

# Portland Fire and Rescue Blueprint for Success Fire Management Area 25- Woodstock



An assessment and recommendations by students in the Masters of Urban and Regional Planning program at Portland State University.



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# Fire Management Area 25- Woodstock

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## **I. Executive Summary**

Between 2000 and 2017, the call volume for Portland Fire and Rescue (PF&R) increased by 23%; the majority of this growth came from “medical” and “other” calls rooted in non-fire causes. This increase in non-fire related calls impacts the whole Portland community as firefighters who continually respond to “low acuity calls” have less capacity and availability to respond to fire related calls. The Blueprint for Success project is an initiative from PF&R to understand the reasons behind this increase and to create community-based strategies to reduce call volume. This project was originally based off of initial work done by a Masters in Urban and Regional Planning (MURP) workshop team in the winter and spring of 2018 and has now been taken on by students in the Qualitative Methods class, a required course for first year MURP students. This report summarizes the findings and recommendations of year one of three in this partnership between the MURP program and PF&R.

Over the relatively short time-frame of ten weeks, students worked in four very different Fire Management Areas (FMAs): Lents, Woodstock, Sandy Blvd, and Alberta Park. Teams conducted assessments of existing conditions with emphasis on understand the demographics, history, community assets, urban form, livability, and equity challenges of the neighborhoods with their assigned FMA. Teams also conducted interviews with fire station staff and community members and held strategy sessions to cultivate community-based solutions to the problem of increased call volumes. Together, the student’s research demonstrates that while each FMA is distinctly unique in geographical area, urban form, assets and community demographics, etc. they each face the same challenges of rising non-fire-related call data. The research shows an overwhelming need for greater social and behavioral health support of the most vulnerable populations in our communities.

Although not an exhaustive process within the communities that surround the FMAs, the strategy sessions generated many recommendations for possible solutions. One common recommendation across all four project teams was to increase funding and staff capacity for teams that address behavioral health and connectivity of services i.e. Community Health Assessment Teams (CHAT), the Meals on Wheels Gatekeeper program and/or a service comparable to Eugene's Crisis Assistance Helping out on the Streets (CAHOOTS) program. Another common recommended strategy was to improve the dispatch model to ensure fire crews are equipped with the right tools and services when they are dispatched. Other common recommendations include: increasing community partnerships to coordinate services and resources; updating the website with information and education on more than just fire-related calls; and establishing a non-emergency number and call center to offer a 911 alternative, i.e. a 311 number. The project teams sincerely hope that the information presented in the following report helps station captains and PF&R administration to create workable solutions that respond to the needs of these communities.

## II. Existing Conditions

### Overview

While FMA 25 is referred to as the Woodstock station, the service area for FMA 25 ranges well beyond the Woodstock neighborhood. Stretching from the southwest corner of Mt. Tabor on the north end to the Portland- Milwaukie border on the south and from the Reed neighborhood on the west to Lents on the east, the FMA encompasses many neighborhoods including Foster Powell and parts of South Tabor, Lents, Reed, Eastmoreland, Mt. Scott-Arleta, Brentwood-Darlington, Richmond and Creston-Kenilworth. This area is covered by two zip codes: 97206, covering the majority of the FMA, and 97202 in the western part, covering Reed and portions of Errol Heights. According to Census data, there are 6,298 foreign-born individuals living within 97206 and roughly 2,000 foreign born individuals living within 97202.

### Demographics

Demographics within FMA 25 are representative of those of greater Portland. The FMA population is predominantly white at 77.8% and is largely owner-occupied. Both of these demographics can be explained by zoning, as a majority of the area is zoned residential, specifically for single-family detached homes which often serves as a barrier of entry for low-income and communities of color.

**FMA 25 vs. Portland Demographics Snapshot**

	<b>FMA 25</b>	<b>Portland</b>
Population	43,890	620,589
Total number of housing units	18,960	265,439
Median household income	\$57,982	\$61,532
Renter occupied housing units	7,604	115,044
Owner occupied	10,447	133,502
<b>Racial/Ethnic make-up</b>	<b>FMA 25</b>	<b>Portland</b>

White	77.8 %	71.6%
Black/African-American	2%	5.6%
Asian	7.9 %	7.5%
Hispanic/Latinx	6.6 %	9.7%
<b>Education</b>		

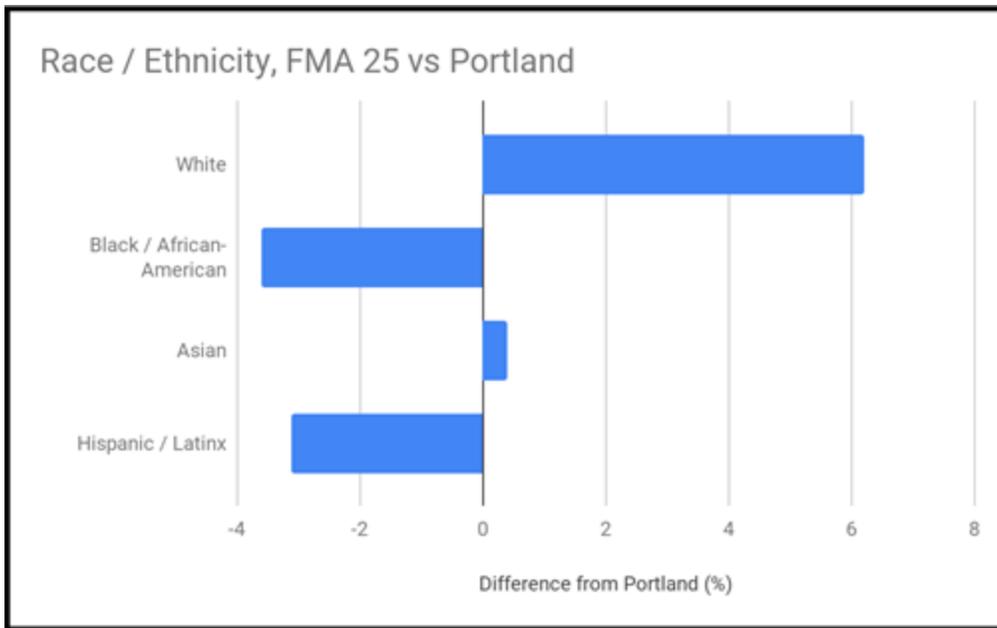
High school graduate or higher	92.6%	91.8%
Bachelor's degree or higher	48.7%	48.2%
<b>Languages-spoken</b>		
English-speaking households	33%	81%
Spanish-speakers households	1.1 %	.08%
Indo-European language-speaking households	1.4 %	.4%
Asian-language speaking households	2.4%	.5%
<b>Poverty</b>		
Households at or below 200% of poverty line	37.7 %	34%
<b>Age</b>		
Male population 65 or older	3.9 %	4.3%
Female population 65 or older	5%	6%
Male youth 18 or under	9.6%	10.9%

Female youth 18 or under	7.3%	10.6%
Median age	37.6	35.8

**Source: Census Bureau**

Understanding the demographics of a community is imperative in properly serving them as a public institution. Though the FMA is largely white and the majority of the firefighters of Station 25 mirror the predominant demographic markers, non-white populations make up 16.5% of the FMA. PF&R may want to take this into account in their internal policies and hiring practices to bring firefighters on board who are more representative of the populations their serving.

Though there is no data on the demographics of callers due to privacy laws, a majority of FMA 25's calls are to assist older adults. Our demographic data indicates that FMA 25 does not have a particularly high population of older adults 65 and over. It's plausible older adults within the FMA may be undercounted, as they are more likely to require assistance filling out surveys such as the Census or American Community Survey. Many older adults within our FMA also live in nursing or residential care facilities and they may also be undercounted if their primary address is different than where they reside most of their time in order to receive appropriate care.

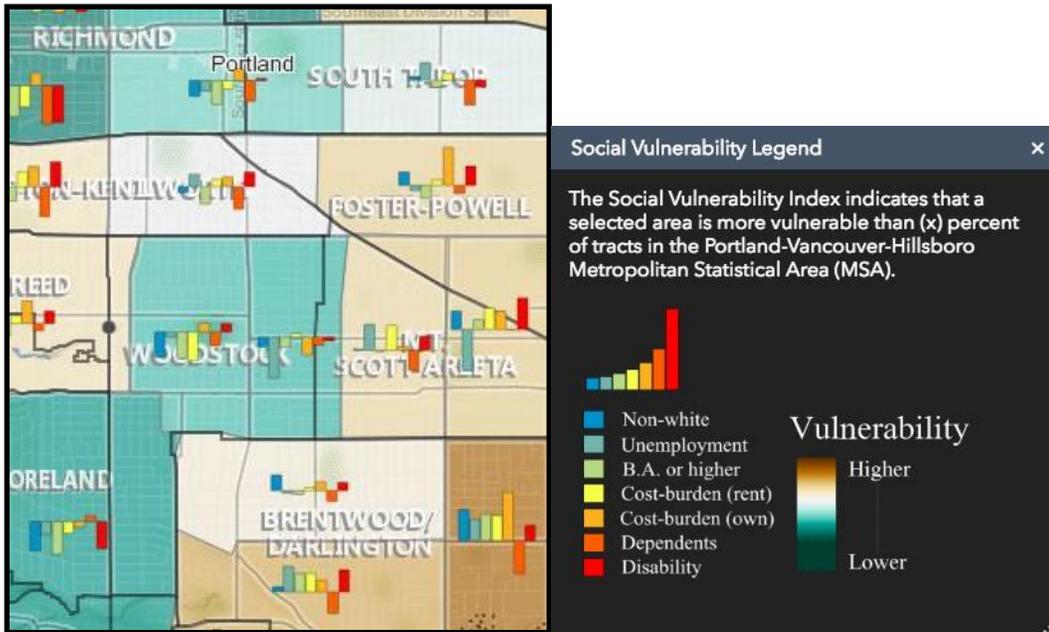


*Bar chart for race (White, Black/African-American, Asian, Hispanic/Latinx) indicating the difference between FMA 25 and Portland by percentage. Source: Census Bureau*

## Social Vulnerability

The Social Vulnerability Index by the CDC tries to predict a community’s ability to prevent human suffering and financial loss in a disaster and looks at poverty, lack of access to transportation, crowded housing, disability rates of an area. Least vulnerable areas (blue) also have fewer fires. Studying SVI within the FMA is crucial in disaster preparedness as PF&R firefighters are first responders and this measurement can help be better prepared to assist its most vulnerable communities. Western areas within the FMA (Woodstock, portions of Eastmoreland & South Tabor) score lower in the Social Vulnerability Index (SVI). As you go east and south, SVI scores are higher, specifically in the Foster- Powell, Arleta, and Brentwood-Darlington areas within the FMA. These are also the areas with higher numbers of immigrants, refugees, and people of color. Additionally, the western portions of the FMA are mostly inhabited by white residents are also the areas that are zoned single-family residential zones whereas immigrant & refugee populations tend to be found more in the eastern portions of the FMA where multi-family housing is concentrated.

## Map of Neighborhoods within FMA 25



**Source: Institute of Portland Metropolitan Studies/Population Research Center**

*Map of neighborhoods within FMA 25. Neighborhoods are colored over to indicate high or low social vulnerability.*

### *Average Rent within FMA 25*

Average rent in Portland is \$1,428 indicating rental costs within our FMA are slightly more affordable. Woodstock, with the highest rent within the FMA, is one of the least vulnerable neighborhood according to the SVI. Though rents in the FMA are slightly more affordable than average rents for the city, they're still largely unaffordable for families who earn below the poverty line.

### Average Rental Prices in Portland

Neighborhood	All rentals
Woodstock	\$1,248
Foster - Powell	\$1,178
South Tabor	\$1,178
Mount Scott - Arleta	\$1,178
Brentwood - Darlington	\$1,178
Reed	\$1,269

*Chart showing average rental prices in FMA 25 neighborhoods including: Woodstock, Foster-Powell, Brentwood-Darlington, South Tabor, Mt. Scott/Arleta, and Reed.*

*Source: Rent Café*

#### *Average home prices within FMA 25*

The income necessary to afford a home within the \$400,000 range across most common interest rates is close to \$100,000 per year based on Principal, Interest, Taxes & Insurance (PITI) calculations. This constitutes a high barrier of entry to the neighborhood for many families, plausibly leading the FMA to continue being homogenous.

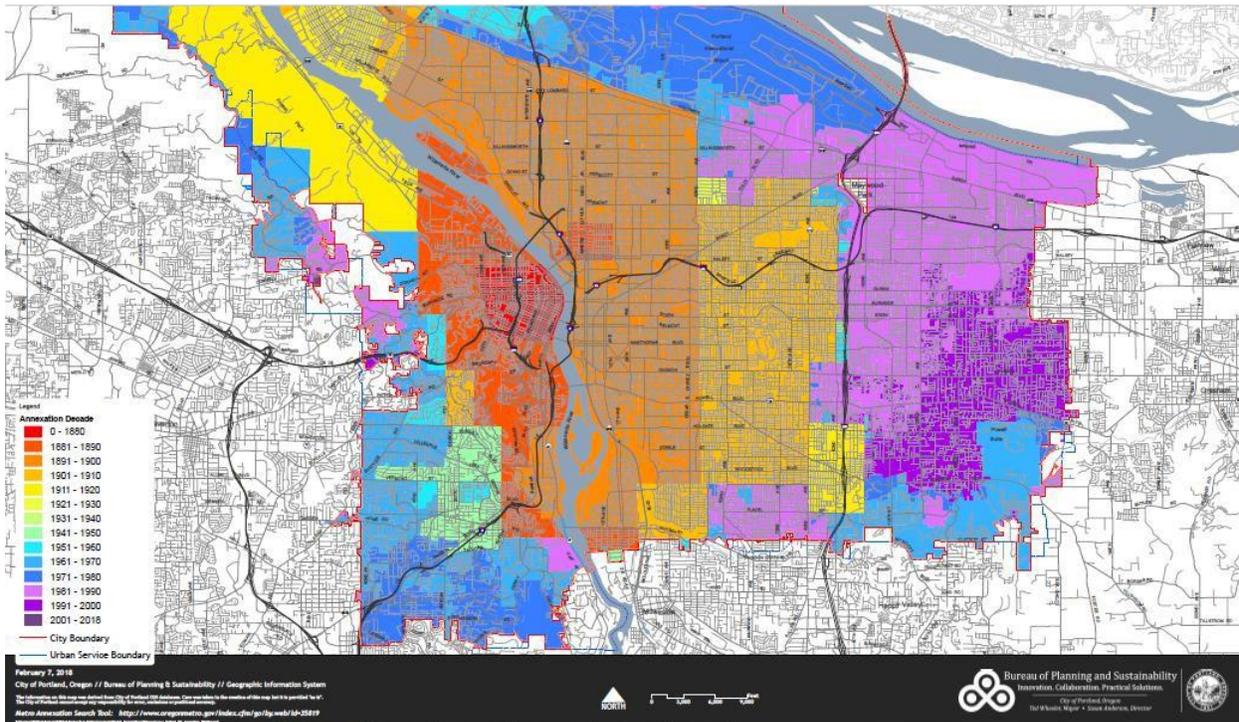
<b>Neighborhood</b>	<b>Median ZHVI (Zillow Home Value Index)</b>
Portland	\$422,400
Woodstock	\$424,600
South Tabor	\$418,800
Mt Scott	\$352,100
Brentwood-Darlington	\$309,500
Foster-Powell	\$373,600

**Source: Zillow**

**History and Community Asset Inventory**

Covering 11 census tracts, FMA 25 encompasses several neighborhoods in Southeast Portland. For the purposes of neighborhood history, this section of the report focuses on the Woodstock, Foster-Powell, and Brentwood- Darlington neighborhoods. This section will also detail PF&R Station 25’s history. To fully discuss the history of FMA 25, we must initially acknowledge and honor the first peoples of Portland. The Multnomah, Kathlamet, Clackamas, Bands of Chinook, Tualatin Kalapuya, and Molalla people inhabited Portland, utilizing the Columbia River and natural resources within the Portland basin (Oregon History Project). The neighborhoods comprising FMA 25 were all formed at the cost of native peoples’ land and human rights.

## Annexations by Decade Map, City of Portland, Oregon



Source: Portland Bureau of Planning and Sustainability

### *Woodstock Neighborhood Area*

The Woodstock neighborhood boundaries include SE Holgate Ave to the north, SE 39th Avenue to the west, and SE 60th to the east. This is the only neighborhood completely within FMA 25's boundaries, giving Station 25 its name of Woodstock Station. Originally platted in 1889, Woodstock developed as a town with its own post office and was separate from the city of Portland until its annexation in 1912. The Woodstock Waverly Electric Company Trolley Line, deeded in 1891, drastically affected Woodstock's development. Consequently, the Woodstock Boulevard commercial corridor, stretching from SE 39th to SE 52nd Avenues, flourished due to trolley service. With the northern portion featuring older, single-family housing stock, and the southern part containing post-WWII single-family housing stock, the Woodstock neighborhood is comprised of mostly single-family housing of various ages (Woodstock Neighborhood Plan, 1995). In fact, the median year housing structures were built in Woodstock is 1949. As Multnomah County's median year housing structures were built is 1967, this makes Woodstock a slightly older neighborhood than FMA's nearby such as Lents.

### *Foster-Powell Neighborhood History*

Similar to Woodstock, Foster-Powell was a rural and agricultural area outside of Portland city lines before 1880. In 1892, the 50th Avenue and Foster Road streetcar line was completed, and was operated by the Portland, Chicago and Mt. Scott Railway (Foster-Powell Neighborhood Plan). The streetcar line connected central Portland with Foster-Powell and spurred residential and commercial development along the rail line. Foster Road, originally a dusty corridor for farmers from eastern areas transporting their goods to central Portland, further developed as an important social and commercial arterial (Foster-Powell History, 1996). The Foster-Powell neighborhood was annexed in 1908. The boundaries are Powell Boulevard to the north and Foster Road to the South, and the neighborhood is distinguishable by its triangular shape. The parts of the neighborhood within the FMA 25 boundaries mostly have a median year of housing built in the late 1940s to late 1950s.

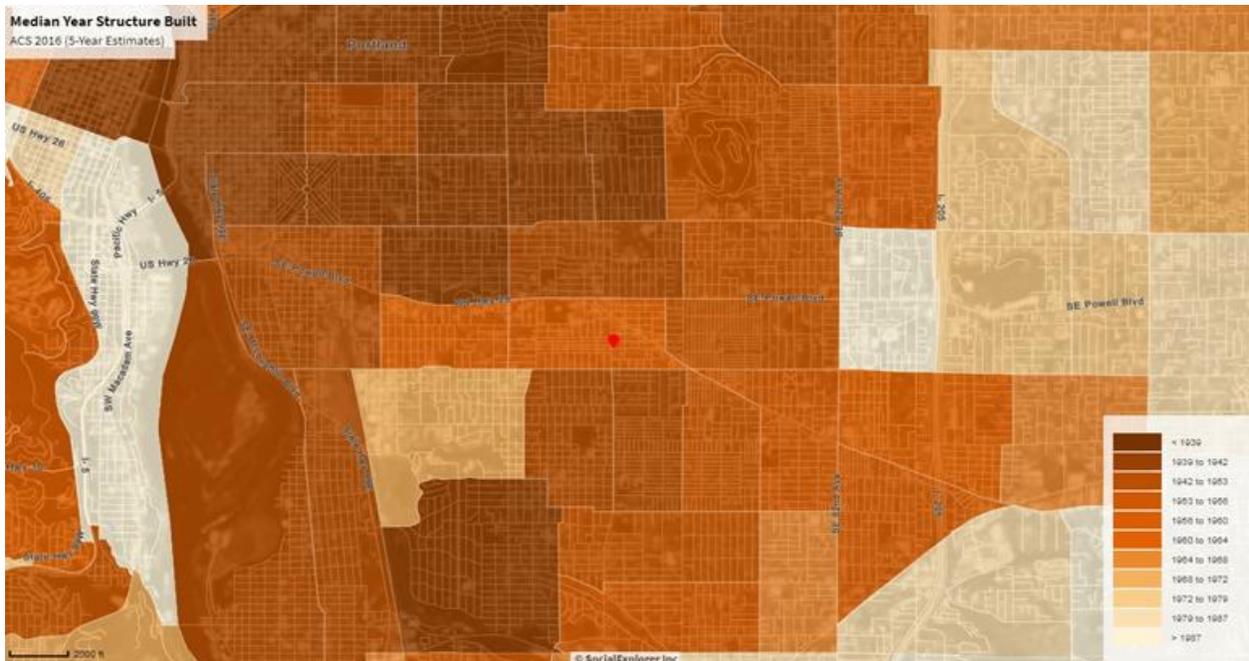
### *Brentwood-Darlington Neighborhood*

The Brentwood-Darlington neighborhood is bounded to the north by SE Duke Street, SE Clatsop Street to the south, SE 45th Avenue to the west, and SE 82nd Avenue to the east. First established in 1882, the neighborhood was also impacted by streetcar service development. However, Brentwood-Darlington was not annexed until 1986 (Brentwood-Darlington Plan, 1992). This impacted the development of housing and city services such as sewer infrastructure, sidewalks, and paved roads, and parts of Brentwood-Darlington maintained rural characteristics into the 1990s. With the annexation, some residents were frustrated by the new costs of city living. For example, residents protested astronomical sewer hookup bills, and lamented rising costs of housing. Also, in the 1980s, many Southeast Asian, Eastern Europeans, and East African immigrants moved to the area because of its affordable housing prices. The neighborhood was originally called Errol Heights, but changed names to Brentwood-Darlington to shake negative associations and the derogatory nickname ‘felony flats’ (Abbott, 2001). The median age of housing structures range from late 1950s to early 1970s, with newer housing located along the eastern boundaries of the neighborhood.

