

BELLEVUE FIRE DEPARTMENT



2024 STANDARDS OF COVER COMMUNITY RISK ASSESSEMENT



BELLEVUE FIRE DEPARTMENT

Community Risk Assessment & Standards of Cover



Introduction	9
Executive Summary	10
Section 1 – Documentation of Area Characteristics	11
Legal Basis for Agency	11
Governance and Administration	11
2024 Organization Chart.....	12
Historical Perspective	12
Funding.....	14
Service Area and Jurisdictions Served	15
The City of Bellevue.....	15
Beaux Arts Village	17
The City of Clyde Hill.....	17
The Town of Hunts Point	18
The City of Medina	18
The City of Newcastle.....	18
The Town of Yarrow Point.....	18
Topography and Geology.....	18
Climate.....	19
Development.....	20
Section 2 - Description of Agency Programs and Services	22
Bellevue Fire Services	22
Population	22
Location of existing fire stations and companies	23
Resource Descriptions	24
Staffing Levels and Patterns.....	24
Automatic and Mutual Aid	25
Operations – Response.....	25
Suppression Response.....	26
Emergency Medical Service (EMS) Response.....	26
Technical Rescue Response	26
Hazardous Materials Response	27
Aviation Rescue and Firefighting	27
Marine and Shipboard Rescue and Firefighting	27



Wildland Fire Service	27
Other Programs and Services	28
Fire Prevention Division.....	28
Community Liaison and Public Information Officer	28
Office of Emergency Management (OEM)	28
Community Advocates for Referral and Education Services (CARES)	29
Community Satisfaction and Engagement	29
Community Loss and Save Data	30
Agency Goals	30
Insurance Rating.....	32
Section 3 - All-Hazard Risk Assessment of the Community.....	33
Geographic Planning Zones (GPZ)	34
Fire Station One	34
Fire Station Two	38
Fire Station Three	41
Fire Station Four	44
Fire Station Five	47
Fire Station Six	51
Fire Station Seven	54
Fire Station Eight	57
Fire Station Nine	60
Fire Station Ten (under construction).....	63
Other Hazards Considered in the CRA.....	67
City of Bellevue Neighborhoods.....	67
Response Strategies - Human Caused Events	68
Emergency Medical Incidents.....	68
Structure Fire	68
High-rise Fires	69
Vegetation Fires	70
Civil Unrest	72
Response Strategies - Biological, Geologic, and Metrological Hazards.....	73
Pandemic.....	73
Earthquake.....	74



Severe Weather	76
Response Strategies - Hazards to Infrastructure	78
Petroleum Pipeline Fire	78
Energize Eastside	80
Sound Transit Light Rail – 2 Line	81
Other Critical Infrastructure	82
Section 4 – Current Deployment and Performance	84
Critical Tasks	87
System Resiliency	87
Section 5 – Evaluation of Current Deployment and Performance	90
Performance Components	90
Discussion of Current Performance.....	90
Section 6 – Plan for Maintaining and Improving Response Capabilities	92
Ensuring Compliance/Validation of Response Plans	92
Performance Policy.....	93
Programs - changing demographics and vulnerable populations	96
Recommendations.....	97
Section 7 - Correlation of CRA-SOC Document to CFAI Accreditation Model	98
Correlation Matrix	98
Section 8 – Appendices	100
Appendix A - Critical Tasks and ERF Determinations.....	100
Low Risk.....	100
Moderate Risk	101
High Risk	102
Special Risk	104
Appendix B – 90th Percentile Performance	91
Suppression Performance	91
EMS Performance	94
HazMat Performance.....	97
Technical Rescue Performance	101
Appendix C – Performance Improvement Plan (PIP)	103
STEP 1	103
Step 2.....	105



Step 3.....	105
Step 4.....	105
Step 5.....	106
Appendix D - Service Level Objectives and Benchmark Thresholds	107
Suppression	107
Emergency Medical Services	108
Technical Rescue.....	109
Hazardous Materials Response	110



Figure 1 - 2024 Org Chart 12

Figure 2 - Historical Incident Volumes 13

Figure 3 - Bellevue Fire Budget 2024..... 14

Figure 4 - City Data 15

Figure 5 - Transportation Network 16

Figure 6 - Contract Cities 17

Figure 7 - Puget Sound Regional Weather..... 19

Figure 8 - Bellevue Fire Stations 20

Figure 9 - Current Deployment Model 23

Figure 10 - Mitigation Actions 28

Figure 11 - 2024 Budget Survey Results 29

Figure 12 - Cardiac Survival 30

Figure 13 - Fire Loss 30

Figure 14 - Fires Contained to Room of Origin 30

Figure 15 - Bellevue Fire Department Station Areas 33

Figure 16 – Station 1 34

Figure 17 - Station 1 area 35

Figure 18 - Station 1 Demographics 36

Figure 19 - Station 1 Community Change Snapshot..... 36

Figure 20 - Station 1 Heat Map and Critical Infrastructure 37

Figure 21 - Station 1 Responses..... 37

Figure 22 - Station 2..... 38

Figure 23 - Station 2 area 38

Figure 24 - Station 2 Demographics 39

Figure 25 - Station 2 Community Change Snapshot..... 39

Figure 26 - Station 2 Heat Map and Critical Infrastructure 40

Figure 27 - Station 5 Responses..... 40

Figure 28 - Station 3..... 41

Figure 29 - Station 3 Area 41

Figure 30 - Station 3 Demographics 42

Figure 31 - Station 3 Heatmap and Critical Infrastructure 42

Figure 32 - Station 3 Responses..... 43

Figure 33 – Station 4 44

Figure 34 - Station 4 Area 44

Figure 35 - Station 4 Demographics 45

Figure 36 - Station 4 Community Change Snapshot..... 45

Figure 37 - Station 4 Heatmap and Critical Infrastructure 46

Figure 38 - Station 4 Responses..... 46

Figure 39 - Station 5..... 47

Figure 40 - Station 5 Area 47

Figure 41 - Station 5 Demographics 48

Figure 42 - Station 5 Community Change Snapshot..... 49

Figure 43 - Station 5 Heatmap and Critical Infrastructure 49

Figure 44 - Station 5 Responses..... 50

Figure 45 - Station 6..... 51



Figure 46 - Station 6 Area 51

Figure 47 - Station 6 Demographics 52

Figure 48 - Station 6 Community Change Snapshot 52

Figure 49 - Station 6 Heatmap and Critical Infrastructure 53

Figure 50 - Station 6 Responses 53

Figure 51 - Station 7 54

Figure 52 - Station 7 Area 54

Figure 53 - Station 7 Demographics 55

Figure 54 - Station 7 Community Change Snapshot 55

Figure 55 - Station 7 Heatmap and Critical Infrastructure 56

Figure 56 - Station 7 Responses 56

Figure 57 - Station 8 57

Figure 58 - Station 8 Area 57

Figure 59 - Station 8 Demographics 58

Figure 60 - Station 8 Community Change Snapshot 58

Figure 61 - Station 8 Heatmap and Critical Infrastructure 59

Figure 62 - Station 8 Responses 59

Figure 63 - Station 9 60

Figure 64 - Station 9 Area 60

Figure 65 - Station 9 Demographics 61

Figure 66 - Station 9 Community Change Snapshot 61

Figure 67 - Station Nine Responses 62

Figure 68 - Station 9 Heatmap and Critical Infrastructure 62

Figure 69 - Render of Station 10 63

Figure 70 - Station 10 Location 63

Figure 71 - Station 10 Service Area 64

Figure 72 - Station Ten Demographics 64

Figure 73 - Station 10 Community Change Snapshot 65

Figure 74 - Station 10 Heatmap and Critical Infrastructure 65

Figure 75 - Station Ten Responses 66

Figure 76 - Map of Bellevue Neighborhoods 67

Figure 77 - Washington DNR WUI Map 71

Figure 78 - Seattle Fault Zone Map 74

Figure 79 - The Chain of Survival 86

Figure 80 - Times vs Combustion 87

Figure 81 - Unit Utilization Chart 2024 88

Figure 82 - May 2018 - June 2024 performance vs benchmark 91

Table of Figures



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Introduction

The following report serves as the Bellevue Fire Department Community Risk Assessment (CRA) and Standards of Cover (SOC). Its purpose is to identify, assess and document local needs and circumstances, risks, strengths, gaps, and response capabilities. This process will recognize changing risks, identify opportunities for improvement, help to justify current service levels, and illuminate needed enhancements to our programs.

The Bellevue Fire Department is dedicated to delivering a safe and effective response force to mitigate events requiring fire suppression, emergency medical and specialty technician-level response. This mitigation is best achieved by working with the community to provide, information, education, training, enforcement of codes and building engineering standards, economic incentives, and data-informed, focused outreach that prevents a situation from arising whenever possible. The department's accrediting body, The Commission of Fire Accreditation International (CFAI) defines the SOC as, "Those written policies and procedures that establish the distribution and concentration of fixed and mobile resources of an organization."

In conducting this CRA and creating this SOC, the department analyzed many factors: demographics, such as, population densities, community demographics, and community profiles; other factors like geography, climate, building design and structure, manmade hazards, fire-on-scene tasks, and both the type, quantity and distribution of emergency and non-emergency calls. This analysis both serves to quantify the risk to the community and better enables the department to evaluate changing risk. Therefore, establishing and managing performance standards which are data-informed and rooted in community expectations.

Additionally, by periodically performing this analysis, the department provides a more responsive outreach/mitigation strategy, tailored to the changing demographics and make-up of the community served. Performance reporting and program evaluation will demonstrate where the department is meeting its established standards, where shortfalls exist, and measure a programs efficacy in achieving its desired outcomes. Ultimately, the analysis of these factors leads to the justification of changes in the placement and staffing of fire department resources, the addition of new resources, the creation or modification of response plans designed to mitigate the effects of those events and the prioritization of effective outreach strategies that prevent and mitigate behaviors contributing to risk.



Executive Summary

The Bellevue Fire Department's fundamental role is to provide emergency medical, fire suppression, technical rescue, and hazardous materials response, as well as emergency management, fire prevention and public education. The goal is to prevent incidents, preserve, and protect both life and property, and minimize risk by educating our community. Since its formation in 1965, the department has evolved from a single station to a nine-station configuration serving a growing, vibrant, and diverse community. Throughout the years, we have been at the forefront of incorporating efficiencies and new services in response to changing demands and have built a reputation as a leader and innovator in the delivery of emergency services within our region.

We start with a description of how we began and how we have grown. Not only will each jurisdiction we serve be described, but unique facts about climate, population, development, and funding will be included.

The balance of this report will describe the resources we use to deliver our services along with how we staff and respond. One section will detail what the community thinks about our service and how our service is matched to community desires. Additionally, we will detail our strategies for engaging, educating, and ensuring our community has the necessary information to minimize the most probable types of risk.

The most important section of this report is the Community Risk Assessment (CRA). The CRA is an analysis of physical hazards, human related factors, and mitigating influences within our service area; each risk is quantified according to the likelihood of occurrence and consequence to both the community and the Fire Department. The CRA serves as the foundational tool for strategies and programs related to the mitigation of risk in the community and is vital to recognizing changing risk profiles within our service area.

The on-scene operations and critical tasks section describes in detail what our personnel do when they respond to an emergency. It is these required tasks that drive us to establish response plans designed to get the right number of firefighters and equipment to an emergency to have the greatest chance at a positive outcome.

This *Standards of Cover* document establishes performance standards and corresponding metrics designed to measure program performance and outcomes. These metrics will be reported and evaluated in concert with changing risks and system resource reliability to illuminate areas within the jurisdiction where the placement of additional resources, changing response strategies or additional community risk reduction (CRR) efforts would be most beneficial.

Finally, this document serves to.

- document the type of analysis performed,
- establish our intent to repeat this analysis at regular intervals that allow for corrective adjustments in response performance, resource positioning, staffing requests, outreach efforts,
- ensure that this analysis becomes self-sustaining by making it transparent, iterative, and repeatable for many years to come.



Section 1 – Documentation of Area Characteristics

Legal Basis for Agency

The Bellevue Fire Department was established on January 1, 1965, by the passage of Bellevue ordinance No. 698. In addition to the organizational structure provided in Bellevue City Code, additional rules and regulations exist in Washington State law found primarily in [RCW 35.103](#).

The Bellevue Fire Department exists as one of [16 separate departments](#) that provide municipal services through the City of Bellevue. Under the powers granted to cities and towns by [state law \(RCW 35.22.280\)](#), and under the [state law \(RCW 35.103.030 1a\)](#) that requires that they must have a written statement establishing the existence of a fire department, the City of Bellevue passed [Ordinance No. 6410](#), establishing the Bellevue Fire Department's existence as the provider of emergency fire service to the city of Bellevue.

Governance and Administration

Current [city code 3.35.010](#) creates and establishes a fire department which shall protect life and property from fire, inspect property for fire hazards and require their removal; enforce the ordinances for fire safety in places of public gathering; foster fire prevention, regulate the use of all combustible or explosive materials, regulate and restrain the use of fireworks, provide emergency medical services, and perform such other duties in the protection of life and property as directed by the city manager.

The City Council is the governing body for the City of Bellevue. The Fire Chief is the head of the Fire Department and serves as a member of senior management on task forces and committees participating in the City's strategic planning efforts and addressing City-wide policy and management issues. The Fire Chief reports directly to the City Manager and Deputy City Manager, who, in turn, inform the City Council. The Fire Chief may not initiate communication with the Council on matters related to Fire Department policies or planning, however, the Chief's [duties](#) include informing the Council on matters of budget, planning and policies when called upon while remaining accountable to the City Manager. The City Manager may also direct the Chief to prepare studies and reports that are eventually used to guide the policy decisions of the Council. This communication process is meant to prevent department heads from circumventing established lines of authority.

The city uses a "budgeting for outcomes" (also known as "priorities of government") process called "Budget One" to develop the city's budget. Budget One puts the emphasis on community expectations for government services, not how the city is organized (departments). The City Council approves and funds the budget proposals during the month of November in even numbered years.

The implementation of the Budget One process has given an additional level of accountability by requiring all city departments to give clear descriptions of their programs and service level objectives.

The success of the Bellevue Fire Department can be directly related to the professional oversight and assistance provided by the Administrative Staff. While small, this dedicated group is key to creating a supportive culture, initiating the organizational change needed to establish a High Performing Organization (HPO); directly impacting employee engagement. The Department's administrative structure has been largely unchanged for the past 10 years. However, the 2013-2014 budget cycle brought some consolidation of city services that allowed the Department to pass facility management and fleet maintenance to the City's Finance and Asset Management (FAM) department. The department, however, has continued to maintain oversight of all these functions.



2024 Organization Chart

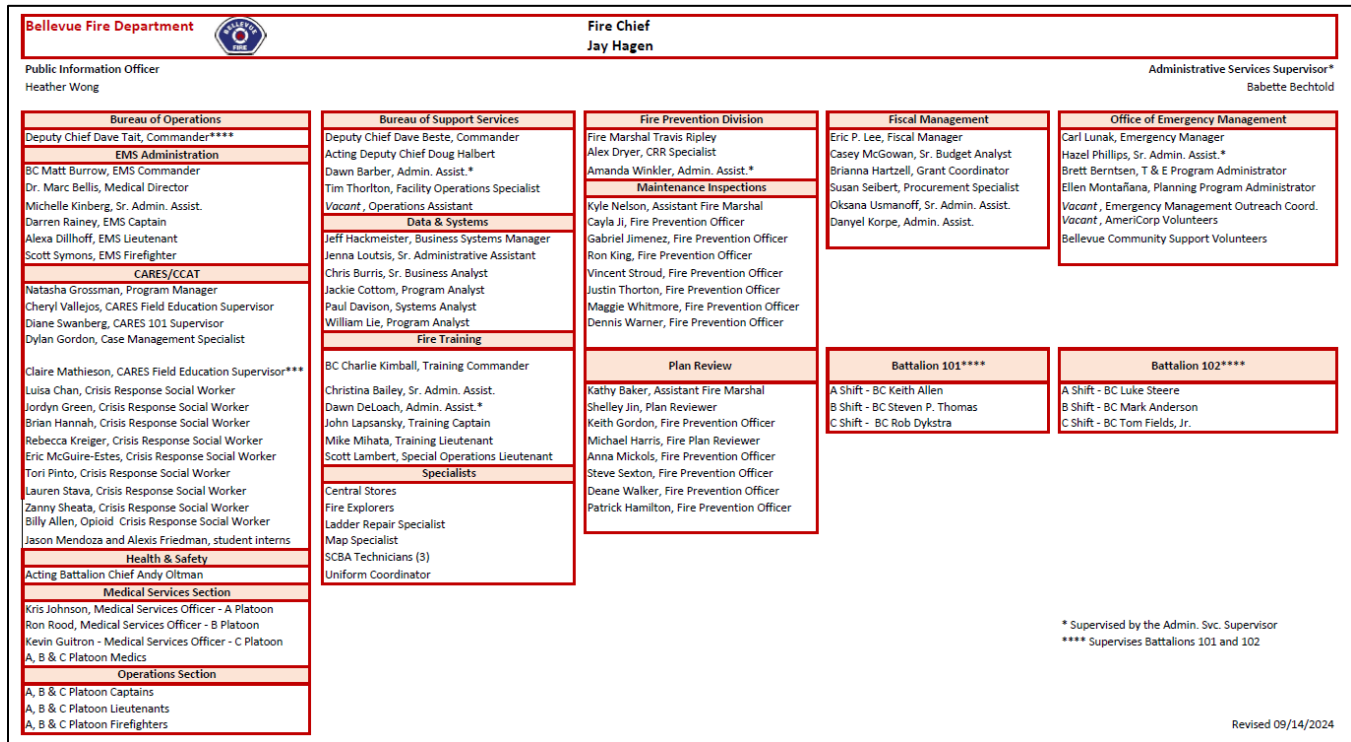


Figure 1 - 2024 Org Chart

Historical Perspective

The Bellevue Fire Department (BFD) was first organized in 1965 as an emergency response agency with one fire station and 16 employees, 12 of which worked a three-platoon 24-hour shift schedule. In 1969, the Department merged with King County Fire District 14, which added three additional stations, primarily staffed by volunteers.

The most significant fire department growth was a direct result of the 1979 Fire Protection Master Plan. This plan, adopted in principle by the City Council through the Public Safety Bond issue of 1980, provided an integrated means of addressing existing and future service-level needs within the fire department sphere of influence. The plan was a blueprint for providing a more consistent level of service to at least 80% of the city, instead of the existing 50% coverage. While the facility, resource and personnel growth afforded by the measure may have seemed aggressive at the time, it proved to be visionary and remains a vital part of our current service delivery.

In addition to the growth brought through increased investment, the city continued to [expand by annexation](#). The department also expanded through the contracting of services to neighboring jurisdictions. Some of the city’s greatest growth during the 1970’s came from the expansion of fire department services in the realm of prehospital care.

Prior to 1970, BFD was primarily focused on responding to fires, catastrophic emergencies, fire prevention, code enforcement, and education. At the time, limited effort was directed toward emergency medical incidents. A growing national movement and a concerted effort by residents and physicians put the Department in a place to respond by offering a comprehensive emergency medical response system for the community.



Bellevue began by sending several firefighters to Harborview Medical Center in Seattle to study under the guidance of doctors looking to change the way emergency services were delivered to the community. The [Medic One training program](#), as it is now known, was then in its formative stages. Upon completion of training, BFD placed its first Mobile Intensive Care Unit (MICU) into service in the fall of 1972.

The importance of expanding the fire departments emergency medical service (EMS) cannot be overstated. In 1965, emergency medical responses accounted for 7% of the Department's run activity. Today, EMS accounts for over 70% of emergency response activity. Early recognition of the public's desire for high-quality, emergency medical care is one of the great and lasting achievements of the Department. The Department, along with other regional Medic One providers, takes great pride in what is widely considered one of the most progressive and successful emergency medical response systems in the world.

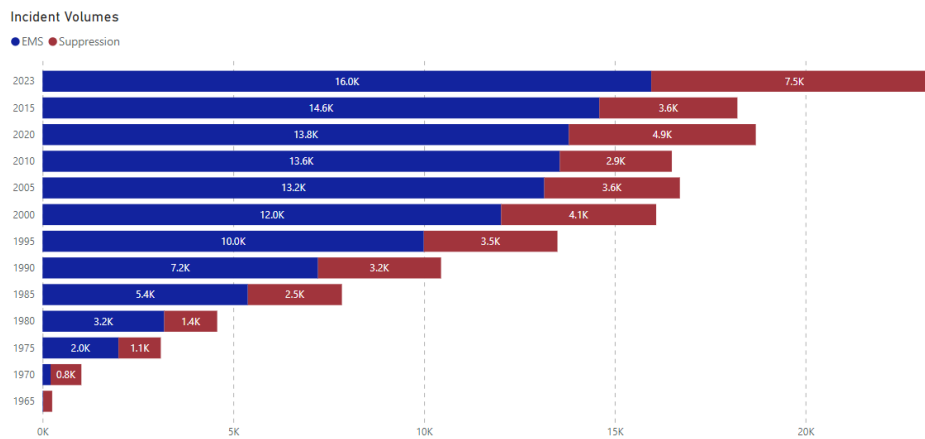


Figure 2 - Historical Incident Volumes

Throughout the period of EMS growth, the City's business and residential footprint expanded as well. In addition to the increasing fire response needs that this growth [city code 3.35.](#), the added importance of fire prevention and code enforcement became clear. The increasing complexity of commercial construction drove the City and Department to adopt modern building and fire codes designed to lessen the chances of major fire-loss disasters. The resulting proliferation of office high-rises and high-density residential occupancies, without a significant increase in fire incidents or fire loss, is proof of the effectiveness of the department's code enforcement and prevention programs.

Further proof of progressive code enforcement is found in the City's mandate for fire sprinklers in all new residential construction that exceeds 10,000 square feet. The city further incentivizes residential fire suppression in smaller homes by waiving service upgrade fees if homeowners install the systems. In 2024, the city also mandated installation of Firefighter Rescue Air Systems (FARS) for all new high-rise buildings.

Along with the delivery of emergency services, the events of September 11, 2001, the COVID-19 pandemic and recent incidences of civil unrest demonstrated the value of effective emergency management. The Department and community recognized the need for better planning considering the threats surrounding civil unrest, terrorism, natural disasters, pandemics, and other man-made catastrophes. Predating the heightened awareness caused by 9/11 and Hurricane Katrina, the department took several steps as far back as 1991 towards improving its response to these situations. The Fire Department's Office of Emergency Management (OEM) (originally Emergency Preparedness Division) was established to create a Comprehensive Emergency Management Plan (CEMP) designed to provide continuity of government and coordinate both City departments and regional authorities during a disaster. In addition, OEM began partnering with the community to help residents and businesses prepare for and respond to local disasters.



Funding

The City of Bellevue (COB) requires that departments submit budget proposals every two years. The Budget Office leads the development of the City's biennial budget through a process called budgeting for Strategic Target Areas, which are the City Council's priority areas that align the City's budget to achieve the City Council vision of "Bellevue 2035 – The City Where You Want to Be."

The process uses the same principles of the previous outcome-based "Budget One" process the City began in 2011-2012, but it focuses on Council/Community outcomes instead of departmental outcomes. This creates clearer alignment to the Council's vision. The emphasis on [City Council priorities](#), not department programs helps direct all departments in the same direction. [Budget Development \(sharepoint.com\)](#)

Administrative resources are in place to oversee the Department's four main functions: operations, prevention, administrative support, and emergency management. All those functions have their roots within the established fire department [mission, vision, goals](#) and objectives. There is some overlap within functions, as some resources perform multiple functions. For example, operations resources are engaged in fire prevention efforts through company level inspections. In addition, resources may have specialty roles within each function that directly address the department's mission, vision, and goals. An example would be operations resources are allocated to address both fire suppression and emergency medical service.

Bellevue Fire Department Budgeted Revenue & Expense

Revenues	2024 Budget
EMS Services - Basic (BLS)	\$4,414,778
EMS Services - Advanced (ALS)	\$11,697,244
EMS Services - Transport (BLS)	\$1,421,510
Ground Emergency Medical Transport (GEMT)	\$4,144,512
Fire Prevention - Inspection	\$865,439
Fire Prevention - Development Svc Plan Review	\$1,307,953
Fire Contract City Services	\$5,179,346
Hazardous Materials Fee	\$75,753
Other	\$11,107
Total Revenues	\$29,117,642
Expense	2024 Budget
Personnel - Salary & Benefits	\$55,553,960
Supplies	\$1,915,950
Contracted Services	\$2,272,452
Intergovernmental - External	\$1,673,762
Intergovernmental - Internal	\$12,332,471
Total Expense	\$73,748,595

Figure 3 - Bellevue Fire Budget 2024

While many jurisdictions would find it notable to have even 20 percent of expenditures from revenue, BFD's current ratio is almost 41 percent. The most notable sources of revenue come from the contracting of fire services, the funding from the



Medic One property tax levy, grant funding, Ground Emergency Medical Transport (GEMT) and Basic Life Support (BLS) transport fees.

Service Area and Jurisdictions Served

The City of Bellevue has an established jurisdictional boundary and a [Comprehensive Plan](#) that defines and documents those boundaries. King County established the original boundary when the City of Bellevue was incorporated in 1953 through King County Resolution #13925. Since then the City has expanded through a [series of annexations](#). The last annexation of unincorporated county land within the service area jurisdiction occurred in 2012. This annexation has resulted in fixing the City’s geographical boundaries, as all other boundaries are in direct contact with other city jurisdictions.

BFD directly serves the City of Bellevue and contractually provides services to six neighboring jurisdictions: Beaux Arts, Clyde Hill, Hunts Point, Medina, Newcastle, and Yarrow Point. Fire service contracts are subject to jurisdictional boundaries of the client cities and are constrained by either the City of Bellevue, other jurisdictions boundaries or geographic obstacles (lakes). These contracts are renegotiated every 10 years and approved by the Bellevue City Council and the governing bodies of the other communities. Annual performance meetings are held with all contract communities.

BFD is also [one of five ALS providers](#) in King County. The BFD ALS service area covers approximately 350 square miles.

The department has current [automatic and mutual aid agreements](#), contract for service agreements, and service level agreements that all support organizational objectives. Automatic aid agreements have been established with agencies immediately contiguous to the City of Bellevue. These agreements are reciprocal and cover all emergency responses into neighboring jurisdictions. The Department also has agreements in place for [state-wide](#) support.

Jurisdiction	2024 Population Estimate	Square Miles	2024 AV	YoY AV Change
Bellevue	155,000	31.97	\$92,718,111,139	(\$6,279,449,660)
Newcastle	13,750	4.45	\$5,248,343,092	(\$703,868,502)
Clyde Hill	3,100	1.06	\$4,204,183,951	(\$482,891,792)
Medina	2,920	1.44	\$6,648,319,406	(\$555,961,267)
Yarrow Point	1,135	0.36	\$2,079,288,981	(\$178,307,862)
Hunts Point	460	0.29	\$1,771,645,091	(\$109,178,455)
Beaux Arts Village	315	0.09	\$285,673,796	(\$29,666,485)

Figure 4 - City Data

The City of Bellevue

The city of [Bellevue](#) is the 5th largest of 281 cities in the State of Washington with a 2024 estimated population of 155,000. It is located on the east shore of Lake Washington near the population and geographic center of the Puget Sound region. It is just 11 miles east of Seattle and 40 miles north of Tacoma. Bellevue is surrounded by mountains, with the Cascades to the east and south, including Mount Rainer 60 miles to the southeast, and the Olympic Mountains to the west. Bellevue is roughly three hours south of Vancouver, BC and 2 hours north of Portland, OR along Interstate 5.

The city’s name is derived from a French term for “beautiful view”. Under favorable conditions, scenic vistas of the Olympic and Cascade Mountains can be viewed from hilltops and high-rise buildings within the city.

In Bellevue’s earliest years, it was primarily known as a “bedroom community” or an extended suburb of Seattle. Since then, the business and retail sectors have grown dramatically and have been the driving force behind the formation of a modern downtown core which today boasts over 1,400 businesses with about 55,000 employees that are creating a premier



regional economy. Over 145 of these businesses claim Bellevue as their headquarters. The [Central Business District \(CBD\)](#) is home to many well-known companies such as Symetra Financial, Eddie Bauer, Paccar, and Puget Sound Energy. T-Mobile USA is headquartered within the city but outside of the CBD in an area known as Factoria. Regional employers such as Microsoft, Amazon and Boeing have a substantial presence in Bellevue as well.

With over 160,000 jobs within the city, Bellevue was the second largest city in terms of employment in Washington State in 2020. [Over the past five years, more than 17,500 new jobs were created in Bellevue - a gain of 14.2%.](#)

Information Technology created nearly 5,000 jobs – accounting for more than a quarter of the new jobs in Bellevue. The industries with the next largest employment increases were Tourism (3,600 jobs); Health, Beauty & Fitness (2,600); Construction & Development (1,600); Retail (1,500); and Business Services (1,200). By 2035, the number of jobs in Bellevue is projected to exceed 200,000.

Bellevue is home to many well-educated residents, incredible K-12 schools, and two successful post-secondary educational institutions, Bellevue College, and the Global Innovation Exchange. With nearly 70% of adults holding a bachelor's degree or higher, Bellevue is the third best-educated city among the nation's 200 largest. Employers in Bellevue draw from a large, well-skilled labor pool that stretches across the Puget Sound. The strength of Bellevue as an employment destination is seen in the magnitude of its labor draw—90% of individuals employed in Bellevue live outside the city.

Bellevue community demographics are changing rapidly. In 2018, Bellevue became a majority minority city. A majority minority city is a community where the majority of its residents identify as [“people of color”](#). Over 37% of Bellevue residents were born outside the U.S., 42% of the Bellevue population speak a language other than English at home and there are over 99 languages spoken in the Bellevue School District.

The city has grown significantly over the past 25 years. Bellevue now has more than 35 million total square feet of office space, a half of which is located downtown. Amazon currently leases over 100,000 SF of space in the Centre 425 building and is announced plans to move over 25,000 jobs into three new office towers next to the Bellevue Transit Center and Downtown Bellevue light rail station. This station, along with 7 others, opened in 2024 as the start of Sound Transit's 2 Line which will eventually connect Redmond to downtown Seattle through Bellevue. Much of this new development supports premier regional shopping complexes such as the [Bellevue Collection](#) and [The Bravern](#).

The city lies between Lake Washington to the west and the smaller Lake Sammamish to the east. Much of Bellevue is drained by the small Kelsey Creek watershed, whose source is in the Larsen and Phantom Lake green belt and whose outlet is near where Interstate 90 meets Lake Washington's eastern shore.

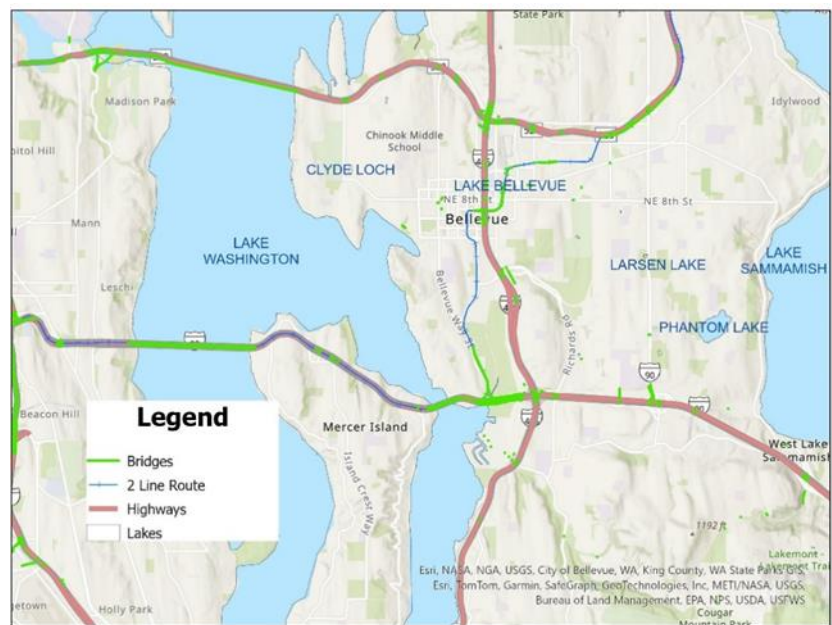


Figure 5 - Transportation Network



The city is bisected by Interstate 405 running north-south, and the southern portion is crossed from east to west by Interstate 90. The State Route 520 freeway roughly delineates the northern reaches of Bellevue. South of I-90 the city surrounds the most recently annexed area of Eastgate. South of Eastgate, the city continues up to the western flanks of Cougar Mountain. On top of Cougar Mountain exists the recently incorporated area called Hilltop and to the west of Cougar Mountain are the Somerset, Coal Creek and Factoria neighborhoods.

Bellevue is bordered by the cities of Kirkland to the north and Redmond to the northeast near the Overlake and Crossroads neighborhoods. Across the short East Channel Bridge, I-90 connects Bellevue to Mercer Island to the southwest. The City of Issaquah lies to the east, along I-90 at the south end of Lake Sammamish. At the south end of Bellevue lies the City of Newcastle, which contracts with Bellevue for its fire protection. Beyond the south end of Newcastle lies Renton.

Beaux Arts Village

Incorporated in 1954, [Beaux Arts Village](#) is located on the eastern shore of Lake Washington just north of the I-90 east channel bridge. With its population of around 300 residents, Beaux Arts is one of the smallest municipalities in Western Washington, yet its proximity to Seattle and the Eastside help make it a highly desirable place to live. The total land area is only 0.1 square miles.

Residents relish the “small town” feel of Beaux Arts Village, referring to themselves as “Villagers” since well before incorporation. The streets are narrow, and tree lined. The community is 100 percent residential, and the homes are an eclectic mix of new and vintage, old-fashioned and modern. Beaux Arts Village was founded in 1908 as an artists’ colony and named after the Western Academy of Beaux Arts, to which its founders belonged. At the time, one could purchase membership in the Academy for \$200. Today, membership in the Academy comes with home ownership.

The City of Clyde Hill

The City of Clyde Hill is in the northwest corner of the department’s service area and is also the home of Fire Station 5. The majority of Clyde Hill is zoned for single-family use, apart two commercially zoned parcels – a gas station and a coffee shop. In addition to a small governmental zone, the city is home to two Bellevue Public Schools (Clyde Hill Elementary School and Chinook Middle School) and two private schools (Bellevue Christian School and Sacred Heart School).

Clyde Hill exists on 1.06 square miles with a 2024 estimated population of 3,100. The city’s minimum lot size is 20,000 square feet, although many smaller lots exist from before incorporation. Clyde Hill is best described as a low-density residential community, and its minimum lot size requirement is meant to preserve that look and feel. The city works to retain and maintain the original spacious and wooded character of the community and to remain relatively small, simple, and intimate.

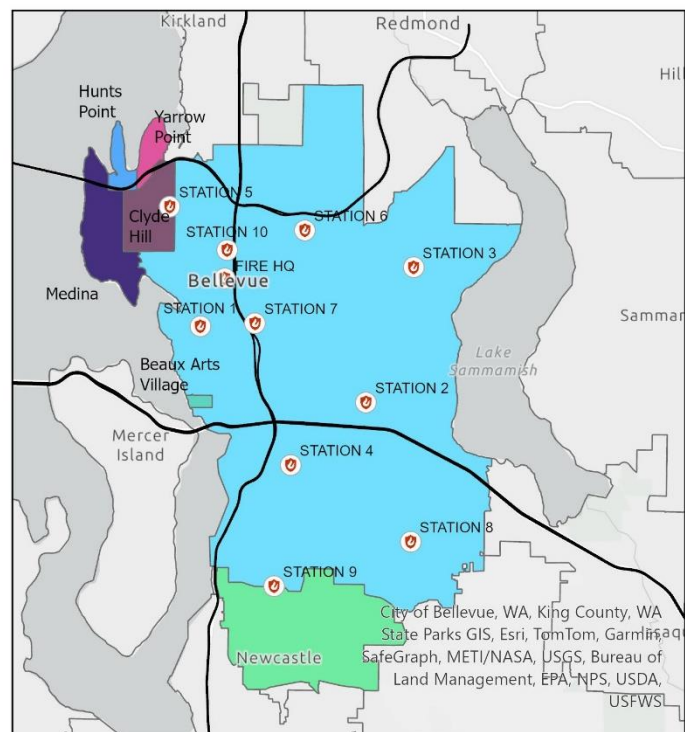


Figure 6 - Contract Cities



The Town of Hunts Point

The [Town of Hunts Point](#) is located on the middle of the three land peninsulas that make up “The Points communities”. It was incorporated in 1955 and still is comprised of its original 0.3 square mile. There are 186 housing units, 165 households and 420 residents. Except for the community center and town hall, the rest of the community is zoned residential. A drive down the community’s [main access road](#) will show that the typical house is set back from away from the road and down towards the water on long, narrow lots.

The City of Medina

[Medina](#), along with its neighboring cities of Hunts Point and Yarrow point, is often referred to as the “Eastside Gold Coast”. This predominantly affluent community occupies 1.44 square miles along the eastern shore of Lake Washington and offers some of the best western views of Seattle. Like its immediate neighbors, the city is almost completely residential except for a small convenience store, a post office, gas station, one public elementary school, two private elementary schools, a country club/golf course, and a town hall. There are 1,165 dwelling units and 1,111 households with a population of 3,300.

The City of Newcastle

[Newcastle](#) extends across the southern border of the City of Bellevue and is just north of the City of Renton. Incorporated in 1994, one of its first actions was to begin contracting for fire suppression and EMS services from the Bellevue Fire Department, changing from a fire district that was affiliated with the Renton Fire Department.

The community is predominantly residential. However, unlike the other contract communities that BFD serves, Newcastle has a growing commercial zone with multiple grocery stores, shops, and small businesses. Recently, an assisted living facility focusing on the Asian community has been built. Perhaps the most notable point of interest here is the [Golf Club at Newcastle](#), a premier public golf course with stunning views of Bellevue, Seattle and the Olympic Mountain ranges.

The city has 3,150 housing units, 4,396 households and 2,215 families with a population of 12,870. Its total land area is 4.45 square miles.

The Town of Yarrow Point

The easternmost of “The Points communities”, [Yarrow Point](#) lies on another peninsula extending into Lake Washington just north of Clyde Hill. First homesteaded in the late 1880’s, the Town was incorporated in June 1959 to preserve its unique characteristics in the face of significant changes throughout the greater Puget Sound region. While one-fourth of the homes in Yarrow Point enjoy waterfront locations or water access, the remaining three- quarters offer views ranging from expansive to territorial.

