations

Given the projected growth in population and call volume, CWFD will have structural gaps in place in the response system. One such gap that exists today is response travel times to the Northshore/Green Mountain area, Prune Hill, the southeast side of Lacamas Lake, and the east side of Washougal.

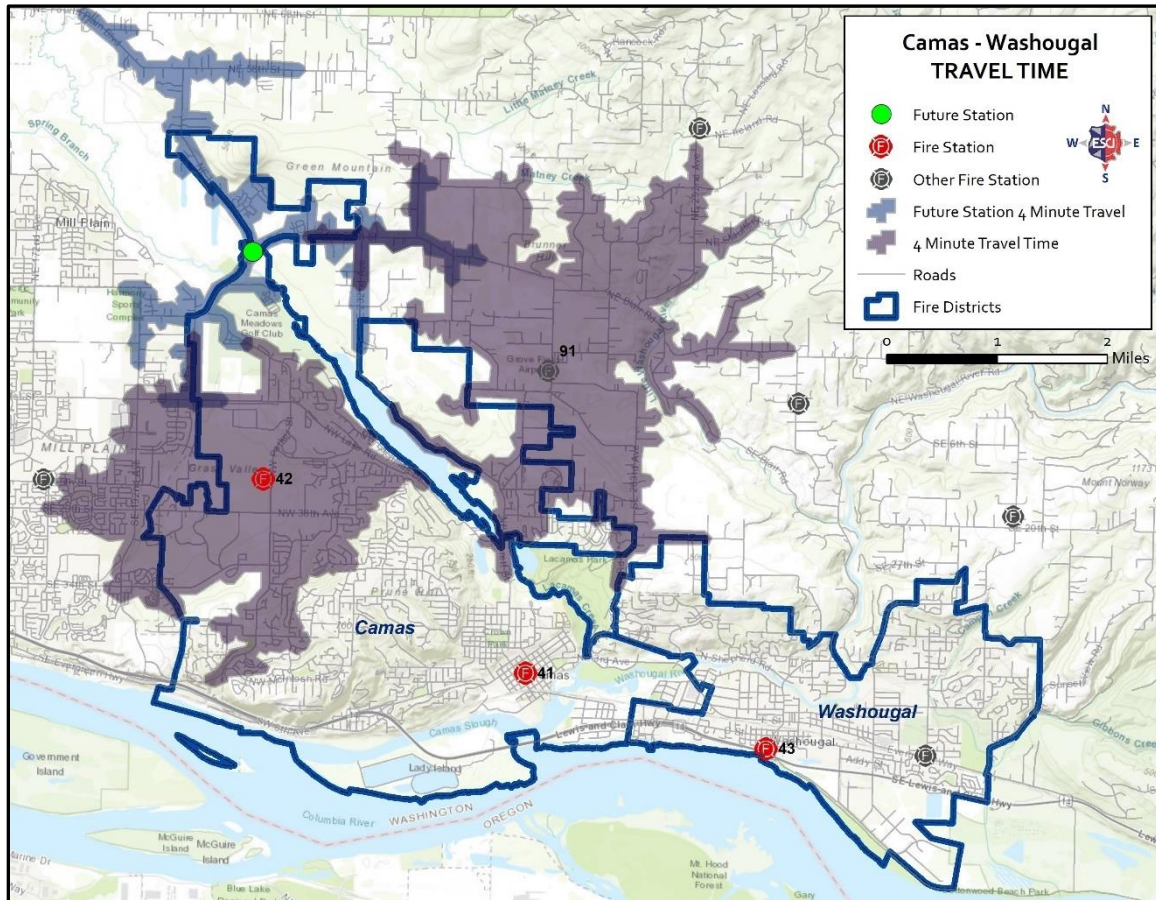
The WSRB assigns deficiency points for response areas that are further than 1.5 miles from existing fire stations, or are further than 4 minutes' travel time from existing resources (4 minutes' travel plus 80 seconds for turnout time for a total of 5 minutes, 20 seconds response time from dispatch for structure fires). According to Robert Ferrell, Vice President, Public Protection at the Washington Surveying and Rating Bureau, the agency will evaluate a fire department using the more advantageous of the two methods. Thus, it is critical that CWFD be able to demonstrate via response data that these response time elements are achieved to the extent possible.

Northshore/Green Mountain

Currently, the Northshore/Green Mountain area is further than 4 minutes' travel from Station 42, the closest CWFD station to the area. Much of it is also further than 4 minutes away from East County Fire & Rescue's (ECFR) Station 91. To serve this growing area, CWFD must anticipate the need ahead of the service demand. It could be appropriate for CWFD to secure land for a future fire station when call volume begins to accelerate, however vacant property may be difficult to come by in the right area if demand is the trigger for purchase. Demand would indicate development and density is growing, driving land costs higher and making the right location potentially problematic. It would be proactive to secure land in advance of growing demand and avoid having to consider exercising eminent domain. The property should be large enough to provide for a station with at least two apparatus bays and crew quarters to house two units, with expansion potential for a third in the distant future. An appropriate area of approximately 1.5 acres would be sufficient.

ESCI recommends purchasing property now suitable for a new fire station in the area of the intersection of Ingle Road and Goodwin Road. Generally, any property of suitable size within approximately one-quarter mile of that intersection would be an appropriate location from a travel time standpoint. The following figure illustrates 4-minute travel time from that location and how that travel time complements travel times for Stations 42 and 91.

Figure 60: Proposed Future Fire Station (Ingle Rd./Goodwin Rd. Intersection)



It is important to recognize that the travel times in the previous figure (and all maps within this report) are reflecting current road networks. If the existing road network is substantially improved, it will also have a more positive effect on travel times.

ESCI also recommends tracking response data (included in short-term recommendations) for this area. Calls for service in the area that would be served by this station are currently at 44 (2018 data). Given that the area was previously underdeveloped, new development should significantly increase the pace of demand for service. When emergency calls for service reach approximately 500 in a given 12-month period, construction should begin for the new station, which takes between 9 and 12 months to complete. Further, apparatus (a fire engine) should be purchased to operate out of this station, which can also take nine months. A single engine company is necessary here initially. Staffing should be hired for this station factoring the recruit academy training cycle. This should be a three-person engine company.

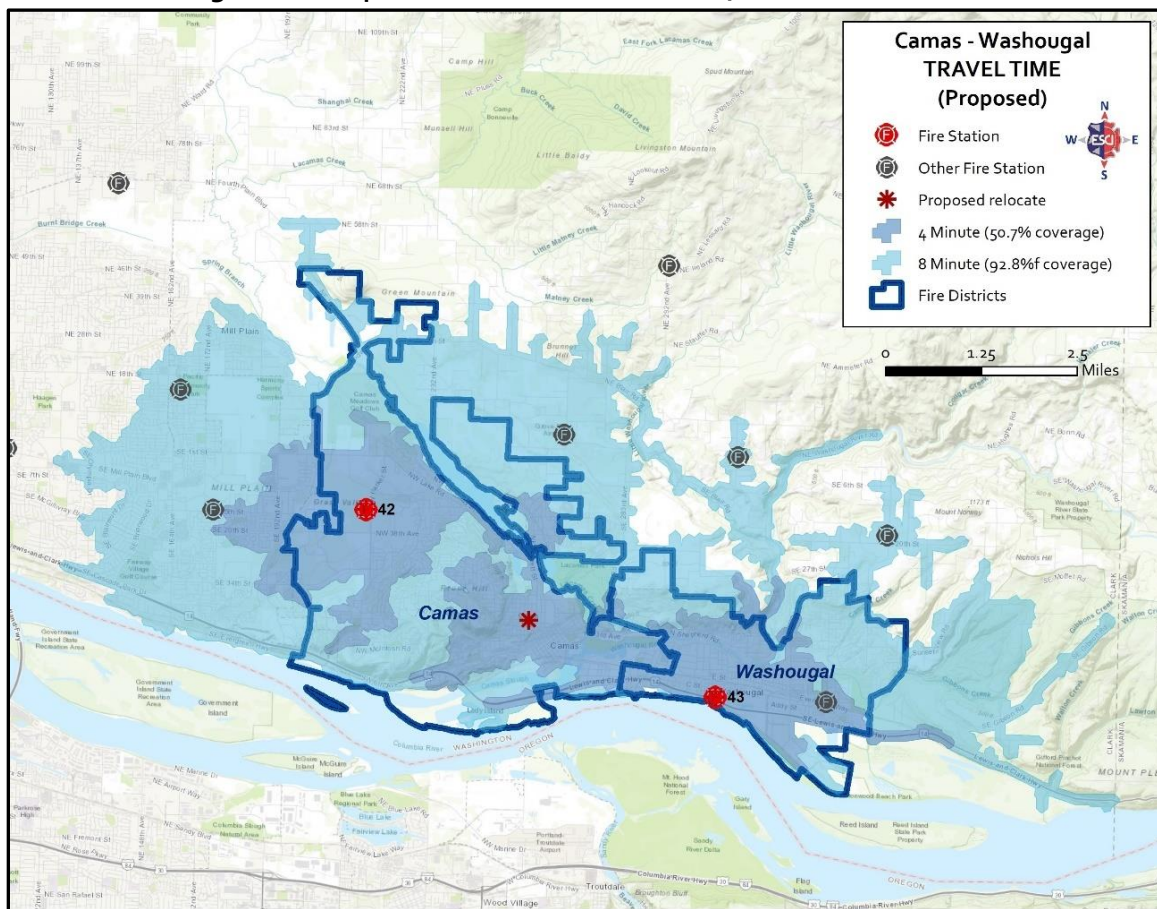
An alternative to consider for this area prior to build-out is contracting with ECFR for first response coverage.

Relocation of Station 41

There are two underserved areas in Camas; Prune Hill and the southeast side of Lacamas Lake. Prune Hill is already substantially developed, while the area southeast of Lacamas Lake is slated to receive significant medium and high density residential, commercial, and industry (further north) development according to the *Camas 2035* Comprehensive Plan. Station 41 shares service on Prune Hill with Station 42 from a travel time standpoint, but is the only practical CWFD station to serve the area southeast of Lacamas Lake. Combining these two underserved areas and the need for Station 41 to eventually be upgraded, this is the opportune time to consider shifting Station 41 further north to address some of the Prune Hill gap and some of the southeast Lacamas Lake area, while not venturing too far out of the downtown area where the bulk of the call volume is today.

ESCI plotted a location generally at Crown Park (Division, Everett, 15th and 17th) to identify the travel time benefits to this potential relocation. This relocation improves travel time service overall by only 2%, but most importantly, improves 4-minute travel time coverage to more of Prune Hill and more of the southeast Lacamas Lake area. The shift is not too far to inhibit travel time service to downtown Camas nor the areas of highest concentration for service. This relocation should be considered as an alternative to a significant remodel of the existing facility. The following figure illustrates a relocated Station 41 and its improved 4-minute travel time to Prune Hill and southeast Lacamas Lake.