### *History of Housing in FMA 25 Median Year Housing Structures Built by Census Tract*

In 1924, Portland voted on its first zoning code, and the code passed. This code, heavily influenced by Klansmen, formally divided land into industrial and residential zones, and zoned most residential as single-family only. Not only did families have to pay for a single-family home, they also had to pay for the large lot of land on which the house stood (Sightline Institute). This was cost prohibitive to many low- income residents and People of Color. Furthermore, the Alien Land Bill, passed in 1923, banned Japanese people from owning property in Oregon. In many cases, homes also had restrictive covenants written into the deeds. These deeds specifically denied African-Americans and other People of Color from renting or owning homes in Portland. Portland solidified exclusionary practices by banning attached housing in most neighborhoods by 1959, further prohibiting renters from the city (Sightline Institute).

### **Woodstack Neighborhood, Median Year Structure Built**



*Source: American Community Survey 2016 via Social Explorer; red marker is Station 25*

As FMA 25's housing stock was mostly built in the 1940s and 1950s, according to the median year housing structure data from the American Community Survey, FMA 25 developed as single-family, large lot residential neighborhoods (Abbott, 1994). FMA 25 was heavily impacted by these exclusionary zoning laws, and, due to racist and classist land use practices, most neighborhoods, especially Woodstock, systemically kept out low-

income residents, as well as People of Color through zoning code and housing structures.

### *History of Station 25*

The great fire of 1873 in Portland, located at the Hurgren and Shindler furniture shop, revealed the inadequacies of an all-volunteer firefighting. Consequently, The Portland Paid Fire Department submitted their first annual budget request to City Council in 1883, thus creating the foundation for the current day Portland Bureau of Fire, Rescue, and Emergency Services. Previously called The Portland Fire Bureau, Portland Bureau of Fire, Rescue, and Emergency Services (colloquially, Portland Fire & Rescue) changed names in 1988 to reflect the changing nature of fire service in the United States, and required all firefighters to train as Emergency Medical Technicians (Firefighting in Portland Through the Years).

Located at 5211 SE Mall Street, Station 25 was built in 1959 and retrofitted in 2002. The original Station 25, built in 1912, was located at 3350 SE Francis Street, and was designed for horse-drawn firefighting equipment. Today, Station 25 operates one fire truck and one fire engine (East PDX News, 2012). Most of the current firefighters at Station 25 live outside of the Portland city limits, but several have deep familial connections to Portland PF&R, and at least two firefighters are the children of past Woodstock firefighters. The firefighters visualize the community through the calls they receive, and have a way to divide the FMA accordingly. They indicated 52nd Street as a divider with East of 52nd Street having a higher call volume and a higher social vulnerability population. Moreover, Foster was indicated as a marker due to the changing nature of this thoroughfare.

Overall, FMA 25's neighborhoods were mostly developed in the early- to mid-twentieth century. The Woodstock and Foster-Powell neighborhoods originated as neighborhoods for wealthier residents, and systemically kept out low-income residents and People of Color. Moreover, the late annexation of Brentwood-Darlington created a gap in city services. In terms of fire and medical calls, this can help Station 25 understand the differences in opportunity, social and city services, and social vulnerability, influencing fire and health risks, throughout FMA 25.

### *Community Assets Inventory*

Though by no means exhaustive, this list details services that may be useful to FMA 25 residents. We will continue to add to this list as we progress with the Blueprint for Success project.

#### **Older Adults**

- Eastside Village PDX Elders in Action Meals on Wheels

- Multnomah County Gatekeepers Store to Door

### **Community Development -Southeast specific**

- Southeast Uplift
- Rose Community Development Mt. Scott Community Center
- Neighborhood Emergency Teams -*Brentwood-Darlington, Creston-Kenilworth, Foster-Powell, Reed, Woodstock, South Tabor, Mount Tabor*
- Neighborhood Associations -*Reed, Creston-Kenilworth, Woodstock, Brentwood-Darlington, South Tabor, Foster-Powell, and Mt. Scott-Arleta Neighborhood Associations*

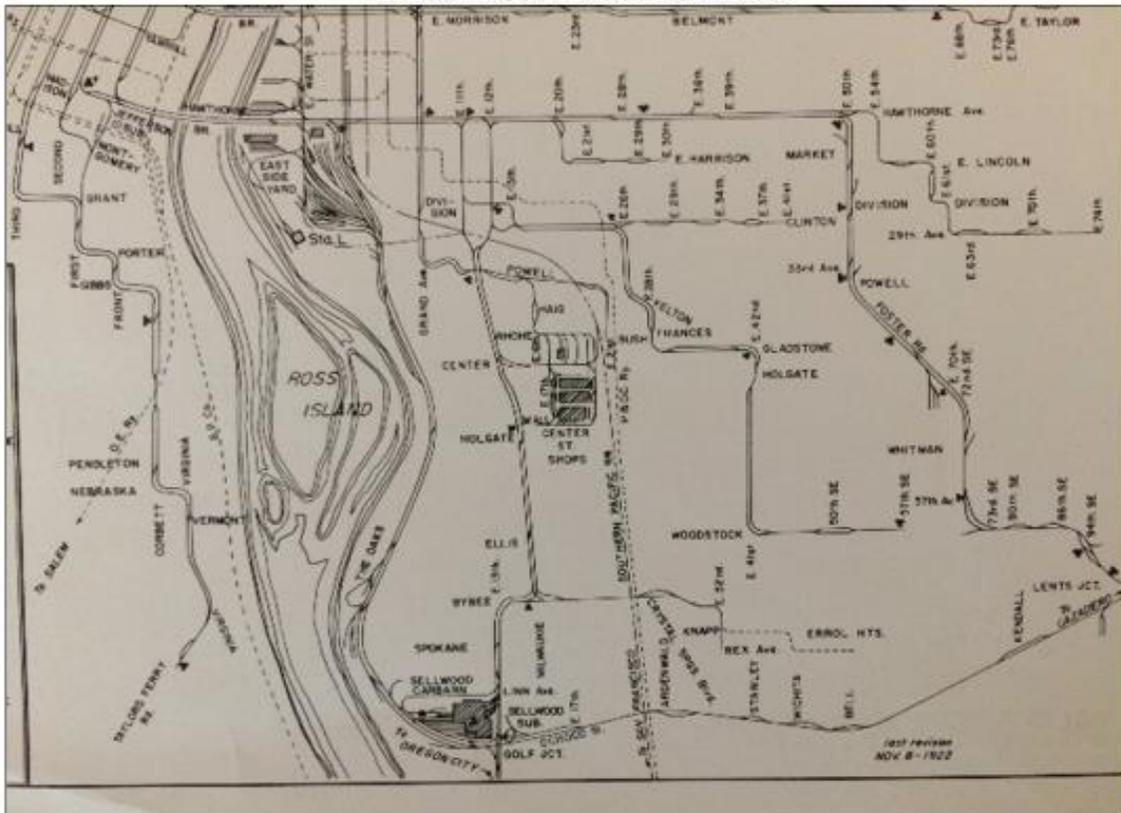
### **Health**

- Aging and Disability Resource Connection Hotline
- Asian Health & Services Center -Yu Miao Chinese Preschool (Community Development) Eastside Concern
- Southeast Health Center (Multnomah County Health)
- Multnomah County Student Health Centers -Franklin High School Portland Street Medicine
- Portland Fire & Rescue's Trauma Intervention Program
- 211 info: dial 211 or visit 211info.org; 211 info Mission statement: Our central hub empowers Oregon and Southwest Washington communities by helping people identify, navigate and connect with the local resources they need.\
- Tri County 911

### **Urban Form**

Portland is considered a classic streetcar city, and what are now commercial areas along Foster Road and in Woodstock were owe their existence to streetcar extensions in the late nineteenth and early twentieth centuries. As some of these areas were separate villages separated by small farms serving the central part of Portland, housing stock age varies significantly as different portions of the FMA developed at different times and farmland was divided and built-out.

## Portland Streetcar Map from 1922 Showing Streetcar Lines in Southeast Portland



Labbe, John, 'Fares Please, Those Early Portland Trolley Years', map from frontispiece, Caxton Printers, 1980

### *Geography*

From a geographic perspective, this FMA is one of the flattest in the city. As the geographic maps below shows, there is little elevation change throughout the neighborhood with the exception being near Flavel in the far southwest corner. The flat nature of the neighborhood lends itself to building a grid system of streets and there is virtually no service hindrance due to natural geographic boundaries such as rivers and steep slopes. Being well above the Willamette River and Johnson Creek and having almost no natural water features, FMA 25 is highly unlikely to experience flooding. The only flooding that may be expected is from blocked drains, a particularly acute across the city during the fall when leaves clog storm drains.

Earthquakes are a fact of life in the Northwest. According to geologic surveys, FMA 25 is among the safer regions in Portland. Except for the north end along Division and in western Woodstock, FMA 25 is rated the among the least hazardous for an earthquake. This means responders have to worry less about earthquake damage within the FMA than other areas of the city. This also means surface infrastructure is less likely to be damaged when the shaking stops.



**Oak Villa, An Example of an FMA 25 Home Over 100 Years Old**



Photo credit: Chandra Brown

As of 2016, about 125 individual multi-family housing units were built with about the same number in the permitting or construction process. About 25 single family homes were built and about 55 were either under construction or in the permit process in 2016.

**Portland Rental Affordability: 2016 to 2017 Change in Average Neighborhood Rent in Dollars**

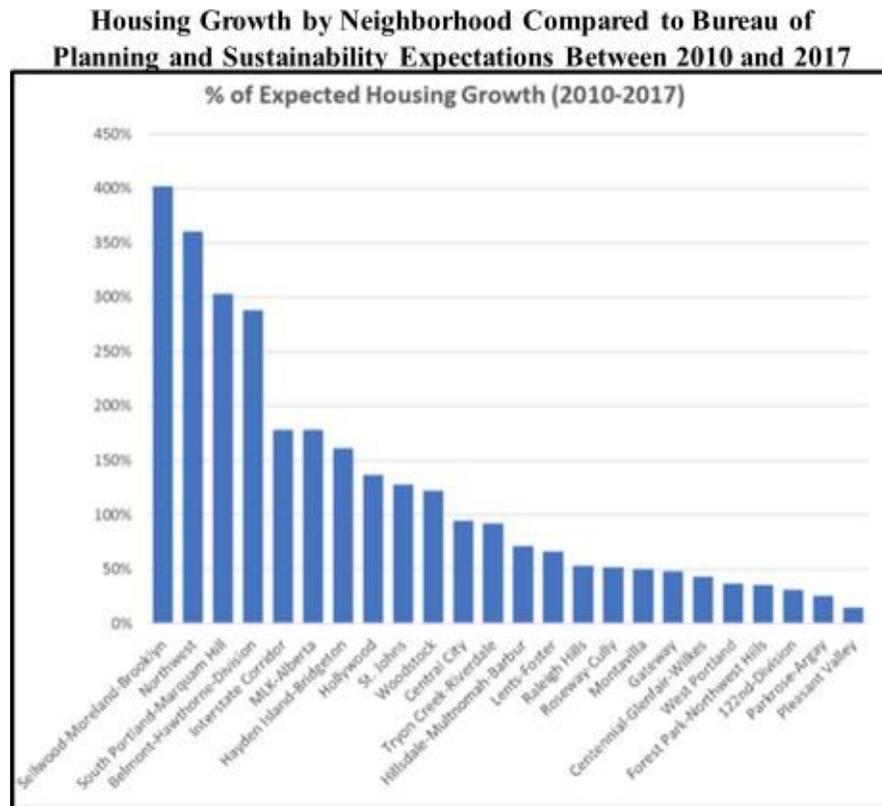
	<b>Studio</b>	<b>% +/-</b>	<b>1-Bed</b>	<b>% +/-</b>	<b>2-Bed</b>	<b>% +/-</b>	<b>3-Bed</b>	<b>% +/-</b>
<b>Portland</b>	1130	-3.3	1350	1.7	1599	5.2	1717	9.9
<b>Woodstock</b>	942	1.6	1012	-0.2	1272	0.9	1352	2.9

(Source: Portland Housing Bureau)

The good news is Woodstock remains relatively affordable compared to many neighborhoods in Portland. For those households earning the average Portland income of \$55,003 with 2.07 inhabitants, all types of

rentals listed in the above figure are affordable. For those with moderate household incomes, affordable rentals can also be found. Those earning low incomes and extremely low incomes will have a challenging time finding affordable housing although studios and one-bedrooms remain affordable for those with low incomes (Portland Housing Bureau, 2017). As for the future of housing prices, this is a question that the housing market will determine.

Although the average sales price in Portland hovered a little below \$400,000 in 2017, Woodstock’s average home value is almost 20% higher at \$482,500. This makes purchasing the average home in Woodstock unaffordable for those households earning the median income.



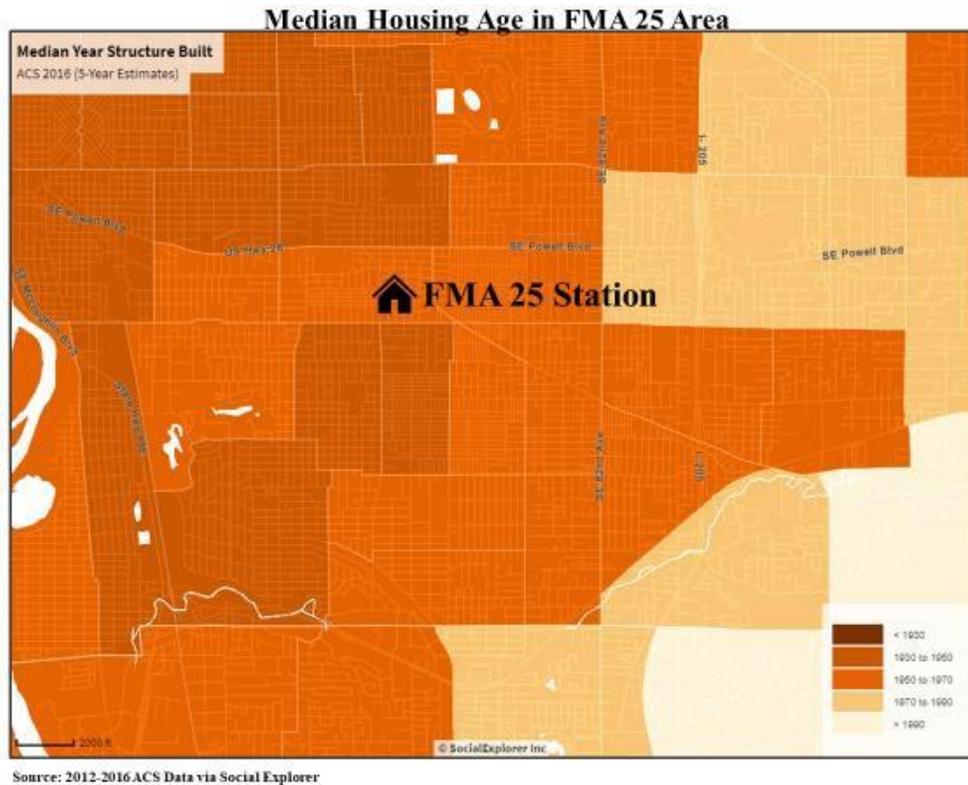
Source: City of Portland, Bureau of Planning and Sustainability

Interestingly, between 2010 and 2017, building permits issued for Woodstock neighborhood were above the Portland 2035 plan at 150% of expected permits. For Foster-Lents, building permits issued were below projected issuances. It should be noted that Woodstock in the City’s report is only part of FMA 25 and the Foster-Lents neighborhood boundaries used in the housing report includes areas outside FMA 25.

*Housing Stock Age*

Woodstock has many older homes. Much of the housing in the FMA was built between 1930 and 1970 and some homes were built prior to 1920. This map shows that much of the

housing in the FMA is more than 50 years old. What is unclear is how well the houses are maintained which can affect the incidence of fires.

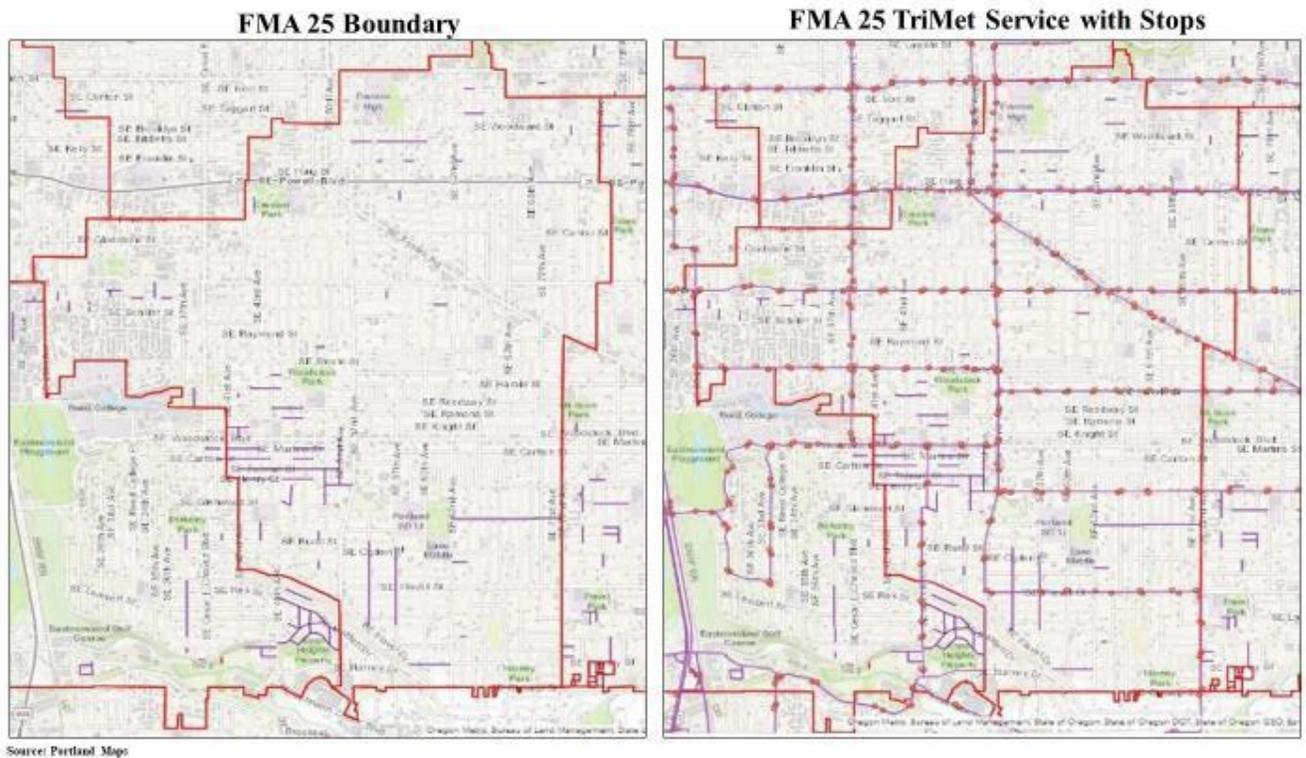


Another issue facing firefighters across the country is how newer structures are built, an issue the team learned about this during ride-alongs. Older structures have greater structural support so when they catch fire, it is often possible to attack the fire from the roof as that can still maintain structural integrity, even when partially burned. Newer structures, both single and multi-family units, may be built to make it more challenging to catch fire initially but once they do, they can burn quickly and they do not have the same structural integrity when damaged. This poses problems for fighting fires from above via roof access as a partially burned roof on a newer structure can more easily collapse. As newer structures are built, PF&R may need to assess protocols on how fires should be fought.

