

Consultant Report

2021

Community Risk Assessment and Standards of Coverage



SNOHOMISH REGIONAL FIRE & RESCUE

**Snohomish Regional Fire & Rescue
Monroe, Washington**

FITCH
—
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Introduction

The following document functions as Snohomish Regional Fire and Rescue’s (SRFR) All Hazard Community Risk Assessment and Standards of Cover statement. The Commission on Fire Accreditation International (CFAI) defines the process, known as “deployment analysis,” as a written procedure which determines the distribution and concentration of fixed and mobile resources of an organization. The purpose of completing such a document is to assist the District in ensuring a safe and effective response force for fire suppression, emergency medical services (EMS), hazardous materials incidents, and technical rescues, and in facilitating activities for domestic preparedness, emergency planning, and disaster response.

Creating a Standards of Cover (SOC) document requires the research, study, and evaluation of a considerable array of community features. The following report will begin with a descriptive overview of SRFR and the area that it serves. Following this overview, an all-hazards risk assessment provides an analysis of potential risks and describes activities the District employs to mitigate those risks. Current deployment and performance was assessed to determine the capabilities and capacities that are available. Benchmark statements and baseline performance support SRFR’s ability to meet distribution and concentration metrics. The report concludes with plans for maintaining and improving capabilities, as well as policy recommendations to address gaps in performance or desired outcomes.

Core Competency or Performance Indicator	
Description of the core competency or performance indicator with <u>the most important phrases or words</u> underlined for emphasis.	Throughout the document several “accreditation building blocks” will be highlighted, drawing a direct link between the community risk assessment-standards of coverage and the requirements of the fire department accreditation process as administered through CFAI.

This SOC is demonstrative of SRFR’s continued commitment to regular community risk assessment (CRA). The District has adopted a formal process of reviewing and assessing risk as an annual process. SRFR anticipates that regularly revisiting and revising the SOC and CRA will allow the District to stay on top of changes in the community as well as enable staff to efficiently distribute and plan for resources allocated throughout the jurisdiction.

Snohomish Regional Fire Rescue would like to thank all members for their continued dedication to the citizens and visitors to the district and for the commitment to continuous improvement embodied by the accreditation process.

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Standards of Coverage Process

A fire District's Standards of Cover (SOC) document is defined by the Commission on Fire Accreditation International (CFAI) as the "adopted written policies and procedures that determine the distribution, concentration and reliability of fixed and mobile response forces for fire, emergency medical services, hazardous materials and other technical types of responses." For the elected body and district administrators to have confidence that their fire District is meeting the needs of the community, a complete assessment of the risks must be honestly undertaken. Only after the application of a proven and consistent risk assessment model is made can a fire District develop an SOC performance contract.

It is the responsibility of district's decision makers to provide an educated calculation of the expected risk, what resources are available to respond to that risk, and what outcomes can be expected. All of these factors play a role in providing the community's emergency services. It is best practice that communities set response standards based on the identified risks within their jurisdictions. Fire Districts that do not apply a valid risk assessment model to their community are not able to adequately educate their community leaders of their true needs. The application of a tested risk assessment model allows the fire District and elected officials to make educated decisions about the level of emergency service they desire.

Section A- Documentation of Area Characteristics

Snohomish Regional Fire & Rescue (SRFR) is a full-service fire district providing fire suppression, emergency medical services (EMS), fire prevention, hazardous materials, and technical rescue services for approximately 180,655 people occupying over 140 square miles in Snohomish County, WA. SRFR serves the cities of Lake Stevens, Mill Creek, and Monroe along with the unincorporated areas surrounding these communities.

Snohomish Regional Fire and Rescue as it stands today is the result of several mergers taking place with agencies formed as far back as 1942 (Fire District 3), 1945 (Fire District 7), and 1947 (Fire District 8). SRFR is in compliance with the Revised Code of Washington (RCW) Title 52 which outlines the regulations applicable to fire districts, their formation, annexations, dissolution, powers, commissioners, finances, benefit charges, provisions, etc., as well as performance measures.

Snohomish Regional Fire & Rescue utilizes a tiered strategy to organize response areas into geographical planning zones. The first, is at the first due area. These areas have specific resource allocation strategies based on measured risks. Secondly, each first due area is informed by more granular assessments of 175 Geographic Planning Zones (GPZs). Each GPZ is approximately one square mile.

Section B- Description of Agency Programs and Services

Snohomish Regional Fire and Rescue provides high quality fire suppression, emergency medical, technical rescue, and hazardous materials services from 11 fire stations staffed with a constant daily staffing level of 44 personnel. Additionally the organization delivers a full spectrum of fire and life safety services supported by administrative staff and training officers to ensure the first responders are well prepared for any hazard or situation they may face.

Snohomish Regional Fire & Rescue provides much more than emergency response to fires, medical events, hazardous material spills and technical rescues. The Division of Fire & Life Safety is home to the Office of the Fire Marshal where specially trained staff provide proactive fire safety inspections and fire code enforcement for the cities of Lake Stevens, Mill Creek and Monroe. Snohomish Regional Fire & Rescue employ three fire marshals who are certified by the International Code Council in fire code inspection, enforcement, and plan review.

Section C- All-Hazard Risk Assessment of the Community

A comprehensive risk assessment analyzed the physical, economic, sociologic and demographic aspects of the jurisdiction. The factors that drive the service needs were examined in a precise and scientific manner to determine the capabilities necessary to adequately address the risks that are present.

Each of the major natural and manmade risks evaluated received a clearly defined probability and consequence ranking. Service areas that either had little quantitative data, or did not require that level of analysis, were evaluated through both retrospective analysis as well as structured interviews with District staff members. Final call types from the 2017-2019 CAD data file were classified into the program areas of EMS, Fire, Hazmat, Other, and Technical Rescue based on district leadership decisions, and were assigned a risk classification based on district leadership criteria.

Section D- Community Feedback

As SRFR embarked on the strategic planning journey, focused was placed on where the organization was going in the next five years, to ensure that the program goals and objectives aligned with the desired outcomes identified by not only our internal personnel, but the communities that are served by SRFR.

With the guiding principle of inclusion in place, and a clear plan for multi- faceted engagement, the organization was able to incorporate many voices in the creation of the refreshed Mission, Vision and Values. This alignment facilitated the creation of strong and action oriented goals, objectives, and critical tasks. The input gleaned from community members was invaluable in shaping the next several years of work for SRFR.

Section E- Program Goals and Objectives

The major programmatic goals and objectives for SRFR have been captured in the latest strategic plan which covers 2021-2026. The goals, objectives, and associated sub tasks have been organized into five main categories: Emergency Response, Fire and Life Safety Services, People and Culture, Business Practices, Facilities and Equipment.

The goals will be reviewed and addressed by goal owners in regular leadership reviews, including a quarterly review conducted with the executive leadership team. Annually, a documented report-out will be created by the Fire Chief to share with the Fire Commissioners. The annual reviews will identify any gaps in current capabilities, capacity, and the level of service provided within each service delivery area.

Section F- Current Deployment and Performance

This section analyzed the emergency response history of the district, taking a systems level view of current performance, established formal benchmark (what SRFR strives to attain) performance measures, and analyzed actual (baseline) performance. Projected growth of the emergency call volume was also evaluated, along with an in depth look at each first due fire station area to identify areas of concern with elevated risks and lagging performance.

Simultaneous calls (call concurrency), Distribution (first unit on scene), Concentration (arrival of the full effective response force), Reliability (how often a unit can answer their own calls), and several other measures were used to paint a clear picture of SRFR's emergency response performance as balanced against community risk and internally developed response time goals.

Section G- Evaluation of Current Deployment and Performance

It is imperative that district continuously evaluate their actual performance (baseline performance) versus their established goals (benchmark performance). This section takes a detailed look at the gaps where performance could be improved (noted in red) or is currently exceeding established goals (in green). Important trends can be discerned based upon the risk level (low, moderate, high, extreme) or where the incidents or occurring (urban or rural). The majority of performance gaps were minor in nature, allowing further refinement of the response system to achieve SRFR response time goals. Other areas, such as low risk fire suppression incidents or high risk EMS incidents showed bigger gaps, highlighting areas of opportunity for the organization.

Section H- Plan for Maintaining and Improving Response Capabilities

A strategic plan, on paper, is a commitment to action. A commitment to action requires an execution strategy. SRFR does this by including the development of specific, measurable, attainable, relevant and time-bound goals in the strategic plan. The timing was perfect to chart a new course for SRFR with the recent merger of Snohomish County Fire District 7 and Lake Stevens Fire. The strategic plan was developed to provide an inclusive continuous improvement framework to address existing gaps and variations for each functional area of the District.

Sustaining the work is a critical step in the implementation of a strategic plan. The plan is a living document that supports continuous improvement, rather than a static document that sits on the shelf. Meeting quarterly, the planning team will assess progress and report out in a similar manner to what is show here; areas of focus, objectives, goals, and tasks are examined to see if the target is still relevant, if more resources need to be allocated, or if adjustments to the strategy need to be undertaken; all in an effort to address existing gaps and variations between baseline and benchmark performance.

Section I– Conclusion and Recommendations

Snohomish Regional Fire and Rescue is an organization with a total authorized staff of 284 personnel who are committed to saving lives, protecting property, safeguarding the environment, and taking care of their people. This is accomplished by providing a full spectrum of emergency and non-emergency services that align with the risks present in the community. Population growth, continued expansion of building construction, and significant changes to human-made hazards made this an ideal time to undertake a comprehensive standards of coverage process (SOC) and assess the organization's benchmark and baseline performance.

A succinct list of strengths, weaknesses, opportunities, threats, and recommendations can be found in this section, further aiding SRFR in charting a path towards continuous improvement. Finally, observations and recommendations regarding station locations, ALS unit deployment, BLS unit deployment, workload, resource allocation, and commensurate staffing strategies. Six primary recommendations are presented in this section.

Appendices

- Data Analysis Report
- GIS Report
- Risk Assessment Report

Section A – Documentation of Area Characteristics

Description of Community Served

Description of Area Served

Description of Community Served

This section provides legal and historical background pertinent to the delivery of emergency service within jurisdiction for Snohomish Regional Fire and Rescue (SRFR). Included in this section are reviews of the legal and governmental structure, overview of the demographics and physical environment, and characteristics of particular areas for which SRFR provides service.

Introduction

Snohomish Regional Fire & Rescue (SRFR) is a full-service fire district providing fire suppression, emergency medical services (EMS), fire prevention, hazardous materials, and technical rescue services for approximately 180,655 people occupying over 140 square miles in Snohomish County, WA. SRFR serves the cities of Lake Stevens, Mill Creek, and Monroe along with the unincorporated areas surrounding these communities.

Documentation of Area Characteristics as it relates to Criterion 2A

The agency collects and analyzes data specific to the distinct characteristics of its legally defined service area(s) and applies the findings to organizational services and services development.

As approved by the Lake Stevens voters at the beginning of 2020, Lake Stevens Fire and Snohomish County Fire District 7 merged agencies. Formerly known as Snohomish County Fire District 7, the now combined fire district has already improved services; most notably in firefighter training, efficiencies in administrative services, and most importantly, by bolstering the fire district's ability to respond to large scale operational emergencies like COVID-19.

Snohomish County is located on Puget Sound, between Skagit County to the north and King County (and Seattle) to the south. Covering 2,090 square miles, it is the 13th largest county in total land area in Washington. Snohomish County's varied topography ranges from saltwater beaches, rolling hills and rich river bottom farmlands in the west to dense forest and alpine wilderness in the mountainous east. Glacier Peak, at 10,541 feet, is the highest point in Snohomish County and one of the highest in Washington State. Sixty-eight percent of the county land area is forest land, 18% is rural, 9% is urban/city and 5% is agricultural.

284 personnel provide emergency and support functions for the district out of 11 fire stations and a logistics facility with personnel including 11 administrative staff, 27 administrative support staff, 8 mechanics, 8 chaplains, 33 part-time firefighters, 188 career firefighters and 9 commissioners. The Fire Chief reports to a nine-member Board of Commissioners that are elected from the community at-large. Due to the merger with Fire District 3 in October 2016, and most recently the merger with Lake Stevens the board is temporarily expanded to nine commissioners.

Snohomish Regional Fire and Rescue Technical Rescue Vehicle



Legal Basis

Snohomish Regional Fire and Rescue as it stands today is the result of several mergers taking place with agencies formed as far back as 1942 (Fire District 3), 1945 (Fire District 7), and 1947 (Fire District 8).

SRFR is in compliance with the Revised Code of Washington (RCW) Title 52 which outlines the regulations applicable to fire districts, their formation, annexations, dissolution, powers, commissioners, finances, benefit charges, provisions, etc., as well as performance measures.

The Fire Chief is the Chief Executive Officer of the District and appointed by the Board of Commissioners, who have authority for policymaking, appointment and discipline, and budgetary accountability in accordance with RCW Title 52.

Performance Indicator 2A.1

Service area boundaries for the agency are identified, documented, and legally adopted by the authority having jurisdiction.

History of the District¹

The three fire districts that became SRFR are rich in history and rooted within their communities.

Snohomish Regional Fire & Rescue

Snohomish Regional Fire & Rescue (SRFR) is a newly merged all-hazards incorporated fire district in Washington State serving the cities of Lake Stevens, Mill Creek, Monroe, and portions of unincorporated southeast and central Snohomish County. SRFR is the product of two mergers between three Fire Districts. The first merger took place between Fire District 7 (SCFD 7) and Fire District 3 (Monroe Fire) on October 1, 2016 where Monroe Fire merged into SCFD 7. The second merger took place on January 1, 2020 between Lake Stevens Fire (LSF) and SCFD 7 where LSF merged into SCFD 7. In August of 2020, the combined board of fire commissioners voted to change the legal name of the fire district to Snohomish Regional Fire & Rescue to better represent the fire district's area and communities served. SRFR is now a district of 284 career, part-time, and volunteer personnel; working out of 11 fire stations, 1 logistics center, and 1 administration building; serving an area of 140 square miles with a population of 180,655 people.

Monroe Fire District 3

Prior to the formation and legal establishment of Monroe Fire, fire protection was provided by a group of volunteers serving the City of Monroe beginning as early as 1902. In 1942, Snohomish County Fire District 3 was legally established to service the unincorporated county and through an interlocal agreement provided service to the City of Monroe. To strengthen the partnership with the City of Monroe, it was collectively decided to reverse annex in 2006, which eliminated the need for an interlocal agreement.

¹ Retrieved from <http://www.fireDistrict7.com/section1/about/history.html>.

Snohomish County Fire District 7

Snohomish County Fire District 7 was officially established in 1945 after several local citizens pursued the idea of organizing a fire district to service their community. Initially, the SCFD 7 operated out of one station located at the same site where Station 71 is today and served an estimated population of 1,400.

As the area began to develop, SCFD 7 sought the need to build Stations 72 and 73 in response to the growing needs of the community. The population of the SCFD 7 continued to increase with the accompaniment of some light industry in the Maltby area. As such, Station 74 was constructed to meet the service requirements of this area. Up until 1971, SCFD 7 was entirely volunteer.

With the introduction of fire department-based Emergency Medical Services (EMS) and the tremendous rate of growth through the 1970's, SCFD 7 hired Rick West as its first full-time fire chief in 1977. This position was needed to manage District operations to meet the growing demands of the community. The late 1970's and early 1980's brought about many more changes. First, Station 75 was constructed to better service the Lost Lake Area. Second, it was estimated that 70% of the alarms received were for emergency medical services and the population had grown to approximately 30,000. Third, newly constructed Stations 71 and 72 were upgraded to facilitate 24-hour staffing by full-time personnel. Finally, the SCFD 7 saw an opportunity to expand EMS to include the first fire based advanced life support (ALS) paramedic service in Snohomish County.

After the City of Mill Creek officially incorporated in 1983, the City opted to continue to receive fire protection and emergency medical services under an interlocal agreement with SCFD 7. Although growth of residential housing was primary during the late 1980's, light industry had grown steadily as well. Once again, the citizens realized the need for increased services. Therefore, they approved tax increases to fund improvements to fire and emergency medical services, which resulted in the purchase of new apparatus, an increase in the number of staffing and construction of Station 76.

In the late 1990's three additional fire stations were built to accommodate continued growth and improve the level of service. Station 73 was built to serve the residential area of Bear Creek, Station 77 was built to service the new communities of Gold Creek and Silver Firs, and lastly, Station 74 was built to service the existing Maltby community.

In 2015 SCFD 7 sought the need to evaluate its performance for fire service as the District's population continued to explode. SCFD 7 engaged with Fitch & Associates to help create the District's first Standard of Cover document, which coincided with SCFD 7 becoming a registered agency with CFAI.

After the economic crisis of 2008, many fire/EMS agencies in Snohomish County and the region began exploring the feasibility of consolidations and mergers to help improve efficiency. Fire Chief Gary Meek of District 7 and Fire Chief Jamie Silva of District 3 began discussions specifically on the benefits of a merger between their two agencies. In 2015 the proposal was presented to each district board of commissioners, which overwhelmingly supported the concepts. In October 2016, the process was completed with District 3 merging into District 7, including all governance. The merger provided a number of business efficiencies for both districts especially in the administrative and business functions. The trends of consolidating districts to maximize efficiencies and reduce costs continued, with the recent merger with Lake Stevens which officially took place on January 1, 2020, resulting in the renaming of the district fire protection services to Snohomish Regional Fire and Rescue.

Lake Stevens Fire

Lake Stevens Fire (LSF) was formed around a popular tourist spot and former timber mill town that surrounds Snohomish County's largest lake. Fire protection began with a water tank in the Rucker Mill Lumber Yard. An electric pump kept the tank filled with water from Lake Stevens. A hose cart and hand propelled pump engine was kept between the town bank and the Eggerst feed building for citizen volunteers to use. In 1947, a vote was taken to establish Snohomish County Fire District 8, later renamed to Lake Stevens Fire (LSF) in 2006. LSF's first fire engine was a World War II surplus CCKW 6X6 or "duce and a half" sold to the District by the Lake Stevens School District for one dollar.

By 1950, LSF had 15 volunteers, and purchased its first new fully equipped fire engine along with property on Chapel Hill Road for a new fire station.

In 1960, the City of Lake Stevens was incorporated with a population of 1,500 and included what is now the North Cove and downtown area. That same year, construction of the fire station on Chapel Hill Road was complete. The volunteer firefighter corps met each Monday and trained for two hours. LSF approved the purchase of two new engines, carrying 750 gallons of water each. An engine was placed at each fire station. Additionally, the Volunteer Firefighters' Association began hosting an annual "Fireman's Ball" to help raise funds for the District.

The 1970's saw the purchase of the first new aid car for medical emergencies capable of transporting up to three patients at once. Property was purchased in Machias for a future fire station as well. Finally, LSF moved out the original fire station in downtown Lake Stevens and moved to the current location of Fire Station 81.

During the 1980's, LSF purchased its first defibrillator for treating patients with cardiac arrest. Most of the District's firefighters became certified Emergency Medical Technicians in response to the growing need for trained medical response. The Volunteer Firefighter Association and Lake Stevens Fire together purchased a Hurst cutter/spreader commonly referred to as the "Jaws of Life." This tool would help extricate patients who were trapped inside crushed automobiles. Valley General Hospital stationed paramedics at LSF in the late 1980's. This would provide advanced life support care to the most critically sick and injuries patients. A new Headquarters Station 82 was built on Chapel Hill Road and Fire Station 83 was built in Machias. Most of all, in 1981 the City of Lake Stevens voted to reverse annex into LSF's fire district.

LSF saw the need to begin specialized training for technical rescue in the 1990's. A training tower was built at First Station 83 providing the first in-district training ground. As training continued in technical rescue, the Machias facility expanded to include confined space and heavy rescue props. Volunteer firefighters became part-paid employees of Lake Stevens Fire. Most notably the USFA's Risk Watch program was introduced in the Lake Stevens School District and taught by LSF personnel.

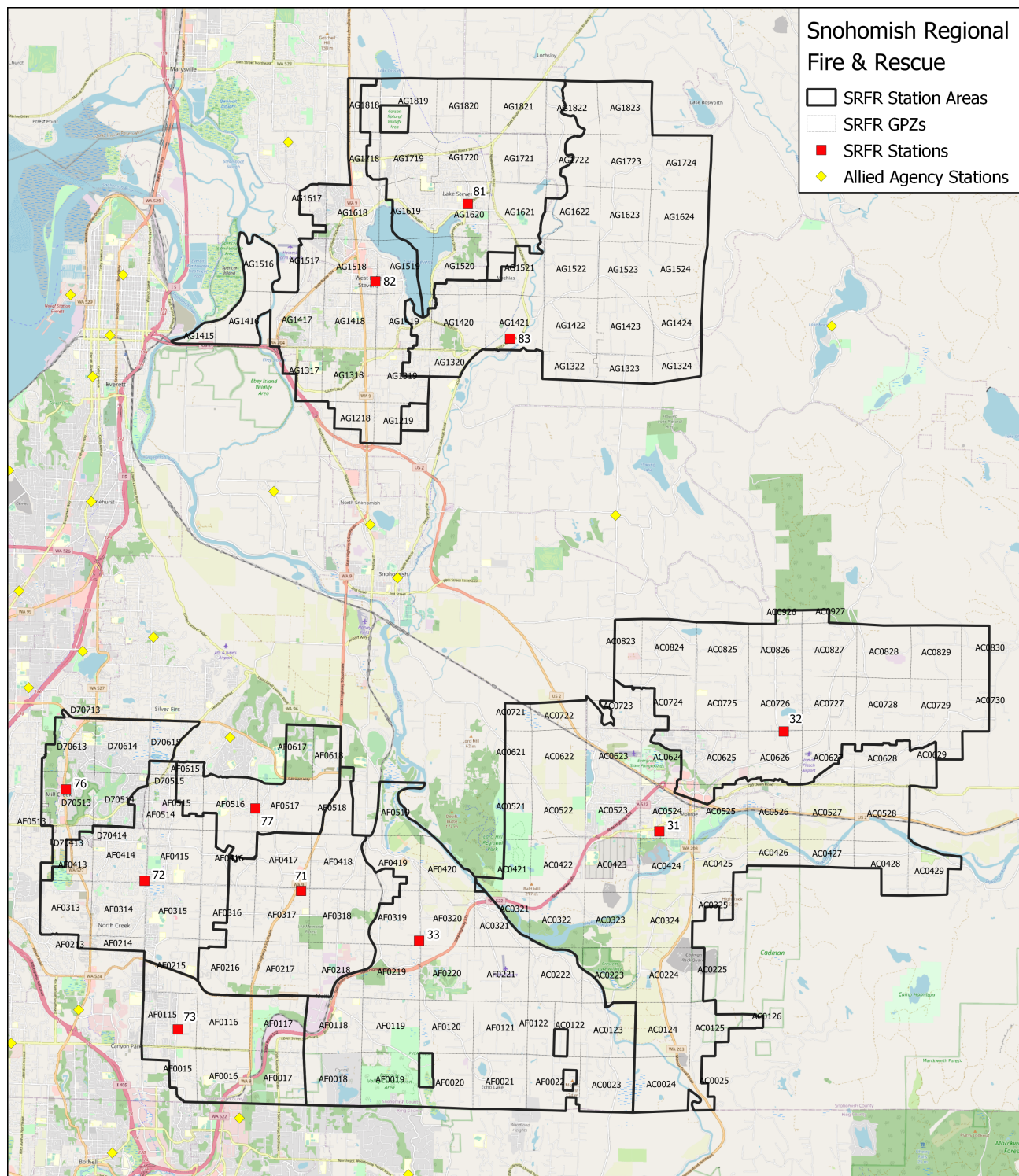
As the City of Lake Stevens and the surrounding unincorporated area continued to grow, LSF responded by charging for ambulance transport and purchasing two new engines, one in 1998 and one in 2001. In addition, the District purchased a boat with a fire pump to provide fire suppression to vessels on Lake Stevens. LSF purchased a headquarters building in 2008 off of South Lake Stevens Rd to accommodate its growing administrative staff.

LSF was committed to excellence and providing the best service possible to its community. In January of 2018, the LSF Board of Fire Commissioners approved registration with CFAI to begin the agency accreditation process.

Core Competency 2A.3

The agency has a documented and adopted methodology for organizing the response area(s) into geographical planning zones.

Snohomish Regional Fire and Rescue Overall Jurisdictional Map



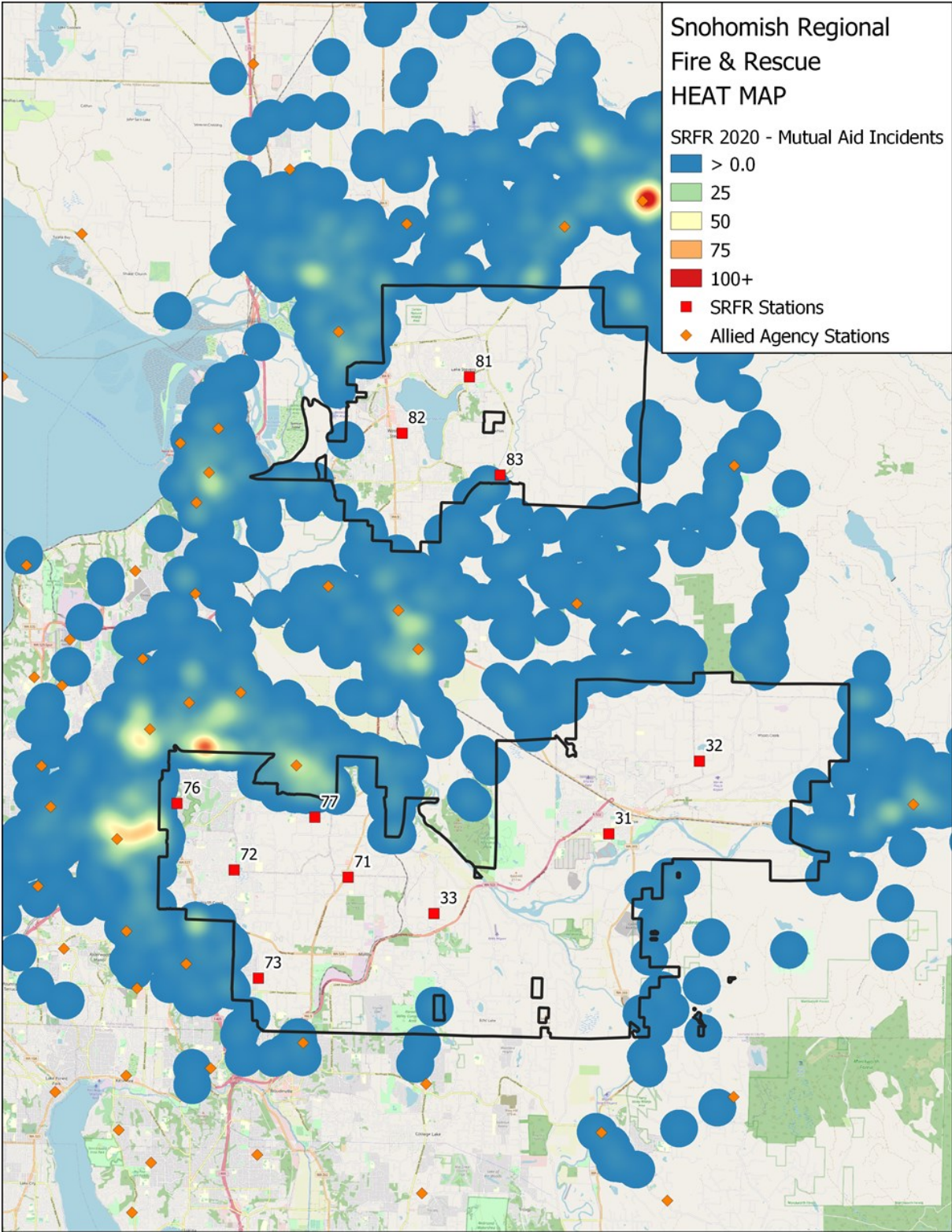
Auto/Mutual Aid

SRFR maintains an active relationship with the surrounding agencies, providing 3,241 responses during 2019 (19.8% of overall incident responses). The associated heat map shows a widespread area with low call volume in addition to a few key areas with over 100 calls per year (adjacent to station 76 and Northeast of station 81).

Performance Indicator 2A.2

Boundaries for other service responsibility areas, such as automatic aid, mutual aid and contract areas, are identified, documented, and appropriately approved by the authority having jurisdiction.

SRFR Mutual Aid Heat Map



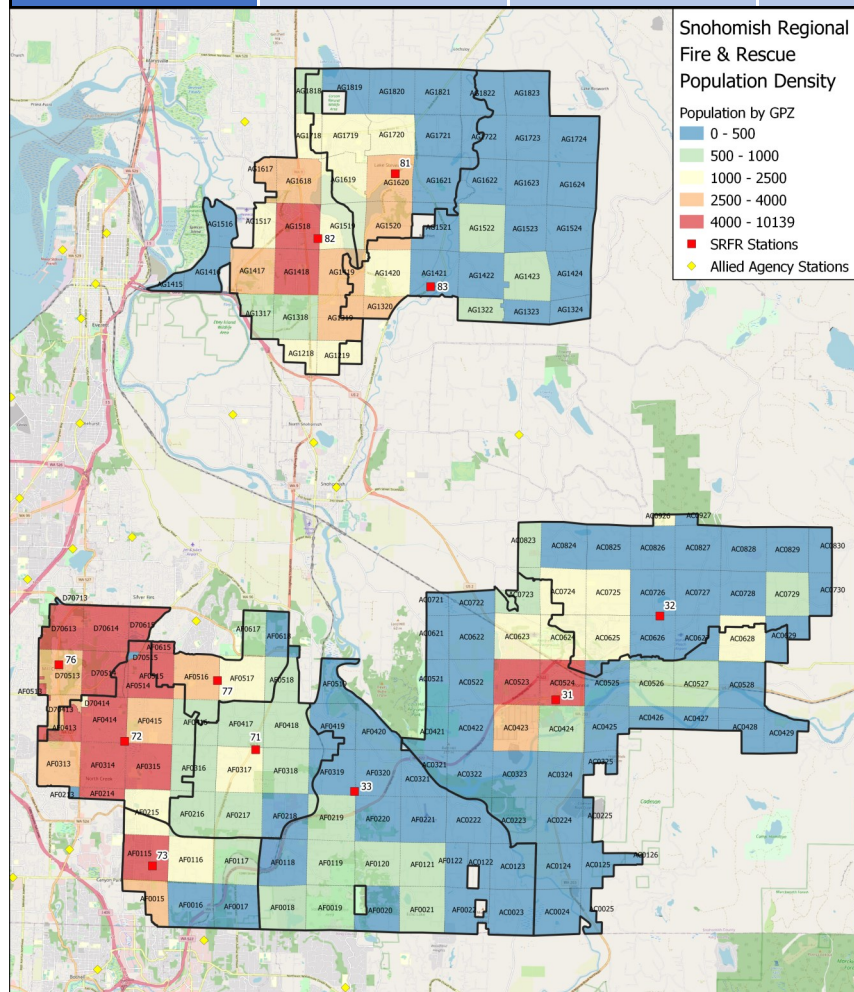
Core Competency 2A.4

The agency assesses the community by plan-
ning zone and considers the population densi-
ty within planning zones and population are-
as, as applicable, for the purpose of develop-
ing total response time standards.

Fire Rescue serves a population of 180,655 according to current U.S. Census Bureau data². Fire Rescue's jurisdiction encapsulates three municipalities with populations between 19,776 to 33,911, respectively. The District has observed manageable growth over the years, experiencing a 14% to 20% increase in population since the last U.S. Census dated April 1, 2010. Over the approximate 140 square miles, the population density within the District ranges from > 432 up to 4,706 people per square mile, with the average population density of approximately 1,290 people per square mile.

Snohomish Regional Fire & Rescue Population Summary

	Lake Stevens	Monroe	Mill Creek	SRFD
Total Population	33,911	19,776	20,897	180,665
Population per Square Mile	3,162	2,862	3,907	1,290
Land Area in Square Miles	8.88	6.05	4.67	140.1



Snohomish Regional Fire & Rescue Population Density by GPZ Map

²U.S. Census. (2019). Apportioned data by Fire Rescue in ESRI for the unique fire district geography.

Data Overview

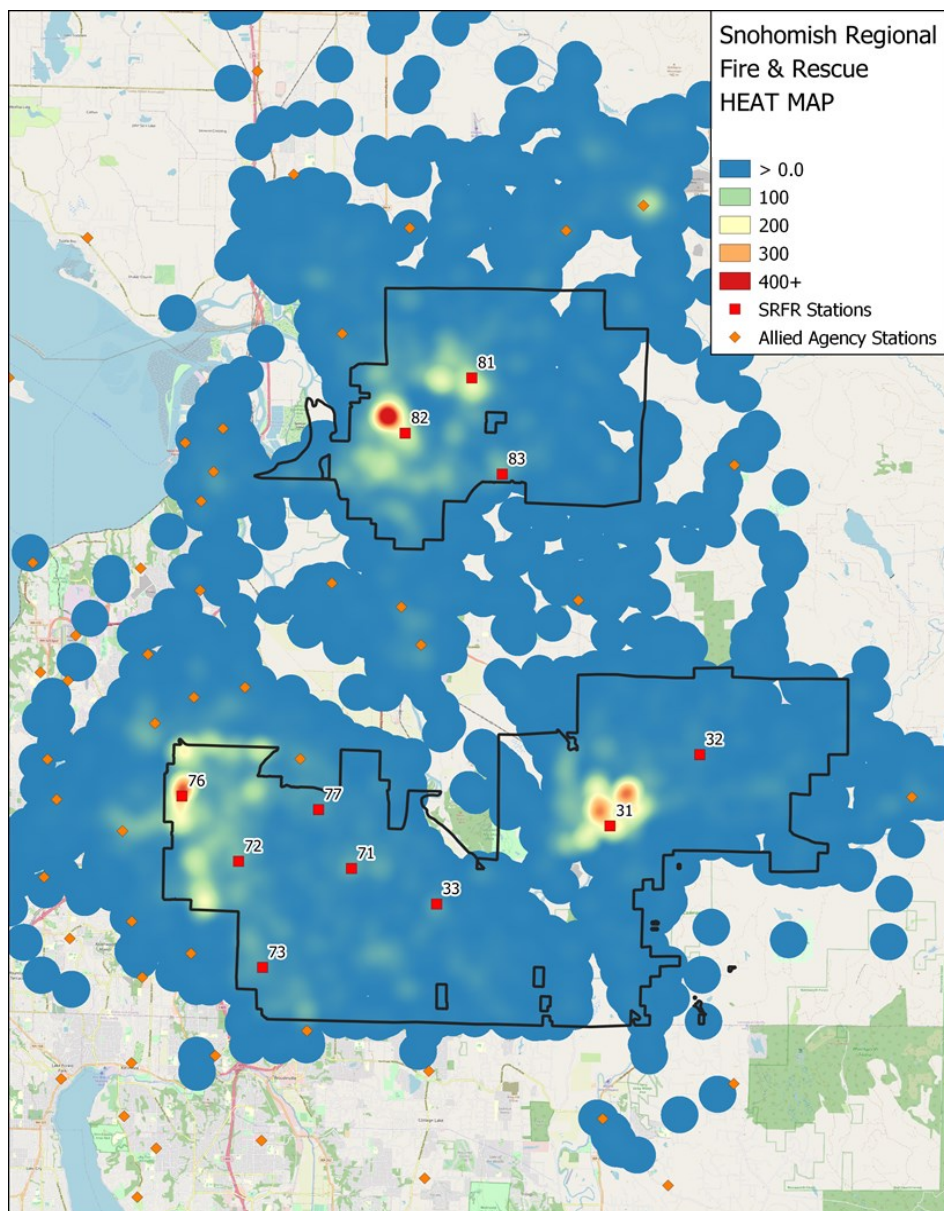
A 2017-2019 community demand snapshot indicates that the overall community demand for services has remained relatively stable over the rating period with less than 4% decrease in calls overall. Call density and distribution have a concentrated area in each of the Battalions at Stations 31, 76, and 82, respectively.

2017-2019 SRFR Incident Demand

Program	Number of Calls		
	2017	2018	2019
EMS	11,282	10,948	10,760
Fire Suppression	1,503	1,375	1,373
Hazmat	152	161	202
Technical Rescue	14	9	7
Other	909	915	766
Automatic Aid	3,517	3,600	3,241
Total	17,377	17,008	16,349
Calls per Day	47.6	46.6	44.8
YoY Growth		-2.1%	-3.9%

Performance Indicator 2A.5

Data that include property, life, injury, environmental and other associated losses, as well as the human and physical assets preserved and/or saved, are recorded for a minimum of three (initial accreditation agencies) to five (currently accredited agencies) immediately previous years.



2017-2019 SRFR Incident Demand Heat Map

Description of Area Served

Geography

The District is a mix of urban, suburban and rural generally east of the intersections of Interstate 5 and 405, both east and west of the Snohomish River, approximately 20 miles northeast of Seattle and 95 miles south of the Canadian border. State Route 9 bisects the District.

Performance Indicator 2A.6

The agency utilizes its [adopted planning zone](#) methodology to identify response area characteristics such as population, transportation systems, area land use, topography, geography, geology, physiography, climate, hazards, risks, and service provision capability demands.

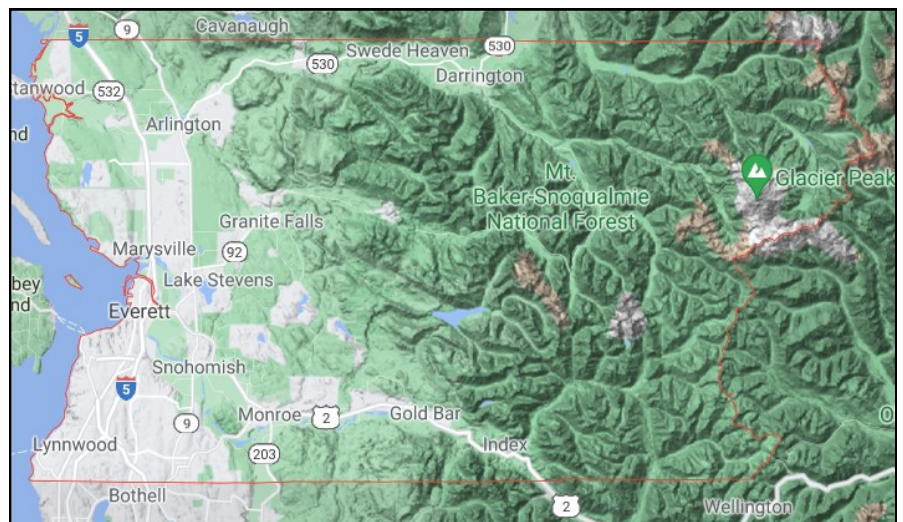
Map of Snohomish County, WA and Location as Compared to United States



Topography

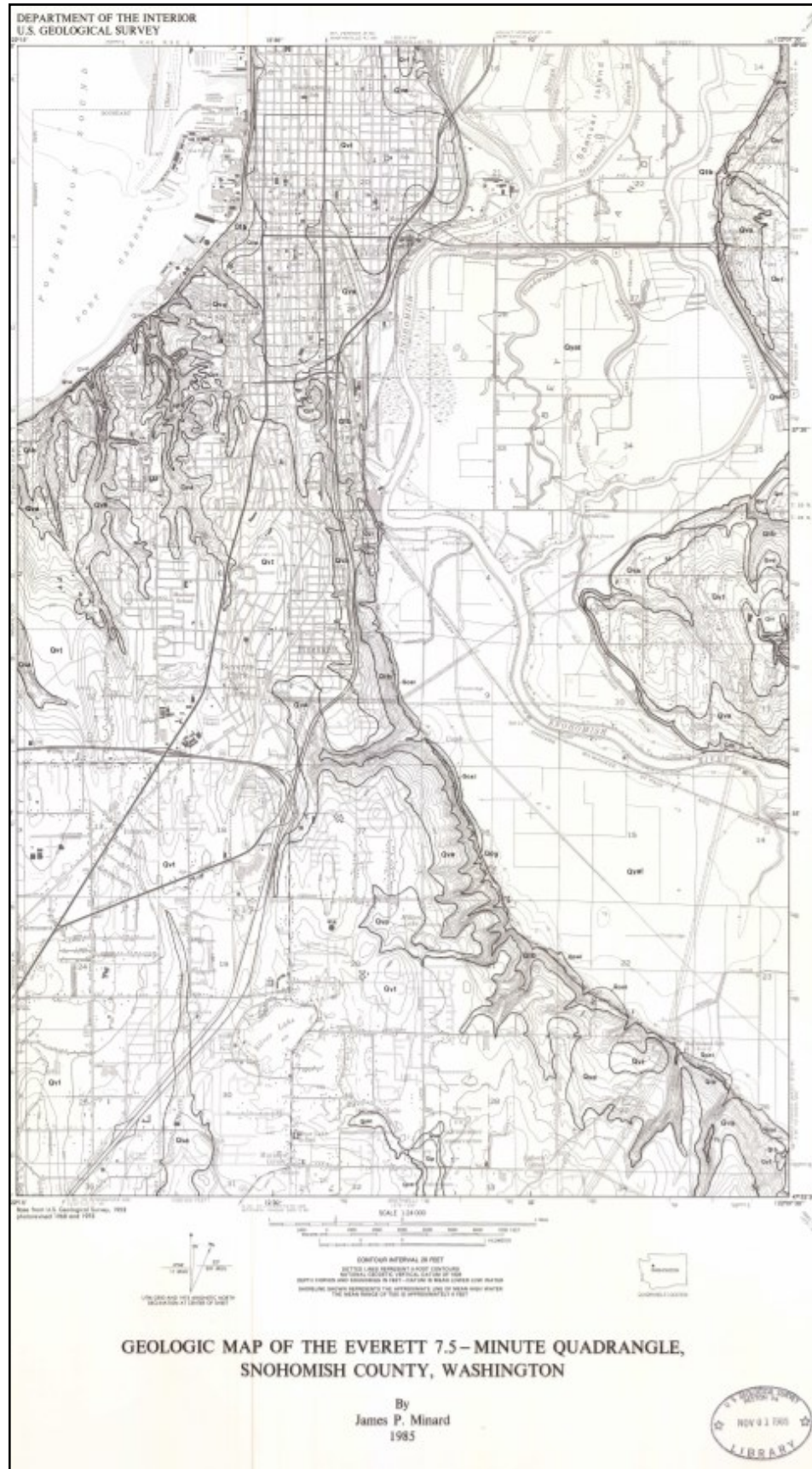
The District's topography is generally comprised of heavily wooded rolling hills and small valleys with an elevation range of approximately 200 to 600 feet in elevation. The planning area is essentially a glacial drift plain underlain by soils deposited by advancing and retreating glacial ice. The topography is ideal for hiking, with many visitors enjoying the Mt. Baker Snoqualmie National Forest each year. 68% of the county land is forest, 18% is rural, and 9% is urban, with the remaining 5% agricultural.

Topographical map of Snohomish County, WA



Geology

Geological map of Snohomish County, WA



This map and descriptions are based mostly on field work from the fall of 1977 through 1980 by the US Geological Survey and aimed at planners and developers in need of earth-science information concerning Puget lowlands³.

Exposed in the quadrangle are pre-Quaternary bedrock units and glacial, fluvial, lacustrine, and associated deposits.

Overlying predominately glacial sediments were deposited from the Puget lobe of the Cordilleran continental ice sheet approximately 20,000 years ago.

As the glacier advanced of the outwash and underlying materials, in incorporated, mixed, and redeposited the overridden materials, producing a largely unsorted mass of clay, silt, and gravel in varying proportions.

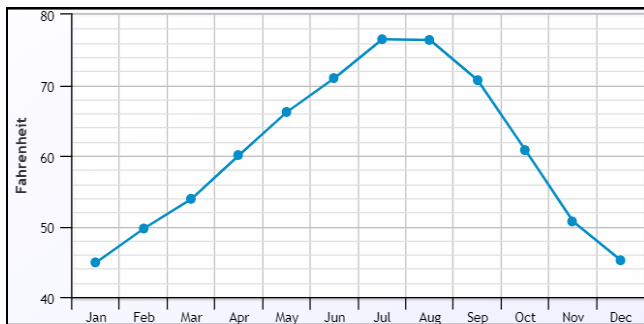
Since the ice melted and withdrew from the area, erosion and deposition have modified the land surface, reducing some slopes and steepening others by undercutting, land sliding, and redepositing of beach and stream sediment.

³ Geologic Map of the Everett 7.5 minute quadrangle, Snohomish County, WA retrieved from https://ngmdb.usgs.gov/Prodesc/proddesc_7449.htm

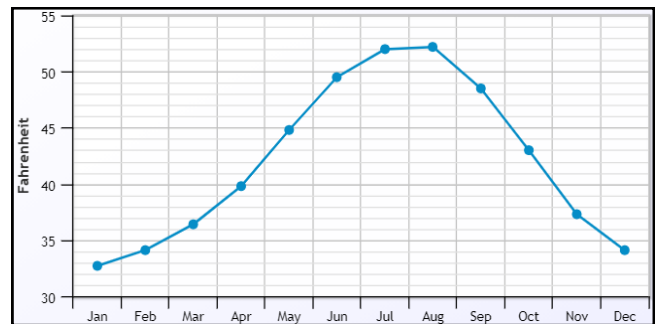
Climate

The climate of the District is heavily influenced by marine air masses, which tend to moderate temperatures with seasonal variations that get more pronounced moving into the inland areas. Overall the weather is relatively mild in Western Washington. The average high temperature in August is 76°F and the average low temperature is 32°F in January. The area averages just over 47 inches of rainfall annually in addition to a small amount of snow generally totaling less than 8 inches each year. Wind speeds average 7 mph but maximum speeds of over 30 mph can occur⁴.

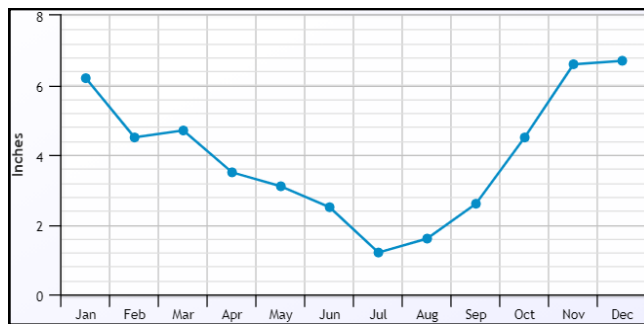
**Average Annual High Temperatures
Snohomish County, WA**



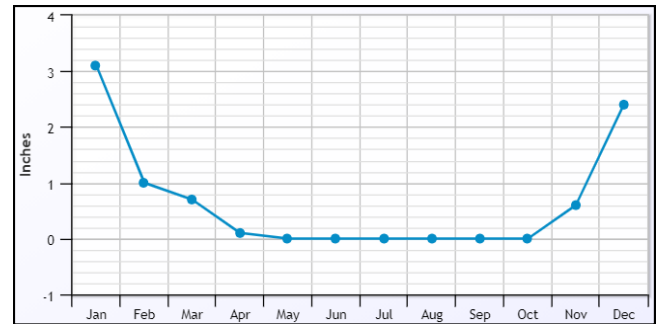
**Average Annual Low Temperatures
Snohomish County, WA**



**Average Annual Precipitation
Snohomish County, WA**



**Average Annual Snowfall
Snohomish County, WA**



Physiography/Disaster Potentials

Snohomish County is vulnerable to natural hazards of fires, thunderstorms, floods, droughts, tornados, hurricanes, and winter weather events. The county wide risk index is a useful guide, but cannot predict the probability of all events with 100% accuracy, as evidenced by the landslide that occurred in 2014 along State Route 530. A snapshot of the overall hazard probability is referenced in the table below. These specific

Hazard	Probability (Percent Chance)
Fire	100
Thunderstorm and Wind	100
Flood (Widespread)	46.88
Drought	32.81
Tornado	27.69
Hurricane/Tropical Storm	12.66
Winter Weather (Snow>10")	1.50
Earthquake	0.32
Avalanche	n/a
Tsunami	n/a
Landslide	n/a
Dam Failure	n/a

hazards are discussed in detail in the Community Characteristics of Risk section.

Snohomish County Risk Probability

All-Hazard Risk Assessment and Response Strategies as it relates to Criterion 2B

The agency identifies and assesses the nature and magnitude of all hazards and risks within its jurisdiction. Risk categorization and deployment impact considers such factors as cultural, economic, historical, and environmental values, and operational characteristics.

⁴ Weather information from www.weatherbase.com

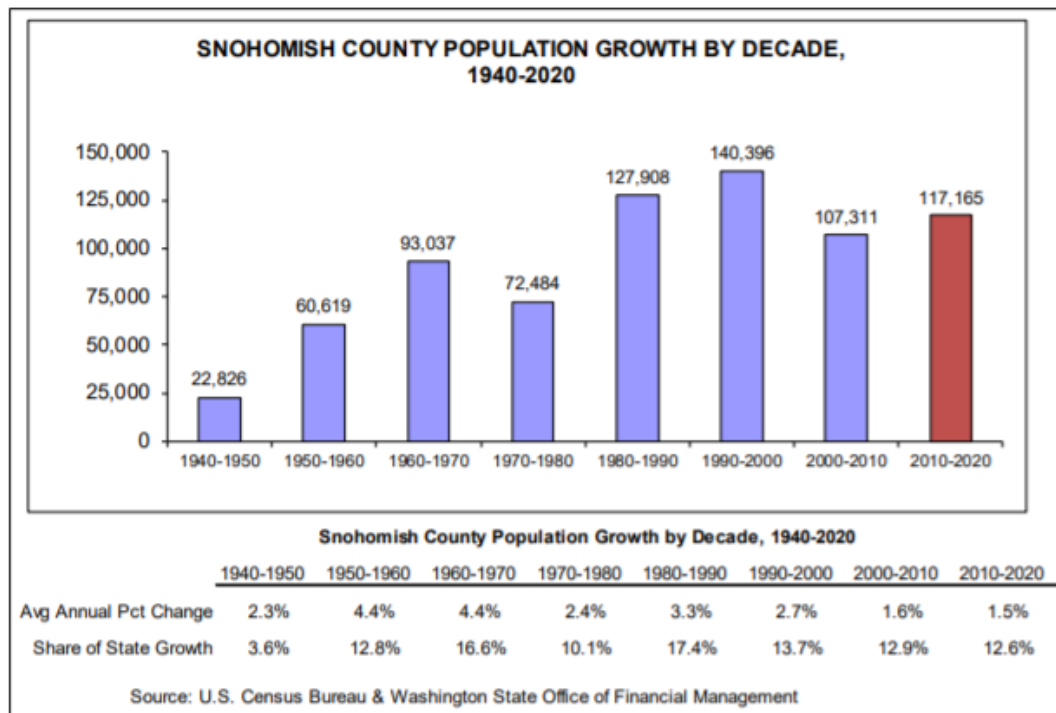
⁵ Risk probability table accessed from Snohomish County 2020 Hazard Mitigation Plan

Human Related Characteristics

Population Analysis

Snohomish County has continued to experience significant population growth over the last several decades, adding over an estimated 117,165 people to the county from 2010-2020⁶. The overall growth trends by decade can be seen in the below Figure⁶.

Snohomish County Population Growth by Decade



Growth in the three municipalities within SRFD varied from 14% to nearly 21% since the April 1, 2010 Census. The City of Monroe grew by 14%, Mill Creek increased 14.6%, and Lake Stevens increased by 20.6%; respectively.

Demographics

Age

According to the United States Census Bureau, persons under 5 years of age account for 6.3% of the population in Snohomish County, WA, persons under 18 account for 22.4% of the population, and persons over 65 for 14% of the population⁷. Age demographics across the three cities are provided below.

Years of Age	Lake Stevens	Monroe	Mill Creek
Under 5	7.9%	7.5%	5.7%
Under 18	28%	23.5%	21.8%
65 and Over	9.6%	7.8%	15.8%

⁶ Snohomish County Tomorrow 2020 Growth Monitoring Report retrieved from: https://snohomishcountywa.gov/DocumentCenter/View/77947/2020_GMR_Final_SCT-SC_Dec-2-2020_final

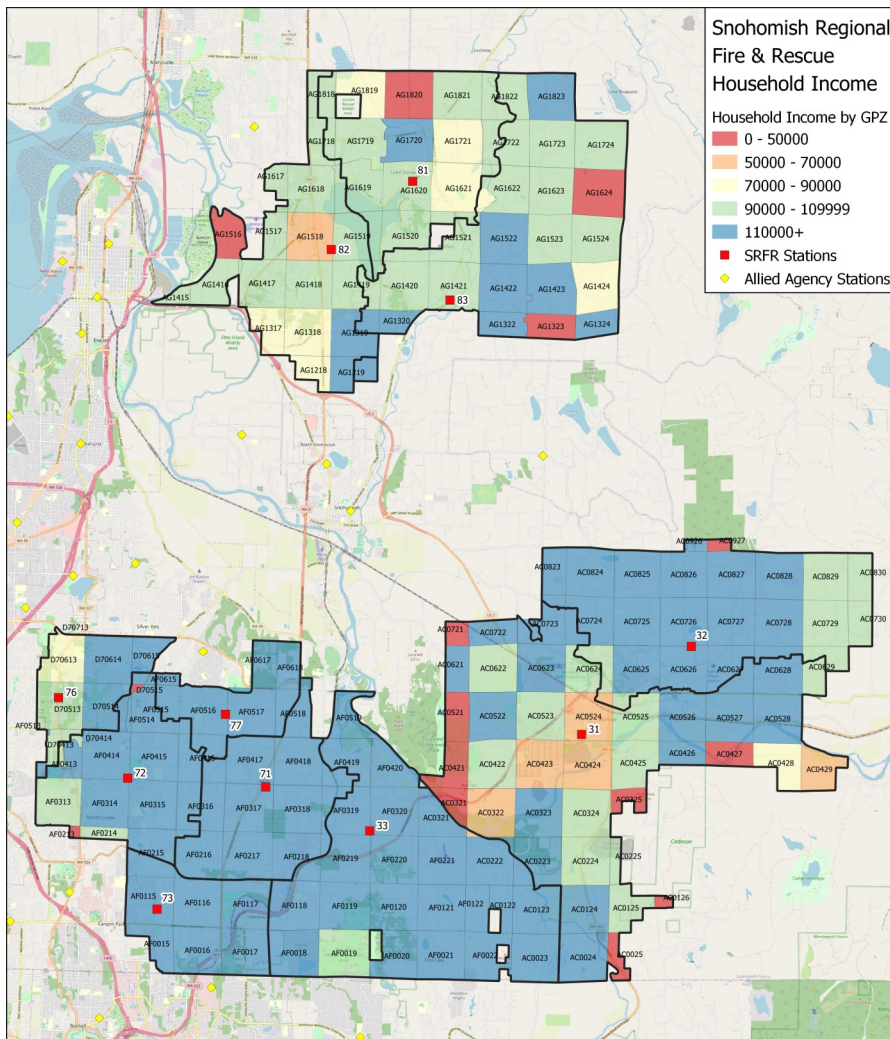
⁷ U.S. Census. (2019). Quick Facts for Snohomish County, WA. Retrieved from <https://www.census.gov/quickfacts/fact/table/snohomishcountywashington/PST045219>

Socioeconomic Characteristics

Finally, population alone is not the sole variable that influences demand for services, as socioeconomic and demographic factors can ultimately have a greater influence over demand. Median household income was evaluated to determine the degree to which the community had underprivileged populations. According to the U.S. Census Bureau, the 2019 (i.e., most recent data available) national median household income is reported at \$68,703. The median household income for Snohomish County, WA was \$86,691, with approximately 7.0% of inhabitants being at or below poverty levels⁸. Visualization of median household income also provides perspective of where economic disparities may exist within the jurisdiction.

Snohomish County Income and Poverty

	Lake Stevens	Monroe	Mill Creek	SRFD
Median Household Income	\$93,381	\$85,896	\$103,750	\$117,313
Per-capita Income	\$36,205	\$28,803	\$52,848	\$48,664
Persons in Poverty	6.8%	7.3%	4.3%	4.6%



SRFR Jurisdictional Median Household Income

⁸U.S. Census. (2019). Quick Facts for Snohomish County, WA. Retrieved from <https://www.census.gov/quickfacts/fact/table/snohomishcountywashington/PST045219>

Demographic Characteristics

Diversity

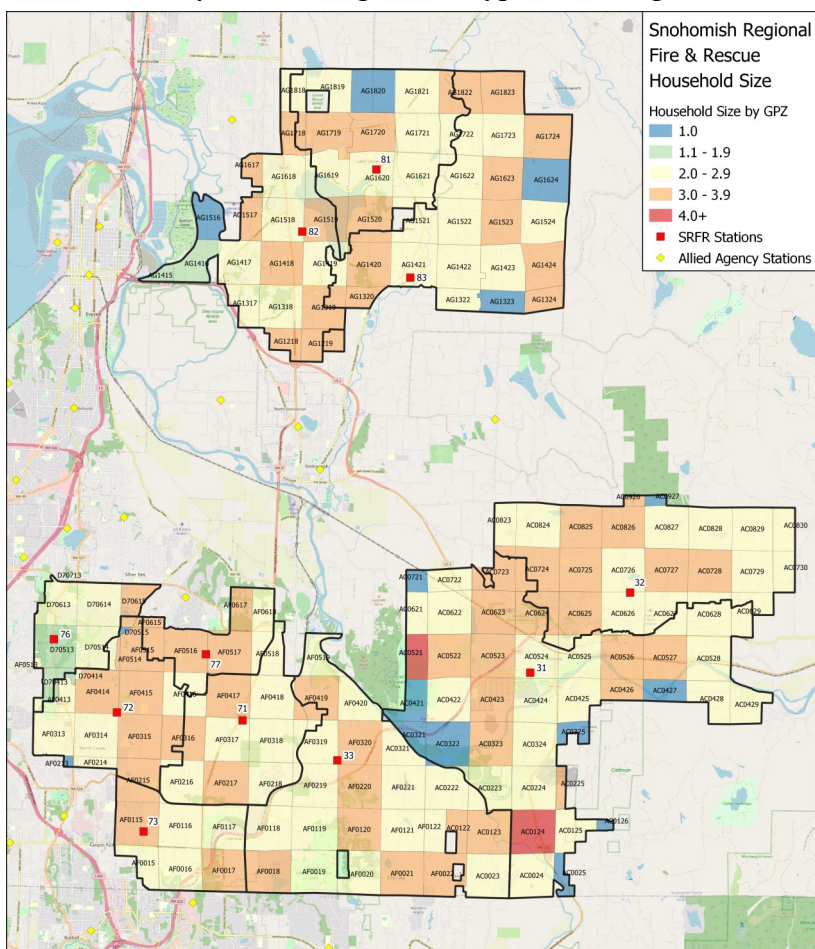
Snohomish County is 77% white, 3.8% African American, 1.6% American Indian, 12.0% Asian, 10.6% Hispanic or Latino, and 0.7% pacific islander.

	Lake Stevens	Monroe	Mill Creek	SRFD
White-Alone	84.9%	76.7%	67.0%	70.9%
Black or African American	2.1%	4.2%	3.4%	1.9%
Indian and Alaska Native Alone	1.1%	1.4%	0.3%	0.6%
Asian Alone	3.9%	2.6%	19.0%	10.7%
Native Hawaiian or other Pacific Islander	0.1%	0.3%	0.3%	0.19%

Snohomish County Race and Hispanic Origin

Household Size

Household size is another socioeconomic factor, with more densely populated and inhabited areas often posing more life safety risks during certain types of emergencies.



SRFR 2019 Average Household Size

⁷U.S. Census. (2019). Quick Facts for Snohomish County, WA. Retrieved from <https://www.census.gov/quickfacts/fact/table/snohomishcountywashington/PST045219>

Area Economics⁸

Each fire district has its own set of funds established within the County's accounting system that the Snohomish County Treasurer utilizes to account for cash received and disbursed in Snohomish County's capacity as ex officio treasurer and collection agent. SRFR (formerly Fire District 7) has earned clean audits for the past 36 years from the state.

Performance Indicator 2A.7

Significant socioeconomic and demographic characteristics for the response area are identified, such as key employment types and centers, assessed values, blighted areas, and population earning characteristics.

Economic conditions have a direct impact on the County's revenues and the demand for County services. therefore, the information presented in the financial statements is perhaps best understood when it is considered from the broader perspective of the specific economic environment within which the County operates. The County's economy is an urban-rural mix. Technology and aerospace manufacturing predominate in the southern and western regions of the County. The Boeing Company's largest manufacturing facility is in that area. Many of the company's supply chain partners are also located within the County. In the past few years, those partners have diversified and expanded their customer bases to include Airbus, shipbuilders, defense contractors and energy generation customers among others.

Boeing is by far the largest employer and manufacturer within Snohomish County. Even after announced layoffs, Boeing will still have close to 30,000 employees at the Snohomish County plant. The company currently has a significant backlog of orders for the county-based facility despite COVID 19, which results in an expectation that the company's local level of employment will remain relatively high over the next several years. The local economy continues to diversify into technology, telecommunications, and health care. Snohomish County's unemployment rate of 5.8% as of March 2020 is 1.8% higher than March 2019's unemployment rate of 4.0%, which

Boeing Factory Snohomish County



demonstrates the early effects of the Governors stay at home order associated with the COVID 19 health emergency.

A deep-water port facility located within Snohomish County and the County's regional airport facility both continue to plan for future growth. Each facility serves as an economic development tool for the region by providing lease space to new and growing businesses. Together they provide the capacity to import and export virtually anything from or to anywhere in the world, which places the County in a strong competitive position for global markets. In addition to their ability to attract global business markets, both facilities also provide significant recreational opportunities to the local community and beyond. The deep-water port located in the City of Everett is the largest recreational marina on the US West Coast. About 58,500 jobs (20.2 percent of total Snohomish County nonfarm employment) in 2018 were in manufacturing industries. This is proportionally higher than any other county in Washington and above the national average. Although Snohomish County manufacturing is made up of many types of industries, aerospace products and parts manufacturing makes up the largest portion of employment.

Snohomish County Deep Water Port



⁸Area Economics Information from the 2019 Snohomish County CAFR found here: <https://snohomishcountywa.gov/Archive.aspx?AMID=47>

Property tax revenues tend to be stable. They are based on the prior year's levy amount with optional increases of up to one percent, plus property tax on the value of new construction. Property taxes are levied on real property owned by individuals and businesses. In accordance with the Washington State Constitution and state law, property taxes paid by a property owner are determined by a taxing district's rate applied to the value of a given property. In the County, the total property tax levy varies based on the make-up of the various taxing districts that include cities, school districts, fire districts, other special purpose districts and the county-wide levy. SRFR operates with funding from property tax revenues generated through two levies; fire at \$1.35 per \$1,000 of assessed property value and EMS at \$.041 per \$1,000 of assessed property value for a total 2019 levy rate of \$1.76.

Expenditure Controls and Restrictions

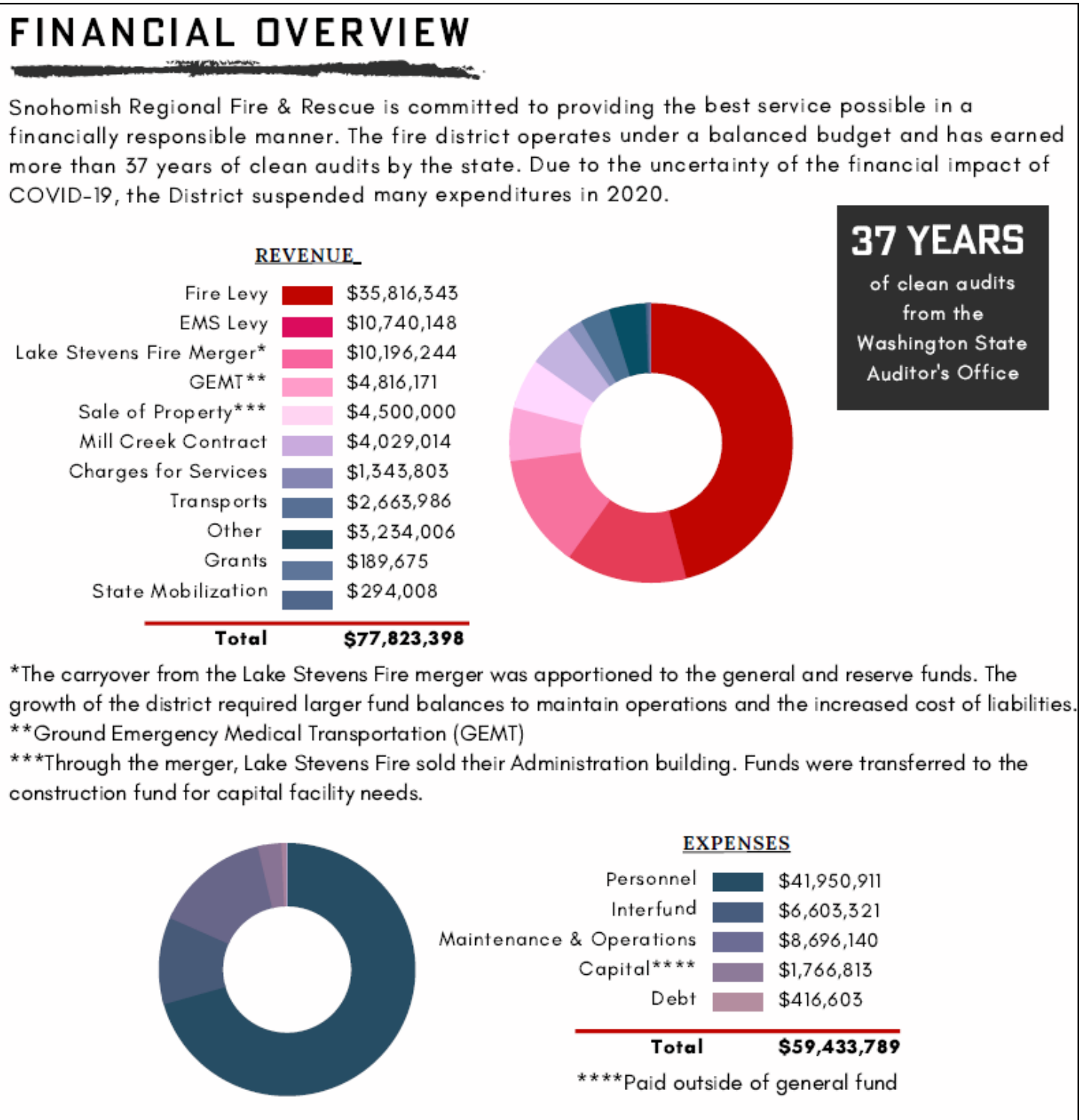
The County is committed to maintaining a strong general fund balance and has a track record of making the hard decisions necessary to do so. During the 2019 budgetary process, the County Executive and the County Council built and adopted the 2019 budget to add to fund balance and liquidity now and to build reserves to address any potential revenue shortfalls associated with future economic downturns.

Per requirements of County code, the general fund balance level is measured as a percentage of prior year revenue (excluding transfers received by the general fund from other County funds). At the end of 2019 the County's total general fund balance was \$49.7 million, or approximately 19.94 percent of 2018 revenues (excluding transfers received by the general fund from other County funds) higher than 2018 general fund balance to prior year's revenues of 17.71 percent.

Since March of 2020 the County has been adjusting to an anticipated decline in general fund revenues due to the Governor's stay at home order to address the COVID 19 health emergency. On June 10, 2020, County Council implemented a 3.5% across the board appropriations cut within the general fund. This action along with halting planned general fund capital projects and a limited use of unspent 2019 funds allows the County to maintain service levels while maintaining liquidity in uncommitted fund balance. Cutting budgets to maintain necessary level of funds will maintain financial flexibility, which is critical in difficult financial times such as this. Similar to other Washington jurisdictions, the County will continue to face challenges meeting the demands for services. To ensure quality services are provided to the community, it is recognized that it will be incumbent on county officials to prioritize the services most important to the community.

It should be noted that these same fiscally responsible practices are also utilized at SRFR, where the district has not requested voters to approve a bond since 1978, instead using sound financial planning to pay into sinking funds, allowing the district to pay cash for fire apparatus, building repairs, and construction. Looking to the future, the district realized that the current levies were not keeping up with rising call volumes or inflation, prompting the district to ask voters to “lift the lid” and restore funding for emergency services to previously approved levy rates. Unfortunately the motion did not pass, resulting in the need to reevaluate future spending and possibly service levels.

2020 SRFR Financial Summary



*The carryover from the Lake Stevens Fire merger was apportioned to the general and reserve funds. The growth of the district required larger fund balances to maintain operations and the increased cost of liabilities.
**Ground Emergency Medical Transportation (GEMT)
***Through the merger, Lake Stevens Fire sold their Administration building. Funds were transferred to the construction fund for capital facility needs.

Human-Made Characteristics

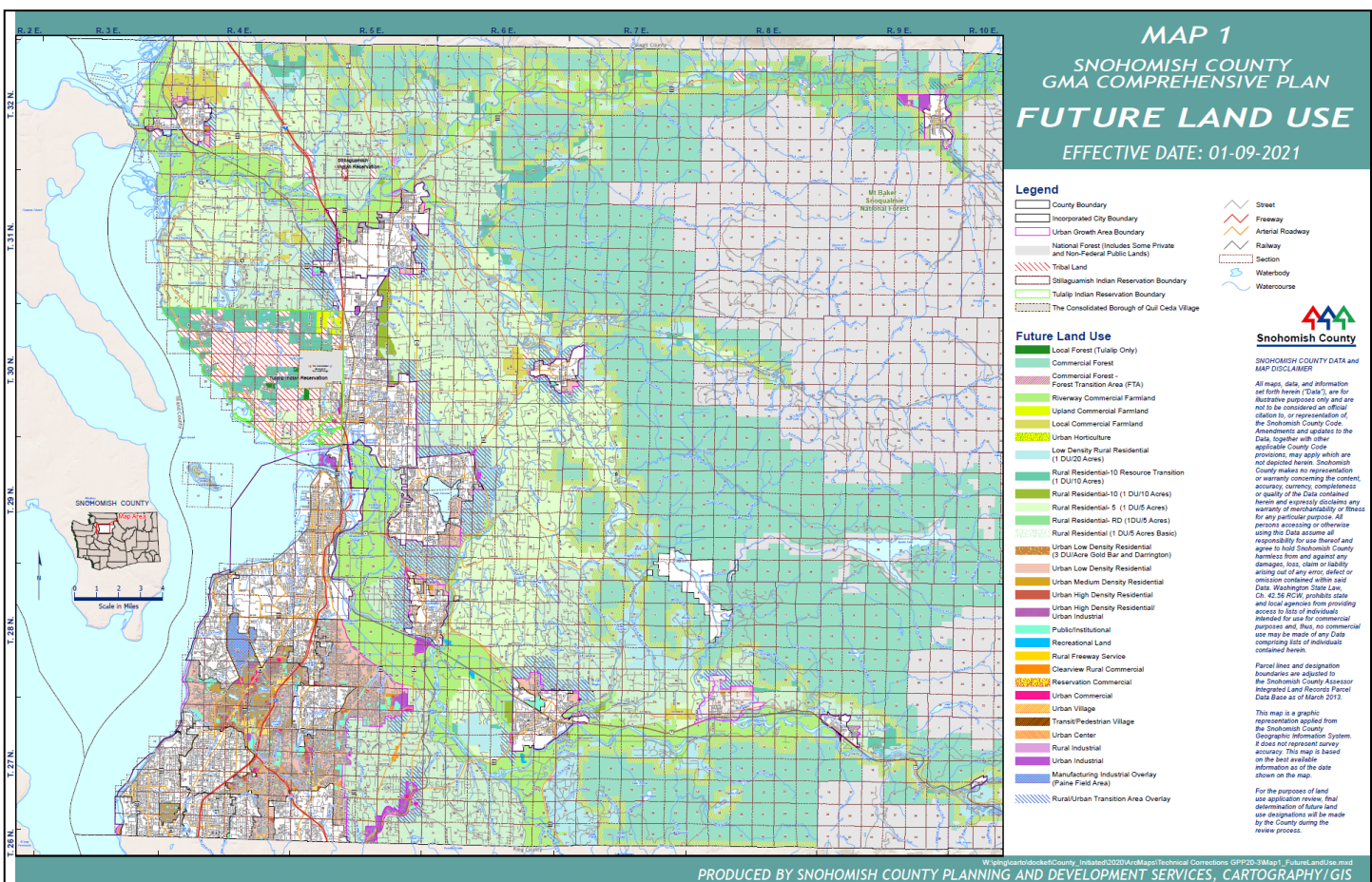
Development

Snohomish County's general policy plan has established several goals for land use including⁹:

- Provide for a supply and distribution of land use types to accommodate the majority of county population and employment growth within urban growth areas
- Reduce land consuming urban development patterns and provide structure for urban development within neighborhoods or urban centers
- Reduce development pressures and patterns of sprawl within rural areas
- Conserve agricultural, forest, and mineral resource lands of long-term commercial significance; and
- Preserve and protect open space, scenic, and cultural resources.

The future land use map provides generalized urban and rural residential, commercial, and industrial land use designations. The map also includes urban growth area (UGA) boundaries and specific designations of urban, rural, and resource land uses¹⁰.

Map of Snohomish County, WA Future Land Use



⁹ General Policy Plan Information for Snohomish County, WA retrieved from <https://www.snohomishcountywa.gov/1566/General-Policy-Plan>

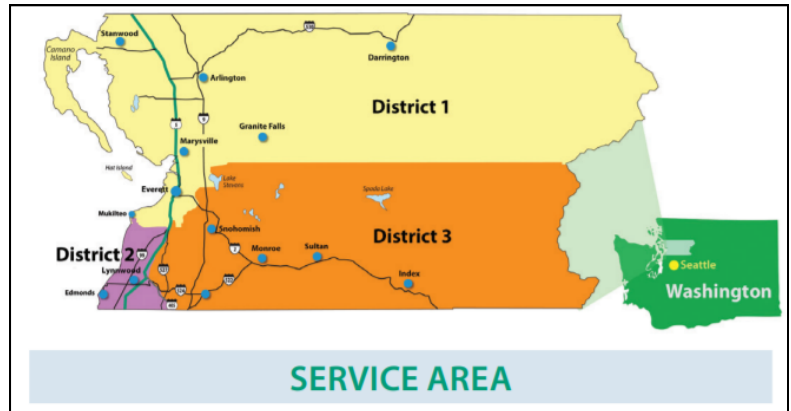
¹⁰ Future land use map of Snohomish County, WA accessed at: http://www.snoco.org/docs/scd/PDF/PDS_GMA_FLU/Map1_FutureLandUse.pdf

Infrastructure

Electric¹¹

Snohomish County Public Utility District #1 is a municipal corporation of the state of Washington, formed by the voters of Snohomish County in 1936. It is currently the second largest public electricity utility in the Pacific Northwest and the 12th Largest in the U.S.⁴.

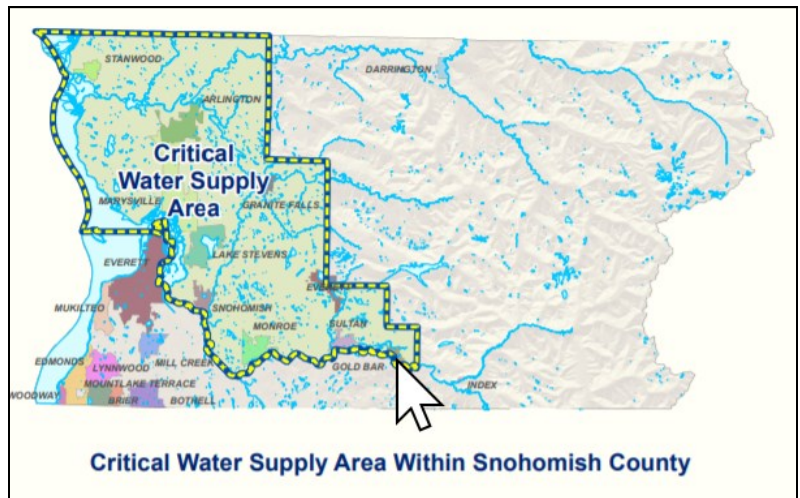
PUD Number 1 Service Area Map



Water

Snohomish Regional Fire and Rescue jurisdictional boundaries generally lie within the critical water supply area for the county. This area is that portion of the county where water supply problems related to uncoordinated planning, inadequate water supply, or unreliable service may exist. No new public water system may be approved within the area unless an existing water purveyor is unable to provide water service. Refer to State RCW 70.116 for more information.

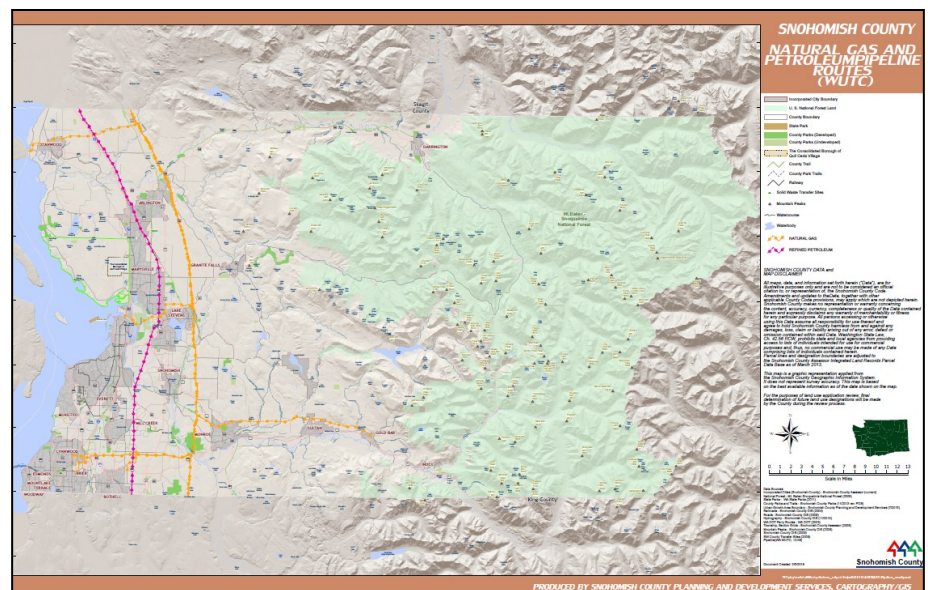
Map of Snohomish County, WA Critical Water Supply Areas



Map of Snohomish County, WA Natural Gas and Petroleum Pipeline Routes

Natural Gas and Petroleum

SRFR has both natural gas and refined petroleum lines running through their district.



¹¹ Electric Information from https://www.snopud.com/Site/Content/Documents/custpubs/QuickFacts_521.pdf

Transportation

Rail

Amtrak currently provides passenger rail service from Seattle through Snohomish County with stops at Edmonds, Everett Multimodal Station, and Stanwood. The service provides north-south connections to Vancouver, British Columbia and Portland, Oregon southward. It also runs service easterly to Spokane and beyond. Sound transit operates commuter rail service between Everett and Seattle.

The Burlington Northern Santa Fe (BNSF) Railroad provides rail freight service. Its major terminal facility within Snohomish County is located near downtown Everett on the waterfront. Snohomish County's eastside rail corridor currently provides oil and freight service with additional potential future uses as a regional non-motorized multi-use trail, excursion train, and commuter rail line.

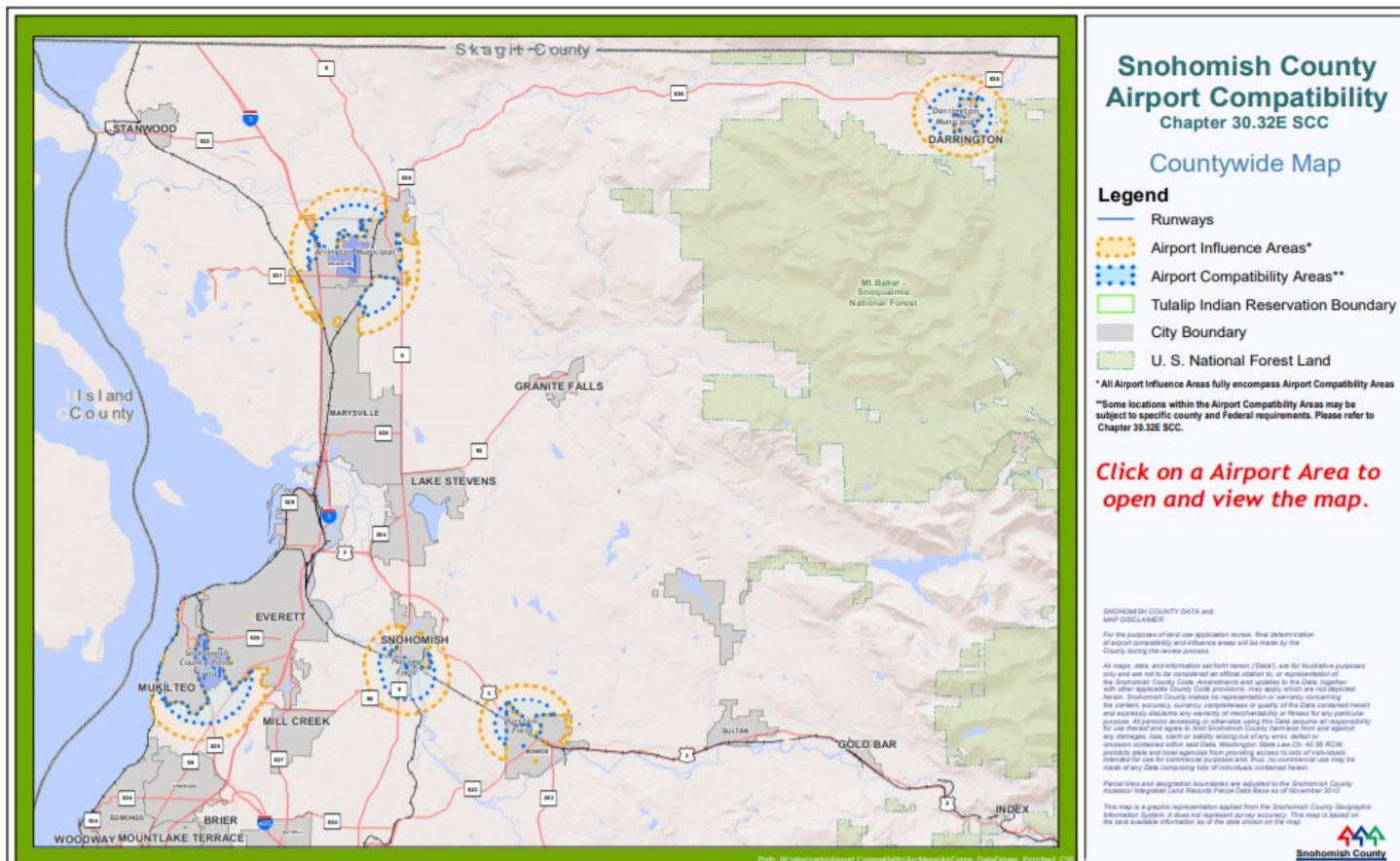
Ferry System

Two Washington State Ferry (WSF) routes serve Snohomish County providing cross Puget Sound travel. The Edmonds-Kingston route operates between the cities of Edmonds and Kingston. The Mukilteo-Clinton ferry route operates between two WSF terminals located in the cities of Mukilteo and Clinton.

Airports

Several public and private airports are located in Snohomish County. Paine Field airport is located southwest of Everett and is owned and operated by Snohomish County. The airport has three runways and a two gate passenger terminal used for commercial, general aviation, and aircraft-related manufacturing. The City of Arlington owns and operates the Arlington Airport which has two runways with an adjoining industrial park. Several smaller privately owned airports exist in Granite Falls, Marysville, Monroe, Snohomish, and Sultan.

Map of Snohomish County, WA Airports



Major Transportation Features¹³

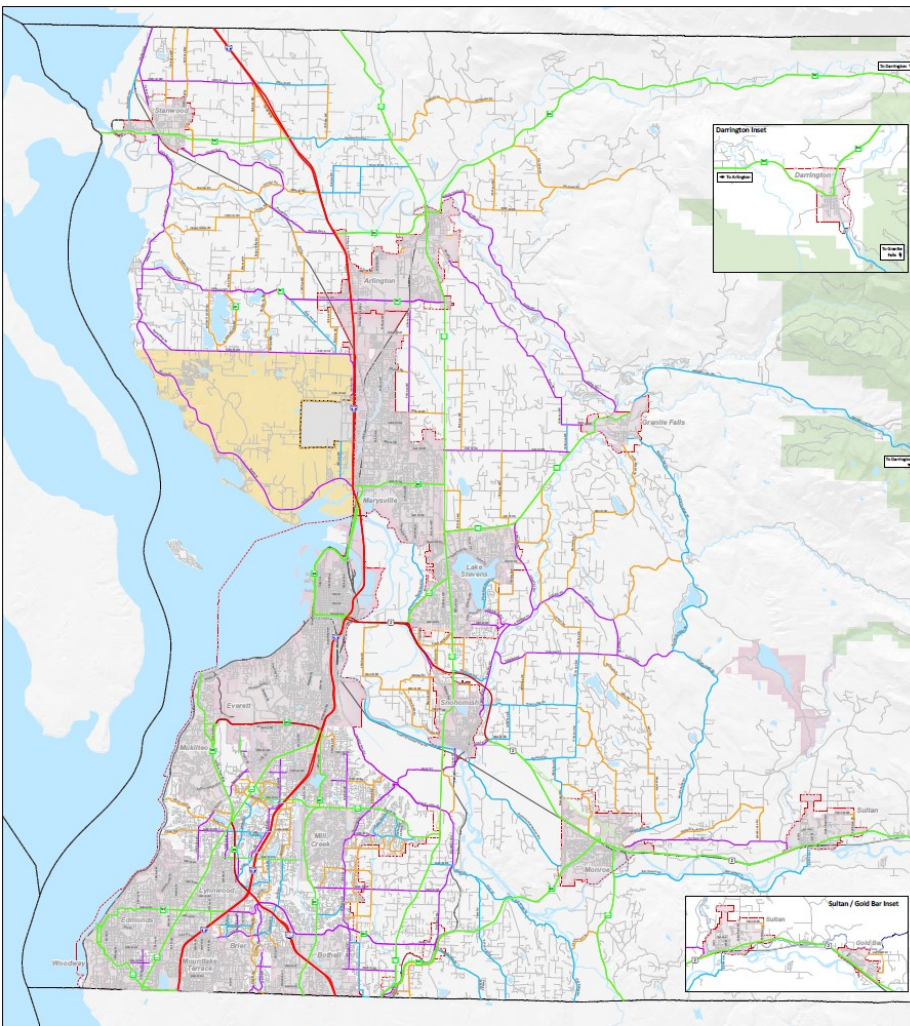
Snohomish County, along with 20 municipalities, the Washington State Department of Transportation (WSDOT), and the Tulalip Tribe provide the public roadway system in Snohomish County. Major responsibilities include the planning, design, construction, and maintenance of these transportation facilities³.

To have a better understanding of the highway, street and road system, Snohomish County maintains a functional classification system. The system is shown on the Arterial Circulation Map. Arterials are classified as an interstate, freeway/expressway, principal arterial, minor arterial, major collector, or minor collector. High Occupancy Vehicle Lanes (HOV) are also designated on state highways and a county arterial, Airport Road/128th St SW.

Other important information specific to Snohomish County roads such as traffic volumes, traffic control, bridges, road geometry, and striping are maintained in separate databases such as Mobility.

Integrated within the Snohomish County public highway, street, and road system are non-motorized facilities including separated paths. The Countywide Bicycle Facility System includes trails, such as the Centennial and Interurban trails; designated on-street bike lanes on some State highways; select County and city roads; routes

Map of Snohomish County, WA Arterial Circulation

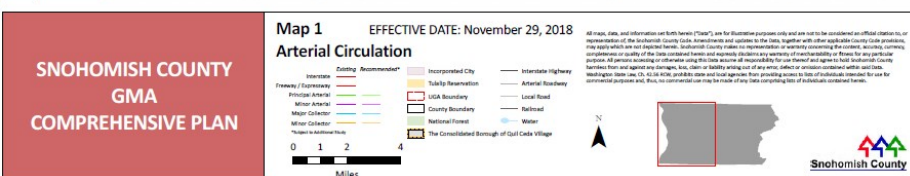


on widened County road shoulders; and streets and roads with shared roadway use that do not include special markings or signs.

SR522, I405, SR9, Hwy 203, and I5 are all major roadways connecting the district's bedroom communities to key employers (Microsoft, Amazon, Facebook, Boeing, REI, etc.)

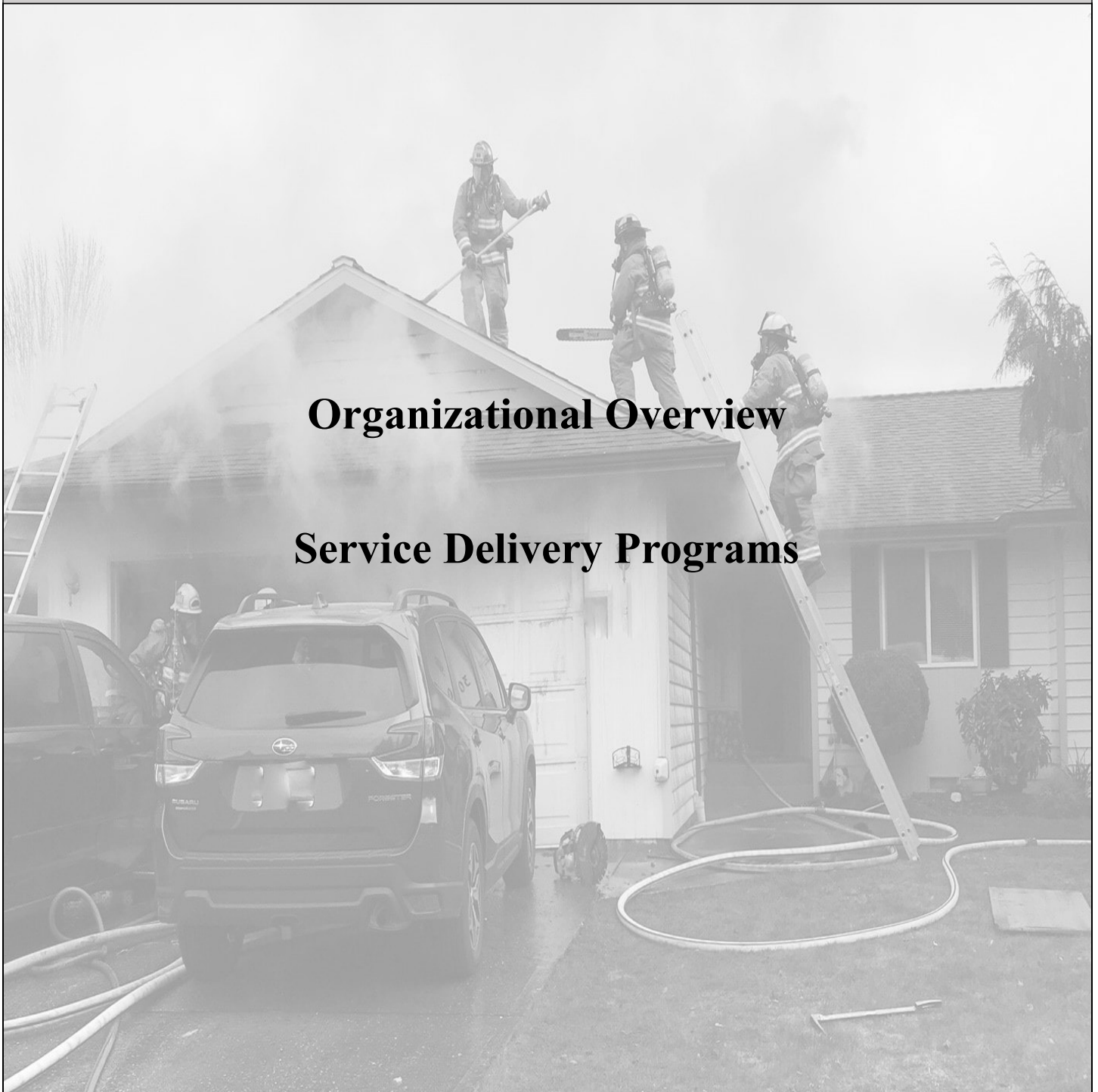
Performance Indicator 2A.9

The agency defines and identifies infrastructure that is considered critical within each planning zone.



¹³ Major transportation features description from the Inventory of Transportation Facilities and Services, November 29, 2018 edition, Snohomish County Public Works

Section B - Description of Agency Programs and Services



Organizational Overview

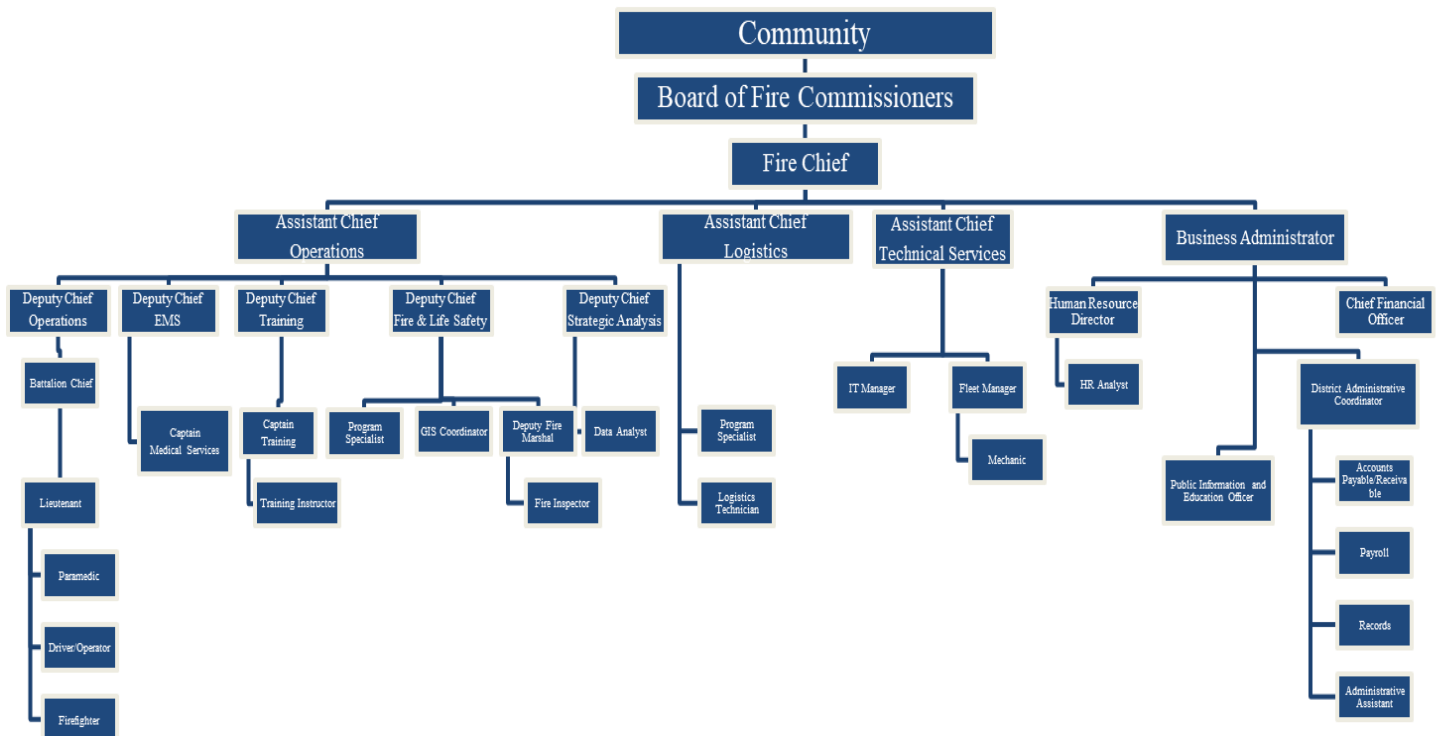
Service Delivery Programs

Organizational Overview

Snohomish Regional Fire and Rescue provides high quality fire suppression, emergency medical, technical rescue, and hazardous materials services from 11 fire stations staffed with a constant daily staffing level of 44 personnel. Additionally the district delivers a full spectrum of fire and life safety services supported by administrative staff and training officers to ensure the first responders are well prepared for any hazard or situation they may face.

Human Resources

2021 SRFR Organizational Chart



The District's organizational structure reflects a fairly typical, paramilitary organization. The Senior Staff is comprised of five senior personnel, including the Fire Chief, three Assistant Chiefs and one Business Administrator. The Senior Staff is supported by five Deputy Chief officers, one Chief Financial Officer, and one Human Resources Director, which are distinguished primarily by their functional areas of responsibility. These include :

1. Operations, EMS, Training, Fire and Life Safety, Strategic Analysis, and Health and Safety
2. Logistics
3. Technical Services, IT, and Fleet Maintenance
4. Administration, Finance, Human Resources, and Public Information and Education

Primary responsibility for the administration and management of the District's budget rests with the Fire Chief. The next level of supervision are the twelve Battalion Chiefs (three per shift). Personnel at the rank of Captain are used as functional supervisors in support roles within the EMS and Training divisions. Personnel at the rank of Lieutenant perform individual station / company supervision.

Physical Resources-Apparatus



Battalion Chief

Three pickup trucks staffed with a battalion chief are on duty each shift. In addition to emergency responses and personnel management, they also supervise many non-emergency programs.



Engine

A piece of fire apparatus that carries water, medical equipment and tools to the scene of an emergency. The primary function of this crew at fires is to establish a water supply, search for people in the interior of a structure and apply water with hose lines to extinguish the fire. Engines are in service at ten of eleven stations in the city.



Ladder

This fire apparatus extends to approximately 100 feet in the air and is capable of providing an elevated stream of water. The jurisdiction has two ladders in service which are located at stations 33 and 72.



Ambulance

This piece of equipment can be either fully staffed or cross staffed depending on the station and can also be basic life support or advanced life support depending upon staffing. SRFR operates 14 frontline and reserve ambulances which carry a myriad of first aid equipment to treat and stabilize patients until arrival at local emergency departments.

Physical Resources-Fire Stations

Fire Station 31 (Monroe).
Constructed in 1991
163 Village Court, Monroe Washington,
98272.



Fire Station 32
Constructed in 1991
22122 132nd, Monroe Washington, 98272



Fire Station 33 (Fales Road).
Constructed in 2019.
19424 Fales Road, Snohomish, WA 98296



Physical Resources-Fire Stations

Fire Station 71 (Clearview).
Constructed in 1983.
8010 180th Street SE, Snohomish, WA
98296



Fire Station 72 (Fernwood).
Constructed in 1984
3431 180th Street SE, Bothell, WA 98012



Fire Station 73 (Bear Creek).
Constructed in 2007
22225 45 Avenue SE, Bothell, WA 98021



Physical Resources-Fire Stations

Fire Station 76 (Mill Creek).
Constructed in 1998
1020 153rd Street SE, Mill Creek, WA 98012



Fire Station 77 (Gold Creek).
Constructed in 1997.
6610 Snohomish-Cascade Drive,
Snohomish, WA 98296



Fire Station 81 (Downtown).
Constructed in 1975.
12409 21st St. NE, Lake Stevens, WA 98258



Physical Resources-Fire Stations

Fire Station 82 (Chapel Hill Road).
Constructed in 1988.
9811 Chapel Hill Rd, Lake Stevens, WA
98258.



Fire Station 83 (Division Street).
Constructed in 1989.
13717 Division Street, Snohomish
Washington, 98290



Logistics Facility.
Constructed in 2000
21709 99th Ave. SE, Snohomish, WA 98296



Service Delivery Programs

Fire & Life Safety Services

The Division of Fire & Life Safety at SRFR is a system and process in which programs, actions, and services within the community are utilized to prevent injuries; loss of life; loss of property; and damage to the environment. Fire & Life Safety Services activities identify and prioritize risks and apply resources in a coordinated manner to minimize the probability and severity of occurrence of fire, natural disasters, and human-made disasters.

The benefits of a safer community are achieved through:

Education — Whether our firefighters are helping a business owner understand the hazards created by overloading an electrical cord, or reminding senior adults about trip hazards in their home, education is one of our strongest tools for prevention.

Engineering — Through plan review and code compliance activities, sometimes engineering controls are employed to prevent incidents from occurring in the first place. Some of these engineering controls are fire sprinkler systems, hazardous materials spill prevention efforts, heat-regulating systems, and others.

Enforcement — Our code compliance activities are the backbone of our enforcement tools. Largely through state and local adoption of the International Fire Code, fire inspectors and plans examiners regulate risks which can lead to loss of life, property, and the environment.

Economic Incentive — Sometimes a strategy of economic incentives are employed to reduce a particular risk within the community. For example, businesses can receive a reduced fee for early operational permit renewal, which results in a decrease in incidence of fire and hazardous materials incidents due to fire inspections occurring earlier.

Emergency Response — Fire & Life Safety Services efforts are aimed at preventing emergency incidents. However, when they do occur, firefighters are strategically placed throughout our community at 11 different fire stations. The risk reduction process may help identify ways for our firefighters to respond more effectively to emergency incidents.

Fire Prevention

Snohomish Regional Fire & Rescue provides much more than emergency response to fires, medical events, hazardous material spills and technical rescues. The Division of Fire & Life Safety is home to the Office of the Fire Marshal where specially trained staff provide proactive fire safety inspections and fire code enforcement for the cities of Lake Stevens, Mill Creek and Monroe. Snohomish Regional Fire & Rescue employ three fire marshals who are certified by the International Code Council in fire code inspection, enforcement, and plan review. In addition, the fire marshals hold credentials as certified firefighters, paramedics, hazardous materials technicians and fire investigators. Together, these dedicated employees have over 30 years of experience as fire marshals.



Public Education

A public education program is in place and directed towards reducing community risks in a manner consistent with the district's mission. The program targets specific risks, behaviors, and audiences as identified through incident, demographic, and program data analysis. Programs are in place to identify large loss potential or high risks audiences and partnerships have been fostered to best address those challenging areas within the community. A deep dive takes place with a formal and documented annual program appraisal to determine the program's impacts and outcomes, and to measure performance and progress towards reducing risk in the community. SRFR's public educator coordinates public requests for a variety of programs including school visits and presentations, media events, civic events, and city or official business requests. Additionally a variety of programs and information are delivered to the community via the district's webpage and social media outlets, which covers topics ranging from address signs, blood pressure checks, and car safety seat checks to Covid-19 resources for kids.



Fire Investigation, Origin, and Cause

The district does not operate a full-service fire investigation program. Fire investigations completed by district personnel are limited to those by company officers for incidents where (1) damage is limited to less than \$10,000, (2) no loss of life, (3) no suspicion of criminal activity, and (4) origin and cause of the fire is obvious.

The district provides fire investigation education and training to all company officers during completion of the Washington State Patrol IFSAC Fire Officer I/II program in compliance with NFPA 1021: Standard for Fire Officer Professional Qualifications, 2014 Edition, JPR 4.5.1 and 5.5.1.

For fires that fall outside of a company officer's scope of qualification, the district contracts with the Snohomish County Fire Marshal's Office (SCFMO) for fire investigation services. These interlocal agreements are in-force for the cities of Lake Stevens and Monroe. The City of Mill Creek maintains a separate contract for fire investigation services since Mill Creek is a contract service city and not annexed into the district.

SCFMO staffs a fire investigation division with three (3) limited scope commissioned law enforcement officers who are IAAI Certified Fire Investigators. These investigators work Monday through Friday from 0800 to 1700 and are assigned to a weekly rotating on-call shift for after-hours response. SCFMO investigators can be requested by the district's incident commander for fire investigations with notification through Snohomish 9-1-1 (SnoCom).

Per Washington State law, Snohomish Regional Fire & Rescue enforces the 2018 International Fire Code with Washington amendments. The top 10 fire code violations found in local businesses by the fire marshals are:

1. Emergency lights not working, needing new bulbs or batteries
2. Fire extinguishers needing annual service
3. Misuse of extension cords
4. New keys are needed for the fire district key box
5. Ceiling tiles or holes in walls need to be repaired
6. Exit signs not working, needing new bulbs or batteries
7. Fire sprinkler or fire alarm systems need annual service or repair
8. Cooking hood suppression systems need biannual service or repair
9. Open electrical wiring needs to be covered
10. Electrical panels and shut-offs are blocked

Snohomish Regional Fire & Rescue's goal is to inspect all businesses for fire safety at least annually to help maintain and improve the level of safety in our community for our citizens and emergency responders.

Domestic Preparedness

The district operates an all-hazards preparedness program that includes a coordinated multiagency response plan designed to provide the community preparedness and resiliency in response to terrorist threats or attacks, major disasters, and other large-scale emergencies occurring at or in the immediate area.

Fire Suppression

The District provides high quality fire suppression services within the jurisdiction as well as response to requests for service from adjacent municipalities and fire districts. In 2019, the District saved just over \$15 Million dollars in property and contents. Fire suppression services are provided from eleven fixed facility fire stations distributed throughout the community. All SRFR members are trained as firefighters and Emergency Medical Technicians (EMTs). The District utilizes a constant staffing strategy with staffing per day of 44. The following is a description of staffing configurations; not including cross-staffed specialty units such as water tenders, technical rescue and vegetation fire vehicles.

In total, the District operates the following response units: (maximum staffing of 47)

- 10 fire engines companies (7 are cross-staffed)
- 2 ladder companies (2 cross-staffed)
- 6 medic units (advanced life support ALS ambulances – 2 cross-staffed)
- 7 aid units (basic life support or BLS ambulance – 6 cross-staffed)
- 3 Battalion Chief command units
- 1 Medical Services Officer

Emergency Medical Services (EMS)

On March 1, 1982 Snohomish County Fire District 7 submitted a proposal to provide Advanced Life Support services to the citizens of Fire District 7 and greater Snohomish County. This decision to add paramedics to the Fire District marked a significant commitment to improve the health of our community. Fire District 7 has endeavored to be a high quality provider of emergency medical care to our community from basic through advanced levels of care.

All firefighters are cross-trained as EMTs or paramedics, with rigorous training taking place through the Harborview Medical Center. SRFR EMS has produced excellent patient outcomes with a 50% CPR survival rate and 96% patient satisfaction rating according to the 2019 SRFR annual report. These services are provided through the use of engine and ladder companies who act as first responders, followed by a Basic Life Support (BLS) aide care or Advanced Life Support (ALS) medic unit for advanced care, treatment, and transport to the hospital.

Fast forwarding to today, SRFR is committed to continuously evaluating the needs of the community, current medical practice, and internal data in order to provide the right care, at the right price, at the right time. These goals are measured by the following vision, mission, and objectives specific to the emergency medical service delivery to citizens and visitors to the SRFR jurisdiction.

The EMS Division mission is to provide the highest quality, evidence based, pre-hospital medical care to the community. This is accomplished through:

- Integrating internal data and external evidence quarterly to assess key performance indicators against the 90% fractal response time goals.
- Utilizing quarterly reports to guide, develop and implement strategies that are the most effective and produce the greatest value to the organization and public.
- Communicating findings to the organization and public to increase awareness and educate on ways to improve overall health.

SRFR administers a Medical Services Officers (MSO) program. The team is comprised of a group of Captains who work in the Emergency Medical Services (EMS) Division of SRFR. There are currently four MSO's with one assigned to each 24 hour shift. Their primary role is to provide functional supervision of all EMS related activity on their shift. This includes review of patient charts to assure documentation standards are met, training personnel in the most up to date medical procedures and responding on the most critical EMS incidents to provide on scene assistance and quality assurance.



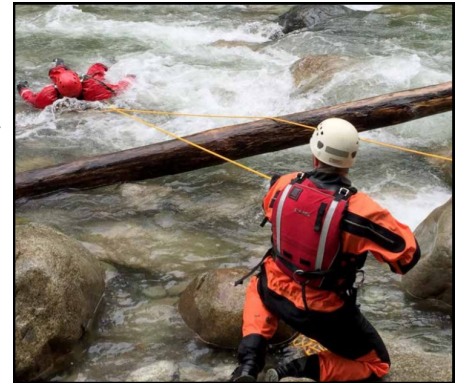
Technical Rescue

Nine jurisdictions in Snohomish County have come together as partners to create a regional technical rescue response team to better serve the jurisdiction. Having a regional team combines these rescue resources and reduces duplication to provide a seamless and efficient emergency response. These highly trained professionals are ready to assist with tasks associated with the following rescue disciplines: trench, rope, urban search & rescue (USAR), water/ice, and confined space.



Water Rescue

SRFR has three major rivers within its jurisdiction and countless lakes where we respond to water related rescue calls; such as missing person(s) in swim areas, capsized boats, vehicles into the water, flooding and other water related incidents. The Water Rescue Team is highly trained in swift water rescue, boat operations, rescue swimming for free diving to 40 feet deep and long distance swims.



Hazardous Materials

The District operates as part of a regional Hazardous Materials (HazMat) response team that has advanced capabilities for detection of and mitigation of risks. Seven jurisdictions in Snohomish County have come together as partners to create a regional hazardous materials (HAZMAT) response team to better serve our respective communities. This team requires specialized resources and training to respond to these types of emergencies. Their technical skills and equipment provide them with the ability to detect and/or identify chemical, biological, radiological, and explosive materials. The team utilizes various levels of chemical protective clothing and equipment needed to enter dangerous atmospheres.



Training Division

SRFR's Training Division is committed to preparing fire rescue personnel to deliver excellent customer service to the citizens of the jurisdiction while adhering to training requirements that are mandated by law. This is accomplished by proactively responding to changes, solving problems, collaborating on issues, assessing the needs of the community and personnel, and developing viable solutions. The training division accomplishes this by incorporating the best instructional and training methods, as well as continuously evaluating the capabilities of the personnel. SRFR collaborated with neighboring agencies to conduct a Part-Time Academy where each recruit received training to prepared them for national certifications in HazMat Awareness and Operations, Firefighter 1 and Firefighter 2.



Section C - All Hazard
Community Risk Assessment

Risk Assessment Process

Geospatial Risk Factors

Natural Risk Hazards

Human made Hazards

Physical Assets Protected

Population Growth

Historical Service Demand and Probability Analysis

Risk Assessment Process

The purpose of this section is to describe the process used in performing an analysis of the community it serves and its potential risks using real world factors that are both physical and theoretical. To perform a comprehensive risk assessment, it was necessary to analyze physical, economic, sociologic and demographic aspects of the area served. The factors that drive the service needs are examined in a precise and scientific manner to determine the capabilities necessary to adequately address the risks that are present. The assessment of risk is critical for the determination of the number and placement of resources, and the mitigation measures that are required by the community.

All-Hazard Risk Assessment and Response Strategies as it relates to Criterion 2B:

The agency identifies and assesses the nature and magnitude of all hazards and risks within its jurisdiction. Risk categorization and deployment impact considers such factors as cultural, economic, historical, and environmental values, and operational characteristics.

The risks that the district faces can be natural or human-made and fall in various locations on the consequence, probability and impact matrix. Where these risks are located on the matrix has a direct impact on how resources are located around the jurisdiction (distribution) and the overall amount of resources required to mitigate the incident (concentration) effectively through the use of the staffing and deployment model.

Each of the major natural and manmade risks evaluated received a clearly defined probability and consequence ranking. Service areas that either had little quantitative data, or did not require that level of analysis, were evaluated through both retrospective analysis as well as structured interviews with District staff members. Final call types from the 2017-2019 CAD data file were classified into the program areas of EMS, Fire, Hazmat, Other, and Technical Rescue based on district leadership decisions, and were assigned a risk classification based on district leadership criteria, as follows:

Core Competency 2B.1

The agency has a documented and adopted methodology for identifying, assessing, categorizing and classifying all risks (fire and non-fire) throughout the community or area of responsibility.