The town is zoned residential apart from a town hall. There are 393 housing units over its 0.36 square miles. 2020 census estimates reflect a population of 1,030 people.

Topography and Geology

The service area is situated in Western Washington and is part of what is commonly referred to as the Puget Sound region. The waterways of the [Puget Sound](#), along with the [Cascade](#) Range to the east and the [Olympic mountains](#) to the west are its major geographic features.

The service area is mostly low and modestly rolling hills situated between Lake Sammamish to the east and Lake Washington to the West. The lack of a sizable watershed means that the few streams that drain into the surrounding lakes are small and not prone to urban flooding.



Elevation varies from near sea-level to about 1,400 feet on the slopes of Cougar Mountain, which is in the southeast area of the city. Elevation differences become more evident in the winter months when it is not uncommon to get a dusting of snow on the higher hilltops while the lower areas remain untouched.

Thirty miles directly to the east are the foothills and mountains of the Cascade Range. Formed mainly through volcanic and tectonic forces, the Cascades form both a geographical and climatological border between the western and eastern portions of the state of Washington. Sixty miles to the southeast is Mount Rainer; the most prominent Cascade Range feature with its 14,410-foot peak visible on clear days.

The hills and lakes in and around the service area were mainly formed through glacial processes and the lack of rocky outcroppings and firm bedrock indicates most of the area is a form of deposited glacial till.

Seismic activity is not uncommon as the region is crisscrossed with several major and minor fault lines. Most notably is the [Cascadia subduction zone](#) which is located off the western coast of Washington and has been known to cause earthquakes more than 8.0. The last major earthquake associated with this fault occurred in 1700 and historic intervals for these quakes are between 300-600 years apart. The next major earthquake associated with this fault is expected to produce widespread destruction throughout western Washington.

Climate

The climate is typically described as coastal mild. The 47th northern latitude would normally lead to appreciably hot summers and equally cold winters. But the proximity to the Pacific Ocean and Puget Sound means that temperatures are moderated, and extremes are rare. When temperature extremes occur, they typically last for short periods as the weather patterns that brought them are typically fast moving and infrequent.

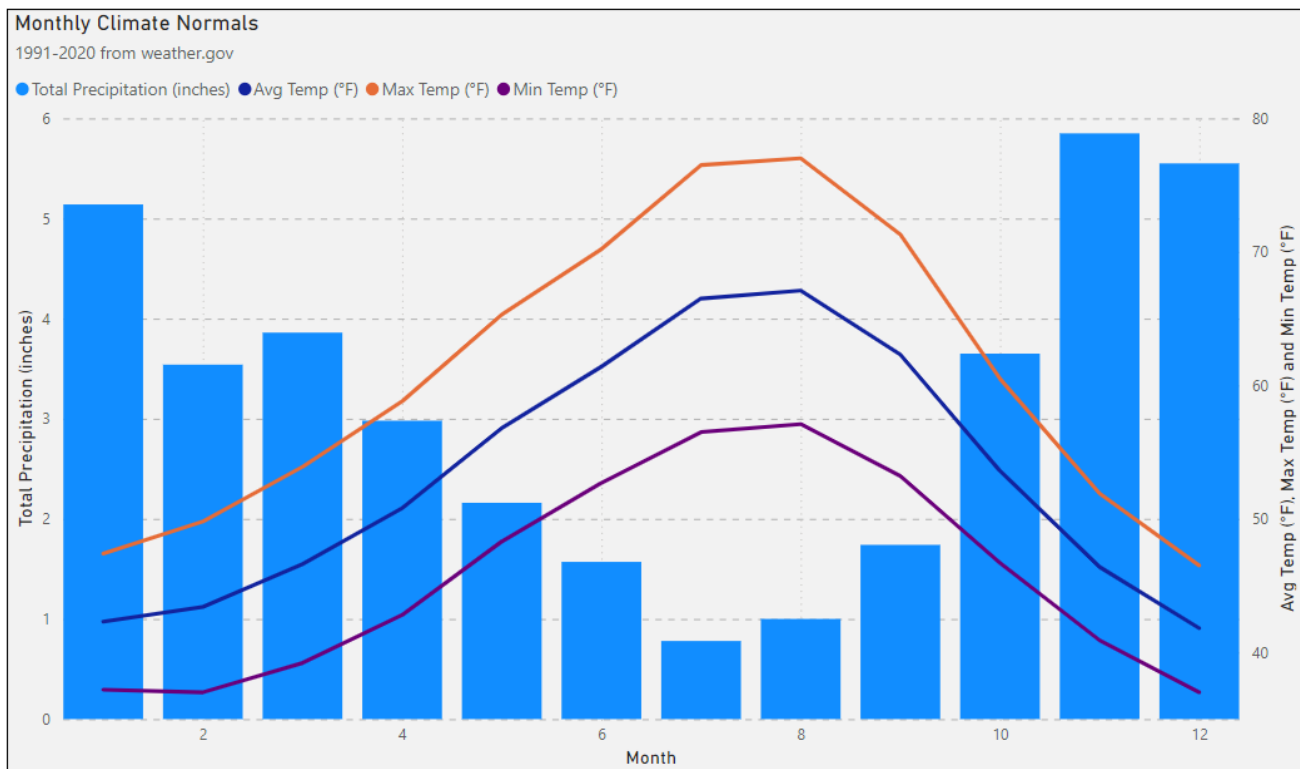


Figure 7 - Puget Sound Regional Weather



Development

The City of Bellevue and its contract jurisdictions are unique when compared with other cities of similar size. As an urban environment, the area's residential and commercial areas are very prominent, but noticeably absent are the manufacturing, transportation, and agriculture sectors. The city's light industrial area known as the "[Spring District](#)" is home to two beverage bottling plants and a milk and ice cream plant. Most remaining businesses are smaller and mainly service the needs of the surrounding community (e.g. automotive repair, sales, home construction, and various services). Development master plans for the Spring District are replacing what little light industry remains with Transit Oriented Development (TOD), a mixture of residential and business construction with an emphasis in urban concentrations around planned rail stations. Currently, expansion of light rail transportation to Bellevue and neighboring cities is ongoing.

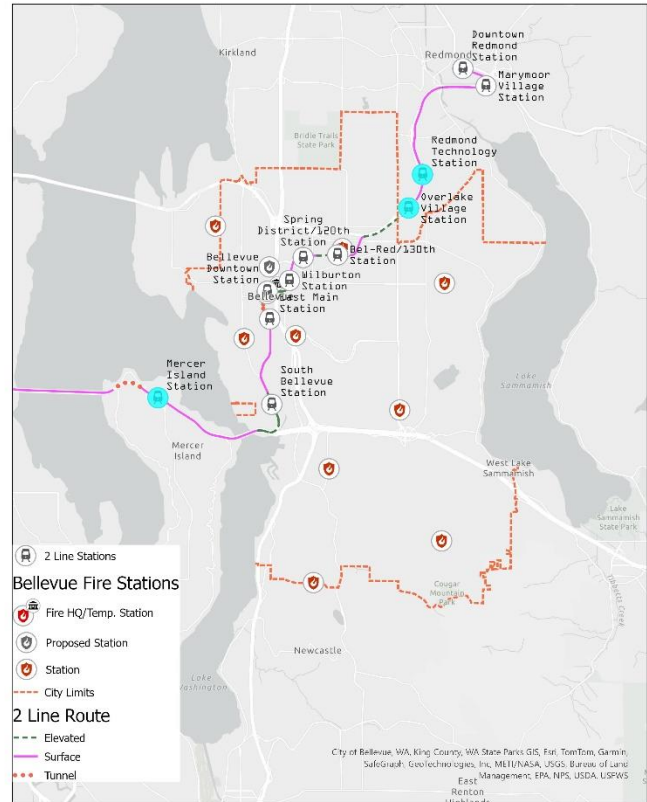


Figure 8 - Bellevue Fire Stations

In April 2024, Sounds Transit opened the first segments of the [2 Line](#). Currently connecting the Redmond Technology Station to the South Bellevue Station, this light rail line will eventually connect downtown Redmond to downtown Seattle, including the six current stations in Bellevue and a first of its kind crossing of Lake Washington on the Interstate 90 floating bridge. Additionally, a light rail [Operations and Maintenance Facility - Eastside](#) (OMFE) has opened on the edge of the Spring District adjacent to the former BNSF rail line. This facility is designed to maintain, store, and deploy up to 96 rail vehicles.

Also, noticeably absent is the lack of a freight rail corridor and airport. The only rail line through the area was decommissioned in 2009 after the removal of a vital bridge during a highway widening project. The small amount of freight that used the line was redirected onto roads or alternate rail lines. The new light rail alignment will briefly run next to this previous rail line, but much of this alignment has been converted into a bicycle/pedestrian corridor. The area's air transportation needs are served by two airports, Sea-Tac International a 20-minute drive to the south, and Paine Field a 30-minute drive north.

The development within Bellevue's central business district (i.e. high-rise area), has driven the city's population and valuation growth. Since the 2009-2013 downturn, [construction in the CBD and elsewhere in the City](#) has proceeded at near historic levels and shows no signs of abating in the near future.

The driving force behind this development is the number of high-tech jobs related to Microsoft, Amazon, and other major players in the technology sector. Employers in that sector have found that their workforce's have specific office, urban and social needs. Bellevue's development in recent years has attracted these businesses because their employees find the



housing, recreation, entertainment, and infrastructure appealing. Bellevue’s governing leaders are driven to create a competitive tax structure, pro-business environment and efficient/responsive government to foster this growth.

COB reached the limit of its growth boundaries with the [last annexations](#) of unincorporated area occurring in 2012. Now confined to its borders, growth is still expected as properties are fully developed or redeveloped. The recent trend in residential single-family development is that houses built in the 1950’s are razed, and modern, larger ones are constructed. The growth of higher-density housing is also significant as urbanization continues. The manifestation of urban growth has been the increase in the “five-over-one” buildings (upper floors built with type- 5 construction for residential use and a ground-level built with type-1 construction for retail/business) over the past 12 years. In late 2017, the City Council approved a modification to height restrictions within the CBD, raising the limit for designated portions of the city to 600 feet from 450 feet. Currently, a number of [600 foot towers are in the development pipeline](#).



Section 2 - Description of Agency Programs and Services

Bellevue Fire Services

The services provided by BFD include:

- Fire Suppression
- Emergency Medical Services
 - Basic Life Support (BLS), first response and transport
 - Advanced Life Support (ALS), first response and transport
 - [CARES](#) – Community Advocates for Referral and Education Services
 - [CCAT](#) – Community Crisis Assistance Team (in partnership with Bellevue PD)
- Hazardous Materials “Technician Level” Response
- Technician-level Specialized Rescue: trench, confined space, rope, vehicle, structural collapse, and surface water
- Public Education/Outreach
- Fire Prevention Division (FPD)
 - New construction plans review
 - New construction inspection
 - Fire and Life Safety inspection
 - Fire Investigation
- City-wide Emergency Management

The basic organizational structure for these services can be found in our [departmental organizational chart](#).

Population

The Department’s service area is part of the [Seattle-Tacoma-Bellevue Metropolitan Statistical Area](#) and is classified as “urban”. While the downtown core has achieved a population density placing it in the metropolitan classification, the total jurisdiction population remains under the 200,000-resident threshold needed for the higher rating. The CBD contains the two (2) U.S. Census Tracts located in our service area that exceed population densities of 12,500 individuals per square mile and have been designated “high density” for response time purposes.

The remainder of the service area averages population densities of 4,600 per square mile. Although there are areas in the Crossroads neighborhood with much greater population densities.

Apart from the CBD, population densities, the recurrence and location of incidents indicate a mostly uniform risk level throughout the remainder of the service area.



Location of existing fire stations and companies

BFD operates out of nine stations within our service area, with a tenth station under construction in the downtown core. Additionally, four medic units are staffed with Bellevue firefighter/paramedics that operate out of four locations. Two locations are within the Fire Department coverage area, at Fire Station 2 and Overlake Hospital. The other two medic units operate east of the department's jurisdiction in East Side Fire and Rescue stations, they serve the ALS needs of those communities. On-duty staff operate under two Battalion Chiefs (BCs); however, medic resources operate under a shift supervisor (Medical Service Officer (MSO)), that oversees their needs and activities.

Fire Department administration offices are located at [Bellevue City Hall](#). While Station 10 is under construction, City Hall serves as the day-time location for Engine 110.

Station maps show what is historically referred to as "first-due" area. Currently computer aided dispatch (CAD) sends responders to nearby calls by using automatic vehicle locators (AVL) that transmit GPS locations of each available unit. Once the CAD determines the exact location of an emergency, it assigns and notifies the closest response unit. The address and staffing of each station are listed below.

Station Neighborhood	Location	Companies	Staffing
Station 1 <i>Enatai, Downtown</i>	766 Bellevue Way SE, 98004	Battalion 101 Engine 101 Aid 101 (BLS) CARES 101 CCAT	2 3 2 2 1 MHP and 1 Officer
Station 2 <i>Eastgate</i>	2802 148th Ave SE, 98007	Engine 102 Aid 102 (BLS) Medic 102 (ALS) MSO 105 MCI One	3 2 2 1 cross/select
Station 3 <i>Crossroads</i>	16100 NE 8th St, 98008	Ladder 103 Aid 103 Rescue 103	5 2 cross/select
Station 4 <i>Factoria/Somerset</i>	4216 Factoria Blvd. SE, 98006	Engine 104 Battalion 102	3 1
Station 5 <i>Clyde Hill/Points</i>	9621 NE 24th St, 98004	Engine 105	3
Station 6 <i>BelRed/Overlake</i>	1850 132nd Ave NE, 98005	Engine 106 Aid 206 HM 106	3 2 – OT PT cross/select
Station 7 <i>Wilburton</i>	11900 SE 8th St, 98005	Ladder 107	5
Station 8 <i>Lakemont</i>	5701 Lakemont Blvd. SE, 98006	Engine 108 Air Unit 108	3 cross/select
Station 9 <i>Newport/Newcastle</i>	12412 Newcastle Way, 98006	Engine 109	3
Overlake Hospital	1035 116th Ave NE, 98004	Medic 101 (ALS)	2
Outside City Medic Units			
<i>Issaquah</i>	1280 NE Park Dr., Issaquah 98029	Medic 104	2
<i>North Bend</i>	112 W Second St., North Bend 98045	Medic 103	2

Figure 9 - Current Deployment Model



Resource Descriptions

Battalion Chief - A BC shift commander responsible for the supervision of all personnel in the battalion. In 2023 the department activated a second battalion position (B102) to cover the south side of the city. B102 is a unit of one, while B101 is assisted by a Staff Firefighter who serves as driver, manages personnel accountability, and assists during incidents. B102 is partially funded and is in service 299 days per year. The days B102 is not in service are referred to as “gap days”. B101 becomes the point of contact during gap days.

Engine Companies – The department currently staffs seven fire engines that specialize in fire suppression and EMS. These resources are equipped with a fire pump, hose complement, and a 500-gallon water tank. Bellevue’s fire engines are rated at a minimum of 1500 GPM.

Ladders/Trucks - The Department currently staffs two ladder companies. Both ladders are tillered aerial trucks and they respond with an engine. The ladder has 4 personnel, and the engine (pump) has 1. It is considered a ladder company but can handle a first in fire as an engine with 5 people. Generally, their role is to support fire ground operations with ventilation, search, rescue, forcible entry, salvage, overhaul, and general ladder operations. The ladder companies are also our technical rescue response team trained to technician level in trench rescue, confined space rescue, rope rescue, structural collapse, machinery rescue, and vehicle extrication.

Aid/Medic Units – The Department currently provides BLS transport services through the deployment of three Type I/Type III ambulances. ALS services are provided through the deployment of four Type I/Type III medic units.

The primary role of these units is the treatment and transport of sick and injured people as defined by emergency medical dispatch protocols.

Medical Services Officer (MSO) -The MSO is a 24-hour shift officer that is responsible for supervision of all on-duty ALS medic personnel as well as assisting, as needed, on EMS responses. The MSO is an operations officer and may also fulfill fire-scene duties such as medical group supervisor or safety officer.

Rescue - A specialty apparatus that carries additional technical rescue equipment used in specialty rescue situations. While the ladder/tiller apparatus has some vehicle extrication and rope rescue equipment, the rescue apparatus has additional equipment for trench rescue, structural collapse, and confined space rescue. The rescue is cross/select staffed by on-duty personnel.

HazMat - A specialty apparatus that carries equipment needed for a technician-level hazardous materials response. The hazmat apparatus is cross/select staffed by on-duty personnel.

MCI (mass casualty incident)-The Medical Supply Unit (MCI 104) is a specialty apparatus that carries equipment needed for a mass-casualty incidents (MCI). MCI 104 is cross/select staffed by on-duty personnel and is housed at Station 4.

Air Unit - The air unit is a specialty apparatus that is capable of refilling self-contained breathing apparatus bottles (SCBA) and performing rehab and decon at a fire scene. The air unit is cross/select staffed by on-duty personnel.

Staffing Levels and Patterns

BFD minimum daily staffing is 39 suppression personnel and 9 ALS (medic) personnel. All suppression and medic personnel work 24-hour shifts currently on a 48/96 schedule.

The use of “acting above grade” positions ensures that companies are staffed with appropriately qualified personnel. A firefighter may fill an acting officer and/or driver role while regularly assigned personnel are on compensated leave. Actors



must meet basic training requirements and complete skills during an evaluation period that prove they are able to perform the duties of the position. The use of acting positions also meets a departmental goal of succession planning by developing skills in firefighters prior to being promoted.

Compensated leave in the form of vacations, holidays and Kelly days are scheduled a year in advanced and are subject to rules designed to minimize department exposure to overtime. In addition, leave is restricted when specialty skills are required to staff a company. For example, the company officer and engineer on a crew may not take the same day off to ensure that someone with area knowledge is either driving or navigating.

Engine companies are staffed with three personnel: a company officer, engineer/driver, and a firefighter. Staffed aid cars (BLS) and medic units (ALS) have two personnel assigned of firefighter/EMT or FF/paramedic rank. Ladder 103 and Ladder 107 are staffed with 5 personnel and the normal response is with two apparatus: a tillered aerial and an engine.

The Battalion Chiefs, designated as Battalion 101 and 102, responds in a command apparatus with a firefighter staff assistant as the driver for Battalion 101.

All suppression personnel are trained to the EMT-D Basic level and are certified through King County EMS. The paramedics that staff the medic units are trained through the [King County Medic One](#) program and are also nationally certified. Bellevue is [one of five ALS providers](#) in the county.

Automatic and Mutual Aid

BFD and the fire agencies dispatched by NORCOM operate under automatic/mutual aid agreements, use AVL and strive to ensure inter-operability. King County has designated geographic regions of the county as Zones, and Bellevue is in Zone One (1). Other Zone 1 fire agencies include Bothell, Duvall (joining Eastside Fire and Rescue January 2025), Eastside F&R, KCFD 27, Kirkland, Redmond, Shoreline, Snoqualmie, and Snoqualmie Pass. Discussions are continuous in Zone 1 on how to best ensure seamless response and inter- operability across geographic boundaries, as all the agencies in the Zone recognize the need to minimize obstacles in emergency situations.

Mutual aid responses are specified in the King County Fire Resource plan. The department can both request and provide resources to regional task forces and strike teams under the agreements in the plan.

Operations – Response

An emergency response is typically broken down into the following sequence of steps:

- **Dispatch:**
 - **Call Answering:** begins when a phone call is initiated into the 911 system and ends when the call is connected to and answered at a dispatch center. In 2023, NORCOM reported that [96% of calls were answered within 15 seconds](#).
 - **Call Processing:** begins with phone pickup in the dispatch center and ends when the information from the phone interview is sent to the CAD (Computer Aided Dispatch) to determine an initial response.
 - Each call is classified into “problem/nature code”. The CAD automatically classifies the problem based on its scope and location with an “incident type”. Location is important because most properties have risk classifications that will affect the incident type (e.g. the difference between a single-family residential AFA and a high-rise residential AFA). Once the incident type is determined, a pre-determined response plan is selected by the CAD.



- **Unit assignment and Unit notification:** This step is nearly instantaneous since the CAD uses the jurisdiction-specific response plan to assign the needed response apparatus to the emergency. Additionally, the CAD uses AVL (GPS) information to assign the closest available units. After assignment, [Locution](#) almost simultaneously notifies all assigned response units through an automated voice in the station and alphanumeric personal pagers. An automated voice is also sent out over an 800 MHz dispatch radio channel when airtime is available. However, station and pager notification always precede the 800 MHz notification.
- **Turnout:** Upon notification, personnel proceed to apparatus and, if needed, don protective clothing for the emergency response. Once personnel are seated in the vehicle and ready to respond, a touchscreen entry on a mobile data computer (MDC) or a voice report over an 800 MHz tactical channel will notify the dispatch center that they are responding.
- **Travel:** While driving to the call, crews may read updated information over the MDC or may receive important voice messages from a dispatcher over the tactical channel. Dispatchers can monitor the locations of response units and their progress toward the incident. The crew will use an MDC touchscreen or voice report to indicate arrival on scene. First-arriving crews on major emergencies are expected to give appropriate voice size up reports in lieu of touchscreen notifications.
 - **Vertical Travel:** This is a special time component not in the ACR timetables. It exists in the benchmark threshold statements for high rise addresses only, and any variance reports only, until we report single incidents in the SIB dashboard in the future.

Suppression Response

Suppression calls are dispatched according to pre-determined suppression response plans. In the event of extreme call volume (e.g. severe weather, power outages, etc.) the on-duty battalion chief, or higher, may enact a “resource emergency”. During a resource emergency, automatic fire alarms and most low risk incidents will only receive a single-engine response and emergency incidents will take priority.

Emergency Medical Service (EMS) Response

EMS providers in King County use a “tiered EMS response” through the Medic One System that is internationally known for its proficiency and success rates. 911 calls are answered at the call center where trained dispatchers using focused questions employ a criteria-based system to determine both the nature of the call and the appropriate level of care that is needed. High-risk life-threatening emergencies such as cardiac events and trauma with shock receive a higher response with both the nearest BLS suppression crew (either aid, engine, or ladder/truck) and the nearest ALS Medic unit. Lower risk calls (e.g. falls less than 10 feet, broken bones without shock, anxiety, etc.) are handled by the closest BLS crew only. These tiered-response plans meet several performance goals, primarily, the ALS responders will only respond on calls where their advanced skills are most needed, and lower risk-but-more-frequent calls are handled by BLS responders. A secondary benefit is that fewer paramedics are needed, and training costs are reduced.

Technical Rescue Response

Technical rescue responses are provided by ladder/truck personnel responding from Stations Three and Seven. These personnel are trained to the Technician level in, confined space, rope, structural collapse, trench, and vehicle extrication. The remainder of BFD Operations personnel are trained to an awareness or operations level depending on technical rescue response.



The department also performs surface water rescue. Technicians in surface water rescue are trained to receive a national certification from PADI (Professional Association of Diving Instructors) as a rescue swimmer. Water rescue technicians are not specifically stationed at one station.

Hazardous Materials Response

Hazardous materials response is accomplished through standard suppression program response plans for low and moderate risk incidents. High and special risk incidents receive technician response through a consortium of agencies comprising what is known as the [Eastside Hazardous Materials Group](#) (EHMG). BFD has participated in EHMG for over thirty (30) years and houses one of the two dedicated HazMat apparatus at Fire Station Six.

Personnel at Station Six are trained to the Haz-Mat Technician level and provide a cross-staffed response capability for Technician-level Haz-Mat incidents. BFD is the only member of EHMG that currently requires that a HazMat Technician always be on-duty. To assemble the number of technicians required to mitigate a High or Special risk incident, NORCOM will group some EHMG member agencies, who will then respond with all available on-duty technicians. The remainder of BFD Operations personnel are trained to an Awareness level on HazMat response.

Aviation Rescue and Firefighting

There are no aviation facilities in the service area and BFD has had very few aviation related incidents (2) in the last thirty plus years, therefore, this program is not addressed in this document or in our response plans. Of the two incidents, one was a float plane failed take-off and was handled as a surface water rescue, and the second was a Cirrus aircraft with a deployable parachute that was activated by a student pilot. These two incidents do not rise to the level of needing a full response plan for aviation incidents and were handled with general rescue response plans.

Marine and Shipboard Rescue and Firefighting

There are no commercial marine facilities in the service area and BFD has not experienced a commercial marine related incident in the last twenty plus years. Private waterborne vehicle fires and medical incidents are addressed by mutual aid agreements providing marine unit capabilities through, Mercer Island Fire, Seattle Police, Seattle Fire, and Renton Fire. Therefore, this program is not currently addressed in this document or in our response plans. In 2024 we received a donation from a foundation that will be used to develop our water rescue program to include watercraft that can respond to surface water rescues beyond the point that our rescue swimmers can cover.

Wildland Fire Service

Wildland Fire is a prevention and mitigation program and has not have had significant response / incident volume in 2018-2024; however, the prevalence of combustible material near structures has not been historically identified as a target hazard. The jurisdiction has not experienced a significant wildland fire incident in its history, as of 2024; however, we are able to predict a future event will occur, given the number of brush fires, bark fires and vegetation fires with seasonal frequency. The wildland program exists to provide wildland specialty training to fire department members annually with a distribution of specialty red card wildland technicians throughout the department across all platoons and station assignments who can offer additional perspective and insight when the need arises. Valuable experience is gained on large scale incidents through mobilization of personnel and resources around the Pacific Northwest during annual fire season. The program engages in community risk reduction activities aimed at identifying target hazards within the natural, built, social and response environment.

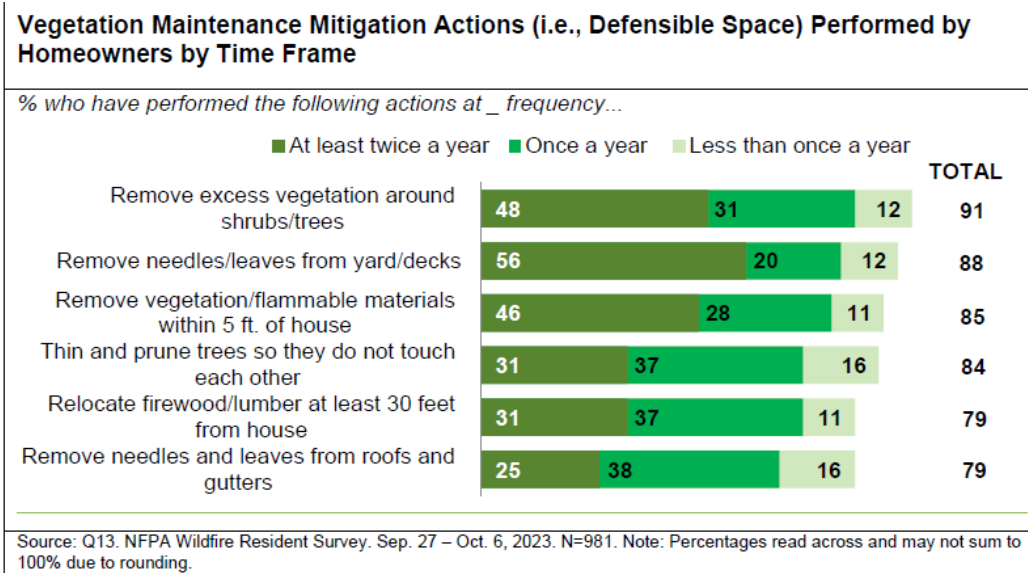


Figure 10 - Mitigation Actions

Other Programs and Services

Fire Prevention Division

The [Fire Prevention Division](#) exists to assist the public in the protection of life and property by minimizing the impact of fire, medical emergencies, and potential disasters or uncontrolled events that affect the community and environment. The division is responsible for investigating fires, fire prevention activities, and community risk reduction. The functions of plan reviewer, construction inspection, fire investigation, maintenance inspection and community risk reduction and outreach are all performed by a team of 18 highly qualified individuals. In 2023, Fire Prevention evaluated 2,916 sets of construction documents and inspected nearly 8 million square feet of new construction projects. In existing structures, 4,018 occupancy inspections were conducted – 1,593 by firefighter crews and 2,425 by Fire Prevention Officers.

In August of 2024 the department hired a Fire Education Coordinator in the Fire Prevention division to lead public education and CRR activities.

Community Liaison and Public Information Officer

The department coordinates public information activities by unitizing a civilian Public Information Officer (PIO)/Community Liaison Officer (CLO). This position is held by the former Community Risk Reduction Specialist and functions as the primary departmental media spokesperson as well as coordinating attendance at community events, social media, website, and public outreach functions.

Office of Emergency Management (OEM)

[OEM](#) consists of one and one-half full-time positions funded through the City general fund and two-and one-half- time other positions funded through grant programs. Although a division of the fire department, OEM is tasked with strengthening and managing all emergency preparedness and management programs within the City of Bellevue.



Community Advocates for Referral and Education Services (CARES)

[Bellevue Fire CARES](#) consists of a Program Manager and a Clinical Coordinator who supervise up to twenty-five (25) unpaid Master of Social Work (MSW) students from multiple colleges. These student advocates meet with residents who have been identified by either police, fire or other agencies as needing assistance in connecting to community resources who can provide better support than first responders.

CARES1 is a response unit that delivers timely assistance to non-emergency incidents by providing an immediate resource staffed with licensed MSW advocates at the time of need. The CARES Program Manager partners with the Community Risk Reduction Specialist to provide Juvenile Fire Setter Interventions when necessary.

In 2023, CARES launched a co-response program with the Bellevue Police Department. The [Community Crisis Assistance Team](#) (CCAT) was formed to address a dramatic increase in calls involving individuals in crisis. These units pair specially trained, plain-clothes police officers with mental health professionals to help community members during times of crisis.

Community Satisfaction and Engagement



Figure 11 - 2024 Budget Survey Results

The City of Bellevue conducts a Budget Survey every two years to learn about resident budget priorities, the importance and level of satisfaction with city services and the value residents feel they receive for their tax dollars. The [2024 survey](#) indicated that the services the fire department provides are both highly desired and give high satisfaction.

There were several methodology changes in the 2024 survey from previous versions, but when asked about the services with the highest level of satisfaction, respondents ranked “Responding to fires” and “Providing emergency medical services” as their top two categories.



Community Loss and Save Data

Year	Cardiac Arrest Survival Rate	Methodology
2019 - 2023	48.5%	Utstein protocol - (Witnessed, presumed cardiac, presents with VF or VT) – 5 year rolling average as reported for Bellevue Fire by King County Emergency Medical Services (KCEMS). KCEMS follows patient to discharge from the hospital.

Figure 12 - Cardiac Survival

Year	Total Fire Loss
2023	\$9,755,810
2022	\$4,309,302
2021	\$3,316,180
2020	\$5,699,648
2019	\$4,568,330

Figure 13 - Fire Loss

Year	Confined to Room of Origin
2023	74.7%
2022	65.4%
2021	75.2%
2020	69.2%
2019	75.8%

Figure 14 - Fires Contained to Room of Origin

Agency Goals

The Bellevue Fire Department's agency goals are explained more in-depth in our [Strategic Plan](#). A summary of the target areas and objectives developed in that plan are as follows:

I. Succession Planning

- A. Conduct an assessment to determine immediate and long-term needs in relation to succession planning
- B. Perform a cost analysis to forecast available funds to execute the identified needs of the department's succession plan
- C. Establish and implement policies, procedures, and documentation based on needs



- D. Implement comprehensive education and training programs to facilitate succession planning efforts
- E. Build an evaluation process that measures the effectiveness of the succession plan

II. Training and Development

- A. Perform a needs assessment of existing training and educational opportunities throughout the fire department
- B. Develop supporting documentation for proposed training to prepare for program implementation
- C. Create and implement prioritized training and professional development programs
- D. Create an evaluation process that measures the effectiveness of the training and professional development programs

III. Recruitment and Retention

- A. Assess recruitment and retention to determine the immediate and long-term needs in relation to recruitment, retention, and diversity
- B. Create and communicate policies, procedures, and documentation
- C. Implement recruitment and retention programs

IV. Health and Wellness

- A. Perform a needs assessment of the existing Health and Wellness Program throughout the department
- B. Develop supporting documentation to prepare for Health and Wellness Program implementation
- C. Create and implement the approved Health and Wellness Programs

V. Staffing

- A. Perform a needs assessment for the current staffing model
- B. Develop supporting documentation to prepare for staffing implementation
- C. Create and implement the approved staffing changes
- D. Create and evaluation process that measures the effectiveness of the staffing changes

VI. Technology and Innovation

- A. Create a beta testing taskforce of interested participants to pilot new systems and inventory current systems, provide feedback, and assist with adoption and acceptance
- B. Develop a software system/contract monitoring process for department-adopted software and Software as a service (SAAS) products
- C. Deconflict current software systems used and streamline the number used
- D. Create a base implementation rollout model for all new software programs to ensure clear expectations for training
- E. Add existing and newly adopted systems training during employee onboarding to ensure that staff are equipped to accomplish the expectations of their role



- F. Evaluate current work processes to identify manual and outdated processes that can be automated to ensure accuracy, improve efficiency, and reduce workloads

Each of the identified target areas has been assigned a lead who is responsible for creating the necessary work groups to accomplish their objectives. Each group will report back to the Fire Executive Team on a regular basis

Insurance Rating

BFD maintains a Class 2 rating from the [Washington State Survey and Rating Bureau \(WSRB\)](#). The operation of WSRB is funded by an annual assessment of its subscribers, based on premiums written in Washington. WSRB has been in continuous operation since 1911, with roots that go back into the 19th century.

WSRB evaluates all Washington communities for their fire protection/suppression capability using a schedule approved by the Washington State Office of the Insurance Commissioner. WSRB assigns each community a Protection Class of 1 through 10, where 1 indicates exemplary fire protection capabilities, and 10 indicates the capabilities, if any, are insufficient for insurance credit. This rating system, used throughout the state of Washington, is generally considered more rigorous than the more common Insurance Services Office (ISO) rating used throughout most of the United States.

A Class 2 rating places Bellevue in the top 1 percent of the [29,705](#) departments in the U.S. and among the top three departments in the state. As of March 2021, there are no Class 1 rated departments in the state.

To determine a community's Protection Class WSRB objectively evaluates four major areas:

- **Fire Department**
 - WSRB reviews such items as engine companies, ladder companies, distribution of fire stations and fire companies, automatic aid received, response to alarms, equipment carried on apparatus, apparatus maintenance, pumping capacity, reserve apparatus, department personnel and training.
- **Water Supply**
 - Water supplies used are reviewed to determine their adequacy for fire-suppression purposes. Major tasks include calculating required fire flows (gpm) for buildings and conducting flow tests to measure water pressures (psi) and volume (gpm). They also consider hydrant size, type, and installation, as well as the inspection frequency and condition of fire hydrants.
- **Emergency Communications Systems**
 - The community's 911 system is evaluated including facilities, handling and dispatching fire alarms, dispatch personnel and training.
- **Fire Safety Control**
 - Fire prevention activities such as fire code enforcement, public education and building code enforcement are reviewed.

The Fire department score accounts for 40% of WSRB's evaluation. Another 35% of the evaluation focuses on the public or private water supplies available to fight fires. Other factors include the capabilities of the 911 emergency communications/dispatch center (9%) and community fire prevention activities (16%). About half of a community's classification is based on capabilities that are not under the direct control of the fire department.

This rating was last conducted in September 2020, and the rating bureau will reevaluate the department again in 2025.



Section 3 - All-Hazard Risk Assessment of the Community

A comprehensive Community Risk Assessment (CRA) is a critical aspect of creating a Standard of Cover (SOC). This process leads the department in quantifying the risks faced by the community served. Once those risks are identified, the department is better equipped to determine if the current response resources are sufficiently staffed, equipped, trained, and positioned. In this section, the factors that drive the service needs are examined in a precise and scientific manner to determine the response capabilities needed to adequately address the risks.

The risks that the department faces can be natural or man-made and may be affected by the changing demographics of the community served.

This risk analysis will consider three factors when evaluating risk. The probability or frequency of the risk occurring, the consequence of that risk to the community served, and the impact of each risk to the department. This three-axis approach to evaluating risk is depicted in the probability/consequence/impact matrix.

The general qualitative and quantitative measurements of each risk are listed within the graphically designed matrix. The matrix rates consequence to the community (RC) by placing (consequence = C) on the X axis ranging from insignificant to catastrophic. Event likelihood (probability = P) is rated on the Y axis, ranging from unlikely to frequent. The impact to the organization (impact = I) is rated on the Z axis and ranges from insignificant to catastrophic.