### *Transportation*

Many FMA's in Portland have major highways, freeways, rail lines or light rail lines. FMA 25

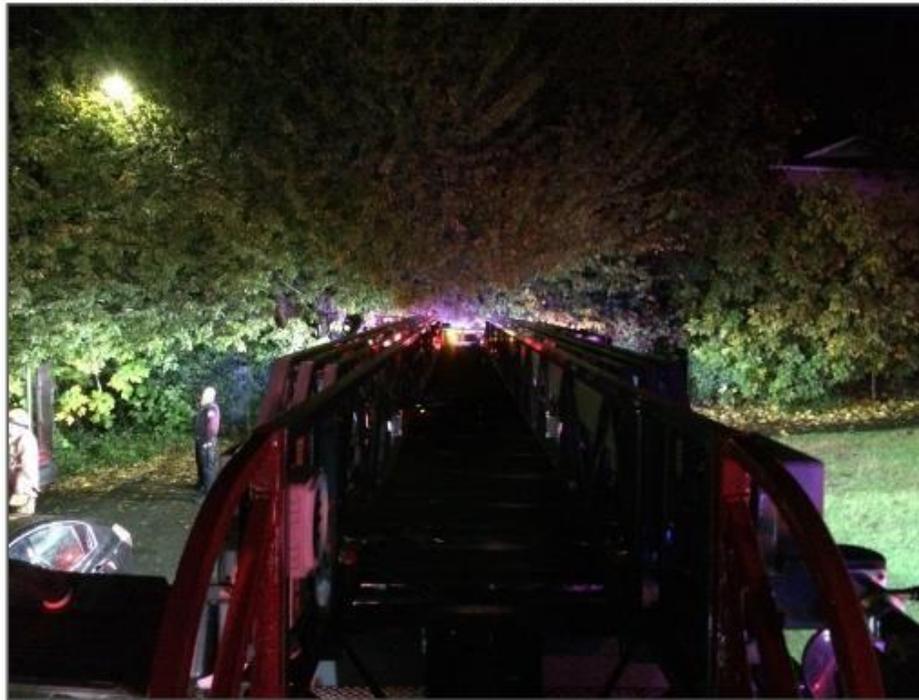
has none of these transportation facilities but Highway 26 travels the length of Powell Boulevard within Portland's city limits. Powell Boulevard is a major thoroughfare but remains a surface street with many intersections. The other major east-west arterials in the FMA are Division Street on the north end, Holgate Boulevard and Woodstock Boulevards in the middle in the middle of the FMA. Running north to south on the west side of the FMA is Cesar Chavez (39<sup>th</sup> Street), 52<sup>nd</sup> in the middle and 72<sup>nd</sup> forms the eastern edge of the FMA. Because of the flat nature of the FMA, the street network is a grid. A grid network allows responses to emergencies to easily navigate around traffic problems. The downside to the grid system is there are gaps or streets do not go all the way through. The map below shows where the street grid is most disrupted. Some of the largest disruptions are public facilities such as parks.



The map above also shows that the FMA has a number of unpaved streets, especially in the west Woodstock area. While the team felt unpaved streets could make it challenging or impossible for a fire truck to access buildings on these streets as many have huge potholes and surfaces that can vary several feet in a short span of street, the firefighters did not see this as a problem. They were more concerned about narrow, steep, sharply-curved streets in the West Hills than unpaved or dead-end streets in Southeast Portland. How well firefighters handle narrow dead-end streets was witnessed by a student during a ride-along in late October. A response was required at a house at the end on a two-block long dead-end street. The truck pulled all the way to the end of the street and when it was time to return to the

station, the tiller man and driver communicated with each other and backed the truck down two city blocks with no problems.

**FMA 25 Truck Responding to Incident at the End of a Dead-End Street.  
View from Tillerman's Cab Looking Toward the Front of the Truck**



Source: Jeff Broderick

No rail facilities or freeways pass through FMA 25. TriMet buses do serve the area with multiple frequent bus lines operating in addition to less frequent bus services in other areas. MAX light rail does not pass through the FMA but can be accessed both to the west (Orange Line) and east (Green Line).

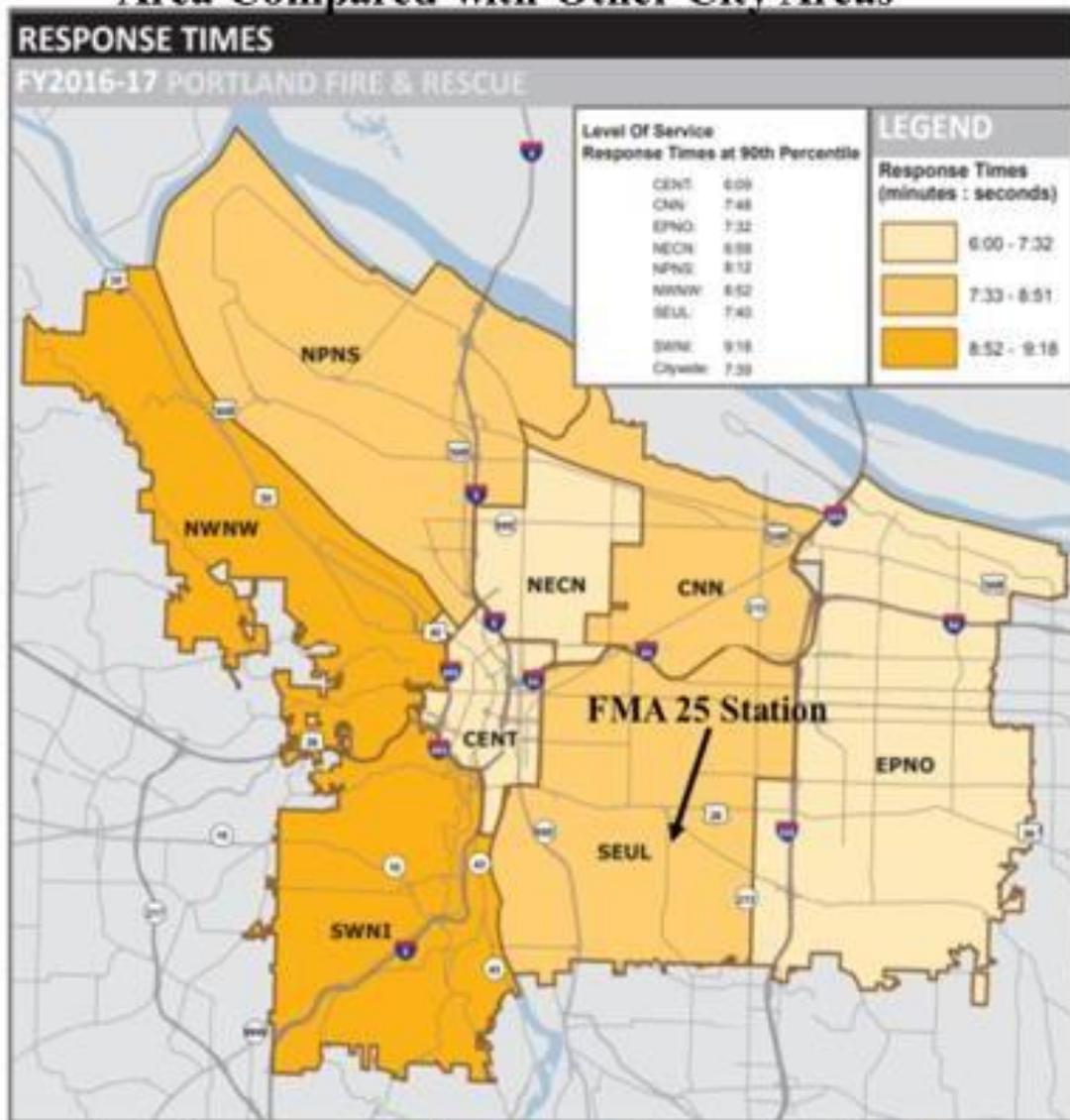
The biggest recent change in the FMA the Foster Road Transportation and Streetscape project. Foster Road is being rebuilt from four lanes to two lanes with a center turn lane and sidewalk bulb-outs are being installed at key intersections. This will have the effect of calming traffic and making the street friendlier for pedestrians. The fire fighters on shift when the team conducted their initial station visit felt the change changes to Foster would be good for the safety of those using the road and this debate continued during further interviews and during ride-alongs. On the other hand, as witnessed while making neighborhood observations, eastbound traffic does back up for many blocks while waiting for the light at 82<sup>nd</sup> Avenue to change. These traffic jams have the potential for delays responding to emergencies.

Transportation issues affect how quickly emergency services arrive on the scene. Right now, the average response time for FMA's in the southeast part of Portland average one second longer than the city

as a whole. However, increased traffic congestion could degrade response times.

An issue for future development is streets with medians. This was witnessed during a ride-along when the truck needed to cross from the eastbound to westbound lanes while responding to an emergency. It was challenging to switch to the opposite side because of the landscaped median separating eastbound and westbound traffic. If medians are built in the future, medians that can be crossed with a large vehicle or more frequent breaks should be considered as this will help speed responses.

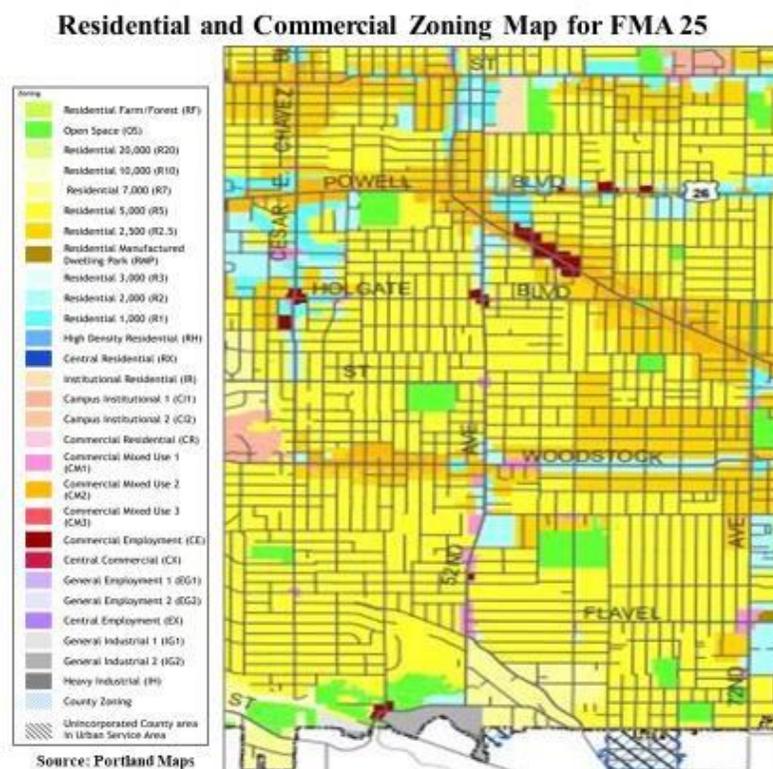
## 2016-2017 Response Times for PF&R Showing the Southeast Area Compared with Other City Areas



Source: [Portlandoregon.gov](https://www.portlandoregon.gov/cho/article/676602), accessed at: <https://www.portlandoregon.gov/cho/article/676602>

## Zoning, Commercial Development and New Multi-Family Dwellings

Most of FMA 25 is zoned residential with most of this being R5 with some R7 and R2.5. The housing stock reflects this with most residences being single family structures on individual lots but this is changing. Areas adjacent to Foster Road and Woodstock Boulevard are zoned more densely and some of these lots are being built up. Several multi-family structures have been built or are under construction along Foster, Woodstock and a couple along Holgate as well.



Commercial zoning follows where commercial development already exists. The commercial zone along Woodstock is well established. Although there is some business churn, there are very few vacant storefronts along Woodstock. Development Foster is different. Vacant commercial property can still be found but many new businesses have moved in over the last few years. Many new businesses are restaurants and bars which have the potential of having kitchen fires. After interviewing members of the Foster-Powell Business Association, there was concern about vacant buildings and a lack of maintenance along with the potential of being fire hazards. Some buildings have the “U” for unoccupied signs.

With mixed use developments allowed along Foster and Woodstock, new buildings have been built in the last five years with several more under construction. Many of these new buildings have retail and commercial businesses on the ground floor with multi-family housing above. Some of these new structures are four and five stories tall, a type of construction virtually not seen in this FMA until recently. This FMA has a ladder truck so can handle taller buildings with existing equipment but they may need to use it more often.

During Ride-alongs, our research team learned firefighters are concerned about responding to fires in these newer structures. With multi-story buildings and the necessity to run hoses through stairwells with twists and turns, managing hoses could be an issue during a fire response. The firefighters want to make sure they have sufficient staffing to be able to both manage hoses and enter a burning building with allowances for egress. A crew of less than four people could hinder responses. Additional housing densification should be expected in this FMA and more people are expected to move to this area in the future. Areas adjacent to both Foster and Woodstock are zoned R2.5 which encourages townhome construction and there is space to build more multi-family/multi-story structures along thoroughfares.

One potential concern is the collection of tiny houses situated at the Apostolic Church headquarters facility on SE 52nd south of Woodstock Boulevard. While these are newer structures, they may not be built to the same standards as traditional houses and these are built very close together. However, they are used for only brief periods during the year. Almost no industrial or manufacturing facilities are located in the FMA. However, there is industrial development just to the south of the FMA in Milwaukie and some industry to the west near Union Pacific's Brooklyn rail yard. Occasionally, FMA 25 may be called to assist in these areas but these industrial areas do not affect FMA 25 directly.

#### *Large, Long-Term Care Facilities in FMA 25*

There are several long-term care facilities in FMA 25. Per interviews with firefighters, these facilities generate a substantial number of calls, often daily or multiple times per week. The station is conveniently located between the two concentrations but responses to facilities along Division Street on the north end of the FMA requires crossing two busy thoroughfares, Foster Road and Powell Boulevard and worsening traffic could affect response times to these facilities.



## PF&R FMA 25 Firefighters Assisting During an FMA 11 Training Session



Source: Jeff Broderick

### Fire Risk and Social Vulnerability

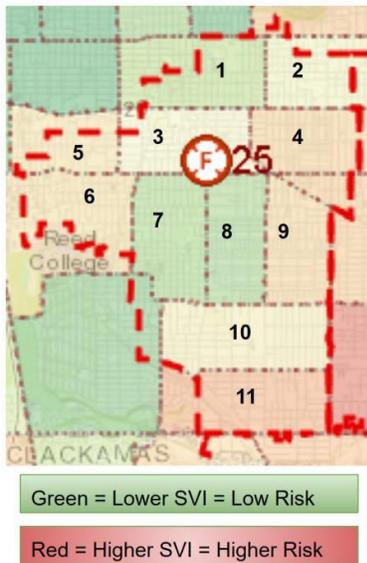
One of the objectives specified by PF&R to the research team is to increase efficiency of fire preventative methods (such as inspections) through advanced knowledge of where fires are most likely to occur. The Portland State research team was not the only academic team recruited to help PF&R reduce fires/fire related deaths. John Jay, a doctoral researcher at the Harvard Chan School of Public Health (“Johnathan Jay...”) was commissioned by PF&R to use machine learning techniques to develop, implement, and validate property-level predictions for fire risk in Portland OR (Jay, pg 2). Using data from 2012-2016, he utilized a random forest (RF) statistical model to predict the 2017 fire incidences. After several adjustments, his model significantly outperformed models based on random chance. The Area Under the Curve (AUC), a common measurement of accuracy for probability models, is 0.5 for random chance, and 0.77 for Jay’s RF model. In practical terms, this can lead to far more effective preventative measures, such as fire safety inspections. For example, suppose fire inspectors were to inspect 20% of the 3,260 Portland tax lots in 2016. At random, this would prevent 26.8 fires. Using Jay’s RF to prioritize certain properties, these inspections would prevent 79 fires (Jay, pg 9).

Jay’s model revealed several valuable factors in predicting which properties are the most vulnerable to fire. The most important factor was building size and usage pattern. Basically, the more people and the

more uses a building has, the higher the risk for fire (Jay, pg 9). Property and building value played a role, with less valuable properties having higher risk. Finally, geography of the Portland Area specifically played a part, there being a higher risk of fire in both North and East Portland (Jay, pg 9). This is significant as both North and East Portland are lower income and education level neighborhoods when compared to the Portland area as a whole (“Portland Oregon Income...”). This, combined with the higher risk associated with lower property values, offers a possible correlation between fire risk Social Vulnerability Index (SVI). The SVI is a composite variable of seven socio-economic indicators: unemployment rate, percent of population with a disability, percent of owners/renters that are cost burdened, percent of population that is dependent (0-4 and 65+), educational level, percentage of the population that is White and Non-Hispanic, and percentage of homeowners that are cost burdened. The final result of all those factors is expressed as a percentage, with higher percentages indicating more significant risk (“Social Vulnerability Index...”). Correlation between SVI and 2017 fire calls in a specific Portland fire management area (FMA) will be examined in the following section.

#### *Correlation between RF, SVI, and 2017 Fire Calls in FMA 25*

FMA 25 is located south of Portland, about due east of Ross Island. Its westernmost boundary of 27th Avenue, just skirts the edges of Reed College. To the east the boundary is 72nd, SE Grand Avenue to the north, and Clatsop Street to the south (with a small area extending into Clackamas County). It contains all or part of 11 census tracts, the boundaries we must use for our analysis (“CUPA...”). A breakdown of the area can be seen in Figure below, as well some defined terminology for the neighborhood, and a chart of census tract correspondence to SVI. SVI in this FMA is interesting, as lower SVI tracts are not disadvantaged for the same reason. Tract 6 and 4’s dominant factor is owner burdened, and tract 9 is rent burdened. Tract 11 biggest factors are disability and unemployment. Tract 10 has a higher number of minorities, and tract 5 is disability and rent/owner burdened.

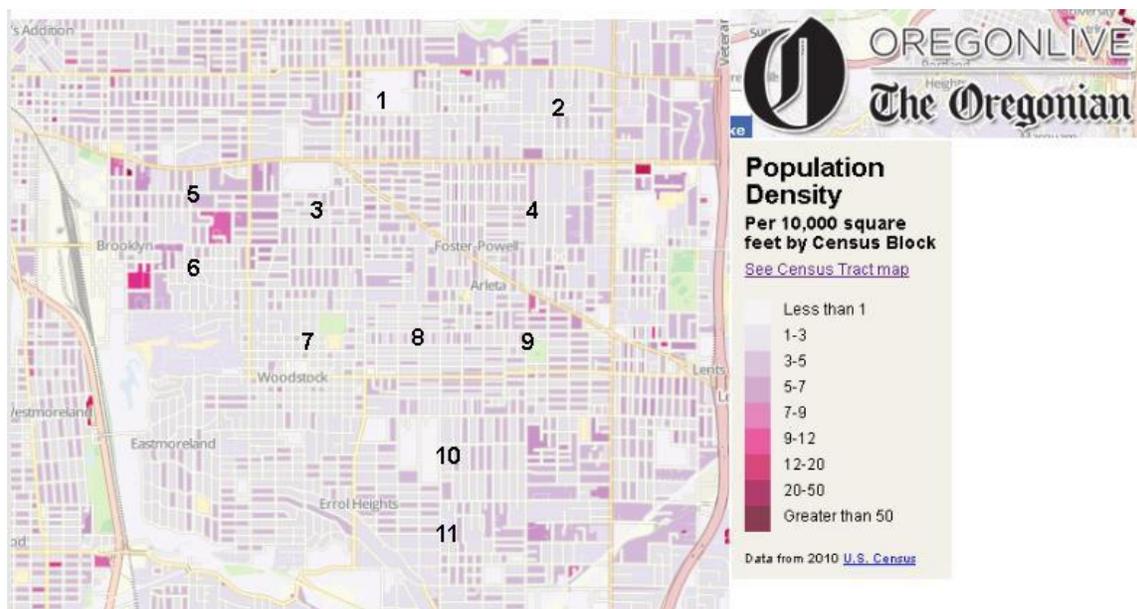


- 1&2: North of Powell
- 3,4&9: Foster Powell Area
- 5&6: Reed College Area
- 7&8: Central Woodstock Area
- 10&11: Errol Heights Area

Area	SVI
1	-0.43%
2	-0.07%
3	-0.01%
4	0.33%
5	0.21%
6	0.24%
7	-0.53%
8	-0.57%
9	0.31%
10	0.11%
11	0.53%

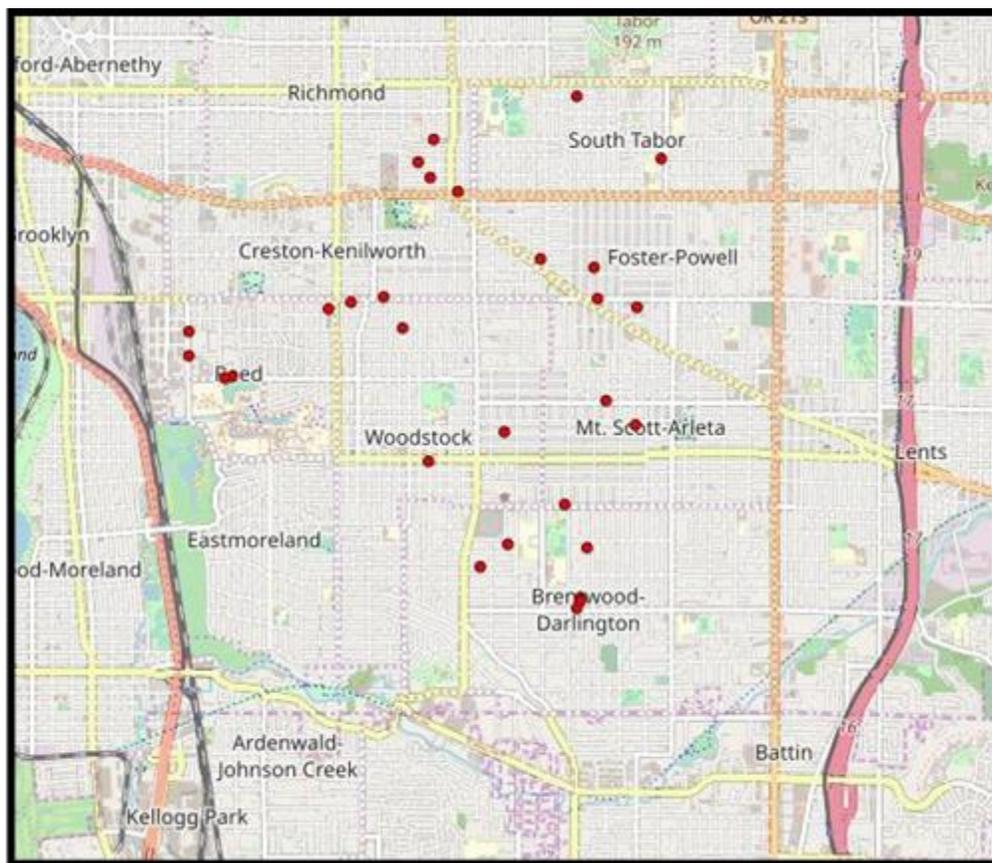
FMA census tracts, neighborhood definitions, and SVI

In 2017, there were 29 relevant fire calls in the FMA. By relevant, I refer to fires that were structural in nature, and not confined to a container. This is consistent with the verbal confirmation from researcher John Jay in regards to the data used for the RF (Jay). Using google maps, I was able to map the results geographically, as seen in Figure 3. In Figure 3, I have circled three areas with a relatively high density of fire calls. Figure 2 is a density map obtained from *The Oregonian*, with rough placement of census tract numbers for comparison (“Population Density”).



