Portland Fire and Rescue
Blueprint for Success
Fire Management Area 12- Sandy Blvd

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 12- Sandy Blvd.

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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

Demographics

The Fire Management Area (FMA) of Portland’s Station 12 firehouse is just over eight square miles in northeast Portland. Located north of I-84 and west of I-205, the FMA is made up of several neighborhoods – Cully, Roseway, Sumner, and Madison are the most prominent. There is also an unincorporated neighborhood within Station 12’s FMA called Maywood Park. The total population of the FMA is 16,282 people, making up approximately 3% of the city’s population. These individuals are living in an estimated 6,282 households, which averages out to be 2.5 people per household. Overall, the population of Station 12’s FMA is significantly more diverse than the City of Portland in its entirety.

Just over half of the population of Station 12’s FMA is white, while the other individuals identified as people of color or more than two races. Compared to the city of Portland as a whole – which is 72% white – the neighborhoods within Station 12’s FMA are more racially and ethnically diverse than the rest of the city.
This racial diversity carries over into the languages spoken within the FMA. English is by far the most common language spoken, but there are also quite a few households that speak Spanish and a variety of Asian and European languages – most notably Vietnamese, Chinese, Russian, and other Slavic languages. As their primary language, there are 758 households that speak Spanish, 531 that speak Asian languages, and 77 that speak European languages. This includes both households that solely speak that language, and those that speak both that language and English.

Population by primary language spoken in the household

The average household income is approximately $50,000, and approximately 20.8% of the population is living under the poverty line as defined by the Oregon Center for Public Policy. This is a lower annual income and a higher poverty rate for Station 12’s FMA than the city as a whole, which are $62,127 and 14.7% respectfully. On the other end of the spectrum, 4.8% of the population of the FMA are making above $150,000.
Gender and age of Station 12’s FMA are quite similar to the city of Portland in general, with about 51% of the population female, and the other 49% male. The average age of the FMA is 38 years old, slightly higher than the city average age of 35.7.
Overall, the neighborhoods and residents that make up Station 12’s Fire Management Area more diverse than the City of Portland as a whole. This is reflective in the high amount of people of color throughout the FMA and the diversity of non-English languages spoken. Additionally, the FMA is also lower income than the rest of Portland, with nearly 20% of the resident living under the poverty line and making significantly less than the Portland Median Household Income. This is not reflective to the demographics of the firefighters at Station 12 who all appear to be white, male, and are not living under the poverty line.

History of Station 12 and the neighborhoods within the FMA

Station 12’s FMA currently consists of four neighborhoods, as well as the airport and the unincorporated city of Maywood Park. The neighborhoods within the FMA are Cully, Roseway, Madison South, and Sumner. Native Americans had a strong presence in the FMA before Portland was established as a city. Sandy Boulevard and Cully Boulevard are among the few streets on the east side of Portland that do not follow the grid pattern. This is because they follow the routes of major Native American paths. Also within the FMA, the Grotto is a Catholic outdoor shrine and sanctuary, but was likely once a rock shelter for Native Americans.¹

Photo of NE 82nd and Sandy in 1928. (Photo Courtesy of City of Portland Archives)
Station 12’s Fire Management Area, and the neighborhoods within that area, “remained unincorporated, largely rural in character, and developed identities distinct from those parts of Portland that had urbanized in the nineteenth and early twentieth centuries. The FMA is largely comprised of suburban type developments. Much of the new developments occurring in East Portland in the 1920s weren’t streetcar suburban communities, but the first automobile suburbs. These automobile suburbs developed further out than, and filled-in between, earlier streetcar suburbs. Within the FMA this is specifically present in the Cully and Sumner neighborhoods. During this period and for many decades after, Portland redlined parts of the city. While the FMA was not outright redlined, it was seen as “undesirable.” According to the historic map of the redlined areas, parts of the FMA were considered “definitely declining” in terms of the grading system (Mapping Inequalities, City of Portland).

Photo of NE 82nd and Sandy in 1936. This is taken a few years after the first housing boom in the FMA. It shows the 82nd street was paved compared to the 1926 photo. (Photo Courtesy of City of Portland Archives)

During WWII, Portland was a war city due to its shipyard building, which brought an influx of people and a housing boom. In the FMA, many houses were built, and some were built very quickly and potentially inadequately constructed. After the war, there was an even bigger housing boom in the FMA. The housing stock was built with solely the automobile in mind. It was very suburban and had wide corridors, such as Sandy and 82nd. This could explain the extremely busy roadways that run through the FMA. It also explains one reason why there is a lack of sidewalks and other pedestrian and transit
Most of the FMA was not incorporated into the City of Portland until the 1980s. For instance, the Cully neighborhood was not annexed till 1985. According to the neighborhood association’s website, it is also Portland’s largest neighborhood by land area and population. It is over three-sqaure miles and has a population of 13,322 as of the 2010 US Census data.

Figure 3: Photo of NE 82nd and Sandy in 1956. (Photo Courtesy of City of Portland Archives)

Station 12 has been sited near the airport since 1980, but was previously located on NE 58th and Going that served the FMA. The current Station 12 was not built until 2002 and opened on September 11th as a memorial to 9/11. It was built with enough room for a double company and is located on the site of an old junkyard. In 2014, Station 12 became a technical fire and rescue station which is one of only two in the city. It was chosen because Portland Fire & Rescue wanted a station on the east side when an earthquake occurs. The station has a special FEMA funded apparatus crane to help in the event of an earthquake or to rescue in a situation where the firefighters need to reach down into a crevice.

Community Assets Inventory

Station 12’s FMA has a diverse demographic compared to the city of Portland. The community assets reflect that diversity with strong cultural organizations, as well as clinics offered to community members. A very unique asset for Station 12 and the FMA is that the building is also home to Central Northeast Neighbors (CNN). They provide support and technical assistance to the volunteer-based neighborhood associations, community groups, individuals, and business associations. This dual purpose
of a fire station and neighborhood coalition in the same building is the only one in Portland, and potentially in the country. It provides an opportunity for neighborhood associations and community members to become familiar with their fire station and crew.

The following is a list of community and cultural organizations that reside in the FMA:

- **Central Northeast Neighbors** - [http://cnncoalition.org/](http://cnncoalition.org/)
- **Asian Family Center** - [https://irco.org/assets/uploads/AFC_1.pdf](https://irco.org/assets/uploads/AFC_1.pdf) Asian Family Center (AFC) was established by the Immigrant and Refugee Community Organization as the very first culturally and linguistically specific one stop community center focused on the diverse needs of Asians and Pacific Islanders.
- **Native American Youth and Family Center** - [http://nayapdx.org/services/critical-services/](http://nayapdx.org/services/critical-services/) Programming such as emergency energy assistance, clothing closet, food pantry, homeless services and domestic violence interventions exist to respond to the real life emergencies that impact Native families and individuals.
- **Ride Connection (near FMA)** - [https://rideconnection.org/](https://rideconnection.org/) The Ride Connection network is made up of a collection of agencies who serve older adults and people with disabilities as well as low-income individuals and general public by offering a variety of transportation options.

Community Assets offered by the City of Portland and Multnomah County that reside in the FMA or can help individuals within the FMA:

- **Neighborhood Emergency Teams (NETs).** [https://www.portlandoregon.gov/pbem/article/456221](https://www.portlandoregon.gov/pbem/article/456221) Portland residents are trained by Portland Bureau of Emergency Management and Portland Fire & Rescue to provide emergency disaster assistance within their neighborhoods. FMA 12 has four NET teams - one in Cully, Madison South, Roseway, and Sumner.

- **Portland Fire & Rescue’s Community Health Assessment Team (CHAT)** CHAT was formed over a year ago due to the high number of medical calls PF&R receives to provide preventative care to high utilizer groups (HUGs) and serves Portland.

- **Multnomah County Student Health Clinic** - Madison High School - [https://multco.us/school/student-health-centers-locations-and-hours](https://multco.us/school/student-health-centers-locations-and-hours) This clinic located inside
Madison High School, but is accessible for students in grades K-12. Students do not need to attend the school where the center is located.

- **Ridewise Program** - [https://rideconnection.org/services/travel-training](https://rideconnection.org/services/travel-training) This program teaches older adults and people with disabilities to ride safely on Trimet. It could be used to educate community members for alternative transportation to doctor or other non-emergency medical visits.

- **La Clinica de Buena Salud** - [https://multco.us/service-locations/la-clinica-de-buena-salud](https://multco.us/service-locations/la-clinica-de-buena-salud) Multnomah County program that offers services for homeless children and provides services in Spanish, too.

