2024 AGENCY EVALUATION

TUMWATER FIRE DEPARTMENT

Tumwater, Washington

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Emergency Services Consulting International
Helping Change the World, One Community at a Time

Contents

Background & Process

The City of Tumwater Fire Department, Washington, retained Emergency Services Consulting International (ESCI) to conduct an agency evaluation. ESCI is an international firm providing specialized, high-quality, and professional fire, EMS, police, and communications consulting services to organizations throughout the United States. ESCI, the trusted consulting arm of the International Association of Fire Chiefs (IAFC), has been meeting emergency service providers' needs since 1976. Consistently, ESCI provides innovative and sustainable recommendations that are readily understood by the public and valuable to elected officials for setting sound public safety policies. Utilizing consultants nationwide who are leaders in their respective fields, ESCI provides consulting services to municipalities, districts, non-profit organizations, and the industrial and commercial community.

ESCI's agency evaluation takes a "snapshot in time" of the emergency service delivery providers, reviews its structure, programs, processes, service delivery, and response performance in detail, and compares the current service to national standards, best practices, and the experience of ESCI's consultants. This process provides a gap analysis and can be used as the basis for a follow-up strategic planning process. The project involved a site visit, interviews with key elected and appointed officials, volunteer and career personnel, and evaluation of fire stations and apparatus, with findings summarized and key recommendations offered.

ESCI evaluated and reported on this project in two phases. Phase I includes the acquisition of background information, site visits with various stakeholders, organizational overview and planning processes, capital improvement program, management components, staffing, personnel management, service delivery and performance, training program, and final draft report and presentation. Phase 2 included a community-centered strategic planning process that sought feedback from organizational members and community stakeholders.

Executive Summary

Emergency Services Consulting International (ESCI) is pleased to present the findings and recommendations from our comprehensive Agency Evaluation of the Tumwater Fire Department (TFD). This project aimed to enhance the effectiveness and readiness of TFD by addressing key aspects of their emergency response services, community risk reduction programs, and specialized rescue programs. Below is a summary of the key project components and outcomes.

The project began with the foundational review of the critical data on community risk, demographics, incident response, department deployment, and emergency response system performance. The analysis provides TFD with insights into evolving risks, enabling them to allocate resources more efficiently and respond effectively to emerging challenges.

ESCI has compared industry standards and best practices against TFDs performance, covering a wide range of emergency response services, including fire suppression, code enforcement, and emergency management. These standards serve as a foundation for optimizing TFDs operational strategies and allocation of resources.

ESCI has projected anticipated population increase and service demand impacts expected in the City. In addition, increased service demands are expected from the natural growth of the population and with the addition of annexation into urban growth boundaries. This report provides actionable recommendations to enhance TFDs operational efficiency and service delivery.

TFD and ESCI have worked collaboratively throughout this project to gain a deep understanding of their unique challenges and needs. Our recommendations are tailored to align with TFDs mission to safeguard the City of Tumwater residents and visitors' emergency service deployment and risk reduction services. In addition, TFD has a companion document, the Customer Centered Strategic Plan, which guides the efforts of the organization to successfully implement many of the initiatives identified through the staff retreat and many of the recommendations in this report.

We are proud to have partnered with the City of Tumwater in this endeavor, and we believe that the outcomes of this project will empower TFD to continue providing the highest level of service to the community in a cost-effective manner.

The recommendations from our analysis begin on page 85 and outline several short-, mid- and long-term considerations. Recommendations range from adding staff positions in Community Risk Reduction, engine companies, and emergency management, as well as studying, planning, and constructing a third fire station to adequately provide distribution coverage for the community and potential urban growth boundaries.

Acknowledgments

Tumwater Fire Department Staff

Fire Chief | Brian Hurley

Assistant Fire Chief | Shawn Crimmins

Administrative Assistant | Erika Stone

Fire Training Lieutenant | Jon Kalar

Fire Prevention Officer | Mark Armstrong

City of Tumwater Governing Body

Mayor | Debbie Sullivan

City Administrator | Lisa Parks

Council Position #1 | Leatta Dahlhoff

Council Position #2 | Angela Jefferson

Council Position #3 | Joan Cathey

Council Position #4 | Eileen Swarthout

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Organizational Overview

History, Formation, & General Description

Tumwater is the oldest permanent American settlement on Puget Sound, founded in 1845, first named New Market, and renamed Tumwater in 1863[1]. In 1869, Tumwater was incorporated as a town.

The Tumwater Fire Department provides fire and emergency medical services from two stations that operate twenty-four hours per day. The Tumwater Fire Department was formed in 1928. Fire protection was first provided by the Olympia Brewery, which organized the Olympia Brewery Fire Department in 1903. In 1967, Munn Lake Fire District began contracting fire service through Tumwater. The Tumwater Fire Department participates in a mutual and automatic aid system, providing and receiving fire and emergency services in cooperation with surrounding jurisdictions and fire districts.

The Tumwater Fire Department provides Advanced Life Support (ALS) services to the city and surrounding jurisdictions and fire districts as a contract provider within the Thurston County Medic One system. Basic Life Support transport services are provided through private ambulance companies.

Accreditation & ISO

The Commission on Fire Accreditation International (CFAI) offers an accreditation program that is designed to assist fire and emergency service agencies around the world in achieving excellence through self-assessment and accreditation. This accreditation process includes:

- **Self-Assessment:** Enables agencies to critically review their performance and services against internationally accepted benchmarks.
- **Quality Improvement:** Emphasizes a continuous improvement model that ensures that fire departments remain up to date with the evolving challenges and maintain the highest quality of service to their communities.
- **Peer Review:** As a part of the accreditation process, peer assessors review the department's self-assessment and conduct an on-site visit to validate the department's practices and performance.

The Tumwater Fire Department is not accredited by the Commission on Fire Accreditation International (CFAI).

The Insurance Services Office (ISO) Public Protection Classification (PPC) Rating is a system used to reflect a community's local fire protection for property insurance rating purposes. Washington State subscribes to a separate not-for-profit independent public protection

[1] ci.tumwater.wa.us

classification company called the Washington Survey and Rating Bureau (WSRB), which closely follows the ISO Fire Protection Rating Schedule. TFDs rating this year improved from a PPC 4 to a PPC 3, which will be effective July 1, 2024.

- The PPC rating is on a scale from 1 to 10, with 1 being the best and representing superior property fire protection, and 10 indicating that the area's fire-suppression program does not meet ISO's minimum criteria.
- Evaluation Criteria: The rating assesses various factors, including fire department capabilities (equipment, staffing, training, and geographical distribution of firehouses), water supply (availability and distribution), emergency communication systems (911 systems, equipment, and operator training), and fire safety control (fire code and building code enforcement, fire investigation, and public education programs).
- Insurance Impact: Insurance companies use PPC ratings as part of their decision-making when deciding coverages and rates for personal or commercial property insurance. A better PPC rating often translates to lower premiums, given that a superior rating indicates a more effective fire response and, potentially, reduced fire damage.
- Community Value: Beyond insurance, a good PPC rating can be a point of pride for a community and fire department, reflecting the effectiveness and efficiency of its fire protection services.

Service Area Population & Demographics[2]

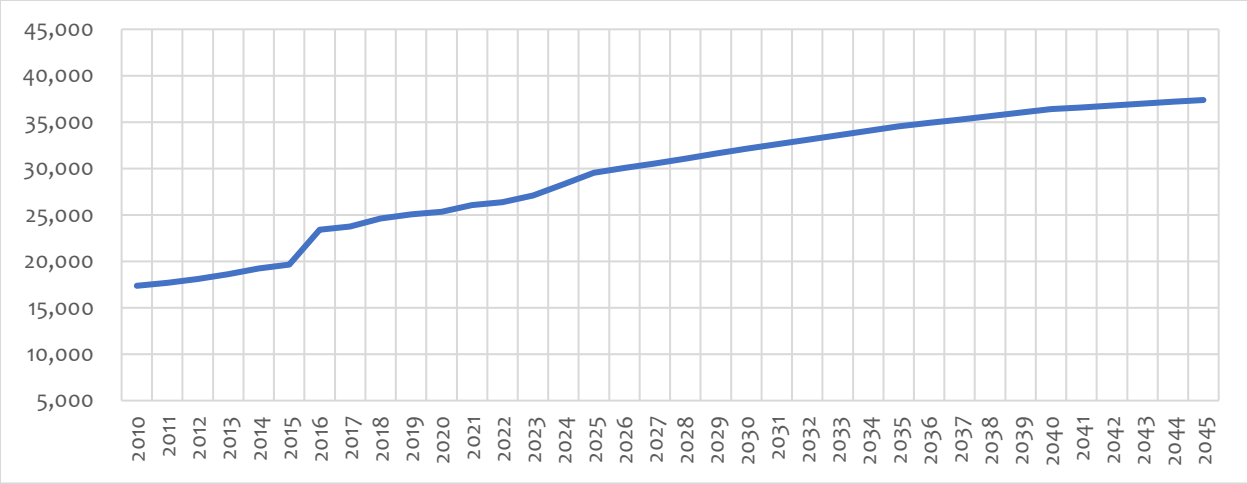
The Tumwater Fire Department community has been through a fairly rapid transformation over the last thirteen years (2010 to 2023). The average annual population growth rate has been 3.57% over that period, beginning in 2010 with 17,371 and ending with 27,100 residents in 2023.[3] This growth is also reflected in a relatively high population density of 1,524 people per square mile, suggesting a dense, vibrant community.

The Thurston County Regional Planning Council, whose purpose is to carry out regionally focused plans and studies on topics such as transportation, growth management, and environmental quality, has produced Population projections for the City of Tumwater that are estimated through 2045 and provide a variable range of growth projections. The Following figure demonstrates the average growth at 1.48% year over year from 2023 to 2045. The estimated City of Tumwater population in 2045 is 37,381 persons.

[2] ArcGIS Community Profile Tool

[3] Thurston Regional Planning Council: Population, Housing, and Employment Data

Figure 1: TCRPC Population Estimates for the City of Tumwater



The median household income stands at a robust $81,369, which suggests a predominantly middle to upper-middle-class demographic. The community's preference for homeownership is evident, with 11,970 homes in the city limits, with 58% single-family residences, 35% multi-family, and 7% manufactured homes.[4] An additional 1,210 homes are located within the City of Tumwater's Urban Growth Area (UGA).

In the context of ArcGIS and its community profile tools, the diversity index is a measure designed to reflect the racial and ethnic diversity within a given area. This index is based on the premise that in a highly diverse area, there's a greater chance that two randomly selected individuals will belong to different racial or ethnic groups. The diversity index used in ArcGIS Community Profiles typically ranges from 0 to 100, where a higher number indicates greater diversity. The City of Tumwater's diversity is modest, with an index of 51.5, which may reflect a community that is somewhat diverse but likely has a dominant cultural or ethnic group.

A concerning community demographic that has shown to impact emergency services is that Tumwater has 899 households falling below the poverty level and 316 households relying on public assistance income, highlighting areas where social services could be focused.

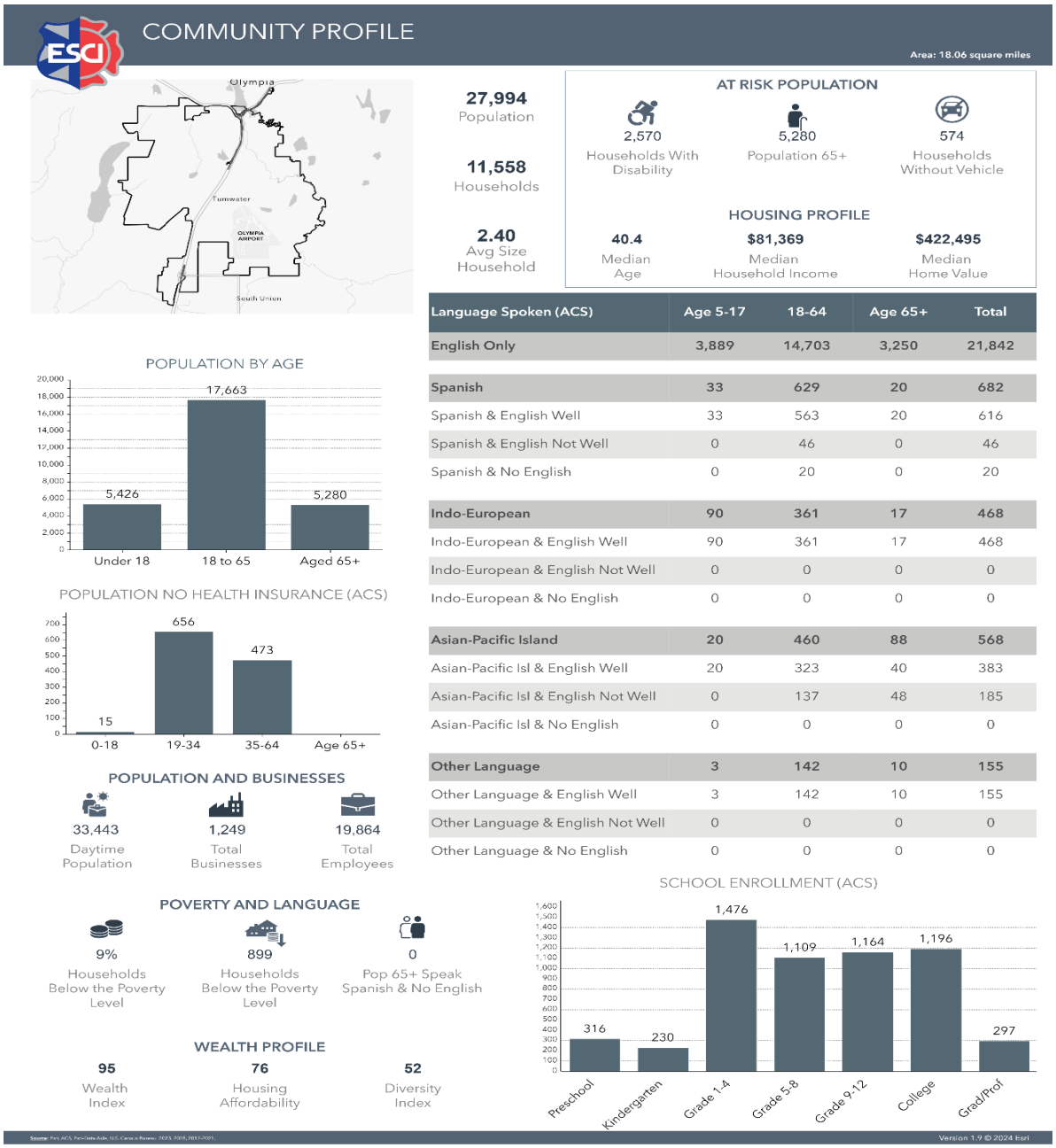
The educational attainment is commendable, with 3,108 individuals holding graduate or professional degrees and 5,472 with bachelor's degrees. These figures could point to a well-educated workforce, which is further evidenced by a daytime population of 33,443 — significantly higher than the resident population — suggesting that this community is a hub for employment and commerce.

The number of households with one or more persons with a disability stands at 2,570, indicating a significant portion of the population that may require additional support and accessible infrastructure. Interestingly, there is a negligible non-English-speaking

[4] Thurston Regional Planning Council: Population, Housing, and Employment Data

population, which can have implications for the community's language services and integration policies. This diversity in housing can attract a wide range of demographics, from young professionals to seniors — of which there are 5,282, indicating a notable senior presence in the community. Educational enrollment is well-distributed across all educational levels, indicating a healthy, functioning school system.

Figure 2: Tumwater Community Profile



Language Spoken (ACS)	Age 5-17	18-64	Age 65+	Total
English Only	**3,889**	**14,703**	**3,250**	**21,842**
Spanish	**33**	**629**	**20**	**682**
Spanish & English Well	33	563	20	616
Spanish & English Not Well	0	46	0	46
Spanish & No English	0	20	0	20
Indo-European	**90**	**361**	**17**	**468**
Indo-European & English Well	90	361	17	468
Indo-European & English Not Well	0	0	0	0
Indo-European & No English	0	0	0	0
Asian-Pacific Island	**20**	**460**	**88**	**568**
Asian-Pacific Isl & English Well	20	323	40	383
Asian-Pacific Isl & English Not Well	0	137	48	185
Asian-Pacific Isl & No English	0	0	0	0
Other Language	**3**	**142**	**10**	**155**
Other Language & English Well	3	142	10	155
Other Language & English Not Well	0	0	0	0
Other Language & No English	0	0	0	0

The Tumwater community showcases several distinctive characteristics when compared to Thurston County. These features highlight the community's unique demographic, economic, and social landscape. The community demonstrates a robust engagement with homeownership, a strong education profile among its adult population, and a significant daily population shift, indicating a dynamic local economy with a substantial influx of non-residents during the day. Despite these strengths, it faces challenges with a higher percentage of households below the poverty level and a considerable segment of the population with disabilities. The overall picture is one of a community that is economically active and relatively well-off but not without its share of social challenges that require targeted interventions.

Key Comparisons from the Bureau of Labor of Statistics 2020 Census:

- Lower Percentage of Households with a Disability: 22% (City of Tumwater) vs. 26% (Thurston County)
- Larger Daily Population Shift: 119% (City of Tumwater) vs. 94% (Thurston County)
- Equal Percentage of Households with Public Assistance.
- Slightly lower Percentage of Households Below Poverty Level: 8% (City of Tumwater) vs. 9% (Thurston County)
- Higher Percentage of Renter Occupied Units: 40% (City of Tumwater) vs. 31% (Thurston County)
- Lower Percentage of Owner Occupied Units: 60% (City of Tumwater) vs. 69% (Thurston County)
- A slightly lower Percentage of Homes Using Gas Appliances needing CO Alarm: 32% (City of Tumwater) vs. 34% (Thurston County)
- Slightly higher Percentage of Households without a Vehicle: 2% (City of Tumwater) vs. 1% (Thurston County)
- Comparable Percentage of School-aged Population (Grades 1-8): 9% (City of Tumwater) vs. 9% (Thurston County)
- Slightly lower Percentage of High School Age Population: 4% (City of Tumwater) vs. 5% (Thurston County)
- Higher Percentage of Population with College Degree: 31% (City of Tumwater) vs. 28% (Thurston County)

Description of the Current Service Delivery Infrastructure

The Tumwater Fire Department operates from two fire stations and staffs an additional ALS Medic Unit 14 located in a West Thurston Regional Fire Authority Station, 16 miles south of the City of Tumwater. The department responds to a variety of emergency and non-emergency incidents utilizing two engine companies, three transport units, and some specialized equipment. Four shift supervisor positions were recently upgraded from Captain to Battalion Chief in order to provide an enhanced level of supervision. This has resulted in coordinated expectations of leadership and management across each shift while mitigating performance issues.

Emergency Medical Services

The Department responds to Advanced Life Support (ALS) and Basic Life Support (BLS) incidents in the city and through mutual aid in the surrounding communities in Thurston County. The EMS system is managed by a component unit of Thurston County government known as Medic One, which provides financial support and oversees the performance of the provision of paramedic and EMT ambulance services. Fire departments and fire districts throughout Thurston County deliver the services for which they are contracted to provide. Tumwater FD staffs one ALS transport unit in station T1 and one ALS transport unit located in the West Thurston Regional Fire Authority Station. A private ambulance service responds and manages BLS transports.

Medic One provides 80% of the cost of 9.5 paramedic personnel for Medic 5 and one Medical Services Officer (Battalion Chief). Medic One provides 89% of the cost of 9.5 paramedic personnel for Medic 14. Medic One also provides 100% of the costs of the transport units and associated equipment, including stretchers, AEDs, etc., as well as all EMS supplies, funded through an EMS levy approved by the voters.

Special Operations

All TFD personnel are trained at the Hazardous Materials Operations level to manage routine fuel leaks, other minor releases, etc. More serious incidents require a Level A hazardous materials response, which Joint Base Lewis-McChord (JBLM) provides. The readiness of the hazmat response can be delayed due to the mobilization and travel distance (approximately a 30-minute travel time) of JBLM resources.

TFD does not have its own internally organized special operations team. Various TFD personnel are trained at basic levels in disciplines that include technical rescue, water rescue, and vehicle rescue. Advanced technical rescue services such as swift water, high and low angle, trench, confined space, and structural collapse are provided through an Interlocal Agreement of Thurston County agencies in a county-wide effort to produce the Special Operations Rescue Team (SORT). Various agencies and personnel will simultaneously deploy

to the scene, while others will meet at an assembly point to access equipment and apparatus and respond to the incident site.

Wildland Firefighting

In recent years, many people across the nation have understood the dangers and damaging effects that wildland fires cause across the Midwest and the West Coast of the United States, and those dangers are no different in Washington. Wildland fires are becoming increasingly common as development creates increasing urban interface areas. The definition of wildland–urban interface is changing and is now a risk for most communities. NFPA 1710 states that when dispatched to a wildland incident, a minimum of two personnel shall be dispatched, and any additional units responsible for delivering and pumping water shall be staffed with a minimum of four personnel.[5]

The city of Tumwater has a wildland–urban interface risk and responds to mutual aid wildland incidents. It also sends Rapid Extrication Module Support (REMS) personnel on state and regional wildland deployments. However, the department has limited wildland firefighting capabilities. Slightly more than 50% of the personnel are certified to the level of National Wildfire Coordinating Group firefighter I (Red Card) certified. The department is currently undergoing training and expects to have all its personnel Red Card certified by the end of 2024. The department generally issues wildland shirts, helmets, and shelters. Still, it lacks the full complement of personal protective equipment for personnel to fully engage in wildland incidents beyond the initial attack phase (1 Hour).

Fire Inspections

The TFD has one Fire Prevention Officer (FPO), who is supported by the Department Assistant. The FPO is primarily responsible for the department's fire prevention and risk reduction program. The FPO conducts fire code inspections in the City of Tumwater but has limited capacity and is unable to complete all required annual inspections. Shift staff assist with limited types of inspections but still fall short of meeting the fire inspection impacts.

The Building Official in the Community Development office serves as the City's Fire Life Safety Official. This position fulfills many of the city's traditional fire marshal duties, performing all the plan reviews for fire and life safety provisions, sprinkler and fire alarm design, and specialty systems. The involvement of the fire department, either through the FPO or Fire Chief, has been intermittent, resulting in less than fully coordinated response to identifying issues related to fire protection components. Although the fire department is consulted on plan reviews when requested, the department does not have any responsibility in this area of service. TFD charges for inspections on the first (Initial) inspection of a business when performed but does not invoke a comprehensive fire code fee schedule.

[5] NFPA 1710: Organization and Deployment of Fire Suppression Operations by Career Fire Departments, Section 5.7.2.3

Fire Investigations

The TFD utilizes shift officers and mutual aid partners who are certified in fire investigations to conduct investigations of fires. A fire resulting in minimal damage or property loss is the responsibility of the shift officers to investigate, referencing NFPA 921 and 1033. Shift officers typically investigate approximately 23 fires annually.

Currently, mutual aid resources of certified fire investigators are utilized in instances where significant damage, property loss, or fatality occurs or suspicion of arson. Two TFD personnel are currently in training to become certified fire investigators.

Office of Emergency Management (OEM)

The Fire Chief serves as the Emergency Manager for the city according to the city's code. The city's Emergency Management Group is made up of various city agency directors. The Chief meets regularly with other emergency managers in surrounding communities. Based on a cursory assessment of the emergency management program, it appears that the city is unable to meet the demands to adequately achieve the four phases of emergency management: preparedness, mitigation, response, and recovery.

The Emergency Operations Center (EOC) for the city is located at TFDs Station T1, situated in a small conference room that cannot support the staff and personnel needed in the event of an EOC activation in response to an event. A larger training/meeting room in Station 1 might afford the capacity to operate the EOC. However, it is not equipped with all the necessary technologies to support a modern EOC properly. To effectively meet the emergency management expectations, additional staff and resources should be considered.

City employees who are assigned to staff the City's EOC should obtain the following certifications to be compliant with NIMS certifications standards and best practices:

- ICS 100 – Introduction to the Incident Command System
- ICS 200 – ICS for Single Resources and Initial Action Incidents
- ICS 700 – National Incident Management System, An Introduction
- ICS 800 – National Response Framework
- ICS 300 – Intermediate ICS for Expanding Incidents (management and personnel reporting to the EOC)
- ICS 400 – Advanced ICS for Command and General Staff (management and personnel reporting to the EOC)

The City's goal is to evaluate the training and qualifications of the city staff, identify the gaps, and implement a thorough NIMS training program that includes tracking progress.

In addition, all the fire department personnel within the Tumwater Fire Department are trained and certified to the ICS 100 and 200 level. Ninety-five percent of fire personnel have obtained the ICS 700 level, and 30% have obtained ICS 800 certification. The Chief Officers and a few other personnel are certified at the ICS 300 and 400 level. A future goal is to require all fire officers to obtain ICS 300 and 400 in the next few years.

The City of Tumwater was party to an Interlocal Cooperative Agreement with Thurston County Emergency Management Council for the purpose of advising each other in the emergency management functions of preparation, mitigation, response, and recovery. The agreement outlines that participants are to meet regularly, with meetings held monthly. The agreement has expired; however, the county is working on an updated agreement that the City of Tumwater intends to consider in June 2024.