Source: *The Oregonian*. Density map with rough placement of census tracts.

In John Jay's research, the most significant variables responsible for increasing the likelihood of fire calls were density (more people per area/building), and property/building values. There was also a possible connection with SVI (Jay, pg 9). As can be seen from comparing Figure 3 and Figure 2, the largest fire clusters do appear to be correlated with density, in tracts 6 and 5. These two sports are easily the densest areas in the FMA. The Foster-Powell road area is also dense, and sees a corresponding number of calls, following Foster road and continuing up 50<sup>th</sup> past the intersection of Foster and Powell. Tract 10 sees a fair number of calls, but while denser than tracts 7 and 8, is not nearly the same density as tracts 5 and 6. There is a possible correlation with this tract and its dominant SVI factor, as we will discuss in the next paragraph.



*Map of relevant fire calls. Source: PF&R Data*

In regards to SVI, notably absent are clusters of fire calls in the Central Woodstock Area. These two tracts, 7 and 8, represent the most affluent population in the FMA, comprising SVI's of -0.59% and -0.57% respectively. There also appears to be almost nothing in North of Powell, minus the cluster along 50<sup>th</sup>, an area consisting of census tracts 1 and 2 with SVI's of -0.43% and -0.07%. It is important to note that census tract 1 is roughly as dense as the Errol Heights neighborhood, but has nowhere near the same number of fire calls. Perhaps the increase in density is counteracted by the improvement in SVI. Thus, it

appears that some relationship between fire calls and SVI is apparent. SVI does take into account race and income burden, factors related to property/building values (higher income earners and non-minorities tend to earn more and purchase/live in areas with higher property values), they are indirectly located in the SVI calculation. The correlation between SVI and the RF predictions is therefore in line with the Jay's initial findings. However, with this small number of calls it is hard to tell how closely that correlations align, especially for smaller differences. For example, tract 10 has more calls than tract 11, but a lower SVI score. I suggest further investigation be made into tract 10, considering it has a higher minority population and large relative number of fire calls. In conclusion, analysis of the location of 2017 fire calls in FMA 25 backs up Jay's predictions using the RF model. Fire risk appears to be related to both density and SVI.

## **Livability**

Analyzing livability can help us identify what amenities and accessibility features exist and what is lacking in a region. For the purposes of this report, livability is characterized as:

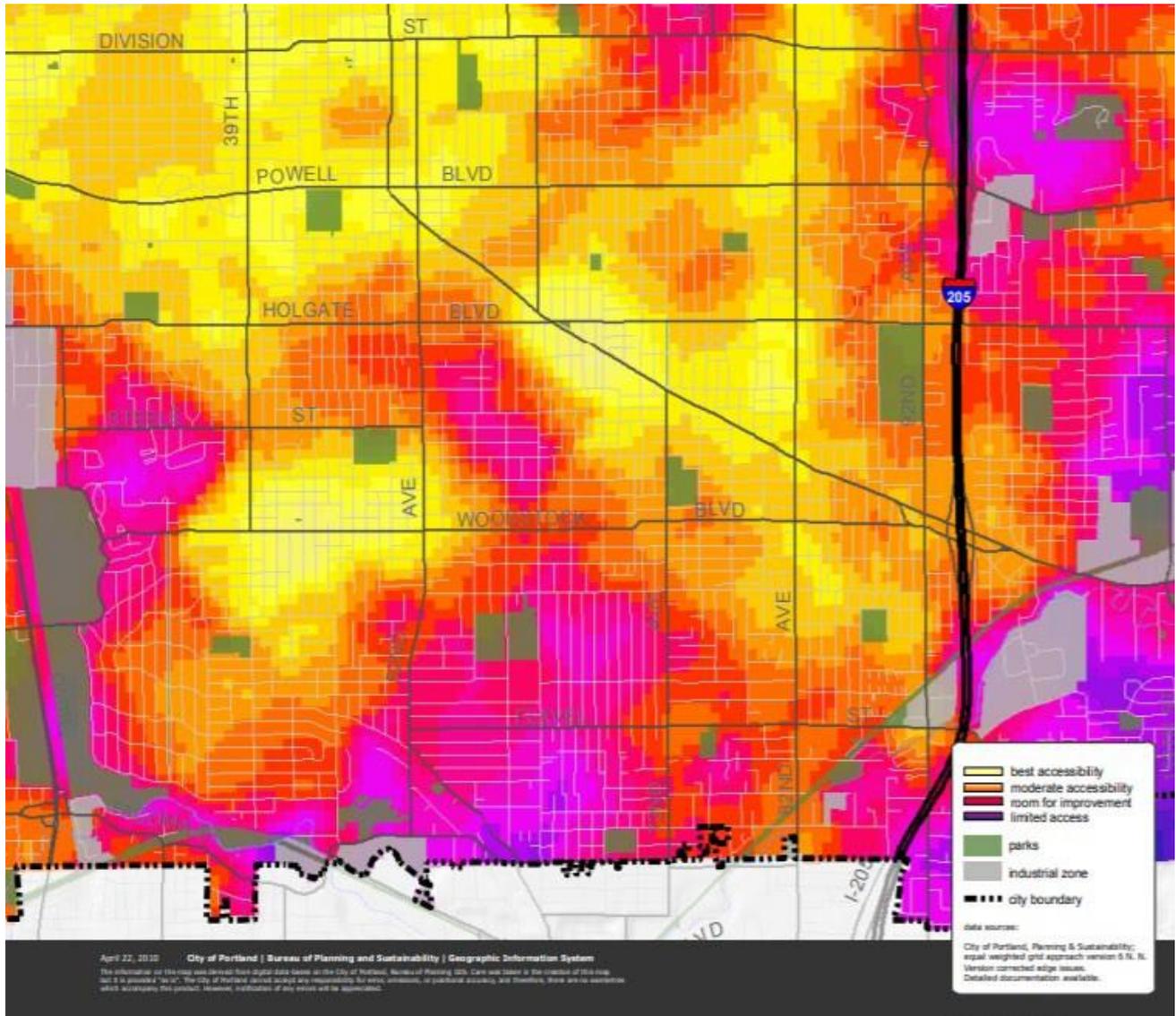
- Connectivity - 20 minute neighborhood status
- Food Access
- Affordability (Cost of housing and transportation as a percentage of income)
- Proximity to Public and Human Services
- Air Quality

These characteristics were chosen because they address a broad range of factors that shape the health and wellness of a community on different scales.

### *20 Minute Neighborhood Status*

Areas that have pedestrian access to commercial services and amenities have a higher livability status. The 20 Minute Neighborhood Map from the City of Portland indicates locations that have concentrations of services (grocery stores and other commercial services) that are within relatively short walking distance of homes. The map also accounts for additional pedestrian access factors, including sidewalks, street connectivity, and topography. Looking at FMA 25 specifically, there is a variety of access found. Accessibility decreases heading farther east and south. Overall, there is a moderate pedestrian access throughout FMA 25, but many areas where there is room for improvement. This could be important for FMA 25, as it is possible that areas which have limited pedestrian access and room for improvement could be areas with more pedestrian fatalities, which the station would have to respond to.

## 20 Minute Neighborhood Status Map



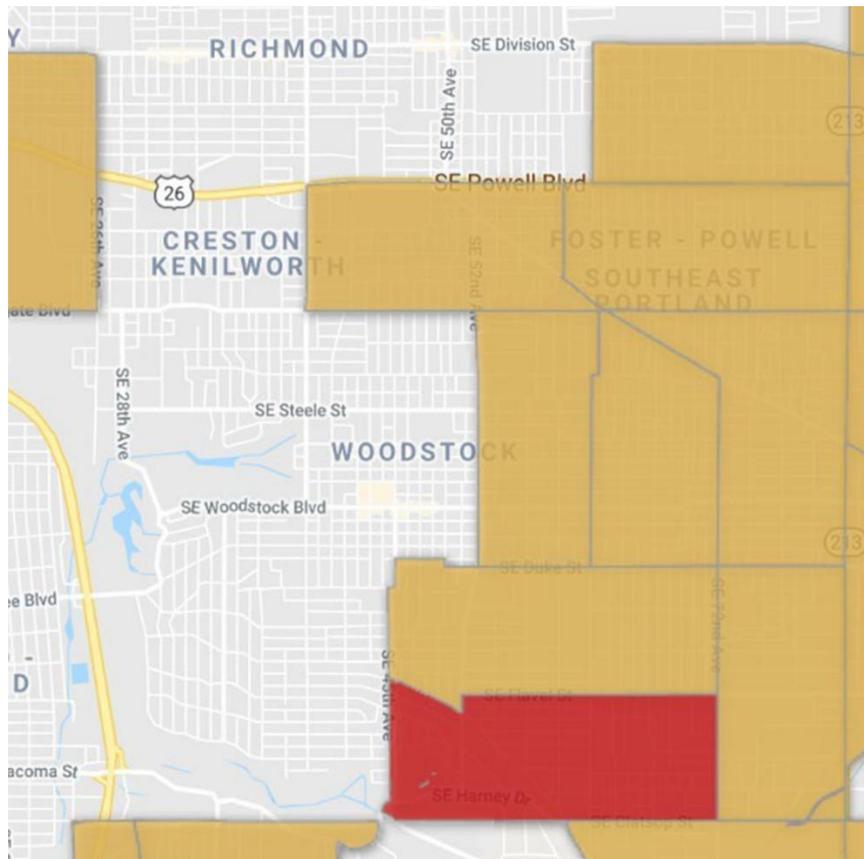
*Source: City of Portland, 20 Minute Neighborhood Status Inner East Map  
Image description: Map that depicts the accessibility of Inner East Portland.*

### *Food Accessibility*

Access to healthy and affordable food is also an important livability measurement. The map below depicts the low-income census tracts where the U.S. Department of Agriculture has determined that a significant number of residents are more than a half-mile (orange) or a mile (red) from the nearest supermarket. More than half of FMA 25 falls under one of these categories. The farther east and southern regions of the FMA are the areas for concern in regards to food deserts. This could be important for FMA 25 as food accessibility issues could be a reason for some callers, especially older, more vulnerable

populations.

### Food Accessibility Map



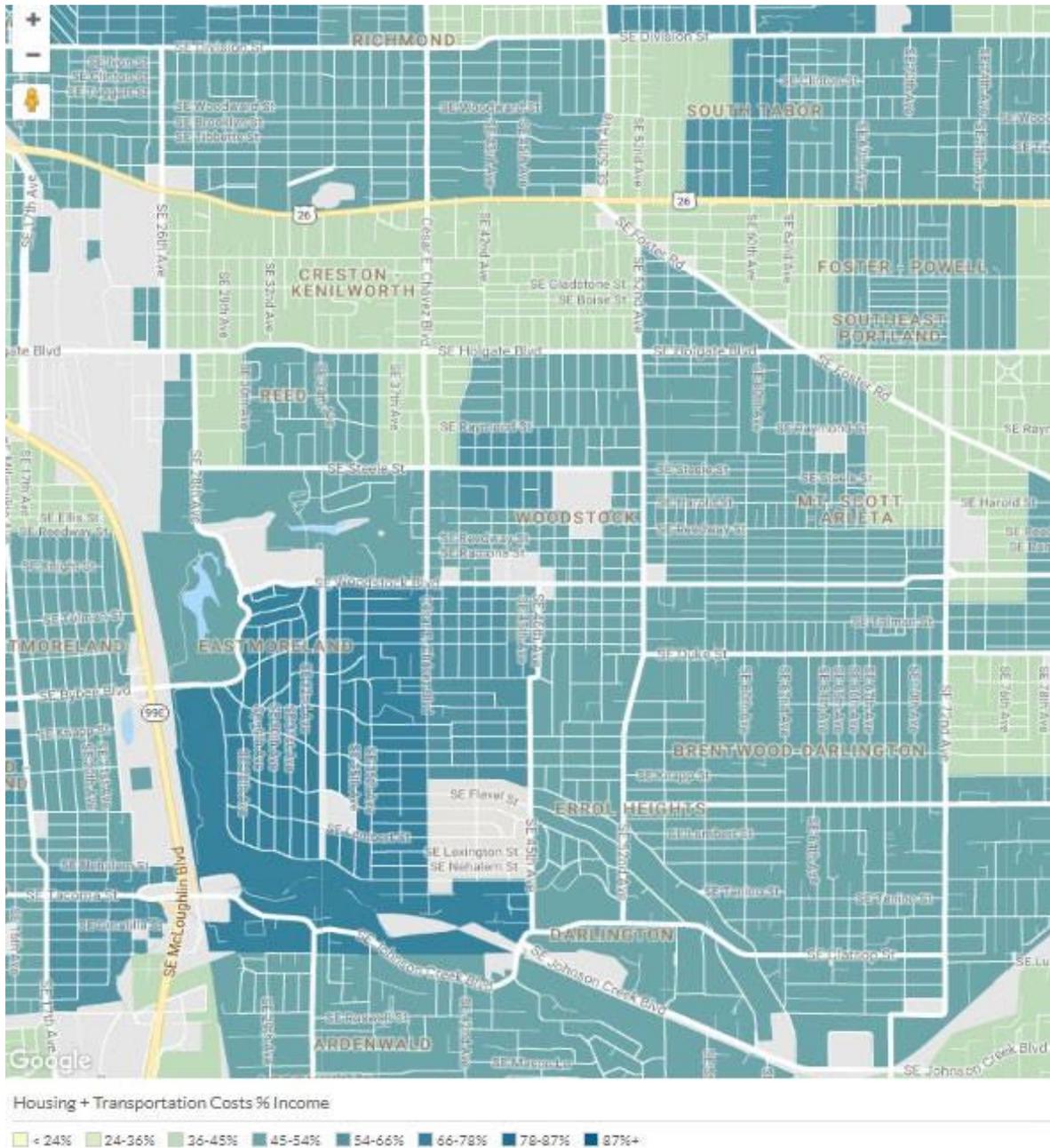
Source: U.S. Department of Agriculture, U.S. Census Bureau; Map: Mark Friesen/The Oregonian Image

Description: Map that depicts food desert locations in the FMA.

#### *Affordability*

Affordability is a key aspect of livability. One way to measure this is using an H+T (Housing and transportation costs) calculation. These costs are then divided by the income, to show the cost burden of housing and transportation on a typical household. The map below depicts housing and transportation costs as a percentage of household income in FMA 25. Throughout Portland as a whole, this percentage is 48%. In FMA 25, the percentage varies from 24-78%. The percentage is lower in the more northern regions of the FMA.

## Affordability Map



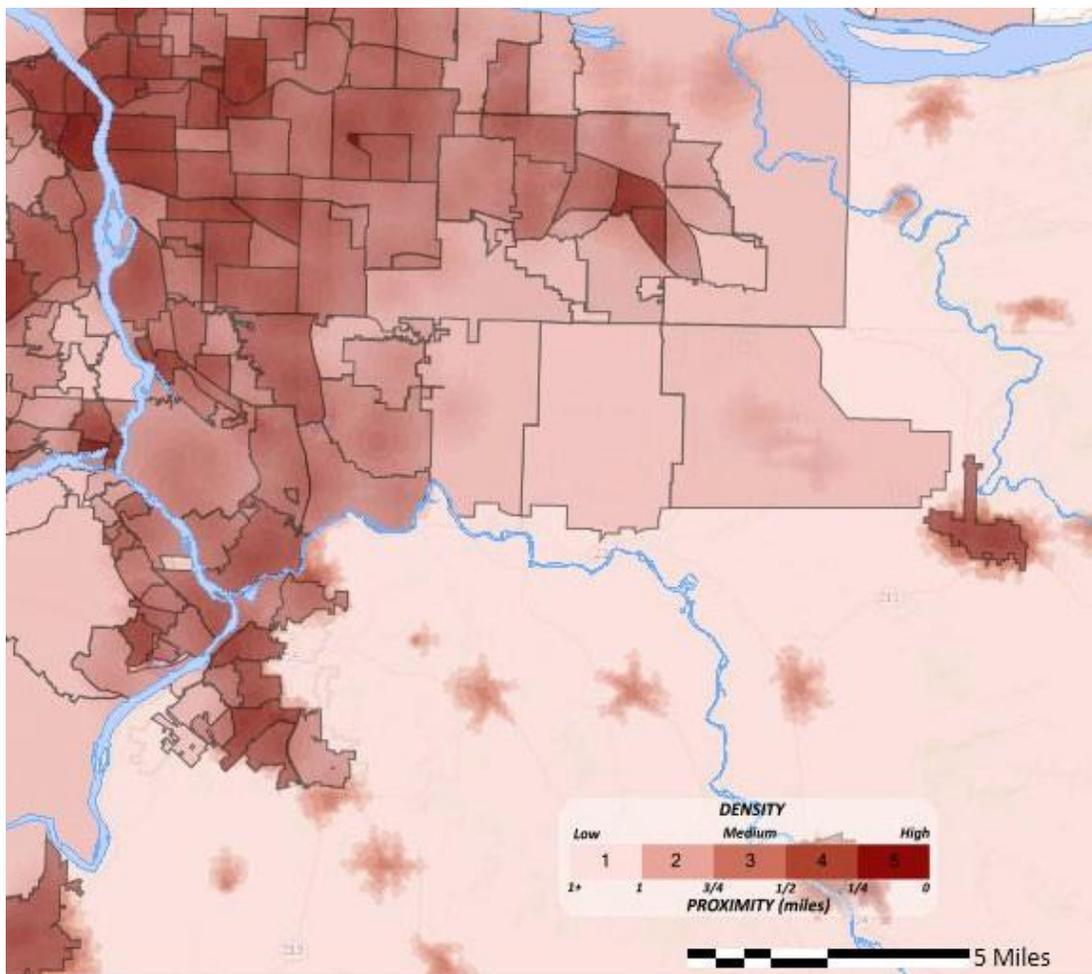
Source: Center for Neighborhood Technology Housing + Transportation Index Image

Description: Map that depicts affordability status throughout the FMA

### *Proximity to Services*

Proximity to essential public and human services are a key factor of the livability of a community. The composite map below shows the proximity of public services (police, fire, hospitals, government agencies, and post offices) and human services (housing services and services for seniors, persons with disabilities, and youth) by neighborhood. A darker neighborhood means a higher proximity to services. The proximity seems to vary, with slightly less density of services in the southeast region of FMA 25, but overall there is a moderate density of services. Areas with less proximity to services could potentially be a factor in higher call volumes.

### **Proximity to Public and Human Services Map**



*Source: Coalition for a Livable Future Regional Equity Atlas*

*Image Description: Map depicting the density and proximity to services.*



Overall, livability varies greatly within FMA 25. The area has a moderate amount of public services, food access, and connectivity. There are pockets of areas within the FMA where affordability is much higher than Portland’s average, but also many areas where the opposite is true. Air quality is not very poor in the FMA, compared to other hot spots in Portland. The southeast region of the FMA has a lower livability in many of the many of the metrics analyzed. The areas with lower livability could be having systemic problems and could potentially be an area that has been historically underfunded.

## Analysis and Summary of PF&R Calls

Below, we analyze the distribution of calls in FMA 25 and compared it to Portland overall to see what makes this FMA unique. We also consider the most common types of calls to make recommendations about what sorts of interventions might have the most impact on call volume.

### *Overview*

<b>Table: Call distribution overall, 2017</b>	Number	% of total calls	% of total calls
NFIRS Category	(FMA 25)	(FMA 25)	(Portland)
Rescue & EMS	2062	60.5%	56.6%
Good Intent Call	494	14.5%	15.4%
Service Call	448	13.2%	8.5%
False Alarms & False Calls	196	5.8%	7.4%
Hazardous Condition	99	2.9%	2.0%
Fire	96	2.8%	3.4%
Other	11	0.3%	6.6%

FMA 25 has a moderate call volume, slightly lower than the Portland average at 3,406 in 2017. At dispatch, only 5.8% of calls in FMA 25 were coded as fires, while 74.8% of calls were coded as medical. This is very similar to the distribution of dispatch codes in the city as a whole, where 5.8% of calls are for fire and 75.2% are medical. The table below shows conditions at the scene, categorized according to National Fire Information System categories. At the scene, 60.5% of calls in FMA 25, compared to 56.6% of calls citywide, are coded Rescue & EMS as calls tagged “Medical Aid” at dispatch get downgraded to Good Intent or False Alarm calls. Fire and hazardous conditions make up 5.7% of

scene conditions in the FMA, on track with the city's 5.4%. Notably, FMA 25 has a larger share of Service Calls than average (see the end of this section regarding mobility assistance).