Figure 61: Proposed Relocation of Station 41 (Crown Park Area)



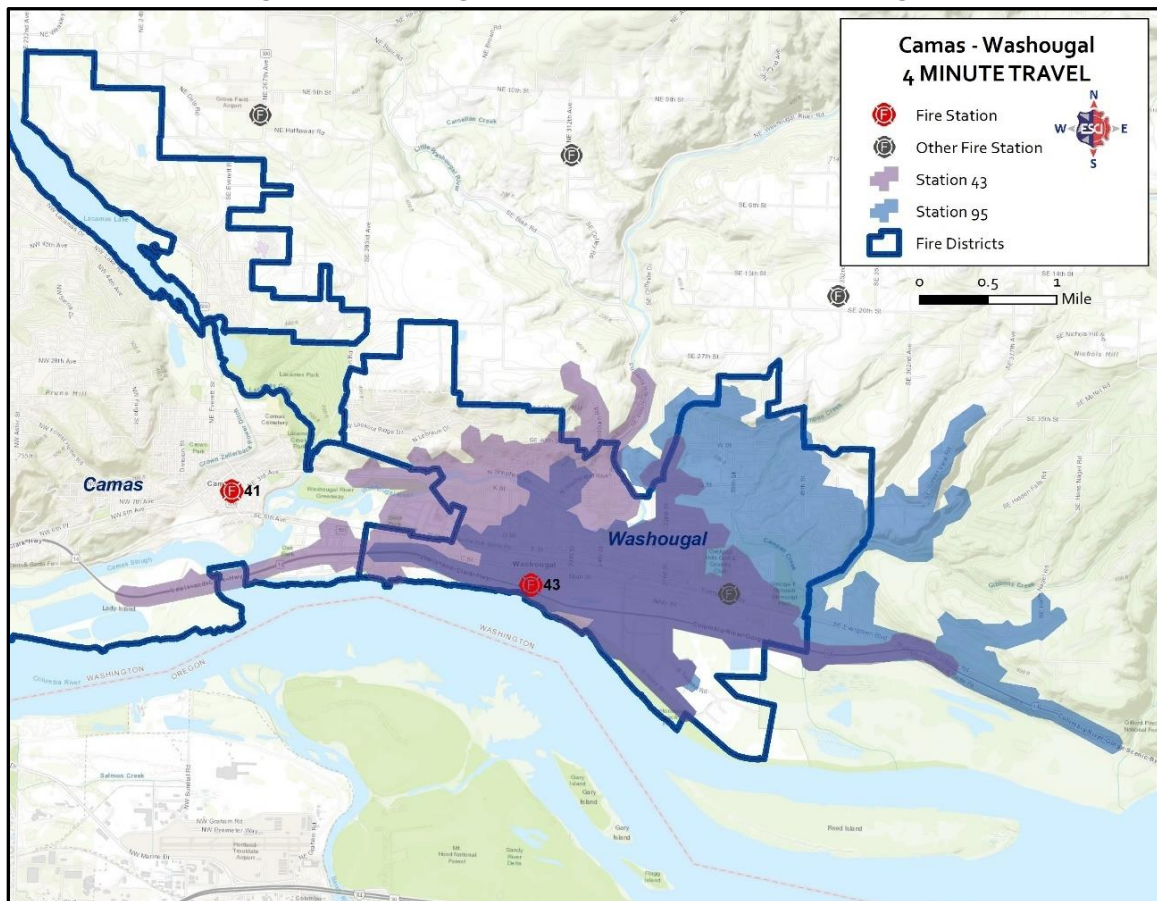
As with the Northshore/Green Mountain property, the ideal location is within a quarter-mile of the center of Crown Park. By relocating the station, potential response performance is slightly improved over the current location, and addresses a station that is in need of significant refurbishment and affords the City of Camas an opportunity for future expansion of City Hall, if that were to become a future need.

An alternative to consider for the area of southeast Lacamas Lake is contracting with ECFR for first response coverage. This would not address the Prune Hill gap.

East Washougal

Washougal is well served by Station 43, with only the northwest corner and northeast areas of the city outside of a 4-minute travel time. In 2018, the northeast corner of the city had the highest prevalence of long response times of the entire CWFD service area. Coincidentally, ECFR has an unstaffed station on the east end of the city (Station 95, 211 39th Street). Response from that station provides excellent coverage to the northeast end of Washougal, with appropriate overlapping coverage to the rest of Washougal, as illustrated in the following figure.

Figure 62: Coverage from Station 95 to East Washougal

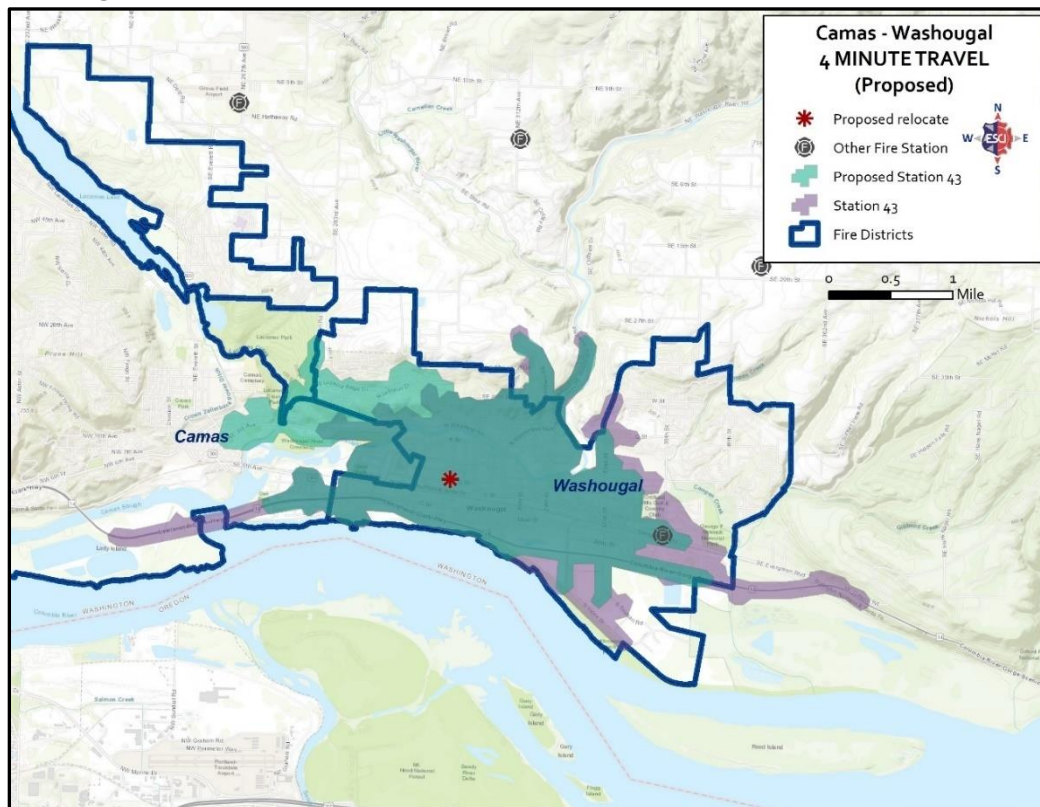


The area that would be served by Station 95 (which is outside of Station 43's 4-minute travel) received 985 calls for service in 2018, which is 32% of the department's total calls for service. ESCI recommends CWFD consider purchasing Station 95 from ECFR and initially staffing it with volunteer personnel. This is a high call volume for a purely volunteer staffing configuration to sustain. Consideration should be given to assigning career staff to the station sooner rather than later, for fear of burning out the volunteers and compromising service to the community as a result. Alternatively, CWFD could negotiate with ECFR to serve that area on the department's behalf as a transitional step to CWFD staffing it and operating it, initially with volunteers, then ultimately with career personnel.

Relocation of Station 43

By addressing the east end of Washougal, the opportunity presents itself to also relocate Station 43 north to improve coverage to the northwest area. Relocating the station north to the area near G Street and 9th Street. As with the new proposed station in the Northshore/Green Mountain location within a quarter mile of that intersection is ideal, and the property should be approximately 1.5 acres. This relocation should be considered as an alternative to a significant remodel of the existing facility. The following figure illustrates a relocated Station 43 and its improved 4-minute travel time to the northwest and relying on an operating Station 95 in east Washougal.

Figure 63: Proposed Relocation of Station 43 (G Street & 9th Street Area)



The proposed relocation sacrifices response to the east, which would be covered by Station 95, and shifts response toward the northwest, improving that underserved area. Thus, this proposed relocation should not occur until the Station 95 option is exercised.

Fiscal Analysis

FINANCIAL OBSERVATION SUMMARY

- The existing funding structure is adequate and likely to be sufficient in the near future. The addition of a new fire station and related personnel will require additional revenue such as additional General Fund support.
- Expenses have outpaced population growth, but are in line with increases in call volume.
- Full use of potential revenue resources is being hampered by the ongoing need to complete a capital facilities plan, review ambulance transport fees, review the ECFR contract, and develop an equipment repair and replacement plan or fund.
- Growth in assessed values is outpacing expenditure and revenue growth, creating the potential for increased levy revenue (assuming voter support).

Current Financial Outlook

This section provides brief information on the financial condition of the Camas-Washougal Fire Department and the local/regional economic context affecting its future operations. It begins with a very brief review of selected local economic/demographic data to provide some context for the department's forecast. Historical revenues and expenses are examined, highlighting key aspects and factors affecting the department's revenue and expense trends. Finally, using information provided by department staff and regional economic contextual information, a forecast of revenues and expenses through 2024 is provided.

Along with much of the country, Camas and Washougal have enjoyed an extended period of growth and revitalization. While there is evidence of an upcoming recession on the national level within the next couple years (such as inverted yield curves and slower global growth), current projects in the pipeline (Green Mountain and Holland developments in Camas, and the Port Waterfront in Washougal) should significantly buffer each city's tax revenues. A likely recession scenario may include a slow-down in new construction, which while limiting growth of property tax revenue may also limit some of the strains put on the department from population growth.

Among the positive local indicators are:

- **Assessed Values.** Camas's assessed value has increased 11.1% annually on average since the fire department merger, while Washougal's has increased by 10.4% annually.
- **Per Capita Income.** The per capita income for Clark County has averaged 7.0% annual growth since the merger. This has well outpaced nation inflation, which averaged about 1.6% annually over the same period.
- **Clark County Unemployment** has remained low and has declined slightly over the last few years, averaging about 5.5%.
- **Population growth** has been likewise strong since the formation of CWFD, averaging 2.9% annually for Camas, and 2.0% annually for Washougal. Of course, while strong population growth can be a good sign for the economy, it can also strain fire department resources.

Internally the two cities have worked to build the department's fund balance and have held expenses to increases averaging 5.6% from 2016 to 2019 (ignoring the additional staffing, capital and replacement of Self-Contained Breathing Apparatus [SCBA] gear in 2019). It should be noted that these increases can be largely explained by unionized pay structures and specialty equipment, both of which come with strong inflationary pressure. Looking forward, we can expect continued increases in operating expenditures of around 4%, not including the potential of additional staff.

Historic & Current Revenues and Expenses

An analysis of departmental historic revenues and expenses for the Camas-Washougal Fire Department (CWFD) was completed in order to help identify relevant financial trends, strengths and weaknesses, and to lay the groundwork for the financial forecast presented in the *Strategic Recommendations* section of the report. Camas is the fiscal agent for CWFD and manages all financial activity. Washougal Fire revenues and expenditures are also included in the 2014 CWFD budget figures since 2014 was the transitional year to the combined department and there was still significant activity in Washougal's budget.

Per the interlocal agreement, the total CWFD expenses less ambulance fees and ECFR payments are allocated to both Camas and Washougal based on the following allocation formula: 50% assessed value, 25% population, and 25% call volume. Each city uses its EMS levy and then other General Fund revenue to pay its share of CWFD expenses. The allocation is reconciled by the end of June the following year, and each city is accordingly billed or refunded money. The allocation of the net CWFD expenses is roughly 60/40 but Washougal's share has been increasing slightly due to the growth in its call volume.

Revenues

The Camas-Washougal Fire Department is budgeted under the Camas special revenue fund number 115, incorporating both EMS and Fire functions. Major operational revenue sources include:

- Camas and Washougal General Fund support,
- Camas and Washougal EMS levies,
- Ambulance transportation fees, and
- East County Fire and Rescue (ECFR) contract payments.