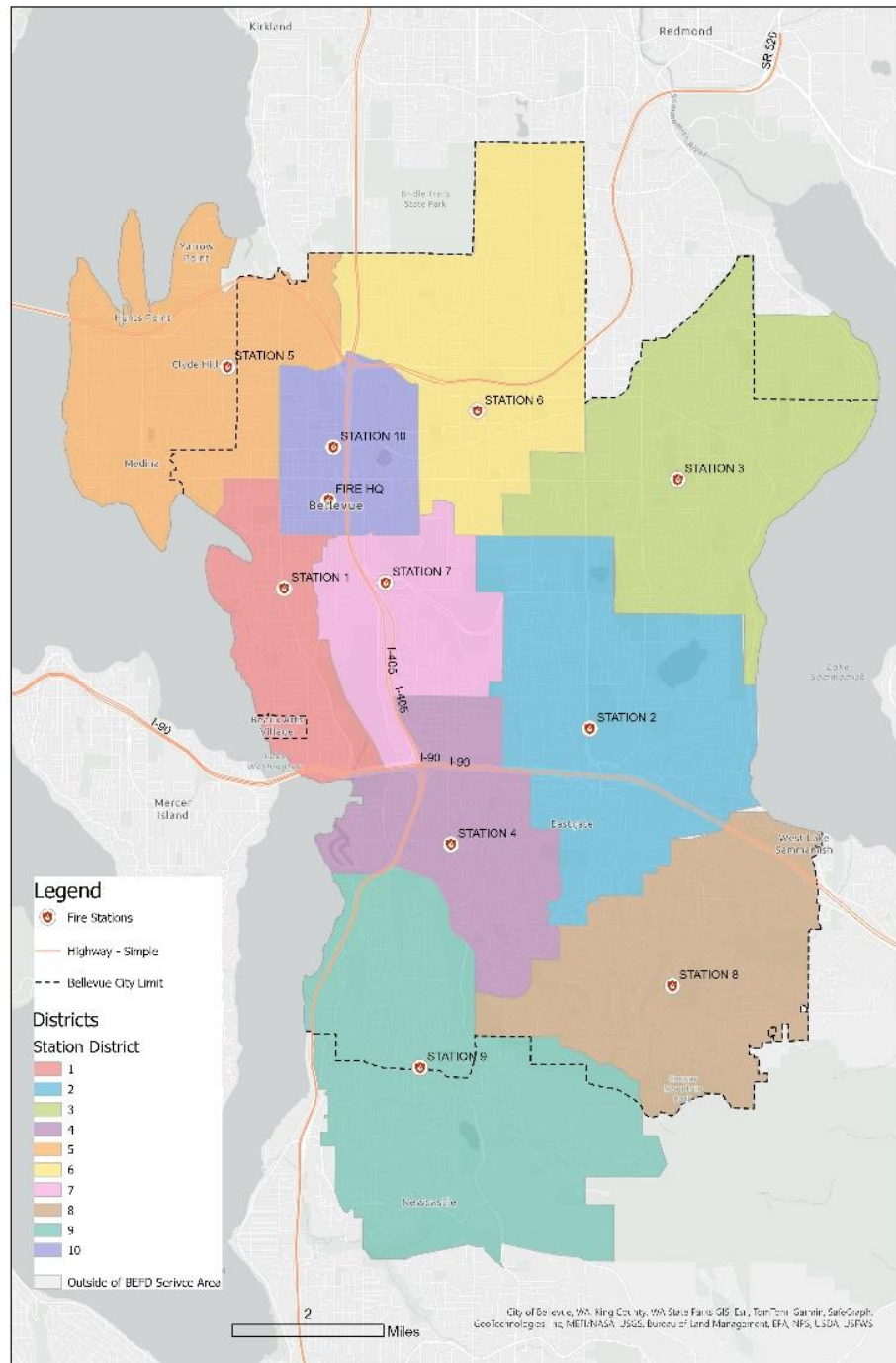


Figure 15 - Bellevue Fire Department Station Areas



Operational imperatives were accounted for by using a (modifier = M) to reflect an increase or decrease in risk for various reasons beyond the three risk quantifiers, these modifiers include blocking on collision response, vertical response time, technician level requirements, smoke control, fire sprinklers, etc.

Geographic Planning Zones (GPZ)

Fire station first-due areas will be the primary planning zones used to determine and document the different categories and classes of risk. Additionally, these areas will be used to perform response time analysis according to the Benchmark Service Level Objectives and determine incident/response distribution.

Fire Station One



Figure 16 – Station 1

Units and Personnel

Bellevue Fire Station 1 is located at 766 Bellevue Way SE. This 15,701 s.f. facility was constructed in 1975, remodeled in 1987 and seismically upgraded in 1996. Front-line apparatus includes, 1 engine, 1 BLS aid car, 1 BC and 1 boat on a trailer. Reserve apparatus include 1 aid car and 1 BC. Daily on-duty personnel staffing; engine company (3), BLS aid car (2) and BC (2) for a total of 7. During the construction of Station 10, this facility also serves as the overnight home of Engine 110 and the corresponding 3 personnel.

With the introduction of CCAT, Station 1 is also houses the on duty CCAT teams as well as the CARES 101 response unit and supervisor.



Community Characteristics and Demographics

Station 1 serves the neighborhoods of Northwest Bellevue, West Bellevue, and Downtown, as well as Beaux Arts Village. The Downtown neighborhood consists of a mix of commercial and residential High and mid-rise structures built within the last twenty years with older commercial properties. There are several mid and high-rise licensed care facilities at the north end of the response area. These facilities are the most significant generators of incident activity. The outlying residential neighborhoods are mostly single-family residential buildings ranging from 2,000 s.f. to 50,000 s.f. There are a small number of older multi-family residential complexes grouped around Lake Washington that are primarily elderly citizens from lower socio-economic cohorts

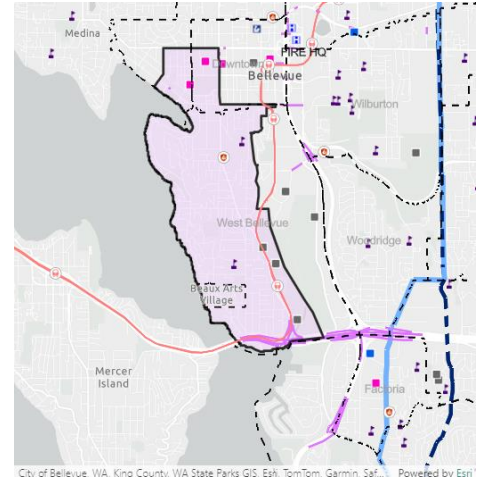


Figure 17 - Station 1 area

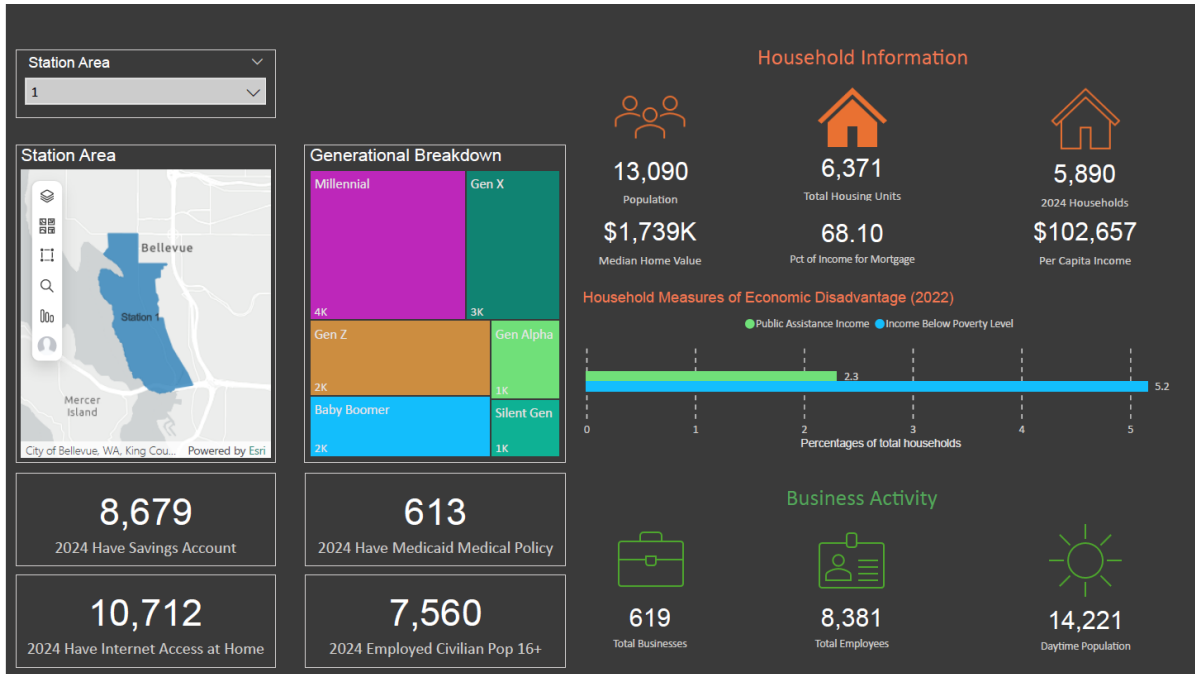


Figure 18 - Station 1 Demographics

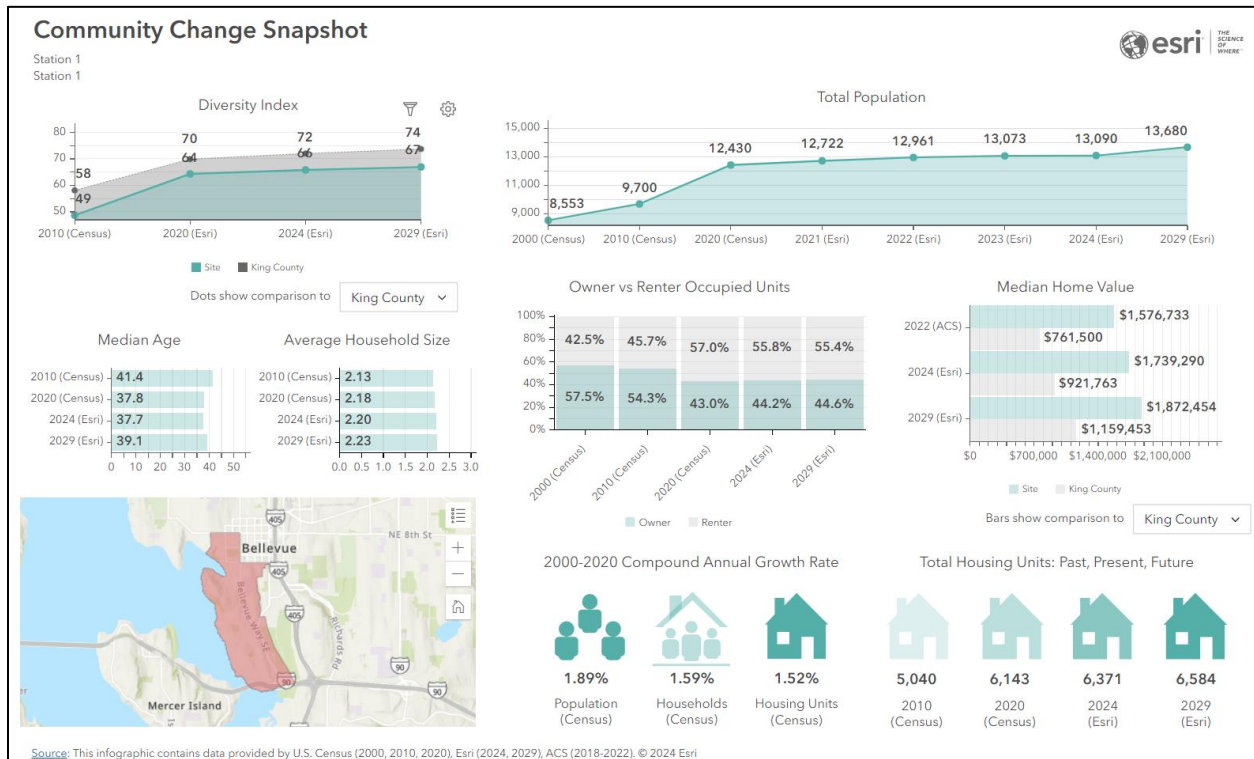


Figure 19 - Station 1 Community Change Snapshot



The district is intersected by Interstate 90 and sits just to the west of the I-90 and I-405 junction. The 2 Line light rail also crosses the district with the South Bellevue and East Main stations. The [2 Line downtown tunnel](#) all crosses through the district, including a firefighter access point at the halfway point. The South Bellevue station is currently the southern terminus of the 2 Line, but it will soon connect to Mercer Island and then cross Lake Washington to connect to Seattle.

The district is also home to two of Bellevue’s premier parks, [Meydenbauer Bay Park](#) and [Bellevue Downtown Park](#). The Downtown Park hosts many community events throughout the year, including the very popular [Bellevue Family 4th](#) each summer and the [Bellevue Downtown Ice Rink](#) in the winter. Downtown Bellevue also hosts many large gatherings, including [Snowflake Lane](#) and the [Bellevue Arts Fair](#) which brings thousands of people into the city’s core.

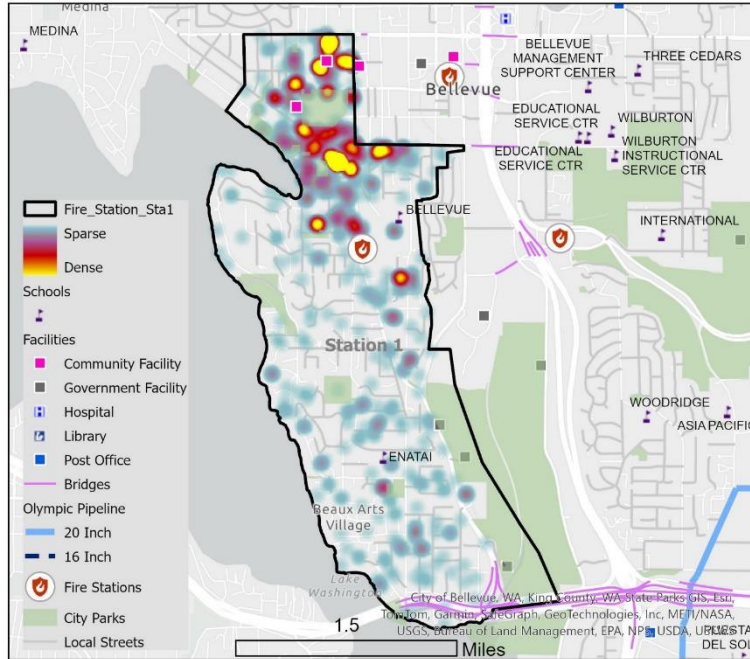


Figure 20 - Station 1 Heat Map and Critical Infrastructure

Metric	2019	2020	2021	2022	2023
Suppression Incidents	14	21	20	17	18
EMS Incidents	195	186	204	271	207
HazMat Incidents	4	3	5	1	4
Tech Rescue Incidents	1	1	1	6	2
90 th Percentile Turnout Time	1:43	1:45	1:45	1:43	1:47
90 th Percentile Total Response Time	7:01	5:32	6:49	6:02	8:27

Figure 21 - Station 1 Responses



Fire Station Two



Figure 22 - Station 2

Units and Personnel

Bellevue Fire Station 2 is located at 2802 148th Ave SE. This 8,061 s.f. facility was originally constructed in 1955. In 2002 it was reconstructed and 3,198 s.f. were added. Front-line apparatus includes, 1 engine, 1 BLS aid car, 1 ALS medic unit and 1 Medical Services Officer (MSO). Reserve apparatus include 2 ALS medic units. Daily on-duty personnel staffing; engine company (3), BLS aid car (2), ALS medic (2) and MSO (1) for a total of 8.

Community Characteristics and Demographics

Station 2 serves the Bellevue neighborhoods of Lake Hills, Eastgate, and Westlake Sammamish. The response area includes Bellevue College, the Eastgate commercial sectors and outlying residential neighborhoods. The Eastgate commercial properties include car dealerships, strip malls and mid-rise office buildings. Incident activity is well distributed throughout the response area. The outlying residential neighborhoods are mostly single-family residential buildings ranging from 2,000 s.f. to 5,000 s.f. The single-family residential housing stock is generally older and less well-maintained than other areas of the community. There are a small number of older multi-family residential complexes grouped around Bellevue College. These complexes are primarily populated by young adults. Census tract population density is mostly uniform across the response area. Most census tracts in the station service area are less diverse than other areas of the community.

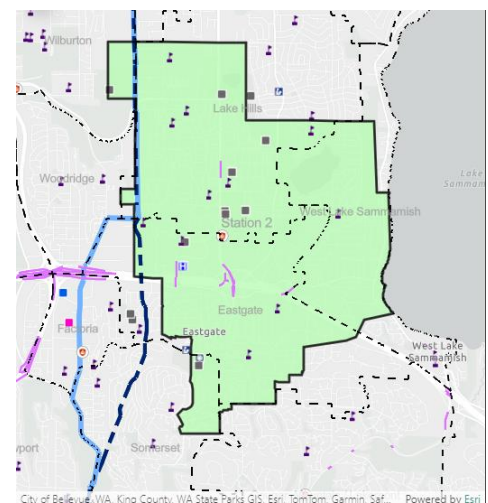


Figure 23 - Station 2 area

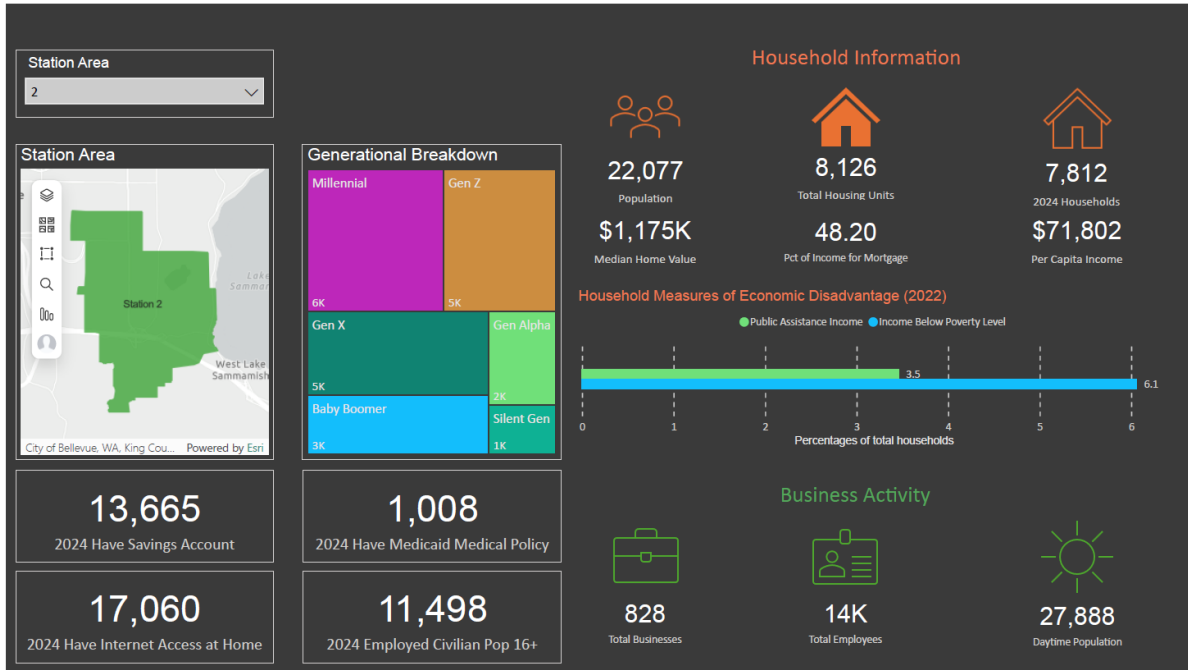


Figure 24 - Station 2 Demographics

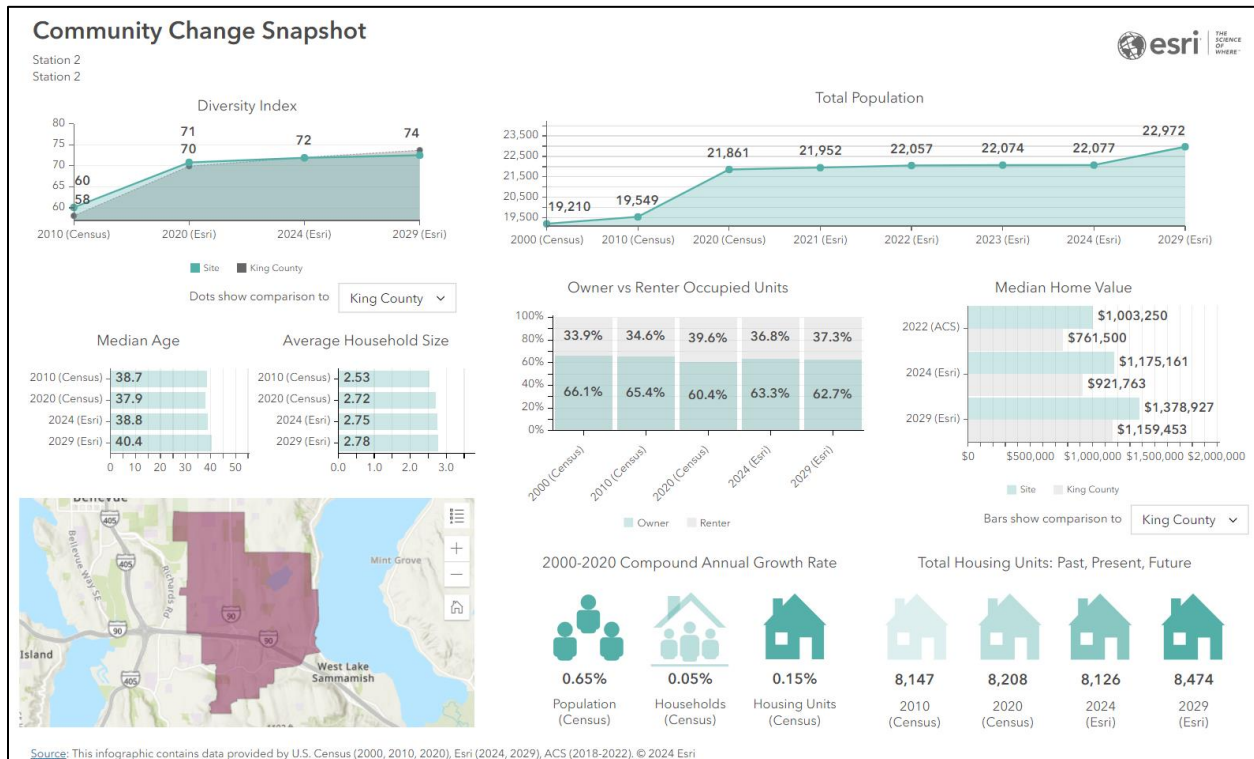


Figure 25 - Station 2 Community Change Snapshot

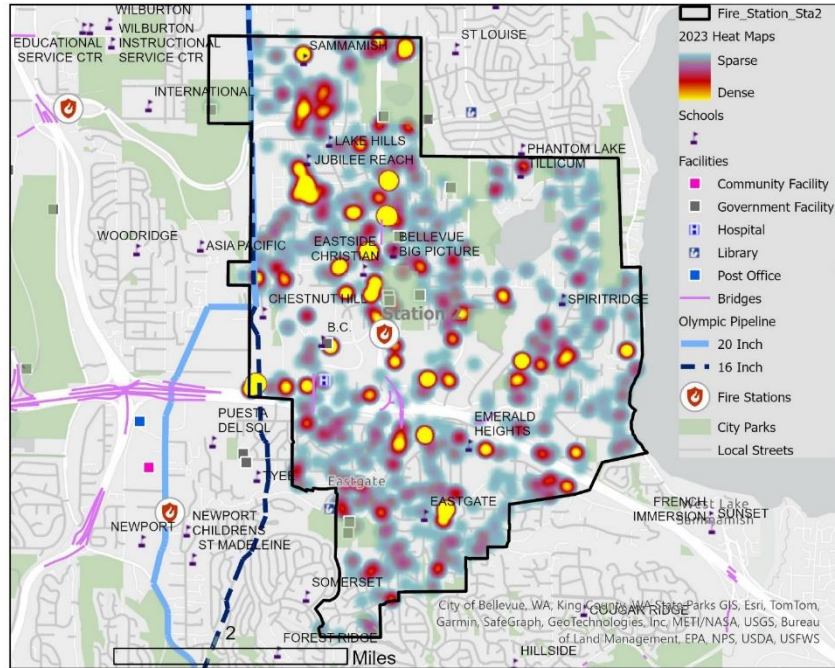


Figure 26 - Station 2 Heat Map and Critical Infrastructure

Metric	2019	2020	2021	2022	2023
Suppression Incidents	39	28	24	33	31
EMS Incidents	380	339	367	428	450
HazMat Incidents	9	11	7	5	9
Tech Rescue Incidents	4	4	1	5	4
90 th Percentile Turnout Time	1:43	1:41	1:43	1:44	1:46
90 th Percentile Total Response Time	6:19	5:51	6:53	6:37	8:10

Figure 27 - Station 5 Responses

Fire Station Three



Figure 28 - Station 3

Units and Personnel

Bellevue Fire Station 3 is located at 16100 NE 8th St. This 16,463 s.f. facility was constructed in 1983 and seismically upgraded in 1996. Front-line apparatus includes, 1 engine, 1 aerial ladder, 1 BLS aid car and 1 Rescue. Reserve apparatus include 1 aerial ladder. Daily on-duty personnel staffing; aerial ladder/engine company combined (5) and BLS aid car (2) for a total of 7.

Community Characteristics and Demographics

Station 3 serves the Bellevue neighborhoods of Crossroads, Northeast Bellevue, Lake Hills, West Lake Sammamish, and Bel-Red. The Crossroads neighborhood consists of a mix of older commercial and residential low-rise structures and newly constructed mid-rise “5 over 1” multi-family residential buildings. The older multi-family residential complexes grouped around Crossroads Mall are primarily populated by minorities and those that speak other languages than English in the home. Additionally, there are several mid-rise licensed care facilities at the north end of the response area. Crossroads Malls and these facilities are significant generators of incident activity. The outlying residential neighborhoods are mostly single-family residential buildings ranging from 2,000 s.f. to 5,000 s.f.

Directly next to Station Three is [Crossroads Park](#), which hosts a community center, par 3 golf course, the Bellevue Youth Theatre and many community events throughout the year.

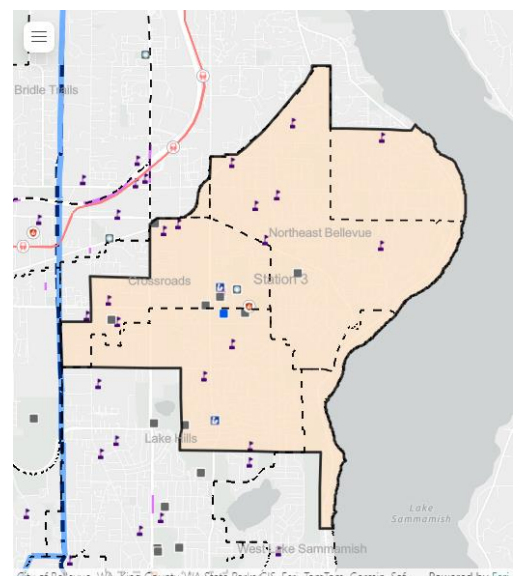


Figure 29 - Station 3 Area

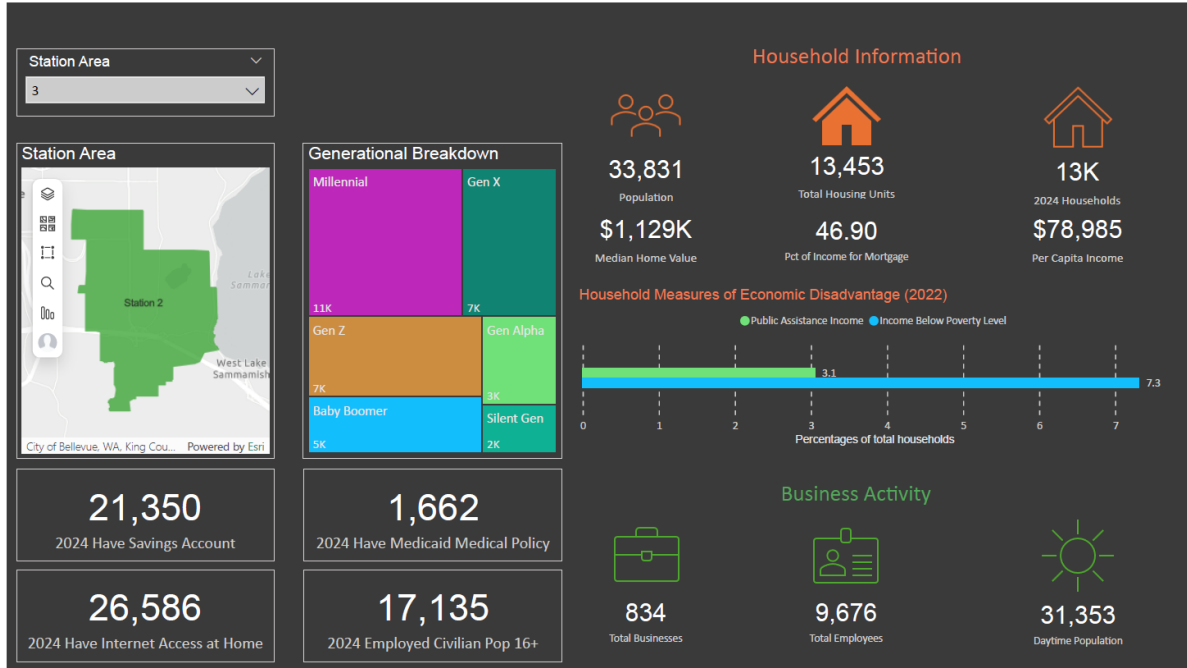


Figure 30 - Station 3 Demographics

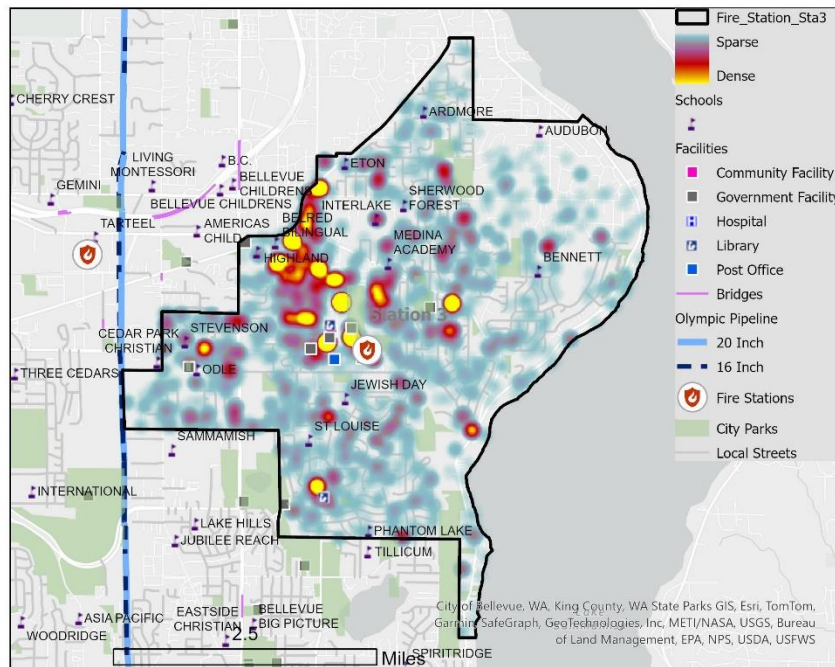


Figure 31 - Station 3 Heatmap and Critical Infrastructure



Metric	2019	2020	2021	2022	2023
Suppression Incidents	52	50	44	38	48
EMS Incidents	535	454	565	568	606
HazMat Incidents	4	12	20	13	10
Tech Rescue Incidents	1	6	8	5	9
90 th Percentile Turnout Time	1:43	1:43	1:44	1:42	1:48
90 th Percentile Total Response Time	6:24	5:40	6:25	5:44	8:19

Figure 32 - Station 3 Responses



Fire Station Four



Figure 33 – Station 4

Units and Personnel

Bellevue Fire Station Four is located at 4216 Factoria Blvd SE. This 6,751 s.f. facility was constructed in 1965 and remodeled in 1997. This remodel added 2,053 s.f. to the facility. Front-line apparatus includes 1 engine. Reserve apparatus include 1 engine, 1 MCI unit (for mass casualty situations), and 1 MSO unit. Daily on-duty personnel staffing; engine company (3) for total of 3. City of Bellevue Neighborhoods protected include Factoria, Newport, Eastgate and Somerset.

Community Characteristics and Demographics

Station Four serves the Bellevue neighborhoods of Factoria, Newport, Woodridge, Eastgate, and Somerset. The Factoria neighborhood consists of a mix of older commercial and residential low-rise structures and newly constructed mid-rise “5 over 1” multi-family residential buildings. Three fully protected (3) High-rise office buildings are in Factoria. The older multi-family residential complexes grouped around Factoria Square Mall are primarily populated by minorities and those that speak other languages than English in the home. Additionally, there are several smaller licensed care facilities at the north end of the response area. The outlying residential neighborhoods are mostly single-family residential buildings ranging from 2,000 s.f. to 5,000 s.f. The Somerset neighborhood population is primarily elderly and access challenges during inclement weather has become an issue in recent years. Population densities are analogous across the station response zone census tracts with commercial activity being the primary generator of daytime incident volumes. Factoria Square Mall is a significant generator of incident activity.

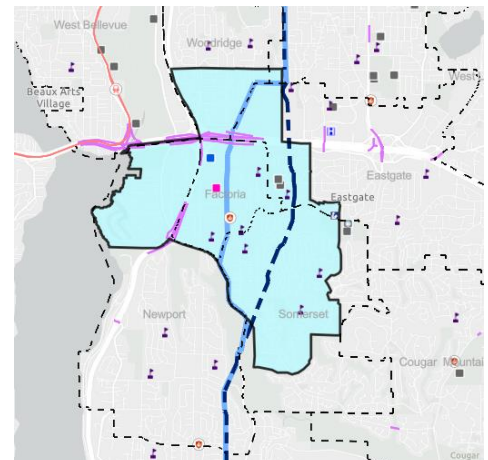


Figure 34 - Station 4 Area

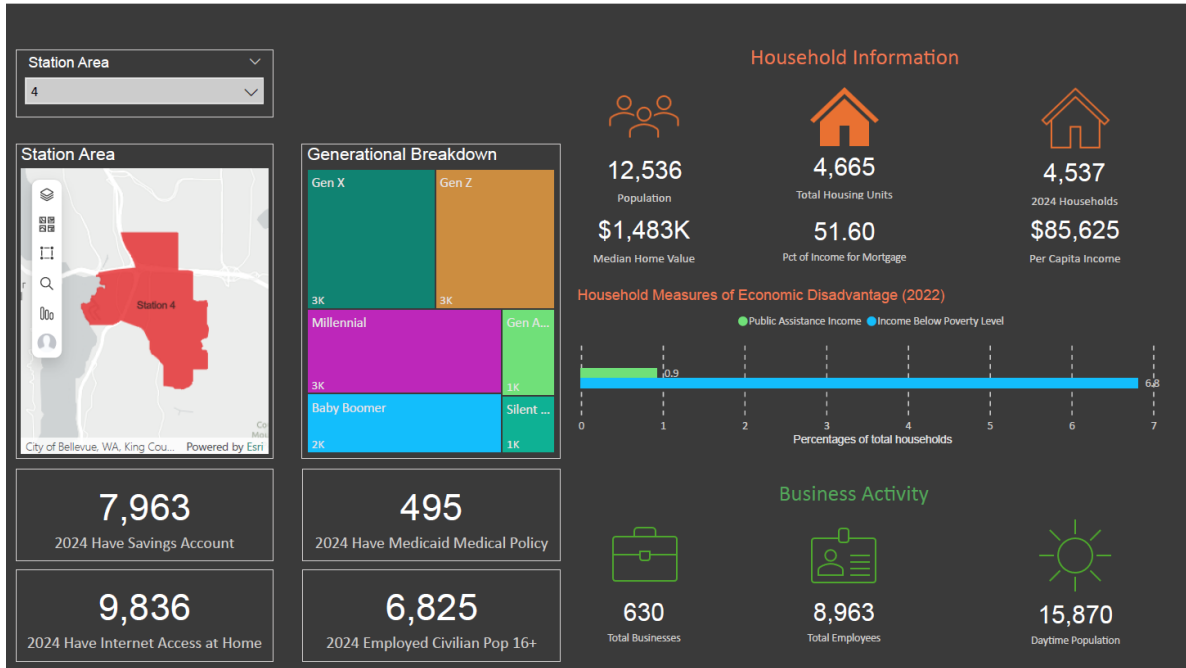


Figure 35 - Station 4 Demographics

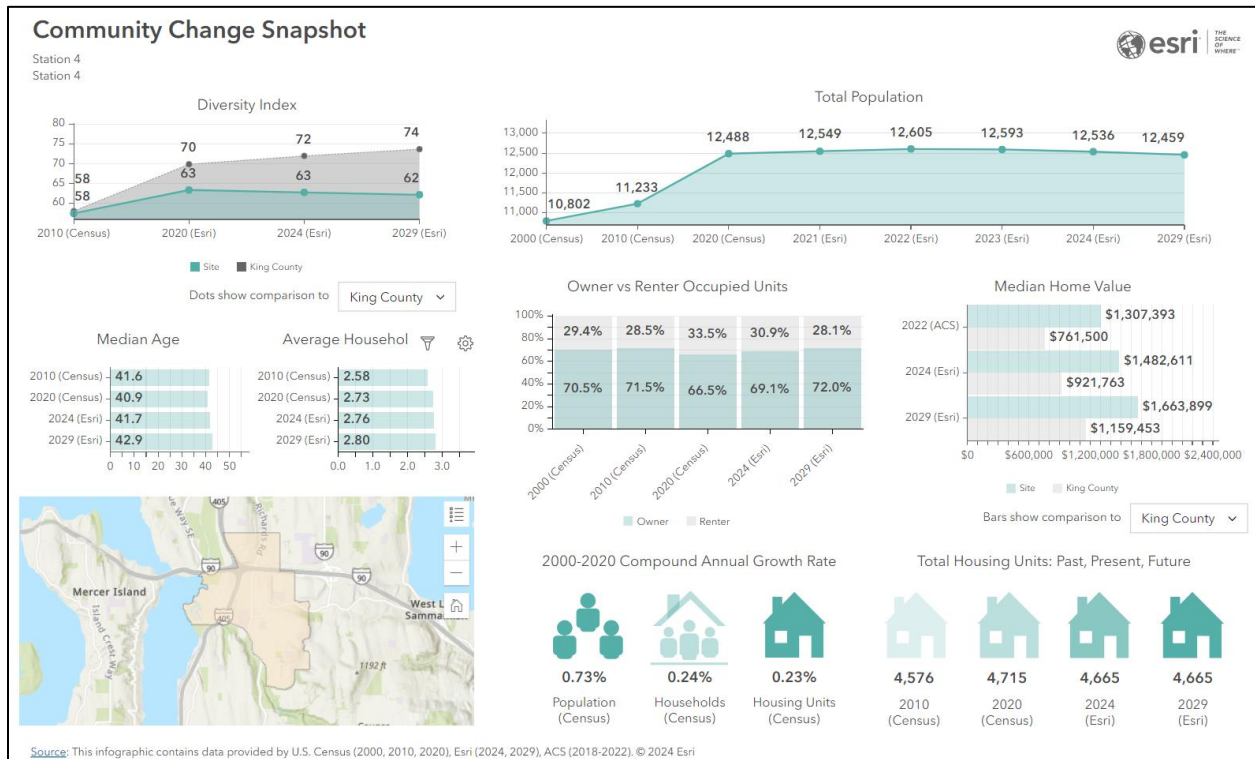


Figure 36 - Station 4 Community Change Snapshot

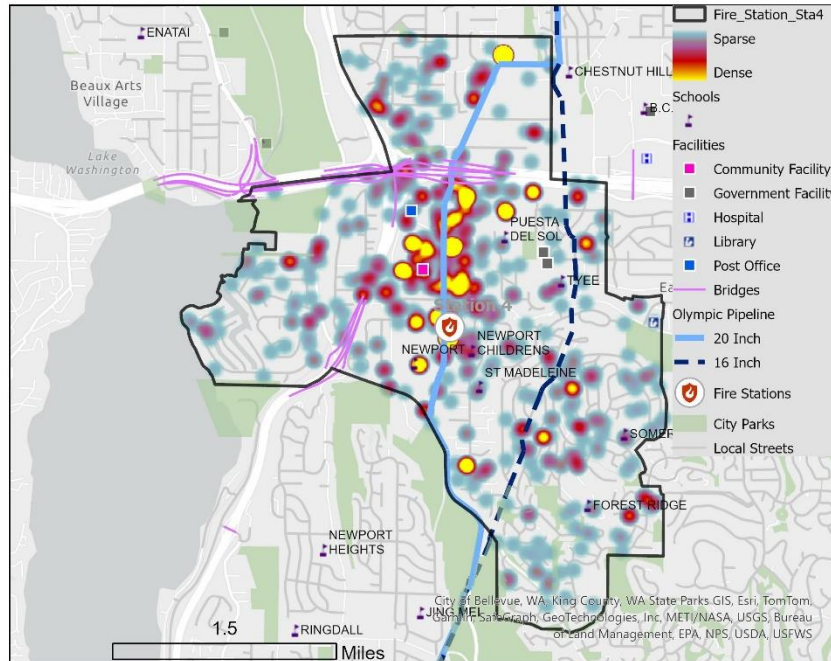


Figure 37 - Station 4 Heatmap and Critical Infrastructure

Metric	2019	2020	2021	2022	2023
Suppression Incidents	24	19	22	12	19
EMS Incidents	208	197	214	246	244
HazMat Incidents	5	3	6	5	3
Tech Rescue Incidents	1	1	1	4	1
90 th Percentile Turnout Time	1:40	1:47	1:49	1:44	1:48
90 th Percentile Total Response Time	8:24	7:45	7:37	7:33	10:19

Figure 38 - Station 4 Responses



Fire Station Five



Figure 39 - Station 5

Units and Personnel

Bellevue Fire Station Five is located at 9615 NE 24th St., Clyde Hill, WA. It is the only station located outside the City of Bellevue jurisdictional boundaries. This 5,000 s.f. facility was constructed in 1967, remodeled in 1987, and seismically upgraded in 1997. Front-line apparatus includes 1 engine. Reserve apparatus include 1 ALS medic unit. Daily on-duty personnel staffing; engine company (3) for total of 3.