Consequence (x)

Value	Category	Description
2	Minor	Individual / Business
4	Low	Multiple People / Businesses
6	Moderate	Multiple People / Businesses / Financial Impact to Community
8	High	City / Community Level
10	Extreme	Regional

Probability (y)

Value	Category	Frequency of Occurrence	Description
2	Unlikely	Annually	≤ 3 times per year
4	Possible	Quarterly	4 - 11 times per year
6	Probable	Monthly	12 - 51 times per year
8	Likely	Weekly	52 - 364 times per year
10	Frequent	Daily	≥ 365 times per year

Risk Assessment Process Cont'd

Impact (z)

Value	Category	Resource	Description
2	Minor	Personnel Time	≤ 2 personnel ≤ 11.32 minutes
4	Low	Personnel Time	3 - 9 personnel > 11.32 to ≤ 23.75 minutes
6	Moderate	Personnel Time	10 - 18 personnel > 23.75 to ≤ 46.58 minutes
8	High	Personnel Time	19 - 28 personnel > 46.58 to ≤ 79.90 minutes
10	Extreme	Personnel Time	≥ 29 personnel > 79.90 minutes

The “Personnel” component of the impact (z) variable score was based on effective response force (ERF) values defined by the district per CAD final call type. The “Time” component was based on average call duration from the observed 2017-2019 data set per CAD final call type. Score ranges were defined through identification of quintiles using observed call duration values from the 2017-2019 data set. The impact score was then obtained for each CAD final call type by averaging the personnel and time values (i.e., each variable component was weighted equally).

Once all CAD final call types were assigned scores for all three variables (x, y, and z), the values were placed into a formula to yield a final risk score, as follows:

$$\text{square root of } [(x * y)^2 + (x * z)^2 + (y * z)^2 / 2]$$

CAD final call types were then assigned an overall risk classification of Low, Moderate, High, or Extreme based on the resulting values of the application of the above formula, in conjunction with the following overall scoring scale defined by district leadership:

Risk Category Scale				
Category	Low	Moderate	High	Extreme
Score	4.90 - 32.12	32.13 - 49.64	49.65 - 67.16	67.17 - 122.47

The following tables provide the 2017-2019 CAD final call types, program area classifications, individual variable values, final overall risk score, and final overall risk classification. Entries are sorted by risk classification within each program area, from Low to High. It should be noted that no CAD final call type was associated with a score within the Extreme range of the scoring scale.

CAD Final Call Type ¹	Description	Program Area	x ²	y ³		z ⁴					Final	
			Score	Average Number of Calls per Year	Score	ERF	Component Score	Average Call Duration (Minutes)	Component Score	Score	Score	Risk
AID	Aid Call	EMS	2	3.67	4	2	2	6.01	2	2	8.49	Low
AIR	Aircraft Crash - Light Plane	EMS	4	1.67	2	15	6	66.53	8	7	22.85	Low
BLS	BLS Response	EMS	2	4,728.33	10	2	2	46.45	6	4	32.12	Low
COAM	Carbon Monoxide Medic	EMS	2	6.67	4	4	4	27.32	6	5	16.79	Low
CRP	Community Resource Paramedic	EMS	2	37.33	6	2	2	64.94	8	5	23.92	Low
DEATH	Generic Fire Call	EMS	2	0.33	2	2	2	37.20	6	4	8.49	Low
MAA	Mutual Aid - ALS	EMS	2	37.00	6	2	2	45.50	6	4	19.80	Low
MAB	Mutual Aid - BLS	EMS	2	31.00	6	2	2	39.92	6	4	19.80	Low
MVCF	Motor Vehicle Collision - Fire	EMS	4	6.00	4	15	6	53.00	8	7	30.20	Low
MVCN	Motor Vehicle Collision Non Code	EMS	2	225.00	8	5	4	26.00	6	5	31.27	Low
TRES	Generic Fire Call	EMS	2	0.33	2	2	2	69.03	8	5	10.39	Low
AIRC	Aircraft Crash - Commercial Plane	EMS	6	0.33	2	26	8	29.95	6	7	32.43	Moderate
BLSN	BLS - Noncode	EMS	2	1,909.33	10	2	2	51.17	8	5	38.73	Moderate
MED	Medic Response	EMS	2	5,532.33	10	4	4	56.10	8	6	45.52	Moderate
MVC	Motor Vehicle Collision	EMS	4	661.00	10	5	4	31.93	6	5	47.43	Moderate
MVCE	Motor Vehicle Collision - Entrapment	EMS	4	45.67	6	15	6	67.95	8	7	39.52	Moderate
MVCM	Motor Vehicle Collision - Medic	EMS	4	129.67	8	11	6	45.26	6	6	44.18	Moderate
MVCP	Motor Vehicle Collision - Pedestrian	EMS	2	58.33	8	10	6	34.60	6	6	36.77	Moderate
MEDX	Medic Upgrade Response	EMS	4	405.33	10	10	6	67.24	8	7	60.35	High
FAC	Fire Alarm - Commercial	Fire	2	338.00	8	3	4	16.19	4	4	25.92	Low
FAR	Fire Alarm - Residential	Fire	2	333.33	8	3	4	10.62	2	3	20.83	Low
FAS	Fire Alarm - Sprinkler	Fire	2	81.67	8	3	4	22.79	4	4	25.92	Low
FB	Brush/Grass/Wildland Fire	Fire	2	71.00	8	3	4	39.43	6	5	31.27	Low
FI	Fire Investigation	Fire	2	0.33	2	2	2	0.18	2	2	4.90	Low
FSN	Fire Single Noncode	Fire	2	117.33	8	3	4	20.36	4	4	25.92	Low
FTU	Fire Type Unknown	Fire	2	64.00	8	3	4	19.25	4	4	25.92	Low
MAF	Mutual Aid Fire	Fire	2	58.00	8	3	4	20.80	4	4	25.92	Low
FR	Fire Residential	Fire	2	196.67	8	18	6	51.97	8	7	42.36	Moderate
FRC	Fire Residential Confirmed	Fire	4	26.00	6	18	6	67.86	8	7	39.52	Moderate
FS	Fire Single	Fire	2	417.00	10	3	4	25.78	6	5	38.73	Moderate
FC	Fire Commercial	Fire	4	100.67	8	26	8	32.44	6	7	49.72	High
FCC	Fire Commercial Confirmed	Fire	6	12.67	6	26	8	68.74	8	8	54.33	High
COA	Carbon Monoxide Alarm	Hazmat	2	92.33	8	3	4	22.59	4	4	25.92	Low
GLO	Gas Leak - Outside	Hazmat	2	68.00	8	3	4	28.04	6	5	31.27	Low
MAH	Mutual Aid HazMat	Hazmat	4	1.00	2	3	4	24.15	6	5	16.79	Low
GLI	Gas Leak - Inside	Hazmat	4	66.33	8	7	4	22.19	4	4	33.94	Moderate
HZ	HazMat	Hazmat	4	13.33	6	3	4	59.11	8	6	34.99	Moderate
911	Generic Fire Call	Other	2	0.67	2	2	2	1.93	2	2	4.90	Low
AC	Generic Fire Call	Other	2	0.33	2	2	2	1.55	2	2	4.90	Low
AF	Generic Fire Call	Other	2	0.67	2	2	2	17.99	4	3	6.63	Low
AIDP	Police Request for Medical	Other	2	0.33	2	2	2	0.97	2	2	4.90	Low
ALARMA	Generic Fire Call	Other	2	0.67	2	2	2	7.24	2	2	4.90	Low
AP	Generic Fire Call	Other	2	1.67	2	2	2	4.45	2	2	4.90	Low
ASLTP	Generic Aid/EMS	Other	2	0.67	2	2	2	33.08	6	4	8.49	Low
ASLTW	Generic Aid/EMS	Other	2	0.33	2	2	2	4.03	2	2	4.90	Low
ATC	Generic Fire Call	Other	2	0.33	2	2	2	1.05	2	2	4.90	Low
BAIT	Generic Fire Call	Other	2	0.67	2	2	2	15.23	4	3	6.63	Low

CAD Final Call Type¹	Description	Program Area	x²	y³		z⁴					Final	
			Score	Average Number of Calls per Year	Score	Personnel		Time		Score	Score	Risk
						ERF	Component Score	Average Call Duration (Minutes)	Component Score			
BOAT	Generic Fire Call	Other	2	0.67	2	2	2	0.13	2	2	4.90	Low
BURG	Generic Fire Call	Other	2	0.67	2	2	2	0.73	2	2	4.90	Low
BURGP	Generic Fire Call	Other	2	0.67	2	2	2	0.08	2	2	4.90	Low
CHECK	Generic Fire Call	Other	2	5.33	4	2	2	0.69	2	2	8.49	Low
CIVIL	Generic Fire Call	Other	2	0.67	2	2	2	0.22	2	2	4.90	Low
COL	Generic Fire Call	Other	2	2.67	2	2	2	4.40	2	2	4.90	Low
COLP	Generic Fire Call	Other	2	1.00	2	2	2	2.56	2	2	4.90	Low
DIST	Generic Fire Call	Other	2	0.67	2	2	2	0.00	2	2	4.90	Low
DUI	Generic Fire Call	Other	2	0.67	2	2	2	0.12	2	2	4.90	Low
DVP	Generic Fire Call	Other	2	1.00	2	2	2	8.67	2	2	4.90	Low
DVV	Generic Fire Call	Other	2	0.67	2	2	2	0.00	2	2	4.90	Low
ESCORT	Generic Fire Call	Other	2	0.33	2	2	2	0.42	2	2	4.90	Low
FLUP	Generic Fire Call	Other	2	4.67	4	2	2	1.37	2	2	8.49	Low
FRAUD	Generic Fire Call	Other	2	0.33	2	2	2	0.38	2	2	4.90	Low
HARASS	Generic Fire Call	Other	2	0.33	2	2	2	0.57	2	2	4.90	Low
HOLD	Hold	Other	2	2.33	2	2	2	17.12	4	3	6.63	Low
INFO	Generic Fire Call	Other	2	0.67	2	2	2	10.45	2	2	4.90	Low
LEVEL2	Generic Fire Call	Other	2	0.33	2	2	2	0.00	2	2	4.90	Low
MISC	Miscellaneous	Other	2	1.33	2	2	2	3.71	2	2	4.90	Low
MU	Move Up	Other	2	31.33	6	2	2	10.06	2	2	12.33	Low
NEW CALL	Generic Fire Call	Other	2	1.33	2	2	2	0.54	2	2	4.90	Low
NOTICE	Notice	Other	2	17.33	6	2	2	6.33	2	2	12.33	Low
NOTICEP	Priority Notice	Other	2	1.00	2	2	2	3.26	2	2	4.90	Low
NURSE	Nurse Line Referral	Other	2	0.67	2	2	2	3.38	2	2	4.90	Low
ORD	Generic Fire Call	Other	2	0.33	2	2	2	0.37	2	2	4.90	Low
OTHER	Generic Fire Call	Other	2	0.33	2	2	2	0.27	2	2	4.90	Low
PAPER	Generic Fire Call	Other	2	0.33	2	2	2	1.03	2	2	4.90	Low
PARK	Generic Fire Call	Other	2	0.67	2	2	2	2.36	2	2	4.90	Low
PERSP	Generic Fire Call	Other	2	0.33	2	2	2	3.22	2	2	4.90	Low
PROP	Generic Fire Call	Other	2	0.33	2	2	2	0.93	2	2	4.90	Low
PS	Generic Fire Call	Other	2	0.33	2	2	2	1.32	2	2	4.90	Low
ROUTE	Generic Fire Call	Other	2	0.67	2	2	2	1.80	2	2	4.90	Low
RSO	Generic Fire Call	Other	2	4.33	4	2	2	0.96	2	2	8.49	Low
SC	Service Call	Other	2	889.67	10	2	2	23.97	6	4	32.12	Low
SCHOOL	Generic Fire Call	Other	2	1.33	2	2	2	0.07	2	2	4.90	Low
SEX	Generic Fire Call	Other	2	0.33	2	2	2	0.15	2	2	4.90	Low
SHOP	Generic Fire Call	Other	2	0.33	2	2	2	0.00	2	2	4.90	Low
SPOP	Generic Fire Call	Other	2	0.67	2	2	2	0.00	2	2	4.90	Low
SUBS	Generic Fire Call	Other	2	0.33	2	2	2	0.48	2	2	4.90	Low
SUIC	Generic Fire Call	Other	2	1.67	2	2	2	18.51	4	3	6.63	Low
SUSP	Generic Fire Call	Other	2	1.33	2	2	2	1.07	2	2	4.90	Low
SUSPP	Generic Fire Call	Other	2	0.67	2	2	2	0.89	2	2	4.90	Low
TFDRUG	Generic Fire Call	Other	2	0.33	2	2	2	0.27	2	2	4.90	Low
THAZ	Generic Fire Call	Other	2	1.33	2	2	2	11.08	2	2	4.90	Low
THEFT	Generic Fire Call	Other	2	0.67	2	2	2	0.11	2	2	4.90	Low
THEFTP	Generic Fire Call	Other	2	0.33	2	2	2	0.00	2	2	4.90	Low
TRF	Generic Fire Call	Other	2	1.00	2	2	2	0.00	2	2	4.90	Low
TS	Generic Fire Call	Other	2	1.33	2	2	2	0.20	2	2	4.90	Low

Section C - All-Hazard Community Risk Assessment

CAD Final Call Type ¹	Description	Program Area	x ²	y ³		z ⁴					Final	
			Score	Average Number of Calls per Year	Score	Personnel		Time		Score	Score	Risk
						ERF	Component Score	Average Call Duration (Minutes)	Component Score			
VEHR	Generic Fire Call	Other	2	1.00	2	2	2	1.79	2	2	4.90	Low
VEHT	Generic Fire Call	Other	2	0.33	2	2	2	0.68	2	2	4.90	Low
WARR	Generic Fire Call	Other	2	0.67	2	2	2	1.27	2	2	4.90	Low
WARRS	Generic Fire Call	Other	2	0.67	2	2	2	0.19	2	2	4.90	Low
WELC	Generic Fire Call	Other	2	1.00	2	2	2	0.74	2	2	4.90	Low
MAR	Mutual Aid Rescue	Technical Rescue	4	0.67	2	10	6	3.23	2	4	13.86	Low
RESA	Technical Rescue - High/Low Angle	Technical Rescue	2	3.00	2	10	6	79.38	8	7	14.28	Low
RESCS	Technical Rescue - Confined Space	Technical Rescue	2	0.33	2	10	6	233.38	10	8	16.25	Low
RESST	Technical Rescue - Structure	Technical Rescue	4	1.33	2	15	6	135.33	10	8	25.92	Low
RESTR	Technical Rescue - Trench	Technical Rescue	2	0.67	2	10	6	37.93	6	6	12.33	Low
RESSW	Technical Rescue - Swift Water	Technical Rescue	4	19.33	6	10	6	68.52	8	7	39.52	Moderate
RESWA	Technical Rescue - Water (Non-River/Swift Water)	Technical Rescue	4	13.33	6	10	6	28.29	6	6	34.99	Moderate

“Percentage of Incidents” values reflect percentages within each program row, using the number of incidents per relevant risk rating category as the numerator and the total number of incidents in the corresponding program row as the denominator.

Number of Incidents						Percentage of Incidents ¹				
Risk Rating						Risk Rating				
Program	Low	Moderate	High	Extreme	Total	Low	Moderate	High	Extreme	Total
EMS	13,690	18,452	610	0	32,752	41.8	56.3	1.9	0.0	100.0
Fire	2,698	1,375	118	0	4,191	64.4	32.8	2.8	0.0	100.0
Hazmat	430	159	0	0	589	73.0	27.0	0.0	0.0	100.0
Other	2,776	0	0	0	2,776	100.0	0.0	0.0	0.0	100.0
Technical Rescue	6	28	0	0	34	17.6	82.4	0.0	0.0	100.0
Total	19,600	20,014	728	0	40,342	48.6	49.6	1.8	0.0	100.0

Community Risk Input Factors

Risk factors in the community were analyzed with historical and statistical data, and trending was established based on the type of call and location of the incident. General categories of risk included overall geospatial characteristics of the community, natural hazards and manmade hazards.

Geospatial risk factors

- Political Boundaries and Growth Boundaries
- Construction Limitations
- Topography-Response Barriers
- Critical Infrastructure and Facilities
- Rural Interface

Core Competency 2B.6

The agency assesses critical infrastructure within the planning zones for capabilities and capacities to meet the demands posed by the risks.

Natural Hazards

- Flood
- Earthquake
- Severe Weather
- Glacier Peak Volcano
- Landslide
- Wildfire
- Contagious Diseases

Core Competency 2B.4

The agency's risk identification, analysis, categorization, and classification methodology has been utilized to determine and document the different categories and classes of risks within each planning zone.

Human-made risk hazards

- Road Networks
- Passenger and Freight Lines
- Airports
- Population Growth
- Fires
- EMS
- Hazardous Materials
- Technical Rescue

The number of natural disasters in Snohomish County (31 since 1953) is substantially greater than the US average (15).

Major Disasters (Presidential) Declared: 27

Emergencies Declared: 2

Causes of natural disasters: Floods: 21, Storms: 17, Mudslides: 14, Landslides: 10, Winter Storms: 6, Winds: 5, Earthquakes: 2, Heavy Rain: 1, Hurricane: 1, Snow: 1, Tornado: 1, Volcanic Eruption: 1, Other: 1 (Note: some incidents may be assigned to more than one category)

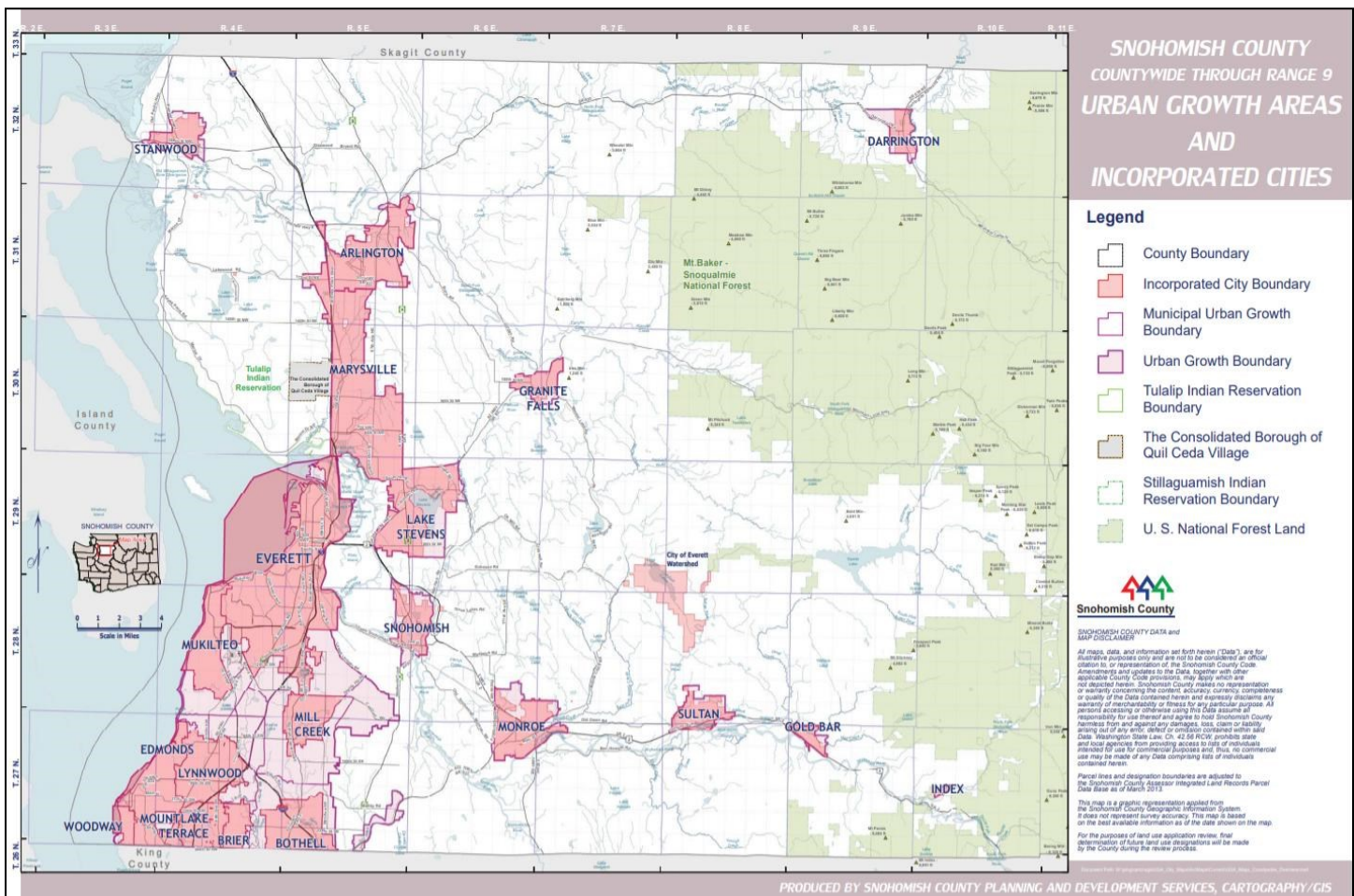
Geospatial Risk Factors

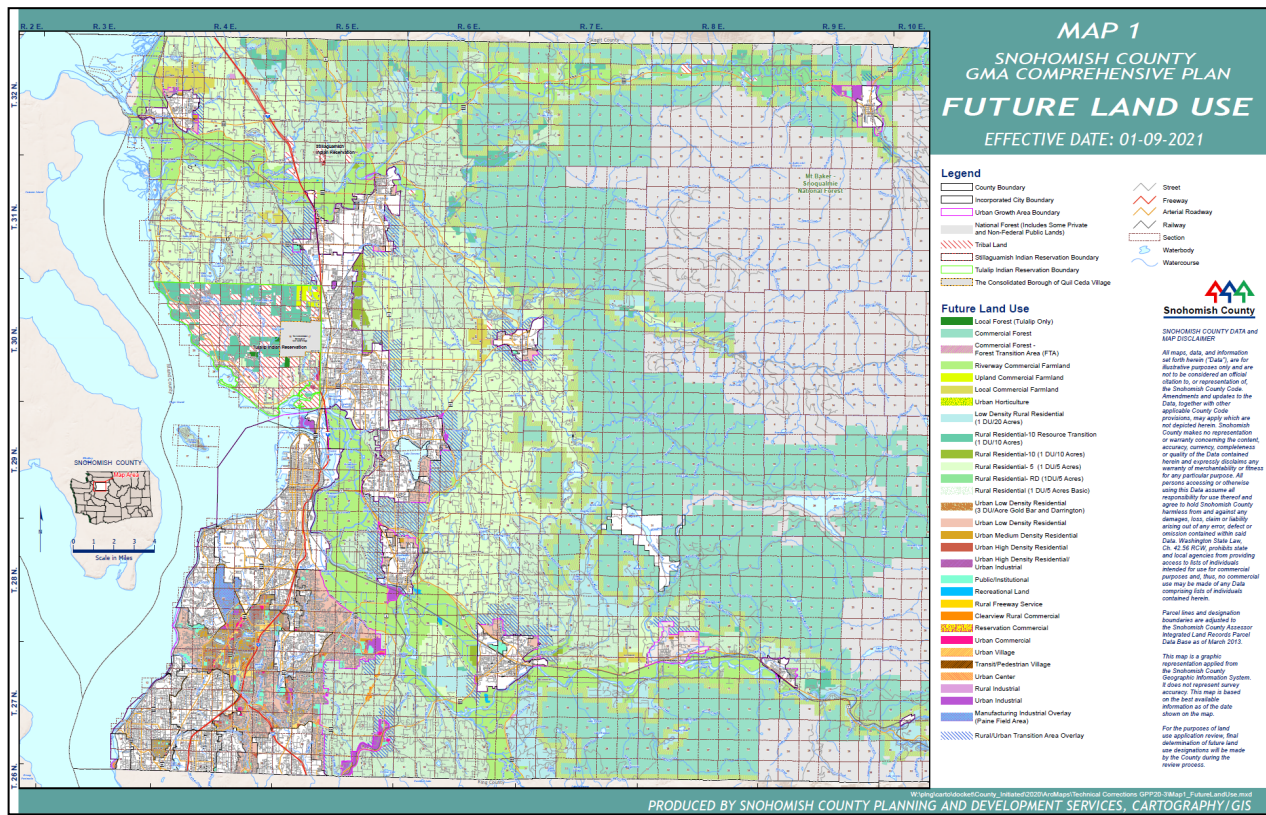
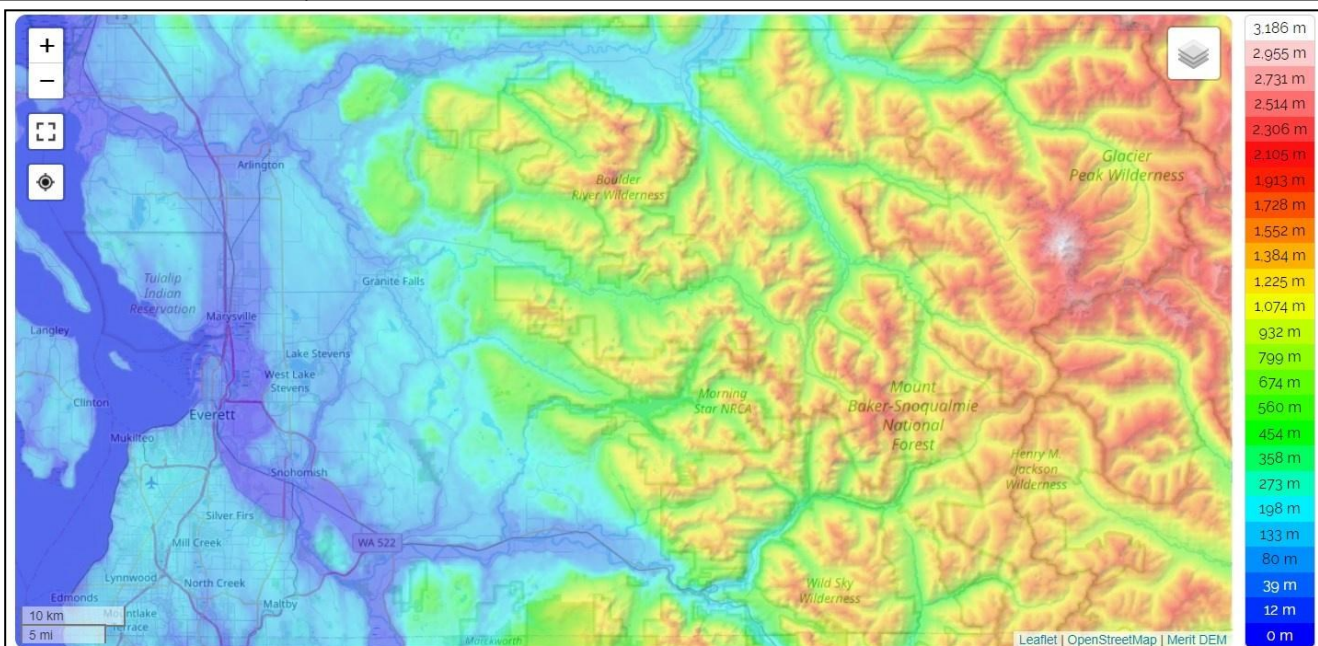
Low Risk

Low Probability
Low Consequence

Political and Growth Boundaries

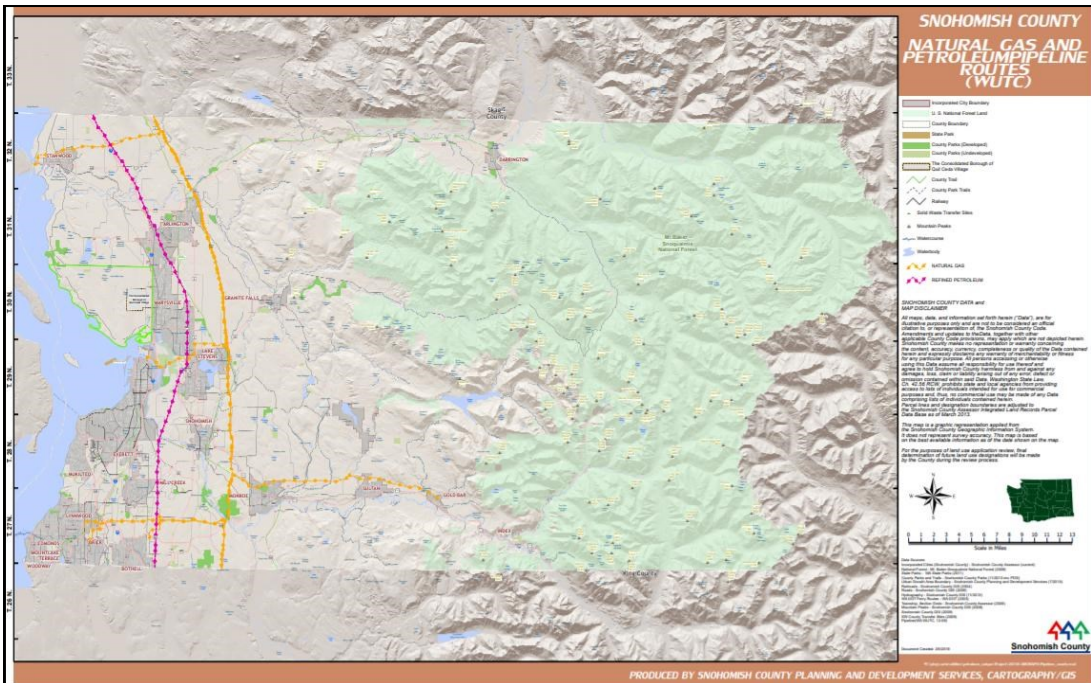
The District boundaries are not expected to change significantly other than through mergers or regional consolidation efforts. From this perspective, increases in population density may only serve to eventually require a greater concentration of resources to meet the demand rather than expanding the distribution model. In other words, if the District does not anticipate creating a larger geographic coverage area through annexations, the likely result of population growth will require additional resources within the existing distribution model rather than by expanding the number of stations

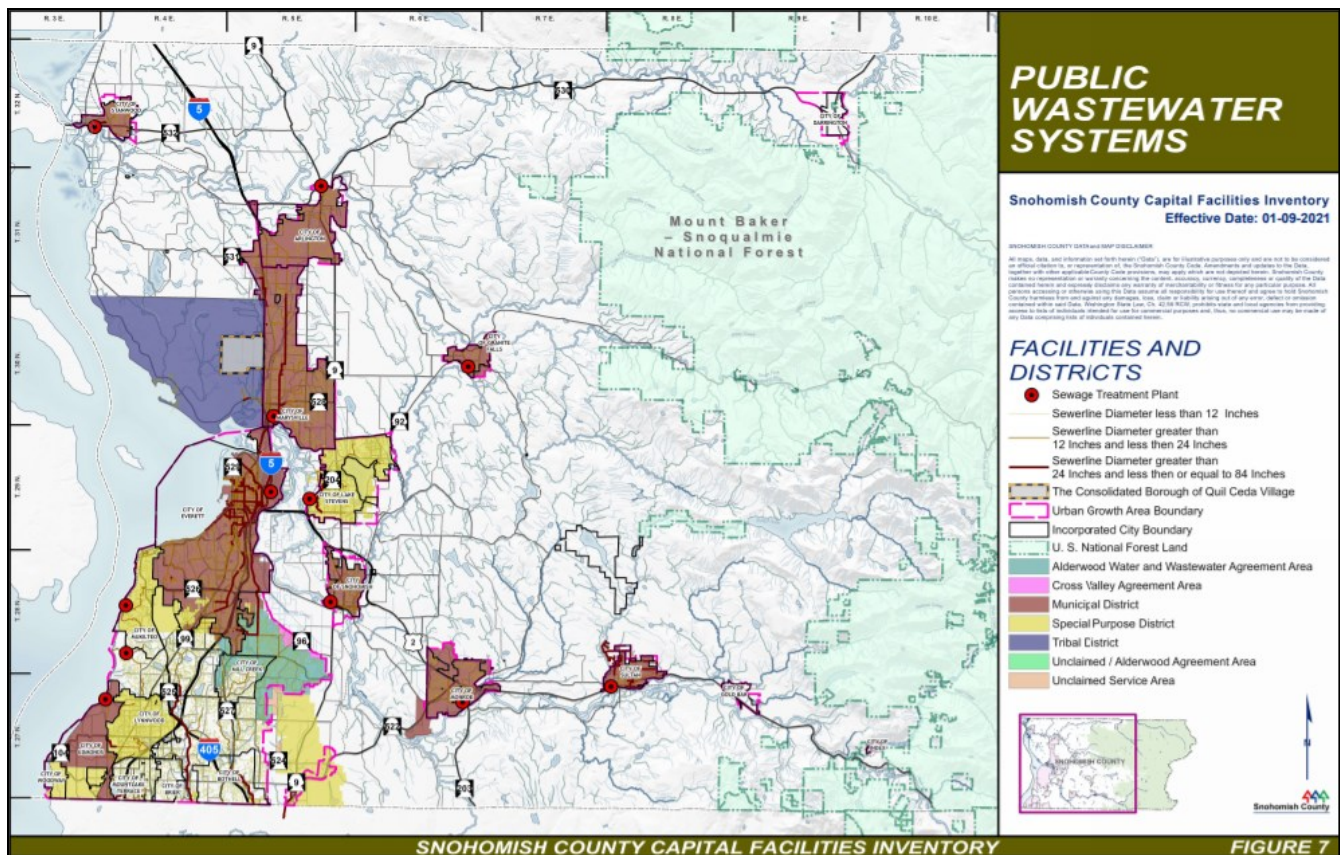
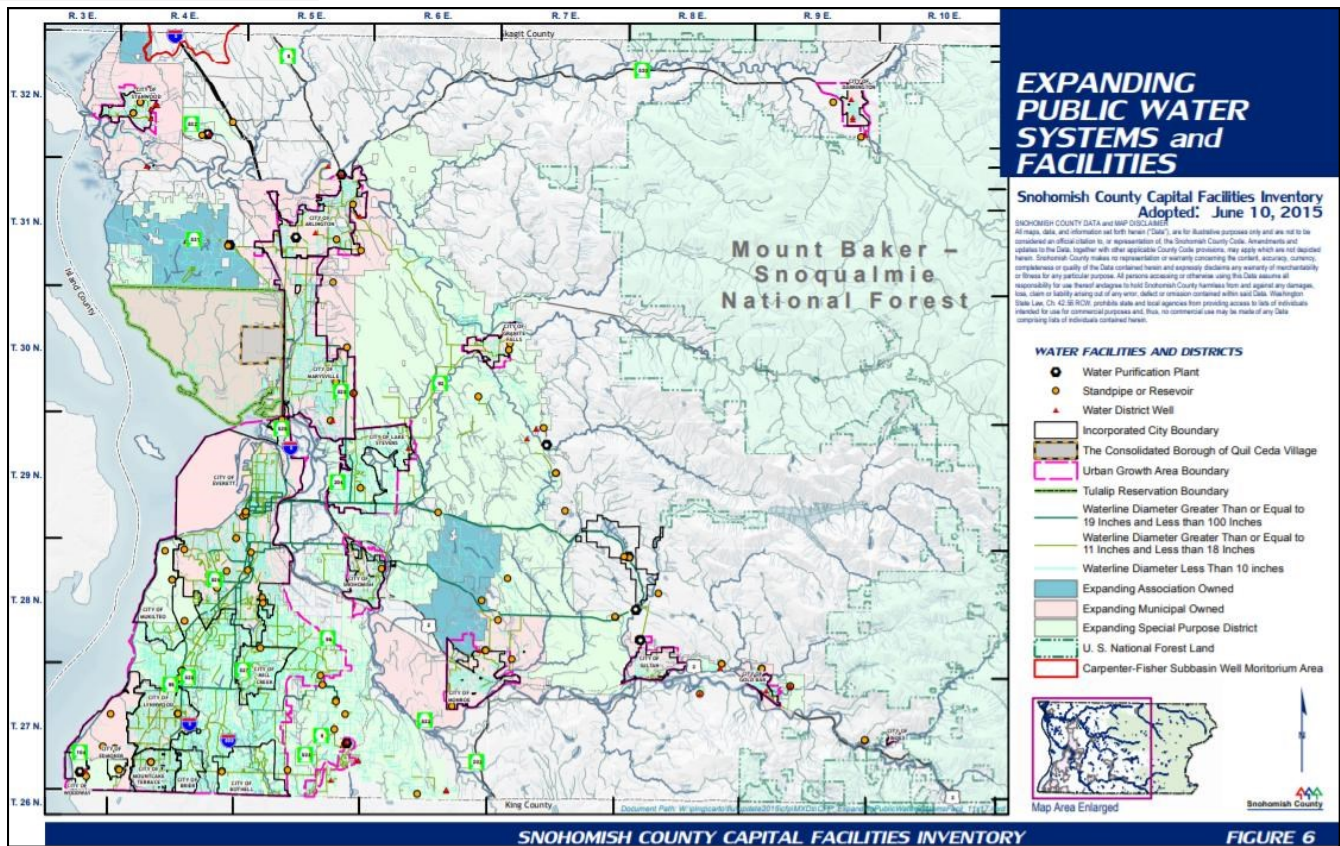


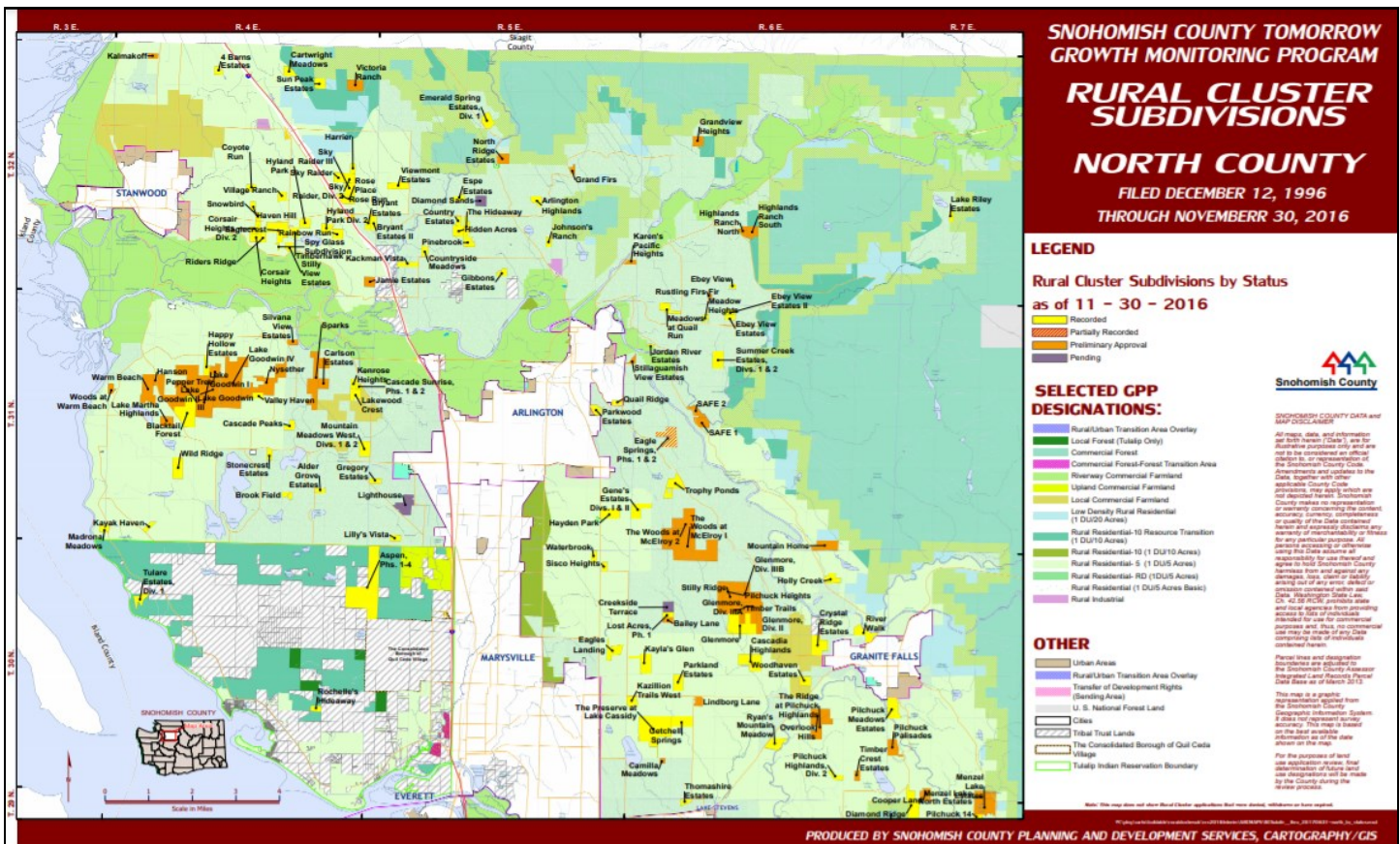
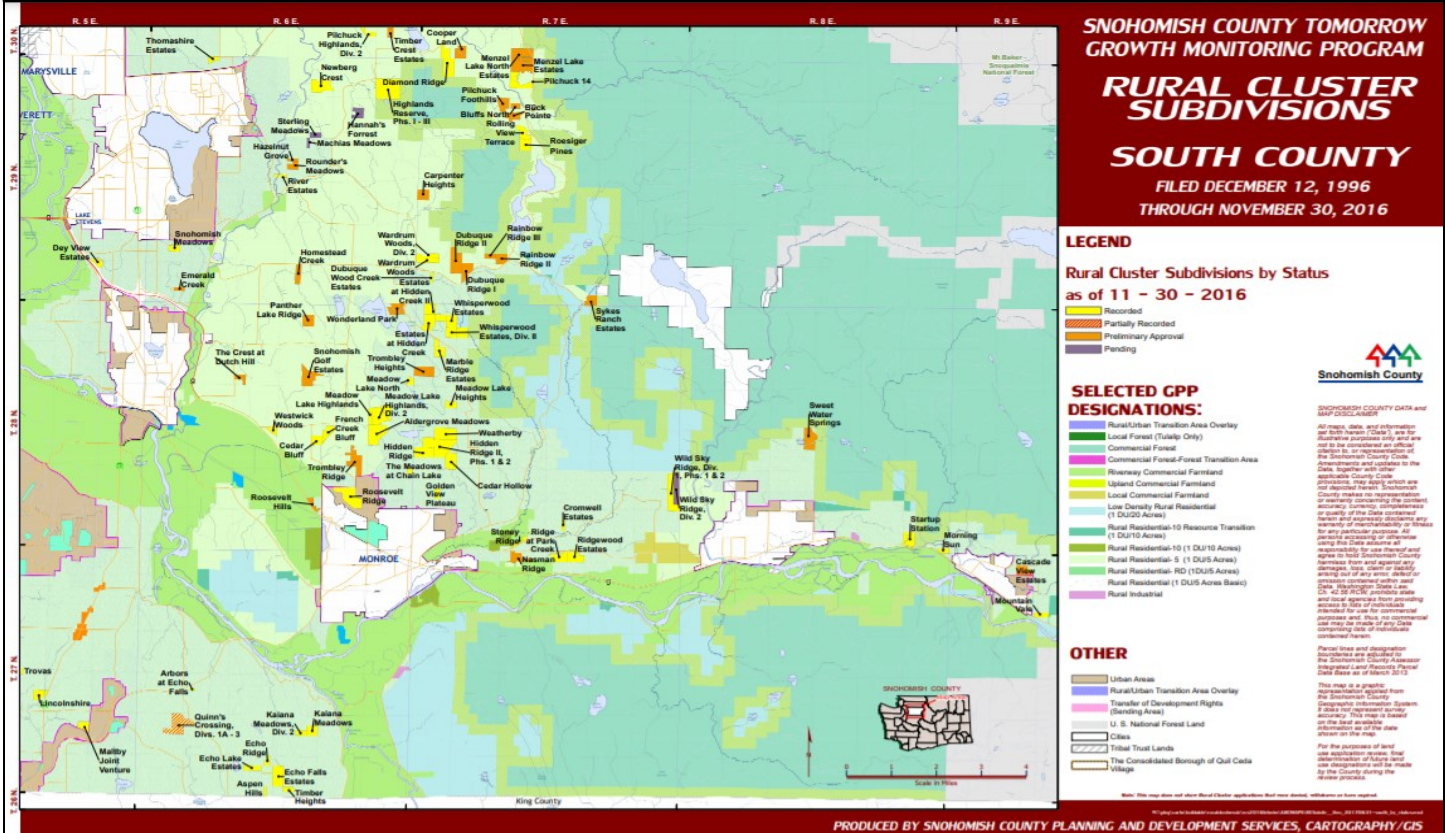
Low Risk**Low Probability
Low Consequence****Construction Limitations****Low Risk****Low Probability
Low Consequence****Topography - Response Barriers**

Snohomish County, Washington, United States (48.00747 -121.73049)

Failure of critical public or private utility infrastructure or facilities can result in a temporary loss of essential functions and/or services that last from just a few minutes to days or more at a time. Public and private utility infrastructure provides essential life supporting services such as: electric power, natural gas, heating and air conditioning, water, sewage disposal and treatment, storm drainage, communications and transportation.



Maximum Risk**Low Probability****High Consequence****Critical Infrastructure and Facilities**

Low Risk**Low Probability
Low Consequence****Rural Interface**

Natural Risk Hazards

(Information taken from Snohomish County, WA planning and development website and current hazard mitigation plan)

Maximum Risk

Low Probability

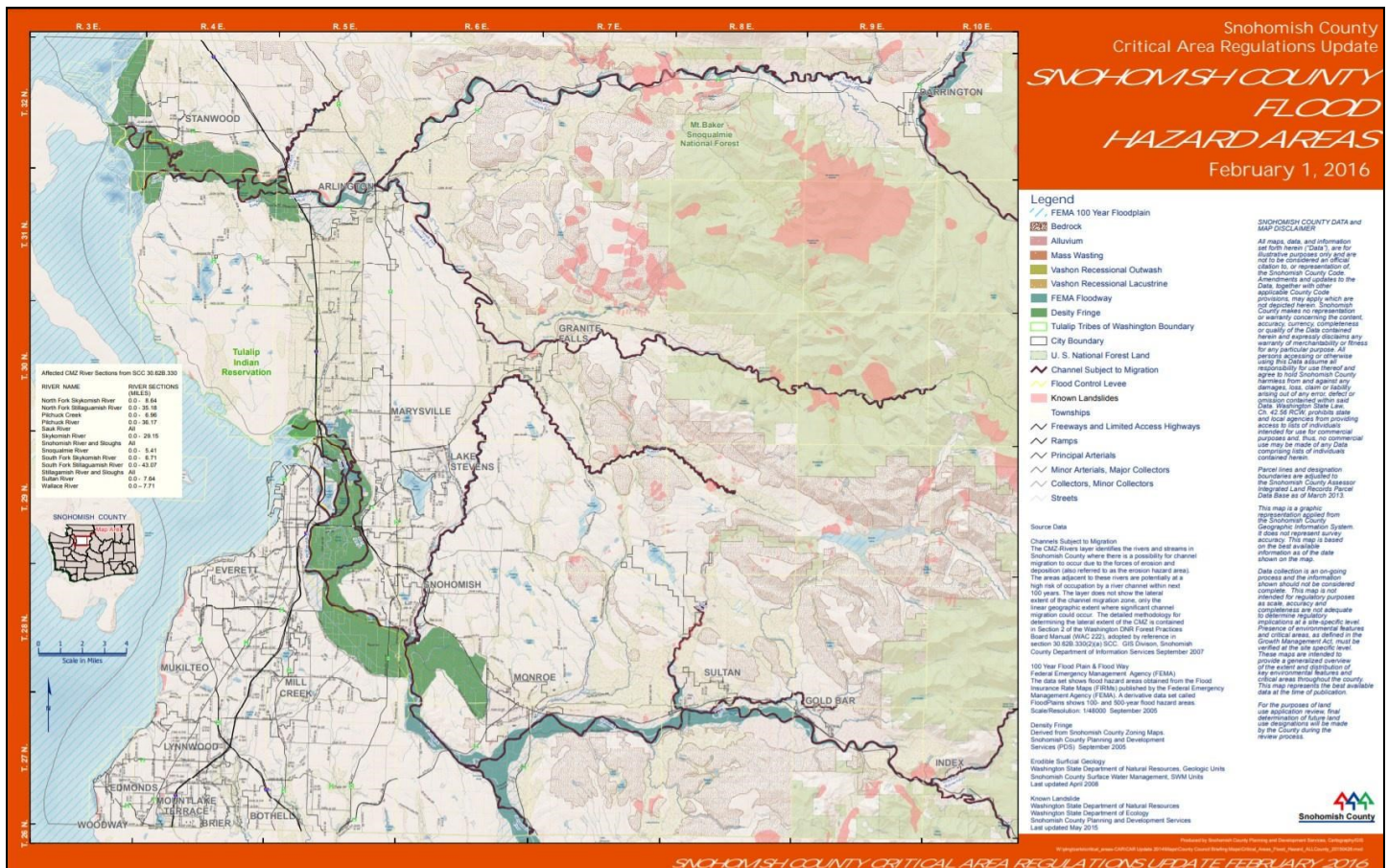
High Consequence

Flood Events

More than **75,000 people** in Snohomish County live and work in places where potentially devastating floods occur. The major river basins – the Snohomish and Stillaguamish – flood every three to five years, often at the same time. Big creeks draining through southern Everett, Mill Creek, Lynnwood and Bothell also bear watching. Since 1962, the county has weathered 18 floods large enough to be Presidentially declared disasters. The worst arrived during winter 1975, causing \$42 million damage and the deaths of 3,500 head of livestock.

Flood season here typically begins in October and lasts into spring. The threat is greatest between late November and early February. That's when storms heading inland from the Pacific Ocean bring heavy rains and mild temperatures, often melting mountain snows and spurring rivers to jump over their banks.

While heavy downpours can produce flash flooding, particularly in some urban neighborhoods, there usually is some warning that high water is coming. That means there is time to prepare.



Maximum Risk**Low Probability****High Consequence**

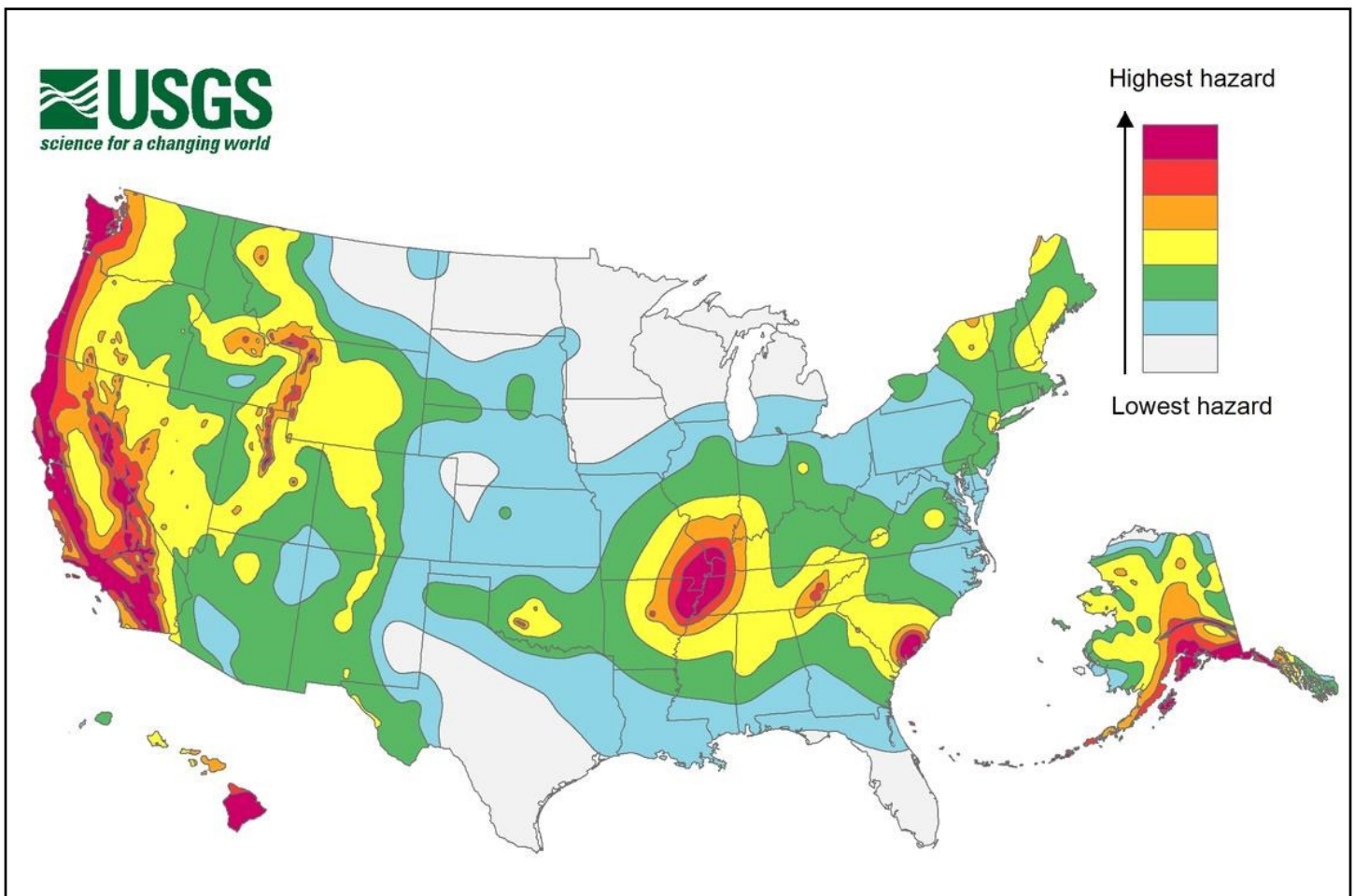
Earthquakes

The USGS hazard map below is showing peak ground accelerations having a 2 percent probability of being exceeded in 50 years, for a firm rock site. The map is based on the most recent USGS models for the contiguous U.S. (2018), Hawaii (1998), and Alaska (2007). The models are based on seismicity and fault-slip rates, and take into account the frequency of earthquakes of various magnitudes. Locally, the hazard may be greater than shown, because site geology may amplify ground motions.

The ground in Snohomish County conceals dozens of **faults** and **folds** that contribute to making the area one of the more seismically active places in North America.

Hundreds of earthquakes occur in the Puget Sound region every year, most so small that they only can be detected using sensitive instruments. However, at least 20 strong quakes have shaken the area during the past 125 years, resulting in 16 deaths and \$2 billion in damage.

A major quake threat rests in the Cascadia subduction zone off the Washington Coast. If it lets loose, experts predict widespread damage to bridges and overpasses, likely shutting down the region's transportation system for weeks. Closer to home, emergency managers worry about the Devil's Mountain Fault in the county's northeast corner, and the South Whidbey Island Fault. The latter runs below much of south county.



High Risk**High Probability****High Consequence****Severe Weather**

Everyone who lives in Snohomish County gets familiar with severe weather. High winds, torrential rains, ice and snow are regular visitors. They often cause millions of dollars in property damage and sometimes take lives. Experts say the community averages at least one high-wind event annually, and calculate a 58 percent probability of a severe winter storm any given year.



Storms not only knock out electricity, they often leave live power lines across roadways and topple trees into homes. The most vulnerable populations include the elderly, people living with life-threatening medical conditions, low-income families and those who are isolated either because they live in remote areas or do not speak English.

Recent notable storms include:

November 17, 2015– Most power outages to date from high winds

December 18, 2008– Pre-holiday snow storm

January 20, 1993– Inauguration day storm

December 17, 1990– Pre-holiday snow storm



Maximum Risk**Low Probability****High Consequence**

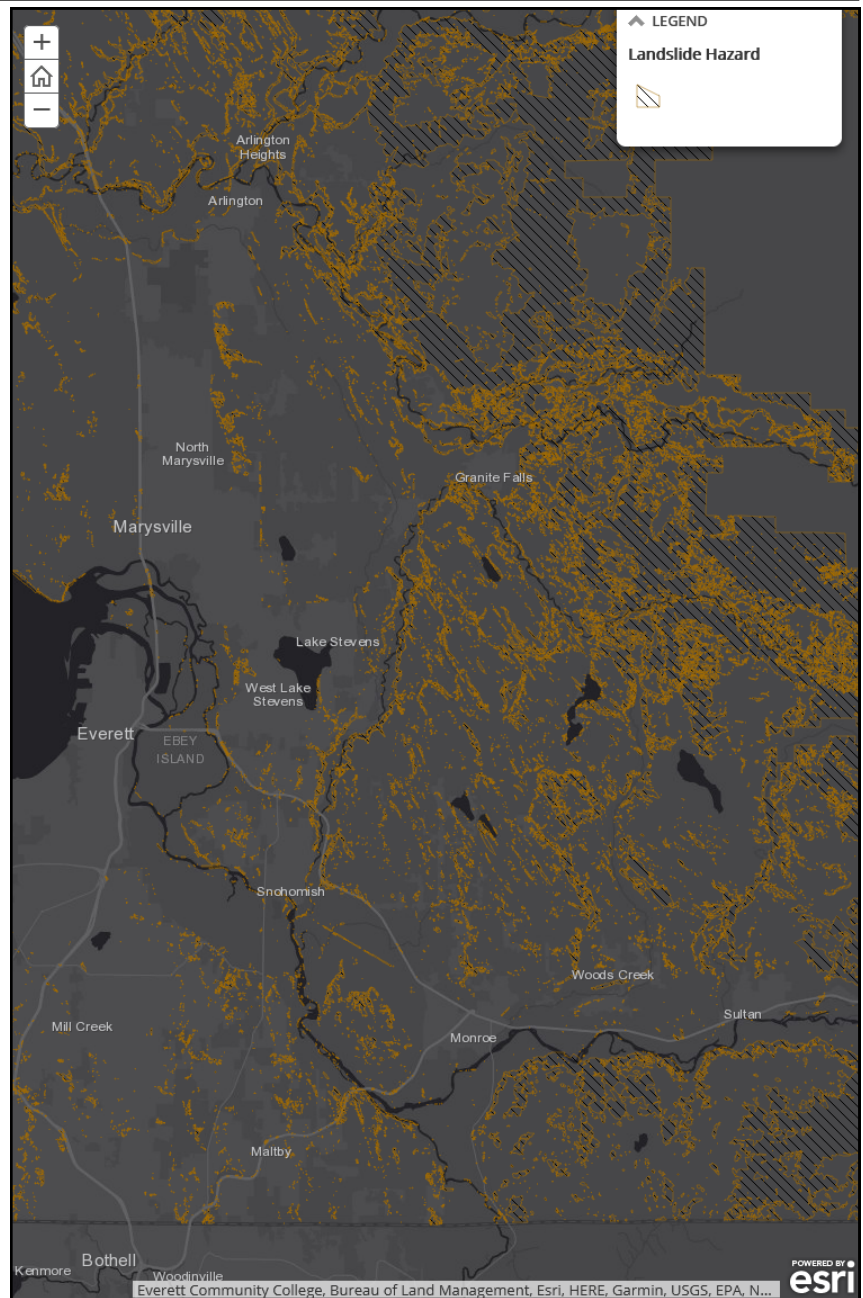
Landslide

March 22, 2014. That was the morning a wall of mud swept away the Steelhead Haven neighborhood and buried Highway 530 between Oso and Darrington. A total of 43 people died and more were injured in what is now recognized as the deadliest landslide in U.S. history.

The tragedy brought into focus just how much harm slides can cause, and how widespread the risks can be in a damp, hilly place such as Snohomish County. Planners estimate that up to 60,000 people live in areas of the county where steep slopes, soil types and lots of rain combine to create risk from landslides. In all, more than 12,400 structures have been identified as being located on, above or below slopes with the potential for slides. Analysis shows that 95 percent of those buildings are somebody's home.

Landslides here typically occur from January into spring after the water table has risen during the wet months of November and December. Human influences, including development activity and removing vegetation, factor into more than 80 percent of reported slides, experts say.

In general, if you see cracks forming in the ground, changes in vegetation from ground movement, sudden changes in creek levels or the sound of cracking wood, get clear of slide prone areas.



Moderate Risk**High Probability****Low Consequence**

Wildfire

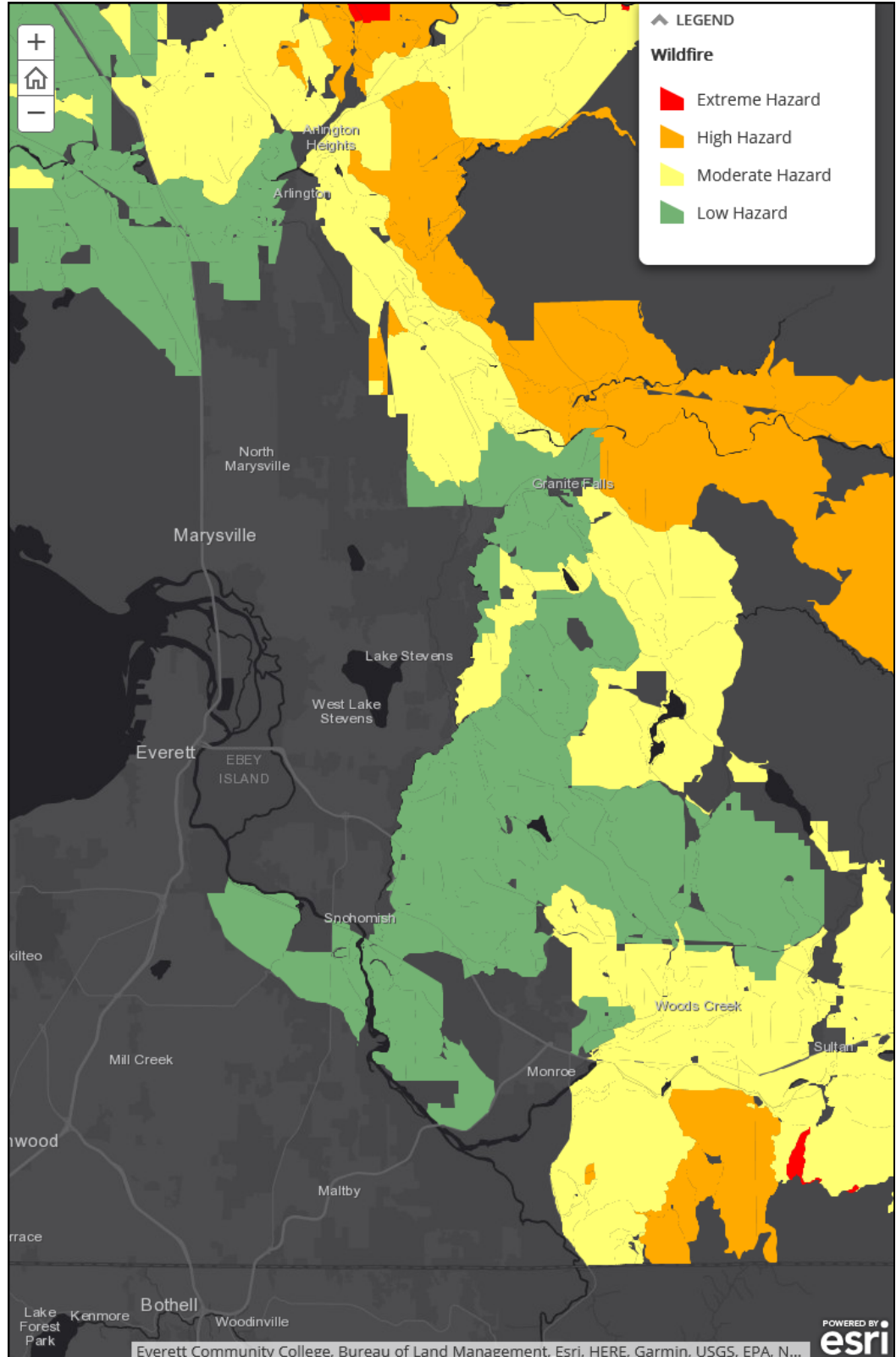
The **wildland fire** season in Snohomish County usually begins in early July and ends with the rains of fall. However, fires have occurred in every month of the year, influenced by drought, limited snow pack, and local weather conditions.

For people, the potential danger zones lie in the places where trees, shrubs and homes are mixed together. These can include lone houses surrounded by woods or suburban neighborhoods bordering forest lands.

Emergency experts call these areas the wildland urban interface. In Snohomish County, they are home to an estimated 128,000 people with property valued at more than \$9.7 billion.

This map shows the county's wildland urban interface areas as defined by the Washington Department of Natural Resources, incorporating data from the most-recent National Fire Protection Association risk assessment.

Wildland fire risk is scored based on several factors, including vegetation, topography, the built environment and available fire protection



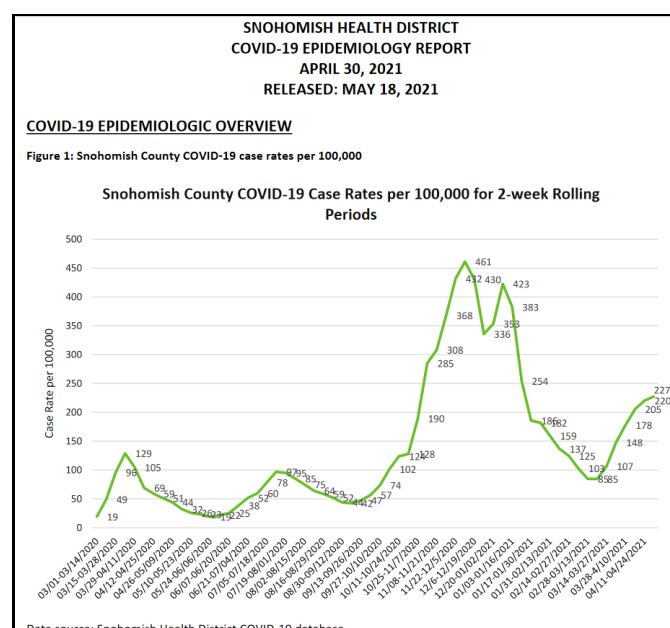
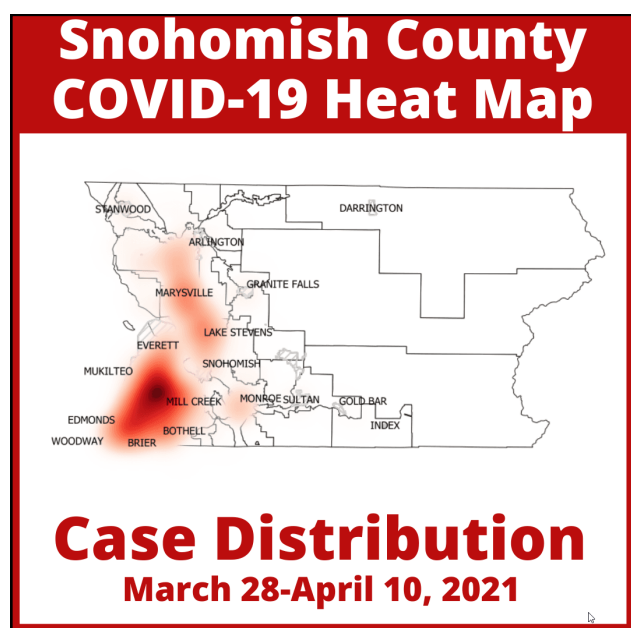
High Risk**High Probability****High Consequence****Contagious and Chronic Disease****Contagious Disease**

The Snohomish Health District Communicable Disease Program investigates certain diseases to find the source of a disease or outbreak in order to stop any ongoing spread of illness.

To ensure the health and safety of the community, when a contagious disease is confirmed in a place where people are in close contact (such as schools, daycares, and nursing homes), we follow up with the people who might be exposed to the disease as a result.

For example, parents may receive a parent letter and a fact sheet outlining what to watch for should you or your child become ill. For some diseases, we also make phone calls or send text messages to ensure you receive any necessary preventative treatment.

Thanks to vaccines, medical care, clean water, and safe food sources and handling, deadly diseases are more rare in Snohomish County than ever before. International travel and trade, however, mean contagious diseases are never far away. New diseases also pose a threat, as they can develop and spread rapidly.

**Chronic Disease**

Chronic diseases, including heart disease, stroke, cancer, and diabetes, rank among the most common, costly, and preventable of all health problems throughout the United States. The 5 leading causes of death in Snohomish County in 2010 were heart disease, cancer, stroke, chronic obstructive lower respiratory disease, and unintentional injury.

According to the CDC, nearly 1 out of every 2 adults has at least 1 chronic illness and 7 out of 10 deaths among Americans each year are due to chronic diseases. Access to high-quality and affordable prevention measures, including screening and appropriate follow-up care, are also essential steps in disease prevention. For example, regular cancer screenings can diagnose new cases of cancer at an early stage, which may improve the prognosis of the patient.

Human-made Hazards

Moderate Risk

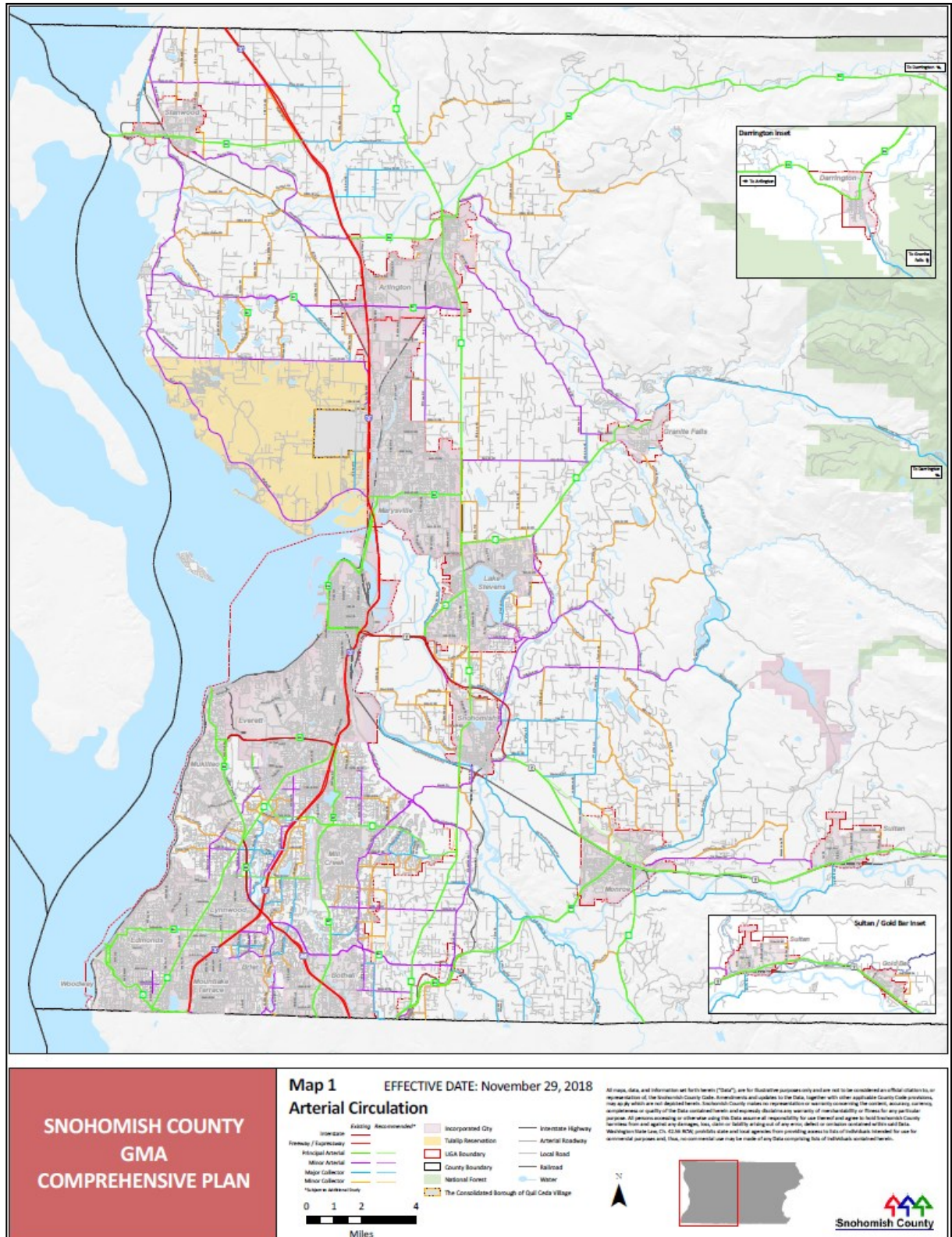
High Probability

Low Consequence

Transportation Network

Highway

Significant road structures, including highways and interstates, provide access for the population of SRFR's district. Therefore, the inherent risk of motor vehicle accidents, vehicle fires, and hazardous materials releases exist.



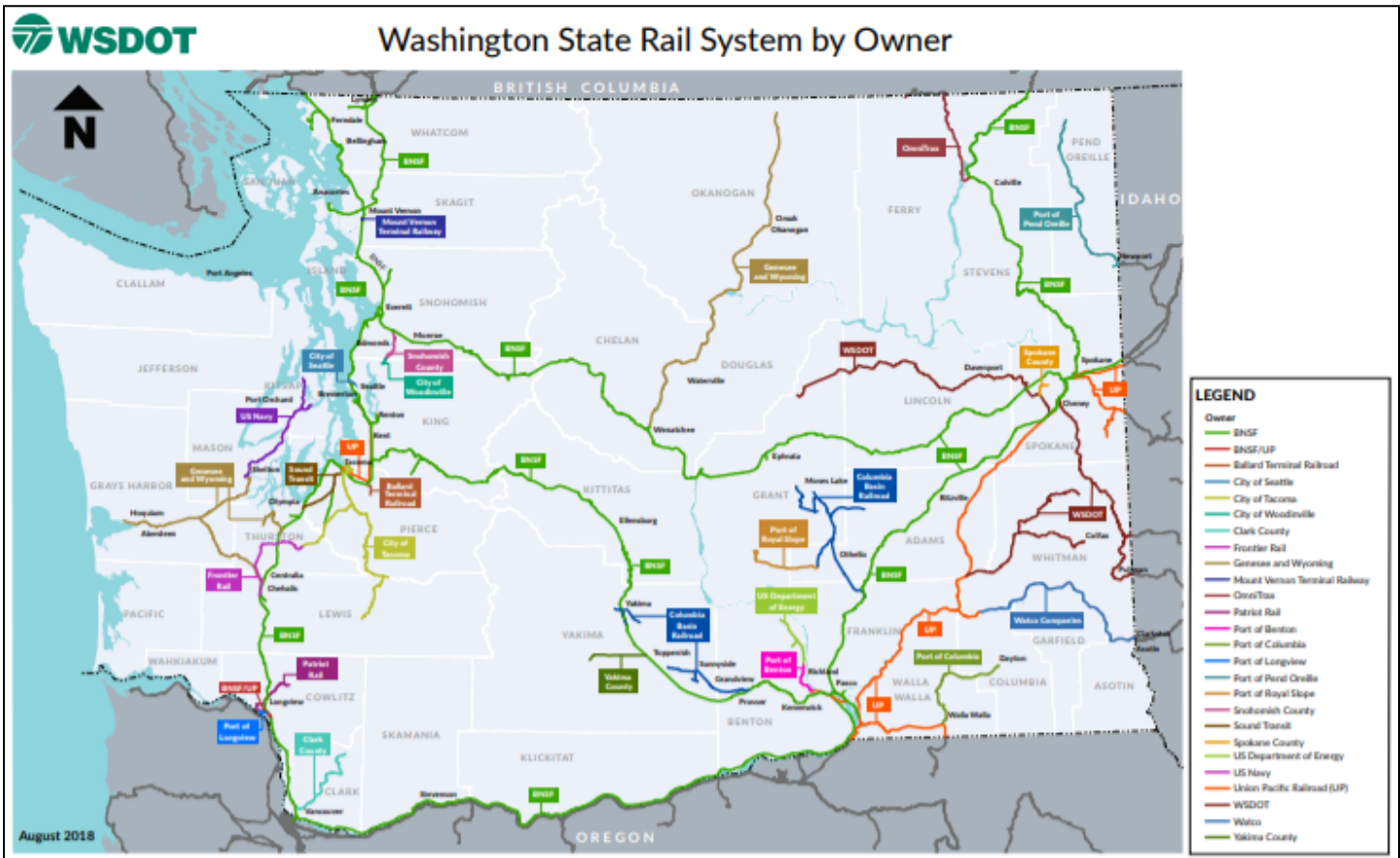
Moderate Risk**High Probability****Low Consequence**

Transportation Network

Railroad

The principal rail transportation risk for the area centers on the trackage owned / operated by the Burlington Northern Santa Fe Railroad (BNSF). A single mainline track between Seattle, WA and Vancouver, BC follows a north-south corridor that generally parallels Interstate 5.

The freight cargoes are diverse and include coal, crude oil, LPG, grain and mixed cargoes originating from or destined to area seaports. The exact volume of hazardous materials rail shipments is elusive as a result of railroad security concerns. Based upon local observations of railroad freight activity, it appears that there is sufficient evidence that the hazardous nature and volume of these cargoes introduces some risk.

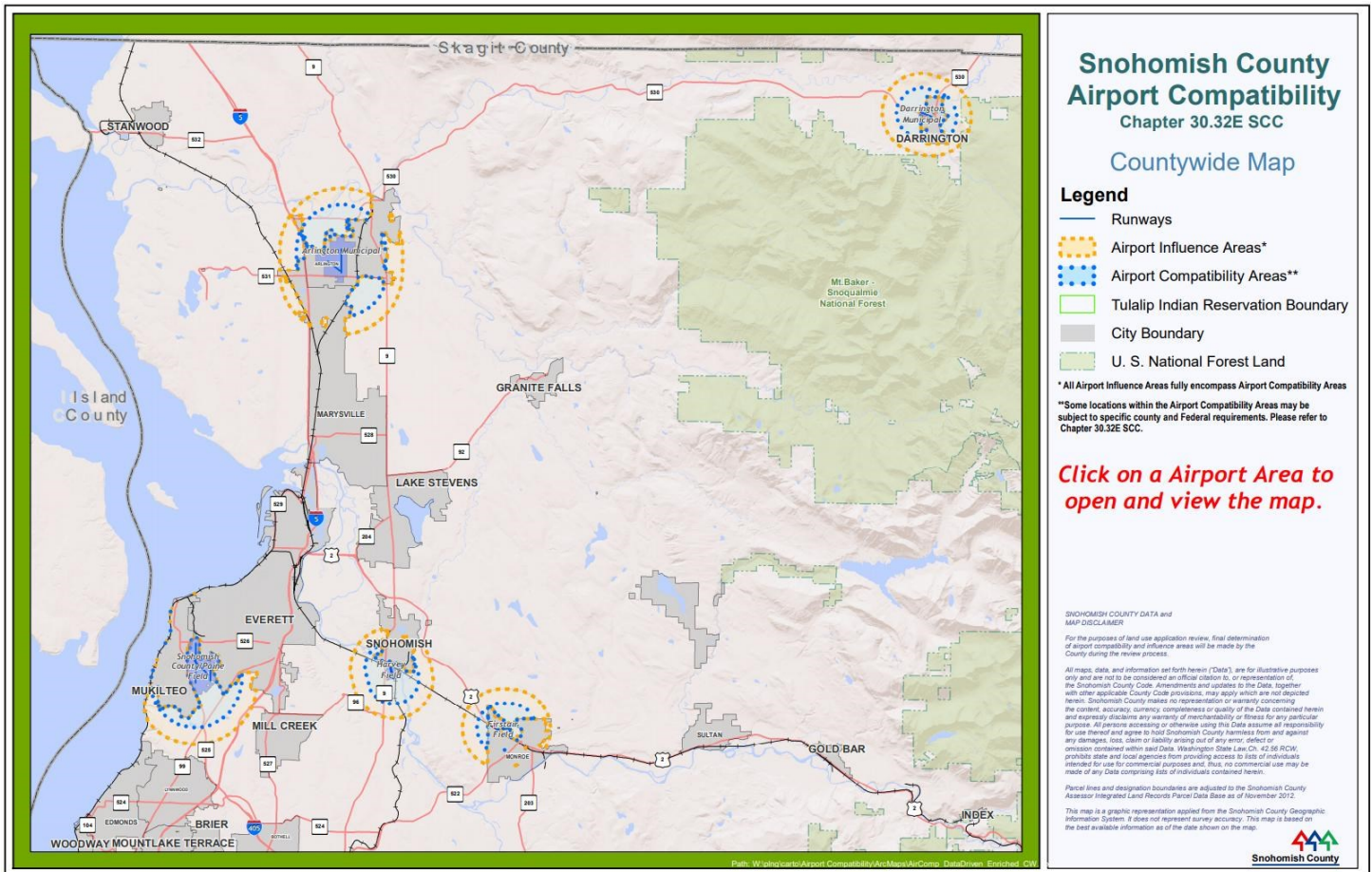


Moderate Risk**High Probability****Low Consequence**

Transportation Network

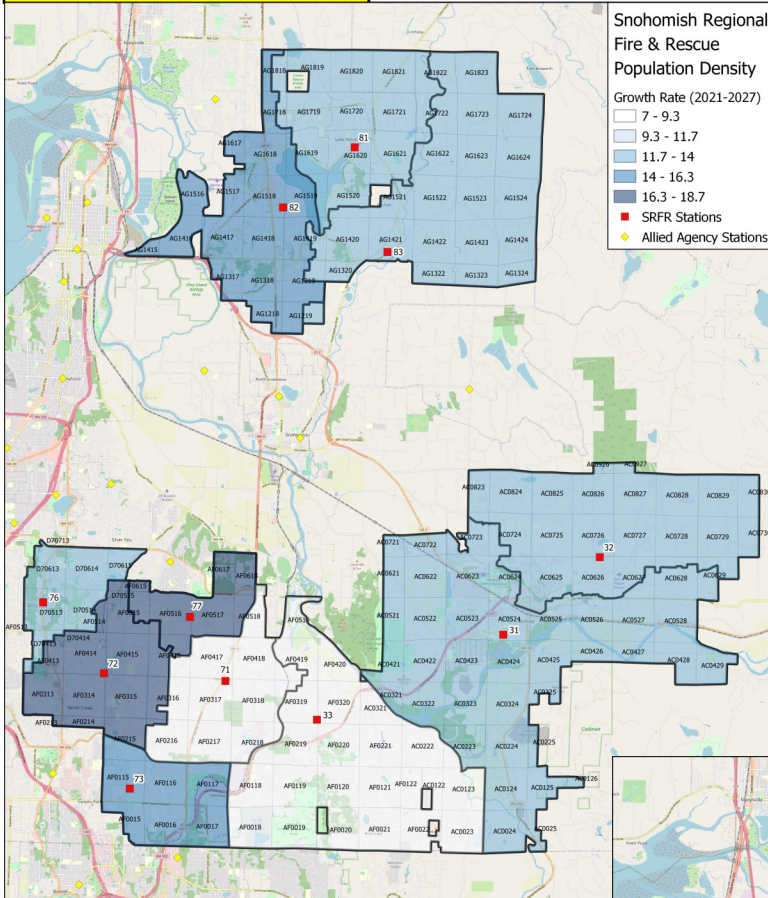
Aviation

Several airports are in the region beginning with Paine Field operated by Snohomish County. In addition, the cities of Arlington and Darrington provide general aviation use. Finally, several smaller privately owned airports exist in Granite Falls, Marysville, Monroe, Snohomish, and Sultan.



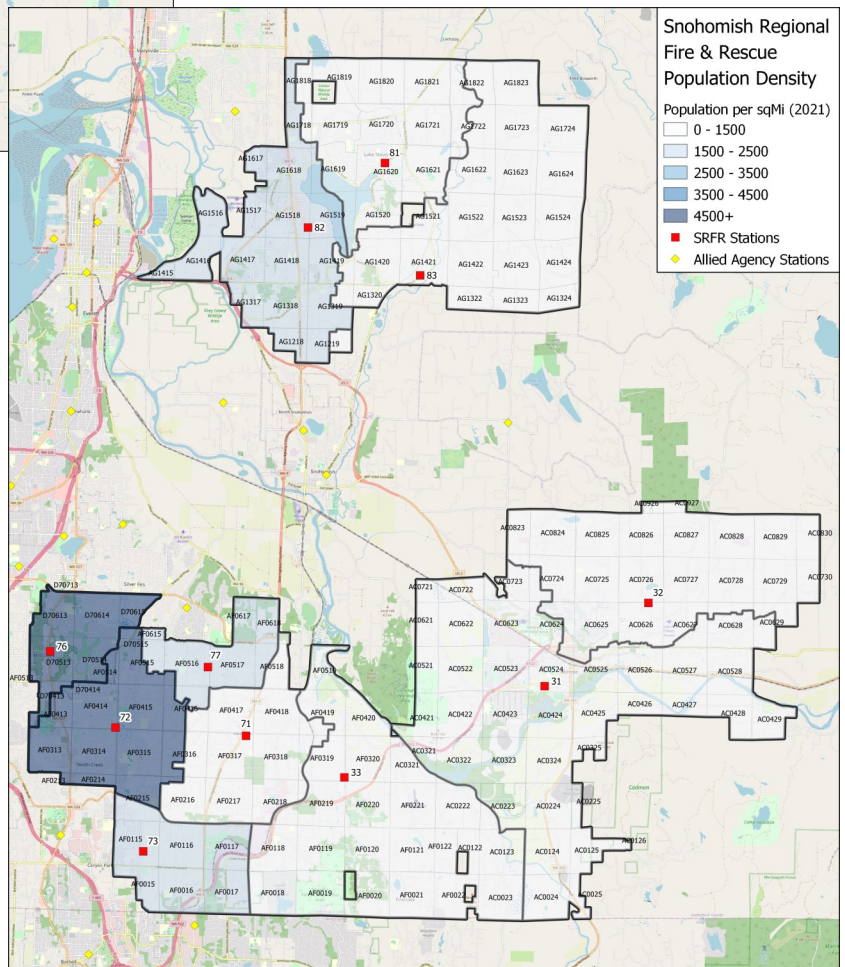
Moderate Risk
High Probability
Low Consequence

Population Growth



The annual population growth rate is predicted at $> 0.2\%$ to 2.7% for the majority of the census block areas in the District.

The majority of census block areas in the District have population densities of up to 5,148 people per square mile, a critical factor to watch as population numbers continue to rise.



Station Summary Risk Rating

Viewing risk at multiple levels is a best practice within the fire service. Many of the risk in this section have been viewed at a jurisdictional level, moving to first due districts as the main lens, then progressing to geographic planning zones, and finally, turning to the most granular view; individual risk ratings for buildings located within a community.

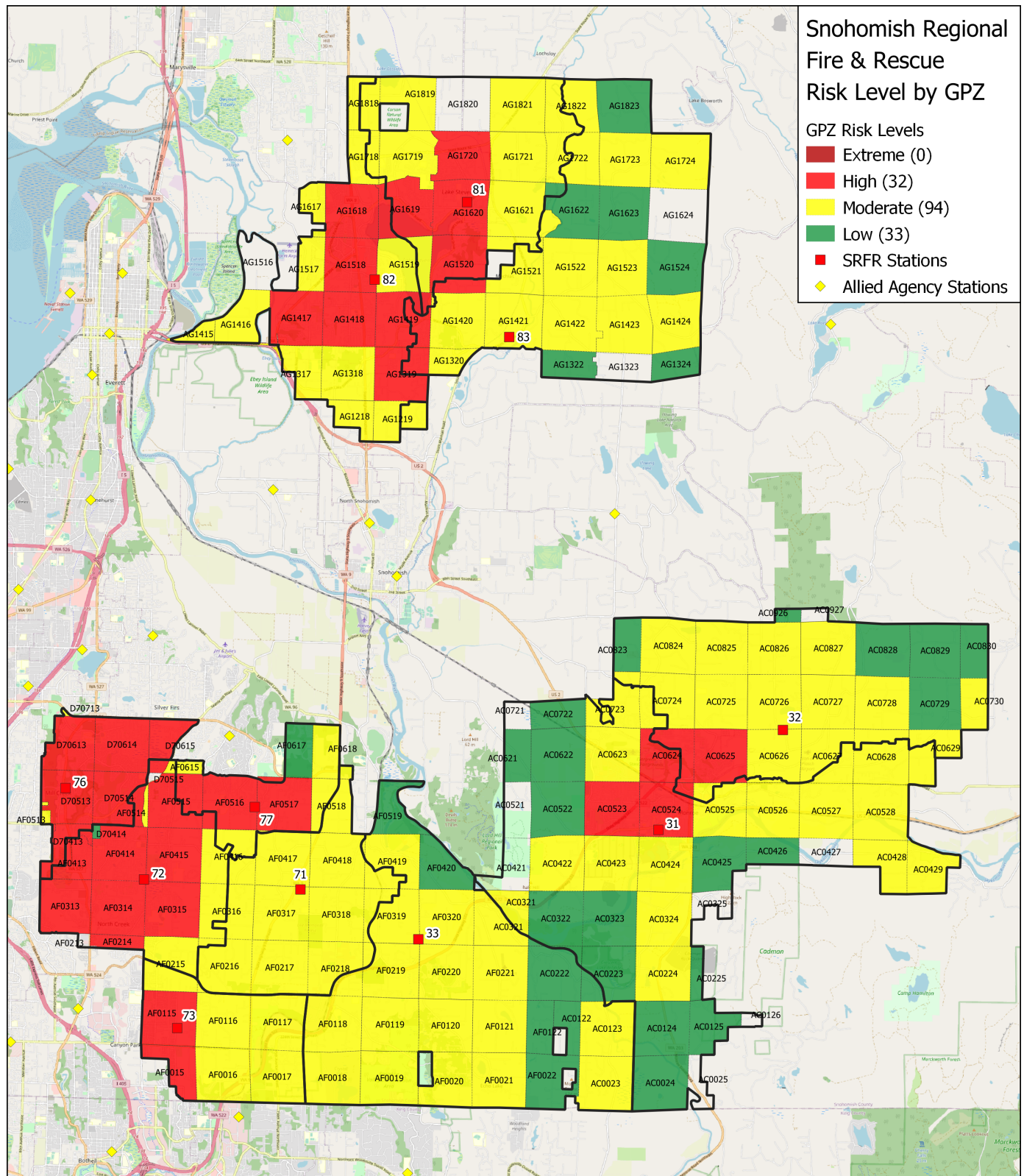
Below is the First Due Area ratings for SRFR, indicating that 4 of 11 stations (36%) are considered high risk, with the remaining 7 stations scoring a moderate risk based upon the following factors:

- Population density
- Median household income
- Unemployment rate
- Percentage of total market share
- Square miles
- Median age
- Percentage of home greater than 50 years old
- Number of moderate/high risk occupancies,
- Weighted average of GPZ values
- Call concurrency rate

First Due Area	Component Risk Scores									GPZ Risk Scores		2019 Call Concurrency		Total Risk Ratings	
	Population Density	Median Household Income	Unemployment Rate	Percentage of Total Market Share	Square Miles	Median Age	Percentage of Homes > 50 Years	Number of Moderate-High-Risk	Average Score	Weighted Average GPZ Risk Value	Risk Score	Call Concurrency Rate	Risk Score	Final Risk Score	Risk Level
76	10	3	8	7	2	5	2	3	5	35.5	10	19	7	65.67	High
82	5	4	9	7	4	4	6	3	5.25	24.9	7	26.4	9	60.76	High
72	9	2	8	10	3	4	2	3	5.13	29.8	9	14.3	5	51.86	High
31	2	4	9	6	10	4	7	9	6.38	11.6	4	21.4	8	46.23	High
81	3	3	8	4	4	4	7	4	4.63	21.0	6	13.9	5	31.64	Moderate
77	5	1	8	3	2	4	2	1	3.25	22.5	7	3.4	2	21.12	Moderate
32	2	2	8	3	6	5	7	3	4.5	12.4	4	7.7	3	18.03	Moderate
33	1	1	8	4	7	5	4	3	4.13	10.8	4	7.6	3	16.89	Moderate
71	2	1	7	3	3	5	6	3	3.75	15.9	5	5.1	2	15.93	Moderate
83	2	2	8	3	7	5	6	1	4.25	13.4	4	5.9	2	12.78	Moderate
73	4	1	7	5	3	4	3	3	3.75	9.1	3	6.9	3	12.60	Moderate

Geographical Planning Zone Development and Review

Geographic planning zones (GPZ's) were developed by making more granular zones approximately one square mile in area. The result is **175** GPZ's across the district allowing for a more focused view of the risk present within the community. The District is comprised of **33** low risk GPZ's, **94** moderate risk FMZ's, **32** high risk GPZ's and **0** maximum risk GPZ's. Sixteen GPZs had insufficient data to develop a risk rating.



Physical Assets Protected

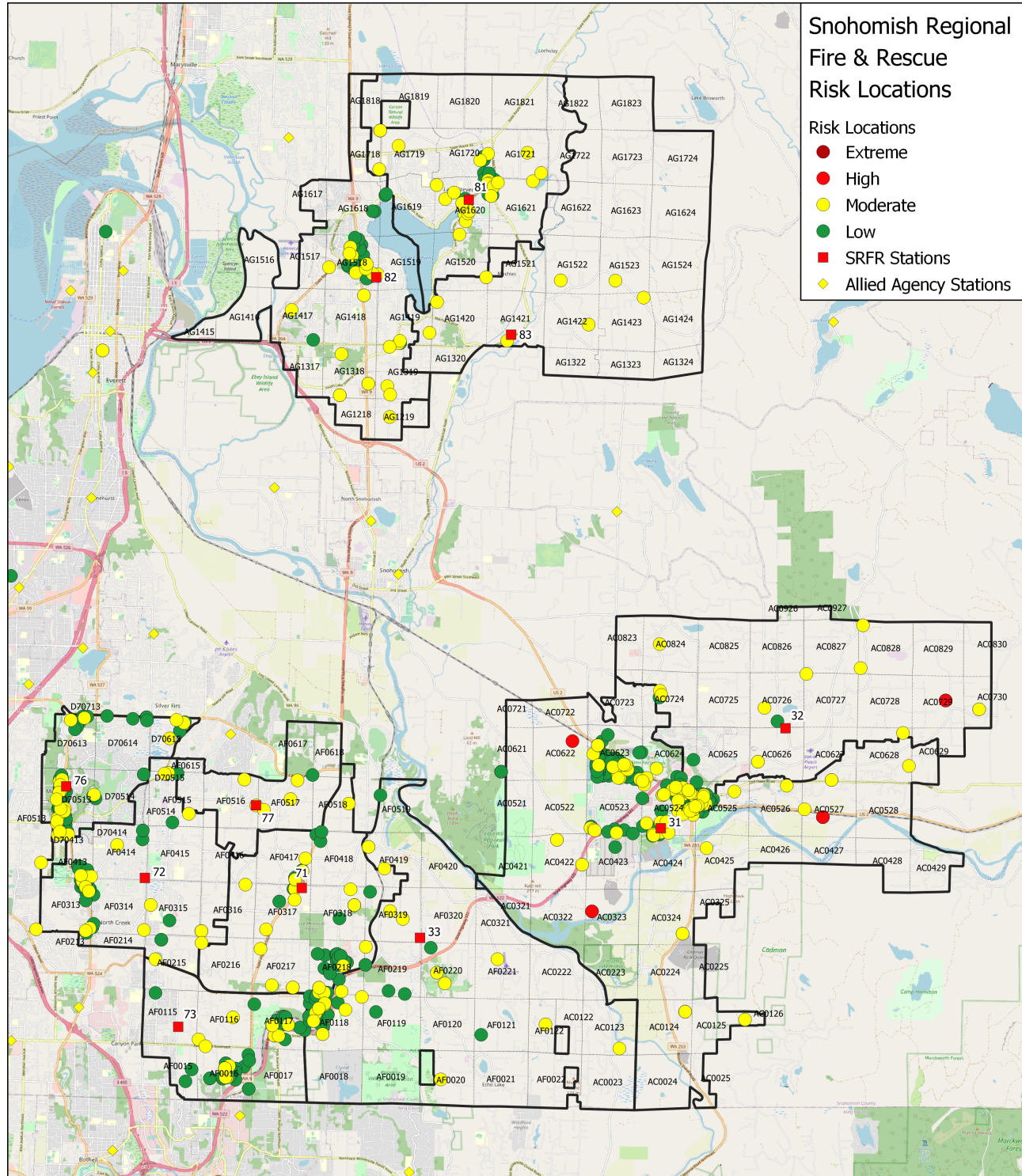
Sufficient data was available from the Washington Surveying and Rating Bureau (WSRB) that provided specific building occupancy information.

Individual buildings are rated by the WSRB that include multiple variables such as needed fire flow, number of stories, location, building construction type, burning degree, and the **presence of automatic**

sprinklers. Although this information was utilized throughout the risk assessment process and calculations, the map below shows specific locations of rated occupancies and the respective risk severity.

Performance Indicator 2B.5

Fire protection and detection systems are incorporated into the risk analysis.



Critical Tasking Methodology for Fire, EMS, HazMat and Technical Rescue

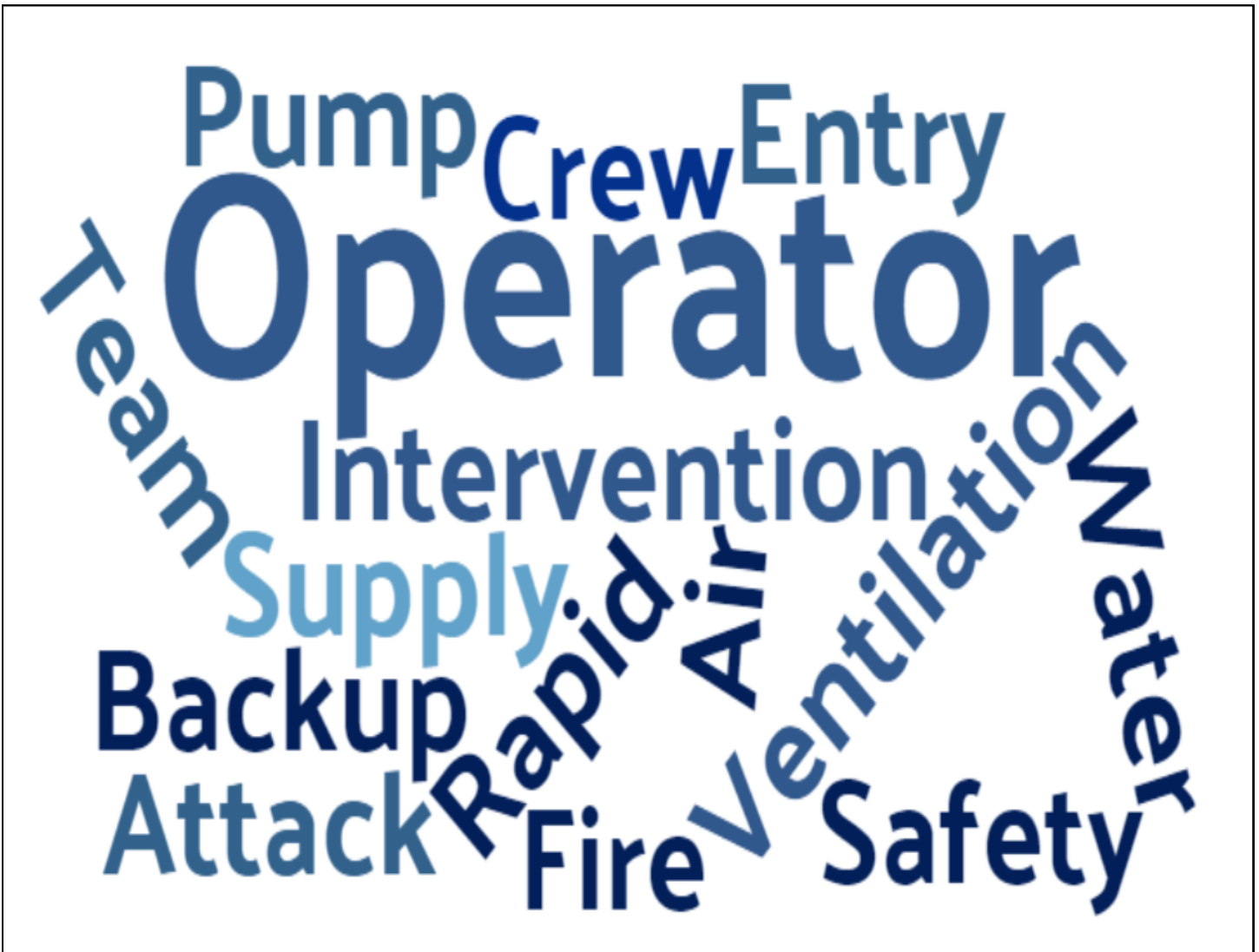
The district utilizes its annual risk assessment and critical tasking review meetings for the fire, EMS, hazardous materials, and technical rescue programs to determine and document categories and classes of risks throughout the community.

Core Competency 2C.4

A critical task analysis of each risk category and risk class has been conducted to determine first due and effective response force capabilities and a process is in place to validate and document the results.

These meetings are also used to assess whether the current effective response force (ERF) can perform the critical tasking necessary to mitigate the hazards associated with each hazard and risk level. The district uses after action reviews for structure fires, technical rescues, and hazardous material incidents to evaluate the effectiveness of first due and initial assignments in achieving incident goals.

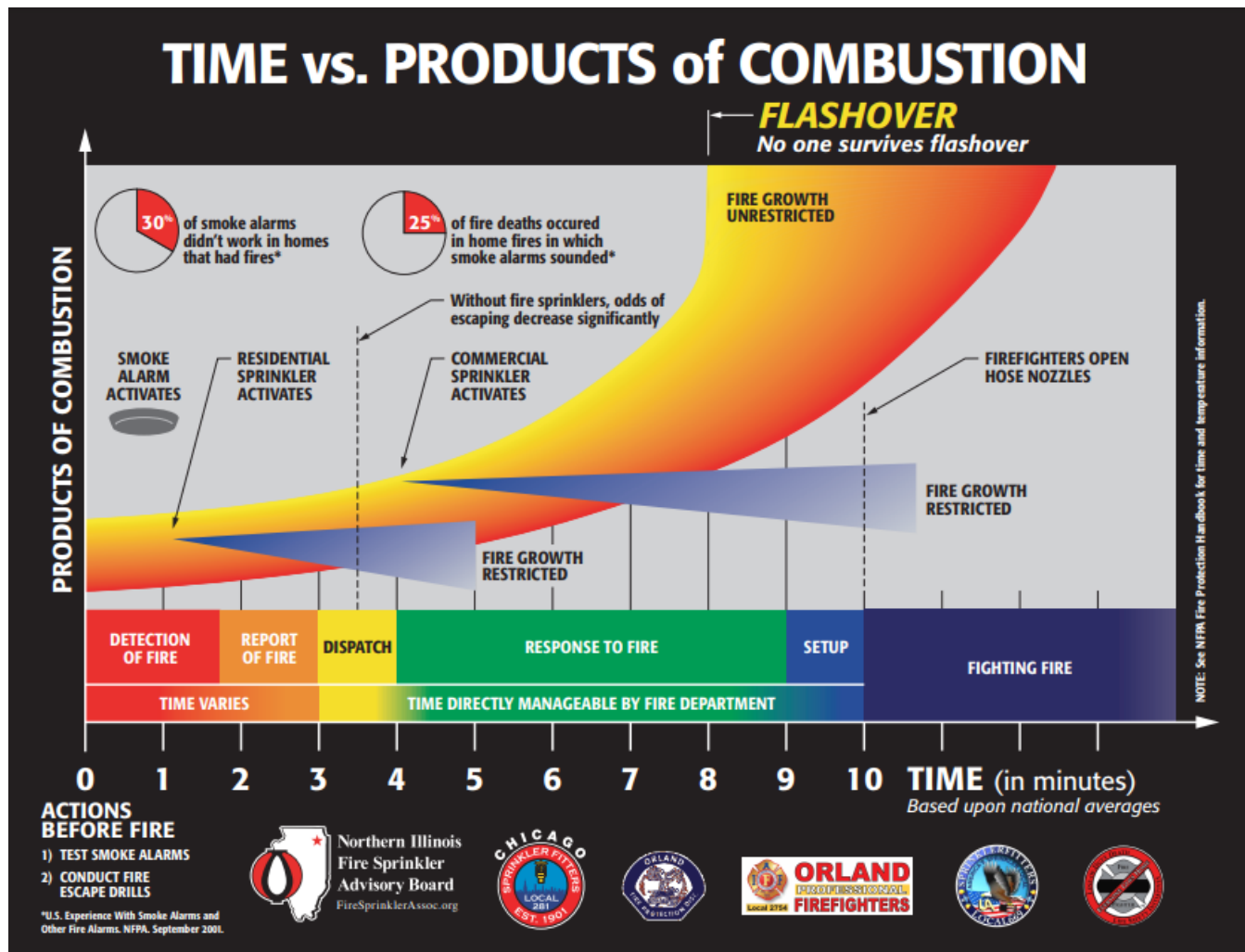
The EMS program evaluates hands on training activities for critical tasking, and monitors metrics such as return of spontaneous circulation (ROSC) to assess the effectiveness of initial assignments for cardiac arrest incidents. Changes to critical tasking and ERF's will be documented in annual updates to the standards of coverage. Dispatch recommendations are modified to reflect the ERF's identified during the critical tasking reviews.



High Risk**High Probability****High Consequence****Structure Fires**

Fire suppression is one of the most visible response services that a fire District provides, and at the very core of our existence. As evidenced by the flashover curve and exacerbated by modern furnishings and construction methods, fires are an extremely time sensitive emergency.

The district has classified the risk of fires into four main categories: low, moderate, high and maximum. These rankings are applied to individual occupancies and to areas of like type buildings.

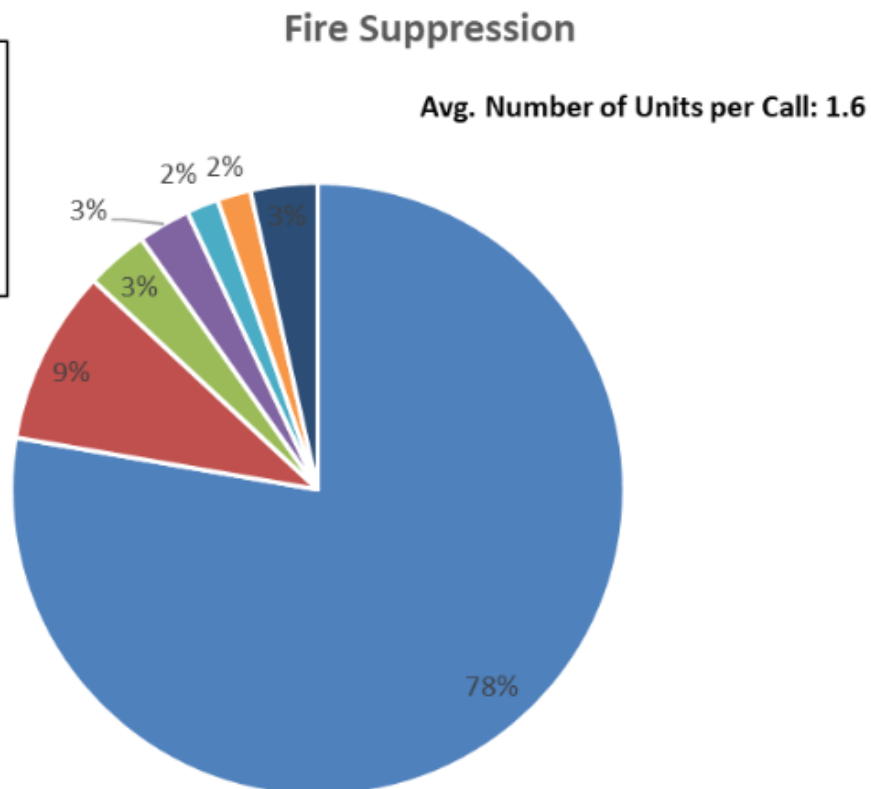
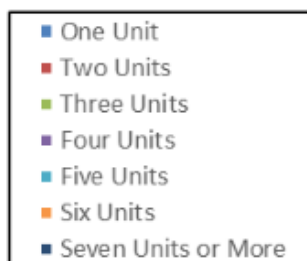


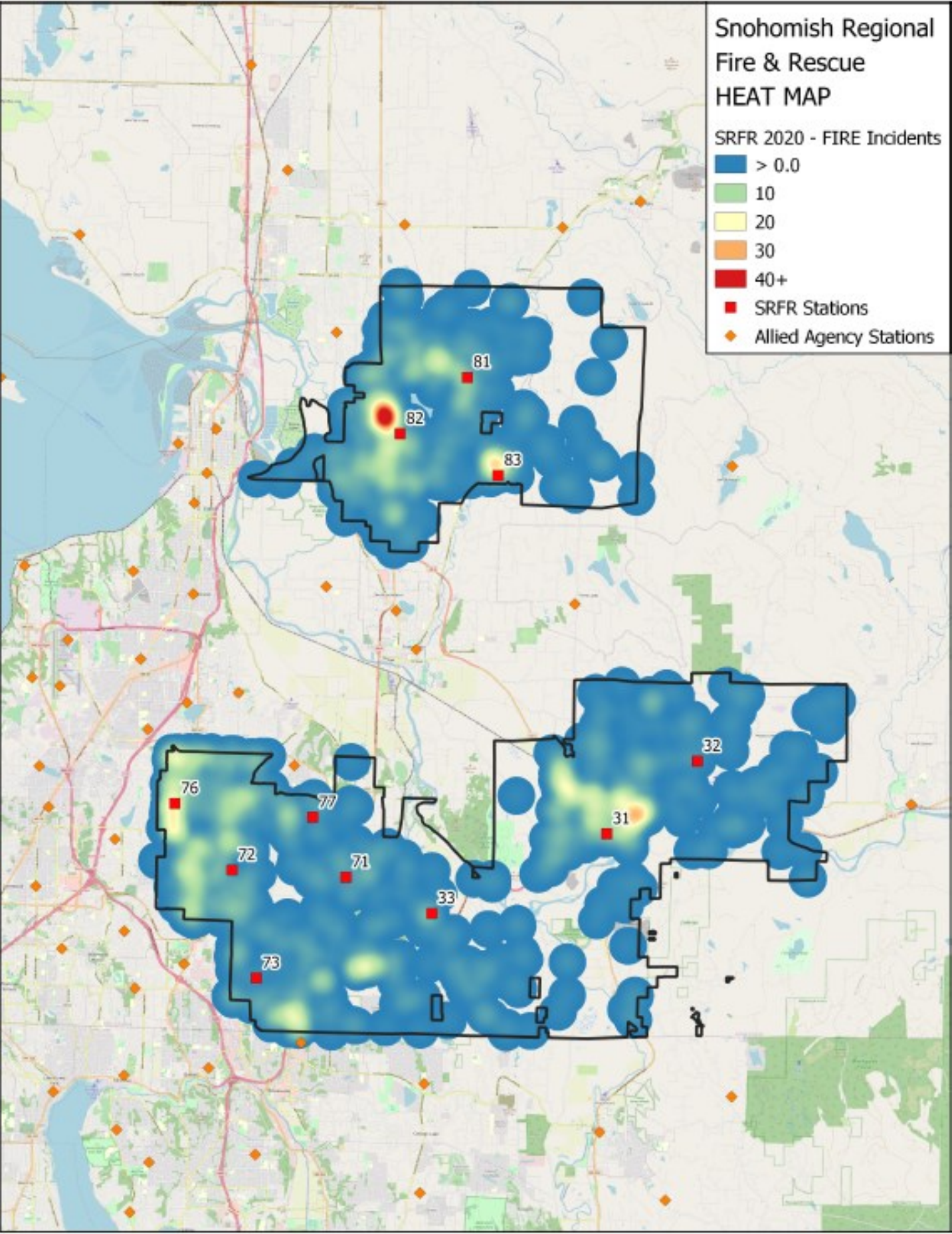
Recent studies by Underwriter's Laboratories (UL) have found that in compartment fires such as structure fires, flashover occurs within four minutes in modern fire environment. In addition, the UL research has identified an updated time temperature curve due to fires being ventilation-controlled rather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

Hour of Day	Number of Calls	Calls per Day	Call Percentage
0	24	0.07	1.7
1	20	0.05	1.5
2	23	0.06	1.7
3	17	0.05	1.2
4	24	0.07	1.7
5	26	0.07	1.9
6	30	0.08	2.2
7	39	0.11	2.8
8	56	0.15	4.1
9	49	0.13	3.6
10	73	0.20	5.3
11	73	0.20	5.3
12	70	0.19	5.1
13	75	0.21	5.5
14	80	0.22	5.8
15	80	0.22	5.8
16	87	0.24	6.3
17	100	0.27	7.3
18	95	0.26	6.9
19	96	0.26	7.0
20	84	0.23	6.1
21	56	0.15	4.1
22	55	0.15	4.0
23	41	0.11	3.0
Total	1,373	3.8	100

Month	Number of Calls	Calls per Day	Call Percentage
January	102	3.3	7.4
February	114	4.1	8.3
March	121	3.9	8.8
April	96	3.2	7.0
May	100	3.2	7.3
June	147	4.9	10.7
July	147	4.7	10.7
August	120	3.9	8.7
September	133	4.4	9.7
October	105	3.4	7.6
November	97	3.2	7.1
December	91	2.9	6.6
Total	1,373	3.8	100

Day of Week	Number of Calls	Calls per Day	Call Percentage
Sunday	148	2.8	10.8
Monday	213	4.1	15.5
Tuesday	211	4.1	15.4
Wednesday	177	3.4	12.9
Thursday	199	3.8	14.5
Friday	207	4.0	15.1
Saturday	218	4.2	15.9
Total	1,373	3.8	100





Critical Tasking and Effective Response Forces

General Description - The district approaches response to fires in a tiered fashion. Below is the description of what a low, moderate, high, or maximum response is, with corresponding critical tasking in the Effective Response Force for Fires table.