Figure 64: Historic and Current Revenues

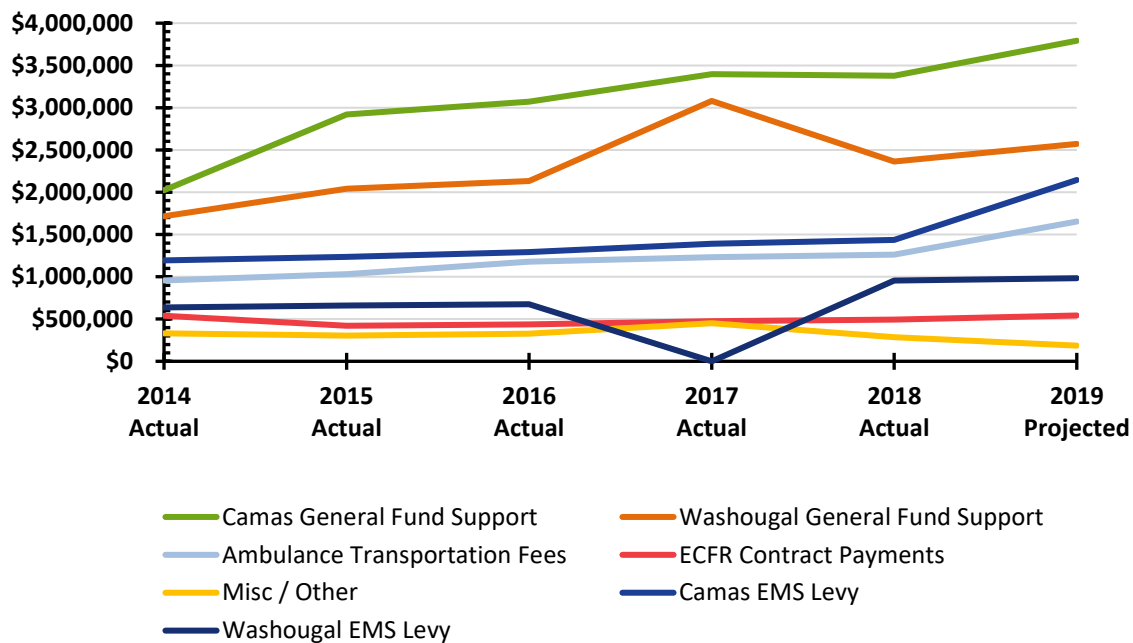
Description	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Projected
Camas General Fund Support	\$2,023,555	\$2,919,590	\$3,143,888	\$3,534,055	\$3,384,113	\$3,792,417
Camas EMS Property Tax Levy	\$1,193,831	\$1,235,139	\$1,290,773	\$1,392,294	\$1,437,229	\$2,144,863
Washougal General Fund Support	\$1,419,578	\$1,679,136	\$2,032,614	\$2,233,104	\$2,174,039	\$2,573,173
Washougal EMS Property Tax Levy	\$638,099	\$658,665	\$677,065	\$57,924	\$956,424	\$983,115
Ambulance Transportation Fees	\$956,498	\$1,030,645	\$1,177,112	\$1,233,179	\$1,260,612	\$1,657,462
ECFR Contract Payments	\$539,109	\$420,513	\$435,664	\$475,425	\$491,830	\$541,942
Misc./Other	\$625,780	\$665,596	\$356,636	\$1,103,423	\$469,357	\$207,364
Total Revenue	\$7,396,451	\$8,609,284	\$9,113,752	\$10,029,403	\$10,173,604	\$11,900,336

Both cities also charge fire impact fees, which must be used for capital purposes only. At the end of 2018, Camas had an impact fee fund balance of \$446,194 and Washougal’s impact fee fund balance was budgeted at \$379,525. These figures are not included in the previous figure because they are not currently being used, pending a capital improvement plan.

With additional contributions from both cities, the fire department’s Ending Fund Balance has grown from just 4% of operating expenditures to 20%, or about 2.5 month’s operating expenditures. This is approaching the standard expectation of maintaining 3 month’s operating expenditures in reserves (fund balance) in order to weather cash flow challenges, unexpected expenditure needs, and changes to the revenue stream. No further contributions to the fund balance are planned after 2019.

The following figure presents the same data in a graphical format.

Figure 65: Revenues



Revenues have increased by 61% over the 2014 to 2019 (projected) time period, thanks in large part to climbing property taxes and increased ambulance fees. The property tax increases were due to annexations, a levy renewal at a higher rate, and significant new construction; ambulance fees increased in large part due to a federal program designed to help ensure that Medicaid reimbursements fully compensate related ambulance expenses (see GEMT discussion that follows under Forecasts).

Together, the cities’ tax-supported portion of overall funding increased from 71.3% to 79.8% between 2014 and 2019 (general fund support rose from 46.6% to 53.5% while EMS Levies rose from 24.8% to 26.3%). Over the same time period, ambulance fees increased from 12.9% to 13.9% of total revenues (thanks to GEMT payments), ECFR contract payments decreased from 7.3% to 4.6%, and miscellaneous revenues decreased from 8.5% to 1.7%. The increasing reliance on tax revenues indicates that a review of fees, charges, and contract revenues may be warranted.

Figure 66: Changes in Revenues, 2014–2019

Description	Average Annual Change 2014–2019	2014–2019 Increase	2014 % of Total Revenue	2019 % of Total Revenue
Camas General Fund Support	13.6%	84.5%	43.5%	49.9%
Washougal General Fund Support	12.9%	72.8%	27.8%	29.9%
Ambulance Transportation Fees	12.1%	73.3%	12.9%	13.9%
ECFR Contract Payments	0.9%	0.5%	7.3%	4.6%
Misc./Other	11.2%	-66.9%	8.5%	1.7%
Total Revenues	10.1%	60.9%	100.0%	100.0%

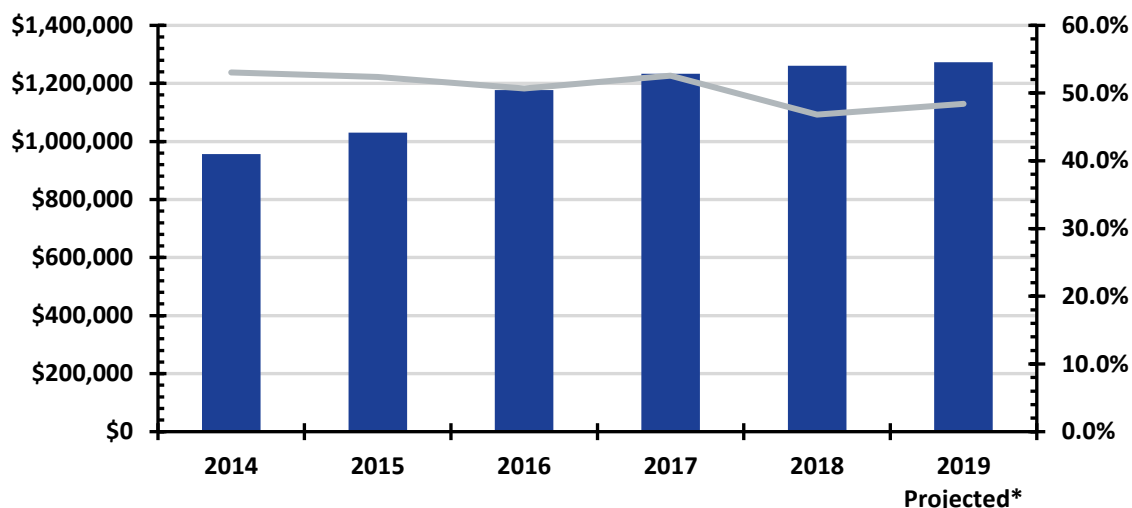
As can be seen in Figure 66, support from City of Camas has grown more quickly over the life of the consolidated department than the support from the City of Washougal. That said, it is important to recognize that much of that change occurred in 2019 with the renewal of Camas’s EMS levy at a higher rate (along with the addition of personnel within Camas). If we look at the change from 2014 to 2018 (Figure 67), the difference in growth between the two cities drops significantly. We also note that the ECFR fee portion of funding has decreased from 7.3% to 4.8% of total; without a separate review of that contract it is difficult to be certain whether this is appropriate.

Figure 67: Changes in Revenues, 2014–2018

Description	Average Change 2015–2018	2015–2018 Increase	2014 % of Total Revenue	2018 % of Total Revenue
Camas General Fund Support	11.2%	50%	43.5%	47.4%
Washougal General Fund Support	12.7%	52%	27.8%	30.8%
Ambulance Transportation Fees	7.2%	32%	12.9%	12.4%
ECFR Contract Payments	-1.5%	-9%	7.3%	4.8%
Misc./Other	28.0%	-25%	8.5%	4.6%
Total Revenues	8.4%	38%	100.0%	100%

Figure 68 shows reported ambulance transportation receipts compared to the percent of billings received. It is normal for total receipts to be roughly half of total billings—a high percentage of CWFD transports are for Medicare and Medicaid patients, for which the reimbursements are capped at roughly one-half of the charges. While total receipts continue to increase, the trend of the percentage received has been modestly downward. This issue may be worth further investigation to help ensure that the department is receiving the maximum reimbursements possible for transport expenses.

Figure 68: Ambulance Receipts As Percentage Of Billings



*2019 displayed with GEMT payment removed.

■ COLLECTED — % COLLECTED

Expenses

Like most fire and EMS departments, the bulk of the expenses are personnel (85% in 2018), with occasional large capital purchases to replace or update equipment (such as SCBAs and fire apparatus)—as can be seen in the jump in capital expenditures between 2018 and 2019 as illustrated in Figure 69.

While the largest growth in terms of raw numbers is salaries and benefits, the largest percentage of growth is in overhead costs. Much of this growth occurred because the city’s support services plan was updated in 2016 and reflected the additional support required by the combined department. From 2016 to 2019, overhead expenses continued to increase at an average of 9.9%. Both the supplies line and the capital/debt line are skewed by the purchase of SCBAs (supplies) and an ambulance (capital/debt) in 2019—there would otherwise be a decrease in both areas. New personnel were also added in 2019, accounting for growth in Salaries and Benefits. Figure 70 shows growth rates for 2016 to 2018 and 2016 to 2019 to better show historical average growth rates (2016–2018) and to highlight anomalous expenditures in 2019.

Figure 69: Historic and Current Expenses

Description	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Projected
Salaries & Wages	\$4,440,734	\$5,512,962	\$5,765,876	\$5,750,556	\$6,319,359	\$6,659,584
Benefits	\$1,373,947	\$1,665,456	\$1,821,702	\$1,736,160	\$1,958,573	\$2,183,948
Supplies	\$267,635	\$227,424	\$211,977	\$288,364	\$221,760	\$629,840
Professional Services	\$321,032	\$444,497	\$446,237	\$517,673	\$522,404	\$528,384
Support Services (Overhead)	\$169,056	\$174,284	\$370,772	\$414,303	\$478,325	\$490,042
Capital & Debt	\$183,318	\$322,162	\$267,951	\$123,398	\$76,261	\$447,548
Other (Transfers and Inter-Gov't Services)	\$428,323	\$283,823	\$276,128	\$170,618	\$182,288	\$179,490
Total Expenditures	\$7,184,046	\$8,630,608	\$9,160,643	\$9,001,073	\$9,758,971	\$11,118,837
Operating Expenditures*	\$7,000,728	\$8,308,446	\$8,892,691	\$8,877,674	\$9,682,709	\$10,298,719

*Does not include Capital, Debt, or the 2019 SCBA Expenditure

Figure 70: Expenditure Growth

Description	Average Annual Growth 2014-2018	Total 2014-2018 Growth	Average Annual Growth 2014-2019	Total 2014-2019 Growth
Salaries & Wages	4.8%	42%	8.7%	50%
Benefits	5.5%	43%	10.0%	59%
Supplies	35.3%	-17%	35.0%	135%
Professional Services	5.0%	63%	11.4%	65%
Support Services (Overhead)	7.9%	183%	29.1%	190%
Capital & Debt	144.5%	-58%	90.7%	144%
Other	-9.9%	-57%	-13.9%	-58%
Total Expenditures	6.9%	36%	9.4%	55%
Total Operating Expenditures	4.7%	38%	8.2%	47%

Figure 71: Historic and Current Expenditures, Salaries and Benefits

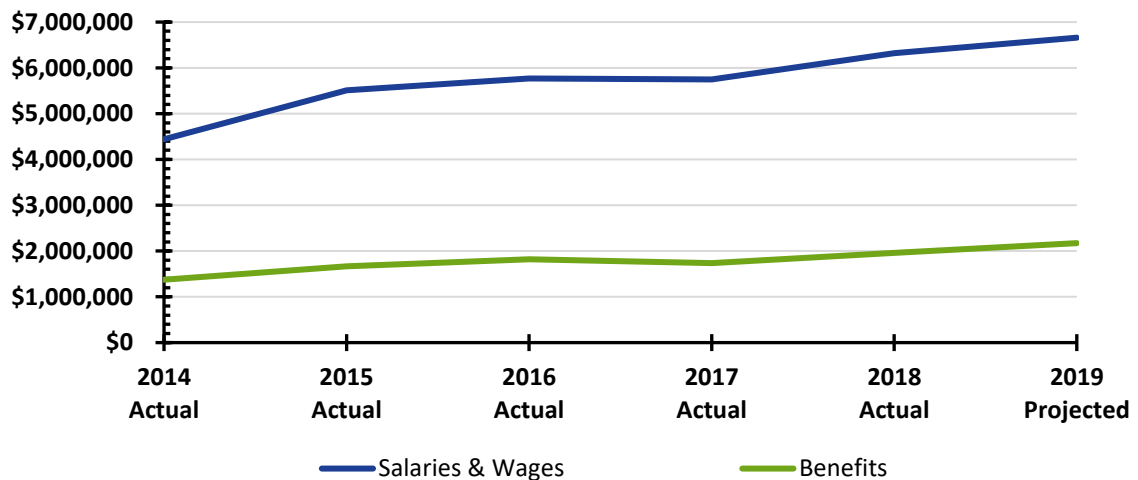
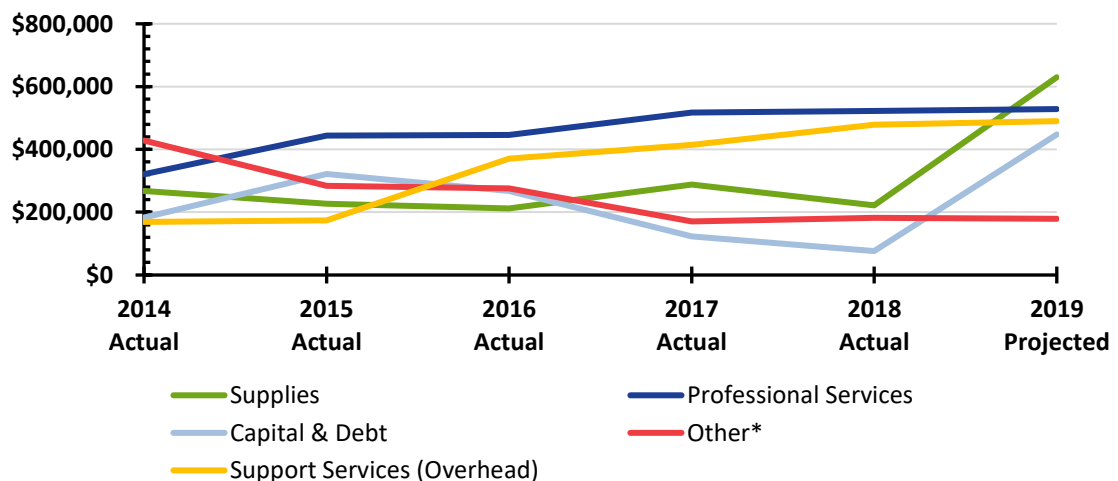