Community Characteristics and Demographics

Station Five serves the Bellevue neighborhoods of Northwest Bellevue and Downtown along with the contract cities of [Clyde Hill](#), [Medina](#), [Hunts Point](#), and [Yarrow Point](#). The northly portion of Downtown consists of a mix of older commercial low-rise structures and newly constructed high-rise multi-family residential buildings. Three fully protected (3) High-rise licensed care facilities are located at the extreme south-eastern corner of the response area. A few older multi-family residential complexes near Bellevue Square Mall are populated by community members with a lower socio-economic standing, but these are being rapidly replaced with newly constructed, fully protected complexes. Bellevue Square Mall is a significant generator of incident activity and Station 5 is second-in for this location. The remainder of the station service area is comprised of mostly single-family residential buildings ranging from 2,000 s.f. to 50,000 s.f.

Medina, Clyde Hill, Hunts and Yarrow Point experience a low frequency of incidents, but residences can present complex access challenges depending

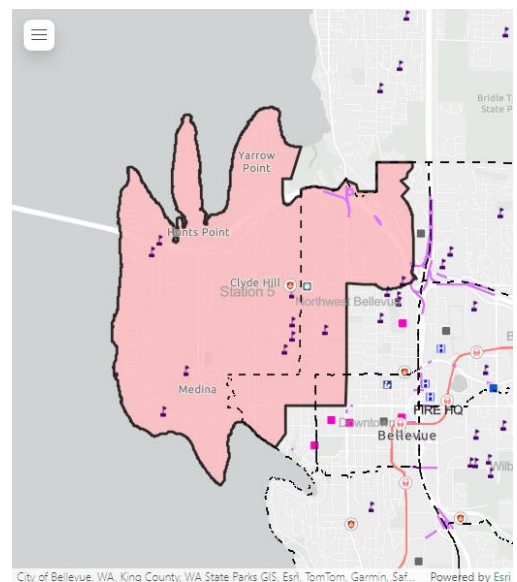


Figure 40 - Station 5 Area



on their location. Most larger residences have been constructed with fire sprinkler systems due to low fire flow and extended supply concerns. FS5 Population densities are some of the lowest in the BLS/Suppression service area except for the census tract comprising the north portion of Downtown.

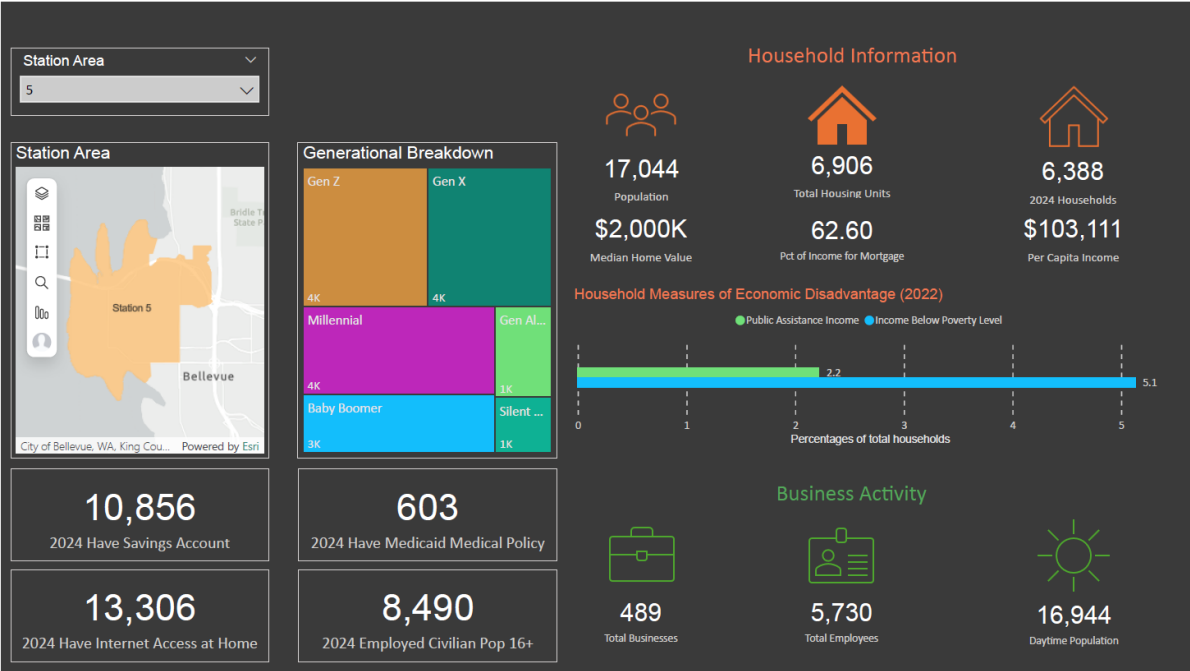


Figure 41 - Station 5 Demographics

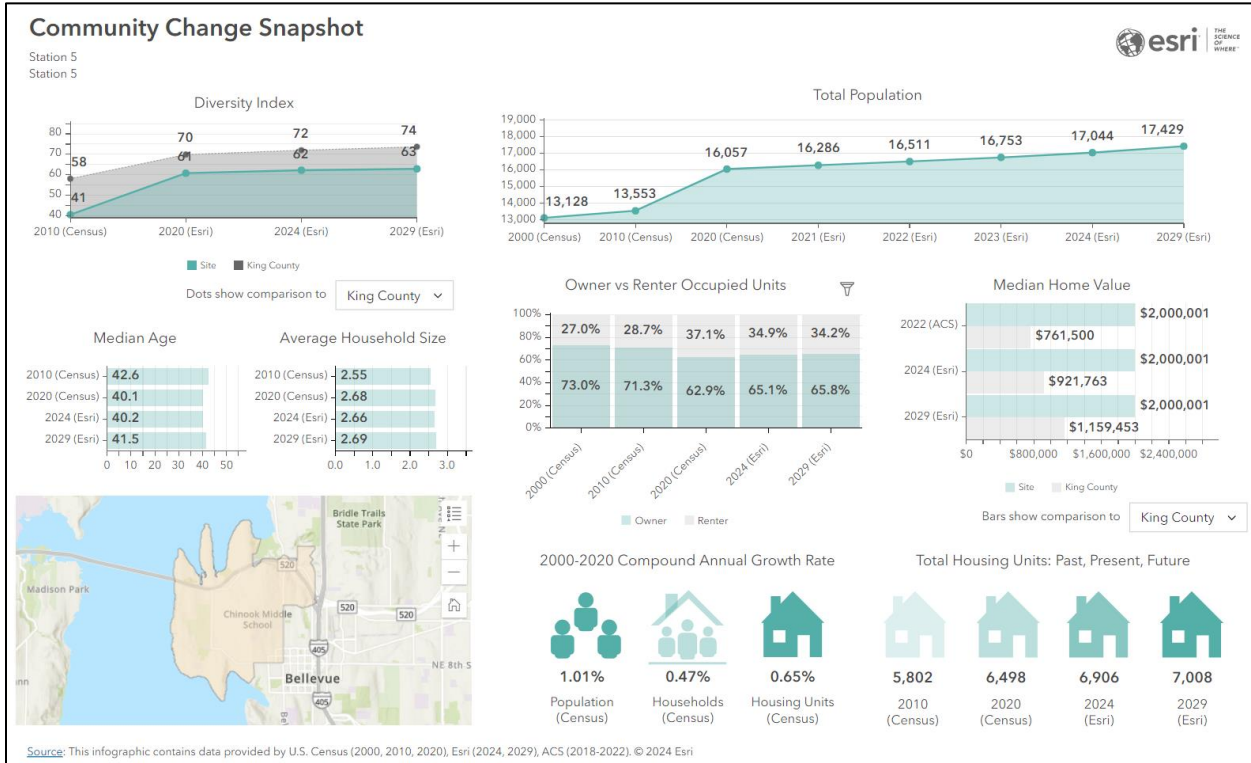


Figure 42 - Station 5 Community Change Snapshot

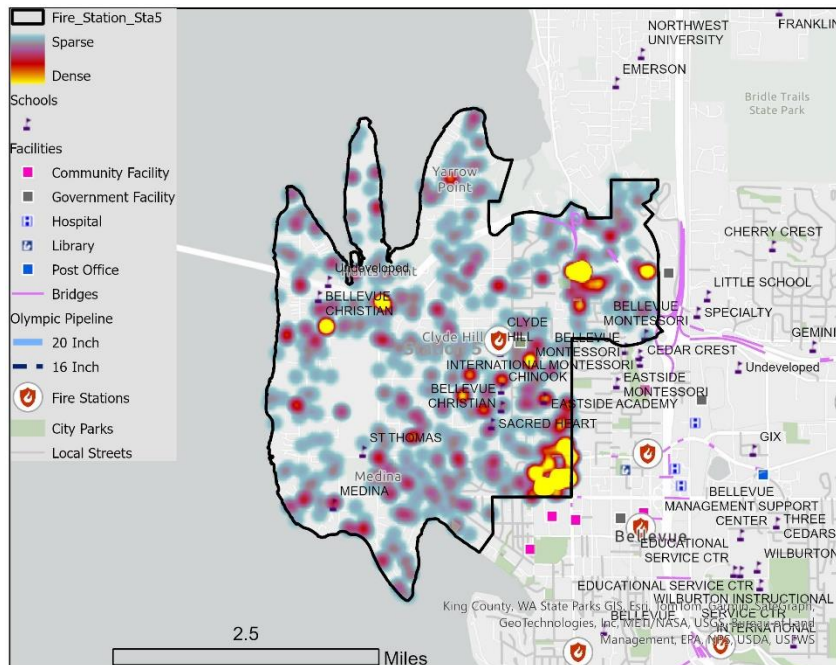


Figure 43 - Station 5 Heatmap and Critical Infrastructure



Metric	2019	2020	2021	2022	2023
Suppression Incidents	16	16	18	16	23
EMS Incidents	215	168	217	203	202
HazMat Incidents	2	1	4	5	5
Tech Rescue Incidents	2	0	1	1	2
90 th Percentile Turnout Time	1:42	1:47	1:51	1:49	1:43
90 th Percentile Total Response Time	8:18	7:56	7:40	7:27	11:51

Figure 44 - Station 5 Responses



Fire Station Six



Figure 45 - Station 6

Units and Personnel

Bellevue Fire Station 6 is located at 1850 132nd Ave NE. This 5,000 s.f. facility was constructed in 1983 and seismically upgraded in 1997. Front-line apparatus includes 1 engine, 1 BLS aid car and 1 Hazardous Materials Unit. Daily on-duty personnel staffing; engine company (3) for total of 3.

Community Characteristics and Demographics

Station 6 serves the Bellevue neighborhoods of Bel-Red, Bridle Trails, Wilburton, Crossroads, and Northwest Bellevue. It also shares a border with the City of Redmond and hosts Redmond Fire Station 12 along 148th Ave NE. Most of the service area is a mix of light industrial and commercial low-rise structures. The only significant hazardous material exposure in the city is in this area. This exposure consists of a bottling plant, milk and ice cream plants and similar facilities that use a significant quantity of anhydrous ammonia in their production processes.

Most automobile repair and service facilities in the city are in older unprotected strip malls within this service area. The light-rail line passes directly south of the station and ongoing transit-oriented development (TOD) of the area is creating an increasing residential presence. A new high-rise multi-family residential complex has just been constructed, though the majority of new residential will be low and mid-rise buildings. Currently, a few older multi-family residential complexes and an assisted living facility near the southwest corner of the service area are the primary generators of incident activity. The Bridle Trails neighborhood comprises most of the single-family residential structures in the area and is

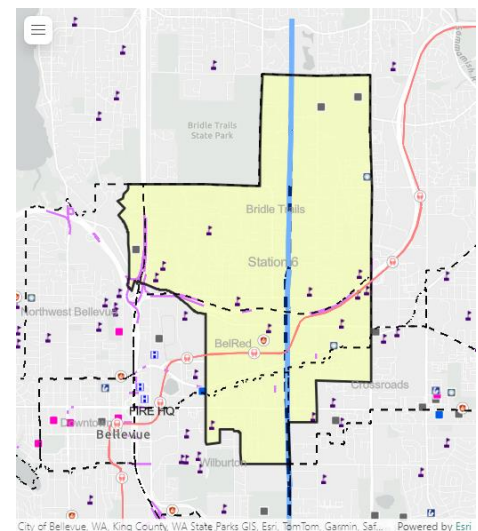


Figure 46 - Station 6 Area



composed of horse properties with structures between 3,000 and 10,000 s.f. This neighborhood has some of the lowest population densities in the city.

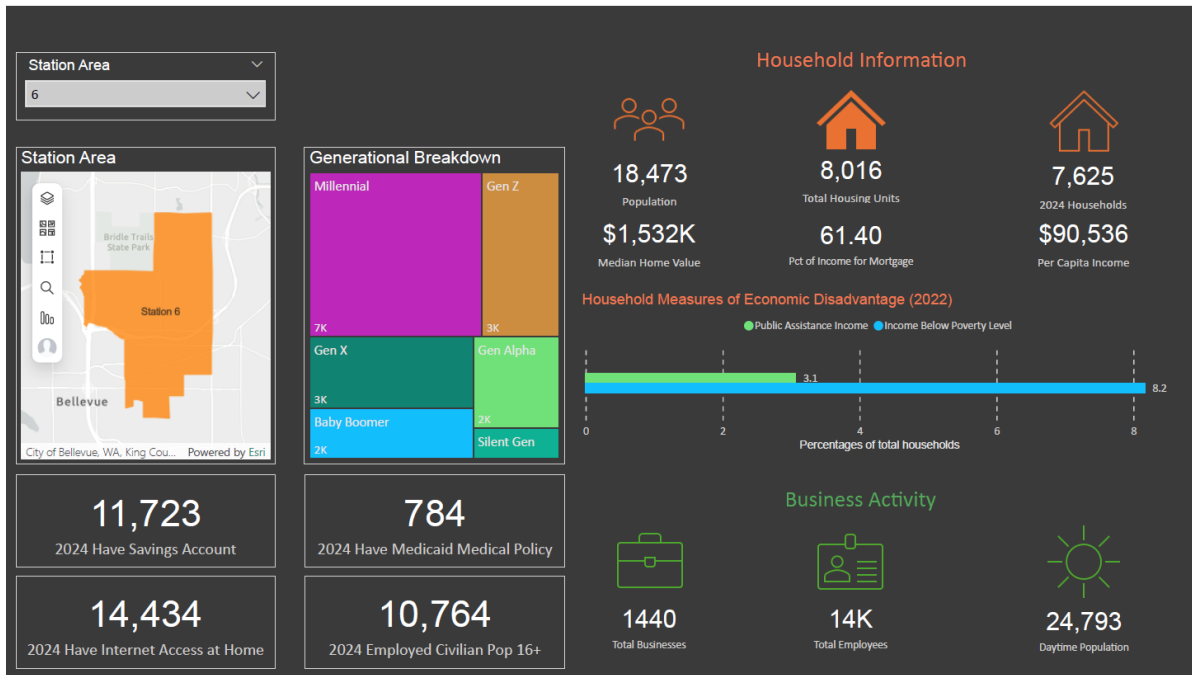


Figure 47 - Station 6 Demographics

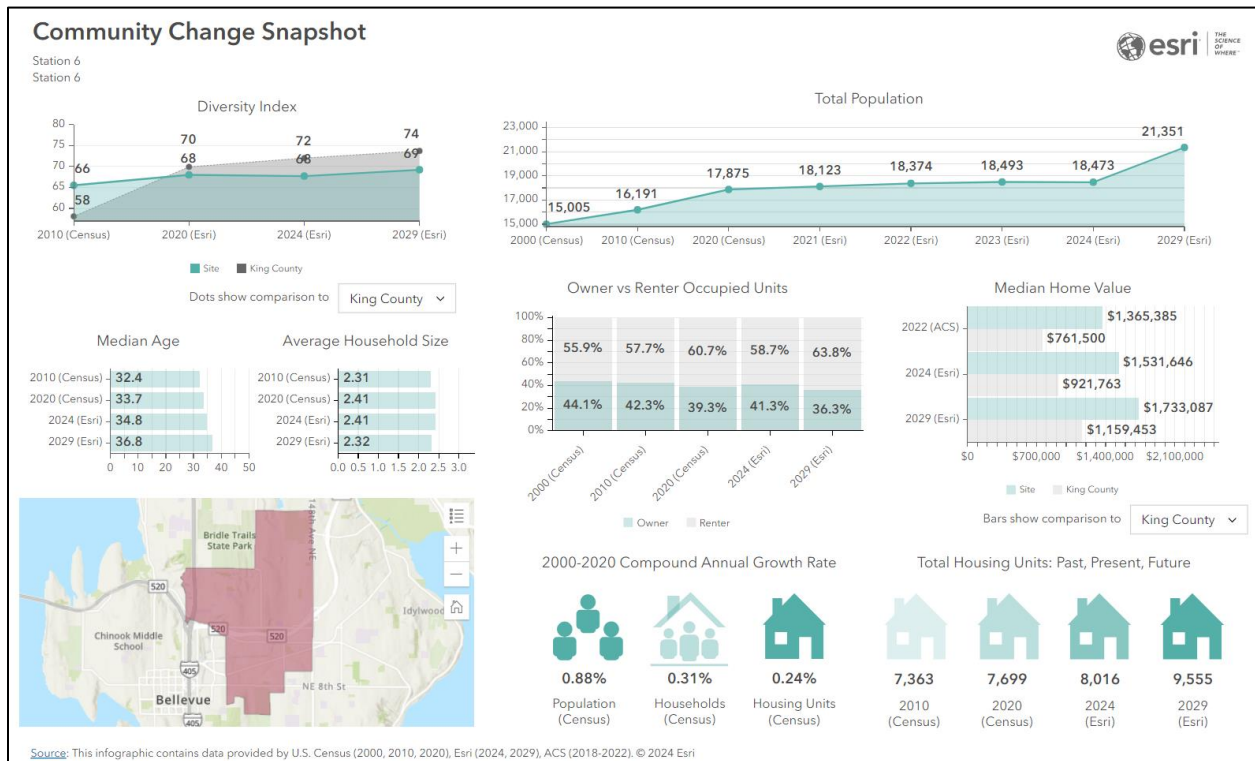


Figure 48 - Station 6 Community Change Snapshot

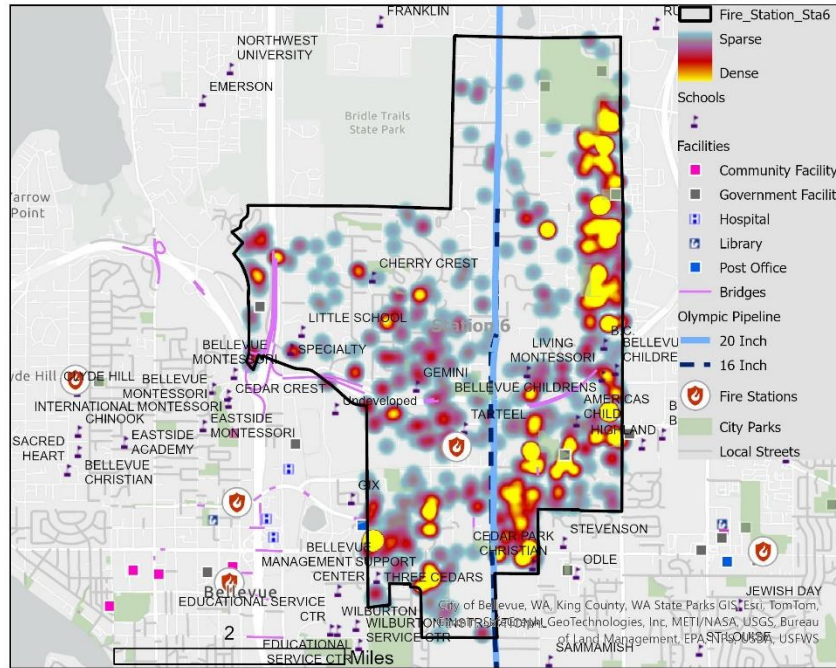


Figure 49 - Station 6 Heatmap and Critical Infrastructure

Metric	2019	2020	2021	2022	2023
Suppression Incidents	27	21	18	29	28
EMS Incidents	248	250	269	290	313
HazMat Incidents	7	8	6	4	7
Tech Rescue Incidents	3	1	0	1	2
90 th Percentile Turnout Time	1:36	1:40	1:19	1:29	1:51
90 th Percentile Total Response Time	7:44	7:17	8:17	7:29	11:40

Figure 50 - Station 6 Responses



Fire Station Seven



Figure 51 - Station 7

Units and Personnel

Bellevue Fire Station 7 is located at 11900 SE 8th St. This 5,000 s.f. facility was constructed in 1985 and seismically upgraded in 1998. Front-line apparatus includes 1 engine and 1 aerial ladder. Daily on-duty personnel staffing; aerial ladder/engine company combined (5) for a total of 5.

Community Characteristics and Demographics

Station 7 serves the Bellevue neighborhoods of Woodridge, Lake Hills, West Bellevue and Wilburton. Most of the service area is a mix of commercial mid and high-rise structures. New high-rise fully protected multi-family residential complexes have been constructed in the downtown. A few older multi-family residential complexes and a Men's homeless shelter are the primary generators of medical incident activity. The Wilburton and Woodridge neighborhoods are primarily composed of single-family residential structures between 2,000 and 5,000 s.f. The 2 Line light-rail line passes through Wilburton and the south-east portion of Downtown, but crossings are elevated or underground in this service area.

The Station 7 ladder/truck company responds to a higher percentage of non-EMS responses than any other unit. This is primarily due to it being the closest ladder/truck company to the Downtown and response plans that require a ladder/truck on Automatic Fire Alarms (AFA) in commercial and multi-family structures.

Station 7 is also home to the [Mercer Slough Nature Park](#), [Kelsey Creek Farm](#), and the [Wilburton Trestle](#).

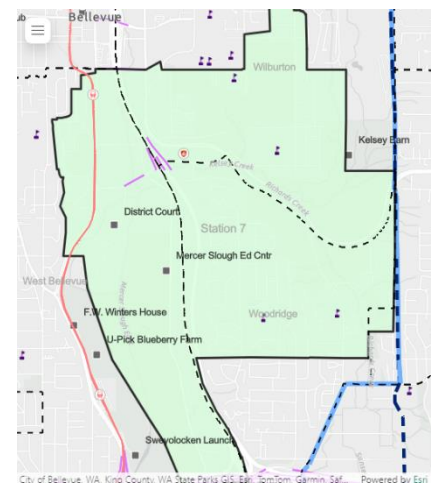


Figure 52 - Station 7 Area

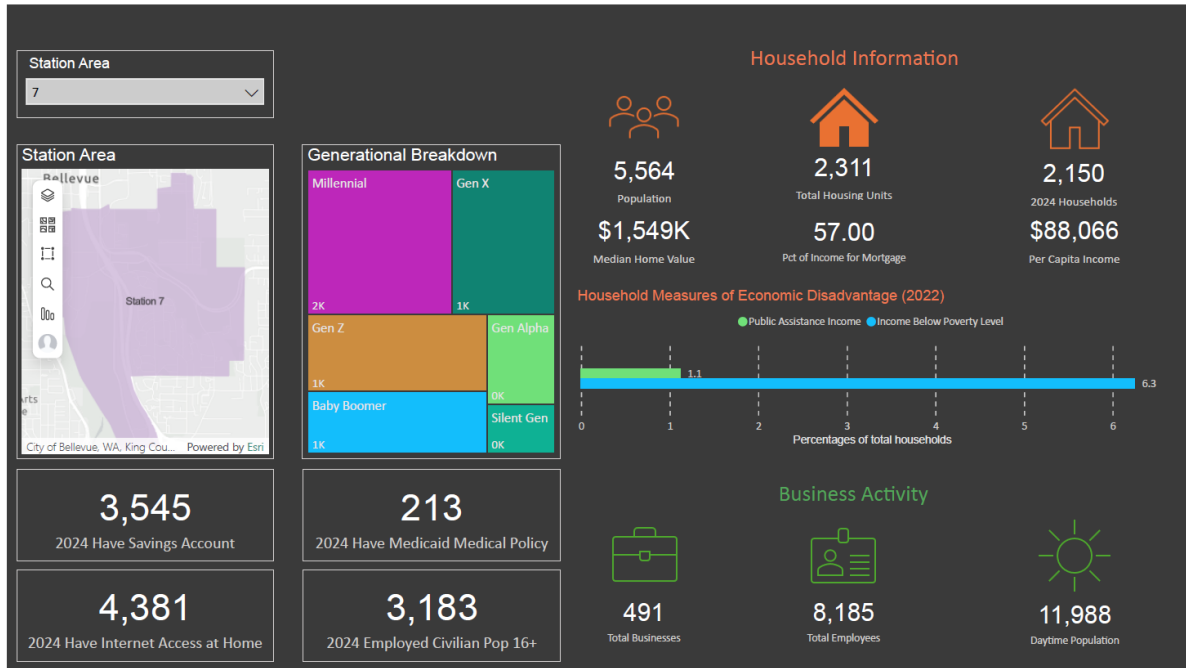


Figure 53 - Station 7 Demographics

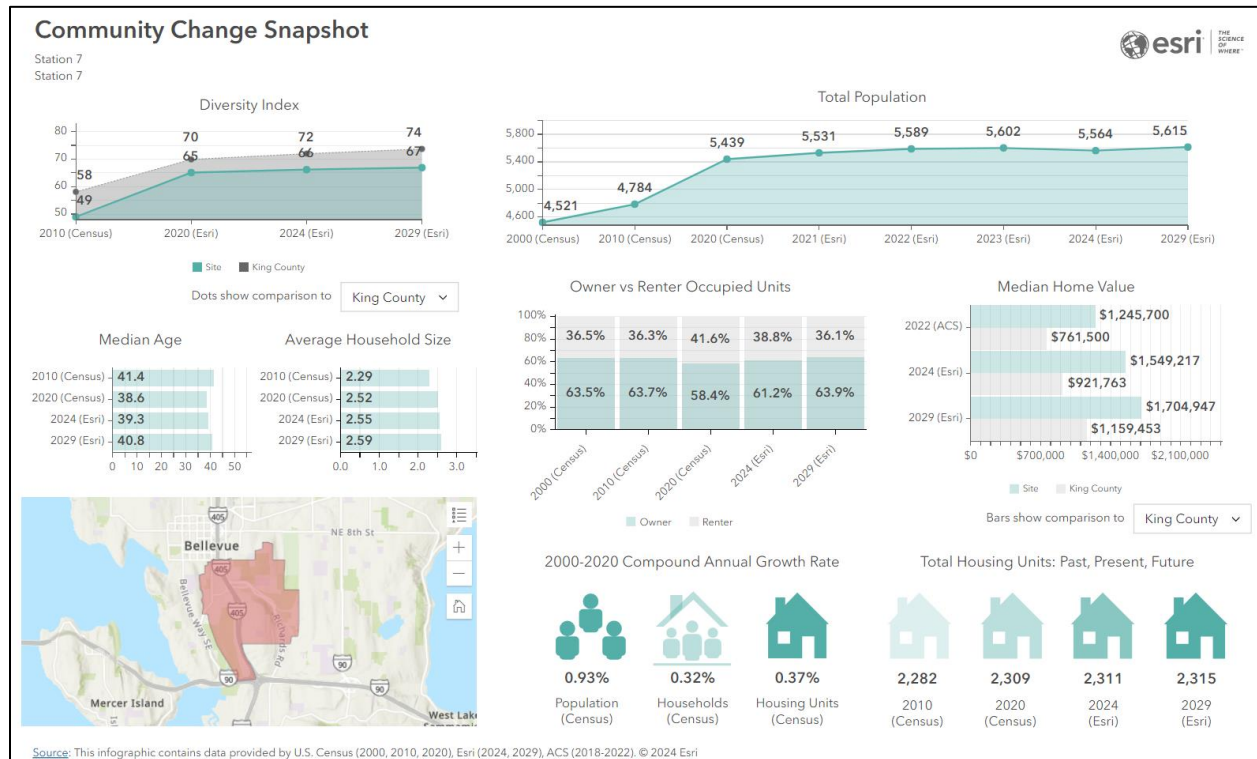


Figure 54 - Station 7 Community Change Snapshot

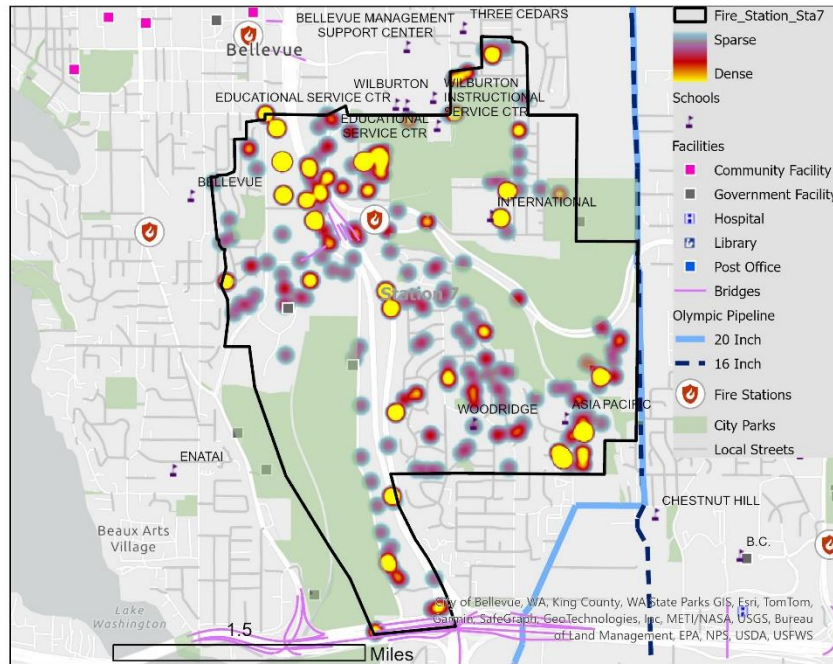


Figure 55 - Station 7 Heatmap and Critical Infrastructure

Metric	2019	2020	2021	2022	2023
Suppression Incidents	11	14	8	8	9
EMS Incidents	97	74	106	92	119
HazMat Incidents	1	2	4	4	0
Tech Rescue Incidents	0	2	1	0	0
90 th Percentile Turnout Time	1:41	1:34	1:40	1:50	1:50
90 th Percentile Total Response Time	9:03	8:26	8:04	8:09	11:12

Figure 56 - Station 7 Responses



Fire Station Eight



Figure 57 - Station 8

Units and Personnel

Bellevue Fire Station 8 is located at 5701 Lakemont Blvd SE. This 9,128 s.f. facility was constructed in 1995. Front-line apparatus includes 1 engine, 1 Air Unit and 1 Rescue/ATV. Reserve apparatus includes 1 engine. Daily on-duty personnel staffing; engine company (3) for total of 3.

Community Characteristics and Demographics

Station 8 serves the Bellevue neighborhoods of Cougar Mountain/Lakemont, Somerset, Eastgate, and West Lake Sammamish. Most of the service area consists of single-family residential buildings ranging from 2,000 s.f. to 10,000 s.f. There are a few low-rise multi-family residential complexes and some minor commercial development in the Lakemont area. There is one assisted living facility located at the southeastern edge of the service area. Population densities are lower than average for this station area, but there is an increasing risk of Wildland Urban Interface (WUI) fires in the east portion of the service area.

Station 8 also covers the 5,000 acre [Cougar Mountain Park](#), part of an area known as the “Issaquah Alps”. This park contains over 35 miles of wooded trails. There is also Vasa Park Resort and Sambica Summer Camp on the shore of Lake Sammamish.