Low – This type of fire is a low risk/value incident such as a dumpster, car, or brush fire. It requires a single unit with pumping capability to effectively respond and mitigate.

Moderate – This is a residential or small commercial structure fire and calls for nine apparatus (typically three engines, one ladder truck, one medic unit, one MSO, one aid unit, and two battalion chiefs, for a total of 18 personnel).

High – Large structures including high rise fires, expansive industrial occupancies or other buildings requiring additional personnel to accomplish multiple simultaneous tasks. This type of response calls for 11 apparatus (typically four engines, two ladder trucks, one medics, one aid, one MSO, and two battalion chiefs, for a total of 26 personnel).

Extreme – Very large industrial occupancies, hazardous materials manufacturing facilities, hospitals, or other structures such as critical infrastructure bring the maximum established initial response consisting of **35** personnel on six engines, three ladder trucks, one medic, one aid, one MSO, and two battalion chiefs.

* For low or moderate risk incidents, the command and safety tasks may be combined in one position.

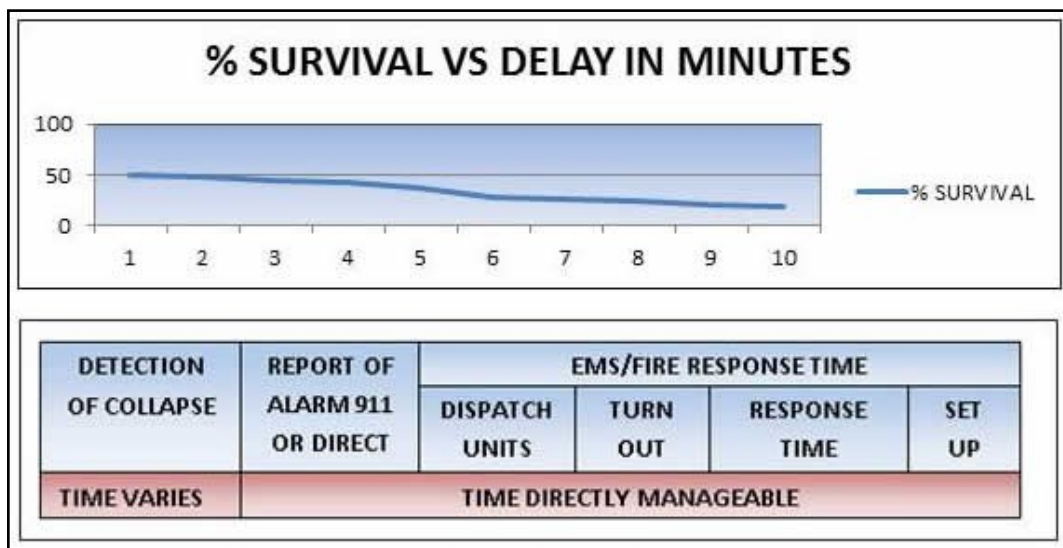
Effective Response Force for Fire Incidents				
Task	Extreme	High	Moderate	Low
Command	1	1	1	1
Safety	1	1	1	1*
Investigation/				1
Pump Operation	4	2	2	1
Fire Attack 1	4	2	2	
Fire Attack 2	4	2		
Water Supply	4	4	2	
Search / Forcible Entry	6	4	2	
Ventilation	4	4	2	
Back-up Line		2	2	
On-Deck / RIC	4	2	2	
Medical Standby / Rehab	3	2	2	
ERF Personnel	35	26	18	3

Moderate Risk**High Probability****Low Consequence****Emergency Medical Services**

Time is a critical element when responding to true medical emergencies, with the chance of survival for a cardiac arrest dropping precipitously with every passing minute.

The potential survival rate for cardiac arrests, which is one of the most serious medical emergencies an individual can experience, is only at 50% by the time a fire apparatus leaves the station, making prevention efforts a crucial piece of achieving positive patient outcomes.

When evaluating the steady rise in emergency medical calls over the last few decades, it is readily apparent that the workload demand of these calls will continue to rise. The district is actively working with community partners to reduce or eliminate many of the lower risk/severity calls for help by channeling the patient into a more appropriate method of care.

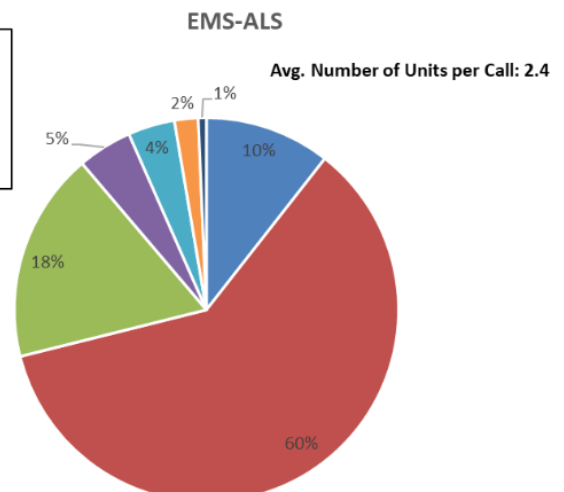
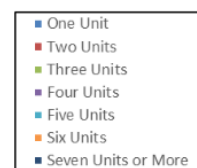
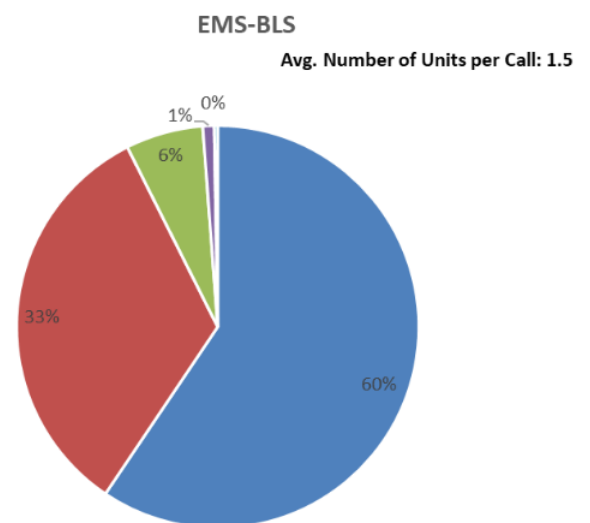
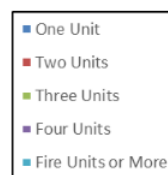


EMD Determinant	Number of Calls	Number of Responses	Average Responses per Call	Total Busy Hours	Avg. Busy Time per Response	Percent of Calls
Alpha	2,990	4,372	1.5	3,094	42:28	27.8%
Bravo	1,653	2,755	1.7	1,512	32:56	15.4%
Charlie	2,054	3,602	1.8	2,575	42:54	19.1%
Delta	2,612	5,884	2.3	3,535	36:03	24.3%
Echo	123	545	4.4	348	38:17	1.1%
Omega	76	128	1.7	78	36:43	0.7%
NA	1,252	2,050	1.6	1,149	33:38	11.6%
Total	10,760	19,336	1.8	12,291	38:08	100%

Month	Number of Calls	Calls per Day	Call Percentage
January	854	27.5	7.9
February	776	27.7	7.2
March	910	29.4	8.5
April	855	28.5	7.9
May	937	30.2	8.7
June	924	30.8	8.6
July	887	28.6	8.2
August	960	31.0	8.9
September	874	29.1	8.1
October	959	30.9	8.9
November	860	28.7	8.0
December	964	31.1	9.0
Total	10,760	29.5	100

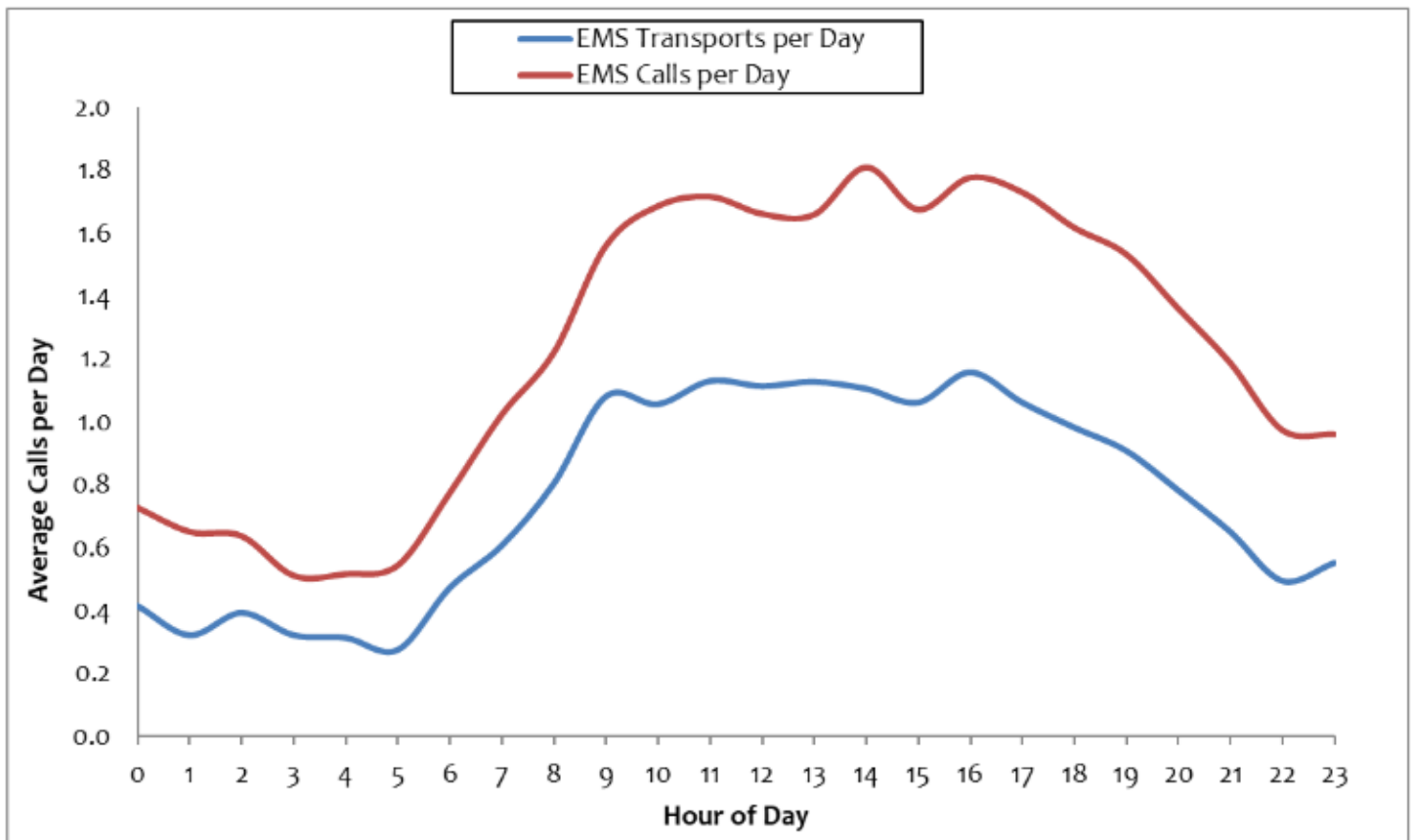
Day of Week	Number of Calls	Calls per Day	Call Percentage
Sunday	1,424	27.4	13.2
Monday	1,524	29.3	14.2
Tuesday	1,625	31.3	15.1
Wednesday	1,543	29.7	14.3
Thursday	1,577	29.8	14.7
Friday	1,593	30.6	14.8
Saturday	1,474	28.3	13.7
Total	10,760	29.5	100

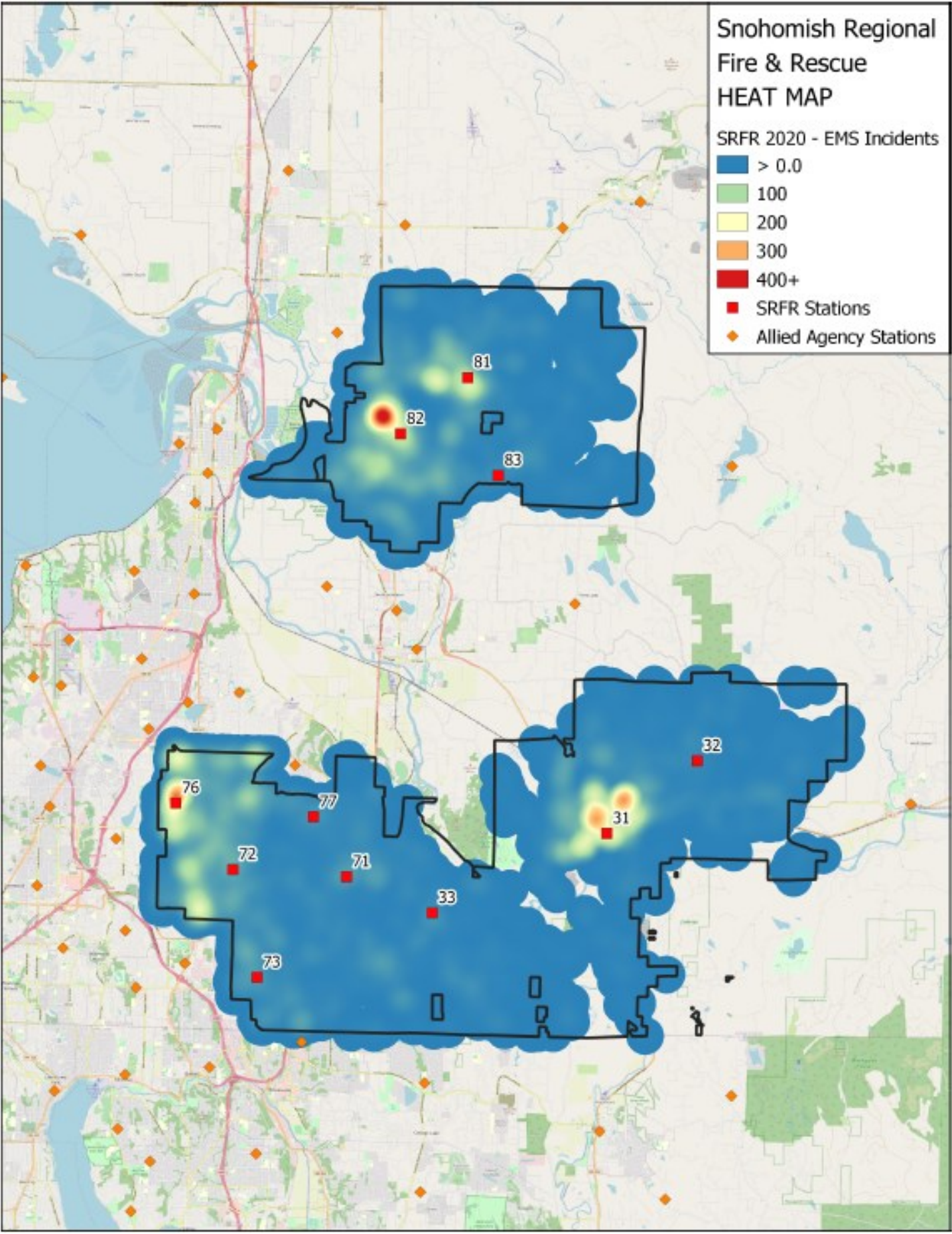
Hour of Day	Number of Calls	Calls per Day	Call Percentage
0	265	0.73	2.5
1	237	0.65	2.2
2	232	0.64	2.2
3	186	0.51	1.7
4	188	0.52	1.7
5	198	0.54	1.8
6	282	0.77	2.6
7	373	1.02	3.5
8	445	1.22	4.1
9	569	1.56	5.3
10	615	1.68	5.7
11	626	1.72	5.8
12	606	1.66	5.6
13	605	1.66	5.6
14	660	1.81	6.1
15	611	1.67	5.7
16	648	1.78	6.0
17	631	1.73	5.9
18	590	1.62	5.5
19	559	1.53	5.2
20	496	1.36	4.6
21	433	1.19	4.0
22	355	0.97	3.3
23	350	0.96	3.3
Total	10,760	29.5	100



EMD Determinant	Transport		Non-Transport		Transport Rate
	Duration (minute)	Number of Calls	Duration (minute)	Number of Calls	
Alpha	71:33	1,947	22:33	1,043	65.1%
Bravo	70:53	747	19:52	906	45.2%
Charlie	72:40	1,510	24:58	544	73.5%
Delta	74:26	1,702	21:25	910	65.2%
Echo	98:13	72	57:35	51	58.5%
Omega	74:26	42	26:06	34	55.3%
NA	74:13	631	20:15	621	50.4%
EMS Total	73:02	6,651	22:09	4,109	61.8%

Hospital	Duration (minute)	Number of Calls	Transports per Day	% of Total
Providence Hospital	81:56	2,830	7.8	43%
Evergreen Health Monroe	47:37	1,519	4.2	23%
Evergreen Health Kirkland	88:29	1,201	3.3	18%
Swedish Hospital Mill Creek	67:06	382	1.0	6%
Swedish Hospital Edmonds	99:33	137	0.4	2%
Other	61:47	582	1.6	9%
Total	73:02	6,651	18.2	100%





Critical Tasking and Effective Response Forces

General Description - The district approaches an emergency medical incident in a tiered fashion. Below is the description of what a low, moderate, high or maximum response is, with corresponding critical tasking in the Effective Response Force for EMS table.

Low – This type of medical incident is for BLS incidents with two personnel to serve as medical first responders. This response is typically handled by an Aid unit.

Moderate – This level of medical emergency includes difficulty breathing, chest pain, imminent child birth, falls over 10 ft., obese patients requiring lifting assistance, or traumatic injuries. At least two units respond to this type of incident to accomplish the critical tasks needed in a timely manner. These types of incidents receive either an Aid or Medic unit and a secondary unit that may be either an Engine, Aid, or Ladder for a total of five personnel on two apparatus.

High – Incidents involving 3 or more patients as the result of a shooting, vehicle accident or other type of catalyst that requires multiple units to respond, and Med X medical upgrades. Critical tasking is 10 personnel on five units that includes one engine or ladder, a Battalion Chief, two medic units, and an MSO.

Extreme – This is a mass casualty type incident that involves multiple vehicles or patients and sends at least seven units that includes a Battalion Chief, two engines or ladders, two medics, an aid unit, and an MSO for a total of 15 personnel.

Effective Response Force for EMS Incidents				
Task	Extreme	High	Moderate	Low
Command Safety	1	1	1	1*
Traffic Control	2	2	2	
ALS Treatment	2	2	1*	1
ALS Triage	2	1		
BLS Patient Assessment/ Treatment	1	1	1	1*
Patient Information	1	1	1	1
Extrication	3		0	
Fire Attack / Safety	2			
Vehicle Stabilization	1	1		
Medical Supervision		1		
ERF Personnel	15	10	5	2

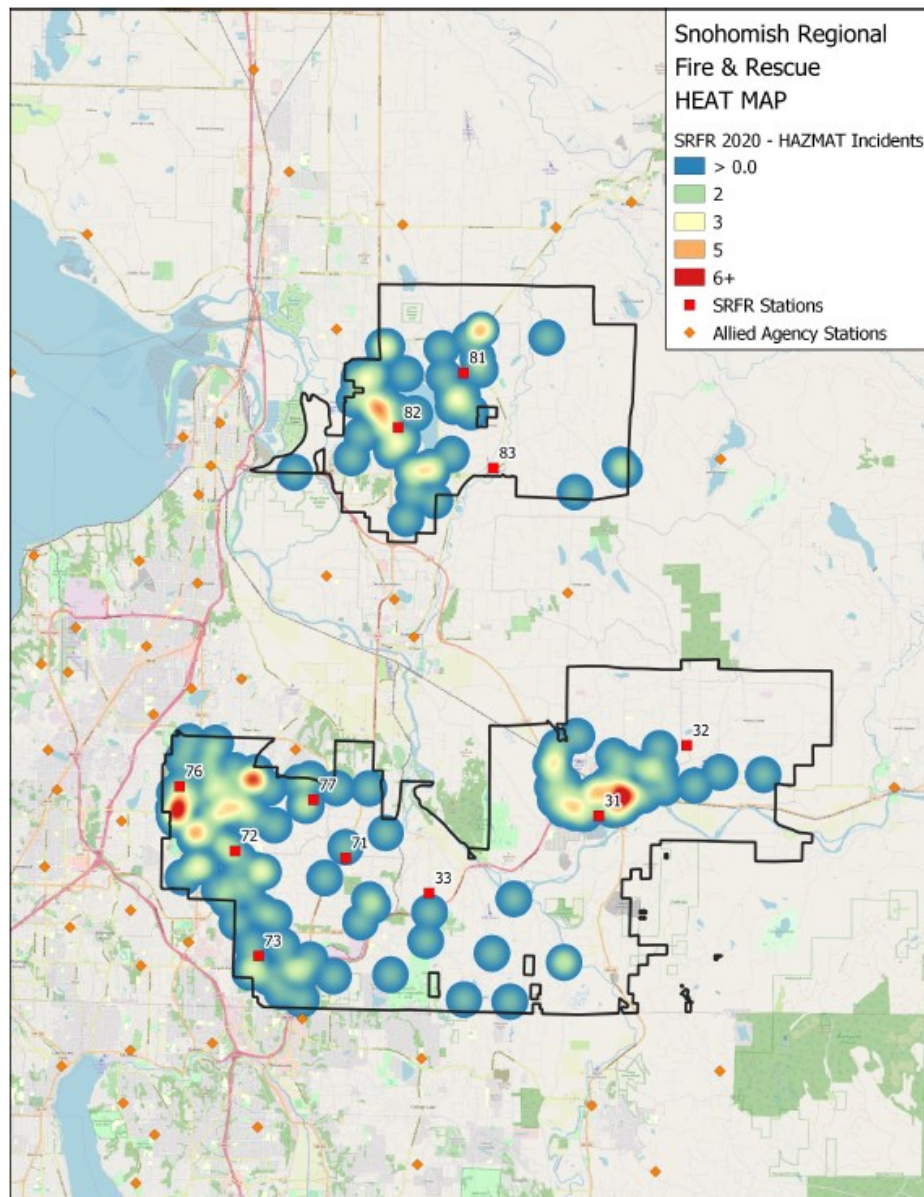
* For low and moderate risk incidents, the command, safety, and patient information tasks may be combined in one position.

Maximum Risk**Low Probability****High Consequence**

Hazardous Materials

The potential release of hazardous materials exists wherever that material may be located. A higher potential for release coincides with storage sites at fixed facilities and along transportation routes, such as major roadways and rail lines. Hazardous materials are chemical substances which, if released or misused, can pose a threat to people, property, or the environment. These chemicals are used in industry, agriculture, medicine, research, and consumer goods.

As many as 500,000 products pose physical or health hazards and can be defined as "hazardous chemicals." Each year, over 1,000 new synthetic chemicals are introduced. Hazardous materials come in the form of explosives, flammable and combustible substances, poisons, and radioactive materials. These substances are most often released as a result of transportation accidents or because of chemical accidents in manufacturing plants. Hazardous materials are contained and used at fixed sites and are shipped by all modes of transportation, including transmission pipelines.



Critical Tasking and Effective Response Forces

General Description - The district approaches a hazardous materials response in a tiered fashion. Below is the description of what a low, moderate, high or maximum response is, with corresponding critical tasking in the Effective Response Force table.

Low – Small spills from a passenger type vehicle of common hydrocarbon materials such as gasoline, fuel oil or diesel fuel. The material can be diked or absorbed utilizing equipment normally carried on a first due engine or ladder truck. Small spills of antifreeze, transmission fluid, etc. at the scene of a motor vehicle accident would also fall under this category as well as gas leaks outside and common monoxide alarms. This response typically utilizes one unit and three personnel.

Moderate – Larger spills common hydrocarbon materials such as gasoline, fuel oil, or diesel fuel from a large commercial vehicle and gas leaks inside. This level of response requires two engines and a battalion chief for a total of three apparatus and seven apparatus.

High – Second alarm hazardous materials incidents. Confirmed or unconfirmed chemical spill, leak or release. This level of call requires a minimum of 4 hazmat technicians to establish a total effective response force of 11 personnel. Equipment required includes a command officer, two engines, one medic, one hazmat unit, and one decon unit, a total of six apparatus.

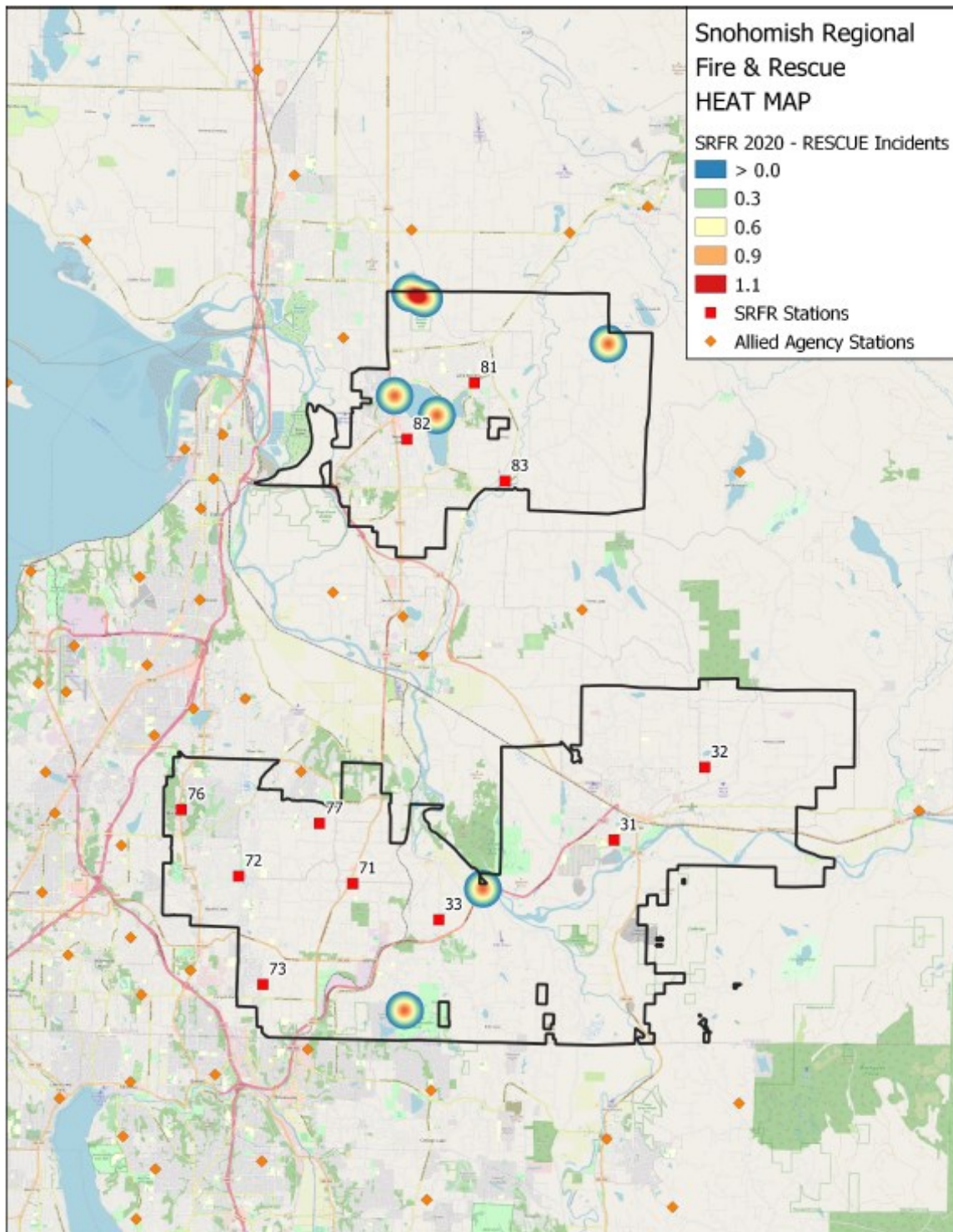
Extreme – Third alarm hazardous materials incidents that may include suspected Weapons of Mass Destruction (WMD) or Chemical, Biological, Radiological, Nuclear or Explosive (CBRNE) type release requires a command officer, three engines, one medic, three hazmat units, and one decon unit. This hazmat ERF will require at least 19 personnel and nine apparatus.

Effective Response Force for Hazmat Incidents				
Task	Extreme	High	Moderate	Low
Command	1	1	1	1
Safety	1	1*	1*	1*
Air Monitoring		1	1	1
Recon		1	2	1
HazMat Group Supervisor	1			
HazMat Safety	1			
Entry Team Leader	1			
Entry Team	3			
Backup Team	3	2		
Decon	3	2		
Research	1			
ALS Treatment	1	1		
ALS Triage	1	1		
Support	2			
Technical Assistance		2		
Pump Operation			1	
Safety Line/Ric			2	
ERF Personnel	19	11	7	3

Maximum Risk
Low Probability
High Consequence

Technical Rescue - Collapse, Confined Space, High Angle, Trench, Water Rescue

The District has several members trained as technicians for the Technical Rescue Program and both relies on and participates with the Countywide Technical Rescue Team. Technical rescue is a relatively broad term and includes responses to a wide variety of incidents such as water rescue, confined space rescue, high angle rescues, and structural collapse. Similar to the analyses for hazardous materials, the demand for technical rescue services is low in relation to fire or EMS calls within the service area.



Maximum Risk**Low Probability****High Consequence****Technical Rescue—Collapse, Confined Space,
High Angle, Trench, and Water Rescue****Critical Tasking and Effective Response Forces**

General Description - The district approaches a technical response incident in a tiered fashion. Below is the description of what a low, moderate, high or extreme response is, with corresponding critical tasking in the Effective Response Force table.

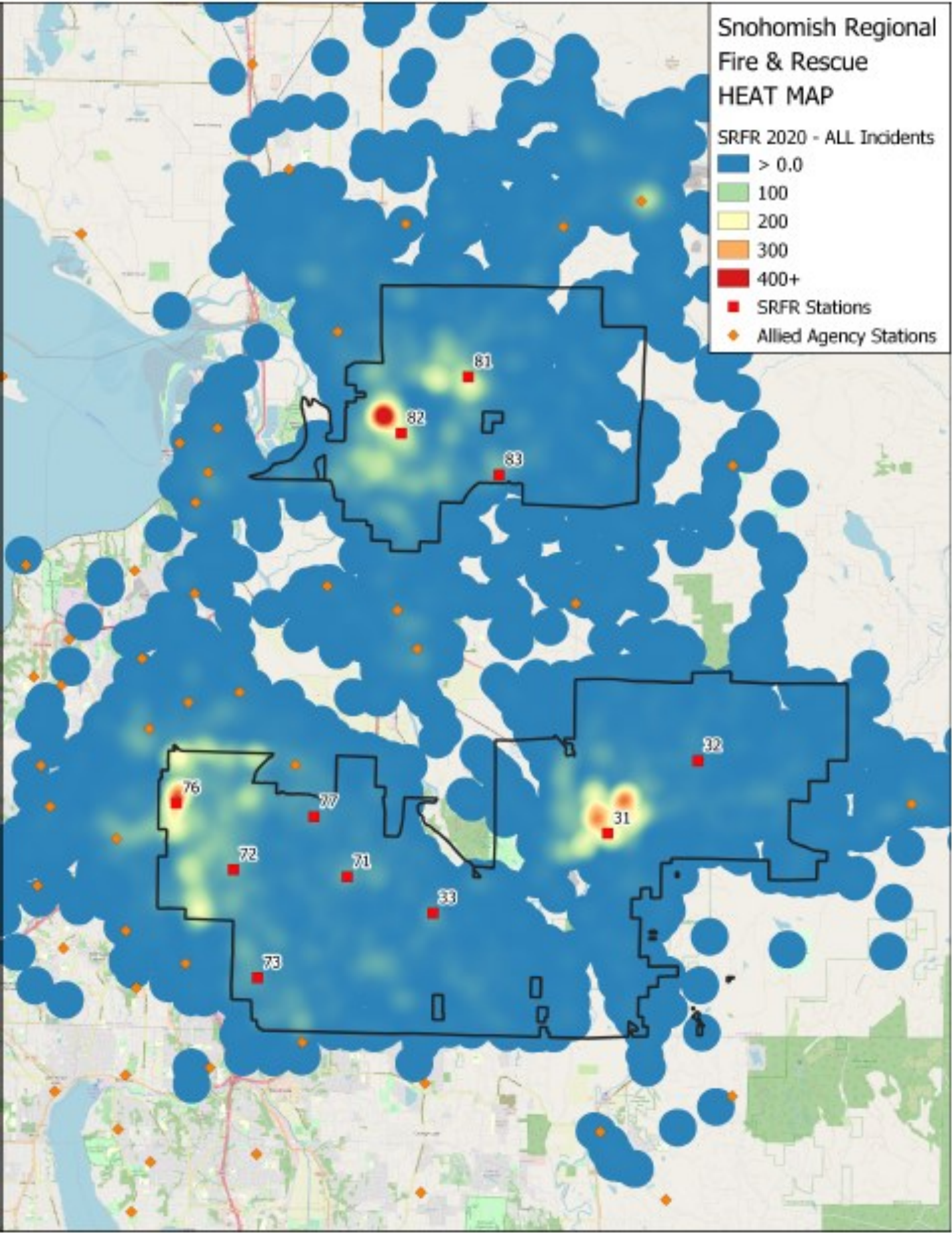
Low – Low risk incidents may include 1st tier (alarm) confined space, trench, high/low angle, and within structures. This investigative and stabilization response requires the closest engine or ladder for a single resource and three personnel.

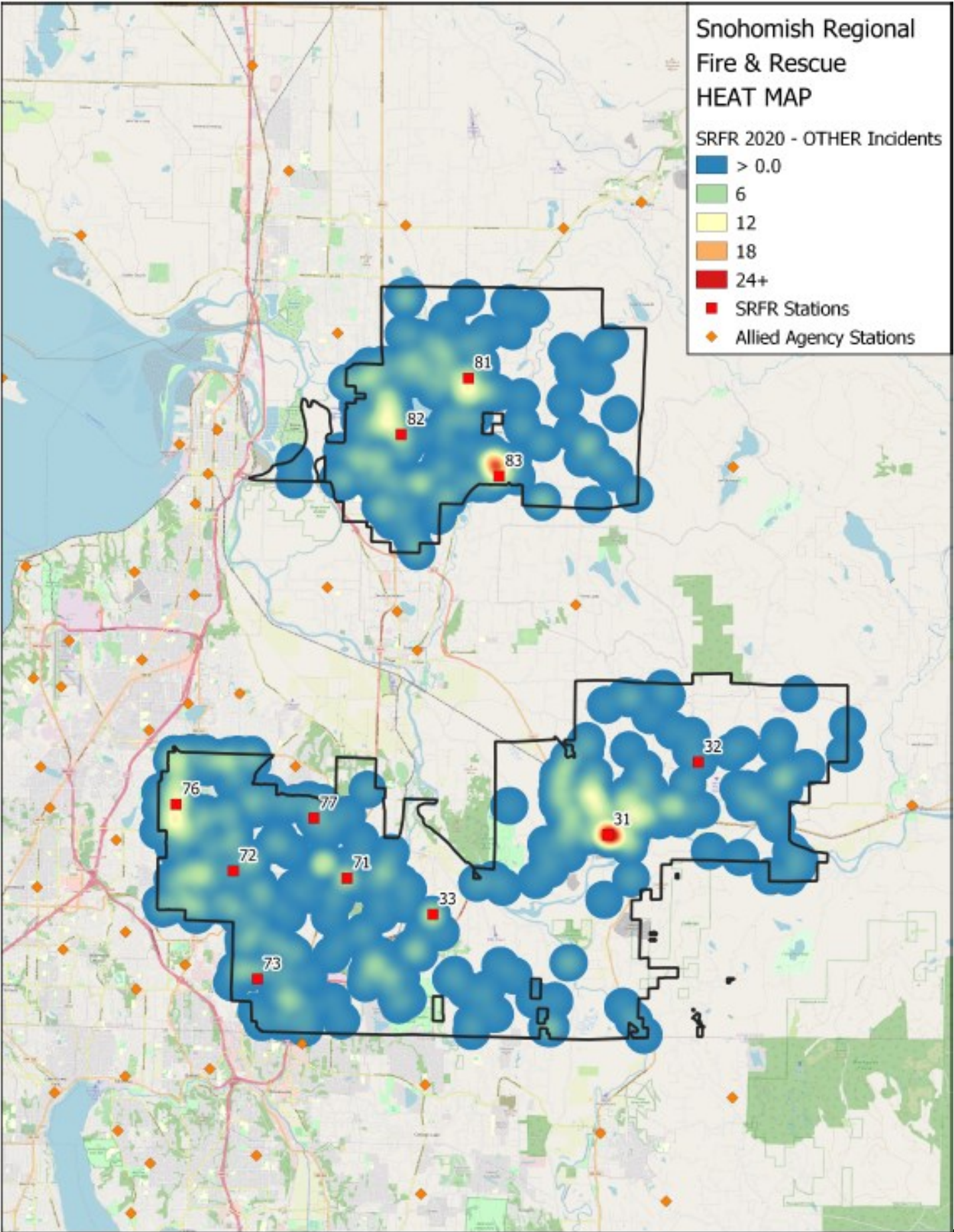
Moderate – Moderate risk incidents include rescue swift water, non-river/swift water, and 2nd alarm high/low angle rescue and rescues within a structure. Responses include five units and 10 personnel. Units include a Battalion Chief, either Boat/Marine or Tech Rescue Unit, one engine, one medic, and one MSO.

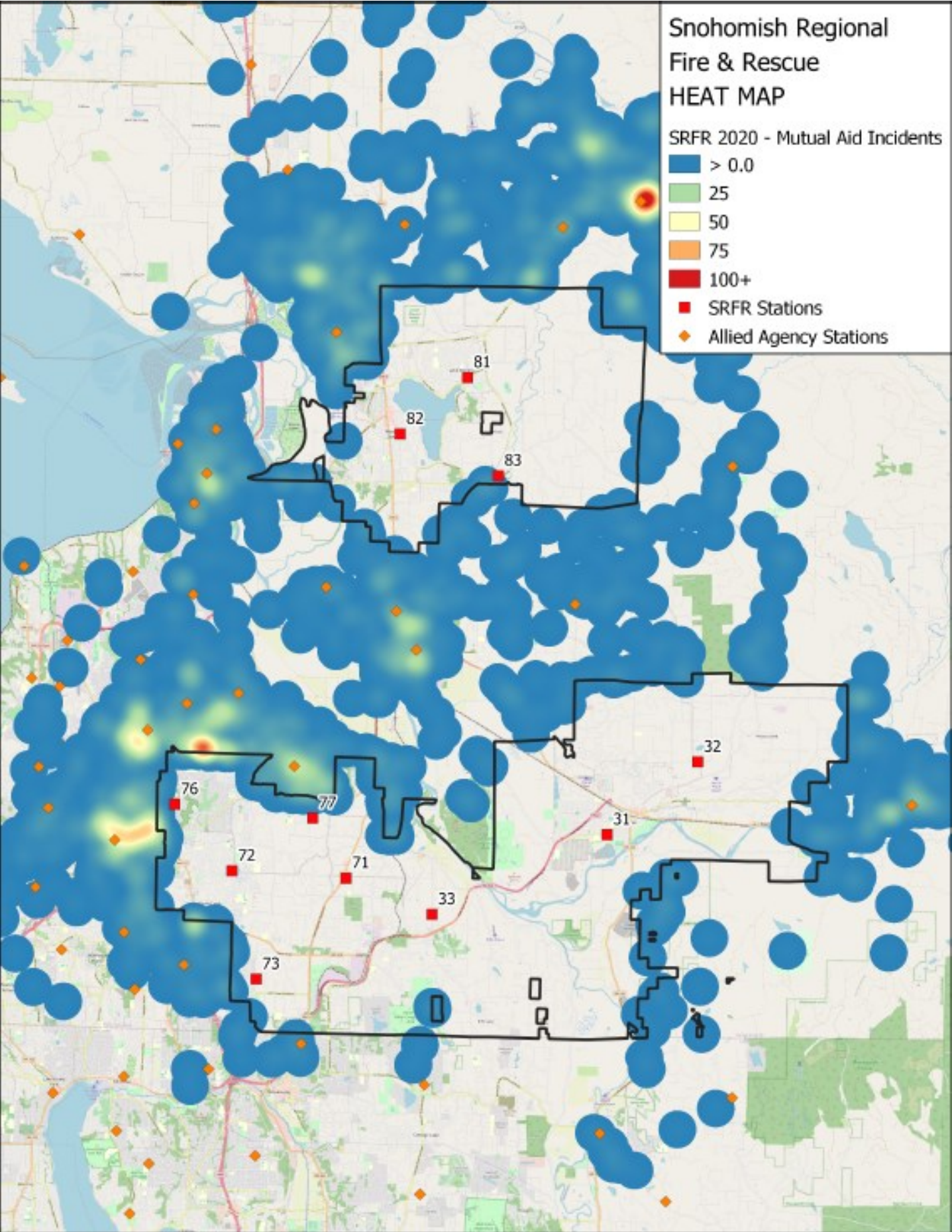
High – High risk incidents include 2nd alarm confined space and trench rescues. This response requires seven units and 12 personnel and can escalate as needed. Resources include a Battalion Chief, technical rescue unit, hazardous materials unit, an engine, one medic, one air unit, and one MSO.

Extreme – Third alarm responses for confined space, trench, high/low angle rescues, and within structures. This response requires a total of 11 resources and 24 personnel. Response apparatus include a Battalion Chief, four technical rescue units, one engine, one medic, two hazardous materials unit, one air unit, and one MSO.

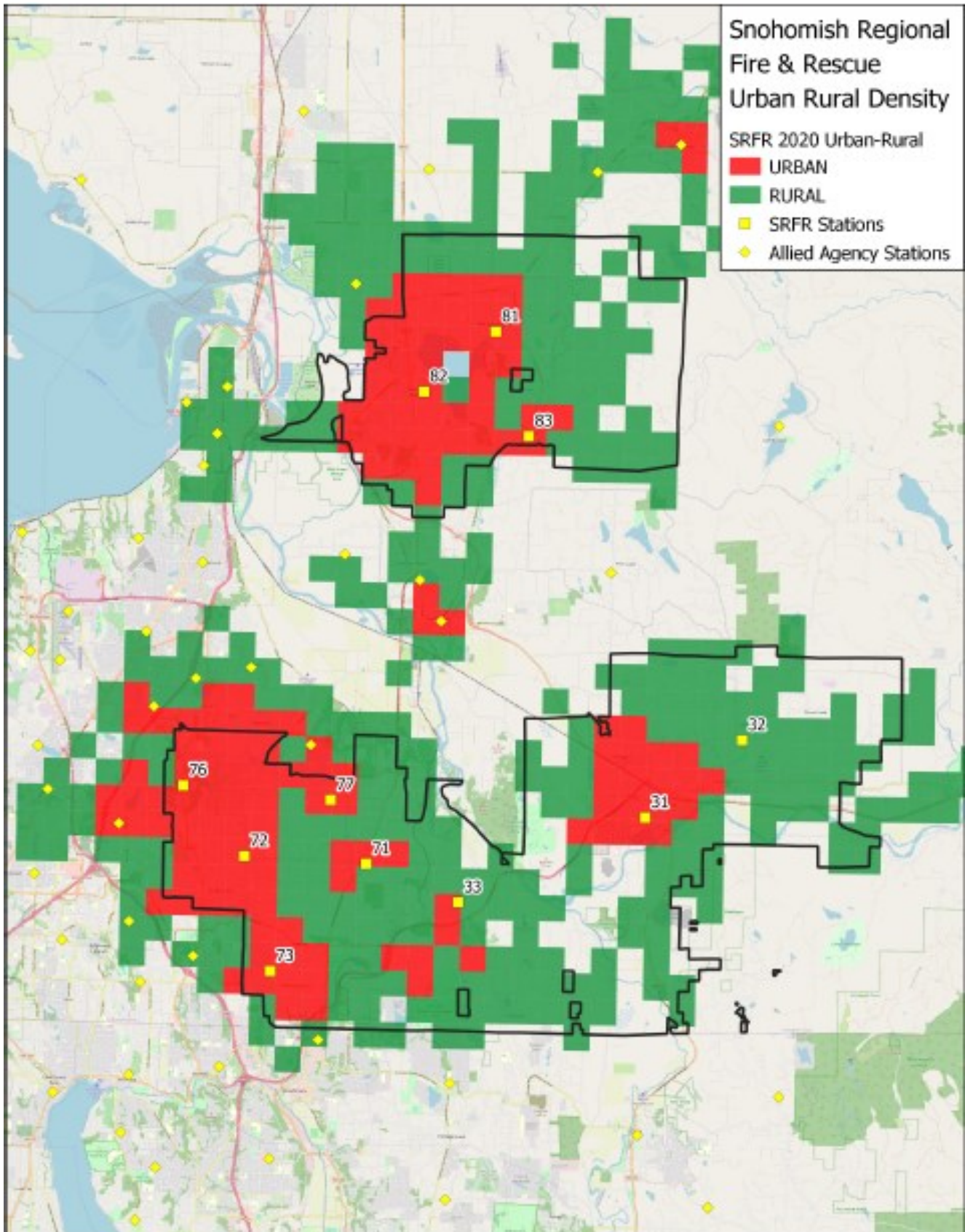
Effective Response Force for Rescue Incidents				
Task	Extreme	High	Moderate	Low
Command	1	1	1	1
Triage				2
Safety	3	3	1	1*
Rescue Group Supervisor	3	3		
Rescue Safety Officer	2			
ALS Treatment		1	1	
AL Triage		2	1	
Entry Team	2	2	2	
Entry Team Leader	2			
Backup Team	3	1	2	
Air Monitoring	3			
Communication Systems	3			
Support	2		1	
Boat Operator			1	
ERF Personnel	24	12	10	3







Additionally, call density was calculated on the relative concentration of incidents based on approximately 0.5-mile geographic areas as well as the adjacent 0.5-mile areas. The results demonstrate an urban and rural designation based on call density for services and not based on population. The red areas are designated as urban service areas and the green areas are designated as rural service areas. Any area that is not colored has less than one call every six months in the 0.5-mile area and the adjacent areas.



Section D - Community Feedback

COMMUNITY SURVEY



Community Feedback

As we plan for plan
for the future, we
want to hear from
our community.

THE BRIEF ONLINE SURVEY
SHOULD ONLY TAKE 10 MINUTES.
LET YOUR VOICE BE HEARD.

Strategic Planning Process

As SRFR embarked on the strategic planning journey, focused was placed on where the district was going in the next five years, to ensure that the program goals and objectives aligned with the desired outcomes identified by not only our internal personnel, but the communities that are served by SRFR. The process began with a set of guiding principles; a place to come back to when or if the process inadvertently took a detour along the way. One of the guiding principles, inclusion, required SRFR to carefully consider the team and balance the size of the group making decisions, including a much broader constituency of engaged individuals providing input than in the past. With the guiding principles in place, and a clear plan for multi - faceted engagement, the organization was able to incorporate many voices in the creation of the refreshed Mission, Vision and Values. This alignment facilitated the creation of strong and action oriented goals, objectives, and critical tasks. As seen below, engagement took place with several groups, including the community leadership advisory committee on several occasions throughout the process. The input gleaned from the community members was invaluable in shaping the next several years of work for SRFR.

Performance Indicator 2B.7

The agency engages other disciplines or groups within its community to compare and contrast risk assessments in order to identify gaps or future threats and risks.

MULTI-FACETED ENGAGEMENT				COMMUNITY LEADERSHIP ADVISORY COMMITTEE	
	ALL TEAMS	STEERING COMMITTEE			
LIVE BRAINSTORMING		✓		✓	
SURVEYS	✓	✓		✓	
WRITTEN FEEDBACK	✓	✓			
FACILITATED FEEDBACK		✓		✓	
FACILITATED PRIORITIZATION		✓			
SMALL TEAM BREAKOUTS		✓			

Community Members

Fire Chief Kevin O'Brien worked to develop a team of external stakeholders to provide community input and feedback on our proposed strategic plan. This group was limited to virtual meetings as a result of pandemic social distancing restrictions. The group's feedback proved valuable as we sought to better understand the needs of the community and to assure that our district's mission, vision, values, goals, and objectives aligned with the expectation of our community members.

Performance Indicator 2D.10

The agency interacts with external stakeholders and the AHJ at least once every three years to determine the stakeholders' and AHJ's expectations for types and levels of services provided by the agency.

AMY BETH COOK LAKE STEVENS S.D.	DAN LORENTZEN SNOHOMISH CO. FIRE MARSHAL	MAYOR BRETT GAILEY CITY OF LAKE STEVENS
MAYOR GEOFFREY THOMAS CITY OF MONROE	ADMINISTRATOR GENE BRAZEL CITY OF LAKE STEVENS	CHIEF JOHN DYER LAKE STEVENS P.D.
ADMINISTRATOR DEBORAH KNIGHT CITY OF MONROE	CHIEF JEFF JOLLEY MONROE P.D.	MAYOR BRIAN HOLTZCLAW CITY OF MILL CREEK
CITY MANAGER MICHAEL CIARAVION CITY OF MILL CREEK	CHIEF SCOTT EASTMAN MILL CREEK P.D.	SAM LOW COUNTY COUNCIL
JERED MEAD COUNTY COUNCIL	CAROLYN ESLICK STATE REPRESENTATIVE	STEVE HOBBS STATE SENATOR
SUE SKILLEN MONROE CITIZEN	GARY O'RIELLY LAKE STEVENS CITIZEN	PAM PRUITT MILL CREEK CITIZEN
DICK KEENAN CLEARVIEW CITIZEN	ROBIN MCGEE CITIZEN AT LARGE	LESLIE JO WELLS CITIZEN AT LARGE
CHRISTY MILLER CITIZEN AT LARGE	RANDY WOOLERY FIRE COMMISSIONER	JIM STEINRUCK FIRE COMMISSIONER
MATT TABOR LAKE STEVENS CHAMBER		JANELLE DREWS MONROE CHAMBER

Community Feedback Results

The Community Stakeholder team met virtually to discuss the strengths, weaknesses, opportunities, and threats experienced by the community. Feedback was provided via survey responses in advance of the virtual meeting and live through a facilitated brainstorming session. The aggregated data was brought back to the strategic planning steering committee to review and incorporate into the plan. The primary task was to ensure that the mission, vision, and values of SRFR aligned with the expectations of the Community Stakeholder group. After the alignment check, the SWOT feedback was incorporated into the goals and objectives section of the strategic plan. Connection with the Community Stakeholders Group assures that the plan aligns with both our internal stakeholders and the citizens they serve.

Core Competency 3B.3

The agency solicits feedback and direct participation from internal and external stakeholders in the development, implementation and evaluation of the agency's goals and objectives.

Strengths (areas to leverage)

- People/Staff– Leadership, Hiring, Training, Diversity
- Organizational Size– Fiscal efficiency, ability to support smaller communities
- Operational Performance– Response Time, medical services
- Community Oriented– Perceived connection, partnerships
- Equipment Quality
- Communication and Community Education– Social media presence, CRP program
- Culture– Continuous improvement, adaptive, progressive, planning mindset, driven

Weaknesses (areas to invest)

- Future Funding– Anti-tax sentiment, contracted communities, levy communication and success
- Organizational Size– Losing touch with individual communities, cost control, supply & order management
- Technical Infrastructure– Delays in execution and adoption
- Culture– Currently in Storming/Norming/Conforming/Performing, difficult conversations, transparency
- Service Area– Geographic gap, deployment model, standards of cover
- Community Education– More focus on prevention and reaching diverse communities
- Employees– Retirement and turnover
- Capital Facilities
- Training– EMS

Opportunities (areas to prioritize)

- Reaching a Broader Community Demographic– Youth, immigrants, multi-lingual
- Deployment of Resources as a Merged Organization
- Accreditation
- Future Expansion
- Employees– New opportunities for promotion and new hires
- Funding– Fire benefit charge
- Merger– More influence, clear priorities, single voice, chance to strengthen brand/rebrand

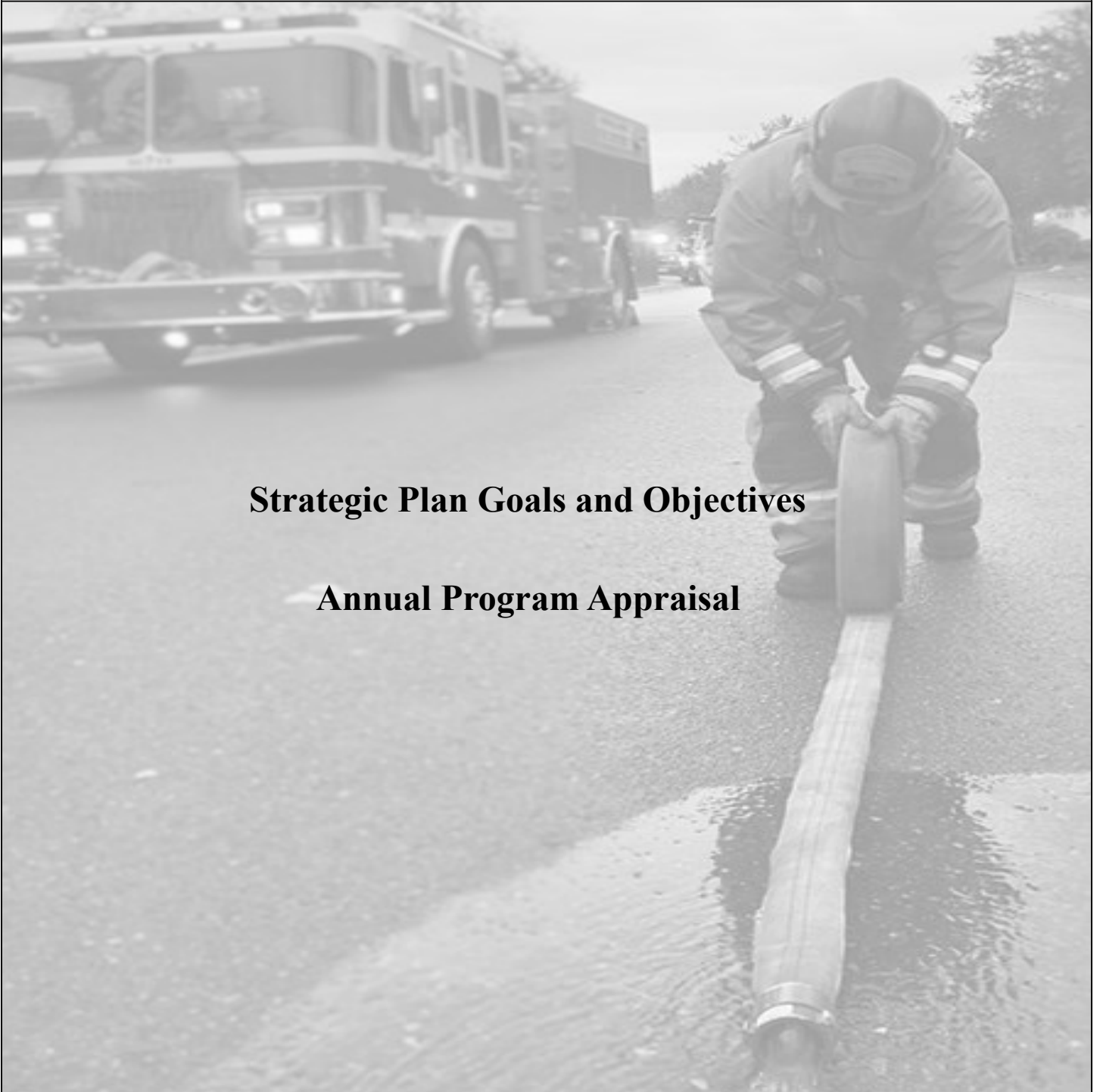
Threats (areas to mitigate)

- Funding– Anti-tax sentiment, reallocation of tax dollars, contracts, reliance of border communities
- Service Concentration– Rapid community growth
- Employees– Increased competition for talent, behavioral health support
- Community Needs– Increased mental health calls
- Environmental Impact– More Fires
- Merger– Transparency and voices of individuals can be lost, competing needs, extended storming/norming

Section E - Program Goals and Objectives

Strategic Plan Goals and Objectives

Annual Program Appraisal



Program Goals and Objectives

The major programmatic goals and objectives for SRFR have been captured in the latest strategic plan which covers 2021-2026. The goals, objectives, and associated sub tasks have been organized into five main categories:

Emergency Response

Goal 1: Provide the highest level of emergency response to the communities we serve.

Objective 1.1: Evaluate and address the impacts of growth within Snohomish Regional Fire and Rescue to better manage the current and future needs of the agency.

Objective 1.2: Provide realistic and relevant training to ensure our firefighters are prepared to meet the needs of our communities.

Objective 1.3: Analyze emergency response performance compared to agency benchmarks and industry best practices.

Objective 1.4: Evaluate equipment and technology that will improve response capabilities.

Fire and Life Safety Services

Goal 2: Engage and serve the community by providing proactive, strategic, and adaptive fire and life safety programs that prevent and mitigate risk.

Objective 2.1: Provide regionalized code enforcement services adapted to the municipalities we serve.

Objective 2.2: Create and Implement measures to ensure a sustainable code enforcement program.

Objective 2.3: Adapt, assess, and administer current community education and outreach programs.

Objective 2.4: Analyze current data to develop strategic community outreach programs in order to reduce newly identified risks in our jurisdiction.

Objective 2.5: Build and foster long-term working relationships with community, external organizations, businesses, and agencies to further the agency's public education efforts to prevent and mitigate risks in our communities.

Objective 2.6: Strengthen long-term working relationships with the community, external organizations, businesses, and agencies to build community trust and resiliency.

Objective 2.7: Adapt to evolving community communication needs through the use of technology, print media, and in person venues.

Objective 2.8: Develop a comprehensive plan to educate staff about the agency's key messaging, education programs, and personnel's role in community risk reduction.

Objective 2.9: Create performance indicators and benchmarks to evaluate the need for an internal fire investigation program.

Objective 2.10: Evaluate fire investigation training and education needs.

Objective 2.11: Build relationships and trust with Snohomish County Fire Marshal's Office (SCFMO).

Program Goals and Objectives

People and Culture

Goal 3: Exemplify our mission of taking care of people physically, mentally, and emotionally while creating a robust and diverse culture.

Objective 3.1: Build a diverse, adaptable, and skilled workforce to support the needs of our communities.

Objective 3.2: Develop and foster resilient relationships between labor and management to amplify staff engagement and growth.

Goal 4: Embody and convey our agency's new core values focusing on accountability, integrity, and respect.

Objective 4.1: Earn the respect of our staff and community by exhibiting accountability for our actions and strive to learn from all experiences.

Objective 4.2: Exercise agency integrity by earning public trust and building community equity.

Business Practices

Goal 5: Operate sustainably and responsibly while maintaining transparency by strengthening established business practices.

Objective 5.1: Standardization of policies and procedures to ensure consistency throughout the district.

Objective 5.2: Determine the most practical path to provide financially sustainable services.

Objective 5.3: Ensure district operations are fiscally responsible and sustainable.

Objective 5.4: Enhance inventory tracking and control of agency assets.

Objective 5.5: Assess needs for growth and development to the benefit of the citizen in alignment with our mission.

Objective 5.6: Develop and validate methods to measure agency sustainability.

Objective 5.7: Partner with the public affairs team to communicate decisions with transparency and care.

Facilities and Equipment

Goal 6: Provide and maintain contemporary facilities and equipment for our workforce to help enable our mission of saving lives, protecting property, safeguarding the environment, and taking care of people.

Objective 6.1: Evaluate and adjust the comprehensive capital facility and equipment for our workforce to help enable our mission of saving lives, protecting property, safeguarding the environment, and taking care of people.

Objective 6.2: Increase transparency to clearly inform staff about future needs, plans, and goals set by the agency.

Objective 6.3: Research and develop processes that ensure end-user input in facilities, apparatus, and equipment.

Annual Program Appraisal

The goals, summarized in this section, will be reviewed and addressed by goal owners in regular leadership reviews, including a quarterly review conducted with the executive leadership team. Annually, a documented report -out will be created by the Fire Chief to share with the Fire Commissioners. The annual reviews will identify any gaps in current capabilities, capacity, and the level of service provided within each service delivery area. Additionally, program goals to mitigate identified risks within the service area will also be discussed. Executive staff and program/goal owners will work collaboratively to ensure an accurate and useful annual appraisal process is performed, documented, and presented, ensuring transparency and trust in maintained between SRFR and the communities they serve.

The annual report will include at a minimum the following specific elements:

- Program name, Program owner and backup personnel
- Strategic goals, objectives, and critical tasks
- Metrics and outcomes of the program
- Risk assessment and critical tasking if applicable
- Self assessment manual review and performance indicator gaps
- Applicable Policy and SOG review
- Program Budget Review
- Report outs/notes from strategic planning meetings, annual report submissions, program meetings, etc. as an appendix.

Core Competency 5A.7

The agency conducts a formal and documented program appraisal, at least annually, to determine the program's impacts and outcomes, and to measure performance and progress in reducing risk based on the community risk assessment/standards of cover.

Core Competency 5E.3

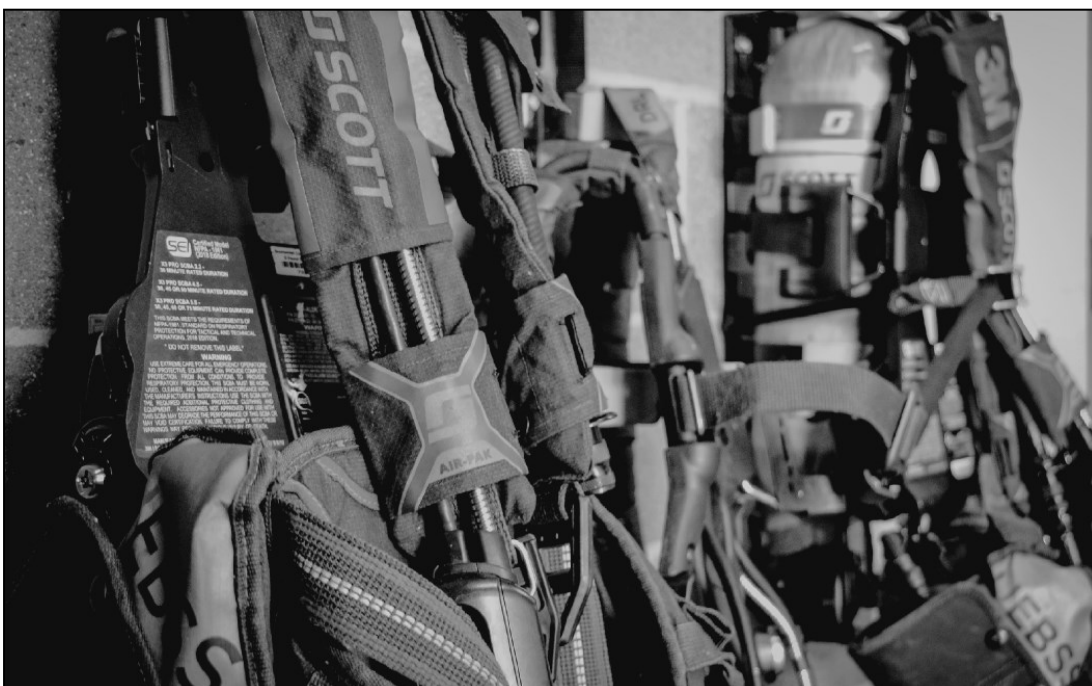
The agency conducts a formal and documented program appraisal, at least annually, to determine the impacts, outcomes, and effectiveness of the program, and to measure its performance toward meeting the agency's goals and objectives.

Core Competency 8B.6

The agency conducts a formal and documented program appraisal, at least annually, to determine the program's effectiveness and compliance with meeting the needs of the organization.

Core Competency 2C.6

The agency identifies outcomes for its programs and ties them to the community risk assessment during updates and adjustments of its programs, as needed.



Section F - Current Deployment and Performance



Community Response History

Review of System Performance

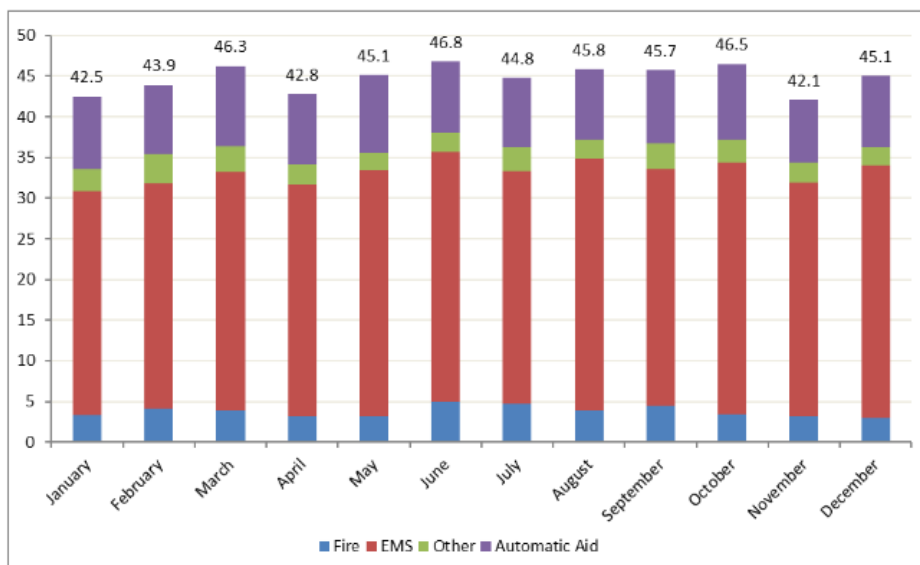
Baseline and Benchmark Analysis

Projected Growth

First Due and Geographic Planning Zone Analysis

Community Response History

Program	Number of Calls		
	2017	2018	2019
EMS	11,282	10,948	10,760
Fire Suppression	1,503	1,375	1,373
Hazmat	152	161	202
Technical Rescue	14	9	7
Other	909	915	766
Automatic Aid	3,517	3,600	3,241
Total	17,377	17,008	16,349
Calls per Day	47.6	46.6	44.8
YoY Growth		-2.1%	-3.9%



Weekday	Calls per Day				
	Fire	EMS	Other	Automatic Aid	Total
Sunday	2.8	27.4	2.4	8.9	41.6
Monday	4.1	29.3	2.7	9.7	45.8
Tuesday	4.1	31.3	3.0	9.1	47.3
Wednesday	3.3	29.1	2.7	8.6	43.7
Thursday	3.8	30.3	2.0	8.7	44.9
Friday	4.0	30.6	2.7	8.7	46.0
Saturday	4.2	28.3	3.2	8.5	44.2
Total	3.8	29.5	2.7	8.9	44.8

Performance Indicator 2B.2

The historical emergency and nonemergency service demands frequency for a minimum of three immediately previous years and the future probability of emergency and nonemergency service demands, by service type, have been identified and documented by planning zone.

Current Deployment and Performance as it relates to Criterion 2C:

The agency identifies and documents the nature and magnitude of the service and deployment demands within its jurisdiction. Based on risk categorization and service impact considerations, the agency's deployment practices are consistent with jurisdictional expectations and with industry research. Efficiency and effectiveness are documented through quality response measurements that consider overall response, consistency, reliability, resiliency, and outcomes throughout all services areas. The agency develops procedures, practices, and programs to appropriately guide its resource deployment.

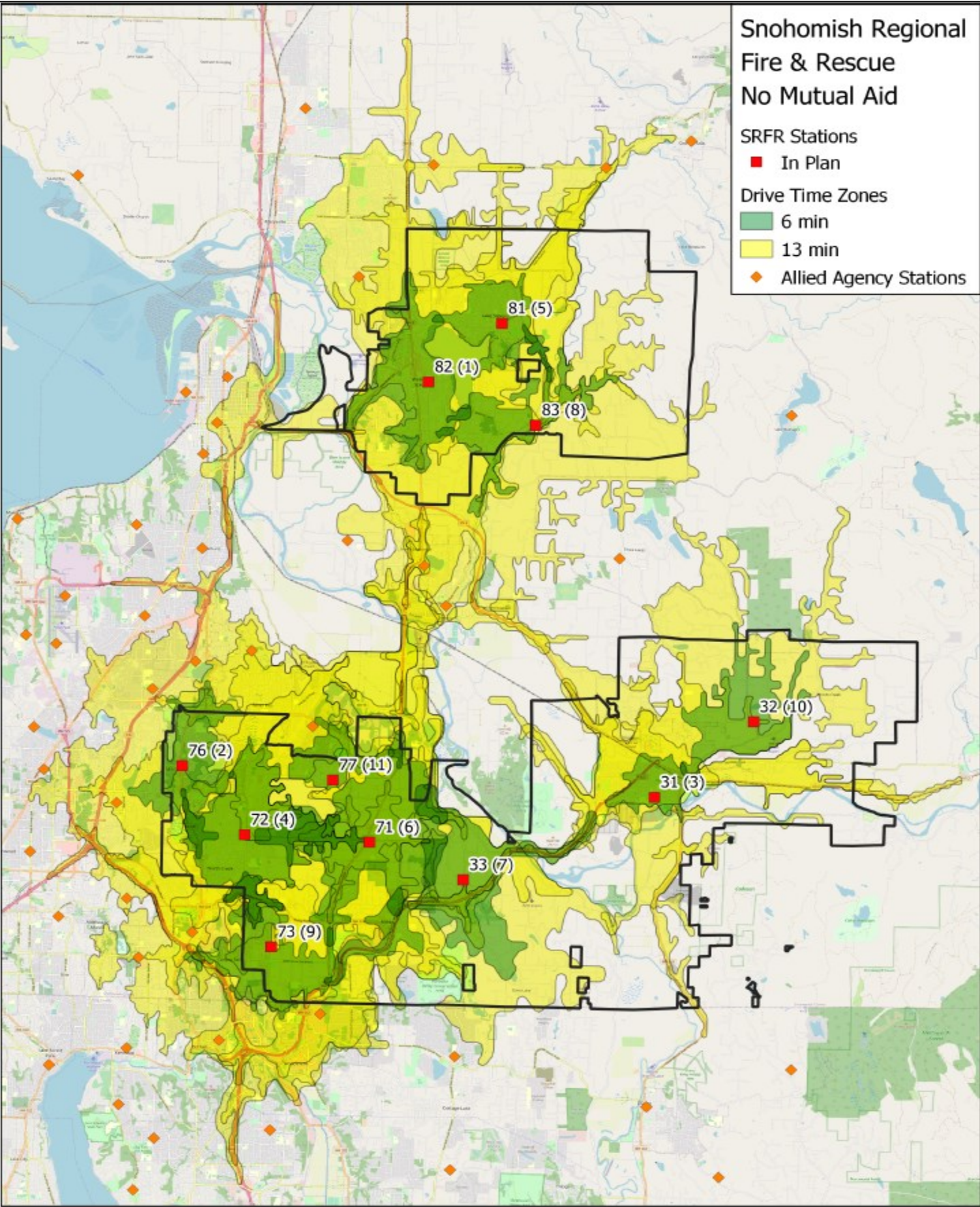
Core Competency 2C.1

Given the levels of risks, area or responsibility, demographics, and socioeconomic factors, the agency has determined, documented, and adopted a methodology for the consistent provision of service levels in all service program areas through response coverage strategies.

Community Response History Discussion

SRFR answers approximately 17,000 emergency calls per year, with a fairly even dispersion with regards to type of call and month or year. Sundays are the lowest call volume day for fires, ems, and other calls. Automatic aid given is highest on Mondays.

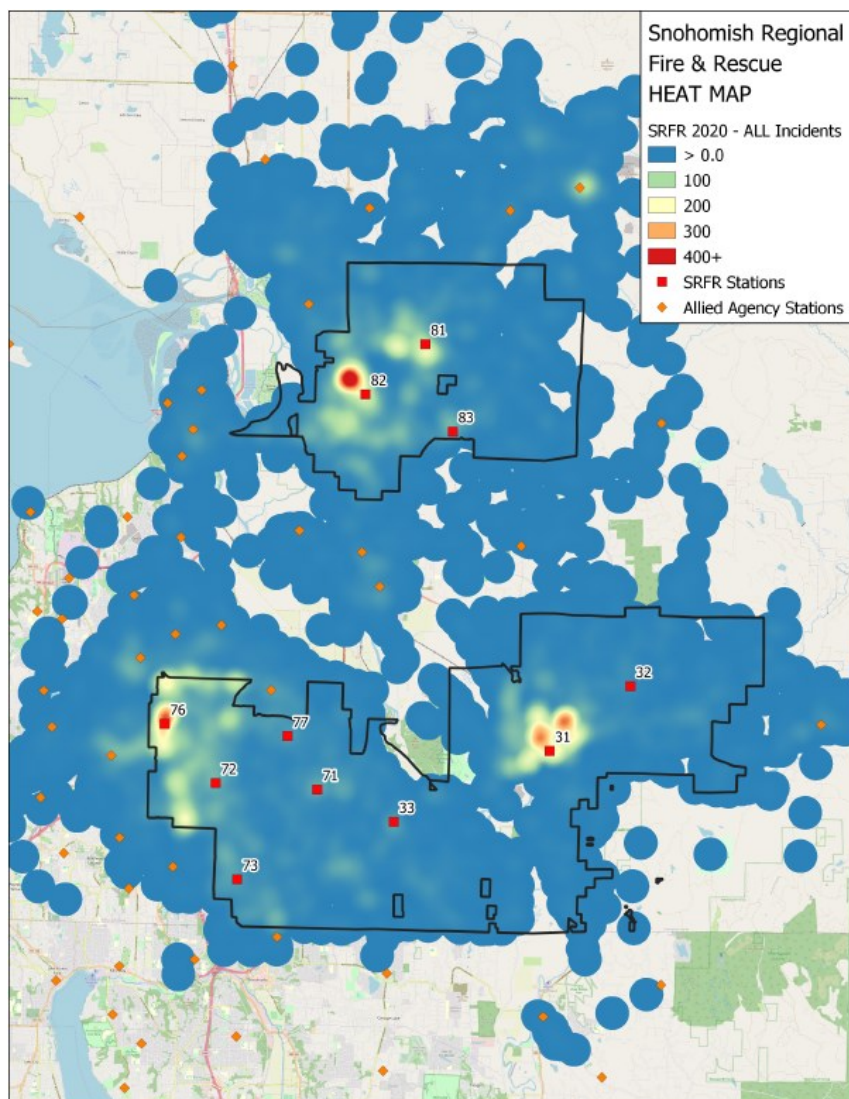
Distribution – Geographical Drive Time Analysis shows a 6 minute drive time (in green) and 13 minute drive time (in yellow), giving a good visual depiction of who can get where within a specified amount of time.



Distribution – Percent of Incidents Captured by

Station shows that 70% of the incidents are covered by first due districts within 6 minutes travel time. When expanded to 13 minutes to account for rural settings, just over 98% of the incidents can be captured.

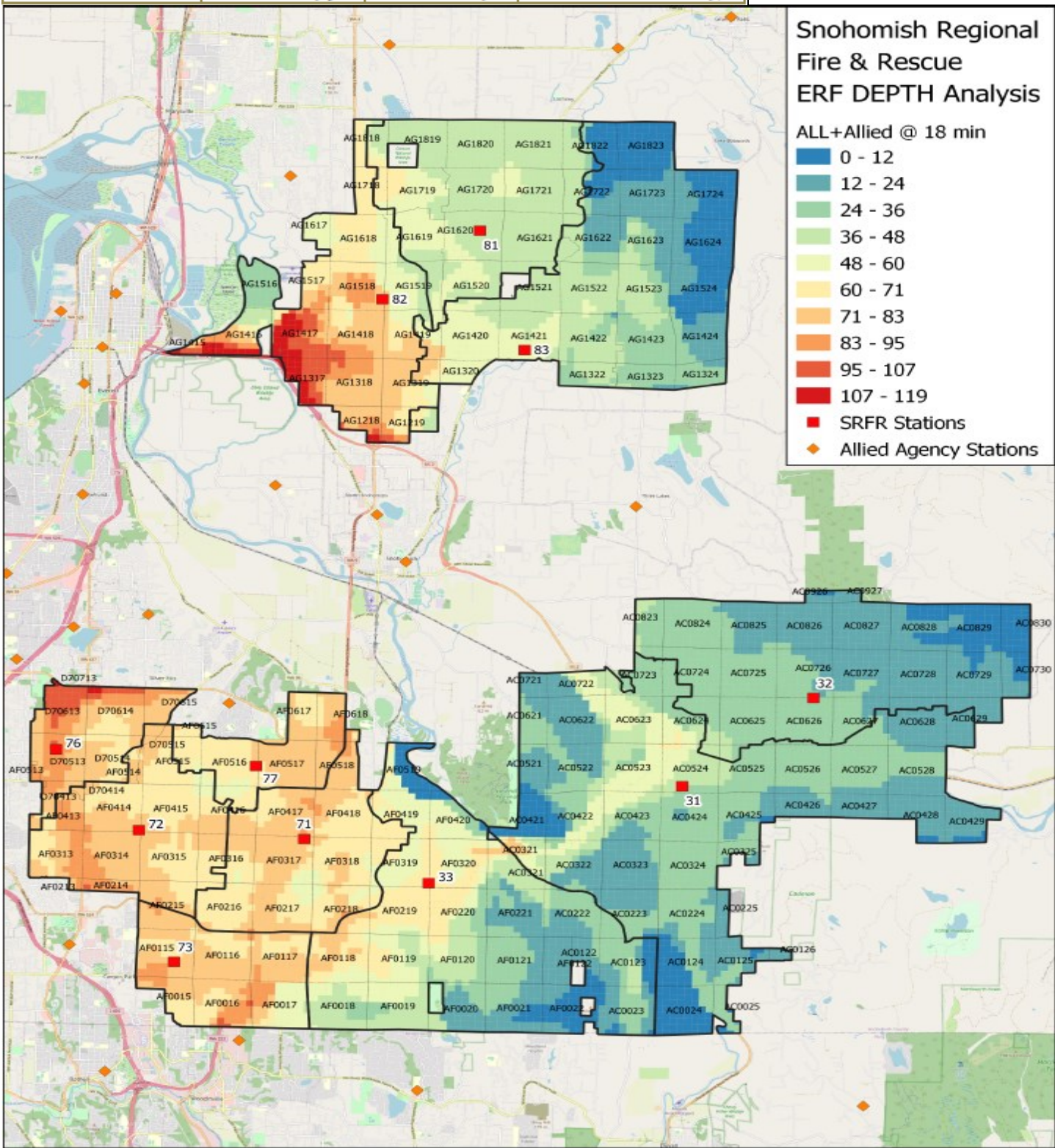
Rank	Station	Drive Time	Station Capture	Total Capture	Percent Capture
1	82	6	1,970	1,970	15.03%
2	76	6	1,760	3,730	28.46%
3	31	6	1,454	5,184	39.55%
4	72	6	1,262	6,446	49.18%
5	81	6	958	7,404	56.48%
6	71	6	443	7,847	59.86%
7	33	6	345	8,192	62.50%
8	83	6	342	8,534	65.11%
9	73	6	304	8,838	67.42%
10	32	6	221	9,059	69.11%
11	77	6	113	9,172	69.97%
12	33	13	1,508	10,680	81.48%
13	83	13	934	11,614	88.60%
14	72	13	622	12,236	93.35%
15	32	13	342	12,578	95.96%
16	82	13	158	12,736	97.16%
17	31	13	111	12,847	98.01%
18	81	13	7	12,854	98.06%
19	77	13	4	12,858	98.09%
20	76	13	0	12,858	98.09%
21	73	13	0	12,858	98.09%
22	71	13	0	12,858	98.09%



Distribution – Heat Map Analysis Indicating Increased Frequency of Incidents. Station 31, 76, and 82 have the most density of emergency incidents as compared to neighboring districts.

These analyses are modeled using GIS data in order to more accurately assess capabilities. The tabular data demonstrates the saturation for ERF at various travels times and geographic areas. The mapping is representative of the concentration of personnel within 18-minutes and includes automatic-aid.

Travel Time Objective	Combined Jurisdiction	Northern Battalion	Western/Eastern Battalion
8-Minute	9.30%	13.42%	6.99%
10-Minute	35.25%	44.04%	29.38%
13-Minute	56.20%	63.65%	49.73%
15-Minute	67.46%	70.95%	62.35%
18-Minute	85.38%	80.50%	81.57%

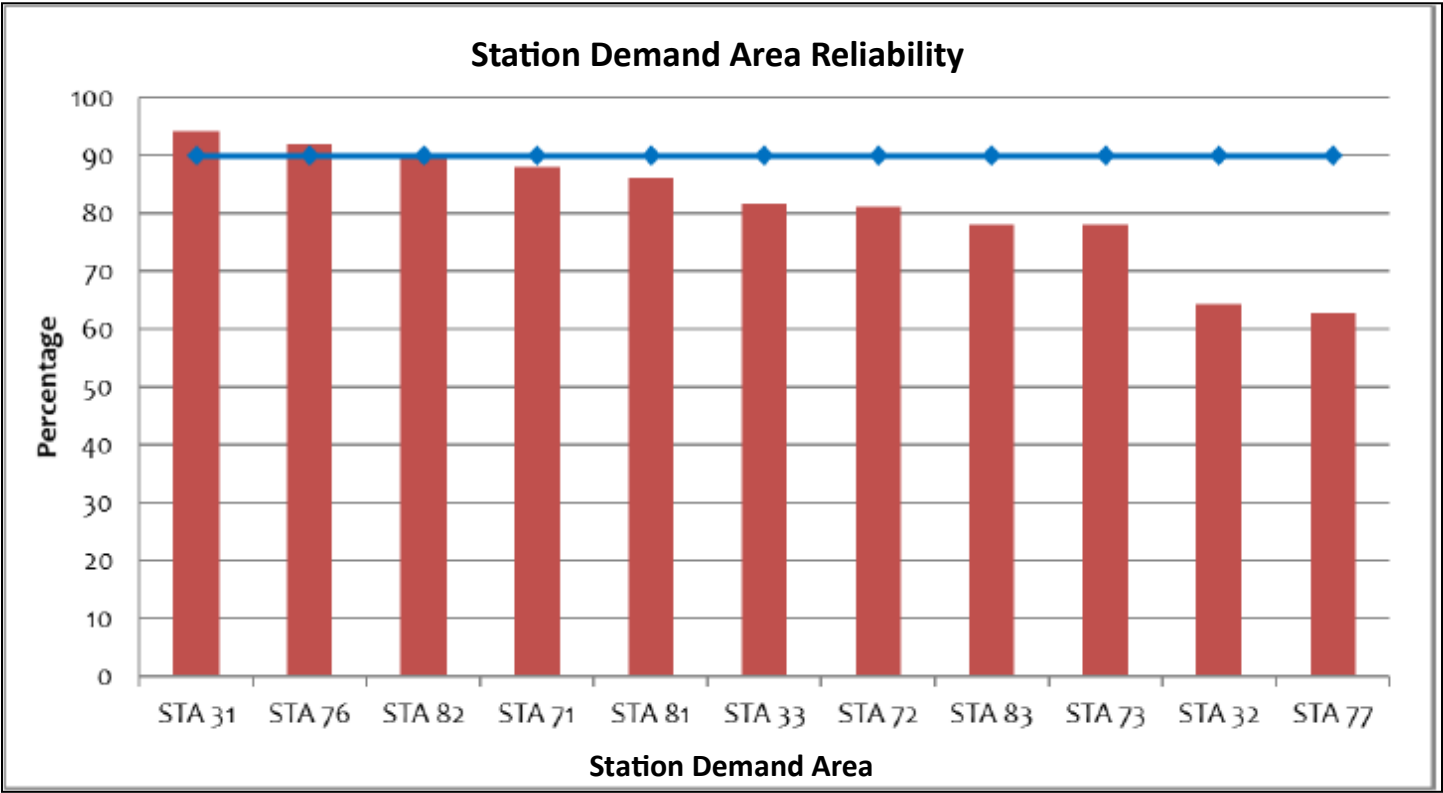


Reliability Analysis -District Wide

The first step in assessing the reliability of the deployment model or system performance is to understand the District’s availability to handle the requests for service that occur within the jurisdiction. **SRFR is available to respond to 97.4% of the requests for service that are originating within the jurisdiction**, with a total of 347 incidents responded to by other agencies with no SRFR units responding.

Reliability Analysis –First Due Area

The reliability of the distribution model is a factor of how often the response model is available and able to respond to the call within the assigned demand area. If at least one unit from the first due area is able to respond to a call, we consider the station is able to response to the call within the assigned area. Utilizing the District’s Fire Demand Areas (FDA), analyses reveal that stations 31, 76 and 82 are capable of meeting their demand for services at the 90th percentile. In other words, when request for service is received FDA 31, 76 and 82 are available to answer the call nine out of 10 times. Station 32 and 77 had the lowest reliability, and are 64 and 63 percent respectively. It is considered both best practice and the most reliable measure to perform at the 90th percentile as indicated by the “blue” line in the Figure below. This analysis utilized all dispatched calls within the jurisdiction and the performance included all assigned units to the specific FDA.



Reliability Analysis –First Due Area Cont'd

Fire suppression companies (engine or ladder) are consistently staffed across each of the FDAs. Analyses were conducted to examine the ability of the specifically assigned Engine or ladder Company to answer the request for service responded to by at least one engine or ladder unit. Engine 31 or Ladder 31 responded to 87% of the FDA's 31 calls, which had engine or ladder units. Engine 32 responded to 27% of the FDA's 32 calls. E33 or L33 responded to 63% of station 33 calls. Engine E71 responded to 58% of the FDA's 71 calls. Ladder L72 responded to 55% of the FDA's 72 calls. Engine E73 responded to 60% of the FDA's 73 calls. Engine E76 responded to 96% of the FDA's 76 calls. Engine E77 responded to 40% of the FDA's 77 calls. Engine E81, E82 and E83 responded to 58%, 84% and 63% of calls in their own station demand zone, respectively.

Station Demand Zone	E31/L31	E32	E33/L33	E71	L72	E73	E76	E77	E81	E82	E83	Total
Station 31	1,801 87%	149	87	9	14	3		7		3	2	2,075
Station 32	264	103 27%	11		1							379
Station 33	19		176 63%	40	10	31	2	1				279
Station 71			28	103 58%	21	13	2	10				177
Station 72			1	33	310 55%	20	187	12				563
Station 73			31	46	22	152 60%	2					253
Station 76	1		1	2	53	1	1445 96%	7		1		1,511
Station 77			1	22	12		11	31 40%				77
Station 81					1				190 58%	81	56	328
Station 82								1	64	753 84%	76	894
Station 83	1								50	31	139 63%	221
Total	2086	252	336	255	444	220	1,649	69	304	869	273	6,757

Reliability Analysis –First Due Area Cont'd

BLS or ALS units are consistently staffed across each of the FDAs. Analyses were conducted to examine the ability of the specifically assigned EMS unit to answer the request for service. BLS and ALS units in Station 31 responded to 82% of the FDA's 31 calls. ALS unit M32 responded to 47% of the FDA's 32 calls. BLS unit in Station 33 responded to 46% of the FDA's 33 calls. ALS unit M71 or MSO71 responded to 53% of the FDA's 71 calls. BLS unit A72 responded to 51% of the FDA's 72 calls. BLS unit A73 responded to 45% of the FDA's 73 calls. ALS unit M76 responded to 46% of the FDA's 76 calls. BLS unit A77 responded to 46% of the FDA's 77 calls. BLS and ALS units in stations 81, 82 and 83 responded to 76%, 74% and 44% of calls in their own station demand zone, respectively. The detailed engine responses are presented below.

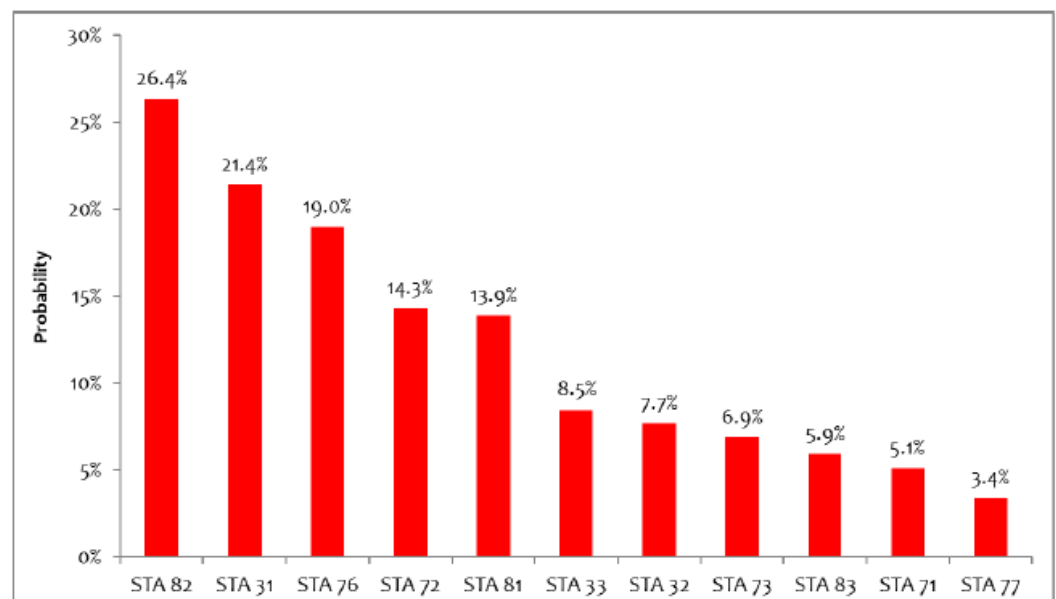
Station Demand Zone	A31/ M31	M32	A33/ A74	M71/ MSO71	A72	A73	M76	A77	A81/ M81	A82/ M82	A83	Total
Station 31	2,210 82%	271	88	127	1	1		1	1	4		2,704
Station 32	326	330 47%	17	27						2		702
Station 33	50	3	306 46%	240	8	47	1	9				664
Station 71			63	288 53%	75	54	10	49		1		540
Station 72			4	263	919 51%	97	464	72				1,819
Station 73	1		34	223	48	262 45%	12	4				584
Station 76				87	107	96	745 46%	568				1,603
Station 77			4	76	52	4	26	139 46%				301
Station 81				25					1,318 76%	212	189	1,744
Station 82				89					404	2,545 74%	385	3,423
Station 83		1		19					190	106	244 44%	560
Total	2,587	605	516	1,464	1,210	561	1,258	842	1,913	2,870	818	14,644

Overlapped (Simultaneous) Incidents

Overlapped calls are defined as the rate at which another call was received for the same FDA while there were one or more ongoing calls in the same FDA. For example, if there is one call in station 76's zone, before the call was cleared another request in station 76's zone occurred and the second call would be captured as an overlapped call. If there is a long structure fire call ongoing, all calls occurred after the structure fire started, but before the structure fire call was cleared would be counted as overlapped calls. Understanding the probability of overlapped calls occurs will help to determine the number of units to staff for each station. In general, the larger the call volume a FDA has, it is more likely to have overlapped or simultaneous calls. The distribution of the demand throughout the day will impact the chance of having overlapped or simultaneous calls. The duration of a call will also have major influences, since the longer time it takes to clear a request, the more likely to have an overlapped request.

Station 82 has the second most demand, and the duration of calls lasted at 50 minutes, which is significantly longer than calls in station 31, and thus it has the highest probability of having overlapped calls at 26.4%. This means that during the period of an active station 82 call, there is a 26.4% chance that another incident in station 82 will occur. Station 31 has the most demands (20 percent of the District's total calls), and thus the second highest probability of having overlapped calls at 21.4%, followed by station 76 at 19.0%. Results are presented below.

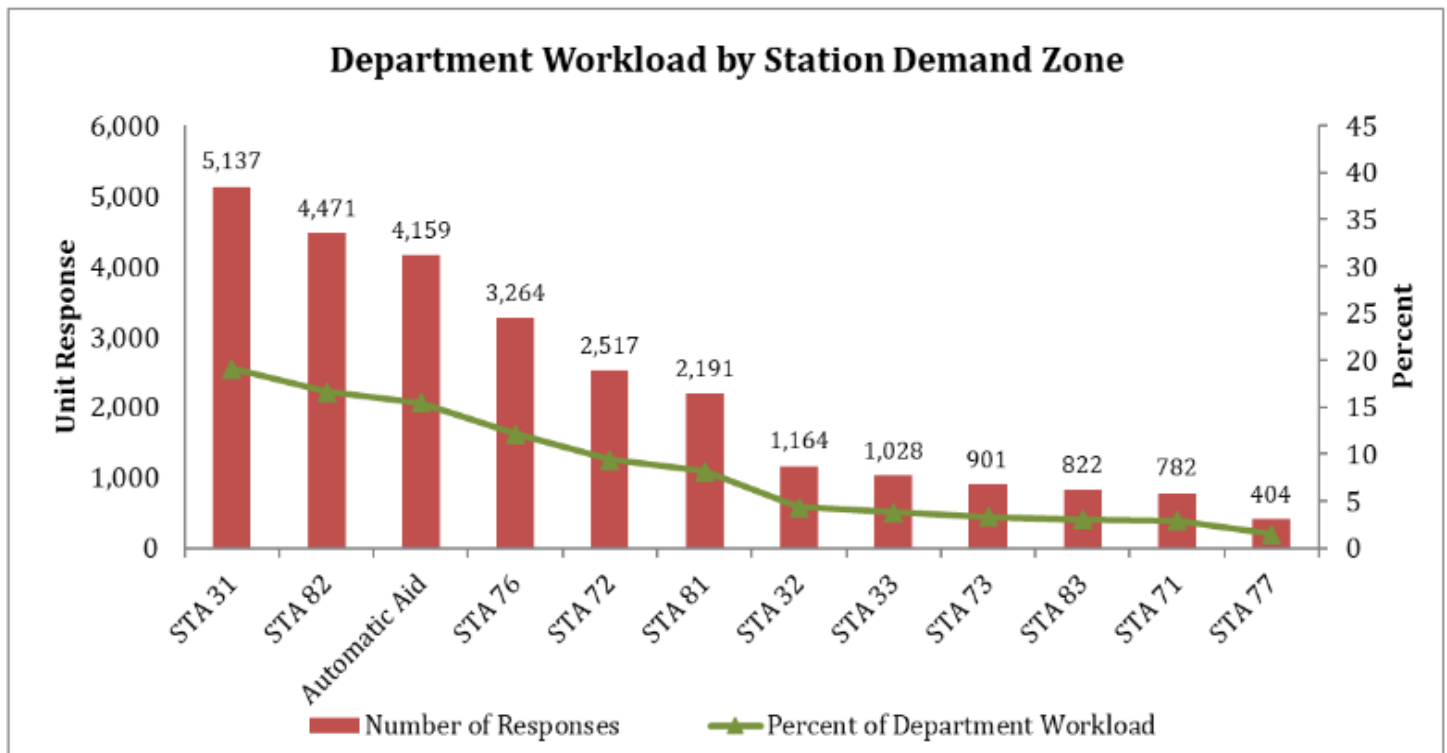
First Due Zone	Overlapped Calls	Total Calls	Probability of Overlapped Calls Occurring	Duration (Minutes)
STA 82	678	2,572	26.4%	49.9
STA 31	572	2,673	21.4%	38.9
STA 76	367	1,934	19.0%	51.3
STA 72	219	1,531	14.3%	52.3
STA 81	190	1,367	13.9%	51.7
STA 33	50	590	8.5%	54.6
STA 32	53	689	7.7%	43.8
STA 73	36	522	6.9%	48.8
STA 83	29	490	5.9%	52.0
STA 71	22	430	5.1%	54.7
STA 77	10	294	3.4%	45.5
Total	2,226	13,092	17.0%	48.3



Workload Demand

First Due Zone	Number of Responses	Percent of Department Workload	Cumulative Percent of Department Workload
STA 31	5,137	19.1	19.1
STA 82	4,471	16.7	35.8
STA 76	3,264	12.2	48.0
STA 72	2,517	9.4	57.3
STA 81	2,191	8.2	65.5
STA 32	1,164	4.3	69.8
STA 33	1,028	3.8	73.7
STA 73	901	3.4	77.0
STA 83	822	3.1	80.1
STA 71	782	2.9	83.0
STA 77	404	1.5	84.5
Automatic Aid	4,159	15.5	100.0
Total	26,840	100.0	100.0

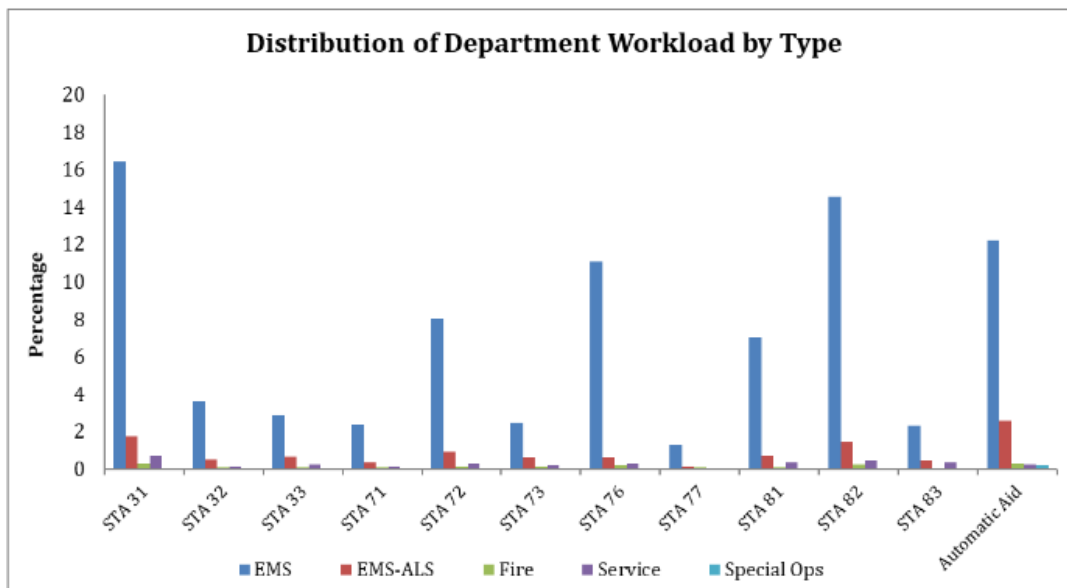
Station 31 by itself makes up almost 20% of the District's workload, followed closely by station 82 at almost 17%. In fact, the top three stations (31, 82, 76) account for almost 50% of the SRFR's workload. Automatic aid accounts for over 15% of the District's workload, but is an essential partnership to account for times when SRFR needs to have rigs from other jurisdictions assist on calls.



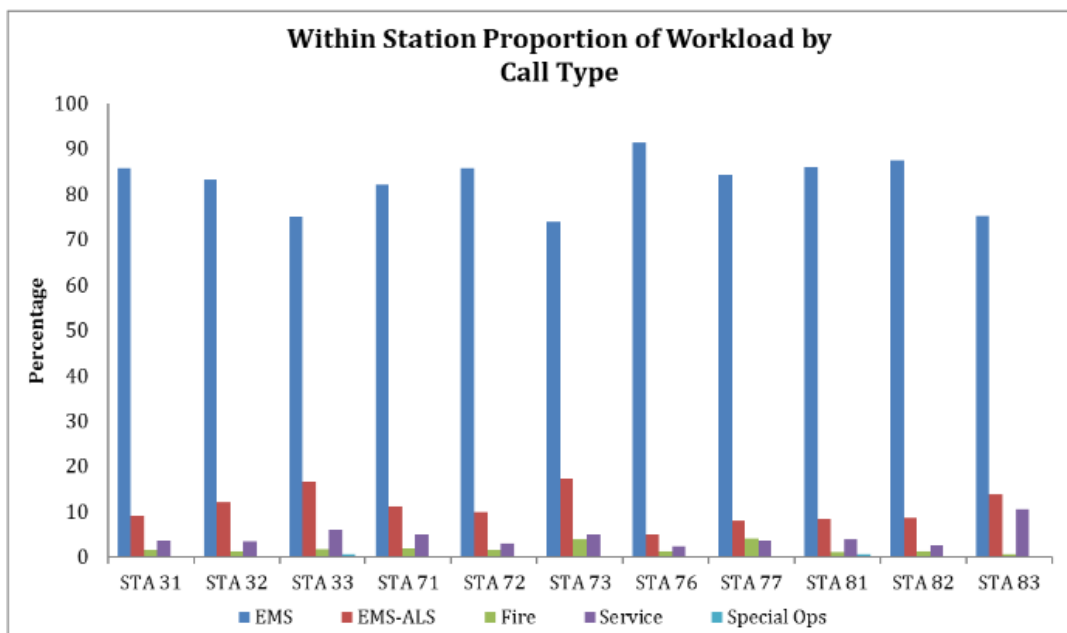
Workload Demand

First Due Area	Fire	EMS	Hazmat	Technical Rescue	Other	Total Unit Responses
STA 31	466	4,400	80	0	191	5,137
STA 32	140	968	16	0	40	1,164
STA 33	170	771	17	7	63	1,028
STA 71	87	641	16	0	38	782
STA 72	247	2,155	39	0	76	2,517
STA 73	156	666	35	0	44	901
STA 76	165	2,978	44	0	77	3,264
STA 77	32	340	17	0	15	404
STA 81	186	1,881	24	15	85	2,191
STA 82	383	3,905	60	9	114	4,471
STA 83	114	617	5	0	86	822
Automatic Aid	693	3,272	82	52	60	4,159
Total	2,839	22,594	435	83	889	26,840

As with most organizations, the majority of emergency responses are EMS related (84.1%) calls for help.



Automatic aid is the third highest “district” for EMS workload and the highest area for fires.



Stations 33, 73, and 83 have the highest within district proportion of EMS-ALS calls.

Apparatus Deployed Hours

Across all jurisdictions, all units of the district made 26,847 responses, and were busy on calls for a total of 15,881 hours in 2019. Overall, average busy minutes per response was just over 35 minutes, and average number of responses per call was 1.6. Outside of the jurisdiction, fire district 7 units made 4,152 responses to 3,241 calls and were busy on these calls for a total of 2,084 hours. Average busy minutes per response was approximately 30 minutes, and average number of responses per call was 1.3.

Call Category	Number of Calls	Number of Responses	Average Responses per Call	Total Busy Hours	Avg. Busy Minutes per Response	Average Calls per Day	Avg. Responses per Day	Avg. Busy Hours per Day
EMS	10,760	19,336	1.8	12,291	38:06	29.5	53.0	33:40
Fire Suppression	1,373	2,146	1.6	1,041	29:06	3.8	5.9	2:51
Hazmat	202	353	1.7	143	24:18	0.6	1.0	0:24
Technical Rescue	7	31	4.4	9	17:54	0.0	0.1	0:01
Other	766	829	1.1	312	22:36	2.1	2.3	0:51
Automatic Aid	3,241	4,152	1.3	2,084	30:06	8.9	11.4	5:43
Total	16,349	26,847	1.6	15,881	35:30	44.8	73.6	43:31

Before SRFR was formed, data was analyzed by district 7 and Lake Stevens, with stations 31-77 accounting for 17,815 runs and Lake Stevens accounting for 8,996 runs, totaling 26,811.

Agency	Station	Avg Busy Minutes per Run	Total Busy Hours	Number of Runs
31D07	Station 31	30:26	2,762	5,444
	Station 32	38:10	625	983
	Station 33	37:47	561	891
	Station 71	32:49	1,396	2,552
	Station 72	39:15	1,210	1,850
	Station 73	43:29	607	837
	Station 76	31:09	2,162	4,165
	Station 77	54:28	992	1,093
District 7 Total		34:44	10,315	17,815
31D08	Station 81	39:48	2,193	3,306
	Station 82	35:22	2,643	4,483
	Station 83	34:51	701	1,207
Lake Stevens Fire Total		36:56	5,537	8,996
FD7 Total		35:29	15,852	26,811

Workload by Station and Unit

The station-level demand is more reflective for deployment decisions, and the unit-level workload will help evaluate the utilization of physical apparatus and assist with apparatus procurement or maintenance decisions. Overall, all units made a total of 26,811 responses, and the total busy hours were 15,852 hours. Stations 31, 76 and 82 were the top three busiest stations. A82, M76, M82 and M31 were the top four utilized BLS/ALS units, and each made more than 1,500 responses in a year. E76, E31, and E82 were the top three utilized fire apparatus. E76 and E31 made more than 2,000 responses in a year, and E82 made 978 responses in a year.

Station	Apparatus	Apparatus Type	Avg. Busy Minutes per Response	Annual Busy Hours	Annual Total Responses
Station 31	E31/E31A/BR31/BR31A/TR31	Cross Staffed	20:36	754.4	2,197
	M31/T31	Cross Staffed	42:12	1096.6	1,558
	A31	Aid - BLS	34:30	734.8	1,278
	B31	Battalion	24:54	156.0	376
	IN31	Inspector	15:48	4.2	16
	BT31	Boat	50:24	10.9	13
	FM31	Fire Marshall	15:42	1.0	4
	CL31	Clergy (Chaplain)	114:54	3.8	2
	Station 31 Total		30:24	2,762	5,444
Station 32	M32/E32	Cross Staffed	38:12	625.3	983
	Station 32 Total		38:12	625	983
Station 33	A33/BR33/E33/L33	Cross Staffed	37:48	561.1	891
	Station 33 Total		37:48	561	891
Station 71	E71/M71/HZ71/T71/BR71	Cross Staffed	41:06	917.0	1,339
	MSO71	Medical Services Officer	21:48	238.1	655
	B71	Battalion	22:12	187.8	508
	CRP71	Community Risk Paramedic	70:12	41.0	35
	CL71	Clergy (Chaplain)	59:24	8.9	9
	DC71	Tender	17:30	0.9	3
	CH71	Deputy Chief	36:18	1.8	3
	Station 71 Total		32:48	1,396	2,552
Station 72	L72/A72	Cross Staffed	39:12	1203.7	1,841
	DC72	Deputy Chief	43:18	6.5	9
	Station 72 Total		39:12	1,210	1,850
Station 73	E73/A73	Cross Staffed	43:36	604.1	831
	DC73	Deputy Chief	24:30	2.4	6
	Station 73 Total		43:30	607	837
Station 76	E76	Engine	24:00	921.7	2,308
	M76	Medic - ALS	40:06	1240.6	1,857
	Station 76 Total		31:06	2,162	4,165
Station 77	A77/E77	Cross Staffed	54:30	992.2	1,093
	Station 77 Total		54:30	992	1,093
Station 81	A81/BR81/BR81A/E81	Cross Staffed	37:18	972.3	1,562
	M81	Medic - ALS	45:48	1086.8	1,425
	B81	Battalion	20:42	103.3	300
	FM81	Fire Marshall	47:24	7.9	10
	CL81	Clergy (Chaplain)	152:30	22.9	9
	Station 81 Total		39:48	2,193	3,306
Station 82	A82	Aid - BLS	41:30	1327.1	1,917
	M82	Medic - ALS	37:00	971.0	1,576
	E82/BR82	Cross Staffed	20:42	339.5	982
	BT82	Boat	21:48	1.8	5
	FM82	Fire Marshall	79:24	2.6	2
	B82	Battalion	26:48	0.4	1
	Station 82 Total		35:24	2,643	4,483
Station 83	A83/E83/T83	Cross Staffed	34:54	701.2	1,207
	Station 83 Total		34:54	701	1,207

Unit Hour Utilization

The number of calls responded to primarily address the wear and tear on the apparatus. Another measure, time on task, is necessary to evaluate best practices in efficient system delivery and consider the impact workload has on personnel. Unit Hour Utilization (UHU) determinants were developed by mathematical model. This model includes both the proportion of calls handled in each major service area (Fire, EMS, ALS, Special-Ops, and Service) and total unit time on task for these service categories in 2019. The resulting UHU's represent the percentage of the work period (24 hours) that is utilized responding to requests for service.

The International Association of Fire Fighters (IAFF) recommends that 24-hour units do not surpass a 0.25, or 25% workload threshold. Similarly, the International Association of Fire Chiefs (IAFC) recommend 24-hour units do not surpass a 0.30, or 30% threshold. In other words, best practice would not have units and personnel exceeding 30%, of their workday responding to calls. This would equate to approximately 8 hours of the 24-hour period. These thresholds take into consideration the necessity to accomplish non-emergency activities such as training, health and wellness, public education, and fire inspections.

The District is currently operating within the boundaries of nationally recommended best practices with respect to workload. Overall, the District is performing at approximately 0.09, or 9% excluding Battalion chief, brush truck, HazMat unit and the tender unit. The most utilized unit is the A82 in station 82, at 0.15. M76 is the second most utilized at 14%. At the current workload utilization rates, the District should have a limited impact on their level of readiness or system performance.

Station	Unit Report	Total Busy Hours	UHU	IAFF	IAFC
Station 82	A82	1,327	0.15	0.25	0.30
Station 76	M76	1,241	0.14	0.25	0.30
Station 72	L72/A72	1,204	0.14	0.25	0.30
Station 31	M31/T31	1,097	0.13	0.25	0.30
Station 81	M81	1,087	0.12	0.25	0.30
Station 77	A77/E77	992	0.11	0.25	0.30
Station 81	A81/BR81/BT81/E81	972	0.11	0.25	0.30
Station 82	M82	971	0.11	0.25	0.30
Station 71	E71/M71/HZ71/T71/BR71	917	0.11	0.25	0.30
Station 76	E76	922	0.11	0.25	0.30
Station 31	E31/E31A/BR31/BR31A/TR31	754	0.09	0.25	0.30
Station 31	A31	735	0.08	0.25	0.30
Station 83	A83/E83/T83	701	0.08	0.25	0.30
Station 32	M32/E32	625	0.07	0.25	0.30
Station 73	E73/A73	604	0.07	0.25	0.30
Station 33	A33/BR33/E33/L33	561	0.06	0.25	0.30
Station 82	E82/BR82	340	0.04	0.25	0.30
Station 71	MSO71	238	0.03	0.25	0.30
Station 71	B71	188	0.02	0.25	0.30
Station 31	B31	156	0.02	0.25	0.30
Station 81	B81	103	0.01	0.25	0.30

Workload by Demand Zone-First Due Area

Another method of assessing the effectiveness of the distribution model is to analyze the demand for services across the distribution model. Workload is assessed at the station demand zone level and at the individual unit level. Analyses illustrate that Station Demand Zones 31, 82 and 76 each answer 19.1%, 16.7% and 12.2% of the total requests for services. Collectively these three demand zones accounted for 48% of the District's total workload. Automatic aid responses accounted for 15.5% of the total.