_Free & Hot meals offered in FMA:_

- Baltazar Ortiz Family Center
- Crossroads Cupboard
- Northeast Emergency Food Program
- Portland Adventist Community Services
- Portland Adventist Community Services
- We Care Outreach Parkrose Deliverance Tabernacle

**Urban Form**

FMA 12 is located in the Cully, Sumner, Roseway, and Madison South neighborhoods of Northeast Portland, which make up the majority of the Central Northeast Neighbors Coalition (CNN). Portland International Airport (PDX), portions of the Parkrose neighborhood, and the city of Maywood Park are also within station 12’s management area. FMA 12 is bounded by the Columbia River to the north, NE Tillamook Street to the South, and Interstate 205 to the east, except for the Maywood Park enclave, which sits just east of the highway. The western edge zig-zags diagonally from NE Tillamook though the Roseway and Cully neighborhoods up to PDX.
FMA 12 is below the average population density of Portland FMAs. However, there is great variation in population density within the management area, as the Union Pacific railroad just north of the Highway 30 bypass acts as a dividing line between the largely industrial north end of the FMA, and the mostly residential south side (Figure 1, Figure 2).

In addition to industrial land, the north side of the FMA, which also includes PDX, Colwood Golf
Center, and the Cascade Station shopping center constitutes 65% of FMA 12’s area yet is home to just a few hundred residents (Figure 2). The remainder of FMA 12’s population lives south of the railroad (Figure 2). Despite a relatively low population density overall, the portions of FMA 12 that are inhabited are of average to high density (Figure 1). The majority of the south side of the FMA is made up of single-family, owner-occupied homes, with a handful of multi-family residential (MFR) properties mixed in (Figure 2, Table 1). 73% of homes in FMA 12 are owner-occupied, which is well above the city-wide average of 47%, although renter-ship increased 5% in the Roseway-Cully neighborhood between 2000 and 2015 (Portland Housing Bureau, 2017). According to researcher and Blueprint for Success collaborator, Dr. Jon Jay, larger renter-occupied, multi-unit buildings with more activity are at greater risk of fire. Residential proximity to industrial-use land has been known to have numerous and wide-ranging negative health outcomes associated with it (Brender, Maantay & Chakraborty, 2011). Moreover, studies have shown that low-income communities and communities of color disproportionately bear the brunt of negative environmental outcomes (Emmanouilidou, 2015; Failey, 2016). Hazardous materials common to industrial sites, may also be easily flammable and thus increase the risk of fire. This type of event occurred in FMA 12 on March 12th, 2018 a five-alarm fire broke out at the NW Metals auto salvage yard (Monahan and Mesh, 2018).

**Building Age**

The mean age of all buildings in FMA 12 is 69 years old, which is marginally older than city-wide average of 63 years old. This part of town appears to have experienced construction booms between 1924 and 1927, and then again between 1941 and 1954 (with down years in 1944 and 1946), as records indicate that many of the buildings in FMA 12 were constructed during these periods. There is very little new construction within the management area. Per Dr. Jay’s research, while building age is positively correlated with fire risk, it was not among the most explanatory variables. However, building age can determine construction materials, design, and likelihood of a sprinkler system—all relevant details when attacking a fire or performing search and rescue.

**Table 1. Land Use, FMA 12**

<table>
<thead>
<tr>
<th></th>
<th>Single-Family Residential</th>
<th>Multi-Family Residential</th>
<th>Commercial and Industrial</th>
<th>Vacant/No Data/Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Properties</td>
<td>80.8</td>
<td>0.9</td>
<td>9.8</td>
<td>8.5</td>
</tr>
<tr>
<td>% of FMA Area</td>
<td>15.5</td>
<td>0.5</td>
<td>53</td>
<td>13</td>
</tr>
</tbody>
</table>

*Source: Metro RIS*

**Major Arterials and High Crash Corridors:**

Three major arterials NE Sandy, NE 82nd, and Highway 30 bypass intersect FMA 12. The
secondary arterials, Columbia and Prescot both run east-west through the FMA, while a small portion of NE 102nd runs north-south through Maywood Park. The remainder of the streets are designated residential or local access. Nearly all of these arterials have been identified by Portland Bureau of Transportation (PBOT) as high crash corridors that pose a danger to pedestrians, cyclists, and motorists (Table 2). Street designs that enable high-speed driving and maneuvering may improve emergency response times, but compromise traffic safety; a worthy consideration as many PF&R calls are automobile accidents (Snyder, Siegman, Huff, & McCormick, 2013). Nationally, traffic-related injuries and fatalities vastly outnumber fire-related injuries and fatalities (Table 3).

<table>
<thead>
<tr>
<th>Table 2. High Crash Streets, FMA 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
</tr>
<tr>
<td>NE 82nd</td>
</tr>
<tr>
<td>NE Marine Dr</td>
</tr>
<tr>
<td>NE Sandy Blvd</td>
</tr>
<tr>
<td>NE Lombard</td>
</tr>
<tr>
<td>NE Columbia</td>
</tr>
<tr>
<td>NE Freemont</td>
</tr>
<tr>
<td>NE Killingsworth</td>
</tr>
<tr>
<td>NE 102nd</td>
</tr>
<tr>
<td>NE Airport Way</td>
</tr>
</tbody>
</table>

Source: PBOT High Crash Network

Street Network Connectivity

Highly connected streets, with short blocks offer numerous advantages to emergency responders. Response times in urban grid-like neighborhoods tend to be shorter because the high density of intersections allows for a more direct route from station to scene and multiple routing options should one path be impeded (Snyder et al., 2013). Tactically, smaller blocks allow responders to approach buildings and attack fires from multiple angles (Snyder et al., 2013).

<table>
<thead>
<tr>
<th>Table 3. Traffic vs Fire Injuries and Fatalities, U.S. 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire-Related</td>
</tr>
<tr>
<td>Fatalities</td>
</tr>
<tr>
<td>2,640</td>
</tr>
</tbody>
</table>

While many of FMA 12’s residential neighborhood streets are well connected, overall intersection density is well below the city-wide average of 114 intersections per square mile. Rocky Bute Park and Interstate 205 combine to form a barrier that separates much of FMA 12 from the area east of 205. Within the FMA, only three through streets, Highway 30 Bypass, NE Prescott, and NE Sandy span the Interstate. Additionally, long block lengths along limit the number of available crossings to the industrial zone on the North side of the Union Pacific railway. While many variables determine response times, the built environment may partially explain Station 12’s below average response time. Per Portland Fire and Rescue’s 2017 call log, Station 12 was 36 seconds slower than the city-wide average of 5 minutes and 20 seconds. Poor street connectivity also has implications on the travel behavior of the community at large. Greater distances between destinations create conditions that necessitate motorized transportation for most trips (Cervero & Kockelman, 1997; Cervero 2002). Increased automobile trips contribute to neighborhood congestion and greenhouse gas emissions, which are dispersed beyond the FMA, but have localized negative health consequences as well. Moreover, car ownership incurs significant costs, which could be especially burdensome for FMA 12 residents as most census tracts in the neighborhood have elevate levels of Poverty (>20%) (2016 American Community Survey 5-year estimate).

Unimproved Roadway NE 82nd and Alberta

Photo Credit: photo cred: http://transitinutah.blogspot.com
In addition to below average street connectivity, lack of bicycle and pedestrian infrastructure in FMA 12 create conditions that are not conducive to walking or cycling—two essentially free forms of transportation that afford people an opportunity to meet daily recommended exercise goals. Two and a half percent of streets in FMA 12 have unimproved, unpaved roadways, which is above the city-wide mean of 1.7 percent when FMAs 22 and 27, which are outliers containing large swaths of Forest Park, are excluded (Figures 3 and 5).