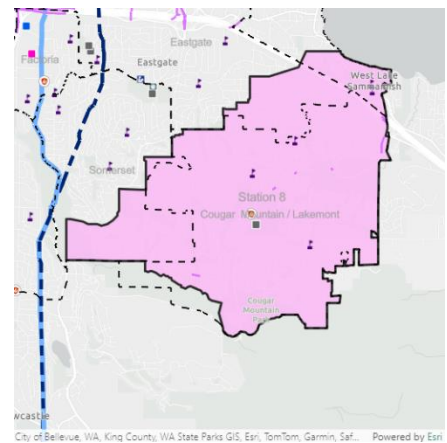


Figure 58 - Station 8 Area

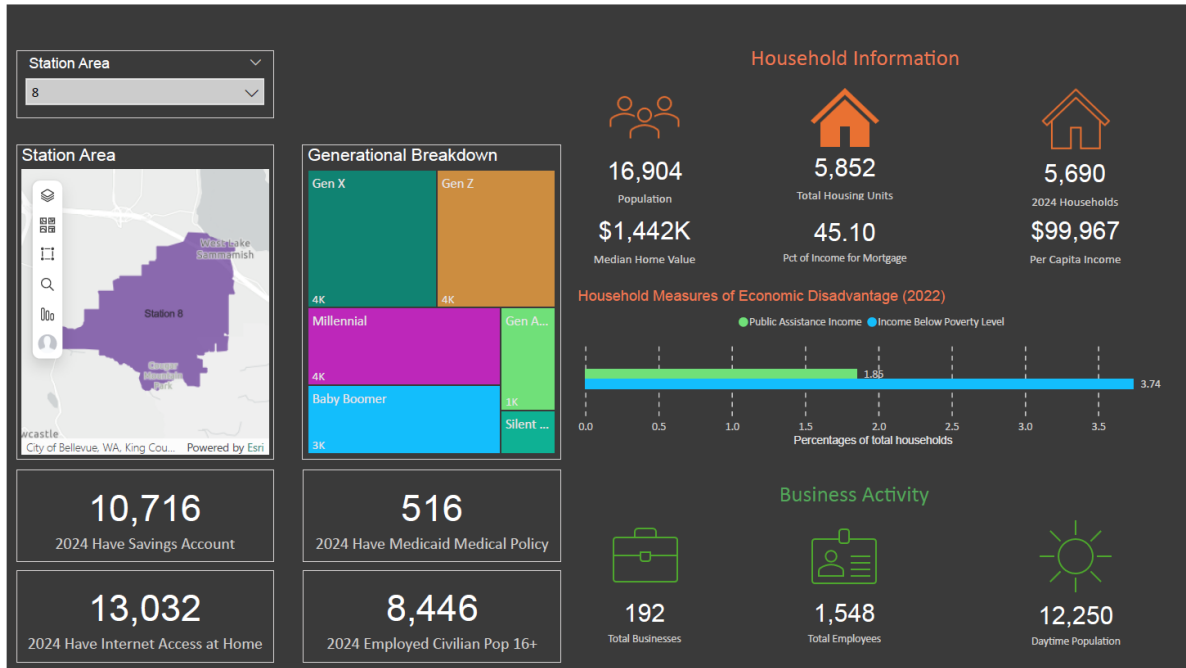


Figure 59 - Station 8 Demographics

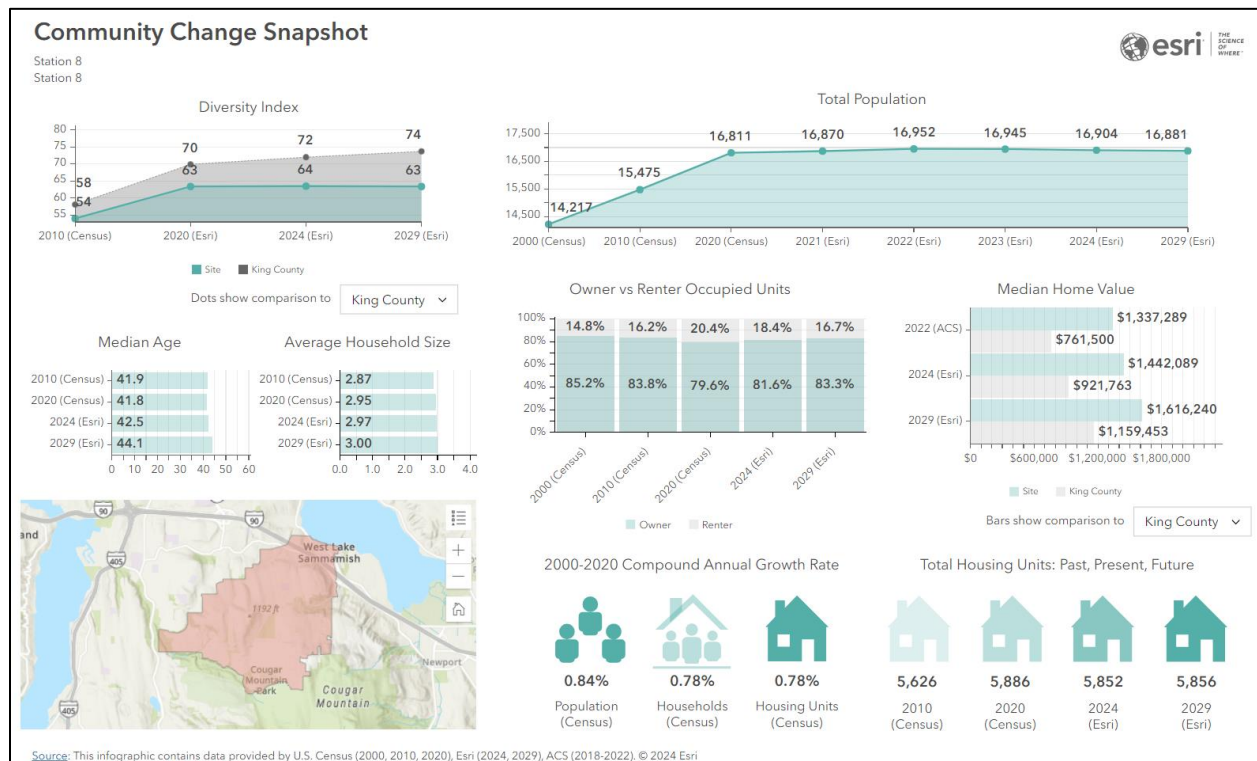


Figure 60 - Station 8 Community Change Snapshot

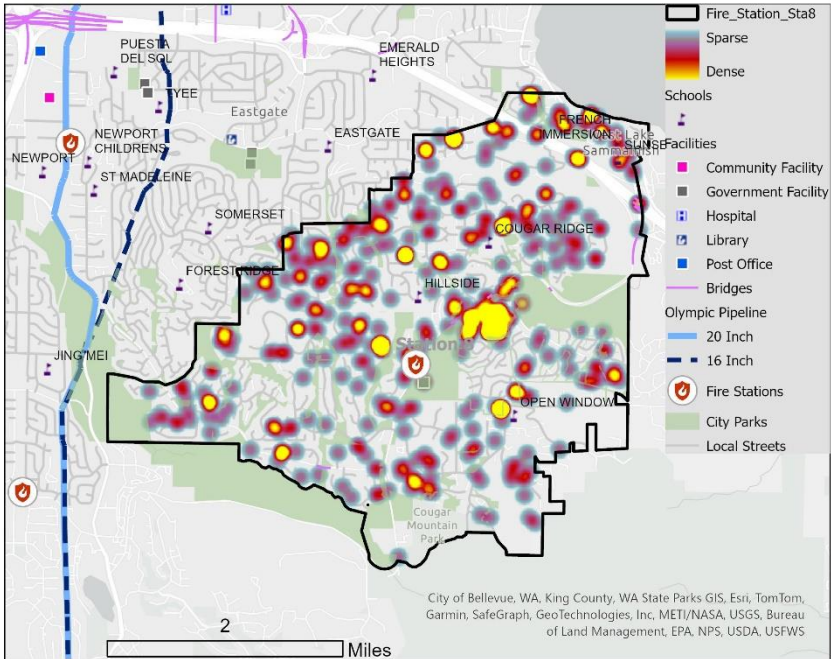


Figure 61 - Station 8 Heatmap and Critical Infrastructure

Metric	2019	2020	2021	2022	2023
Suppression Incidents	6	10	6	8	15
EMS Incidents	102	93	101	135	112
HazMat Incidents	1	1	1	0	0
Tech Rescue Incidents	1	0	1	0	1
90 th Percentile Turnout Time	1:34	1:42	1:40	1:54	1:40
90 th Percentile Total Response Time	8:41	6:58	7:35	8:20	10:34

Figure 62 - Station 8 Responses



Fire Station Nine



Figure 63 - Station 9

Units and Personnel

Bellevue Fire Station 9 is located at 12412 Newcastle Way. This 7,838 s.f. facility was constructed in 1975, remodeled in 1987 and seismically upgraded in 1997. Front-line apparatus includes 1 engine and 1 Mobile Command Unit (MCU). Reserve apparatus is 1 engine and 1 aid car. Daily on-duty personnel staffing; engine company (3) for total of 3.

Community Characteristics and Demographics

Station 9 serves the Bellevue neighborhoods of Newport and Somerset as well as the [City of Newcastle](#). The majority of the service area consists of single-family residential buildings ranging from 2,000 s.f. to 10,000 s.f. There are low-rise multi-family residential complexes and some commercial development in the City of Newcastle. There are two assisted living facilities in the service area.

Population densities are about average for this station area, but there is an increasing risk of Wildland Urban Interface (WUI) fires in the southeast portion of the service area.

The district also borders the City of Renton and King County Zone 3.

In addition to waterfront property along Lake Washington, the district also contains Lake Boren Park which hosts 4th of July fireworks and [Newcastle Days](#) in September.

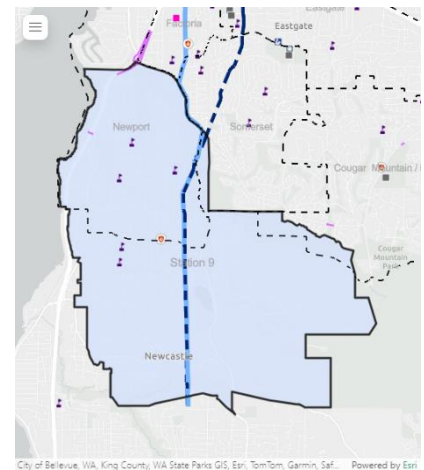


Figure 64 - Station 9 Area

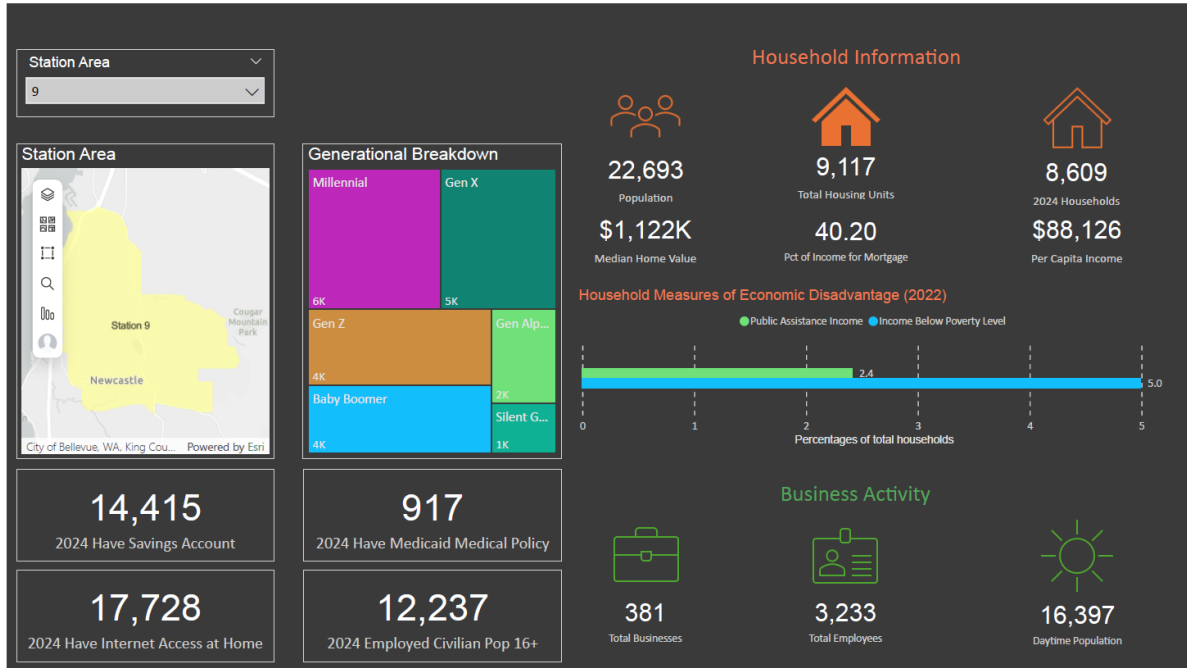


Figure 65 - Station 9 Demographics

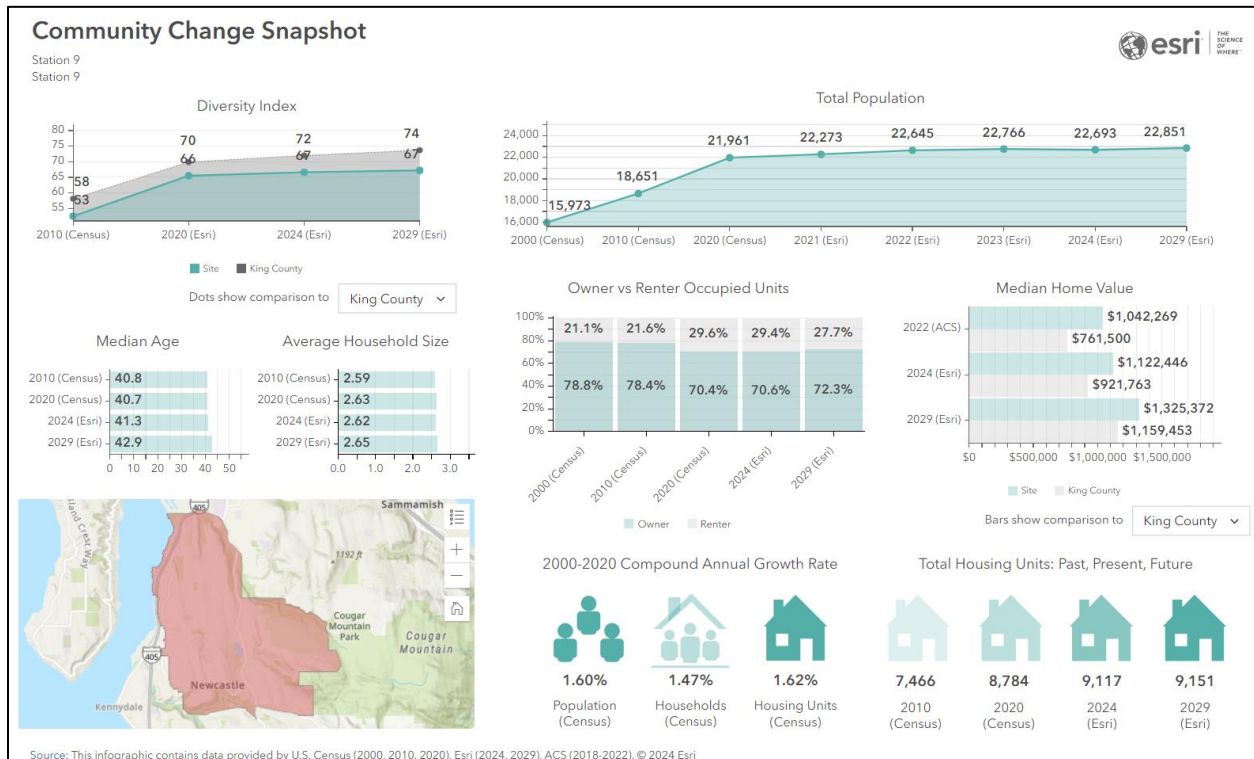


Figure 66 - Station 9 Community Change Snapshot



Metric	2019	2020	2021	2022	2023
Suppression Incidents	27	23	27	25	31
EMS Incidents	312	240	290	340	308
HazMat Incidents	5	5	5	8	15
Tech Rescue Incidents	3	1	1	2	4
90 th Percentile Turnout Time	1:42	1:43	1:40	1:44	1:46
90 th Percentile Total Response Time	8:04	7:43	8:09	7:28	11:44

Figure 67 - Station Nine Responses

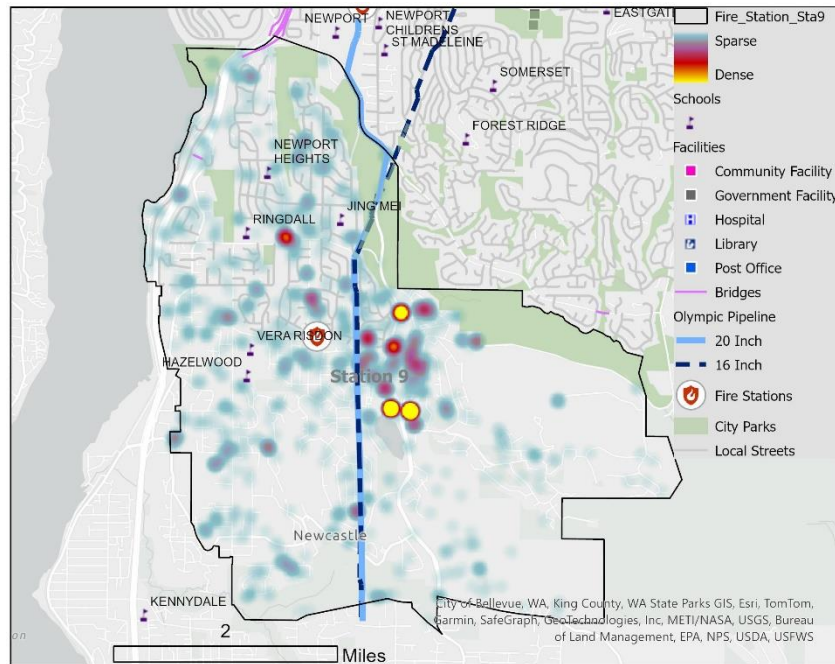


Figure 68 - Station 9 Heatmap and Critical Infrastructure



Fire Station Ten (under construction)



Figure 69 - Render of Station 10

Planning

Fire Station 10 will be on the northwest corner of 112th Avenue Northeast and Northeast 12th Street, north of McCormick Park. The City Council approved funds for the land acquisition for Fire Station 10 in the 2015-21 Capital Investment Program and has completed property acquisition for the site. A geographic area was selected for Fire Station 10 based on coverage gaps identified in the Fire Facilities Master Plan. The 112th Avenue site was selected because it best met the criteria used to evaluate potential sites. Station 10 will contain the following front-line apparatus; 1 engine (Engine 110), 1 BLS aid car (moved from Station 1), 1 ALS medic unit (moved from Overlake Hospital Medical Center) and 1 BC (moved from Station 1). On-duty staffing total staffing will be 9. The station design will accommodate up to 14 firefighters. This will allow for future growth and provide additional flexibility for future resource decisions.

In 2024, Engine 110 went into service as a full-time company. During the day, the crew responds from Bellevue City Hall, which is approximately 3 blocks from the site of Station 10. At night, the unit moves to Station 1 and continues to receive calls for the Station 10 area.



Figure 70 - Station 10 Location

Community Characteristics and Demographics

Station 10 will serve the Bellevue neighborhoods of Downtown, Northwest Bellevue, Bel-Red, and Wilburton. Downtown has been Bellevue's fastest growing residential neighborhood for more than a decade Bellevue's employment base, with the highest concentration of workers downtown, is also projected to grow from 42,525 employees in 2010 to an estimated 70,300 by 2030. Bel-Red, northeast of Downtown, is also growing, with transit-oriented development drawing people and businesses there. The areas of Downtown, Wilburton, and Bel-Red represent 70 percent of the projected population growth for Bellevue.

The district contains the Downtown, Wilburton and Spring District light rail stations as well as the Sound Transit Light Rail Maintenance Yard and Bellevue's joint Public Safety Training Center.

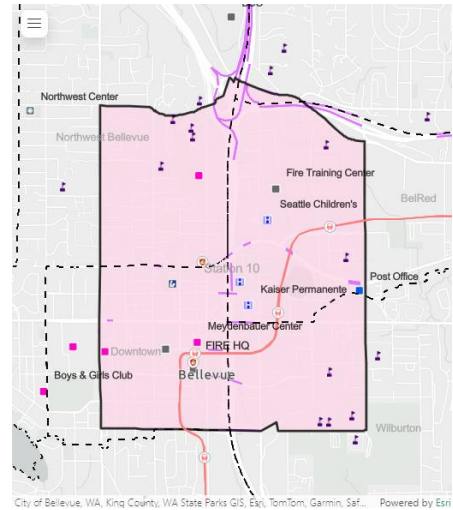


Figure 71 - Station 10 Service Area

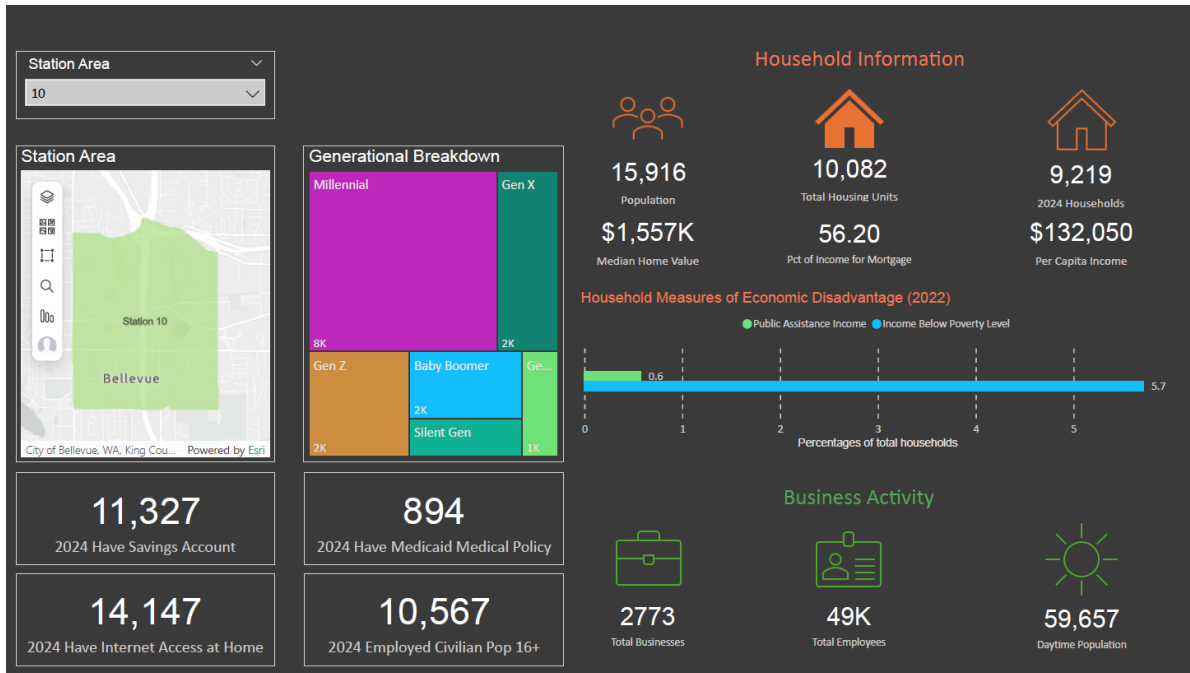


Figure 72 - Station Ten Demographics

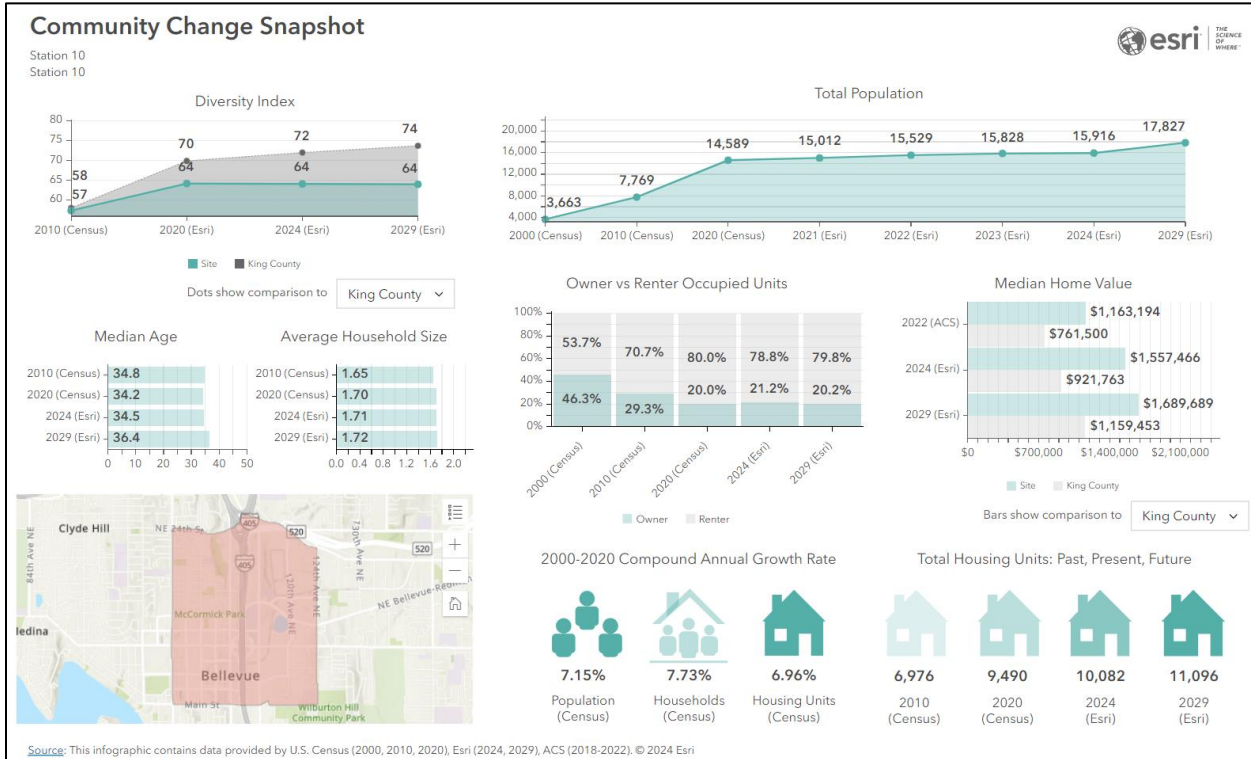


Figure 73 - Station 10 Community Change Snapshot

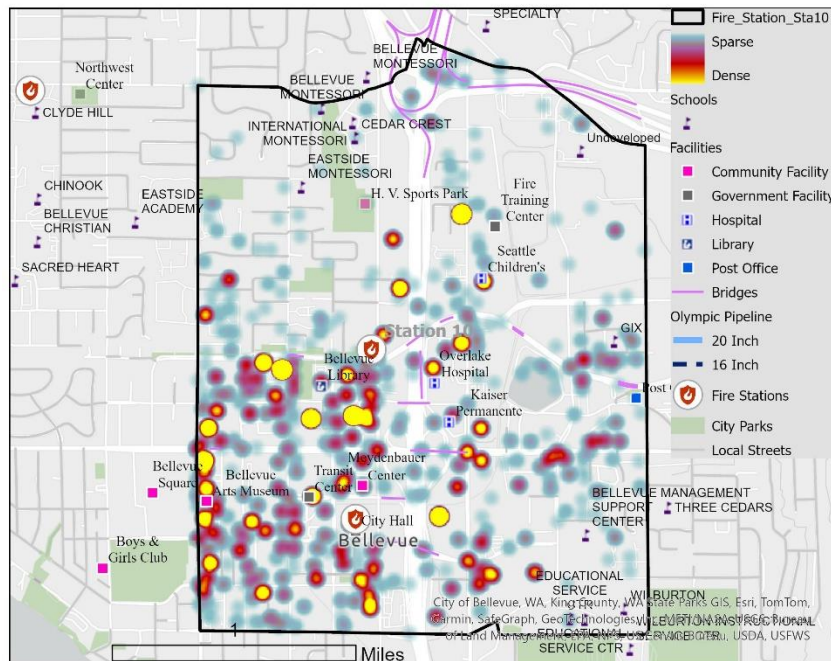


Figure 74 - Station 10 Heatmap and Critical Infrastructure



Metric	2019	2020	2021	2022	2023
Suppression Incidents	2442	49	45	48	60
EMS Incidents	529	488	587	597	631
HazMat Incidents	11	13	14	8	8
Tech Rescue Incidents	2	4	4	9	2
90 th Percentile Turnout Time	1:44	1:44	1:47	1:47	1:41
90 th Percentile Total Response Time	8:27	7:52	7:53	7:40	10:54

Figure 75 - Station Ten Responses



Other Hazards Considered in the CRA

Man-made Hazards

From protection of critical infrastructure like the Olympic Pipeline, to civil unrest, to Tier II storage of hazardous materials to the future placement of the Eastlink Light Rail line and Maintenance Facility, human caused hazards are addressed through a GIS based analysis of properties and geographical areas likely to be affected in the event of a significant event.

Floodplain

Floodplain analysis promotes more awareness of inherent dangers within the watershed area and provides information for pre-planning efforts to mitigate the effect of rising waters.

Earthquake

The effectiveness of pre-planning and mitigation activity is severely impacted by the damage a significant event would have on the entire region. However, awareness and highlighting of this hazard serve the community and the organization by reinforcing the need for preparedness activity and education and encouraging individuals to take individual responsibility during a high impact event.

Windstorm/High Wind Event

Of all severe weather events, wind events are the most likely natural hazard to occur within the service area with most years experiencing at least one significant wind event. The evaluation of geographic areas most likely to suffer significant damage from wind event allows for modification of response strategies, focused outreach efforts, and partnerships with other organizations to reduce the impact these events have on the community.

City of Bellevue Neighborhoods

Bellevue is a community of diverse and vibrant neighborhoods. The city has 16 neighborhood areas, each with unique neighborhood character and identity. Bellevue's neighborhoods are home to a diverse community of neighbors with connections to schools, stores, parks, trails and the natural environment. These will be used to communicate and present to neighborhood groups. However, due to their exclusion of communities served by department that are outside of the City of Bellevue's jurisdictional boundaries, they will not be used to represent overall system workload or performance.

The City of Bellevue's Community Development department maintains [current demographic and economic data](#) for all neighborhoods.

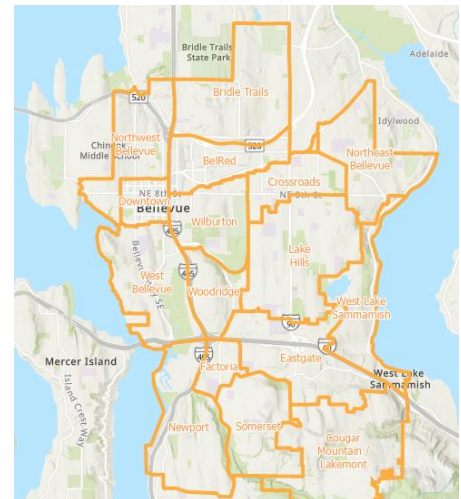


Figure 76 - Map of Bellevue Neighborhoods



Response Strategies - Human Caused Events

Emergency Medical Incidents

Definition

Emergency Medical Service (EMS) is all medical treatment and care which may be rendered at the scene of any emergency or while transporting any patient in a transport capable apparatus to an appropriate medical facility, including ambulance transportation between medical facilities.

History

EMS incidents represent between 75 – 80 percent of all Bellevue Fire Department responses. EMS responses include all trauma, medical, and motor vehicle collisions that don't require patient extrication. BLS incidents mostly involve a single patient, are low risk and typically require a single fire department resource. Moderate risk incidents typically receive at least two-resource responses: one ALS and one BLS. Both high and special risk EMS incidents will require additional BLS and ALS resources.

Location and Extent

As expected, the greatest concentration of incidents is in the areas that have the highest population densities. The Central Business District (CBD) has the greatest concentration of calls for service. Other areas with significant concentrations are in the Crossroads neighborhood, the Overlake area, the Spring District, Factoria, and higher- density housing in the Coal Creek/Newcastle area, as expected, areas with high daytime population represent the areas with greatest risk for EMS incidents.

Recurrence and Impacts

EMS incidents are clearly the most prevalent type of response within the Bellevue service area and determining outreach and prevention strategies to mitigate these incidents whenever possible will provide the most benefit to reducing strain on response resources.

Structure Fire

Definition

A structure fire is a fire involving the structural components of various types of buildings and, and for the purposes of this document, will also include fires within buildings of various types. Fires inside buildings that do not involve the structural components are typically called "room and content fires". Buildings are places where people normally live, work, or frequent and can include residences, businesses, assembly occupancies and even storage facilities.

History

Structure fire responses average less than 200 incidents per year are typically classified as moderate or high risk and comprise about 1% or less of total incidents. However, they are the highest-profile and the most demanding of response resources of recurring incidents that the department typically faces. It is notable that despite significant growth in both population and number of buildings, structure fire responses have not trended upward. The factors that contribute to the decline in fire responses, include safer home appliances, safer home construction, as well as fire prevention and safety awareness efforts (e.g. the recent emphasis on smoke and carbon monoxide detectors in multi-family residential dwellings). This decreasing trend in fire responses is likely to continue as additional advancements in these areas are made.



Recurrence and Impacts

Occurrence of fires are directly related to many factors that are unique to each community. Most of these factors are described earlier in this document and include variables like population densities, income levels, climate, age of structures and even cultural influences.

One significant factor in the recurrence of structure fire not previously discussed is the ongoing fire prevention and code enforcement activities of the department. Both Fire Prevention staff and line firefighters take a very active role in education and enforcement efforts and the department believes that these efforts contribute to a safer community by reducing fire hazards.

An associated impact of structure fires is fire deaths. Bellevue averages less than one fire death per year and in most of these cases there are the following contributing factors:

- No working smoke detector.
- Alcohol or drug intoxication.
- Combination of the two.

The combination of fire code enforcement, relatively modern building construction and an educated and moderately affluent population, ensures that the department's overall structure fire risk is both manageable and moderate. High-rise structures, however, pose a special risk and those are separately assessed in the next sub-section.

High-rise Fires

Definition

A high-rise fire is a fire involving the structural components of a building having floors more than 75 feet above the lowest level of fire department vehicle access.

History

High-rise development in the City of Bellevue has been one of the major components of the city's growth over the past 25 years. As the region's high-tech sectors have grown, so has the need for high-rise office spaces and the benefits that they provide for their employees. As recently as 10 years ago, Bellevue's use of high-rises was predominantly for business purposes. Recent development of residential high-rises has not only created a more urban living environment in the downtown core but contributed greatly to the city's overall population growth.

All high-rises have been constructed with fixed fire sprinkler suppression and fire alarm detection systems. The two high-rises that were built prior to the code requirements for fire sprinklers are now entirely sprinklered and fire alarmed but are still absent other systems, such as smoke control, that reduce risk. The prevalence of fire protection and modern construction in the city is a major factor in the *Recurrence and Impacts* section to follow.

In late 2017, the Bellevue City Council approved a land use code amendment allowing for the construction of buildings up to 600 feet in height in certain areas of the downtown core, where the previous code had restricted high-rise heights to 450 feet or less. Since this change, one such building has been completed. Located at 555 108th Ave NE, the building known as 555 stands at a height of 593 feet and 11 inches and features the City of Bellevue's first Occupant Evacuation Elevators. Additionally, another high-rise building currently under construction, Bellevue 600, is expected to reach a height of 603 feet and 4 inches upon completion.



Location and Extent

The [COB Building Bellevue map](#) illustrates the locations of the new high-rise developments within the city.

Recurrence and Impacts

In the past 20 years there have been no significant fires in high-rise buildings within Bellevue. In every case a fire occurred, automatic sprinklers and/or hood-and-duct systems have successfully confined and/or suppressed the fires prior to the arrival of firefighters and prevented fire spread to structural components. The existence of modern construction and advanced monitoring and fire suppression systems throughout the city has resulted in decreased risk to the community. Despite the installation of state-of-the-art monitoring and fire suppression systems in high rise building, which include smoke detectors and pull-stations, automatic fire alarms remain a prevalent reoccurring problem for response resources. To encourage proper maintenance of such systems the department utilizes a progressive “preventable response” enforcement program to identify and correct system malfunctions that create these false alarms.

The probability for a significant high-rise fire in the City of Bellevue is minimal. Although some small fires have occurred, all have been controlled by properly maintained suppression systems. As a result, there has been no meaningful impact to the community to date. Nationally, the recurrence of destructive high-rise fires in sprinklered building remains very low. Even so, the impact of a destructive high-rise fire remains classified as special risk because the risk of both substantial life and property loss from such an incident is very high. Additionally, it has been identified that high-rise structures represent an “additional risk” due to the vertical access challenges that responders will face. The associated life safety issues of high-density occupancies along with the personnel and equipment needed to sustain an offensive attack heighten the risk of this hazard. This is one of the primary factors in advocating for the addition and placement of a new fire station in the downtown core and the adoption of the “High Density” response time standard.

Vegetation Fires

Definition

Vegetation fires occur when grass, bushes, trees, or other types of plants combust. A Wildland/Urban Interface (WUI) area is a geographic area in which structures and other human development meets or intermingles with wildland or vegetative fuels. A WUI fire is a fire located in that geographic area.

History

There are some locations within the service area limits where residential development meets and intermingles with wildland areas. This condition gives rise to the possibility of WUI fires, especially when weather conditions are dry, and vegetation fuels are abundant. Before 2020 this risk was considered “Low”. In 2020, Washington State Department of Natural Resources (DNR) issued a new assessment that raised portions of both Station 8 and Station 9 first-due areas to “Very High” risk.

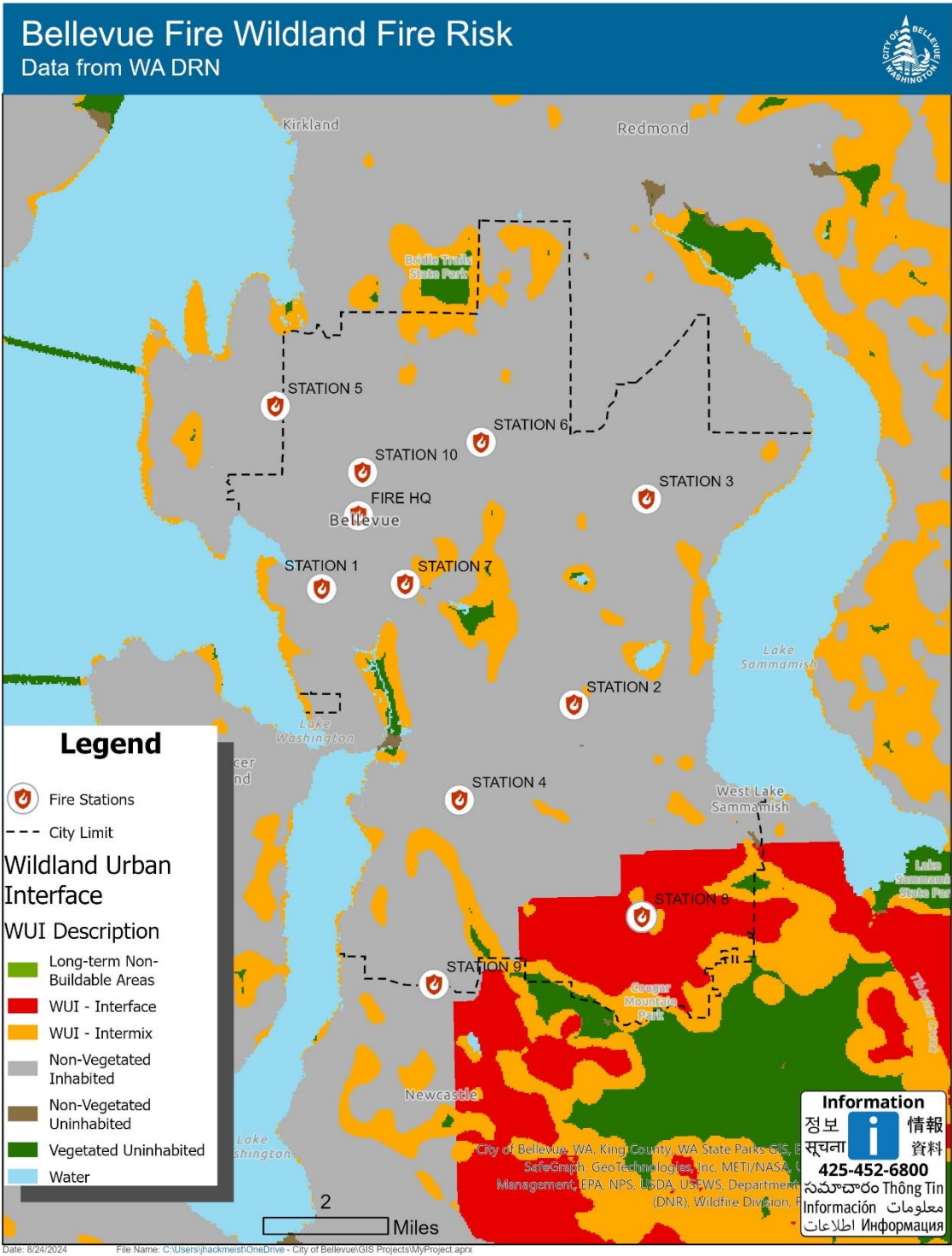


Figure 77 - Washington DNR WUI Map

In the past, the climate of the Puget Sound region has limited the possibility of this risk significantly. A “dry season” typically occurs in the months of July through mid-September. However, despite periods of dryness that can reach 50-60 days, the



prevailing mild temperatures do not facilitate the extreme drying of fuels that is required for a high-risk WUI fire. Also uncommon are the high winds that drive uncontrolled WUI fires. High-wind events are highly uncommon in the summer and early fall when WUI risk is highest. When high-wind events have occurred in late fall and early winter, fire danger has already returned to “low”. BFD has not had a single life lost due to a WUI fire and there has not been a structure lost due to WUI fire for at least 25 years.