Community Risk Reduction (CRR)

The TFD lacks a robust CRR program. The Fire Prevention Officer (FPO) is assigned to lead and manage the department's CRR activities supported by a Department Assistant but is primarily focused on managing the fire inspection program, leaving little time to dedicate to public education. The department conducts Fire Extinguisher and Hands-Only CPR classes for eighth-grade students annually. Engine company crews conduct preplanning activities, and the shift Battalion Chiefs coordinate smoke detector installations. The Chief is hopeful of hiring an Assistant Fire Chief to lead and manage the CRR program, providing greater importance and focus to the mitigation of community risks. The Chief expects to have the new position begin by conducting a community risk assessment and fully developing a robust set of targeted prevention programs.

Governance And Lines of Authority

The City of Tumwater operates in a Mayor-Council form of government. Seven elected Council members serve as the legislative body, providing the mayor with policy guidelines and performance objectives. The city government is led by a city administrator who is responsible for implementing policies and procedures and daily operations.

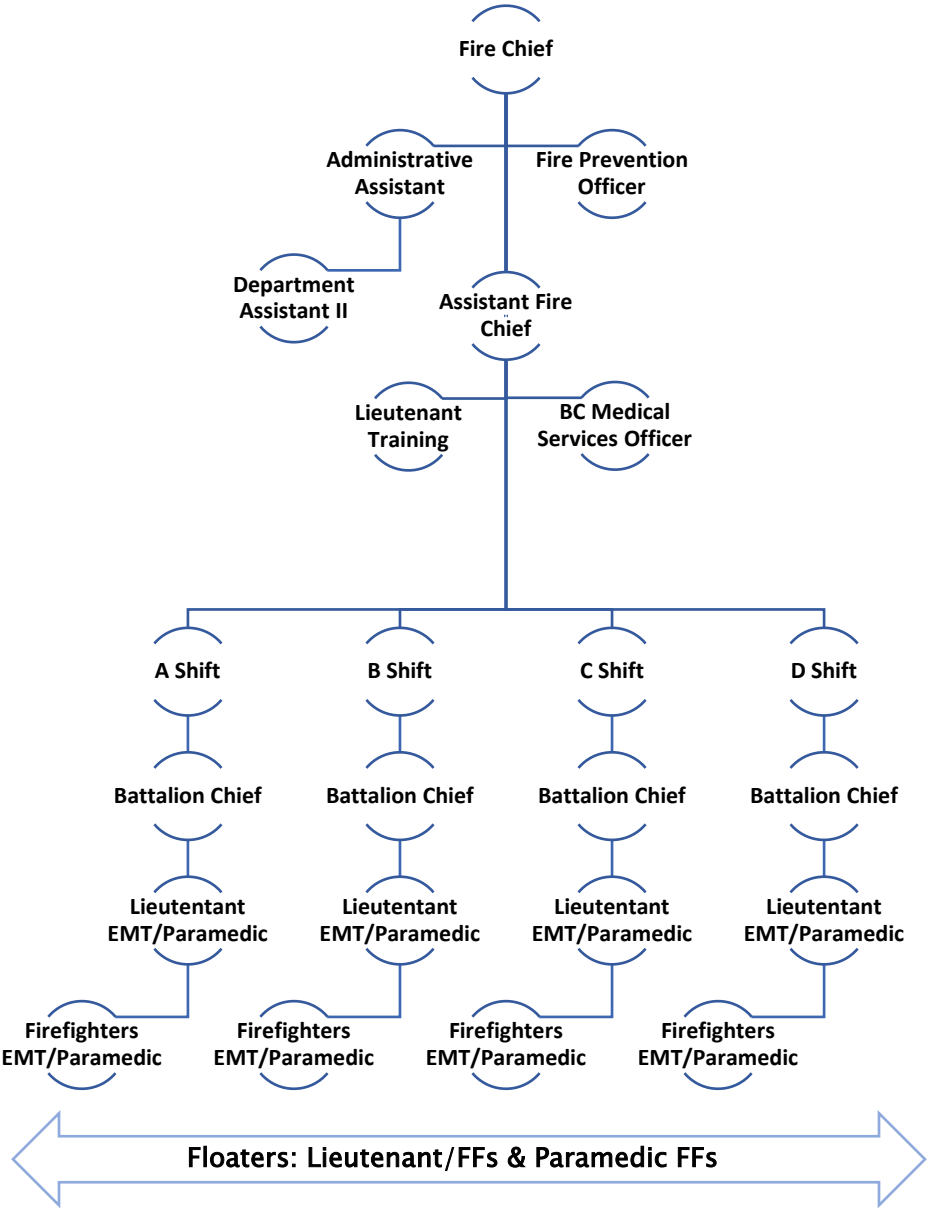
Foundational Policy Documents

The department utilizes Lexipol to assist in developing and managing the department's policies and procedures. The Assistant Chief is tasked with reviewing, revising, and issuing the updated policies and procedures. The process of integrating Lexipol policies is a significant undertaking and requires enormous staff hours to draft, review, and redraft. Administrative support for this endeavor will be required to support the Assistant Chief of Operations with the effective implementation of this program.

Organizational Design

The Tumwater Fire Department is designed much like many other fire service organizations of this size and scope. It is reasonably developed to both maintain the span of control and unity of command.

Figure 3: Tumwater Fire Department Organizational Structure



Operating Budget, Funding, Fees, Taxation, & Financial Resources.

The City of Tumwater uses a biennial budget process where a budget is adopted for the following two years in an even number of years. The Council and Mayor provide the budget goals with insight from the City's department directors. The 2023–2024 biennial overall general fund budget for the City is $80,421,748, while the fire department's budget is $20,399,539, comprising 25% of the City's overall general fund. Meanwhile, TFD expenses have increased by 7.7% per year for the last 20 years. (According to the Finance Director)

The City's General Fund budget relies largely on taxes (property, sales, utilities, etc.) for income. A Levy Local Improvement District (LID), bonds, and fees are additional possible sources of revenue. The city, in general, is operating on a constrained budget that requires that goals be prioritized across all city departments. Currently, the residential and industrial construction in the city is strong, increasing revenues from permits and new construction property tax.

The City's 2022–2027 Capital Improvement Plan has a total projected funding of $68,526,000 over the five years. This plan allows for $900,000 in 2025 for a fire engine, a total of $130,000 for station T1 improvements in 2026 and 2027, and $122,000 in 2026 for a new digital alerting system. Three of the four planned fire engine purchases were funded through a levy LID lift in 2011.

TFD has an Interagency Agreement with the Washington State Patrol, which allows TFD to be reimbursed for allowable costs incurred during a mobilization to a disaster or wildfire. The Washington State Fire Services mobilization plan establishes a structured policy and organization for statewide resource mobilization in large-scale emergencies. This plan grants specific powers to the chief of fire services, allowing for the coordination of resources across the state. Key provisions include financial compensation for state and local fire jurisdictions mobilized under this plan, as well as for host fire departments that have depleted their resources and local mutual aid.

Management Components

Effective department management is a complicated challenge for service leaders as they must effectively address management complexities that include setting and measuring service levels, staying in front of new technologies and best practices, evaluating and maintaining a qualified workforce, developing staff for effective promotion, and ensuring financial sustainability for the community.

To be effective, the management of a department needs to be based on several components. These include a clearly stated *mission* (the fundamental purpose of an agency), a *vision* for the future (where the organization is going), and the *values* or *guiding principles* (how the organization will treat its members as it navigates from its current state to its desired state). From these fundamental elements, the organization evaluates the environment it operates within and establishes a series of strategic initiatives, goals, and objectives. These elements combine to form a strategic plan.

Mission, Vision, Strategic Planning, Goals, & Objectives

In February 2024, ESCI team members facilitated a two-day strategic planning session with personnel from the Tumwater Fire Department, including the Fire Chief and fire personnel representing various levels of the organization. Participants were asked to provide input in the following areas: what is the department currently doing well that the department should continue; what is the department doing that it should improve upon; what is the department doing that it should stop doing; and what should the department start doing. This information was used to guide the participants in developing elements of the strategic plan. Revised Mission and Vision Statements and organizational Values were updated.

Mission Statement:

"Providing excellent public service through compassion and dedication."

Vision Statement:

We will lead through innovation, education, and integrity while serving the evolving needs of our diverse community.

Values: C-I-T-E

Compassion: Serve others with respect, empathy, and humility.

Innovation: Fostering an environment with professional and personal development opportunities encompassing physical and mental wellness.

Trust: We recognize an inherent trust from our community and peers built upon integrity, individually and as a team. High-functioning and successful teams are dependent on trust.

Empowerment: Empowerment promotes accountability and responsibility. Together, these values create a framework for fostering autonomy, integrity, and effectiveness within individuals and the organization.

From this session, six goals were developed with objectives and tasks for each goal. The goals are communications, fire department deployment (response), enhanced training programs, review of recruitment, hiring, and retention practices, improved employee wellness, and improved service levels through strengthening cooperative services.

External Communications Processes

The Fire Chief takes the lead on external communications with the community, and the department utilizes the city's communications staff when needed. The department has a Facebook page that is used to promote safety and share important information about the department. One thousand eight hundred people follow the Tumwater Fire Department's page, while the City of Tumwater's Facebook page has 11,000 followers.

Document Control & Security

All the department's documents are stored electronically. Passwords are required to access the network where the documents are stored. Paper copies of personnel files (Disciplinary records, Annual Evaluations, Employment documents, etc...) are kept with the Human Resource Department, under lock and key.

Reporting & Recordkeeping

The Tumwater Fire Department employs various records management systems for record-keeping and reporting.

- Policies and Procedures: Lexipol
- Incident Response: ESO
- Fire Training: Fire-Rescue-1 Academy Learning Management System (LMS)
- EMT and Paramedic Training: EMS Academy LMS
- Pre-fire Plans: First Due

ESO is used to capture and maintain records on incident responses and for capturing fire inspections. The FireRescue1 Academy online learning management system (LMS) is utilized to capture and provide reports on the department's fire training. The EMS1 Academy online LMS is used to deliver and capture EMT and paramedic training for the department's providers. TFD uses Lexipol to store and provide access to all internal policies and procedures. First Due is the department's pre-fire platform.

Financial Controls

Tumwater Fire Department staff follow the City's system of internal controls for finance. Assigned personnel review invoices for reasonableness and authorization limits, determine the ledger codes, and enter them into the system for payment. Through an automated function, the invoice is routed to the next level for approval. The Fire Chief is notified and must approve any expenditure over $1000. Once approved, the invoice is routed to the City's Finance Department for approval. If the documentation is accurate and acceptable and the coding is correct, the invoice is processed for payment. Larger payments may require review from the Finance Director or City Administrator prior to making the purchase.

Tumwater Fire Department staff have the latitude to purchase day-to-day things such as fuel, small tools, and other operating items. Larger purchases that invoke bidding requirements or require a contract to be signed follow a different procedure: Fifty Thousand dollars or less can be approved by the Fire Chief, while the mayor must sign any purchases greater than $50,000 after Council approval.

The city is audited regularly by the Washington State Auditor's Office, which focuses on internal controls, compliance, and risks of fraud and abuse.

Security

The security of the department's facilities and equipment is an important element of a fire and emergency services agency. A significant investment of public dollars is provided for the delivery of these services; therefore, precautions must be taken to protect those investments from loss, vandalism, or protection from weather.

TFDs stations both have CCTV and are secured by a key lock. Station T2 also utilizes a keypad for entry. Neither station has security fencing allowing uninhibited access to the parking lots and exterior areas. Computers are secured inside the buildings or vehicles, and personnel must have keys to access them. Personnel at station T2 report that unhoused individuals have been found charging their cell phones using the outside outlet at the station's front entrance.

Emergency apparatus are typically stored inside the stations when not responding to incidents or handling other daily tasks. Some vehicles not used for responses to incidents are also stored inside a station. A few staff vehicles are assigned as take-home vehicles, and some older units are stored outside of the station when not in use, making them vulnerable to vandalism and environmental wear.

Information Technology Systems

Tumwater Fire Department uses the City's Information Technology (IT) department for its IT support. TFD has a close working relationship with the City's IT department, and as reported, the department is understaffed, but it is still responsive to TFDs needs. Support for TFDs apparatus modems is handled by Thurston County Medic One's IT department. Below is a list of software systems currently in use. Most of them operate independently from each other.

Figure 4: Tumwater Fire Department Software Systems

Solution/Program	Use	Usage	ESCI Perspective
ESO	EMS/NFIRS Reporting	Daily	Appropriate
FireRescue1	Fire Training	Daily	Appropriate
EMS1	EMS Training	Daily	Appropriate
First Due	Fire Pre-Plans/Call Dispatch	Daily	
Active 911	Call Dispatch	Daily	Appropriate
Crewsense	Shift Scheduling	Daily	Appropriate
Lexipol	Department Policies	Weekly	Appropriate
MS365	Memos/Projects	Daily	Appropriate
MS Teams	Virtual Meetings	Daily	Appropriate
Zoom	Virtual Meetings	Daily	Appropriate

Organizational Planning Processes

Review & Evaluate the Adequacy of the Current Planning Process

Nationally, the fire service creates and gathers large volumes of data in the performance of 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 and efficient.

Internal Assessment of Critical Issues

Financial

The Fire Department is approximately 25% of the City's general fund budget. The city will continue to face growing expenditures with limited revenue sources. Consideration may need to be given to additional revenue for public safety through a levy lid lift. The last public safety lid lift was passed in 2011.

Crisis Response and CARES Program

TFD is not unique in that many of our responses are for community members who do not have medical emergencies but are in crisis and need support resources that are not currently available for immediate response. Thurston County, Olympia, and Lacey all have some form of crisis response team. A crisis response program would support both police and fire response in Tumwater. The Fire Department also sees several individuals who have chronic medical or other issues that, in some cases, lead to frequent calls for service from the department. A Community Assistance, Referrals, and Education Services (CARES) program could provide a mechanism for response crews to refer non-emergency patients to qualified support staff who could assist with their needs. The CARES program was developed to help departments aid community members who have non-emergency issues managed and mitigated prior to becoming an emergency. This could include sending a nurse and a social service worker to a community member who may be experiencing an issue that doesn't rise to the level of an emergency. The Olympia Fire Department is establishing a CARES program, and Tumwater has indicated a desire to partner with that program.

Wildland Firefighting

The changing climate has led to an increase in the potential of significant wildfires in Tumwater and Thurston County, as well as the State. Wildfire risk has been recognized in local hazard mitigation plans and recently proposed building code updates. For the last several years, Tumwater Fire has worked to train staff in wildland firefighting with Red Card certification. Not all staff members have been trained. TFD is working to purchase appropriate wildland PPE and equipment. Discussions have identified the desire and need to purchase a brush unit and water tender. Tumwater Fire units are dispatched throughout the fire season to incidents throughout the County. Personnel need to be properly trained

and equipped. Currently, TFD does not participate in State mobilizations other than REMS deployment of single personnel.

Community Risk Reduction

Currently, TFD has one fire prevention officer (FPO), who is supported by a Department Assistant, to support fire prevention and risk reduction. The FPO is a certified code inspector and Fire Life Safety educator. The FPO does code inspections in the city but cannot inspect all businesses annually. The FPO also coordinates fire extinguisher training. Shift Battalion Chiefs generally coordinate smoke detector installations. Currently, the City Fire Life Safety Official is the Building Official in Community Development. The building official reviews all the plans and fulfills many of the city's traditional "Fire Marshal" duties. The FD wants to build a more robust community risk reduction program with an Assistant Chief of CRR who would manage the duties of the Fire Marshal as outlined in the International Fire Code.

Health and Safety

Staff are perpetually facing threats to both physical and emotional well-being. The Department needs to ensure that proper training and equipment are being provided to staff to mitigate threats. Annual physicals have been implemented. Although the TFD and its union fully support PEER support efforts in the county, the department should consider the utilization of various resources, such as employee assistance programs, IAFF behavioral health awareness training, regional training, etc. Post-traumatic stress has been recognized as a presumptive illness under the State Worker's Compensation statute.

Internal Assessment of Future Challenges

Staffing

The City continues to grow, and with that comes increased call volume. Response times have been increasing, and around 1/3 of the time, the department has multiple calls. Consideration will need to be given to future resource needs. This may include an additional station or units. As staffing levels increase, additional units, such as an EMS unit, could be staffed. Personnel could be used to cross-staff a brush unit or tender. The goal would be to eventually hire enough staff for full-time staffing of a 3rd engine with that unit sited in a new station.

Emergency Management

Currently, the Fire Chief is the Emergency Management Director for the City. Support is needed for this program to be effective. Consideration should be given to providing support staff for this position to enhance planning development support, deliver required and necessary training, and assist with researching and applying for grants to support overall emergency management activities and needs.

Review Elements of Organizational Planning

Operational Planning

Operational planning involves the development of pre-fire plans for hazards within the community or regional response plans such as mass-casualty incident plans, hazardous materials plans, active shooter plans, etc. TFD utilizes the pre-incident planning function of its record management software. This function creates a user-friendly document that identifies a variety of information regarding the reported location:

- Responsible party name and contact information
- Occupancy type, history, and future uses
- Information on the size and construction of the building
- Relevant firefighting information

However, pre-incident planning within the TFD operational footprint could use improvement. The TFD operational staff's capacity to conduct pre-incident planning with their companies is directly related to the notably limited fire prevention staff capacity. Company officers conduct pre-incident planning, although not scheduled regularly due to operational workload.

In the cursory review of the TFDs policy manual, it was noted that Policy 301 – Emergency Response provides general directions for the department to respond to all emergency calls and discusses the manner in which personnel will respond and their general responsibilities. Also, only three policies provide direction on specific incidents; however, there are a number of other types of incidents that require guidance.

Tactical Planning:

Developing strategies for potential emergency incident response and internal projects is known as Tactical planning, which includes preventative maintenance and inspection programs, mass casualty, snow removal, and active shooter plans. These tactical plans support the broader operational and strategic goals and the department's mission.

Emergency incident response policies are currently being drafted. Once developed and approved, they will be issued to the department personnel through the Lexipol platform.

There are no specific regional response policies or procedures, but Thurston County fire departments subscribe to the Blue Card Incident Command system. In addition, TFD utilizes C3 Pathways for regular active shooter training, and Thurston County has a county-wide Mass Casualty Incident plan that includes active shooter. The dispatch center will implement a High Incident Response Load plan when they are inundated with calls, and TFD will self-dispatch to respond to non-priority incidents.

Administrative Planning

Administrative planning consists of forecasting the organization's needs through the lens of people, equipment, and community organization. Administrative planning comprises succession planning, capital equipment planning, and community development plans.

Succession Planning

This process begins with identifying the critical positions within your organization and developing action plans for individuals to assume those positions in the future.

Tumwater Fire Department is challenged with providing succession planning as the administrative time between the fire department and human resources is limited. The Fire Chief has identified the positions of Fire Prevention Officer, Fire Training Lieutenant, and Emergency Manager as critical positions that need enhanced support to meet the short-term and long-term needs as well as provide an opportunity for more comprehensive overall planning, including succession planning.

Community Development Planning

These plans are typically called comprehensive or general plans and are performed by the city's Community Development Department, which the City Administrator oversees. The Comprehensive Plan guides long-term physical development and planning for the city. This plan influences the department's service area through the zoning and development approval process.

The city has been working on a habitat conservation plan for the last 10 years and needs to complete this project. The Community Development Office updated the Hazard Mitigation Plan for Tumwater, which is an annex of Thurston County's plan.

Organizational Planning

Organizational planning is also essential and is often overshadowed by emergency response planning efforts. Organizational planning involves two primary types of plans: Master and Strategic.

Master Planning

A comprehensive analysis of the fire department's programs and processes is looking forward 10-15 years so that the department is able to manage and anticipate community growth and service demands. In 2019, ESCI conducted a regional fire and emergency services study for the City of Tumwater, reviewing service delivery from the departments in Thurston County. Findings from this study can be utilized in future planning efforts. Recently, a Regional Fire Authority plan was considered and developed to consolidate regional partners, predominately the City of Olympia. The residents did not approve of the ballot measure, so the effort is being reserved for future consideration.

Strategic Planning

Tumwater Fire Department developed a strategic plan for 2016–2021 and engaged ESCI to update its strategic plan. The updated plan will provide an internal and external evaluation of the current conditions, develop initiatives, goals, and tasks, as well as organize and obtain commitment from the members in advancing the department for the next 3 to 5 years.

A planning team made up of personnel from within a fire service organization works to complete the following:

- Develop or update the agency's mission, vision, and core values.
- Identify the department's most important goals for the next three to five years.
- Definition of objectives and action steps to achieve goals.
- Establishment of means by which to measure accomplishment of goals and objectives.

Financial Planning

A standard and common short-term planning tool is the budgetary process, which provides the framework and financial means to accomplish annual or biannual objectives.

The proposed biennium FY2023–2024 budget for the fire department is $20,399,539, representing 25% of the city's overall General Fund Budget of $80,421,748. Revenues are primarily derived from various taxes and fees.

Preparation for purchasing capital equipment, apparatus, and facilities is essential to ensure sufficient revenues exist when the capital needs upgrading or replacement.

The replacement schedule for front-line engines and ladders historically has been every seven years, although this is due to the timing of the levy lid lift. In 2011, a levy LID was approved, allowing the department to purchase four new engines. Three of the engines have been replaced, but there will not be sufficient funds to purchase the fourth engine in the schedule. The department is working with the city to determine adequate funding for the engine. The reserve fleet will naturally rotate out of the system as the front-line apparatus is replaced. The staff vehicles, including the Battalion Chief, are scheduled to be replaced about every ten years and purchased with city funds.

The department's funding priorities, as outlined in the FY 2023–2024 budget, are:

- Staff Battalion T1 24/7.
- Update the Fire Department's five-year strategic plan.
- Improve Fire Prevention and Community Risk Reduction Programs.
- A complete study of potential staffing of the BLS Aid Unit with transport capability to address increasing call volumes and ambulance delays.
- Prepare for the 2023 Washington Survey and Rating Bureau re-evaluation of the City's rating.

- Prepare to replace the 2013 Pierce Engine T1 in 2025 through the Levy Lid Lift.
- Seek a partnership with local tribe(s) to fund equipment for wildland fire response.
- Seek a partnership with the Port of Olympia to help fund Aircraft Rescue Firefighting training and equipment purchases.
- In partnership with Thurston County Medic One, explore opportunities to support opioid response in Tumwater and Thurston County.
- Work to improve Emergency Management planning efforts through a partnership with the City of Olympia.

  (As of this document, priorities 1, 5, and 6 have been completed.)

Facility upgrades are currently planned for and budgeted during the budget process. Currently, there is no capital improvement funding plan for the next 10–15 years to ensure sufficient funding is available to purchase equipment, apparatus, and facility upgrades on a pre-determined life cycle.

Staffing

Admin & Support Staffing Levels

Administrative and support personnel are considered primarily to manage, plan, and support the agency's and its programs' activities. Tumwater Fire Department is organized into five divisions: Fire Prevention, Medical Services, Training, Operations, and Administration, with seven people to manage, plan, or support the district-wide activities.

ESCIs experience shows that administrative staffing totals for municipal fire departments supported by city administrative staff range between 10% and 15% of department personnel totals depending on the programs and complexity of the department. Tumwater Fire Department operates with seven administrative staff, and their administrative support is within the average range threshold for efficient administrative and support staff at 13%. The more complex the organization is, however, the higher the ratio of administrative and support to operational personnel required. This percentage of personnel should not replace the need to ensure that time on tasks is appropriate or that the section efficiently completes required functions and tasks. However, interviews with staff revealed they felt over-tasked to perform their required work and that some functions were not occurring due to lack of time. They acknowledged that this feeling was familiar throughout all divisions. These staff members felt there were additional functions or tasks they would like to be able to perform but often could not because the staff was limited.

Operational Staffing Levels

A baseline overview of the staffing model, staffing levels, and relief factors provides an opportunity to review and analyze the current staffing patterns, shifts, and options to increase efficiency, effectiveness, and capabilities. While the scope of this project does not include that analysis, each organization should conduct a staffing relief factor analysis for each classification across the shifts to maximize efficiency and effectiveness.

The total operational personnel assigned to shifts include Battalion Chiefs (4 FTEs), Lieutenants (13 FTEs), Master Drivers (4 FTEs), Fire Medics (13 FTEs), Firefighters (12 FTEs), and Uniformed Administration (5 FTEs).

However, approximately 9 FTEs of Firefighters and Fire Medics are assigned to Medic 14 located at the West Thurston Regional Fire Authority Station, located too far south of the City of Tumwater to reasonably draw upon for supplemental firefighters under national standards and best practices.

The *US Fire Department Profile* 2020, issued in September of 2022 by NFPA, compares career firefighters per 1,000 people protected.[6] This study indicates the national median rate of

[6] US Fire Department Profile 2020, https://www.nfpa.org/education-and-research/research/nfpa-research/fire-statistical-reports/us-fire-department-profile?l=0

firefighters per 1,000 people in the population of mostly-career or all-career fire departments ranges from 1.54 to 1.81 per 1,000 people. Career firefighters include full-time uniformed firefighters regardless of assignment (e.g., suppression, prevention/inspection, administrative, etc.)