**MAX Approaching Parkrose Transit Center**

![MAX Approaching Parkrose Transit Center](http://transitinutah.blogspot.com)

In addition to posing a hazard to motorists and cyclists, unimproved roadways limit the types of apparatuses PF&R can use. The majority of the blocks north of Prescott and south of Killingsworth are without sidewalks, as are those in the area east of Interstate 205 and west of 102nd (Figure 5). While dedicated bicycle facilities are not prevalent in FMA 12, there are bicycle lanes running east-west along NE Killingsworth and NE Lombard. The bike lanes on Killingsworth continue through the I-205 overpass to connect with Sandy Blvd (with a gap between 99th and 102nd). Additionally, there is a small section along Columbia Parkway that to the industrial area along Columbia Blvd north of the Union Pacific train tracks. Lastly there is an east-west bike lane on NE Sacramento on the north side of Rose City Golf Course that veers north at NE 77th and continues until it reaches Sandy Blvd (Figure 5).
Transit Accessibility

The Parkrose Transit Center acts as a transit hub for FMA 12. Seven TriMet bus routes (87, 73, 72, 71, 24, 21, and 12) intersect the FMA. The Max Red line also services FMA 12, although only the Parkrose Transit Center stop is within the catchment area of any residential neighborhoods, although very few homes are within any reasonable walking or cycling distance of the transit center when considering the ‘real’ distance traveled via the street network. The tracks run in the median of I-205, and therefore the station does not have many local street access connections. The remaining three stations, Cascades, Mt. Hood Ave, and PDX service the airport and nearby business park, but are not easily accessible from FMA 12 residential areas. Transit accessibility has implications on the well-being neighborhood resident, particularly those with low-incomes, as it is many people’s only affordable option for accessing jobs, grocery stores, health care, and other essential services. Transit accessibility to jobs in FMA 12 is poor relative to rest of Portland.
Fire Risk and Social Vulnerability

Building fires are an important health and safety risk in cities; fire disproportionately affects people of color, and those individuals of lower income and education levels. John Jay, a researcher at Harvard University worked alongside Portland Fire and Rescue (PF&R) to “generate property level fire-risk analysis for the City of Portland, Oregon”. His research used machine learning techniques to develop and implement these predictions using fire incident, tax assessment, and building data from 2012-2016. This research generates accurate predictions of the most common fires where fire injuries occur; house fires, at the property level. According to the predictions produced by John Jay’s research; FMA 12 has a very high percentage of individual tax lots (identified as TLID) ranking as high or moderate risk parcels for risk of building fire. Using these predictions to guide PF&R and partners to the right locations, will mark considerable progress towards PF&R’s goals of Zero Fire Deaths.

For this research, the Social Vulnerability Index from Institute of Portland Metropolitan Studies/Population Research Center was used to assess the factors that contribute to vulnerability within
our Fire Management Area (FMA). The Social Vulnerability Index (SVI) is a composite of seven socio-economic factors; percent of population that is dependent (ages 0-4, 65+), percent with bachelor’s degree, percent of population that is white, unemployment rate, percent of population with a disability, percent of renters that are cost burdened and percent of homeowners that are cost burdened. These indicators are assessed at the census tract level.

Fire Station 12 covers a large Fire Management area. Including landmarks such as the Portland International Airport and Rocky Butte; Station 12’s FMA has a diverse and unique population. Based on five years of census data there are 5,473 total housing units, and a median household income of $53,320.61. The SVI for those census blocks that fall within the FMA range from .21%-.84% social vulnerability. Non-white population is as high as 1.93, and those lacking a bachelor’s degree is as high as 1.88. Disability is as high as 1.82 in census tract 76.

*Image: Social Vulnerability Index Map created by Portland Metropolitan Studies/Population Research Center*
Earthquake Risk

Social vulnerability affects the ability of individuals to recover from natural disasters. While John Jay’s research focuses on building fire risk; PF&R is also interested in vulnerability due to the impending predicted earthquake that will cause severe damage to the Portland Metro area and beyond. Social vulnerability is a large determinant of the safety and status of a particular area in the event an earthquake was to occur. From the data we have collected, we can see that the SVI for FMA 12 is especially vulnerable in this regard. Other determinants for risk include natural factors such as shake potential, soil type, liquefaction and proximity to faults, in addition to the type of building, and whether it is reinforced to withstand shaking from an earthquake. Included is a map zoomed out to display earthquake risk for all of Portland, as well as a map that focuses specifically on FMA 12. Known fault lines are displayed on this map, as well as relative earthquake hazard and liquefaction hazard.
This map shows risk in the event an earthquake occurs for FMA 12. The determining factors included in this map are location of fault lines, landslide risk, liquefaction hazard, and Relative Earthquake Hazard. As you can see from this analysis, a major fault line goes right through the center of FMA 12. Additionally, major areas of liquefaction and high to moderate levels of hazard from shaking are included within the area of the FMA. Another significant area is Rocky Butte which features an extremely high landslide risk.

These determining factors of John Jay’s prediction of building fires, social vulnerability and earthquake risk show that the existing conditions in FMA 12 have high levels of vulnerability.
Livability Analysis

Livability, like many other contemporary planning concepts, is quite ambiguous which can make its analysis challenging - and frequently problematic. Indicators of livability can vary significantly from person to person, country to country, and culture to culture. As a result, we decided that the best way to establish a method for measuring liveability was to focus on the most fundamental characteristics of livable space. These include the characters that transcend cultures, languages, and geographic areas. To get further perspective on the livability within our FMA we decided that we would compare our findings in relation to Portland as a whole.

At its most fundamental level livability can be understood as: the characteristics of an environment or climate that make it fit to live in. Continuing with the definition offered, a livable place must, at the very least, support sustained (or healthy) living. Here, we call forward Abraham Maslow’s hierarchy of human needs to help clarify what is required to sustain human life. The base level of Maslow’s hierarchy holds the physiological needs which include: food, water, sleep, shelter, and homeostasis.

These attributes are fundamental to human life and must always be considered in spatial analysis of livability. Mapping these fundamental characteristics to our FMA we would ask:

- Is there access to quality water within the boundaries of our FMA?
- Are there multiple food options within the boundaries of our FMA?
- Are there preventable events (sound/vibration) that impact sleep quality within our FMA?
- Are the residents of our FMA adequately sheltered?

An analysis of our fire calls would lead us to believe that people within the FMA are not reporting illness from water, air, or food quality, or nor are people dropping dead on the streets from malnourishment or inadequate shelter (although, many people certainly experience non-ideal living conditions). Given this information our team concluded that we would need to implement a more in-depth analysis of livability that explored more culturally specific indicators.

While there is no single standard the AARP (formerly American Association of Retired Persons) developed an index to calculate area livability. They include over 50 metrics in their calculations but for efficiency we will only consider the overarching categories, they include: neighborhood, transportation, environment, health, engagement, and opportunity.
This section focuses on transportation, neighborhood, and environment. There is an in depth analysis of housing in our equity existing conditions report. Further, a large portion of health and engagement data is tracked at a county level which made finding FMA specific data challenging. We recognize the limitations of our livability analysis but find the information we did acquire very useful.

The first analysis was of grocery access within our FMA. There is only a single grocer located with the boundary of our FMA and it is located within the Portland International Airport Center. From a livability perspective this is extremely problematic. Specifically for the people located more centrally in the FMA with limited transportation options. Limited grocery options often leads to poor eating habits, malnutrition and obesity - all issues that have the potential to generate low-acuity calls.
Our second analysis covered transit availability. Our overlays for this map included high frequency transit stops (15 minute or less) as well as transit access by walking distance. Our FMA seems to be relatively similar to Portland as a whole in terms of transit access however, when this map is compared to our sidewalk availability (see Urban Form Existing Conditions) it is clear that safe routes to transit stops are limited. Additionally, the entire north half of our FMA has limited accessibility.
Our team also looked at proximity to educational institutions and similar to transit access the amount of schools seemed to reflect Portland averages. Something noteworthy is the proximity of the fire station in relation to the schools. It is about equidistant from all the schools which is a significant community benefit.

Our team struggled to find geographically specific air quality data but we were able to assess elemental atmospheric pollution via moss-based measurements. Moss accumulate pollutants from the atmosphere and can serve as an inexpensive screening tool for mapping air quality and guiding the placement of monitoring instruments. The yellow areas indicate hotspots with high concentrations of potential pollutants which can help paint a picture of locations to install more accurate air quality analysis instruments. As you can see, one of the three hyper-concentrated areas falls within our FMA, something that needs to be researched in more depth to better understand the exact health concerns that could impact residents within our FMA.
The final, and most contemporary aspect of livability we analyzed was proximity to parks. Parks appear to be quite nicely distributed within our FMA. And although the two large parcels to the SW are just outside of the boundary, they represent one of the largest green areas on the east side of the Willamette River. We feel it is also important to note that proximity to parks is just one factor - if the facilities within in the park don’t meet the needs of the community then it will not be used. Moving forward we suggest a more in depth analysis of parks within the FMA that takes this into consideration.
We recognize the limitations of our data, but hope that this existing conditions report successfully highlighted some potential indicators of livability within our FMA. It is critical to remember that beyond the basic physiological needs, livability is a social construct that varies significantly from party to party. The areas analyzed in this report attempted to explore a wide array of indicators across differing areas. The two biggest surprises were the high concentration of moss based toxins in our FMA as well as the absence of any grocers beyond the one located in the airport.