Figure 72: Historic and Current Expenditures, Non-Compensation Categories



There are a number of ways to benchmark data to estimate whether expenditure growth is in-line with environmental factors. Figure 73 presents some common benchmarks. While the department may not measure well against certain benchmarks, this does not necessarily indicate poor management. For example, costs may increase faster than benchmark data due to changes in City Council priorities, inflationary pressures beyond staff control, or a variety of other factors.

- **Personnel:** Salaries have grown by 50% over the review period, this is due largely to the growth in the cost per person. The total increase on a per-FTE basis has increased a total of 41.4% over the period, or an average of 7.4% per year.
- **Population:** Population is the most common driver of government service-oriented costs such as fire departments. The department's expenditure growth has been 36.5% higher than that of the population since 2014 (population increased 13.4% while total operating expenses increased 47.1% between 2014 and 2019).
- **Responses:** Along with population, another major driver of cost can be the number of responses. Responses have increased 23.3% while expenses have increased 54.8% (47.1% after removing capital, debt, and the 2019 purchase of SCBA gear). One cannot generally combine multiple benchmarks (such as responses and population) to explain the total expense increase—each stands on its own. Rather, as mentioned under Personnel, the growth of expenses can be explained in large part by the growth of personnel costs.
- **Property Tax Receipts:** While the benchmarks above describe environmental factors that affect inflationary pressures, this measure provides an indicator of the cities' ability to afford cost increases. From 2014 to 2019 total costs decreased by 16.0% as a percentage of total property tax receipts. Note that this measure includes all property tax receipts, not just those dedicated to CWFD.

Figure 73: Expense Benchmarks

	2014	2015	2016	2017	2018	2019	2014-19
Number of personnel	53	54	54	54	53	58	9.4%
Cost/Personnel	\$135,548	\$159,826	\$169,642	\$166,687	\$184,132	\$191,704	41.4%
% Growth		17.9%	6.1%	-1.7%	10.5%	4.1%	
Combined Population	35,790	36,380	37,370	38,840	39,790	40,590	13.4%
Cost/Population	\$201	\$237	\$245	\$232	\$245	\$274	36.5%
% Growth		18.2%	3.3%	-5.5%	5.8%	11.7%	
Fire and EMS Responses	\$5,986	\$6,231	\$6,353	\$6,786	\$7,170	\$7,382	23.3%
Cost/Responses	\$1,200	\$1,385	\$1,442	\$1,326	\$1,361	\$1,506	25.5%
% Growth		-7.2%	1.7%	15.1%	1.5%	-1.8%	
Property Tax Receipts	\$15,509,821	\$16,298,076	\$16,889,084	\$17,289,500	\$18,813,403	\$20,158,798	30.0%
Cost/Property Taxes	\$2,159	\$1,888	\$1,844	\$1,921	\$1,928	\$1,813	-16.0%
% Growth		-12.5%	-2.4%	4.2%	0.4%	-6.0%	

Financial Forecasts

In this section we provide a high-level overview of the likely financial future of the CWFD, assuming no structural changes.

Property tax revenues (and ECFR contract payments, which are pegged to their levy receipts) are projected at 1% plus new construction at recent rates of development (as mentioned previously, we expect that a recession will have only limited impact locally). We assume that Washougal will successfully renew its EMS levy in 2024 at \$0.50 per \$1,000 assessed value, and that ECFR will renew its EMS levy for 2021 at its previous rate of \$0.35 per \$1,000 assessed value. Ambulance Fees are projected using a linear forecast model, though we also added a \$350,000 GEMT payment to ambulance fee forecasts. We further assumed that the two cities would continue their current funding split on net expenses (roughly a 60%–40%, Camas to Washougal).

The Ground Emergency Medical Transportation (GEMT) program is a federal Medicaid program that became available in Washington State in 2016. The goal of the program is to ensure that an agency is fully reimbursed for its Medicaid-eligible ambulance transports. Based on the net increase of \$384,000 in ambulance fees received in 2019 through the GEMT program reconciliation (included in the 2019 projected figures), we forecast an additional \$350,000 each year going forward. It is important to note that there is no guarantee of this funding increase—the program could be canceled, and the amount will vary each year according to a number of factors. Given the uncertainty in forecasting this revenue stream, a good use for it may be to use it for one-time costs such as for medic unit replacements and capital equipment upgrades such as ALS-level cardiac monitor/defibrillators and self-loading gurneys (see the 2017 CWFD-ECFR EMS System Assessment). ESCI included such expenses in the forecast capital expenses to match the forecast revenues.

ESCI followed the City of Camas 2017–18 Budgetary assumptions of 4% wage growth and 7% benefits growth (plus the addition of staff as described below), and 2% inflation on supplies and professional services. For capital and debt expenditures, we maintained the existing figures, and adjusted them as described below.

With no capital facilities plan, we were unable to include projected capital repair and replacements for equipment and apparatus (aside from medic units as described above). However, per the *Long-Range Strategies* discussion we assumed the purchase of Station 95 in 2020. Construction of a new fire station for Green Mountain/Northshore is driven by growth in call volume, which is tied substantially to population growth and the speed of development in the area. The relocation of Stations 41 and 43, if it occurs, would likely happen outside the time horizon of these projections.

The current Assessed Value listed on the County website for Station 95 is \$587,700. According to the 2017 CWFD-ECFR EMS System Assessment, the station is in good condition and was remodeled in 2002. Accordingly, ESCI added \$100,000 to the Assessed Value for only modest improvements, and include the full price in 2020. ESCI did not add any professional staffing for this station in our projections, assuming it will be staffed by volunteers for the duration of the forecast period. The station would require the purchase of one \$600,000 equipped fire engine in 2020, amortized over 10 years at 1% interest.

For a Green Mountain/Northshore station, we estimated the cost roughly at \$6,500,000 for a 10,000-square-foot, two-bay facility, and amortized it over 20 years at 3.5% interest, or approximately \$776,000 per year. This station would need 12 FTEs to fill three positions on a continuous basis. ESCI also added one equipped fire engine for \$600,000 (amortized over 10 years at 1% interest). These figures are for discussion purposes only and are not included in our forecasts since the station may not be needed in the 5-year horizon.

Fire Fighter positions can be estimated at about \$125,000 (\$80,000 pay and \$35,000 benefits). To staff a Green Mountain/Northshore station would therefore cost about \$1,500,000 per year. The additional 8 staff recommended for station 42 would cost about \$1,000,000, and the additional 4 staff recommended for stations 41, 42, and 43 (12 fire fighters total) would again be about \$1,500,000. In total, recommended staffing increases would add up to roughly \$4,000,000. Since these additional positions require policy discussions and decisions by policy-makers regarding implementation levels and timelines, they have not been included in our forecasts. Given the large cost of staffing recommendations CWFD may also wish to investigate the Staffing for Adequate Fire and Emergency Response (SAFER) Grants program, which could significantly help alleviate the up-front costs.

Figure 74: Forecast Revenues and Expenditures

	2019	2020	2021	2022	2023	2024
Revenues	Projected	Projected	Projected	Projected	Projected	Projected
Camas General Fund Support	\$3,792,417	\$3,331,037	\$2,938,698	\$3,566,155	\$4,929,910	\$4,970,647
Camas EMS Property Tax Levy	\$2,144,863	\$2,227,103	\$2,312,326	\$2,400,390	\$2,491,436	\$2,585,603
Washougal General Fund Support	\$2,573,173	\$2,759,017	\$2,520,779	\$2,975,644	\$3,931,321	\$3,590,224
Washougal EMS Property Tax Levy	\$983,115	\$1,012,207	\$1,042,065	\$1,072,684	\$1,104,097	\$1,536,727
Ambulance Transportation Fees	\$1,657,462	\$1,805,914	\$1,886,990	\$1,968,066	\$2,049,143	\$2,130,219
ECFR Contract Payments	\$541,942	507,969	\$725,010	\$740,753	\$756,389	\$771,944
Misc./Other	\$207,364	\$268,675	\$258,092	\$275,844	\$276,112	\$262,483
Total Revenue	\$11,900,336	\$11,911,923	\$11,683,961	\$12,999,536	\$15,538,408	\$15,847,848
Expenses						
Salaries & Wages	\$6,659,584	\$6,925,968	\$7,203,006	\$7,491,127	\$8,910,772	\$9,267,202
Benefits	\$2,183,948	\$2,233,300	\$2,386,208	\$2,549,724	\$3,214,631	\$3,436,024
Supplies	\$629,840	\$279,219	\$284,803	\$290,499	\$296,309	\$302,236
Professional Services	\$528,384	\$538,952	\$549,731	\$560,726	\$571,940	\$583,379
Support Services (Overhead)	\$490,042	\$499,843	\$509,840	\$520,036	\$530,437	\$541,046
Capital & Debt	\$447,548	\$1,266,994	\$579,372	\$1,413,004	\$1,836,410	\$1,536,494
Other (Transfers and Inter-Gov't Services)	\$179,490	\$167,647	\$171,000	\$174,420	\$177,909	\$181,467
Total Expenditures	\$11,118,837	\$11,911,923	\$11,683,961	\$12,999,536	\$15,538,408	\$15,847,848
Operating Expenditures*	\$10,298,719	\$10,644,929	\$11,104,589	\$11,586,532	\$13,701,998	\$14,311,354
Net						
Net Surplus (Deficit)	\$781,499	\$0	\$0	\$0	\$0	\$0
Ending Fund Balance	\$2,106,119	\$2,106,119	\$2,106,119	\$2,106,119	\$2,106,119	\$2,106,119

ESCI projects a temporary reduction in the need for general fund support in 2020 and 2021, due primarily to a reduction in capital equipment needs. This reduction in general fund support reverses course dramatically in 2022 and 2023 for Camas with the need to fund and staff an additional fire station. If there were an updated capital improvement plan, the department could count on using fire impact fees to help alleviate this issue.

Overall, ESCI forecasts an average annual expenditure increase of 7.6% (without capital expenses and additional staffing the increase would be only about 4.2%). From 2019 to 2024, the total increase is expected to be 42.5% (without capital expenses and additional staffing the total increase would be about 22.6%).