Using TRPC population estimates, the City of Tumwater's population is 27,100 residents and a total of 42[7] uniformed career firefighters; the City of Tumwater's ratio is 1.55 firefighters per 1000 people.

This benchmark only serves as a single point of reference for analysis of current operational activities and is a broad comparison. Other factors that play a significant role in the number of personnel that communities deploy include the type of shift schedule, geography of the community, the community risks, and unique services a department might provide, such as hazardous materials teams, ambulance services, wildland strike teams, etc. In the case of the Tumwater Fire Department, higher ratios of firefighters to population would be expected in systems that provide ALS ambulance services inside the city in order to cover the staffing needed for medic units.

Review Staff Allocation to Various Functions

TFD allocates most of its staff to Station T1 based on the area's service level needs. A 24-hour ALS medic unit is also located at West Regional Fire Authorities Station 1-1. This crew primarily responds to calls outside the City of Tumwater under contract with Thurston County Medic One.

Six personnel are assigned to Station T1 on each shift. They operate and staff an engine, a medic unit, and a command vehicle. The station is also equipped with a mass casualty incident response trailer. If required, personnel will respond with the trailer and a pickup truck to the scene county-wide. The on-duty Battalion Chief is also located at Station T1 to provide necessary command during incidents and manage the administrative duties of the shift during the daytime.

Three personnel staff Station T2 24 hours a day. The minimum city staffing available in the department is nine personnel. Each shift has additional duties assigned, such as training, facilities maintenance, health and wellness, minor apparatus and facility repair and maintenance, public education, pre-fire planning, etc.

Review Staff Scheduling Methodology

Tumwater Fire Department employs a four-platoon system operating on a 24/48-24/96-hour shift rotation; a "debit day" is used once every 24 days to add a work shift to make up the average hours outlined in the collective bargaining agreement. This debit day provides

[7] Uniformed FFs in City of Tumwater: Total staff of 51 minus 9 assigned to Medic 14.

for a 48.9 average-hour work week. This work rotation is used to achieve the daily minimum staffing of personnel.

Tumwater Fire Department also establishes the number of employees needed above the minimum to allow for vacancies due to vacation, sickness, and other types of leave, known as the staffing coefficient or relief factor.

This staffing requirement above the minimum staffing yields the total number of full-time employees required to maintain the minimum daily staffing. The minimum staffing for TFD is three firefighters for engine companies, two personnel for Medic units, and one person to fill the Battalion Chief position.

The following table shows the minimum daily staffing for the City of Tumwater for emergency response capability. The staffing of Medic 14, as mentioned above, is located too far south to be utilized for developing an Effective Response Force (ERF) for the deployment of personnel under NFPA 1710. Therefore, Medic 14 is set apart in the table from the minimum staffing for the City of Tumwater.

Figure 5: Tumwater Fire Department Minimum Station/Unit Staffing

Station	Resource	Daily Staffing
Station 1	Engine T1	3
Station 1	Medic 5	2
Station 1	Battalion T1	1
Station 2	Engine T2	3
	Minimum Staff	**9**
WTRFA	Medic 14	2

The best practice for optimal staffing and efficiency is determining the appropriate minimum staffing and relief factors. Tumwater Fire Department uses personnel who return to work on their debit day to fill vacancies, allowing a reduction in overtime costs and creating a better work-life balance.

Deployment Methods and Staffing Performance

Trained emergency responders use specialized equipment to handle various incidents, such as fires, accidents, and medical calls. Deploying the correct number of personnel is crucial because inadequate staffing reduces response effectiveness and raises the risk of injury for everyone involved. Sufficient personnel ensures that emergency apparatus and equipment are utilized effectively, mitigating incidents more efficiently and enhancing overall safety outcomes.

Emergency Fire Incidents

Tasks performed at a fire can be broken down into three key components: life safety, incident stabilization, and property conservation. Responders determine life safety tasks based on the number of building occupants, location, status, and ability to take self-preservation action. Life safety-related tasks involve search, rescue, and evacuation of victims. The incident stabilization element involves delivering enough water to extinguish the fire and create an environment within the building that allows firefighters to enter. Property conservation comes from efficient confinement and extinguishment or, generally, mitigation of incident damage.

NFPA 1710: *Standard for Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments* specifies the number of firefighters assigned to a particular response apparatus, time frames for first due and second due. Also, the standard establishes the number of firefighters assembled to each category of risk in a specified time frame to simultaneously perform the tasks based on the particular risks, referred to as the "Effective Response Force (ERF)." Tumwater Fire Department should set staffing levels based on risk, capability, and citizen expectations, ultimately becoming a policy decision determined by the governing body. The NFPA 1710 level of staffing is described in the figures below for three different categories of risks.[8]

The following figure shows the ERF staffing needed to mitigate safely and effectively a single-family, 2,000-square-foot, two-story residential structure without a basement without exposures.

[8] 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 2020 ed.) Article 5.2.4 Deployment.

Figure 6: Task Analysis – Single Family Dwelling

Critical Tasks	No. FFs
Incident Commander	1
Water Supply Operator	1
2 Application Hose Lines	4
1 Support Member per line	2
Victim Search and Rescue Team	2
Ground Ladder Deployment	2
Aerial Device Operator	1
Incident Rapid Intervention Crew (4 FF)	4
Total	**17**

The following figure describes the tasks required to extinguish an Open-Air Strip Mall or Multi-Family Apartment building fire.

Figure 7: Task Analysis – Open Air Strip Mall or Multi-Family Apartment

Critical Tasks	No. FFs
Incident Commander	2
Water Supply Operators	2
3 Application Hose Lines	6
1 Support Member per line	3
Victim Search and Rescue team	4
Ground Ladder Deployment	4
Aerial Device Operator	1
Rapid Intervention Crew (4 FF)	4
EMS Care (1 crew)	2
Total:	**28**

The following demonstrates the number of firefighters to develop the ERF for a multi-story building, three floors and greater, or a large expansive building, such as an industrial complex or distribution center.

Figure 8: Task Analysis – Multi-story or Large Expansive Structure

Critical Tasks	No. FFs
Command	2
Apparatus Operator	2
Handlines [2 FF's each]	4
Support members	8
Search and Rescue	4
Ground Ladders/Ventilation	1
Aerial Operator (If Deployed)	(1)
Initial Rapid Intervention Crew	4
Initial Medical Care Component	4
Building Fire Pump (If Equipped)	1
Hoseline – Floor Above Fire	2
Elevator Operations Manager	1
Incident Safety Officer	1
Interior Staging Manager	2
Member Rehabilitation	2
Vertical Ventilation Crew	4
Lobby Control	1
	42 (43)

Tumwater Fire Department's daily operational staffing can deploy nine individuals, assuming no other incidents are occurring. Tumwater Fire Department has established three-person staffing for fire engines and two-person staffing for medic units. The current staffing model does not allow the department to effectively respond with enough firefighters to accomplish the simultaneous tasks required in the lowest risk category, single-family residence fire. Later, ESCI will develop a prospective model of the ERF capability, considering TFD and mutual aid resources.

The following figure depicts the emergency staffing employed for incidents by TFD.

Figure 9: Task Analysis – Single Family Dwelling

Response Comparison	NFPA	TFD	Differential
Residential Structure Fire	17	9	8
Apartment building or Strip Mall	28	9	19
Multi-story or Large Expansive Structure	43	9	34

TFD does not meet the recommended initial response for commercial and three-story apartment-type incidents. It should be noted that TFD must rely on outside agencies to meet the recommended response to meet critical tasks. Through these aid relationships, TFD should increase the response depth and weight to the commercial and apartment incidents.

Emergency Medical Incidents

Emergency medical calls are the most frequent reason for activating the 911 system. NFPA 1710 states that personnel deployed to advanced life support (ALS) emergency responses shall include a minimum of two members trained at the EMT-Paramedic level and two at the EMT-Basic level. The first unit, providing initial care, should arrive within 4 minutes of each fire station, followed by ALS care within 8 minutes. It is recognized that Thurston County Medic One has adopted different performance benchmarks for ALS response (as prescribed by the Department of Health), which are to arrive within 10 minutes in Urban zones, within 20 minutes within suburban zones, and 30 minutes in rural zones.

Wildland Firefighting

NFPA 1710, subsection 5.7.2, states, "The number of on-duty wildland fire-fighting personnel shall be sufficient to perform the necessary firefighting operations given the expected wildland fire-fighting conditions."

Further, subsection 5.7.4.3.1 states, "The fire department providing wildland fire suppression operations shall have the capability to deploy an indirect attack, including the application of water to the fire, engagement in search and rescue and preservation of property, accountability for personnel, and provision of support activities for those situations that are beyond the capability of the direct attack."

TFD has limited wildland firefighting capabilities, with no wildland apparatus in the fleet. Occasionally, TFD deploys wildland-trained personnel to staff rapid extrication modules (REMS) for medical emergencies during wildland fires across the nation. This program brings the experience back to the department. Wildland fires pose challenges, including their expense, extensive periods to mitigate and bring under control, and sometimes require

outside support. NFPA 1140 is the standard for wildfire protection and contains many elements for assessments and planning.

Special Operations Incidents

Tumwater Fire Department maintains an operational level of response to manage routine fuel leaks, etc. Technical rescue services such as swift water rescue, high and low angle, trench, confined space, and structural collapse are provided through a county-wide joint effort that creates the Special Operations Rescue Team (SORT). TFD supplies some personnel who participate in the SORT team. Through the Strategic Planning process, staff members expressed a desire to develop members' training and participation in the regional team.

Responsibilities & Activity Levels of Personnel

Personnel responsibilities & activity levels of personnel have been a focus of recent internal organizational issues. The Battalion Chief of EMS has been vacant but was recently filled. Also, the single Fire Prevention Officer is affected by an overwhelming number of occupancies and inspection activities that require significantly more staff time. The Emergency Manager functions are assigned to the Fire Chief, who is predominantly focused on leading and managing the fire department. The saturation of tasks can lead to work fragmentation, communication challenges, and inconsistent work effort across all divisions. These observations present TFD with a valuable opportunity to refine role definitions within the command staff and enhance overall organizational efficiency.

In every fire department, many activities are accomplished outside the "regular" duties of responding to emergency incidents. These typically involve managing the self-contained breathing apparatus (SCBA), hose testing, air monitor calibration, EMS quality assurance, and various committees. TFD relies upon individuals on various shifts who are interested in these additional areas to accomplish the tasks.

This approach can work well as long the primary duty of operations staff has sufficient time to ensure operational readiness for emergency incidents. In addition, a benefit of completing and assigning these tasks to shift members is that it provides an opportunity to adopt an important function and develop further knowledge, skills, and abilities of participating individuals. These individuals can learn project management, time management, and budgeting skills that prepare them for future promotional opportunities.

Personnel Management

Policies, Rules, Regulations, Manuals, & Handbooks

Tumwater Fire Department has personnel policies and procedures guiding both administrative and personnel behavior. The City of Tumwater's employee policies and the TFD policies are available to all employees.

The TFD policies are maintained in Lexipol and focus on specific fire department policies. The use of a third-party vendor allows for regular updating and assistance with policy development and maintenance. It was noted during the on-site interviews the updating of the TFD policies had been intentionally delayed during the RFA discussion to avoid duplication of policy work, resulting in some policies being delayed in their intended update. The TFD staff has recently begun to work on updating the policies.

Labor-Management Relationships & Issues

Tumwater Fire Department and its union, the Tumwater Firefighters IAFF Local 2409 (local), work together to improve the health and safety of the Tumwater community and the TFD firefighters. Over the past years, despite a failed RFA attempt, relationships have been strong, and there is an overall sense of collaboration between the local and the administration. When discussing this relationship, union leadership emphasized the need for training and career advancement improvement. Key issues include a clear direction of where the fire department is headed after the failed RFA. The union members have a great sense of pride in TFD and desire a larger role in contributing more to regional partners.

Because of the department's efforts to move forward after the RFA attempt, there is a renewed sense of progress and improved morale. The union members have a strong sense of culture and enjoy working with the administration toward an optimistic future. ESCI notes that the local and administration's relationships and attitudes were excellent, and they truly look for opportunities to collaborate.

Disciplinary Process

Tumwater Fire Department relies on the City of Tumwater personnel policies to address general conduct, discipline, and separation. These policies are available to the employees and were published in July 2011. There is also a firefighter code of ethics within TFD policies.

The City of Tumwater’s disciplinary policy aims to maintain high standards of conduct among its employees, emphasizing the importance of following directions for safe service delivery and public trust. The direct supervisor can take some corrective actions, including issuing a written reprimand and lower-level actions. The Fire Chief has the authority to recommend discipline, including demotion, suspension, and termination, with the final approval of the Mayor. The policy offers fair means to address legitimate concerns against employees, protecting them from false misconduct charges and ensuring due process. Disciplinary

actions, ranging from coaching to dismissal, are applied based on the severity of infractions. The policy also applies to at-will employees. Those who are under the provision of the civil service cannot be demoted, suspended, or terminated except for cause under the rules of the civil commission rules. Both the policy and the Civil Service Commission's rules outline procedures for a pre-disciplinary meeting; they also detail the levels of discipline, appeal processes, and post-termination guidelines, emphasizing confidentiality, fairness, and consistency in maintaining discipline and addressing employee misconduct.

Counseling Services

TFD provides counseling guidance documents and a peer support group within the department. These documents include IAFF resources, EAP, and local and regional nonprofit resources.

Application & Recruitment Processes

Applicants for entry-level, lateral, and promotional positions in TFD are subject to the Civil Service Commission's qualification and examination procedures. One of the commission's tenets is always assuring all civil service employees of fair and impartial treatment. Prospective candidates are required to pass all required background standards and medical/physical standards approved by the commission. The city Administrative Services Department supports hiring processes.

Testing, Measuring, & Promotion Processes

The Civil Service Commission (as required by the Civil Service Rules) tests all promotional ranks within the department. The Civil Service Commission is comprised of three members appointed by the mayor. Commissioners are appointed to six-year terms.

The intent is to inspire public confidence in the promotional system and give employees an opportunity for promotion within uniformed Fire Department positions. The Civil Service Commission has extensive rules governing hiring, promotion, and discipline for fire department personnel. These rules were last modified in February 2023.

The Civil Service Commission governs the testing methods, which include written, oral, and physical tests, interviews, assessment centers, and evaluations of experience and education.

From these processes, an eligibility list is created for one year from the date of announcement as determined by the Commission or for eighteen months for all promotional eligibility lists within the Fire Department or for an indefinite period for eligibility lists subject to continuous recruitment as determined by the Commission. Before the expiration of an eligibility list, the Commission may extend the period of eligibility for candidates who still meet the announced qualifications for one year at a time.

Health And Wellness Programs

Tumwater Fire Department's health, safety, and risk management programs are administered and managed by a collective effort within the department. During interviews, it was noted that health and wellness programs were a priority, and there were opportunities for improvement.

The fire service is currently facing several aspects of health and wellness, and Tumwater is no exception. Issues from mental health to cancer prevention are at the forefront of departments across the country. Several opportunities are outlined in the strategic plan and will be reflected in the final recommendations in this evaluation.

Tumwater has already identified tasks to improve firefighter health and wellness. The transition to a four-platoon schedule was made to assist with sleep and burnout prevention. During ESCI's station tours, exercise areas were in the apparatus bays without separate ventilation and wall barriers.

Training Program

General Training Competencies

The TFD Training Lieutenant, along with the command staff members, work together to identify, plan, and develop training. The Training Lieutenant and Medical Services Officer (MSO) are responsible for the development of the training program. Both positions report directly to the Assistant Fire Chief.

The delivery of training is accomplished utilizing various instructors and methods and by partnering with other jurisdictions, primarily the Olympia Fire Department and Lacey Fire Department. Meeting federal and state competency requirements is the priority of the department, followed by identifying training needs outside of mandated competencies.

Certifications & Licensing

Tumwater Fire Department has adopted the Washington State Apprenticeship Program Standards (WSAPS) for firefighters, officers, and fire apparatus operators. These standards are reviewed and adopted by the Washington State Fire Fighters Joint Apprenticeship and Training Committee (JATC). WSAPS integrates on-the-job training, academic studies, and certifications such as Pro Board. Pro Board® accredits public sector organizations that certify emergency services responders against the National Professional Qualifications System Standards requirements. The National Fire Protection Association creates those Standards in which minimum levels of required training are identified for all positions and aligned with certification standards, including the WSAPS.

All personnel are trained to maintain Washington EMS standards, which vary based on their level of certification and the scope of practice allowed by the Medical Program Director. Recertification is accomplished through the Ongoing Education and Training Program (OTEP).

Newly hired firefighters must participate in probationary firefighting recruit training. This training includes a fire academy that meets the National Fire Protection Association standard of NFPA 1001 (Firefighter I and II) and EMS training to meet Washington standards.

Training Administration

The Commission on Fire Accreditation International (CFAI) addresses “Training and Competency” and lists several performance indicators. Some of these competencies include the following:

- The organization has a process in place to identify training needs.
- The agency's training program is consistent with the mission statement, goals, and objectives and meets its needs.
- The training program is consistent with legal requirements for performing mandatory training.

- The agency identifies the minimum levels of training required for all positions in the organization.
- A process is in place to ensure that personnel are appropriately trained.
- The agency provides a training schedule that meets the organization's needs.
- The agency evaluates individual and crew performance through validated and documented performance-based measurements.
- The agency maintains a training records management system that meets recognized standards.
- Facilities and apparatus are provided to support the agency's all-hazards training needs.
- The agency has instructional personnel with teaching qualifications and expertise to meet its needs.
- Instructional materials are current, support the training program, and are easily accessible.
- The agency has a process for purchasing, developing, or modifying the existing curriculum to meet its needs.
- Equipment utilized for training is maintained correctly, following the agency's operational procedures.
- The agency maintains a current inventory of all training equipment and resources.
- A selection process is in place for training and educational resource materials.
- Training materials are evaluated at least annually to reflect current practices and meet the needs of the agency.

Furthermore, the Insurance Service Organization (ISO) requires detailed hours of specific training as part of their fire department ranking. The following is a summary of each firefighter's annual ISO-required training hours.

- Facilities Training: 18 Hours
- Company Training: 192 Hours
- Officer Development Training: 12 Hours
- New Driver Training: 60 Hours
- Driver Continuing Education: 12 Hours
- Hazardous Materials Training: 6 Hours
- Recruit Training: 240 Hours

- Pre-fire Planning: Annual Review

The department appears to be challenged to deliver training with the current staff structure. During the Strategic Planning process, several key issues were identified to improve the overall training program. Additional staff will be required to restructure and design a more effective training program to accomplish these goals. Some of the goals identified include identifying future skills and training needs, evaluating the professional development programs, improving leadership promotion and training programs, and potentially incorporating regional partners.

The Training Lieutenant oversees the fire training, and the MSO oversees EMS training assisted by various Paramedic Lieutenants. The department has several instructors trained to deliver the Blue Card Command Training and Emergency Vehicle Incident Prevention (EVIP) program.

Tumwater does incorporate its training activities with mutual aid partners but often will require on-duty crews to travel outside their primary response zone, extending response times and delaying service to the community.

Training Schedule

Training topics vary from mandatory classes required to meet State minimum standards to training necessary to meet department and certification or re-certification requirements.

The Assistant Fire Chief, Battalion Chiefs, and Training Lieutenant meet before the calendar year to discuss needed training outside of mandatory training and provide a quarterly and yearly training schedule based on a four-year training strategy.

The minimum training, education, and competency standards for newly hired firefighters and company officers receive additional training to become eligible for promotion to Battalion Chief. On-duty shift personnel assist new firefighters in achieving the competencies outlined in their apprenticeship program.

Training Facilities

Tumwater Fire Department does not own or have access to a training facility within city limits. However, TFD has an Interlocal Agreement with the City of Olympia, allowing the TFD to utilize the training facility located at 1305 Fones Road in Olympia. The agreement requires TFD to pay an annual fee for its use. Again, TFD units, typically while on duty, travel outside of the city to utilize the facility. The facility provides a broad range of critical training needed to maintain and enhance the personnel's knowledge, skills, and abilities. The keystone training prop on the property is a commercial tower that spans 8,500 square feet across six floors, offering multiple entry points, complex room search areas, and a live fire training (LFT) prop. Available training options include live fire training, ventilation, hose deployment, search and rescue, ground ladder training, aerial positioning, and rope rescue.

The LFT Burn Prop utilizes propane for flames and theatrical smoke to simulate a live fire training environment for firefighters. In the event of an emergency, powerful fans are capable of immediately exhausting the heat and smoke, ensuring an unparalleled level of training safety in live fire scenarios.

Training Program Goals & Objectives

Qualified members must manage an effectively functioning training program, requiring the development of training planning, clear goals, and defined objectives. Tumwater Fire Department does not have a written multiyear training plan as well as the necessary staff to support that effort. Tumwater is compelled to focus on mandatory training and include additional training as needed.

Training Procedures & Manuals

Tumwater Fire Department utilizes task books through the Joint Apprenticeship and Training Committee (JATC) for newly hired firefighters, fire apparatus driver/operators, and newly promoted lieutenants. TFD does not have additional written training manuals. TFD would benefit from developing training manuals outlining procedures, schedules, competencies, and expectations. Doing so can provide more consistent expectations and a platform for succession planning for future training officers. To the greatest extent possible, the procedures must be coordinated with mutual aid partners to ensure consistency across jurisdictions.

Recordkeeping

The TFD utilizes FireRescue1 Academy and EMS1 Academy for their training record management. FireRescue1 Academy meets the department's needs for re-occurring online course material and training. Good record-keeping is essential for capturing and archiving the training and certifications of the department’s personnel and in supporting the accreditation and ISO processes. Battalion Chiefs and company officers are responsible for entering drills into the records management system. The training officers primarily handle clerical support for training; however, the administrative personnel assist when needed.

Service Delivery & Performance

Responding to calls for service (incidents) is the primary role of the fire department within the Tumwater community, even though they provide many other types of services beyond that primary mission. This response to incidents is encompassed within the industry term "service delivery," and the following components of service delivery will be considered in the analysis of service delivery.

- Service demand.
- Resource distribution.
- Resource concentration.

Service Demand Study

The primary mission of TFD is to respond to calls for service that citizens or visitors make of the community, and leadership and elected officials need to have an in-depth understanding of service demand. This knowledge helps leadership in the planning process when determining staffing, resource types, resource location, and more.

Incident Type Analysis

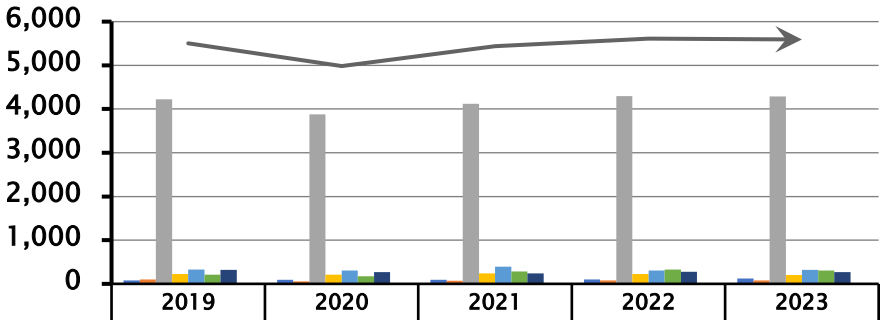
Tumwater Fire Department, like many fire departments throughout the nation, was originally founded to respond to emergency incidents involving fires. As the modern fire service has evolved, the types of incidents to which fire departments respond have become much more varied, and departments should quantify and qualify responses via records management software that meets the requirements outlined by the National Fire Incident Reporting System (NFIRS). This system provides a standardized method of data collection that enables fire departments to understand their responses better and provides an opportunity to compare data to other departments within the region and across the nation. Within the NFIRS system, each incident type (currently 178 incident types) is assigned a three-digit code. These three-digit codes are then organized into a series, as illustrated in the following figure, based on the first digit of each code.

Figure 10: NFIRS Incident Schema

Incident Series	Incident Type
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	Canceled, Good Intent
700-Series	False Alarm, False Call
800-Series	Severe Weather, Natural Disaster
900-Series	Special Incident Type

As illustrated in the following figure, TFD service demand has increased by 1.7% from 2019 to 2023. This overall increase includes decreases of 9.4% in 2020 and 0.3% in 2023, as well as increases of 9.2% in 2021 and 3.1% in 2022. The significant decrease in 2020, followed by a similar increase in 2021, was the result of the COVID-19 pandemic.