Location and Extent

Small roadside, grass or brush fires, and beauty bark fires are not uncommon during the dry portion of the year. They can occur anywhere within the jurisdictional boundary and no area is more susceptible than others. The extent of damage is typically minor, and it is very rare that one would exceed one acre in total size. Most often these fires are caused by inappropriately discarded smoking materials or machinery that has been used improperly. Bark fires are particularly viable for an increased CRR effort that can serve to increase the public’s awareness and reduce the risk of these completely preventable fires.

Recurrence and Impacts

Due to ongoing climate change, past occurrence may not be a reliable indicator of the future probability and severity of these types of fire. This changing risk is illustrated in WA DNR designation of WUI areas located in the south and east portions of the community protected. As part of the department’s ongoing prevention efforts, a compressive wildland fire program appraisal is written annually and presented as part of the Annual Compliance Report produced for accreditation through the Center for Public Safety Excellence (CPSE).

Civil Unrest

Definition

Any incident that disrupts a community where intervention is required to maintain public safety is a civil disturbance. Examples are demonstrations, riots, strikes, public nuisances, and criminal activities. They may be caused by such political grievances and urban economic conflicts as racial tension, unemployment, unpopular political actions, and a decrease in the supply of essential goods and services. In general, civil disturbance most often arises from highly emotional social and economic issues.

History

Historically much of the civil unrest in the region has been limited to Seattle and Olympia. For example, there was the [World Trade Organization \(WTO\)](#) protest in Seattle in 1999. There has also been instances of riots and civil unrest during [May Day](#) demonstrations in Seattle and Olympia over the years.

However, while most instances of civil unrest are based in more urban areas, over the years Bellevue has experienced several instances of civil unrest. Though most public demonstrations in Bellevue have been peaceful and well-intentioned, there have been events that required intervention.

In the spring of 2020, there were a series of demonstrations and protests in over 140 cities across the US that were driven by the [death of George Floyd](#) in Minneapolis. There was a relatively large demonstration in downtown Bellevue on May 30th, and the Mayor issued a [Civil Emergency Order](#) in response to “looters downtown damaging property and stealing merchandise”. The unrest continued for several days, and the Washington National Guard was brought in to provide support.



Location and extent

Civil unrest can potentially impact all areas of the city. Historically, these events have been most likely to occur in the Downtown Bellevue area, however the impacts (i.e. curfews) can be spread throughout a larger area.

Recurrence and Impacts

Instances of civil unrest are relatively rare in Bellevue. Most demonstrations are reasonably peaceful and do not require intervention. However, the potential impacts of civil unrest can be significant, including:

- Road closures and traffic impacts
- Property damages
- Economic repercussions (due to temporary business closures)
- Injuries to demonstrators and public safety personnel

Additionally, curfews and other emergency measures may also be imposed in response to civil unrest which can impact residents' day-to-day lives.

While the Police Department takes the lead in response to civil unrest, a Unified Command (UC) may be formed to coordinate response efforts between Fire and Police. The Emergency Operations Center (EOC) may be activated to support citywide coordination if requested.

Response Strategies - Biological, Geologic, and Metrological Hazards

Pandemic

Definition

Disease outbreaks can be characterized by the extent of spread of the disease. An outbreak is an epidemic if it's above normal disease levels within a defined geographical area. It is a pandemic if the disease spreads across several countries and affects a large number of people. New diseases can quickly lead to an epidemic or pandemic because there is often little or no immunity in the general population and there is limited information about disease prevention and treatments. New disease outbreaks can quickly overwhelm hospitals and other health care providers and decrease a jurisdiction's ability to provide essential services. Though some diseases may be more common in certain regions due to climate and other conditions, they can easily be spread globally if the appropriate preventative measures are not taken.

History

Historically there have been several pandemics that have impacted Washington State. Key examples include the [1918 Spanish Flu](#), [the 1957 H2N2 virus](#), [the 2009 H1N1 virus](#), and, of course, [COVID-19](#). The impacts of COVID-19 continue to be felt in Bellevue and around the globe.

Recurrence and Impacts

Though historically pandemics have been relatively rare, they are increasing in frequency globally. When pandemics do occur, they can be devastating to the impacted region (or world if it is a global pandemic). Impacts of pandemics can include, but are not limited to, the following:

- Loss of human life and health
- Overwhelmed hospital and health care systems
- Rise in number of people in poverty
- Increase in unemployment, evictions, and homelessness
- Scarcity of personal protective equipment (PPE)
- Disruption to supply chains
- Widespread school closures (remote learning still available)
- Reduction of critical services and impact to continuity of government
- Increase in mental health issues
- Civil unrest

As Fire Department personnel are regularly in contact with members of the public (including transporting COVID-19 patients) it is critical that protective measures are taken to protect both staff and their family members. In response to COVID-19, decontamination, Scout/Recon, and other policies, procedures, and guidelines had to be developed and/or revised to address staff and patient safety.

Earthquake

Washington State is situated in a highly active geologic area which contains shifting tectonic plates, crustal faults, and a subduction zone that can all produce frequent earthquakes. Earthquakes occur in Washington nearly every day and many of them go unnoticed. There are three types of earthquakes which may occur in our region: crustal (shallow), intraplate (deep) and megathrust.

Crustal faults are caused by the deformation within the [North American Plate](#) due to compression by neighboring tectonic plates. Crustal earthquakes occur no deeper than 18 miles below the surface and can produce earthquakes as large as M7.5. Intense shaking occurs near the epicenter but usually diminishes quickly with distance relative to the other earthquake types. Several major population hubs are situated directly atop such faults, such as the [Seattle Fault](#) which runs directly beneath the Cities of Seattle and Bellevue. The most recent Seattle Fault earthquake occurred about 1,100 years ago and this fault has been active 3-4 times over the past 3,000 years.

The most frequent type of earthquake in Washington is [Intraplate](#). These earthquakes rupture faults within the subducting Juan de Fuca Plate and are usually less than M7.5. Because these earthquakes are so deep (18-42 miles beneath the surface), the seismic wave energy spreads over a much larger area than a shallow quake, thus shaking is felt over a larger geographic extent. Historically, intraplate earthquakes occur every 10 to 30 years. The United States Geological Survey (USGS) estimates that there is an 84% chance of an intraplate earthquake of M6.5 or greater occurring within the next 50 years. Deep earthquakes larger than M6.0 occurred in 1909, 1939, 1946, 1949, 1965, and most

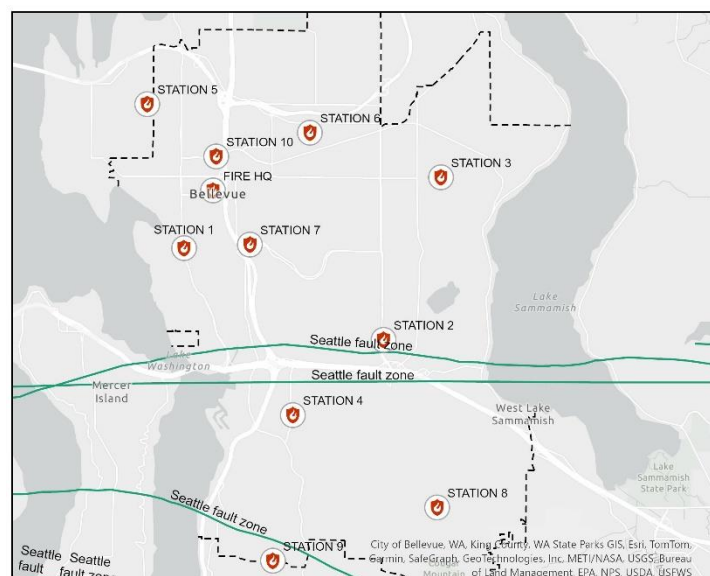


Figure 78 - Seattle Fault Zone Map



recently on [February 28, 2001](#) with the epicenter under the Nisqually Delta. The Nisqually quake did not cause any significant disruption to Bellevue or the surrounding communities.

Megathrust earthquakes occur at subduction zones and produce earthquakes as powerful as M9.0. In the Pacific Northwest, megathrust earthquakes will occur along the [Cascadian Subduction Zone](#). Historically, these earthquakes reoccur at a 500-year interval.

The most likely earthquake to occur in the next twenty years is a Seattle fault event. Most scenarios model a M7.2 Seattle fault earthquake caused by a 63 kilometer (40 mile)-long rupture on the northernmost strand of the Seattle fault zone from the Kitsap Peninsula to just east of Lake Sammamish. This scenario is based on a past earthquake that probably caused a surface rupture on the fault in the Bellevue area thousands of years ago. That event caused about 2 meters (6.5 feet) of surface displacement west of Lake Sammamish near SE 38th Street. Unlike deep earthquakes, which usually produce few or no aftershocks strong enough to be felt, a M7.2 shallow earthquake like the one in this scenario would likely be followed by many aftershocks, a few of which could be large enough to cause additional damage. The number of people injured is likely to be high, particularly if the earthquake occurs during or at the end of the business day. King County is expected to suffer the highest number of casualties (as many as 15,615) or which a significant portion would be in Bellevue and the adjacent communities.

The [Washington State Geologic Information Portal](#) contains estimates of earthquake damage for a variety of faults in the State of Washington.

Liquefaction:

If sediments (loose soils consisting of silt, sand, or gravel) are water-saturated, strong shaking can disrupt the grain-to-grain contacts, causing the sediment to lose its strength. Increased pressure on the water between the grains can sometimes produce small geyser-like eruptions of water and sediment called sand blows. Sediment in this condition is liquefied and behaves as a fluid. Buildings on such soils can sink and topple, and foundations can lose strength, resulting in severe damage or structural collapse. Pipes, tanks, and other structures that are buried in liquefied soils will float upwards to the surface.

The department's response plans for earthquakes are described more thoroughly in SOP Article 700, Section 24, which details earthquake and disaster response protocols. Additionally, BFD Forms FD150 through FD159 cover individual Station post-earthquake protocols and damage assessments. In summary, the plan is to move apparatus to safe areas, assess station damage, report assessments to the BC via a radio roll call, and then resources will perform a first-due area damage assessment prior to any emergency response. The on-duty BC will then form an area command that will prioritize the incidents and assign resources via a "resource emergency" plan designed to prioritize incidents and provide resources to those incidents where they have the most effect on the outcome.

The Emergency Manager (in coordination with COB leadership) will assess if an activation of the Emergency Operations Center (EOC) is required to support citywide response.

Despite the response capabilities of the department, a catastrophic earthquake will quickly deplete those resources and widespread damage is inevitable. The BFD Office of Emergency Management (OEM), along with county and state agencies, encourages residents to [plan for these occurrences](#) by maintaining emergency food supplies and abating hazards in their homes and businesses.



Recurrence and Impact

None of the earthquakes of the past 50 years have had any significant impact on the service jurisdiction. However, with this type of event, the next one could be devastating and there should be no attempt to discount future risk based on past occurrences.

Severe Weather

Definition

Severe weather includes a variety of meteorological phenomena that are detrimental to citizens and/or infrastructure in the communities protected. These atmospheric disturbances are usually characterized by strong winds frequently combined with rain, snow, sleet, hail, ice, thunder, and lightning. This definition includes unusual weather disturbances such as tornadoes or funnel clouds, which appear infrequently in the region. In addition, any heavy snowfall or rain might be considered a severe storm. Secondary hazards or impacts that can result from severe storms include flooding, landslides, power outages, and closed transportation routes limiting emergency response, increasing pollution, and causing environmental damage.

History

Over the years the jurisdiction has had many instances of severe weather. While not all have caused major long-term problems, they have all disrupted people's day-to-day activities and posed a burden, especially on the most vulnerable.

Location and extent

Severe weather of all types directly and indirectly affects the entire service area. Due to variations in geographic location and elevation, certain areas are more vulnerable to certain types of severe weather than others. Higher elevations are particularly susceptible to snow events. Areas with above-average tree cover are more susceptible to windstorm damage, however, conifer cover is more prevalent in open spaces (i.e. parks) and damage in those areas typically has minimal community impact.

Hail

To date, the hailstorms have not caused significant damage. A local weather condition known as the [Puget Sound Convergence Zone](#) is capable of producing hail up to ¼" in size, but typically no larger. Convergence zone conditions are most common in the winter and spring and rare in summer and fall. The most significant impact brought on by this risk is a disruption in transportation brought on by localized hail accumulations that result in poor driving conditions.

Ice Storms

Ice storms and/or freezing rain conditions are extremely rare. The proximity to the relative warmth of the Puget Sound waters disrupts the ability to create the cold air conditions necessary for freezing rain. In addition, the Cascade Mountain range to the east provides a barrier to the colder inland air of eastern Washington. Lastly, weather fronts from the Pacific Ocean are known for quickly scouring away stagnant and colder surface air, thus removing ideal icing conditions. The most significant impact brought on by this risk is a disruption in transportation brought on by poor driving conditions.



Snowstorms

Snowstorms are not uncommon in this lowland region, but they tend to be both brief and without appreciable accumulation. It is rare to have snow conditions that persist longer than 10 days at a time, although it does happen occasionally such as the snow event in February of 2019 which lasted for approximately 13 days. However, it is also not uncommon to have a snowless year. The moderating effect of the relatively warm Pacific and Puget Sound waters limits the ability of cold air to persist long enough to create snow conditions.

Tornados/Funnel Clouds

Tornados are an extremely rare occurrence in the region. Only a small handful of localized wind damage events are known to have occurred in the Puget Sound area and the National Weather Service would rate all of them at the F0 to F1 level. This weather event only occurs in association with the Puget Sound Convergence Zone weather phenomena previously described and areas to the north and south of the service area are more likely to be affected. Tornado and/or funnel clouds events in this region, when they do occur, are always very brief and would not generally affect an area greater than half a football field. The most significant impact brought on by this risk is localized property damage.

Windstorms

Wind has played a prominent role in the history of emergencies and disasters impacting the community. BFD can expect some wind-related problems on a near-annual basis; however, windstorms such as the 1962 [Columbus Day Storm](#), 1993 [Inaugural Day Storm](#), and the 2006 [Hanukkah Eve storm](#) brought widespread and significant property damage. Even so, the likelihood of loss-of-life due to these events remains historically low.

Windstorm events, when they do occur, typically happen during the fall and early winter. There are relatively low incidences of significant windstorms during the spring and summer.

The most significant impacts brought on by this risk are widespread power outages, downed trees blocking transportation routes, and property damage. In addition to the damage, emergency responders experience much higher call volumes and periods of resource depletion. These incidents are best responded to under current response plans until the number of requests requires the initiation of the “resource emergency” plan. This plan prioritizes life safety incidents, followed by property damage and leaves resource requests to be dealt with in a non-emergent manner when circumstances permit.

Flooding

Definition

A flood is typically a temporary condition of partial or complete inundation of normally dry land areas from:

- The overflow of inland or tidal waters,
- The unusual and rapid accumulation or runoff of surface waters from any source, or
- Mudflows or the sudden collapse of shoreline land

History

Bellevue’s flood hazards are primarily based on urban stream/groundwater events. Due to the absence of sizable rivers and no significant watershed, there is no risk to widespread inundation. However, the urbanization of Bellevue and an increase in impervious surfaces has led to a greater risk of localized urban flooding events.



The most severe flooding on the service areas major streams and creeks results from low-to-moderate elevation (1,000 to 3,800 feet) snowmelt runoff occurring in conjunction with a prolonged moderate-to-high intensity rainfall event. This is commonly referred to as a rain-on-snow event. Accumulating snowfall usually occurs for brief periods (one-to-three days) and can be followed by accelerated warming from Pacific frontal storm systems arriving from the tropics and which contain a significant amount of precipitation. Rain-on-snow events typically result in a sharp rise in stream flow. Occasionally, those streams will overrun their banks.

Flooding usually occurs when runoff exceeds the conveyance capacity of natural and manmade drainage systems. Surface-water runoff volumes in urban stream channels, roadway ditches, culverts and conveyance pipe systems can exceed the available conveyance and storage capacity of such systems. This typically occurs with moderate- to high-intensity storms that can last for several days or occur in succession over a period of weeks. These events are characterized as rainfall of three inches or more in a 24-hour period. Urban area flooding generally occurs gradually and allows time for property owners to identify an impending flood situation and prepare for it. In some areas, however, flooding can occur rapidly and may leave little time for preparation.

In many cases, debris can accumulate in storm water collection systems and reduce the capacity of the system to convey flow. Such a reduction in capacity can lead to more frequent flooding events.

Location and Extent

Bellevue has 235 properties located within the 100-year flood plain defined by the Federal Emergency Management Agency (FEMA). According to the modeling conducted by the King County Flood Control District, in a 100-year flood event, the service area could face up to \$10,162,000 in damages to buildings and property.

The City of Bellevue has undertaken considerable effort to manage storm water since 1994. Recent activity has included increasing storage capacity of a regional pond, replacing culverts, and conducting levee improvements near the I-405 corridor.

Recurrence and Impacts

Despite [12 instances of Federally-Declared flood disasters in King County since 1990](#), those events had relatively minor effect on the service area. Significant flooding during those declarations took place in river basins outside of the jurisdiction. BFD only has two properties in the jurisdiction that are susceptible to recurring flooding.

Response Strategies - Hazards to Infrastructure

Petroleum Pipeline Fire

Definition

A petroleum pipeline is a conduit used for the transport of liquid petroleum products and is distinctly different than a natural gas pipeline. A petroleum pipeline fire is a fire involving the products that have leaked or escaped from that conduit.

Description

The Olympic Pipeline is a 400-mile underground pipeline extending from refineries in northwest Washington to Portland, Oregon. This pipeline carries refined liquid petroleum products such as diesel, aviation fuel and gasoline. The pipeline extends approximately 10 miles through the center of Bellevue from NE 60th Street at the city's northern border to SE 59th Way at the City's southern border. The easement follows a close approximation of the



136th Ave NE line and the Puget Sound Energy transmission line utility corridor. The pipeline route is clearly marked with right-of-way or “warning” marker signs, but the signs do not indicate the precise location of the pipe. The City of Bellevue publishes a GIS based hazard layer map that identifies the approximate location of the pipeline, and this information is part of all BFD hazard mapping.

Built in 1965, the pipeline serves the transportation energy needs of the region by delivering an average of 18.7 million gallons of fuel each day to both Sea-Tac International Airport and to tank farm refuelers that supply the region’s service stations. Without the pipeline, it would take an average of 1,800 tanker trucks per day to deliver the same amount of fuel.

The pipeline consists of two separate steel pipes that lay side-by-side for most of the 400-mile length, but then separate in Bellevue for an approximate 2-mile stretch. One pipe is 16 inches in diameter and the other is 20 inches. Pressures, fluid characteristics, and rates of flow are monitored and controlled remotely by telemetry from central control or dispatch rooms equipped with Supervisory Control and Data Acquisition Systems (SCADA). The control center is staffed 24 hours a day, 7 days a week.

Other facts about the pipeline include:

- The pipeline is buried between 30 and 48 inches in depth. Where it crosses under roads and railroad tracks it is 8 feet deep and encased in additional steel protection.
- The pipeline is constructed of carbon steel with walls 0.281 inches thick and carries a small electrical charge to reduce corrosion.
- Sixty percent of the time the pipeline carries gasoline that travels at about 4 mph producing 5,900 gpm at pressures between 250 and 1440 psi.
- Flow and pressure are controlled by computers in the [Olympic Pipe Line Company \(OPLC\)](#) Control Center in Renton. Shut down of the pipeline for maintenance or emergency is done by using valve blocks located throughout the system. OPLC uses three types of valve blocks:
 - Check Valves that prevent backflow.
 - Hand-Operated Valves (HOV’s) are shut by OPLC personnel only, in the field. An HOV takes approximately 2 to 8 minutes to shut once the person arrives at the valve site (travel to a valve site can take anywhere from 5 to 60 minutes).
 - Remotely Operated Valves (ROV’s) are controlled by the OPLC Control Center in Renton. It takes approximately 45 to 90 seconds to completely close the valve using a computer-enhanced system.

History

There have been no incidences of pipeline fires or leaks within the city of Bellevue. However, this pipeline has had incidents that resulted in both environmental contamination and loss of life. The most notable incident occurred on June 10, 1999, when the 16-inch fuel line ruptured in Bellingham, WA, spilling 277,200 gallons of gasoline into Hanna and Whatcom creeks. The volatile fuel found an ignition source and the ensuing explosion killed three children playing near the creeks. The massive fireball sent a plume of smoke 30,000 feet into the air, visible from Anacortes, WA to Vancouver, B.C., Canada. The rupture was traced to a [cascading series of failures](#) instead of one problem or event.



The Bellingham incident brought closer scrutiny of pipeline operations and the safety features that are to be used to prevent future spills. The software that controls the pipeline has a leak detection system that gives operators the ability to detect unusual conditions and begin shutdown procedures when leak conditions are possible. Automated valve and pump shutdown are designed to prevent another catastrophe.

Pipeline damage in the US due to malicious or terrorist acts has not occurred and has not been factored into this risk analysis.

Location and Extent

Anecdotal evidence of prior pipeline ruptures indicates that leaks and ruptures can result in spills of several hundred gallons to over 100,000 gallons. However, some of the greatest spills occurred during the early history of the pipeline when automation and monitoring was more limited or non-existent. As such, a catastrophic rupture with a near-immediate pipeline shutdown can still result in a spill well of well over 10,000 gallons. Where the spill occurs, where it travels to, and whether it finds an ignition source will largely determine the extent of possible damage. Low lying areas near the pipeline are most at risk for this hazard.

Recurrence and Impacts

Despite stricter Environmental Protection Agency (EPA) reporting measures for spills, pipeline safety appears to be improving with smaller and less impactful spills. Therefore, this hazard has less frequency risk within the BFD service area than even a standard highway tanker spill. However, aging infrastructure and rupture risks due to seismic events may put the community at additional risk. Given all factors, the probability of an event remains in the “unlikely” category. However, pipeline incidents continue to occur in this country, and many for undetermined reasons. The combination of a highly flammable liquid, in large quantities, and in urban environment translates into a significant consequence and impact that approaches the “catastrophic” level. Response and recovery from a significant pipeline event would deplete the response and mitigation abilities of the City of Bellevue. During the CRA process, the existing Bellevue Fire Department Olympic Pipeline Plan was reviewed, revised, and republished.

Energize Eastside

Puget Sound Energy (PSE) is the sole provider of electric service for the City of Bellevue and surrounding areas. PSE monitors its electric systems on a continual basis (24/7) and is alerted to anomalies in several ways including, automatic operation protective devices, public 911 calls, emergency dispatchers and responding PSE field personnel. If adjacent non-PSE infrastructures, such as the Olympic Pipeline, are discovered to have possible impacts by an electric event, PSE will communicate with impacted infrastructures immediately upon learning of the impact. Further coordination and collaboration may be required between PSE and other responders to support safe response.

Energize Eastside is a Puget Sound Energy (PSE) project to increase electrical transmission capability across the region by replacing four (4) existing wooden transmission towers with two (2) new steel towers and a substation, using the existing pipeline right-of-way. Sixteen (16) miles of electrical transmission lines will be replaced, and a new substation constructed to manage the increased capacity. The existing right-of-way was chosen to minimize tree and property issues. PSE maintains that the Olympic Pipeline will not be affected by the construction activity. These two (2) new transmissions towers will be between 70 and 100 feet in height, will be constructed out of steel and will replace four (4) wooden towers in approximately the same physical location.

In the event of an incident involving the release of material from the pipeline, these new towers will be more robust and less likely to suffer catastrophic failure. Incident Commanders (IC) should be familiar with these facts



and Community Communication Plans should proactively address this issue to allay public concerns in the unlikely event of an incident.

Sound Transit Light Rail – 2 Line

The Sound Transit (ST) light rail system is an electrically powered public transportation system. Sound Transit is the owner and governing body.

In April 2024, [Sound Transit opened the first segments of the 2 Line](#). Engineering delays continue on the I-90 bridge component of the line, but trains are currently running from South Bellevue to Redmond Technology Center. When the bridge component is complete, the 2 Line will connect to the existing 1 Line at Seattle’s International District station. The 1 Line connects from Angle Lake, south of Seattle-Tacoma International Airport, through Seattle and to Lynnwood in Snohomish County.

Sound Transit Rail Operation Maintenance Facility

Bellevue has also been identified as the location for a second [light rail maintenance facility](#). This facility was been constructed at the same time as the rail line and supports the maintenance and storage of Light Rail Vehicles (LRV) with their associated equipment, parts, supplies and repair facilities. Additionally, Sound Transit will co-locate some administrative and support staff at the facility.

2 Line Operations

Light rail terms:

- **LRV:** Light Rail Vehicle, 103,000 lbs., 200 passengers, up to 4 LRV’s linked
- **OCS:** Overhead Contact System (overhead light rail electrical wires)
- **TPSS:** Traction Powered Substation
- **ETS:** Emergency Trip W=Switch (located at TPSS)
- **LCC:** Link Control Center (center for communications and operations of light rail)
- **Pantograph:** mechanical arm that connects the LRV to the overhead wires.

Orientation: The light rail uses a two-track system that typically run parallel to each other. The LRVs operate on DC electric current supplied from the substations (TPSS) by two overhead wires (OCS). LRV’s connect with the OCS via a pantograph that can be raised and lowered. The tracks operate as the negative return (not a significant electrical threat) for the electrical current. The Link Control Center (LCC) functions as the nerve center for the light rail and can communicate, coordinate, and remotely shut off power to the OCS. It is in Seattle. The estimated train frequency is every 6-8 minutes during peak operations. The LRV’s have an operator located in the forward cab (each end has a cab) of the LRV. The driver must operate the train by utilizing a throttle equipped with a “dead man” switch. In the event the operator becomes incapacitated, the LRV will come to a stop. The system times traffic lights using predicative GPS technology and changes the signals much like the pedestrian button and car sensors do, but the only system that actively takes control of traffic signals is the Opticom system (when equipped) used by emergency responders. Train operators are required to stop for red lights and hazards.



Eastlink potential emergencies

All the following will require interagency collaboration and coordination under emergency conditions (COB and Sound Transit). In any emergency, a Sound Transit Supervisor is requested to the command post to establish a unified command. This supervisor will be the direct contact to the LCC to verify that the necessary systems are operating, and rail systems and operations have been shut down.

Examples of emergencies include:

- LRV fire
- LRV de-rail
- LRV vs. vehicle collisions
- LRV vs. pedestrian involving heavy vehicle rescue
- Other Fire Department incidents operating in Light Rail Intersections
- Incidents involving elevated guideways
- Confined Space Rescue
- Electrical Hazards of the OCS
- Incidents involving the 2500-foot tunnel
- Terrorist activity involving LRV's
- Fire or incident involving the TPSS
- Collisions involving the switching locations
- Responding to EMS calls on the LRV

2 Line Incident Response Training

Following the completion of the current construction and prior to revenue service, BFD actively engaged in training activities with Sound Transit representatives and other regional fire departments. This training included a full-scale MCI drill, training involving light rail electrical systems, drills involving patient extrication from an LRV, training for approaching elevated guideways with aerial ladders, high voltage electrical fires, training and drills on lifting LRV's, and confined space drills and firefighting in the tunnel and other confined spaces on the alignment.

Other Critical Infrastructure

There are 16 Critical Infrastructure (CI) Sectors identified by the Regional Threat Hazard identification and risk assessment (THIRA) as defined by FEMA.

The fire department should evaluate GIS and other available technology to leverage a more informed and efficient earthquake response plan. This may reveal critical infrastructure not otherwise observed using our current annual evaluation.

An inventory of CI that affects BFD's ability to mitigate incidents has been compiled. This inventory will be evaluated by Program Managers when performing program appraisals; to identify gaps in capability, and develop policies and response strategies around CI, such as bridges, interchanges, highways, water mains, reservoirs, pumping stations, and communications facilities.



Section 4 – Current Deployment and Performance

On scene operations, critical tasking, and effective response force (ERF) determinations are the key elements of the department SOC. Ultimately those factors determine staffing levels, resource types, resource numbers, and expected duties performed to mitigate emergency incidents. The ability to rapidly place enough staff on-scene to perform duties or critical tasks has a direct influence on the outcome of a situation.

Consistent Provision of service

BFD has established performance benchmarks to consistently provide the highest quality service to protect and preserve the lives, property, and environment of our community. In establishing its benchmarks, BFD understands that applying a single benchmark standard to all service areas and planning zones of the community is in line with NFPA 1710. However, BFD proposes to require a more stringent benchmark performance standard in the planning zones that reflect the greatest population density. This “High Density” standard will ensure that a consistent performance goal is applied to the entire jurisdiction by more accurately accounting for both the increased population density and the “vertical” response component of the structures in these planning zones.

To provide this level of consistency, the BFD has developed a service provision methodology to measure its baseline performance against its established benchmarks in the following manner:

The two (2) census tracts that comprise the CBD (0238.03 & 0238.04) have been designated as “High Density” planning zones and will be evaluated on a benchmark standard that uses a 2:00 minute travel time instead of the urban area 4:00 minute standard. Additionally, this reduced benchmark for response will better reflect the “verticality” of these more densely populated zones and highlight the increasing challenges in ensuring risk is minimized in these areas. These census tracts and population densities will need to be reevaluated when the 2020 Census results are available.

Service Provision Methodology

In performing its CRA, the agency was able to assess, categorize, and classify its risk within its service area. This SOC is designed to evaluate available resources and match them against the risk to provide consistent provision of service across all demand zones in the community. This is accomplished by:

- Conducting a critical task analysis of each service type.
- Measuring baseline performance for each service type.
- Establishing consistent benchmarks for each service type across the entire agency.
- Analyzing baseline performance against established benchmarks during program evaluation activity.
- Identifying opportunities to improve service and close the gap between baseline performance and benchmark goals in the Performance Improvement Plan (PIP).

Fire on-scene operations

The variables of fire growth dynamics, along with property and life risks, combine to determine the fire ground tasks required to mitigate losses. The tasks are interrelated but can be separated into two basic types: suppression and/or rescue. Suppression tasks are those actions necessary to confine and extinguish the fire, while rescue tasks are those associated with finding trapped victims and safely removing them from the involved structure.

Suppression tasks are generally accomplished by using one of two methods: deployment of hand-held hose lines or fixed master streams.

The decision to use hand lines or master streams depends upon the stage of the fire, water supply, available personnel and resources, and the recognized threat to life and property. If the fire is in the pre-flashover stage firefighters can make an offensive fire attack into the building by using hand lines. Properly positioned hand lines can quickly extinguish fires or protect trapped victims until they can safely exit the building.

If the fire is in the post-flashover stage and has extended beyond the capacity of hand-held hose lines, or if structural damage is a threat to firefighter safety, the structure is typically declared lost. In this situation, master streams are typically deployed defensively to extinguish the fire and keep it from advancing to surrounding exposures.

First-arriving firefighters may use a “quick hit” strategy to rapidly move from the exterior to interior firefighting operations to limit or abate an environment suspected of presenting an immediate danger to life or health (IDLH) for trapped victims. This tactic can also be used while awaiting the arrival of additional resources to mount a more aggressive offensive fire attack.

Rescue tasks are based upon many variables including: the number of occupants, their location, their status, and their ability to take self-preserving action. For example, ambulatory adults need less assistance than those with restricted mobility, while the very young and the elderly may require more assistance.

Before initiating actions, the Incident Commander (IC) must select an appropriate initial strategy or mode of operation, namely: Offensive, Defensive or Rescue. Each strategy has its own critical task demands:

- **Offensive strategy** – This strategy typically employs an aggressive seat-of-the-fire attack by the first-arriving firefighters. The top priorities of this strategy are to immediately stabilize the incident, rescue trapped victims and/or minimize property losses. Because the objective is to confine and extinguish the fire in a specific area, the ultimate goal of protecting life in unaffected areas can be achieved simultaneously. The offensive strategy is a preferred fire attack method because its use has dual benefit. Before its use, responders must consider the survivability for fire victims, dangers to firefighters, and availability of needed resources.
- **Defensive strategy** – This strategy generally consists of an exterior attack designed to either confine the fire to the structure of origin; or block a fire’s expansion to nearby exposures by taking a stand at a defensible position. Either no victims exist, or no attempts are made to rescue civilian victims from the active fire area due to either non-survivable conditions or structural risks that outweigh the chances of success. Nearly all firefighting is performed from outside the involved structure or from unaffected areas on or in the structure.
- **Rescue strategy** - An operational mode which is focused on immediate actions meant to protect or rescue occupants to prevent serious injury or death. The first-arriving engine company on-scene may utilize 2-in/1-out while performing imminent rescue. Rescue mode ends when the second engine company arrives on-scene or when the rescue situation is resolved, whichever occurs first.

Operational service objectives

The Department’s service objectives are based on a thorough consideration of all the preceding sections:

- Community profile
- Community risks
- Task analysis
- Community expectation that are based on surveys and funding commitments
- Evolving service demands

The overall objective of a response, whether a fire or EMS emergency, is to get

- properly trained responders



- the correct equipment
- at the right time
- to have the best chance of achieving the desired outcome.

Because of the wide variety of conditions at each emergency, it is often complicated to attempt to define department capabilities considering desired outcomes. With staffing, equipment and even the types of calls remaining mostly constant, the remaining variable is *time*. As is often the case, time determines success or failure in emergency situations. Ideally, the actions taken by responding personnel should stop further harm or damage from taking place. As is the case in many emergencies, the more time that passes before responders can intervene, the less chance there is of limiting damages or even death. The same principle applies to EMS responses. Total response time performance (911 call to intervention) and its relationship to cardiac-arrest survival have been examined extensively. Agencies that can incorporate CPR trained citizens with early defibrillation (from either bystanders or responders) and rapid ALS interventions are known to have higher cardiac arrest survival rates. Due to *time's* significance in successful outcomes, aside from cardiac arrest save rate and success rate at confining fires to the room of origin, it is *the only other* factor measured in department

Type of Care for Sudden Cardiac Arrest Victims after Collapse	Chance of Survival
No care after collapse	0%
No CPR and delayed defibrillation (after 10 minutes)	0-2%
CPR from a non-medical person (such as a bystander or family member) begun within 2 minutes, but delayed defibrillation	2-8%
CPR and defibrillation within 8 minutes	20%
CPR and defibrillation within 4 minutes; paramedic help within 8 minutes	43%

Figure 79 - The Chain of Survival

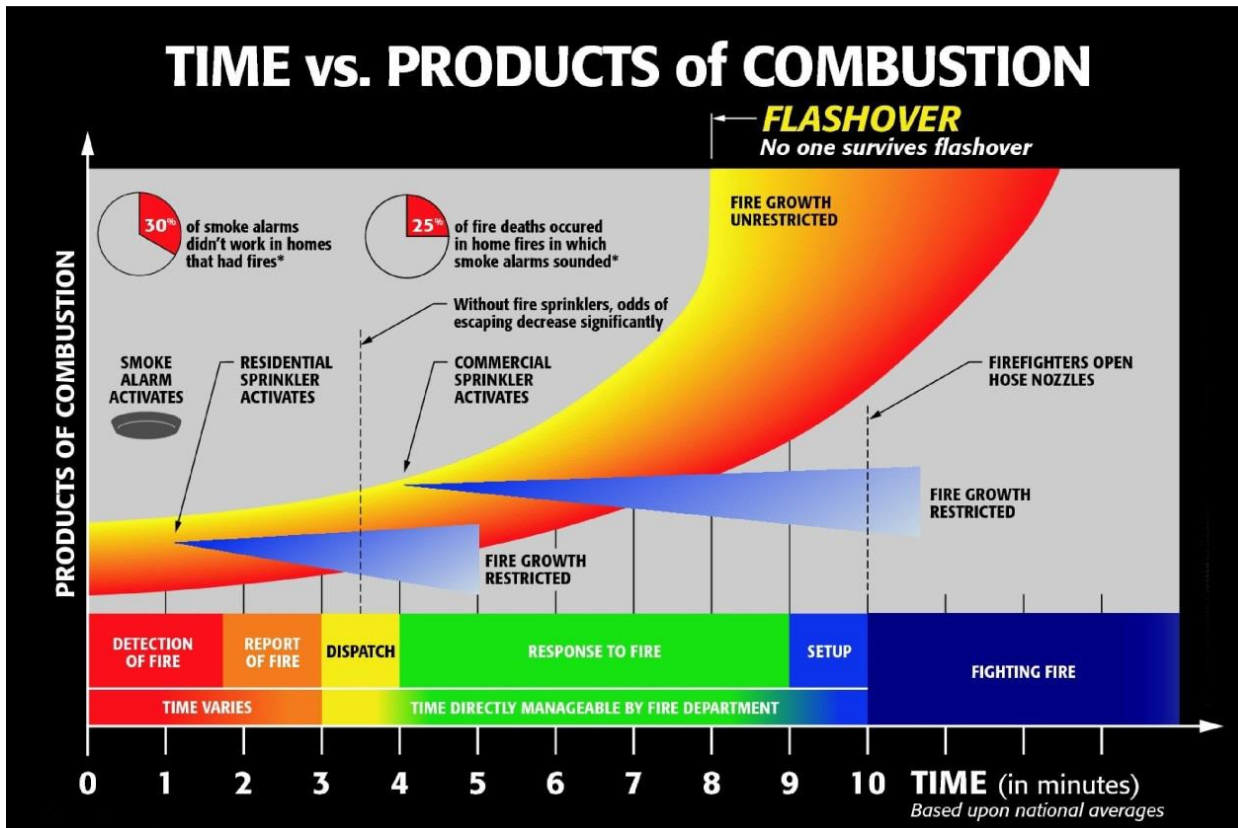


Figure 80 - Times vs Combustion

In summary, the stage of the fire affects both staffing and equipment needs. Early smoke detector notification or early suppression by installed fire protection systems can have a significant impact on restricting (or stopping) fire growth. However, if neither of these mitigation sources is present, the firefighters must arrive within a certain timeframe and additional time is required to adequately apply water to the fire. This suppression effort must occur prior to the flashover stage to have the most beneficial results. In addition, the crew's proficiency at fulfilling their tasks has a direct impact on time. The inability to quickly deploy a hose line or a delay in giving a fire ground assignment will invariably prolong the time that a fire must develop.

Critical Tasks

Those items that must be conducted in a timely manner by firefighters to ensure the highest chance of mitigating an emergency. Critical tasks are important for all emergency types whether it be an uncontrolled fire, sudden cardiac arrest, or an extrication rescue. Tasks, when properly executed at a fire incident can prevent property loss and/or civilian death. EMS tasks such as CPR, defibrillation, advanced airway management and drug therapy can increase a patient's survivability chances. Response plans are based on the critical task-needs for each incident type. When the department determines that an incident type requires a change in standard resources assignment, the response plan is modified. In addition, the first arriving crew or IC always has the option to request additional resources to assist with specific tasks. See [Appendix A](#) for additional details.