*Fire*

Of the 195 fire and hazardous conditions calls, building fires, downed power lines, gas leaks, and bark dust fires are the most common situations at the scene, making up between 10 and 15% each. See the table below for the most common conditions in this combined category.

<b>Fire and Hazardous Conditions, FMA 25, 2017</b>	Number	% of fire/ haz. calls	% of total calls
Building Fire	29	14.7%	0.9%
Power Line Down	25	12.7%	0.7%
Odor of Gas, Gas Leak (Natural Gas or LPG)	23	11.7%	0.7%
Bark dust Fire	20	10.2%	0.6%
Hazardous Condition, Other	10	5.1%	0.3%
Non-Injury Vehicle Accident	10	5.1%	0.3%
Outside Fire, Other (may have value and loss)	9	4.6%	0.3%
Electrical Arcing, Shorted Electrical Equip, Other	7	3.6%	0.2%
Outside Rubbish, Trash or Waste Fire	7	3.6%	0.2%
Passenger Vehicle Fire	7	3.6%	0.2%

*Medical*

The most common medical codes at dispatch in FMA 25 are trauma, breathing, and chest pain. Together these make up almost half of medical calls and a third of total calls in FMA 25.

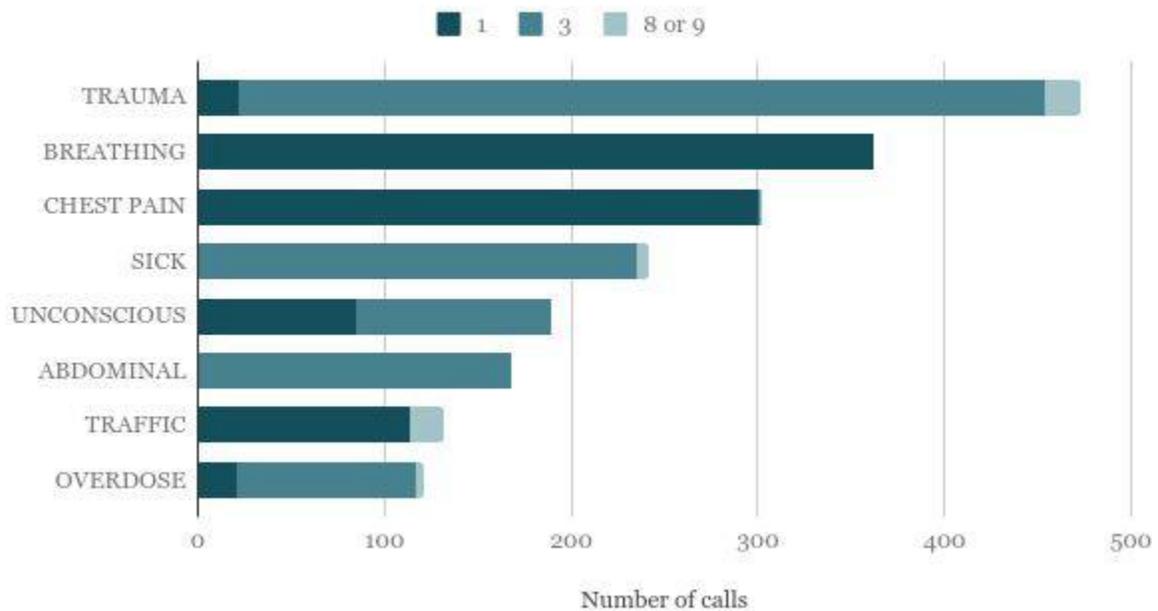
**Most common medical  
calls, FMA 25, 2017**

Call Code	Number	% of medical	% of total
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Trauma	473	18.6%	13.9%
Breathing	362	14.2%	10.6%
Chest Pain	302	11.9%	8.9%
Sick	241	9.6%	7.1%
Unconscious	189	7.4%	5.6%
Abdominal	168	6.6%	4.9%
Traffic	132	5.2%	3.9%
Overdose	121	4.8%	3.6%

As shown in the chart below, almost all of the calls coded trauma, the most common medical code in this FMA, are low-acuity. There is plenty of room to reduce the call volume in FMA 25 by focusing on low-acuity medical calls.

FMA 25: Most common medical calls and acuity, 2017



### *Service*

Firefighters in Station 25 mentioned that a large proportion of their calls involve lifting or helping a resident move through their living space. As shown in the first table (Call distribution), this FMA goes on more Service Calls -- a category that includes lifting -- than PF&R does citywide. We find that 6.5% of calls are for mobility assistance, more common than fire and hazardous conditions combined in FMA 25. Any strategy that reduces the number of calls for mobility assistance would significantly reduce the number of calls overall.

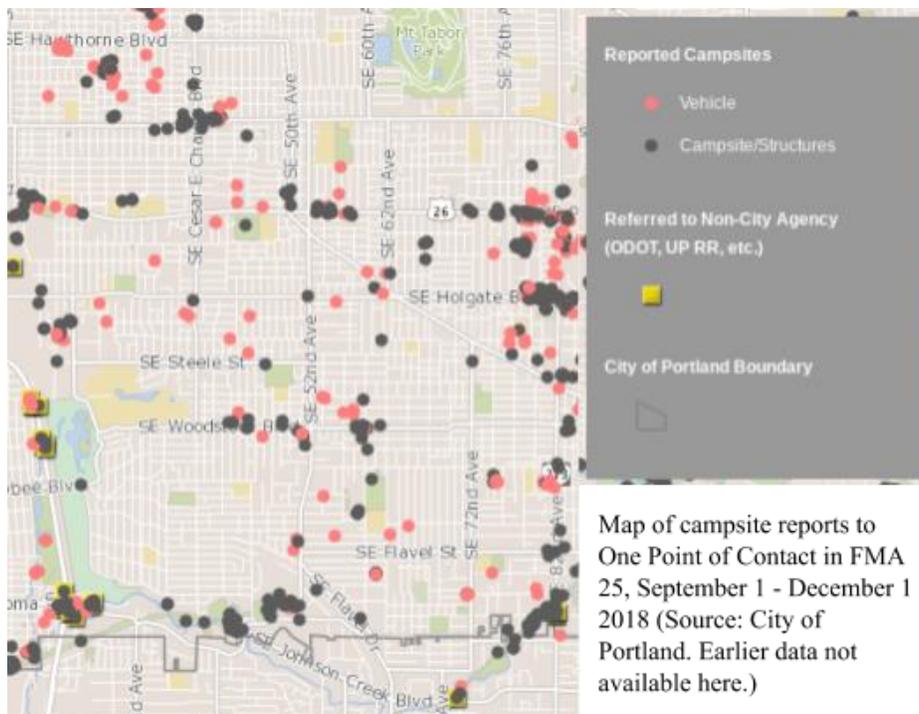
<b>Mobility assistance calls, FMA 25, 2017</b>	<b>% of</b>	
Mobility assistance subcategory	Number	total calls
Invalid Assist	71	2.1%
Lifting Person to Bed or Chair / Facility	32	0.9%
Lifting Person to Bed or Chair / Residence	118	3.5%
<b>Total</b>	<b>221</b>	<b>6.5%</b>

### *People experiencing houselessness*

There is currently no shelter for people experiencing houselessness within the FMA, but Multnomah County is expected to open a new one at 6144 SE Foster Rd in early 2019. The shelter, run by Transition Projects, will have 120 beds for women and people in couples, will allow pets, and will prioritize veterans, people over 55, and people with debilitating conditions (Multnomah County News). The nearest shelters are Willamette Center at 5120 SE Milwaukie Ave and Clark Center at 1431 SE MLK Blvd. In the 2017 Multnomah County Point-in-Time count on February 22, 2017, 22.1% of respondents who were sleeping unsheltered indicated that they slept in Southeast Portland -- from the Willamette River to 82nd Ave -- that night (Point-in-Time Count, p 87, more detailed location information not available).

FMA 25 lies entirely within that area and covers just over 5.0 square miles out of approximately 17 square miles.\* If people sleeping unsheltered are distributed evenly across SE Portland, approximately 6.5% of people sleeping unsheltered in the city slept in FMA 25 during the night of the count. This is almost twice the percentage land area taken up by FMA 25. We have no reason to assume people sleeping unsheltered would be distributed evenly across SE Portland and need another data source to make an accurate estimate of this vulnerable population.

HUD’s definition of homelessness does not include living “doubled-up,” or sharing the housing of others for economic reasons, but people living doubled-up might be at greater risk of losing housing altogether and the number of people living doubled-up is an indicator of the level of unmet need for housing in an area (Point-in-Time Count, p 101). Given that where there are more people, generally there are more fires, PF&R might be particularly interested in the distribution of people sharing housing or living in cramped quarters. The Oregon Department of Education collects information on K-12 students living doubled-up, which the county then uses to estimate the number of people living doubled-up during point-in-time counts (Point-in-Time Count, p 101). Publicly available information only considers Portland Public Schools as a whole, and we reached out to PPS for data disaggregated by school but did not have time to go through their research review process this term. PF&R should attempt to get this data from PPS for the next round of stations to get a fuller picture of housing insecurity in Portland. This is especially important in areas with less visible houseless populations. As shown in the map of reported campsites below, FMA 25 has fewer reports of people camping than many areas of the city.



While people experiencing houselessness do not appear to currently make up a large portion of FMA 25’s call volume, strategies that target this vulnerable population should still be incorporated into Blueprint for Success.

## Equity Analysis

For the purposes of this analysis, equity is defined as when one's identity cannot predict their individual outcome. Qualitative and quantitative data is utilized within this section to address the equitability of Station 25's Fire Management Area (FMA) within the Woodstock neighborhood. Using a series of indicators and existing conditions to gauge equity within the community, this analysis acts as an introduction to the community's current strengths and potentiality for improvements. Spatial data utilized in this analysis include all census tracts that intersect within Station 25 FMA boundaries, while also referencing social data from the *American Community Survey (ACS) 2017 5-year estimates*, *Walkscore.com*, and *Social Explorer*.

### *Race*

This space is extremely homogeneous with its demographic composition being primarily white. This is not uncommon for inner Southeastern neighborhoods, and its lack of diversity can be attributed Portland's historical and contemporary injustices against low-income people of color within the City. Barriers to entry within these spaces are extremely daunting for various groups without adequate capital and resources. Its inferable that the Woodstock neighborhood is inaccessible to POC's, low-income, and other marginalized populations in adjunct FMA's.

### *Age*

The age demographics of this FMA is mostly middle-aged residents, but respectively this has not been reflective of the calls received based on qualitative data obtained throughout interviews. This highlights a potential short-falling in services targeted towards low-income elderly populations.

### *Education*

Most within the FMA have some form of secondary education. Interestingly, the adjunct neighborhood of Lents appears to parallel this, which hints that there may be less inequality between census tracts, and more neighborhood compositions.

### *Other Equity Indicators*

This section highlights three other equity indicators pertaining to equity in Station 25’s FMA.

Indicators	Data Types
Healthcare	Accessibility to green spaces (social) and hospital services (physical)
Transportation	Public transportation service stops, sidewalks, and road connectivity
Housing	Availability of diverse housing.

#### *Health:*

A large determinant of a community's health, current and projected, is by the community’s accessibility of healthcare services and resources within an adequate distance. Gauging healthcare equity within the Woodstock FMA is important in acknowledging potential improvements in relation ease of access. Many of the calls received by the Woodstock FMA are in relation to health related incidents. Though there exist various individuals and senior care facilities that abuse these services, a large majority of these calls are due to treatable ailments that could have easily been prevented if provided the appropriate access to healthcare and other services.

#### *Physical Health*

There was a focus on neighborhood proximity to hospitals, due to their encompassing services provided. Establishing that a reasonable buffer distance within an urban environment is within a 2 mile radius, which a majority of the FMA does reside within. This is particularly concerning since health related acuity calls are the majority received.

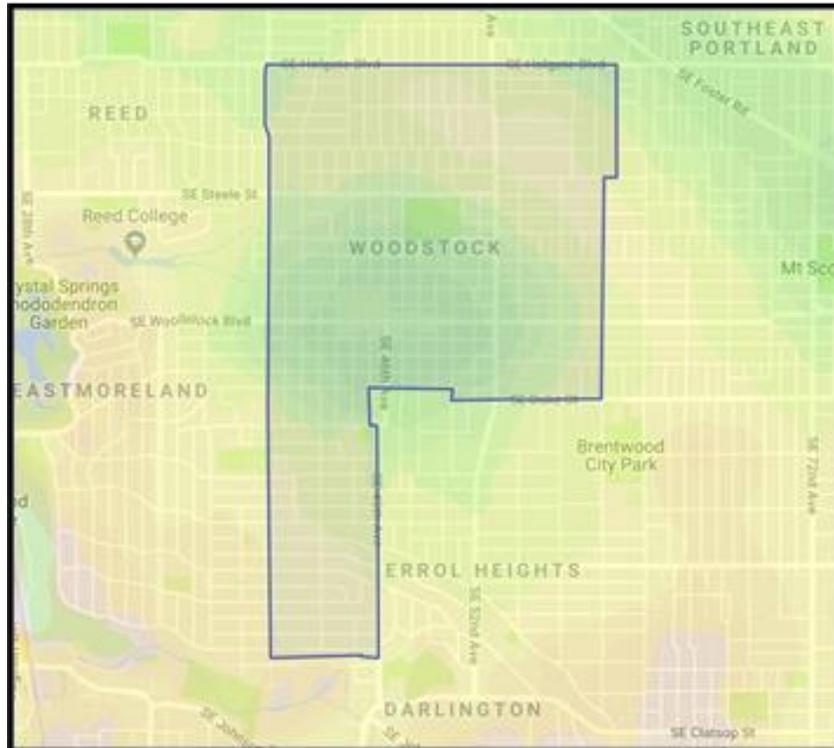
#### *Social Health*

Having access to green spaces is important feature for a community, because it acts as physical space where community is able to conjugate and participate in recreational activities. A large concern regarding elderly populations is social isolation that can be exasperated by inaccessible

services and community. A large presence of these green spaces exist within the FMA boundaries and are easily accessible to a good majority of these within the neighborhood.

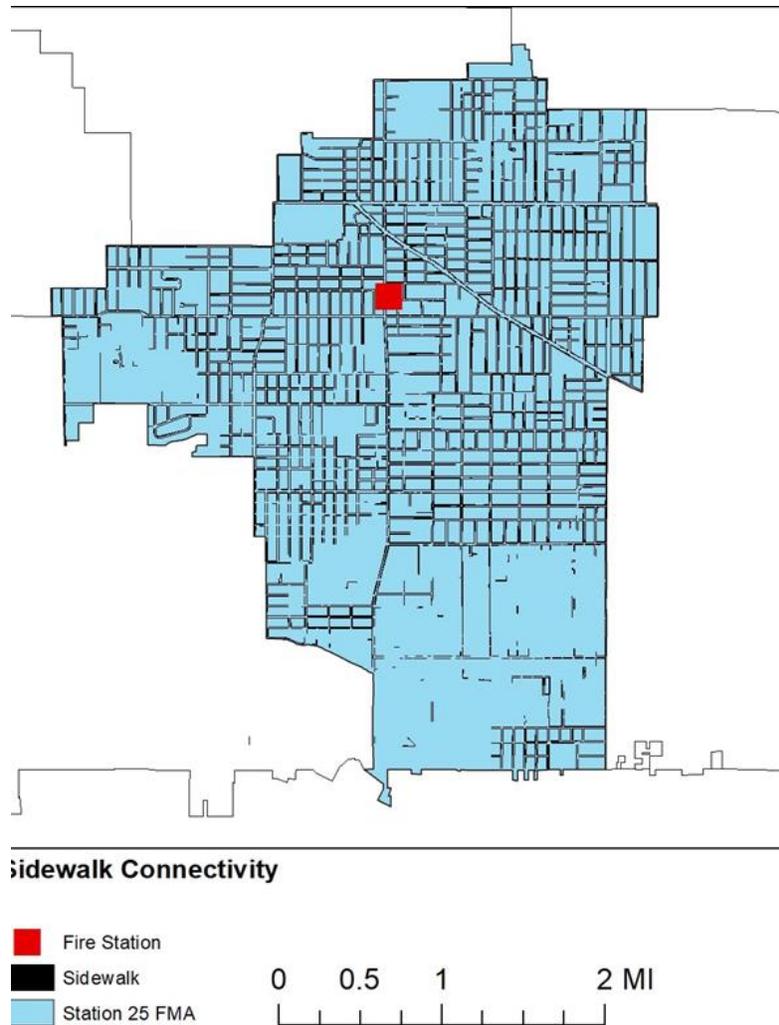
*Transportation:*

Walkscore.com measures the walkability of a space by analyzing walkability routes to nearby amenities. This score also measures pedestrian friendliness by analyzing population density and road metrics such as block length and intersection density.



*Walkability Heat Map of Station 25 FMA Accessed via Walkability.com*

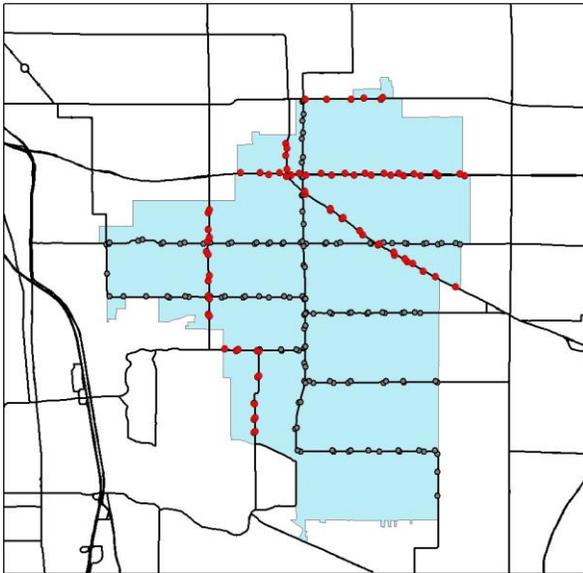
The overall walkscore of the City of Portland was 65, while their transit was 51. Portland is the 14<sup>th</sup> most walkable city in the nation. The walkscore of the Woodstock neighborhood was 65, which is considered somewhat walkable. Their transit score was slightly lower than the city average at 48. These scores place this neighborhood as the 43<sup>rd</sup> most walkable neighborhood in Portland. These scores are important in analyzing equity within this space, due to concerns around accessibility for elderly and low-income individuals who likely are reliant on services and need to fully access their immediate areas. Respectively, accessibility within this FMA is comparable to the city as a whole.



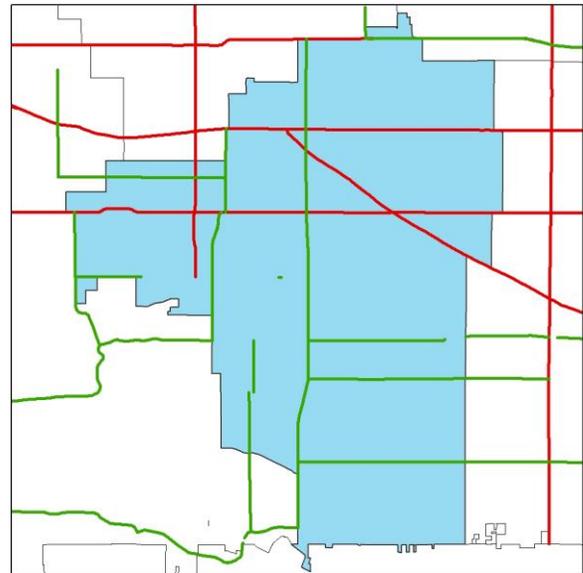
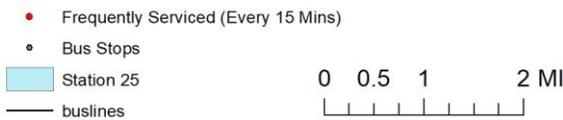
*Other Potential Modes of Transportation*

Other potential modes of transportation would be Trimet buses, cycling, Taxi's, and Ridesharing apps. The Taxi industry has been in steep decline due to the popularized "Ridesharing Apps" such as Uber and Lyft, which has arguably driven down the demand for the traditional taxi services. Conversely, the population that would most benefit from taxi service are elderly, especially due to gaps in technological knowledge being a barrier for them to utilize phone Applications. Light-rail service does not extend within FMA boundaries, which means the only public transportation service available is Trimet buses. This primarily serves elderly and other low-income communities. Equitable services for buses accessibility is determined based on stops and frequency serviced. Trimet stops that are serviced every 15 minutes intervals, are considered frequently serviced. These frequent stops are clustered towards the Northern portion of our FMA, which is within a high crash area. This means that the most accessibility for public transportation is near areas of high danger.