Figure 11: TFD Service Demand by NFIRS Incident Series, 2019–2023



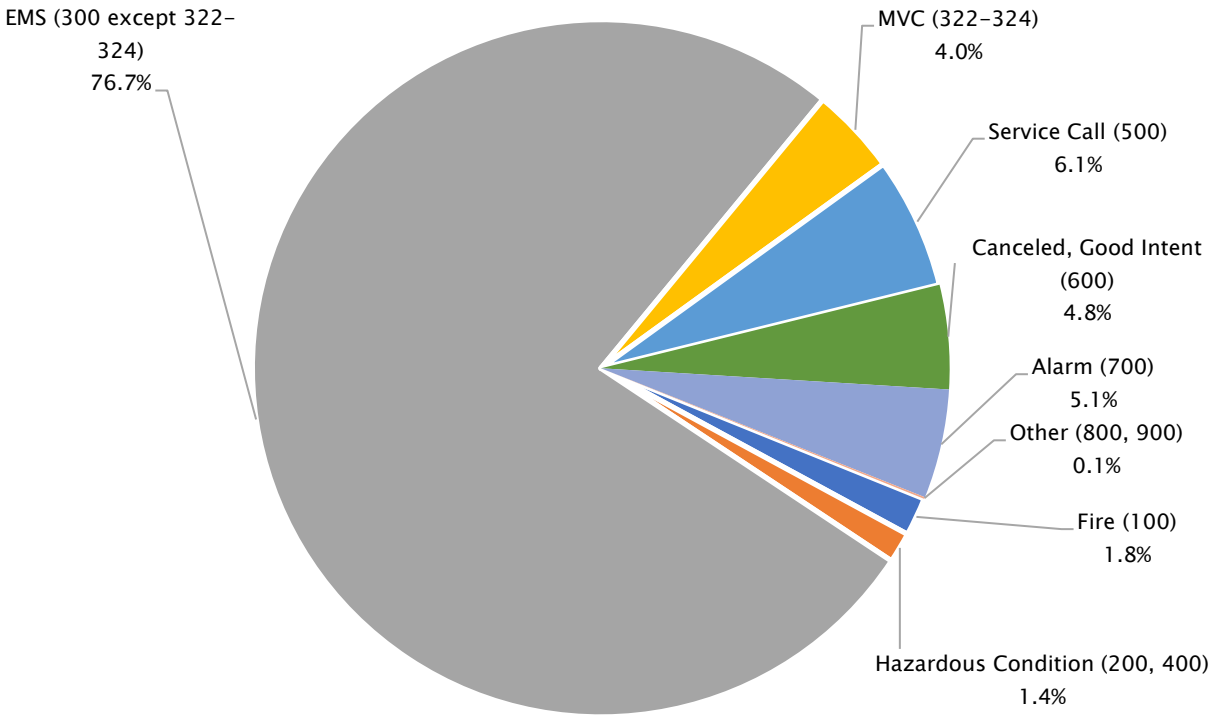
	2019	2020	2021	2022	2023
Fire (100)	81	90	90	103	122
Hazardous Condition (200, 400)	101	54	71	79	80
EMS (300 except 322–324)	4,224	3,878	4,117	4,294	4,287
MVC (322–324)	226	207	236	225	204
Service Call (500)	329	308	391	307	323
Canceled, Good Intent (600)	213	175	287	324	309
Alarm (700)	322	270	239	275	267
Other (800, 900)	5	1	9	4	3
Total	5,501	4,983	5,440	5,611	5,595

The preceding figure illustrates very well the changes that have occurred in service demand within the community from year to year. However, there is also value in understanding the

same dataset from the perspective of how each NFIRS incident series compares to the total service demand, expressed as a percentage.

As illustrated in the following figure, the greatest service demand is for incidents involving emergency medical services, and the lowest service demand is for other incidents. Emergency medical service incidents, as the highest service demand, are consistent for most communities within the United States.

Figure 12: TFD Service Demand by NFIRS Incident Series, 2019–2023.



Future Service Demand

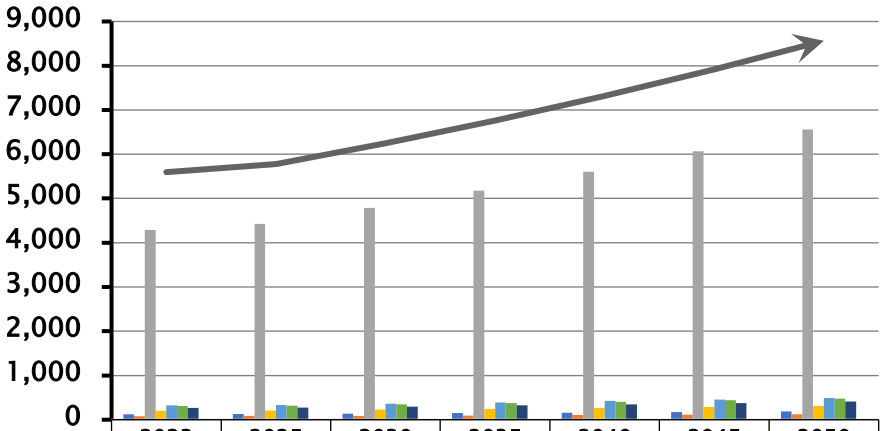
With the knowledge of service demand that has occurred within the near past, it is possible to project theoretical service demand that may occur in the future. This is a critical consideration as leadership and elected officials strive to ensure quality services that arrive in a timely manner within the community. There are two primary methods used to project future service demand—projection based on changes in population and projection based on historical service demand.

Future Service Demand by Population

This method of projecting future service demand analyzes the number of incidents per 1,000 population within the community. Then, through analysis of the historical population changes within the community obtained from the United States Census Bureau, a projection of future population is extrapolated, the incidents/1,000 population is applied to achieve the total number of incidents each year, which is then distributed based on the incident frequency percentages.

The following figure illustrates the projected TFD service demand based on changes in population and provides the upper estimate.

Figure 13: TFD Projected Service Demand by Population Changes, 2025–2050.

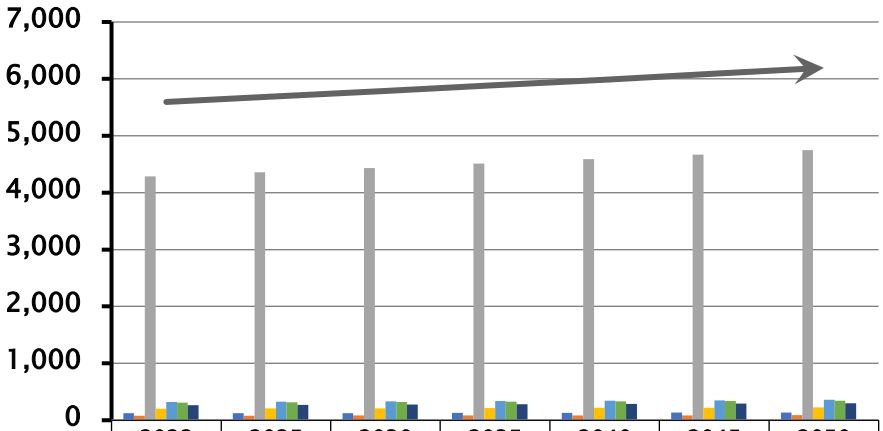


	2023	2025	2030	2035	2040	2045	2050
Fire (100)	122	126	136	147	159	173	187
Hazardous Condition (200, 400)	80	83	89	97	105	113	122
EMS (300 except 322–324)	4,287	4,424	4,787	5,180	5,605	6,064	6,562
MVC (322–324)	204	211	228	246	267	289	312
Service Call (500)	323	333	361	390	422	457	494
Canceled, Good Intent (600)	309	319	345	373	404	437	473
Alarm (700)	267	276	298	323	349	378	409
Other (800, 900)	3	3	3	4	4	4	5
Total	5,595	5,774	6,248	6,760	7,315	7,914	8,564

Future Service Demand by Historical Service Demand

This method of projecting future service demand analyzes the historical percentage of change during the study period to determine the average increase or decrease per year. This figure is then extrapolated over time to provide the total number of incidents each year, which is then distributed based on the incident frequency percentages. The following figure illustrates the projected TFD service demand based on historical changes in service demand and provides a lower estimate.

Figure 14: TFD Projected Service Demand by Service Demand Changes, 2025–2050.



	2022	2025	2030	2035	2040	2045	2050
Fire (100)	122	124	126	128	131	133	135
Hazardous Condition (200, 400)	80	81	83	84	86	87	89
EMS (300 except 322–324)	4,287	4,360	4,435	4,511	4,588	4,666	4,746
MVC (322–324)	204	207	211	215	218	222	226
Service Call (500)	323	329	334	340	346	352	358
Canceled, Good Intent (600)	309	314	320	325	331	336	342
Alarm (700)	267	272	276	281	286	291	296
Other (800, 900)	3	3	3	3	3	3	3
Total	5,595	5,691	5,788	5,887	5,987	6,090	6,194

Temporal Analysis

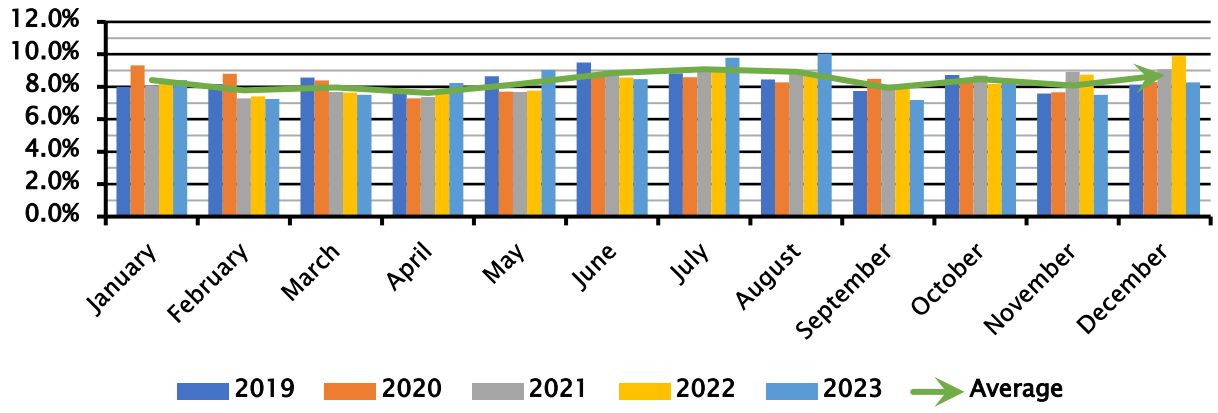
Temporal analysis—when incidents occur–is an important factor for leadership to consider when determining staffing levels of on-duty units, as well as when scheduling non-incident activities such as the following and working to schedule during periods of lower service demand.

- Pre-incident planning.
- Training.
- Station maintenance.
- Apparatus maintenance.

- Fire hose testing.
- Fire hydrant testing.
- Public education.

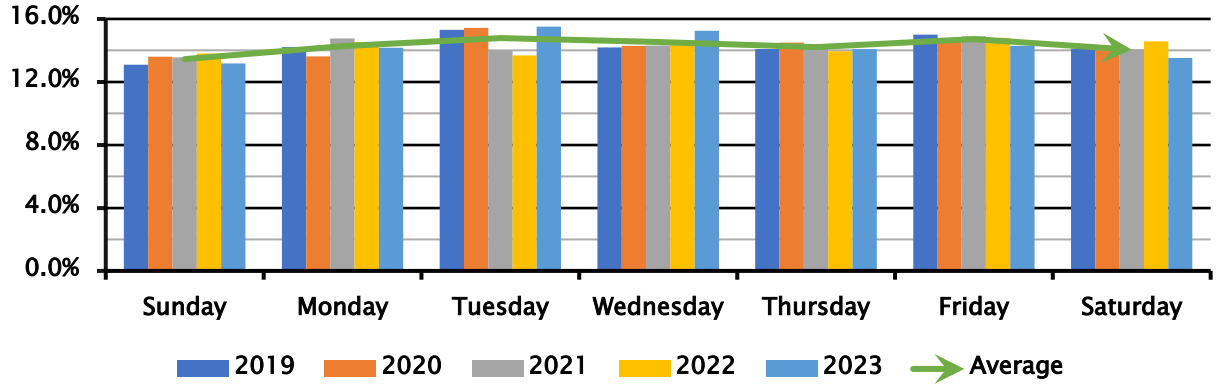
Analysis of when incidents occur first focuses on the months of the year. As illustrated in the following figure, the greatest service demand within Tumwater occurs in July, and the lowest service demand occurs in April.

Figure 15: TFD Service Demand by Month, 2019–2023.



Analysis of when incidents occur then focuses on the days of the week. As illustrated in the following figure, the greatest service demand within Tumwater occurs on Tuesday, and the lowest service demand occurs on Sunday.

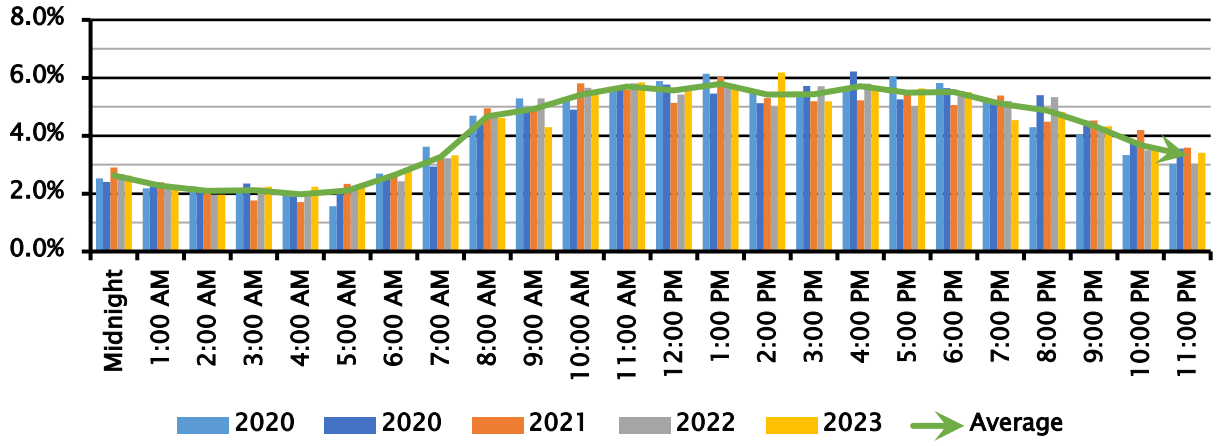
Figure 16: TFD Service Demand by Day, 2019–2023.



Analysis of when incidents occur finally focuses on the hours of the day. As illustrated in the following figure, the lowest demand for service occurs at 4 AM, followed by slight increases over the next three hours. This increase then steepens at 9 AM and continues to increase until reaching the greatest demand at 1 PM. Throughout the afternoon, service demand fluctuates slightly before beginning a general decrease starting at 7 PM. This decline

continues throughout the evening and into the night until returning to the lowest point. The pattern described above is very common within communities that have minimal 24-hour workplaces and follows the movement of the population arising in the morning, leaving their homes, going about their daily activities such as work or recreation, moving into evening activities such as dining out and sports, and finally returning to their residences for the night.

Figure 17: TFD Service Demand by Hour, 2019–2023.



While the preceding figure illustrates that demand for service is at its lowest during the late night and early hours, leadership should ensure adequate staffing is still in place to respond and mitigate structure fire incidents quickly. Based on a national study recently published, from 2018 to 2020, the occurrence of residential structure fires with fatalities was highest between midnight and 1:00 AM. The 8-hour peak period (11:00 PM to 7:00 AM) accounted for 45% of residential fatal fires[9].

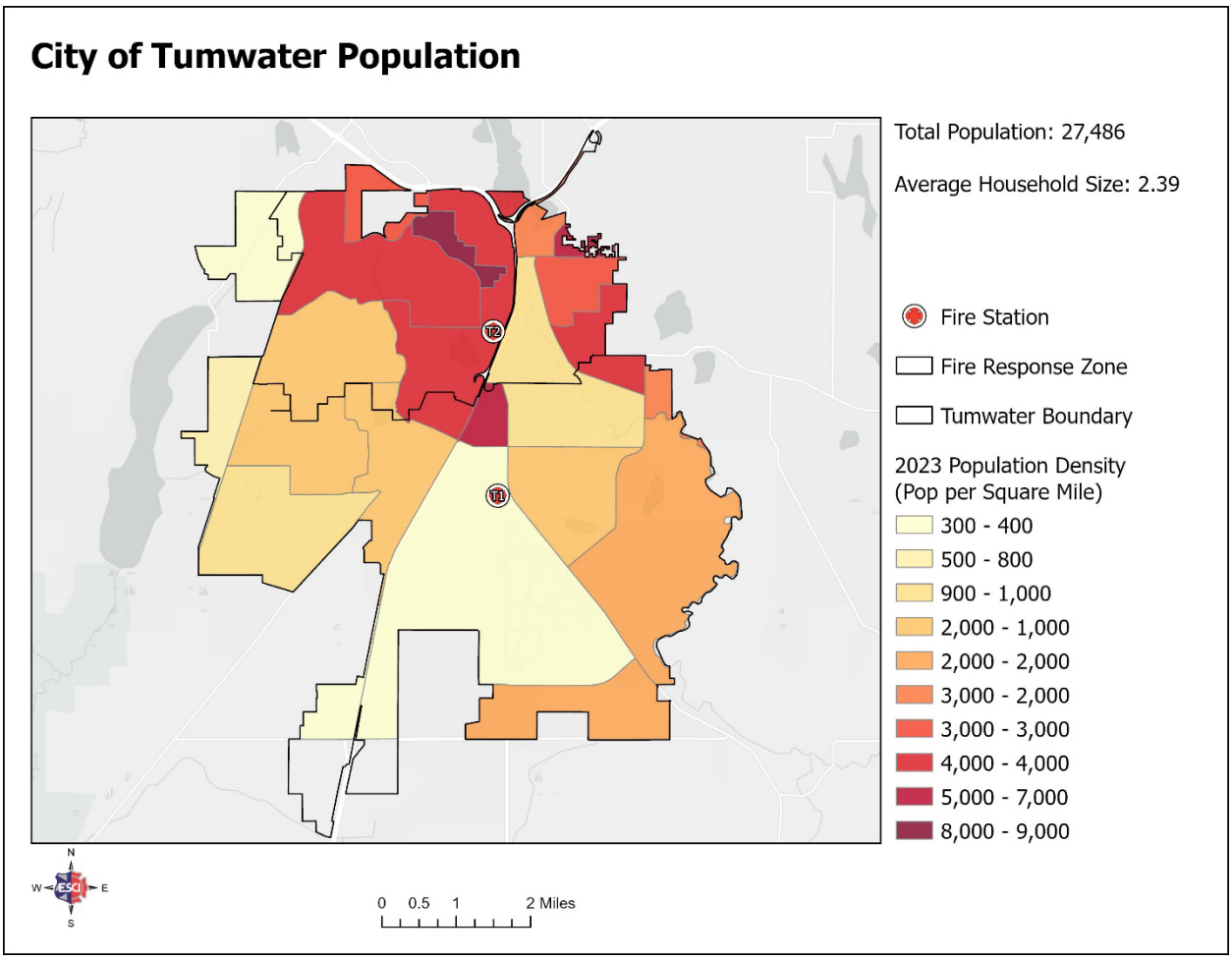
Geographic Analysis

Where incidents occur within the community—geographic analysis—provides leadership knowledge to then associate with the deployment of current and future resources for response to calls for service. With such a large percentage of service demand related to emergency medical service incidents, it is logical to consider that there is a correlation between the location of people and the location of incidents. There are areas of higher population density within the community, and there are also areas of higher incident density.

Through analysis of population density obtained from the U.S. Census Bureau, the following figure illustrates the population density within Tumwater, WA. As illustrated in the following figure, the greatest density is located in the northern portion of the city, near Station T2.

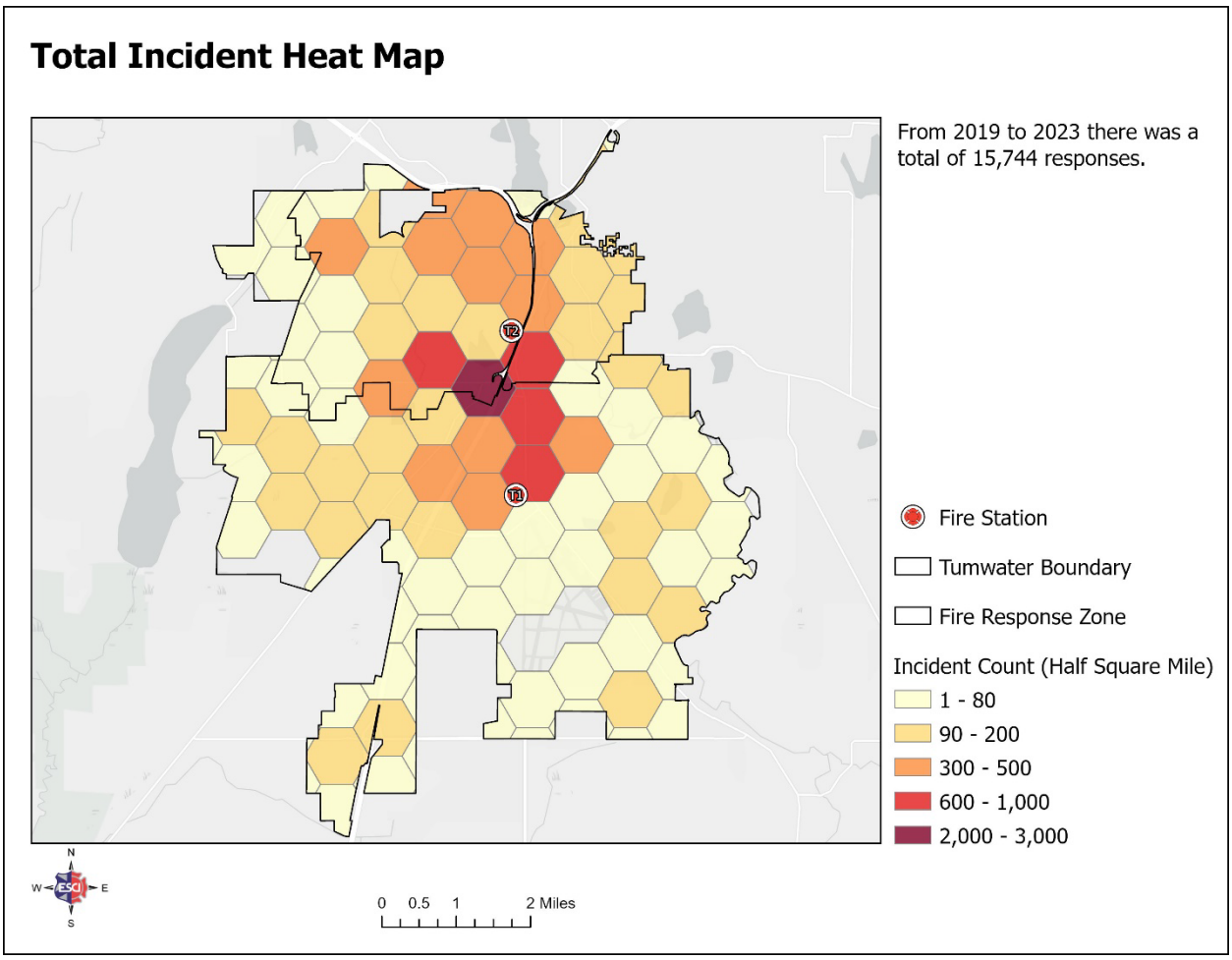
[9] *Fatal Fires in Residential Buildings (2018–2020), Topical Fire Report Series Volume 22, Issue 2 /June 2022, U.S. Department of Homeland Security, U.S. Fire Administration, National Fire Data Center.*

Figure 18: Tumwater Population Density, 2023.