Financial Recommendations

ESCI has developed a number of recommendations to ensure the greatest possible revenue receipts to support continued growth of the department in support of the two cities' growing populations and increased call volume:

- Completion of a Capital Improvement Plan is vitally important. While a Capital Facilities Plan was called for in the Interlocal Agreement that formed the consolidated department, ESCI recommends expanding the concept to a Capital Improvement Plan, which would include apparatus repair and replacement (see ER&R discussion below). In undertaking this project, ESCI suggests the committee include the Finance Directors from each city to ensure adequate projections and to include the needs of both the consolidated department and the two cities' budget priorities. The plan is needed to support the use of impact fees (which must be dedicated to capital improvements) and should include an updated impact fee schedule. If not completed, the impact fees cannot be spent, and concurrency may become an issue in 2023, which will mark the 10-year anniversary of the implementation of impact fees. (RCW 82.02.080 requires each jurisdiction to refund the impact fees, plus earned interest, to the developer if the impact fee is not expended or encumbered within 10 years of collection).
- A fire equipment repair and replacement fund (ER&R fund) could help the department plan for and smooth out expenditure spikes caused by capital equipment expenses. The plan for this fund should be included in a Capital Improvement Plan. One maneuver to help provide for an initial fund balance may be to make use of Washougal's impact fees (currently about \$380,000). Washougal could pledge its fees to the needed purchase of Station 95 and in return, Camas could put the resulting savings toward the ER&R fund. This would also help enable the outright cash purchase of the station in 2020. Note that per MRSC,

"Fire impact fees must be used for 'fire protection facilities' that are addressed by a capital facilities plan element of a comprehensive plan... Because state law provides no further statutory or administrative definitions, some jurisdictions have taken it upon themselves to define 'fire protection facilities' in their own municipal codes. [which could include fire engines and equipment.]"

- The contract with ECFR should be reviewed and contract payments updated prior to the 2020 levy election to ensure that the rate requested of the voters equals ECFR's portion of CWFD's EMS expenses.
- A review of ambulance billing should be undertaken, particularly to investigate whether any changes have occurred in billings that would lead to a lower collection percentage. Consider outsourcing patient billing services to an external vendor, and review transport fees to ensure they are adequate.
- Dedicate GEMT payments toward medic unit replacements and capital equipment upgrades via an ER&R fund and related Capital Improvement Plan.

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Appendix B: NFPA 1911 Annex D Guidelines

Annex D Guidelines for First Line and Reserve Fire Apparatus

This annex is not a part of the requirements of the NFPA document but is included for informational purposes only.

D.1 General. To maximize fire fighter capabilities and minimize risk of injuries, it is important that fire apparatus be equipped with the latest safety features and operating capabilities.

In the last 10 to 15 years, much progress has been made in upgrading functional capabilities and improving the safety features of fire apparatus. Apparatus more than 15 years old might include only a few of the safety upgrades required by the recent editions of the NFPA fire department apparatus standards or the equivalent Underwriters Laboratories of Canada (ULC) standards. Because the changes, upgrades, and fine tuning to NFPA 1901 have been truly significant, especially in the area of safety, fire departments should seriously consider the value (or risk) to fire fighters of keeping fire apparatus more than 15 years old in first-line service.

It is recommended that apparatus more than 15 years old that have been properly maintained and that are still in serviceable condition be placed in reserve status; be upgraded in accordance with NFPA 1912; and incorporate as many features as possible of the current fire apparatus standard (*see Section D.3*). This will ensure that, while the apparatus might not totally comply with the current editions of the automotive fire apparatus standards, many of the improvements and upgrades required by the current editions of the standards are available to the fire fighters who use the apparatus.

Apparatus that were not manufactured to the applicable NFPA fire apparatus standards or that are over 25 years old should be replaced.

D.2 Evaluating Fire Apparatus. It is a generally accepted fact that fire apparatus, like all types of mechanical devices, have a finite life. The length of that life depends on many factors, including vehicle mileage and engine hours, quality of the preventative maintenance program, quality of the driver training program, whether the fire apparatus was used within the design parameters, whether the apparatus was manufactured on a custom or commercial chassis, quality of workmanship by the original manufacturer, quality of the components used, and availability of replacement parts, to name a few.

In the fire service, there are fire apparatus with 8 to 10 years of service that are simply worn out. There are also fire apparatus that were manufactured with quality components, that have had excellent maintenance, and that have responded to a minimum number of incidents that are still in serviceable condition after 20 years. Most would agree that the care of fire apparatus while being used and the quality and timeliness of maintenance are perhaps the most significant factors in determining how well a fire apparatus ages.

Critical enhancements in design, safety, and technology should also play a key role in the evaluation of an apparatus life cycle. Previous editions of the fire department apparatus standards featured many requirements advancing the level of automotive fire apparatus safety and user friendliness.

Contained within the 2009 edition were requirements for rollover stability; tire pressure indicators; seat belt warning systems requiring all occupants be properly seated and belted; extended seat belt length requirements resulting from an in-depth anthropometric study evaluating the average size of today's fully dressed firefighter; roadability, including minimum accelerations and top speed limitations; enhanced step and work surface lighting; cab integrity testing; increased use of retroreflective striping in the rear of apparatus, providing a consistent identifiable set of markings for all automotive fire apparatus; and enhanced aerial control technologies, enabling short jacking and envelope controls.

D.3 Upgrading Fire Apparatus. Any apparatus, whether in first-line or reserve service, should be upgraded in accordance with NFPA 1912, as necessary, to ensure that the following features are included as a minimum:

- (1) Seat belts with seat belt warning systems are available for every seat and are new or in serviceable condition.
- (2) Warning lights meet or exceed the current standard.
- (3) Reflective striping meets or exceeds the current standard.
- (4) Slip resistance of walking surfaces and handrails meets the current standard.
- (5) A low-voltage electrical system load manager is installed if the total connected load exceeds the alternator output.
- (6) The alternator output is capable of meeting the total continuous load on the low voltage electrical system.
- (7) Where the gross vehicle weight rating (GVWR) is 36,000 lb (16,000 kg) or more, an auxiliary braking system is installed and operating correctly.
- (8) Ground and step lighting meets or exceeds the current standard.
- (9) Noise levels in the driving and crew compartment(s) meet the current standard, or appropriate hearing protection is provided.
- (10) All horns and sirens are relocated to a position as low and as far forward as possible.
- (11) Signs are present stating that no riding is allowed on open areas.
- (12) A pump shift indicator system is present and working properly for vehicles equipped with an automatic chassis transmission.
- (13) For vehicles equipped with electronic or electric engine throttle controls, an interlock system is present and working properly to prevent engine speed advancement at the operator's panel, unless either the chassis transmission is in neutral with the parking brake engaged, or the parking brake is engaged, the fire pump is engaged, and the chassis transmission is in pumping gear.
- (14) All loose equipment in the driving and crew areas is securely mounted in accordance with the current standard.

D.4 Proper Maintenance of Fire Apparatus. In addition to needed upgrades to older fire apparatus, it is imperative that all fire apparatus be checked and maintained regularly to ensure that they will be reliable and safe to use. The manufacturer's instructions should always be followed when maintaining the fire apparatus. Special attention should be paid to ensure that the following conditions, which are particularly critical to maintaining a reliable unit, exist:

- (1) Engine belts, fuel lines, and filters have been replaced in accordance with the manufacturers' maintenance schedule(s).
- (2) Brakes, brake lines, and wheel seals have been replaced or serviced in accordance with the manufacturers' maintenance schedule.
- (3) Tires and suspension are in serviceable condition, and tires are not more than 7 years old.
- (4) The radiator has been serviced in accordance with the manufacturer's maintenance schedule, and all cooling system hoses are new or in serviceable condition.

- (5) The alternator output meets its rating.
- (6) A complete weight analysis shows the fire apparatus is not over individual axle rating or total GVWR.
- (7) The fire pump meets or exceeds its original pump rating.
- (8) The water tank and baffles are not corroded or distorted.
- (9) If the apparatus is equipped with an aerial device, a complete test to original specifications has been conducted and certified by a certified testing laboratory.
- (10) If so equipped, the generator and line voltage accessories have been tested and meet the current standard.

D.5 Refurbishing or Replacing Fire Apparatus. Fire department administrators and Fire Chiefs should exercise special care when evaluating the cost of refurbishing or updating an apparatus versus the cost of a new fire apparatus. Apparatus that are refurbished should comply with the requirements of NFPA 1912. A thorough cost-benefit analysis of the value of upgrading or refurbishing a fire apparatus should be conducted. In many instances, it will be found that refurbishing costs will greatly exceed the current value of similar apparatus.

Some factors to consider and evaluate when determining whether to refurbish or replace a fire apparatus include the following:

- (1) What is the true condition of the existing apparatus? Has it been in a major accident, or has something else happened to it that would make spending significant money on it ill advised?
- (2) What advancements in design, safety, and technology have improved the efficiency and safety of personnel?
- (3) Does the current apparatus meet the program needs of the area it is serving? Is it designed for the way the fire department operates today and is expected to operate in the foreseeable future, or is the apparatus functionally obsolete? Can it carry everything that is needed to do the job without being overloaded?
- (4) If the apparatus is refurbished, will it provide the level of safety and operational capability of a new fire apparatus? It should be kept in mind that in many cases, refurbishing does not mean increasing the GVWR, so it is not possible to add a larger water tank or additional foam agent tanks or to carry massive amounts of additional equipment. Enclosing personnel riding areas might add enough weight to the chassis that existing equipment loads need to be reduced to avoid overloading the chassis.
- (5) What is the anticipated cost per year to operate the apparatus if it were refurbished? What would the cost per year be for a new apparatus? Insurance costs, downtime costs, maintenance costs, depreciation, reliability, and the safety of the users and the public all have to be considered. At what rate are those costs rising each year? Are parts still readily available for all the components on the apparatus? A refurbished 15-year-old apparatus still has 15-year-old parts in it. How long could the fire department operate without the apparatus if it suddenly needed major repairs?
- (6) Is there a current trade-in value that will be gone tomorrow?

D.6 Conclusion. A fire apparatus is an emergency vehicle that must be relied on to transport fire fighters safely to and from an incident and to operate reliably and properly to support the mission of the fire department. A piece of fire apparatus that breaks down at any time during an emergency operation not only compromises the success of the operation but might jeopardize the safety of the fire fighters relying on that apparatus to support their role in the operation. An old, worn-out, or poorly maintained fire apparatus has no role in providing emergency services to a community.

Appendix C: Integration Options Described

Washougal's City Manager requested general information about integration options as an appendix to this report. This appendix describes the following permanent integration alternatives for Camas and Washougal to consider going forward.

- Contract for services
 - Administrative
 - Functional
 - Operational (Full Service)
- Regional Fire Authority
- Formation of a Municipal Fire District
- Annexation (if East County Fire & Rescue included)

GENERAL PARTNERING OPTIONS

It is often assumed that legal merger of agencies is the only alternative that is available. However, in general terms, a number of different strategies are available to the client agencies when considering consolidation of services. This begins with a do-nothing approach and ends with complete unification of the organizations into what is, essentially, a new emergency service provider. A summary of the available methodologies is found next, followed by identification of specific options that are considered feasible in these study agencies.

Contract for Services

There are three main types of contracts for service; administrative, functional, or operational consolidation. Each of these is discussed in greater detail in the following sections.

Administrative Consolidation

An administrative consolidation occurs when two or more agencies maintain their separate legal status and separate operational elements, but combine some or all of their administrative functions. Examples include combining clerical, HR, IT, and/or financial functions while maintaining separate operational activities, or even combining agency administration and management under one Fire Chief. An administrative consolidation is accomplished legally through an Interlocal Cooperation Agreement between the agencies.³¹ There are no limitations regarding crossing city or county boundaries.

³¹ RCW 39.34.030.

The advantages of such a model include reduced overhead costs by eliminating administrative duplication; a gradual alignment of otherwise separate operations under a single administrative head; less resistance to change by the rank and file in the operational elements than other consolidation options; and singularity of purpose, focus, and direction at the top of the participating organizations. This option lends itself well to a gradual move toward a single, consolidated agency where differences in attitude, culture, and/or operation are otherwise too great to overcome in a single move to combine.

The disadvantages include potential conflicts in policy direction from the various boards and councils; potentially untenable working conditions for the Fire Chief (“one person, multiple bosses”); and increased potential for personnel conflict as separate employee groups vie for dominance/supremacy. This strategy would be a step away from integration, reverting to a lesser form of contract than is currently in place.

Functional Consolidation

Functional consolidation, as the term is used here, would enable the client agencies to work together while remaining as separate organizations. Under the Washington statutes, governmental entities may elect to cooperate or contract for any lawful purpose, allowing individual organizations to share resources, improve service, and save money at the *program* level. Most commonly, fire departments enter partnering agreements for programs such as firefighter training, fire prevention, closest force response, and administrative/support services.

In many cases, functional consolidation is sufficient to accomplish the cooperative goals of agencies without considering operational agreements or integration. It is common in the industry to functionally join such activities as purchasing, firefighter training, fire prevention, public education, apparatus maintenance, and command response assistance as a modest step toward integration. The keys to success of a functional consolidation strategy lie in a trusting relationship between partner agencies, the completeness of the agreement that sets up the program, and a cooperative approach to the management of the program.