First Due Area	Number of Responses	Percent of District Workload	Cumulative Percent of District Workload
STA 31	5,137	19.1	19.1
STA 82	4,471	16.7	35.8
STA 76	3,264	12.2	48.0
STA 72	2,517	9.4	57.3
STA 81	2,191	8.2	65.5
STA 32	1,164	4.3	69.8
STA 33	1,028	3.8	73.7
STA 73	901	3.4	77.0
STA 83	822	3.1	80.1
STA 71	782	2.9	83.0
STA 77	404	1.5	84.5
Automatic Aid	4,159	15.5	100.0
Total	26,840	100.0	100.0

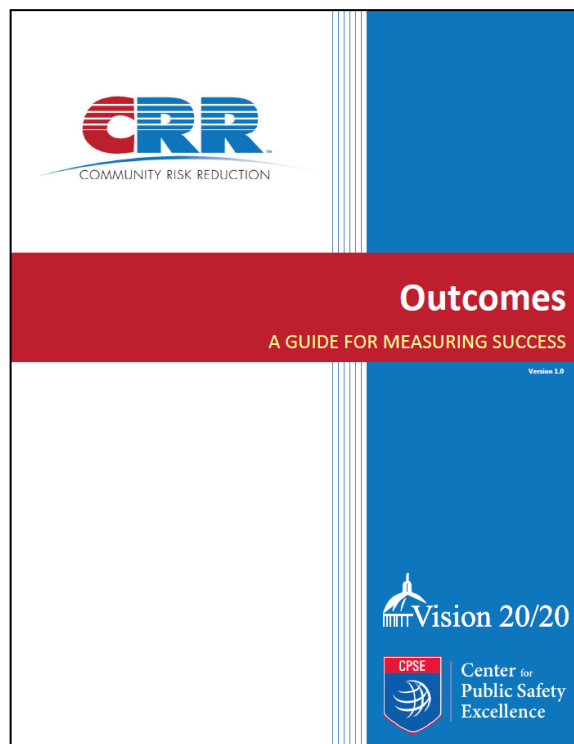
First Due Area	Fire	EMS	Hazmat	Technical Rescue	Other	Total Unit Responses
STA 31	466	4,400	80	0	191	5,137
STA 32	140	968	16	0	40	1,164
STA 33	170	771	17	7	63	1,028
STA 71	87	641	16	0	38	782
STA 72	247	2,155	39	0	76	2,517
STA 73	156	666	35	0	44	901
STA 76	165	2,978	44	0	77	3,264
STA 77	32	340	17	0	15	404
STA 81	186	1,881	24	15	85	2,191
STA 82	383	3,905	60	9	114	4,471
STA 83	114	617	5	0	86	822
Automatic Aid	693	3,272	82	52	60	4,159
Total	2,839	22,594	435	83	889	26,840

Event Outcomes

Outcome measures tell us if our ultimate goals of public safety have been reached by documenting changes in fire, ems, hazmat, technical rescue, or community risk reduction efforts. As this is SRFR's first formal Standards of Coverage, many of the outcomes measures are still in process. The district utilized *CRR Outcomes: A guide for measuring success* published by Vision 20/20 and the Center for Public Safety Excellence as a guide to identify core measures in each major program area. Refinement of the data to ensure accuracy is in process and will be finalized as of the first annual compliance report; providing a solid view of the dis-

Performance Indicator 2B.3

Event outputs and outcomes are assessed for three (initial accrediting agencies) to five (currently accredited agencies) immediately previous years.



Fire

One of the most visible outcomes of a fire and rescue service is the percentage of property and contents saved during the course of a structural fire. SRFR is analyzing fire data for the past three years including property and contents lost, property and contents saved, and overall save rate %.

EMS

Many factors contribute to the survival of out-of-hospital cardiac arrest including EMS response time, experience/case volume of the paramedic, layperson CPR, age/health of patient, type of rhythm encountered, etc. However, one outcome has generally been accepted as a positive marker of EMS system performance; Return of Spontaneous Circulation (ROSC). Global rates of ROSC for out of hospital arrests hover just under 30%.

Technical Rescue

Much like hazardous materials incidents, fortunately technical rescue incidents are rare as compared to EMS or Fire calls, but usually people's lives are on the line during these low frequency, high risk events. Over the past three years, SRFR responded to 83 technical rescue incidents, potentially saving numerous lives from injuries sustained during these incidents.

Hazmat

Fortunately hazardous materials incidents are generally a relatively rare occurrence, although when they do occur, the impacts can be devastating to not only the people involved but the environment as well. SRFR responded to 435 hazardous materials events over the last three years. SRFR is currently analyzing the gallons of product that were successfully stopped from exiting their containers or entering storm drains.

Community Risk Reduction

There is not a single CRR measure that defines program success, but generally speaking the number and severity of fires (including dollar loss as measured above in the Fire outcome area) and injuries or deaths are the ultimate outcomes of a program. SRFR is actively analyzing several measures for code compliance, FLS Education, plan review, and fire investigation programs from page 8-9 from the Outcome guide.

Benchmark and Baseline Statements and Tables

The agency has established benchmark performance objectives and baseline measurements for four major categories of emergency responses including fires, emergency medical services, hazardous materials and technical rescue incidents. These objectives and measures are also tailored by risk level classification for low, moderate, high and maximum risks, including the amount of personnel required (effective response force) to perform the required critical tasking that aligns with both the needs of the incident and Districtl policies and standard operating guidelines.

In simple terms, the benchmark is the desired level of performance and the baseline is the current level of performance. Rather than using averages for response times, these goals are measured against 90% fractals, aligning with best practices in the fire industry for both the Center for Public Safety Excellence and National Fire Protection Association standards. This measurement style affords a much more accurate view of performance.

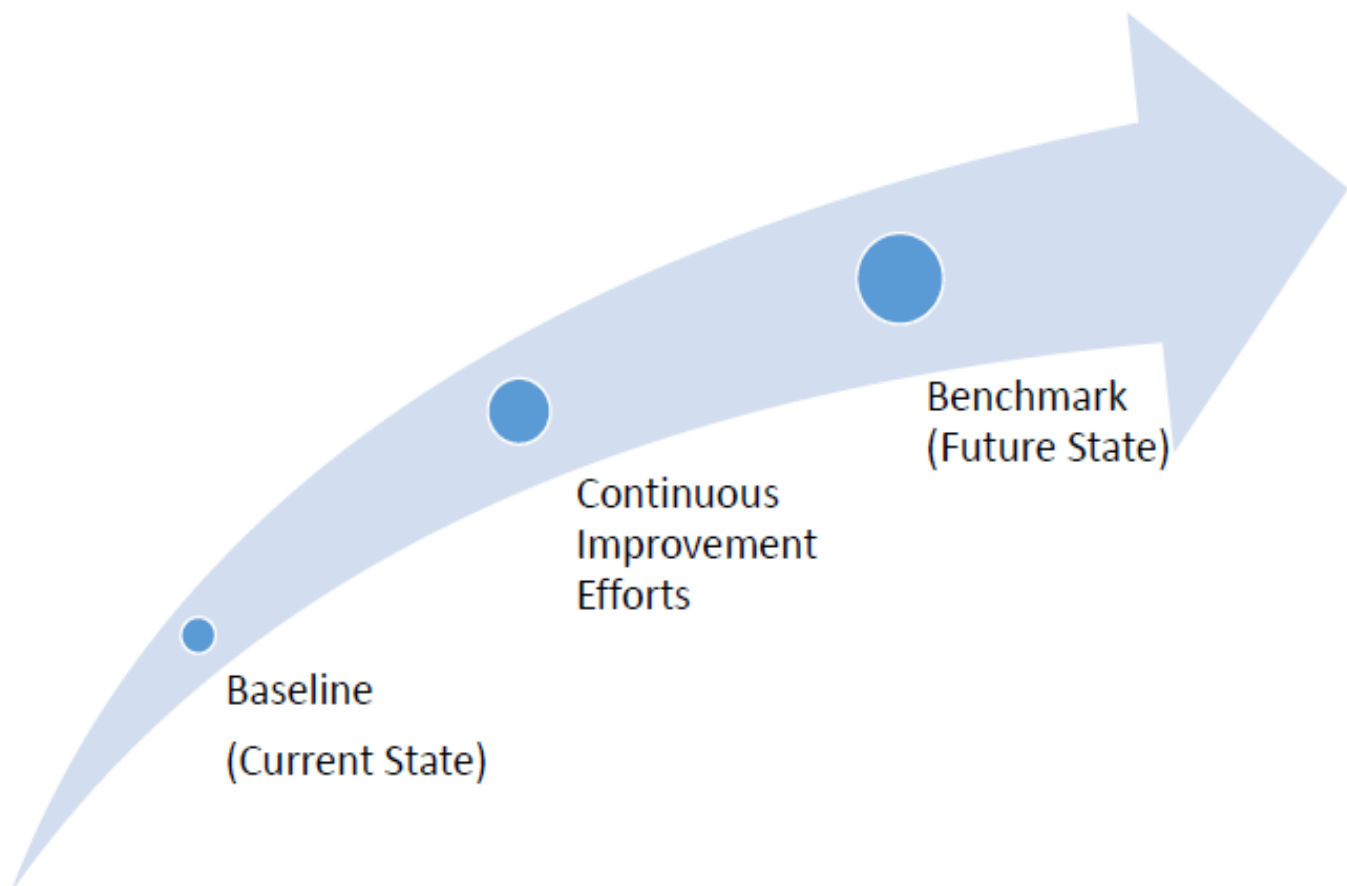
The benchmark statements and baseline charts all reflect current Districtl practices. Historic data presented in the baseline charts represents actual incident data from 2017-2019. Automatic Baseline data is only available for certain risk levels for each of the four incident types, due to some risk levels not happening frequently enough to produce valid data. These are clearly noted within each table and the corresponding baseline statements.

Core Competency 2C.5

The agency has identified the total response time components for delivery of services in each service program area and found those services consistent and reliable within the entire response area.

Performance Indicator 2C.7

The agency has identified the total response time components for delivery of services in each service program area and assessed those services in each planning zone.



Performance Statements - Fires

Benchmark Statements

For **all fire incidents** (low, moderate, high and maximum risk), the 90th percentile of total response time for the arrival of the first due unit, staffed with a minimum of three firefighters, shall be 9 minutes and 22 seconds (urban) or 12 minutes and 49 seconds (rural). The first due unit shall be capable of establishing command, sizing up the incident, utilize appropriate tactics in accordance with District standard operating guidelines, develop an initial action plan, extend an appropriate hose line and begin initial fire attack or rescue.

For **moderate risk fires**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 18 personnel, shall be 15 minutes (urban) or 18 minutes (rural). The effective response force shall have the capability to establish command, provide an uninterrupted water supply, advance an attack line and backup line for fire control, establish a rapid intervention crew, complete forcible entry and ventilation, conduct primary and secondary searches, control utilities and perform salvage and overhaul operations. These critical tasks shall be done in a safe manner in accordance with department standard operating guidelines.

For **high risk fires**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 26 personnel, shall be 18 minutes (urban) or 21 minutes (rural). The effective response force shall have the capability to establish command, provide an uninterrupted water supply, advance an attack line and backup line for fire control, place elevated streams into service, establish a rapid intervention crew, complete forcible entry and ventilation, conduct primary and secondary searches, control utilities and perform salvage and overhaul operations. These critical tasks shall be done in a safe manner in accordance with department standard operating guidelines.

For **maximum risk fires**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 35 personnel, shall be 21 minutes (urban) or 24 minutes (rural). The effective response force shall have the capability to establish command, provide an uninterrupted water supply, advance multiple attack lines and backup lines for fire control, place elevated streams into service, establish a rapid intervention crew, complete multiple forcible entry and ventilation procedures, conduct primary and secondary searches, control utilities, perform occupant evacuation and perform salvage and overhaul operations. These critical tasks shall be done in a safe manner in accordance with department standard operating guidelines.

Performance Statements - Fires

Baseline Statements

For **all fires** (low, moderate, high and maximum risk), the 90th percentile of total response time for the arrival of the first due unit, staffed with a minimum of three firefighters, was 11 minutes and 10 seconds. The first due unit is capable of establishing command, sizing up the incident, utilizing appropriate tactics in accordance with District standard operating guidelines, developing an initial action plan, extending an appropriate hose line and beginning initial fire attack or rescue.

Low-Risk Fire – 90 th Percentile Times – Baseline Performance			2017-2019	2017	2018	2019
Alarm Handling	Pick-up to Dispatch	Urban	2:57	3:21	2:54	2:43
		Rural	3:43	3:25	3:56	4:01
Turnout Time	Turnout Time	Urban	2:44	2:52	2:50	2:32
		Rural	2:48	3:02	2:47	2:43
Travel Time	Travel Time 1 st Unit Distribution	Urban	7:04	7:02	7:06	7:04
		Rural	11:38	11:36	11:53	11:34
	Travel Time ERF Concentration	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Total Response Time	Total Response Time 1 st Unit on Scene Distribution	Urban	11:10	11:09	11:20	11:06
			n=1,751	n=624	n=593	n=534
		Rural	15:44	15:18	16:01	16:04
			n=1,073	n=364	n=339	n=370
	Total Response Time ERF	Urban	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A

For **moderate risk fires**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 18 personnel, was not statistically relevant due to the fact that only two incidents occurred where the ERF was assembled. The effective response force has the capability to establish command, provide an uninterrupted water supply, advance an attack line and backup line for fire control, establish a rapid intervention crew, complete forcible entry and ventilation, conduct primary and secondary searches, control utilities and perform salvage and overhaul operations. These critical tasks are done in a safe manner in accordance with department standard operating guidelines.

Moderate-Risk Fire – 90 th Percentile Times – Baseline Performance			2017-2019	2017	2018	2019
Alarm Handling	Pick-up to Dispatch	Urban	3:44	3:40	3:29	4:00
		Rural	2:53	3:20	4:17	2:46
Turnout Time	Turnout Time	Urban	2:49	3:24	2:47	2:36
		Rural	3:29	4:45	2:39	2:53
Travel Time	Travel Time 1 st Unit Distribution	Urban	5:55	5:54	5:38	6:20
		Rural	10:12	9:45	9:42	11:23
	Travel Time ERF Concentration	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Total Response Time	Total Response Time 1 st Unit on Scene Distribution	Urban	9:28	9:49	8:48	9:22
			n=139	n=61	n=37	n=41
		Rural	14:29	13:27	14:12	15:43
			n=109	n=36	n=44	n=29
	Total Response Time ERF	Urban	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0
		Rural	N/A	N/A	N/A	N/A
			n=2	n=0	n=0	n=2

Performance Statements - Fires

Baseline Statements

For **high risk fires**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 26 personnel, was not statistically relevant due to the fact that only one incident occurred where the ERF was assembled. The effective response force has the capability to establish command, provide an uninterrupted water supply, advance an attack line and backup line for fire control, place elevated streams into service, establish a rapid

High-Risk Fire – 90 th Percentile Times – Base-line Performance			2017-2019	2017	2018	2019
Alarm Handling	Pick-up to Dispatch	Urban	4:20	5:40	2:15	7:17
		Rural	3:04	N/A	N/A	N/A
Turnout Time	Turnout Time	Urban	3:31	3:58	2:46	3:40
		Rural	3:01	N/A	N/A	N/A
Travel Time	Travel Time 1 st Unit Distribution	Urban	4:59	5:05	4:27	5:26
		Rural	6:11	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Total Response Time	Total Response Time 1 st Unit on Scene Distribution	Urban	9:02	8:43	8:22	10:48
			n=69	n=23	n=24	n=22
		Rural	10:35	N/A	N/A	N/A
			n=20	n=6	n=5	n=9
	Total Response Time ERF	Urban	N/A	N/A	N/A	N/A
			n=1	n=0	n=0	n=1
		Rural	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0

intervention crew, complete forcible entry and ventilation, conduct primary and secondary searches, control utilities and perform salvage and overhaul operations. These critical tasks are done in a safe manner in accordance with department standard operating guidelines.

For **extreme risk fires**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 35 personnel, was not statistically relevant due to the fact that zero incidents occurred where the ERF was assembled. The effective response force has the capability to establish command, provide an uninterrupted water supply, advance multiple attack lines and backup lines for fire control, place elevated streams into service,

Extreme-Risk Fire – 90 th Percentile Times – Baseline Performance			2017-2019	2017	2018	2019
Alarm Handling	Pick-up to Dispatch	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Turnout Time	Turnout Time	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Travel Time	Travel Time 1 st Unit Distribution	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Total Response Time	Total Response Time 1 st Unit on Scene Distribution	Urban	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0
		Rural	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0
	Total Response Time ERF	Urban	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0
		Rural	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0

establish a rapid intervention crew, complete multiple forcible entry and ventilation procedures, and conduct primary and secondary searches. These critical tasks are done in a safe manner in accordance with department standard operating guidelines.

Performance Statements - Emergency Medical Services (EMS)

Benchmark Statements

For all **emergency medical services incidents** (low, moderate, high and maximum risk), the 90th percentile of total response time for the arrival of the first due unit, staffed with a minimum of two firefighters, shall be 9 minutes and 22 seconds (urban) and 12 minutes and 49 seconds (rural). The first due unit shall be capable of establishing command, sizing up the incident, conducting an initial patient assessment, obtaining vitals and patient medical history, initiating basic life support measures in accordance with District standard operating guidelines and transport to an appropriate health care facility.

For **moderate risk EMS incidents**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 5 personnel, shall be 11 minutes and 24 seconds (urban) and 15 minutes and 18 seconds (rural). The units shall be capable of establishing command, sizing up the incident, conducting as initial patient assessment, obtaining vitals and patient medical history, initiating advanced life support efforts in accordance with District standard operating guidelines and transport to an appropriate health care facility.

For **high risk EMS incidents**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 10 personnel, shall be 22 minutes and 28 seconds (urban) and 24 minutes and 22 seconds (rural). The units shall be capable of establishing command, sizing up the incident, conducting initial patient assessments for multiple patients, obtaining vitals and patient medical history, initiating advanced life support efforts in accordance with District standard operating guidelines transporting several patients to an appropriate health care facility.

For **extreme risk EMS incidents**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 15 personnel, shall be 25 minutes (urban) and 27 minutes (rural). The units shall be capable of establishing command, sizing up the incident, triaging multiple patients simultaneously, conducting initial patient assessments for multiple patients, obtaining vitals and patient medical history, initiating basic and advanced life support measures in accordance with District standard operating guidelines, setting up an onsite treatment and triage location, and transporting multiple patients simultaneously to multiple health care facilities.

Performance Statements - Emergency Medical Services (EMS)

Baseline Statements

For all **emergency medical services incidents** (low, moderate, high and maximum risk), the 90th percentile of total response time for the arrival of the first due unit, staffed with a minimum of two firefighters, was 10 minutes and 57 seconds (urban) and 14 minutes and 45 seconds (rural). The first due unit shall be capable of establishing command, sizing up the incident, conducting an initial patient assessment,

Low-Risk EMS – 90 th Percentile Times – Base-line Performance			2017-2019	2017	2018	2019
Alarm Handling	Pick-up to Dispatch	Urban	3:42	3:20	3:49	3:56
		Rural	3:39	2:58	4:09	4:12
Turnout Time	Turnout Time	Urban	2:16	2:26	2:13	2:06
		Rural	2:21	2:31	2:13	2:07
Travel Time	Travel Time 1 st Unit Distribution	Urban	6:43	6:41	6:55	6:34
		Rural	10:32	10:44	10:21	10:31
	Travel Time ERF Concentration	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Total Response Time	Total Response Time 1 st Unit on Scene Distribution	Urban	10:57	10:52	11:06	10:58
			n=11,968	n=4,806	n=3,665	n=3,497
		Rural	14:45	14:29	14:47	15:10
			n=3,194	n=1,479	n=919	n=796
	Total Response Time ERF	Urban	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A

obtaining vitals and patient medical history, initiating basic life support measures in accordance with District standard operating guidelines and transport to an appropriate health care facility.

For **moderate risk EMS incidents**, the 90th percentile of total response time for the arrival of the effective

response force, consisting of 5 personnel, was 13 minutes and 16 seconds (urban) and 16 minutes and 45 seconds (rural). The units shall be capable of establishing command, sizing up the incident, conducting an initial patient assessment, obtaining vitals and patient medical history, initiating advanced life support efforts in accordance with District standard operating guidelines and transport to an appropriate health care facility.

Moderate-Risk EMS – 90 th Percentile Times – Baseline Performance			2017-2019	2017	2018	2019
Alarm Handling	Pick-up to Dispatch	Urban	3:30	2:56	3:41	3:37
		Rural	3:50	3:25	4:00	3:56
Turnout Time	Turnout Time	Urban	2:09	2:19	2:09	1:59
		Rural	2:20	2:45	2:14	2:06
Travel Time	Travel Time 1 st Unit Distribution	Urban	5:40	5:34	5:42	5:42
		Rural	9:13	9:13	9:29	9:08
	Travel Time ERF Concentration	Urban	8:26	8:25	8:35	8:18
		Rural	11:35	11:02	11:53	11:50
Total Response Time	Total Response Time 1 st Unit on Scene Distribution	Urban	9:37	9:10	9:50	9:39
			n=6,960	n=2,088	n=2,481	n=2,391
		Rural	13:10	12:53	13:20	13:11
			n=2,949	n=944	n=1,020	n=985
	Total Response Time ERF	Urban	13:16	12:49	13:34	13:09
			n=5,516	n=1,639	n=1,952	n=1,925
		Rural	16:45	15:48	17:24	16:45
			n=2,321	n=733	n=776	n=812

Performance Statements - Emergency Medical Services (EMS)

Baseline Statements

For **high risk EMS incidents**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 10 personnel, was 24 minutes and 57 seconds (urban) and 27 minutes and 5 seconds (rural). The units shall be capable of establishing command, sizing up the incident, conducting initial patient assessments for multiple patients, obtaining vitals and patient medical history, initiating advanced life support efforts in accordance with District standard operating guidelines transporting several patients to an appropriate health care facility.

High-Risk EMS – 90 th Percentile Times – Base-line Performance			2017-2019	2017	2018	2019
Alarm Handling	Pick-up to Dispatch	Urban	3:08	3:09	3:13	2:59
		Rural	3:24	2:37	3:49	3:11
Turnout Time	Turnout Time	Urban	2:15	2:52	2:14	2:09
		Rural	2:17	2:11	2:43	1:54
Travel Time	Travel Time 1 st Unit Distribution	Urban	5:15	6:09	5:16	5:11
		Rural	8:56	8:04	9:24	8:43
	Travel Time ERF Concentration	Urban	15:50	N/A	13:48	28:30
		Rural	17:44	N/A	16:42	22:53
Total Response Time	Total Response Time 1 st Unit on Scene Distribution	Urban	8:54	10:22	8:47	8:45
			n=390	n=90	n=164	n=136
		Rural	13:11	11:37	14:41	11:53
			n=247	n=45	n=115	n=87
	Total Response Time ERF	Urban	24:57	N/A	24:57	40:12
			n=45	n=7	n=15	n=23
		Rural	27:05	N/A	20:34	37:03
			n=43	n=7	n=10	n=26

For **Extreme risk EMS incidents**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 15 personnel, was not statistically relevant due to the fact that only one incident occurred where the ERF was assembled. The units shall be capable of establishing command, sizing up the incident, conducting as initial patient assessment, obtaining vitals and patient medical history, initiating advanced life support efforts in accordance with District standard operating guidelines and transport to an appropriate health care facility.

Extreme-Risk EMS – 90 th Percentile Times – Baseline Performance			2017-2019	2017	2018	2019
Alarm Handling	Pick-up to Dispatch	Urban	3:07	N/A	N/A	N/A
		Rural	3:49	N/A	N/A	N/A
Turnout Time	Turnout Time	Urban	2:21	N/A	N/A	N/A
		Rural	2:21	N/A	N/A	N/A
Travel Time	Travel Time 1 st Unit Distribution	Urban	7:10	N/A	N/A	N/A
		Rural	8:43	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Total Response Time	Total Response Time 1 st Unit on Scene Distribution	Urban	10:01	N/A	N/A	N/A
			n=19	n=2	n=8	n=9
		Rural	12:05	N/A	N/A	N/A
			n=18	n=3	n=8	n=7
	Total Response Time ERF	Urban	N/A	N/A	N/A	N/A
			n=1	n=0	n=0	n=1
		Rural	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0

Performance Statements - Hazardous Materials

Benchmark Statements

For all **hazardous materials incidents** (low, moderate, high and maximum risk), the 90th percentile of total response time for the arrival of the first due unit, staffed with a minimum of three firefighters, shall be 9 minutes and 22 seconds (urban) or 12 minutes and 49 seconds (rural). The first due unit shall be capable of establishing command, sizing up the incident, developing an incident action plan in accordance with District standard operating guidelines, isolating the hazard, and calling for appropriate assistance if needed.

For **moderate risk hazardous materials incidents**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 7 personnel, shall be 10 minutes and 27 seconds (urban) or 10 minutes and 57 seconds (rural). The units will be capable of establishing command, sizing up the incident, developing an incident action plan in accordance with District standard operating guidelines , isolating the hazard, initiating mitigation efforts - including containment and/or offloading of common hydrocarbon materials, and calling for appropriate assistance if needed.

For **high risk hazardous materials incidents**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 11 personnel, including a minimum of 5 hazardous materials technicians, shall be 15 minutes (urban) or 18 minutes (rural). The units will be capable of establishing command, sizing up the incident, developing an incident action plan in accordance with District standard operating guidelines, researching the hazard, isolating the hazard, initiating mitigation efforts, establishing decontamination actions, and acting as a liaison with other agencies and private sector businesses or residents involved.

For **extreme risk hazardous materials incidents**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 19 personnel shall be 18 minutes (urban) or 21 minutes (rural). The units will be capable of establishing command, sizing up the incident, developing an incident action plan in accordance with District standard operating guidelines, researching the hazard, isolating the hazard, initiating mitigation efforts, establishing decontamination actions, and acting as a liaison with other agencies and private sector businesses or residents involved.

Performance Statements -Hazardous Materials

Baseline Statements

For all **hazardous materials incidents** (low, moderate, high and maximum risk), the 90th percentile of total response time for the arrival of the first due unit, staffed with a minimum of three firefighters, was 11 minutes and 29 seconds (urban) or 15 minutes and 16 seconds (rural). The first due unit is capable of establishing command, sizing up the incident, developing an incident action plan in accordance with District standard operating guidelines, isolating the hazard, and calling for additional resources if needed.

Low-Risk Hazmat – 90 th Percentile Times – Baseline Performance			2017-2019	2017	2018	2019
Alarm Handling	Pick-up to Dispatch	Urban	3:15	3:09	3:04	3:50
		Rural	2:56	3:15	3:27	2:38
Turnout Time	Turnout Time	Urban	2:43	2:43	3:04	2:33
		Rural	2:56	3:59	2:31	2:41
Travel Time	Travel Time 1 st Unit Distribution	Urban	7:07	7:21	7:05	7:52
		Rural	11:24	17:59	8:42	10:05
	Travel Time ERF Concentration	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Total Response Time	Total Response Time 1 st Unit on Scene Distribution	Urban	11:29	11:27	11:31	11:40
			n=252	n=81	n=80	n=91
		Rural	15:16	22:36	12:44	13:40
			n=99	n=29	n=26	n=44
	Total Response Time ERF	Urban	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A

For **moderate risk hazardous materials incidents**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 7 personnel, was 12 minutes and 10 seconds (urban) and 11 minutes and 37 seconds (rural). The units are capable of establishing command, sizing up the incident, developing an incident action plan in accordance with District standard operating guidelines, isolating the hazard, initiating mitigation efforts - including containment and/or offloading of common hydrocarbon materials, and calling for additional resources if needed.

Moderate-Risk Hazmat – 90 th Percentile Times – Baseline Performance			2017-2019	2017	2018	2019
Alarm Handling	Pick-up to Dispatch	Urban	2:55	3:52	3:02	2:34
		Rural	1:58	N/A	1:59	2:17
Turnout Time	Turnout Time	Urban	2:36	2:31	2:18	3:06
		Rural	2:22	N/A	2:42	2:27
Travel Time	Travel Time 1 st Unit Distribution	Urban	6:51	7:55	6:22	6:28
		Rural	7:58	N/A	8:34	7:15
	Travel Time ERF Concentration	Urban	8:52	7:35	8:58	10:38
		Rural	7:51	N/A	N/A	N/A
Total Response Time	Total Response Time 1 st Unit on Scene Distribution	Urban	10:26	11:33	10:07	10:09
			n=97	n=29	n=25	n=43
		Rural	11:22	N/A	12:36	10:54
			n=24	n=4	n=10	n=10
	Total Response Time ERF	Urban	12:10	11:32	13:01	16:02
			n=51	n=19	n=17	n=15
		Rural	11:37	N/A	N/A	N/A
			n=10	n=2	n=5	n=3

Performance Statements -Hazardous Materials

Baseline Statements

For **high risk hazardous materials incidents**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 11 personnel, was not statistically relevant due to the fact that only one rural incident occurred (urban or rural) where the ERF was assembled. The units are capable of establishing command, sizing up the incident, developing an incident action plan in accordance with District standard operating

High-Risk Hazmat – 90 th Percentile Times – Baseline Performance			2017-2019	2017	2018	2019
Alarm Handling	Pick-up to Dispatch	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Turnout Time	Turnout Time	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Travel Time	Travel Time 1 st Unit Distribution	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Total Response Time	Total Response Time 1 st Unit on Scene Distribution	Urban	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0
		Rural	N/A	N/A	N/A	N/A
			n=1	n=0	n=0	n=1
	Total Response Time ERF	Urban	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0
		Rural	N/A	N/A	N/A	N/A
			n=1	n=0	n=0	n=1

guidelines, researching the hazard, isolating the hazard, initiating mitigation efforts, establishing decontamination actions, and acting as a liaison with other agencies and private sector businesses or residents involved.

For **extreme risk hazardous materials incidents**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 19 personnel, was not statistically relevant due to the fact that no incidents occurred where the ERF was assembled. The units are capable of establishing command, sizing up the incident, developing an incident action plan in accordance with District standard operating

Extreme-Risk Hazmat – 90 th Percentile Times – Baseline Performance			2017-2019	2017	2018	2019
Alarm Handling	Pick-up to Dispatch	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Turnout Time	Turnout Time	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Travel Time	Travel Time 1 st Unit Distribution	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Total Response Time	Total Response Time 1 st Unit on Scene Distribution	Urban	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0
		Rural	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0
	Total Response Time ERF	Urban	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0
		Rural	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0

guidelines, researching the hazard -including initial monitoring, and calling for appropriate assistance from both the SRF and outside agencies if needed.

Performance Statements - Technical Rescue

Benchmark Statements

For all **technical rescue incidents** (low, moderate, high and maximum risk), the 90th percentile of total response time for the arrival of the first due unit, staffed with a minimum of three firefighters, shall be 9 minutes and 22 seconds (urban) or 12 minutes and 49 seconds (rural). The first due unit shall be capable of establishing command, sizing up the incident, developing an incident action plan in accordance with District standard operating guidelines, denying access to bystanders, and calling for appropriate assistance from outside agencies if needed.

For **moderate risk technical rescue incidents**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 10 personnel, shall be 15 minutes (urban) or 18 minutes (rural). The units will be capable of establishing command, performing an assessment of the incident, and initiating mitigation activities such as isolating the hazard, de-energizing equipment, conducting lockout/tag-out procedures, and denying access to bystanders.

For **high risk technical rescue incidents**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 12 personnel, shall be 18 minutes (urban) or 21 minutes (rural). The units will be capable of establishing command, performing an assessment of the incident, and initiating mitigation activities such as isolating the hazard, deploying primary and belay rope systems, stabilizing the trench and/or structure, and setting up a safe operating zone to perform patient assessment and treatment.

For **maximum risk technical rescue incidents**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 24 personnel shall be 21 minutes (urban) or 24 minutes (rural). The units will be capable of establishing command, sizing up the incident, developing an incident action plan in accordance with District standard operating guidelines, researching the hazard, isolating the hazard, initiating mitigation efforts, perform technical rescue operations, triage/treat patients, and liaise with external agencies.

Performance Statements - Technical Rescue

Baseline Statement

For **low risk technical rescue incidents**, the 90th percentile of total response time for the arrival of the first due unit, staffed with a minimum of three firefighters, did not have any responses, therefore a baseline analysis of response time was not possible. The first due unit shall be capable of establishing command, sizing up the incident, developing an incident action plan in accordance with District standard operating guidelines, denying access to bystanders, and calling for appropriate assistance from outside agencies if needed.

Low-Risk Rescue – 90 th Percentile Times – Baseline Performance			2017-2019	2017	2018	2019
Alarm Handling	Pick-up to Dispatch	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Turnout Time	Turnout Time	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Travel Time	Travel Time 1 st Unit Distribution	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Total Response Time	Total Response Time 1 st Unit on Scene Distribution	Urban	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0
		Rural	N/A	N/A	N/A	N/A
			n=5	n=2	n=2	n=1
	Total Response Time ERF	Urban	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A

For **moderate risk technical rescue incidents**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 10 responders, was not statistically relevant due to the fact that only one incident occurred where the ERF was assembled in an urban setting and two in a rural location. The units will be capable of establishing command, performing an assessment of the incident, and initiating mitigation activities such as isolating the hazard, de-energizing equipment, conducting lockout/tag-out procedures, and denying access to bystanders.

Moderate-Risk Rescue – 90 th Percentile Times – Baseline Performance			2017-2019	2017	2018	2019
Alarm Handling	Pick-up to Dispatch	Urban	N/A	N/A	N/A	N/A
		Rural	7:01	N/A	N/A	N/A
Turnout Time	Turnout Time	Urban	N/A	N/A	N/A	N/A
		Rural	4:03	N/A	N/A	N/A
Travel Time	Travel Time 1 st Unit Distribution	Urban	N/A	N/A	N/A	N/A
		Rural	12:45	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Total Response Time	Total Response Time 1 st Unit on Scene Distribution	Urban	N/A	N/A	N/A	N/A
			n=7	n=6	n=1	n=0
		Rural	19:43	N/A	N/A	N/A
			n=14	n=5	n=6	n=3
	Total Response Time ERF	Urban	N/A	N/A	N/A	N/A
			n=1	n=1	n=0	n=0
		Rural	N/A	N/A	N/A	N/A
			n=2	n=0	n=1	n=1

Performance Statements - Technical Rescue

Baseline Statement

For **high risk technical rescue incidents**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 12 responders, was not statistically relevant due to the fact that zero incidents occurred (urban or rural) where the ERF was assembled. The units will be capable of establishing command, performing an assessment of the incident, and initiating mitigation activities such as isolating the hazard, deploying primary and belay rope systems, stabilizing the trench and/or structure, and setting up a safe operating zone to perform patient assessment and treatment.

High-Risk Rescue – 90 th Percentile Times – Baseline Performance			2017-2019	2017	2018	2019
Alarm Handling	Pick-up to Dispatch	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Turnout Time	Turnout Time 1 st Unit	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Travel Time	Travel Time 1 st Unit Distribution	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Total Response Time	Total Response Time 1 st Unit on Scene Distribution	Urban	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0
		Rural	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0
	Total Response Time ERF Concentration	Urban	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0
		Rural	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0

For **extreme risk technical rescue incidents**, the 90th percentile of total response time for the arrival of the effective response force, consisting of 24 personnel was not statistically relevant due to the fact that no incidents occurred where the ERF was assembled. The units will be capable of establishing command, sizing up the incident, developing an incident action plan in accordance with District standard operating

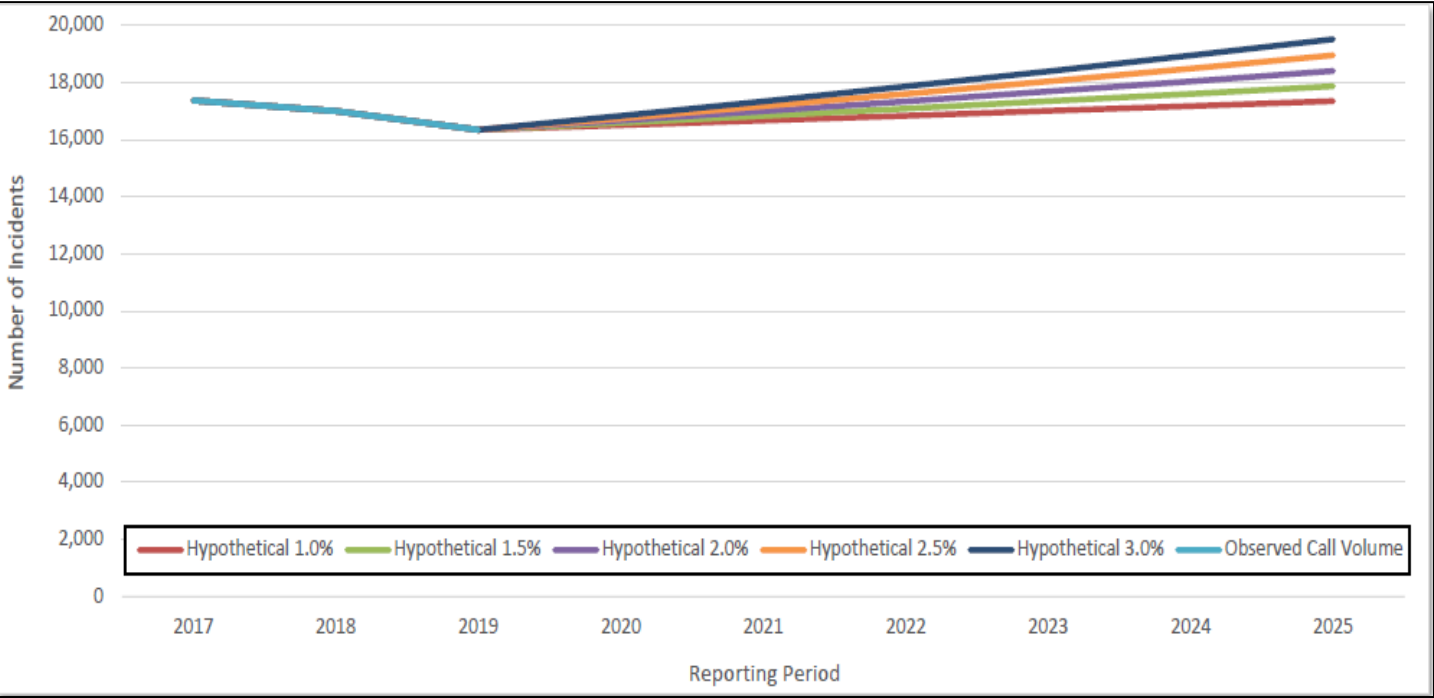
Extreme-Risk Rescue – 90 th Percentile Times			2017-	2017	2018	2019
Alarm Handling	Pick-up to Dispatch	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Turnout Time	Turnout Time	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Travel Time	Travel Time 1 st Unit Distribution	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
Total Response Time	Total Response Time 1 st Unit on Scene Distribution	Urban	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0
		Rural	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0
	Total Response Time ERF	Urban	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0
		Rural	N/A	N/A	N/A	N/A
			n=0	n=0	n=0	n=0

guidelines, researching the hazard, isolating the hazard, initiating mitigation efforts, perform technical rescue operations, triage/treat patients, and liaise with external agencies.

Projected Growth

The available data set included three reporting periods of data, representing reporting periods 2017 to 2019. During that time, calls for SRFR services decreased from 17,377 to 16,349, with an average growth rate of -3.1% per year. The figure below depicts observed call volume during the last three reporting periods and various hypothetical growth scenarios over the next six reporting periods. These projections should be used with caution due to the variability in growth observed across prior calendar years. In all cases, data should be reviewed annually to ensure timely updates to projections.

Assuming that future demands may not be reasonably distributed across the various stations in the system, the system may ultimately require a redistribution of workload and ultimately reinvestment in resources to meet the growing demand. While the system should be evaluated continuously for performance and desired outcomes, the department should specifically re-evaluate workload and performance indicators for every 1,000 -call increase to ensure system stability.



With respect to the long-term sustainability of the current deployment model, it will remain accurate for as long as the jurisdiction’s overall coverage area has not expanded. In other words, if the city’s square mileage remains, then the deployment strategy will be sustainable indefinitely with respect to the coverage area.

As other variables such as population density or socioeconomic status change over time, there may be a need for a higher concentration of resources necessary to meet the growing demand for services, but not additional stations.

The most prominent reason that the geographic distribution model would need to be updated is for changes in traffic impedance that significantly limit the historical average travel speed. Monitoring travel time performance, system reliability, and call concurrency will provide timely feedback for changes in the environment that could impact the distribution model.

Section F - Current Deployment and Performance

at the First Due Station Area

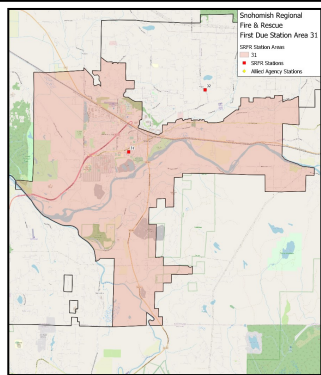


First Due Station Area Analysis

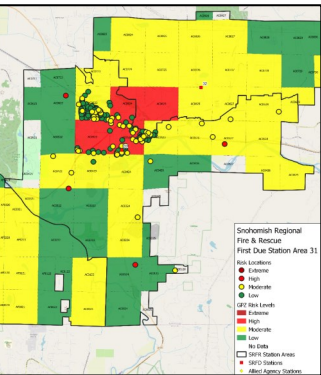
Taking a more granular approach, each of SRFR’s 11 stations received a comprehensive analysis including eight pages of maps and data to highlight the planning zones, risk, and past performance on all types of emergency incidents. Below is a master legend to assist in navigating the large amount of analysis on the following pages.

Core Competency 2C.7

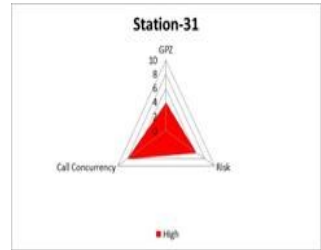
The agency has identified the total response time components for delivery of services in each service program area and assessed those services in each planning zone.



First Due Station Area - This page contains a basic overview of the district and contains a map which shows the fire district in relation to the organization’s boundaries, units based out of the station with full or cross staffing, and an overall station risk rating based upon risk, demand, and call concurrency.



Geographical Risk Assessment - Geographic Planning Zones (GPZ) for the district are defined, along with their respective risk classifications, in addition to risk rankings of specific structures within the first due station area.

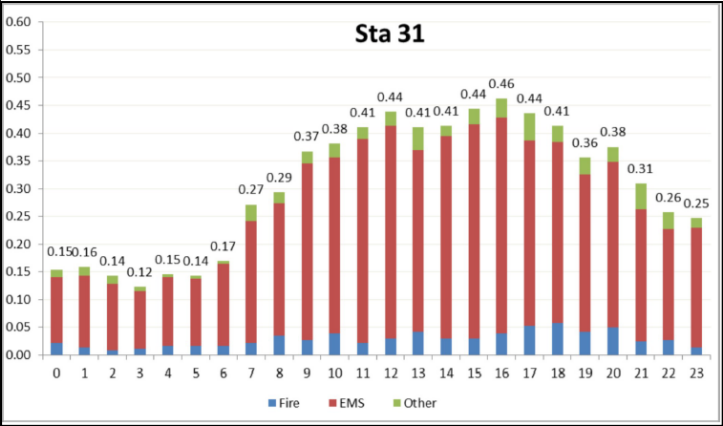


3D Risk Assessment - Risk for each first due station area was evaluated by incident type (fire, EMS, hazmat, and technical rescue) and by demand, call concurrency, and risk; providing a comprehensive and visual way to ascertain the risk of certain incident types within the first due station areas. The 3D model graphically shows the event probability, the consequences to the community, and the impact on the District.

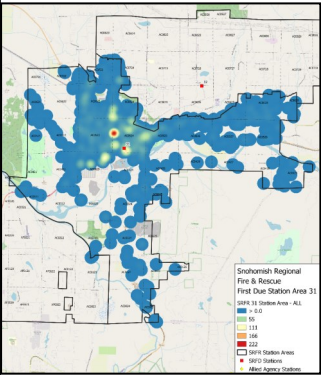
Station Level Analysis cont'd

Station 31 Incidents by Call Category	Reporting Period			
	2017	2018	2019	All
EMS Total	2,440	2,466	2,214	7,120
Fire Total	323	310	249	882
Hazmat Total	28	31	39	98
Other Total	211	196	170	577
Total	3,010	3,008	2,673	8,691
Average Calls per Day	8.2	8.2	7.3	N/A
YoY Growth	N/A	-0.1%	-11.1%	N/A

Historical Data Analysis - three years of data for SRFR was evaluated by station, including number of incidents, number of unit responses, and baseline response times.



Temporal Analysis - This graph shows the frequency of incidents within the first due station areas by hour of day and incident type, a very useful set of data when making deployment decisions.



Section F - Current Deployment and Performance

Station 31	E31	Engine
	M31	Medic - ALS
	T31	Truck
	A31	Aid - BLS
	B31	Battalion
	BT31	Boat

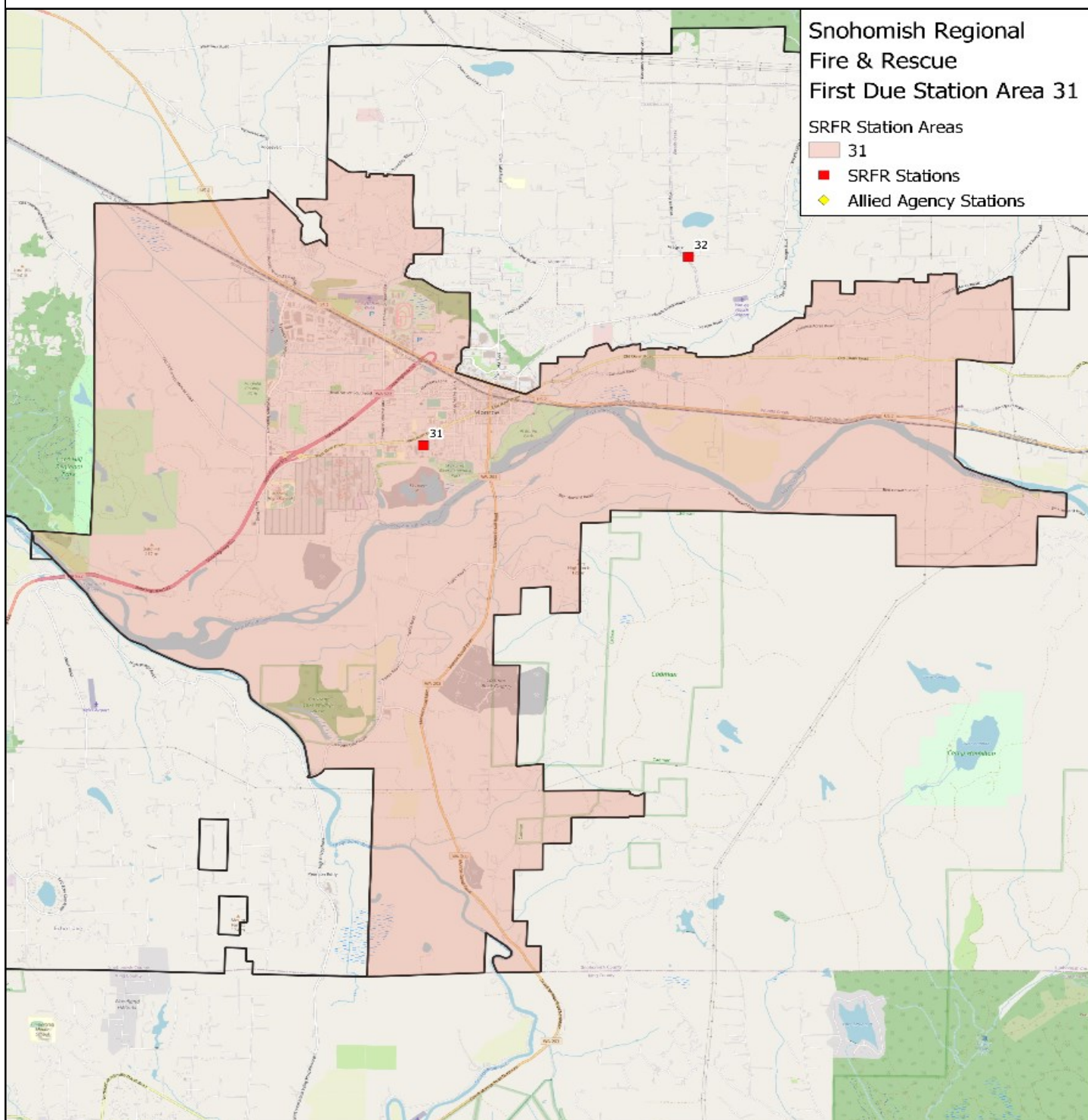
Station-31

GPZ
10
8
6
4
2
0

Call Concurrence Risk

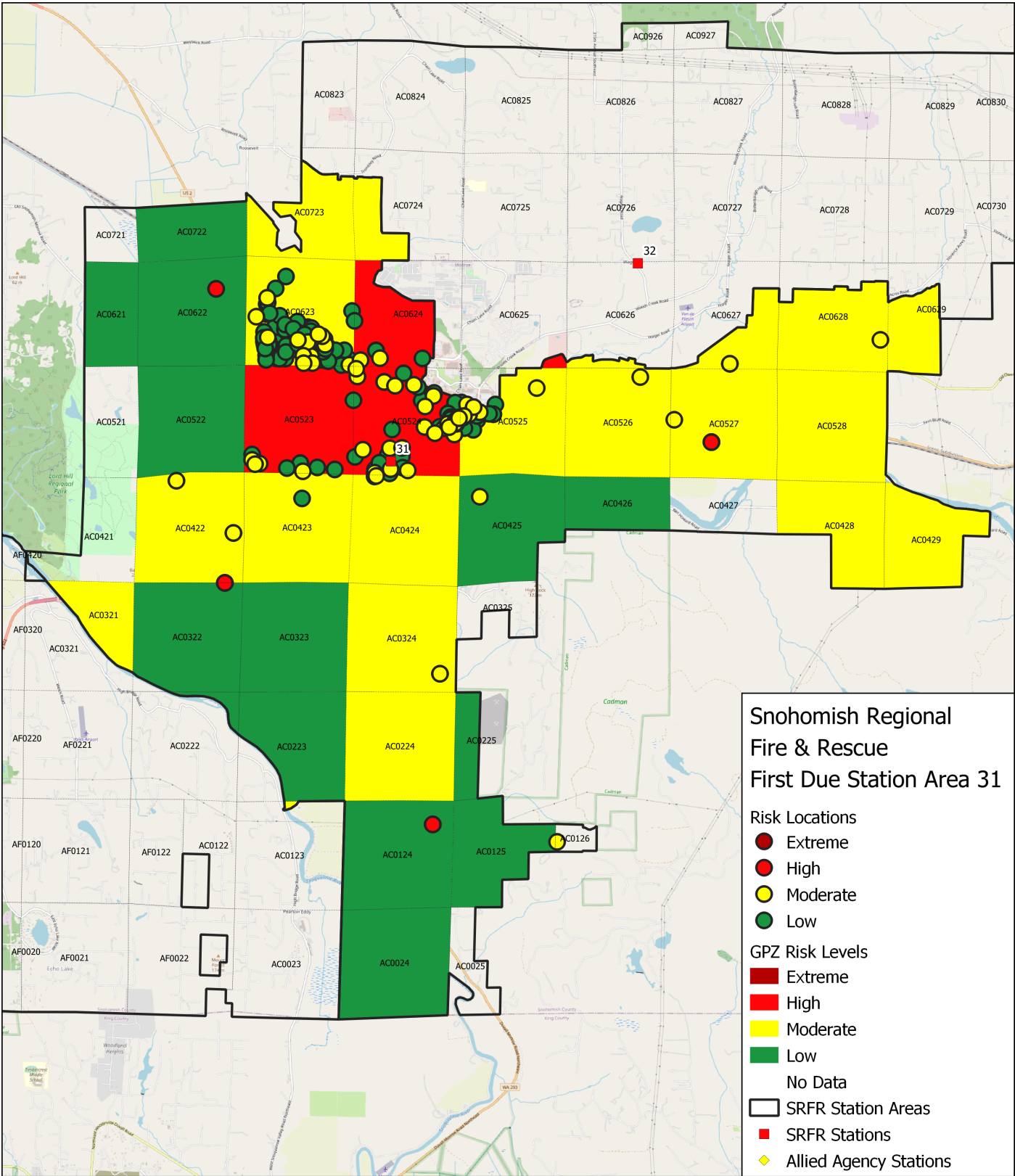
■ High

Station 31 staffs an four primary units; Engine, Truck, Medic, Aid, Boat and Battalion Chief. The first due station area has high risk level and is adjacent to Stations 32 and 33.

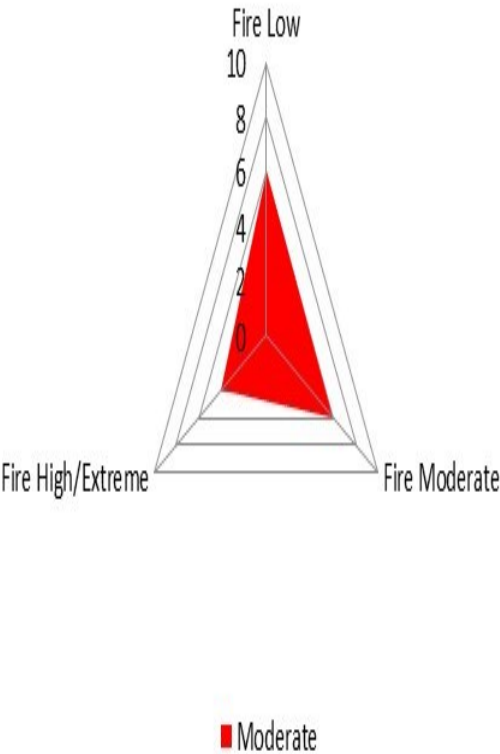


Risk Analysis

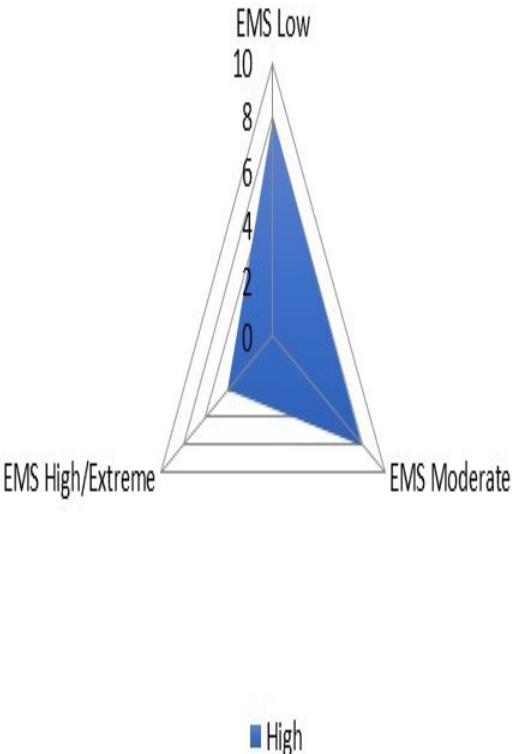
Risk of individual building locations is represented by the small circles and shaded to indicate risk level. There are high risk buildings located throughout the first due station area. Risk is also evaluated by GPZ using the same shading criteria. The GPZ's surrounding Station 31 present the most risk.



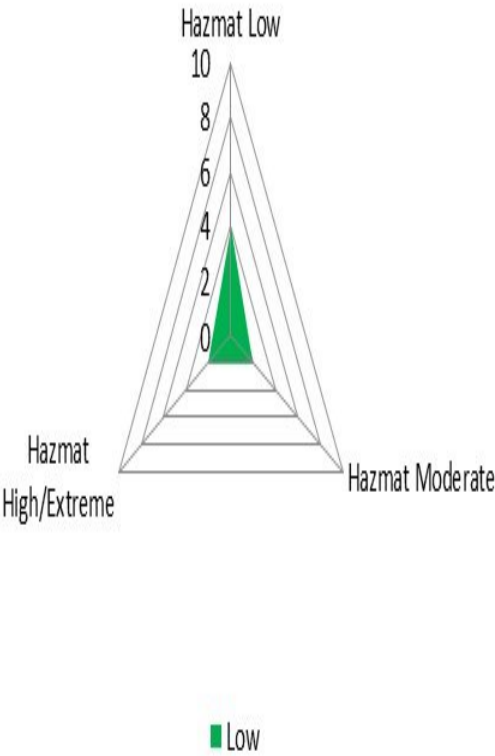
Station 31 First Due Area



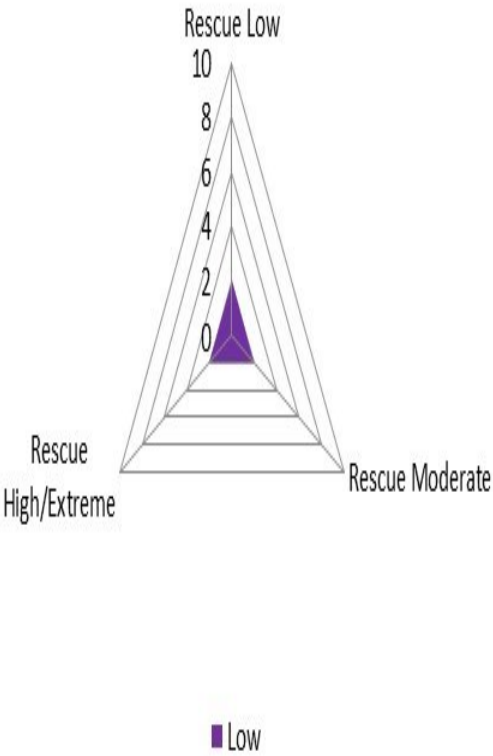
Station 31 First Due Area



Station 31 First Due Area



Station 31 First Due Area



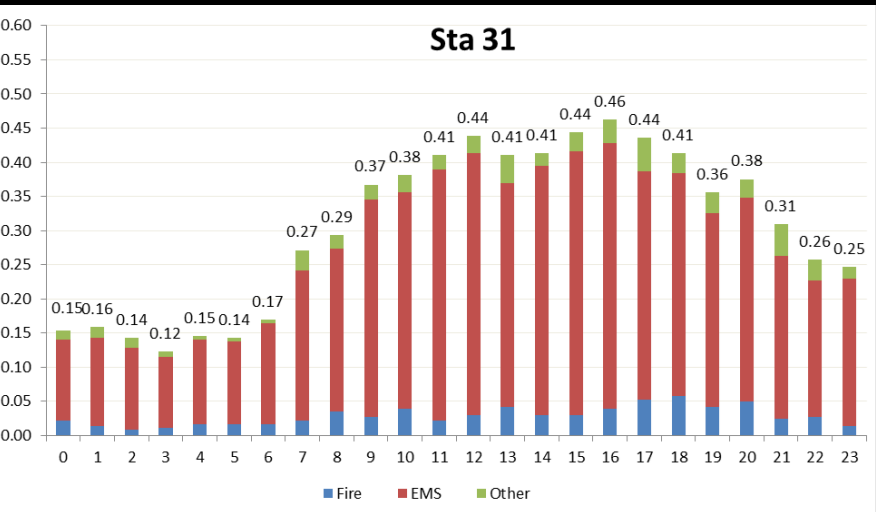
Station 31 First Due Area Historical Data Analysis

Station 31 First Due Area Incidents by Call Category	Reporting Period			
	2017	2018	2019	All
EMS Total	2,440	2,466	2,214	7,120
Fire Total	323	310	249	882
Hazmat Total	28	31	39	98
Other Total	211	196	170	577
Technical Rescue Total	8	5	1	14
Total	3,010	3,008	2,673	8,691
Average Calls per Day	8.2	8.2	7.3	N/A
YoY Growth	N/A	-0.1%	-11.1%	N/A

Station 31 First Due Area Unit Responses	Reporting Period ¹			
	2017	2018	2019	All
A31	1,304	1,013	1,261	3,578
B31	460	438	376	1,274
BR31	50	40	47	137
BR31A	1	0	1	2
BT31	34	20	12	66
E31	1,445	1,627	2,140	5,212
E31A	70	4	4	78
L31	46	27	3	76
M31	1,672	1,771	1,534	4,977
T31	33	21	24	78
TR31	7	4	1	12
Total	5,122	4,965	5,403	15,490
Average Responses per Day	14.0	13.6	14.8	14.1

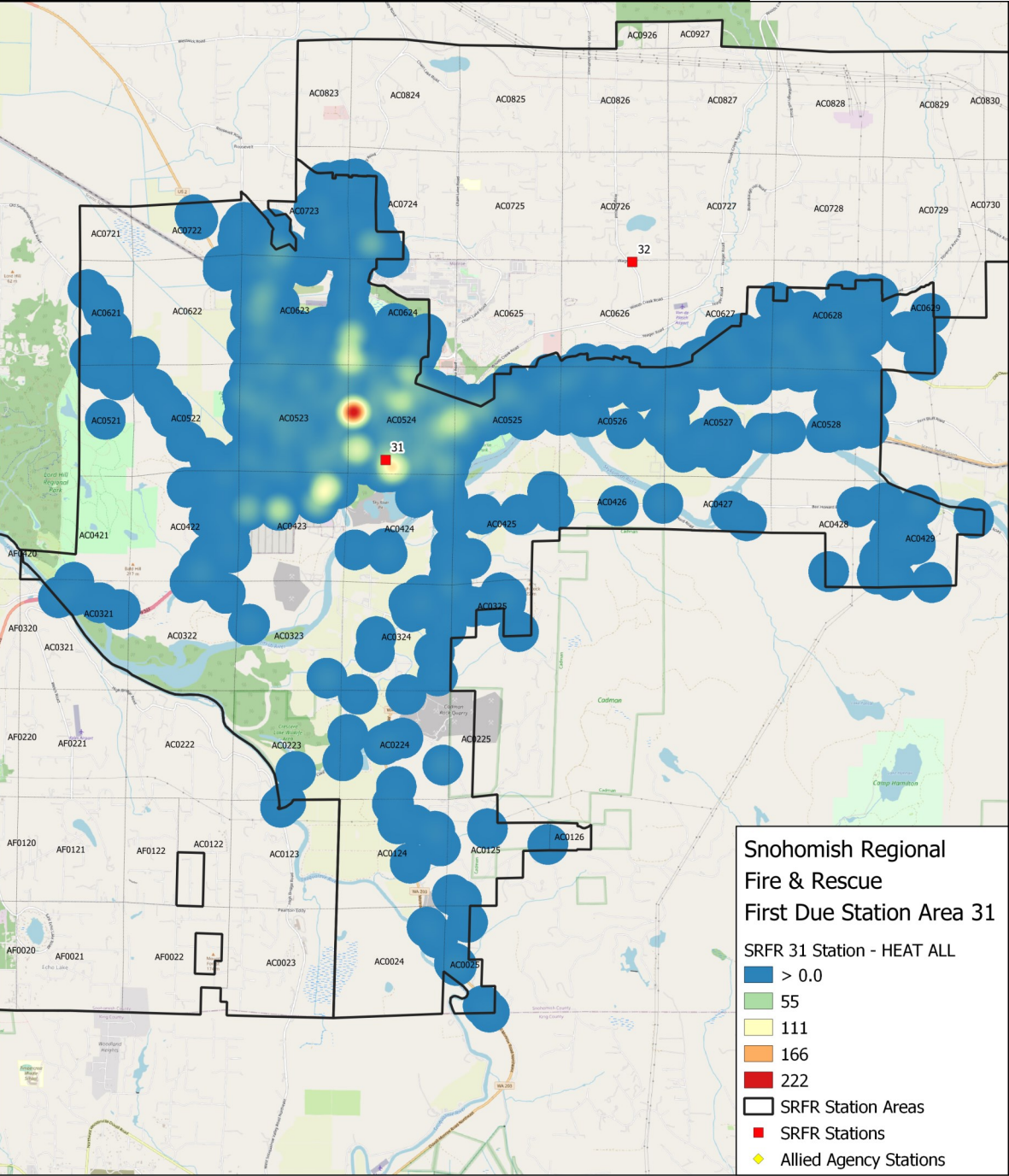
Station 31 First Due Area:		1 st Arriving Baseline Performance				2017-2019 Benchmark	2017-2019 Compliance
		2017-2019	2017	2018	2019		
Alarm Handling		3:36	3:03	3:55	3:38	3:14	86.4%
Turnout Time		2:07	2:22	1:57	1:55	2:07	90.5%
Travel Time	Urban	5:56	5:44	6:12	5:47	5:44	88.8%
	Rural	11:16	11:36	11:28	9:54	9:05	81.1%
Total Response Time	Urban	9:44	9:19	10:12	9:38	9:22	87.8%
		n = 5,118	n = 1,844	n = 1,776	n = 1,498		
	Rural	15:38	15:49	15:47	15:03	12:49	80.7%
		n = 1,343	n = 515	n = 444	n = 384		

Legend: green fill ≥ 90%; yellow fill ≥ 70% to < 90%; red fill < 70%)



Temporal Analysis

Incident volume by time of day by type of call shows Station 31's busiest times are from 9am to 9 pm.

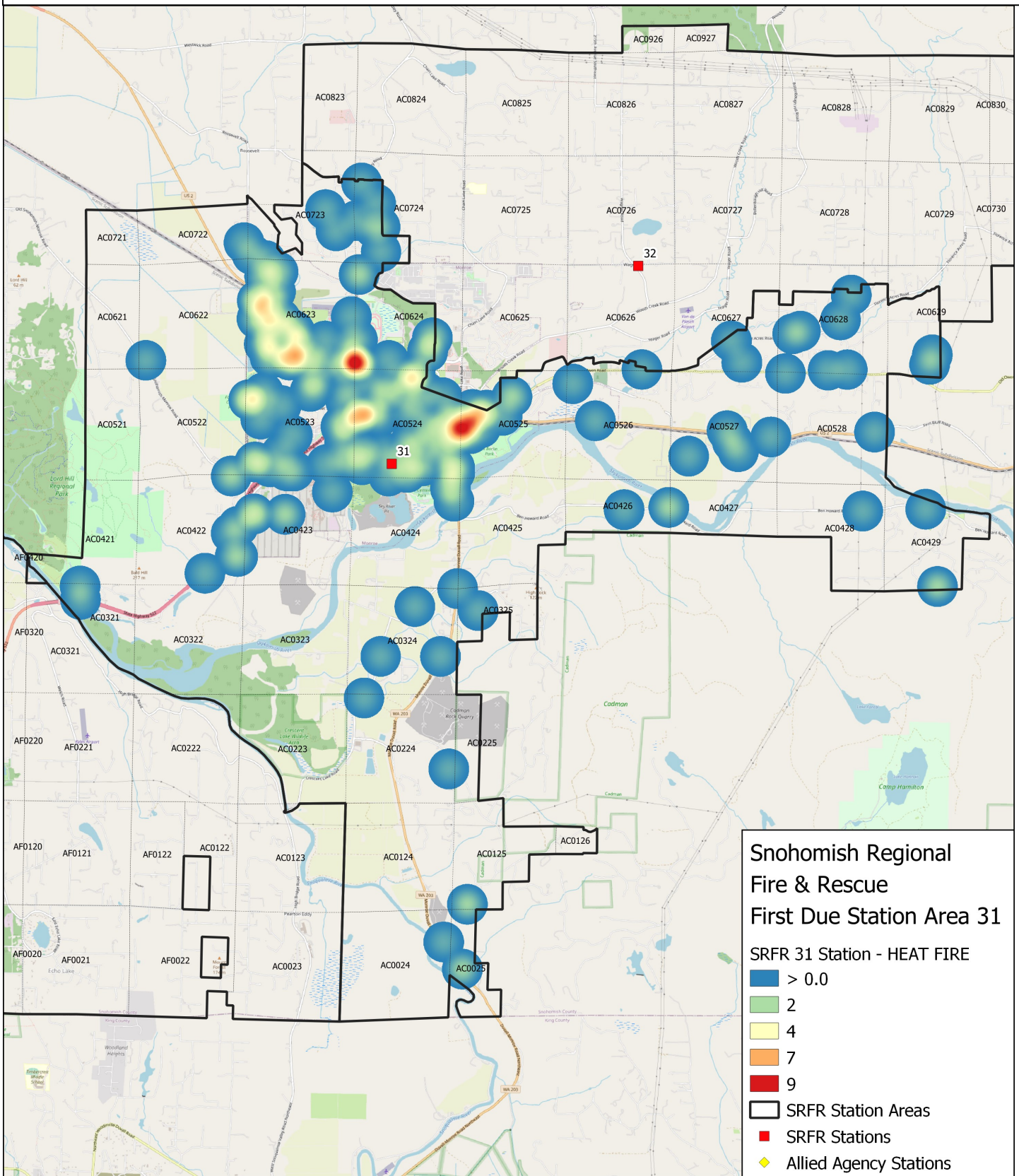


Overall Hot Spot Map

Shows the most call volume in the north parts of the first due station area.

Fire Hot Spot Map

Most of the call volume for fire related calls is in close proximity to Station 31.



Respect

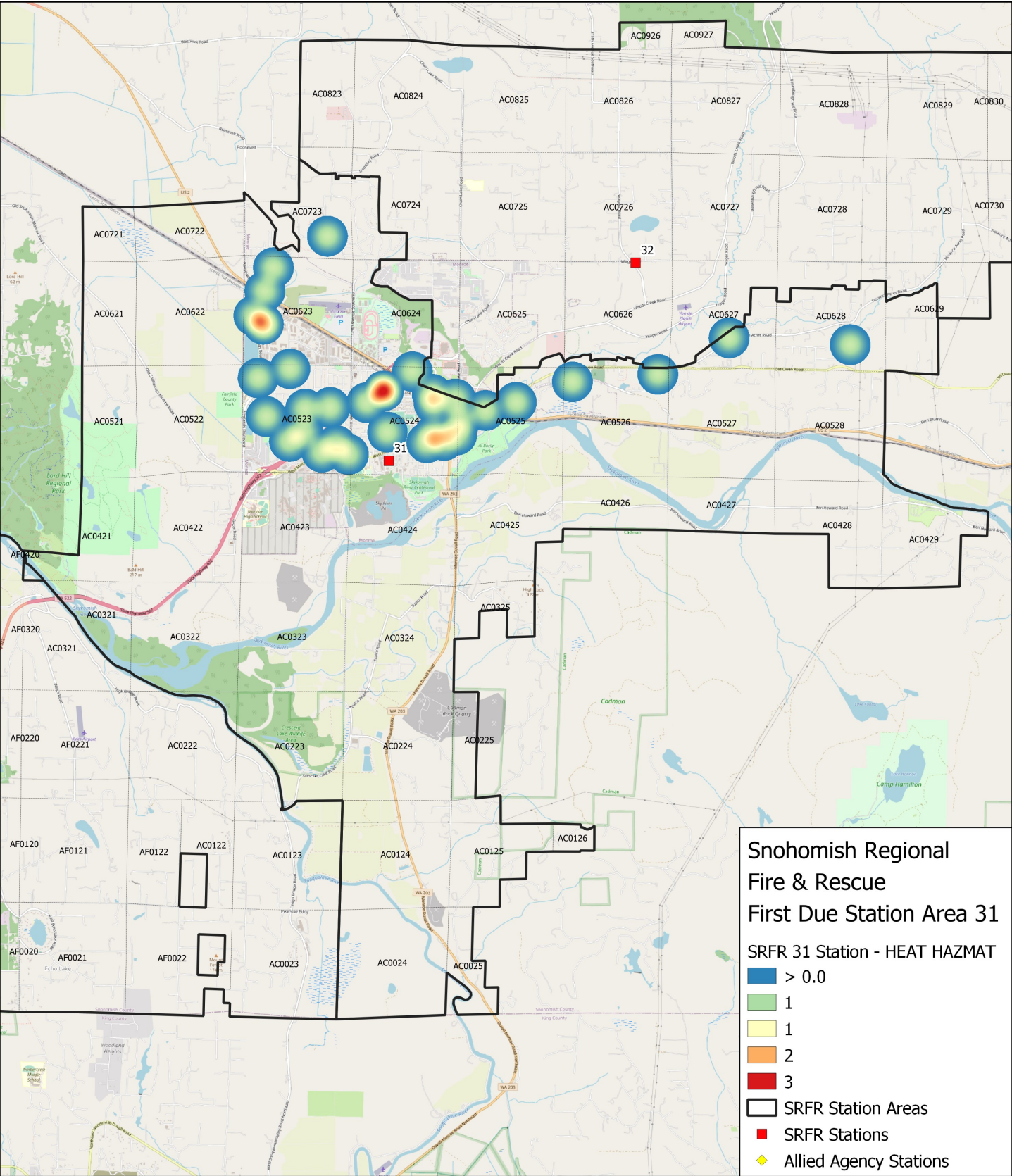
Accountability



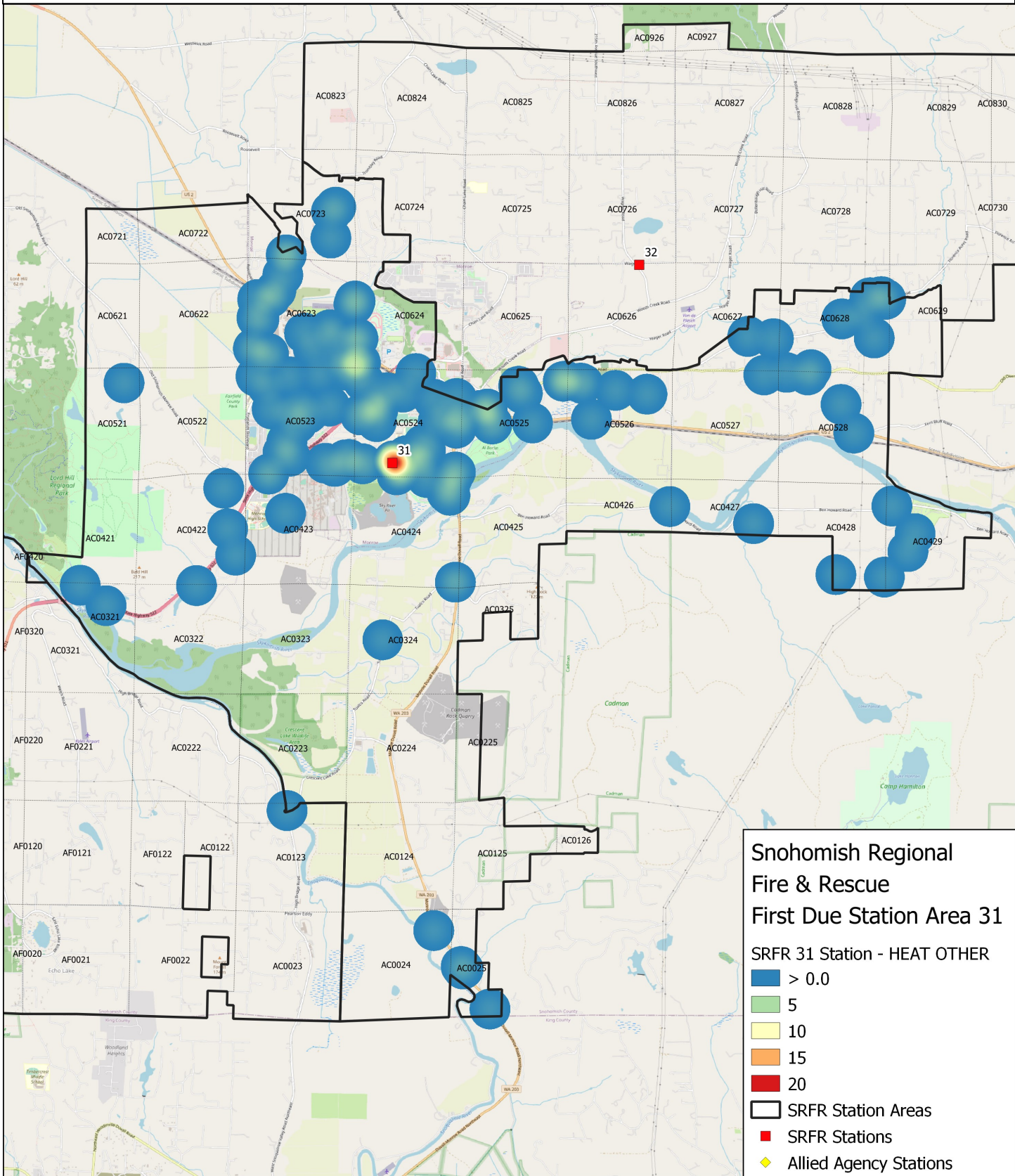
Teamwork	Service
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HazMat Hot Spot Map

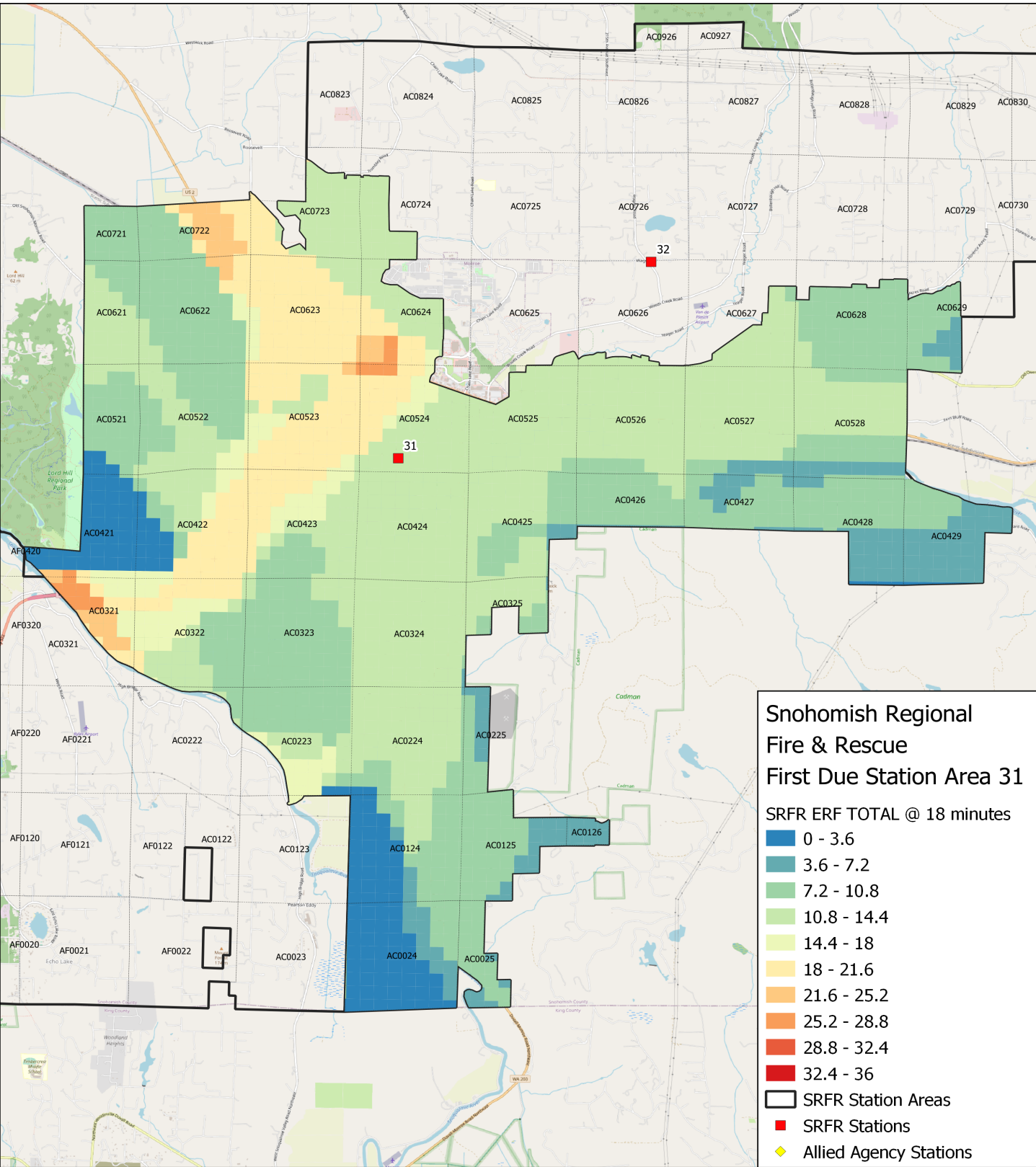
Like fire and EMS, the hazmat hot spot map for Station 31 shows the greatest call volume surrounding the station just to the North, with some incidents stretching east near Station 32’s first due station area.

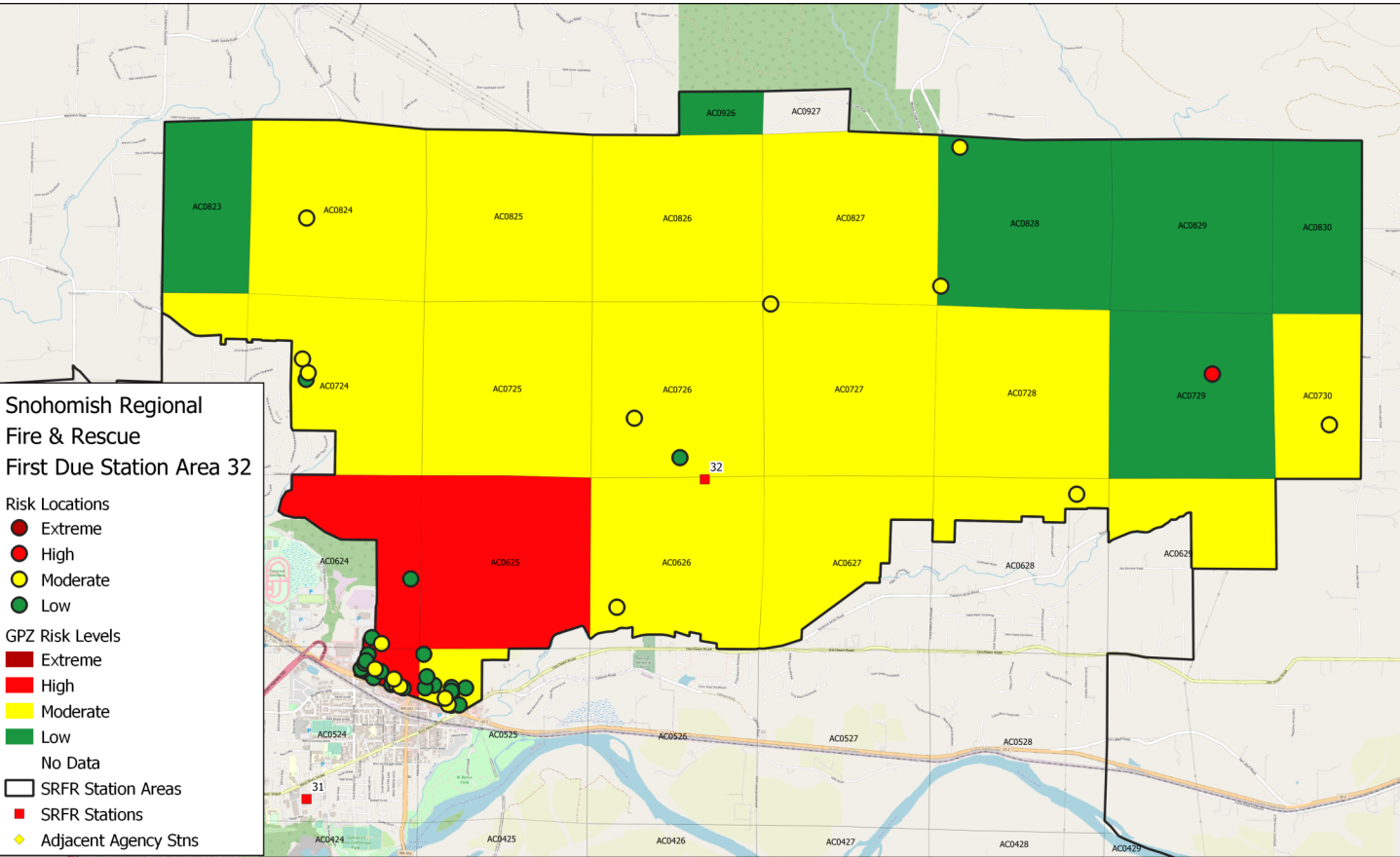
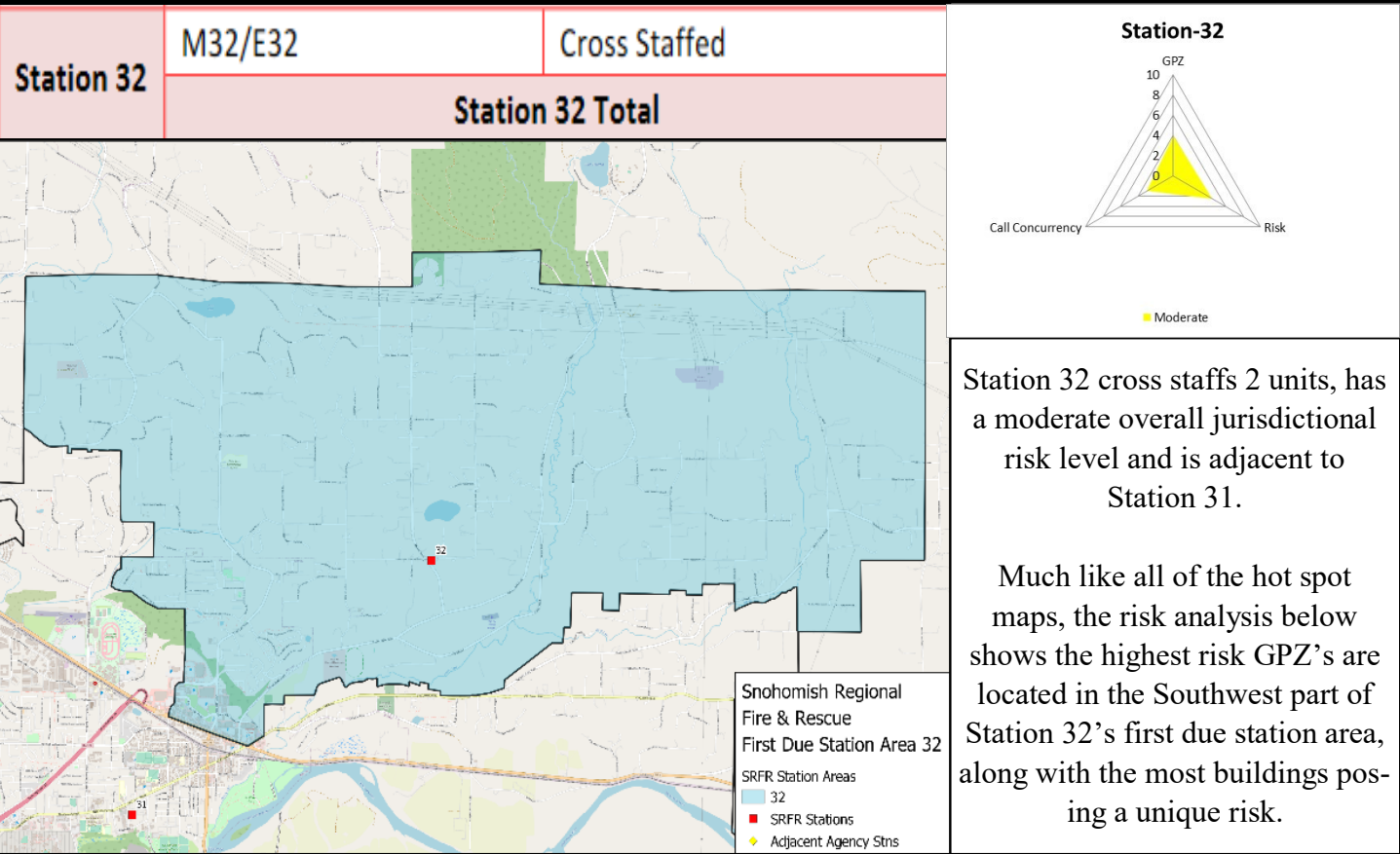


Other related calls appear in close proximity to Station 31. Several calls occur on the far East end of the first due station area.

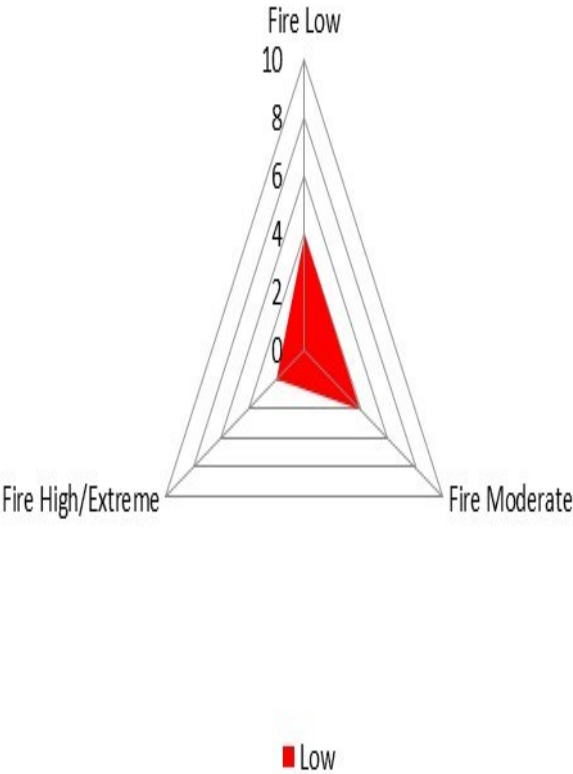


Time Increments	ERF-11	ERF-12	ERF-15	ERF-18
8-Minutes	7.60%	7.60%	5.29%	0.00%
10-Minutes	24.49%	24.49%	16.05%	5.97%
13-Minutes	54.39%	54.39%	40.73%	32.12%
15-Minutes	68.39%	68.39%	57.11%	49.45%
18-Minutes	89.60%	89.60%	86.80%	79.02%

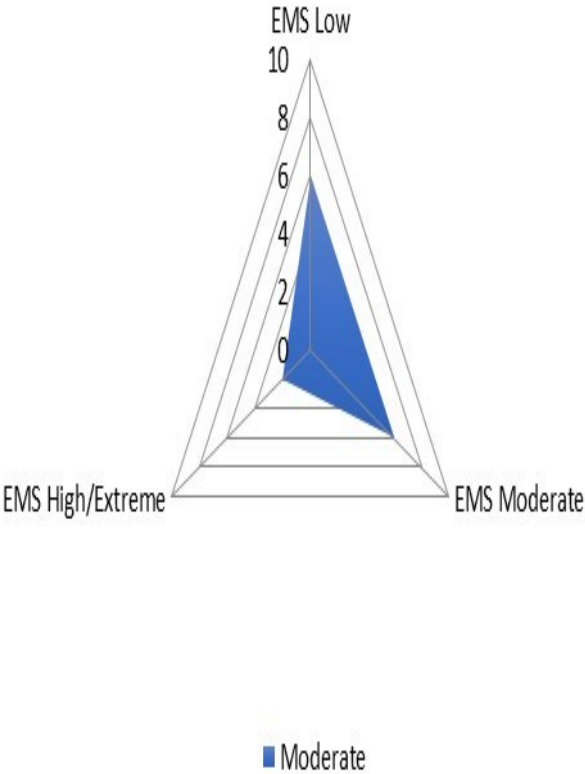




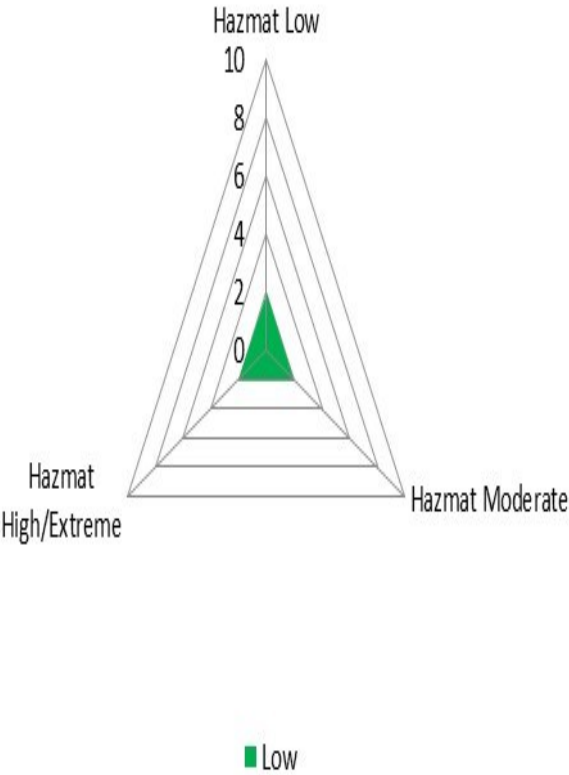
Station 32 First Due Area



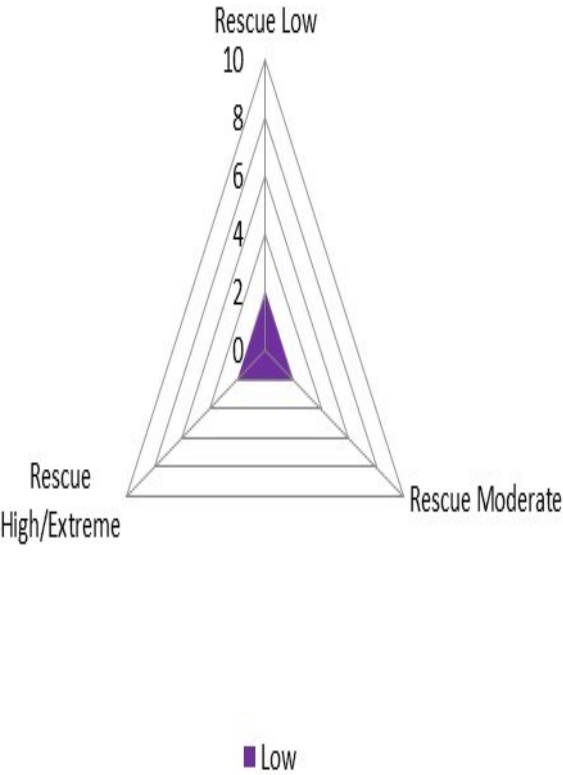
Station 32 First Due Area



Station 32 First Due Area



Station 32 First Due Area

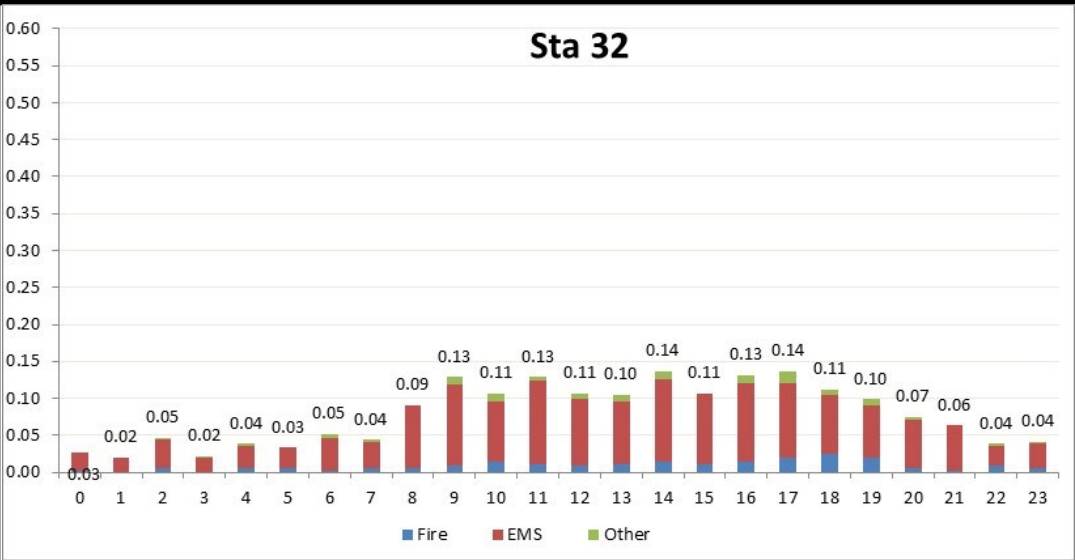


Station 32 First Due Area Historical Data Analysis

Station 32 First Due Area Incidents by Call Category	Reporting Period			
	2017	2018	2019	All
EMS Total	309	328	570	1,207
Fire Total	48	43	78	169
Hazmat Total	2	8	7	17
Other Total	61	42	34	137
Technical Rescue Total	1	0	0	1
Total	421	421	689	1,531
Average Calls per Day	1.2	1.2	1.9	N/A
YoY Growth	N/A	0.0%	63.7%	N/A

Station 32 First Due Area Unit Responses	Reporting Period			
	2017	2018	2019	All
E32	285	297	280	862
M32	620	757	703	2,080
Total	905	1,054	983	2,942
Average Responses per Day	2.5	2.9	2.7	2.7

Station 32 First Due Area: 1 st Arriving Baseline Performance		2017-2019	2017	2018	2019	2017-2019 Benchmark	2017-2019 Compliance
Alarm Handling		3:29	3:06	3:41	3:29	3:14	87.1%
Turnout Time		2:09	2:49	1:59	1:53	2:07	89.2%
Travel Time	Urban	6:42	7:04	6:57	6:43	5:44	75.8%
	Rural	10:57	11:23	10:42	10:52	9:05	78.2%
Total Response Time	Urban	10:36	13:42	11:03	10:27	9:22	80.3%
		<i>n</i> = 345	<i>n</i> = 34	<i>n</i> = 41	<i>n</i> = 270		
	Rural	15:06	16:19	14:49	15:00	12:49	77.4%
		<i>n</i> = 726	<i>n</i> = 251	<i>n</i> = 255	<i>n</i> = 220		

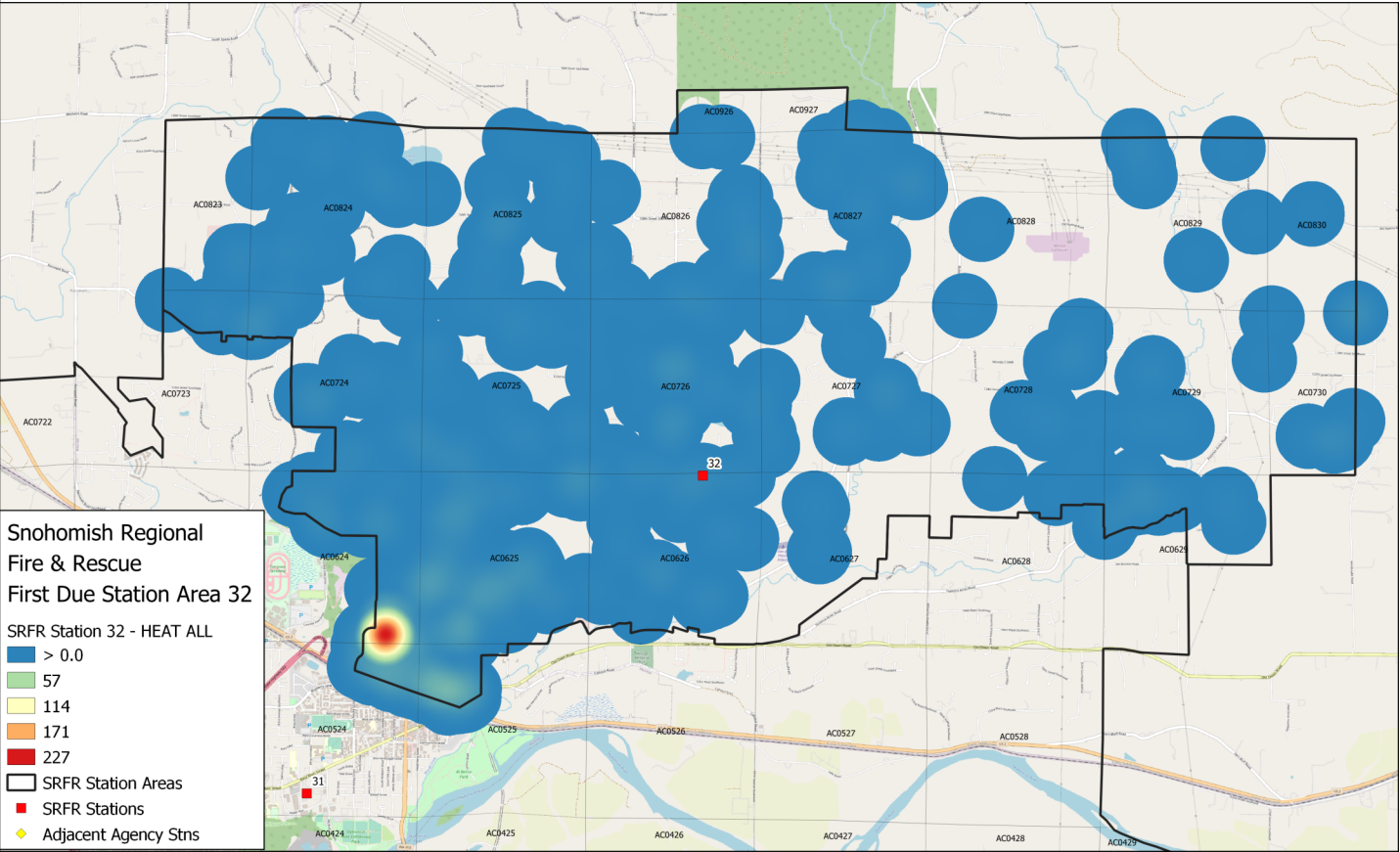


Temporal Analysis

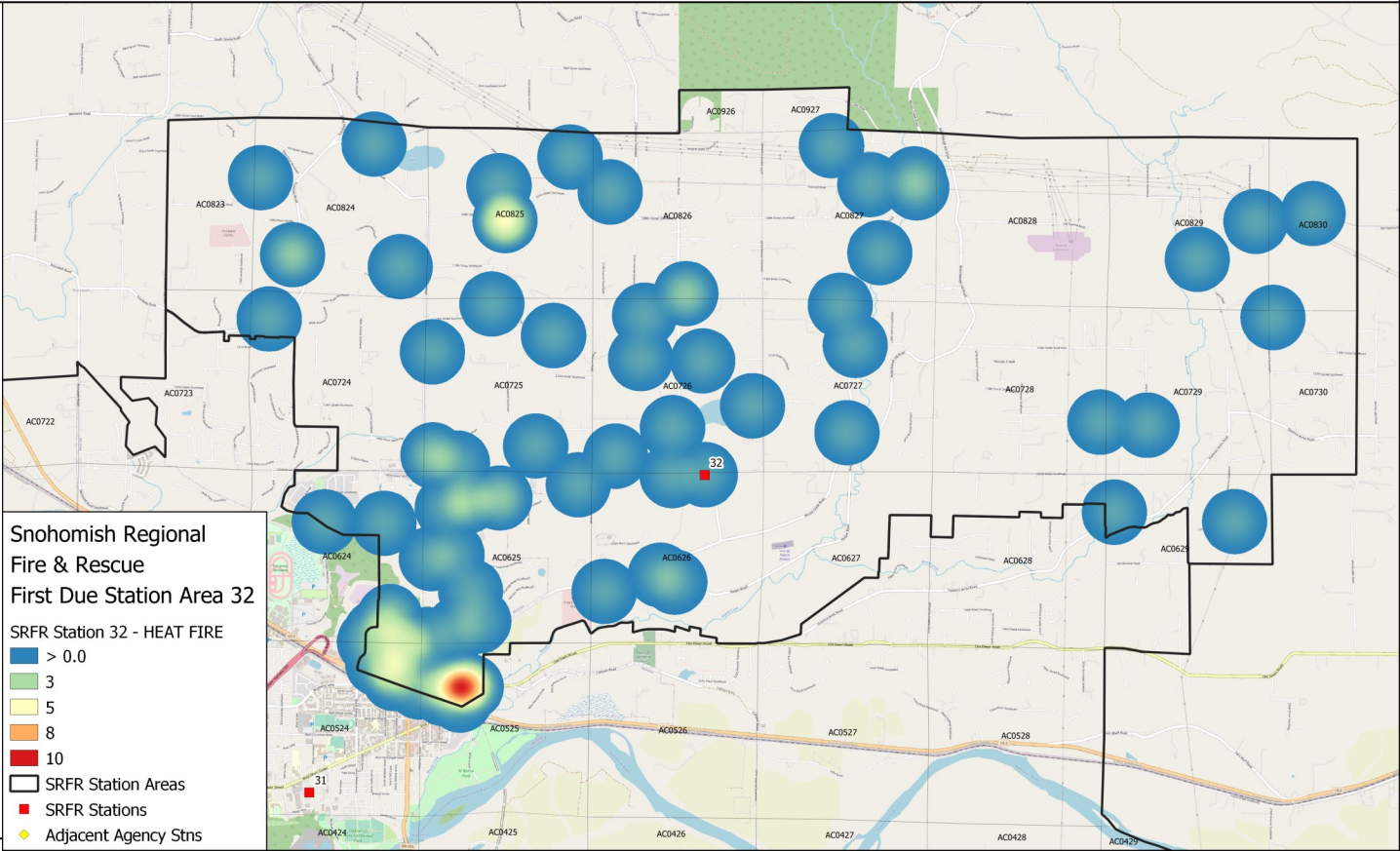
Incident volume by time of day by type of call shows Station 32’s busiest times are from 9am to 5 pm, with most fire’s occurring late afternoon.

Overall Hot Spot Map

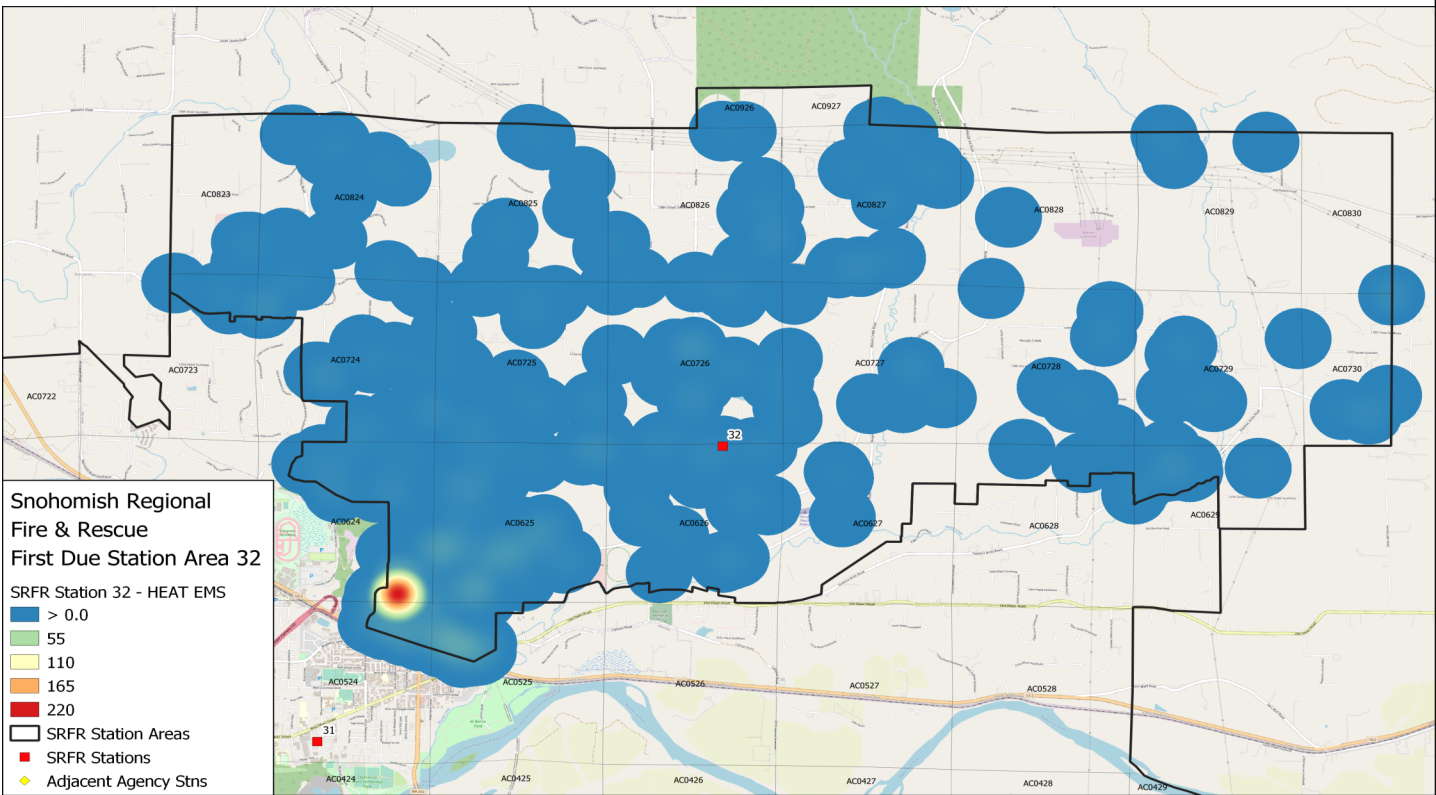
Trends indicate the majority of call volume immediately surrounding the station and West, with the most call volume Southwest of the station.



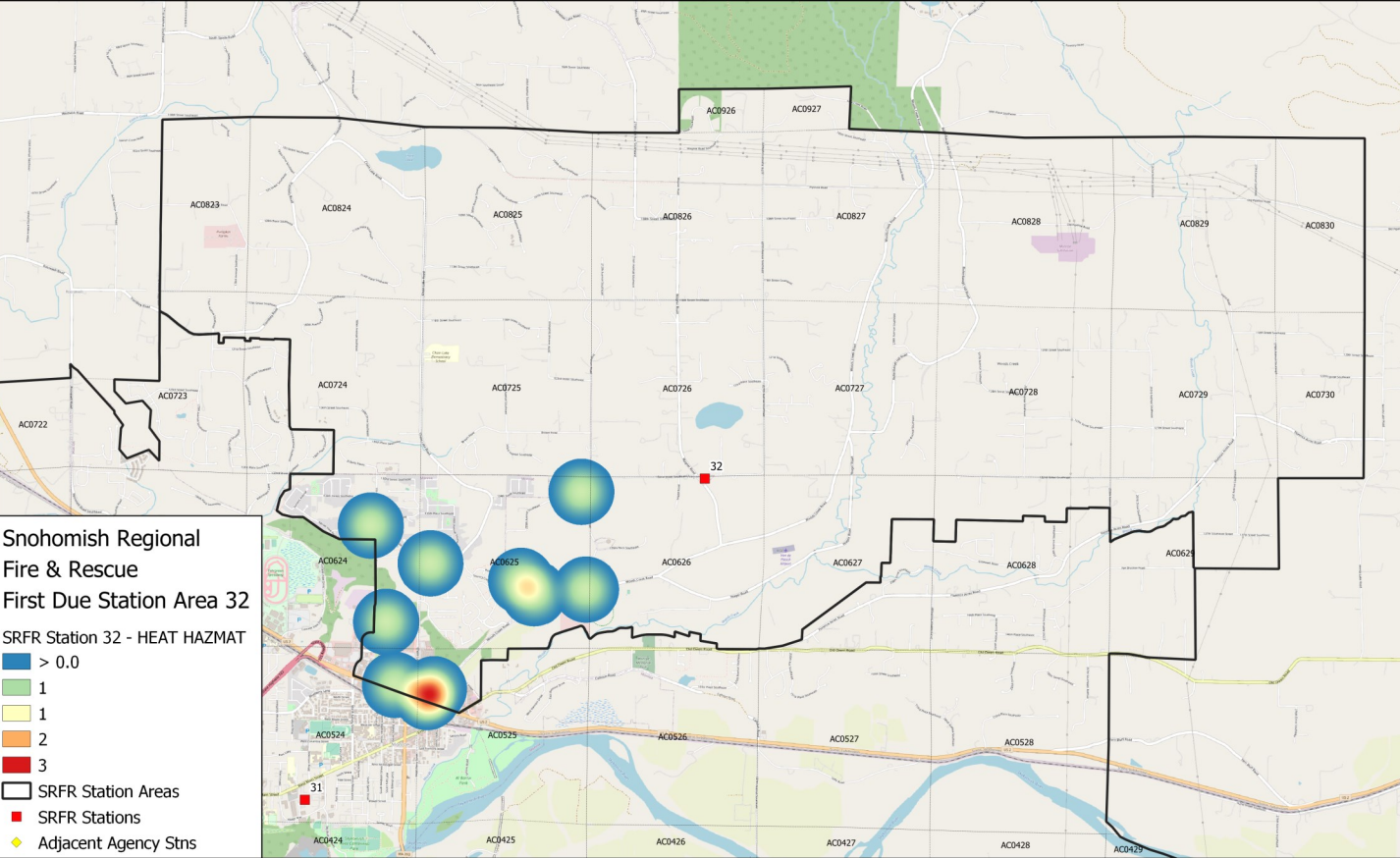
Fire Hot Spot Map– This map indicates a fairly even distribution of fire calls with most located Southwest of Station 32.