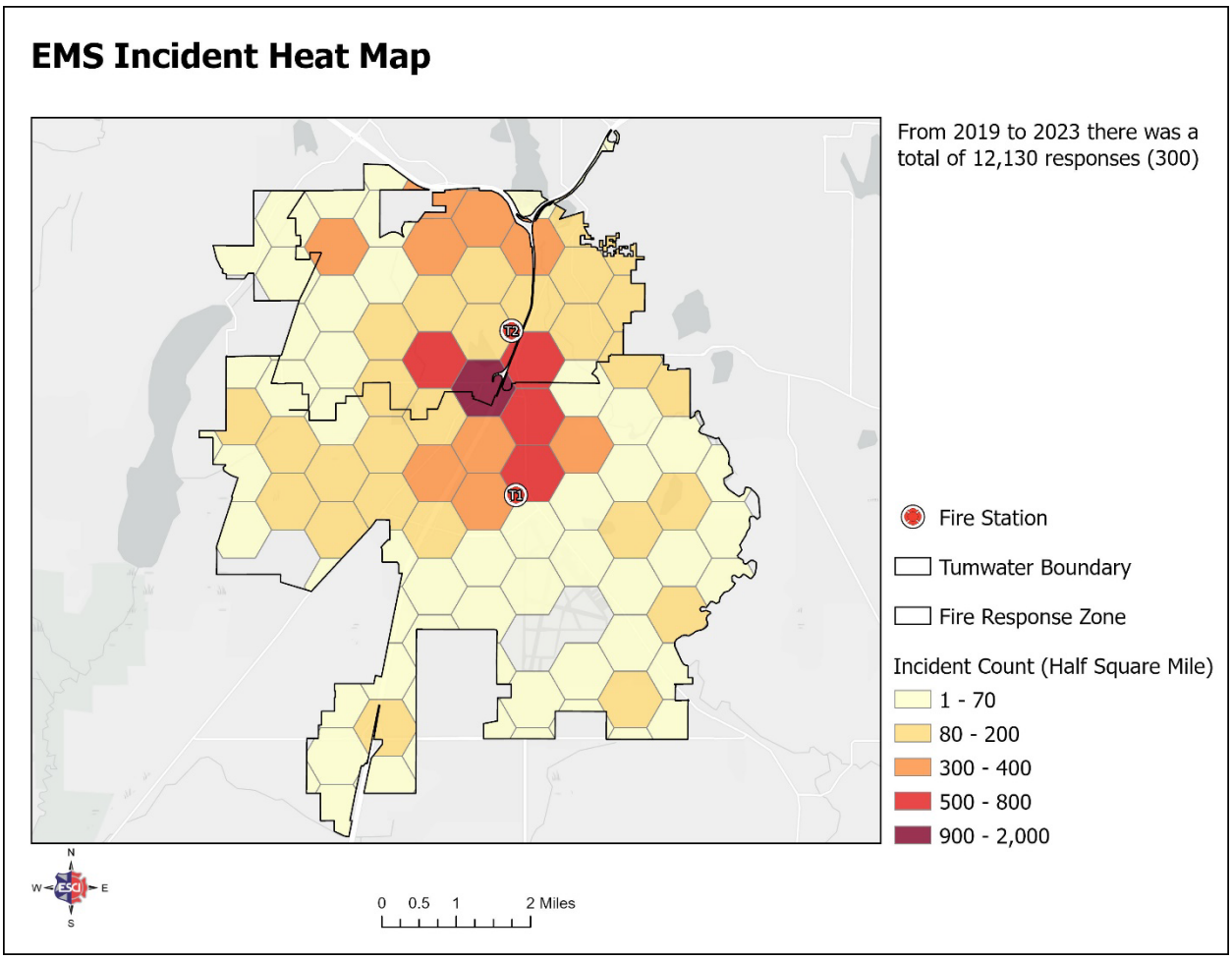
Using the tools provided by geographic information system (GIS) software, ESCI plotted the geographic location of each incident and then determined the mathematical density of incidents per half-square mile. As illustrated in the following figure, the greater density of incidents is located in the area near Station 12, corresponding with the greater density of the population.

Figure 19: TFD Incident Density (All Incidents), 2019–2023.



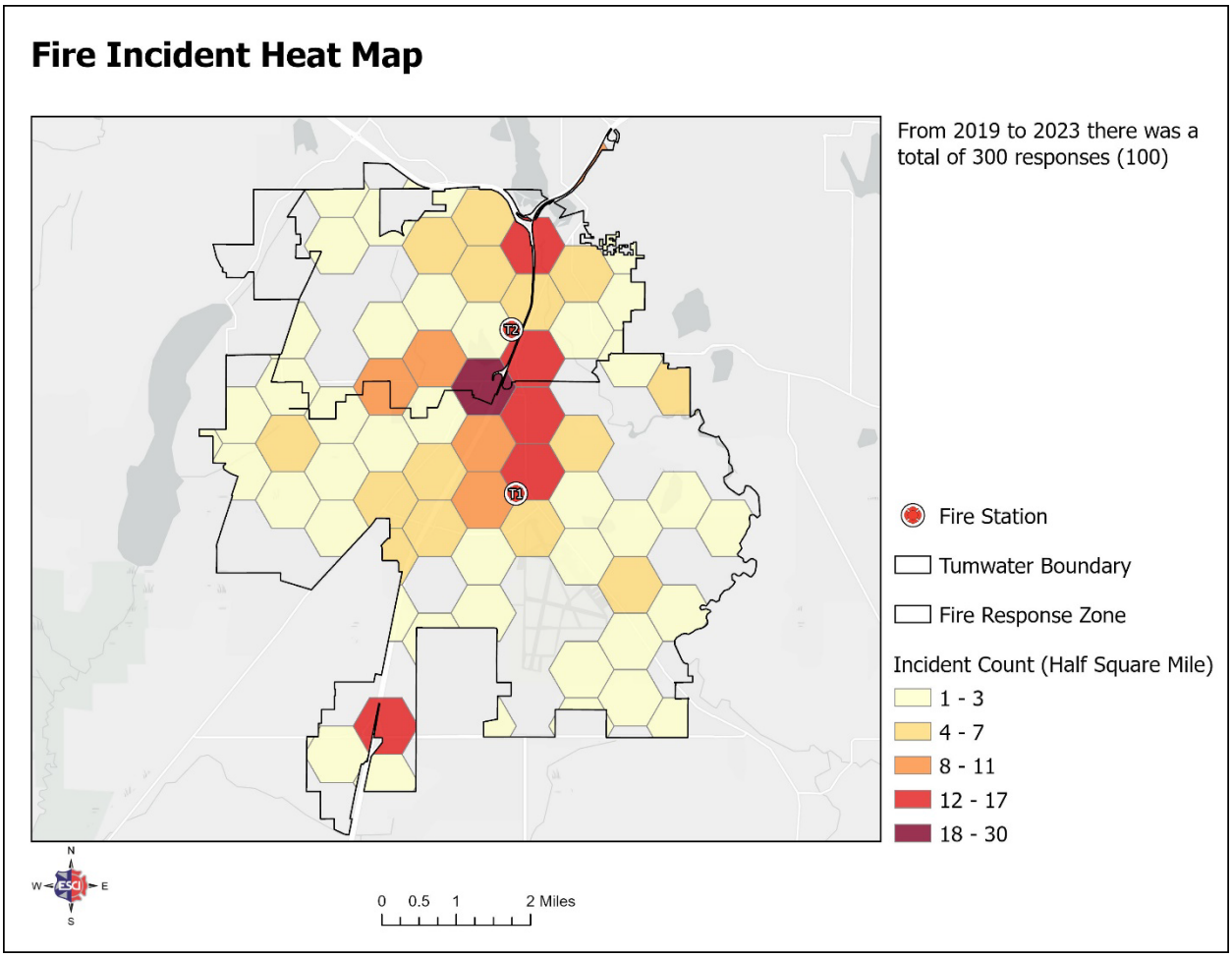
While the preceding figure provides a view of the incident density of all service demands, those directly related to emergency medical service incidents (NFIRS 300–Series) should be considered as a separate subset due to being the category of greatest service demand, as illustrated in the following figure, the density of EMS incidents follows a pattern similar to that of the overall incident density.

Figure 20. TFD Incident Density (EMS), 2019–2023.



Finally, responses to incidents involving fires (NFIRS 100-Series) generally require more resources than other incidents. Thus, this group should also be considered as a separate subset of the overall incident data. As illustrated in the following figure, the density of fire incidents also follows a pattern similar to that of the overall incident density.

Figure 21: TFD Incident Density (Fire), 2019–2023.



Resource Distribution Study

As TFD has continued to grow in order to provide appropriate services within the community, resources have been placed based on different factors available at the time. This section will provide a view of current resource locations as compared to industry standards and best practices. Leadership should also then consider how the geographic analysis in the preceding section compares to resource distribution. The Washington Survey and Rating Bureau (WSRB) for Washington State manages the ISO standards discussed below. WSRB utilizes the same or similar standards for the following analysis.

ISO Distribution

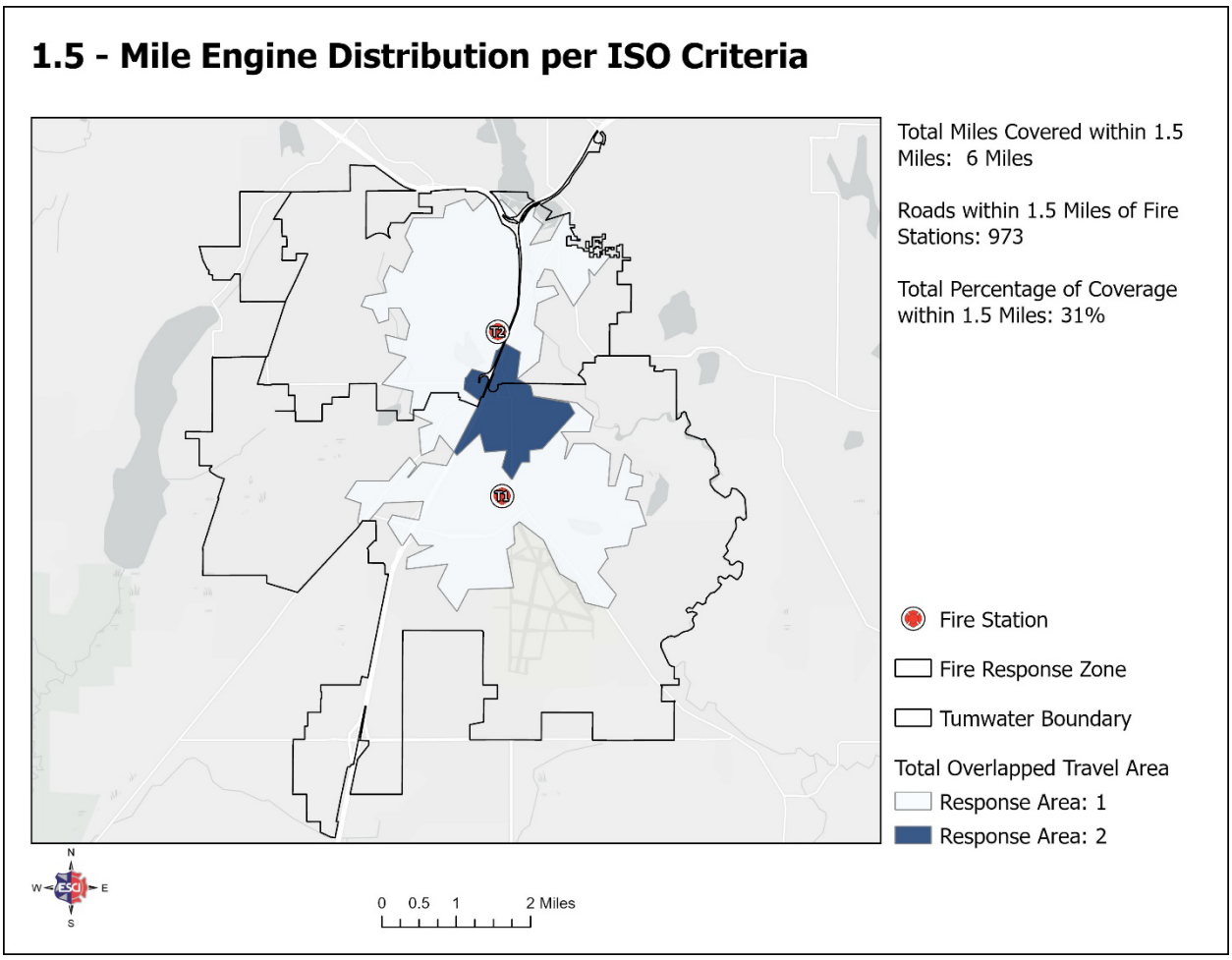
The Insurance Services Office (ISO) is a national insurance industry organization that evaluates fire protection for communities across the country. ISO assesses all areas of fire protection and categorizes them into four major areas: emergency communications, fire department, water supply, and community risk reduction. Following an on-site evaluation, an ISO rating, or specifically, a Public Protection Classification (PPC®) number, is assigned to the community ranging from 1 (best protection) to 10 (no protection). The PPC® score is developed using the Fire Suppression Rating Schedule (FSRS), which outlines sub-categories of each of the major four, detailing the specific requirements for each area of evaluation.

A community's ISO 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, ISO 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.

ISO Engine Distribution

Consideration by ISO for purposes of developing the PPC® score within the community includes an evaluation to determine the percentage of the service area (and associated structures) that fall within a 1.5-mile travel distance of a staffed fire engine. This distance is equivalent to the 4-minute travel time recommendation for first-unit arrival, which will be discussed in a subsequent section. As illustrated in the following figure, 31% of the TFD service area is within the 1.5-mile travel distance from a staffed fire engine.

Figure 22: TFD Engine Distribution per ISO Criteria.

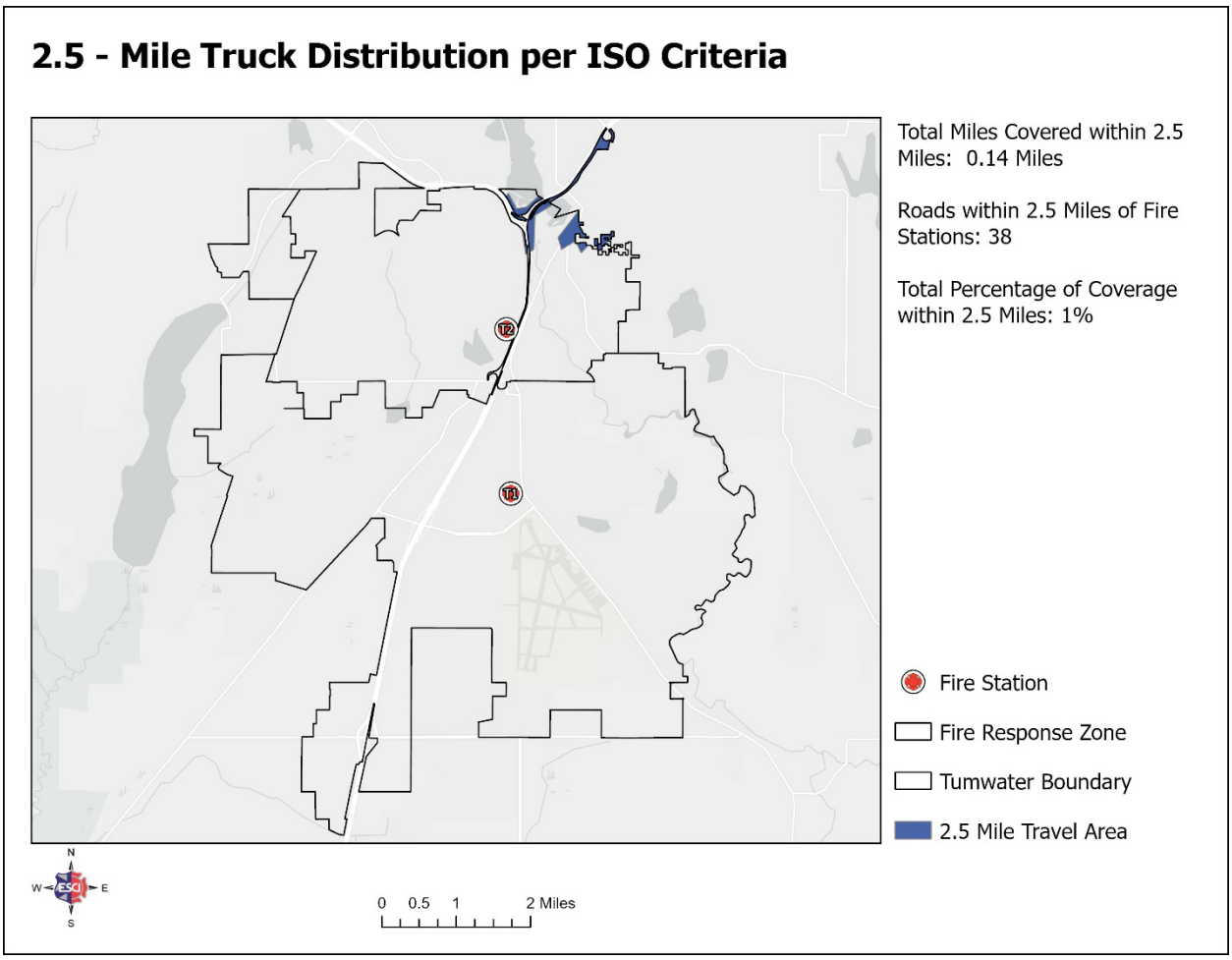


ISO Aerial Distribution

The use of aerial apparatus is more specifically needed in areas of the community where there are five or more buildings of three stories (or 32 feet) or more in height or with five or more buildings requiring a needed fire flow of greater than 3,500 gallons per minute, or five or more buildings meetings any combination of these requirements.

Consideration by ISO for purposes of developing the PPC® score within the community includes an evaluation to determine the percentage of the service area (and associated structures) that fall within a 2.5-mile travel distance of a staffed aerial apparatus (ladder truck, platform truck, etc.). This distance is equivalent to the 8-minute travel time recommendation for full assignment arrival, which will be discussed in a subsequent section. As illustrated in the following figure, 1% of the TFD service area is within the 2.5-mile travel distance from a staffed aerial apparatus, as TFD does not currently operate any aerial apparatus.

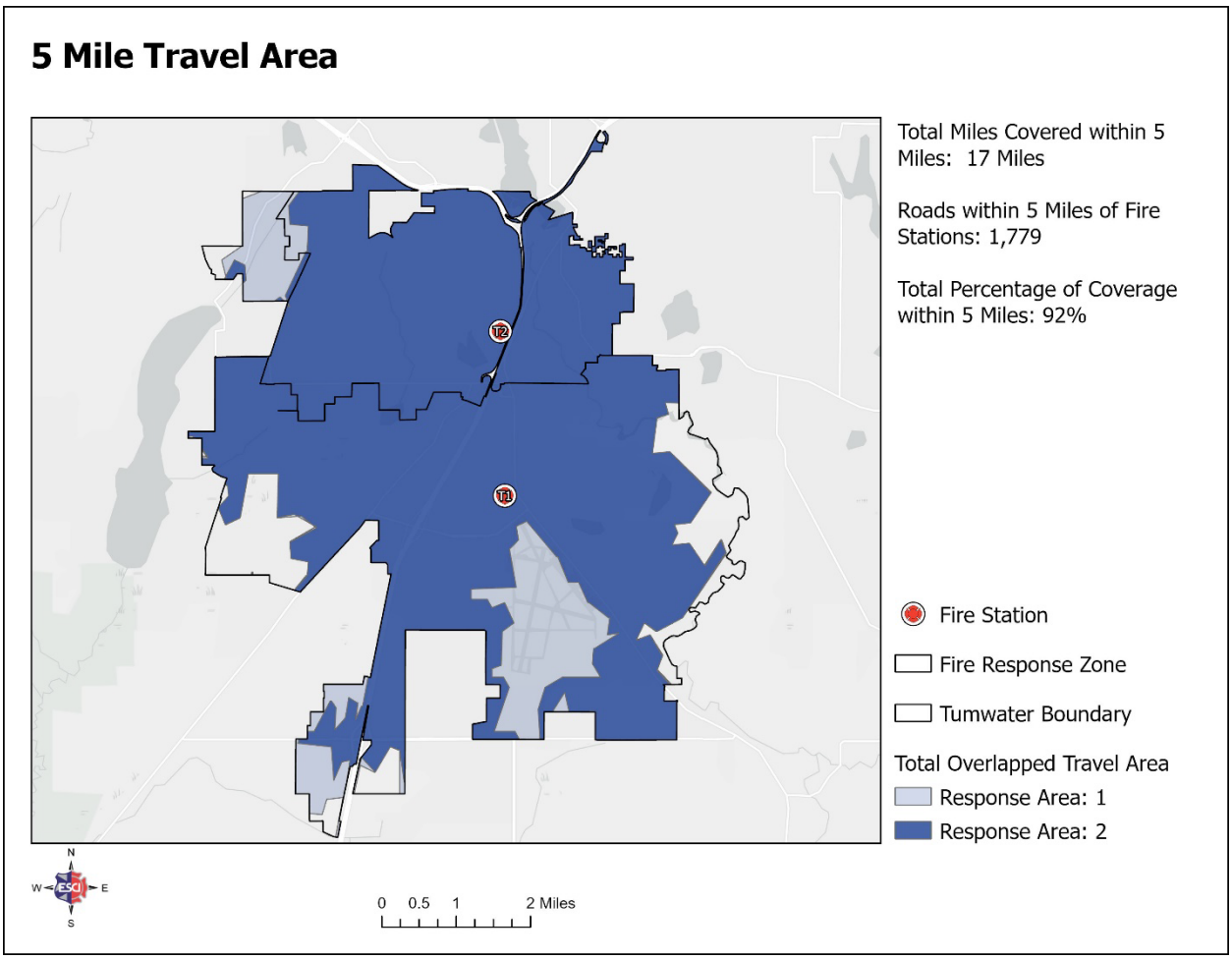
Figure 23: TFD Truck Distribution per ISO Criteria.



ISO Station Distribution

Consideration by ISO for purposes of developing the PPC® score within the community includes an evaluation to determine the percentage of the service area (and associated structures) that fall within a 5-mile travel distance of a staffed fire station. As illustrated in the following figure, 92% of the TFD service area is within the 5-mile travel distance from a staffed fire station.

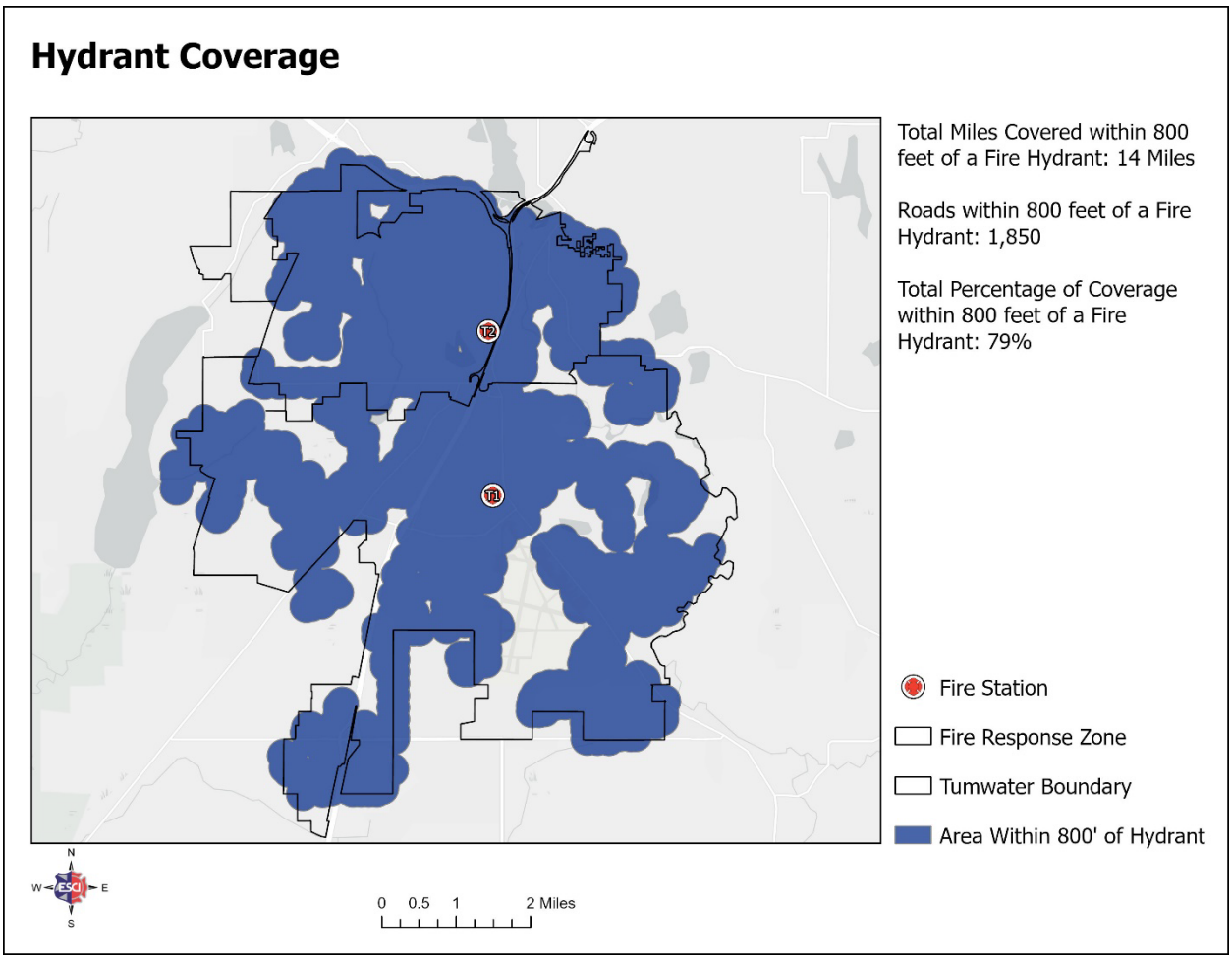
Figure 24. TFD Station Distribution per ISO Criteria.



ISO Water Supply Distribution

Consideration by ISO for purposes of developing the PPC® score within the community includes an evaluation to determine the 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 tanker operation is possible to provide the needed volume of water for fire suppression activities for a specific period. However, TFD has established a performance measure to determine the amount of service area within 800 feet of a fire hydrant. As illustrated in the following figure, 79% of the TFD service area is within 800 feet of a fire hydrant.

Figure 25: TFD Hydrant Coverage.