For a functional consolidation, the advantages are greater opportunities for efficiency; an opportunity to reinvest redundant resources into those areas lacking in resources and a closer working relationship between members of the agencies in the consolidated function(s) that can spill over to other unrelated activities in the otherwise separate agencies. This type of collaboration may segue to greater levels of cooperation. Barriers can be broken down as members of each agency realize that the other agency’s members “aren’t so different after all.”

A disadvantage is that interaction by and between line personnel of different agencies increases the potential for friction. Numerous details must be worked out in advance of such a contract, including but not limited to work rules, employee assignments, volunteer opportunities, office location, logos, asset allocation, authority, and even the name of the consolidated function. Further, independence and autonomy are lost in the consolidated areas, spilling into other seemingly unaffected areas.

Operational (Full Service) Consolidation (Current Structure)

This partnering option takes the next step in the continuum of closer collaboration. In this case, all operations are consolidated under a single organization that serves the participating agencies. The agencies remain independent organizations from a legal/political/taxing standpoint; but from a service level standpoint, the organization operates as one agency. Like other strategies listed, an operational consolidation is accomplished legally through an Interlocal Cooperation Agreement.³²

Under an operational consolidation, governance of the client agencies could remain with the two City Council's separately. However, this strategy largely joins the entities, operationally, through the execution of a more comprehensive interlocal cooperation agreement. The resulting organization features a single organizational structure and chain of command with a lead agency on behalf of both agencies. This is the case with Camas as the lead agency with all employees becoming Camas employees and Washougal City Council forming part of an advisory committee.

Operational consolidation means that, regardless of their overarching governance structure, the agencies become one in terms of how day to day operations are performed. One Fire Chief oversees a blended organization. This option requires a significant commitment toward a full consolidation and is usually done as a last sequential step toward full integration as the administrations and policy-making bodies work out the last details.

For an operational consolidation, the advantages are that the greatest opportunity for efficiency (not necessarily cost reduction) is typically in the operational element where service is delivered to the communities; and the level of trust and cooperation required to make implementation of this option successful implies a near-readiness to take the next step to full integration.

The disadvantage is that administrators and policymakers from one agency must subordinate themselves and rely on influence where they once had unilateral authority to control and implement. The other disadvantages have already been overcome in that there is a single bargaining agreement for all employees, and Camas is the lead agency.

In all three versions of the foregoing types of interlocal agreement, the participating agencies can establish an oversight board made up of appointees of the governing bodies involved in the interlocal agreement. The joint board can be established with their scope of authority granted to them by the separate governing bodies involved in the interlocal agreement.³³

³² Ibid.

³³ RCW 39.34

Regional Fire Authority

Unique to Washington is the potential formation of a Regional Fire Authority (RFA) where a whole new form of governance is created. An RFA is a new entity whereby fire agencies, whether districts, cities, or a combination, fall under this new structure with a new tax base, a new operational plan, and a new legal framework.

If agencies contemplate forming an RFA, it is usually wise to begin meeting informally to discuss and address issues in advance of initiating the first formal step in the process. Most successful efforts start with establishing exploratory or steering committees composed of a wide variety of stakeholders to determine the feasibility of creating an RFA far in advance of forming the actual Planning Committee, which is required by statute. Should the decision be made to move forward with an RFA formation, the first legal step is the formation of a Planning Committee, considered to be the most important step in the process. The Planning Committee is charged with establishing the RFA plan, which specifies how the RFA will be funded, operated, and governed. The RFA plan should be considered the “charter” or “constitution” of the new agency.

The Planning Committee is comprised of three elected officials appointed from each agency, assuring an equal voice in the decision-making process. Moving forward with the formation of an RFA also requires approval by the affected governing bodies near the end of the process but prior to the initiative being put before the voters.

Funding Mechanisms

A key consideration of the RFA formation decision is funding. The RFA plan will identify funding sources that may include some or all of the following:

- Fire levies
- EMS levies
- Excess levies
- Benefit charges
- Bonds for capital purchases

Facilities and Equipment

The ownership or transfer of ownership of capital assets is not prescribed by law and will be determined by the Planning Committee. Although ownership of facilities and equipment will most likely be transferred to the newly formed RFA, the responsibility for bonded indebtedness for capital assets will remain with the originating agency until the debt is satisfied.

Staffing and Personnel

Under an RFA configuration, employees and members of the agencies joining forces in the RFA become employees and members of the new organization, including career and volunteer personnel. Unless an agreement for different terms of transfer is reached between the collective bargaining representatives of the transferring employees and the participating fire protection jurisdictions, employees will retain the rights, benefits, and privileges that they had under their pre-existing collective bargaining agreements.³⁴

Roles and responsibilities assigned to agency personnel may change in a newly formed RFA when modifications are necessary in the interest of service delivery requirements. For this reason, involvement of labor and volunteer organization representatives from the onset of the process is essential.

Governance and Administration

A Regional Fire Authority is governed by a single governance board. The number of board members and the length of their service terms are determined by the Planning Committee consistent with applicable statutes. The statute authorizing the formation of an RFA does not place limitations on the number of members serving on the board, leaving that decision to the Planning Committee and, ultimately, the voters. ESCI is familiar with one RFA in Washington State that initially had nine board members.

Administration of the new RFA, once established, becomes the responsibility of the newly established governing board. The Planning Committee, however, will include in its body of work identification of the composition of the RFA's administrative staff. The Fire Chief and his/her command staff, as agreed to by the Planning Committee, will subsequently report to the governing board.

³⁴ RCW 52.26.100 (6)

Legal Considerations

A number of important legal considerations must be taken into account in the formation of a Regional Fire Authority. They are summarized below:

- *Regional Fire Protection Service Authority Plan*—Planning Committees are tasked with forming the RFA plan. The RFA plan outlines the plan for governance, financing, operations, asset transfers, and other considerations and is the plan that the voters are asked to approve when voting on the formation of the RFA.
- *Formation Procedures*—Like any other type of significant consolidation, the formation of an RFA requires careful planning. Because the RFA creates a new entity, there is an added layer of complexity to the planning. The new entity will need to register with the Internal Revenue Service (IRS), establish new accounts with the County and vendors, contracts will need to be assigned and negotiated, labor agreements need to be negotiated, payroll systems may need to be established, and so on. In other words the formation of a new entity can be incredibly time intensive and attention to detail is critical. The formation of an RFA is not subject to review by a Boundary Review Board or a county legislative authority. The formation of an RFA is, however, likely subject to compliance with the State Environmental Policy Act (SEPA). Legal counsel familiar with RFAs should be obtained to guide policymakers in the process.

The advantages of this option are that it allows agencies to retain the strengths they bring to the new agency, minimizes the weaknesses of each agency, and may allow for establishing new “best practices” not currently provided by any of the participating agencies alone. It facilitates a contemporary look at services, resources, and costs, finding the right balance for the community. It retains (or has the potential to retain) the policymakers of the participating agencies in a governing board (including participating cities), thus utilizing the vision and commitment that initiated the implementation of this option. Finally, it creates an opportunity to “right-size” the revenue with the cost of operation, and it provides an active role for the citizens in setting their service level and costs.

The disadvantages of pursuing this option are the loss of autonomy for each participating agency as it relates to the provision of fire and emergency medical services; the loss of a familiar structure (RFAs operate almost identically to a fire district); the investment of time and effort to develop an RFA plan can be rendered moot by the voters; and funding options are not significantly better for RFAs than they are for fire districts.

Formation of a Municipal Fire District

Municipalities can form an independent fire district with the same boundaries as the city that initiated the formation. The process requires introducing a resolution by the City Council establishing the ballot measure proposing formation of the fire district and any other provisions determined by the council as authorized by the statute. The formation is voted upon by city voters and a simple majority authorizes the creation (unless the funding mechanism includes a benefit charge, in which case, a 60% favorable vote is required).

The City Council acts as ex officio board members until or unless the fire district elects its own, which can be provided for by City Council action in the formation of the initial resolution, or at any time after formation, by action of a majority of the City Council. In the latter case, the City Council can relinquish governance authority to an appointed board until such time as independently elected board members can be voted into office.

The amount of property tax levy rate to fund the fire district is intended to be deducted from the city's maximum statutory property tax levy rate. The assets of the municipality dedicated to provide fire and EMS services to the city must be transferred or credited to the fire district, including all employees. The intent of the statutory provisions is to provide transparency, prevent double taxation, avoid duplication of investment (i.e., asset transfers), and provide for a governance structure that focuses exclusively upon fire and EMS service delivery within the city separate and distinct from other municipal services.

In the case of Camas-Washougal, one city would need to establish a municipal fire district, and once formed, annex the other city into it to maintain a single Fire District over the combined service area.

The advantages of pursuing this option are that fire and EMS service delivery becomes a separate, independent governing structure with a separate, dedicated funding stream. It maximizes the use of already spent infrastructure in the city for this service by transferring those assets to the district. Employees are not put at risk and are kept whole in the transition.

The disadvantage of pursuing this option is that it is a brand-new statute and there is no track record of any community implementing it. In this case, the first city pursuing this will find any flaws in the statute, which may not be beneficial to either entity. If the newly formed fire district does not levy its full statutorily authorized property tax levy rate initially, but does so at a later date, the city will be required to reduce its maximum authority for property taxes at that time, which may preclude planning for the economic impact.

Annexation (if East County Fire & Rescue included)

A city may be annexed into a fire district for the purposes of receiving fire protection services. An annexation into a fire district expands the boundaries of the fire district to include the current and future boundaries of the city. The city boundaries do not change as a result of annexation into a fire district. There is no reserved authority for a city to be represented on the governing board absent the formation of commissioner districts. However, once annexation occurs, city residents are eligible to run for office as a fire commissioner at large. Commissioner districts can also be created, guaranteeing representation from within the city if the district were created accordingly, as long as each commissioner district was approximately equal in population.

Annexation does not affect any other authority of the city. The city simply transfers its responsibility for fire protection and EMS services to the fire district. The city's maximum allowed tax levy rate is reduced by the actual tax levy rate of the fire district. Although the city's maximum tax capacity may be reduced by the amount of the district's tax levy, depending on the city's tax rate, this may or may not decrease the city's actual tax levy. See the following generic example:

Current Property Tax Levy Rates (Example):

City	\$1.89	Maximum allowed	\$3.60
Fire District	\$1.00	Maximum allowed	\$1.50

City Annexes into District (Example):

Fire District Levy	\$1.00
City Tax Capacity	\$2.60 (\$3.60 – \$1.00)

There are no statutory requirements that a city being annexed by a fire district must transfer its fire department assets. The city may retain its fire stations, for example, and lease them to the district at a nominal rate. RCW 52.04.111 through .131 provide for the transfer of city firefighters to the district in the event of the annexation of the city by the district. The district is not obligated to transfer all employees, therefore, these statutory provisions should be reviewed in detail prior to the initiation of annexation proceedings to ensure that the interests of all parties will be addressed and ensure statutory compliance.

Appendix D: Consolidation & Funding Option Review

The following presentation was authored by Paul Lewis and presented to the CWFD Policy Advisory Committee. The Camas City Administrator requested this presentation be attached to this report as an appendix.