Equity Analysis

This section exhibits the equity conditions in FMA 12. Equity in this case will be viewed as access and fairness in relation to overlaid factors such as income/poverty, race, education, ownership, etc. By cross analyzing disaggregated data, it is possible to see where these factors affect one another to create societal inequities and prevent access to vitality in urban areas. For the neighborhoods that make up FMA 12, resident demography related to factors of equity have changed considerably in the recent past. The pressures of the Portland metropolitan region related to housing affordability, increasing density, and
income inequality have all contributed to making residents of FMA 12 extremely vulnerable to gentrification and displacement. The following will detail the factors that contribute to this vulnerability, and how that may relate to Portland Fire & Rescue (PF&R).

**Race and Ownership**

Disenfranchisement of People of Color (POC) has a longstanding history in Portland. Historical restriction of access through Redlining and prevention of ownership along with property appreciation has led to significant displacement for POC. Along with the displacement of rooted communities of color in Portland, immigrant population increases are also contributing to a significant racial demographic change outside of Portland City Center. The majority of Census Tracts within FMA 12 are experiencing this racial demographic change. Corresponding with this demographic change is an above average homeownership gap. This may be attributed to redlining which has prevented generational wealth building opportunities for POC.

<table>
<thead>
<tr>
<th>Census Block</th>
<th>2000</th>
<th>2010</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.01</td>
<td>23.90%</td>
<td>16.10%</td>
<td>-7.80%</td>
</tr>
<tr>
<td>29.02</td>
<td>27.00%</td>
<td>16.90%</td>
<td>-10.10%</td>
</tr>
<tr>
<td>29.03</td>
<td>22.00%</td>
<td>30.60%</td>
<td>+8.60%</td>
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<tr>
<td>73</td>
<td>27.90%</td>
<td>28.20%</td>
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</tr>
<tr>
<td>74</td>
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<td>43.40%</td>
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<tr>
<td>76</td>
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<td>39.40%</td>
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</tr>
<tr>
<td>77</td>
<td>18.90%</td>
<td>29.60%</td>
<td>+10.70%</td>
</tr>
<tr>
<td>78</td>
<td>16.30%</td>
<td>26.70%</td>
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</tr>
<tr>
<td>79</td>
<td>23.30%</td>
<td>32.70%</td>
<td>+9.40%</td>
</tr>
</tbody>
</table>

*Data Sources: U.S. Census Bureau, 2010 Census, Public Law 94-171 Summary File; 2000 Census, SF1. (Tabulated by Population Research Center, Portland State University)*
**Income and Access**

The Portland Metro Area has experienced economic growth in the past several decades, especially after rebounding from the late 2000’s financial crisis. The subsequent growth and development have created stable and steady increases in household income concentrated near Portland city center. This is a common trait for urban central cities. However, FMA 12 experienced a significant decrease in household over this same period. Here, all but one of the nine Census Blocks within FMA 12 experienced a decrease in Median Income over the ten-year period between 2000-2010. The decrease in household income can contribute deteriorating circumstances related to housing maintenance and health care access which directly impact fire risk and increasing medical 911 calls.

**Change in Median Income**

<table>
<thead>
<tr>
<th>Census Block</th>
<th>2000(Adjusted)</th>
<th>2010</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.01</td>
<td>$59,991.71</td>
<td>$59,048.00</td>
<td>-1.57%</td>
</tr>
<tr>
<td>29.02</td>
<td>$48,451.32</td>
<td>$50,597.00</td>
<td>+4.43%</td>
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<tr>
<td>29.03</td>
<td>$63,411.97</td>
<td>$42,338.00</td>
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<tr>
<td>73</td>
<td>$48,012.67</td>
<td>$38,750.00</td>
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</tr>
<tr>
<td>74</td>
<td>$47,145.39</td>
<td>$34,390.00</td>
<td>-27.05%</td>
</tr>
</tbody>
</table>

![People of Color Homeownership Gap (2010 Census) Equity Atlas](image)
This change of income can be attributed to the increasing rental costs of Portland city center causing population displacement of existing Portland residents and an increasing immigrant and refugee population within FMA 12. Looking at previous Census change in median income data, income growth has gradually expanded from the Portland city center which creates an expanding gentrification and displacement ring. Over time, this expanding ring pushes out vulnerable communities away from the city center. FMA 12 also has a higher than average immigrant and refugee population which may contribute to an above city average for limited and not limited English speaking population. This can have a direct impact on access to jobs, especially those with above poverty wages.
<table>
<thead>
<tr>
<th>Language Proficiency</th>
<th>2015 Census Intersect</th>
<th>Limited</th>
<th>Not Limited</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Only</td>
<td>76.62%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spanish</td>
<td>12.06%</td>
<td>2.17%</td>
<td>9.89%</td>
</tr>
<tr>
<td>Indo European</td>
<td>1.06%</td>
<td>0.02%</td>
<td>1.04%</td>
</tr>
<tr>
<td>Asian Pacific Island</td>
<td>8.78%</td>
<td>3.44%</td>
<td>5.34%</td>
</tr>
<tr>
<td>Other</td>
<td>1.48%</td>
<td>0.47%</td>
<td>1.02%</td>
</tr>
</tbody>
</table>

*6.10% = Total Limited

English Proficiency in FMA
12 3.85% = Citywide Average
(2015 Census Intersect FMA’s)

Gentrification and Vulnerability

Dr. Lisa Bates, contracted by the City of Portland Bureau of Planning and Sustainability (BPS), began a Vulnerability Analysis study in 2012 to assess residential displacement risk of Census Blocks.
within the Portland Urban Growth Boundary. These Blocks were evaluated against citywide averages for ownership, race, education, and median income. They were then given a point for each category that had higher than average numbers, and their cumulative numbers are represented in the map below.

This Vulnerability Analysis and associated mapping may be the best indicator of cumulative equity for FMA 12. The combination of 4 evaluation factors displays the high vulnerability levels of the nine Census Blocks that make up FMA 12. Seven of the nine blocks include three of the four 2012 Risk Factors making FMA 12 at high risk to gentrify and initiate displacement. For this reason, stabilization measures should be considered for protect these vulnerable communities from further societal inequity. Additional low-acuity services to aid with frequent vulnerable callers may be an appropriate strategy for public service agencies such as PF&R. Identifying service gaps relative to fire & rescue will be critical in assisting the ongoing change being experienced in FMA 12.

Limitations and Considerations

While the preceding equity maps paint an effect picture of FMA 12, there are limitations and drawbacks to the research findings and visuals that should factor into the evaluation of equitable conditions of this area. First, the northernmost section of FMA 12 is primarily zoned for industrial used and is occupied by the airport. There are few residents who occupy this Census Block, and this low
density but high area block may visually skew the scale of equity and vulnerability of FMA 12. Additionally, in some cases this data was collected nearly ten years ago. Factoring the extent of the current housing crisis, the presented data may underreport the inequity and vulnerability that is currently experienced in FMA 12. The social and urban forces that have led to FMA 12’s current state of inequity and high vulnerability put a great deal of pressure on the residents of this neighborhood. FMA 12 is currently located between the ring of gentrification and the Portland Urban Growth Boundary, and this pressure is likely to contribute to further displacement of people of color, low-income households, renters, and those that are not college educated. In the meantime, this pressure may also be contributing to the rise in low-acuity 911 medical calls that are dispatched to PF&R. Lacking affordable medical care options, low-income individuals are more likely to access indirectly subsidized health care options for non-emergency related concerns. Further study and qualitative research are required to comprehensively understand the inequity that exists in FMA 12.
III. Interviews

PF&R, and any other pertinent details related to the bureau’s operation. A complete interview guide and series of interview questions are included in the Appendix.