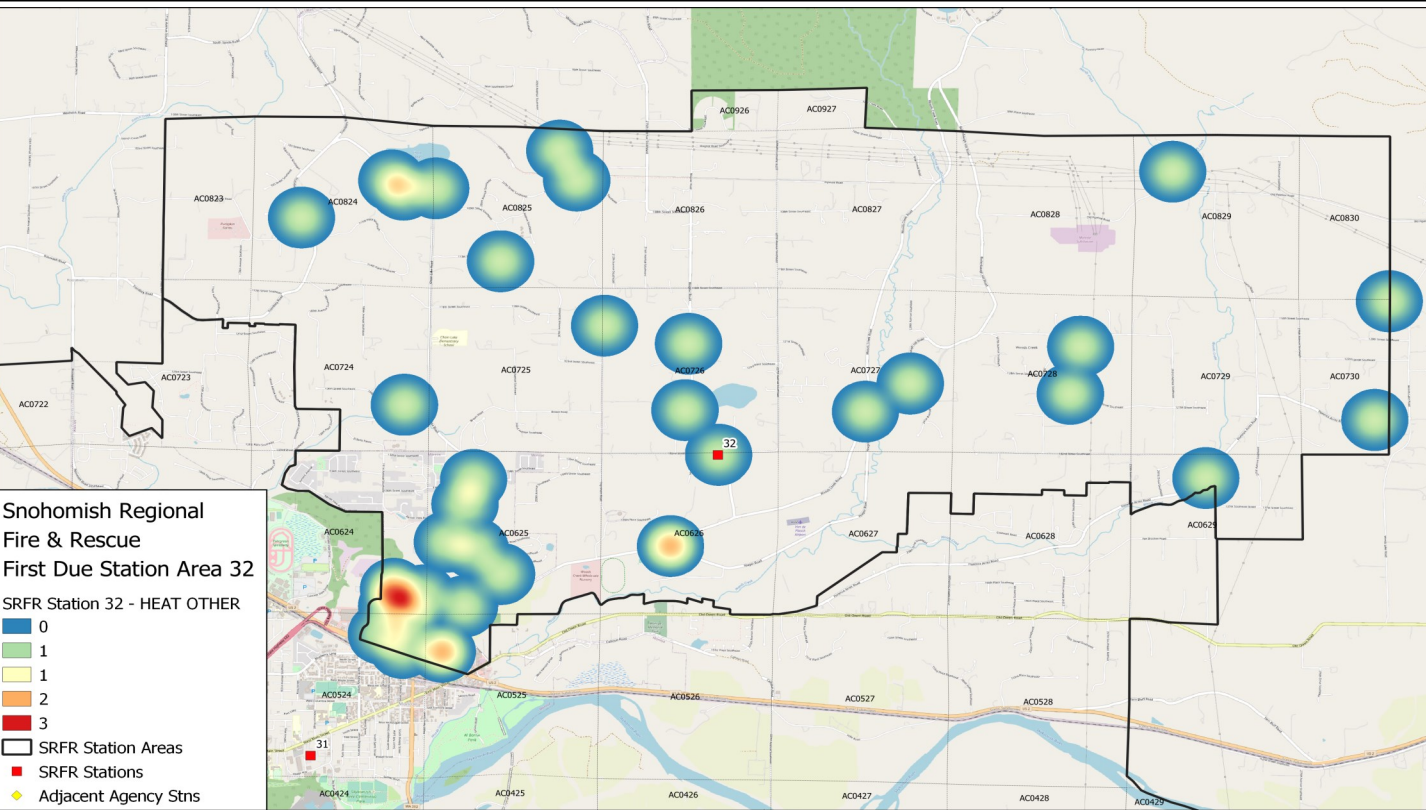
EMS Hot Spot Map– Indicates a reasonably even distribution of EMS calls with most located South-



Haz Mat Hot Spot Map– Haz Mat calls are located in the Southwest corner of 32’s first due area.

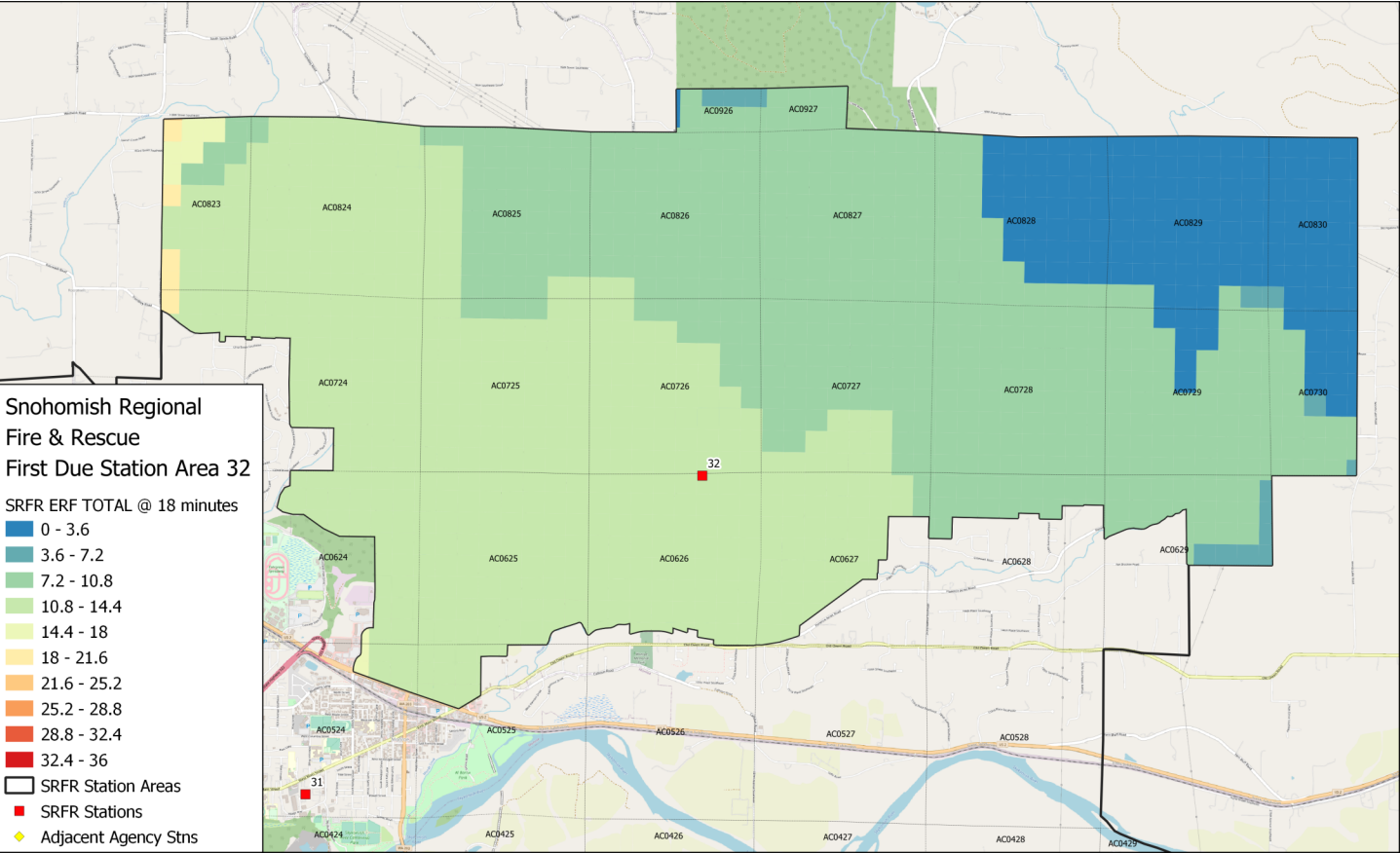


Other Hot Spot Map– Indicates an even distribution of Other calls with the most located in the South-



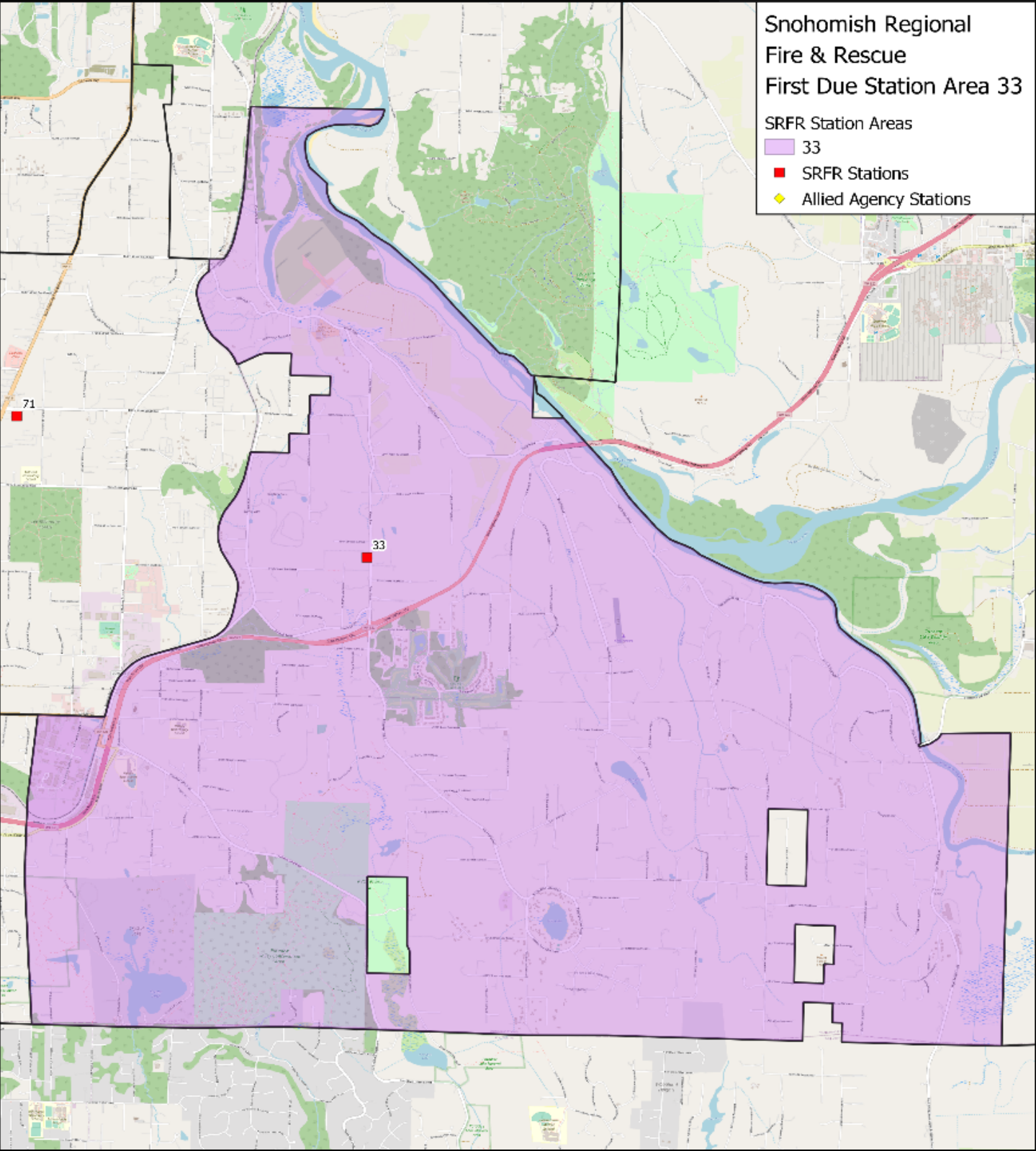
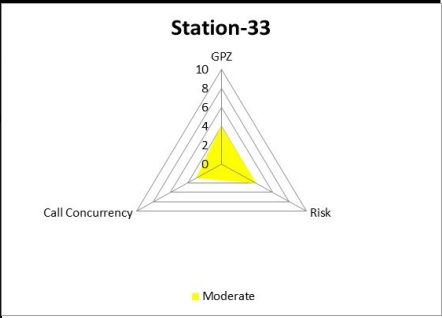
Section F - Current Deployment and Performance

Time Increments	ERF-11	ERF-12	ERF-15	ERF-18
8-Minutes	4.85%	4.85%	2.66%	0.00%
10-Minutes	13.00%	13.00%	9.25%	0.82%
13-Minutes	36.53%	36.53%	31.31%	15.47%
15-Minutes	63.38%	63.38%	54.50%	35.98%
18-Minutes	87.06%	87.06%	83.42%	72.60%

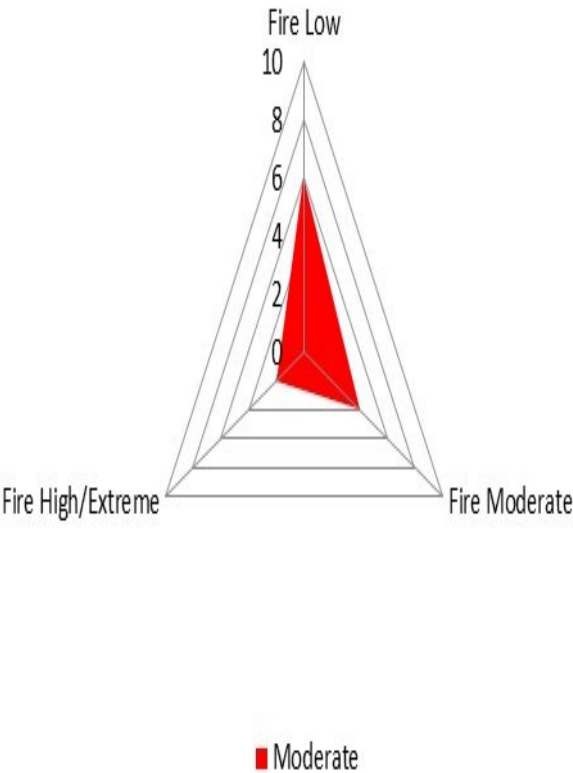


Station 33	A33/BR33/E33/L33	Cross Staffed
	Station 33 Total	

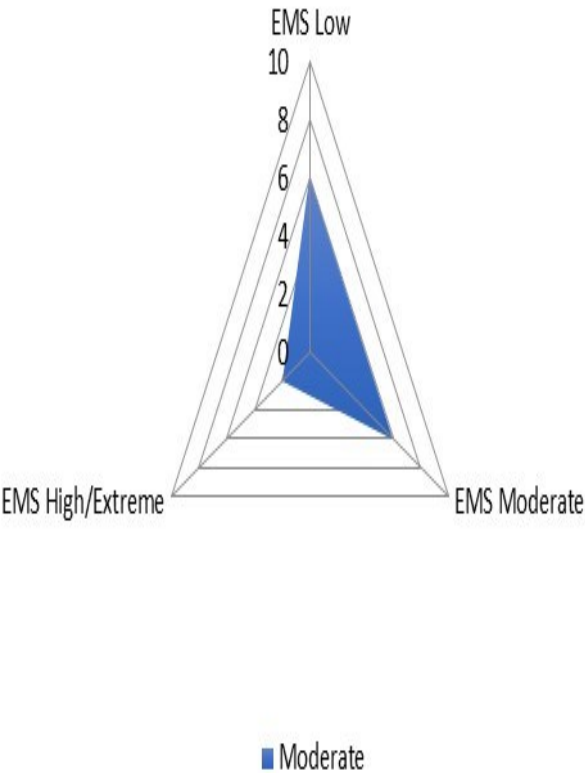
Station 33 cross staffs 4 units, has a moderate overall jurisdictional risk level and is adjacent to Stations 71 and 31.



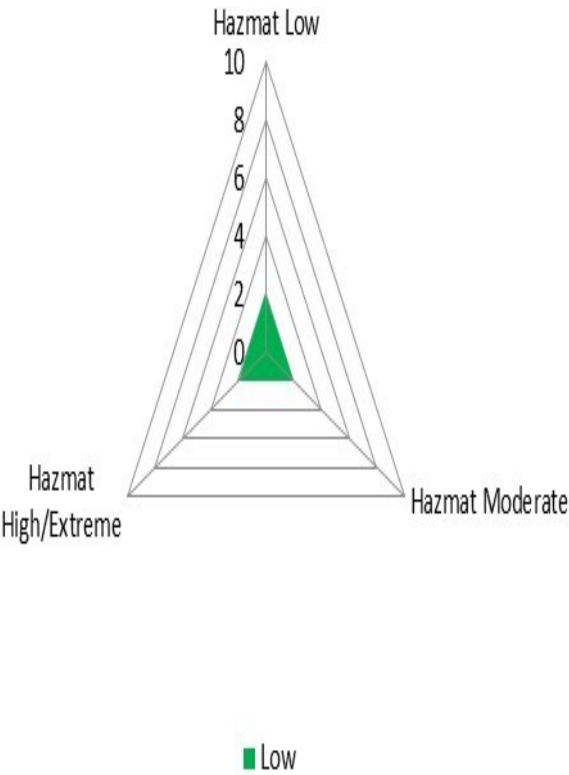
Station 33 First Due Area



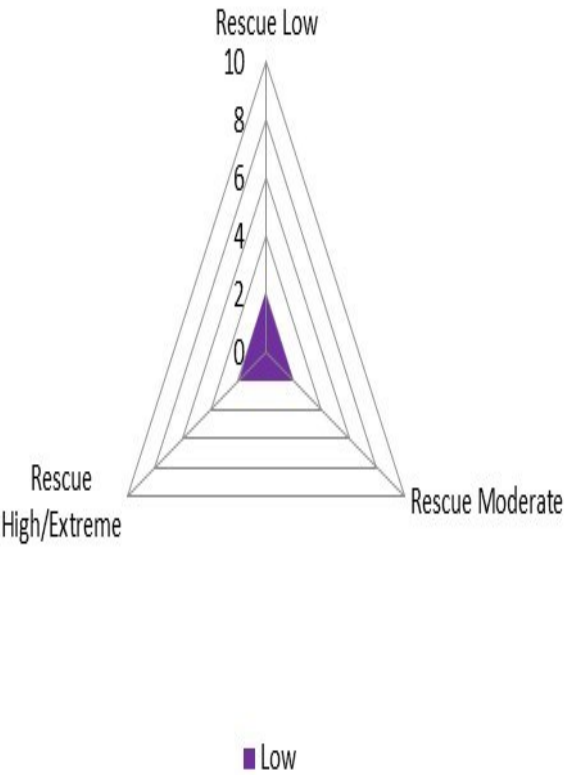
Station 33 First Due Area



Station 33 First Due Area



Station 33 First Due Area

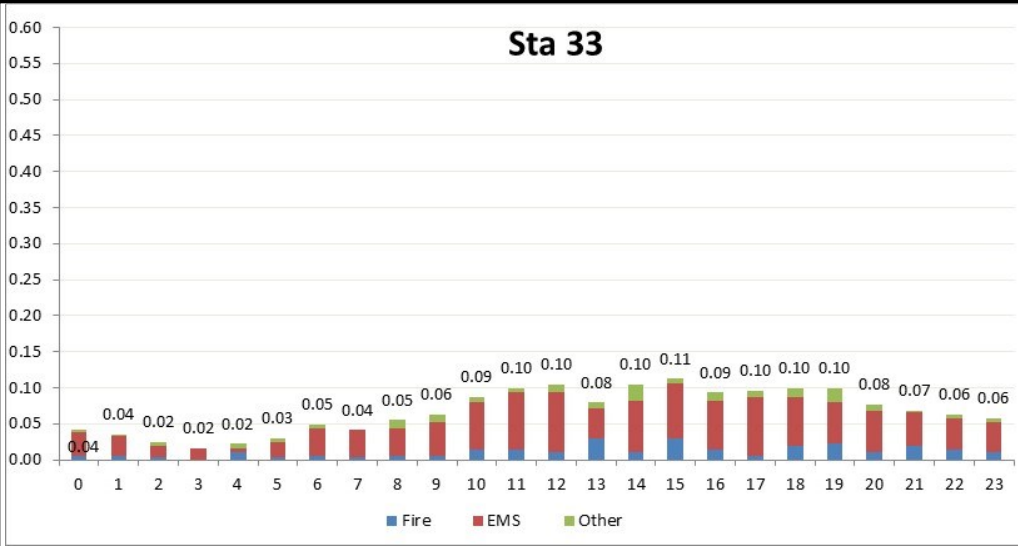


Station 33 First Due Area Historical Data Analysis

Station 33 First Due Area Incidents by Call Category	Reporting Period			
	2017	2018	2019	All
EMS Total	530	459	427	1,416
Fire Total	100	111	95	306
Hazmat Total	13	10	10	33
Other Total	73	66	57	196
Technical Rescue Total	1	0	1	2
Total	717	646	590	1,953
Average Calls per Day	2.0	1.8	1.6	N/A
YoY Growth	N/A	-9.9%	-8.7%	N/A

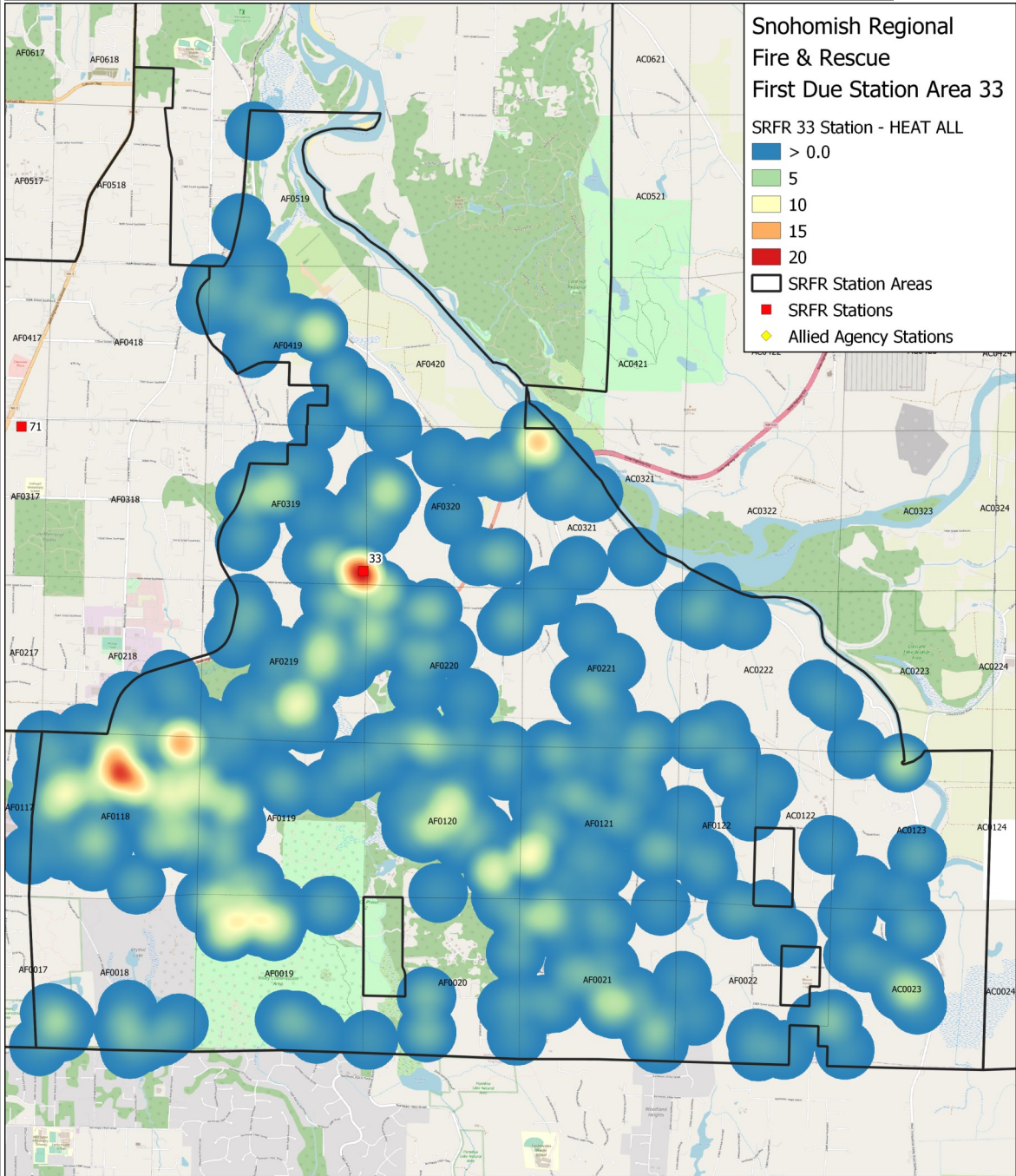
Station 33 First Due Area Unit Responses	Reporting Period			
	2017	2018	2019	All
A33	37	9	388	434
A74	564	563	134	1,261
BR33	0	0	14	14
E33	1	1	232	234
E74	321	358	94	773
L33	0	0	26	26
M33	1	5	1	7
Total	924	936	889	2,749
Average Responses per Day	2.5	2.6	2.4	2.5

Station 33 First Due Area: 1 st Arriving Baseline Performance		2017-2019	2017	2018	2019	2017-2019 Benchmark	2017-2019 Compliance
Alarm Handling		3:37	3:08	3:55	3:41	3:14	87.1%
Turnout Time		2:20	2:21	2:16	2:21	2:07	84.3%
Travel Time	Urban	N/A	N/A	N/A	N/A	5:44	N/A
	Rural	11:10	10:55	11:07	11:33	9:05	77.7%
Total Response Time	Urban	N/A	N/A	N/A	N/A	9:22	N/A
		n = 0	n = 0	n = 0	n = 0		
	Rural	15:17	14:45	15:09	16:33	12:49	79.1%
		n = 1,321	n = 527	n = 425	n = 369		



Temporal Analysis

Incident volume by time of day and by type of call shows Station 33’s busiest times are from 10am to 7 pm. Note the large spike in fire calls around 1pm, 3 pm, and throughout the evening until midnight.

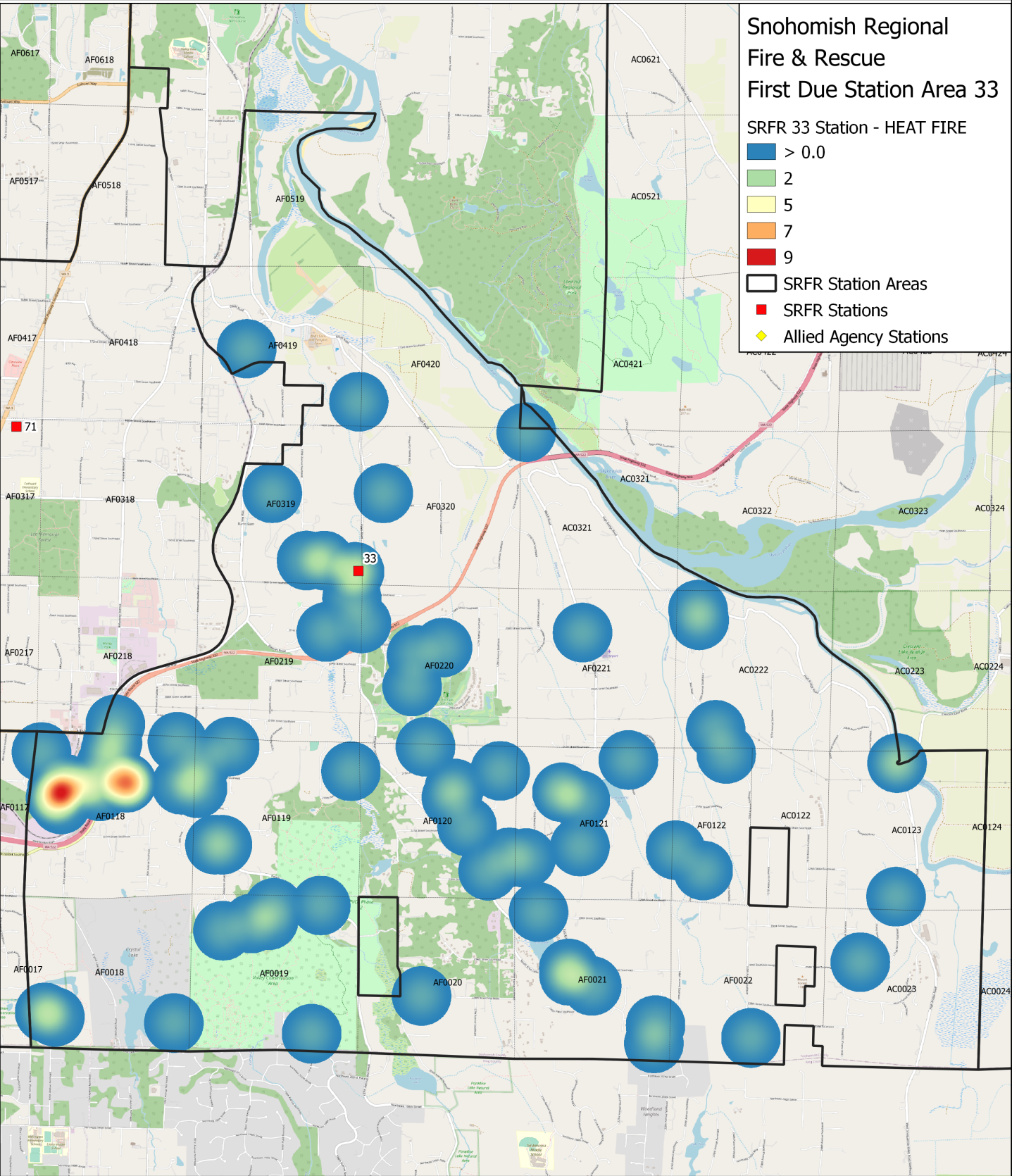


Overall Hot Spot Map

Trends show the majority of call volume immediately surrounding the station and West, with a fairly even spread of calls throughout the rest of Station 33’s first due area.

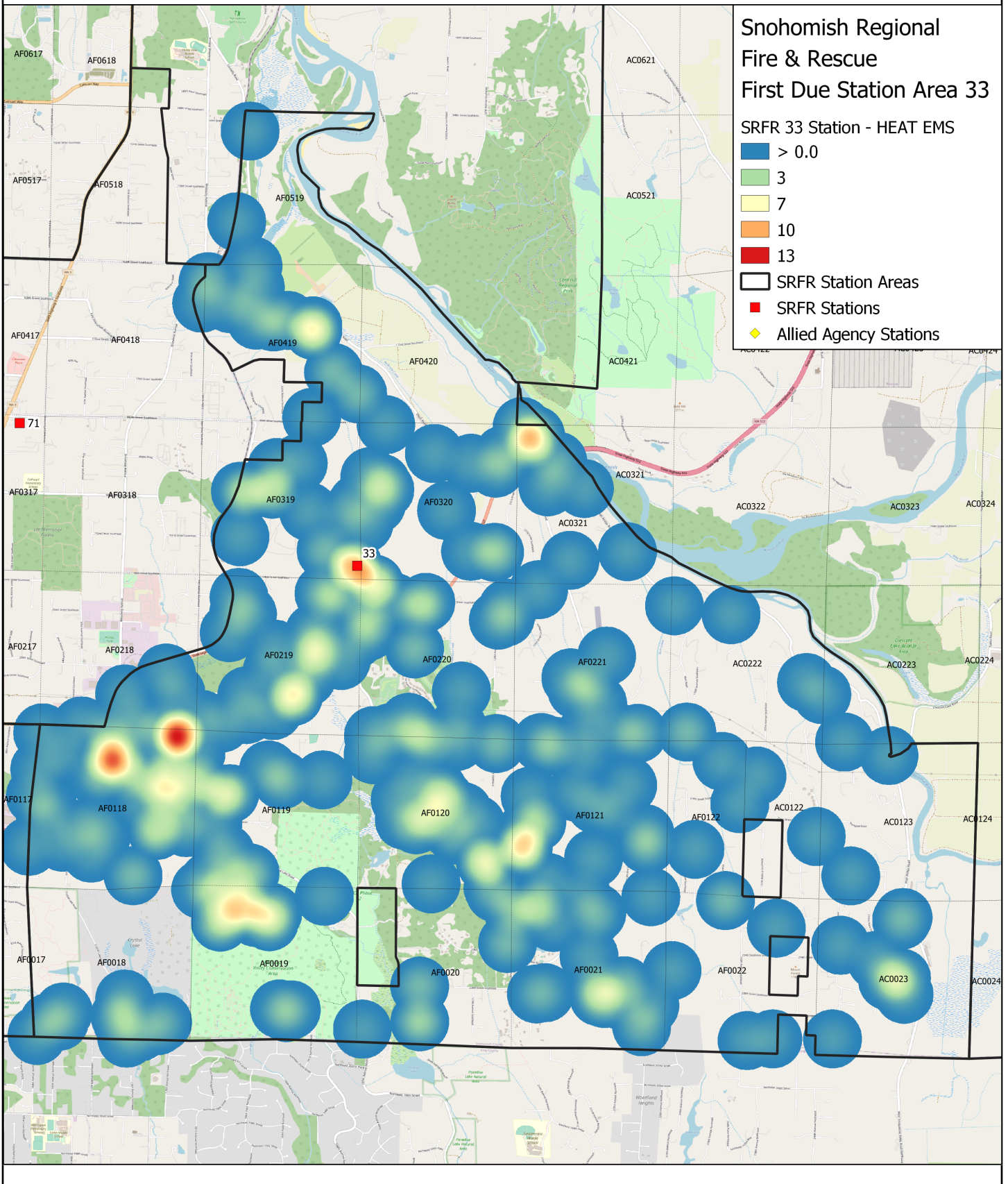
Fire Hot Spot Map

This map indicates the highest concentration of fire calls are Southwest of the station near the first due areas of Station 71 and 73.



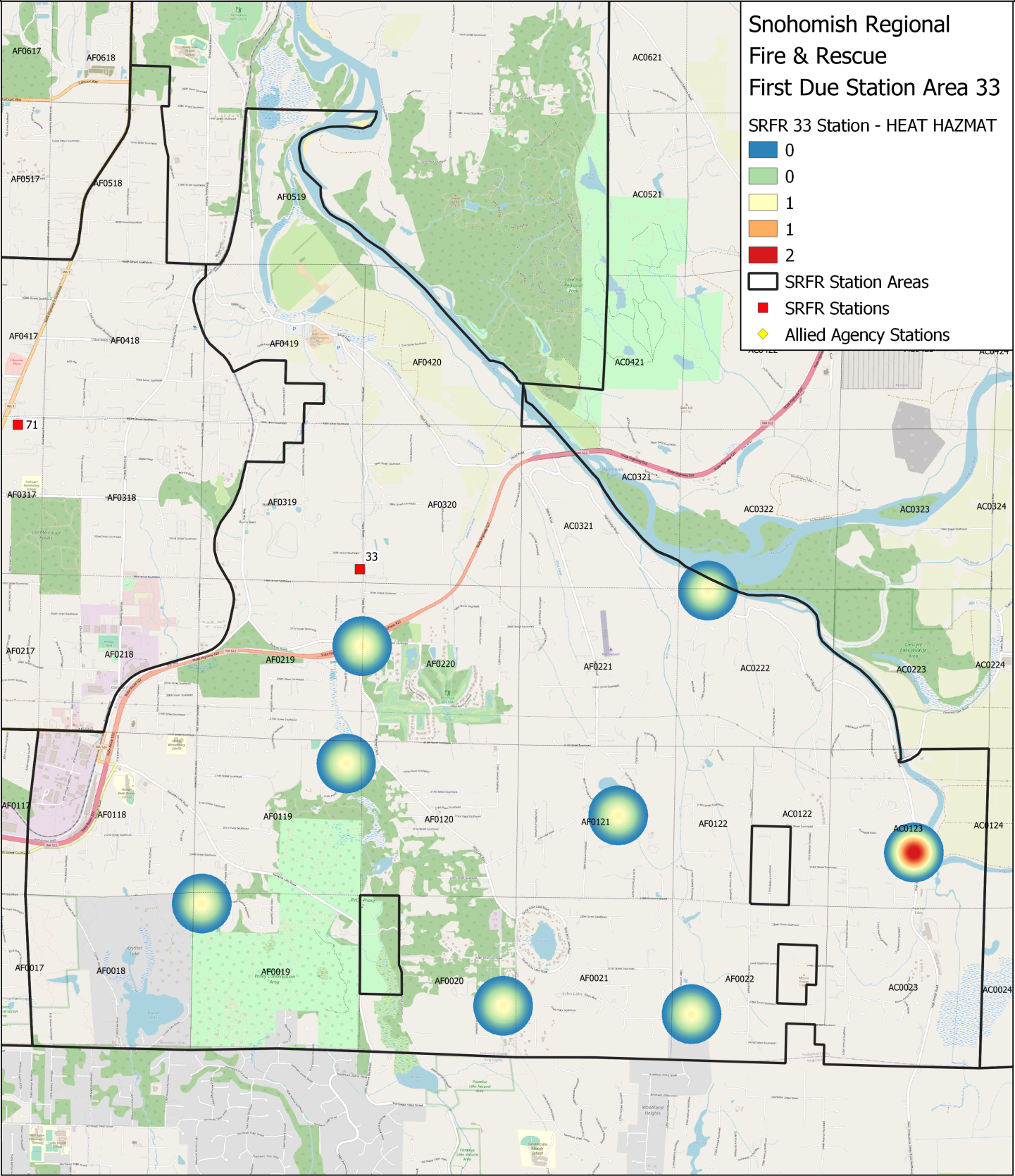
EMS Hot Spot Map

This map shows even distribution of EMS calls throughout the first due area. Most of the concentration is located in close proximity to the station and moving in a Southwest direction. There is a single moderate hot spot Northeast of Station 33.



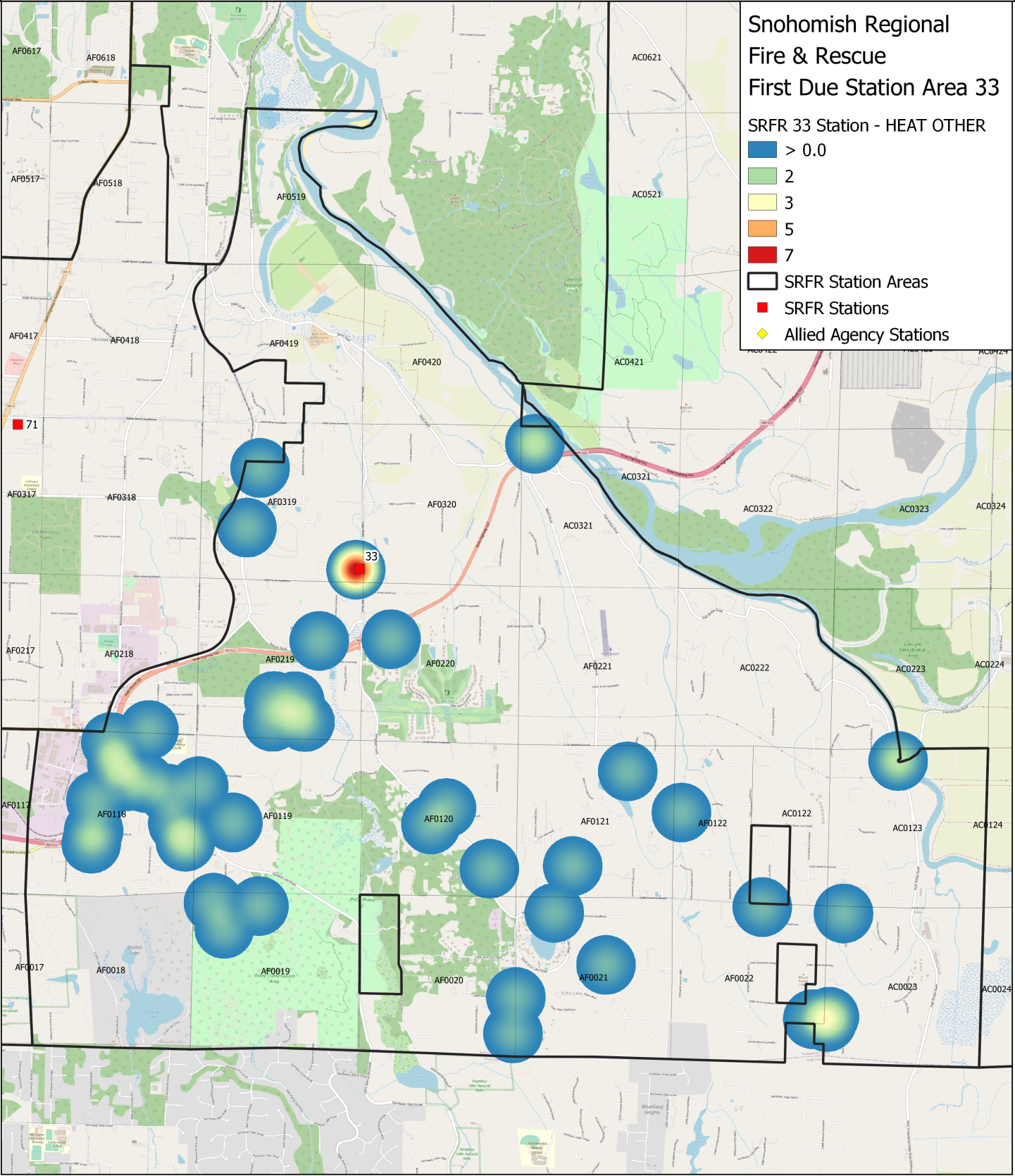
HazMat Hot Spot Map

There is a light volume of hazardous materials calls in the first due area. The concentration of calls seem to be Southeast of the station.



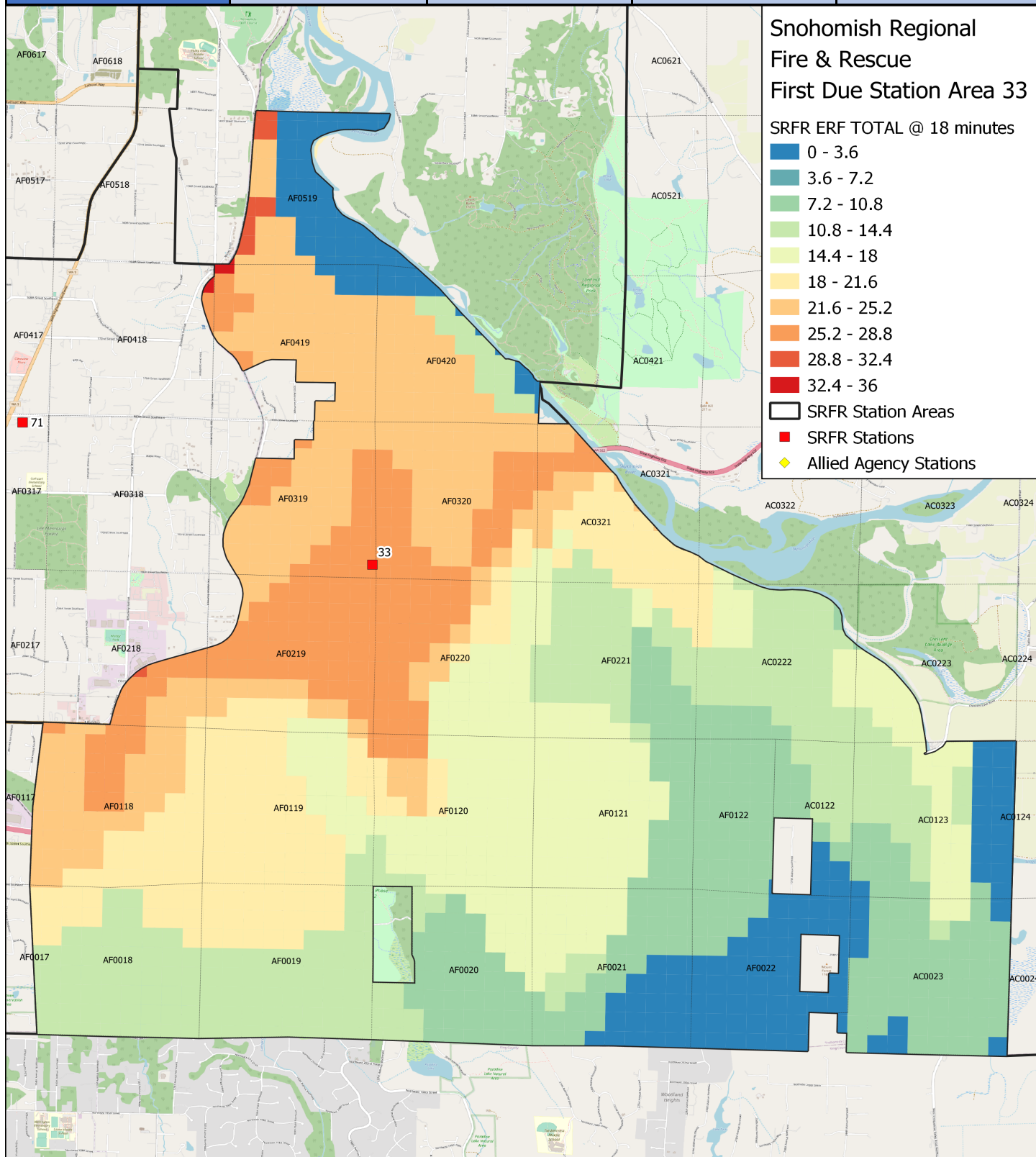
Other Hot Spot Map

This call type shows the most call volume in close proximity to Station 33.



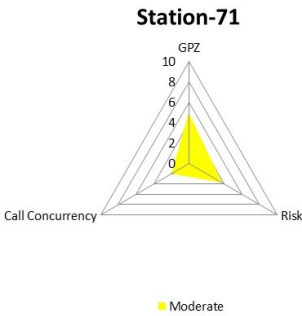
Section F - Current Deployment and Performance

Time Increments	ERF-11	ERF-12	ERF-15	ERF-18
8-Minutes	12.11%	12.11%	0.00%	0.00%
10-Minutes	23.95%	23.95%	7.51%	7.51%
13-Minutes	53.52%	53.52%	34.09%	32.13%
15-Minutes	75.42%	75.42%	59.00%	53.14%
18-Minutes	91.22%	91.22%	86.76%	79.46%



Station 71	E71/M71/HZ71/T71/BR71	Cross Staffed
	MSO71	Medical Services Officer
	B71	Battalion
	Station 71 Total	

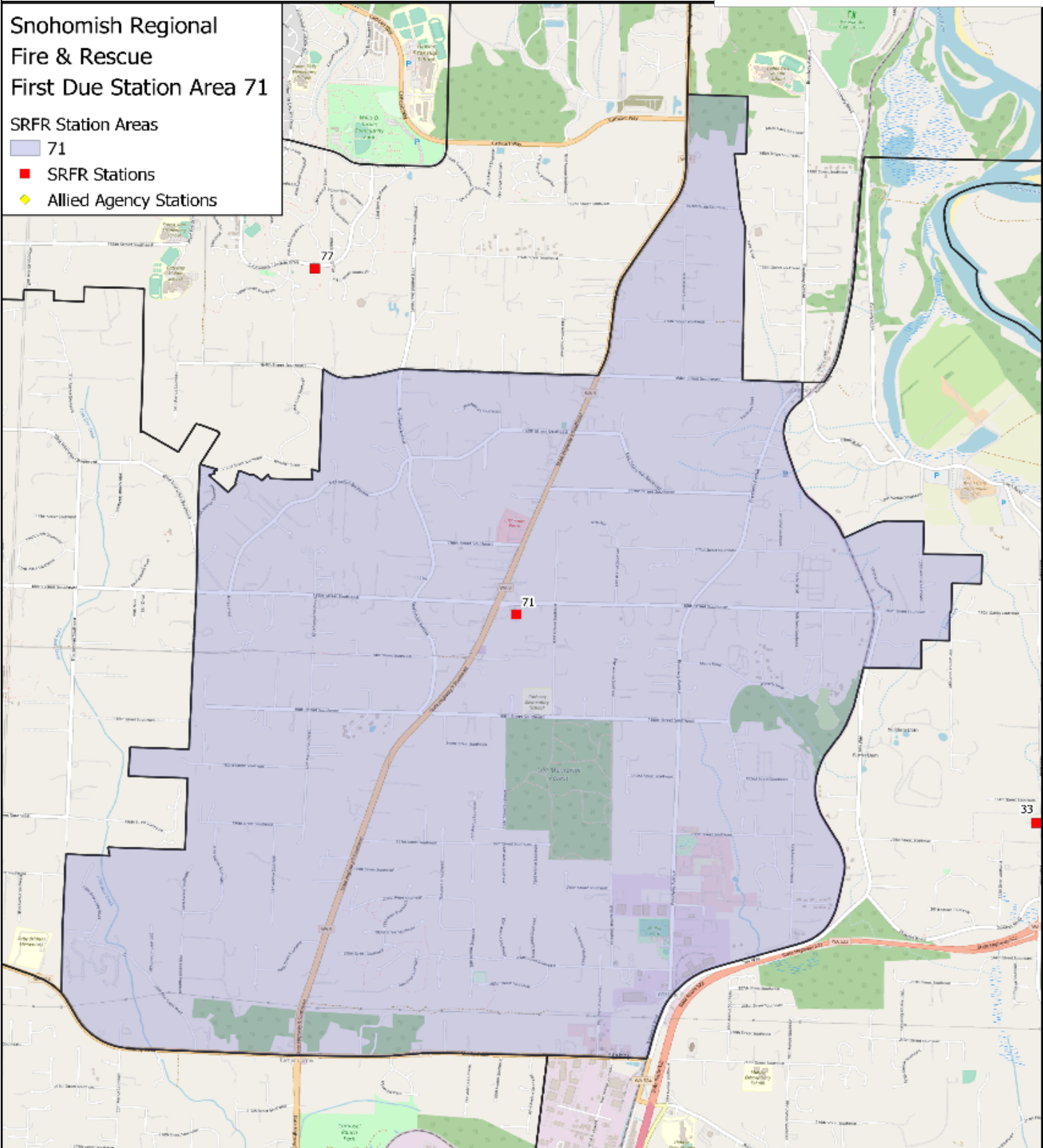
Station 71 staffs 3 units full time, cross staffs 5 units, has a moderate overall jurisdictional risk level and is adjacent to Stations 33, 73, 72, and 77.



**Snohomish Regional
Fire & Rescue
First Due Station Area 71**

SRFR Station Areas

- 71
- SRFR Stations
- Allied Agency Stations

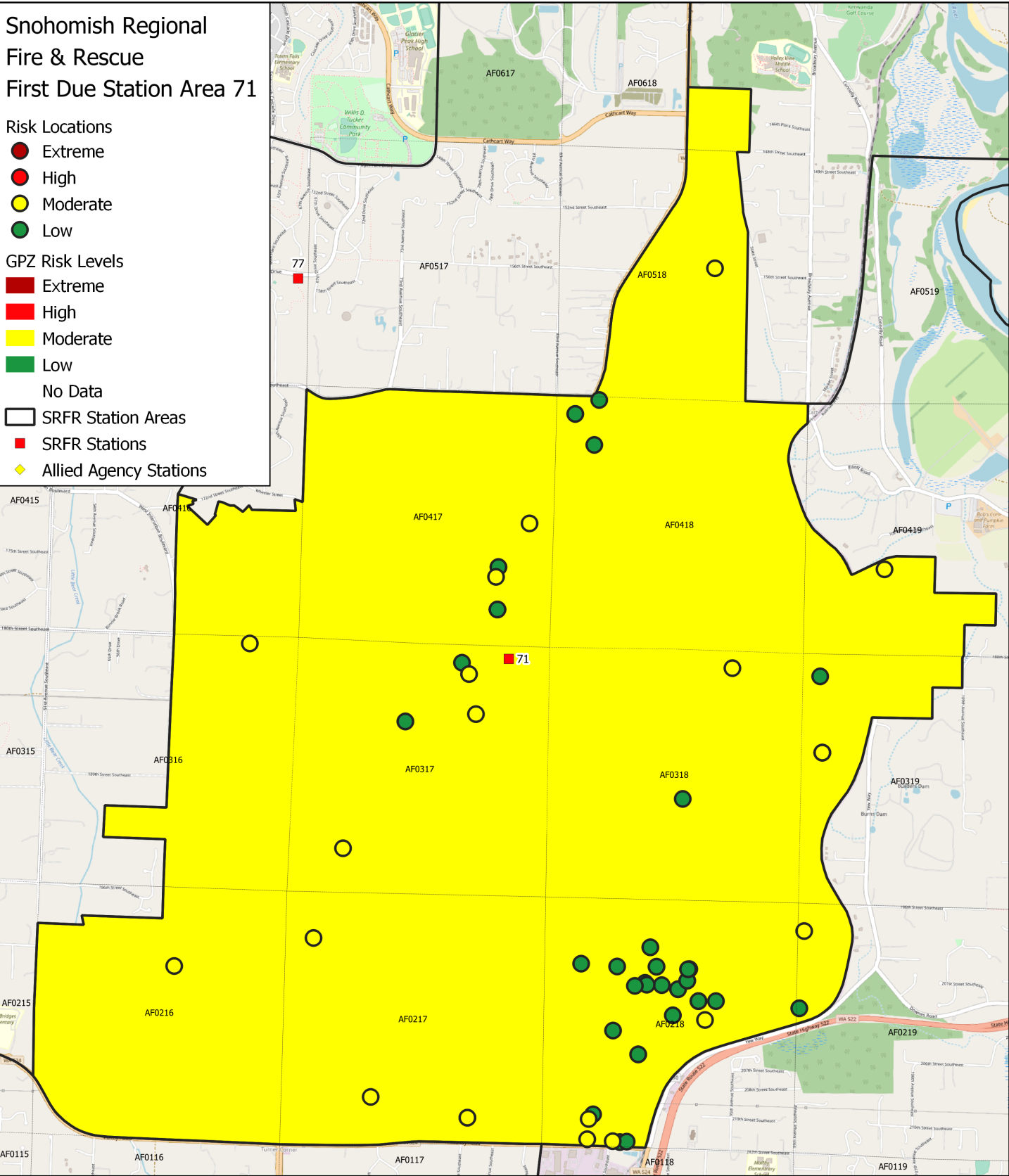


Risk Analysis

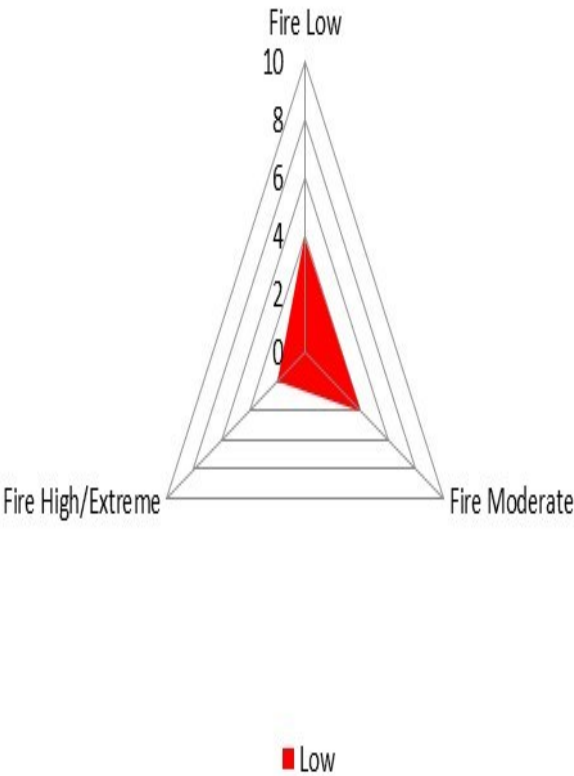
Risk of individual building locations is represented by the small circles and shaded to indicate risk level. There is a concentration of lower to moderate risk buildings along the major travel corridor and Southeast of the station that warrant additional attention. Risk is also evaluated by geographic planning zone using the same shading criteria. The entirety of Station 71’s first due area is moderate risk.

Snohomish Regional
Fire & Rescue
First Due Station Area 71

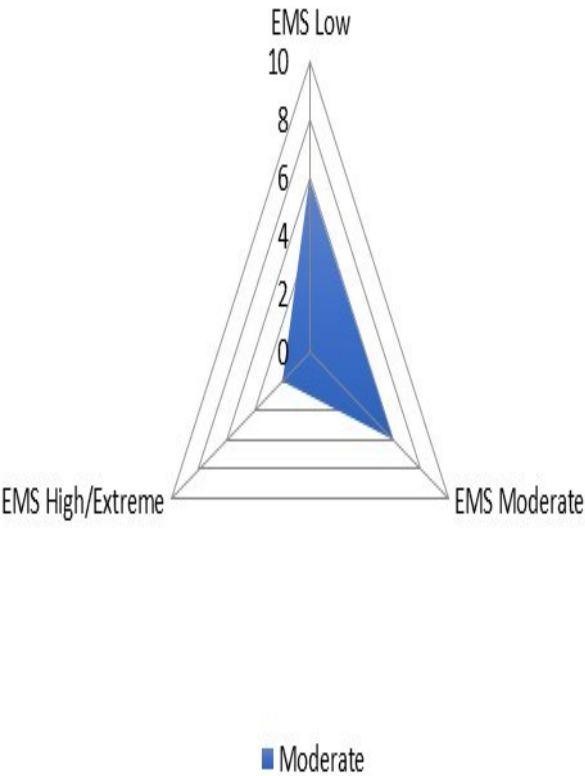
- Risk Locations
- Extreme
 - High
 - Moderate
 - Low
- GPZ Risk Levels
- Extreme
 - High
 - Moderate
 - Low
 - No Data
- SRFR Station Areas
- SRFR Stations
 - Allied Agency Stations



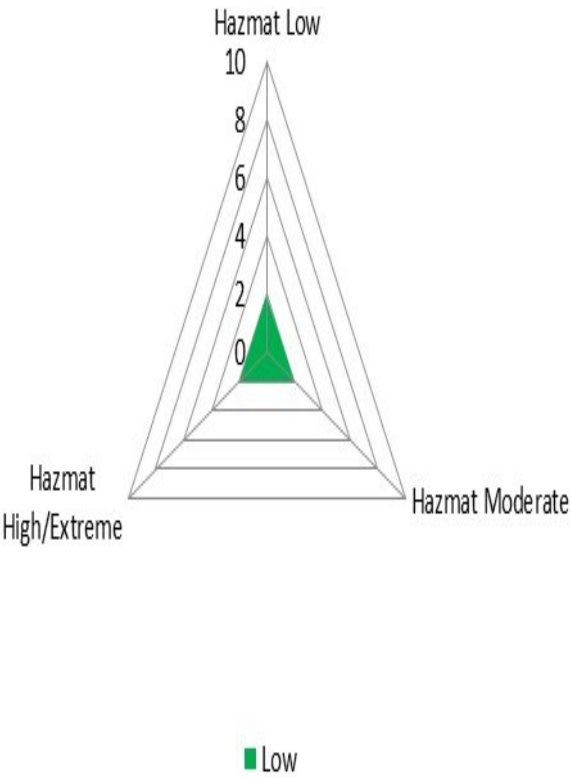
Station 71 First Due Area



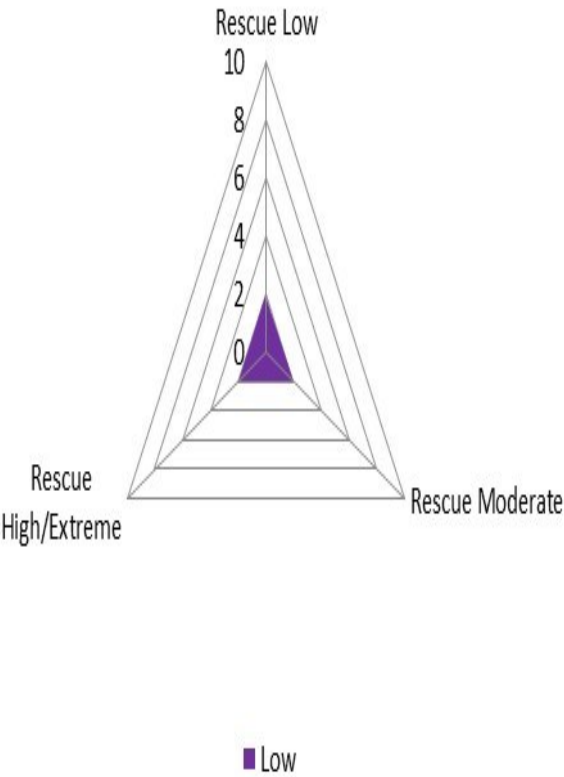
Station 71 First Due Area



Station 71 First Due Area



Station 71 First Due Area

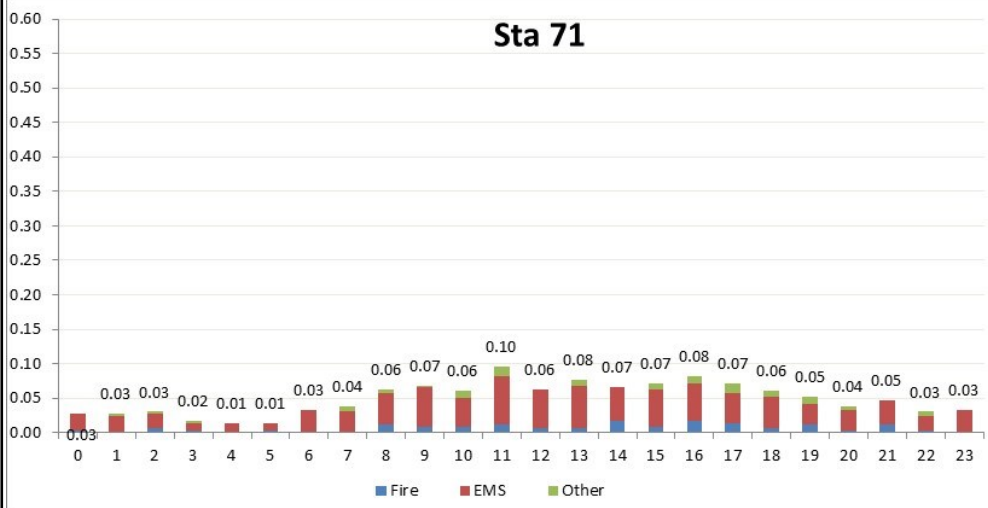


Station 71 First Due Area Historical Data Analysis

Station 71 First Due Area Incidents by Call Category	Reporting Period			
	2017	2018	2019	All
EMS Total	235	237	331	803
Fire Total	50	36	55	141
Hazmat Total	4	5	5	14
Other Total	36	36	39	111
Technical Rescue Total	0	1	0	1
Total	325	315	430	1,070
Average Calls per Day	0.9	0.9	1.2	N/A
YoY Growth	N/A	-3.1%	36.5%	N/A

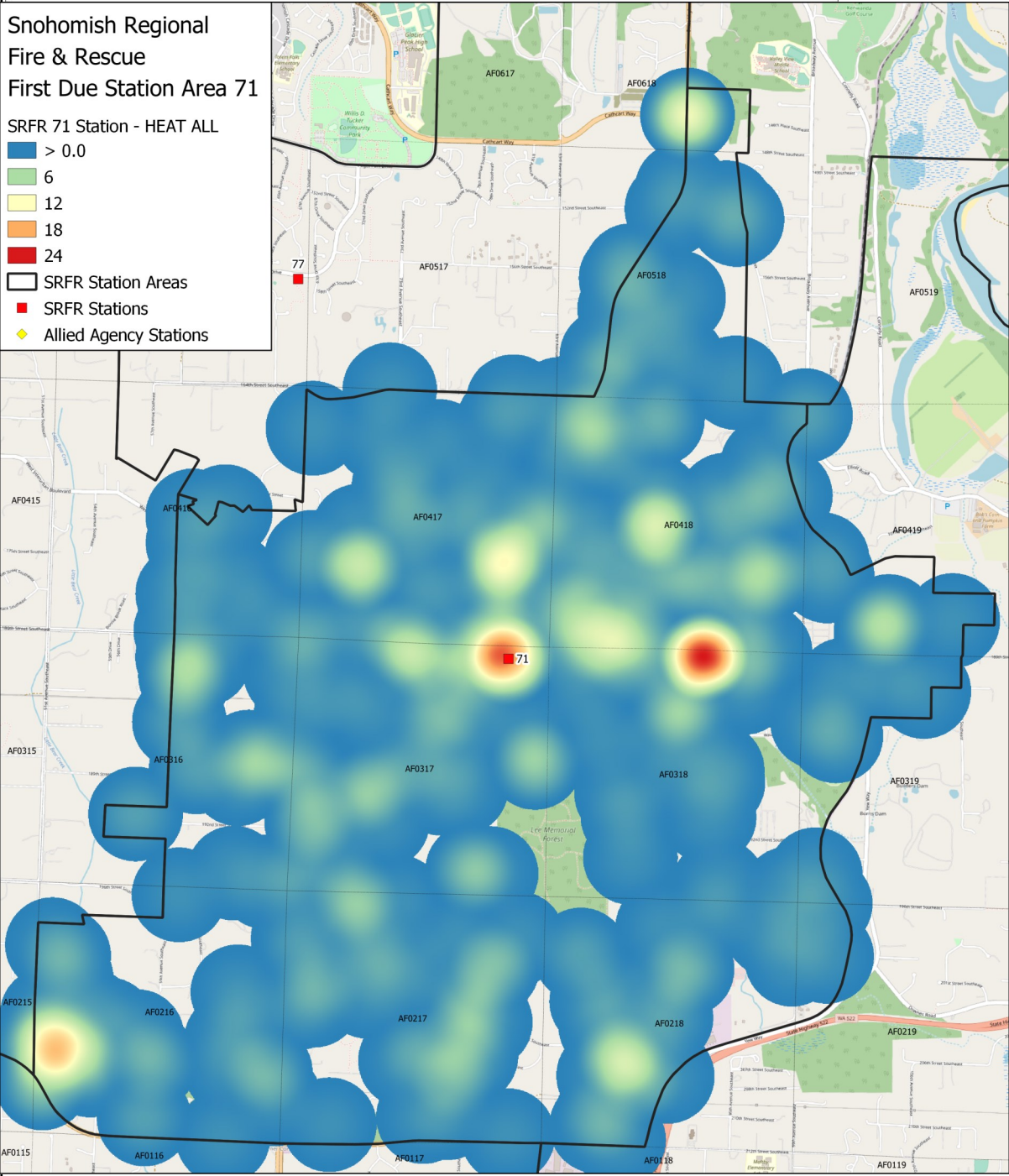
Station 71 First Due Area		Reporting Period			
Unit Responses		2017	2018	2019	All
B71		667	589	508	1,764
BR71		17	13	0	30
CRP71		52	35	35	122
E71		374	336	293	1,003
HZ71		4	5	7	16
M71		970	1,043	1,016	3,029
MSO71		0	53	650	703
MSO72		350	193	5	548
T71		27	15	23	65
Total		2,461	2,282	2,537	7,280
Average Responses per Day		6.7	6.3	7.0	6.6

Station 71 First Due Area:							
1 st Arriving Baseline Performance		2017-2019	2017	2018	2019	2017-2019 Benchmark	2017-2019 Compliance
Alarm Handling		3:23	2:28	3:48	3:45	3:14	88.8%
Turnout Time		2:21	2:25	2:18	2:19	2:07	83.6%
Travel Time	Urban	N/A	N/A	N/A	N/A	5:44	N/A
	Rural	7:00	6:58	7:07	7:02	9:05	96.9%
Total Response Time	Urban	N/A	N/A	N/A	N/A	9:22	N/A
		n = 0	n = 0	n = 0	n = 0		
	Rural	10:56	10:05	11:28	11:02	12:49	96.2%
		n = 744	n = 251	n = 205	n = 288		



Temporal Analysis

Incident volume by time of day by type of call shows Station 71's busiest times are from 11 am to 5 pm. The large spike at 11 am is largely comprised of EMS and Other types of calls.



Overall Hot Spot Map

Trends show the majority of call volume immediately surrounding the station and directly to the East, with moderate call volume Southwest of Station 71.

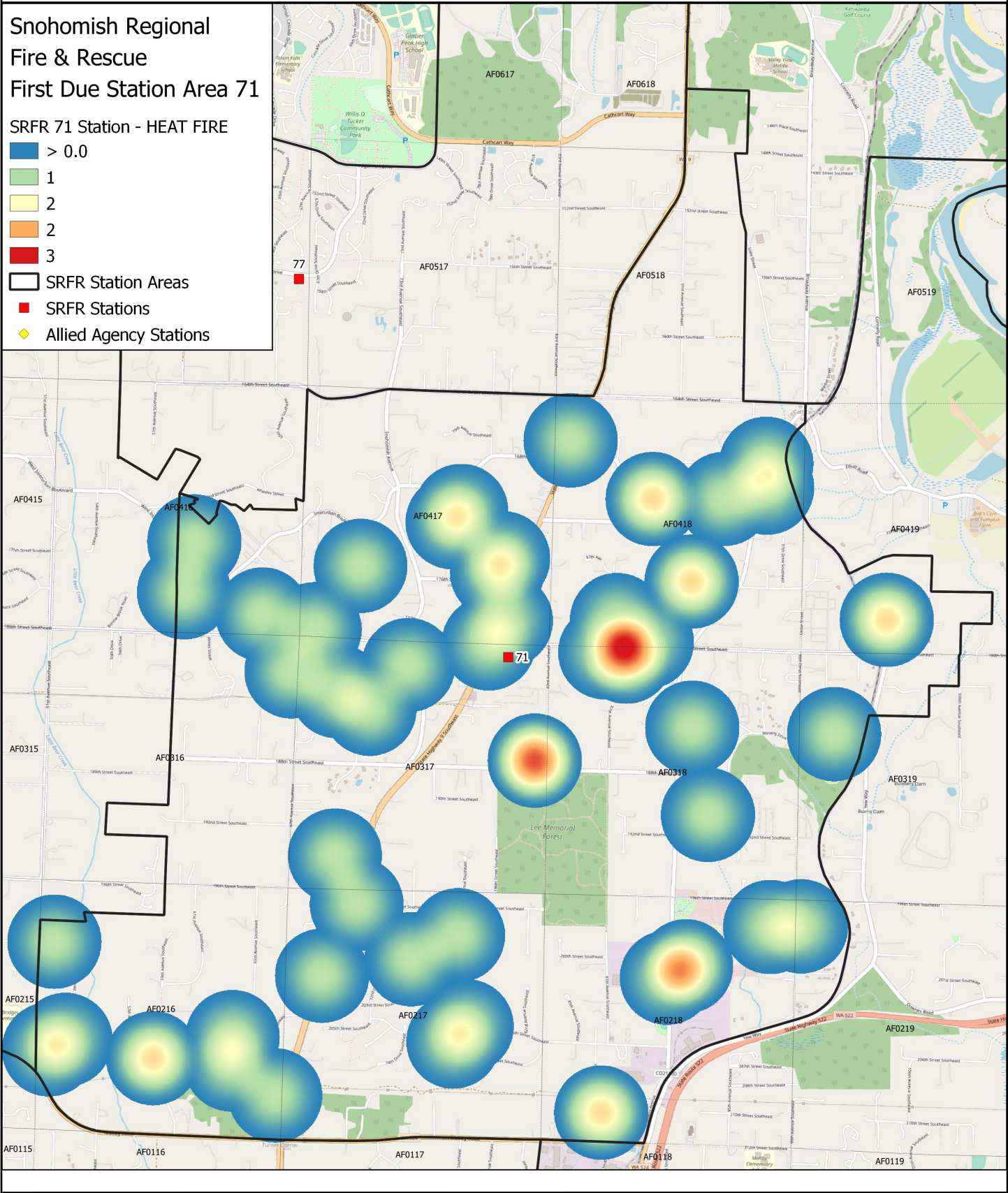
Fire Hot Spot Map

This analysis indicates the highest concentration of fire calls is in closer proximity to Station 71, with the highest fire call volume directly East of the station.

Snohomish Regional
Fire & Rescue
First Due Station Area 71

SRFR 71 Station - HEAT FIRE

- > 0.0
- 1
- 2
- 2
- 3
- SRFR Station Areas
- SRFR Stations
- Allied Agency Stations



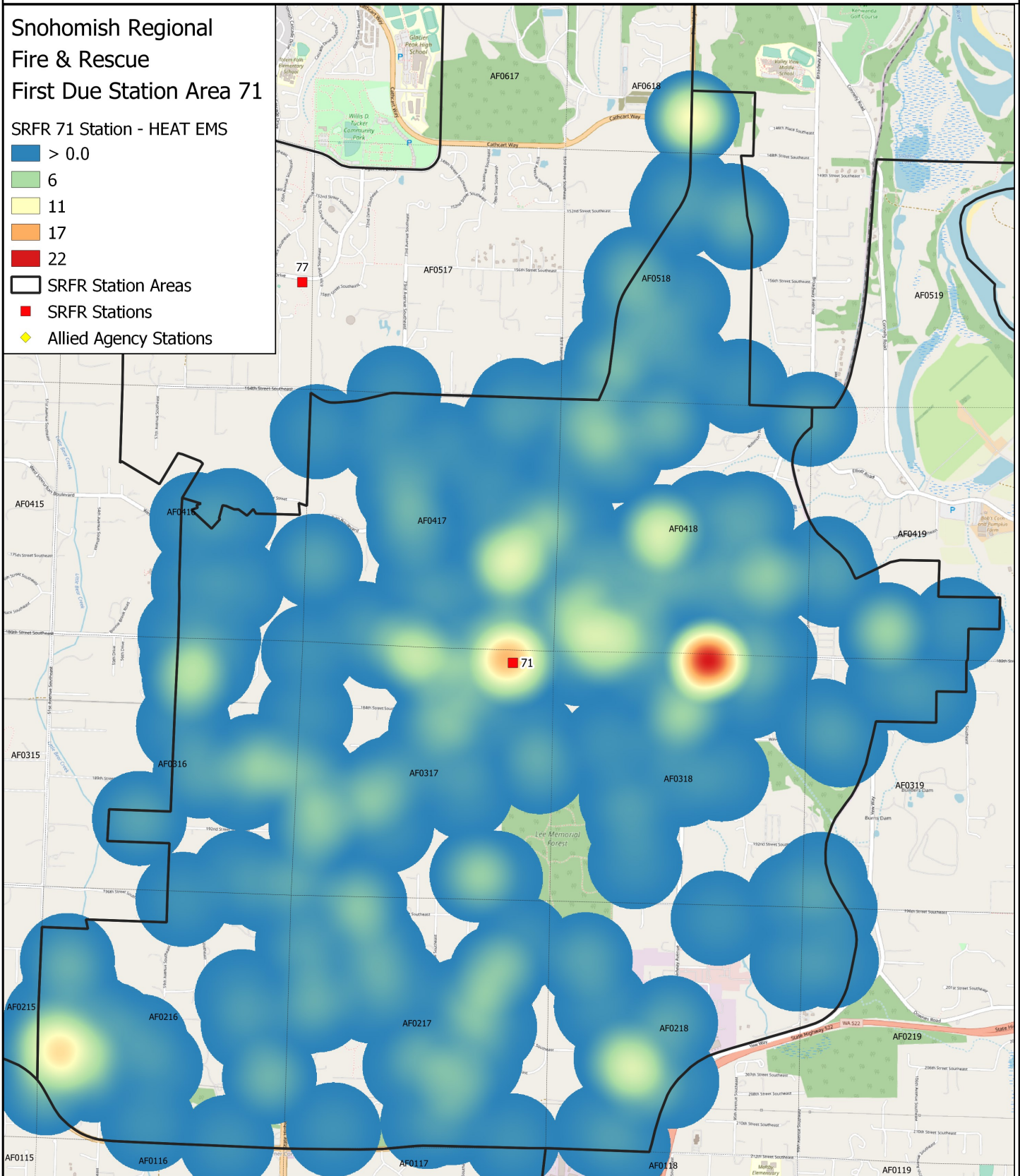
EMS Hot Spot Map

Indicates the highest concentration of EMS calls is directly surrounding the station and just East of the largest hotspot for fire calls, but located within the same GPZ. This area would be a great place to focus community risk reduction efforts.

Snohomish Regional Fire & Rescue First Due Station Area 71

SRFR 71 Station - HEAT EMS

- > 0.0
- 6
- 11
- 17
- 22
- SRFR Station Areas
- SRFR Stations
- Allied Agency Stations

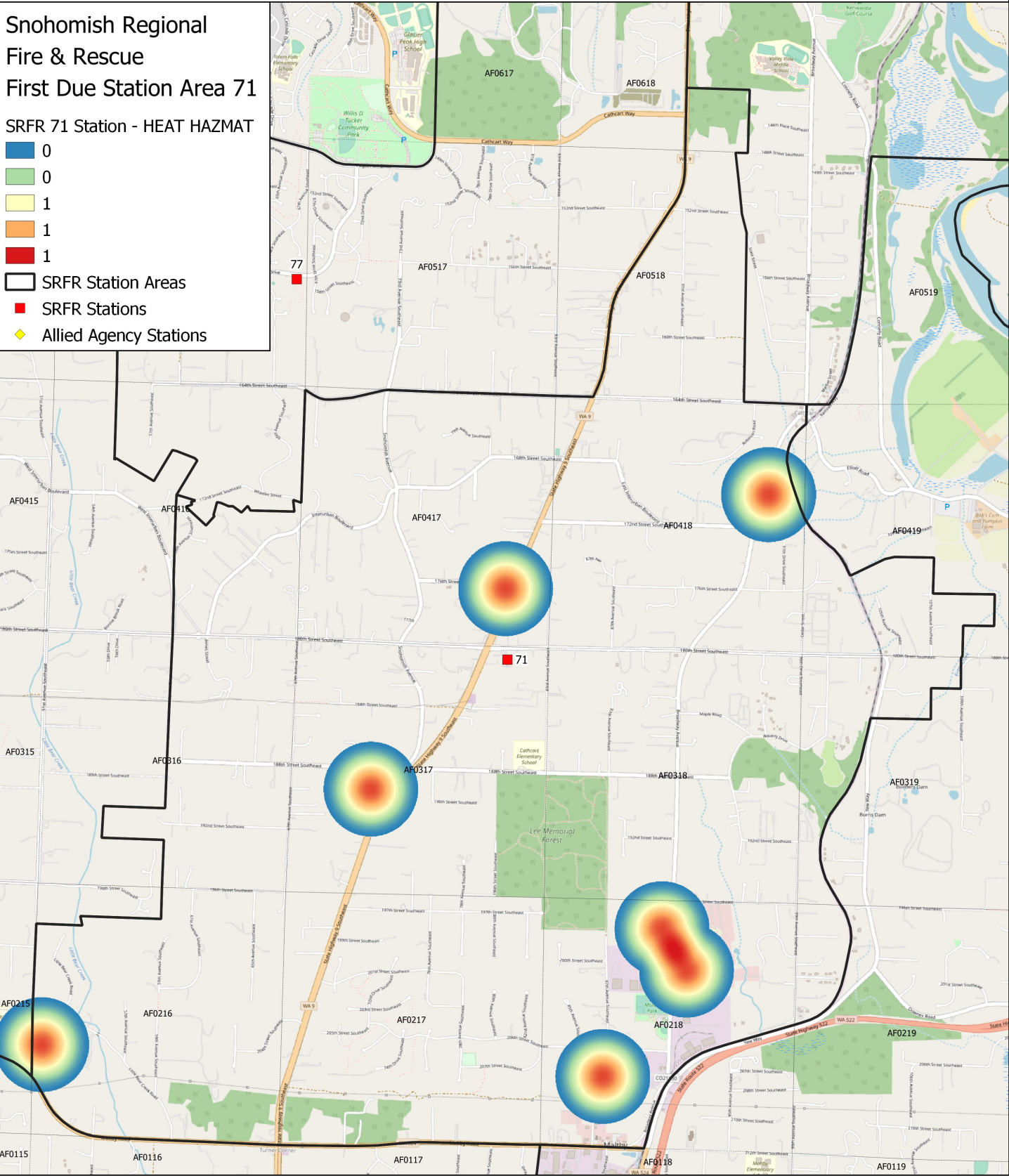
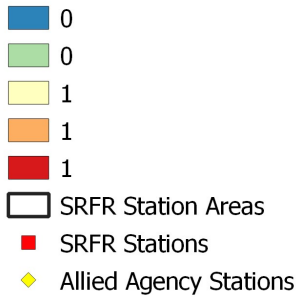


HazMat Hot Spot Map

Station 71 experienced a relatively low volume of hazardous material incidents that were spread throughout the first due station area.

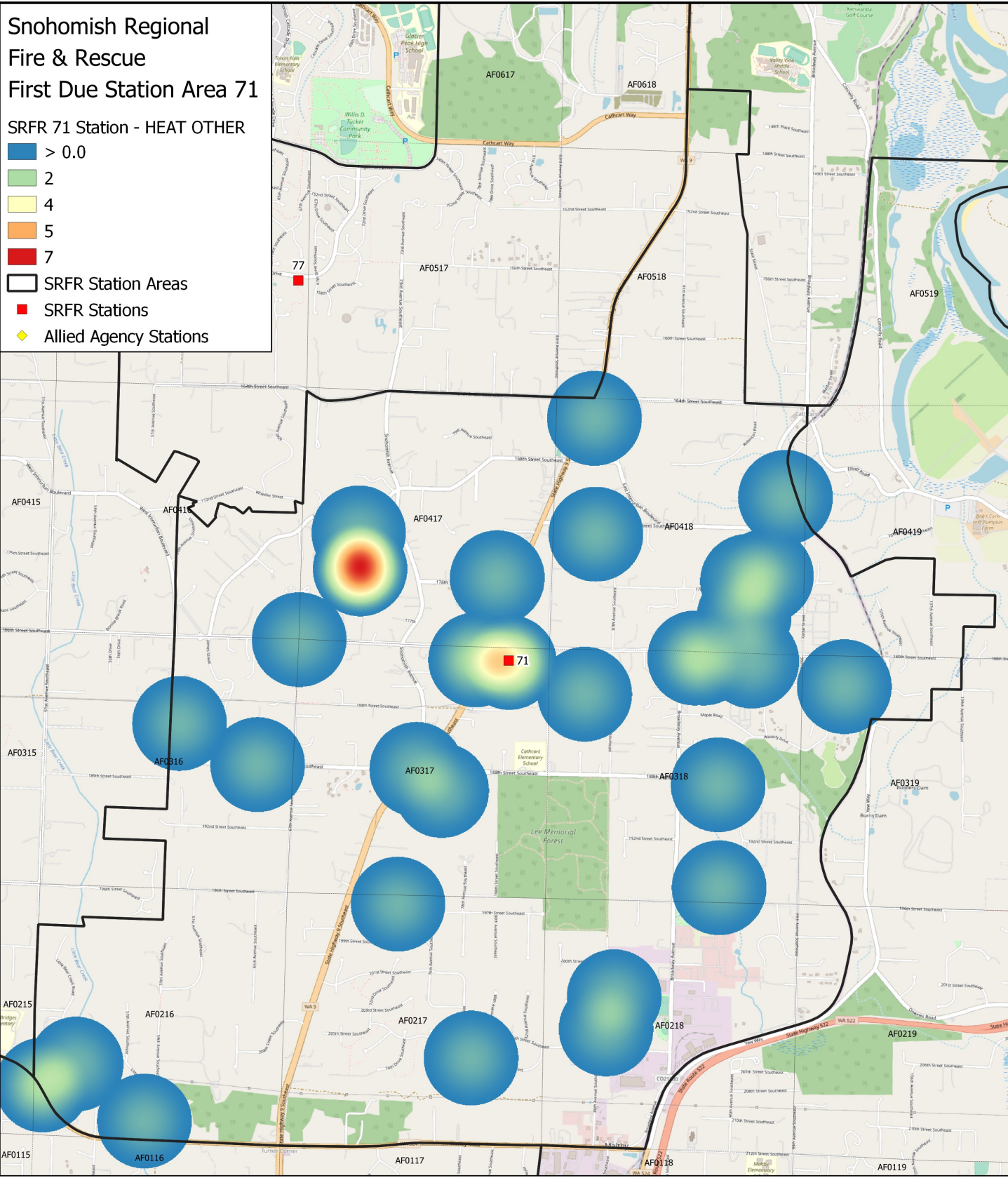
Snohomish Regional
Fire & Rescue
First Due Station Area 71

SRFR 71 Station - HEAT HAZMAT



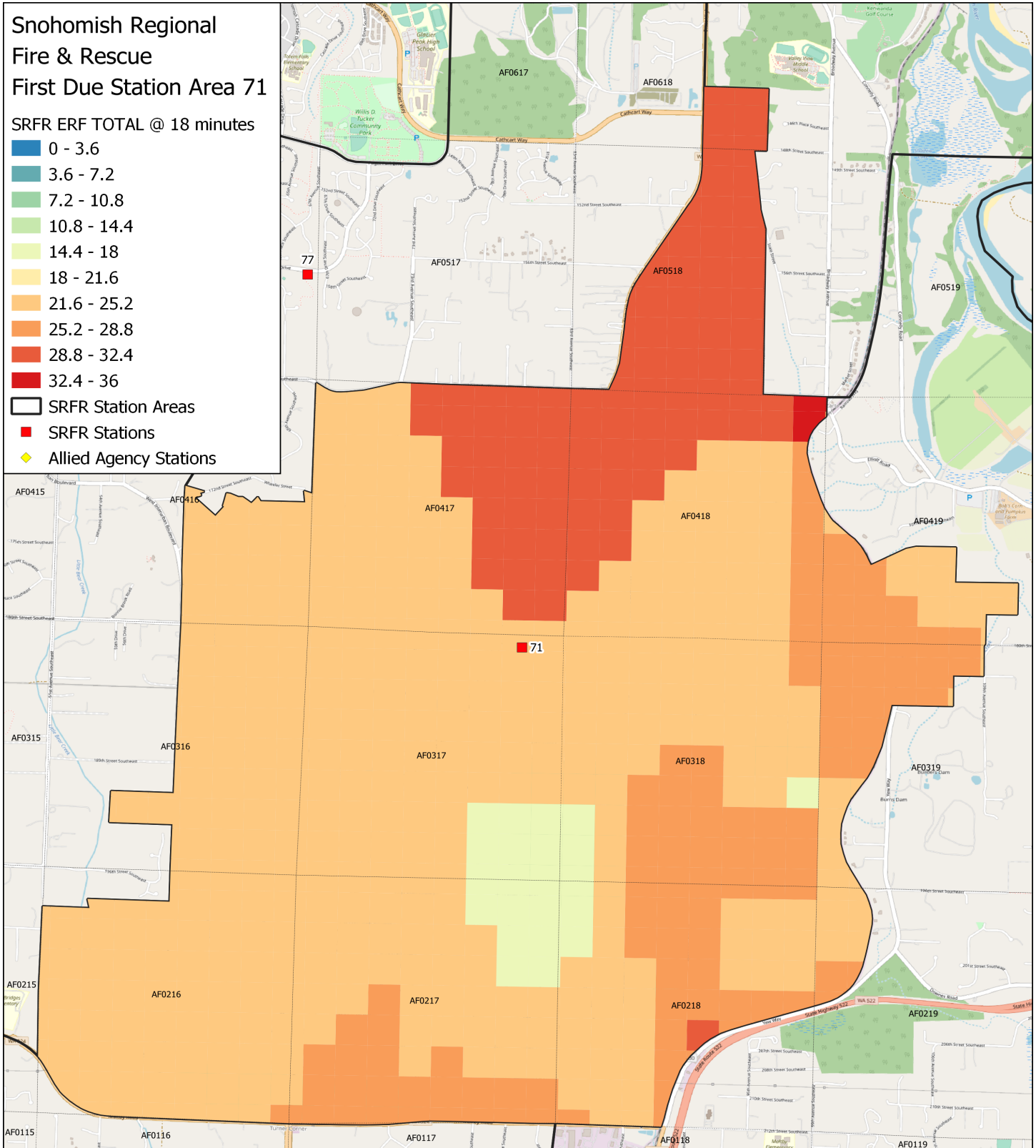
Other Hot Spot Map

Station 71 experienced a dispersed set of other type incidents within their first due station area, with hot spots occurring directly at the station area and Northwest.



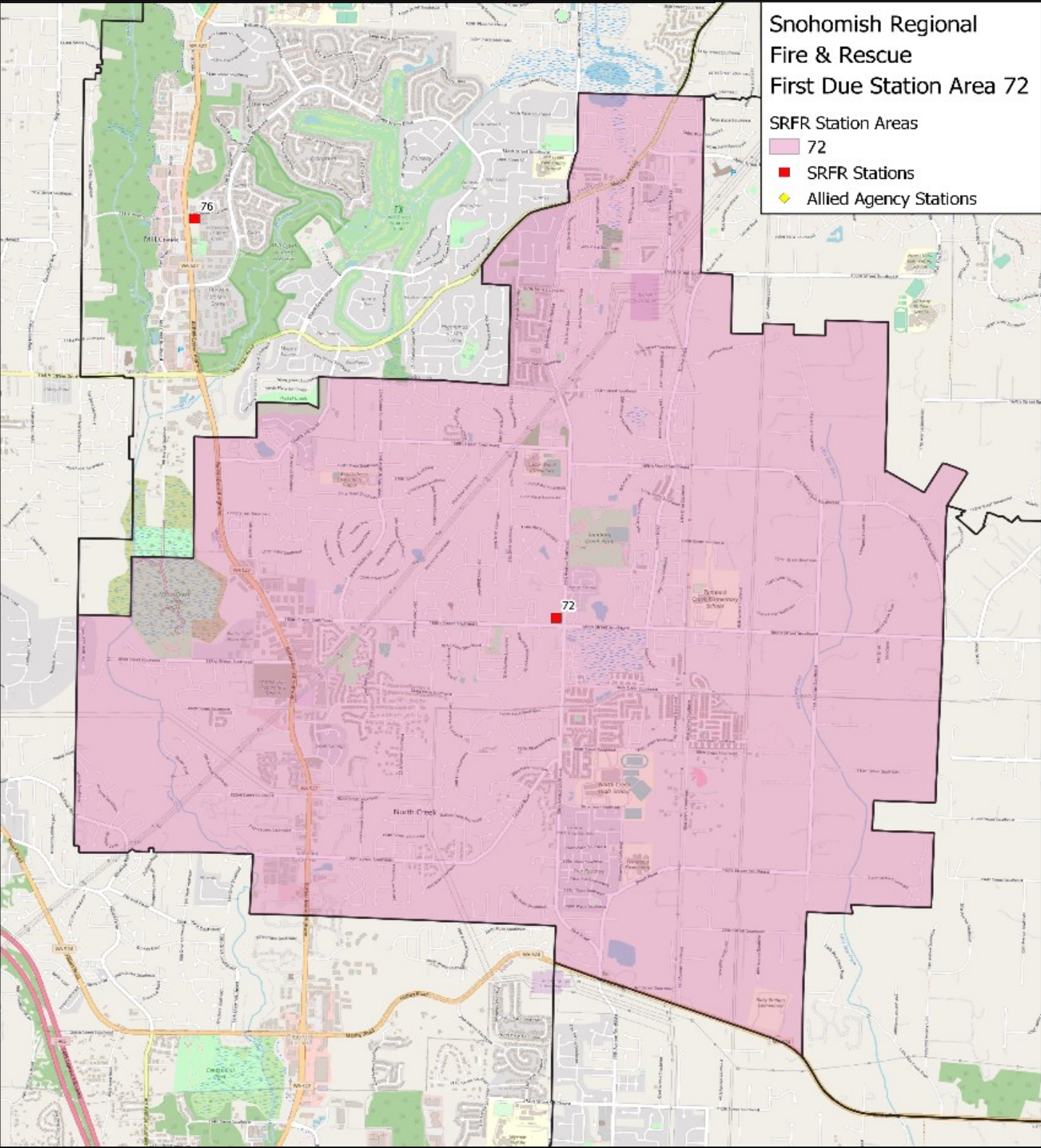
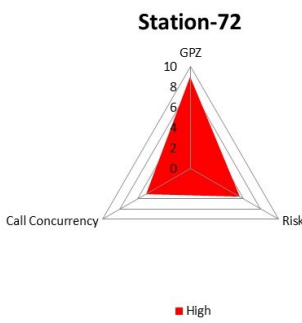
Section F - Current Deployment and Performance

Time Increments	ERF-11	ERF-12	ERF-15	ERF-18
8-Minutes	88.93%	86.79%	21.43%	17.83%
10-Minutes	99.45%	98.20%	72.53%	72.17%
13-Minutes	99.45%	99.45%	99.45%	99.45%
15-Minutes	99.45%	99.45%	99.45%	99.45%
18-Minutes	99.45%	99.45%	99.45%	99.45%



Station 72	L72/A72	Cross Staffed
	Station 72 Total	

Station 72 cross staffs 2 units, has a high overall jurisdictional risk level and is adjacent to Stations 76, 77, 71, and 73.

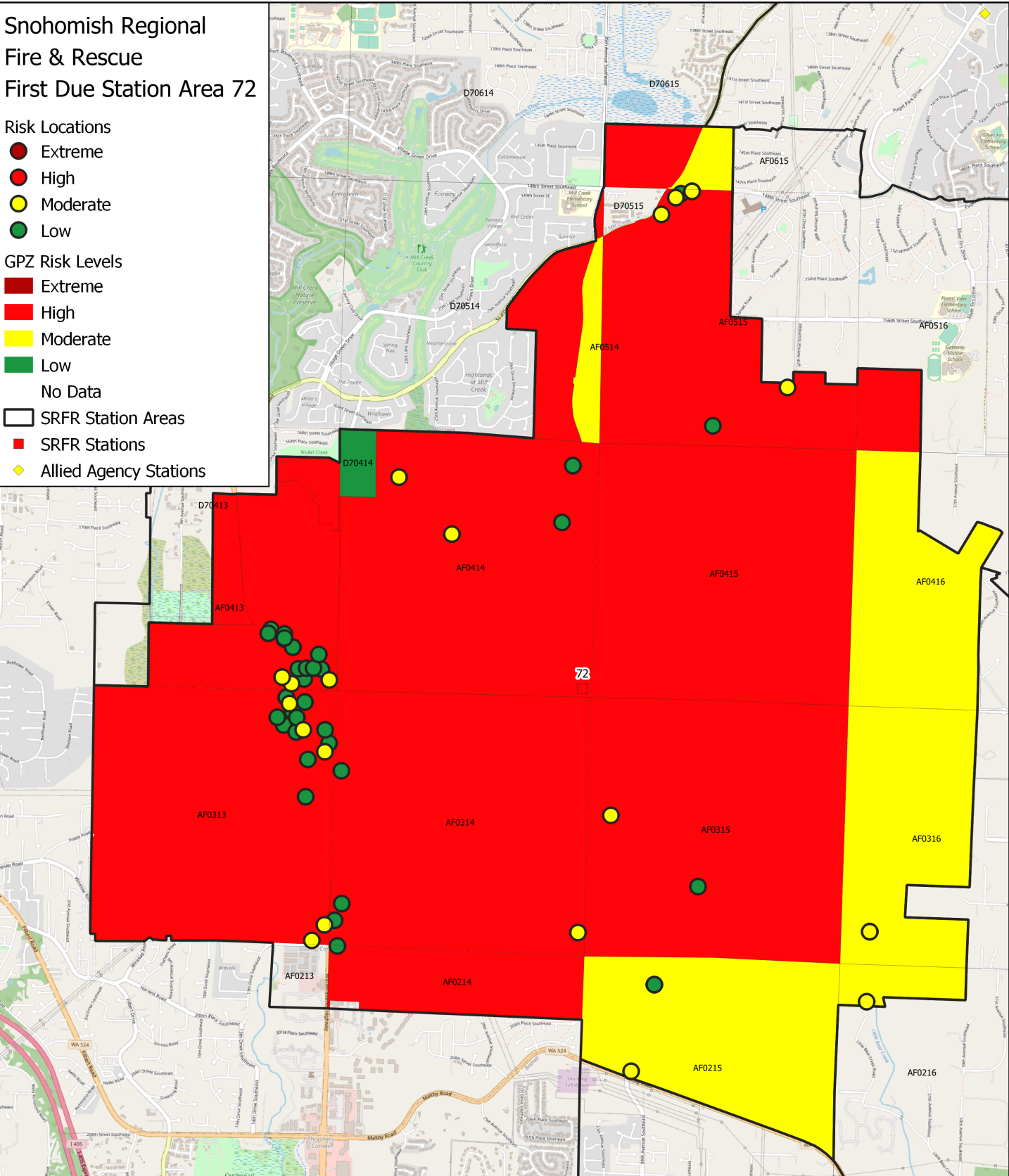


Risk Analysis

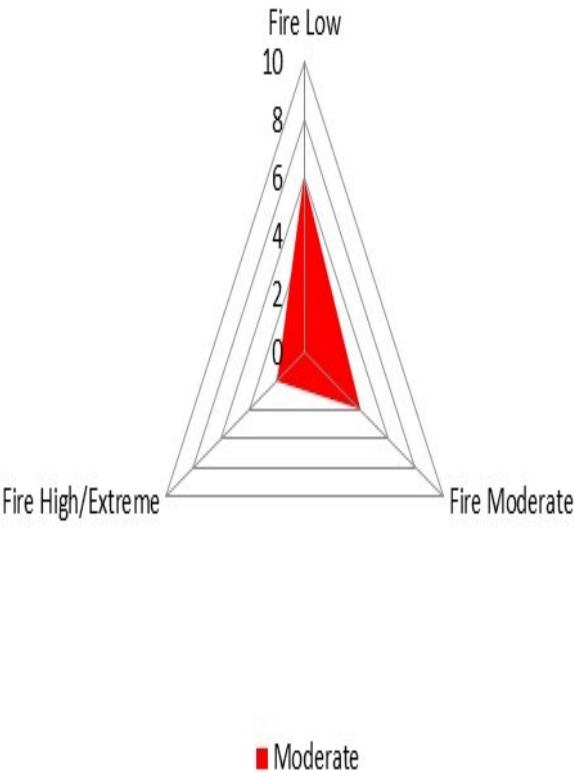
Risk of individual building locations is represented by the small circles and shaded to indicate risk level. There is a concentration of lower to moderate risk buildings located directly West of the station. Risk is also evaluated by geographic planning zone using the same shading criteria. The majority of Station 72’s first due area is high risk.

Snohomish Regional
Fire & Rescue
First Due Station Area 72

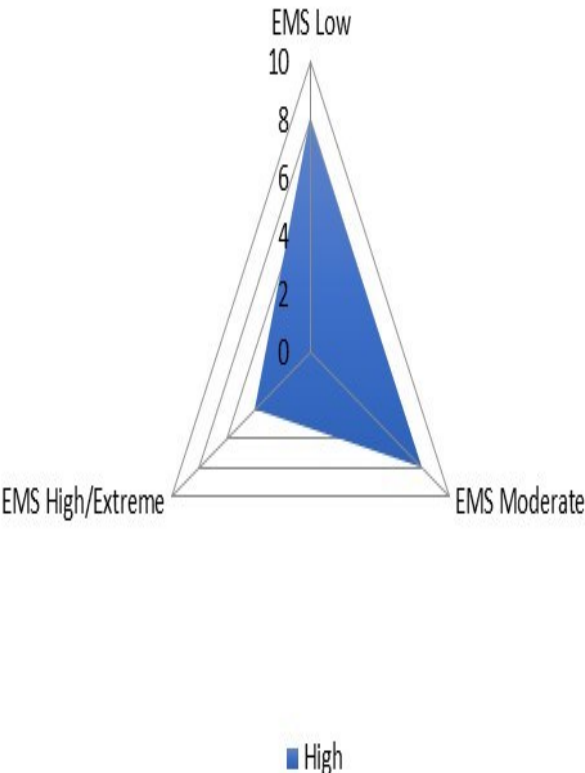
- Risk Locations
- Extreme
 - High
 - Moderate
 - Low
- GPZ Risk Levels
- Extreme
 - High
 - Moderate
 - Low
 - No Data
- SRFR Station Areas
- SRFR Stations
 - ◆ Allied Agency Stations



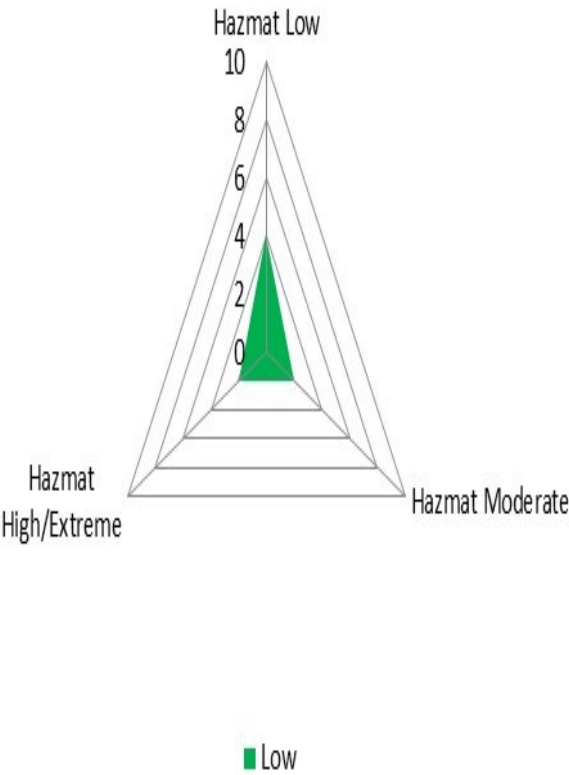
Station 72 First Due Area



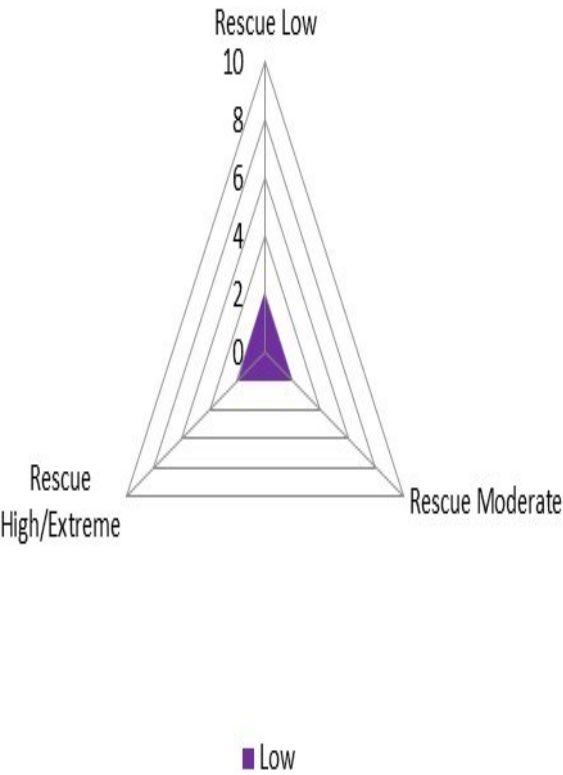
Station 72 First Due Area



Station 72 First Due Area



Station 72 First Due Area



Station 72 First Due Area Historical Data Analysis

Station 72 First Due Area Incidents by Call Category	Reporting Period			
	2017	2018	2019	All
EMS Total	1,194	1,141	1,265	3,600
Fire Total	164	136	157	457
Hazmat Total	27	30	35	92
Other Total	89	84	74	247
Technical Rescue Total	0	0	0	0
Total	1,474	1,391	1,531	4,396
Average Calls per Day	4.0	3.8	4.2	N/A
YoY Growth	N/A	-5.6%	10.1%	N/A

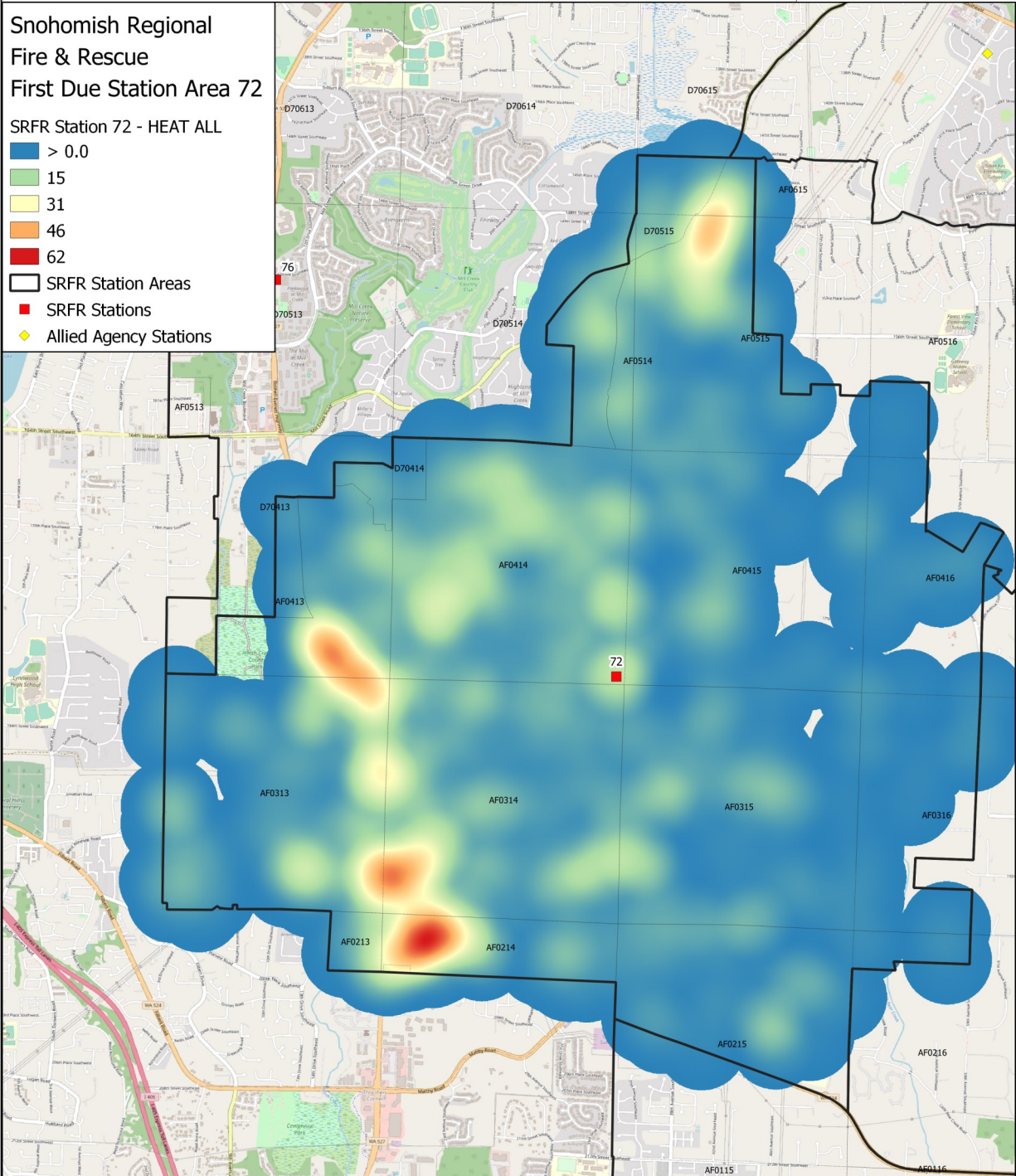
Station 72 First Due Area Responses by Unit ID	Reporting Period			
	2017	2018	2019	All
A72	1,261	1,291	1,282	3,834
L72	673	616	559	1,848
Total	1,934	1,907	1,841	5,682
Average Responses per Day	5.3	5.2	5.0	5.2

Station 72 First Due Area: 1 st Arriving Baseline Performance		2017-2019	2017	2018	2019	2017-2019 Benchmark	2017-2019 Compliance
Alarm Handling		3:27	2:57	3:32	3:40	3:14	88.4%
Turnout Time		2:06	2:07	2:04	2:05	2:07	90.5%
Travel Time	Urban	6:11	6:07	6:13	6:17	5:44	86.0%
	Rural	7:29	7:52	9:27	7:16	9:05	95.2%
Total Response Time	Urban	10:18	10:00	10:15	10:31	9:22	83.0%
		<i>n</i> = 2,941	<i>n</i> = 1,094	<i>n</i> = 900	<i>n</i> = 947		
	Rural	11:45	10:41	17:27	11:29	12:49	93.7%
		<i>n</i> = 193	<i>n</i> = 78	<i>n</i> = 56	<i>n</i> = 59		



Temporal Analysis

Incident volume by time of day by type of call shows Station 72's busiest times are from 9am to 7 pm, although this district shows a relatively steady call volume throughout a 24 hour day.



Overall Hot Spot Map

Trends show Station 72 has a fairly high call volume North and West of the station, with the highest volume located Southwest near the border of the first due area.

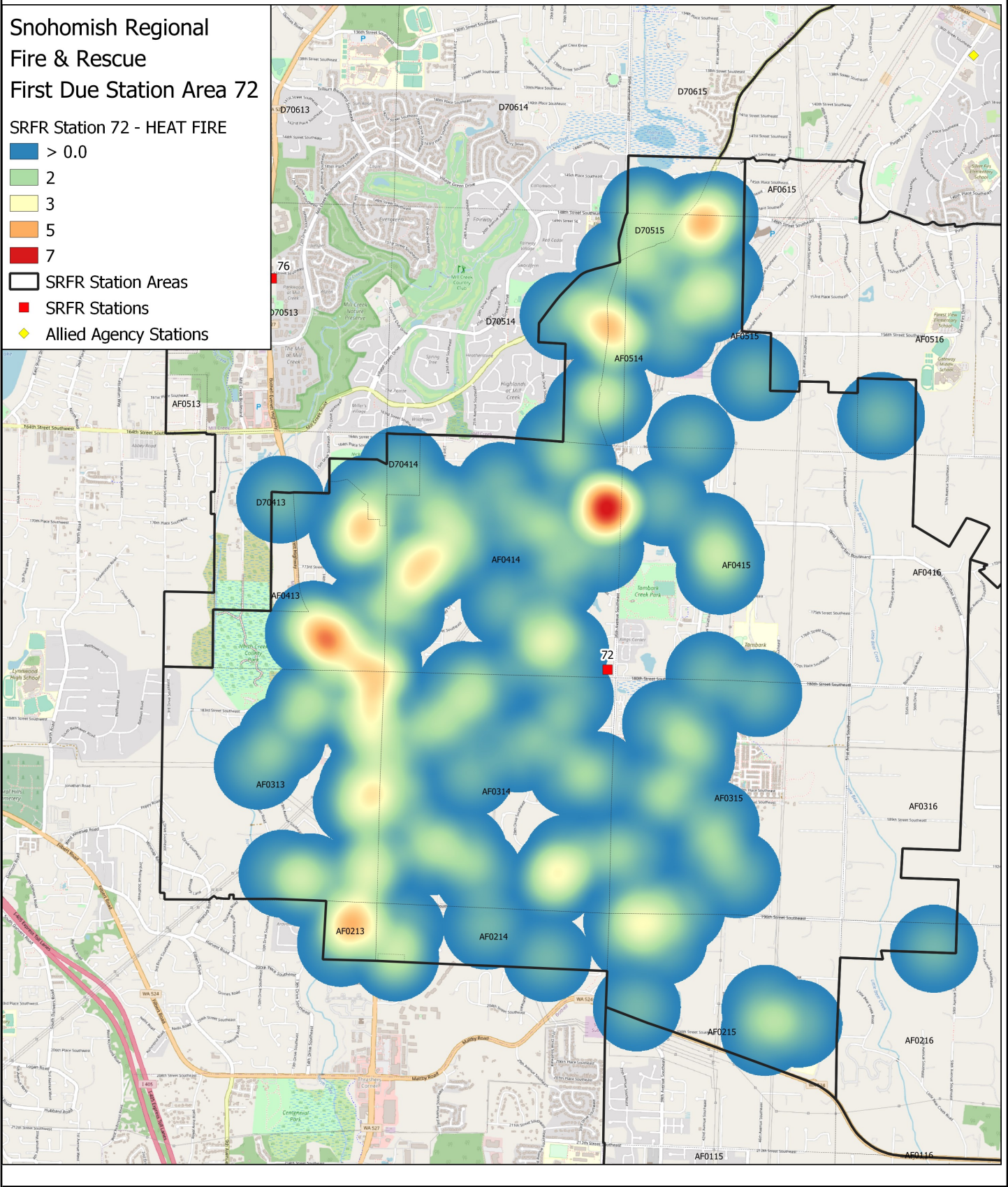
Fire Hot Spot Map

Indicates the highest concentration of fire calls is located North of the station, with a moderate amount located along the West side of the first due area.