The importance of cyclist lanes is that it allows for safe passage for those who are using bikes as their primary mode of transportation, and they add an additional buffer for pedestrians. The concern for cyclist safety is a major concern, due to established bike lanes not being installed in areas that are high impact. This limits safe accessibility for those who desire to utilize these spaces.



**Bus Route Connectivity**



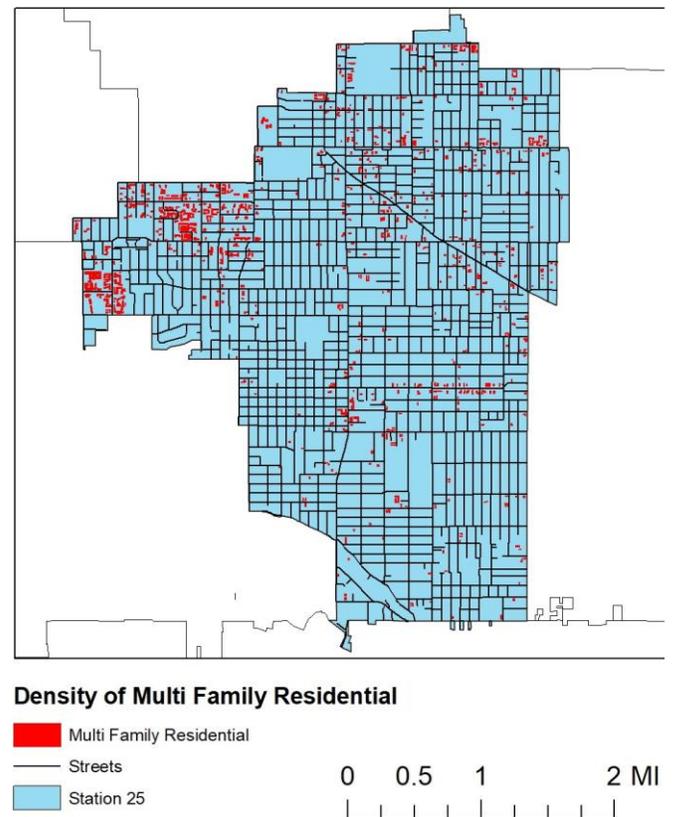
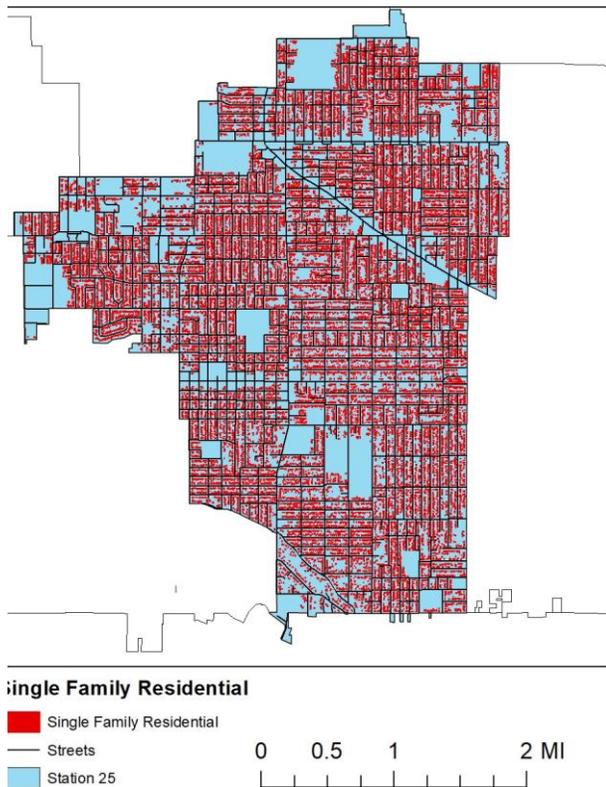
**Cyclist safety in High Impact Areas**



*Housing:*

The diversity and availability of housing stock is important to maximize utilization of space, so that individuals have the capacity to fully enjoy the benefits associated with inhabitants. Equity for different populations vary greatly in relation to housing accessibility. For the general Portland area, the populations who are most vulnerable are elderly, low-income, and historically disenfranchised minority communities.

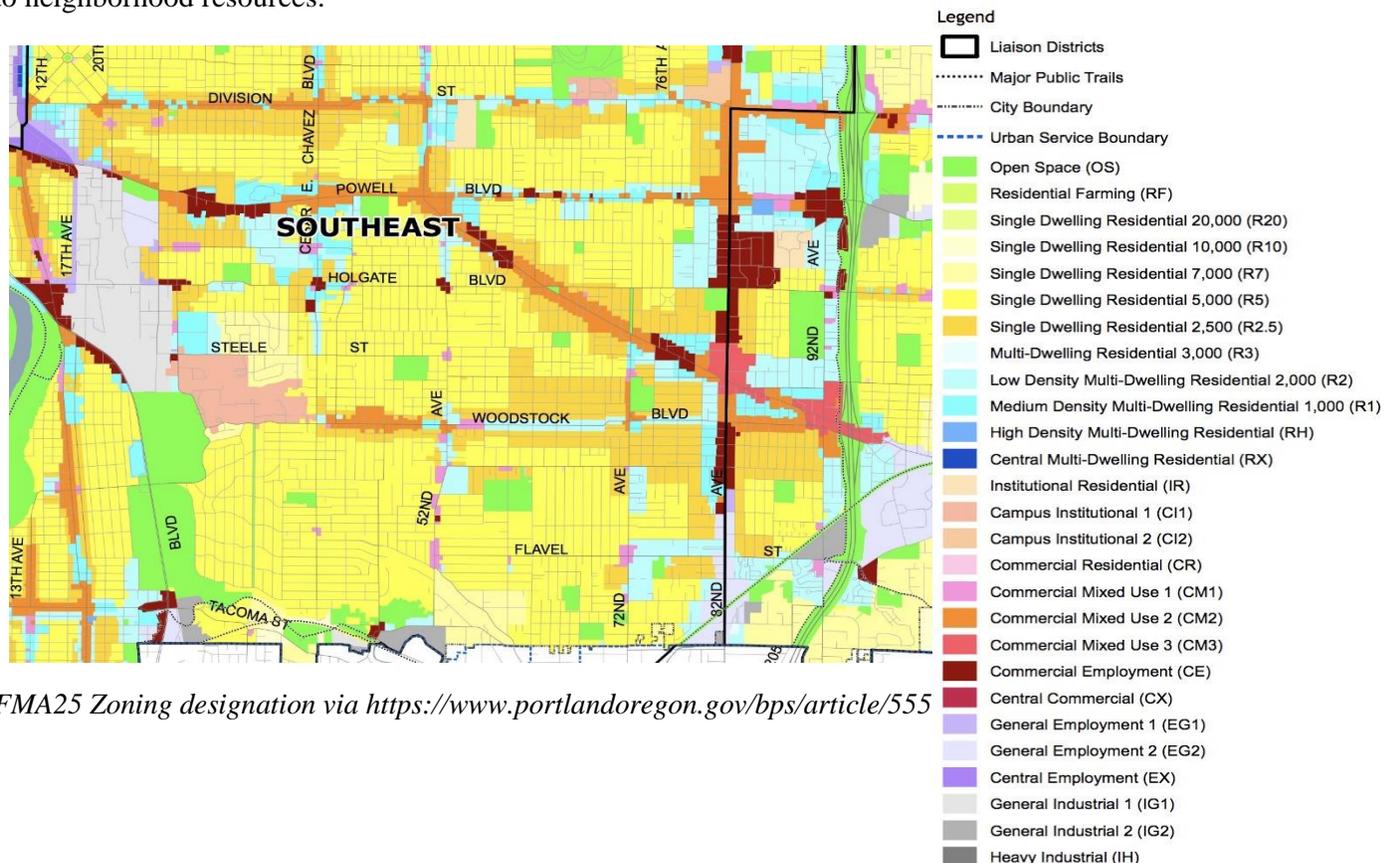
Based on 2017 ACS 5-year estimates, the average median monthly housing cost within Multnomah county was \$1,342.56. The composition of the dominant housing types were single-family homes, while presence of multi-family housing was minor in comparison. A majority of the housing within the FMA were constructed in the mid-20th century, and has not changed to meet the growing demographics of Portland. Multi-family homes are generally considered more affordable than their single-family counterparts. To create a more equitable neighborhood that is accessible, there needs to be diversification of the housing stock to accommodate for a growing population.





Housing stock based on construction year via SocialExplorer.com

Affordable housing for marginalized groups differ greatly within the Portland area. Historically many racial groups have been disenfranchised and prevented from owning property, and have been unable to accumulate new or generational wealth. Elderly populations also affected by this affordability issue, and have lacked the resources to live comfortably given inflation and rising cost of housing. In order to increase neighborhood accessibility it would be advantageous for zoning and development to incorporate more multi-family higher density housing create more equitable access to neighborhood resources.



FMA25 Zoning designation via <https://www.portlandoregon.gov/bps/article/555>

## *Zoning*

Most of the area has been zoned for single-family housing,( R2.5 to R20). Low-Median density residential spaces (RX to R3) are sparse in comparison, but is likely to grow as Portland continues to experience pressures to accommodate its growing population. Station 25 FMA is extremely homogeneous in terms of its demographics. Incidents pertaining fire and health related calls don't fall any particular pattern that would indicate that a particular population or geographic region is experiencing inequality concerns. What this analysis does highlight is room for equitable improvements throughout the entire FMA that would increase accessibility, and provide better accommodations for a more dynamic neighborhood. Due to services from Station 25 extending beyond the FMA boundary, it would be beneficial to apply this analysis to a larger area that encompasses a more macro-level view of calls in relationship to other FMA's. To further breakdown issues regarding equity, it would be necessary to obtain more detailed demographic data relating to calls received. Currently, conclusions are mostly speculative based on qualitative inference. Healthcare could be expanded to include services such as clinics and other localized healthcare services would provide a more encompassing view of healthcare services available and what degree they provide treatment

### III. Key Informant Interviews

#### Interviews

To get a better sense of the community in the Woodstock area and issues facing PF&R, the station 25 FMA team conducted interviews during the second-half of fall term. Six key informant interviews were conducted and several key themes emerged throughout these discussions. The interviews were with community groups, internal stakeholders, and non-profit organizations. Some interviews validated information the team had gathered while assessing existing conditions, and other interviews were useful for generating strategy ideas including future community engagement. Major themes include housing, older adults, transportation, and social isolation. Moreover, the key informants discussed overarching systems and processes affecting their work. All informants discussed social services, prevention and education, community health, representation, communication, financial limitations and community partnerships.

After completing preliminary data, attending several ride-alongs, and station observations, the team identified key internal informants to gain additional insight. We interviewed two PF&R firefighters, interviewing them in-person, and utilized audio recording as well as written notes. An interviewer and note-taker was designated for each interview, and were conducted within semi-private areas within the fire station. Upon meeting, a consent form was provided and the interviewer reviewed confidentiality and general procedures. Each internal informant interview session started by discussing their career paths within firefighting, and within PF&R specifically, in order to build rapport. Questions were asked about the FMA's strengths, areas for improvement, populations served, and current resource sharing and/or community partnerships with PF&R. This was followed by asking both key informants to place FMA 25 within a city-wide context by identifying differences. Furthermore, challenges to their work were identified, which could be categorized into internal PF&R's organizational culture rather than external neighborhoods issues. The firefighters at Station 25 mainly discussed older adults' utilization of 911.

Additional insight was obtained while conversing during ride-alongs and visiting Station 25; these interactions were not documented or recorded. Four external key informant interviews were conducted. One external interview, with *Southeast Uplift*, a non-profit serving neighborhood associations in Southeast Portland, their interview was conducted at their main office in a private room. Present from our group, were one interviewer and one note-taker, and the interview was audio recorded. Because FMA 25 covers 7 neighborhoods, SE Uplift was identified as a resource for understanding the FMA as a whole. They were the only organization interviewed that followed initial internal interview procedures, while the

remaining three interviews deviated from this process.

An informant representing the Woodstock Neighborhood Association and informants representing the Foster-Powell Neighborhood Association were interviewed as well. The Woodstock Neighborhood Association was conducted via phone and the Foster-Powell Neighborhood Association interview was conducted with several people during an in-person meeting at a food cart pod. The last interview conducted was with representatives of both Eastside Village PDX/Store to Door.

*Eastside Village PDX* is an interdependent and intergenerational community membership organization whose members prefer staying in their homes and neighborhoods rather than moving into retirement communities. *Store to Door* provides affordable and personal volunteer grocery service to older adults and disabled residents in Portland. For the external interviews, rapport was built by establishing and contextualizing the Blueprint for Success project focusing on community concerns, populations within the neighborhood associations, and relationships with PF&R.

#### Interviews Conducted with Neighborhood Contacts and PF&R

<b>Interview</b>	<b>Mode</b>	<b>Group Members</b>
<i>Station 25 Firefighter*</i>	<i>In-person</i>	<i>Jean, Christina</i>
<i>PF&amp;R Community Health Assessment Team member*</i>	<i>In-person</i>	<i>Daisy, Jeff, Christina</i>
<i>Woodstock Neighborhood Association</i>	<i>Phone</i>	<i>Jeff</i>
<i>Foster Powell Neighborhood Association</i>	<i>In-person event</i>	<i>Jeff</i>
<i>SE Uplift</i>	<i>In-person</i>	<i>Jean, Christina</i>
<i>Eastside Village PDX/Store to Door</i>	<i>Phone</i>	<i>Christina</i>

\*considered internal informants

### *Attempted Interviews*

Several additional interview attempts were made. The team reached out to Elders in Action, Portland State University's Institute on Aging, Asian Health and Services Center, a Portland Firefighters Association leader, and the Woodstock Chinese Presbyterian Church, but despite repeated attempts, the team was unable to set up interviews with these organizations.

## **Key Themes of Interviews**

### *Older Adults and Aging in Place*

The internal key informants discussed older adults, issues of aging in place, and the prevalence of assisted living and nursing home facilities within FMA 25. Age demographics show the FMA having a predominantly middle-aged population, but firefighters identified older adults and aging in place as their main focus. In fact, the key informant from Station 25 estimated that 80% of calls were for older adults, and many of the calls were due to falls. This aligns with call data in which the top medical call is trauma (falls are categorized as trauma in emergency dispatch).

Additionally, *Eastside Village PDX /Store to Door* identified aging in place as the main concern. *Store to Door* discussed impediments to aging in place safely. For older adults, it becomes harder to complete daily activities, mostly home maintenance, and this creates unsafe living environments for older adults. The *SE Uplift* informant discussed aging in place and the difficulties for low-income seniors to stay in their homes, especially if they are renting. If they wish to remain in their homes, it is costly to retrofit for safety. If they do not have the financial resources to remain in their homes and sell under duress, there is a fear of people taking advantage of older adults and undervaluing their homes when put on the market. The *Eastside Village PDX* informant corroborated this, and discussed the importance of financial resources when aging in place. The *CHAT* member, *SE Uplift*, and *Eastside Village PDX/Store to Door* interviewees all identified Multnomah County Gatekeepers program as a resource for understanding and referring older adults living in below adequate conditions to services.

When discussing the long term care and assisted living facilities, the internal interviewees detailed PF&R's relationship with large assisted living facilities. They were frustrated by the amount of calls they receive to pick up residents who had fallen to the floor and discussed PF&R's research into charging care facilities for these calls. They viewed the lift assists for these companies as for-profit businesses using public, taxpayer dollars to avoid liability, and push lifting safety issues onto public employees. Pushing this risk onto PF&R comes at a cost borne by the entire city. The call records show that Station 25 receives more lift assist calls than other stations.

The *SE Uplift*, *Woodstock Neighborhood Association*, and *Foster Powell Neighborhood Association* informants did not bring up aging in place, or topics related to aging, on their own volition. They only discussed these issues after we asked questions specifically about older populations in FMA 25. While they acknowledged they understand the issue, they did not have firsthand experience with this.

### *Social Isolation*

The *CHAT* interviewee identified loneliness and social isolation as a key issue, especially to older adults. They described an older adult's situation, and felt that the client's frequent calls to 911 would lessen if neighbors would visit and spend time with her. The informant felt that loneliness was the driving force for his client's calls to 911 in this particular situation. The key informant representing Eastside Village PDX and Store to Door organizations identified social isolation as crucial to understanding each organizations' clientele. In fact, when the key informant founded Eastside Village PDX, they believed clients would request services for their home. However, the key informant said the Eastside Village PDX members wanted more social networking opportunities, so the organization focuses on social events to alleviate loneliness. Because social isolation can cause or exacerbate anxiety and depression, we hope to address the intersection of mental health and social isolation in future research.

### *Transportation*

Transportation was a recurring theme in all interviews. Interviewees discussed transportation in several ways. First, internal interviewees identified transportation as a barrier for people accessing healthcare and felt people relied on emergency services for transport to hospitals, specifically in non-emergency situations, because they had few other transportation options. Not surprisingly, the majority of FMA 25's residents live more than 2 miles away from a hospital. In an urban context, this is considered inaccessible. Supporting the transportation theme, the *Eastside Village PDX/ Store to Door* interviewee identified transportation as the main service their clients requested. Their clients requested transportation services to medical appointments, social events, and to volunteer at community events.

Both internal and external interviewees discussed street design changes involved with the Foster Road Transportation and Streetscape project. They viewed it in two ways: either the Foster Road project would reduce traffic accidents, thus lowering calls, or the project would interfere with emergency response times due to increased traffic. This ties into the team's existing conditions survey of the neighborhood; backed-up traffic was observed where lanes had been reduced to one in the vicinity of 82nd Avenue. Although 82nd is out of FMA 25 boundaries, they assist FMA 11 regularly and frequently

go through this intersection. The neighborhood association interviewees, as well as the SE Uplift interviewee, supported the Foster Road Transportation and Streetscape project, and saw it as a boon to safety goals such as Vision Zero. Moreover, they identified active transportation and bike infrastructure as important to many southeast Portland neighborhood associations in terms of traffic safety, sustainability, and walkability.

### *Housing*

Housing insecurity was a recurring theme in all 6 interviews. Each of our interviewees felt that houseless populations were not prevalent in FMA 25 compared to other areas of Portland. However, they did express interest in the overall problem of housing insecurity within the Portland area. Consequently, the external interviewees all referenced a homeless shelter being built in Foster Powell. The *SE Uplift* staff member praised the community facilitation and engagement efforts of a neighborhood association in the houseless shelter site process, and felt that residents were well-informed and pro-shelter. Conversely, both the neighborhood and business associations' members felt strongly about being excluded from the decision-making process, and felt that the city's engagement efforts fell drastically short.

Both internal and external interviewees connected housing insecurity and fire risk as correlated. Homeownership presents less fire risk as discussed by John Jay. As FMA 25 has a higher percentage of residents in owner occupied units than the Portland average, we can deduce that FMA 25 may have a lower fire risk. The SE Uplift key informant discussed infill projects, ADU's, and residential density.

Connecting residential infill proposals and aging in place, the SE Uplift informant discussed the 'visitability' requirements and ADA requirements, no-step entries for example, of new housing as essential to help people remain in their homes safely. Better housing design could prevent falls for older adults, thus impacting trauma calls. Moreover, she suggested our FMA was generally pro-density, but also suggested that excessive new development has not been as much of an issue in our FMA as in others. However, new housing is being built in the FMA. Much of the new construction is multi-story multi-family housing concentrated along major street corridors. The Woodstock Neighborhood Association and Foster Powell Business Association interviewees were generally supportive of additional housing.

***“Being part of a community is just as important as any prescription drug”***

***-Eastside Village PDX***

### *Community Health*

Both internal interviewees as well as two external interviewees discussed community health. The internal key informants discussed the changing role of fire departments, and positioned healthcare at the forefront of PF&R’s current work. This is a daunting task, due to healthcare being complex and often inaccessible. Many low-acuity calls are non-emergencies dealing with stomach pains or back pains due to an inadequate healthcare system that does not prioritize proactive, preventative care.

The *Eastside Village PDX /Store to Door* interviewee discussed health in relation to aging in place, the disabled, and community support. For the low-income older adult and disabled clients of *Store to Door*, the rising costs of healthcare is a troubling trend. She said some *Store to Door* clients struggle with the costs of medication and may have to decide between allocating financial resources to food or to prescriptions. For *Eastside Village PDX* clients, the informant discussed the debilitating effects of both unexpected medical problems and chronic illnesses. In these cases, Eastside Village PDX acts as a network and provides meals, company, and transportation help to its members experiencing health problems.

The SE Uplift interviewee revealed frustrations with connecting public health and neighborhood land use and the built environment. They felt that it was a topic that was too ‘long-term’ in scope, so people, understandably, tend to focus on the everyday actions. This has effects on call volume for Station 25. If residents do not advocate for long-term, urban planning policies that address urban form and community, Station 25 will continue to receive low-acuity calls.

### *Prevention and Education*

Prevention was a key theme in most interviews. With the internal key informants, the discussion was primarily about fire prevention. Noting the success of fire prevention efforts, there was interest to replicate the prevention framework to fit community health when that issue was brought up. One of the internal key informants illustrated this point with a story revealing the difference in ‘charity’ and prevention. They discussed helping to fix a broken bridge rather than routinely saving drowning people in the river. To get to the root causes of the current low acuity calls, there needs to be preventative healthcare. With firefighters seen as ‘role models’ in the U.S. more broadly (especially in contrast to

police), they are in a position to credibly advocate for fire prevention and health education in their communities.