Table: Key Findings from the Interviews

<table>
<thead>
<tr>
<th>Key Findings</th>
<th>Highlights</th>
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<tbody>
<tr>
<td>Livability and Diversity</td>
<td>The diversity of community and people</td>
</tr>
<tr>
<td>CHAT Program</td>
<td>A unique protocol for difficult clients</td>
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<td></td>
<td>Reduce compassion fatigue</td>
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<tr>
<td>Sharing the Community Room</td>
<td></td>
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<tr>
<td>Homelessness</td>
<td>Bonfires</td>
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<td></td>
<td>Discarded needles</td>
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<tr>
<td></td>
<td>Garbage bags and sharps containers</td>
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<tr>
<td></td>
<td>Learning about addiction</td>
</tr>
<tr>
<td>Traffic Accidents</td>
<td>Flashing crossing lights</td>
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<tr>
<td>Outreach to the Public</td>
<td>Reaching out to children</td>
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<tr>
<td></td>
<td>PF&amp;R’s outreach to schools</td>
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<tr>
<td></td>
<td>Community-based organizations</td>
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<tr>
<td></td>
<td>More community events</td>
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<tr>
<td></td>
<td>Spreading safety messages on official city documents or utility bills</td>
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<tr>
<td></td>
<td>and city web pages</td>
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<tr>
<td></td>
<td>Neighborhood Emergency Teams (NET) participating in community events</td>
</tr>
<tr>
<td></td>
<td>emergency protocol</td>
</tr>
<tr>
<td>Relationship Building and</td>
<td>Collaborative meetings with the Joint Office of Homeless Services</td>
</tr>
<tr>
<td>Public Health</td>
<td>Teaming up with community health organizations and social workers</td>
</tr>
<tr>
<td>Shifting Role of Firefighters</td>
<td>The lack of funding</td>
</tr>
<tr>
<td></td>
<td>Tools to deal with social work</td>
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<tr>
<td></td>
<td>Learning about addiction</td>
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<tr>
<td></td>
<td>Learning experience</td>
</tr>
<tr>
<td></td>
<td>A peer support group</td>
</tr>
<tr>
<td>Data Limitation</td>
<td></td>
</tr>
</tbody>
</table>
Interview Process

The Student Research Team strategically compile a list of potential interviewees and completed a plan (See Appendix) which included methodology that would be applied to each interview. The list of potential internal and external interviewees were then contacted by phone. They were introduced to the Blueprint for Success project and how their involvement through an interview would assist the Student Research Teams understanding of FMA 12 and the interviewee’s association with PF&R. The first few questions were designed and organized considerably to start the interview by asking interviewees about their own background, with hopes of warming them up for the interview and establishing a comfortable space. Next, general questions were asked including “what are the strengths of your community?” with hopes of clarifying the differences of each interviewee's unique perspective. As the interview progressed, the Team asked them their thoughts in more detail with more interviewee specific questions.

Next, four formal interviews and one informal series interview were conducted. The formal interview based on a list of questions made it easy for us to obtain the overarching data and ideas needed. One drawback is that the formal interviews tend to be less active and more difficult to get the interviewees’ personal perspective; therefore, to mitigate this tendency we changed the orders and contents of questions flexibly along the circumstance of the interview. The informal interview with TJ and other FMA 12 crewmembers was more casual “conversation.” This allowed the Team to obtain greater insight into their personal perspectives and ideas. Ideas and strategies were frequently discussed on the spot to ensure a natural flowing conversation.

Interviewees

The Student Research Team conducted a series of external and internal interviews. The list of interviewees and interview details are listed below:

Formal Interview

1. Robyn Burek, Portland Fire & Rescue, Principal Management Analyst

   Time and Place: Thursday, November 1st, 2018, 12:30-1:30 p.m. at Fire Station 1
   Interviewers: Dan - lead interviewer, Lydia - note taker, André and Shiori - supporters/facilitators

2. Alison Stoll, the Central Northeast Neighborhood
Coalition, Executive Director

Time and Place: Thursday, November 8th, 2018, 5:10-6:40 p.m. at CNN office
Interviewers: Dan - lead interviewer, Shiori – note taker

3. Tremaine Clayton, PF&R’s CHAT Program Coordinator, Member of CHAT Program
Time and Place: Monday, November 12, 2018, 1:20-2:35 p.m. at Cafe Yumm! PSU Rec Center
Interviewers: Dan - lead interviewer, Lydia, Baxter and Shiori - note takers

4. Terry Schrick, MannaHouse, Chaplain
Time and Place: Friday, November 30, 2018, 1:00-1:55 p.m. at Fire Station 12
Interviewers: Dan and Lydia - lead interviewer, Hillary - note taker, André, Heide and Shiori - supporters/facilitators

Informal Interview

5. TJ Lehnertz, Portland Fire & Rescue, Fire Station 12 Captain (Shift B Crew)

Robyn Burek

Robyn Burek is the Principle Management Analyst for Portland Fire and Rescue. She was the primary contact for our class during the course of this project. Our team wanted to interview her to gain perspective on the administrative side of PF&R. Robyn heads The Blueprint for Success project and the Team felt that an interview with her would yield important information regarding long term objectives that could help us be more strategic in our questioning and data collection methods.

The interview covered an array of topics and Robyn was able to offer useful insight on efforts within the Bureau to adapt to the changing landscape of the fire service. Robyn discussed the brief history of the Blueprint for Success and the Team learned that prior to her involvement it was simply a notebook highlighting a few objectives. Robyn explained she was able to build out the program from the notebook and coordinate the partnerships required for our team to be involved.

Alison Stoll

Alison Stoll is the executive director of the Central Northeast Neighborhood Coalition (CNN), the Team interviewed her along with two neighborhoods association presidents within CNN. CNN is a
community based non-profit coalition of nine neighborhoods which are located east of NE 33rd to I-205 and North of I-84 to the Columbia River. CNN provides support and technical assistance to the neighborhood associations and individuals to address issues they identified. Alison used to work as a crime prevention specialist in Portland and found that neighborhoods have many problems through her involvement with the neighborhood watch program. She started working for CNN Coalition in 1991. The objective for Alison’s interview was to understand how the community currently assesses PF&R’s work and to clarify what she believed to be the community’s assets, as well as its challenges.

“Best part of our community is the people.” --- Alison Stoll

_Tremaine Clayton_

The Team also interviewed Tremaine Clayton, PF&R’s Community Health Assessment Team (CHAT) Program Coordinator and member of CHAT Program. The aim for Tremaine’s interview was to understand how his work with that CHAT program has reduced low acuity calls, and where there is room for improvement to better serve the community. The CHAT program was created to target and assist frequent 911 callers in order to give them necessary resources and reduce their dependence on emergency services. Once firefighters manually identify frequent low acuity 911 callers, they are added to the CHAT program and Tremaine pays in-home visits to each community member. Tremaine’s experience through various positions at PF&R, combined with his passion for community service, leaves him uniquely positioned to perform the duties of the CHAT program and provide insight into factors that contribute to low acuity calls. In the first 18 months of the program, community members that were visited by Tremaine reduced their 911 calls by 50%.

“That's why I love living in the city of Portland just knowing, I got these guys, these brothers, this family [Portland Fire and Portland Police] if I need them.” --- Tremaine Clayton

_TJ Lehnertz_

During the many Station 12 visits by the Student Research Team, many informal conversations over existing conditions and the state of PF&R were conducted with Captain TJ Lehnertz. These visits were an opportunity to build rapport between the Station 12 leader and the Student Research Team. Additionally, these conversations provided understanding on the specific conditions and concerns that would not have been generated through a single formal interview. For this reason, in lieu of a formal interview, his conversational responses have been utilized to represent the internal perspective of a fire
crew member in FMA 12. His perspective is informed by time spent working as a crew member at Station 1 before his promotion and subsequent move to Station 12.

**Terry Schrick**

Chaplain Terry Schrick works at MannaHouse (formerly known as City Bible College). Terry is now retired, but formerly served 24 years in the United States Military as a chaplain, most recently serving in Afghanistan. His work provides outreach and support for houselessness, human trafficking, and programs for seniors and veterans. Terry is one of 70 pastors at MannaHouse and is strongly involved with his church.

*Photo: Terry Schrick Interview (Credit: Shiori Azumaya)*

The following represents an informational gathering process to identify the assets and challenges of the neighborhoods and communities that make up FMA 12, the connections and expectations of PF&R, and any other pertinent details related to the operations of this foundational department within Portland.
Existing Community Assets

We asked interviewees, “What are the strengths of their community?,” and the Student Research Team found that key themes of livability and diversity of communities were repeated throughout. Our interviewees also pointed out that the CHAT program and sharing the community room were important characteristics of their community.

Livability and Diversity

Robyn told the Student Team that livability is a hot topic for PF&R. She pointed to Maslow’s hierarchy of needs and the importance of having the fundamental needs of a community met. She also brought to light the significance of accessibility within a healthy community. She describes a healthy community as one where people can get to the places they want to go, safely and easily. Alison noted the diversity of community and people as one of the great assets of neighborhoods. The area within CNN has a richly diverse community with a variety of businesses and social service agencies, as well as Catholic organizations, and the Portland International Airport. This is reflected in the diversity of the community members as well; working people, immigrants, and refugees all living within CNN’s boundary. Additionally, there is much collaboration between the communities and people reflecting this diversity. Alison gave us an example of an event that CNN and local business associations host called “Trunk or Treat” which is a Halloween event for children that brings community groups together and allows children a safe space to ‘trick-or-treat’.