System Resiliency

System resiliency is defined as "An organization's ability to quickly recover from an incident or events, or to adjust easily to changing needs or requirements." (CPSE)

Resistance/Reliability

Resistance is a system’s ability to suffer repeated shocks or events without being compromised. Location of facilities and geographic/spatial features greatly determine a given systems ability to “bounce back” from a catastrophic incident or series of significant events. By the proactive placement of response apparatus, ensuring facilities can continue to operate after an event, and designing response plans to account for spatial limitations, an organization can maximize its’ ability to withstand catastrophic incidents without compromising system integrity.

In general, reliability is the ability of a system to perform and maintain its functions in routine circumstances, as well as in hostile or unexpected circumstances. “Efficient, optimized systems fail from unanticipated shocks. Resilient systems survive shocks because they are overbuilt and redundant. Response models need to be resilient to survive the shock that overturns the efficient system. When efficient systems fail, they rely on a fast, resilient response model to survive the collapse and mitigate the damage. Therefore, the mission of the fire service is to be resilient and fast, not necessarily efficient. The superseding quest to maximize efficiency in the fire service removes surge capacity, making the fire service fragile”9. In the case of emergency services, reliability looks at actual incident history data

to measure historical performance in accordance with adopted performance benchmarks.

System reliability revolves around the time it takes to respond to the incident while overcoming distance and traffic conditions.

Reliability can be measured or depicted by several different methods. Some jurisdictions track the amount of time that response units are committed to emergencies with the goal of keeping unit availability at or above a certain percentage. The assumption is that out-of-service time results in simultaneous-call response time failure. For example, Bellevue strives to ensure that Unit Hour Utilization (UHU) remains below twenty percent (20%) for all BLS transport capable apparatus. Other jurisdictions might track the number of incidents in a stations area that are handled by out-of-district crews with the rationale that this is less-than-desirable because they assume that an out-of-district response time is automatically below standard. However, neither of these methods is a true predictor of degrading performance. In Bellevue’s case, AVL dispatches and resource repositioning (coverage for units that are out-of-service for training) *can* and *does* ensure that response time standards are met even in out-of-district responses.

A reliability problem does, however, manifest itself in one measurable outcome: failure to meet a response time standard. The value of seeing where these failures are occurring can help the department understand if response problems are more common in certain areas. The reasoning is, that clusters or concentrations of calls that fail to meet response standards highlight areas that would benefit the most from either additional resources or implementation of response efficiencies (e.g. moving a resource closer to the problem area, removal of traffic calming devices, etc.).

Response Count, Total Utilization (mins), Utilization %

BY UNIT NAME

Unit Name	Response Count	Total Utilization (mins)	Utilization %
A101	1742	68,565.57	19.36%
A102	1584	71,929.53	20.47%
A103	1806	74,544.00	21.04%
B101	512	7,523.32	2.48%
B102	259	6,094.72	3.07%
E101	990	21,838.92	6.37%
E102	1112	24,259.25	7.05%
E104	1525	34,415.43	9.72%
E105	981	22,657.47	6.61%
E106	1679	38,807.05	11.00%
E108	598	15,565.47	4.80%
E109	1161	32,475.28	9.28%
E110	983	24,945.33	7.16%
L103	1331	26,768.03	7.59%
L107	1363	25,316.67	7.18%
M101	1040	35,419.98	10.08%
M102	1196	45,510.25	13.01%
M103	375	18,474.10	6.38%
M104	926	36,517.65	10.57%

Figure 81 - Unit Utilization Chart 2024



Failure to meet response time standards can also be the result of process problems. For example, an agency's failure to have credible turnout time performance will have a significant impact on response time. Poor data entry into the incident Records Management System (RMS) can also have an effect. For example, where non-emergency calls with long response times are misclassified as priority responses. It is only reasonable to expect that turnout time standards and data entry integrity be monitored and maintained before a resource request can be completely justified.

Absorption

Absorption is an agency's ability to quickly add or duplicate resources necessary to maintain service levels during incident levels beyond normal reliability demands and incidents of rare occurrence and/or magnitude¹².

To this end, the department has automatic and mutual aid agreements with all King County Zone One fire agencies and has been participating with the East Metro Training Group (EMTG) for the last five years to increase interoperability, increase familiarity with surrounding departments' and reduce variability in fireground tasks. This regional training provides a more seamless integration of "best practices" across the Zone One regional partners and provides additional resiliencies for all participating members.

During periods of high incident volume such as a windstorm, the on-duty BC may request that the Dispatch agency initiate "Resource Emergency". This action will place all non-emergent incidents into a queue awaiting the next available resource. Emergency incidents will always take priority over these non-emergent situations, thus ensuring that resources are always available when a more urgent situation arises.

Restoration/recovery

Restoration is defined as the systems' ability to return to normal operations.

This factor can be best accomplished by ensuring policies and procedures are in place to provide the supplies, equipment, personnel, apparatus, and facilities necessary to resume normal operations as quickly as possible. To that end, the department has moved to ensure that reserve response apparatus is fully equipped to minimize the amount of time required to place them in service.

In order to ensure rapid recovery for the city, OEM manages the [Comprehensive Emergency Management Plan](#) (CEMP). This plan describes the basic strategies, assumptions, operational objectives, and mechanisms through which the City of Bellevue Emergency Management Program will mobilize resources and conduct activities to guide and support local emergency management efforts through preparedness, response, recovery, and mitigation. Though this plan is designed to guide the entirety of the city, many portions of the plan are relevant to Fire operations and administration.

Section 5 – Evaluation of Current Deployment and Performance

Performance Components

Alarm Processing and Dispatch – time from call pick-up at 911 center Public Safety Answering Point (PSAP) to assignment of first fire apparatus. Adopted benchmark standard is 1:00 for 90% of incidents dispatched by NORCOM PSAP at Priority level P0 – P4.

Turnout - time the first fire apparatus is assigned/notified by dispatch of the incident until vehicle is “moving” on incident. Adopted benchmark standard is 1:00 for 90% of priority EMS and Rescue incidents. Adopted benchmark standard is 1:20 for 90% of priority Suppression and Haz-Mat incidents.

First-due Travel - time the first responding apparatus is “moving” on the incident until first unit arrives at the scene of incident. Adopted benchmark standard is 4:00 for 90% of incidents dispatched priority where the first apparatus arrived emergency and did not downgrade or “reduce” enroute. Planning zones meeting the “High Density” threshold established will have an adopted benchmark standard of 2:00 for 90% of priority incidents.

Total Response Time (TRT) - time from PSAP activation to first arriving fire apparatus on priority responses, includes all the three components of response (alarm processing/Dispatch, Turnout, & Travel). Adopted benchmark standard is 6:00 for 90% of EMS and Rescue incidents. Adopted benchmark standard is 6:20 for 90% of Suppression and Haz-Mat incidents. Incidents falling within planning zones designated “High Density” shall be 4:00 for EMS and Rescue and 4:20 for Suppression and Haz-Mat incidents, 90% of the time.

ERF Travel Time - time necessary to travel to the incident for an “Effective Response Force”. This time begins when the first-arriving apparatus begins travel and concludes when the apparatus that establishes the required ERF arrives at scene. This time will depend on the call/incident type; for low-risk EMS calls, ERF may be one apparatus with two firefighters, for a moderate risk structure fire the ERF may be multiple engines, ladders, chief officers and other apparatus until 19 firefighters are present. Adopted standard for ERF travel will be between 4:00 and 8:00, 90% of the time depending on the incident program area and risk level.

ERF TRT - total time necessary to establish an “Effective Response Force”. This time begins at PSAP activation and concludes when the apparatus that establishes the required ERF arrives at scene. This time will depend on the call/incident type; for low-risk EMS calls the ERF may be one apparatus with two firefighters, for a High-risk structure fire the ERF may be multiple engines, ladders, chief officers, and other apparatus until 25 firefighters are present. Adopted standard for ERF TRT will be between 6:00 and 20:00, 90% of the time depending on the incident program area and risk level.

Discussion of Current Performance

- The 73 month trend in total response time in ERF-met incidents shows improvements in 2023 and 2024 across the board, as Engine 110 went into service first at city hall and subsequently in station 1. The overall opportunity to improve is 23.24 seconds, on average, for the 73 month period.
- In 2022 and 2023, the positive variances were negative 31.45 and positive 8.14 seconds per incident on average, which shows the positive effects in 2023 of moving Engine 110 to city hall. More research is needed to determine with 2023-2024 data why the trend moved in the opposite direction after that.
- All response programs show a zero variance from the benchmark threshold in aggregate at the 33rd percentile, and low risk incidents in all programs led, with a negative 5 seconds favorable variance from benchmark threshold.

- We have Power BI dashboards and a quarterly refresh process in development to conduct more research.
- We can ascertain from the current data that turnout time was a large contributor to improvements and most-controllable-by-crew component of the total response time.
- Pursuant to SOP 100-12 Evaluation of Service Level Thresholds for Planning Areas, the Data, Analytics, and Systems Team has classified the program and risk hazard natures according to Appendices A and B of the Standards of Cover. See Appendix C - Performance Improvement Plan for assessment at the 90th %.
- Actions taken ultimately depend on the nature of the issue, the collaborative ability of the fire department to implement change, financial resource allocation and community support. Not all issues will be correctable, and the City has the final decision on whether resources are allocated to address.

All Response Programs Avg Variance from ERF Total Response Time Goal									All Response Programs 32nd% Variance from ERF Total Response Time Goal								
Rollup_Risk5	2018	2019	2020	2021	2022	2023	2024	Total	Rollup_Risk5	2018	2019	2020	2021	2022	2023	2024	Total
High	255.64	295.50	372.18	317.85	348.21	116.20	329.19	284.81	High	187.70	227.32	250.17	212.08	260.01	138.30	192.32	224.13
Low	11.64	7.35	32.90	29.09	37.24	-36.25	-9.73	10.04	Low	-11.00	-13.00	10.00	7.00	17.00	-36.00	-26.00	-5.00
Mod	101.36	126.00	167.85	164.91	179.45	-36.67	72.93	98.76	Mod	48.54	86.05	132.67	124.16	138.06	-38.43	37.41	69.00
Special	856.67	740.09	528.88	756.47	783.35	769.27	757.38	744.72	Special	788.89	624.70	817.38	759.40	824.75	749.82	736.08	733.00
Total	24.33	22.77	49.46	44.02	53.25	-31.45	8.14	23.34	Total	-7.00	-7.00	15.85	14.00	23.00	-35.00	-19.00	0.00

EMS Avg Variance from ERF Total Response Time Goal									Suppression Avg Variance from ERF Total Response Time Goal								
Rollup_Risk5	2018	2019	2020	2021	2022	2023	2024	Total	Rollup_Risk5	2018	2019	2020	2021	2022	2023	2024	Total
High	-9.51	48.91	42.23	38.36	85.94	-68.04	8.44	20.70	High	262.71	271.13	295.32	280.48	281.33	3.58	267.54	227.88
Low	11.12	7.92	32.65	29.65	37.26	-39.78	-9.41	9.57	Low	14.05	3.74	38.39	22.85	37.87	11.30	-21.13	17.36
Mod	92.99	114.22	155.97	150.16	160.31	-57.06	60.62	83.70	Mod	136.94	218.94	205.73	245.62	256.17	18.97	14.50	163.59
Total	15.87	14.21	37.81	34.95	43.02	-40.86	-0.18	13.90	Special					384.00			384.00
									Total	68.88	82.40	107.84	89.84	110.08	9.77	29.66	71.87

Tech Rescue Avg Variance from ERF Total Response Time Goal									Haz Mat Avg Variance from ERF Total Response Time Goal								
Rollup_Risk5	2018	2019	2020	2021	2022	2023	2024	Total	Rollup_Risk5	2018	2019	2020	2021	2022	2023	2024	Total
High	-6.25		83.67	54.14	-367.00	-50.00	38.50	5.48	High	807.00	749.82	859.88	843.26	842.97	719.09	763.83	800.80
Low	303.71		23.00	254.00	310.00	91.69	296.67	202.15	Low	-29.81	-21.42	21.47	6.74	27.32	-19.19	-17.96	-3.45
Mod	325.57	425.58	346.35	279.88	376.53	265.50	264.13	311.58	Mod	149.47	222.61	255.67	246.25	247.50	131.19	185.64	203.03
Total	260.24	425.58	259.63	231.88	354.03	181.27	261.35	263.01	Special	856.67	740.09	528.88	756.47	804.37	769.27	757.38	749.17
									Total	187.33	192.93	326.40	311.24	378.22	265.82	234.03	279.28

Figure 82 - May 2018 - June 2024 performance vs benchmark



Section 6 – Plan for Maintaining and Improving Response Capabilities

Public safety continues to be a high priority for the BFD service area residents. The expectations of the community are clearly stated in the biennial City of Bellevue Budget surveys. The City of Bellevue’s last seven (7) Budget Surveys asked Bellevue residents about their top budget priorities for City services. “Provide a “Safe Community” was identified as the most important priority in 2010, 2012, 2014, 2018, 2020 and the second most important priority in 2016. Survey respondents were also asked to rank the importance of a long list of City services, as well as their relative satisfaction with each. “Responding to fires” was identified as both one of the most important services and the function residents are most satisfied with for the last six (6) surveys. “Providing emergency medical services” ranked second in 2014 and third in 2018 and 2020. These survey results provide evidence that the services provided by BFD are both valued by the community and meeting their expectations.

Ensuring Compliance/Validation of Response Plans

Continuous improvement requires development of a methodology to ensure that planning occurs, problems are addressed, results are evaluated, and adjustments are made. This process is best illustrated by the Plan, Do, Check Act (PDCA) method, also known as the Deming Cycle. To continually improve, an organization must use the PDCA method in an iterative manner.

To further develop this competency, a Program Appraisal (PA) has been developed. Formal PA’s of the previous calendar year will be conducted by each of the following program managers, no later than February 14th of each year:

- **Community Risk Reduction/Fire Prevention** – Fire Marshal or designee
- **Public Education** – Public Information/Community Liaison Officer and Community Risk Reduction Specialist
- **Fire investigation** – Assistant Fire Marshal Inspections/Investigations
- **Domestic Preparedness/Emergency Management** – Emergency Manager or designee
- **Suppression** – Deputy Chief Operations or designee
- **EMS** – Battalion Chief of EMS or designee
- **Technical Rescue** – Special Operations Lieutenant
- **Hazardous Materials** – Battalion Chief Special Operations
- **Mobile Integrated Healthcare (MIH)** – Battalion Chief EMS and CARES Program Manager
- **Wellness/Fitness** – Lead Personal Fitness Trainer

The PA shall ensure that each program is evaluated to determine the following:

1. Review the previous years’ service demand by planning zone (response programs only).
2. Validate the categorization of risk for each program area and class within each planning zone and document this validation (response programs only).
3. Validate the critical infrastructure inventory and changes within each planning zone, discuss and document any changes.
4. Review any program areas that exceeded threshold levels established by policy document, determine if changes need to be made and document their discussion (response programs only).



5. Assess adequacies, consistencies, reliabilities, and opportunities for improvement for the total response area relevant to the program and document their discussion.
6. Evaluate altering conditions, such as population growth, traffic, development and changing risk relevant to the program and document their discussion.
7. Evaluate community risk reduction, public education and outreach efforts and their effect on the program's goals and objectives and document their findings.
8. Discuss industry research findings that are relevant to each program area and document discussion.
9. Identify any shortfalls and gaps in the program and recommended actions to address those shortfalls.
10. Provide budget estimates of program needs for both the immediate future and the next 3 – 5 years.

Completed PA's are forwarded to the Fire Chief for review and consideration. The completed PA's are used by the Departmental Accreditation Manager (AM) to inform the Annual Compliance Report (ACR) to the accrediting body. As necessary, the AM will update the departmental Performance Improvement Plan (PIP) with any relevant findings, gaps, shortfalls and the action(s) recommended to address gaps identified from response program PA's.

These PA's, ACR, PIP and other tools will help the Department identify changing service demands. Those service demands will, in turn, cause the department to look for ways to optimize performance and improve overall outcomes. For example, changing EMS service demands or increased call volume in specific areas will lead the Department to consider revising resource staffing and/or positioning.

Performance Policy

Emergency response time data for the previous year will be evaluated by the Program Managers to ascertain performance for each response program area. Response programs are defined as:

- Suppression
- Emergency Medical Services
 - Basic Life Support (BLS)
 - Advanced Life Support (ALS)
- Technical Rescue
- Hazardous Materials (Haz-Mat)

Response data to be evaluated will include.

- Number of responses (*n value*)
- Dispatch time
- Turnout time
- Travel time
- ERF Travel Time
- ERF TRT

Every category of risk by program area will be evaluated whenever the number of responses meets the accreditation minimum ($n \geq 10$). Threshold limits for each program area shall consist of:

- An increase or decrease of 10% in any component of total response time ($n > 100$)
- An increase or decrease of 10% in any number of responses by program area ($n > 500$)
- An increase or decrease of ERF travel or ERF TRT by 10% or greater by program area ($n > 50$)



Data will be analyzed against previous year and historical performance following the *Standard Operating Policy 100-9 – Use of Planning Zones* to determine trends. Program areas or categories of risk where two (2) or more components of response exceed threshold limits and result in a **Confidence interval** of 95% or higher will be identified and highlighted for additional research and evaluation

Ongoing efforts to ensure performance

While the CRA has shown a broad spectrum of hazards in the jurisdiction, the concentration of highest risks near the more developed areas is properly addressed by the current positioning of response resources. Additionally, the modern construction and advanced fire protection that is typical for special and high-risk occupancies in this jurisdiction helps to lessen the overall community risk.

90th percentile Turnout time is reported for each apparatus quarterly by Station Captains. Platoon Battalion Chiefs are tasked with reviewing performance and counseling crews that are falling below Department standards. Additionally, a dispatch-based trigger has been implemented to alert on-duty Battalion Chiefs of units that fail to meet minimum turnout standards. The Battalion Chiefs have the discretion to document performance-improvement efforts in this area.

Lastly, the department will continue to work towards expanding the use of demographic data to focus community risk reduction outreach and mitigation efforts to ensure that these are “right sized”, timely and relevant to the community.

Having Jurisdiction (AHJ) Notification and Communication

The department provides an annual report to the city manager’s office for review and publication on the city’s website. Furthermore, as part of the Fire Chief’s annual review a performance report is provided to the Deputy City Manager. Monthly supervisory tie-in meetings occur between the Fire Chief and the Deputy City Manager and ad-hoc meetings occur with the city manager’s office whenever situations dictate.

Departmental performance metrics and outcomes are communicated through annual performance reporting to the City of Bellevue Covalent performance reporting system by the end of February for the previous calendar year.

Gaps in service delivery and shortfalls in existing programs are identified and brought forward through the budget process to be prioritized and evaluated. Changes to the biennial budget can be addressed in non-budget years through the “mid-bi” process to reallocate funding and prioritizations.

The totality of these interactions provides numerous means and methods to adequately notify the AHJ of any operational shortfalls, capacity gaps, and opportunities to improve the level of service.

Additionally, the department and/or City meets with or seeks feedback from external stakeholders and the community regularly. These meetings serve to discuss issues and gauge service level expectations and are conducted on the following schedule:

- City Council/City of Bellevue Budget process – Biennially with mid-cycle update, the Department is an active participant in the City’s biennial budget process which establishes service levels based on the expectations and surveys of the community.
- Contract Cities – Annually, the department meets with its contracted cities (Beaux Arts Village, City of Clyde Hill, Town of Hunts Point, City of Medina, City of Newcastle and Town of Yarrow Point) to discuss the prior year’s performance and any outstanding concerns or issues. Contract term is for ten (10) years and is next due for renegotiation in 2026.



- Community/Residents/Citizens – surveyed by the City of Bellevue biennially
- Businesses/Developers – surveyed by the City of Bellevue annually
- Bellevue Fire Department Strategic Plan development – gathers extensive stakeholder and community input every five (5) years.

Community Risk Reduction Plan (CRRP)

In 2015, the department leveraged existing resources to establish a community risk reduction group (CRRG), consisting of the CLO/PIO and the Community Risk Reduction Specialist. This group was tasked with coordinating community outreach, prevention, education, training, and mitigation activities to ensure consistent messaging and adequate resource allocation.

In accordance with CFAI “Best Practices”, a budget proposal was submitted for the 2019-2020 budget to enhance the structure of this group and develop a more focused CRRP. This proposal was not funded. Budgetary constraints implemented due to the 2020 COVID-19 pandemic have postponed the resubmittal of this proposal to future budgets. However, the department continues to strengthen existing CRR efforts and wherever possible expand programs that can reflect data informed outcomes.

The long-term goal of the CRR plan, is to ensure that Fire Prevention, Office of Emergency Management, Emergency Medical Services, Community Liaison Office, Fire Department Diversity, Equity, and Inclusion (DEI) Committee Suppression staff and the Community Risk Reduction Specialist coordinate to deliver “community risk reduction” that is relevant, timely, well-coordinated and makes the best use of limited resources.

The CRRG has long recognized the need to expand the department’s ability to connect with all residents through innovative community outreach. The first step in effective connection is fostering cultural competence among department members. Through this, we can expand our multicultural connections within the city, leveraging partnerships with community agencies who serve historically underrepresented residents.

Looking forward, the CRRG will strive to:

1. Build the department’s multicultural connections and capabilities.
2. Expand a prevention outreach program to use data-based research to target and communicate with groups facing the highest risk from fires, disasters, and health emergencies.
3. Increase the cultural competency of all staff through specialized training in multicultural connections and capabilities.
4. Leverage technology to improve communications with diverse communities when we are unable to deploy specialized personnel with relevant experience.
5. Expand our opportunities for effective, quality public engagement. Increase the effectiveness of our outreach efforts by prioritizing and coordinating with partners to develop new tools.
6. Increase communication with contract city officials and outreach to residents of contract cities.
7. Continuously improve our efforts through data-based assessments of the effectiveness of outreach programs.

Future efforts will focus on raising the participation of community members and other city departments in our outreach planning efforts to leverage other programs/services/partnerships, define community concerns, increase the effectiveness of our efforts, make more use of volunteers and increase the level of trust between the department and the diverse communities we serve. This participation will have the following effects:

- Improve access to public safety information through partnerships with community specific media.



- Support public safety programs that provide outreach to vulnerable people groups, including the elderly, disabled, and isolated communities.
- Establish policies and procedures to ensure that materials and outreach events are culturally appropriate to reach the greatest percentage of our target audiences.
- Leverage existing expertise in other COB departments to take advantage of established programs, services, partnerships, and relationships.
- Prioritize a data-driven approach to outreach and focus on “what works”.
- Increase ownership of community risk prevention and mitigation activities within the organization to ensure that Operations staff participate fully where practical.

Additionally, the department currently hosts Driving Under the Influence (DUI) drills at alternating high schools on an annual basis. The data strongly proves that most teen-involved motor vehicle collisions are tied to distracted driving, not DUI. To make our DUI program more relevant and expand the audience to include teens that would typically be passengers, the department has partnered with Impact! Teen Driving to devise supplemental programming. Pre-COVID, the CRRG began meeting with the Bellevue School District (BSD) to discuss this change in programming focus. Focusing on motor-vehicle collision prevention is also directly tied to the City of Bellevue Vision Zero initiative, which aims to eliminate traffic deaths and serious injuries within the jurisdiction by 2030.

Programs - changing demographics and vulnerable populations

The region’s diversity is increasing by any measure, including race, ethnicity, country of origin, and language spoken at home. In the BSD, more than 100 languages are spoken, 15.7% of the population qualifies for the English-Language-Learners Program, and 40.2% of the student population’s first language is something other than English. While it enriches the fabric of the communities we serve, this diversity creates challenges for the department. More than half of the residents of some neighborhoods and over one third of the City of Bellevue’s overall population speaks a language other than English at home. The presence of populations with different cultural backgrounds, life experiences, and native languages requires fire personnel to be flexible, creative, and sensitive in communicating and interacting effectively. This is true both during preparedness outreach prior to an emergency and during an actual event.

Many Cities of Bellevue sponsored surveys have explored service priorities, levels of satisfaction with department services, community expectations, and desired formats for ongoing communication. In response to these survey results, the department has focused its efforts on strengthening current community engagement strategies and developing additional engagement strategies that improve access to public safety information for all populations. One of the ways we accomplish this goal is by providing cultural competency training to help staff interact appropriately with people of different cultural and language backgrounds during all departmental actions per the [Bellevue Diversity Advantage Initiative](#).

Goals and Objectives

The goal of creating the SOC is to provide BFD with a rational, data-informed analysis for the justification and effectiveness of the services provided. The previous chapters have helped develop a full inventory of fire, Suppression, EMS, rescue, Haz-Mat, demographic and other environmental hazards present in the communities served. Considering those risks, the department can create and better manage a response force that can minimize the impact of those hazards.

In reviewing the SOC, staff and field personnel have a more comprehensive understanding of the department’s ability to provide fire protection and related services based on actual data. The value of this type of document



cannot be understated as it also provides leaders and citizens with a clear picture of the justification for fire department staffing and resources. By ensuring that a comprehensive CRA evaluates all inputs, accounts for changing demographics, is responsive to the needs of the community and occurs more frequently; we ensure that these documents are actively used to formulate and evaluate plans and programs. The CRA and SOC ultimately inform the Goal and Objectives of the department by; highlighting areas in need of improvement, identifying programs in need of expansion and illuminating new trends in community risk reduction. This information should then be used to formulate and inform the strategic planning effort.

Recommendations

1. The department should be prepared to be among the first in the nation to move to the [National Emergency Response Information System \(NERIS\)](#), the federal program to replace the aging NFIRS system. This modern approach to data collection will help drive the innovations already underway in how BFD collects, analyses and reports data internally and externally.
2. Bellevue should continue to invest in the Company Officer Leadership Academy (COLA) to continue to develop the next generation of leaders in the department.
3. The CCRG should be revised with the reintroduction of the Fire Public Education role in fall of 2024 and the anticipated addition of 1-2 CRR specialists in OEM with the 2025-2026 budget.
4. The department will continue to send participants to the [Seattle Fire Executive Leadership Academy](#). This joint program with the University of Washington's Foster School of Business has been instrumental in growing the leadership base of the department and creating meaningful, regional networking opportunities
5. The department should continue to develop and expand regional partnerships. Developing regional taskforces and workgroups improves interoperability across all aspects of the department, not just in response operations. Levering groups like King County Zone One, there is ample opportunity for Bellevue Fire to continue as a regional leader while learning from our neighboring agencies.

Summary

The Bellevue Fire Department has committed to both the intent and spirit of achieving and maintaining International Accreditation. While rigorous, the process ensures that even the most professional and competent of organizations recognize and identify gaps in their service delivery and take steps to address those shortfalls. This periodic reassessment is necessary to continue to evolve, the organization, our procedures, response plans, outreach, education, and delivery of services to the community.

The CRA process and SOC document are a foundational piece to ensure that our Strategic Plans, Goals and Objectives and Performance Improvement Plan (PIP) address the correct issues, identify areas of shortfall, facilitate discussions about resource positioning and allocation and provide data informed community outreach and education.



Section 7 - Correlation of CRA-SOC Document to CFAI Accreditation Model

Correlation Matrix

Performance Indicator / Core Competency	Performance Indicator / Core Competency Description	CRA/SOC Link
1A.1	The agency is legally established	Legal Basis for Agency
1A.2	The agency has a mythology in place for recognizing and reacting to changes in legal requirements of local, state/provincial and federal governments (i.e. inspection reports, regulatory references, meeting minutes and legal opinions)	Governance and Administration
1B.1	The administrative structure and allocation of financial, equipment and personnel resources reflect the agency's mission, goals, objectives size and complexity.	Governance and Administration
2A.3	The agency has a documented and adopted methodology for organizing the response area(s) into geographical planning zones.	Geographic Planning Zones (GPZ)
2A.4	The agency assesses the community by planning zone and considers the population density within planning zones and population areas, as applicable, for the purpose of developing total response time standards.	Geographic Planning Zones (GPZ)
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.	Appendix D - Service Level Objectives and Benchmark Thresholds
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.	Geographic Planning Zones (GPZ)
2C.1	Given the levels of risks, area of responsibility, demographics, and socio-economic 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.	Geographic Planning Zones (GPZ)
2C.2	The agency has a documented and adopted methodology for monitoring its quality of emergency response performance for each service type within each planning zone and the total response area.	Community Characteristics and Demographics
2C.4	A critical task analysis of each risk category and risk class has been conducted to determine the first due and effective response force capabilities, and a process is in place to validate and document the results.	Appendix A - Critical Tasks and ERF Determinations
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.	Appendix D - Service Level Objectives and Benchmark Thresholds



Performance Indicator / Core Competency	Performance Indicator/ Core Competency Description	CRA/SOC Link
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.	Appendix C – Performance Improvement Plan (PIP)
2D.1	The agency has a documented and adopted methodology for assessing performance adequacies, consistency, reliability, resiliency, and opportunities for improvement for the total response area.	Appendix C – Performance Improvement Plan (PIP)
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.	Community Characteristics and Demographics
2D.6	Performance gaps for the total response area, such as inadequacies, inconsistencies, and negative trends, are determined at least annually.	Appendix D - Service Level Objectives and Benchmark Thresholds
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.	Appendix C – Performance Improvement Plan (PIP)
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.	Appendix B – 90th Percentile Performance
3A.1	The agency has a current and published strategic plan that has been submitted to the authority having jurisdiction.	Strategic Plan
3B.1	The agency publishes current, general organizational goals and S.M.A.R.T. objectives, which use measurable elements of time, quantity and quality. These goals and objectives directly correlate to the agency’s mission, vision and values and are stated in the strategic plan.	Strategic Plan
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.	Strategic Plan
3C.1	The agency identifies personnel to manage its goals and objectives and uses a defined organizational management process to track progress and results.	2024 Organization Chart
3C.2	The agency’s personnel receive information explaining its goals and objectives.	Appendix B – 90th Percentile Performance
3D.1	The agency reviews its goals and objectives at least annually and modifies as needed to ensure they are relevant and contemporary.	Annual Report
3D.2	The agency reviews, at least annually, its overall system performance and identifies areas in need of improvement, which should be considered for inclusion in the organizational goals and objectives.	Annual Report



Section 8 – Appendices

Appendix A - Critical Tasks and ERF Determinations

Low Risk

Program Area	Type of Calls / Response Plan	Critical Tasks	Minimum Personnel	Dispatched Units	Staff	
EMS	EMS BLS	Command/ Assess scene safety	1	BLS Unit (1)	2, 3 or 5	
	Medical/Trauma	Assess patient/ provide treatment	1	Aid Car = (2)		
		Transport (if needed)			Engine = (3)	
		Total ERF Required	2	Dispatched	2, 3 or 5	
Suppression	AFA	Command	1	Suppression Unit (1)	3 or 5	
	SFR/MFR/ Comm Service Call Flooding Vehicle Fire Fire Misc	Pump Operator/ Alarm Panel	1	Engine = (3)		
		Attack Line/ Investigation	1	Lightforce = (5)		
		Total ERF Required	3	Dispatched	3 or 5	
	HazMat	HAZ	Command/ Size up	1	Suppression Unit (1)	3 or 5
HAZ Aid Other HazMat		Mitigation	2	Engine = (3)		
		Total ERF Required	3	Dispatched	3 or 5	
Rescue	Trail Rescue (BLS)	Command/ Safety	1	Suppression Unit (1)	3 or 5	
		Search/ Rescue	2			
	Total ERF Required	3	Dispatched	3 or 5		
	Trail Rescue (ALS)	Command/ Safety	1	Battalion Chief (1)	1 or 2	
		Search/ Rescue	2	BLS Unit (1)	2, 3, 5	
		Assess Pt./ Treatment/ Transport	2	ALS Unit (1)	2	
Total ERF Required	5	Dispatched	5 or 9			



Moderate Risk

Program Area	Type of Calls	Critical Tasks	Minimum Personnel	Dispatched Units	Staff
EMS	ALS Medical/Trauma	Command/ scene safety	1	BLS Unit (1)	2, 3 or 5
		ALS - Meds/IV/Shock/ Airway	2	ALS Unit (1)	2
		BLS - Support/ Transport	1		
		Total ERF Required	4	Dispatched	4, 5 or 7
EMS	MVC Street	Command/ scene safety/ Blocking	1	Suppression Unit (1)	3 or 5
		Triage and assessment	2	BLS Transport Unit (1)	2
		BLS Support/ Transport	2		
		Total ERF Required	5	Dispatched	5 or 7
EMS	BLS Highway	Command/Safety	1	Suppression (2)	6, 8 or 10
		Blocking/Triage/ BLS support	4		
		BLS Transport	2	BLS Transport	2
		Total ERF Required	7	Dispatched	8, 10 or 12
EMS	Cardiac Arrest	Command/Safety	1	Suppression (1)	3 or 5
		Med Control / Family Liaison	1	Medic (1)	2
		Triage/CPR Manpower	2	BLS (2)	4 or 5
		ALS	2	Medical Services Officer (1)	1
		Meds/IV/Shock/ Airway/Transport			
		BLS Support	2		
		Total ERF Required	8	Dispatched	10 or 13
Suppression	Automatic Fire Alarm -	Command	1	Engine (2)	6
	High Rise	Water supply/ Pump operator	1	Ladder (1)	3 or 5
	Target Hazard	Fire Attack / Backup line	4	Battalion Chief (1)	1 or 2
		Forcible entry/ Search	2		
		Ventilation	1		
		Total ERF Required	9	Dispatched	10 or 13
Suppression	Brush Fire	Command/Scene safety	1	Battalion Chief (1)	1 or 2



Program Area	Type of Calls	Critical Tasks	Minimum Personnel	Dispatched Units	Staff
		Water supply/ Pump operator	2	Engine (2)	6
		Fire Attack - 2 lines	4		
		Total ERF Required	8	Dispatched	7 or 8
HazMat	Natural Gas - minor	Command/Size up	1	Battalion Chief (1)	1 or 2
	Hazmat - Minor	Air Monitoring/ Investigation	1	Suppression (2)	6, 8 or 10
		Establish zones	1		
		Water Supply / Pump operator	1		
		Attack Line	2		
		Total ERF Required	6	Dispatched	7 to 12
Rescue	Vehicle Entrapment	Command	1	Battalion Chief (1)	1 or 2
	Low Angle	Safety	1	Engine (1)	3
	Surface Water Rescue	Triage	1	Ladder (1)	5
	Tech Rescue (other)	Rescue Technicians	4	Medic (1)	2
		Rescue Supervisor	1	Medical Supervisor (1)	1
		EMS	2	BLS Transport (1)	2
		Treatment/ Transport			
		Total ERF Required	10	Dispatched	14 to 15

High Risk

Program Area	Type of Calls	Critical Tasks	Minimum Personnel	Dispatched Units	Staff
EMS	MVC - Freeway	Command/ scene safety	1	Suppression (2)	6 or 8
	MVC - Freeway ALS	Water supply/ pump operator	1	Medic (1) or	2
		Attack Line	2	BLS Transport (1)	2
		Triage and assessment	2		
		ALS/Transport or	2		
		BLS/Transport	2		
		Total ERF Required	8	Dispatched	8 or 10
EMS	ALS Weapons	Command/ scene safety	1	Battalion chief (1)	1 or 2



Program Area	Type of Calls	Critical Tasks	Minimum Personnel	Dispatched Units	Staff
		Triage/ resources	3	Suppression (1)	3 or 5
		ALS - Meds/trauma	2	BLS Transport (1)	2
		Transport	2	Medic (1)	2
				Medical Supervisor (1)	1
		Total ERF Required	8	Dispatched	9 or 12
Suppression	Working Fire - SFR	Command	1	Engine (4)	12
		Water supply/ Pump operator	1	Ladder (2)	6 to 10
		Fire Attack / Backup line	4	Medic (1)	2
		Forcible entry/Search	2	BLS Transport (1)	2
		Ventilation	3	Battalion Chief (2)	2 or 3
		RIT	3	Medical Supervisor (1)	1
		Support/ Utilities	2	Support (1)	3
		Safety	1		
		Medical	2		
		Total ERF Required	19	Dispatched	28 to 33
Suppression	Working Fire -	Command	2	Battalion Chief (2)	2 or 3
	Targeted Hazard	Water supply/ Pump operator	2	Engine (4)	12
	Comm/MFR	Fire Attack/Standby - 2 lines	6	Ladder (2)	6 to 10
		Forcible entry/Search	4	Medic (1)	2
		Ventilation	5	BLS Transport (1)	2
		RIT	3	Medical Supervisor (1)	1
		Fire Panel	1	Support (1)	3
		Utilities	2		
		Safety	1		
		Total ERF Required	26	Dispatched	28 to 33
HazMat	Natural Gas - Major	Command/Size up	2	Battalion Chief (2)	2 or 3
		Safety (tech)	1	Engine (4)	12
		Haz Group Supervisor (tech)	1	Ladder (2)	6 to 10
		Entry Team	2	Medic (1)	2



Program Area	Type of Calls	Critical Tasks	Minimum Personnel	Dispatched Units	Staff
		Backup Team	2	BLS Transport (1)	2
		Air Monitoring	2	Medical Service Officer (1)	1
		Evaluation	6	Haz Engine (1)	3
		Suppression	5		
		Medical Treatment	3		
		Total ERF Required	24	Dispatched	32
Rescue	Confined Space	Command	1	Battalion Chief (1)	1 or 2
	Structural Collapse	Safety	1	Engine (1)	3
	High Angle Rescue	Pump operator	1	Ladder (3)	9 or 13
	Trench Rescue	Rescue Group Supervisor	1	Medic (1)	2
		Rescue Technicians	8	BLS Transport (1)	2
		Triage	2	Medical Service Officer (1)	1
		BLS treatment and transport	2		
		Medical Group Supervisor	1		
		Logistics/ Support (ops)	2		
		Total ERF Required	19	Dispatched	18 to 23