Camas-Washougal Fire Department: Consolidation Organization and Funding Option Review

**CWFD Joint Policy Advisory Committee
Advisory Committee Meeting**
February 27, 2019

Agenda

- Background
- Consolidation Organization Options Review
 - Current/Revised Interlocal Agreement
 - Regional Fire Protection Service Authority (RFA)
 - Municipal Fire Districts with Annexation or Merger
- Consolidation Funding Options Review
- Recent Ballot Outcomes
- Impact on City Funding and Taxpayers

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Background

- Extensive cooperative efforts history
 - 2006: Camas, Washougal and ECFR Advanced Life Support (ALS) and transport agreement
 - 2008: Camas and ECFR explored forming an RFA
 - 2011: Camas and Washougal initiated an interim trial consolidation; Extended through the end of 2013
 - 2012: ALS & transport agreement extended to 12/31/2014
 - 2013: Formal functional consolidation & CWFD formed
 - 2015: CWFD/ECFR ALS & Transport agreement extended
 - 2017: CWFD and ECFR explored functional consolidation

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Background

- Recent issues related funding requirements
 - Cost allocation formula slowly shifting more costs to Washougal due to higher call volumes
 - Operating expense increases nearing/exceeding limits identified in the inter-local agreement
 - Disagreement about proposed addition of five new positions and \$387,000 budget increase
- New legislation in 2017 allows municipal fire districts
- Great recession recovery – significant AV increase
- Both cities expanding to the north into ECFR area

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Consolidation Organization Options

Current/Revised Interlocal Agreement

- Considerable flexibility provided via RCW 39.34 – Interlocal Cooperation Act
- Cities can create separate entity with its own charter, by-laws, articles of incorporation and governance
 - Can include formal decision making process
- No new tax revenue sources created – funding from sources available to partners
- Example: CRESA; East Side Fire & Rescue

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Consolidation Organization Options

Regional Fire Protection Service Authority (RFA)

- Authorized in 2004 with requirements in RCW 52.26
- Requires a planning process with a detailed plan that addresses governance, financing, operations, etc.
- Plan formally approved by participating jurisdictions and certified for the ballot
- Voters approve plan and proposed funding
- Twelve formed: 7 city/fire district; 4 fire district/fire district; 1 three cities (Algona, Auburn and Pacific)

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Consolidation Organization Options

Municipal Fire District

- Authorized in 2017 with requirements in RCW 52.02.160
 - Other provisions of RCW 52.02 - Fire District apply
- Requires a financial plan that addresses all funding
 - City regular levy permanently reduced
 - Must identify all impacts on property tax and taxpayers
- City resolution referring to ballot identifies governance
- Voters approve plan and proposed funding
- None known to be formed so far

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Consolidation Organization Options

	Current/Revised Interlocal Agreement	Regional Fire Protection Service Authority	Municipal Fire District (with Merger or Annexation)
Formation Process			
Plan Required	No	Yes; Prescribed RCW 52.26.030-52.26.050	Yes; Financing Plan
	Agreement outlines governance, financing, operations, etc.	Planning Committee: 3 elected officials from each jurisdiction	Identify initial Fire District levy and Benefit Charge
Legislative Referral	NA; Agreement approved by City Councils	Plan outlines governance, design, financing, facilities and operations	Permanent reduction in City levy; Identify net property tax impact
		Yes; Each participating jurisdiction must certify the plan to the ballot	Yes; Resolution must address financing impacts and governance
Formation Voter Approval	NA	Certification must identify the revenue options that fund the plan	Public Hearing with three consecutive weeks notice
		50% or 60% if Benefit Charge or EMS Levy in plan; Any election date	50% or 60% if Benefit Charge in plan; General election date only
Annexation	Boundary expands with participating city boundary	Boundary expands with participating city boundary	Boundary expands with city boundary

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Consolidation Organization Options

	Current/Revised Interlocal Agreement	Regional Fire Protection Service Authority	Municipal Fire District (with Merger or Annexation)
Governance			
Number of Governing Board Members	Not required; Flexibility regarding design of governance	Number identified in the plan	City Council; Seven if elected (if annual budget over \$10 million)
Option for Existing Legislative Members to Serve as Ex Officio Board	Yes	Yes; Can also be directly elected; Can be elected by districts; Specifics identified in the plan	Yes; Can also be directly elected; Specifics identified in the resolution
Term	NA	6 years if elected	6 years if elected

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Consolidation Organization Options

Creating a Single Fire District Serving Both Cities

- Creating a single fire district can be accomplished through either an annexation or a merger
 - The City of Washougal could annex to a Fire District created by Camas
 - A Washougal fire district could merge with a Camas one
- City annexation requires a vote by both jurisdictions; a merger requires a vote by Washougal only
- Unclear restriction on governing board representation

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Consolidation Organization Options

Other Considerations

- Each of the three options can accommodate a consolidation with East County Fire & Rescue
- Complexity, time and potential voter confusion with creation of one or two fire districts followed by a merger or annexation
- No City Fire Districts have been formed to date
- Significant flexibility with interlocal agreements

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Consolidation Funding Options

	Current/Revised Interlocal Agreement	Regional Fire Protection Service Authority	Municipal Fire District (with Merger or Annexation)
Property Tax Funding			
Maximum Regular Levy: \$/\$1,000 of Assessed Value	NA; City maximum \$3.60 less library or fire district if applicable	\$1.50 - Must have at least one full time employee for full \$1.50	\$1.50 - Must have at least one full time employee for full \$1.50
	No new revenue authority created	Initial levy amount identified in the plan	Initial levy amount identified in the plan
	Funding from existing city sources (ex: regular levy, EMS levy or lid lift)	Permanent regular levy approved by voters with formation	Permanent regular levy approved by voters with formation
\$5.90 Limit Proration Priority	City regular levy has highest priority (Level 7/7)	\$0.50 second highest (Level 6/7) with balance third (Level 5/7)	\$0.50 second highest (Level 6/7) with balance third (Level 5/7)
Emergency Medical Services Regular Levy	Yes up to \$0.50/\$1,000 AV with 60% voter approval	Yes up to \$0.50/\$1,000 AV with 60% voter approval	Yes up to \$0.50/\$1,000 AV with 60% voter approval
	6 years, 10 years or permanent; Lid lifts allowed	6 years, 10 years or permanent; Lid lifts allowed	6 years, 10 years or permanent; Lid lifts allowed
Excess Levy/Bond Voter Approval Requirement	60% - 1 year only with validation	60% - 1 year only with validation	60% - up to 4 years with validation

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Consolidation Funding Options

	Current/Revised Interlocal Agreement	Regional Fire Protection Service Authority	Municipal Fire District (with Merger or Annexation)
Other Funding			
Benefit Charge	Yes - if annexed fire district area since 2006 per RCW 35.13.256	Yes per RCW 52.26.180	Yes per RCW 52.02.160
	Requires 60% voter approval with renewal every six years	Requires 60% voter approval with renewal every six years	Requires 60% voter approval with renewal every six years
	Reasonably proportioned to benefits; Must be able to identify the charge for each parcel	Reasonably proportioned to benefits; Must be able to identify the charge for each parcel	Reasonably proportioned to benefits; Must be able to identify the charge for each parcel
	Funding cannot exceed 60% of operating budget in any year	Funding cannot exceed 60% of operating budget in any year	Funding cannot exceed 60% of operating budget in any year
	No impact on city regular levy	If approved then regular levy limited to \$1.00/\$1,000 assessed value	If approved then regular levy limited to \$1.00/\$1,000 assessed value
	No city has implemented fire benefit charge	An estimated 4 of 12 RFAs impose a fire benefit charge	An estimated six fire districts impose a fire benefit charge

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Consolidation Funding Options

RFA/Fire Benefit Charge Examples (2018)

Agency	County	Assessed Value (\$Billion)	Regular Levy	Regular Levy Rate	Benefit Charge	Fire Benefit Charge "Rate"	EMS Levy Rate	Total Levy Rate
Kent RFA	King	\$ 21.92	\$ 8,905,455	\$ 0.7714	\$24,320,725	\$ 1.1095	\$ 0.2394	\$ 2.1202
Renton RFA	King	\$ 18.10	\$ 16,909,473	\$ 0.9175	\$ 14,525,029	\$ 0.8027	\$ 0.2394	\$ 1.9596
Valley RFA	King	\$ 10.48	\$ 16,601,543	\$ 0.8500	\$ 12,450,000	\$ 1.1883	\$ 0.2394	\$ 2.2776
Fire Dist. #36-Woodinville	King	\$ 9.79	\$ 5,253,930	\$ 0.8573	\$ 5,773,189	\$ 0.5899	\$ 0.2394	\$ 1.6866
Fire Dist. #16-Northshore	King	\$ 7.17	\$ 8,389,889	\$ 0.7328	\$ 2,800,000	\$ 0.3906	\$ 0.2394	\$ 1.3628
Fire Dist. #40-Spring Glen	King	\$ 2.79	\$ 2,792,325	\$ 1.0000	\$ 2,000,000	\$ 0.7163	\$ 0.2394	\$ 1.9557
West Benton RFA	Benton	\$ 1.16	\$ 1,120,115	\$ 0.9697	\$ -	\$ -	\$ 0.5000	\$ 1.4697
SE Thurston RFA	Thurston	\$ 2.29	\$ 3,434,648	\$ 1.5000	\$ -	\$ -	\$ 0.3393	\$ 1.8393
W Thurston RFA	Thurston	\$ 1.99	\$ 2,795,429	\$ 1.4024	\$ -	\$ -	\$ 0.3393	\$ 1.7417
Riverside RFA	Lewis	\$ 1.95	\$ 2,925,172	\$ 1.5000	\$ -	\$ -	\$ 0.5000	\$ 2.0000
Camas-Washougal FD	Clark	\$ 6.06	\$ 5,397,807	\$ 0.8900	\$ -	\$ -	\$ 0.3940	\$ 1.2840

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Consolidation Funding Options

	Current/Revised Interlocal Agreement	Regional Fire Protection Service Authority	Municipal Fire District (with Merger or Annexation)
Other Funding			
Ambulance Utility	Yes; RCW 35.21.766	Yes; RCW 35.21.766	Yes; RCW 52.02.170
	Cost of service study required; Limited funding from utility fee	Cost of service study required; Limited funding from utility fee	No cost of service study required per RCW; Assume it is needed
	Utility fee can be different based on different demand; Exemptions apply	Utility fee can be different based on different demand; Exemptions apply	Assume same

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Consolidation Funding Options

Ambulance Utility Fee Examples

Agency	2018 Population	Monthly Ambulance Utility Fee
Kennewick	81,850	\$ 7.67
Pasco	73,590	\$ 14.98
Richland	55,320	\$ 7.81
Mercer Island	24,270	\$ 9.29
Moses Lake	23,660	\$ 11.85
Port Angeles(1)	19,370	\$ 6.28
Arlington	19,300	\$ 15.00
Sunnyside	16,850	\$ 16.56
Aberdeen	16,780	\$ 23.87
Lynden	14,160	\$ 6.00
Hoquiam	8,560	\$ 19.23
Ocean Shores	6,220	\$ 19.03
Montesano(2)	4,155	\$ 12.12
Camas-Washougal	39,790	

1) Commercial = \$9.50; 2) Rate from 2012

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- Average monthly fee = \$13.05
- Camas and Washougal had 14,796 housing units in 2018
- If 90% of the units paid \$13.05/month it would have generated \$2,086,000 or approximately \$0.31/\$1,000 AV
 - Higher with commercial property
- Arlington example: ~\$1.5 million in 2019 or equivalent to ~\$0.528/\$1,000 AV

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Consolidation Organization and Funding Option Review

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Consolidation Funding Options

Other Considerations

- Additional requirements for Benefit Charges related to exemptions and administration
- Complexity and potential voter confusion with two (or possibly three) entities implementing a Benefit Charge or Ambulance Utility
- Voter approved sales tax also available to cities with 50% voter approval: up to 3/10% with 33% for fire protection or criminal justice; 15% shared with county

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Consolidation Organization and Funding Option Review

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Recent Ballot Outcomes

Elections Exclusively for Fire/EMS in Past 5 Years

Election Jurisdiction/Topic	Number of			Required Average % Yes		Comments
	Elections	Passed	Failed	%	for Passed	
City Fire Lid Lift	6	5	1	50%	58%	Includes Washougal \$0.10; Ave. = \$0.43
City Excess Levy	19	18	1	60%	77%	6 cities with repeat measures; Ave. = \$1.09
City EMS Levy	30	25	5	60%	73%	Average rate approved = \$0.49/\$1,000 AV
City Annexation to Fire District	14	14	0	50%	80%	Largest were Wenatchee and Ferndale
City Public Safety Sales Tax	2	1	1	50%	50%	Tonasket Passed; Omak Failed
County Public Safety Sales Tax	1	1	0	50%	58%	Lincoln County (East of Spokane)
RFA Formation: No Benefit Charge	5	3	2	50%	64%	West Benton, South Snohomish and Grays Harbor
RFA Formation: With Benefit Charge	3	1	2	60%	63%	Renton Regional Fire Authority
RFA Benefit Charge - Renewal	2	2	0	60%	71%	Kent and Valley Regional (King & Pierce)
Fire District Lid Lift	120	95	25	50%	62%	
Fire District EMS Levy	77	65	12	60%	72%	Average rate approved = \$0.46/\$1,000 AV
Fire District Benefit Charge - New	5	3	2	60%	72%	N. Highline; Shoreline & Snoqualmie Pass
Fire District Benefit Charge - Renewal	2	2	0	60%	78%	King County FD #10; Central Pierce F&R
City Fire Bonds	3	3	0	60%	67%	Bothell, Bremerton & Ephrata; Max. = \$35.5 Mil.
Other Fire Bonds	35	29	6	60%	69%	Range \$200,000 - \$80 million (East Pierce)