CHAT Program

Both the CHAT program itself and the information that Tremaine shared with PF&R are great assets to FMA 12 and the city of Portland. All of the firefighters we asked about the CHAT program and were enthusiastic about the work that Tremaine is doing to help frequent low-acuity callers get in touch with services that can both improve their well-being and reduce their dependency on 9-1-1. However, he pointed out that there is room to improve the manual inputting process that is currently in place for firefighters to refer individuals as candidates for the CHAT program. Firefighters currently initiate entrance into the program through manual input after noticing repeat 9-1-1 callers. This process is dependent on conversations between crews, and their remembrance of repeat callers. Tremaine believes this could be easily changed to an automatic system to remove unnecessary manual logging. Automated reports could also be produced and distributed to Station 12 and CHAT to utilize as needed.
Tremaine sometimes encounters particularly difficult clients that are not responsive to his efforts to aid them, or they have a different interpretation of the “pain scale.” In cases like this, Tremaine expressed that he has tried to make a unique protocol for difficult clients so if PF&R is called back to their house, they can call Tremaine and ask how to proceed to provide the best help for that individual. While Tremaine is modest about the work he does, it is a valuable service to the community. Not only do frequent callers of PF&R receive one-on-one specialized visits, but these visits also reduce the number of low-acuity calls that firefighters have to respond to. This may help to reduce compassion fatigue within the department, which has spillover effects for the community since firefighters would be more rested and better equipped to handle high-acuity calls.

*Photos: Tremaine Clayton and CHAT Vehicle, Tremaine Clayton and CHAT program client (Credit: PF&R)*

**Sharing the Community Room**

Another unique resource mentioned during our interview with Alison is the shared connection between the community room and Station 12. She stated that it is the only community organization co-located with a fire station in the United States. Many different meetings and events including community organization meetings, PF&R’s meetings, events collaborating with the community and PF&R are held at the community room. She mentioned that CNN appreciates that Station 12 allows access to the shared community room without any charge.

This collaboration encourages communication between CNN and PF&R. Although CNN and PF&R do not have regular meetings, sharing a space allows for daily interaction. One fire crewmember remarked that it is an added benefit of safety for the station when Alison and her staff remain at the building when firefighters are dispatched. At times, the CNN staff will assist individuals that need help
from the dispatched fire crew, and they do their best to look out for individuals attempting to break into the station while the rig is away. Alison pointed out that CNN shares valuable information about the neighborhoods with PF&R crews, which improves overall neighborhood safety. In addition, PF&R usually participates in Sumner Neighborhood meetings at CNN on a biannual basis to keep up to date on community concerns within FMA 12.

Photos: Community Room at FMA 12 (Credit: Shiori Azumaya)

Existing Community Challenges and Possible Solutions

“Each neighborhood has own concerns and own issues - we’re not a cookie cutter.”

--- Alison Stoll and a neighborhood association president

During the course of the interview process the Student Research Team discussed the challenges and possible solutions with the interviewees. Some frequently mentioned subjects included anxiety around houselessness and traffic accidents. They pointed to possible solutions, such as public outreach and relationship building within the community. Robyn and Tremaine, internal personnel of PF&R, indicated that the skill sets required for firefighters have changed and widened. Additional limitations discussed included the access to and limitations of data.

Alison and a neighborhood association president mentioned the importance of understanding that each neighborhoods’ concerns are different. Although we will list challenges below, it is important to apply solutions with taking into account these differences.
Houselessness

The systemic issue of houselessness also came up repeatedly during all interviews and station visits. While our Student Research Team does not have crime data analysis in this report, TJ noted that in his opinion, he perceives most petty crimes in the area around Station 12 are being committed by houseless individuals. Other interviewees reported that the most observable common crimes in the area include prostitution, drug trafficking, theft, and lower level crimes like stealing scrap metal for money. Station 12 recently started locking their garbage dumpsters and set up security cameras to mitigate these issues.

Additionally, there has been an increased number of calls related to houselessness. TJ implied this may be due to community members wanting a way to complain about the increased houseless presence. This type of societal policing is in response to a city-wide issue which has not been addressed by municipal government leaders. TJ, along with other fire crewmembers, do not understand how the city can pay for extravagant public art and infrastructure, but Portland is incapable of sheltering its own people.

Photo: Houseless individuals sleeping under light art at the Tilikum Bridge (Credit: Daniel Eddie)
While the Student Research Team does not currently have data to assess the growth or decline of the houseless population in FMA 12, Alison believes the houseless population has increased over the past 18 months. This population growth has spurred a degree of unrest within the neighborhoods CNN represents. Residents are worried about their bonfires getting out of control, and there is a great deal of concern related to discarded needles being left throughout the community. Neighbors are especially worried about children picking up or stepping on used needles and subsequently contracting an illness or disease.

Currently, the City of Portland does not have a centralized collection system. Alison indicated that PF&R could assist with distributing garbage bags and sharps containers to the houseless community. This would allow these community members to discard the needles and other materials responsibly. Additionally, a significant portion of our conversation with Robyn was on the topic of houselessness and the role of PF&R should play. She expressed a need for the Bureau to better understand what type of data should be collected to help clarify what role should be played. She further shared in the interview the city’s attempt to collaborate across bureaus with the Government Accountability, Transparency, and Results (GATR) program. She expressed the GATR program had held a session on houselessness in Portland, but it seemed to be focused on the conversation as opposed to action. In regard to houselessness and firefighters, Robyn stated that there is a gap in the firefighters’ skillset and the type of situations they encounter on a daily basis. Alison mentioned the potential for a collaboration between the Housing Bureau and PF&R to help educate firefighters on houselessness and the housing crisis Portland is experiencing.

Terry Schrick at MannaHouse agreed that houselessness is a key challenge within the community. His work at MannaHouse offers vulnerable individuals who are facing houselessness support and compassion. He believes that education, outreach and care help to improve this issue. Along these same lines, Tremaine expressed that he tries to face the issue from a place of compassion and expressed a desire to “put a name and face to the data,” because every story is different, and a lot of people in these situations have been marginalized. Tremaine is trying to find the best solution to serve them. Part of that solution is education, particularly about addiction. While it is not realistic to expect all firefighters to become addiction medicine specialists, Tremaine suggested that perhaps some training in that area for PF&R responders could be beneficial.
Traffic Accidents

Alison and a neighborhood association president explained that car accidents and dangerous pedestrian conditions are also big community concerns. Sumner neighborhood has been trying to get flashing crossing lights for pedestrians for four years now. The Sumner Neighborhood Association President is afraid that it will take more pedestrians getting killed on Sandy Blvd. for any action at the City level to happen. Several high-traffic and high-speed arterials intersect FMA 12, including Sandy Blvd, Columbia Blvd, and 82nd Ave. Eight percent of the streets account for more than 50 percent of the fatal car accidents in Portland. These deadliest streets are identified by PBOT as part of the 'High Crash Network', and nearly all of the arterial streets in FMA 12 are part of this network. Wide, high speed streets that facilitate the expediency and freedom of movement that emergency response vehicles require to respond rapidly, also put motorists, cyclists, and pedestrians at increased risk of fatal incidents.

Photo: Intersection of Sandy Blvd and 82nd Ave (Google Maps)

Outreach to the Public

The importance of outreach to the public was mentioned by all interviewees. Robyn proposed that if PF&R staff are equipped to make direct connections between community members, 9-1-1 callers and community-based organizations, there is hope for reaching some of the goals in the Blueprint for Success. Alison insisted that firefighters could do a better job reaching out to the public; most people do not know the additional medical and rescue aspect of fire crewmember job descriptions—they think “firefighters only fight fires.” In particular, she pointed out the importance of reaching out to children as some children
have negative images of firefighters. Children may be able to mitigate this negative image by increasing communication with firefighters. CNN has collaborated with PF&R, holding a meeting with children at National Night Out and other events. She mentioned that these events were valuable opportunities for both children and firefighters. In addition, she agreed with our ideas that PF&R’s outreach to schools, arranged by CNN, can support higher performance in schools and greater long-term success for children growing up in this area. Additionally, it would be a great opportunity for both firefighters and students if PF&R could engage with high school students looking for a career.