Snohomish Regional
Fire & Rescue
First Due Station Area 72

SRFR Station 72 - HEAT FIRE

- > 0.0
- 2
- 3
- 5
- 7
- SRFR Station Areas
- SRFR Stations
- Allied Agency Stations



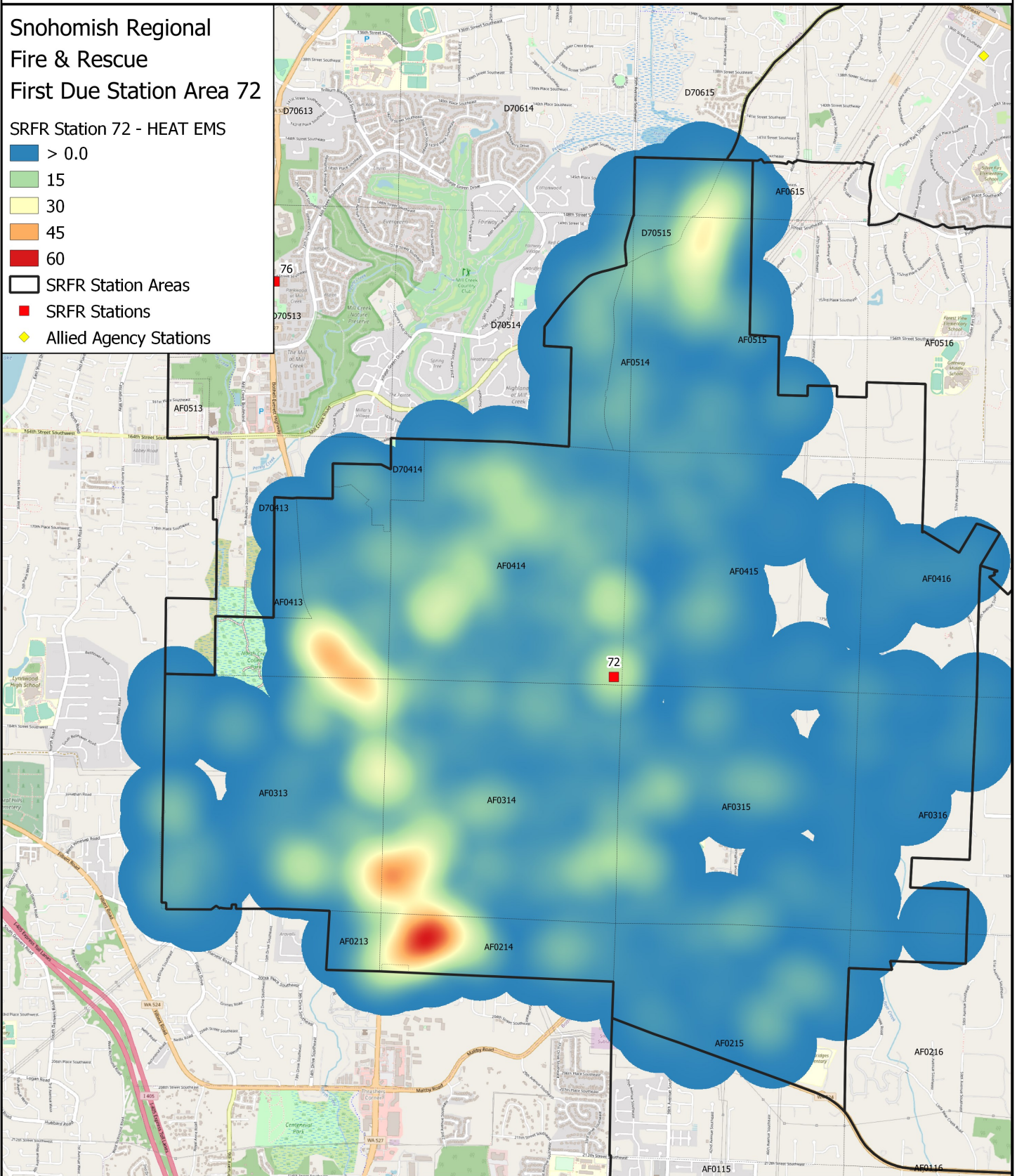
EMS Hot Spot Map

Indicates the highest concentration of EMS calls is located in a North/South band located West of the station bordering several GPZ's.

Snohomish Regional
Fire & Rescue
First Due Station Area 72

SRFR Station 72 - HEAT EMS

- > 0.0
- 15
- 30
- 45
- 60
- SRFR Station Areas
- SRFR Stations
- Allied Agency Stations



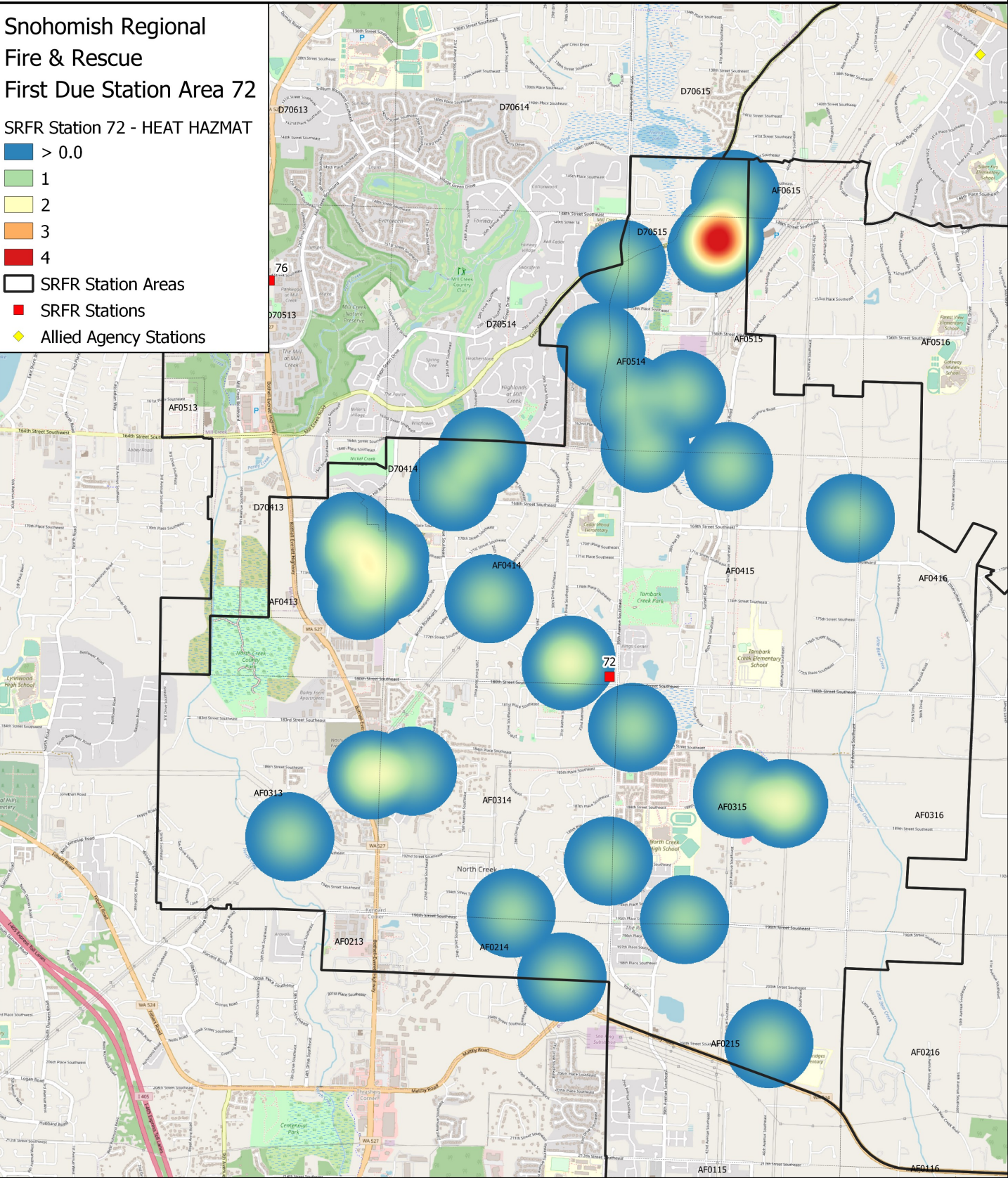
HazMat Hot Spot Map

Indicates a moderate level of dispersion across the station first due area for hazardous materials calls with a hot spot located in the Northern part of the first due area.

Snohomish Regional
Fire & Rescue
First Due Station Area 72

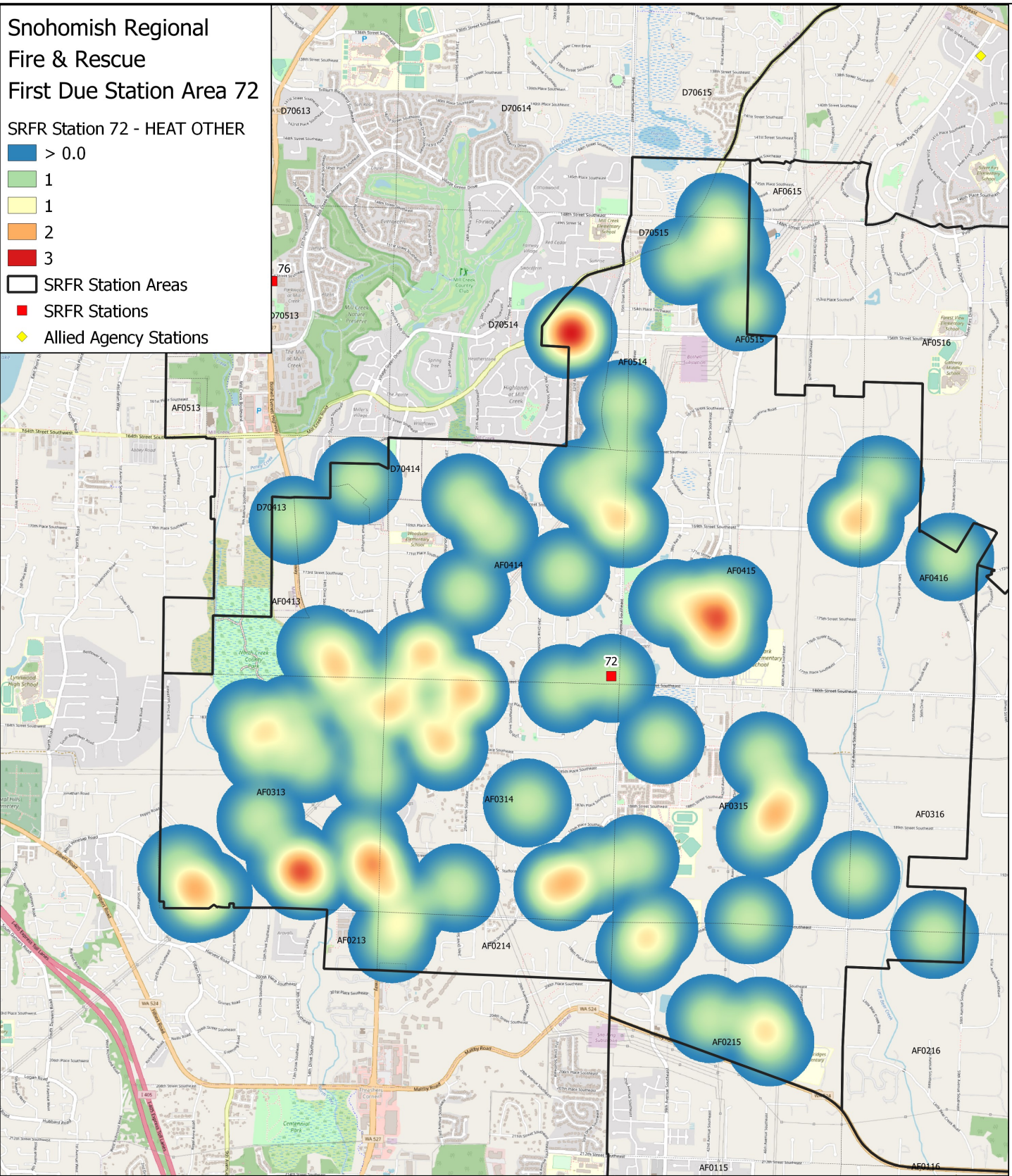
SRFR Station 72 - HEAT HAZMAT

- > 0.0
- 1
- 2
- 3
- 4
- SRFR Station Areas
- SRFR Stations
- Allied Agency Stations



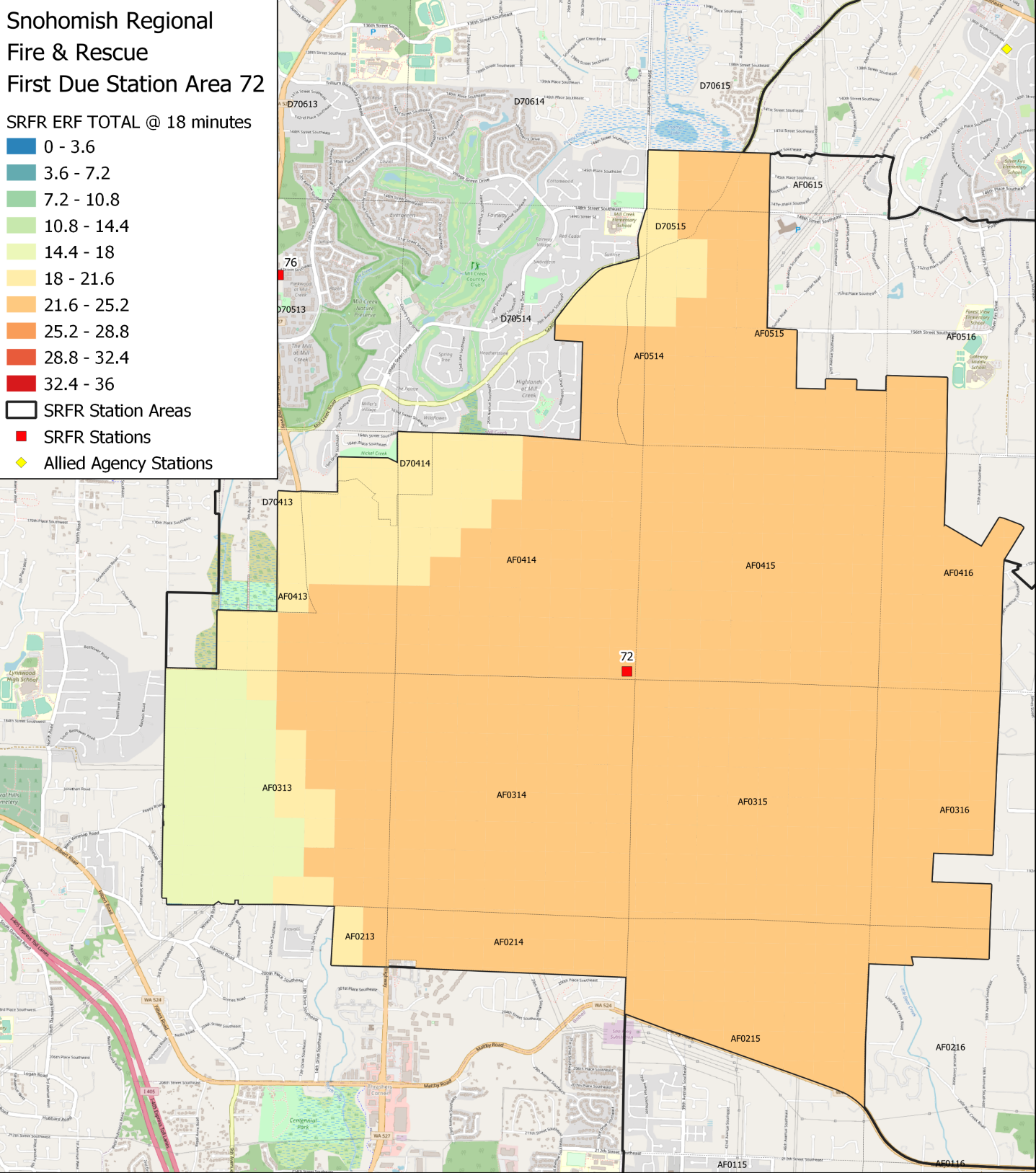
Other Hot Spot Map

Station 72 experienced a wide dispersal of other calls throughout their first due station area with several hot spots located just East of the station, North of the station near the border, and Southwest of the station, again near the border.



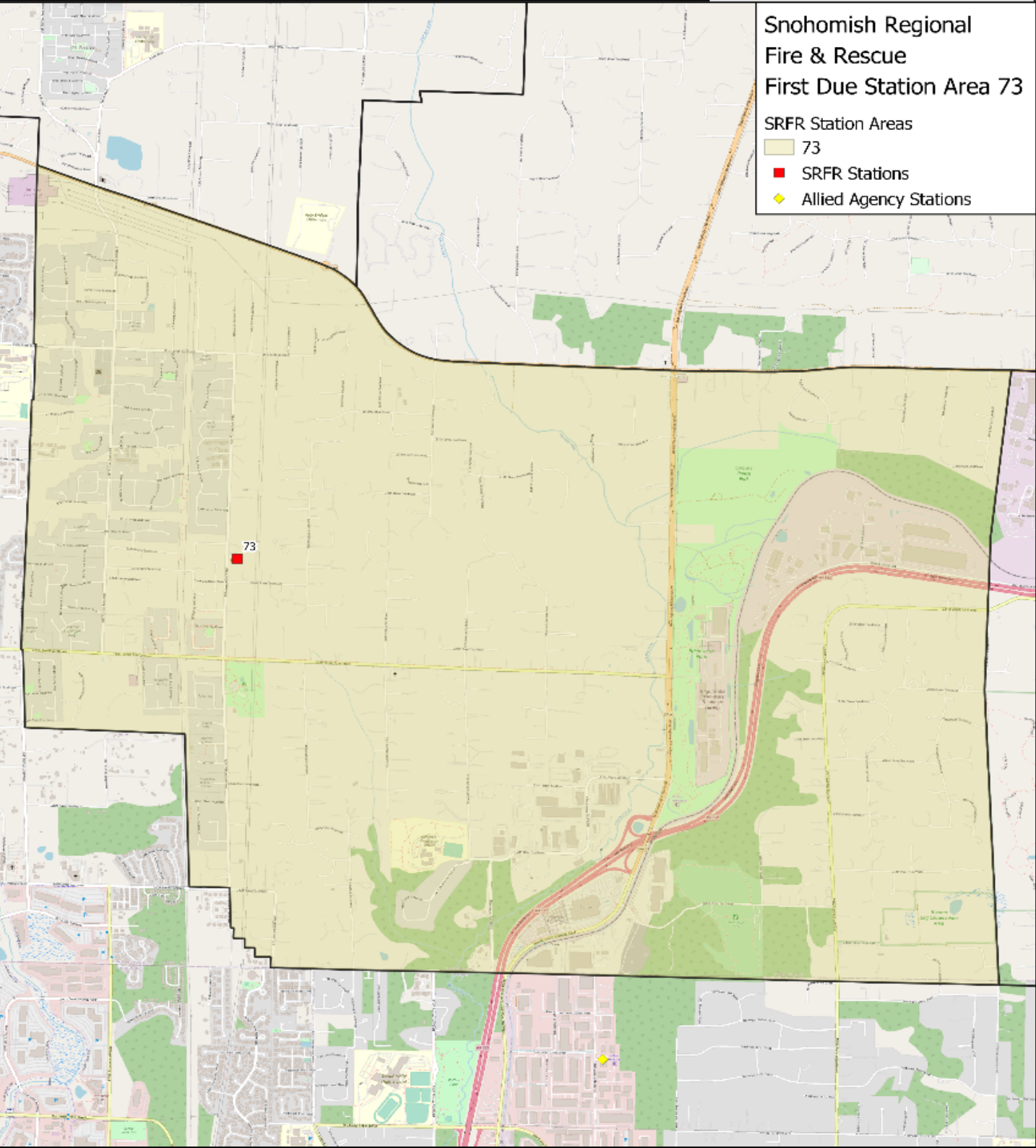
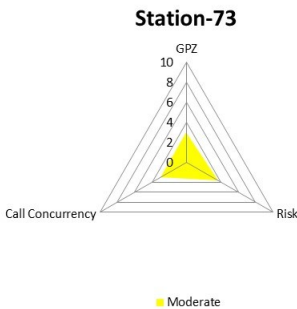
Section F - Current Deployment and Performance

Time Increments	ERF-11	ERF-12	ERF-15	ERF-18
8-Minutes	86.22%	86.22%	59.16%	26.69%
10-Minutes	99.72%	99.72%	94.74%	87.26%
13-Minutes	99.72%	99.72%	99.72%	99.72%
15-Minutes	99.72%	99.72%	99.72%	99.72%
18-Minutes	99.72%	99.72%	99.72%	99.72%



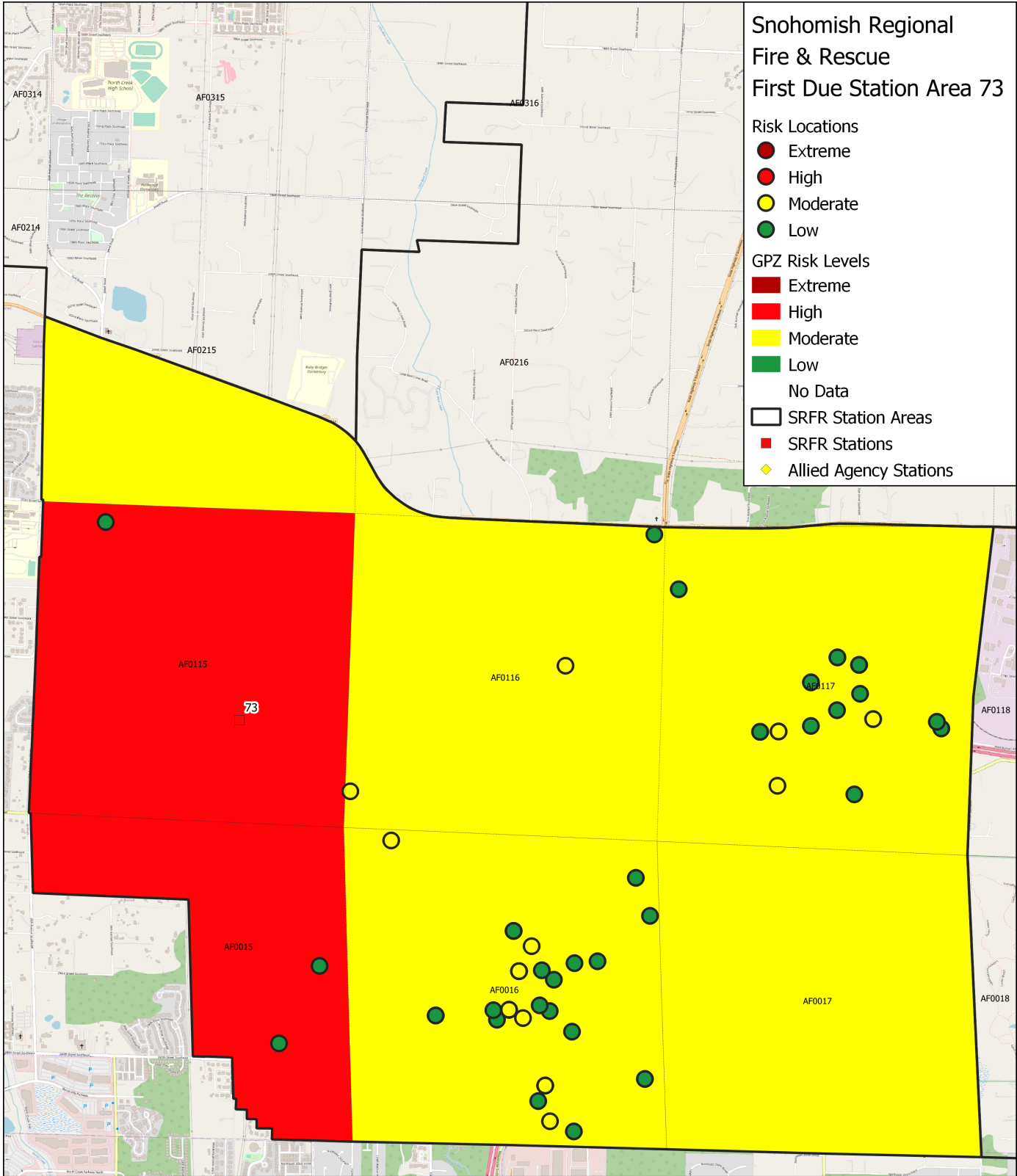
Station 73	E73/A73	Cross Staffed
	Station 73 Total	

Station 73 cross staffs 2 units, has a moderate overall jurisdictional risk level and is adjacent to Stations 71 and 72.

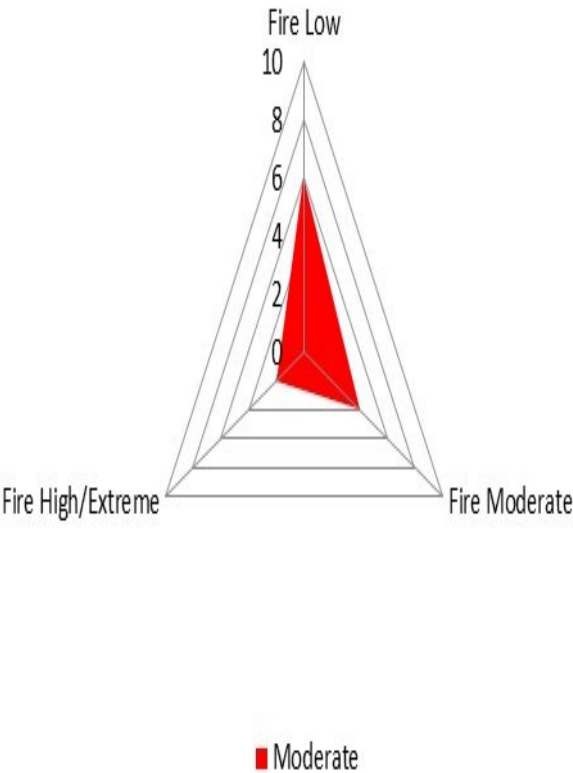


Risk Analysis

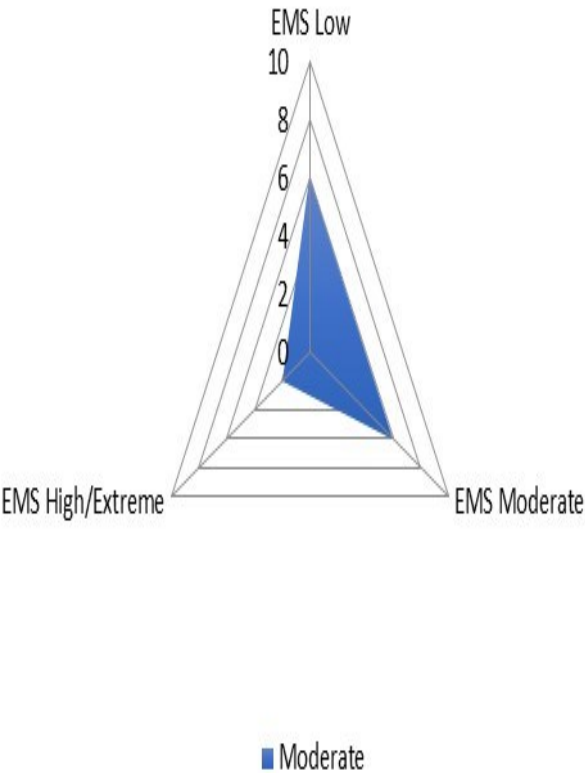
Risk of individual building locations is represented by the small circles and shaded to indicate risk level. The majority of buildings that warrant special attention are located along a major travel corridor in the Southeast part of the station first due area. Risk is also evaluated by GPZ using the same shading criteria. The majority of Station 73’s first due area is moderate risk, with the area immediately adjacent to the station being high risk.



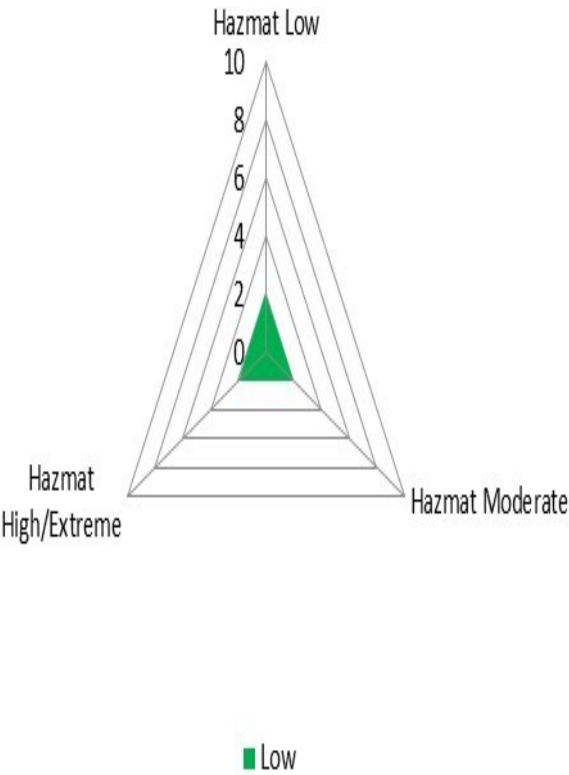
Station 73 First Due Area



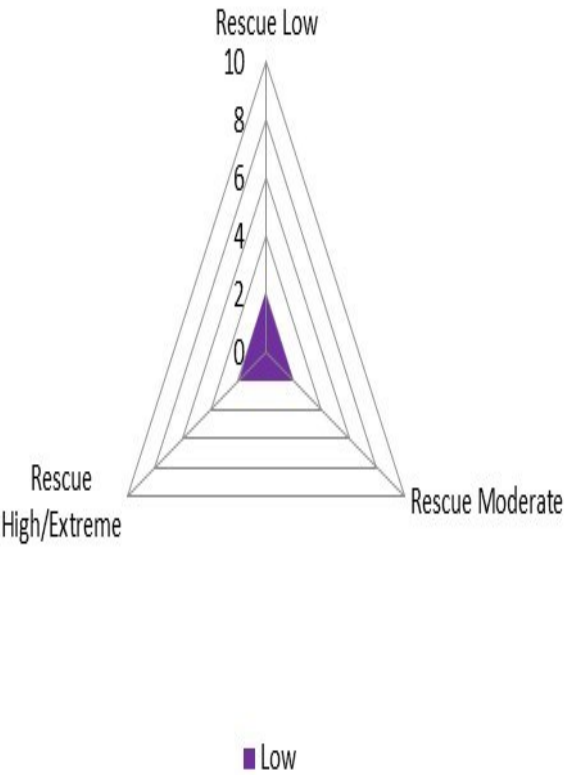
Station 73 First Due Area



Station 73 First Due Area



Station 73 First Due Area

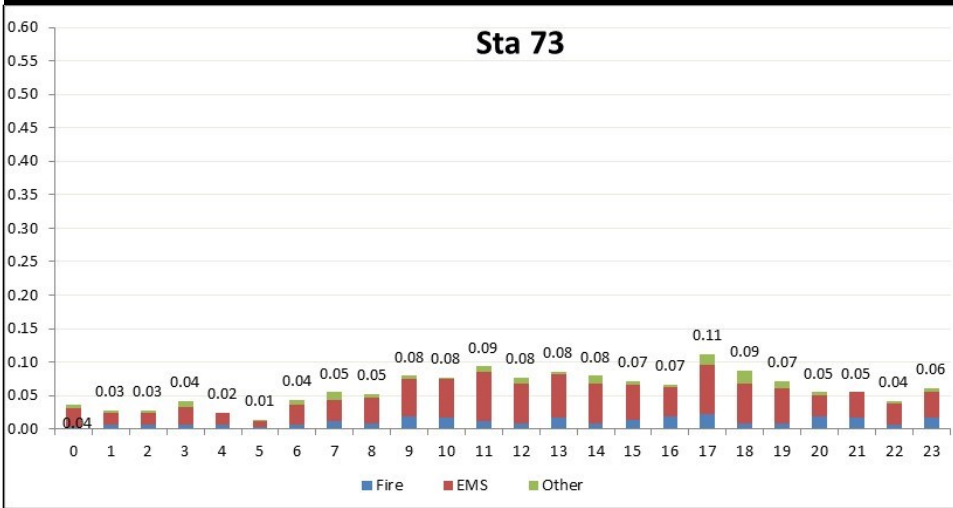


Station 73 First Due Area Historical Data Analysis

Station 73 First Due Area Incidents by Call Category	Reporting Period			
	2017	2018	2019	All
EMS Total	439	479	370	1,288
Fire Total	96	87	94	277
Hazmat Total	17	15	15	47
Other Total	46	38	43	127
Technical Rescue Total	0	0	0	0
Total	598	619	522	1,739
Average Calls per Day	1.6	1.7	1.4	N/A
YoY Growth	N/A	3.5%	-15.7%	N/A

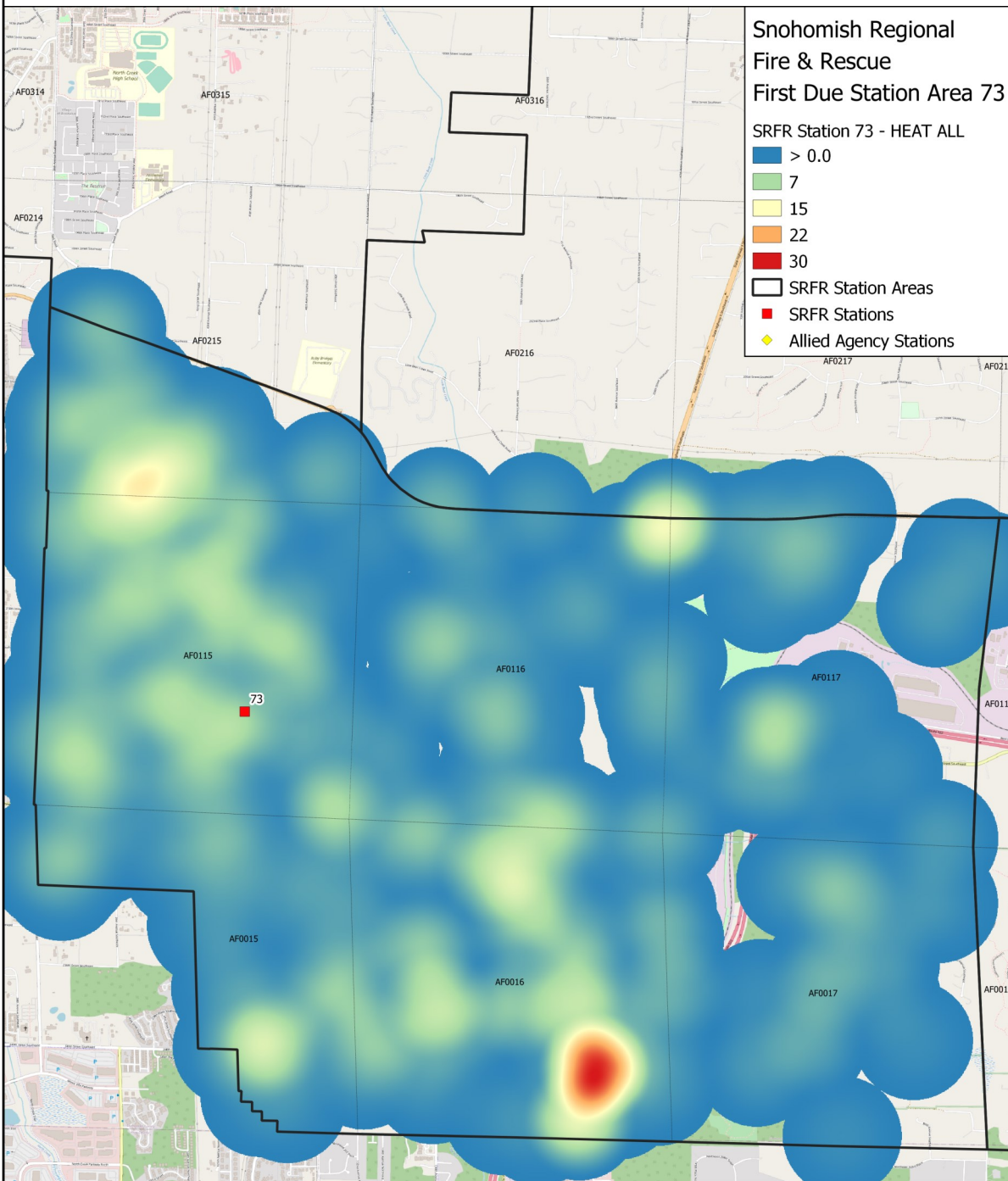
Station 73 First Due Area Responses by Unit ID	Reporting Period			
	2017	2018	2019	All
A73	715	608	589	1,912
E73	254	245	242	741
Total	969	853	831	2,653
Average Responses per Day	2.7	2.3	2.3	2.4

Station 73 First Due Area: 1 st Arriving Baseline Performance		2017-2019	2017	2018	2019	2017-2019 Benchmark	2017-2019 Compliance
Alarm Handling		3:22	2:46	3:40	3:47	3:14	88.8%
Turnout Time		2:18	2:30	2:08	2:09	2:07	85.5%
Travel Time	Urban	6:28	6:27	6:24	7:17	5:44	86.2%
	Rural	8:02	7:43	7:52	8:13	9:05	94.1%
Total Response Time	Urban	10:29	9:59	10:46	11:31	9:22	84.7%
		n = 414	n = 144	n = 156	n = 114		
	Rural	12:03	11:21	11:47	12:20	12:49	93.1%
		n = 821	n = 317	n = 284	n = 220		



Temporal Analysis

Incident volume by time of day by type of call shows Station 73's busiest times are from 9am to 7 pm. The large spike at 5pm is comprised of a blend of fire, EMS, and other types of calls.

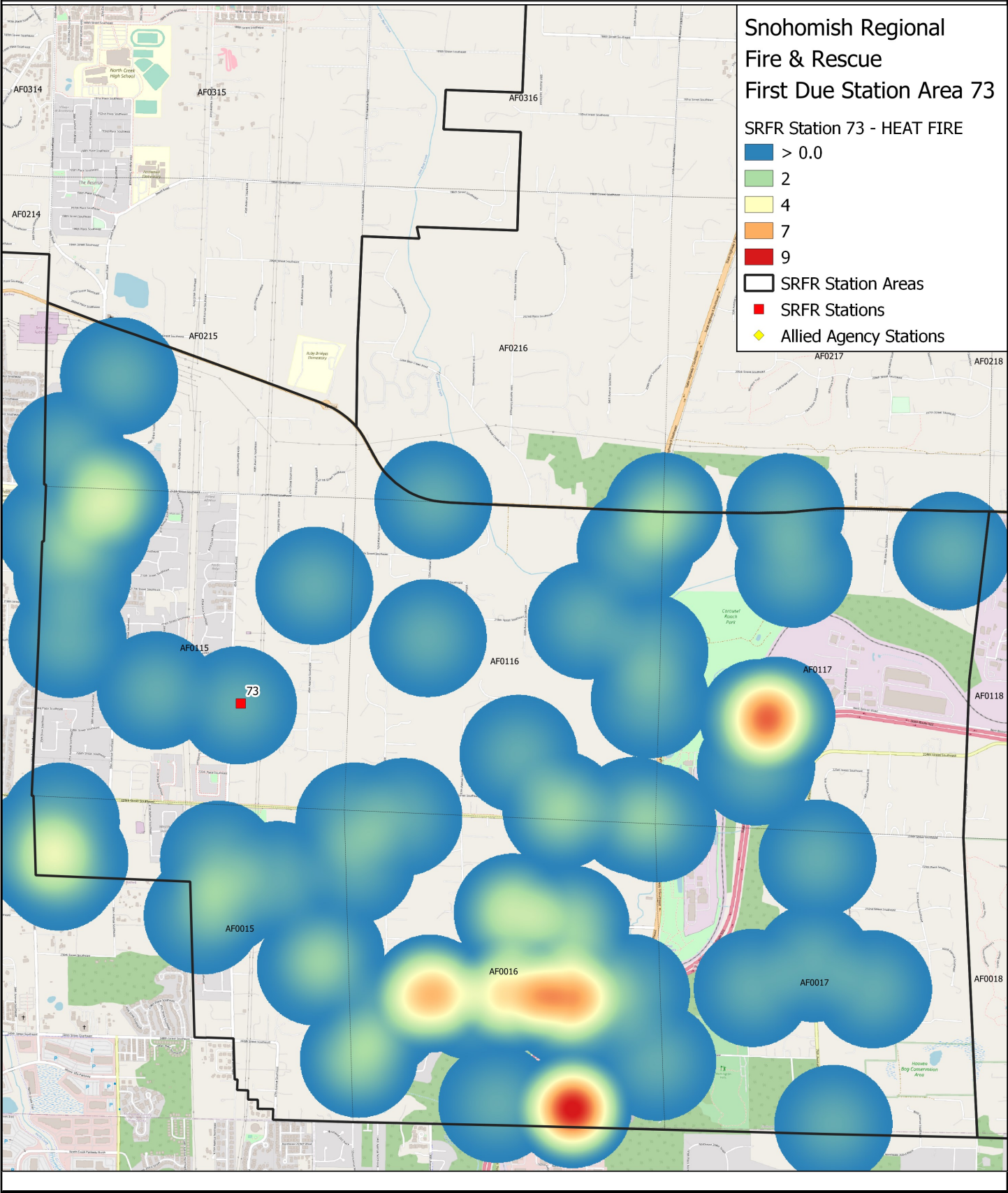


Overall Hot Spot Map

Trends show Station 73 has a call volume that encompasses virtually their entire first due station area, with the largest volume of calls Southeast of the station.

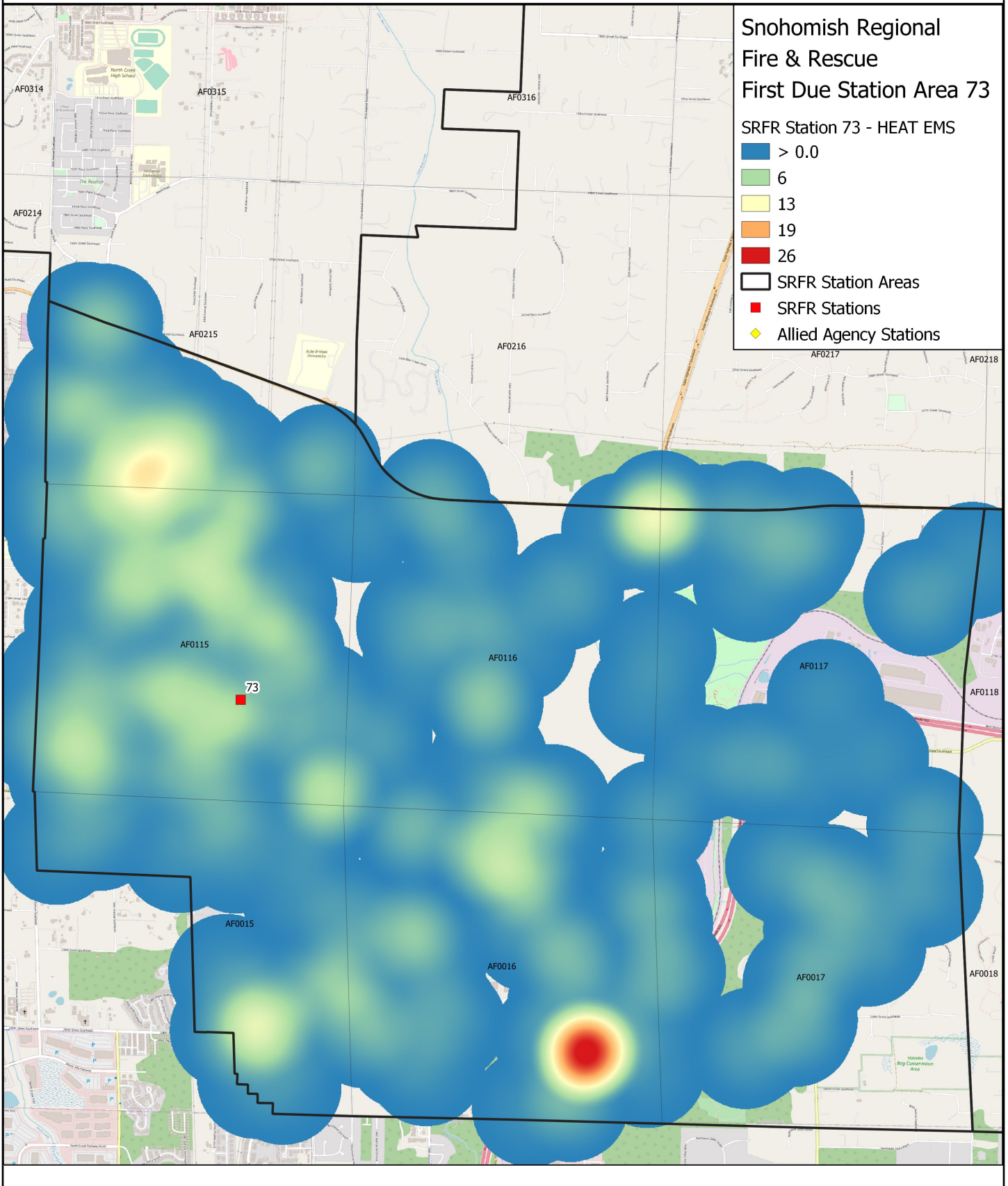
Fire Hot Spot Map

Station 73's fire calls are concentrated East/Southeast of the station.



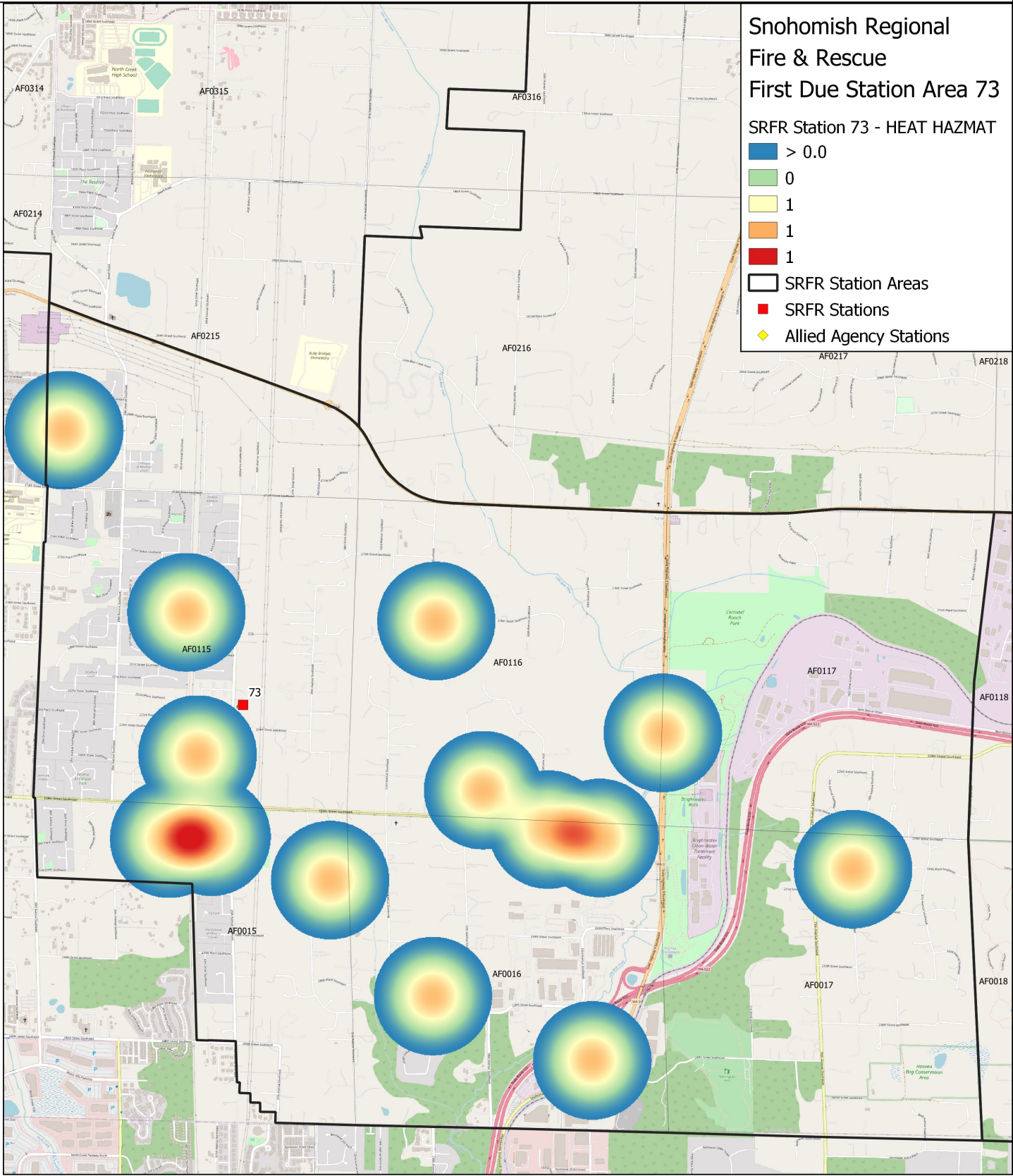
EMS Hot Spot Map

Much like the overall and fire hot spot map, station 73 has a fairly even dispersal of EMS calls in the station's first due area with the highest concentration located Southeast of the Station.



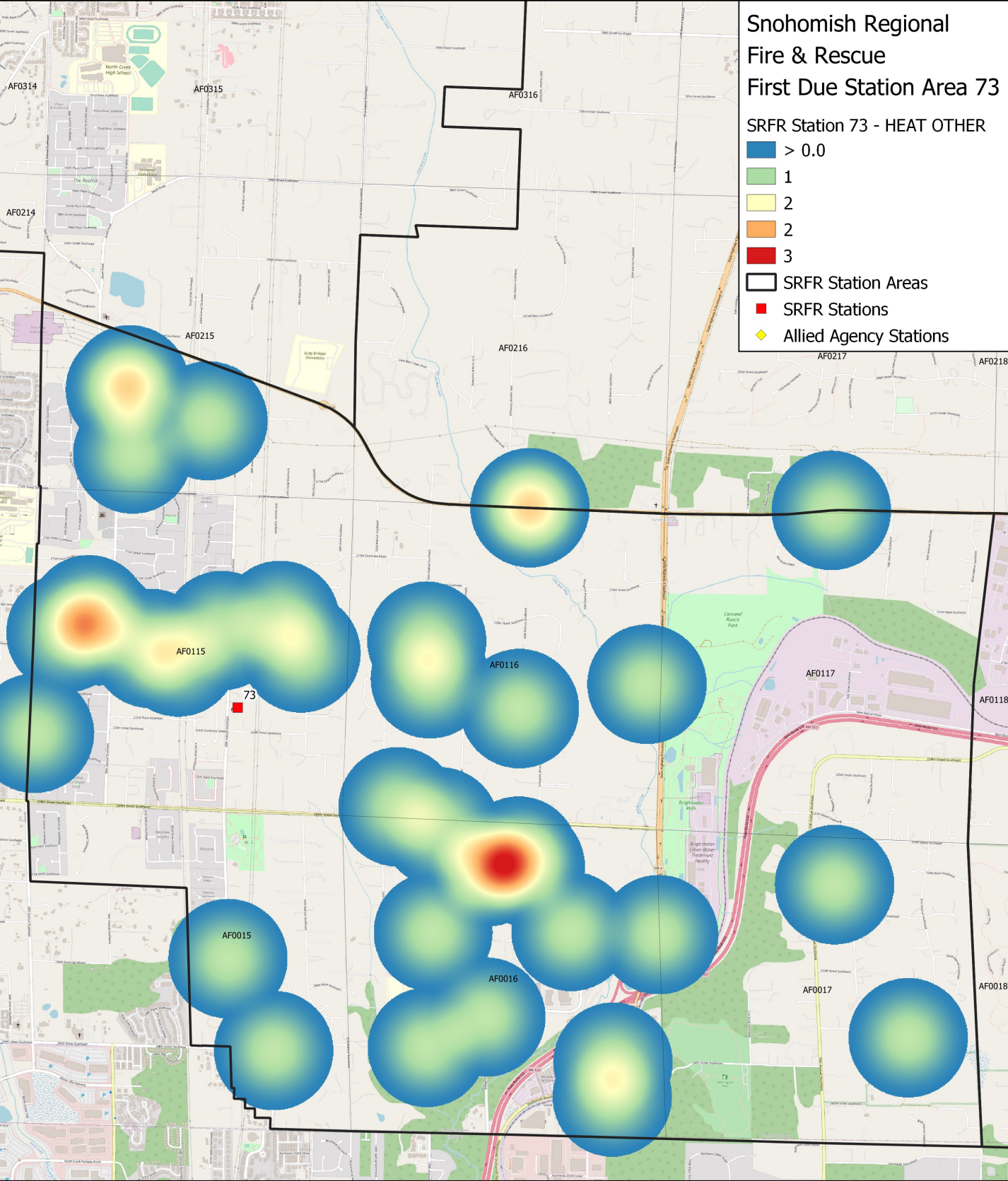
HazMat Hot Spot Map

A low hazardous materials call volume is dispersed evenly throughout Station 73’s first due area.



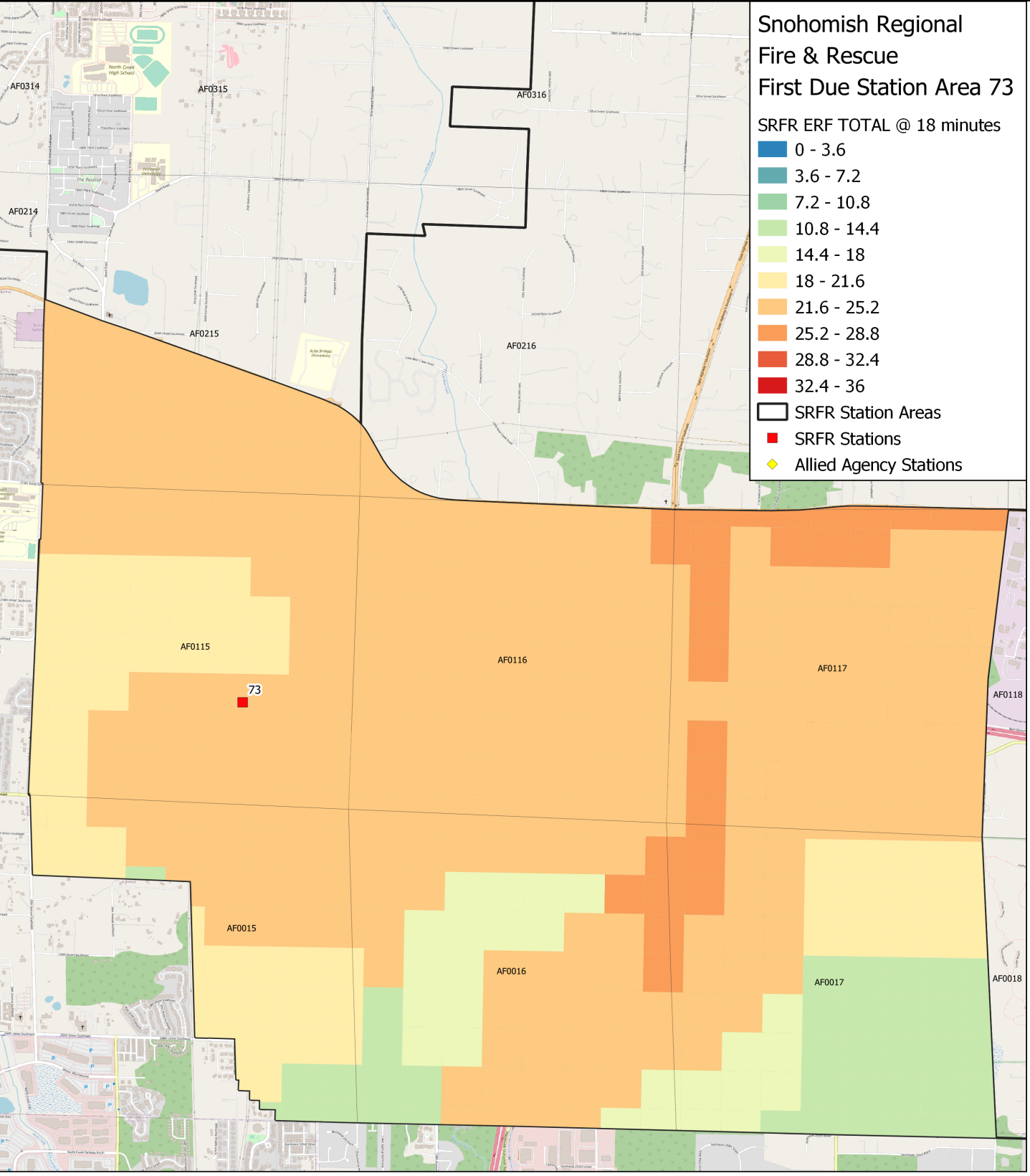
Other Hot Spot Map

Station 73 has a relatively high Other call volume just Northwest of the station, with a higher concentration of calls Southeast of the station.



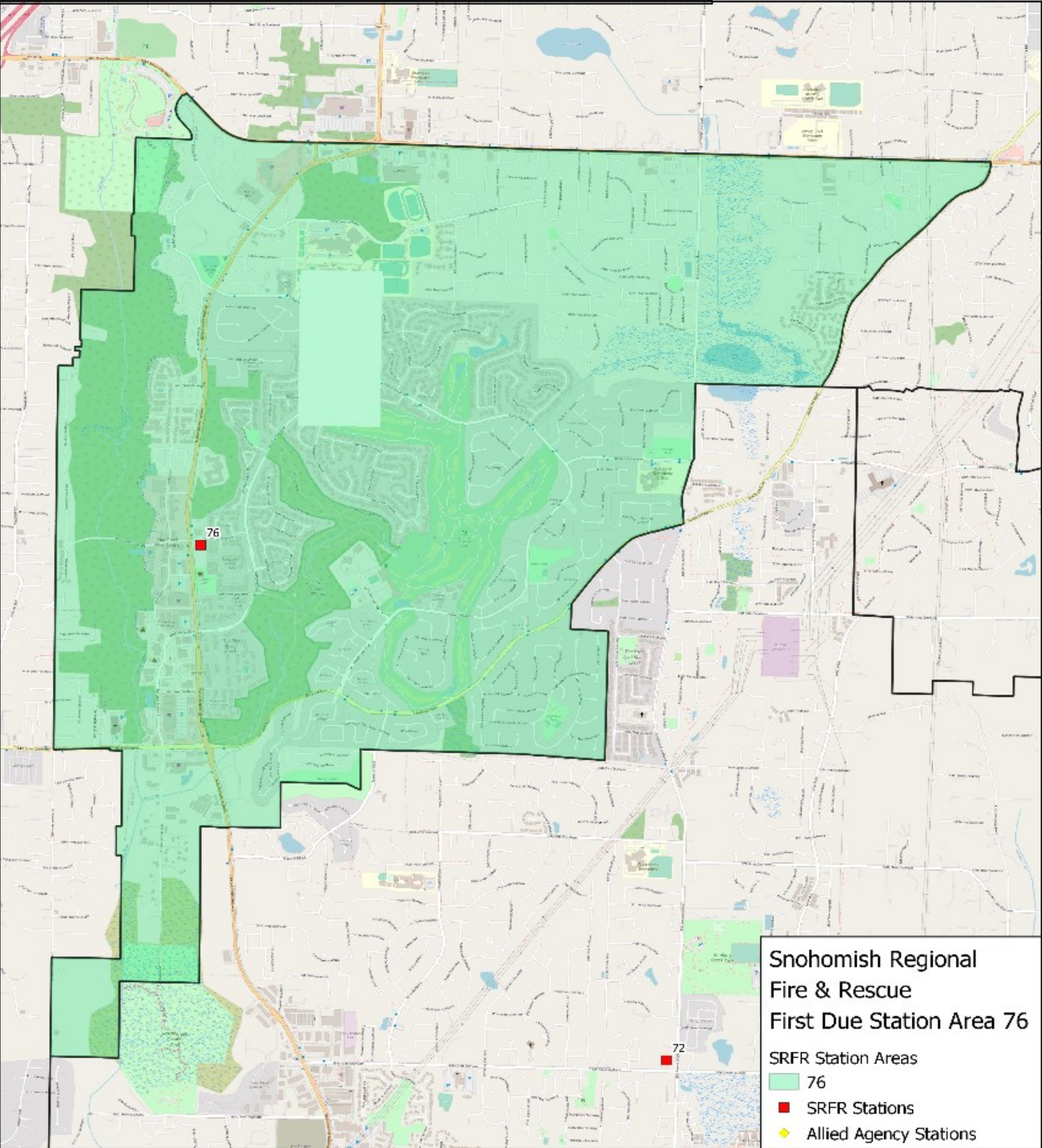
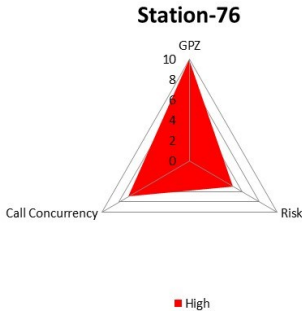
Section F - Current Deployment and Performance

Time Increments	ERF-11	ERF-12	ERF-15	ERF-18
8-Minutes	73.67%	73.67%	56.88%	37.87%
10-Minutes	96.56%	96.56%	95.12%	91.56%
13-Minutes	98.95%	98.95%	98.95%	98.95%
15-Minutes	98.95%	98.95%	98.95%	98.95%
18-Minutes	98.95%	98.95%	98.95%	98.95%



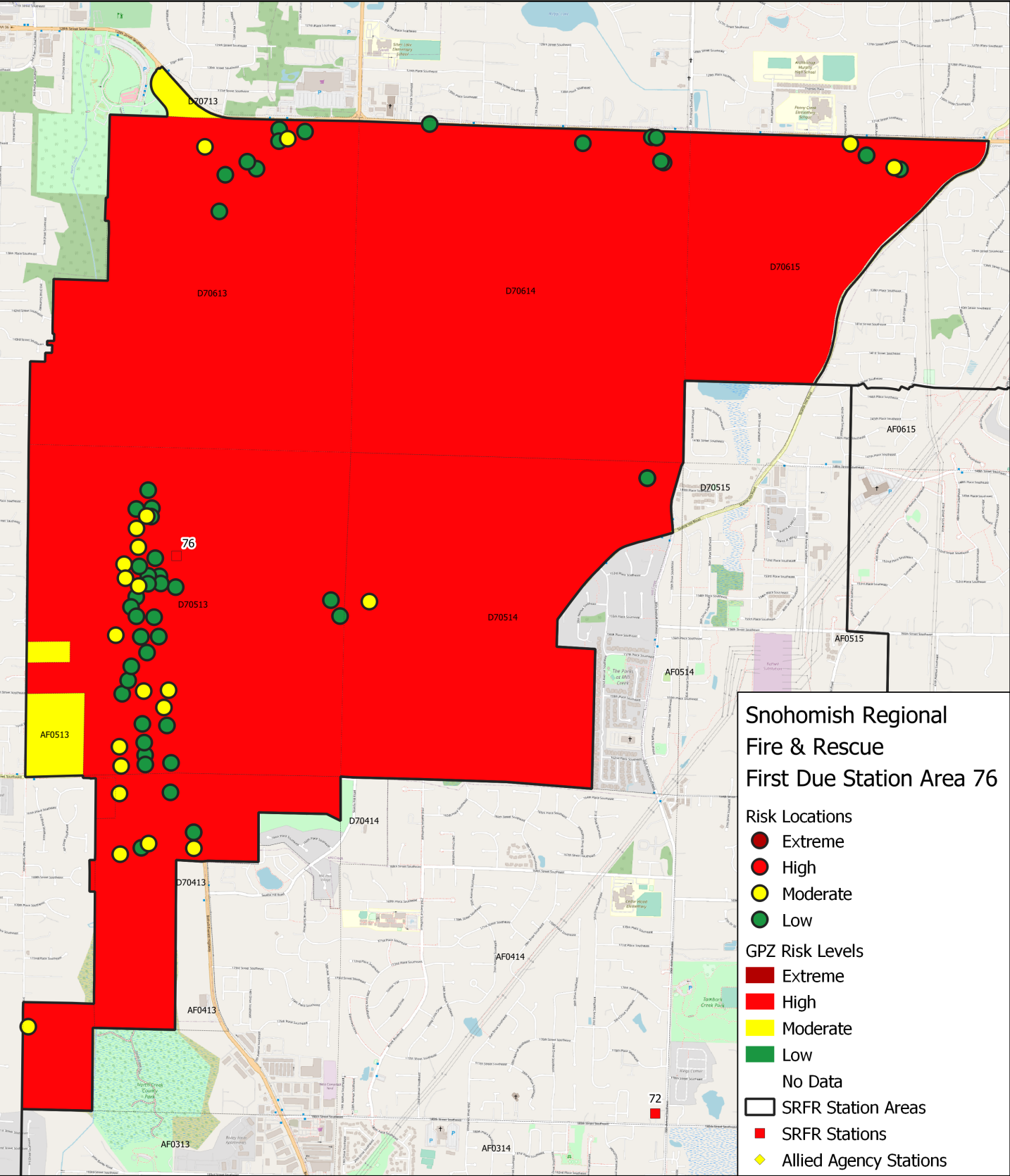
Station 76	E76	Engine
	M76	Medic - ALS
Station 76 Total		

Station 76 staffs 2 units, has a high overall jurisdictional risk level and is adjacent to Stations 72 and 77.

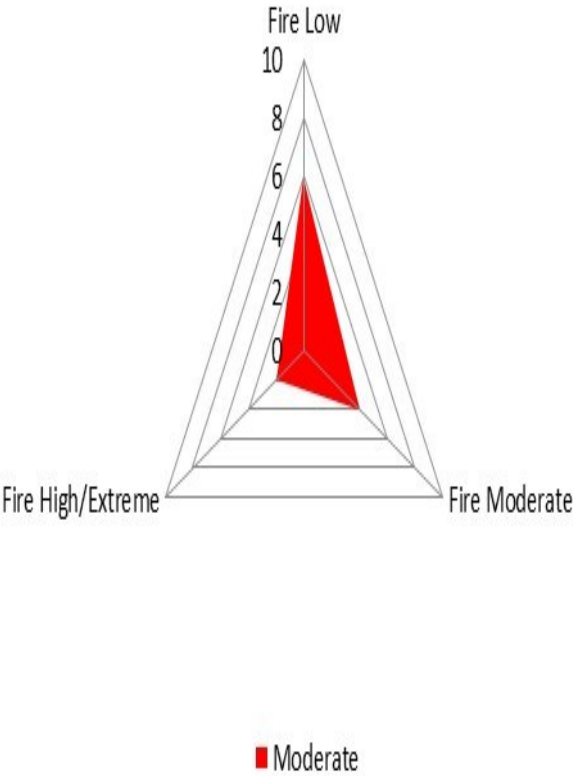


Risk Analysis

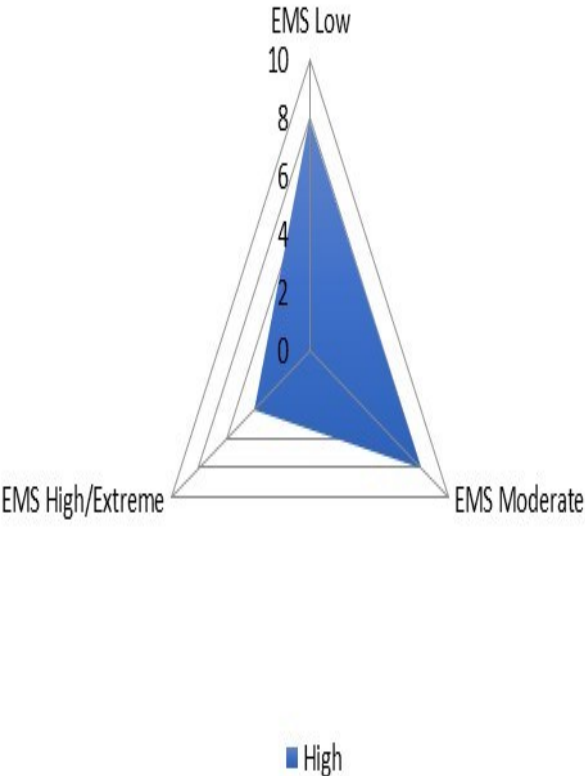
Risk of individual building locations is represented by the small circles and shaded to indicate risk level. There is a concentration of lower to moderate risk buildings located directly West of the Station. Risk is also evaluated by geographic planning zone using the same shading criteria. The vast majority of Station 76's first due area is high risk.



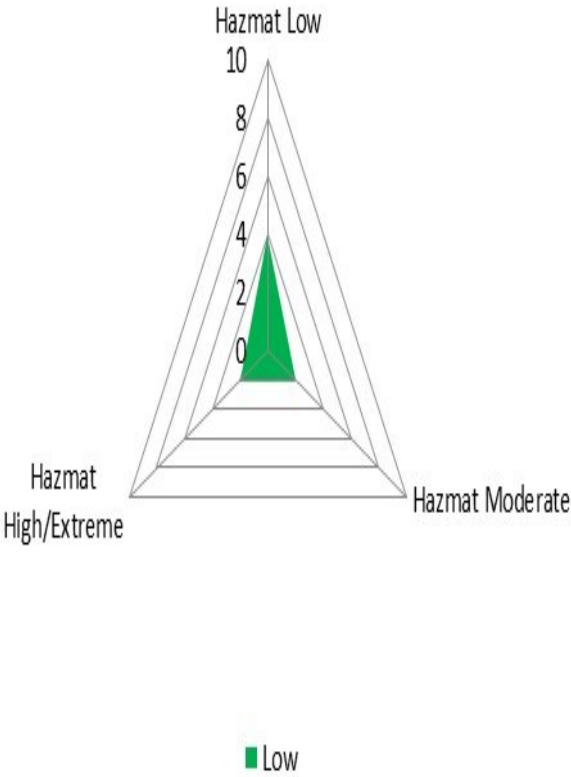
Station 76 First Due Area



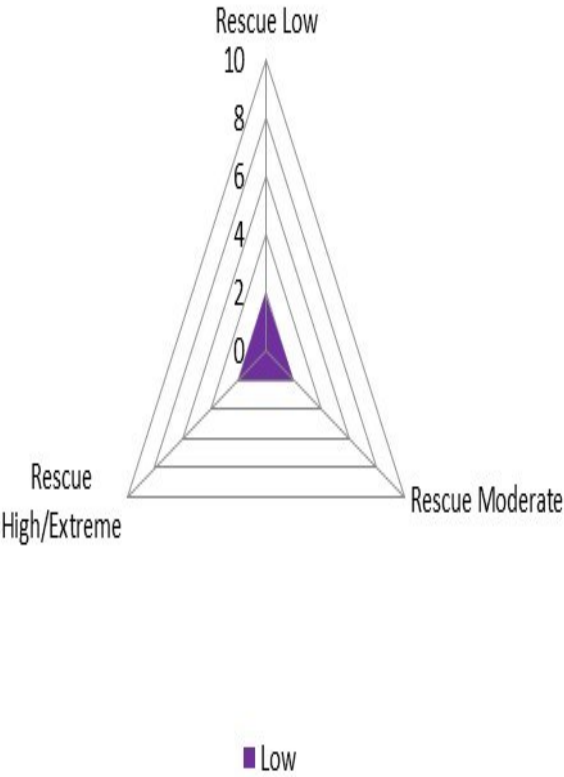
Station 76 First Due Area



Station 76 First Due Area



Station 76 First Due Area

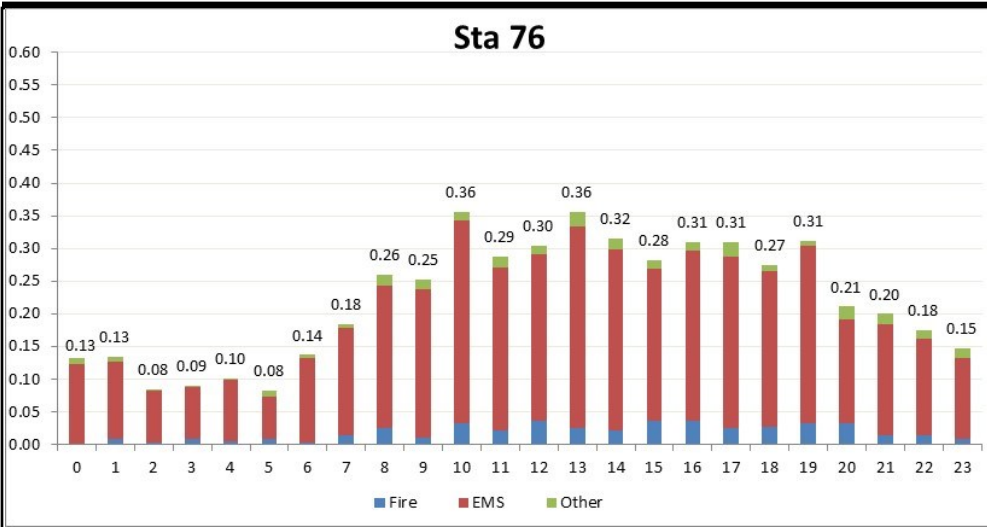


Station 76 First Due Area Historical Data Analysis

Station 76 First Due Area Incidents by Call Category	Reporting Period			
	2017	2018	2019	All
EMS Total	1,835	1,795	1,667	5,297
Fire Total	193	180	158	531
Hazmat Total	33	31	27	91
Other Total	75	92	82	249
Technical Rescue Total	0	0	0	0
Total	2,136	2,098	1,934	6,168
Average Calls per Day	5.9	5.7	5.3	N/A
YoY Growth	N/A	-1.8%	-7.8%	N/A

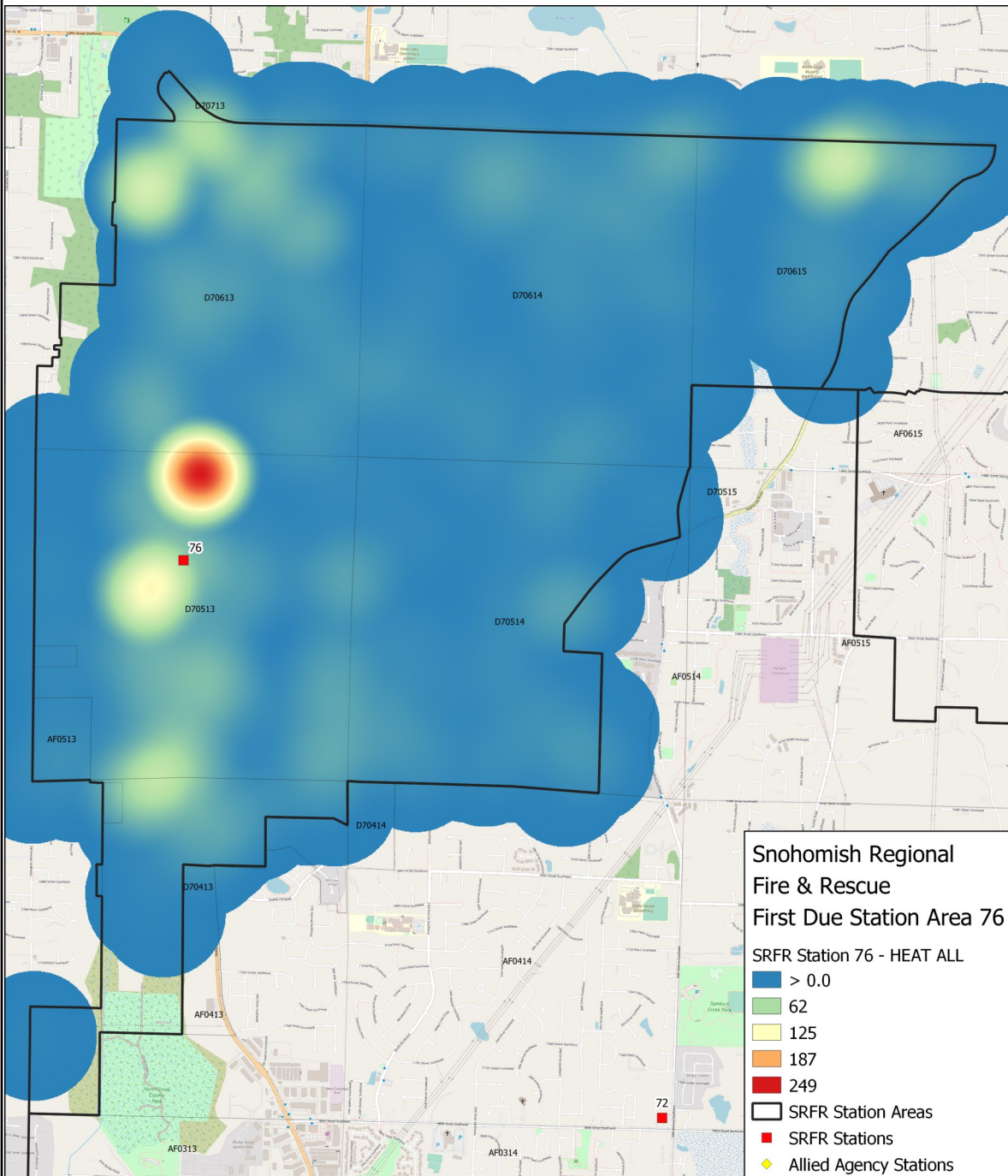
Station 76 First Due Area Responses by Unit ID	Reporting Period			
	2017	2018	2019	All
E76	2,450	2,464	2,308	7,222
M76	2,015	2,006	1,857	5,878
Total	4,465	4,470	4,165	13,100
Average Responses per Day	12.2	12.2	11.4	12.0

Station 76 First Due Area: 1 st Arriving Baseline Performance		2017-2019	2017	2018	2019	2017-2019 Benchmark	2017-2019 Compliance
Alarm Handling		2:56	2:38	2:45	3:25	3:14	91.5%
Turnout Time		2:16	2:20	2:08	2:18	2:07	87.2%
Travel Time	Urban	6:33	6:24	6:48	6:29	5:44	85.5%
	Rural	N/A	N/A	N/A	N/A	9:05	N/A
Total Response Time	Urban	10:29	10:39	10:06	10:50	9:22	87.1%
		<i>n</i> = 5,044	<i>n</i> = 1,768	<i>n</i> = 1,725	<i>n</i> = 1,551		
	Rural	N/A	N/A	N/A	N/A	12:49	N/A
		<i>n</i> = 0	<i>n</i> = 0	<i>n</i> = 0	<i>n</i> = 0		



Temporal Analysis

Incident volume by time of day by type of call shows Station 76's busiest times are from 10am to 7 pm. The station's first due area experiences spikes in call volume at 10 am, 1 pm, and between 4-7 pm.

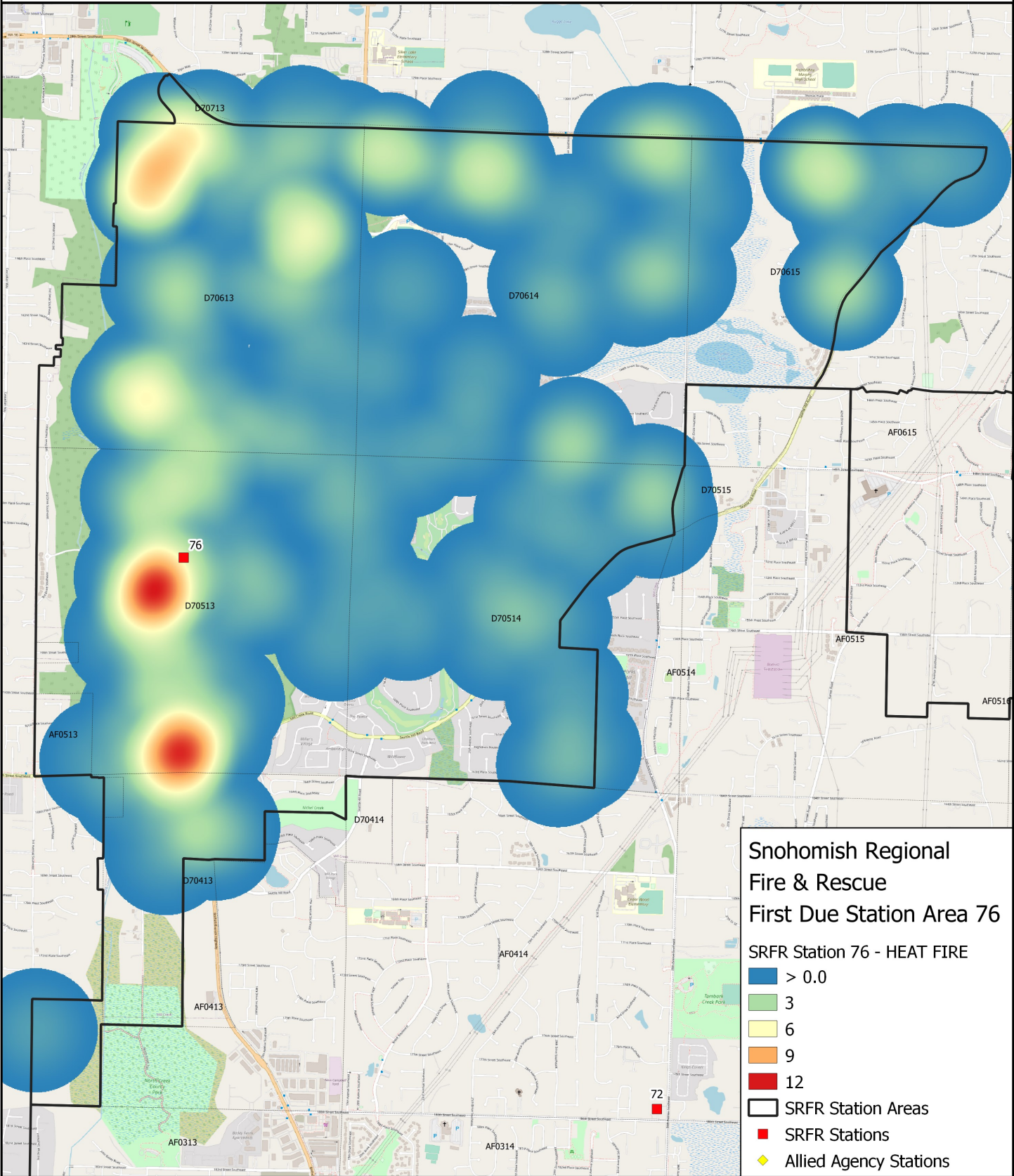


Overall Hot Spot Map

Trends show Station 76 has a call volume that encompasses virtually their entire first due station, with the largest volume of calls just North of the station.

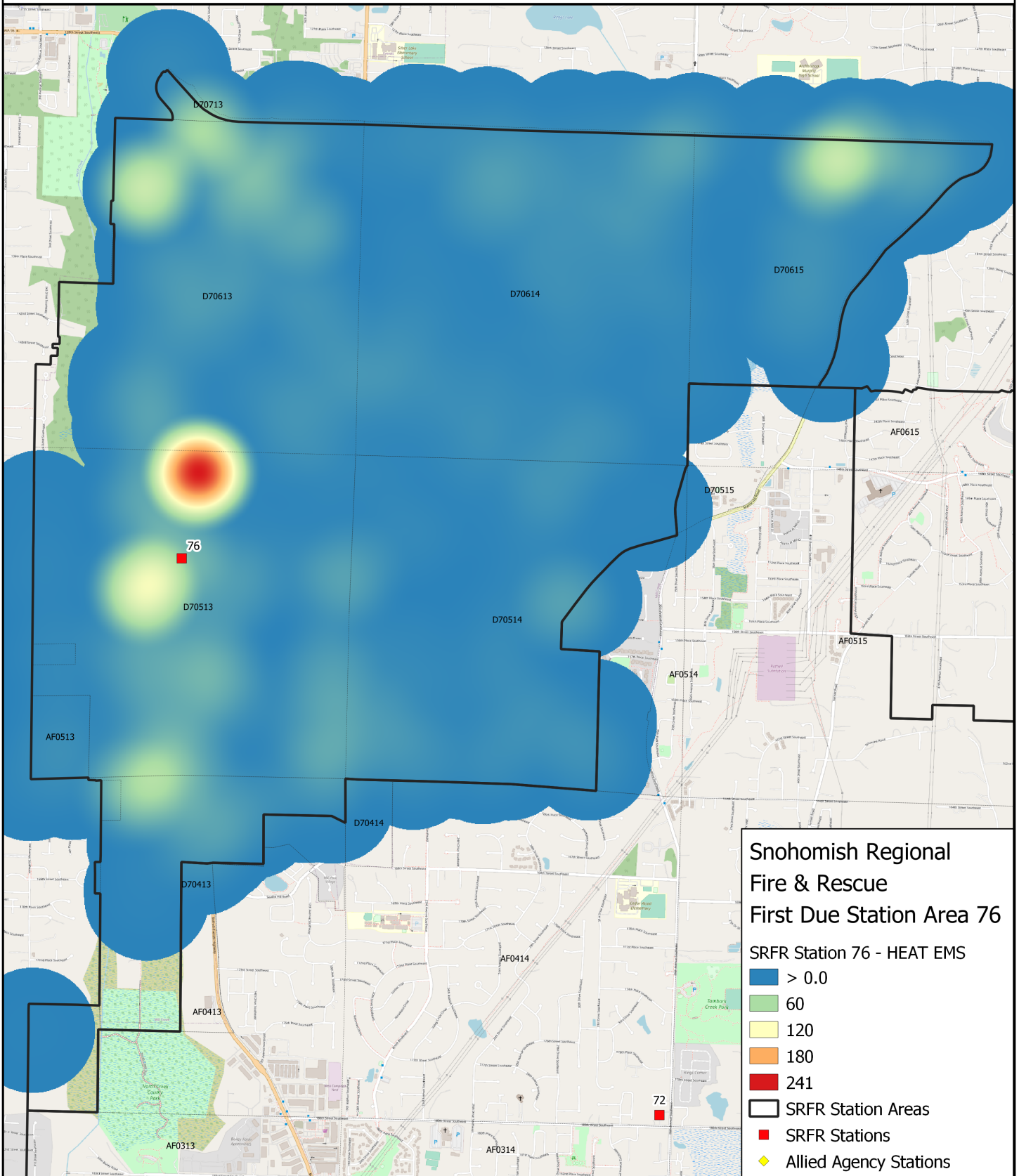
Fire Hot Spot Map

Station 76's fire calls are concentrated in close proximity to the fire station.



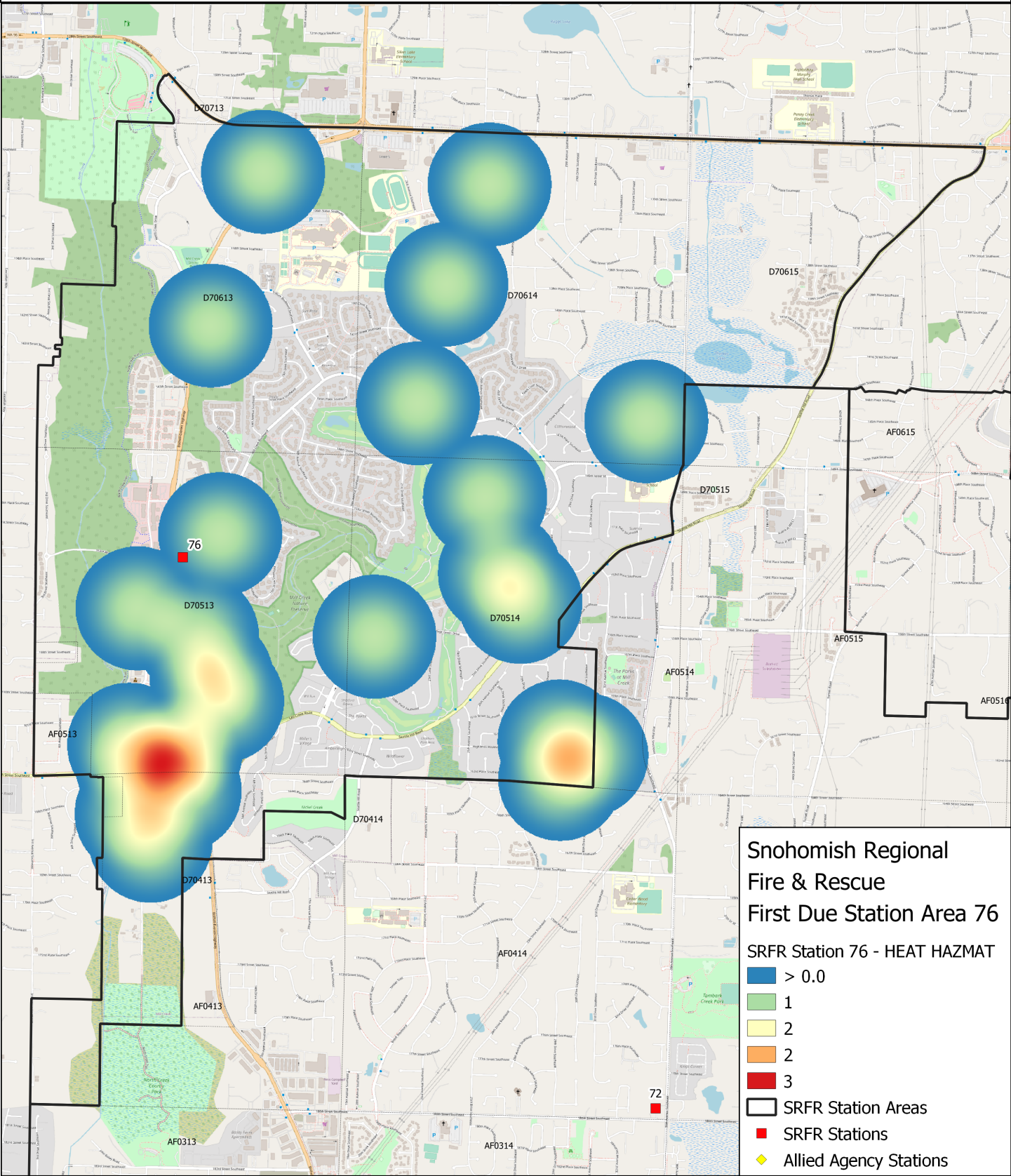
EMS Hot Spot Map

Station 76's EMS calls are concentrated just North of the station, with other moderate hot spots near the Northern border of the station.



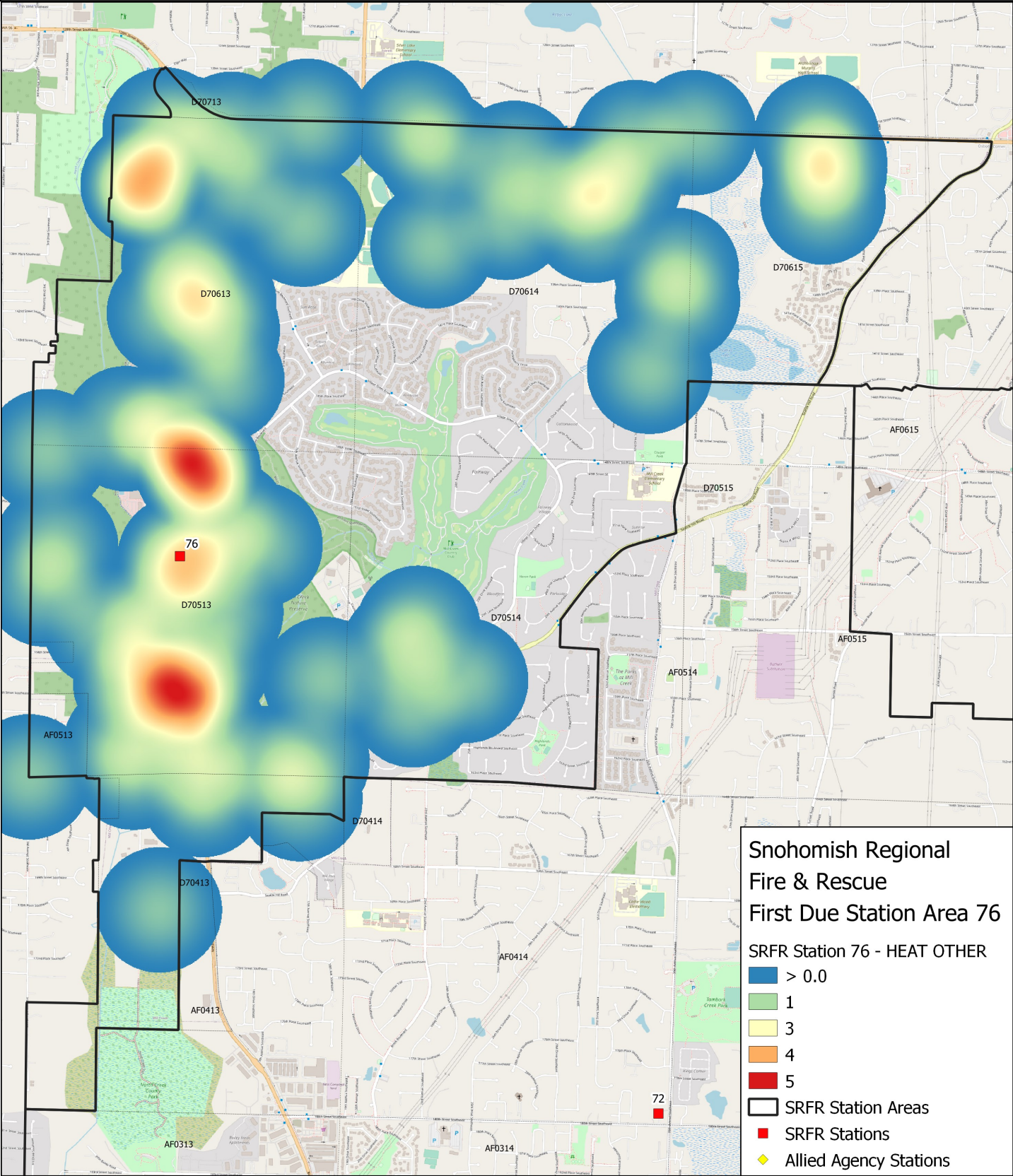
HazMat Hot Spot Map

The station experienced a moderate amount of hazmat calls compared to other first due areas, with the highest volume located in the Southeast and Southwest parts of the station’s first due area.



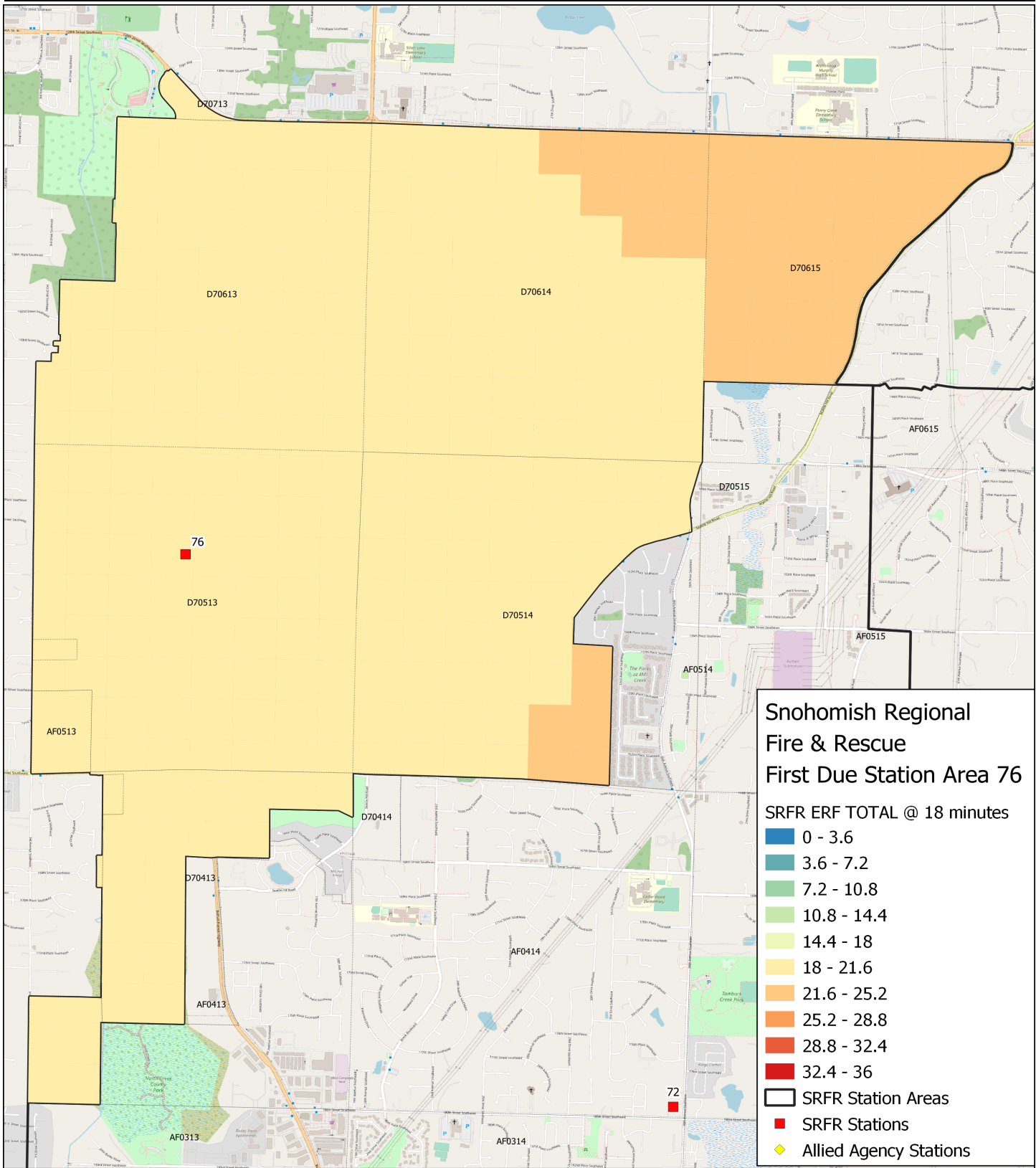
Other Hot Spot Map

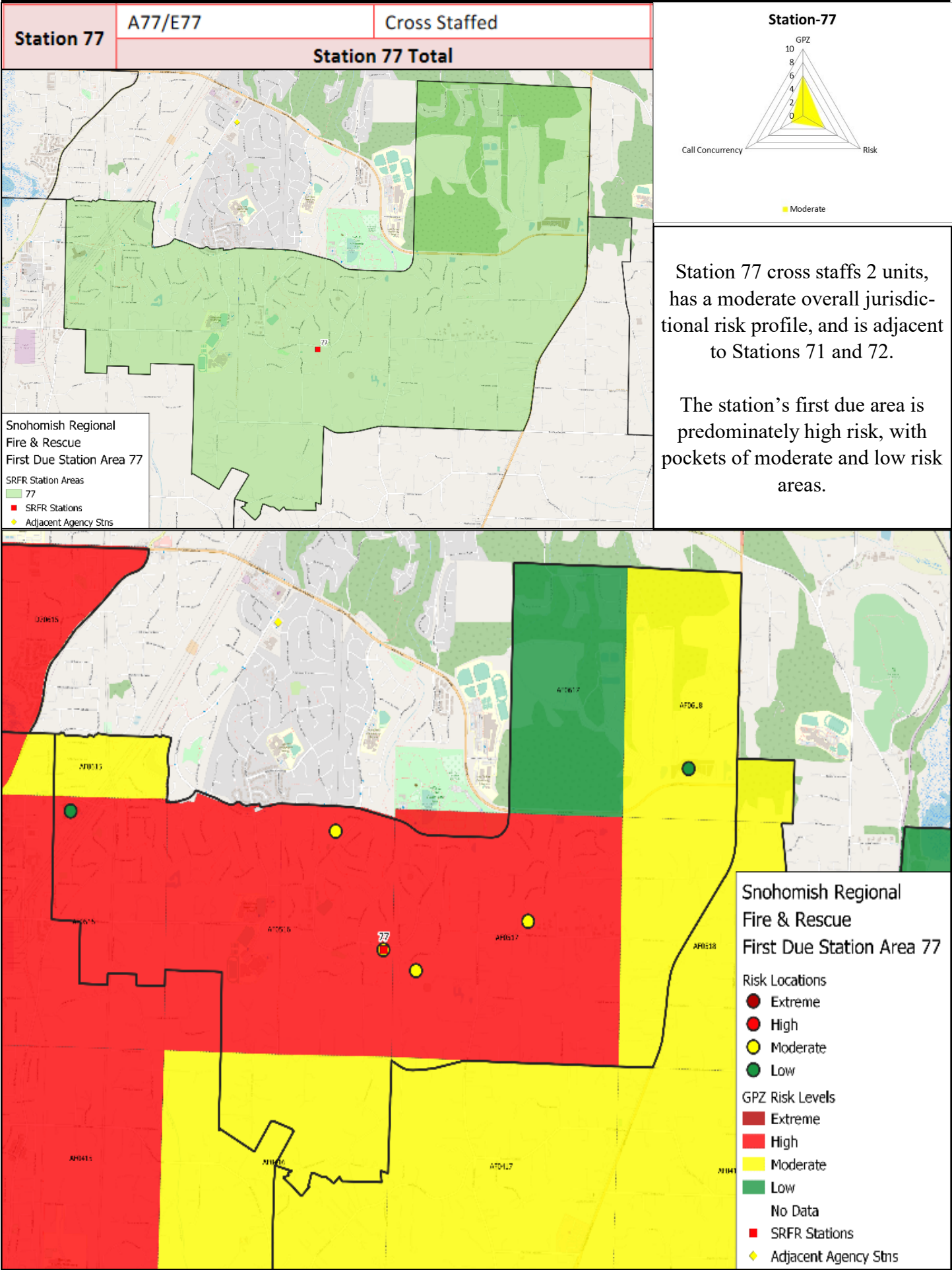
The largest concentration of other type incidents is located in a North/South band in-line with Station 76.



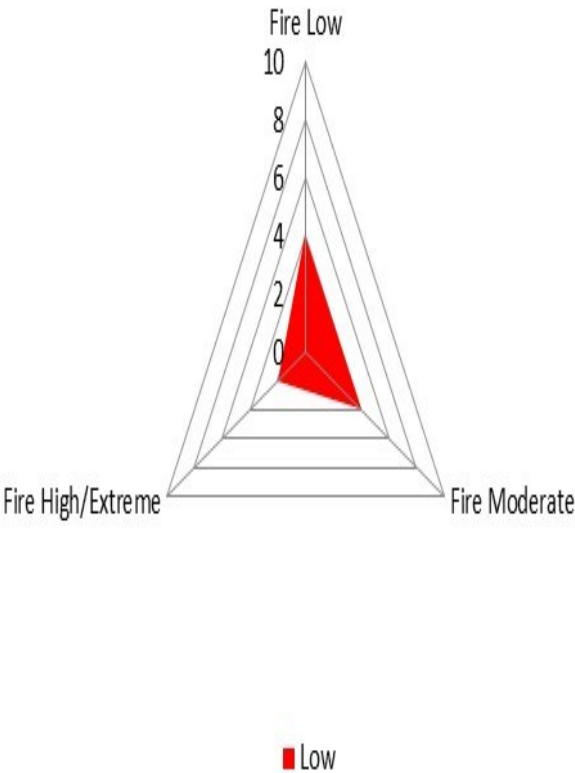
Section F - Current Deployment and Performance

Time Increments	ERF-11	ERF-12	ERF-15	ERF-18
8-Minutes	82.61%	72.87%	60.29%	16.45%
10-Minutes	98.45%	97.87%	97.87%	96.49%
13-Minutes	98.45%	98.45%	98.45%	98.45%
15-Minutes	98.45%	98.45%	98.45%	98.45%
18-Minutes	98.45%	98.45%	98.45%	98.45%

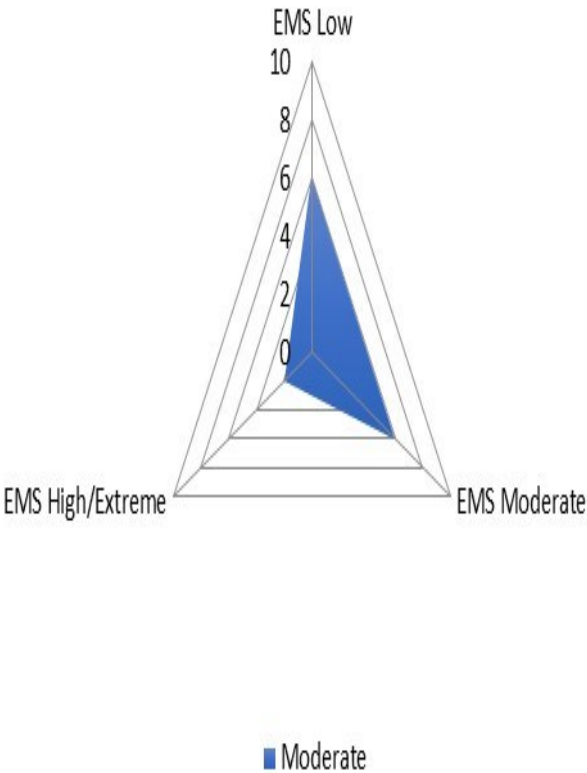




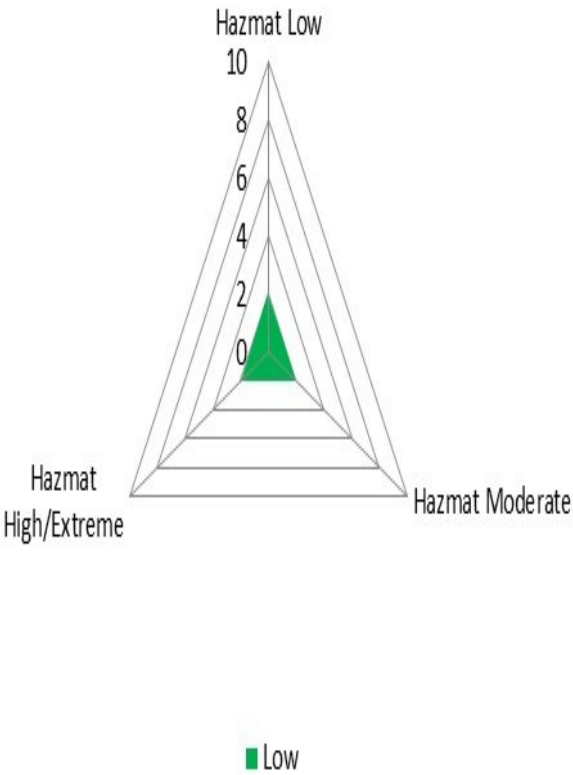
Station 77 First Due Area



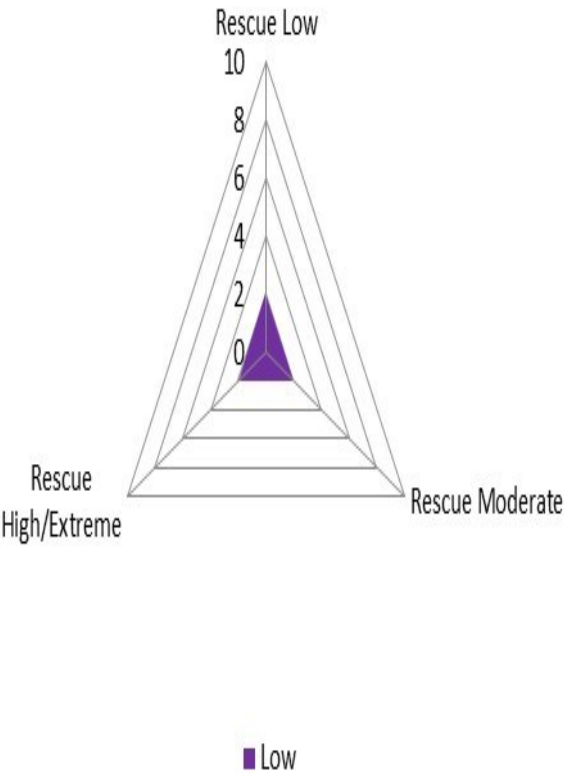
Station 77 First Due Area



Station 77 First Due Area



Station 77 First Due Area

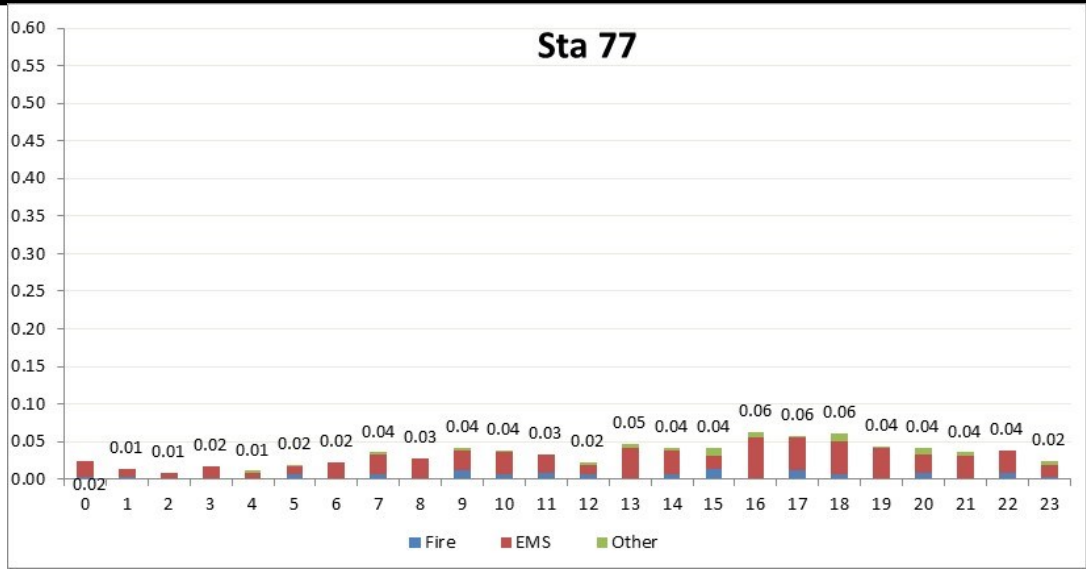


Station 77 First Due Area Historical Data Analysis

Station 77 First Due Area Incidents by Call Category	Reporting Period			
	2017	2018	2019	All
EMS Total	412	387	227	1,026
Fire Total	64	52	34	150
Hazmat Total	5	12	13	30
Other Total	36	36	20	92
Technical Rescue Total	0	1	0	1
Total	517	488	294	1,299
Average Calls per Day	1.4	1.3	0.8	N/A
YoY Growth	N/A	-5.6%	-39.8%	N/A

Station 77 First Due Area Responses by Unit ID	Reporting Period			
	2017	2018	2019	All
A77	1,157	986	958	3,101
E77	136	188	135	459
Total	1,293	1,174	1,093	3,560
Average Responses per Day	3.5	3.2	3.0	3.3

Station 77 First Due Area: 1 st Arriving Baseline Performance		2017-2019	2017	2018	2019	2017-2019 Benchmark	2017-2019 Compliance
Alarm Handling		4:32	4:37	4:08	4:53	3:14	81.9%
Turnout Time		2:11	2:14	2:08	2:08	2:07	87.9%
Travel Time	Urban	7:02	7:02	7:01	6:58	5:44	78.0%
	Rural	7:15	7:29	6:52	7:36	9:05	98.5%
Total Response Time	Urban	13:16	13:33	12:56	13:23	9:22	69.7%
		n = 586	n = 260	n = 211	n = 115		
	Rural	10:59	10:41	10:41	11:54	12:49	98.5%
		n = 268	n = 90	n = 113	n = 65		

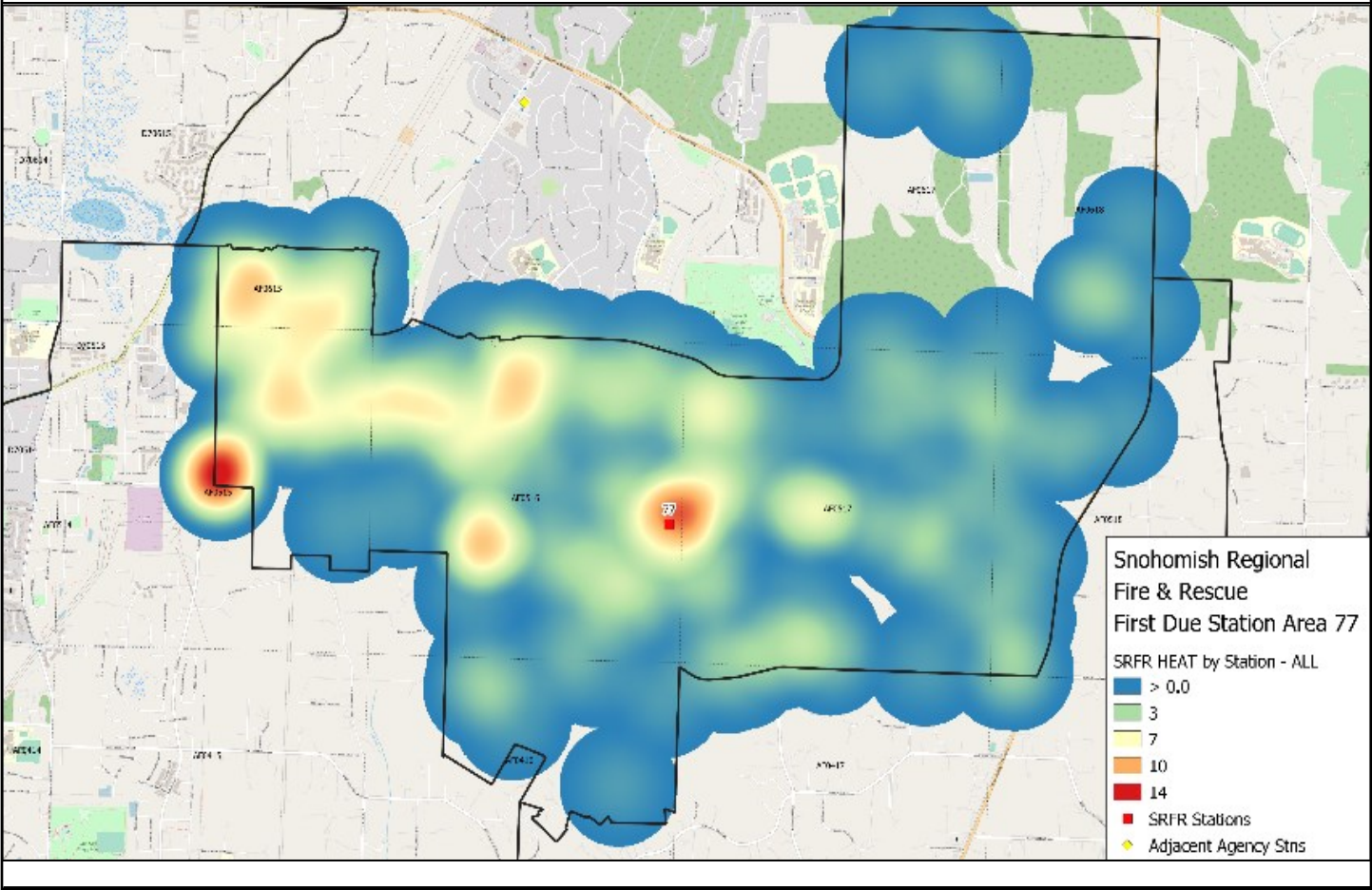


Temporal Analysis

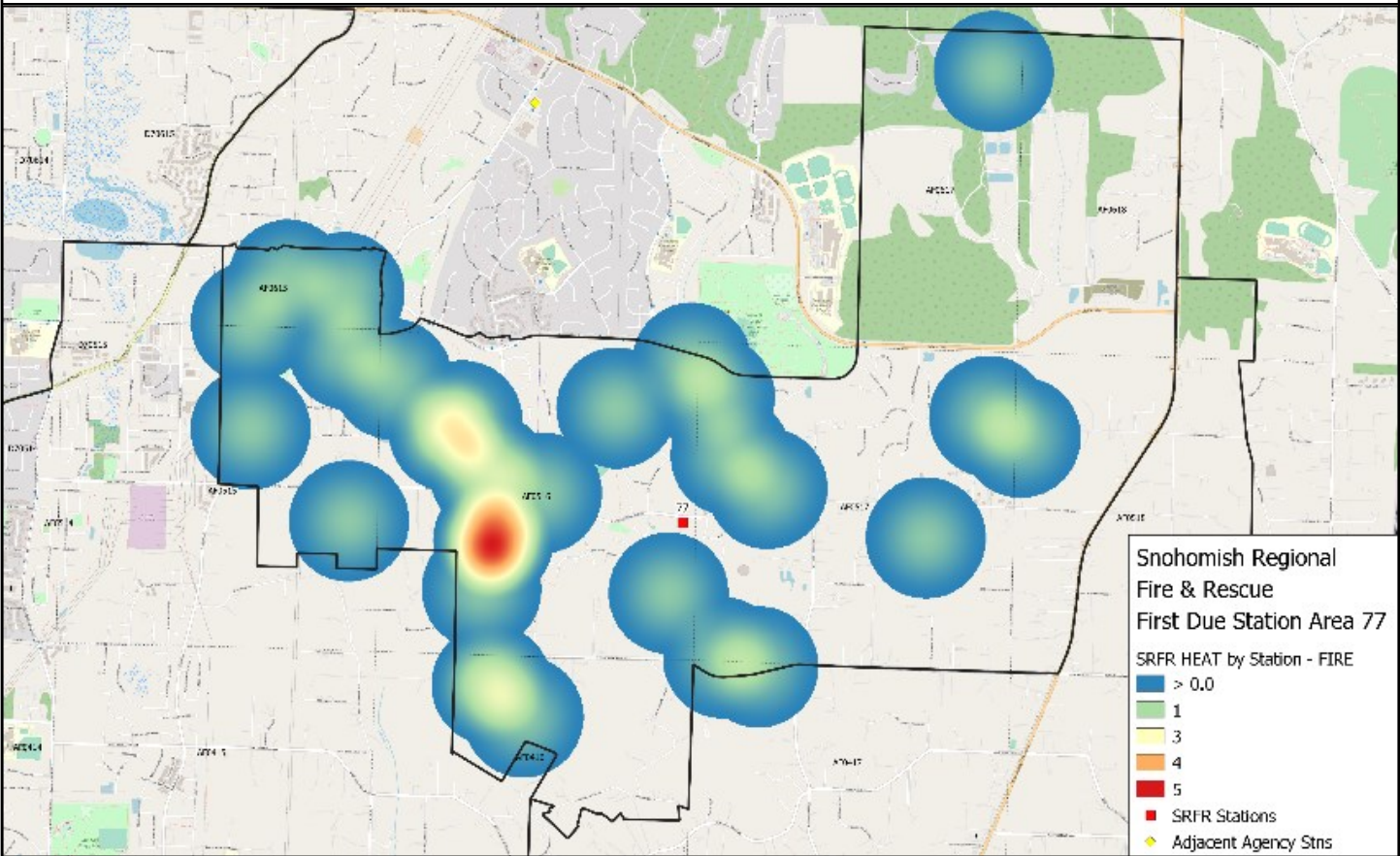
Incident volume by time of day by type of call shows Station 77's busiest times are from 9 am to 8 pm. The call volume peaks around late afternoon, with EMS calls spiking between 4 and 7 pm.