The Eastside Village PDX informant recalled a fire prevention presentation from a woman at Portland Fire & Rescue. She found the presentation useful as PF&R catered the fire prevention presentation to older adults. Mainly, they discussed prevention tips such as identifying and replacing frayed electrical cords, and they informed the Eastside Village PDX members about smoke detectors for residents with limited hearing.

PF&R already utilizes schools within their FMAs for fire education. However, they noted a need for health and emergency education. For example, when is it an appropriate time to call 911? Also, what can children do and learn now in order to be healthier in the future? The education conversation was not limited to children, and internal informants discussed public education regarding health and social justice. With the prevalence of cell phones, it's easier to place a good intent call and pass the issue on to 911 operators. How can we educate the public to be better neighbors and assist others? One informant noted examples such as 'Stop the Bleed' trainings, which teaches bystanders or passers-by to stop and assist someone in distress until help arrives. After discussing education and outreach with informants, there was interest in changing educational topics about issues related to PF&R services.

### *Representation*

Issues of representation surfaced in each of the five interviews. This theme addresses the essential question, 'Who is at the table?' From internal interviewees, it seemed that lower-level staff did not have the platform to share new ideas to create change. An internal interviewee discussed diversity, and felt that PF&R firefighters had diverse backgrounds. However, they only defined diversity in terms of career backgrounds, and did not go into detail regarding racial and gender diversity.

With external interviewees, they shared understandings of representation. For example, the SE Uplift staff member expressed frustration in the imbalanced representation among neighborhood association members. They shared that most neighborhood associations skewed towards older members who are homeowners. They wanted a more representative model that encouraged young people, renters, and people of color to join neighborhood associations. Leaders may not hear certain groups' needs in regards to urban planning and community health. Consequently, Station 25's call volume may increase because policy initiatives fall short.

### *Communication*

The overlapping key theme seemed to be communication. Who is informed, and how are they informed? Overall, it seemed that many PF&R firefighters were unaware of the Blueprint for Success project and scope. Consequently, internally to PF&R, it seemed that many resources were unknown or underutilized. For example, an informant identified the CHAT program as an unknown or misunderstood asset due to communication issues. Moreover, it seems that the city is not communicating with the public in effective ways. If Portland residents are calling 911 for help with shutting off home water pipes, as firefighter interviewees discussed, the city needs to better communicate alternative resources. Similarly, the firefighters felt left out of the loop in regards to city infrastructure projects such as speed bump placement and construction sites.

Summing up communication, both internal and external interviewees expressed interest in doing more to spread the word about services and resources and internal interviewees hoped for more information about department direction, goals and policy. The interview team understood going into this project that PF&R conducted public outreach and education. However, they were surprised at how fire-centric this outreach is, and how it may need to change to reflect what the PF&R does on a daily basis.

### *Financial Sustainability*

A key theme for each internal interview as well as the external, non-profit staff member interview, funding and budgeting was cited as a limitation and barrier in carrying out changes. Long term funding and sustainability for programs was mentioned by some internal interviewees. Some neighborhoods contain wealthier residents, so there could be local funding disparities for locally-funded programs. The one PF&R Community Health Assessment Team (CHAT) staff member received permanent funding only in July 2018. PF&R interviewees expressed great interest in expanding the CHAT program. However, PF&R relies on the general fund, which presents challenges to secure long-term capital planning as well as operating expenses. Any strategies proposed for FMA 25 need both financial support and consistent leadership for implementation and internal interviewees express concern that many good programs that could save money in the long term do not receive sufficient funding in the short term.

### *PF&R Culture and Service Model*

Interviewees also cited challenges with organizational and cultural changes. For the internal PF&R informants, they acknowledged the slow-moving culture of PF&R, and felt that ‘consistency in the face of chaos’ created a strong desire for everyday norms. They acknowledge that many changes, even small changes, frustrated firefighters and, sometimes, put stress and piled on extra responsibilities. Moreover, the current service model does not align with on-the-ground experiences for firefighters. If they are responding to more mental health crises and healthcare gaps, how does the current ‘quick in, quick out’ service model fit the needs of the community? What other services should be provided or changed? This is when ‘buy-in’ was discussed regarding PF&R firefighters. In a changing department and service model, how will PF&R create buy-in from their employees? This question was asked also within the structure of PF&R leadership and political leadership more broadly. With the nature of how political leadership changes, how can they maintain an inclusive culture with shared goals and values that focuses on community health?

In more positive terms, the fire station as home was discussed, and a strong identity around Station 25 firefighters was brought up multiple times. Within the station, two firefighters are ‘legacy’; their fathers were Station 25 firefighters as well. Many firefighters identified the importance of who you work with, and felt that Station 25 was a sought after station because of their strong bond.

***“Thank you for doing what you do. I could never do what you do”***

***-PF&R firefighters to CHAT member***

### *Social Work within PF&R Service Model and Culture*

The above quote references PF&R firefighters’ general attitude regarding the CHAT program. Firefighters are performing the role of social worker, albeit within the current service model of short response times during their calls, and they expressed hesitancy about expanding this role. Both internal PF&R interviewees wanted to see more social justice within service framework, and one noted the need for several related trainings. Specifically, the internal PF&R informants felt that trauma-informed care, mental health, and drug and addiction counseling training would be beneficial to a firefighter’s toolbox. This also pertains to the firefighters themselves. As stress, mental health concerns, and burn-out are concerns within the firefighting profession, the attention to services for firefighters’ mental health is also an area of importance.

### *Resources and Community Partnerships*

Both internal and external informants were interested in creating community events and spaces for PF&R and residents to meet and address FMA needs. All of the external interviewees identified community space as a need, and saw PF&R as a partner in meeting space. Neighborhoods in FMA 25 seemed to interact with PF&R through specific events such as PF&R visits to schools, farmer's markets, and block parties. Outside of these events, however, there was little interaction with community members and PF&R outside of calls to 911. For the neighborhood and business associations, they did not have strong relationships with PF&R, with some having no interaction at all, but were interested in changing that relationship. However, the neighborhood associations and SE Uplift staff member did identify Neighborhood Emergency Teams (NET) as a community resource. While both internal and external informants acknowledged Station 25's 'open door' policy, they did not necessarily take advantage of this. One internal PF&R informant envisioned fire stations as community hubs, and suggested food-centric events as a way to bring community and neighborhood fire stations together.

Based on the interview with the Woodstock Neighborhood Association informant, there was interest in developing more of a partnership with PF&R. Woodstock has a community hall (It is a former fire station!), and they indicated interest in hosting events with FMA 25 at their facility. All key informants were interested in and excited about sharing resources. The internal PF&R interviewees worked with several other community resources, mostly within the medical field, and noted schools as a key resource for prevention education efforts. For the internal PF&R interviewees, they wanted more resource sharing with hospitals and health insurance companies. This would be in the form of data sharing for better client care. In order to equitably create partnerships, we believe a diverse coalition of organizations should be involved. Specifically, organizations representing houseless communities, disabled residents, non-English speaking communities, and organizations oriented toward people of color.

### **Team reflection**

Most external interviewees mentioned they are homeowners, most with long term ties to the area so it can be assumed these interviewees may be more stable than other populations but interviewers did not go into specifics about this with interviewees' individual financial situations. It can also be assumed if they are volunteering their time for neighborhood organizations, they indicates they may be more invested in the direction of their neighborhood and have more time than the average resident.

The firefighters are considered insiders. While none of the firefighters interviewed live in the neighborhood, many have worked in FMA 25 for many years so they understand where issues are and

where problems may occur in the future. Working as a firefighter provides a long term, stable position. For interviewers, one person recently moved to the neighborhood, another visits regularly and others visit occasionally so there was at least generally familiarity with the area. One interviewer has a relatives and friends who work in both city and wildland firefighting capacities so had additional insight into what PF&R experiences.

The interviewers recognized that being graduate students puts them in a position of privilege as most people do not have the opportunity to continue their education. While the team could be considered privileged, the team was probably an external-insider based on Banks' Typology of Cross-cultural Researchers.<sup>2</sup> The FMA 25 team recognizes the interviews we conducted did not fully represent the population or issues in the neighborhood. However, attempts were made to interview a broader range of interview subjects. The interview scope was limited due to a short timeline for project completion. Additional time for scheduling and conducting interviews is a recommended method of diversifying external community interviews. Specifically, the team recommends speaking with community healthcare workers and non- English speaking residents to further understand FMA 25.

Overall, we gathered important information from internal and external informants as well as from our ride-alongs and station observations. Between interviewers, the team working with FMA 25 developed a greater understanding of the neighborhood. This included information about how the area is similar to rest of the city, an example being increasing home prices and new development and how FMA 25 is different with a difference being less (although by no means a non-existent problem) impacted by those experiencing housing insecurity compared to other FMA's. However, all interviewees understand PF&R services may need to change as societal expectations and populations change.

## IV. Strategy Sessions and Recommendations

### Strategy sessions

Our team conducted a strategy development session with each of the three Station 25 shifts. Strategies were identified collaboratively with firefighters based the Blueprint for Success' goals and needs of the FMA. On November 29 - December 1, we held a 2-hour strategy session with each of the three shifts at Station 25. One team member facilitated, one assisted and wrote goals and strategies on giant sticky notes, and one transcribed as much of the meeting as possible. All 8 firefighters who were on shift at the time participated, but since the station remained in service during the sessions, we frequently lost half of the participants to a call. This impacted the momentum of the sessions and made some of our planned facilitation strategies impossible. Materials used for strategy sessions were:

- Four-page handout with existing conditions highlights (see Appendix)
- Strategy generation worksheet for firefighters to brainstorm (see Appendix)
- Large Post-It easel pad for tracking strategies generated
- Sticky dots for firefighters to vote on top strategies

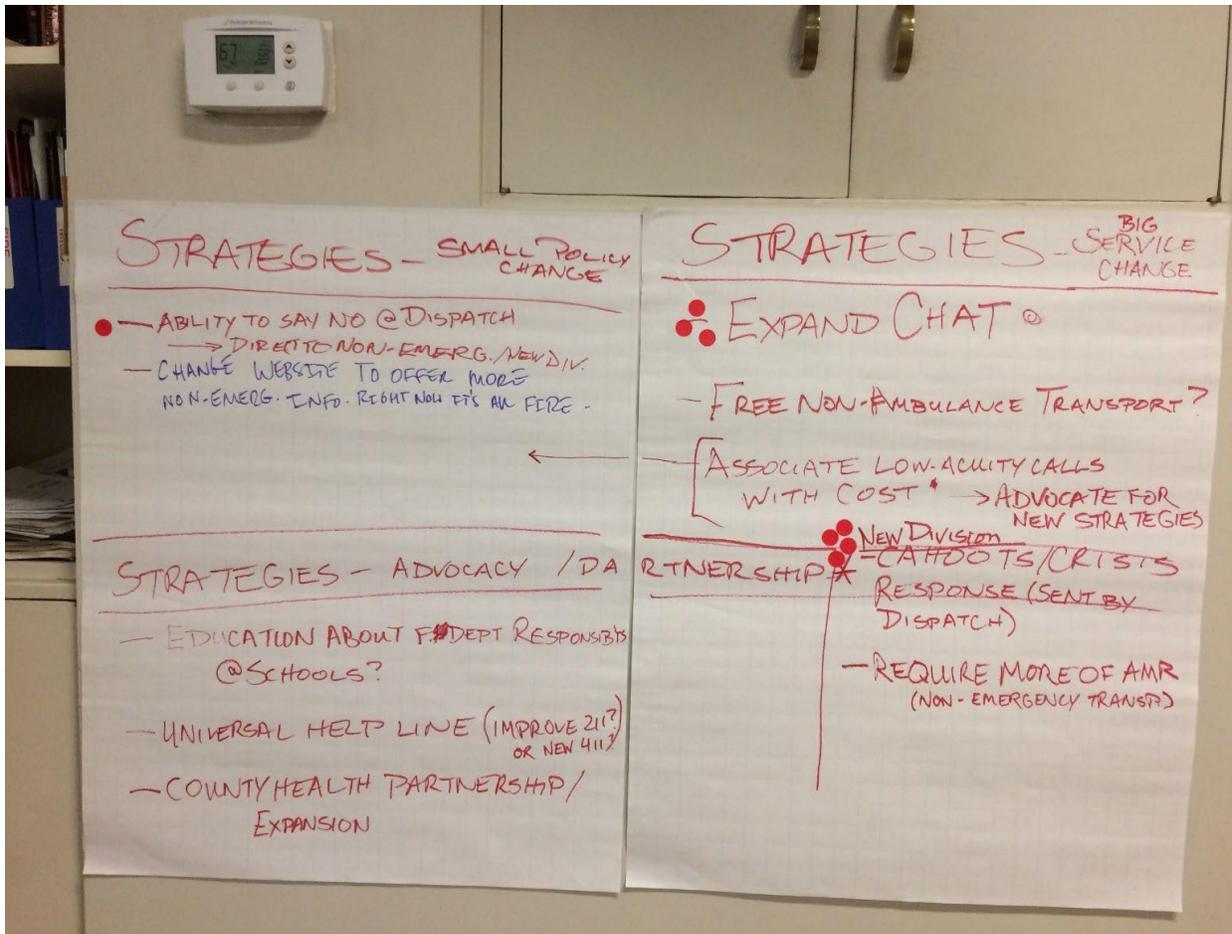
We created a four-page handout on the distribution of calls in FMA 25 and comparison to Portland, transportation and proximity to hospitals and green space, the geographic distribution of building fires, selected demographics, and a non-exhaustive list of possible partner organizations (see Appendix). At the strategy sessions, we talked through these existing conditions and what we learned from key informant interviews and then asked for feedback from firefighters -- whether we missed anything they thought was important, whether any information was surprising, and whether it matched their experience going on calls. Very little of what we provided was surprising to Station 25, but two important pieces of new information came out of this phase.

- Firefighters noticed that three of the top four medical codes get dispatched to the truck, while only one goes to the engine, creating an imbalance of work between the two teams.
- When asked about the number of calls designated “Lifting Person to Bed or Chair / Facility,” which were lower than expected based on conversations about frequent calls to assisted living facilities, firefighters reported that lifts at facilities sometimes get coded as “Invalid Assist” as well, since they fit in either category. We recommend cleaning up the *SitFound* codes and subcategories if PF&R wants to track progress on fine-grained call types.

We then asked firefighters to generate goals for the station and the surrounding FMA for the next several years. Several firefighters expressed confusion as to why they were being asked to think about preventative public health interventions, which they saw as “not what we do,” but others saw the connection between the health of the neighborhood and their own workload. Many of the goals generated can be summed up by this statement from the last strategy session: “We want to get help to people who need it.” Firefighters wanted to make sure we knew that their problem with going on so many low-acuity calls is that it makes them less available to help with true emergencies when they arise. Other goals that fit under that broad heading include:

- Receiving or responding to fewer non-emergency and low-acuity calls,
- Greater public awareness of (1) what constitutes an emergency and (2) what other resources are available and often more appropriate,
- Receiving or responding to fewer calls from businesses (care facilities and commercial fire alarm companies, for example) who, in the firefighters’ view, are using PF&R instead of hiring staff because PF&R’s services are free, and
- Better connections with behavioral and mental health as well as physical health services.

Firefighters were asked to generate strategies to make progress toward some of these goals. In the first two sessions, we gave them worksheets with PF&R’s Blueprint for Success themes across the top and spaces for small internal changes, larger policy or service changes, and partnerships or advocacy efforts. Since firefighters did not use the worksheets in the first two sessions, we changed tactics in the third and wrote those categories on big sticky notes (see photo below). Once we had written down as many suggestions as we had time for, we used dot voting to prioritize the strategies. The second session ended while all firefighters were on a call, so they did not get to participate in this phase. We guessed what their priorities might be based on excitement during the discussion phase. A full list of strategies generated and categorization by Blueprint for Success theme can be found in the Appendix.



Throughout the discussion, we heard the following about implementation difficulties:

- Firefighters believe that simply providing information about alternative resources while at the scene is not enough for most of the callers who need services PF&R cannot provide.
- Firefighters are frustrated with current dispatch protocols and believe that one or two additional questions could often weed out non-emergency situations before the call is sent out.
- Firefighters are concerned this is another short-term initiative and will quickly go by the wayside if there is a change in management or a change to bureau heads. It sounds like they are receptive to change but want any positive changes to be complemented with long term management support.

With this information in mind, we recommend undertaking some fairly large shifts in PF&R's service model and realigning external communications with the Bureau's actual activity in the city.

## **Recommended strategies**

PF&R is already working on two medium-term strategies that were frequent topics of discussion at the Station 25: Improving triage at 911 dispatch and changing PF&R's relationship to assisted living and long-term care facilities.

### *Improve 911 triage*

As PF&R works with the Bureau of Emergency Communications on new call-taker protocols, we recommend that firefighters be asked for their input. They have on-the-ground knowledge about what kinds of questions could be asked to weed out non-emergency situations and calls that PF&R or AMR will not be able to resolve. For example, asking callers whether the person they are calling about actually wants to be transported to the hospital could prevent some unnecessary trips. In addition to including input from firefighters, BOEC should consider incorporating an emergency nurse triage position, who can skillfully divert non-emergency calls to alternative care providers. A 2015 study suggests that incorporating such a position reduces costs for both the emergency care providers and patients by preventing low-acuity medical calls from entering the healthcare system in the most expensive way possible (Gardett, 2015).

### *Institute fees or additional regulation for care facilities*

The City of Omaha, Nebraska has begun charging care facilities when their emergency responders go on calls that turn out to be non-emergency requests for lifting residents (Golden, 2018). As PF&R considers a similar policy change, we recommend that the Bureau take care to ensure that charges are not passed on to vulnerable residents in these facilities. One alternative to charging for non-emergency responses is changing licensing at the city level: the city could require facilities of a certain size to keep staff available for lifts at all hours.

In addition to these in-progress changes, we recommend PF&R shift its external communications messaging to better align with its actual role in Portland and the Blueprint for Success themes. These strategies are relatively inexpensive and can begin to be implemented immediately.

### *Update PF&R website*

The bureau's website is almost exclusively focused on fire safety (see below). PF&R

communications staff should expand its focus to include preventative health information, common non-emergency calls and alternative resources for addressing them, information about aging in place safely, and links to other relevant city and county offices. This is a relatively inexpensive strategy and can begin to be implemented immediately.



*Images taken from PF&R Website*

#### *Expand curriculum for school visits and field trips*

Firefighters report that elementary school visits and field trips could be better used to teach children how and when to call 911, rather than just being a chance for students to see a fire engine up close. PF&R communications staff should develop or locate a curriculum for elementary students that focuses on both fire safety and preventative health. Students should be encouraged to take this information home, expanding the reach of this strategy.

#### *Partner with Neighborhood Associations*

At least one Neighborhood Association in FMA 25 is very interested in partnering more closely with PF&R. Since Neighborhood Associations produce blogs and newsletters, they are an excellent potential communications partner. We recommend that station captains take the lead on this partnership because they are at a similar geographic scale. PF&R communications staff could provide some copy to be placed in the Neighborhood Association newsletters, which station captains or other interested firefighters could personalize for their FMA. For example, in FMA 25, where many of the calls are from older adults who need assistance, the station could emphasize safe aging-in-place. While Neighborhood Association membership typically skews toward homeowners, their communications reach a broad cross-section of the neighborhood.

*Long-term strategy: Expand CHAT into a low-acuity and mental health response team*

Feedback from firefighters about the Community Health Assessment Team was very positive, but the program requires significant expansion if PF&R wants to close care loops and reduce call volumes long-term. Eugene, Oregon, has a crisis response team that could provide a model for PF&R. In this program, social workers are paired with EMTs who have received de-escalation training, and the team can be dispatched by 911 operators to people experiencing mental health, drug, or interpersonal crises (Elinson, 2018). Under PF&R, this team would also address some types of low-acuity calls. The key factors are that this team can spend more time with callers than firefighters, who must be ready to respond to higher-acuity crises and fires, while still responding more quickly than CHAT currently can. Since simply providing phone numbers for alternative resources may not be enough for frequent callers, this team would continue CHAT's work of helping coordinate appropriate care in person. PF&R's new equity manager must be a key figure in the construction of this team to ensure that it is implemented in ways that positively impact racial equity in the city.

A summary table of recommended strategy priorities, along with roles and cost brackets, can be found below. By implementing all of these strategies, PF&R can reduce call volume moderately in the near term while working towards longer-term improvements in public health and connections to alternative resources that will slow the growth of call volume in years to come.