Furthermore, she noted that CNN can connect with PF&R and many community-based organizations, such as IRCO (Immigrant and Refugee Community Organization), NAYA (Native American Youth and Family Center) and Hacienda CDC (Latínx Housing organization). Tremaine also envisions the department being present at more community events, such as Movies in the Park, in addition to the events that they already participate in, like Sunday Parkways.

TJ expressed the necessity of outreach to the public as a way of reducing 9-1-1 calls. He pointed out that the Public Education Office of the PF&R Department stops outreach for educating children at around fourth grade. Children are given the power to call 9-1-1, but they are not told why or what they should call to report. During a station visit, the Station 12 Crew said they would like to increase educational opportunities to middle school, high schools, and even beyond. TJ noted that too often people walk or drive by and call 9-1-1 rather than stopping to see if their concern is a legitimate emergency, which creates potentially unnecessary trips. He described an ideal citizen or community member as someone who stops to help when they see someone else in trouble. If the community is engaged with one another, it may prevent the initial call and future calls as well.

Terry echoed this sentiment, stating that he believes that getting to know your neighbors, speaking to people and understanding their needs, victories and struggles is a great way to improve the health of a community. In terms of a tool for outreach, Tremaine discussed the idea of spreading safety messages on official city documents or utility bills that are sent through the mail to most people within Portland. Similar messages could also be posted online through Next Door or City web pages. Neighborhood Associations and other community organizations that publish periodicals such as church newsletters and neighborhood newsletters could provide low cost or free outlets for spreading safety and educational messages. Alison also shared interest in this idea. The sources mentioned above could be effective communication outlets for PF&R to advertise resources and events they host like the blood pressure check and the smoke alarm distribution program.
We also discussed the idea of Neighborhood Emergency Teams (NET) participating in community events to help spread safety messages with Tremaine. NET is made up of community volunteers who are trained to help in the event of an emergency or natural disaster. Their participation could expand the number of places PF&R represents. Moreover, volunteers may offer a different perspective, or ability to relate to the community. Regarding NET, Alison also pointed out that there needs to be a clear plan and greater communication between the neighborhood, and NET on emergency protocol to keep people safe when disasters happen. She referred to the need for spreading emergency planning information and education, especially focusing on vulnerable populations like the elderly and houseless community within FMA 12.

*Relationship Building and Public Health*

Another key theme of our interviews was the importance of expanding organizational relationships. Currently, Station 12 can authorize calling county or fire cabs for people who may need a ride to a hospital or other healthcare provider, but do not need to be transported by an ambulance. This cooperation also works well when someone refuses to go to the hospital, but they agree to go to a houseless shelter. A fire cab can take the individual to a shelter, while a county cab can only go to the hospital.

Robyn asserted that there are opportunities to bridge gaps between PF&R and the community by working with organizations that are already having a positive influence. For instance, there have already been joint meetings with the Office of Homeless Services, and she expressed that they are open to sharing data with PF&R. Public health was another key subject we discussed with Robyn. She shared that PF&R is involved in efforts to tackle public health, but the key partnerships are not established at the caliber required for widespread implementation.

Tremaine mentioned how he had recently gone to a ‘community summit’ where many community health organizations and social workers exchanged ideas. Tremaine realizes that there are multiple organizations whose work fits within the scope of the Blueprint for Success’ mission. Teaming up with community health organizations and social workers could help CHAT serve more people. Additionally, the more services Tremaine is aware of, the more likely he will be able to connect a client with an organization that suits their specific needs.
The Shifting Role of Firefighters

Robyn explained that a significant shift is occurring within the scope of PF&R’s duties. Firefighters today are not dealing with the same issues that they were as recently as ten years ago. She gave insight into the misalignment between the skill-set of firefighters, and the needs of the community. Compounded with a lack of funding at many levels of public services, additional stress and burden have impacted both firefighters and the neighborhoods they serve. This shifting role prompted the idea of equipping firefighters with tools to deal with social work to meet the changing dynamic of fire and rescue services.

As mentioned above, Tremaine emphasized that learning about addiction would be beneficial for firefighters to help support houseless individuals who may suffer from this illness. Overall, Tremaine feels the department is steadily improving regarding mental health service education and support related to compassion fatigue. He mentioned that these issues were not on his mind until five or six years ago, and then he started reading about them in industry periodicals such as EMS World and Fire Engineering. Tremaine began using some of the techniques he learned through these periodicals to process his feelings and found them to be effective. With this experience, he wants to share this knowledge with fellow firefighters and even brainstormed the idea for “CHATs with Tre,” which he envisions as a peer support group for mental health issues and compassion fatigue.

Data Limitations

Tremaine expressed that he is often limited by the ability to share data between the fire department and medical facilities. This type of data, which is protected by HIPAA, could be beneficial in establishing a baseline with the clients he visits, so that he can better serve them. Robyn also expressed concerns around a lack of accurate data regarding the extent of houselessness in Portland.

Each of our interviews added meaningful insight in terms of identifying community assets and challenges, as well as possible solutions. In general, the Student Research Team acknowledges the limited perspective of a small interview list and that Neighborhood Associations do not always accurately represent each of the residents within their boundaries. Each resident within FMA 12 has a different perspective and may prioritize issues differently based on what they deem most pertinent to their neighborhood. Taking this into consideration, there is room to engage a greater breadth of the community which makes up FMA 12. This includes community organization representatives at the Immigrant and Refugee Community Organization (IRCO) and Native American Youth and Family Center (NAYA).
Drawbacks of this interview process include the lack of specific information on FMA 12 in the interview conducted with Robyn. The limitations of this interview is that it was primarily PF&R organization wide information and did not focus on FMA 12 specifically because that is not Robyn’s experience. However, Robyn was able to share useful information regarding overarching objectives of the Blueprint for Success that significantly impacted the research methodology utilized throughout the Team’s process with Station

She shared her belief that, as students, we are able to productively challenge the thinking of those that we engage with, and that our work should be solution-focused rather than problem-centric. An additional drawback in these interview findings is the missing perspective of individuals who frequently call 9-1-1. Speaking directly with residents of FMA 12 who frequently call 9-1-1 would provide an intimate understanding of their motives and the public service gaps in the area. This interview was not conducted for several reasons. The first being the limited length of the project schedule, and the second was concern over the privacy of these individuals. In future iterations of this research, it would be beneficial to hear from these frequent callers.

Finally, the Student Research Team acknowledges each of our positionalities and how this may apply to our perception and identification in relation to residents and concerns within FMA 12. There was no shared bias by the Student Research Team, but when individual team members felt bias or were triggered during the interview process, this was discussed with the rest of the Student Research Team. The dialog between teammates allowed for greater reflection, and through the interview process the team gained invaluable knowledge about Station 12 and the assets that make this FMA 12 unique.
IV. Strategy Sessions and Recommendations

Following key informant interviews, the Student Research Team led a series of facilitated strategy generation sessions with each shift at Station 12. In each of these sessions a standard agenda and facilitation methodology was used. The facilitation session was divided into two main sections. The first section allowed the Student Research team to introduce each shift to the current existing conditions findings, Key Informant Interview details, and example strategies to initiate dialogue and strategy development to enrich strategy creation. This was followed by collaborate strategy development which captured ideas shared by both fire crew members and students alike addressing the reduction of low-acuity call volume in FMA 12.

Methodology

The facilitation methodology used during these sessions involved an Impact/Effort Matrix. Everyone at the session actively generated strategies through student direct conversation. When strategies were suggested, they were logged on post-it notes and then the individual suggesting the strategy had to post it according to its potential impact and subsequent implementation effort. In this case, effort was categorized as encompassing resources of time and work, as well as the potential funding required.

Impact was detailed as the ability to reduce low acuity calls. This facilitation methodology was selected to create an environment of high participation with inherent evaluation of the implementability and efficacy of each strategy. The Student Research team had previously developed a facilitation methodology based on the Gallery Walk detailed in the “Facilitation Techniques to Make Working Groups Lively and Fun,” by Lynette Friedman and Lani Marquez, but after further reflection, this methodology was deemed too clinical or prescribed for the Station 12 crews. After much discussion, a more informal process of gathering strategies utilizing the Impact/Effort Matrix was then devised and used at each session.