Overall Hot Spot Map

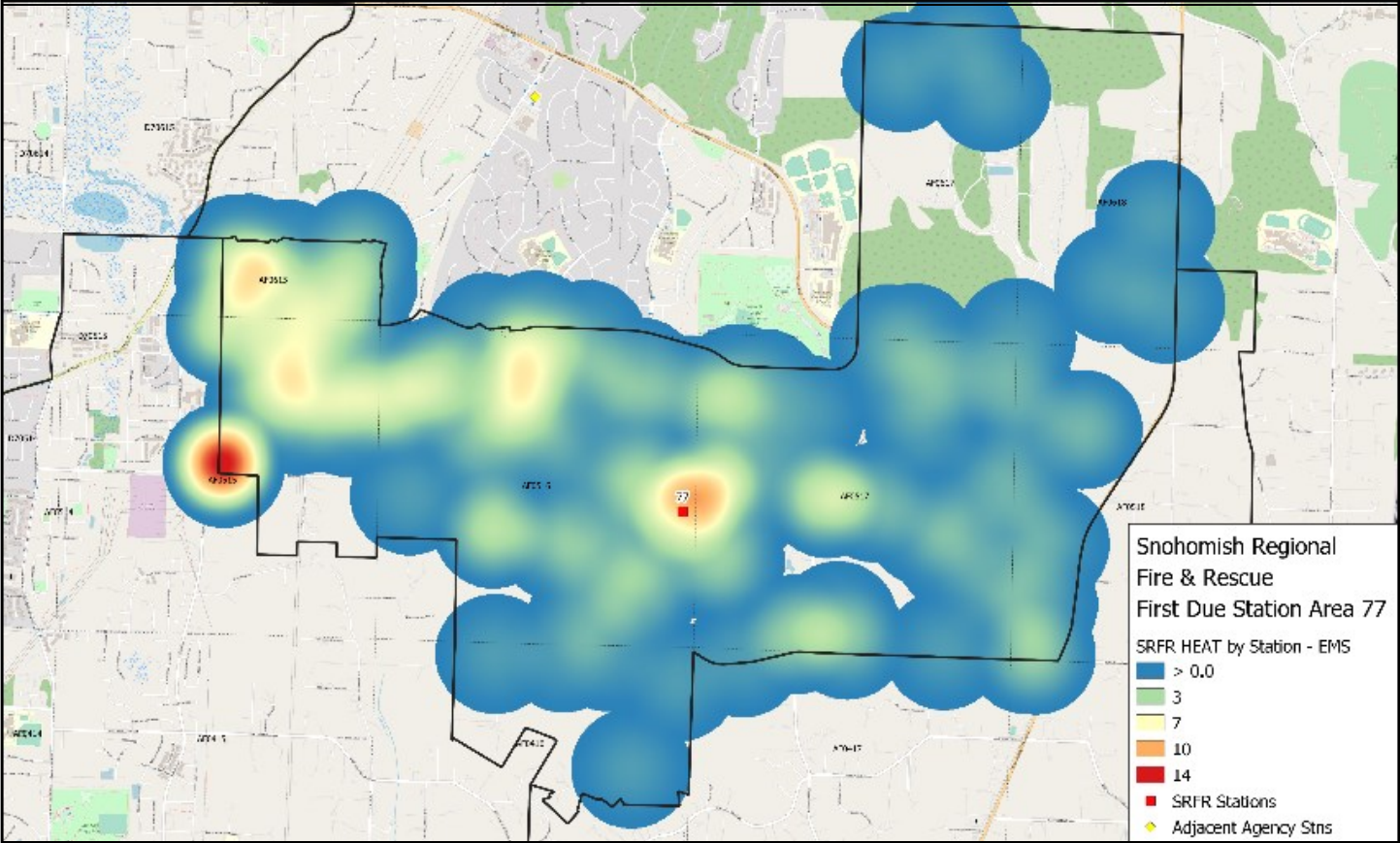
Station 77 has a moderate distribution of incidents, with the highest concentration located directly adjacent to the station and West of the station along Station 72's border.



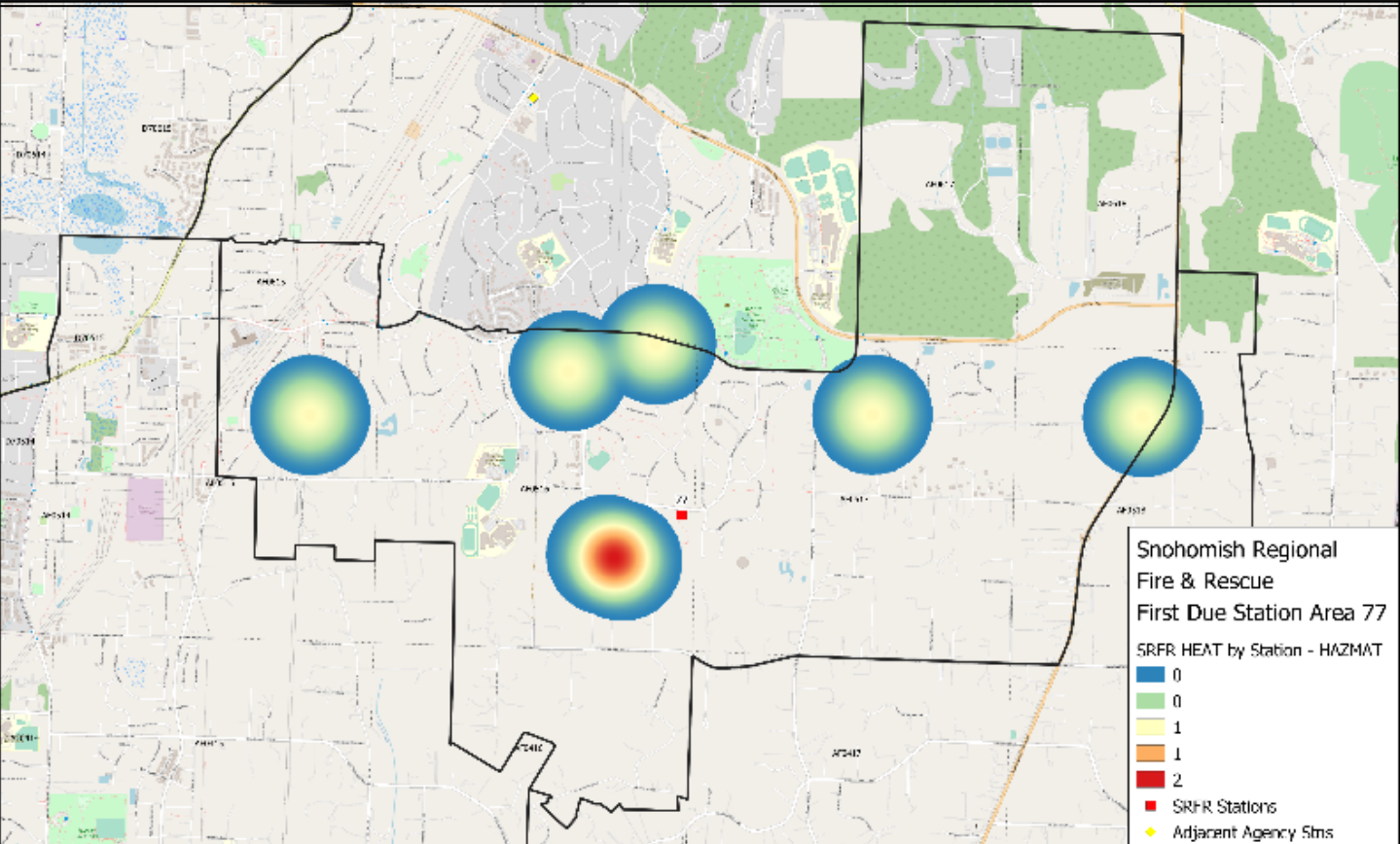
Fire Hot Spot Map– The highest concentration of fire calls is West of the station



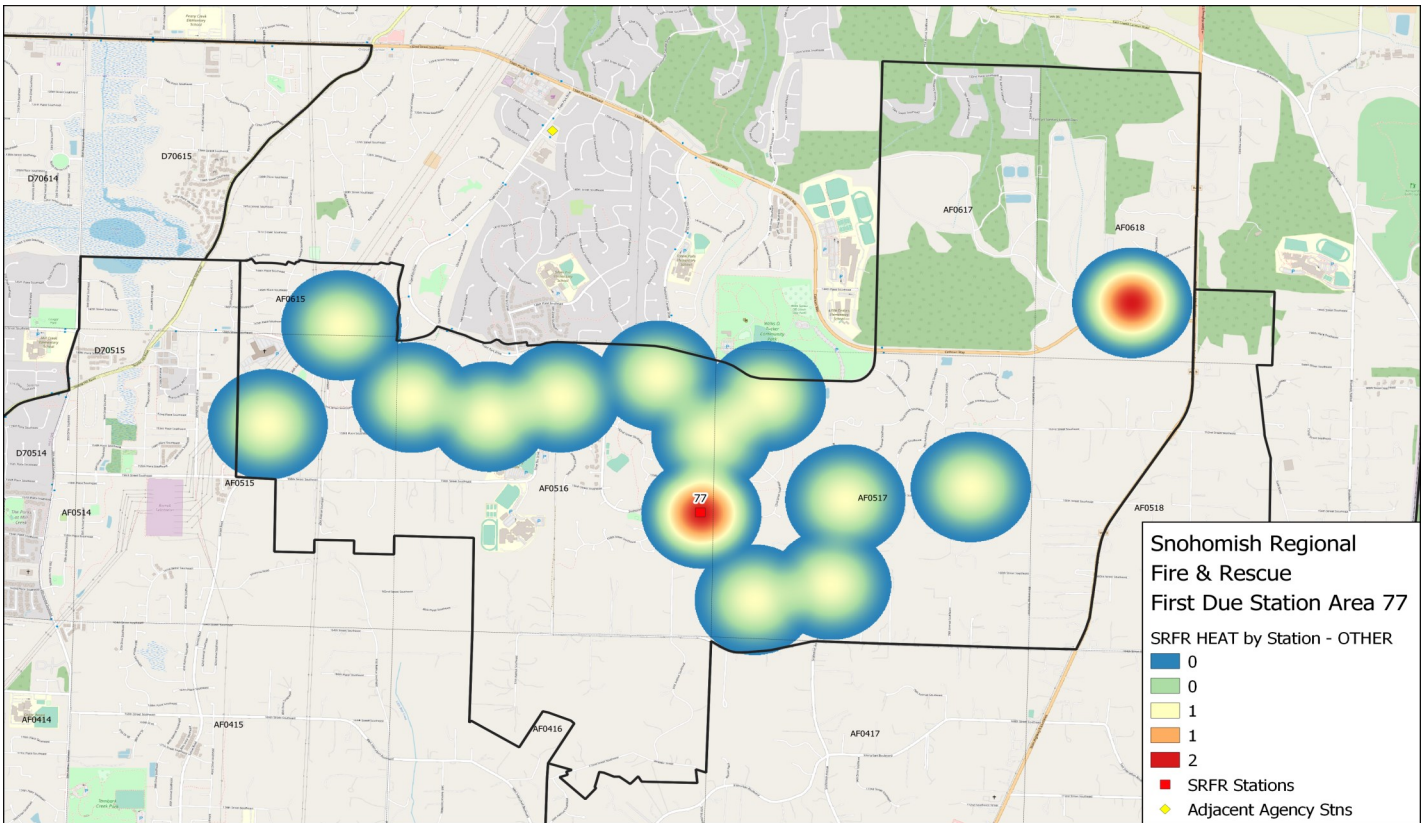
EMS Hot Spot Map– Station 77 has a higher call volume of EMS incidents at and West of the Station



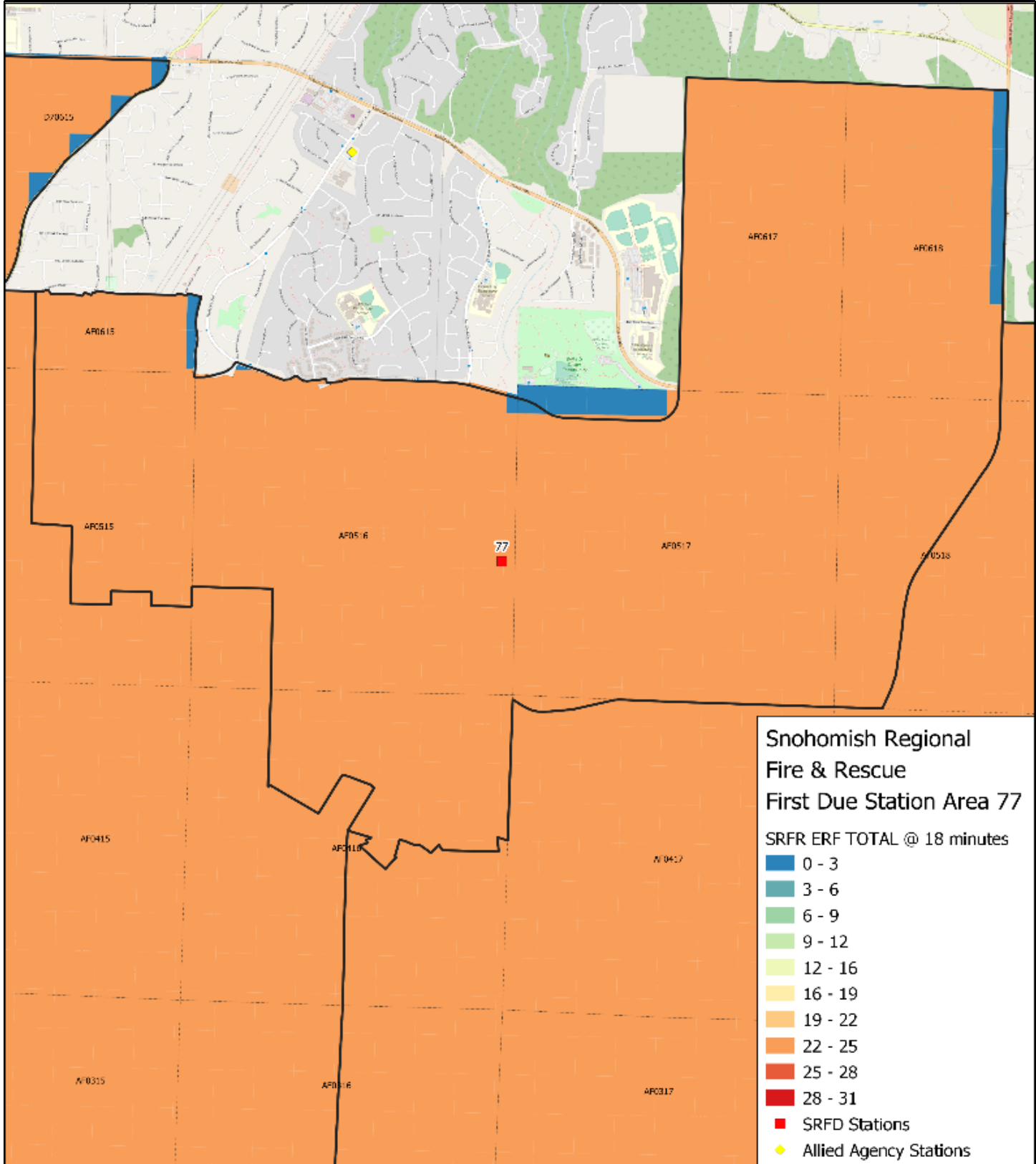
HazMat Hot Spot Map– There is a low volume of hazmat calls with a hot spot just SW of Station 77.



Other Hot Spot Map– Other calls are concentrated at the station area and far East.



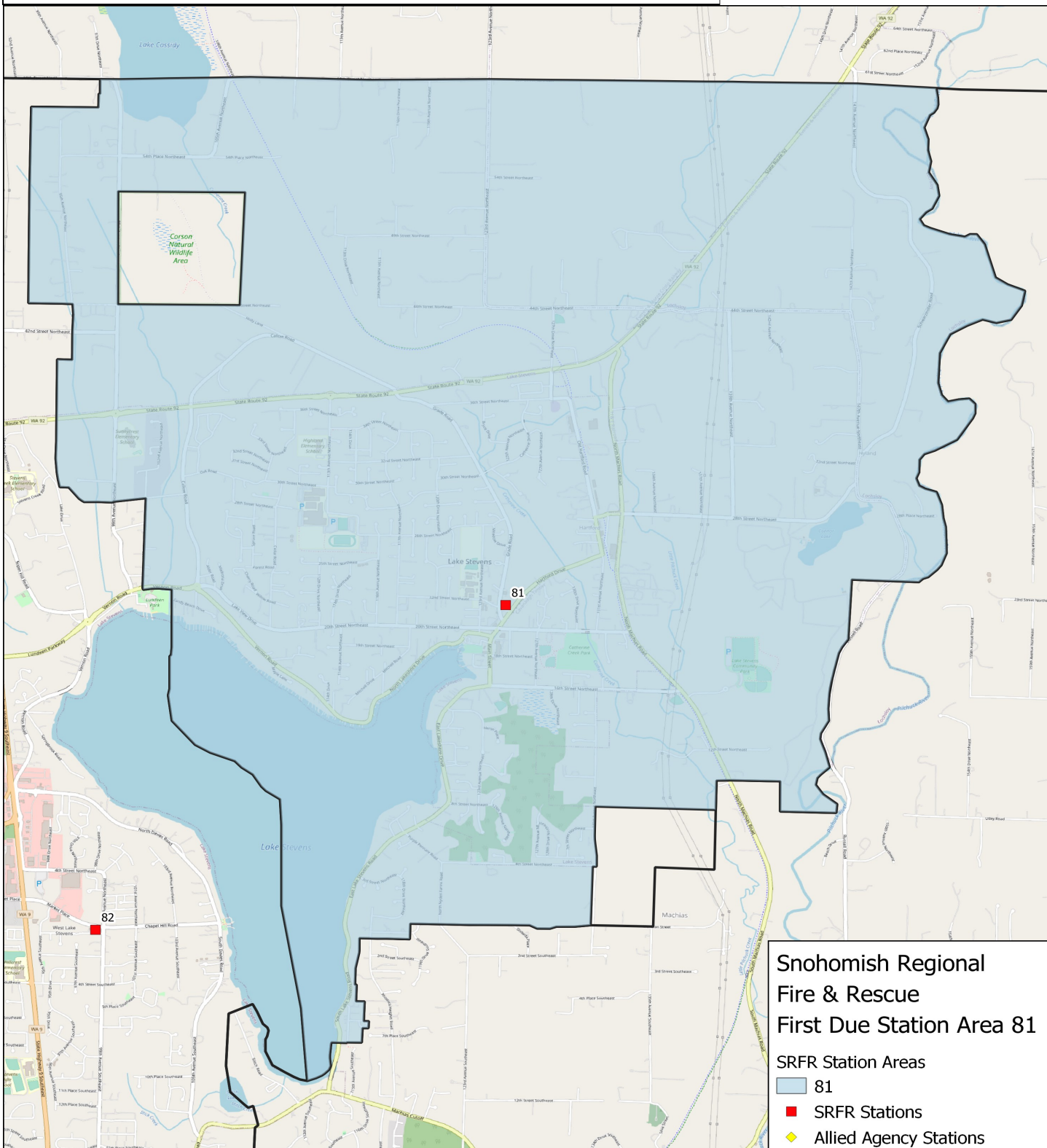
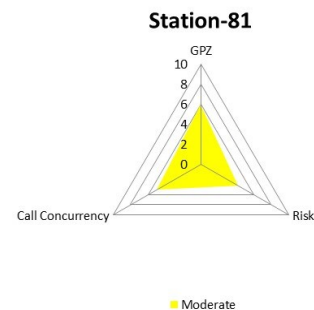
Time Increments	ERF-11	ERF-12	ERF-15	ERF-18
8-Minutes	72.51%	72.51%	66.71%	2.71%
10-Minutes	98.53%	98.53%	87.31%	63.69%
13-Minutes	98.53%	98.53%	98.53%	98.53%
15-Minutes	98.53%	98.53%	98.53%	98.53%
18-Minutes	98.53%	98.53%	98.53%	98.53%



Section F - Current Deployment and Performance

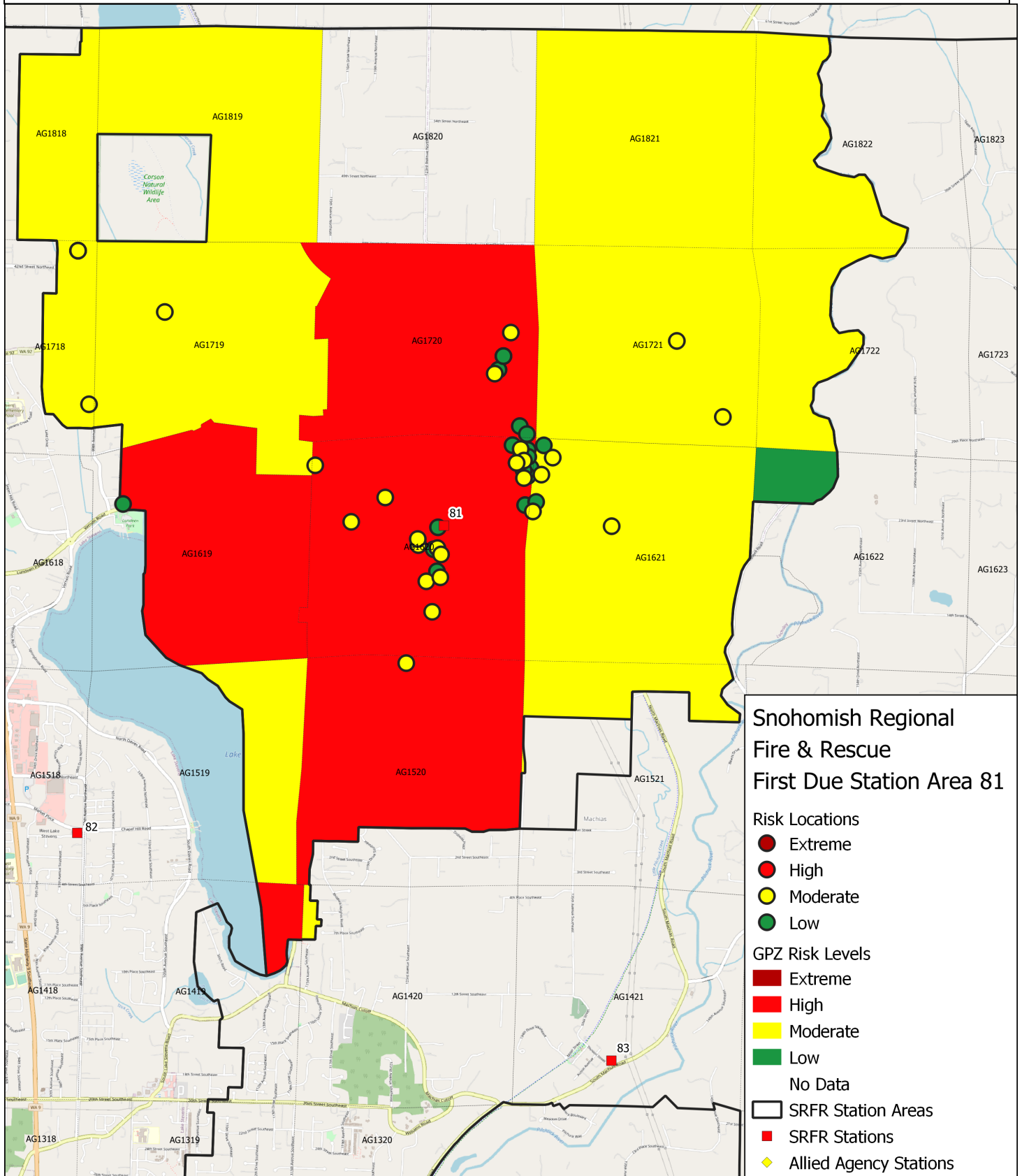
Station 81	A81/BR81/BT81/E81	Cross Staffed
	M81	Medic - ALS
	B81	Battalion
	Station 81 Total	

Station 81 staffs 2 units full time, cross staffs 4 units, has a moderate overall jurisdictional risk profile, and is adjacent to Stations 82 and 83.

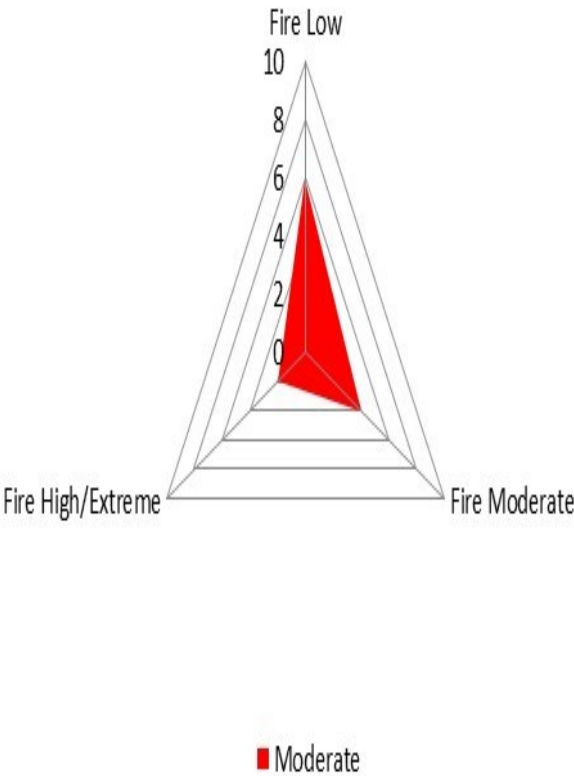


Risk Analysis

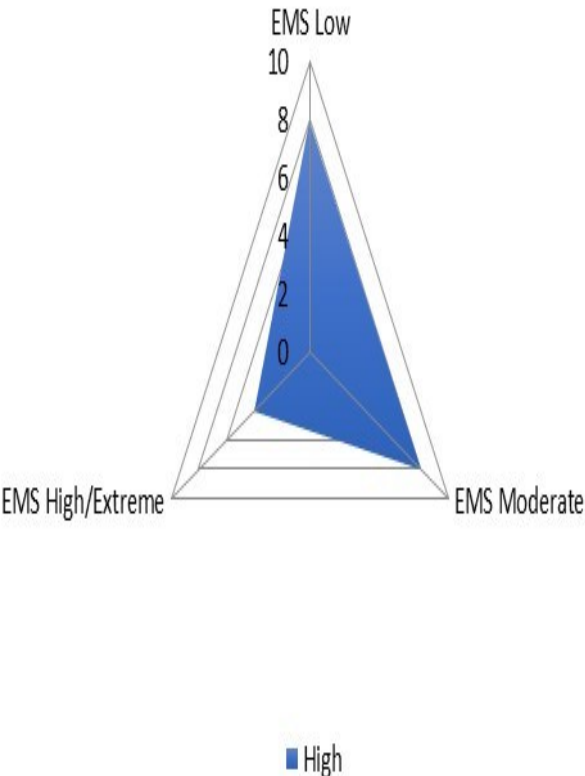
Risk of individual building locations is represented by the small circles and shaded to indicate risk level. There is a concentration of lower to moderate risk buildings located in close proximity to the station which is consequently a high risk GPZ. Risk is also evaluated by GPZ using the same shading criteria. The vast majority of Station 81's first due area is moderate risk.



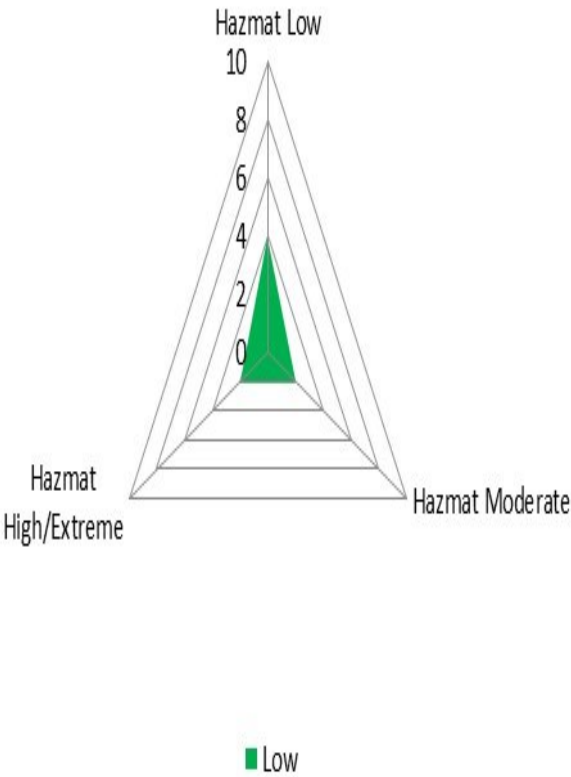
Station 81 First Due Area



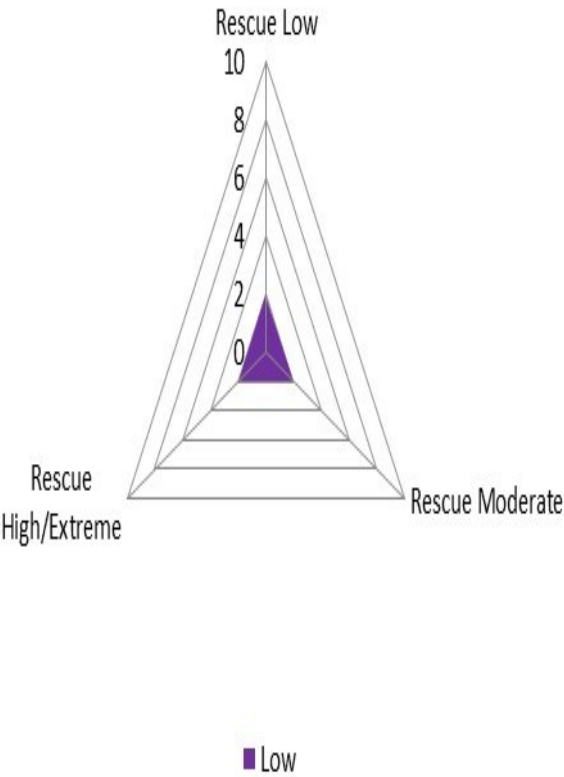
Station 81 First Due Area



Station 81 First Due Area



Station 81 First Due Area

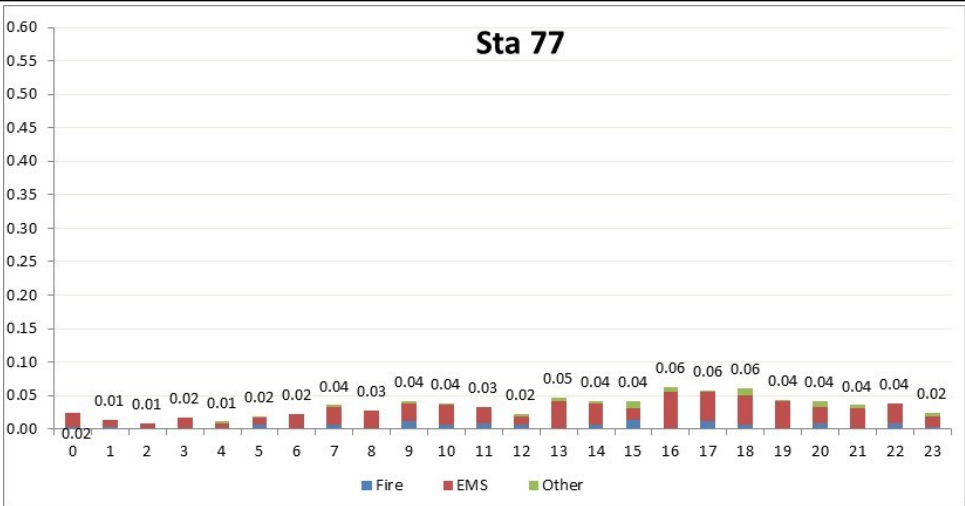


Station 81 First Due Area Historical Data Analysis

Station 81 First Due Area Incidents by Call Category	Reporting Period			
	2017	2018	2019	All
EMS Total	1,150	1,053	1,133	3,336
Fire Total	136	140	111	387
Hazmat Total	23	23	21	67
Other Total	101	164	99	364
Technical Rescue Total	1	0	3	4
Total	1,411	1,380	1,367	4,158
Average Calls per Day	3.9	3.8	3.7	N/A
YoY Growth	N/A	-2.2%	-0.9%	N/A

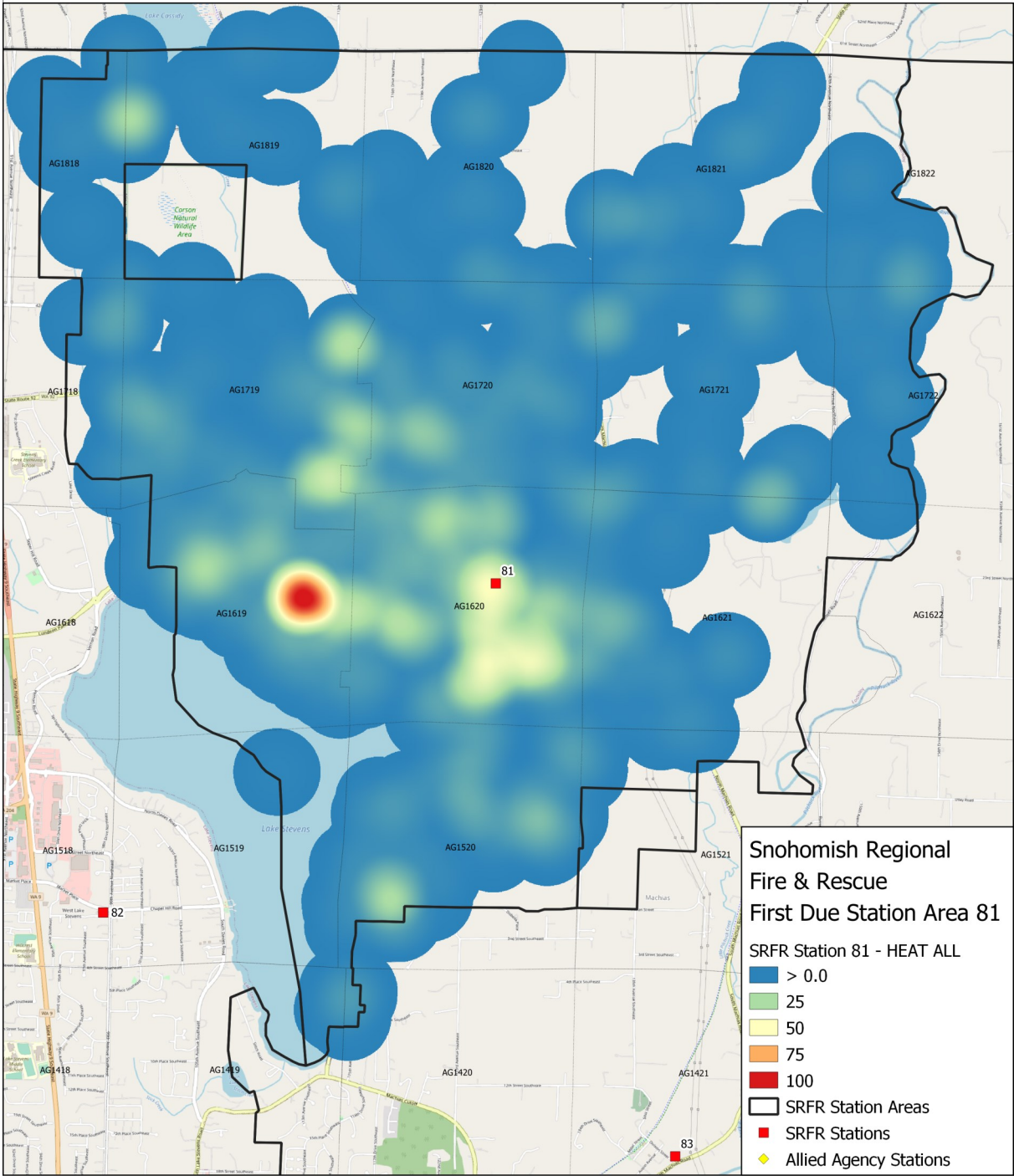
Station 81 First Due Area Responses by Unit ID	Reporting Period			
	2017	2018	2019	All
A81	1,302	1,202	1,211	3,715
B81	267	320	300	887
BR81	40	32	14	86
BT81	8	6	3	17
E81	415	414	334	1,163
M81	1,472	1,526	1,425	4,423
Total	3,504	3,500	3,287	10,291
Average Responses per Day	9.6	9.6	9.0	9.4

Station 81 First Due Area: 1 st Arriving Baseline Performance		2017-2019	2017	2018	2019	2017-2019 Benchmark	2017-2019 Compliance
Alarm Handling		3:50	3:17	3:59	4:05	3:14	85.5%
Turnout Time		2:38	2:49	2:51	2:12	2:07	80.3%
Travel Time	Urban	6:28	6:29	6:42	6:04	5:44	86.4%
	Rural	10:57	10:18	10:28	11:41	9:05	82.7%
Total Response Time	Urban	10:15	10:06	10:49	9:58	9:22	84.0%
		n = 2,050	n = 763	n = 627	n = 660		
	Rural	15:33	14:25	16:02	16:10	12:49	79.9%
		n = 796	n = 306	n = 245	n = 245		



Temporal Analysis

Incident volume by time of day by type of call shows Station 81's busiest times are from 9 am to 8 pm, a busy period encompassing most of the day.

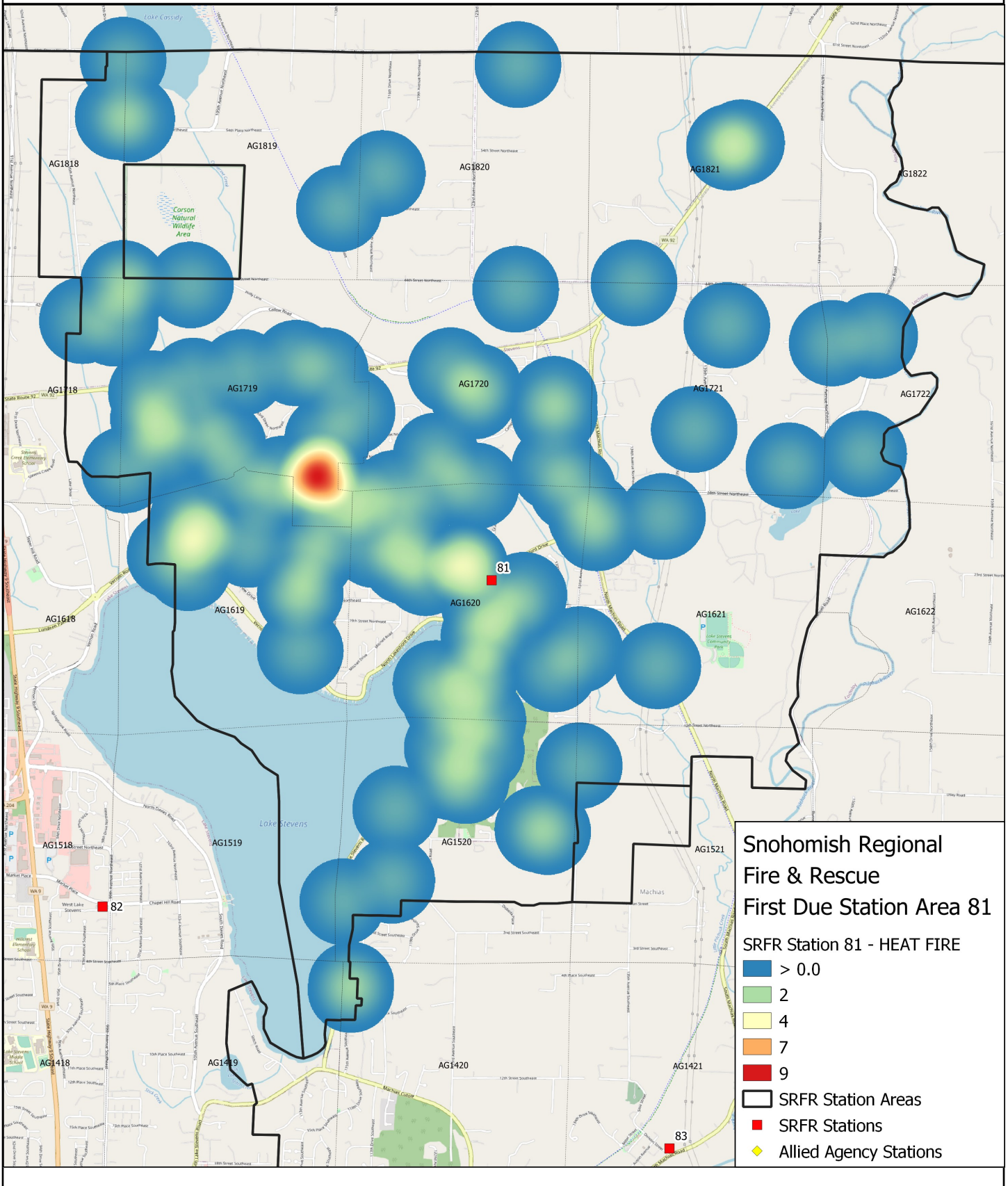


Overall Hot Spot Map

Trends show Station 81 has a call volume that encompasses virtually their entire first due area, with the largest volume of calls just West of the station.

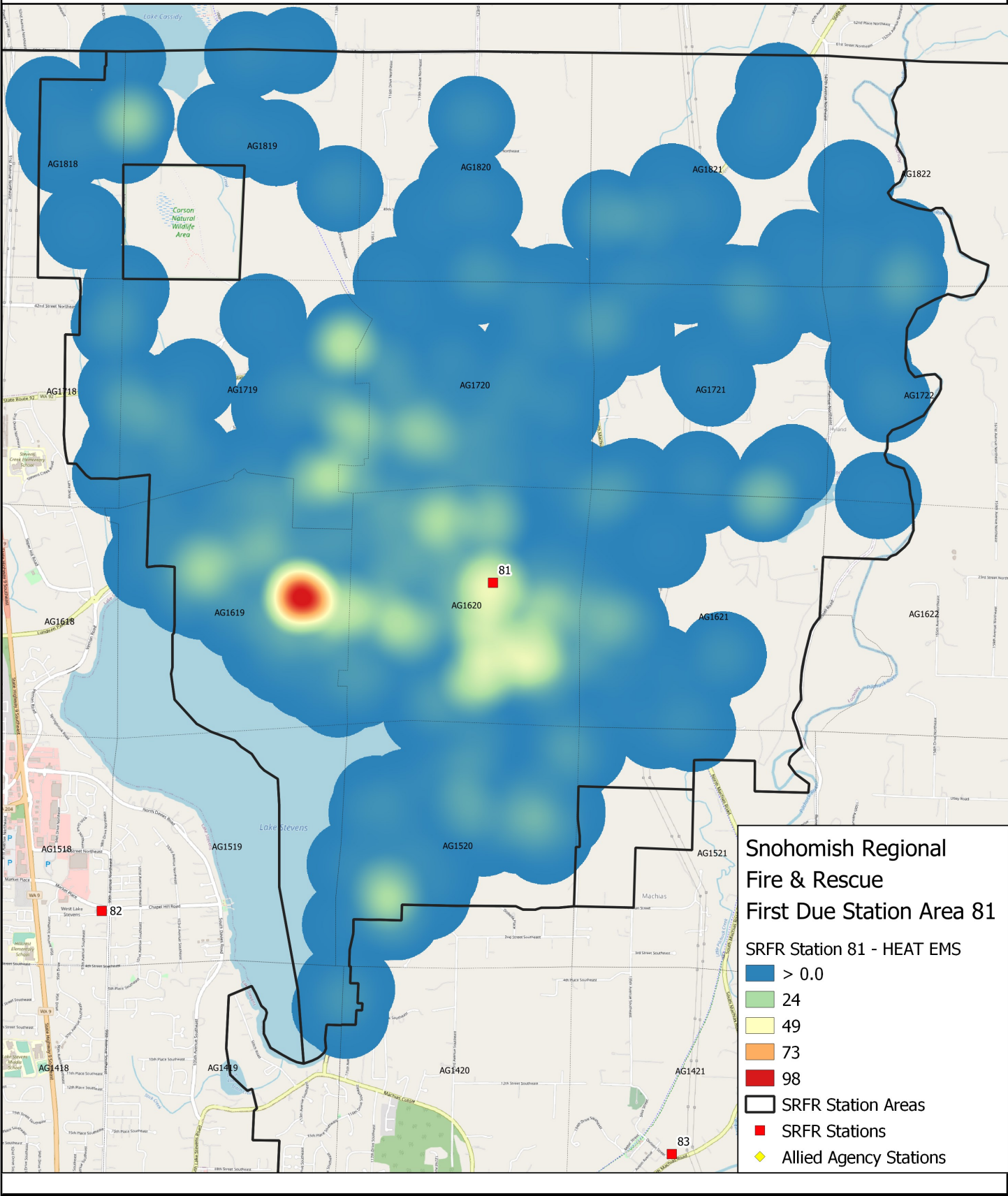
Fire Hot Spot Map

Station 81's fire calls are concentrated in close proximity to the fire station, with the highest volume located just Northwest of Station 81.



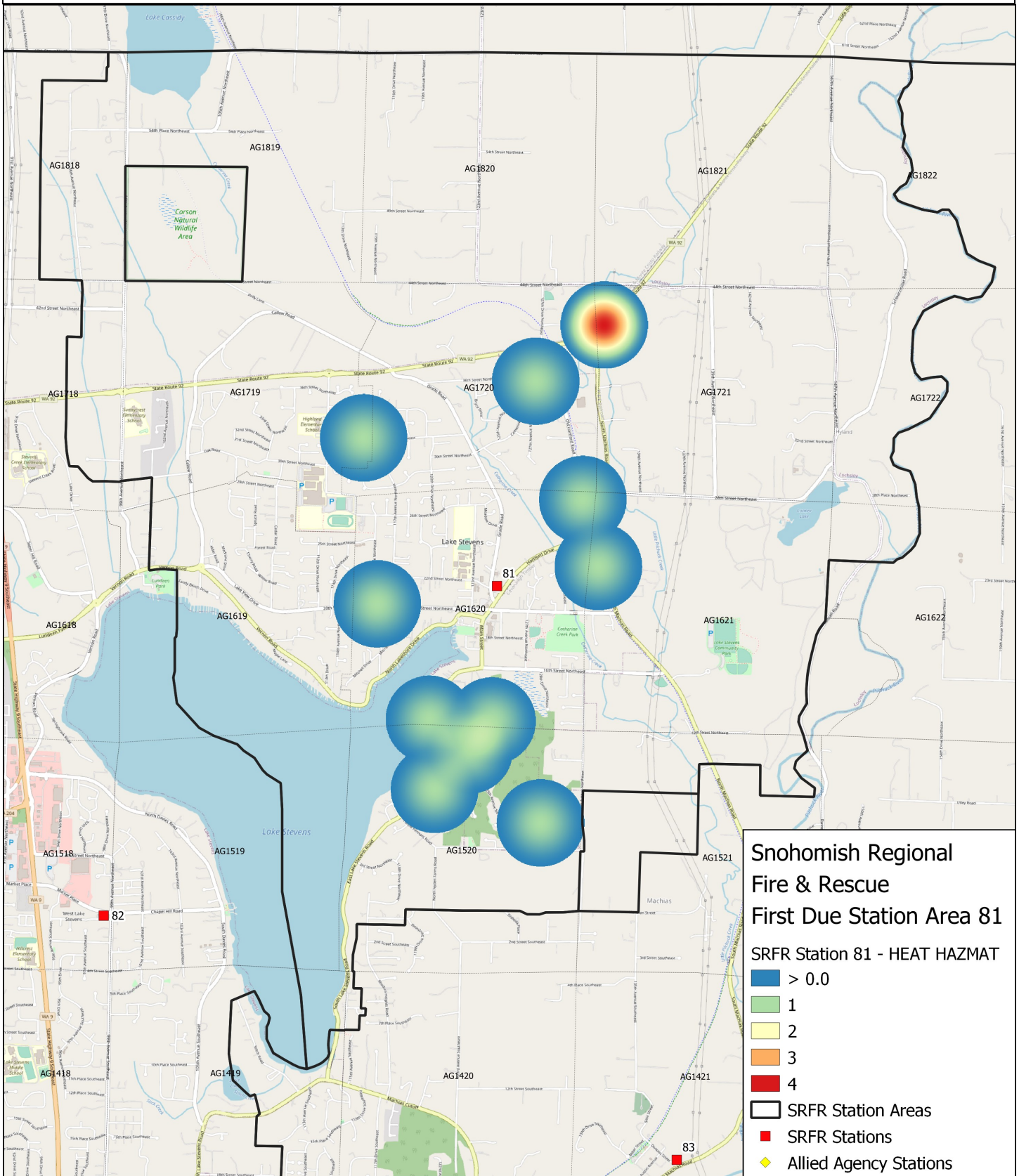
EMS Hot Spot Map

Station 81’s EMS calls dispersed evenly throughout the first due area, with the highest concentration located in the areas surrounding Station 81 and directly West of the Station.



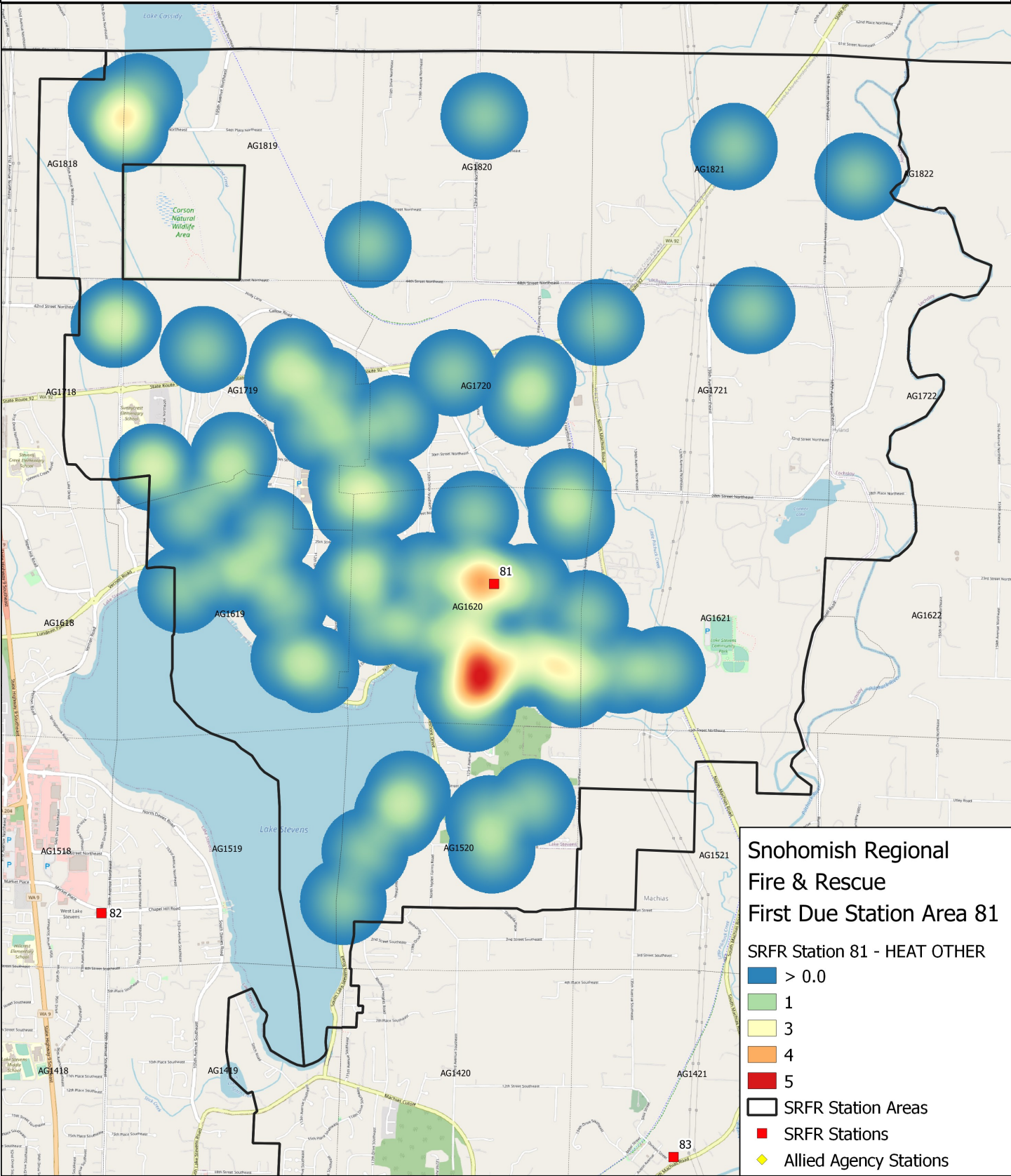
HazMat Hot Spot Map

As with most other stations, a relatively low volume of hazardous materials calls makes it difficult to discern trends with the exception of a hot spot Northeast of the station along a major travel corridor.

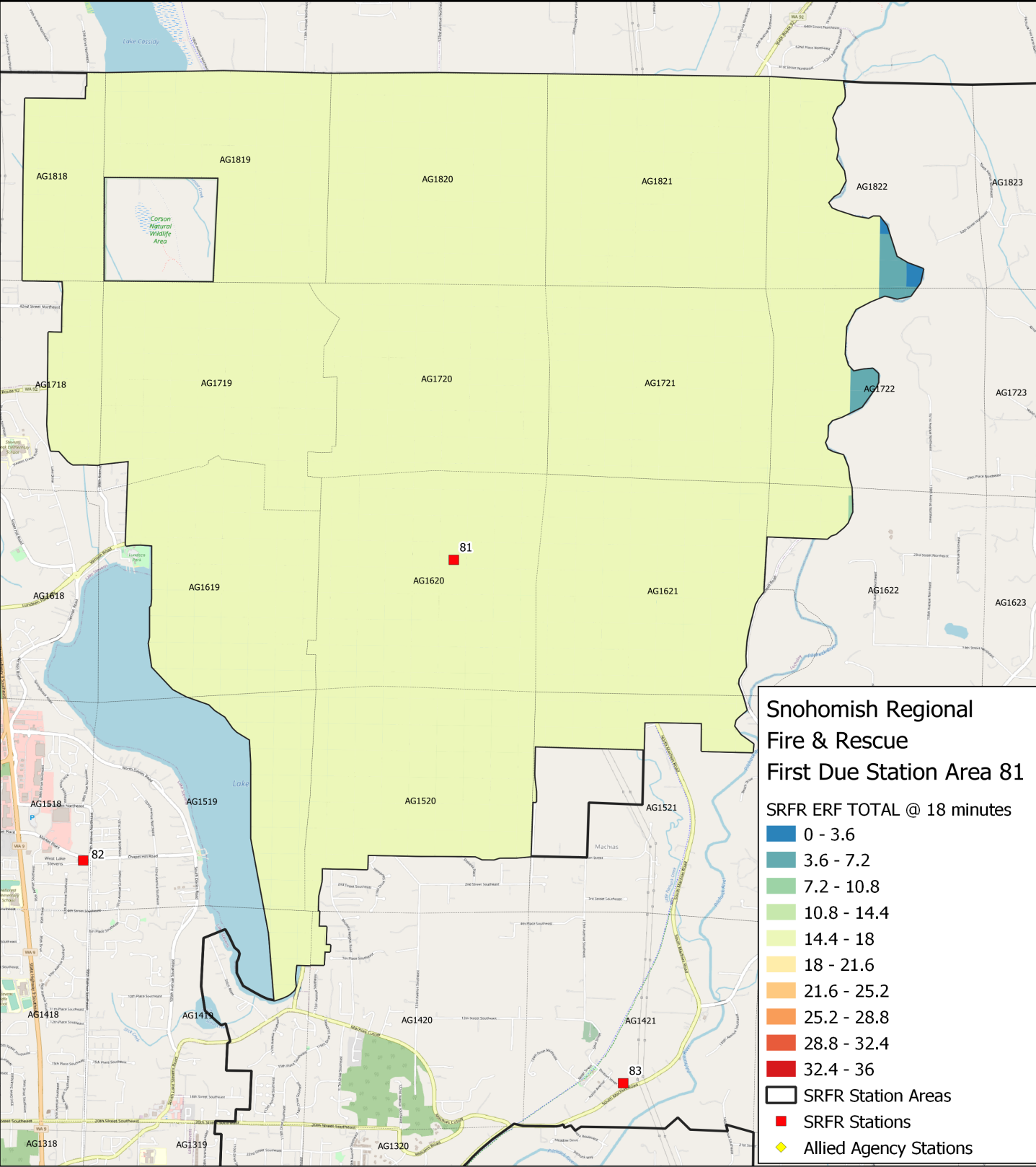


Other Hot Spot Map

Station 81’s other calls are concentrated in close proximity to the fire station, with the largest hot spot directly South of the station.



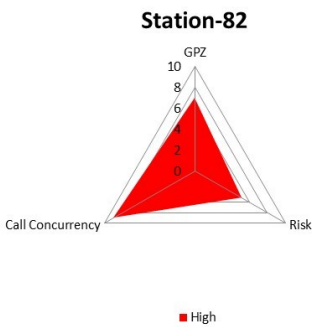
Time Increments	ERF-11	ERF-12	ERF-15	ERF-18
8-Minutes	67.71%	67.71%	47.49%	24.17%
10-Minutes	87.81%	87.81%	86.32%	69.83%
13-Minutes	99.73%	99.73%	99.73%	97.83%
15-Minutes	99.73%	99.73%	99.73%	99.73%
18-Minutes	99.73%	99.73%	99.73%	99.73%



Section F - Current Deployment and Performance

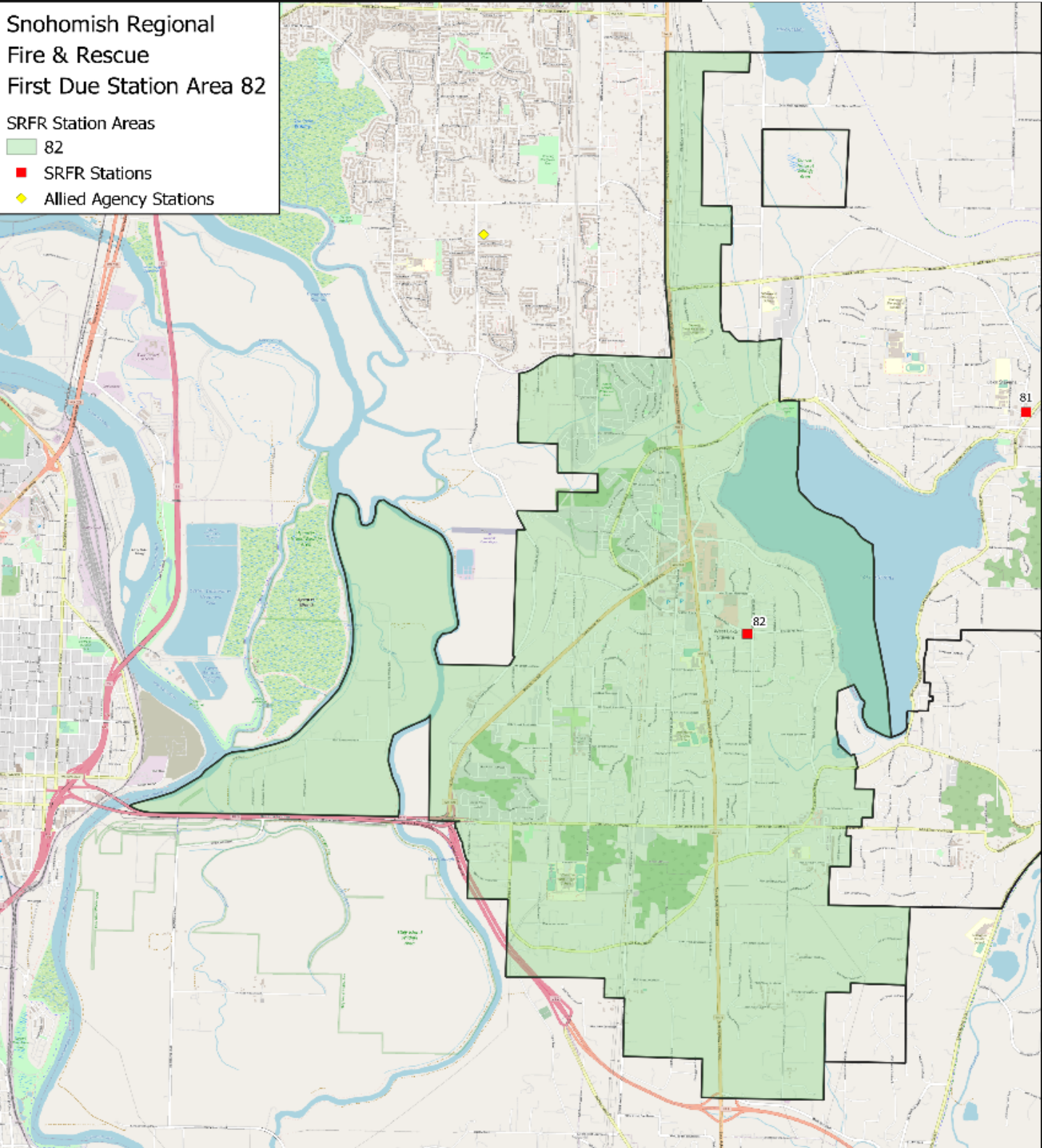
Station 82	A82	Aid - BLS	41.5	1327.1	1,917
	M82	Medic - ALS	37	971.0	1,576
	E82	Engine	20.7	339.5	982
	BT82	Boat	21.8	1.8	5

Station 82 staffs 3 units fulltime, has a high overall jurisdictional risk profile, and is adjacent to Stations 81 and 83.



Snohomish Regional
Fire & Rescue
First Due Station Area 82

- SRFR Station Areas
- 82
 - SRFR Stations
 - Allied Agency Stations

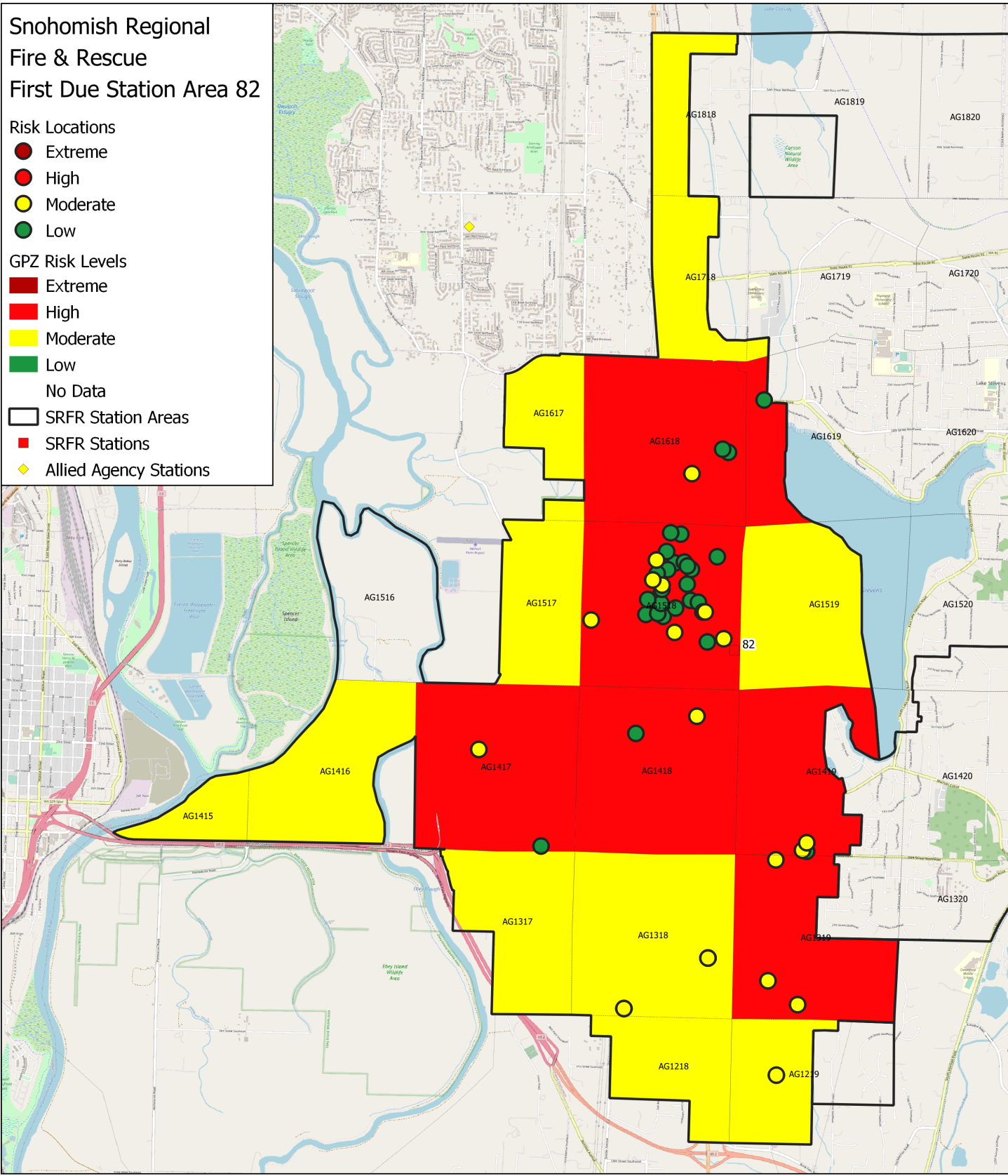


Risk Analysis

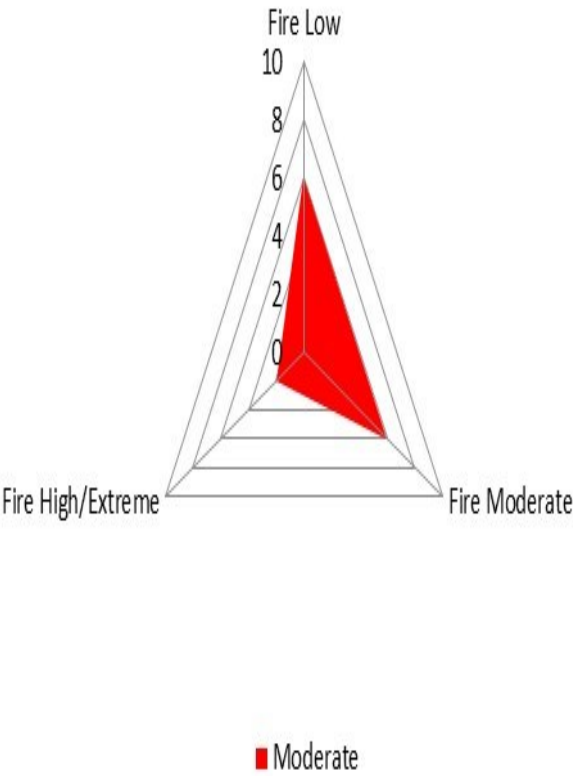
Risk of individual building locations is represented by the small circles and shaded to indicate risk level. There is a large concentration of lower to moderate risk buildings located in close proximity to the station which is consequently a high risk GPZ. Risk is also evaluated by GPZ using the same shading criteria. The vast majority of Station 82's first due area is moderate with a mix of high risk.

Snohomish Regional
Fire & Rescue
First Due Station Area 82

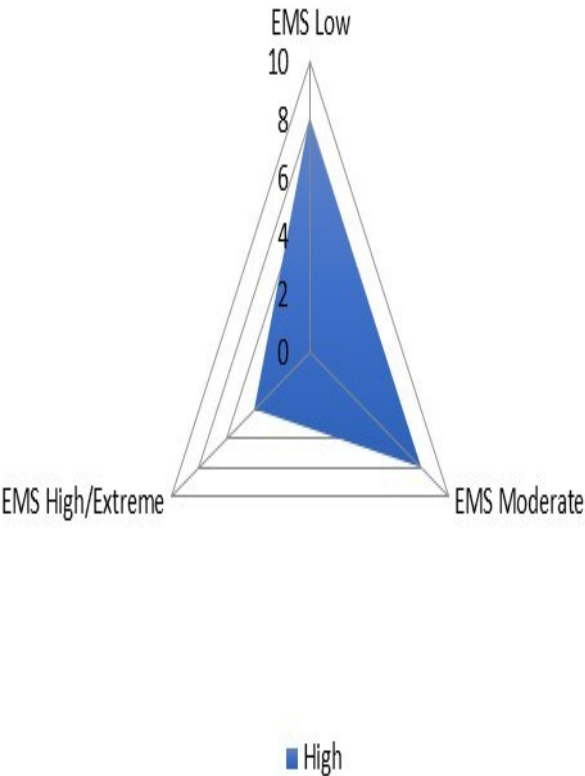
- Risk Locations
- Extreme
 - High
 - Moderate
 - Low
- GPZ Risk Levels
- Extreme
 - High
 - Moderate
 - Low
 - No Data
- SRFR Station Areas
- SRFR Stations
 - ◆ Allied Agency Stations



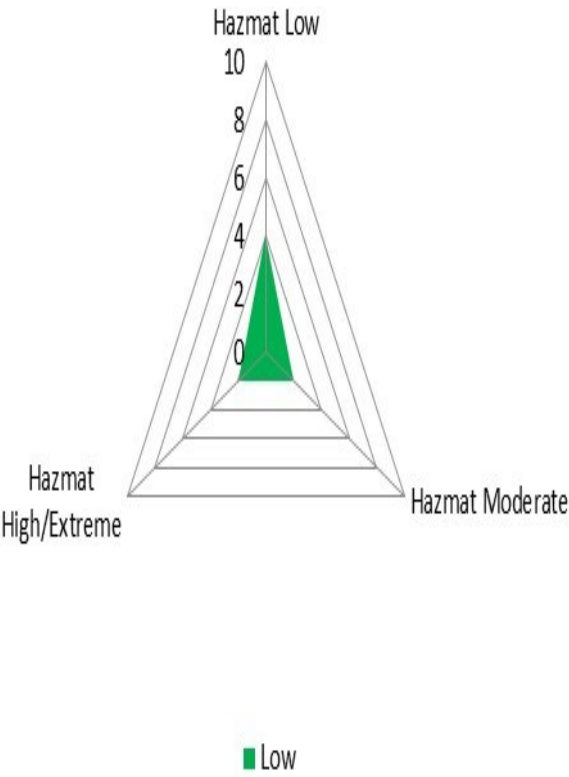
Station 82 First Due Area



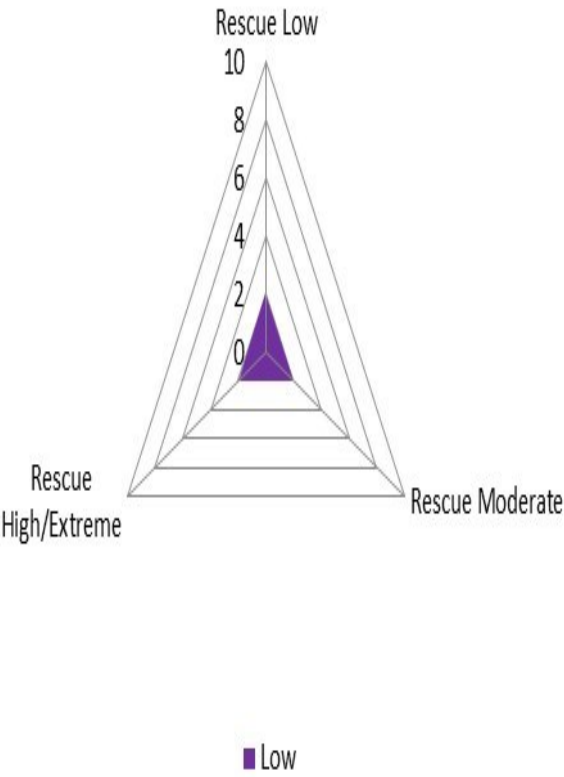
Station 82 First Due Area



Station 82 First Due Area



Station 82 First Due Area

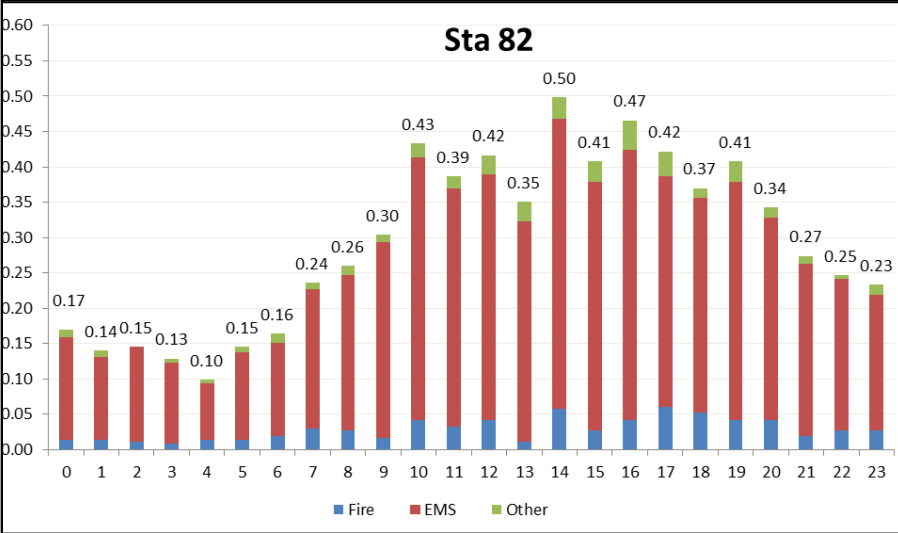


Station 82 First Due Area Historical Data Analysis

Station 82 First Due Area Incidents by Call Category	Reporting Period			
	2017	2018	2019	All
EMS Total	2,281	2,147	2,161	6,589
Fire Total	245	216	246	707
Hazmat Total	30	16	37	83
Other Total	184	168	126	478
Technical Rescue Total	4	1	2	7
Total	2,744	2,548	2,572	7,864
Average Calls per Day	7.5	7.0	7.0	N/A
YoY Growth	N/A	-7.1%	0.9%	N/A

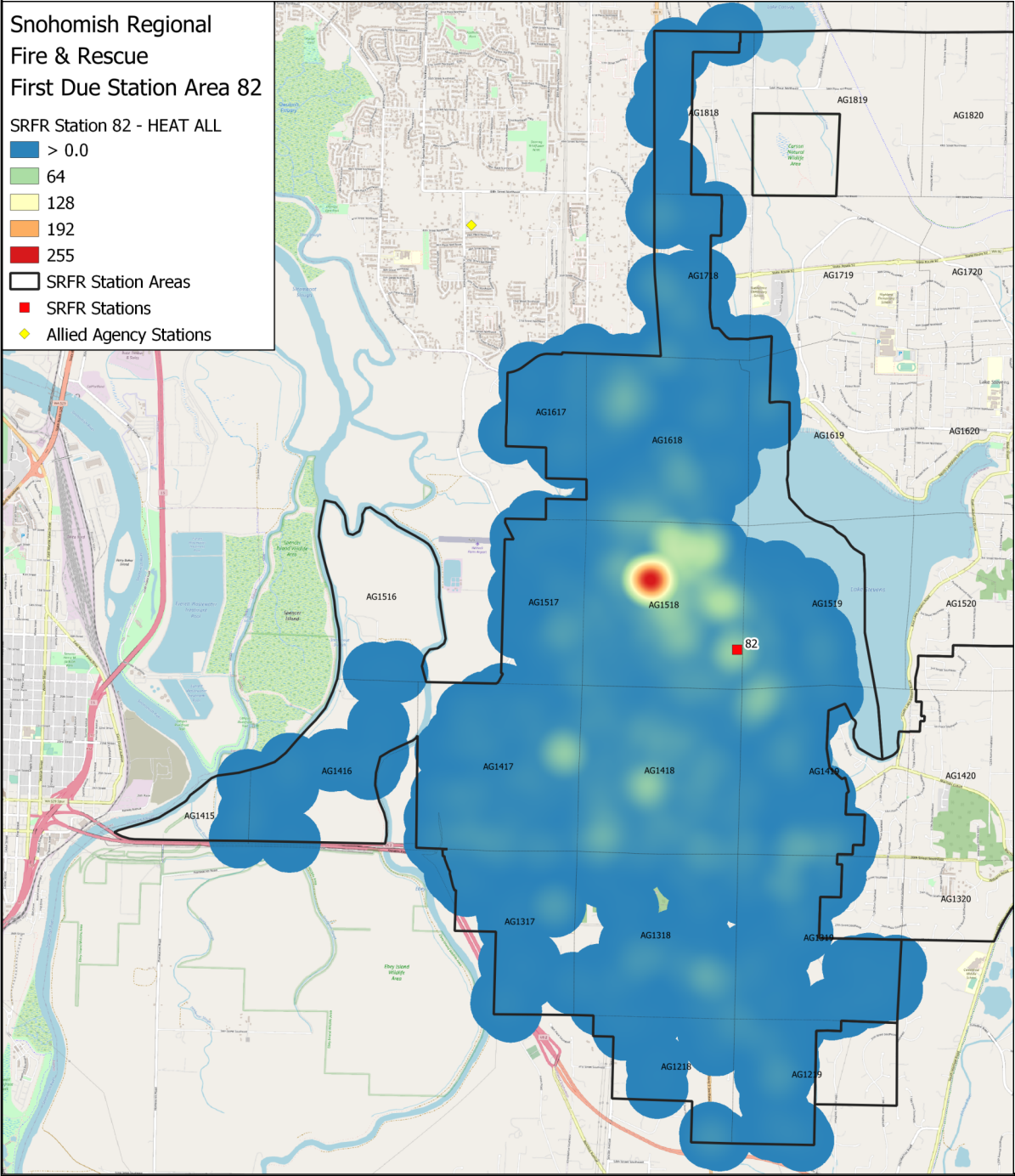
Station 82 First Due Area Responses by Unit ID	Reporting Period			
	2017	2018	2019	All
A82	1,927	1,879	1,917	5,723
BR82	0	3	4	7
BT82	7	6	5	18
E82	1,006	830	978	2,814
M82	1,771	1,719	1,576	5,066
Total	4,711	4,437	4,480	13,628
Average Responses per Day	12.9	12.2	12.3	12.4

Station 82 First Due Area: 1 st Arriving Baseline Performance		2017-2019	2017	2018	2019	2017-2019 Benchmark	2017-2019 Compliance
Alarm Handling		3:50	3:40	3:58	3:53	3:14	84.7%
Turnout Time		2:43	2:58	2:44	2:17	2:07	79.8%
Travel Time	Urban	6:29	6:53	6:17	6:15	5:44	84.0%
	Rural	8:50	9:05	8:22	9:02	9:05	91.2%
Total Response Time	Urban	10:45	11:00	10:37	10:37	9:22	80.4%
		n = 4,996	n = 1,848	n = 1,581	n = 1,567		
	Rural	13:56	14:05	13:26	14:03	12:49	86.8%
		n = 724	n = 275	n = 221	n = 228		



Temporal Analysis

Incident volume by time of day by type of call shows Station 82's busiest times are from 10am to 7 pm. The largest spikes in call volume are late afternoon where there is a high likelihood the crews will be out on calls.



Overall Hot Spot Map

Trends show Station 82 has an evenly dispersed call volume in their first due area, with the largest volume of calls just Northwest of the station.

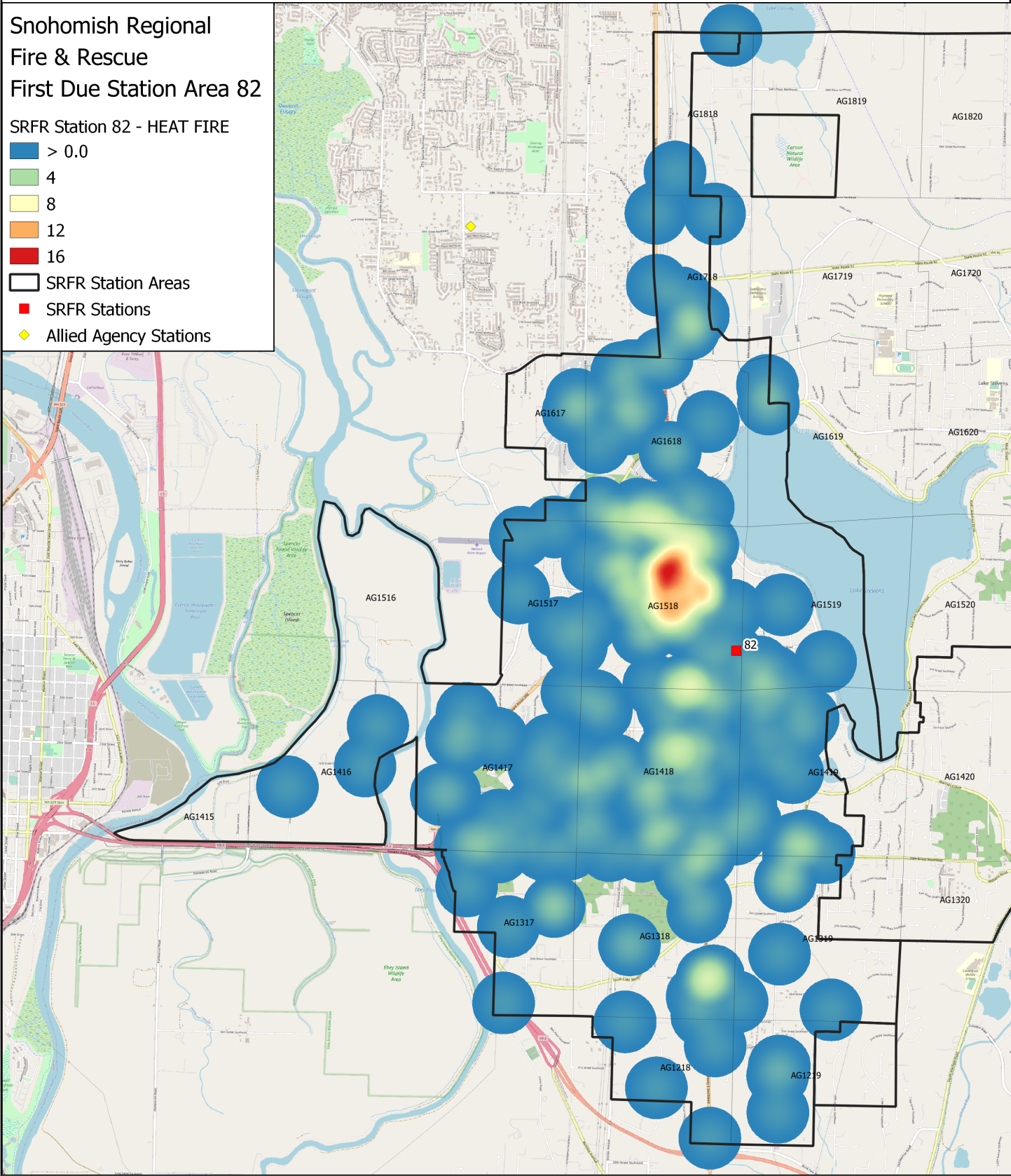
Fire Hot Spot Map

Station 82's fire calls are concentrated in close proximity to the fire station, with the highest volume located just Northwest of the station.

Snohomish Regional
Fire & Rescue
First Due Station Area 82

SRFR Station 82 - HEAT FIRE

- > 0.0
- 4
- 8
- 12
- 16
- SRFR Station Areas
- SRFR Stations
- Allied Agency Stations



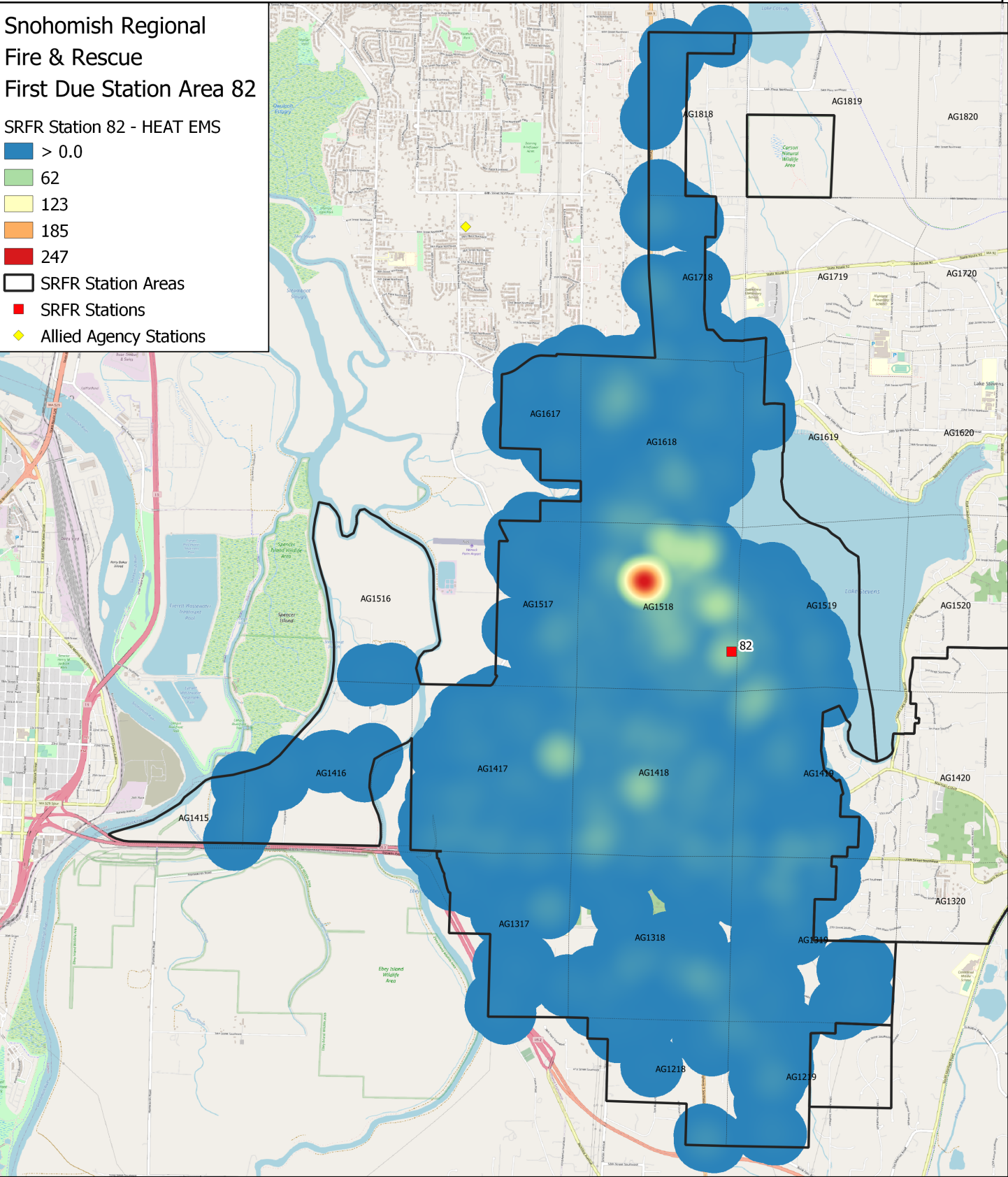
EMS Hot Spot Map

Station 82’s EMS calls spread evenly throughout the first due station area with the exception of a moderate to high amount located North and West of the station.

Snohomish Regional
Fire & Rescue
First Due Station Area 82

SRFR Station 82 - HEAT EMS

- > 0.0
- 62
- 123
- 185
- 247
- SRFR Station Areas
- SRFR Stations
- Allied Agency Stations



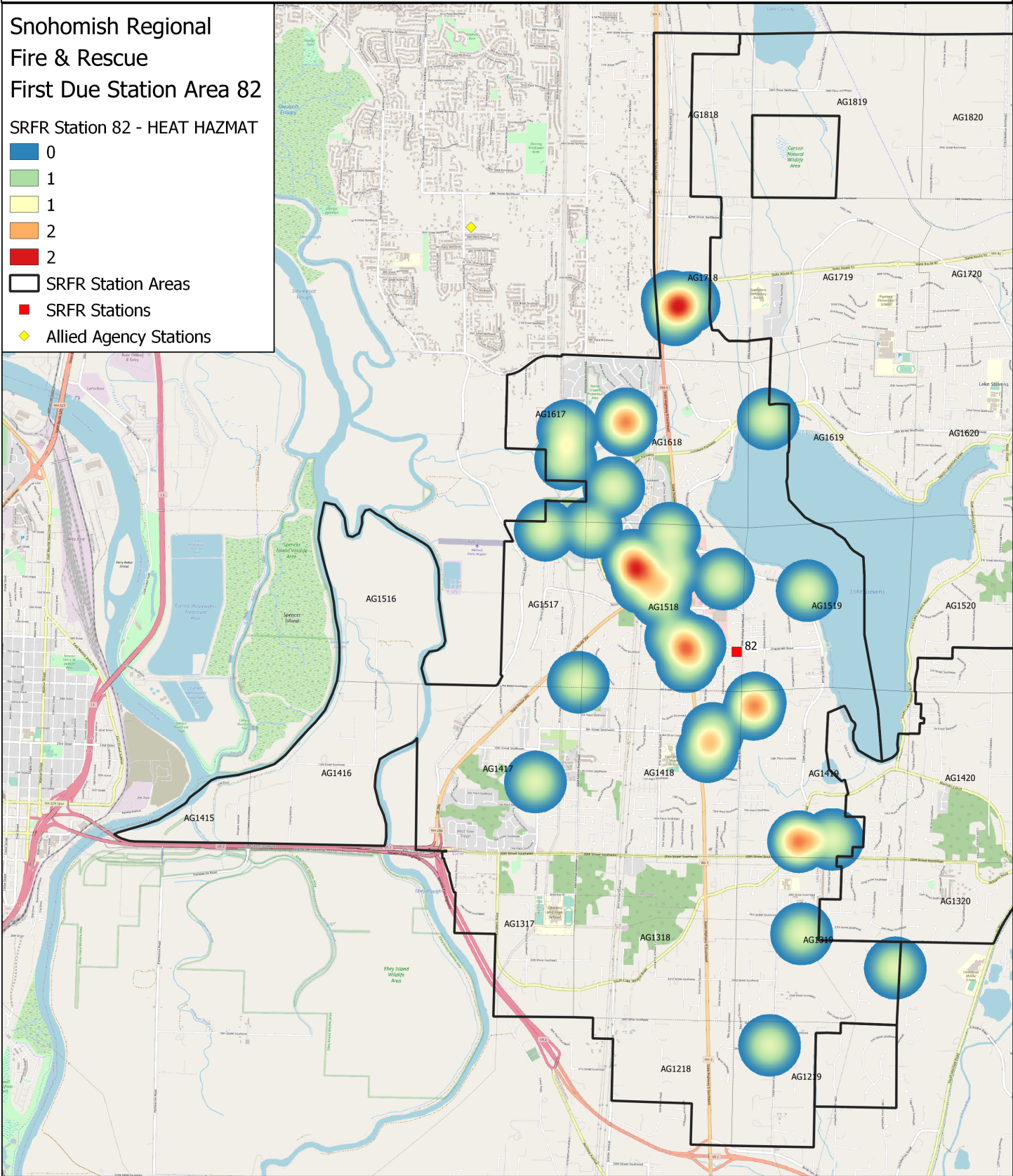
HazMat Hot Spot Map

Station 82 has a higher distribution of hazardous materials calls volume taking place at multiple locations throughout the first due station area.

Snohomish Regional
Fire & Rescue
First Due Station Area 82

SRFR Station 82 - HEAT HAZMAT

- 0
- 1
- 1
- 2
- 2
- SRFR Station Areas
- SRFR Stations
- Allied Agency Stations



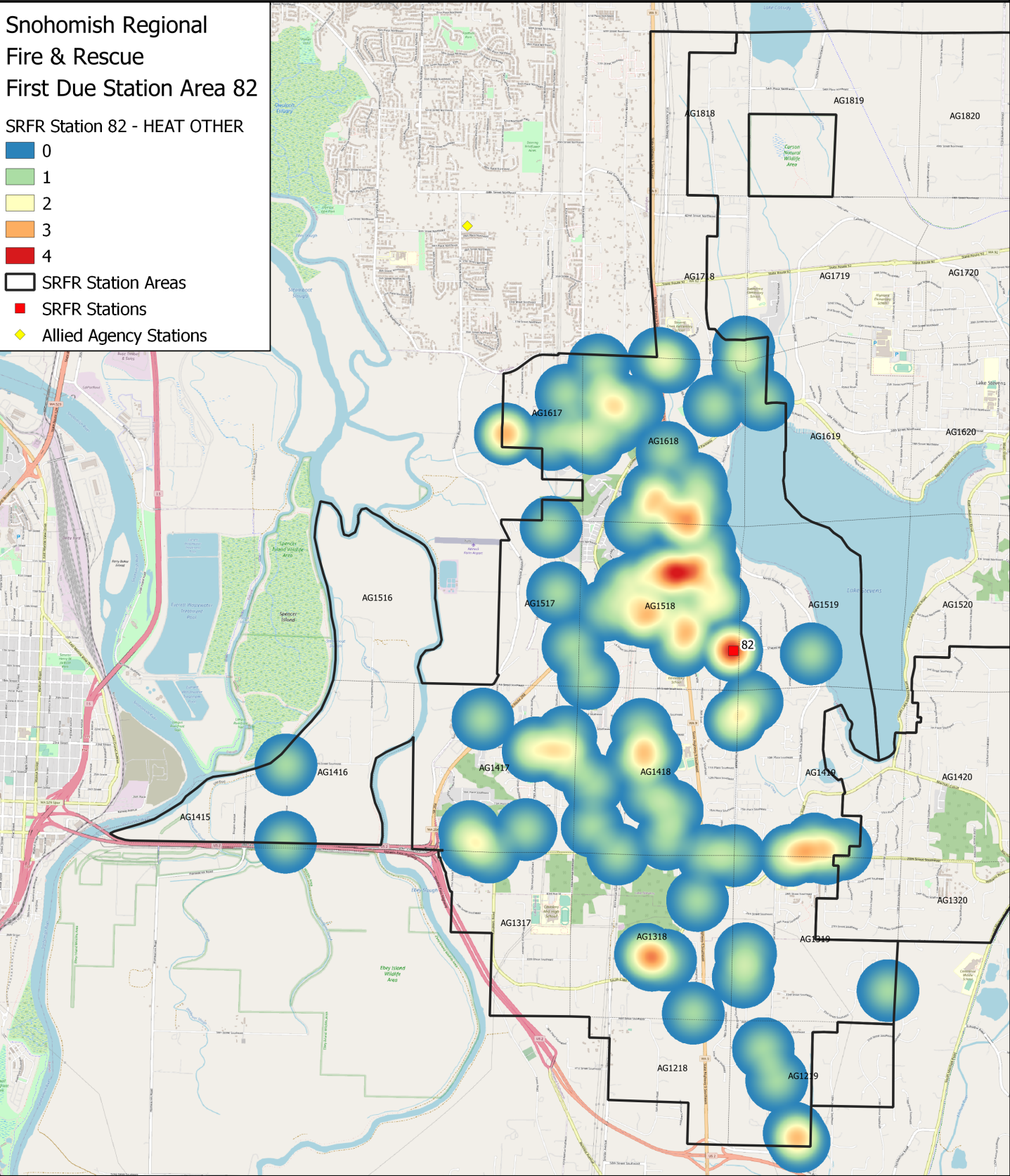
Other Hot Spot Map

Station 82’s other calls are concentrated in close proximity to the fire station.

Snohomish Regional
Fire & Rescue
First Due Station Area 82

SRFR Station 82 - HEAT OTHER

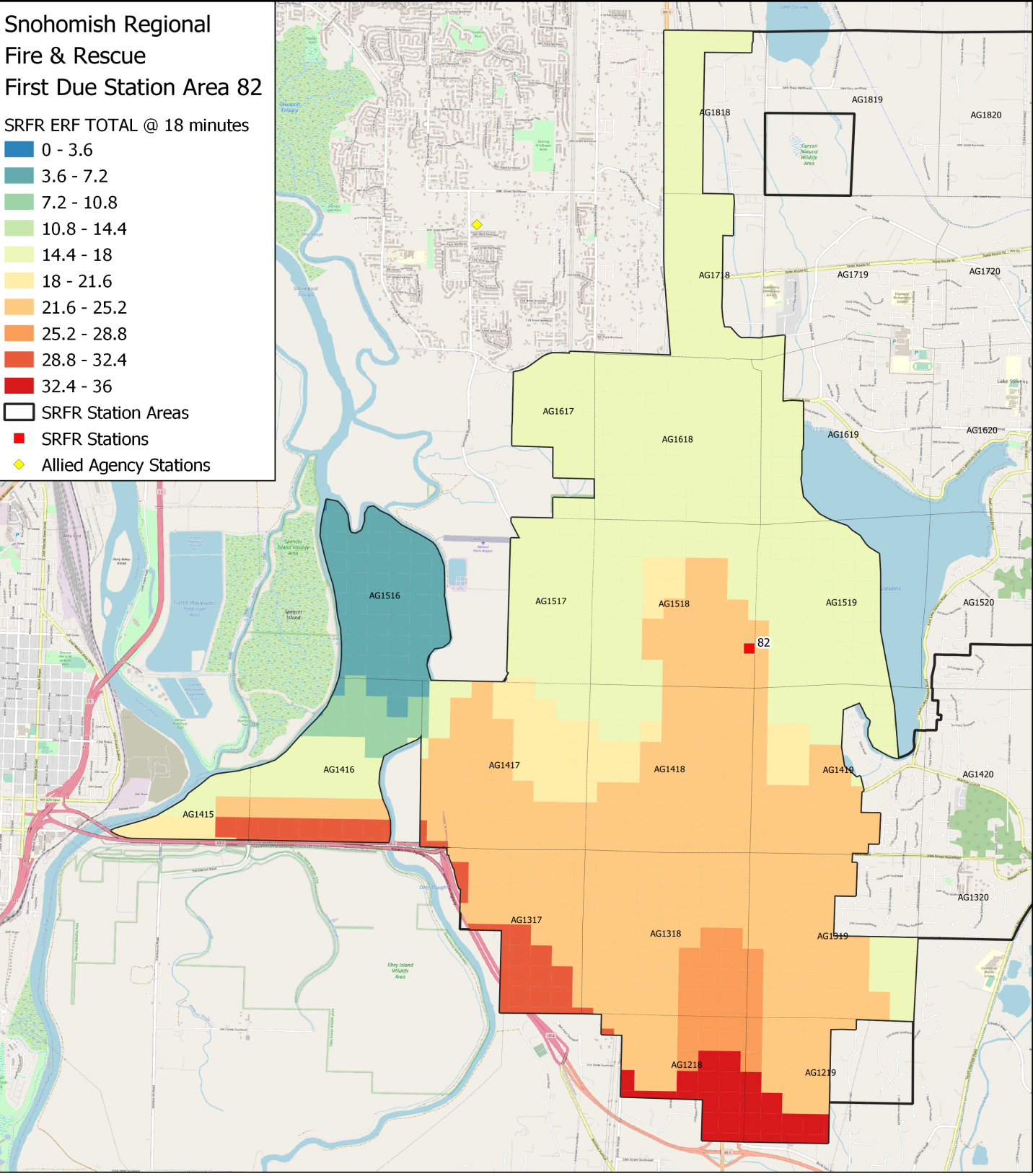
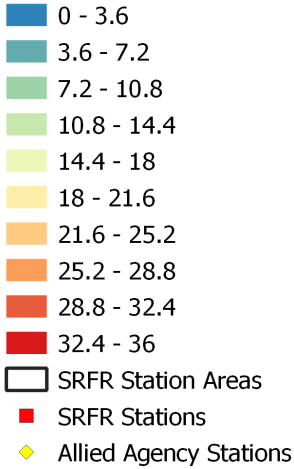
- 0
- 1
- 2
- 3
- 4
- SRFR Station Areas
- SRFR Stations
- Allied Agency Stations



Time Increments	ERF-11	ERF-12	ERF-15	ERF-18
8-Minutes	64.54%	64.54%	51.21%	22.41%
10-Minutes	87.08%	87.08%	85.93%	78.64%
13-Minutes	92.98%	92.98%	92.06%	90.82%
15-Minutes	95.13%	95.13%	95.13%	93.57%
18-Minutes	98.42%	98.42%	98.42%	98.42%

Snohomish Regional
Fire & Rescue
First Due Station Area 82

SRFR ERF TOTAL @ 18 minutes



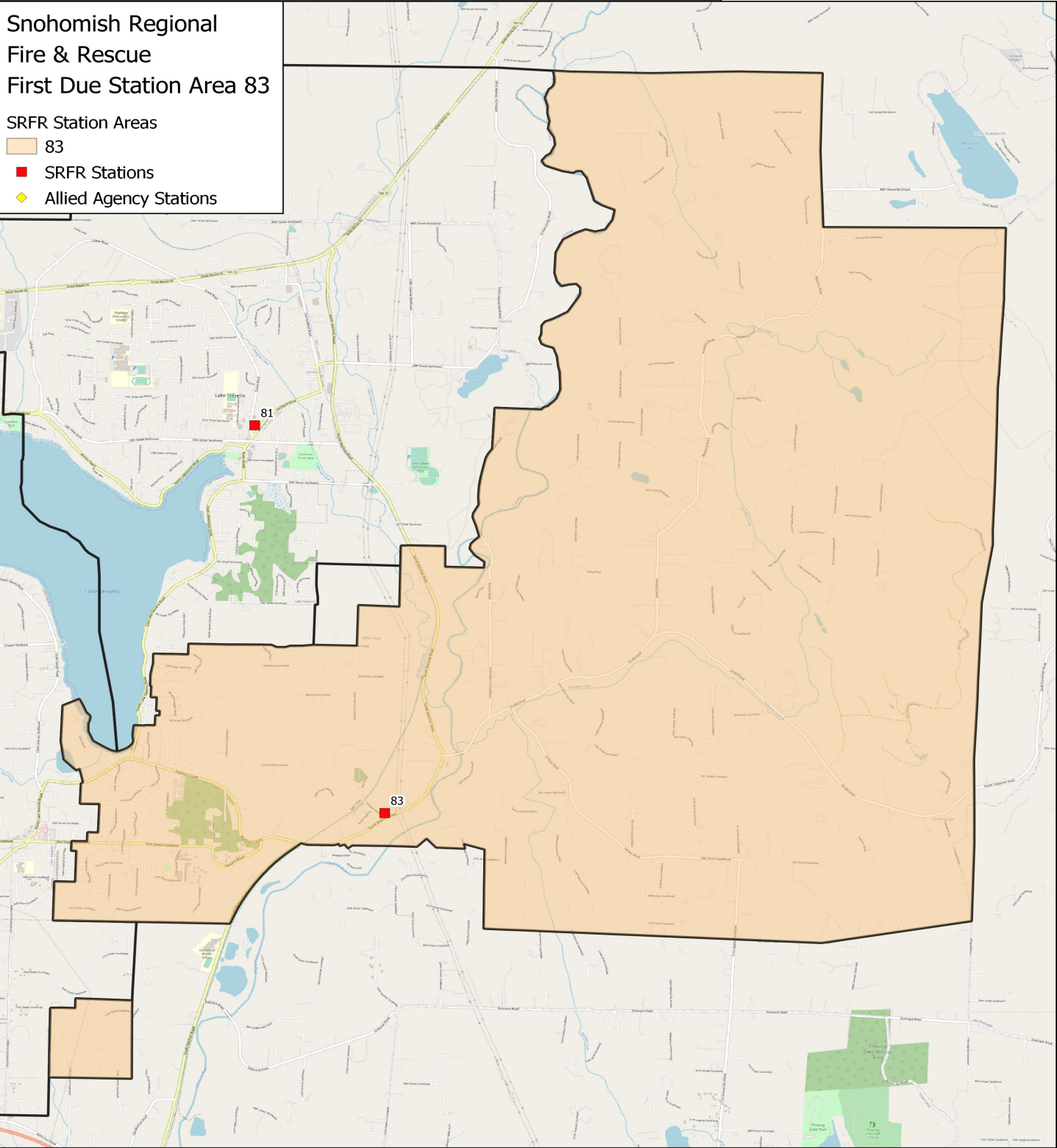
Station 83	A83/E83/T83	Cross Staffed
	Station 83 Total	

Station 83 cross staffs 3 units, has a moderate overall jurisdictional risk level and is adjacent to Stations 81 and 82.