Special Risk

Program Area	Type of Calls	Critical Tasks	Minimum Personnel	Dispatched Units	Staff
EMS	ALS MCI >10	Command/ safety	2	Battalion Chief (2)	2 or 3
	Active Shooter	Medical Group	1	Engine (3)	9
		Rescue Group	1	Ladder (2)	10
		ALS Meds/IV/Shock/Airway	2	Medic (2)	4
		Treatment/ Transport	2	BLS Transport (2)	4
		BLS	10	Medical Services Officer (1)	1
		Support/ treatment	2	Medical Support Unit (1)	1



Program Area	Type of Calls	Critical Tasks	Minimum Personnel	Dispatched Units	Staff
				Private AMB (10)	0
		Total ERF Required	20	Dispatched	31 or 32
Suppression	Working Fire -	Command	2	Battalion Chief (2)	2 or 3
	High Rise	Water supply/ Pump operator	2	Engine (6)	18
		Fire Attack/Standby - 2 lines	6	Ladder (2)	6 or 10
		Forcible entry/ Search	4	Medic (1)	2
		Ventilation	1	BLS Transport (1)	2
		RIT	3	Medical Supervisor (1)	1
		Fire Panel	1	Air Unit (1)	3
		Building evacuation	4		
		Lobby Support/ Control	2		
		Medical Treatment	5		
		Safety	1		
		Total ERF Required	37	Dispatched	40
HazMat	Hazmat - Major	Command/Size up	2	Battalion Chief (2)	2 or 3
		Safety	2	Engine (4)	12
		Water supply/Pump operator	2	Ladder (2)	6 or 10
		Fire Attack - 2 lines	4	Medic (1)	2
		Haz Group Supervisor (tech)	1	BLS Transport (1)	2
		Entry Team (tech)	2	Medical Service Officer (1)	1
		Backup Team (tech)	2	Haz Engine (1)	3
		Air Monitoring (ops)	2	HazMat Group Tone (tech)	5
		Research (tech)	1		
		Logistics/ Support (ops)	2		
		Decontamination (ops)	4		
		Medical Treatment (ops)	3		
		Total ERF Required	27	Dispatched	30
Rescue	Tunnel/Train Rescue	Command	2	Battalion Chief (2)	2 or 3



Program Area	Type of Calls	Critical Tasks	Minimum Personnel	Dispatched Units	Staff
		Safety	1	Engine (6)	18
		Search/evacuation	6	Ladder (2)	6 or 10
		Rescue Group Supervisor	1	Medic (1)	2
		Rescue Technicians	8	BLS Transport (2)	2
		Recon	4	Medical Service Officer (1)	1
		ALS/BLS treatment and transport	4	Air Supply Unit	3
		Medical Group Supervisor	1		
		Air Supply	2		
		Air Monitoring (ops)	2		
		Total ERF Required	31	Dispatched	34 or 39

Appendix B – 90th Percentile Performance

Suppression Performance

(Low Risk) Suppression - 90th Percentile Times - Baseline Performance ERF = 3, 2024			2018-24 Annld.	2024 Annld.	2023	2022	2021	2020	2019	2018 Annld.
Alarm Handling	Pick-up to Dispatch	Urban	1:26	1:36	1:31	1:42	1:19	1:32	1:28	1:07
Turnout Time	Turnout Time 1st Unit	Urban	1:39	1:30	1:38	1:41	1:48	1:39	1:36	1:47
Travel Time	Travel Time 1st Unit Distribution	Urban	6:27	7:44	6:23	6:12	6:57	6:00	6:14	6:08
	Travel Time ERF Concentration	Urban	6:18	6:01	6:23	6:12	6:57	6:00	6:14	6:08
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	8:19	10:10	8:20	7:39	8:41	7:30	8:19	8:15
			n=1,759	n=110	N=236	N=184	N=195	N=204	N=204	N=149
	Total Response Time ERF Concentration	Urban	8:15	10:38	8:20	7:39	8:41	7:30	8:19	8:15
			n=1,242	N=71	N=235	N=184	N=195	N=204	N=204	N=149



(Moderate Risk) Suppression - 90th Percentile Times - Baseline Performance ERF = 8, 2024			2018-24 Annlzd.	2024 Annlzd.	2023	2022	2021	2020	2019	2018 Annlzd.
Alarm Handling	Pick-up to Dispatch	Urban	1:06	0:20	1:42	1:30	0:47	0:21	0:56	0:49
Turnout Time	Turnout Time 1st Unit	Urban	1:42	0:49	1:19	1:58	1:12	1:02	1:46	1:01
Travel Time	Travel Time 1st Unit Distribution	Urban	7:03	2:57	15:28	6:58	4:34	5:20	5:02	10:11
	Travel Time ERF Concentration	Urban	6:54	n/a	6:09	7:00	4:34	5:20	5:09	7:36
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	12:27	n/a	22:00	8:32	6:00	7:20	6:10	13:24
			n=40	n=0	N=5	n=11	n=7	n=4	n=7	n=6
	Total Response Time ERF Concentration	Urban	8:16	n/a	7:46	8:38	6:00	6:15	6:11	12:27
			n=40	n=0	N=5	n=11	n=7	n=4	N=7	n=6



(High Risk) Suppression - 90th Percentile Times - Baseline Performance ERF = 19 or 26, 2024			2018-24 Annlzd.	2024 Annlzd.	2023	2022	2021	2020	2019	2018 Annlzd.
Alarm Handling	Pick-up to Dispatch	Urban	1:30	1:03	1:31	1:34	1:16	1:12	1:37	1:24
Turnout Time	Turnout Time 1st Unit	Urban	1:31	1:34	1:27	1:40	1:24	1:27	1:29	1:49
Travel Time	Travel Time 1st Unit Distribution	Urban	4:38	3:03	4:41	7:03	3:45	3:45	3:21	3:45
	Travel Time ERF Concentration	Urban	8:26	8:38	10:16	7:28	12:06	6:28	6:27	4:50
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	8:42	10:03	22:03	7:15	6:45	7:01	7:44	7:30
			n=427	N=30	N=76	N=65	N=69	N=80	N=69	N=38
	Total Response Time ERF Concentration	Urban	7:27	7:28	12:27	7:00	6:42	7:01	7:28	7:34
			n=316	n=1	n=31	n=60	n=60	n=69	N=60	n=35



EMS Performance

(Low Risk) Emergency Medical Response - 90th Percentile Times - Baseline Performance			2018-24 Annlzd.	2024 Annlzd.	2023	2022	2021	2020	2019	2018 Annlzd.
ERF = 2, 2024										
Alarm Handling	Pick-up to Dispatch	Urban	1:28	1:23	1:31	1:24	1:28	1:25	1:32	1:31
Turnout Time	Turnout Time 1st Unit	Urban	1:47	1:36	1:50	1:49	1:49	1:48	1:44	1:43
Travel Time	Travel Time 1st Unit Distribution	Urban	6:35	8:30	8:03	6:00	6:29	5:35	6:17	5:18
	Travel Time ERF Concentration	Urban	6:24	6:44	8:02	6:00	6:29	5:35	6:17	5:18
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	8:36	10:27	10:47	7:34	7:53	7:43	8:10	8:08
			N=20,603	N=1,510	N=3,650	N=3,755	N=3,482	N=3,014	N=3,343	N=1,849
	Total Response Time ERF Concentration	Urban	8:21	8:16	10:43	7:34	7:53	7:43	8:10	8:08
			n=20,064	n=994	n=3,627	n=3,755	n=3,482	N=3,014	n=3,343	n=1,849



(Moderate Risk) Emergency Medical Response - 90th Percentile Times - Baseline Performance			2018-24 Annlzd.	2024 Annlzd.	2023	2022	2021	2020	2019	2018 Annlzd.
ERF = 4 or 5 or 7 or 8, 2024										
Alarm Handling	Pick-up to Dispatch	Urban	1:23	1:22	1:21	1:20	1:35	1:29	1:15	1:26
Turnout Time	Turnout Time 1st Unit	Urban	1:34	1:33	1:33	1:40	1:40	1:39	1:30	1:31
Travel Time	Travel Time 1st Unit Distribution	Urban	10:44	12:18	12:43	9:17	11:15	8:41	8:14	5:30
	Travel Time ERF Concentration	Urban	9:16	7:28	12:27	9:19	11:15	8:45	8:16	5:30
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	13:09	19:08	16:32	7:56	8:28	8:04	8:43	9:03
			n=1,400	N=415	N=197	N=171	N=153	N=132	N=221	n=111
	Total Response Time ERF Concentration	Urban	9:10	9:33	12:58	7:58	8:29	7:42	8:42	9:03
			n=978	n=61	n=145	n=167	N=152	n=126	n=216	n=111



(High Risk) Emergency Medical Response - 90th Percentile Times - Baseline Performance			2018-24 Annlzd.	2024 Annlzd.	2023	2022	2021	2020	2019	2018 Annlzd.
ERF = 8, 2024										
Alarm Handling	Pick-up to Dispatch	Urban	1:19	1:16	0:55	1:04	1:34	0:45	1:02	1:55
Turnout Time	Turnout Time 1st Unit	Urban	1:30	1:34	1:25	1:28	1:21	1:28	1:23	1:38
Travel Time	Travel Time 1st Unit Distribution	Urban	8:41	18:16	11:15	6:52	8:01	7:43	5:59	6:05
	Travel Time ERF Concentration	Urban	8:59	11:01	15:46	6:57	8:20	7:43	5:14	6:28
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	10:59	16:16	12:14	8:19	8:42	11:06	8:12	10:27
			n=78	n=5	n=12	n=14	n=17	n=9	n=11	n=10
	Total Response Time ERF Concentration	Urban	12:10	14:31	17:47	8:03	8:47	11:06	8:12	10:27
			n=59	n=2	n=6	n=12	n=14	n=9	n=8	n=8



HazMat Performance

(Low Risk) Hazardous Material Response - 90th Percentile Times - Baseline Performance ERF = 3, 2024			2018-24 Annlzd.	2024 Annlzd.	2023	2022	2021	2020	2019	2018 Annlzd
Alarm Handling	Pick-up to Dispatch	Urban	1:31	0:55	1:29	1:56	1:51	1:51	1:22	0:55
Turnout Time	Turnout Time 1st Unit	Urban	1:57	1:38	2:04	2:04	1:44	1:54	1:57	2:00
Travel Time	Travel Time 1st Unit Distribution	Urban	6:45	7:50	6:07	5:44	6:30	6:30	6:42	4:36
	Travel Time ERF Concentration	Urban	6:39	8:02	6:08	5:44	6:30	6:30	6:42	4:36
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	9:04	9:11	10:45	8:07	8:46	8:28	8:54	7:45
			n=235	n=25	N=46	n=32	n=40	N=39	n=38	n=15
	Total Response Time ERF Concentration	Urban	9:06	9:40	10:45	8:07	8:46	8:28	8:54	7:45
			n=223	n=14	N=45	n=32	n=40	n=39	n=38	n=15



(Moderate Risk) Hazardous Material Response - 90th Percentile Times - Baseline Performance			2018-24 Annlzd.	2024 Annlzd.	2023	2022	2021	2020	2019	2018 Annlzd.
ERF = 6, 2024										
Alarm Handling	Pick-up to Dispatch	Urban	1:03	1:20	0:41	1:25	1:00	0:56	1:15	0:39
Turnout Time	Turnout Time 1st Unit	Urban	1:43	1:31	1:21	1:46	1:44	1:13	1:59	1:13
Travel Time	Travel Time 1st Unit Distribution	Urban	8:06	6:11	8:57	1:52	12:39	5:36	6:57	5:48
	Travel Time ERF Concentration	Urban	7:14	n/a	3:43	1:52	12:39	5:36	6:57	5:48
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	11:27	8:21	29:22	4:41	12:21	7:41	9:25	8:10
			n=52	n=7	N=11	n=4	n=15	n=5	n=5	n=5
	Total Response Time ERF Concentration	Urban	9:28	n/a	6:08	4:41	12:21	7:41	9:25	8:10
			n=41	n=0	N=7	n=4	n=15	n=5	n=5	N=5



(High Risk) Hazardous Material Response - 90th Percentile Times - Baseline Performance ERF = 24, 2024			2018-24 Annlzd.	2024 Annlzd.	2023	2022	2021	2020	2019	2018 Annlzd
Alarm Handling	Pick-up to Dispatch	Urban	1:03	1:20	0:41	1:25	1:00	0:56	1:15	0:39
Turnout Time	Turnout Time 1st Unit	Urban	1:28	1:26	1:28	1:23	1:02	1:24	1:39	0:39
Travel Time	Travel Time 1st Unit Distribution	Urban	9:02	7:44	10:38	9:02	9:30	8:13	8:16	5:15
	Travel Time ERF Concentration	Urban	9:00	6:23	7:05	9:10	10:13	5:26	7:49	2:34
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	10:30	9:36	14:10	9:27	7:49	9:54	11:10	7:12
			n=111	N=13	n=16	n=30	n=25	n=14	n=9	n=4
	Total Response Time ERF Concentration	Urban	9:09	8:20	8:43	9:29	6:08	6:41	10:43	6:32
			n=82	N=1	n=7	n=29	n=23	n=12	n=8	n=2



(Special Risk) Hazardous Material Response - 90th Percentile Times - Baseline Performance ERF = 24, 2024			2018-24 Annlzd.	2024 Annlzd.	2023	2022	2021	2020	2019	2018 Annlzd.
Alarm Handling	Pick-up to Dispatch	Urban	1:26	1:11	3:49	0:58	2:02	0:51	0:44	1:20
Turnout Time	Turnout Time 1st Unit	Urban	1:47	1:24	1:42	2:01	1:37	1:30	1:33	0:49
Travel Time	Travel Time 1st Unit Distribution	Urban	9:47	6:11	5:16	12:26	9:16	3:17	25:03	2:00
	Travel Time ERF Concentration	Urban	10:12	n/a	5:16	12:6	9:16	3:17	25:03	2:00
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	11:17	7:31	6:24	14:11	14:49	4:56	9:41	3:01
			n=29	n=2	N=2	n=5	n=8	N=5	n=4	n=3
	Total Response Time ERF Concentration	Urban	12:54	n/a	6:24	14:11	14:49	4:56	9:41	3:01
			n=27	n=0	N=2	n=5	n=8	n=5	n=4	n=3



Technical Rescue Performance

(Low Risk) Technical Rescue Response- 90th Percentile Times - Baseline Performance ERF = 3 or 5			2018-24 Annld.	2024 Annld.	2023	2022	2021	2020	2019	2018 Annld.
Alarm Handling	Pick-up to Dispatch	Urban	1:44	0:29	1:26	0:11	n/a	0:49	n/a	2:10
Turnout Time	Turnout Time 1st Unit	Urban	1:39	0:12	1:51	0:48	n/a	1:11	n/a	2:10
Travel Time	Travel Time 1st Unit Distribution	Urban	9:56	7:26	9:36	12:05	n/a	5:56	n/a	2:45
	Travel Time ERF Concentration	Urban	10:37	n/a	9:36	12:05	n/a	5:56	n/a	2:45
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	10:37	5:50	14:05	n/a	n/a	6:10	n/a	5:41
			n=21	n=3	N=9	n=3	n=0	n=3	n=0	n=3
	Total Response Time ERF Concentration	Urban	12:00	n/a	14:05	n/a	n/a	6:10	n/a	5:41
			n=18	n=0	N=9	n=3	n=0	n=3	n=0	n=3



(Moderate Risk) Technical Rescue Response- 90th Percentile Times - Baseline Performance			2018-24 Annlzd.	2024 Annlzd.	2023	2022	2021	2020	2019	2018 Annlzd.
ERF = 10, 2024										
Alarm Handling	Pick-up to Dispatch	Urban	1:18	0:42	1:04	1:24	0:55	1:35	0:56	2:19
Turnout Time	Turnout Time 1st Unit	Urban	1:53	1:54	1:39	1:34	1:43	2:17	2:02	1:25
Travel Time	Travel Time 1st Unit Distribution	Urban	7:22	8:39	8:26	6:18	9:24	5:42	1:32	n/a
	Travel Time ERF Concentration	Urban	6:11	n/a	7:16	6:18	9:33	5:42	1:32	n/a
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	9:49	9:54	23:15	7:53	7:57	7:33	9:36	6:01
			n=139	n=10	N=21	n=33	N=24	N=20	n=20	n=11
	Total Response Time ERF Concentration	Urban	9:16	n/a	9:14	7:53	7:44	7:33	9:36	6:01
			n=123	n=0	N=16	n=33	n=23	n=20	n=20	n=11



(High Risk) Technical Rescue Response- 90th Percentile Times - Baseline Performance ERF = 19, 2024			2018-24 Annld.	2024 Annld.	2023	2022	2021	2020	2019	2018 Annld.
Alarm Handling	Pick-up to Dispatch	Urban	1:18	n/a	0:30	n/a	n/a	1:41	n/a	0:31
Turnout Time	Turnout Time 1st Unit	Urban	1:25	n/a	1:25	n/a	n/a	1:11	n/a	1:17
Travel Time	Travel Time 1st Unit Distribution	Urban	20:35	24:30	4:27	17:59	n/a	2:55	n/a	n/a
	Travel Time ERF Concentration	Urban	11:13	N/A	4:27	17:59	n/a	2:55	n/a	n/a
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	21:26	25:34	4:56	n/a	n/a	3:55	n/a	0:00
			n=8	n=1	N=2	n=1	n=0	n=2	n=0	n=2
	Total Response Time ERF Concentration	Urban	4:50	n/a	4:56	n/a	n/a	3:55	n/a	0:00
			n=7	n=0	N=2	n=1	n=0	n=2	n=0	n=2

Appendix C – Performance Improvement Plan (PIP)

Pursuant to SOP 100-12 Evaluation of Service Level Thresholds for Planning Areas, the Data, Analytics, and Systems Team will classify the program and risk hazard natures according to Appendices A and B of the Standards of Cover. The Program Managers will perform annual Program Appraisals that will identify ongoing trends in response. Planning Areas found to be deficient in meeting adopted performance standards will be identified and further evaluated by leadership to determine cause. whether the deficiency can be addressed. Actions taken ultimately depend on the nature of the issue, the ability of the fire department to implement change, financial resource allocation and community support. Thus, not all issues will be correctable, and the City of Bellevue has the final decision on whether resources are allocated to address the deficiency.

STEP 1

Please note that all data is reported at the 90th percentile performance for each metric.

After reviewing 2018-2024 (annualized through June) data, the agency has concluded that there are opportunities for improvement in the following areas:

Suppression Moderate Risk:

- The agency's actual baseline performance for call processing time was 1 minute and 6 seconds (1:06) for the six-year aggregate. *This performance presents an opportunity for improvement of 6 seconds.*
- The agency's actual baseline performance for turnout time was 1 minute and 42 seconds (1:42) for the six-year aggregate. *This performance presents an opportunity for improvement of 22 seconds.*
- The agency's actual baseline performance for travel time was 7 minutes and 3 seconds (7:03) for the six-year aggregate. *This performance presents an opportunity for improvement of 2 minutes and 3 seconds.*
- The agency's actual baseline performance for total response time (TRT) was 12 minutes and 27 seconds (12:27) for the six-year aggregate. *This performance presents an opportunity for improvement of 6 minutes and 7 seconds.*
- The agency's actual baseline performance for ERF TRT was 8 minutes and 16 seconds (8:16) for the five- year aggregate. *This performance presents an improvement win (favorable variance to benchmark threshold) of 1 minute and 44 seconds.*

Emergency Medical Services Low Risk:

- The agency's actual baseline performance for turnout time is 1 minute and 47 seconds (1:47) for the five- year aggregate. *This performance presents an opportunity for improvement of 47 seconds.*
- The agency's actual baseline performance for travel time for is 6 minutes and 35 seconds (6:35) for the six-year aggregate. *This performance presents an opportunity for improvement of 1 minute and 35 seconds (1:35).*

Emergency Medical Services Moderate Risk:

- The agency's actual baseline performance for turnout time is 1 minute and 23 seconds (1:23) for the six-year aggregate. *This performance presents an opportunity for improvement of 23 seconds.*



- The agency's actual baseline performance for travel time for is 10 minutes and 44 seconds (10:44) for the six-year aggregate. *This performance presents an opportunity for improvement of 5 minutes and 44 seconds.*

Emergency Medical Services High Risk:

- The agency's actual baseline performance for turnout time is 1 minute and 30 seconds (1:43) for the five-year aggregate. *This performance presents an opportunity for improvement of 30 seconds.*
- The agency's actual baseline performance for travel time is 8 minutes and 41 seconds (8:41) for the five-year aggregate. *This performance presents an opportunity for improvement of 3 minutes and 41 seconds.*

Technical Rescue Moderate Risk:

- The agency's actual baseline performance for call processing time was 1 minute and 18 seconds (1:18) for the six-year aggregate. *This performance presents an opportunity for improvement of 18 seconds.*
- The agency's actual baseline performance for turnout time performance was 1 minutes and 53 seconds (1:53) for the six-year aggregate. *This performance presents an opportunity for improvement of 53 seconds.*
- The agency's actual baseline performance for travel time for the first arriving unit was 7 minutes and 22 seconds (7:22) for the six-year aggregate. *This performance presents an opportunity for improvement of 3 minutes and 22 seconds.*
- The agency's actual baseline performance TRT for the first arriving unit was 8 minutes and 50 seconds (8:50) for the six-year aggregate. *This performance presents an opportunity for improvement of 2 minutes and 50 seconds.*
- The agency's actual baseline performance for ERF TRT was 9 minutes and 16 seconds (9:16) for the six-year aggregate. *This performance presents an improvement win (favorable variance to benchmark threshold) of 44 seconds.*

Hazardous Materials Moderate Risk:

- The agency's actual baseline performance for call processing time performance was 1 minutes and 30 seconds (1:30) for the six-year aggregate. *This performance presents an opportunity for improvement of 30 seconds.*
- The agency's actual baseline performance for turnout time performance was 1 minutes and 43 seconds (1:43) for the six-year aggregate. *This performance presents an opportunity for improvement of 23 seconds.*
- The agency's actual baseline performance for travel time for the first arriving unit was 8 minutes and 6 seconds (8:06) for the six-year aggregate. *This performance presents an opportunity for improvement of 3 minutes and 6 seconds.*
- The agency's actual baseline performance TRT for the first arriving unit was 11 minutes and 27 seconds (11:27) for the six-year aggregate. *This performance presents an opportunity for improvement of 6 minutes and 27 seconds.*
- The agency's actual baseline performance for ERF TRT was 9 minutes and 28 seconds (9:28) for the five-year aggregate. *This performance presents an opportunity win (favorable variance to benchmark threshold) of 32 seconds.*



Step 2

The agency identified that the following factors contributed to the identified opportunity for improvement of between 6 and 30 seconds for its call processing time:

- Moderate risk Technical Rescue incidents 90% call processing time of 78 seconds can be attributed to issues with resolving address of the incident. These are mostly Motor Vehicle Collisions (MVC) and ascertaining the correct location and direction of travel on freeway incidents requires additional time.

The agency identified that the following factors contributed to the identified opportunity for improvement of between 38 – 51 seconds for its turnout time:

- Mobile Data Computers (MDC) clock time was not synchronized to the NORCOM time server. Some apparatus MDCs were off by as much as 34 seconds, while others were within fractions of a second.
- Station officers could further emphasize turnout standards when working with crews.
- Existing monthly turnout time reporting generates immediate value when reviewed in a timelier manner, highlighted on the TipTop quarterly performance report, and reviewed by the chain of command.

The agency identified that the following factors contributed to the identified opportunity for improvement of one minute and 43 seconds to three minutes and 35 seconds for its travel time to incidents occurring in the urban response area:

- Peak call volume occurs during business hours when traffic densities are at their worst.
- Moderate risk Technical Rescue incidents 90% travel time of 7 minutes and 22 seconds can be attributed to increased traffic volumes during freeway and street MVC's incidents.
- First-in units may be out of position due to other service demands and not replaced with nearer units using automatic vehicle location dispatch.

Step 3

After identifying the causal factors that contributed to performance gaps regarding turnout time for low-risk incidents, the agency implemented the following actions:

- In July 2017, the department created a Quarterly Performance Dashboard that requires each Station Captain to report turnout performance against the adopted standard. This data is reviewed by the Fire Chief quarterly.
- The department placed increased emphasis on quick turnout times and expanded the review of these metrics to every level of the chain of command on a quarterly basis

After identifying the causal factors that contributed to performance gap regarding travel time the agency implemented the following actions:

- Increased emphasis on responding as quickly as possible while maintaining safe travel speeds and 100% seatbelt use.

Step 4

The agency proposes the additional actions to reduce the current gap of up to 43 seconds in its turnout time:



- Evaluate the Installation of turnout timers in the front of each station apparatus bay. This installation would provide a count-up clock at the initiation of call processing and will provide immediate feedback to companies of their current performance.
- Redirect all apparatus MDC's to obtain the system clock time from the NORCOM call processing time server.
- Have the COB IT Department ensure that all MDC's default to the NORCOM server.
- Institute weekly MDC clock time checks as part of the apparatus weekly check.

The agency proposes the additional actions to reduce the current gap of one minute and 10 seconds to two minutes and 5 seconds for its travel times:

- Construct a new downtown fire station.
- Implement a new fire suppression/BLS resource at temporary station 10 because the downtown fire station is incomplete.

Step 5

The agency's improvement plan for continuing to reduce the turnout gap of up to 51 seconds and the travel time gap of up to 3 minutes and 25 seconds requires the involvement of the agency to address day-to-day operational issues and the City of Bellevue to address policy and financial implications of this improvement plan.

1. The agency will be responsible for:
 - Highlighting turnout performance and ensuring all suppression staff are aware of adopted standards.
 - Performing annual response Program Appraisals to ensure that Program Managers are aware of changes in baseline performance for their program area and performance against adopted benchmarks.
 - Continue to analyze call volumes and response strategies to ensure new resources are optimally placed.
 - Identifying any operating and capital budget implications created by implementing components of this plan.
2. The City of Bellevue will be responsible for:
 - Reviewing and approving necessary operating and capital budget adjustments, as appropriate.
 - Making any necessary adjustments to the level of service policies after implementation of the improvement plan.



Appendix D - Service Level Objectives and Benchmark Thresholds

Suppression

The department's benchmark service level objectives for the Suppression program are as follows:

For 90 percent of all priority fire suppression responses, the total response time (TRT) for the arrival of the first due unit, staffed with a minimum of 3 firefighters, shall be 6:20 minutes. The first-due unit shall be capable of: providing 500 gallons of water and 1,500 gallons per minute of pumping capacity; establishing Incident Command; completing an initial size-up; initiating a fire attack; addressing a water supply; and complying with 2-in-2 out unless circumstances of the incident indicate the need for other actions, such as immediate rescue. These operations shall be conducted in accordance with the policies and procedures as established by "Best Practices for Offensive Fire Attack & Company Operations" as published by the East Metro Training Group (EMTG).

For 90 percent of all priority low risk suppression responses, the total response Time (TRT) for the arrival of the effective response force (ERF), staffed with a minimum of 3 firefighters shall be 6:20 minutes. The first-due unit shall be capable of: providing 500 gallons of water and 1,500 gallons per minute of pumping capacity; establishing Incident Command; completing an initial size-up; initiating a fire attack; addressing a water supply; and complying with 2-in-2 out unless circumstances of the incident indicate the need for other actions, such as immediate rescue. These operations shall be conducted in accordance with the policies and procedures as established by "Best Practices for Incident Operations" as published by the Fire Departments of Bellevue and Redmond.

For 90 percent of all priority moderate risk suppression responses, the total response Time (TRT) for the arrival of the effective response force (ERF), staffed with a minimum of 8 (Brush Fire) or 9 (Automatic Fire Alarm at High Rise or Target Hazard) firefighters, shall be 10:00 minutes. The ERF shall be capable of establishing command; providing an uninterrupted water supply; advancing an attack line and a backup line for fire control; complying with the requirements of two in two out; completing forcible entry; searching and rescuing at-risk victims; supporting evacuation; ventilating the structure; providing exposure protection; controlling utilities; and providing a safety officer and rehab. These operations shall be conducted in accordance with the policies and procedures as established by "Best Practices for Incident Operations" as published by the Fire Departments of Bellevue and Redmond.

For 90 percent of all priority high risk fire suppression responses, the total response Time (TRT) for the arrival of the effective response force (ERF), staffed with a minimum of 19 firefighters, shall be 10:00 minutes. The ERF for high risk shall be capable of: establishing command; providing an uninterrupted water supply; advancing an attack line and a backup line for fire control; complying with the requirements of two in two out; completing forcible entry; searching and rescuing at-risk victims; supporting evacuation; ventilating the structure; providing exposure protection; controlling utilities; and providing a safety officer and rehab, and be capable of establishing a RIT. These operations shall be conducted in accordance with the policies and procedures as established by "Best Practices for Incident Operations" as published by the Fire Departments of Bellevue and Redmond.

For 90 percent of all priority special risk suppression fire responses, the total response Time (TRT) for the arrival of the effective response force (ERF), staffed with a minimum of 37 firefighters, shall be 12:00 minutes. The ERF shall be capable of: establishing command; providing an uninterrupted water supply; advancing multiple attack lines and a backup line for fire control; complying with the requirements of two in two out; completing forcible entry; searching and rescuing at-risk victims; supporting evacuation; ventilating the structure; providing lobby control and stairwell supervision; establishing a medical group; providing exposure protection; controlling utilities; and



providing a safety officer and rehab, and be capable of establishing a RIT. These operations shall be conducted in accordance with the policies and procedures as established by “Best Practices for Incident Operations” as published by the Fire Departments of Bellevue and Redmond.

Emergency Medical Services

The department’s benchmark service level objectives for the EMS program are as follows:

For 90 percent of all priority BLS medical incidents, the total response time for the arrival of the first-due unit, staffed with a minimum of 2 EMT-D’s, shall be 6:00 minutes. The first-due unit shall be capable of: establishing command; assessing scene safety; conducting initial patient assessment; obtaining vitals and patient’s medical history; and initiating basic life support. These operations shall be done utilizing the policies, procedures and protocols as established by the department and King County Emergency Medical Services (KCEMS).

For 90 percent of all priority ALS medical incidents, the total response time for the arrival of the first-due unit, staffed with a minimum of 2 EMT-P’s, shall be 8:00 minutes. The first-due unit shall be capable of: establishing command; assessing scene safety; conducting initial patient assessment; obtaining vitals and patient’s medical history; providing intravenous (IV) access, medication administration, intubation; and transporting the patient. These operations shall be done utilizing the policies, procedures and protocols as established by the department and King County Emergency Medical Services (KCEMS).

For 90 percent of all priority low risk EMS incidents, the total response time for the arrival of the effective response force (ERF), with a minimum of 2 EMT-D’s, shall be 6:00 minutes. The ERF shall be capable of establishing command; assessing scene safety; conducting initial patient assessment; obtaining vitals and patient’s medical history; and initiating basic life support. These operations shall be done utilizing the policies, procedures and protocols as established by the department and King County Emergency Medical Services (KCEMS).

For 90 percent of all priority moderate risk EMS incidents, the total response time for the arrival of the effective response force (ERF), with a minimum of 4 (ALS Medical/Trauma) or 5 (Motor Vehicle Collision (MVC) - Street) or 7 (BLS Highway) or 8 (Cardiac arrest) 2 of which shall be EMT-P’s, shall be: 8:00 minutes. The ERF shall be capable of: establishing command; assessing scene safety; conducting initial patient assessment; obtaining vitals and patient’s medical history; providing intravenous (IV) access, medication administration, intubation; transporting the patient; and if MVC street, also scene safety / blocking; and if BLS-Highway, blocking / triage / basic life support; and if Cardiac Arrest, 1 of which shall be a Medical Services Officer (MSO) as Med Control/Family Liaison. These operations shall be done utilizing the policies, procedures and protocols as established by the department and King County Emergency Medical Services (KCEMS).

For 90 percent of all priority high risk EMS incidents, the total response time for the arrival of the effective response force (ERF), with a minimum of 8, 2 of which shall be EMT-P’s and 1 a Medical Services Officer (MSO), shall be: 8:00 minutes. The ERF shall be capable of establishing command; assessing scene safety; conducting initial patient assessment; obtaining vitals and patient’s medical history; providing medical support to include CPR, defibrillation, intravenous (IV) access, medication administration, intubation; transporting the patient; and if MVC, providing 500 gallons of water and 1,500 gallons per minute of pumping capacity, initiating a fire attack and addressing a water supply. These operations shall be done utilizing the policies, procedures and protocols as established by the department and King County Emergency Medical Services (KCEMS).

For 90 percent of all priority special risk EMS incidents, the total response time for the arrival of the effective response force (ERF), with a minimum of 20, 6 of which shall be EMT-P’s, shall be: 10:00 minutes. The ERF shall be



capable of establishing command; assessing scene safety; designating a rescue group; conducting triage/initial patient assessments; obtaining vitals and patient's medical history; providing medical support to include BLS; providing intravenous (IV) access, medication administration and control, intubation; and transporting the patients. These operations shall be done utilizing the policies, procedures and protocols as established by the department and King County Emergency Medical Services (KCEMS).

Technical Rescue

The department's benchmark service level objectives for the Technical Rescue program are as follows:

For 90 percent of all priority technical rescue incidents, the total response time for the arrival of the first-due fire apparatus, staffed with 3 firefighters, shall be 6:00 minutes. The first-due fire apparatus shall be capable of: establishing command; sizing up to determine if a technical rescue response is required; requesting additional resources; controlling the hazard; and providing basic life support to any victim without endangering response personnel. These operations shall be conducted in accordance with the policies and procedures as established by the department to ensure personnel safety.

For 90 percent of all priority low risk rescue incidents, the total response time for the effective response force (ERF), staffed with 3 firefighters if Trail Rescue – BLS, and staffed with 5 firefighters if Trail Rescue - ALS, shall be 6:00 minutes. The ERF shall be capable of establishing command; sizing up to determine if a technical rescue response is required; requesting additional resources; controlling the hazard; and providing basic life support to any victim without endangering response personnel, and if Trail Rescue – ALS, conducting initial patient assessment; obtaining vitals and patient's medical history; providing intravenous (IV) access, medication administration, intubation; transporting the patient. These operations shall be conducted in accordance with the policies and procedures as established by the department to ensure personnel safety.

For 90 percent of all priority moderate risk technical rescue incidents, the total response time for the effective response force (ERF), consisting of at least five (5) rescue technicians, and a total of 10 firefighters and officers, shall be 10:00. The ERF shall be capable of establishing command; providing scene and technician safety; patient triage; patient extrication by technician and supervisor; and providing basic life support to any victim without endangering response personnel. These operations shall be conducted in accordance with the policies and procedures as established by the department to ensure personnel safety.

For 90 percent of all priority high risk technical rescue incidents, the total response time for the arrival of the effective response force (ERF), consisting of at least nine (9) rescue technicians, and a total of 19 firefighters and officers, shall be 12:00 minutes. The ERF shall be capable of establishing command; providing scene and technician safety; providing 500 gallons of water and 1,500 gallons per minute of pumping capacity, initiating a fire attack and addressing a water supply; providing logistical support; establishing medical supervision; providing patient triage; and administering basic life support to any victim without endangering response personnel. These operations shall be conducted in accordance with the policies and procedures as established by the department to ensure personnel safety.

For 90 percent of all priority special risk technical rescue incidents, the total response time for the arrival of the effective response force (ERF), consisting of at least nine (9) rescue technicians, and a total of 31 firefighters and officers, shall be 20:00 minutes. The ERF shall be capable of establishing command; providing scene and technician safety; providing air supply and monitoring; supporting rescue operations; establishing medical supervision; providing patient triage; obtaining vitals and patient's medical history; providing intravenous (IV) access, medication administration, intubation; and administering basic life support to any victim without endangering



response personnel. These operations shall be conducted in accordance with the policies and procedures as established by the department to ensure personnel safety.

Hazardous Materials Response

The department's benchmark service level objectives for the HazMat program are as follows:

For 90 percent all priority hazardous materials response incidents, the total response time for the arrival of the first-due unit, staffed with a minimum of 3 firefighters, shall be 6:20 minutes. The first-due unit shall be capable of: establishing command; sizing up; assessing the situation to determine the presence of a potential hazardous material; determining the need for additional resources; estimating the potential harm without intervention; and begin establishing a hot, warm and cold zone. These operations shall be conducted in accordance with the policies and procedures as established by the Eastside Hazardous Materials Consortium (EHMC).

For 90 percent of all priority low risk hazardous materials response incidents, the total response time for the arrival of the effective response force (ERF), staffed with 3 firefighters, shall be 6:20 minutes. The ERF shall be capable of establishing command; sizing up; assessing the situation to determine the presence of a potential hazardous material; determining the need for additional resources; estimating the potential harm without intervention; and begin establishing a hot, warm and cold zone. These operations shall be conducted in accordance with the policies and procedures as established by the Eastside Hazardous Materials Consortium (EHMC).

For 90 percent of all priority moderate risk hazardous materials response incidents, the total response time for the arrival of the effective response force (ERF), staffed with 6 firefighters, shall be 10:00 minutes. The ERF shall be capable of establishing command; performing air monitoring and investigation; and providing the equipment, technical expertise, knowledge, skills and abilities to mitigate a hazardous materials incident. These operations shall be done utilizing safe operational procedures as established by the Eastside Hazardous Materials Consortium (EHMC).

For 90 percent of all priority high risk hazardous materials response incidents, the total response time for the arrival of the effective response force (ERF), staffed with 24 firefighters and at least seven (7) Haz-Mat technicians, shall be 20:00 minutes. The ERF shall be capable of: establishing command and safety; providing 500 gallons of water and 1,500 gallons per minute of pumping capacity, initiating a fire attack and addressing a water supply; designating an entry and backup team; performing air monitoring and investigation; establishing hot, warm and cold zone as necessary; decontaminating; providing medical treatment; and providing the equipment, technical expertise, knowledge, skills and abilities to mitigate the incident. These operations shall be conducted in accordance with the policies and procedures as established by the Eastside Hazardous Materials Consortium (EHMC).

For 90 percent of all priority special risk hazardous materials response incidents, the total response time for the arrival of the effective response force (ERF), staffed with 27 firefighters and at least nine (9) Haz-Mat technicians, shall be 20:00 minutes. The ERF shall be capable of establishing command and safety; designating an entry and backup team; performing air monitoring and investigation; establishing hot, warm and cold zone as necessary; decontaminating; providing medical treatment; and providing the equipment, technical expertise, knowledge, skills and abilities to mitigate the incident. These operations shall be conducted in accordance with the policies and procedures as established by the Eastside Hazardous Materials Consortium (EHMC).