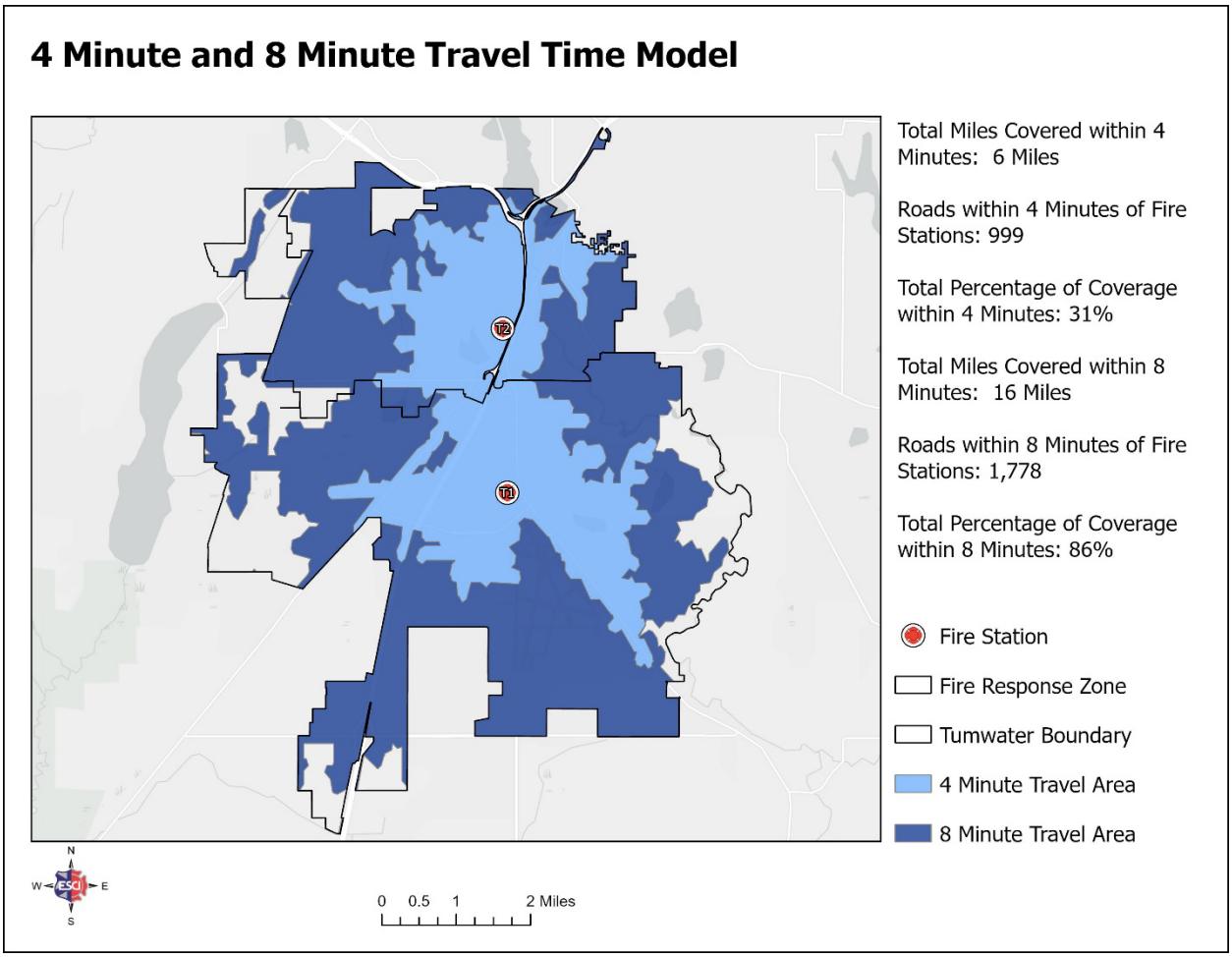


NFPA Distribution

The National Fire Protection Association (NFPA) is an industry trade association that develops and provides standards and codes for fire departments and emergency medical services for use by local governments. One of these standards, 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*, serves as a national consensus standard for career fire department performance, operations, and safety. Within this standard, a travel time of 240 seconds, or 4 minutes, is identified as the benchmark for career departments to reach emergency incidents within their jurisdiction with the first arriving unit. Additionally, the balance of the response (called the effective response force or ERF) is required to arrive at the incident within 480 seconds or 8 minutes.

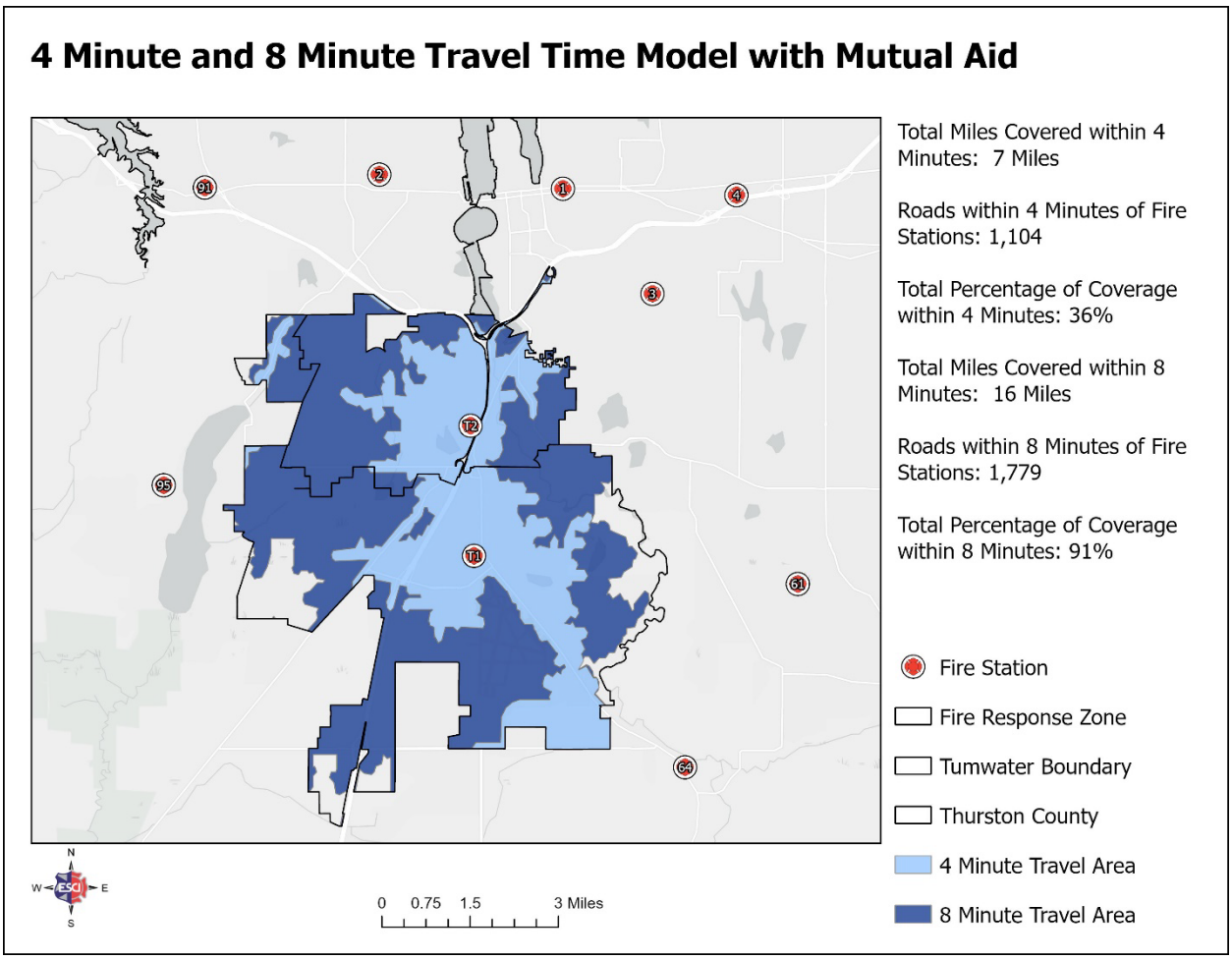
When analyzing this measure, travel time is calculated using the posted speed limits and adjusted for negotiating turns, intersections, and one-way streets. Unshaded pockets indicate that the area falls outside of the model's maximum extension from the road network. Note that other impedance factors, such as traffic congestion, road closures, or weather conditions, are not factored into this analysis. Rarely are conditions perfect. As illustrated in the following figure, 31% of the TFD service area falls within the 4-minute travel time of a fire station, and 86% falls within the 8-minute travel time of a fire station.

Figure 26: TFD 4/8-Minute Travel Time per NFPA Criteria.



Automatic aid and mutual aid will be discussed in a section further within the report. As illustrated in the following figure, 4-minute coverage increases from 31% to 36%, and 8-minute coverage increases from 86% to 91%

Figure 27: TFD Travel Time per NFPA Criteria (With Mutual Aid Resources).



Often, there is value in comparison of actual performance to the theoretical models produced by the GIS software. When analyzing this, ESCI considered the location of the incident (either within the city limits or within the county but outside the city limits). The following figure illustrates TFDs overall travel time performance.

Figure 28. TFD Travel Time Performance, 2019–2023.

Travel Time	City	County
Less Than 4 Minutes	48.44%	10.83%
4 – 8 Minutes	45.32%	33.57%
8 – 12 Minutes	4.67%	26.95%
Greater Than 12 Minutes	1.57%	28.66%

To assist leadership further in the evaluation of travel time, the following figures illustrate the location of incidents with a travel time greater than 4 minutes and less than 8-minutes.

Figure 29: TFD Travel Time 4-8 Minutes.

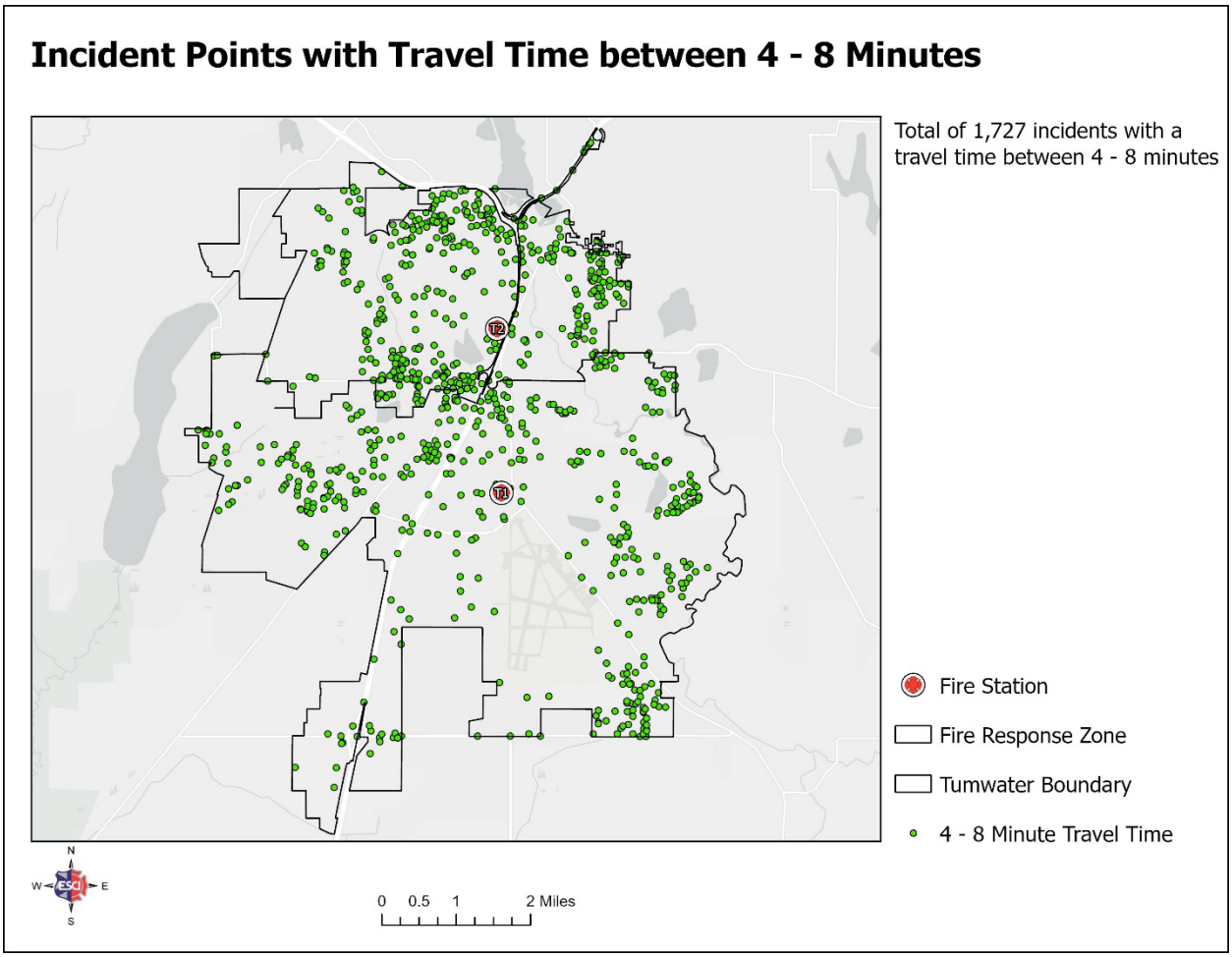


Figure 30: TFD Travel Time 8-12 Minutes.

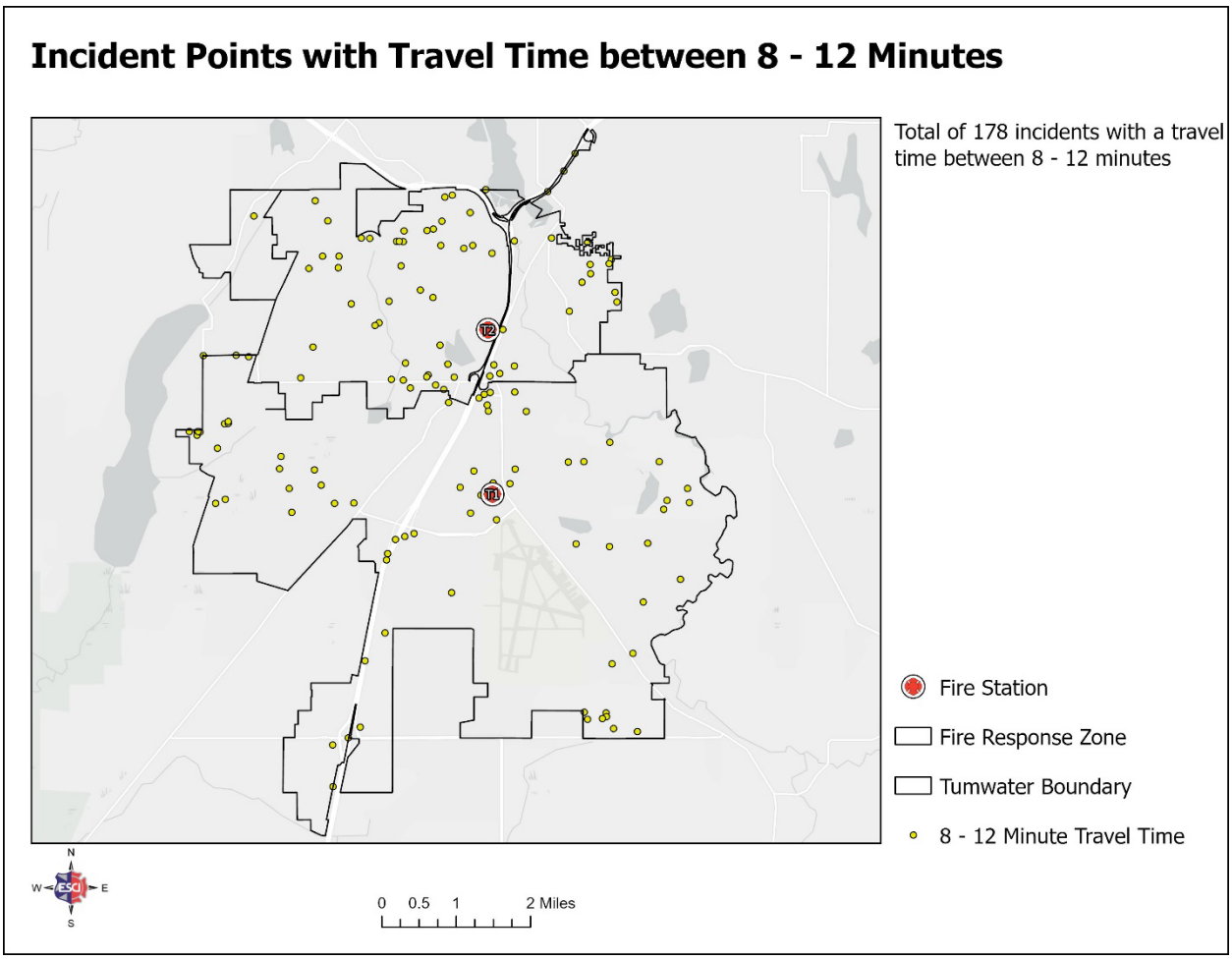
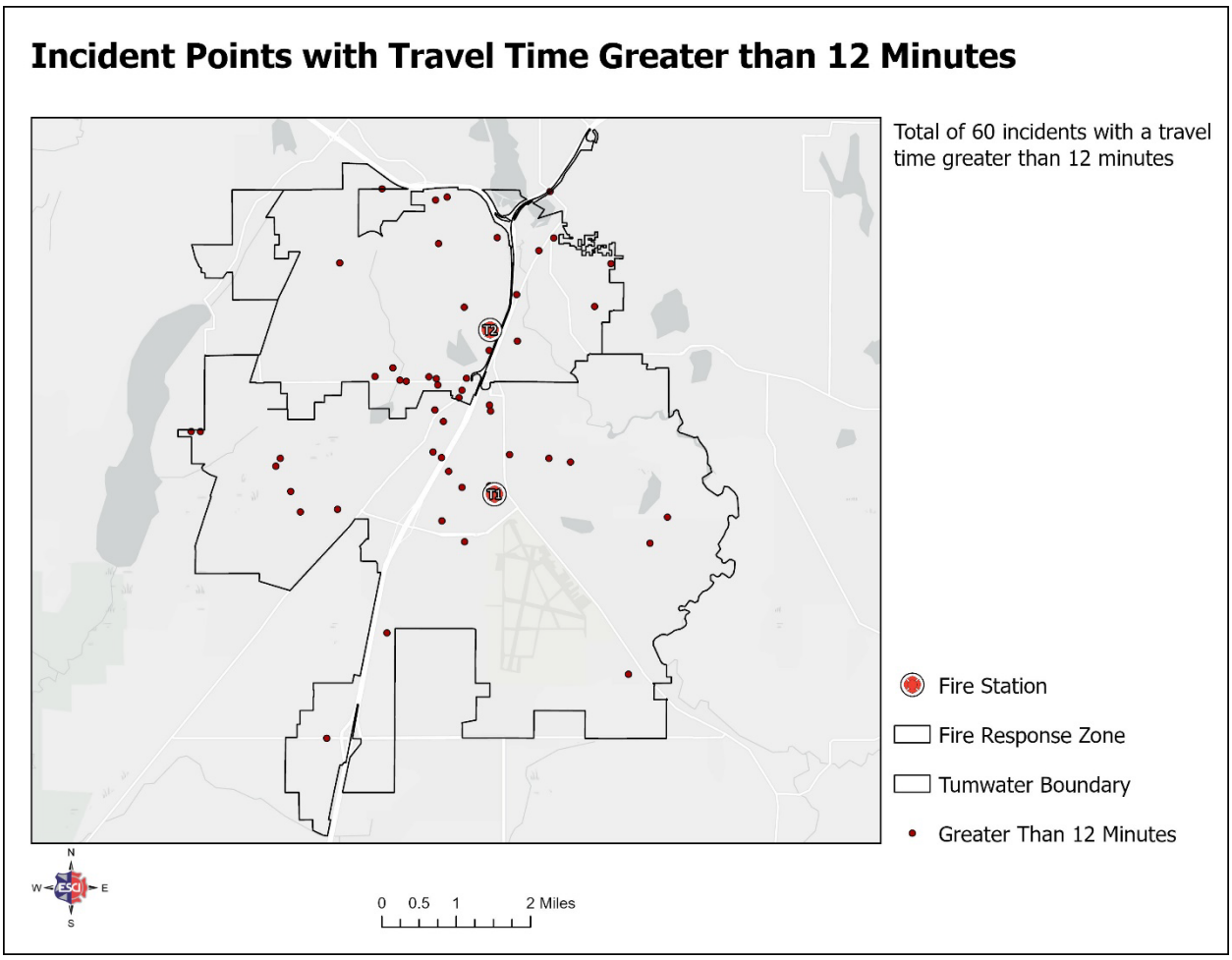


Figure 31: TFD Travel Time Greater than 12 Minutes.



Resource Concentration Study

As presented in the preceding section, industry standards and best practices such as NFPA 1710 recommend the arrival of the effective response force within an 8-minute travel time to provide the opportunity for the fire department to mitigate the incident safely. The effective response force recommendation is based on sufficient apparatus and personnel to accomplish the various tasks needed to safely mitigate the incident, as illustrated in the following figure.

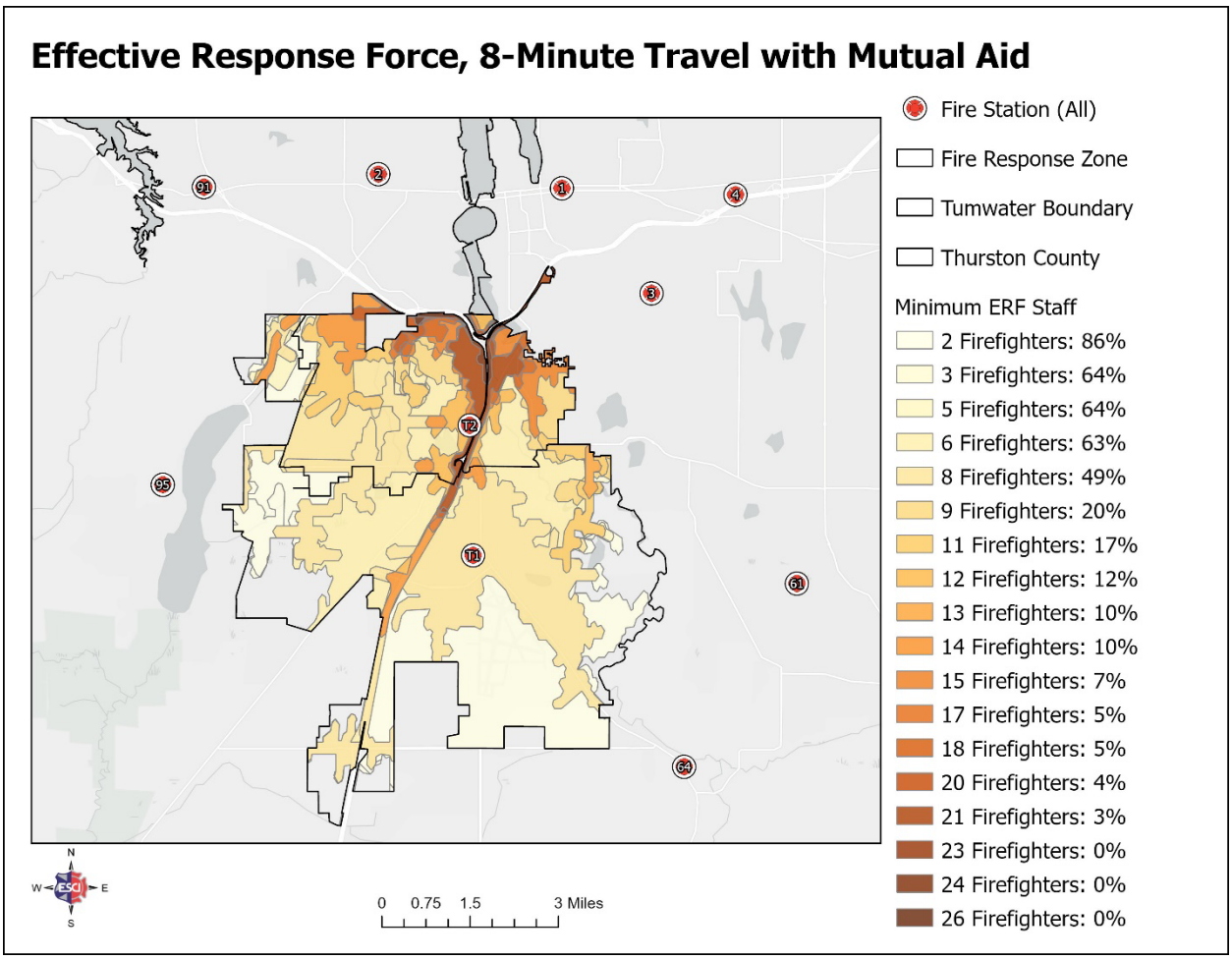
Figure 32: Firefighter Task Analysis – Building Risks

Task	Single Family Residence	Strip Mall or Apartment Building	Multi-Story and Large Expansive Building
Command	1	2	2
Apparatus Operator	1	2	2
Handlines [2 FF's each]	4	6	4
Support members	2	3	8
Search and Rescue	2	4	4
Ground Ladders/Ventilation	2	4	
Aerial Operator (If Deployed)	1	1	2
Initial Rapid Intervention Crew	4	4	4
Initial Medical Care Component		2	4
Building Pump (If Equipped)			1
Hoseline - Floor Above Fire			2
Elevator Operations Manager			1
Incident Safety Officer			1
Interior Staging Manager			2
Member Rehabilitation			2
Vertical Ventilation Crew			4
Lobby Control			1
	16 (17)	27 (28)	42 (43)

NFPA 1710: Deployment of Fire Suppression and EMS to Public Career Fire Departments (2020)

Within the GIS software, ESCI programmed the staffing levels for each station as provided by TFD leadership. Then, through the creation of 8-minute travel time polygons within the software, the analysis was able to determine the number of firefighters (including mutual aid resources) able to arrive within the specific percentages of the TFD service area, as illustrated in the following figure.