Station-83

Call Concurrence Risk

Moderate

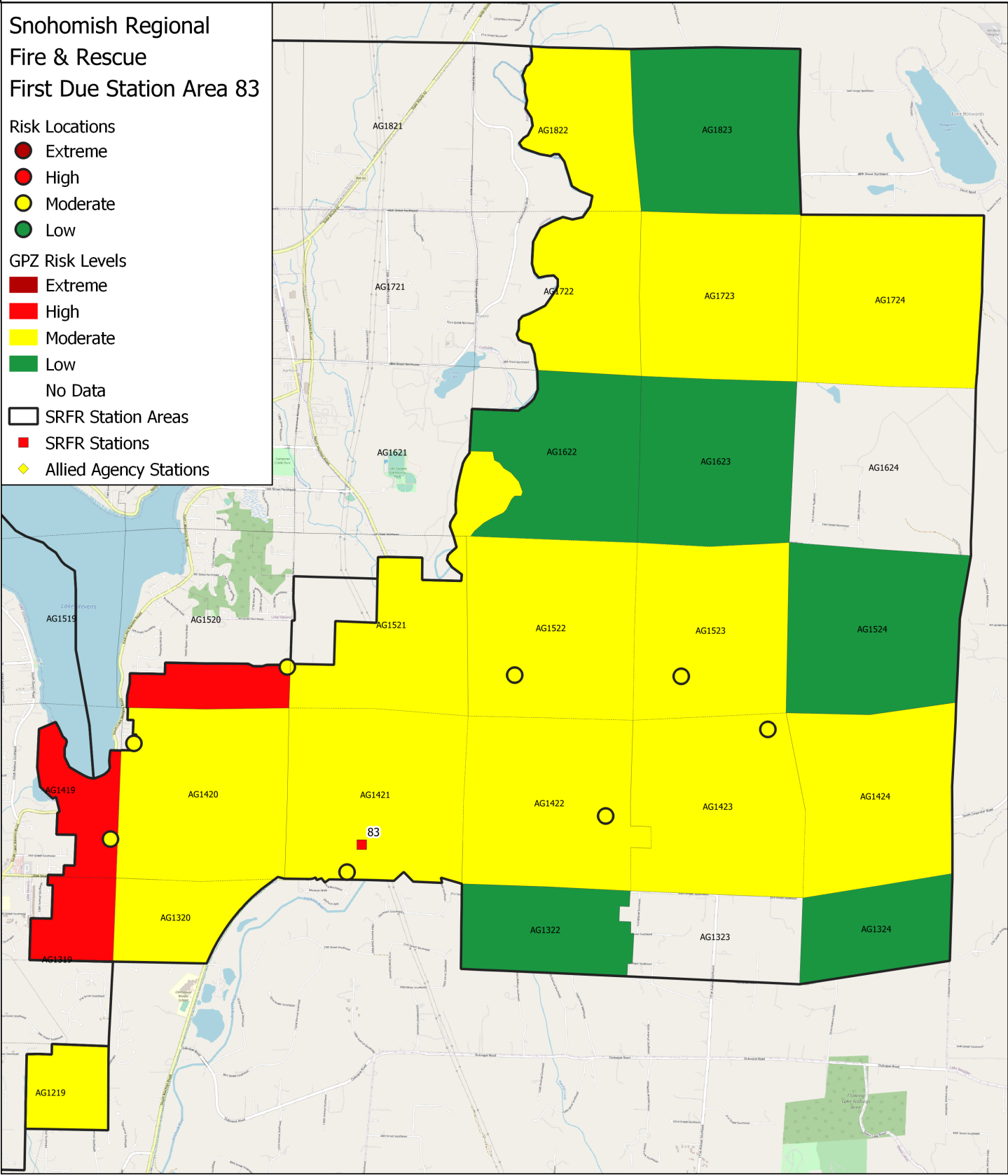


Risk Analysis

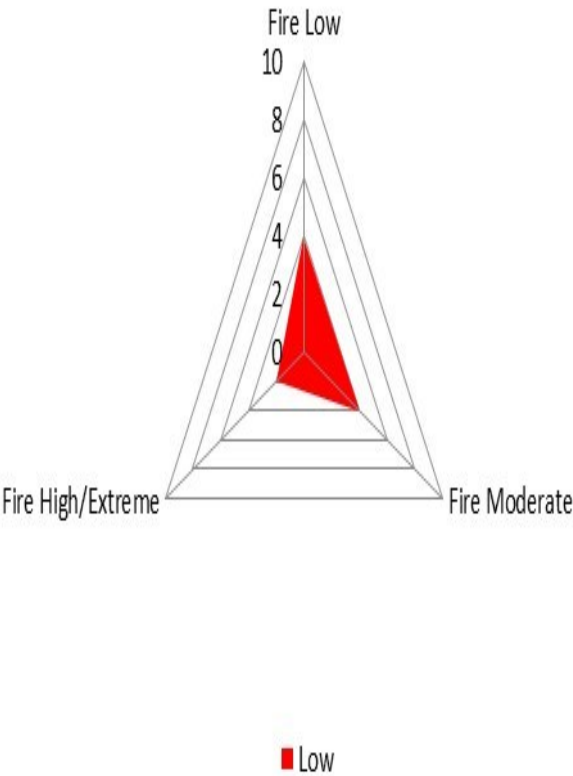
Risk of individual building locations is represented by the small circles and shaded to indicate risk level. There is a sparse amount of moderate risk buildings spread throughout the station first due area. Risk is also evaluated by GPZs using the same shading criteria. The vast majority of Station 83’s first due area is moderate to low risk.

Snohomish Regional
Fire & Rescue
First Due Station Area 83

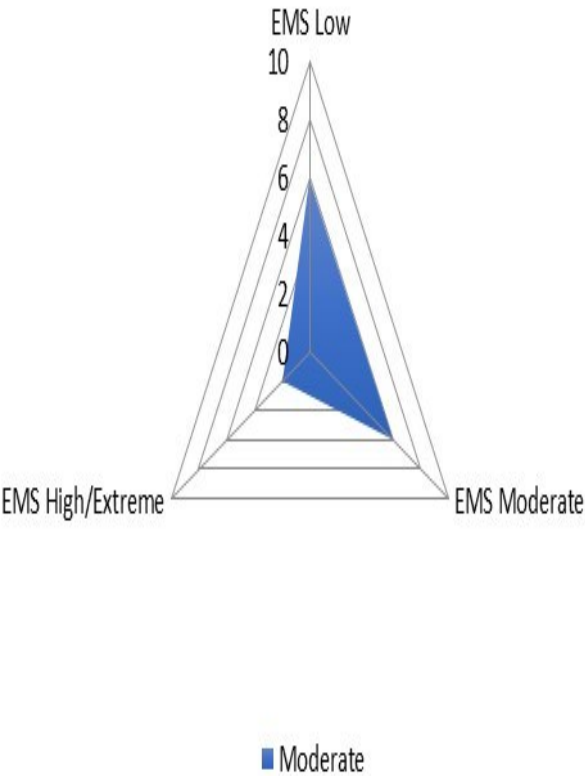
- Risk Locations
- Extreme
 - High
 - Moderate
 - Low
- GPZ Risk Levels
- Extreme
 - High
 - Moderate
 - Low
 - No Data
- SRFR Station Areas
- SRFR Stations
 - ◆ Allied Agency Stations



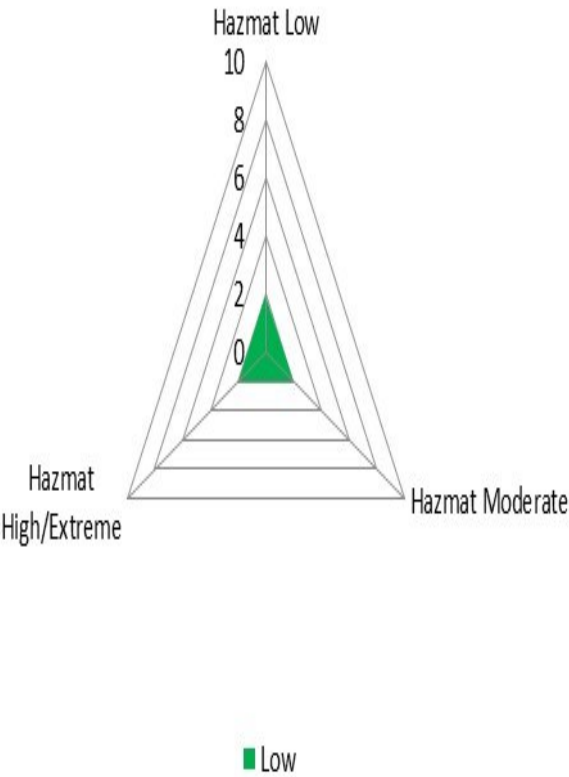
Station 83 First Due Area



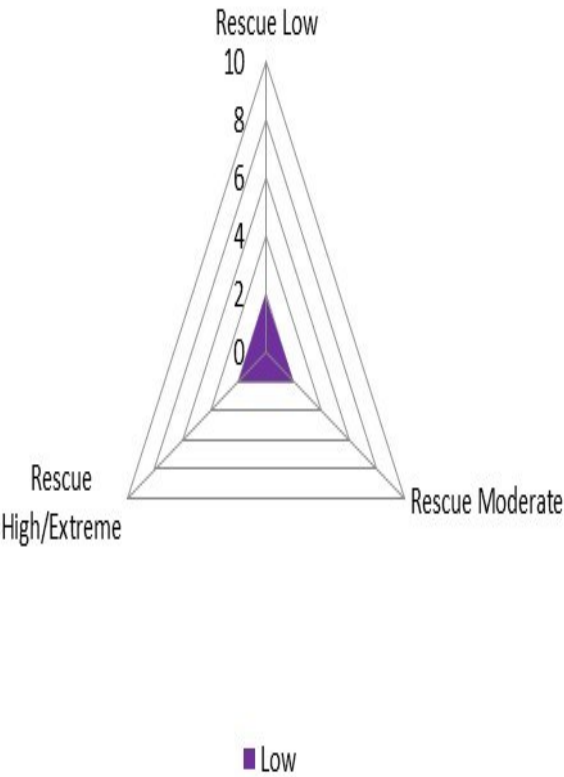
Station 83 First Due Area



Station 83 First Due Area



Station 83 First Due Area

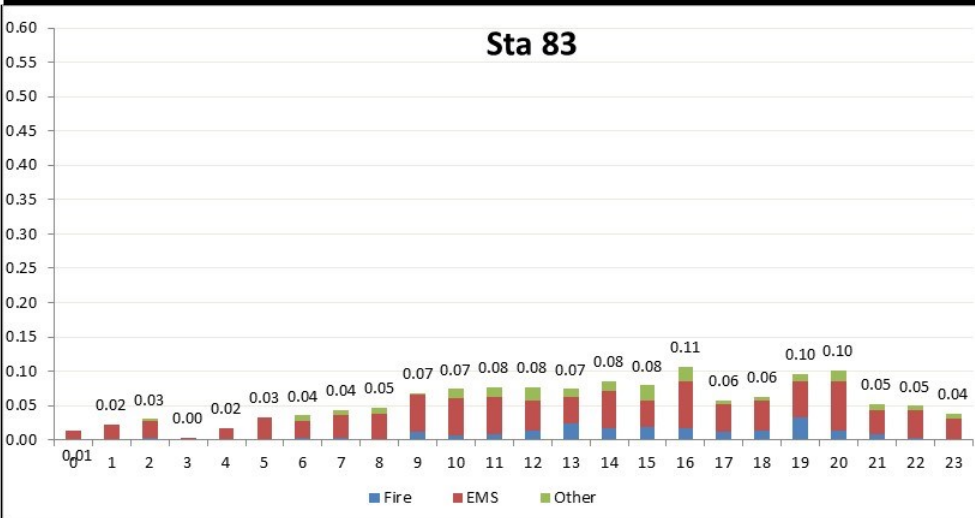


Station 83 First Due Area Historical Data Analysis

Station 83 First Due Area Incidents by Call Category	Reporting Period			
	2017	2018	2019	All
EMS Total	368	333	339	1,040
Fire Total	55	55	71	181
Hazmat Total	5	7	4	16
Other Total	61	52	76	189
Technical Rescue Total	1	2	0	3
Total	490	449	490	1,429
Average Calls per Day	1.3	1.2	1.3	N/A
YoY Growth	N/A	-8.4%	9.1%	N/A

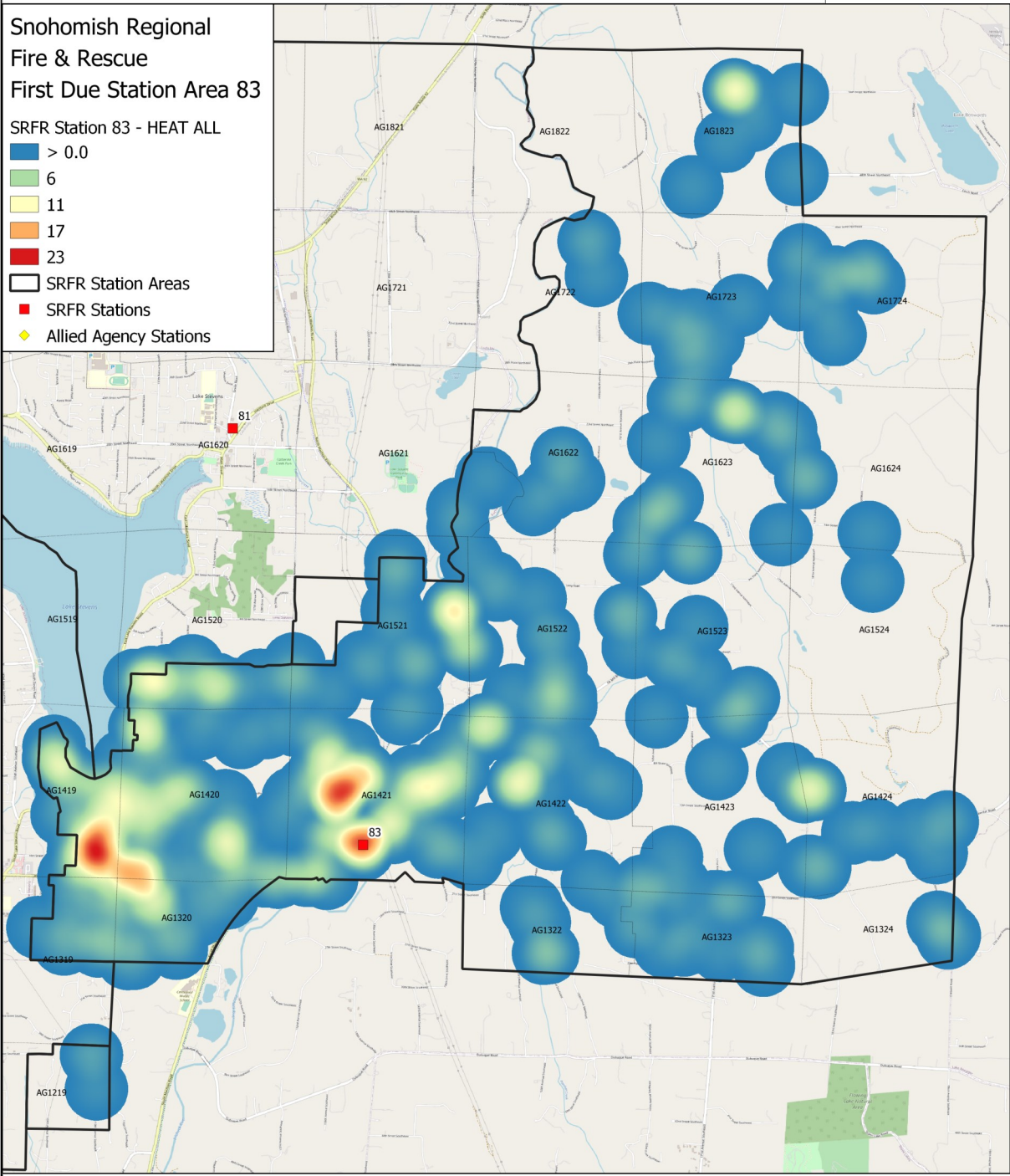
Station 83 First Due Area Responses by Unit ID	Reporting Period			
	2017	2018	2019	All
A83	1,048	897	869	2,814
E83	311	273	319	903
T83	18	33	19	70
Total	1,377	1,203	1,207	3,787
Average Responses per Day	3.8	3.3	3.3	3.5

Station 83 First Due Area: 1 st Arriving Baseline Performance		2017-2019	2017	2018	2019	2017-2019 Benchmark	2017-2019 Compliance
Alarm Handling		3:39	2:59	3:55	3:52	3:14	86.8%
Turnout Time		2:45	2:59	2:46	2:29	2:07	75.1%
Travel Time	Urban	6:47	6:44	6:46	7:18	5:44	70.6%
	Rural	9:26	10:26	8:42	8:50	9:05	88.9%
Total Response Time	Urban	11:29	11:14	11:43	11:44	9:22	65.5%
		n = 161	n = 55	n = 60	n = 46		
	Rural	13:37	13:43	13:57	13:18	12:49	87.3%
		n = 791	n = 295	n = 240	n = 256		



Temporal Analysis

Incident volume by time of day by type of call shows Station 83's busiest times are from 9 am to 8 pm. Much like Station 82, Station 83's crews will likely be busy late afternoon into the evening hours.



Overall Hot Spot Map

Trends show Station 83 has a call volume that is much higher in close proximity to the fire station.

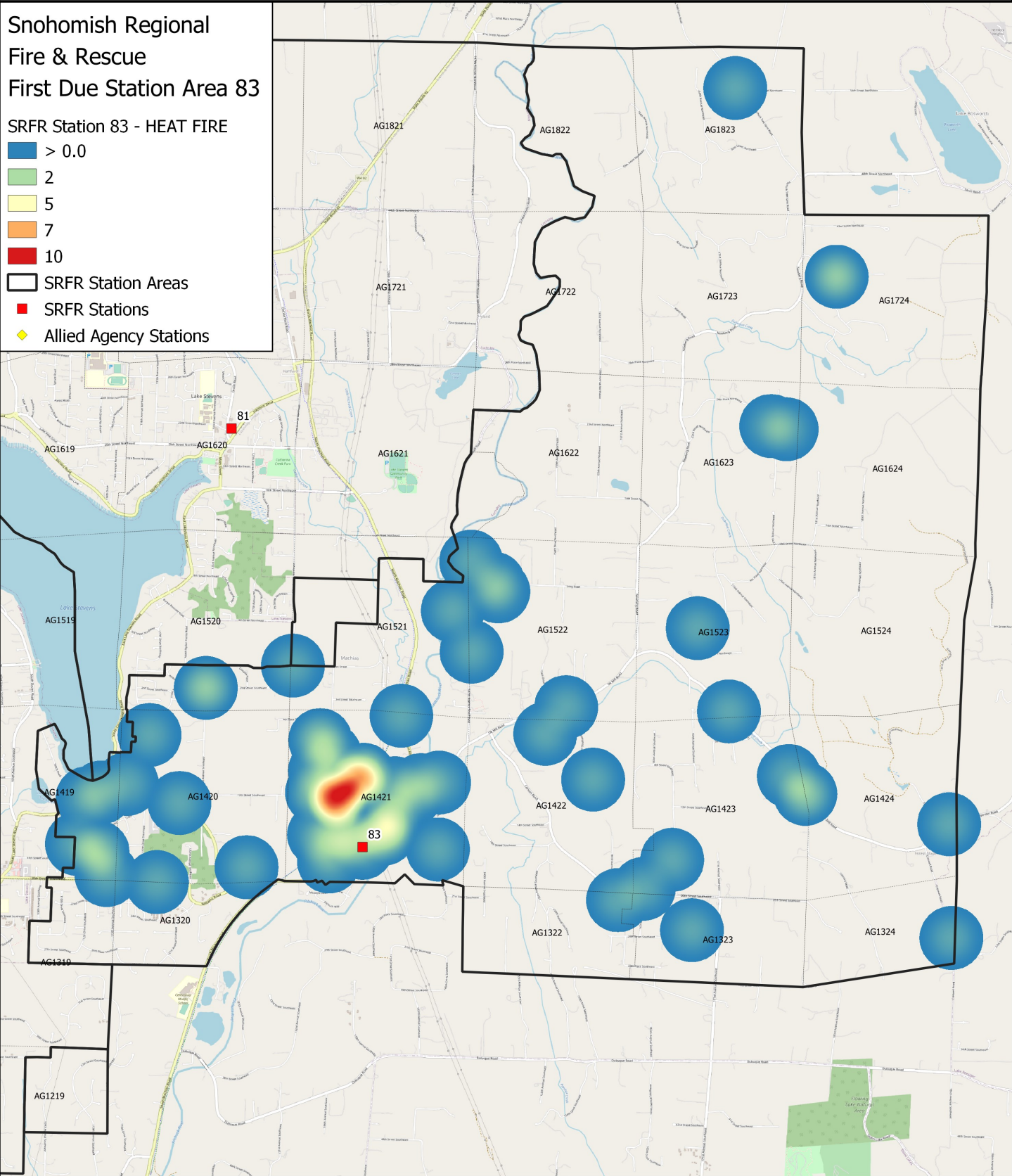
Fire Hot Spot Map

Station 83’s fire calls are concentrated in close proximity to the fire station, with the highest volume located just Northwest of the station.

Snohomish Regional
Fire & Rescue
First Due Station Area 83

SRFR Station 83 - HEAT FIRE

- > 0.0
- 2
- 5
- 7
- 10
- SRFR Station Areas
- SRFR Stations
- Allied Agency Stations



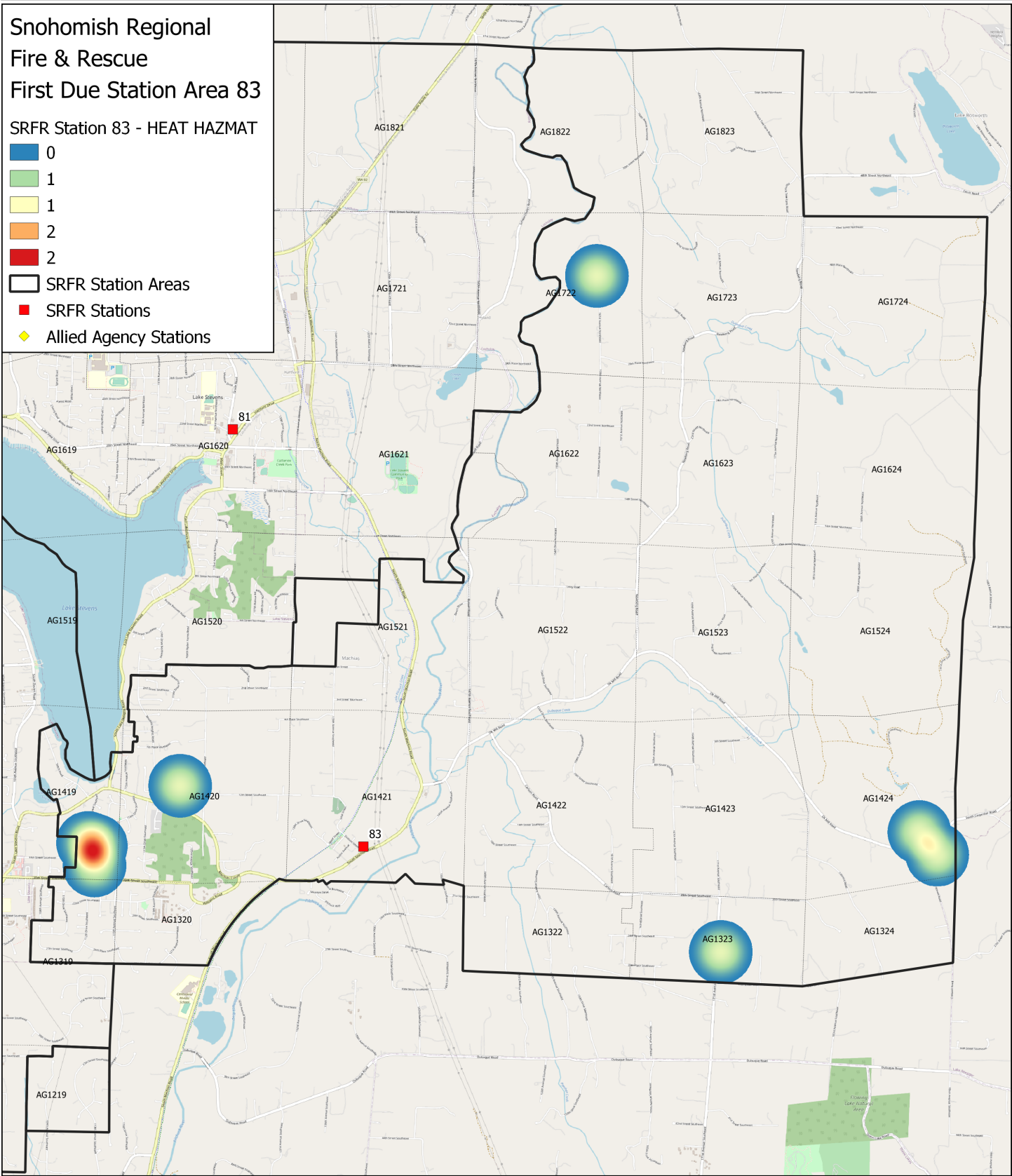
HazMat Hot Spot Map

Station 83’s hazardous materials calls are a low frequency occurrence spread mostly along the station borders.

Snohomish Regional
Fire & Rescue
First Due Station Area 83

SRFR Station 83 - HEAT HAZMAT

- 0
- 1
- 1
- 2
- 2
- SRFR Station Areas
- SRFR Stations
- Allied Agency Stations



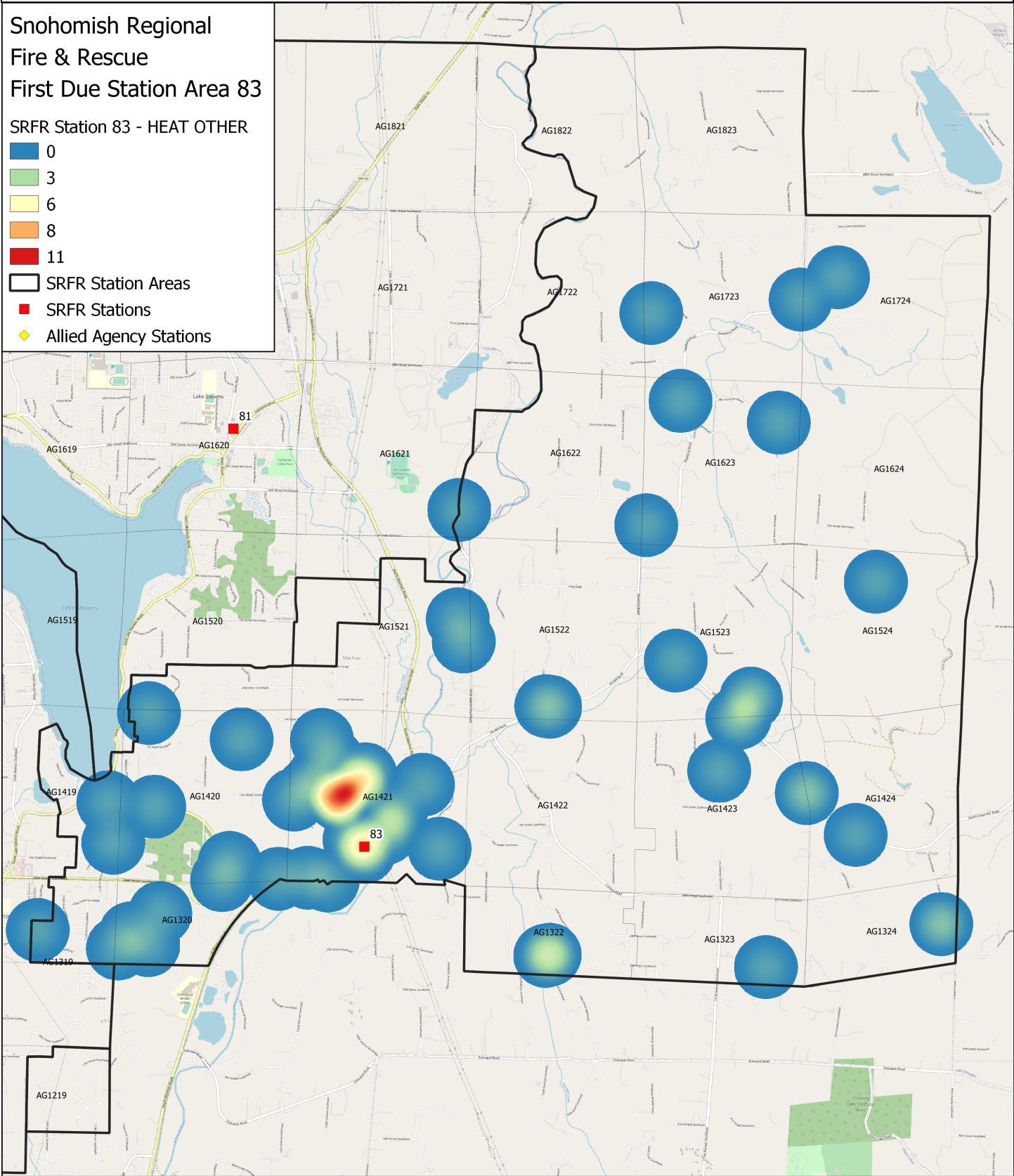
Other Hot Spot Map

Station 83’s Other calls are dispersed throughout the station’s first due area, with the largest call volume being just North of the station.

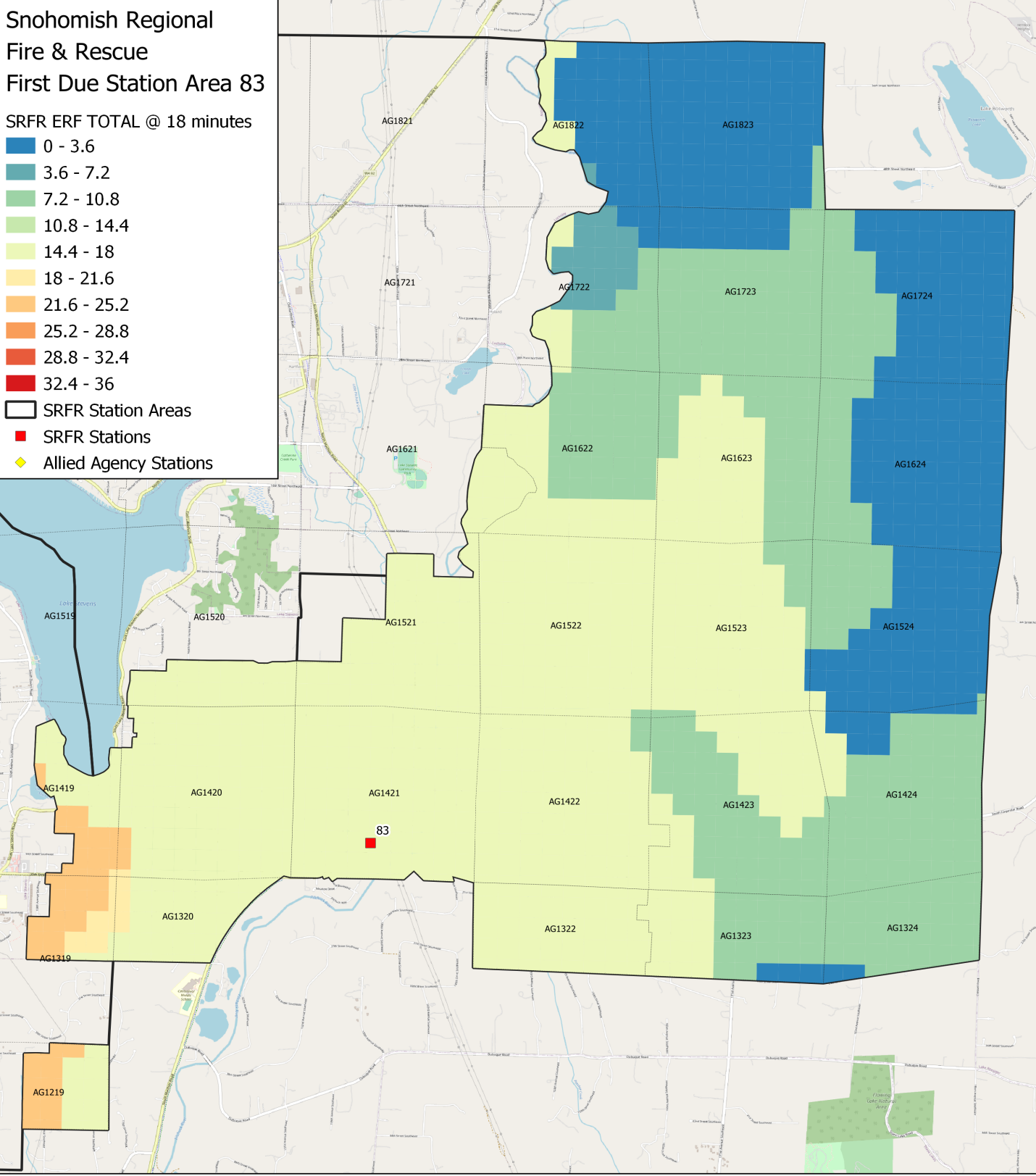
Snohomish Regional
Fire & Rescue
First Due Station Area 83

SRFR Station 83 - HEAT OTHER

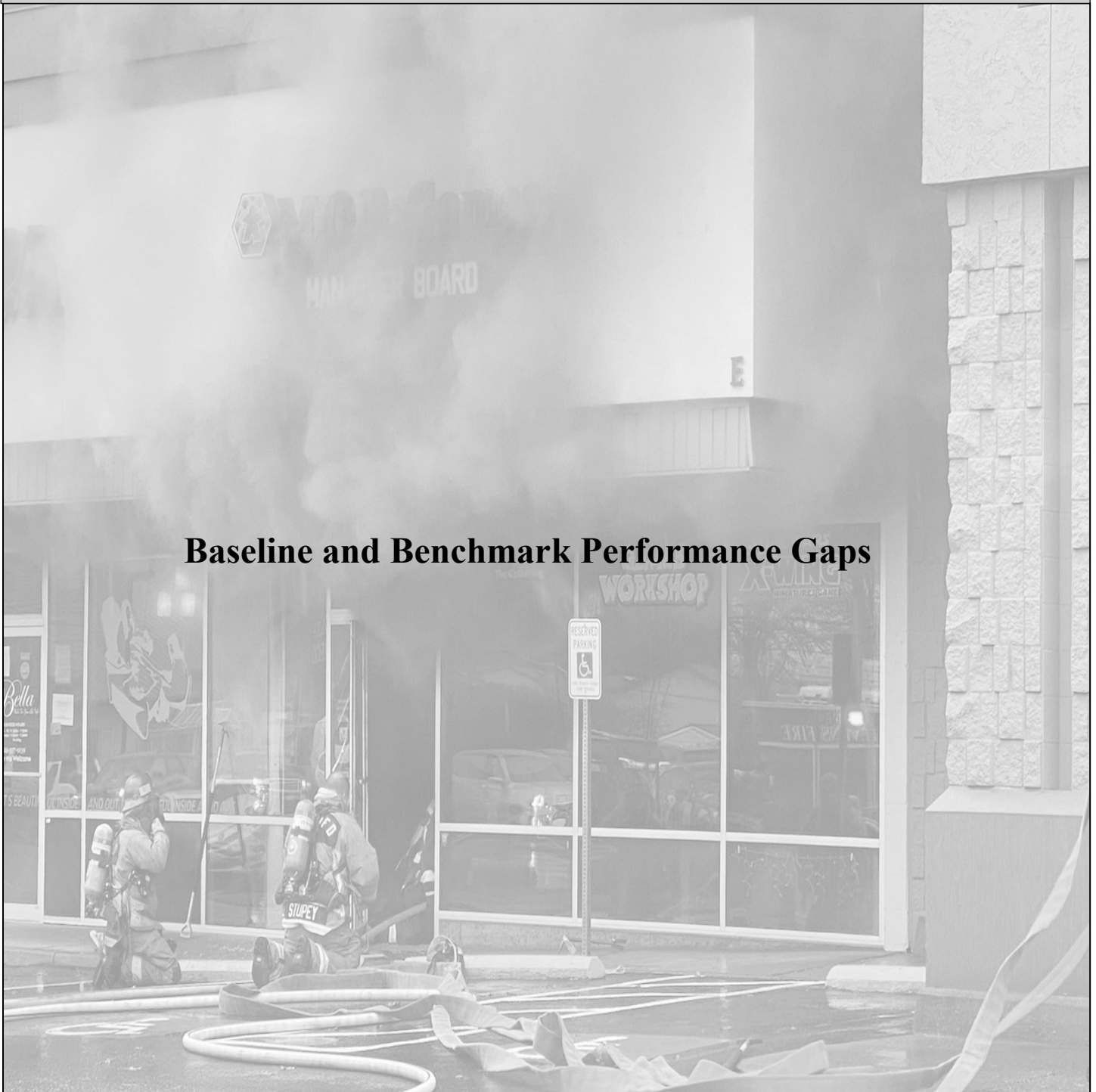
- 0
- 3
- 6
- 8
- 11
- SRFR Station Areas
- SRFR Stations
- Allied Agency Stations



Time Increments	ERF-11	ERF-12	ERF-15	ERF-18
8-Minutes	14.17%	14.17%	14.17%	2.01%
10-Minutes	26.55%	26.55%	25.88%	9.41%
13-Minutes	46.92%	46.92%	41.43%	30.58%
15-Minutes	62.86%	62.86%	56.82%	45.10%
18-Minutes	76.04%	76.04%	76.04%	64.64%



Section G - Evaluation of Current Deployment and Performance



Baseline and Benchmark Performance Gaps

Baseline and Benchmark Performance Gaps

Performance Gap Analysis

It is imperative that District's continuously evaluate their actual performance (baseline performance) versus their established goals (benchmark performance). This section takes a detailed look at the gaps where performance could be improved (noted in red) or is currently exceeding established goals (in green). Important trends can be discerned based upon the risk level (low, moderate, high, extreme) or where the incidents or occurring (urban or rural).

Evaluation of Current Deployment and Performance as it relates to Criterion 2D:

The agency has assessed and provided evidence that its current deployment methods for emergency services appropriately address the risk in its service area. Its response strategy has evolved to ensure that its deployment practices have maintained and/or made continuous improvements in the effectiveness, efficiency, and safety of its operations, notwithstanding any external influences beyond its control. The agency has identified the impacts of these external influences and communicates them to the authority having jurisdiction.

Criterion 5E

Fire Suppression

Summary– Almost 2,000 fire incidents in the urban setting and 1,000 in the rural setting at the low risk level saw performance 1:48-2:55 over the established goals. Moderate risk saw increased performance, and interestingly, high risk distribution met and exceeded SRFR goals.

2017-2019 Fire Suppression Response Times Gap Analysis						
Risk Level	1st Due/ERF	Urban/Rural	n=	Baseline	Benchmark	Gap
Low	1st Due	Urban	1,751	11:10	9:22	-1:48
		Rural	1,073	15:44	12:49	-2:55
Moderate	1st Due	Urban	139	9:28	9:22	-0:06
		Rural	109	14:29	12:49	-1:40
	ERF	Urban	0	N/A	N/A	
		Rural	2	N/A	N/A	
High	1st Due	Urban	69	9:02	9:22	0:20
		Rural	20	10:35	12:49	2:14
	ERF	Urban	1	N/A	N/A	
		Rural	0	N/A	N/A	
Extreme	1st Due	Urban	69	N/A	N/A	
		Rural	0	N/A	N/A	
	ERF	Urban	0	N/A	N/A	
		Rural	0	N/A	N/A	

Criterion 5F

Emergency Medical Services

Summary– EMS response times were overall closer to their goals than fire suppression times. A higher frequency event, there was a linear correlation between number of calls and severity of calls.

2017-2019 EMS Response Times Gap Analysis						
Risk Level	1st Due/ERF	Urban/Rural	n=	Baseline	Benchmark	Gap
Low	1st Due	Urban	11,968	10:57	9:22	-1:35
		Rural	3,194	14:45	12:49	-1:56
Moderate	1st Due	Urban	6,960	9:37	9:22	-0:15
		Rural	2,949	13:10	12:49	-0:21
	ERF	Urban	5,516	13:16	11:24	-1:52
		Rural	2,321	16:45	15:18	-1:27
High	1st Due	Urban	390	8:54	9:22	0:28
		Rural	247	13:11	12:49	-0:22
	ERF	Urban	45	24:57	22:28	-2:29
		Rural	43	27:05	24:22	-2:43
Extreme	1st Due	Urban	19	10:01	9:22	-0:39
		Rural	18	12:05	12:49	0:44
	ERF	Urban	1	N/A	25:00	
		Rural	0	N/A	27:00	

Criterion 5G**Technical Rescue**

Summary– A couple hundred low and moderate hazardous materials incidents occurred, with 51 in the urban setting and 10 in the rural setting seeing an ERF assembled. The gap analysis revealed slightly lagging performance in the small data set.

2017-2019 Hazmat Response Times Gap Analysis						
Risk Level	1st Due/ERF	Urban/Rural	n=	Baseline	Benchmark	Gap
Low	1st Due	Urban	252	11:29	9:22	-2:07
		Rural	99	15:16	12:49	-2:27
Moderate	1st Due	Urban	97	10:26	9:22	-1:04
		Rural	24	11:22	12:49	1:27
	ERF	Urban	51	12:10	10:27	-1:43
		Rural	10	11:37	10:57	-0:40
High	1st Due	Urban		N/A	9:22	
		Rural		N/A	12:49	
	ERF	Urban	0	N/A	15:00	
		Rural	1	N/A	18:00	
Extreme	1st Due	Urban		N/A	9:22	
		Rural		N/A	12:49	
	ERF	Urban	0	N/A	18:00	
		Rural	0	N/A	21:00	

Criterion 5H**Hazardous Materials**

Summary– Technical rescue incidents are generally a low frequency event, but when they do occur, it is imperative to get the effective response force on scene quickly. Only 3 incidents from 2017-2019 saw an ERF at the moderate level; not providing enough data for a gap analysis.

2017-2019 Technical Rescue Response Times Gap Analysis						
Risk Level	1st Due/ERF	Urban/Rural	n=	Baseline	Benchmark	Gap
Low	1st Due	Urban	0	N/A	9:22	
		Rural	5	N/A	12:49	
Moderate	1st Due	Urban	7	N/A	9:22	
		Rural	14	19:43	12:49	-6:54
	ERF	Urban	1	N/A	15:00	
		Rural	2	N/A	18:00	
High	1st Due	Urban	0	N/A	9:22	
		Rural	0	N/A	12:49	
	ERF	Urban	0	N/A	18:00	
		Rural	0	N/A	21:00	
Extreme	1st Due	Urban	0	N/A	9:22	
		Rural	0	N/A	12:49	
	ERF	Urban	0	N/A	21:00	
		Rural	0	N/A	24:00	

Section H - Plan for Maintaining and Improving Response Capabilities

Planning Team

Continuous Improvement Plan

Annual Appraisal Process



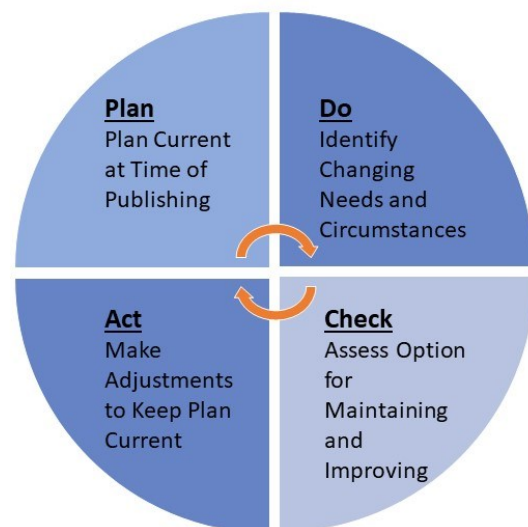
Performance Evaluation and Compliance Strategy

A strategic plan, on paper, is a commitment to action. A commitment to action requires an execution strategy. SRFR does this by including the development of specific, measurable, attainable, relevant and time-bound goals in the strategic plan. The goals are grouped into five functional areas including Emergency Response, Fire and Life Safety Services, People and Culture, Business Practices, and Facilities and Equipment.

Planning Team

The planning process was disrupted by the pandemic and the associated rules that were implemented to protect the workforce from COVID- 19. As a result, the Strategic Planning Team held one live meeting and then transitioned to an all virtual meeting format for the remainder of the plan development . The online format was successful, but also brought about its own unique challenges. In a live scenario, it is much easier to have a free-flowing discussion with the planning team. Online platforms tend to limit the ability to freely express thoughts as technology stands in the way of more organic discussion.

Furthermore, the lack of ability to “read the room” may limit group interaction to a degree. In spite of all of the limitations of online plan development, the planning team remained resilient and flexible as we worked our way through the obstacles presented to us. Snohomish Regional Fire and Rescue would like to recognize the internal stakeholders named below as they represented their functional groups in the development of the strategic plan.



JEFF SCHAUB FIRE COMMISSIONER	JIM STEINRUCK FIRE COMMISSIONER	RANDY WOOLERY FIRE COMMISSIONER
KEVIN O'BRIEN FIRE CHIEF	LEAH SCHOOF BUSINESS ADMINISTRATOR	JOE BASTA BATTALION CHIEF
JAMAL BECKHAM LIEUTENANT	BRIAN HYATT BATTALION CHIEF	TROY SMITH CAPTAIN
RAY SAYAH FIREFIGHTER	DAVID PETERSEN DRIVER/OPERATOR	CHRISTIAN WIGINGTON PARAMEDIC
LEROY SCHWARTZ III FIREFIGHTER	JARROD SPENCE DRIVER/OPERATOR	STEVE KUHLMAN LIEUTENANT
MIKE FRYMIER LOGISTICS TECHNICIAN	HEATHER CHADWICK PUBLIC INFORMATION OFFICER	MIKE MESSER DEPUTY CHIEF
RYAN LUNDQUIST DEPUTY CHIEF	RON RASMUSSEN DEPUTY CHIEF	SUMMER YOUNG TEAMSTERS UNION
MINDY LEBER ADMINISTRATIVE SPECIALIST	MICHAEL MCCONNELL IAFF UNION	PAMELLA HOLTGEERTS HUMAN RESOURCES DIRECTOR
SCOTT DORSEY DEPUTY CHIEF PLAN COORDINATOR		HEATHER NIEMI CONSULTANT AGATHA CONSULTING

Core Competency 2D.1

The agency has a documented and adopted methodology for assessing performance adequacy, consistency, reliability, resiliency and opportunities for improvement for the total response area.

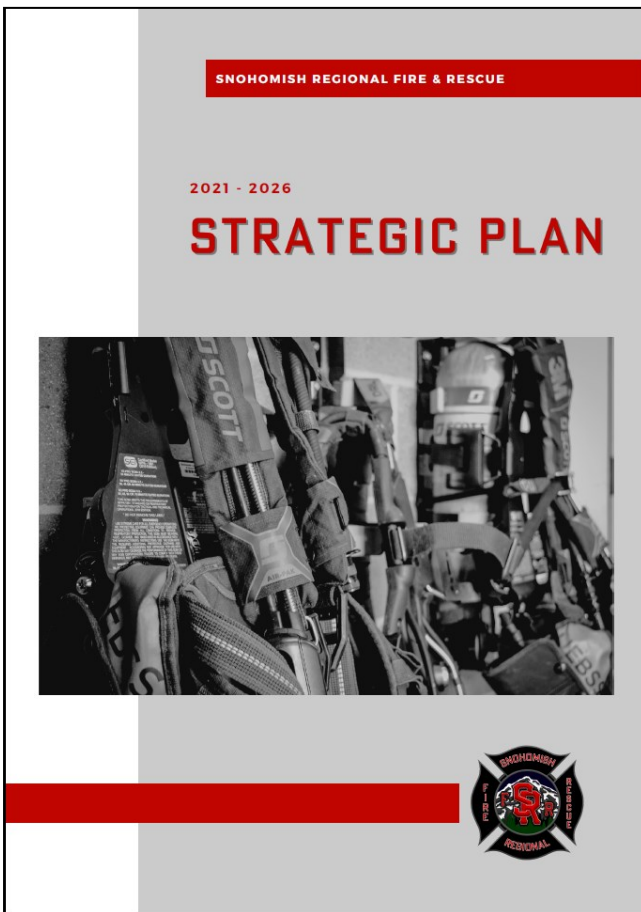
Performance Indicator 2D.2

The agency continuously monitors, assesses, and internally reports at least quarterly, on the ability of the existing delivery system to meet expected outcomes and identifies and prioritizes remedial actions.

Core Competency 2D.3

The performance monitoring methodology identifies, at least annually, future external influences, altering conditions, growth and development trends, and new or evolving risks, for purposes of analyzing the balance of service capabilities with new conditions or demands.

Continuous Improvement Plan



Core Competency 2D.7

The agency has systematically developed a continuous improvement plan that details actions to be taken within an identified timeframe to address existing gaps and variations.

The timing was perfect to chart a new course for SRFR with the recent merger of Snohomish County Fire District 7 and Lake Stevens Fire. The strategic plan was developed to provide an inclusive continuous improvement framework to address existing gaps and variations for each functional area of the District.

Performance Indicator 2D.8

The agency has systematically developed a continuous improvement plan that details actions to be taken within an identified timeframe to address existing gaps and variations.

Sustaining the work is a critical step in the implementation of a strategic plan. The plan is a living document that supports continuous improvement, rather than a static document that sits on the shelf. Meeting quarterly, the planning team will assess progress and report out in a similar manner to what is show here; areas of focus, objectives, goals, and tasks are examined to see if the target is still relevant, if more resources need to be allocated, or if adjustments to the strategy need to be undertaken; all in an effort to address existing gaps and variations between baseline and benchmark performance.

Snohomish Regional Fire & Rescue 2021-2026 Strategic Plan Implementation Tracker				
Program Area: Emergency Response				
Action Item	Description	Staff Assigned	Status	Comments:
Goal 1:	Provide the highest level of emergency response to the communities we serve.			
Objective 1.1:	Evaluate and address the impacts of growth within Snohomish Regional Fire and Rescue to better manage the current and future needs of the agency.			
Critical Task 1.1.1				
Critical Task 1.1.2				
Program Area: Fire & Life Safety				
Action Item	Description	Staff Assigned	Status	Comments:
Goal 2:	Engage and serve the community by providing proactive, strategic, and adaptive fire and life safety programs that prevent and mitigate risk.			
Objective 2.1:	Provide regionalized code enforcement services adapted to the unique abilities we serve.			
Critical Task 2.1.1				
Critical Task 2.1.2				
Objective 2.2:	Create and implement measures to ensure a sustainable code enforcement program.			
Critical Task 2.2.1				
Critical Task 2.2.2				
Critical Task 2.2.3				
Critical Task 2.2.4				
Objective 2.3:	Adapt, assess, and administer current community education and outreach programs.			
Critical Task 2.3.1				
Critical Task 2.3.2				
Critical Task 2.3.3				
Critical Task 2.3.4				
Objective 2.4:	Analyze current data to develop strategic community outreach programs in order to reduce new identified risks in our jurisdiction.			
Critical Task 2.4.1				
Critical Task 2.4.2				
Critical Task 2.4.3				
Critical Task 2.4.4				
Program Area: People and Culture				
Action Item	Description	Staff Assigned	Status	Comments:
Goal 3:	Exemplify our mission of taking care of people physically, mentally, and emotionally while creating a robust and diverse culture.			
Critical Task 3.1.1				
Critical Task 3.1.2				
Critical Task 3.1.3				
Objective 3.1:	Build a diverse, adaptable, and skilled workforce to support the needs of our communities.			
Critical Task 3.1.1				
Critical Task 3.1.2				
Critical Task 3.1.3				
Objective 3.2:	Develop and foster resilient relationships between labor and management to amplify staff engagement and growth.			
Critical Task 3.2.1				
Critical Task 3.2.2				
Critical Task 3.2.3				
Critical Task 3.2.4				
Goal 4:	Embody and convey our agency's new core values focusing on accountability, integrity, and respect.			
Objective 4.1:	Earn the respect of our staff and community by exhibiting accountability for our actions and strive to learn from all experiences.			
Critical Task 4.1.1				
Objective 4.2:	Exercise agency integrity by earning public trust and building community equity.			
Critical Task 4.2.1				
Critical Task 4.2.2				
Critical Task 4.2.3				

Emergency Response

SRFR's mission as an all hazards emergency services agency is to save live, protect property, safeguard the environment, and take care of people. The organization is well aware that even with the best efforts of community risk reduction personnel that emergencies can and do occur. The strategic plan identified gaps in current performance (at least three years) and serves as a guidepost for improvement.

Fire and Life Safety Services

Engage and serve the community by providing proactive, strategic, and adaptive fire and life safety programs that prevent and mitigate risk. Public engagement is critical to prevention and preparedness, especially since SRFR serves a diverse and rapidly growing population base.

People and Culture

Exemplify SRFR's mission of taking care of people physically, mentally, and emotionally while creating a robust and diverse culture. Embody and convey the District's core values with a renewed focus on accountability, integrity, and respect.

Business Practices

Operate sustainably and responsibly while maintaining transparency by strengthening established business practices.

Facilities and Equipment

Provide and maintain contemporary facilities and equipment for SRFR's workforce to enable the mission of saving lives, protecting property, safeguarding the environment, and taking care of people. Without proper, well maintained facilities and equipment, SRFR's teams are unable to proficiently meet the needs of the communities they serve.

Annual Appraisal Process

The goals, summarized in this section, will be reviewed and addressed by goal owners in regular leadership reviews, including a quarterly review conducted with the executive leadership team. Annually, a documented report -out will be created by the Fire Chief to share with the Fire Commissioners. The annual reviews will identify any gaps in current capabilities, capacity, and the level of service provided within each service delivery area. Additionally, program goals to mitigate identified risks within the service area will also be discussed. Executive staff and program/goal owners will work collaboratively to ensure an accurate and useful annual appraisal process is performed, documented, and presented, ensuring transparency and trust in maintained between SRFR and the communities they serve.

Core Competency 2C.8

The agency has identified efforts to maintain and improve its performance in the delivery of its emergency services for the past three (initial accreditation agencies) to five (currently accredited agencies) immediately previous years.

Performance Indicator 2C.9

The agency's resiliency has been assessed through its deployment policies, procedures, and practices.

Performance Indicator 2D.4

The performance monitoring methodology supports the assessment of the efficiency and effectiveness of each service program at least annually in relation to industry research.

Performance Indicator 2D.5

Impacts of incident mitigation program efforts, such as community risk reduction, public education, and community service programs are considered and assessed in the monitoring process.

Core Competency 2D.6

Performance gaps for the total response area, such as inadequacies, inconsistencies, and negative trends, are determined at least annually.

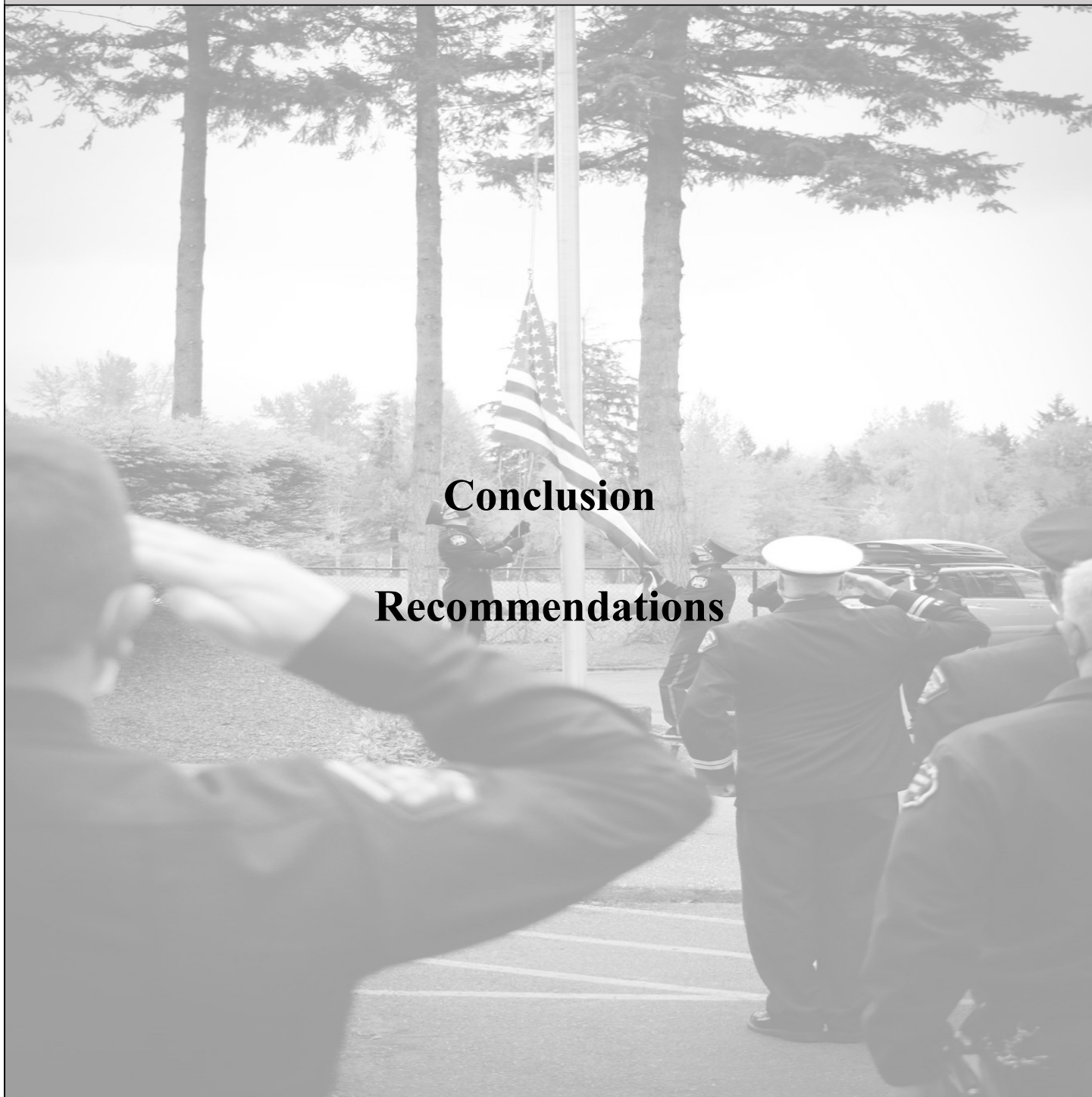
Core Competency 2D.9

On at least an annual basis, the agency formally notifies the AHJ of any gaps in current capabilities, capacity, and the level of service provided within its delivery system to mitigate the identified risks within its service area, as identified in its community risk assessment/standards of cover.

Performance Indicator 2D.10

The agency interacts with external stakeholders and the AHJ at least once every three years to determine the stakeholders' and AHJ's expectations for types and levels of services provided by the agency.

Section I - Conclusion and Recommendations



Conclusion

Snohomish Regional Fire and Rescue is an organization with a total authorized staff of 284 personnel who are committed to saving lives, protecting property, safeguarding the environment, and taking care of their people. This is accomplished by providing a full spectrum of emergency and non-emergency services that align with the risks present in the community. The establishment of formal goals and metrics ensures a high level of performance and outcomes for each functional area: business practices, emergency response, facilities and equipment, fire and life safety services, and people and culture.

Spread out over 140 square miles and protecting over 180,655 citizens, SRFR utilizes 11 fire stations staffing or cross staffing 10 engines, 2 ladders, 6 medic units, 7 aid units, 3 battalion chiefs, and a medical services officer deployed through a risk-based staffing model, balancing the risks in the community with the financial stewardship required of a modern day fire and rescue organization.

Population growth, continued expansion of building construction, and significant changes to human-made hazards made this an ideal time to undertake a comprehensive standards of coverage process (SOC) and assess the organization's benchmark and baseline performance. The following items were identified during the SOC process and utilize the same Strengths, Weaknesses, Opportunities, and Threats (SWOT) model that is employed during the SRFR strategic planning process.

Identification of System Strengths, Weaknesses, Opportunities, and Threats

Strengths

- **Organizational Size and Performance**
- **Human Resources**
- **Community Outreach**
- **Up to Date Equipment**
- **Focus on Customer Service**
- **Medical Services**
- **Continuous Improvement Culture**

Weaknesses

- **Future Funding**
- **Rapid Pace of Organizational Growth**
- **Technical Infrastructure**
- **Large Geographic Service Gaps**
- **Employee Turnover**
- **Better Integration of Dispatch Data**
- **Capital Facilities**

Opportunities

- **Remain Focused on the Community**
- **Accreditation Process**
- **Additional Expansion and Mergers**
- **Employee Promotions and Hires**
- **Fire Benefit Charge**

Threats

- **Anti-tax Sentiment**
- **Continued Reliance on Border Communities**
- **Increased Mental Health Calls for Service**
- **Maintaining Individual Voice in SRFR**

Overall Evaluation

The overall evaluation is the final component of the Standards of Cover (SOC) process. As a risk-based process that incorporates risk, mitigation, and outcomes measures, both the Department and the District leadership can more easily discuss service levels, outcomes, and the associated cost allocations based on community risk.

Overall, the department is performing well within the current system. The community enjoys high quality services from a professional and well-trained department. Predominantly, the department's distribution and concentration delivery models are appropriately aligned with the District's unique risks. In addition, the practice of cross-staffing units provides operational and fiscal efficiencies. However, there are areas that have been identified that the Department could make incremental system adjustments to improve.

General Observations

Total Response Time

The department has established baseline and benchmark performance objectives during the development of this SOC. The individual station demand zones performance provides understanding of the compartmentalized performance. While it is up to the department to establish policy related to meeting or exceeding community expectations, there are opportunities to better align goals and baseline objectives.

Observations and remedies:

- The department could impact the total response time in most instances with the improvement of crew turnout time and improved dispatch time that is more closely aligned with best practices.
- Turnout time performance is typically within personnel and management control
- Improvement of turnout times at no cost would receive the same system benefit as substantive monetary investments in the response distribution model.

Internal Performance Goals and the Distribution of Resources

The Department's internal benchmark goal of 9-minutes and 22 seconds first arriving unit total response time in the urban areas and 12 minutes and 49 seconds in the rural areas is well aligned with the national experience. A District gap analyses between baseline and benchmark performance is fully evaluated in Section G of the SOC. In addition, a per station and per battalion comparison provided below demonstrates that the North and West Battalions have a commensurate service level of 11.8 minutes, and the East Battalion is at 12.6 minutes, or 48 seconds longer.

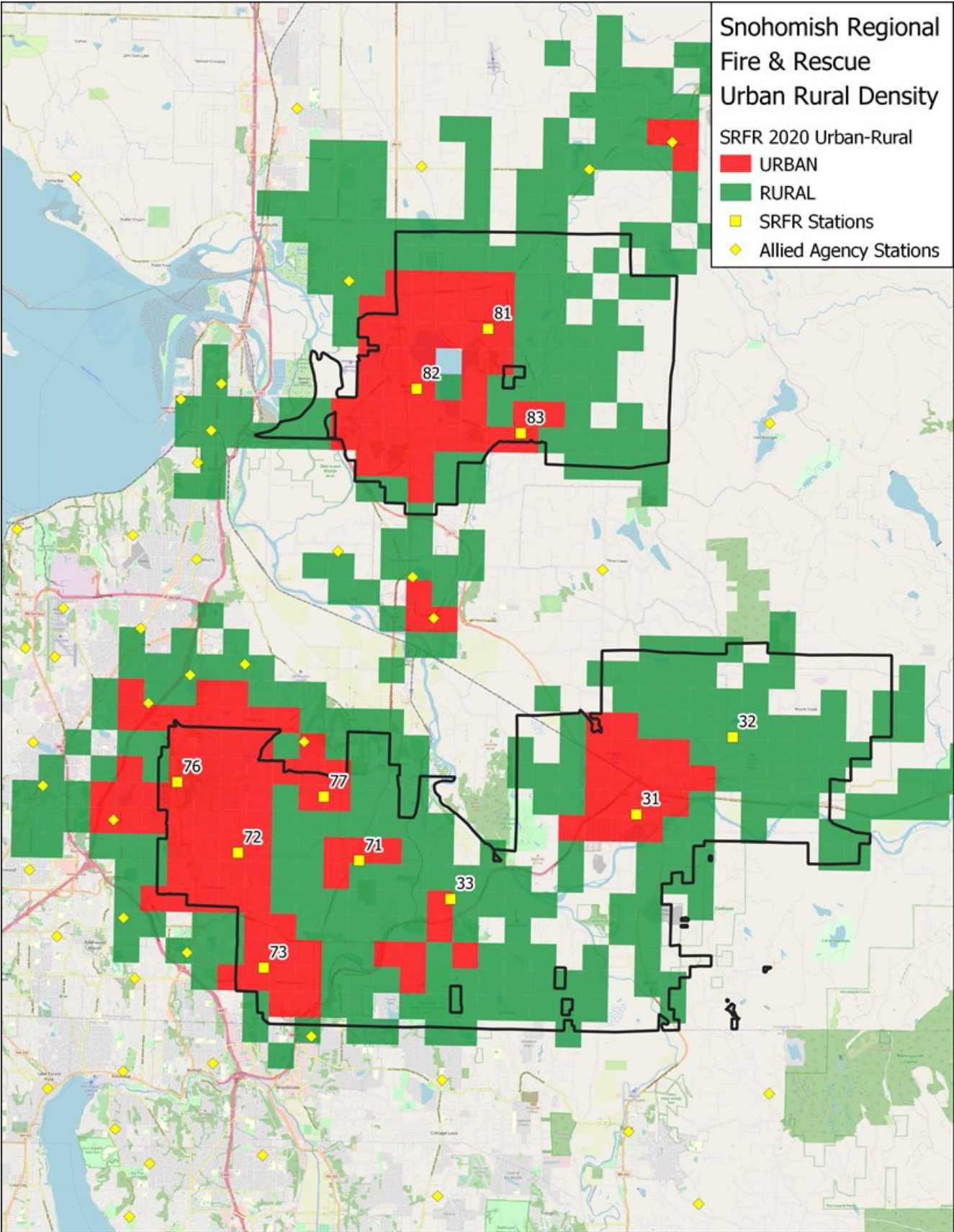
Section I - Conclusion and Recommendations

Call Category	Dispatch Time	Turnout Time	Travel Time	Response Time	Sample Size
EMS - BLS	3:56	2:07	7:35	12:06	4,419
EMS - ALS	3:39	2:02	6:59	11:04	3,631
EMS	3:47	2:05	7:21	11:38	8,050
Fire Suppression	3:16	2:38	8:51	12:58	1,058
Hazmat	3:02	2:34	8:24	11:41	192
Technical Rescue	4:12	2:01	13:02	18:44	4
Other	2:08	1:34	11:24	15:05	1
Total	3:44	2:11	7:32	11:49	9,305

First Due Area	Dispatch Time	Turnout Time	Travel Time	Turnout and Travel	Response Time	Sample Size
STA 31	3:38	1:55	7:19	8:32	11:17	1,892
STA 32	3:28	1:55	9:17	10:41	13:39	503
STA 33	3:39	2:23	11:24	13:16	16:24	373
East Battalion	3:37	1:60	8:24	9:58	12:38	2,768
STA 71	3:45	2:19	7:01	8:35	11:02	289
STA 72	3:38	2:06	6:33	7:59	10:48	1,053
STA 73	3:46	2:09	8:06	9:54	12:13	335
STA 76	3:18	2:20	6:33	8:13	10:50	1,656
STA 77	4:40	2:16	7:15	8:47	12:07	202
West Battalion	3:53	2:16	7:28	8:57	11:46	2,998
STA 81	4:00	2:11	8:18	9:58	12:04	909
STA 82	3:49	2:16	6:52	8:20	11:07	1,786
STA 83	3:49	2:27	8:37	10:29	12:55	303
North Battalion	3:37	2:15	6:55	8:26	11:05	3,535
Total	3:43	2:11	7:31	8:60	11:48	9,301

The current performance is both expected and reasonable from a system design perspective when considering the differences in demand and population levels across the district. Urban/Rural call density is calculated based on the relative concentration of incidents based on approximately 0.5-mile geographic areas as well as the adjacent 0.5-mile areas. The results demonstrate an urban and rural designation based on call density for services and not based on population. The red areas are designated as urban service areas and the green areas are designated as rural service areas. Any area that is not colored has less than one call every six months in the 0.5-mile area and the adjacent areas.

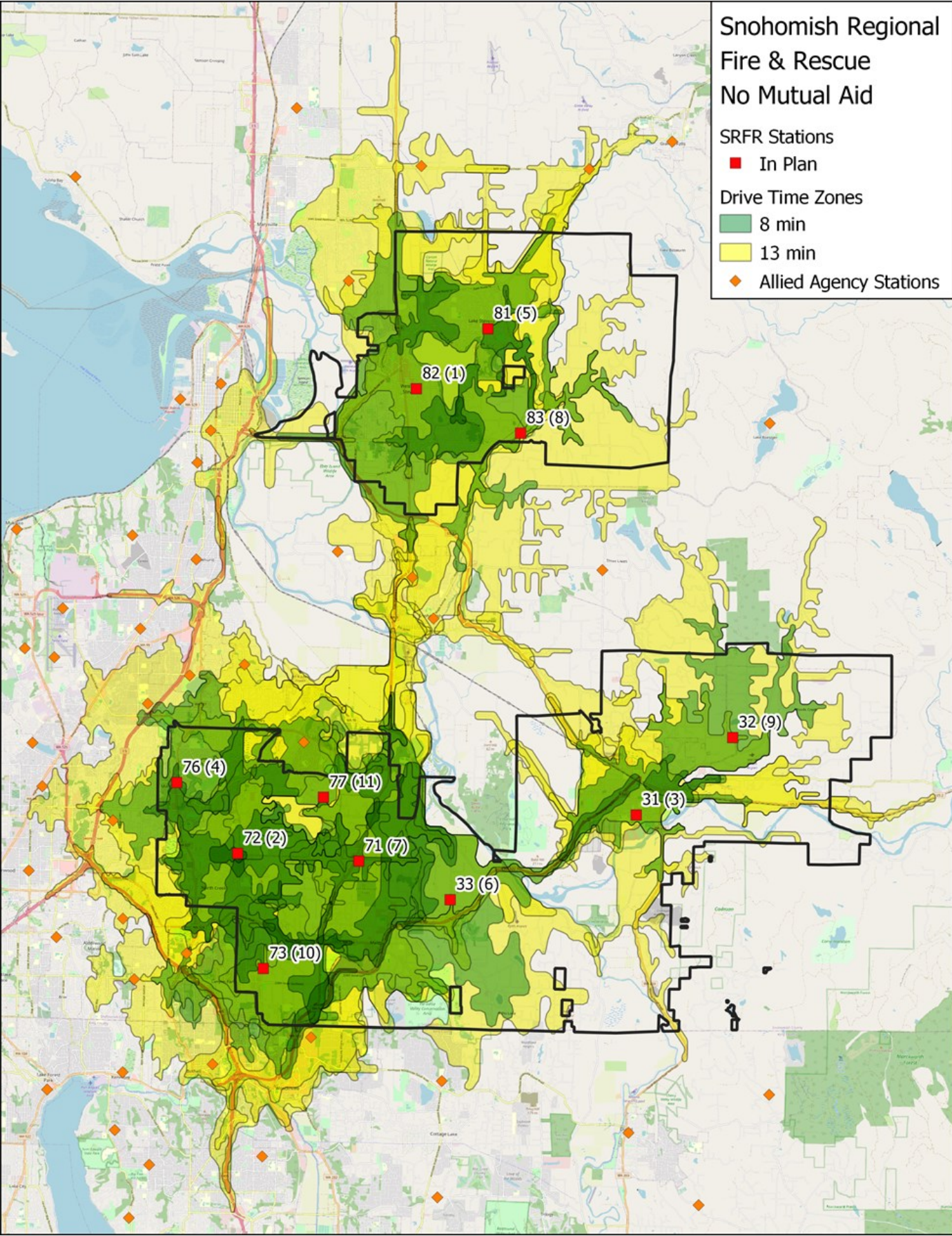
When referring to the Figure below, much of the eastern part of the western battalion and the eastern portion of the eastern battalion areas are rural by definition of this analysis. This strategy is well aligned, and more responsive, as a commensurate risk model than the current census definition of urban and rural.



In addition to the quantitative analyses provided, Geographic Information System (GIS) analyzed the station locations and associated travel time capabilities. The current capabilities were evaluated to determine if, from a planning perspective, an 8-minute travel time to urban areas and a 13-minute travel time is obtainable to rural incidents within the current configuration. Results found that the 8-minute travel time could be accomplished while covering 90.16% of the incidents. This is approximately a 1% improvement compared to the pre-merger state of only the West and East battalions. The rural performance also improved by approximately 1%. In other words, the overall performance through the combined District's lens is that the level of performance has been maintained or incrementally improved.

When referring to the table below, the table can be interpreted as follows: The number one ranked station is station 82 and would be able to respond to 21.78% of the district's incidents within 8 minutes. Each station provides additional coverage, but a diminishing return, until Station 77 brings the total system capability to 90.16%. All currently held eleven stations are needed to attempt to achieve the 8-minute travel time for all incidents. However, it is important to understand the relative diminishing return for the last fire station. All stations repeated underneath the "blue" line are stations that could also contribute to a 13-minute rural travel time that will capture approximately 98% of all incidents within the desired performance. Data is presented in the Table and Figure below.

Rank	Station	Drive Time	Station Capture	Total Capture	Percent Capture
1	82	8	2,855	2,855	21.78%
2	72	8	2,749	5,604	42.75%
3	31	8	2,309	7,913	60.37%
4	76	8	1,061	8,974	68.46%
5	81	8	972	9,946	75.88%
6	33	8	776	10,722	81.80%
7	71	8	300	11,022	84.09%
8	83	8	274	11,296	86.18%
9	32	8	263	11,559	88.18%
10	73	8	167	11,726	89.46%
11	77	8	92	11,818	90.16%
12	31	13	431	12,249	93.45%
13	83	13	183	12,432	94.84%
14	33	13	172	12,604	96.16%
15	32	13	92	12,696	96.86%
16	82	13	78	12,774	97.45%
17	72	13	73	12,847	98.01%
18	81	13	7	12,854	98.06%
19	77	13	4	12,858	98.09%
20	76	13	0	12,858	98.09%
21	73	13	0	12,858	98.09%
22	71	13	0	12,858	98.09%

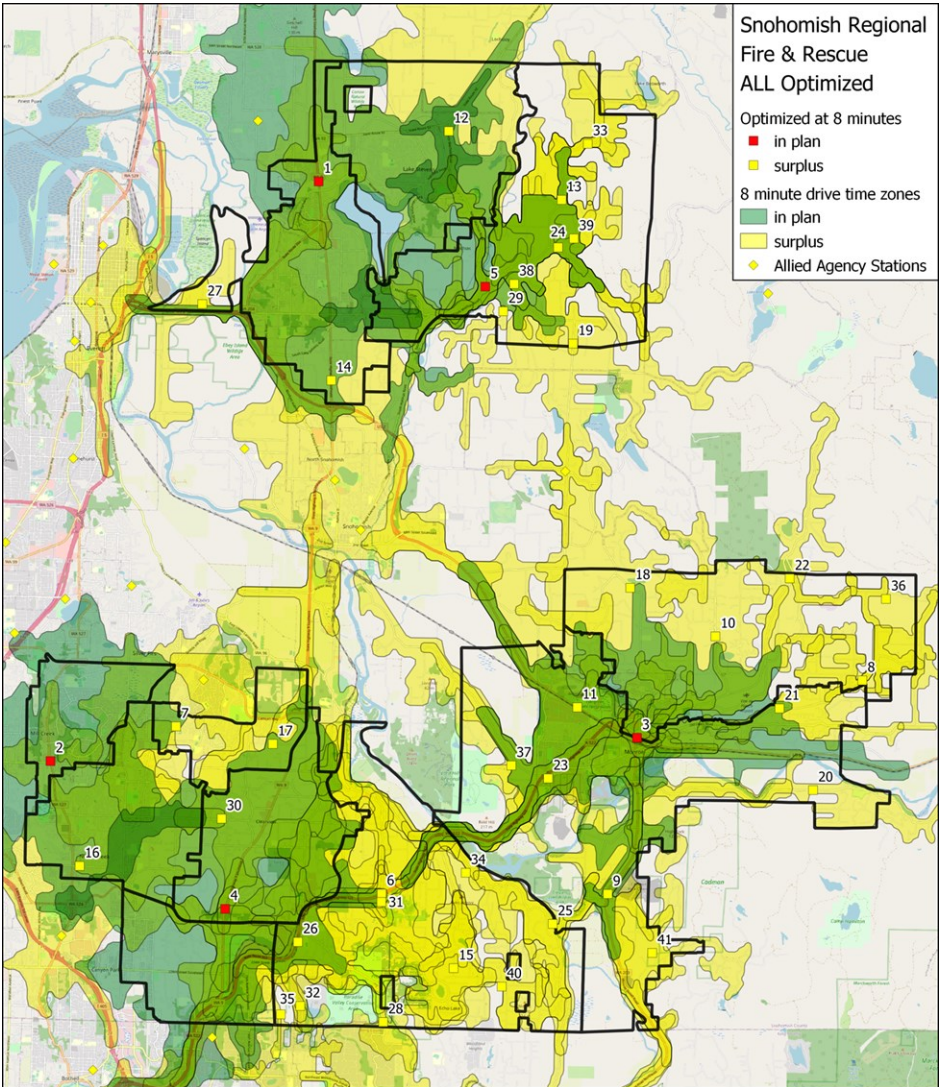


Station Location Analyses

District Level Assessment

Analyses of the station locations validated the placement of the fixed facilities. The urban/rural analysis confirmed that every station except Station 32 had an urban concentration of calls in the adjacency around the station. In addition, the 8-minute travel time analyses confirmed that all 11 stations are needed to meet the 90th percentile threshold for being able to deliver an 8-minute travel time. Therefore, the District has the exact number of stations needed to meet the desired performance. While there could be incremental improvements in station locations in the future, this assessment would suggest a quality and appropriate allocation in the current configuration and distribution and concentration of calls. Again, the current configuration is meeting 90% of the urban responsibility and 98% of the rural responsibility in the desired timeframes.

However, for long-term considerations, an optimized station location analysis was created and found that a five-station configuration could cover 90% of all incidents within the desired 8-minute urban travel time. This “whiteboard” approach may be unrealistic in many communities as elements such as available land, market value, capital outlay, and community expectations may prove to be barriers to implementation. These are provided for policy consideration and long-term planning as station renovations and/or replacements are needed as well as to remain flexible and agile to changes in the service area. Results are provided below.



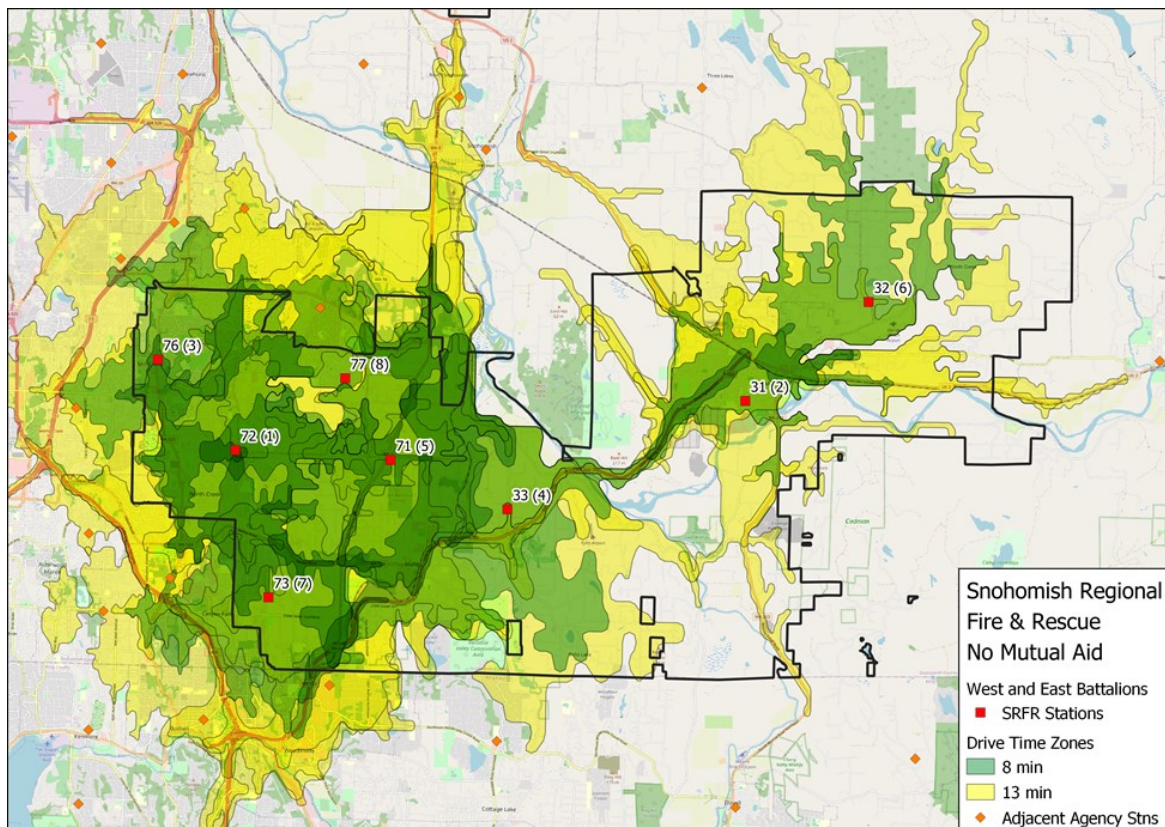
Battalion Level Assessment

Due to the relative geographic separation between the West/East Battalions and the North Battalion more granular analyses of congruent battalions were completed.

West and East Battalions

Results found that the West/East Battalions needed all eight stations in the zone and were able to cover 89% of all urban calls and 98% of rural incidents from the current locations. This is well aligned with actual performance and confirms the necessity and placement of the current configuration. Results are presented below.

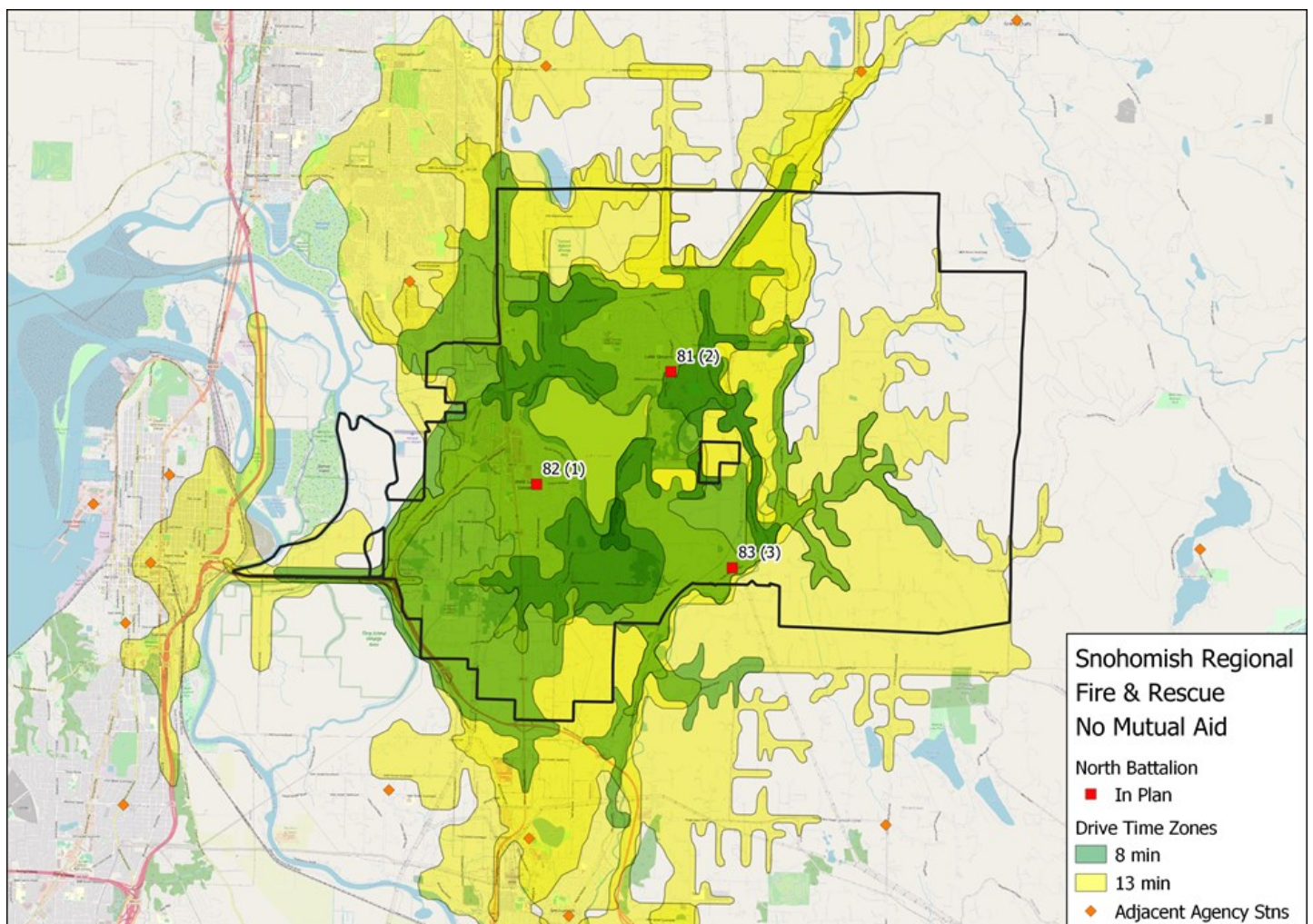
Rank	Station	Drive Time	Station Capture	Total Capture	Percent Capture
1	72	8	2,749	2,749	31.70%
2	31	8	2,309	5,058	58.33%
3	76	8	1,061	6,119	70.57%
4	33	8	776	6,895	79.52%
5	71	8	300	7,195	82.98%
6	32	8	263	7,458	86.01%
7	73	8	167	7,625	87.94%
8	77	8	92	7,717	89.00%
9	31	13	431	8,148	93.97%
10	33	13	172	8,320	95.95%
11	32	13	92	8,412	97.01%
12	72	13	73	8,485	97.85%
13	77	13	4	8,489	97.90%
14	76	13	0	8,489	97.90%
15	73	13	0	8,489	97.90%
16	71	13	0	8,489	97.90%



North Battalion

Similarly, results found that the North Battalion needed all three stations in the zone and were able to cover 92.43% of all urban calls and 98.47% of rural incidents from the current locations. This is well aligned with actual performance and confirms the necessity and placement of the current configuration. Results are presented below.

Rank	Station	Drive Time	Station Capture	Total Capture	Percent Capture
1	82	8	2,855	2,855	64.35%
2	81	8	972	3,827	86.25%
3	83	8	274	4,101	92.43%
4	83	13	183	4,284	96.55%
5	82	13	78	4,362	98.31%
6	81	13	7	4,369	98.47%

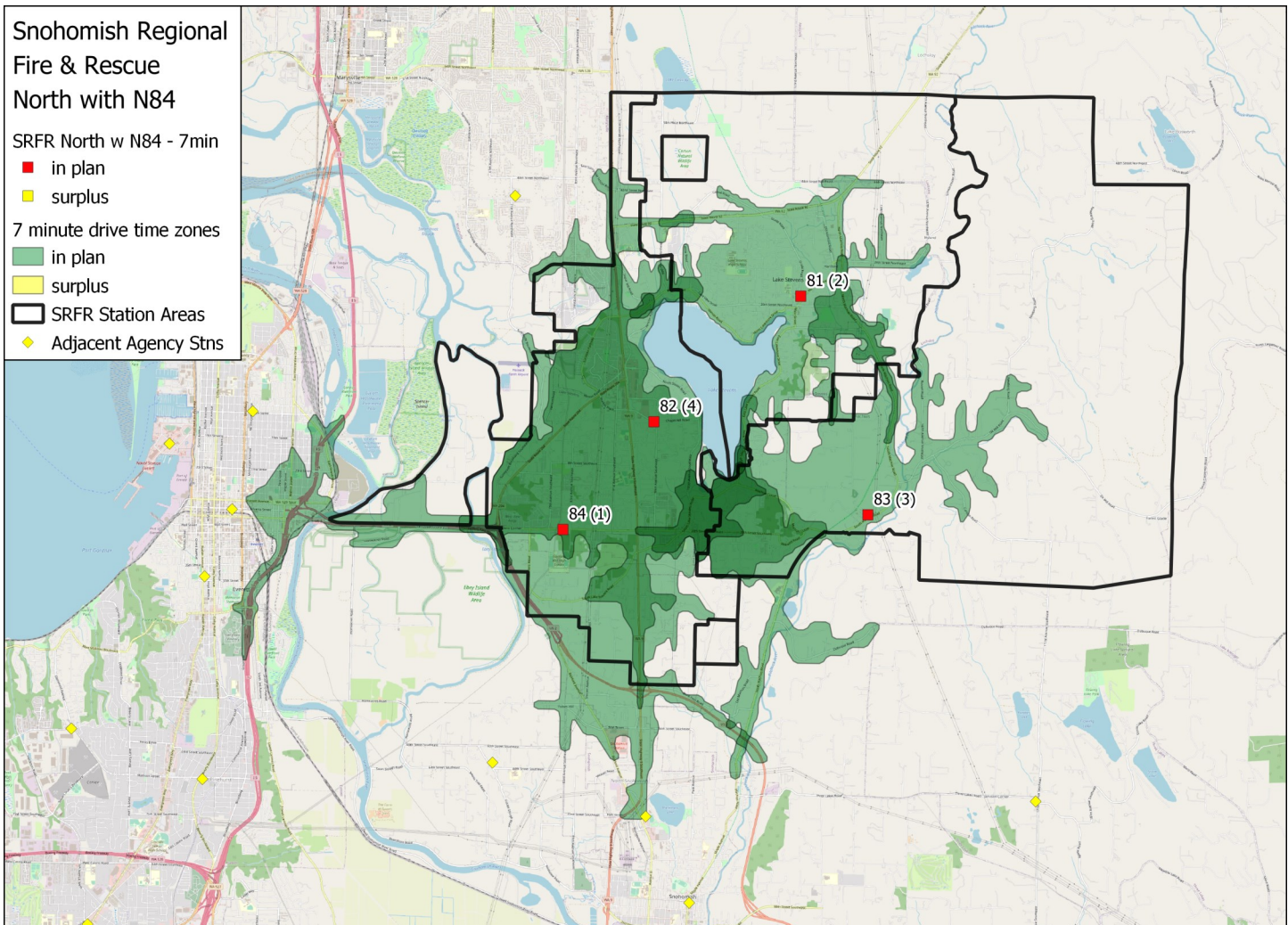


Consideration of a 4th Station in the North Battalion

The previous analysis above, demonstrated that the current three station configuration meets the commensurate level of performance for the District to at least 92% of the incidents. Other than an independent policy desire, the data does not suggest a benefit from an additional station with an 8-minute travel time.

It is understood that prior to the merger, Lake Stevens had a plan to split Station 82 and create a 4th station largely with only capital investment. This strategy would improve response time within the immediate adjacent area to the new station, but have less than 8% improvement overall in the North Battalion at 8-minutes. However, if there is a desire to improve the response time in the North Battalion, then an opportunity exists to move to a 7-minute travel time with a four-station configuration that would achieve approximately 90% coverage within 7-minutes. A 6-minute travel time was also evaluated, but it would require a 5-station configuration to improve the response time by two minutes. In other words, the total capital and recurring costs of the additional station would improve performance by one minute within the North Battalion and would not have a commensurate performance benefit across the entirety of the District. In addition, the previous optimized analysis suggests that the North Battalion could maintain performance with a 2-station configuration.

Finally, as a policy consideration, it may also introduce some potential for an imbalance in performance capability between the West/East Battalion and the North Battalion where currently the service levels are well-aligned. Results for the 7-minute, 4-station configuration is provided below.

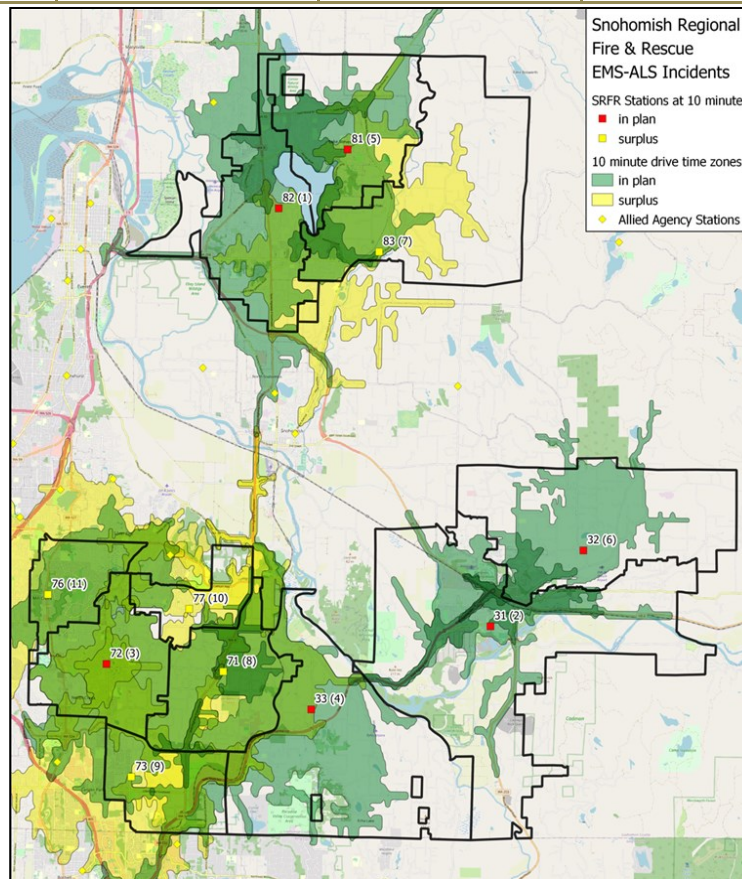


ALS Medic Unit Deployment

Analyses were completed to determine the optimal deployment locations for the ALS Medic Resources. Understanding that all moderate, high, and extreme EMS incidents receive multiple responding resources, the performance by the EMS program area overstates the Medic unit's capabilities due to the first arrival performance of the closest resource. Therefore, these analyses partitioned the incidents evaluated to ALS dispatches. Like the All-Calls analyses previously presented, it would require all 11 stations to meet approximately 89% of the ALS incidents within 8-minutes or less. Thus, the design moved the Medic unit response capability to a 10-minute travel time or less and found that 6-station configuration would achieve a 10-minute travel time to greater than 90% of the ALS incidents.

This would suggest unrestricted Medic units at stations 82, 31, 72, 33, 81, and 32. The current configuration is well aligned as 31, 32, 81, and 82 all have Medic units. Therefore, it would be recommended that Medic resources are considered for Stations 33 and 72 (consistent with previous recommendations). Results are presented below.

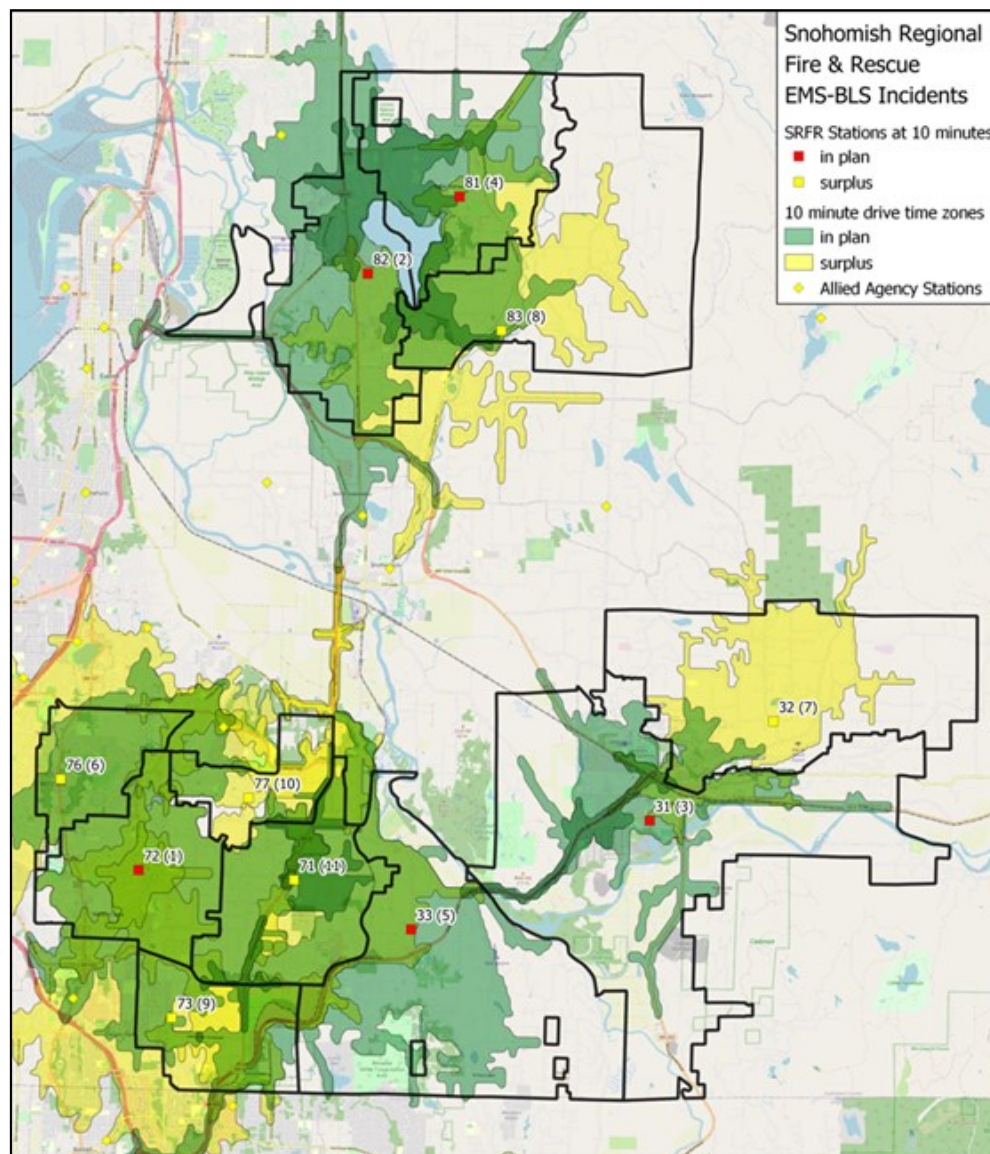
Rank	Station	Drive Time	Station Capture	Total Capture	Percent Capture
1	82	10	1,174	1,174	29.30%
2	31	10	976	2,150	53.66%
3	72	10	920	3,070	76.62%
4	33	10	257	3,327	83.03%
5	81	10	236	3,563	88.92%
6	32	10	66	3,629	90.57%
7	83	10	41	3,670	91.59%
8	71	10	35	3,705	92.46%
9	73	10	20	3,725	92.96%
10	77	10	15	3,740	93.34%
11	76	10	10	3,750	93.59%



BLS Aid Unit Deployment

Similar analyses were completed for BLS incidents the utilization of Aid units. The analyses suggest that a 5-station deployment for Aid resources would provide at least 90% coverage within 10-minutes travel time. These analyses validate the current staffing and resource allocation as each of the stations identified currently have an Aid unit assigned.

Rank	Station	Drive Time	Station Capture	Total Capture	Percent Capture
1	72	10	2,444	2,444	36.19%
2	82	10	1,652	4,096	60.65%
3	31	10	1,319	5,415	80.19%
4	81	10	401	5,816	86.12%
5	33	10	284	6,100	90.33%
6	76	10	146	6,246	92.49%
7	32	10	79	6,325	93.66%
8	83	10	48	6,373	94.37%
9	73	10	43	6,416	95.01%
10	77	10	24	6,440	95.37%
11	71	10	14	6,454	95.57%



Risk-based Approach to the Allocation of Resources

Following a risk-based approach to managing risk in the District, four first due station areas qualified as high-risk areas in Station’s 31, 72, 76, and 82 respectively. Stations 31 and 76 have two staffed units (Engine/Medic) assigned to the station to cover both the demand for services, but also provide a higher concentration of personnel to assist in risk mitigation. This works well as stations 31, 76, and 82 all maintain at least 90% reliability to be available and answer calls in the territory, respectively.

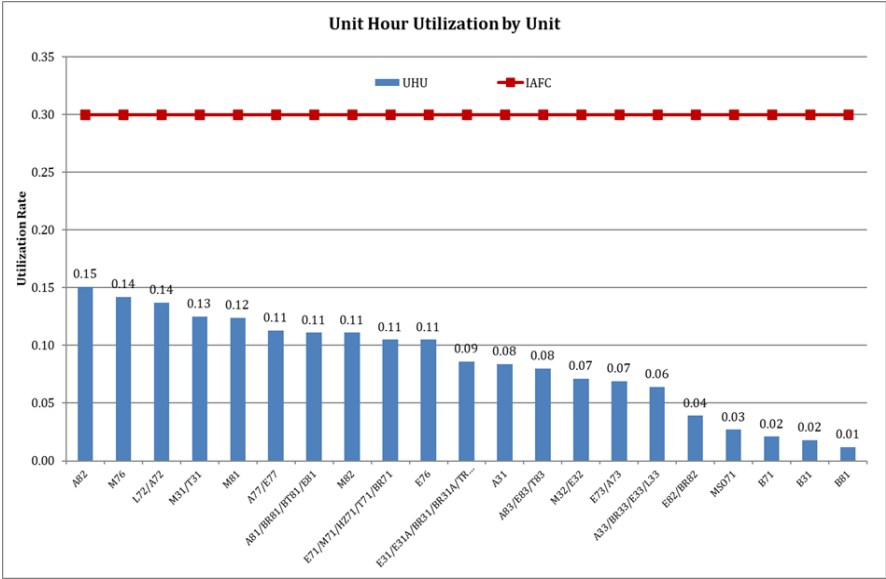
However, the District’s allocation of resources is not commensurate currently with respect to Station 72. While utilizing a systematic approach to risk, it is recommended that the District consider placing another full-time staffed Medic unit at Station 72. This will assist the District in multiple manners. First, the higher risk area should have a higher concentration of personnel and apparatus in a similar fashion as other high-risk demand zones, maintaining a commensurate approach to managing and mitigating risk. Second, the risk matrices created with this SOC can serve as planning tool as the community’s risk profile evolves. In other words, there is a set of thresholds that will guide the District in understanding when additional resources are required and why.

Thirdly, the EMS division has a desire to plan for the most efficient and effective first arriving ALS capable resource for all ALS incidents. Previous analyses demonstrated the overall system performance for ALS incidents that included first arriving first responders. However, the distribution model would improve the overall ALS-Medic Unit response time, since not all stations have a dedicated Medic unit and the distribution of calls in and around 72 would benefit considerably as well as increase Station reliability above the current 80%.

It is understood that there are multiple potentially competing demands in the near future and that considerations for any resource allocation changes to Station 72 should be fully considered prior to implementation.

Workload Capacity – Reinvesting or Reallocating Resources

The District is currently operating within the boundaries of nationally recommended best practices with respect to workload. Overall, the District is performing at less than 15% (0.15). The most utilized unit is the Aid 82 at Station 82, at 0.15. Medic 76, at Station 76, and L72/Aid72 at Station 72, are the second most utilized units at 14% (0.14). At the current workload utilization rates, the District should have a limited impact on their level of readiness or system performance. *FITCH*’s recommendation is that workloads greater than 0.25 are not optimal on a 24-hour shift and should not exceed 0.30.



Commensurate Staffing Strategy for ALS Services

Currently the District has competing staffing strategies with respect to ALS Medic units. Specifically, in the North Battalion there is a commitment to staffing Medic units with two paramedics. In the West and East Battalions Medic units may be staffed with a paramedic and an EMT. It is understood that staffing strategies are largely a local policy choice, therefore, there is no inherent right or wrong choice.

The clinically based research has consistently found that fewer paramedics within the system have better clinical outcomes than an oversaturation of paramedics. A common belief in systems that continue to have an allegiance to double-paramedic staffing is associated with the comfort of having multiple paramedics on scene to help in decision making. However, the research is associated with having a high-level of experience per paramedic. Results have found that intubations are more accurate, sudden cardiac arrests have a higher degree of both ROSC and discharge from the hospital. In other words, the more medics that are in the system, the less that each paramedic is in the position to have to been exposed to, perform independently, and learn from these experiences.

Understanding the clinical argument for fewer paramedics as compared to double-paramedic deployment, what remains is the policy choice of how the District would prefer to staff Medic units. In all other staffing schema, there is a commensurate staffing strategy. For example, Aid units and Engines are staffed the same. Therefore, the District is encouraged to adopt a commensurate staffing strategy for the District that reinforces a singular agency and identity that is not partitioned to legacy items of individual agencies.

Recommendations

- 1. The District could improve the total response time in most instances with the improvement of crew turnout time and improved dispatch time that is more closely aligned with best practices.**
- 2. The District is encouraged to consider the optimized station locations analyses for long range planning.**
- 3. Understanding that the district is incongruent between the North and West/East battalions, the District is encouraged to consider the nuances of imbalances in service capabilities as district-wide benefits may be limited.**
- 4. In addition to the current ALS Medic unit deployment, it is recommended that Medic resources are considered for Stations 33 and 72.**
- 5. Utilizing the risk-based assessment within this SOC, it is recommended that Station 72 has a dedicated Medic unit assigned to increase the mitigation capabilities similar to other stations that were rated high risk.**
- 6. The District is encouraged to adopt a commensurate staffing strategy for the District that reinforces a singular agency and identity that is not partitioned to legacy items of individual agencies.**

Appendix



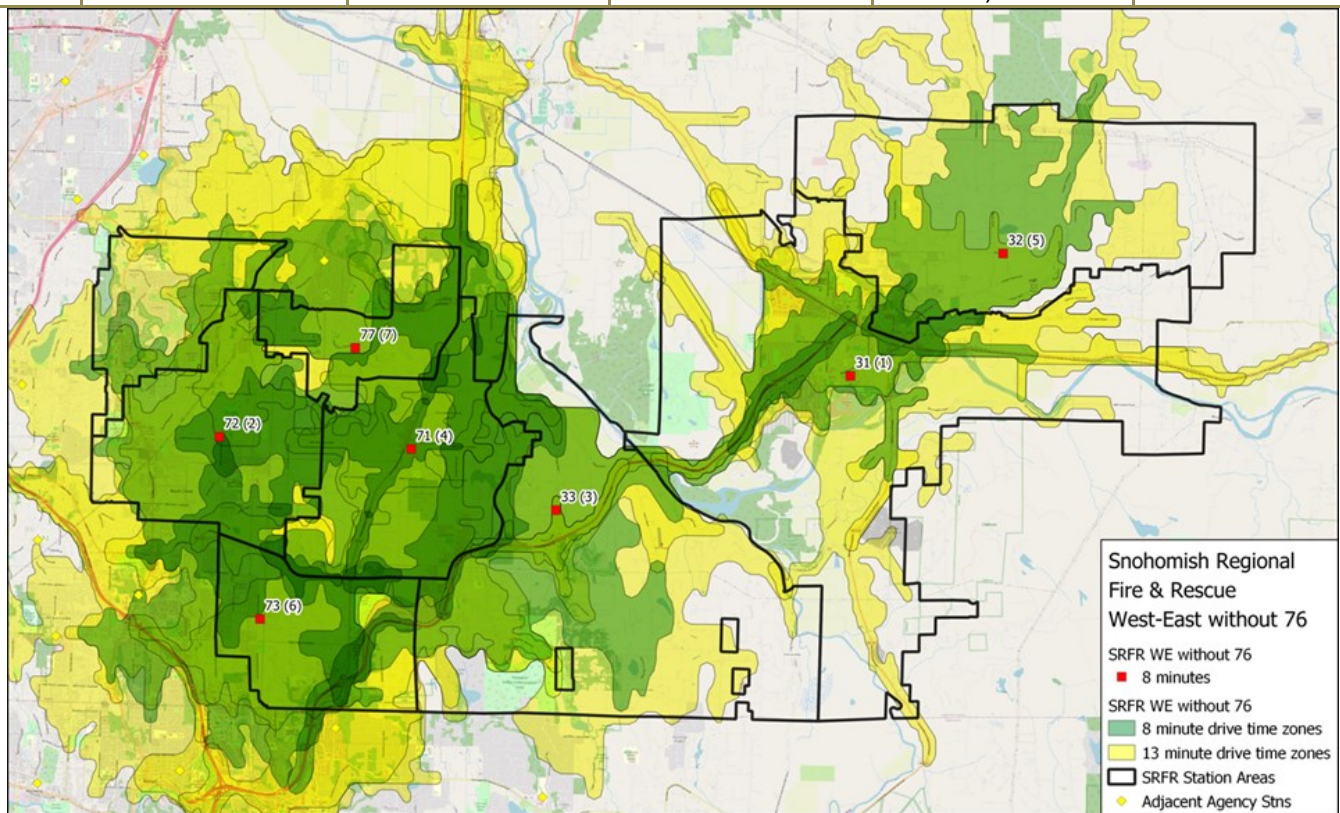
Additional Analyses

Considerations for District excluding Mill Creek

Understanding that the Mill's Creek area is a contractual relationship that is periodically reevaluated, an analysis was conducted to assess the relative impact if either of the parties elected to discontinue the contractual relationship. This analysis removed both the geographic territory and the calls associated with the first due area and then reevaluated the combined West/East Battalion's performance and station needs.

Considering the current performance of 8 minutes urban and 13 minutes rural travel time, results demonstrate that the current service levels are reasonably well maintained at a commensurate level with or without Station 76. The 7-station configuration without Station 76, can meet 87% of the incidents within 8-minutes compared to the current configuration at 89% (urban) and 97% within 13-minutes (rural). In other words, there is approximately a 2.4% reduction in response time coverage. Results are provided below.

Rank	Station	Drive Time	Station Capture	Total Capture	Percent Capture
1	31	8	2,376	2,376	35.18%
2	72	8	1,938	4,314	63.88%
3	33	8	749	5,063	74.97%
4	71	8	287	5,350	79.22%
5	32	8	250	5,600	82.93%
6	73	8	164	5,764	85.35%
7	77	8	82	5,846	86.57%
8	31	13	426	6,272	92.88%
9	33	13	166	6,438	95.34%
10	32	13	64	6,502	96.28%
11	72	13	43	6,545	96.92%
12	77	13	4	6,549	96.98%
13	73	13	0	6,549	96.98%
14	71	13	0	6,549	96.98%



Similarly, considering the removal of the Mill Creek's area on the ALS deployment, all calls were utilized in the analysis to examine a 10-minute response capability to replicate ALS delivery. Results found that a four-station configuration would be needed within the West/East Battalions to respond to all calls within 10-minutes. This is the exact deployment required with or without St. 76. Results are provided below.

Rank	Station	Drive Time	Station Capture	Total Capture	Percent Capture
1	31	10	2,738	2,738	40.54%
2	72	10	2,311	5,049	74.77%
3	33	10	862	5,911	87.53%
4	32	10	202	6,113	90.52%
5	72	13	212	6,325	93.66%
6	31	13	163	6,488	96.08%
7	33	13	29	6,517	96.51%
8	32	13	28	6,545	96.92%
9	77	13	4	6,549	96.98%
10	73	13	0	6,549	96.98%
11	71	13	0	6,549	96.98%
12	77	10	0	6,549	96.98%
13	73	10	0	6,549	96.98%
14	71	10	0	6,549	96.98%