Strategy	Actors/Leaders	Costs
<p>Internal/Service: <b>Improving triage, Changes to 911 dispatch</b></p> <p>-Increase allowed dispatch times</p> <p>-Incorporate firefighter suggestions into dispatch script</p> <p>-Example: “Do you want to be transported to the hospital?”</p> <p>-Give dispatchers greater leeway to direct callers to alternative resources Create non-emergency number similar to Portland police</p>	<p><b>Leaders:</b></p> <p>-Chief</p> <ul style="list-style-type: none"> <li>● Advocate for changes at dispatch level to the City &amp; act as liaison between PF&amp;R and BOEC.</li> </ul> <p>-Station Captains</p> <ul style="list-style-type: none"> <li>● Station Captains will take on a leadership role advocating why the change is needed based on their daily experiences.</li> </ul> <p><b>Actors:</b></p> <p>-Bureau of Emergency Communications</p> <ul style="list-style-type: none"> <li>● Change at dispatch requires a policy change within BOEC.</li> </ul> <p>-City Attorneys</p> <ul style="list-style-type: none"> <li>● Change in dispatch system and times will have to be vetted by city attorneys who provide legal counsel to the City.</li> </ul>	<p>High</p>

<p>Structural/Policy: <b>Create a Low-acuity and Mental Health Response Team</b></p> <ul style="list-style-type: none"> <li>-New division of PF&amp;R</li> <li>-Sent by dispatch but able to spend more time with each caller</li> <li>-Includes expansion of CHAT program</li> <li>-Unlike current Rescues, this team should not pull firefighters off of other apparatus</li> <li>-Requires dedicated long-term funding</li> <li>-Pair paramedics with social workers</li> </ul>	<p><b>Leaders:</b></p> <ul style="list-style-type: none"> <li>-Chief <ul style="list-style-type: none"> <li>● Chief will need to take a lead role in advocating for the funding necessary from the city to make this new team possible.</li> </ul> </li> <li>-PF&amp;R Equity Manager <ul style="list-style-type: none"> <li>● The Equity Manager will need to take a leadership in ensuring the bureau has an equity framework embedded bureau-wide and particularly within the new team.</li> </ul> </li> </ul> <p><b>Actors:</b></p> <ul style="list-style-type: none"> <li>-CHAT Team <ul style="list-style-type: none"> <li>● CHAT is currently made up of one staff-person. This staff-person will likely take on a leadership role as the team expands.</li> </ul> </li> <li>-Portland Firefighters Association, Local 43</li> </ul> <p>The union will likely want to be involved if new team will be union members.</p>	<p>High</p>
<p>Internal/Service: <b>Update website</b> to include preventative health information, other city bureaus and county resources for common non-emergency calls</p>	<p><b>Leaders:</b></p> <ul style="list-style-type: none"> <li>-PF&amp;R Communications staff <ul style="list-style-type: none"> <li>● Communications will take lead in updating website to more accurately reflect needed public information.</li> </ul> </li> </ul>	<p>Moderate</p>
<p>Partnerships: <b>Partner with neighborhood associations</b>, who can include health and safety information, alternative resources, and information about appropriate 911 use in their newsletters, blog posts, etc.</p>	<p><b>Leaders:</b></p> <ul style="list-style-type: none"> <li>-PF&amp;R Communications staff</li> </ul> <p><b>Actors:</b></p> <ul style="list-style-type: none"> <li>-Station Captains <ul style="list-style-type: none"> <li>● Station captains should take ownership in establishing and strengthening relationships with community</li> </ul> </li> </ul>	<p>Moderate</p>

	<p>partners.</p> <p><b>External partners:</b></p> <p>-SE Uplift</p> <p>-Woodstock Neighborhood Association</p> <ul style="list-style-type: none"> <li>• -Foster/Powell Neighborhood Association</li> </ul>	
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<p>Partnership: <b>Expand and focus partnerships with schools:</b> give firefighters a health and safety curriculum for school visits and field trips</p>	<p><b>Leaders:</b></p> <p>-PF&amp;R Communications staff</p> <ul style="list-style-type: none"> <li>• Communications will take lead in providing talking points to firefighters who visit schools.</li> </ul> <p><b>Actors:</b></p> <p>-Firefighters</p> <p>-Teachers</p> <p><b>External partners:</b></p> <p>-Woodstock Elementary School</p> <p>-Franklin High School</p> <p>-Hosford Middle School</p>	<p>Low</p>
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*Final reflections from strategy sessions*

**Over studying:** Students at OHSU studied the urban form, demographics, and community resources in FMA 25 just last year. This sort of over studying may contribute to the firefighters’ “wait-and-see” attitude toward the Blueprint for Success project and PSU’s involvement.

*Suggestions for future sessions*

- To help focus the group, combine the facilitator and assistant roles so that the person asking questions is also the person writing up suggestions.

- Visit the station during morning Roll Call meetings at least once to develop a sense of the meeting culture. This would have helped us prepare more appropriate facilitation methods for this group.
- Schedule sessions when the station can be out of service, if possible. It was very disruptive for the participants to cycle in and out.
- Have name tags for everyone.
- Reorganize the space to allow for better note-taking and more intentional facilitation.

## V. Evaluation & Monitoring

Portland Fire and Rescue charged the Blueprint for Success team with 3 goals:

- Stay cost effective by reducing unnecessary low acuity calls
- Stay relevant by becoming a permanent fixture in the public health of each FMA, and to assist the community in improving the health and welfare of its residents.
- Continue fire prevention efforts/inspections to further reduce the number of fires and fire related deaths in the Portland area

Portland Fire & Rescue can measure progress of these goals using multiple metrics. These metrics should include both quantitative and qualitative data to both evaluate the results of public health initiatives and put them into a broader societal and geographical (by FMA) context. Portland Fire & Rescue already has an annual performance report which includes quantitative data about PF&R as a whole, but we would like to advocate for additional and more specific data.

We suggest creating an FMA-specific annual report. This will allow the department to recognize the specific needs of each FMA community, and the changes and progress that are occurring at a more localized level. We suggest the following metrics to be discussed in a report that each FMA creates through a partnership between station captains and the PF&R data analytics team. This report should be published for the public and individual firefighters to view on each FMA's website. We also advocate for using this information as applicable to increase and give context to the information already included in PF&R's annual report.

### *Additional Quantitative Metrics:*

- Track low acuity calls based on geography and repeat offenses, measured in the annual performance report
- Track fire calls geographically, and increase fire inspections in high frequency areas. Attention should be paid to Existing Conditions Section 5 for correlations with fire calls and John Jay's research.

- Track Number of emergency room visits/transport per FMA
- Measure CHAT program benefits expressed in monetary terms
- Public contacts during community outreach (number of contacts reached, who they were, and the type of outreach conducted)
- Standardize call categories that fire fighters input after a call, such as lift assist. This will allow for better mapping and tracking of types of calls.

A number of these metrics (low acuity calls, public contacts, etc.) are already recorded by the PF&R data analytics team. It will be useful for this data to be separated by FMA and shared throughout the station and presented to the firefighters. Tracking these metrics each year will allow the FMA to see possible successes and challenges and whether they are reaching their goals. The CHAT program is a new initiative aimed providing health and social services for frequent 911 callers to reduce their dependence on emergency services. It will be valuable to measure the cost savings that occurred due to the CHAT program to advocate for the continuation and expansion of the program. Additionally, it will be important to track the methods that led to success and to identify the most helpful community organizations and services that high frequency callers were referred to. This will allow the CHAT program to be more effective at providing the right resource to high frequency callers to better address underlying issues. It will also be useful for the FMA to measure how they are conducting their outreach, to ensure that they are reaching out to the most vulnerable subgroups of FMA.

*Qualitative Feedback:*

- Bi-monthly stakeholder meetings between the fire captain of an FMA and different community organizations, such church groups, nonprofit organizations, community leaders, neighborhood emergency response teams, and neighborhood organizations. The goal of this stakeholder committee would be the improved public health of the FMA.

Qualitative feedback is necessary to put results into context. For example, and FMA may see a reduction in low acuity calls, but what is that being caused by? Changes such as this could be due to a program PF&R initiative, or because at risk residents moved out of the FMA. Obtaining this qualitative data could be obtained by survey, however that method is costly in both time and monetary resources. A simple community stakeholder committee would not only help foster continual community relations, but would give each fire captain an opportunity to solicit for the information and feedback necessary to

understand how their efforts are truly affecting their community. It should be noted that the equal participation of all community groups (renters, homeowners, different societal incomes and races) is in itself a measure of the station's community involvement success. Unequal participation would indicate that there was still more connections and community outreach to be conducted.

### *Accountability*

- Have FMA's report in the annual blueprint about what they are doing to improve their community's health. Provide numbers of events and what demographic those events/partnerships served.
- Suggestion: number of increased safe and well visits
- Have above data reported in both an FMA specific report, and department annual report applicable detail.

For PF&R as a whole, there is a monetary incentive to increase public health. However, on an FMA level, there is very little systematic motivation for each individual fire station buy in to the Blueprint for Success Program, or for stations to do more than the minimum required by PF&R as a whole. It is the hope of the Blueprint For Success Team, that annual performance reports for each FMA will not only provide a tracking device to measure progress, but that will confer a sense of responsibility, competition, and pride to the fire stations in their community's public health and fire risk reduction programs.

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# Appendix a

## Interview Questions

*PF&R firefighter, Station 25*

- Can you briefly talk about your background? What got you interested in being a professional firefighter? What stations have you worked at?
- How long have you been at this station?
- What's different about this station than the others? About this FMA?
- What is your favorite aspect of the FMA you work in?
- What would you consider a community asset in FMA 25? How do these places, people, and/or organizations help you in your work?
- Thinking about the neighborhoods that comprise FMA 25, what do you think is a strength of these neighborhoods? What or who has been overlooked/needs assistance?
- What is the most frustrating aspect of your job?
- What do you see as the challenges facing you, as a leader at this station, in the next year? The next 5 years?
- Have you had, or do you have, any ideas as to how to mediate these challenges?
- What do you see as the challenges facing Portland Fire and Rescue in particular?
  - challenges based on population
  - Are there any challenges an organizational level?
- Have you worked with any outside agencies (other fire stations in particular) to learn how they might be dealing with their own challenges?
- What types of interagency channels of communication are there?
- What goals would you like us to pursue in order to make your job more efficient?

### *Community Health Assessment Team*

- When and why did you join PF&R?
- How did CHAT position come about?
- How did you end up in this role?
- Are there certain populations you work with more? What are they?
- What resources do you rely on the most? Any other community organizations you work with on a regular basis? What do you need that you don't have now?
- Could you tell us more about you work with FMA 25? What are challenges that you see most often working with residents there?
- Do you see CHAT team expanding? What would it look like ideally to you?
- -What training would be necessary? In your opinion, what would be necessary for PF&R (from firefighter level to management) buy-in?
- what is going to be a sustainable model for CHAT?
- Other models/cities looking to?

### *SE Uplift*

- Can you describe SE Uplift and what your daily work looks like?
- How do you serve/interact with the neighborhood associations?
- What resources do you rely on the most? What other community organizations do you work with on a regular basis?
- Could you tell us more about your work with FMA 25?
- What are the strengths of the neighborhoods? Where/what/who are the community assets?

- What is a strong, inclusive, healthy neighborhood?
- What are challenges that you see most often working with neighborhoods associations/residents in FMA 25?
- What are residents/neighborhood associations focused on at the moment? What are their concerns for the future?
- What does community health look like in the neighborhoods in FMA 25?
- Discussed difficulty in people connecting urban form and community health –followed up with, what would need to change for people to connect the two?
- What is your involvement with the elderly community like? Are any neighborhood associations discussing aging in place, care facilities more than others?
- Do you interact with PF&R? Any examples of neighborhood associations and fire station interactions?
- If you could reimagine emergency response, what would it look like? What would a fire station be to the neighborhood?
- Who else should we talk to?

*Woodstock Neighborhood Association*

- How long have you lived in the area and how long have you been involved with the association?
- What kinds of interactions have you had with PF&R over the years?
- What kind of interaction does the association and PF&R have?
- Asked about homeless issues and the new homeless shelter being built on Foster
- How could the neighborhood association be more proactive in working with PF&R?
- Do you think PF&R can do more for community outreach?

### *Foster Area Business Association*

-group member attended an envelope stuffing event, and discussed neighborhood issues there; did not have a formal set of interview questions

### *Eastside Village PDX/Store to Door*

- Can you tell me a little bit about Eastside Village PDX and your involvement? how did you determine boundaries?
- Why did Eastside Village PDX form? What unmet needs does it highlight and work to solve? Discussed involvement with Store to Door, so followed up with discussing Store to Door services and what needs the organization meets.
- What are the greatest factors impeding people from aging in place? Differences across socioeconomic lines?
- How do you serve and account for geographical and socioeconomic differences?
- What are the greatest health concerns for your members?
- Are these health concerns consistent across different neighborhoods you serve?
- Funding issues?
- What is the interaction between different villages?
- Discussed transportation as a top issue and discussed difficulty with volunteer driver training restrictions, so followed up with –what does the transportation training look like and who sets the requirements?
- What is Eastside Village PDX’s interaction with Portland Fire & Rescue/and/or emergency services? Discussed volunteer training and emergencies, so followed up with-- trained in what is emergency/what is an ‘emergency’?
- Discussed PF&R fire prevention event with Eastside Village PDX -followed up with what did she discuss? What were some age specific prevention recommendations?
- What would a beneficial relationship with PF&R look like to you?
- What is the most challenging thing about your work? What is the most rewarding?

## Appendix B

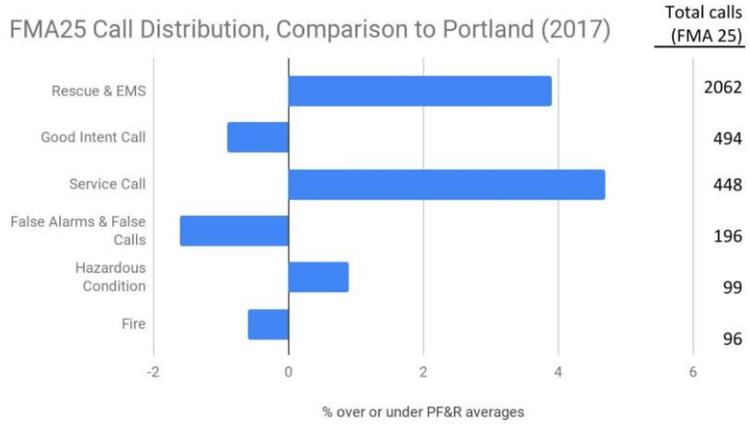
### Strategy Session Agenda

# FMA 25 Strategy Session Agenda

Item	Detail	Time
Intros	<i>Name and how long have you been at PF&amp;R?</i>	10 mins
Review agenda	<i>Write on large notepad</i>	2 mins
Blueprint for Success description	<i>Distribute Jaye's handout</i>	2 mins
Presentation of Existing Conditions research and feedback	<i>Distribute printed handout</i> <i>Ask:</i> <ul style="list-style-type: none"><li>• <i>Does this reflect your experience in this FMA?</i></li><li>• <i>Does any of this information surprise you?</i></li><li>• <i>Is there anything we missed?</i></li><li>• <i>Is there anything you want to know more about?</i></li></ul>	20 mins
Goals and Outcomes	<i>Examples:</i> <ul style="list-style-type: none"><li>• <i>Reduction in low-acuity call volume</i></li><li>• <i>Zero fire/traffic deaths</i></li><li>• <i>Everyone has shelter that meets their needs</i></li><li>• <i>Neighbors have better access to preventative health care</i></li></ul>	10 mins
Strategy Generation	<i>Themes:</i> <ul style="list-style-type: none"><li>• <i>Racial equity, Public health, Mental health, Housing/Other resources, Safety</i></li></ul> <i>Types:</i> <ul style="list-style-type: none"><li>• <i>Small internal policy change</i></li><li>• <i>Larger service / programming change</i></li><li>• <i>Advocacy or Community Partnership</i></li></ul>	25 mins
Strategy Prioritization	<i>Dot voting: two dots per person</i>	5 mins
Next Steps	<i>We'll pool the info from all these sessions, you'll get a copy of the report, Idea Launch in the Spring</i>	5 mins

Strategy Session Handouts

# Emergency Call Overview



# Medical and Mobility Calls

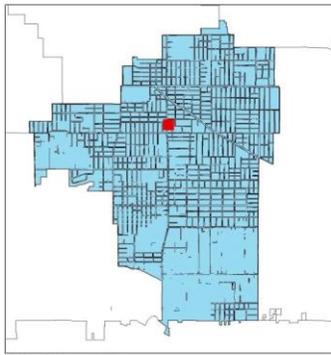
**Table 1: Call Code, Most Common Medical**

FMA 25 only, 2017	Number	% of medical	% of total
Trauma	473	18.6	13.9
Breathing	362	14.2	10.6
Chest Pain	302	11.9	8.9
Sick	241	9.6	7.1
Unconscious	189	7.4	5.6
Abdominal	168	6.6	4.9
Traffic	132	5.2	3.9
Overdose	121	4.8	3.6

**Table 2: Mobility Assistance Calls**

FMA 25 only, 2017	Number	% of total calls
Invalid Assist	71	2.1
Lifting Person to Bed or Chair / Facility	32	0.9
Lifting Person to Bed or Chair / Residence	118	3.5
Total	221	6.5

Image description: Strategy session handout depicting emergency call overview and medical and mobility call summary information.



**Sidewalk Connectivity**

■ Fire Station  
■ Sidewalk  
■ Station 25 FMA

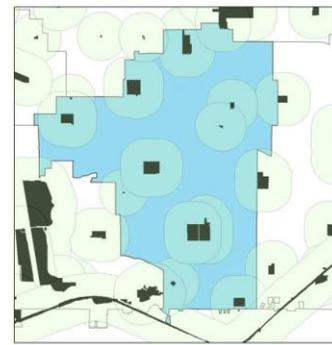
0 0.5 1 2 MI



**Cyclist safety in High Impact Areas**

— High Crash Streets  
— Established Bike Lanes  
■ Station 25

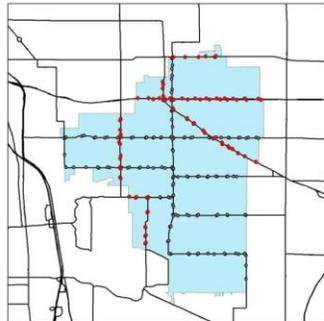
0 0.5 1 2 MI



**Centralized Green Space**

■ Parks  
○ Parks (0.25 mi radius)  
■ Station 25

0 0.5 1 2 MI

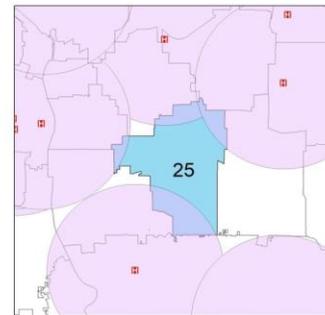


**Bus Route Connectivity**

● Frequently Serviced (Every 15 Mins)  
● Bus Stops  
■ Station 25  
— buslines

0 0.5 1 2 MI

# Transportation & Health Access



**Hospital Locality**

■ hospital  
■ Distance (2 mi radius)  
■ Station 25

0 0.5 1 2 MI

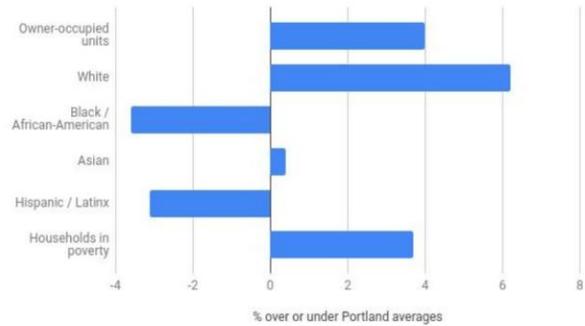
Image description: Strategy session handout depicting transportation and health access data for FMA 25.

# Demographics

**Table 4. Selected demographics (2016)**

	FMA 25	Portland
Total population	43,890	620,589
Median household income	\$57,982	\$58,423
Households at or below 200% of poverty line	37.7%	34.0%
Males 65 or older	3.9%	5.0%
Females 65 or older	5.0%	6.6%

**FMA 25: Selected Demographics, Compared to Portland**



## Possible Partners

**Community Development -Southeast specific**

**Southeast Uplift**

**Rose Community Development**

**Neighborhood Emergency Teams** -*Brentwood-Darlington, Creston-Kenilworth, Foster-Powell, Reed, Woodstock, South Tabor, Mount Tabor*

**Neighborhood Associations** -*Reed, Creston-Kenilworth, Woodstock, Brentwood-Darlington, South Tabor, Foster-Powell, and Mt. Scott-Arleta Neighborhood Associations*

### Health

**Asian Health & Services Center -Yu Miao Chinese Preschool**

**Eastside Concern**

**Southeast Health Center (Multnomah County Health)**

**Multnomah County Student Health Centers -Franklin High School**

**Portland Street Medicine**

**Portland Fire & Rescue's Trauma Intervention Program**

### Elderly

**Eastside Village PDX**

**Elders in Action**

**Meals on Wheels**

**Multnomah County Gatekeepers**

Image description: Strategy Session Handouts: Handout given during strategy session describing demographic data and possible partners for PF&R

# FMA 25 Strategy Session

Pick a theme:

 <b>Racial Equity</b>	 <b>Mental Health</b>	 <b>Safety</b>
 <b>Public Health</b>	 <b>Housing/Other Resources</b>	

How can PF&R make improvements to your theme in FMA 25 or the city at large?  
Each group will come up with at least three strategies.

<b>Small internal policy change</b>
<b>Larger service/programming change</b>
<b>Advocacy or community partnership</b>

Image description: Worksheet provided during Strategy Sessions

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