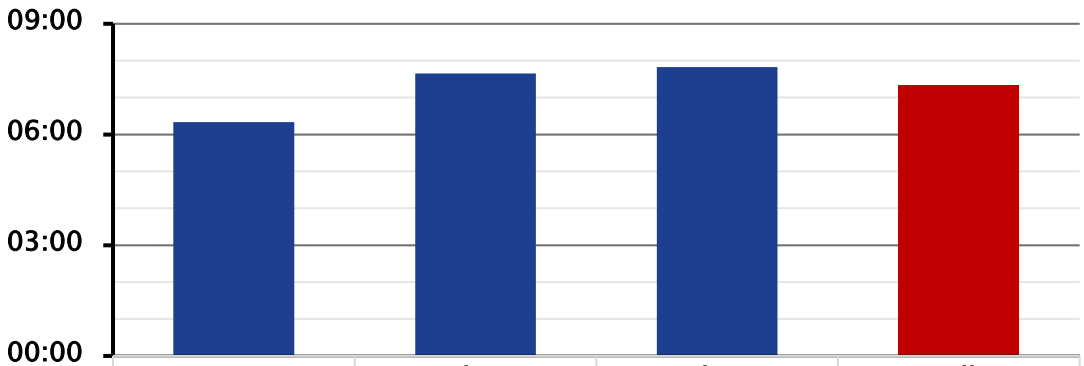
Figure 33. TFD Effective Response Force.



As the theoretical model in the preceding figure assumes that all units are within their assigned stations at the time of dispatch, there is value for TFD leadership to understand the times associated with the arrival of multiple units at the scene of a structure fire incident.

For this analysis, only those incidents coded as NFIRS 111 and 112, where three or more units arrived, were included—and only those units responding to lights and sirens. The following figure illustrates actual response time performance at the 90th percentile based on those criteria.

Figure 34. TFD Structure Fire Order of Arrival, 2019–2023.



	1st Unit	2nd Unit	3rd Unit	All
90th Percentile	06:20	07:39	07:50	07:20

Resource Reliability

The workload of the various units within the department may also impact the ability to provide timely responses to calls for service. An effective method of measuring the workload of units is to consider the total amount of time assigned to calls as compared to the total amount of time the unit is in service, expressed as a percentage. 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. 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 related to commitment factors that may be utilized by TFD leadership as a base for developing internal workload measures.

Figure 35: Commitment Factors as Developed by Henrico County (VA) Division, 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 respond 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—the 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.

As illustrated in the following figure, none of the TFD units are at a concerning level of excessive commitment factors.

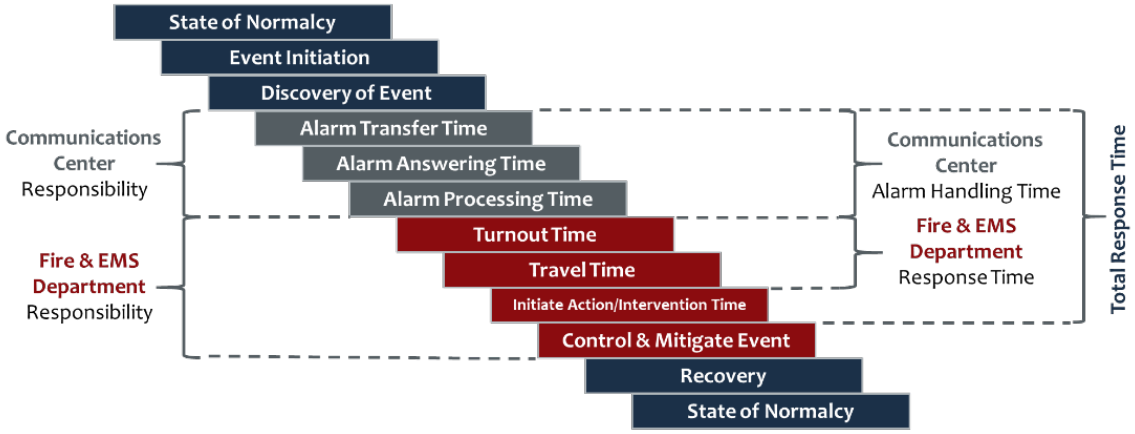
Figure 36. TFD Unit Hour Utilization, 2019–2023.

Unit	2019	2020	2021	2022	2023	Change Over Study Period
ET1	11.52%	10.39%	12.44%	13.70%	13.27%	1.76%
ET12	0.00%	0.10%	0.00%	0.03%	0.06%	0.06%
ET2	11.89%	11.25%	12.38%	12.93%	13.77%	1.88%
ET22	0.00%	0.07%	0.00%	0.00%	0.07%	0.07%
M14	7.27%	6.64%	7.22%	7.17%	7.60%	0.33%
M5	12.27%	11.49%	12.18%	13.54%	13.25%	0.98%

Response Performance Analysis

With the primary mission of responding to calls for service, response performance is often the most visible facet of the fire department. The public and elected officials view this performance as one measure of time between the 911 call and the arrival of the fire department. However, this full measure is but one aspect of response time performance, as illustrated in the following figure.

Figure 37: Response Time Continuum.



To provide further information on these measures, the following lists each measure and defines how it is calculated.

- **Alarm Handling Time:** The amount of time between when a call is answered by the 911 Primary Public Safety Answering Point (PSAP) or dispatch center and when resources are dispatched.
- **Turnout Time:** The time interval between when response units are notified of the incident and when the apparatus begins to respond.
- **Travel Time:** The time the responding unit spends on the road traveling to the incident until arrival at the scene. This is a function of speed and distance.
- **Response Time:** The time from initial alerting of an incident until arrival on the scene. Response Time equals the sum of "Turnout Time" and "Travel Time."
- **Total Response Time:** This is the most apparent time for the caller to request emergency services, from when the emergency call is placed until units arrive on the scene.

In analyzing response performance, ESCI generates percentile measurements of time performance. The use of percentile measurement using the components of response time follows the recommendations of industry best practices. The best practices are derived from the Center for Public Safety Excellence (CPSE) Standard of Cover document 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 not to be as strongly influenced by data outliers.

Percentile measurements are a better 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.

Tracking the individual components of response time can help TFD leadership identify impediments to timely response and make operational adjustments to improve, including developing response time goals and standards that are both relevant and achievable. Fire service best practices recommend that fire service organizations monitor and report the components of total response time.

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 percentile is calculated exists in a set of data unto itself. Each of the following analyses only included those incidents where the response was coded as an "emergency" or "priority" and evaluated the first unit to arrive within the City of Tumwater. The EMS units' responses outside the City of Tumwater are measured separately by the Thurston County EMS system and under a different standard.

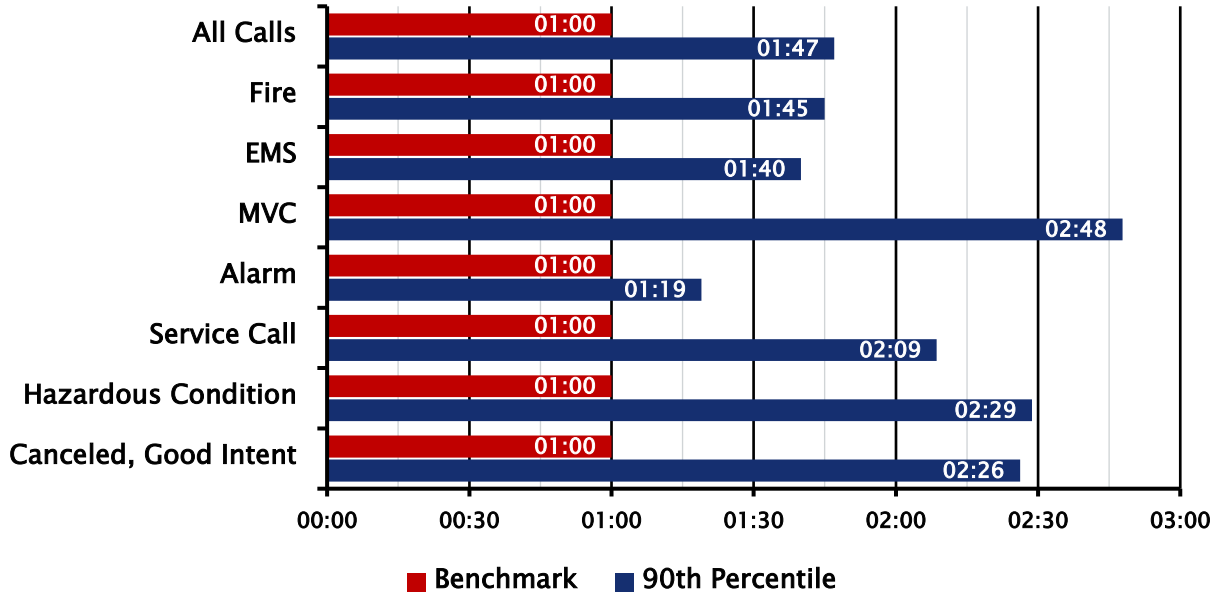
Alarm Handling Time

Alarm handling time is the time between a dispatcher getting the call and the resources being dispatched. For this measure, there is one applicable standard, as illustrated in the following figure.

Standard	Performance
NFPA 1225: *Standard for Emergency Services Communications* (2022 Edition)	60 seconds at the 90th percentile

As illustrated in the following figure, the TFD alarm handling time performance is 2 minutes and 23 seconds. When analyzed by incident series, performance ranges from 1 minute and 21 seconds for alarm incidents to 4 minutes and 12 seconds for motor vehicle collision incidents. As this is not under the direct control of the fire department, TFD leadership should work with communications center leadership to monitor performance and identify any areas of improvement needed.

Figure 38: TFD Alarm Handling Time Performance, 2019–2023.



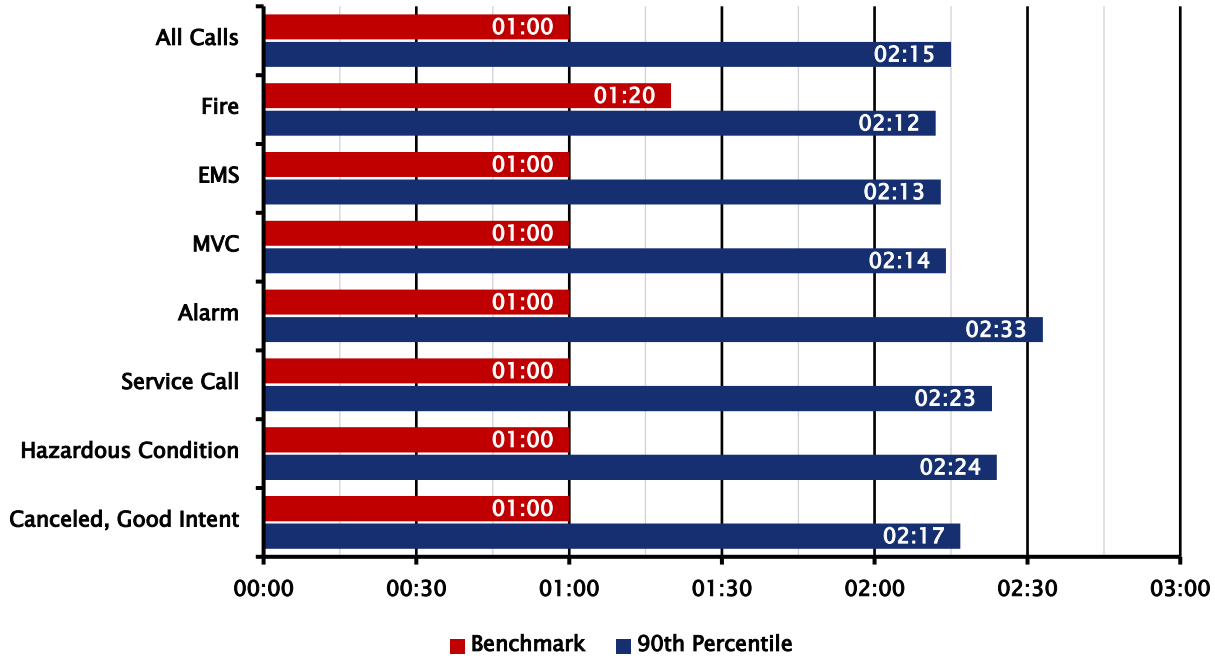
Turnout Time

Turnout performance is measured by turnout time, which is the length of time between dispatch time and when a unit begins responding to the call. For this measure, there is one applicable standard, as illustrated below.

Standard	Performance
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 recommends*	Fire and Special Operations Incidents 80 seconds at the 90th percentile All Other Incidents 60 seconds at the 90th percentile

As illustrated in the following figure, TFD turnout time performance is 2 minutes and 17 seconds. When analyzed by incident series, performance ranges from 2 minutes and 13 seconds for motor vehicle collision incidents to 2 minutes and 33 seconds for alarm incidents.

Figure 39: TFD Turnout Time Performance, 2019–2023.



As this is the first measure under the direct control of the fire department, TFD leadership may consider the various actions that occur within this measure and determine if there are areas where process changes could improve performance. These factors may include:

- Systems are used to notify personnel of an incident.
- Station design relates to the movement of personnel from living quarters to the apparatus bay.
- Personnel adherence to department policies and acting with appropriate speed towards the apparatus.
- Time required to don protective equipment prior to responding.
- Moving equipment between apparatus when units are cross-staffed.
- Time from starting apparatus until radio system is capable of transmitting.

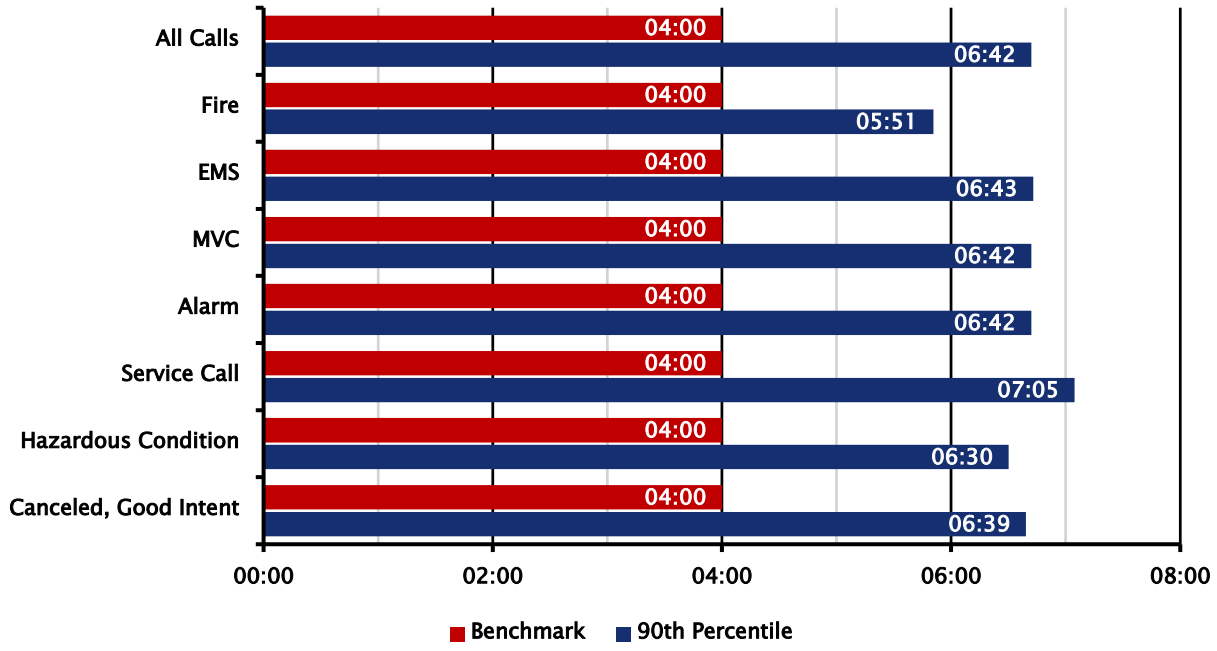
Travel Time

Travel performance is measured by travel time, which is the length of time between when a unit begins to respond and when it arrives on the scene. For this measure, there is one applicable standard, as illustrated below.

Standard	Performance
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*	4 minutes at the 90th percentile

As illustrated in the following figure, TFD travel time performance is 6 minutes and 42 seconds. When analyzed by incident series, performance ranges from 5 minutes and 51 seconds for Fire incidents to 7 minutes and 5 seconds for Service Call incidents.

Figure 40: TFD Travel Time Performance, 2019–2023.



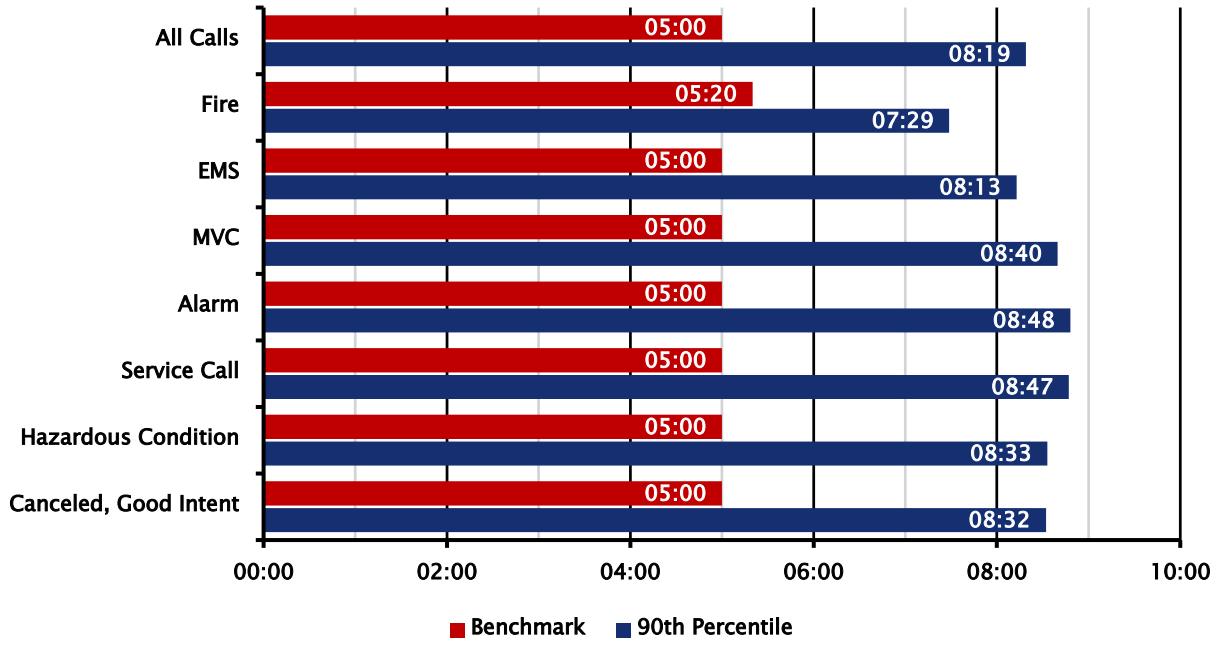
Response Time

Response time is defined as the length of time between dispatch time and arrival at scene time. For this measure, there is not a specific applicable standard. However, by combining the individual component standards, the following figure illustrates expected performance.

Standard	Performance
Turnout Time	Fire and Special Operations Incidents 80 seconds at the 90th percentile All Other Incidents 60 seconds at the 90th percentile
Travel Time	4 minutes at the 90th percentile
Combined	Fire and Special Operations Incidents 5 minutes, 20 seconds at the 90th percentile All Other Incidents 5 Minutes at the 90th percentile

As illustrated in the following figure, TFD response time performance is 8 minutes and 19 seconds. When analyzed by incident series, performance ranges from 7 minutes and 29 seconds for Fire incidents to 8 minutes and 48 seconds for Alarm incidents.

Figure 41: TFD Response Time Performance, 2019–2023.



Total Response Time

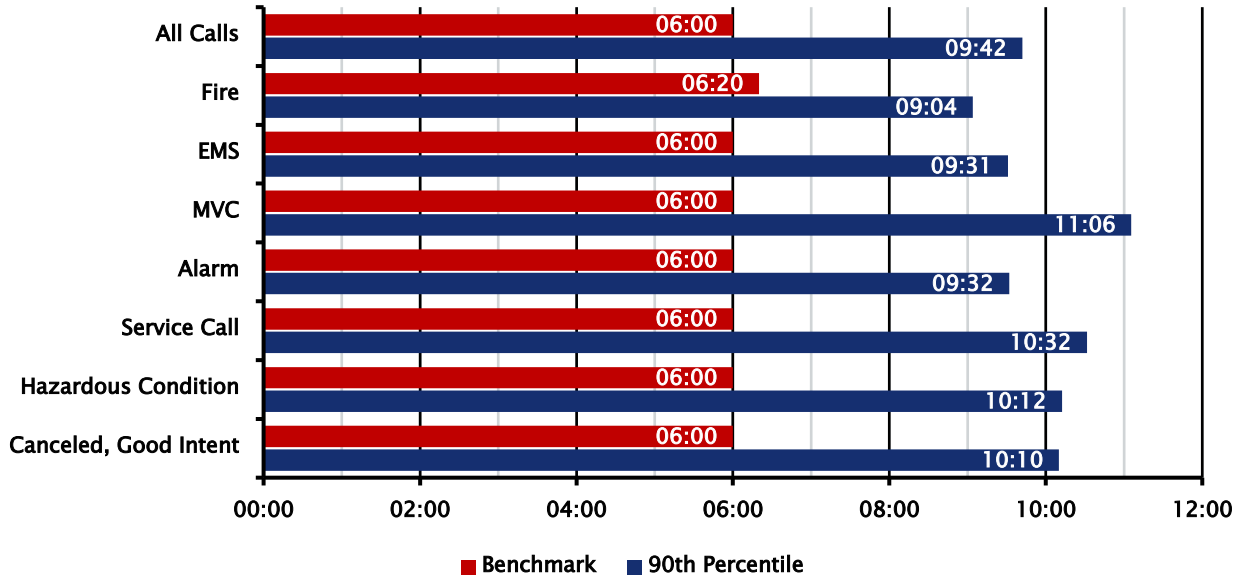
Total response time is defined as the length of time between when the 911 call is answered, and the dispatched unit arrives on the scene. For this measure, there is not a specific

applicable standard. However, by combining the individual component standards, the following figure illustrates expected performance.

Component	Performance
Alarm Handling Time	60 seconds at the 90th percentile
Turnout Time	Fire and Special Operations Incidents 80 seconds at the 90th percentile All Other Incidents 60 seconds at the 90th percentile
Travel Time	4 minutes at the 90th percentile
Combined	Fire and Special Operations Incidents 6 minutes, 20 seconds at the 90th percentile All Other Incidents 6 Minutes at the 90th percentile

As illustrated in the following figure, TFDs total response time performance is 9 minutes and 42 seconds. When analyzed by incident series, performance ranges from 9 minutes and 4 seconds for Fire incidents to 11 minutes and 6 seconds for Motor Vehicle Accident (MVA) incidents.