Source: MRSC Local Ballot Measure Data Base

Recent Ballot Outcomes

Elections Exclusively for Fire/EMS in Past 5 Years

- Overall results: 267/324 passed or 82% (with 68% "yes")
- Eastside Fire & Rescue (King County FD 10 & 38) RFA Election with Benefit Charge
 - April 2016: 56.8% yes; November 2016 = 58.5% yes
- King County FD #43/Maple Valley Fire Benefit Charge
 - August 2016: 59% yes; August 2017: 45% yes

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Impact on City Funding and Taxpayers

CWFD Net Expenses Allocated to Cities

	2018	2019	% Chg
Total CWFD Operating Expenses (1)	\$ 9,770,551	\$10,484,708	7.3%
<u>Less: CWFD Dedicated Revenue</u>			
ECFR EMS Revenue	\$ 450,076	\$ 461,537	2.5%
Ambulance Fees	\$ 1,288,918	\$ 1,290,084	0.1%
Mobilization Revenue	\$ 77,548	\$-	
Other Revenue (2)	\$ 148,982	\$ 142,868	-4.1%
Total CWFD Dedicated Revenue	\$ 1,965,524	\$ 1,894,489	-3.6%
Net CWFD Expenses (Taxpayer Funding)	\$ 7,805,027	\$ 8,590,219	10.1%
<i>(1) 2019 excludes capital expenditures and proposed new positions</i>			
<i>(2) 2019 excludes funding for capital expenses</i>			

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Impact on City Funding and Taxpayers

City EMS, Lid Lift and Net General Fund Support

				\$/1,000 AV	
	2018	2019	% Chg	2018	2019
Net CWFD Expenses (Taxpayer Funding)	\$ 7,805,027	\$ 8,590,219	10.1%		
Camas Net CWFD Expenses	\$ 4,698,626	\$ 5,179,902	10.2%	\$ 1.132	\$ 1.111
Less: Camas EMS Revenue	\$ 1,434,226	\$ 2,144,925	49.6%	\$ 0.346	\$ 0.460
Net Camas General Fund Support	\$ 3,264,400	\$ 3,034,977	-7.0%	\$ 0.786	\$ 0.651
Washougal Net CWFD Expenses	\$ 3,106,401	\$ 3,410,317	9.8%	\$ 1.624	\$ 1.610
Less: Washougal EMS Revenue	\$ 956,424	\$ 979,166	2.4%	\$ 0.500	\$ 0.462
Net Washougal General Fund + Lid Lift Support	\$ 2,149,977	\$ 2,431,151	13.1%	\$ 1.124	\$ 1.148
Total EMS Revenue	\$ 2,390,650	\$ 3,124,091	30.7%	\$ 0.394	\$ 0.461
Total General Fund + Lid Lift Support	\$ 5,414,377	\$ 5,466,128	1.0%	\$ 0.893	\$ 0.806
Total City Taxpayer Funding	\$ 7,805,027	\$ 8,590,219	10.1%	\$ 1.287	\$ 1.267

RFA or Fire District Levy

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Impact on City Funding and Taxpayers

Net General Fund Support: Add \$500,000 in 2019

				\$/1,000 AV	
	2019 Base	2019 + \$500K	% Chg	2019 Base	2019 + \$500K
Net CWFD Expenses (Taxpayer Funding)	\$ 8,590,219	\$ 9,090,219	5.8%		
Camas Net CWFD Expenses	\$ 5,179,902	\$ 5,481,402	5.8%	\$ 1.111	\$ 1.176
Less: Camas EMS Revenue	\$ 2,144,925	\$ 2,144,925	0.0%	\$ 0.460	\$ 0.460
Net Camas General Fund Support	\$ 3,034,977	\$ 3,336,477	9.9%	\$ 0.651	\$ 0.716
Washougal Net CWFD Expenses	\$ 3,410,317	\$ 3,608,817	5.8%	\$ 1.610	\$ 1.703
Less: Washougal EMS Revenue	\$ 983,115	\$ 983,115	0.0%	\$ 0.464	\$ 0.464
Net Washougal General Fund + Lid Lift Support	\$ 2,427,202	\$ 2,625,702	8.2%	\$ 1.146	\$ 1.239
Total EMS Revenue	\$ 3,128,041	\$ 3,128,041	0.0%	\$ 0.461	\$ 0.461
Total General Fund + Lid Lift Support	\$ 5,462,179	\$ 5,962,179	9.2%	\$ 0.805	\$ 0.879
Total City Taxpayer Funding	\$ 8,590,219	\$ 9,090,219	5.8%	\$ 1.267	\$ 1.340

RFA or Fire District Levy

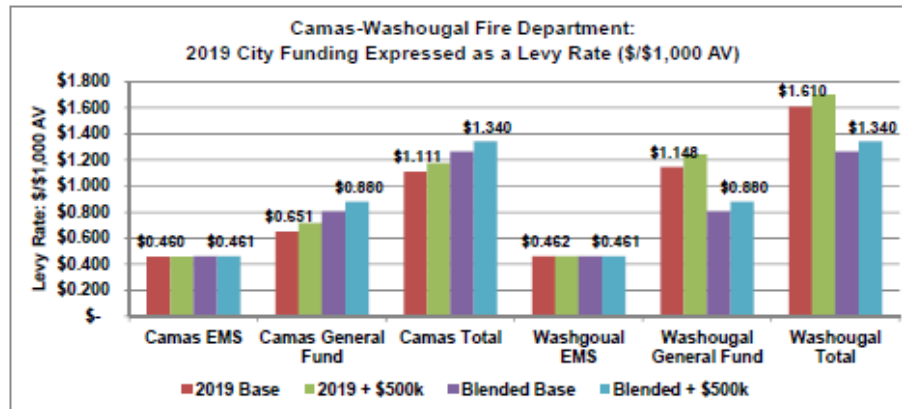
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Impact on City Funding and Taxpayers

2019 Levy Rate Equivalent



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Impact on City Funding and Taxpayers

Impact on City Net Property Tax Levy Revenue

	Camas	Washougal
Current City Levy Net with CWFD		
2019 Regular Levy	\$ 12,467,851	\$ 4,563,331
Less: City CWFD Funding	\$ (3,034,977)	\$ (2,427,202)
A: City Levy: Constant City Funding Level	\$ 9,432,874	\$ 2,136,129
Potential City Net Levy with RFA		
2019 Regular Levy	\$ 12,467,851	\$ 4,563,331
Less: RFA Levy Funding	\$ (3,755,770)	\$ (1,706,408)
B: City Levy: Constant Taxpayer Funding	\$ 8,712,081	\$ 2,856,922
Potential City Funding Surplus/(Deficit) with RFA: B - A	\$ (720,793)	\$ 720,793

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Impact on City Funding and Taxpayers

Impact on Taxpayer Funding

	Camas	Washougal	Combined
Current Taxpayer Funding for CWFD			
Current EMS Levy	\$ 2,144,925	\$ 983,115	\$ 3,128,041
Net General Fund: Regular Levy + Lid Lift	\$ 3,034,977	\$ 2,427,202	\$ 5,462,179
A: Total Taxpayer Funding for CWFD	\$ 5,179,902	\$ 3,410,317	\$ 8,590,219
Projected Taxpayer Funding for RFA			
RFA EMS Levy	\$ 2,150,827	\$ 977,214	\$ 3,128,041
RFA Regular Levy	\$ 3,755,770	\$ 1,706,408	\$ 5,462,179
B: Total Taxpayer Funding for RFA	\$ 5,906,597	\$ 2,683,622	\$ 8,590,219
Potential Taxpayer Increase/(Decrease) with RFA: B - A	\$ 726,695	\$ (726,695)	\$ -

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Impact on City Funding and Taxpayers

Possible Mitigation Strategy

- Washougal collects \$720,793 in its regular levy and transfers it to Camas
- Taxpayer shift of \$5,902 due to slight change in EMS levy rate
- Camas net funding is the same

	Camas	Washougal
Taxpayer Funding with RFA		
New Regular Levy: Current Less RFA Levy	\$ 8,712,081	\$ -
New Regular Levy: Current Less CWFD Funding	\$ -	\$ 2,136,129
Additional Washougal Regular Levy	\$ -	\$ 720,793
RFA Levy	\$ 3,755,770	\$ 1,706,408
RFA EMS Levy	\$ 2,150,827	\$ 977,214
Total Taxpayer Funding with RFA	\$ 14,618,678	\$ 5,540,544
Current Total Fire Taxpayer Funding with CWFD	\$ 14,612,776	\$ 5,546,446
Difference	\$ 5,902	\$ (5,902)
City Funding for Other Services with RFA		
New Regular Levy: Current Less RFA Levy	\$ 8,712,081	\$ -
New Regular Levy: Current Less CWFD Funding	\$ -	\$ 2,136,129
Additional Washougal Regular Levy	\$ 720,793	\$ -
Total City Funding with RFA	\$ 9,432,874	\$ 2,136,129
Current City Levy Funding: Excluding CWFD	\$ 9,432,874	\$ 2,136,129
Difference	\$ -	\$ -

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Impact on City Funding and Taxpayers

Levy Rate Assessment

	Camas	Washougal	
Levy Rates with RFA			
Current Regular Levy Rate	\$ 2.674	\$ 2.154	
Less: Projected RFA Regular Levy	\$ (0.805)	\$ (0.805)	
A: Adjusted City Regular Levy with RFA*	\$ 1.868	\$ 1.349	Required approach for a city fire district
<i>*Levy Rate Required to Make City Taxpayer Funding the Same With and Without RFA</i>			
Current Levy Rates			
Current Regular Levy Rate	\$ 2.674	\$ 2.154	
Less: Current CWFD Funding	\$ (0.651)	\$ (1.146)	
B: Adjusted Current Regular Levy Rate**	\$ 2.023	\$ 1.008	Well within statutory maximum rates:
<i>**Levy Rate Required to Make City Funding the Same With and Without RFA</i>			
Potential Levy Rate Increase/(Decrease) with RFA: B - A	\$ (0.155)	\$ 0.340	
Regular Levy Increase/(Decrease)	\$ (720,793)	\$ 720,793	

	Camas	Washougal
Maximum Levy Rates		
City Maximum Levy Rate	\$ 3.600	\$ 3.600
Less: Library District		\$ 0.500
Less: New RFA/Fire District	\$ 1.500	\$ 1.500
Adjusted City Maximum	\$ 2.100	\$ 1.600

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Impact on City Funding and Taxpayers

Other Considerations

- Agreements needed on transfer of assets and liabilities from cities to any new entity
- Analysis assumes current expenses for (and delivery of) support services
- Additional research needed for future funding of pension and retiree medical obligations
- Nothing is static: AV, annexation, service demand, etc.
- Unclear ability to mitigate over longer term

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Impact on City Funding and Taxpayers

Summary Observations

- Current taxpayer funding for Fire/EMS is roughly \$8.5 million or \$1.26/\$1,000 assessed value (AV) combined
 - EMS levy of \$0.46 and regular levy of \$0.80
 - Well below the maximums of \$0.50 EMS and \$1.50 regular
- Shifting to 100% funding from property tax shifts the burden of a joint fire department to Camas taxpayers
 - Washougal funding decreases \$727,000 or \$0.34/\$1,000 AV
 - Camas funding increases \$727,000 or \$0.16/\$1,000 AV

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Impact on City Funding and Taxpayers

Summary Observations

- Holding each city's taxpayers harmless would reduce Camas' regular property tax levy by \$721,000
 - Washougal gains levy capacity of \$721,000
- Mitigating the reduction in Camas' levy is feasible under an RFA while holding taxpayers harmless
 - Washougal levies higher amount and pays Camas
 - Washougal loses \$2.4 million in expense but only \$1.7 million in revenue – could levy & transfer higher amount

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Impact on City Funding and Taxpayers

Summary Observations

- What has changed?
 - Nearly identical EMS levy rates in 2019: blended rate is just \$0.001/\$1,000 higher than current rate in Camas
 - EMS levy rates will be different if/when AV growth differs
- Similar mitigation strategy could be used if Washougal annexed to a Camas fire district but timing and voter message would be more complicated
- Camas and Washougal regular levies would not be constrained if they formed an RFA or fire district

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Discussion

- Consolidation Organization Options Review
 - Current/Revised Interlocal Agreement
 - Regional Fire Protection Service Authority (RFA)
 - Municipal Fire Districts with Annexation or Merger
- Consolidation Funding Options Review
- Recent Ballot Outcomes
- Impact on City Funding and Taxpayers

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