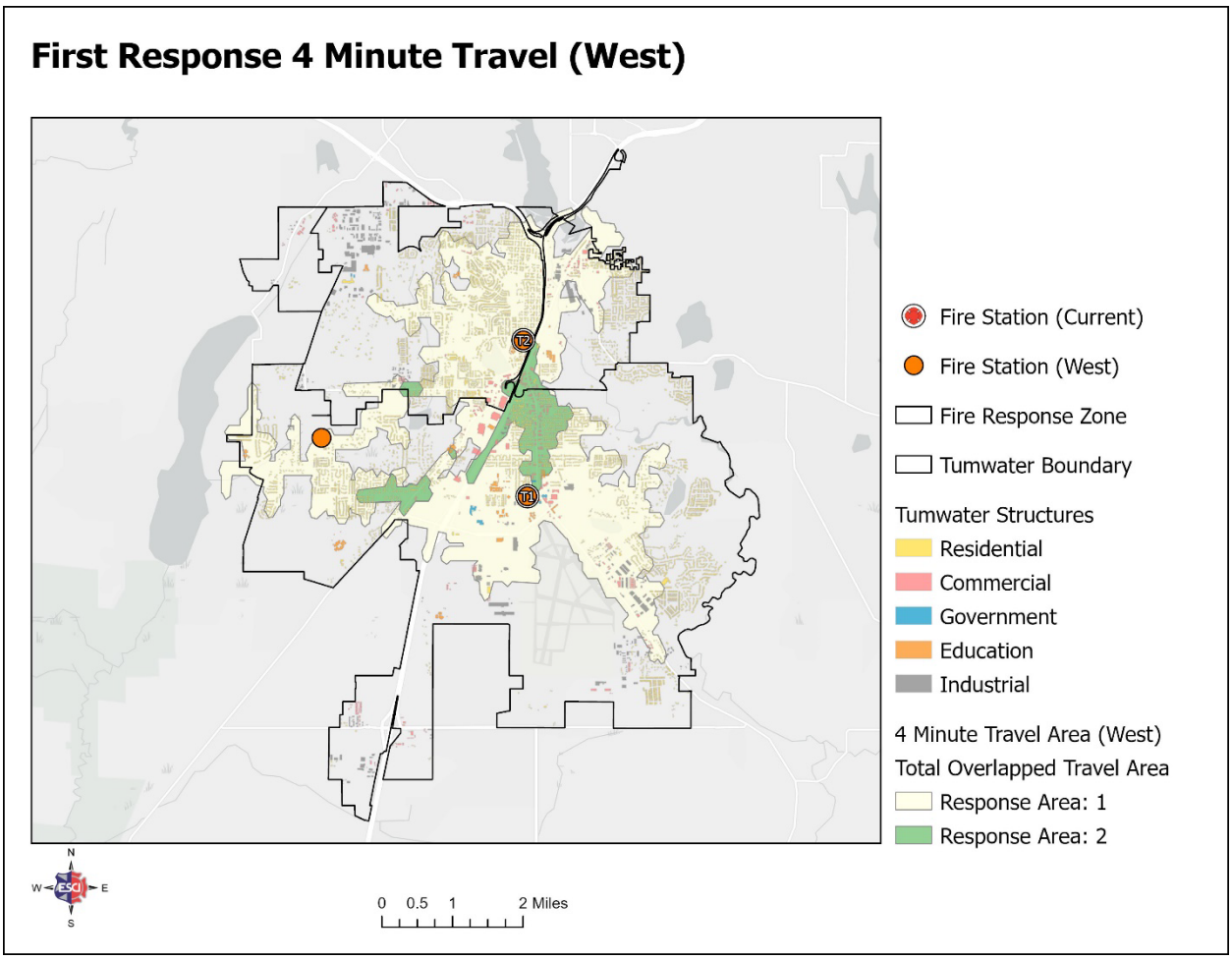
Figure 42: TFD Total Response Time Performance, 2019–2023.



Preliminary Fire Station Site Assessment

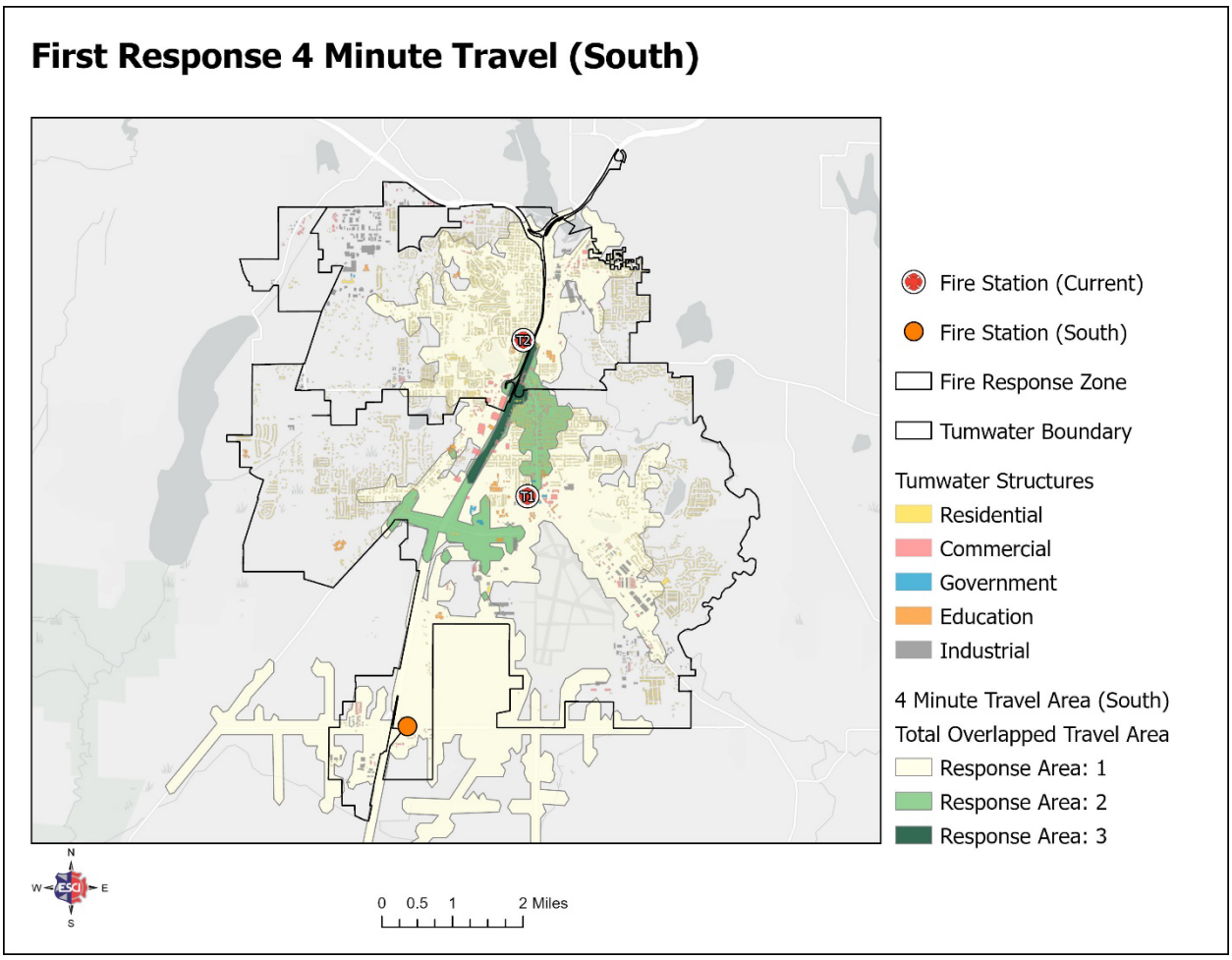
The recommendations will outline that ESCI recommends a full fire station location study be conducted to provide an in-depth analysis of what will be required for the City as it continues to grow. During the fire department evaluation, it became apparent that the City lacks station distribution and the ability to concentrate sufficient numbers of firefighters to combat a standard residential structure fire. The following maps provide a quick assessment of two potential fire station sites and what distribution coverage they might provide.

Figure 43: City West Location



The City West Location's first due area with Station T1 and Station T2 encompasses 6,011 structures, equivalent to 61% of the City's total of 9,854 structures.

Figure 44: City West Location



The City South Location first due area with Station T1 and Station T2 encompasses 5,083 structures, equivalent to 52% of the City's total structure count. Based on this cursory analysis, the City West Station would capture 9% more city structures, given the current building inventory.

Facilities

Locations of Facilities

TFD operates from two fire stations: Station T1 is located at 311 Israel Road SW and primarily serves the southern area of the city. Station T2 is located at 405 Linwood Avenue SW and primarily serves the northern area of the city. TFD utilizes a maintenance facility in Lacey, WA, and the Mark Noble Regional Fire Training Center in Olympia, WA.

Facilities Review

During the site visit, the ESCI team, along with personnel from the TFD, visited both fire stations, the administrative offices located at Fire Station 1, the maintenance facility located in Lacey, and the Mark Noble Regional Training Center located in Olympia. The visits included a walk-around of each building with a focus on building conditions, building amenities, any apparent safety issues, and other visual problems or issues. Personnel were welcoming and encouraged to provide comments.

Overall, the stations were in fair/good condition. The department has an internal facilities inspection program to identify issues in the stations. Issues that the TFD cannot address are forwarded to the City's facilities department. Physical fitness equipment is located in the bays of both stations without physical barriers and separate ventilation systems. There is no security fencing around the property of either station.

The 2022-2027 Capital Improvement Plan calls for the installation of a new digital station alerting system in Stations T1 and T2. The current alerting system uses manual VHF toning to alert crews for a response, turn on lights, and shut off power/gas in the kitchen. It has little flexibility in broadcasting throughout the station. Digital alerting will provide multiple alerts, including voice, LED lighting, and visual information display. Alerting can be controlled in each dorm room, so staff are only alerted to calls for their unit, not all calls, reducing the stress for responders. Most regional departments are installing this technology, which has been shown to reduce turnout time.

The following table provides a rating platform for staff to evaluate their facilities.

Figure 45: ESCI Facility Rating System

Excellent	• Like new condition. • No visible structural defects. • The facility is clean and well-maintained. • The interior layout is conducive to function with no unnecessary impediments to the apparatus bays or offices. • No significant defect history. • Building design and construction match the building's purposes. • Age is typically less than ten years.
Good	• The exterior has a good appearance with minor or no defects. • Clean lines, good workflow design, and only minor wear on the building interior. • The roof and apparatus apron are in good working order, absent any significant full-thickness cracks or crumbling of the apron surface or visible roof patches or leaks. • Building design and construction match the building's purposes. • Age is typically less than 20 years.
Fair	• The building is structurally sound, with a weathered appearance and minor non-structural defects. • The 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 the building's purposes well. • Shows increasing age-related maintenance but with no critical defects. • Age is typically 30 years or more.
Marginal	• The building is structurally sound, with a weathered appearance and moderate non-structural defects. • Full-thickness cracks and crumbling concrete on the apron may exist. • The roof has evidence of leaking and/or multiple repairs. • The interior is poorly maintained or showing signs of deterioration with moderate non-structural defects. • Problematic age-related maintenance and/or defects are evident. • It may not be well suited to its intended purpose. • Age is typically greater than 40 years.
Poor	• The building is cosmetically weathered and worn with potential structural defects, although not imminently dangerous or unsafe. • Large, multiple full-thickness cracks and crumbling concrete on the apron may exist. • The roof has 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 and/or major defects are evident. • It may not be well suited to its intended purpose. • Age is typically greater than 50 years.

General Condition of Fire Stations

Fire Station T1:

311 Israel Rd SW, Tumwater, WA 98501

- Collocated with the administrative offices and EOC
- Constructed in 2000, using Type V construction
- 2 story building
- Fair condition
- Code compliant
- Staffing capacity: 8 bedrooms for a max staffing of 8 FFs
- 5 back in bays
- Has an apparatus exhaust system
- Has CCTV, Keyed lock
- No washer/extractor for PPE
- Diesel fuel tank for emergency power
- Has a decontamination area

Fire Station T2:

405 Linwood Ave. SW, Tumwater, WA 98501

- Constructed in 1995, using type V construction
- 1 story building
- Fair condition
- Code compliant
- Staffing capacity: 3 bedrooms for a staffing of 4 FFs
- 2 back in bays
- Has an apparatus exhaust system
- Has CCTV, Keypad, Keyed lock
- No washer/extractor for PPE
- Diesel fuel tank for emergency power
- Has a decontamination area

Apparatus

Maintaining fire service apparatus and equipment is crucial for ensuring operational readiness, safety, and longevity of service life. Essential elements of this maintenance include regular inspections and preventative maintenance schedules, which should be strictly adhered to according to manufacturer recommendations and NFPA standards.

Checking and servicing all mechanical components, such as engines, pumps, and aerial ladders, as well as testing electrical systems and communication devices. Regular cleaning of equipment and apparatus is also vital to prevent corrosion and prolong life expectancy.

Additionally, thorough documentation of all maintenance activities is necessary to track the condition and service history of each piece of equipment, enabling timely repairs and replacements as needed. Training for personnel on proper operation and maintenance techniques is equally important to minimize wear and tear and ensure the equipment performs effectively during emergencies.

The preventative maintenance provided by interlocal agreement with the City of Olympia provides a significant benefit in maintaining the serviceability of the apparatus and increasing its longevity. The maintenance facility, located in the City of Lacey, has modern facilities and is currently adding more facilities to accommodate larger apparatus.

The mechanics are at various levels of EVT certification and possess other mechanic certifications. The staff have a long history and experience working on fire apparatus and are well qualified.

Age, Condition, & Serviceability

ESCI offers agencies a matrix to evaluate their apparatus condition and use based on experience using the following scheme.

Figure 46: Vehicle Condition Grade 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 of operation.	
Service	1,3, or 5 points are assigned based on the type of service unit. For instance, fire pumpers would be given a 5 because they are classified as severe duty service.	
Condition	This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, etc. The better the condition, the lower the points assigned.	
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 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 1	Excellent
18–22 points	Condition 2	Good
23–27 points	Condition 3	Fair
28 points or higher	Condition 4	Poor

In general, the TFD frontline apparatus is in good or fair condition and appears to be well maintained. The reserve apparatus is in fair condition and also appears to be well maintained. One of the frontline engines is five years old (2019), and the other is twelve years old (2012). The reserve engines are both over twenty years old (2000).

In April 2023, the City of Tumwater signed an agreement to purchase a new engine with expected delivery in 2026. The new engine will replace the 2012 frontline engine, which will be placed in reserve status. The other frontline engine (2019) is slated to be replaced in 2031 through the City's capital facilities plan. The TFD does not have a ladder truck or any ancillary apparatus such as tenders or brush trucks.

The frontline medic units are scheduled for replacement in 2025. Thurston County Medic One provides funding for the purchase of the Medic units. The following table provides the scoring of the units during this engagement.

Figure 47: TFD Apparatus Evaluation Scores

Location	Unit ID	Manufacturer	Year	Radio ID No.	Condition	Condition
Station T1	3104-51	Pierce	2012	ET1	34	Poor
Station T1	3104-48	KME	2000	ET1-2	46	Poor
Station T1	4819	Ford F150	2014	BNT1	23	Fair
Station T1	3031	Ford	2018	M5	21	Good
Station T1	3024	GMC	2014	M5-2	30	Poor
Chief	4989	Ford Explorer	2018	CHT1	6	Excellent
Asst. Chief	4809	Ford Explorer	2014	CHT2	23	Fair
MSO	4633	Ford Explorer	2011	MSO	28	Poor
Prevention	3828	Ford Maverick	2023	PREV1	3	Excellent
Training	4816	Ford F150	2014	TRNT1	20	Good
Station T2	3105	Pierce	2019	ET2	13	Excellent
Station T2	3100-47	KME	2000	ET2-2	42	Poor
Grand Mound	3032	Ford	2018	M14	18	Good
Grand Mound	3018	Ford	2017	M14-2	18	Good

Future Needs

Tumwater FD has been approved and has begun purchasing a replacement fire engine. This vehicle isn't expected to arrive until 2026/2027. TFD is scheduled to replace another engine in approximately seven years, 2031. These two purchases will address the replacement of reserve engines that are deemed in poor condition and beyond their useful life cycle.

Recommendations

Facilitating the adoption and implementation of these recommendations will take commitment, time, and resources (including finances). The suggested timeframes are intended to introduce a realistic "blueprint" for implementation. However, financial and governmental priorities may provide challenges or opportunities to address a recommendation(s) outside of the timeframes identified here. These recommendations should be interlaced into the work plan from the Strategic Plan developed earlier this year.

ESCI has grouped the recommendations into three implementation timeline categories: Short-Term (6 months–1 year), Mid-Term (1–3 years), and Long-Term (3–5 years).

Lastly, these recommendations are just that—recommendations. They are ESCI's best efforts to guide the addressing of issues and deficiencies identified during the study period. City leaders and residents hold the ultimate authority in embracing, revising, or discounting the following guidance.

Organizational Planning

Capital Improvement Plan

Assessment: The Tumwater Fire Department is nearing the end of an apparatus replacement program, and it appears that insufficient funds are available to complete the final engine purchase. Other capital costs are not anticipated in a long-term funding plan, leaving the competitive budget process to address needs when they become more urgent.

Recommendation: Develop a 20-year Capital Improvement Plan (CIP) that incorporates apparatus, equipment, and facility upgrades to determine the expected future costs, annual restricted reserves, and general replacement cycles in partnership with the city's finance department. The CIP must also incorporate capital apparatus and equipment not currently owned but required for the delivery of future services, including the addition of a wildland/brush unit, ladder truck, and future engine to equip future fire station 3.

Time Frame: Short

Wildland Urban Interface Planning

Assessment: The intermingling of undeveloped wildland vegetation adjacent to urbanized infrastructure poses significant challenges for fire management and community safety. As residential developments encroach further into forested areas, the potential for catastrophic wildfires increases, heightened by climate change and periods of drought that exacerbate fire conditions. Effective mitigation strategies, including land use planning, community awareness programs, and robust emergency response planning, are critical to reducing the inherent risks associated with living near wildland areas.

Recommendation: After implementing the recommendation to add the Assistant Chief–Risk Reduction, conduct an all-hazard risk assessment, specifically focused on wildland risks in the community, in contrast to a fire protection task analysis so that response plans, mitigation efforts, and general risk reduction activities are based on a current understanding of the community risks. Developing a Wildland Protection Plan under the guidance provided by the Washington State Department of Natural Resources will provide greater benefits in risk reduction for the City's Wildland Urban Interface Areas.

Time Frame: Mid

Support Service Staffing

Administrative

Assessment: Multiple support service and administrative duties are managed by staff members, and it appears that insufficient staff resources may be inadequate to properly address the community's needs and expected level of services.

Recommendation: Perform a time-on-task analysis and identify program deficiencies and the time spent on different tasks to see where additional staff are needed, e.g., public affairs, administrative support, policy development, etc.

Time Frame: Mid

Emergency Management

Assessment: The emergency management program appears not to be as fully developed as you would expect for a city the size and complexity of Tumwater. The Emergency Manager functions are assigned to the Fire Chief, who is predominantly focused on leading and managing the fire department. The saturation of tasks can lead to work fragmentation, communication challenges, and inconsistent work effort across all divisions.

Recommendation: Develop a contract for service with Thurston County Emergency Management that outlines primary outputs such as developing a local emergency management plan for the City of Tumwater, conducting position-specific training for City of Tumwater staff, ensuring the City of Tumwater is included in the Hazard Mitigation Plan development update cycle, as well as, consult with the City of the design, technology, and operations readiness for the city of Tumwater's primary and backup EOCs. ALTERNATIVELY: The City of Tumwater may consider contracting with a third party that specializes in emergency management services or hiring a position to fulfill the duties.

Time Frame: Mid

Community Risk Reduction Positions

Assessment: Excluding home occupation type businesses, nearly 1200 individual businesses of all sizes and complexity are registered with the City of Tumwater. With fire prevention education and other related tasks, the Fire Prevention Officer reported that 638 initial and follow-up inspections of businesses were conducted, falling short of best practice to inspect each business annually, and wherein hazardous occupancies need two inspections annually. This position and responsibility carry an important role in the community's risk reduction program. This Fire Prevention Officer position is currently slotted in the City's salary schedule as equivalent to a first-line supervisor (Lieutenant). It is also noted that the caliber of experience, training, and professional skills and judgment necessary for a Code Enforcement (Fire Marshal) position demands that a Chief Officer rank and associated salary be assigned.

Recommendation: Establish a new position of Assistant Chief – Risk Reduction to oversee all the elements of a community risk reduction program, and the Fire Prevention officer, who will be assigned the responsibilities delegated by the Fire Chief within the scope of the International Fire Code.

Time Frame: Short

Training Program

Assessment: While the organization is working on developing the training and certification of personnel in wildland firefighting, there is more to be accomplished. Over half of the staff are certified Firefighter 2, leaving a minority without the certification. The department has issued wildland shirts, helmets, and shelters but has not provided the full complement of standard wildland personal protective equipment: slacks, boots, helmet lights, etc.

Recommendation: Personnel should be trained and certified to meet the requirements of NFPA 1051 and the National Wildfire Coordinating Group (NWCG) within Washington State guidelines. Further, personnel should be fully equipped with wildland personal protective equipment that meets the requirements of NFPA 1977.

Time Frame: Short

Assessment: While the department has a dedicated Lieutenant Training Officer and has developed and improved the department's training profile, there are benefits to collaborating and consolidating with adjacent organizations to ensure the programs are consistent across mutual aid partners. Efficiencies can be realized through the scale of the economy, and the specialization of staff within a training division can be developed.

Recommendation: Develop an interlocal agreement with the City of Olympia to consolidate training personnel and programs to provide comprehensive training across both jurisdictions seamlessly.

Time Frame: Mid

Safety Program

Assessment: Researchers from the University of Cincinnati have found that firefighters face a higher risk of developing certain cancers compared to other workers, likely due to inadequate protection from cancer-causing agents encountered in their line of work. The study revealed that firefighters are twice as likely to develop testicular cancer and have higher incidences of non-Hodgkin's lymphoma, prostate cancer, and multiple myeloma. Exposure to carcinogens like benzene, diesel exhaust, and formaldehyde, both at fire scenes and within firehouses, has been identified as a contributing factor. The findings, led by Grace LeMasters and her team, underscore the urgent need for improved protective measures to shield firefighters from these harmful exposures.[10]

Some of the notable changes in the current facilities should be how and where PPE is stored, isolating furniture, ice machines, and other equipment in apparatus bays, and installing separate heating/air conditioning and air handling systems and an airtight physical barrier for exercise facilities from apparatus bay spaces where diesel exhaust may be present.

Recommendation: Adopt and implement the recommended practices developed by the International Association of Fire Fighters and the Firefighter Cancer Support Network. This will include some infrastructure upgrades to existing facilities, such as barrier separation of spaces, installation of separate HVAC, etc.

Time Frame: Short

Service Deployment

Assessment: The Tumwater Fire Department is challenged with the current level of staffing and available facilities to adequately respond to the current boundaries of the City and concentrate enough firefighters for the risk profile, not including its Urban Growth Areas. Stations T1 and T2 provide only 31% of the city within a 4-minute travel time. It appears that the current station deployment underserves the City boundaries, and a third fire station is needed.

Recommendation: Conduct a full fire station location analysis to determine the number of stations that will be required to serve the City's current boundaries and the expected expansion of its urban growth area.

Time Frame: Mid

[10] Firefighters Face Increased Risk for Certain Cancers: https://assets.website-files.com/64b9346df4252df1681cba3e/64c5f53b45a4c36fcf2dd159_firefighters_face_increased_risk_for_certain_cancers.pdf

Assessment: The City of 27,100 residents typically expect a level of emergency services, and the ability to generate enough firefighters to fight a residential structure fire is expected. National standards based on task analysis require 16 firefighters to conduct simultaneous tasks to fight a fire in a 2500$^{sq.ft.}$ Residential structure within 8 minutes of responding from the fire station. The City of Tumwater, with the use of mutual aid, can assemble 16 firefighters to only 5% of the City. It is understood that two additional firefighters per shift may be added, and in that case, the City could improve its coverage of 16 firefighters to approximately 9% of the City.

Recommendation: Increase the engine company staffing to come closer to meeting the standard to assemble firefighters for a residential structure fire by adding a fourth firefighter to each engine company at both stations, coupled with the addition of the staff from a second Medic Unit, and Battalion Chief, the minimum daily staffing would increase from nine (9) to (13) firefighters.

An alternative approach that might provide flexible deployment for EMS incidents could be to staff an aid unit with two firefighters and maintain the engine company staffing with 3 firefighters, still achieving greater compliance in meeting the 16-firefighter threshold for a residential fire identified in NFPA 1710.

Time Frame: Mid

Recommendation: After completing the fire station location analysis, fund and construct a third fire station to cover either the west or south portion of the city with adequate staffing for an engine company.

Time Frame: Long

Assessment: The City's dispatch provider is showing dispatch processing times exceeding national standards. Once the 911 call is answered, NFPA 1710 recommends that the call should be dispatched via radio or other means within 60 seconds. The performance for all incidents shows a 2-minute and 23-second dispatch processing time.

Recommendation: Collaborate and investigate what might be mitigated to enhance the dispatch processing time to meet the national standard.

Time Frame: Mid

Assessment: Tumwater Fire Department's turnout time (time from notification to responding to the incident) exceeds national standards. Once the 911 call is answered, NFPA 1710 recommends that the turnout time for EMS calls be 60 seconds, while fire incidents are 80 seconds. The turnout time performance for EMS incidents is 2 minutes and 13 seconds, and 2 minutes and 17 seconds for fire incidents. Typical issues departments face are adequacy of internal paging systems, station design relative to the movement of personnel from living quarters to the apparatus bays, adherence to department policies, and acting with appropriate speed to the apparatus. We understand that the station's paging systems are outdated, and both are planned for upgrades in the future, which would improve turnout times.

Recommendation: Determine the primary cause of the performance delay and implement ways to mitigate and enhance the turnout performance to meet the national standard.

Time Frame: Short

Assessment: The City of Tumwater possesses multiple buildings which, under Washington Survey and Rating Bureau standards, provide deficiency points for agencies that do not have ladder truck coverage when there are five or more buildings of three stories (or 32 feet) or more in height or with five or more buildings requiring a needed fire flow of greater than 3,500 gallons per minute, or five or more buildings meetings any combination of these requirements. Along I-5 and south of the City are large industrial and distribution centers that also need ladder services. The closest mutual aid ladder service reaches only the very northern portion of the City, approximately 1%.

Recommendation: Purchase and place in-service a Quint apparatus in Station 1 serving, which can serve both fire engine and aerial operations.

Time Frame: Mid

Table of Figures