In addition to the development of strategies, we were tasked with exploring the intersection of PF&R’s five key focus areas with proposed strategies - these areas included:

- Racial Equity
- Public Health
- Mental Health
- Housing/Other Resources
- Safety
The Student Research Team agreed that these were fundamental to the work of PF&R but concluded that there was misalignment, specifically with racial equity and the reduction of low-acuity calls. PF&R does not collect race/ethnicity data on incoming phone calls and, as a result, there is little room for call-acuity analysis based on race. Our team decided that the best method for tackling issues of racial equity would be to ensure PF&R (potentially at an FMA level) employees are racially representative of the communities they serve. Additionally, we suggest comprehensive education on the history of racism in Portland and the United States in conjunction with contemporary issues surrounding race. Further details on the specific agenda, facilitation methodology, and full strategy list can be referenced within the Appendix.

![Shift B Crew with their strategies at their facilitation session (Credit: Heide Camarata)](image)

*Photo: Shift B Crew with their strategies at their facilitation session (Credit: Heide Camarata)*
Priority Strategies

Expansion of CHAT program

Building on the success of the piloted CHAT program, Portland Fire & Rescue could expand the programming it currently offers to make services available to additional high frequency, low-acuity callers throughout the City of Portland and FMA 12. According to the May 2018 Cogglevation, engagement with high frequency clients has reduced 911 calls for these individuals by 50 percent. Cost-benefit analysis of the reduction of dispatched calls using full fire rigs with crews could prove to be a large enough margin to equate a required budgetary increase for CHAT programming. This is dependent on the scale of expansion and associated personnel. Collaborative funding by additional City of Portland bureaus may also be a consideration in the CHAT program expansion’s scope and capacity.

<table>
<thead>
<tr>
<th>Lead</th>
<th>Portland Fire &amp; Rescue Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partners</td>
<td>Portland Healthcare and Joint Offices of Homeless Services Bureaus</td>
</tr>
<tr>
<td>Timeframe</td>
<td>Immediately - Ongoing</td>
</tr>
<tr>
<td>Low Acuity Factors</td>
<td>Public Health, Mental Health, Other Resources, Safety</td>
</tr>
<tr>
<td>Cost</td>
<td>Proposed annual budget increases discretionary resources by $133,334 and internal revenues by</td>
</tr>
</tbody>
</table>
$22,236. This figure could be increased at the discretion of Portland Fire & Rescue. It may be appropriate to expand the number of positions to accommodate one CHAT representative per district or commensurate to available funding based on bureau collaboration.

Establishment of 311 (non-emergency phone number)

All three of our strategy sessions discussed the necessity for establishing an alternative phone number to field non-emergency calls. Contrary to our initial thoughts, the City of Portland does not currently have a number established, although there has been discussion about its feasibility. Further analysis would be required to evaluate its impact in our region, however, a 311 non-emergency number been successfully implemented across more than 60 major US cities.

<table>
<thead>
<tr>
<th>Lead</th>
<th>Portland Fire &amp; Rescue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partners</td>
<td>Multnomah County, City of Portland,</td>
</tr>
<tr>
<td>Timeframe</td>
<td>1+ years</td>
</tr>
<tr>
<td>Low Acuity Factors</td>
<td>Public Health, Mental Health, Housing/Other Resources, Safety</td>
</tr>
<tr>
<td>Cost</td>
<td>The current estimated cost it $3.40 - $5.00 per call. This cost could be mitigated by concurrently implementing a digital service. For example, 46% of New York City’s 311 interactions were digital.</td>
</tr>
</tbody>
</table>

Expansion of rapid response vehicles primarily focused on low-acuity responses

One of the ideas that came up in our first strategy session was a low acuity response team. We thought of this as an expansion on the Fire & Rescue vehicles, or the rapid response vehicles, which are two-person trucks that are smaller than a fire engine. These vehicles would be able to respond to low acuity calls that do not necessarily need an entire fire crew response. This would save the firefighters time and resources for high acuity calls. Furthermore, we could have the people working on these vehicles be first year firefighter recruits who will get experience in this field before they are burnt out.
Fees associated with false alarms and lift assists

In all three of the facilitated strategy sessions with Station 12, crew members expressed a need for the City of Portland to assess fines for false alarms in commercial and residential buildings that automatically call the fire department. Applying fees for false alarms would enforce maintenance of faulty systems and reduce the number of non-fire related low acuity calls dispatched. Fees should be set high enough to discourage negligence like improper maintenance of alarms, smoking detectors, and failure to alert PF&R of a fire alarm tests. The fees assessed could also increase after each offense, but
fees should also consider household income for a residential offender. A similar strategy is implemented in the City of Seattle, first time residential offenders are assessed a $125 fee, and commercial property owners are assessed a $250 fee.

Additionally, care centers that are required to provide equipment and personnel to perform lift assists shall be assessed a fee of $800 for calls dispatched to PF&R intended to perform this task. There will be no penalty for residential visits as they are not expected to have the training nor the equipment to perform these duties. This residential service could be performed by non-emergency low acuity call responders if an alternative program were created or if CHAT were expanded.

<table>
<thead>
<tr>
<th>Lead</th>
<th>Portland City Commission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partners</td>
<td>Portland Fire and Rescue</td>
</tr>
<tr>
<td>Timeframe</td>
<td>6 months - 1 year</td>
</tr>
<tr>
<td>Low Acuity Factors</td>
<td>Housing/Other Resources, Safety</td>
</tr>
<tr>
<td>Cost</td>
<td>The only costs are the time and resources of City Council to investigate the feasibility and equity of such an ordinance to draft it into law. There may be ongoing administrative costs involved in enforcement and record keeping.</td>
</tr>
</tbody>
</table>

*Photo: Fire Department lift assist equipment (Credit: Unknown)*
Education campaign about 311 to public

All three of our strategy sessions with the firefighters discussed some form of education campaign. We decided to focus this campaign specifically on educating the public about 311, the non-emergency number. This would include education on what a real emergency is and when to call 9-1-1 versus when to call 311. This campaign could include handing out pamphlets when firefighters are out in the community, going into middle schools and high schools to educate students, and putting advertisements on reader boards around town, such as TriMet MAX and bus stops, the Moda Center, and Providence Park.

<table>
<thead>
<tr>
<th>Lead</th>
<th>Portland Fire &amp; Rescue Administration, Firefighters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partners</td>
<td>Portland Public Schools, City of Portland, TriMet,</td>
</tr>
<tr>
<td></td>
<td>Moda Center, Providence Park</td>
</tr>
<tr>
<td>Timeframe</td>
<td>Start</td>
</tr>
<tr>
<td></td>
<td>Immediately - Ongoing</td>
</tr>
<tr>
<td>Low Acuity Factors</td>
<td>Public Health, Mental Health, Housing/Other Resources, Safety</td>
</tr>
<tr>
<td>Costs</td>
<td>Depending on the type of campaign that is focused on - ranging from paper pamphlets to an electronic reader board - the cost of this</td>
</tr>
</tbody>
</table>
could range from hundreds to thousands of dollars.

Better communication between bureaus

The topic of better cross bureau communication was discussed in each of the three facilitation sessions. The societal pressures that are contributing to the increased volume of low acuity calls are felt by all departments and bureaus within the City of Portland’s municipal government. There are limitations to the scope of services that can and should be completed by each bureau that makes up this government. By working closer together to identify and eliminate the gaps in city services, the issues that challenge Portland Fire & Rescue can be reduced or eliminated. This could occur through Portland Fire & Rescue's direct involvement or the sourcing of a more apt governmental partner.

Lead Portland City Commission

Partners City of Portland Public Services Bureaus

Timeframe Start Immediately - Ongoing

Low Acuity Factors Racial Equity, Public Health, Mental Health, Housing/Other Resources, Safety Costs Dependent on approved meeting time and any cross-bureau programming

Photo: Fire department high school education visit (Credit: Unknown)
These strategies are a result of active facilitated strategy sessions, as well as existing conditions reports and key informant interviews. Following the facilitated sessions, using informal feedback from the Station 12 crew and factoring in the quantity of strategies, the Student Research Team concludes that the facilitation method was extremely successful. It not only generated a high volume of strategies, but these strategies display overlapping that assists in understanding strategic priority. The facilitation method of pairing high energy dialog, playful imagery (emojis), and inherent strategy evaluation through the Impact/Effort model made the facilitation sessions a fun experience that is highly replicable. This replicability may also be dependent on the rapport that is built between future Station crews and Student Research Teams. Frequent station visits and rapport built during these visits laid the foundation for inform dialog and the necessary comfortability required to strategize this complex societal issue. While the Student Research Team recognizes the limitations of the comprehensive nature of the selected strategies, an attempt was made to select strategies that varied in scale and ease of implementability. All the above strategies share one common goal, their ability to reduce the frequency or impact of low-acuity calls.

The chart below offers a visual representation of the strategies we collected divided by the various levers of change. As expected, the largest portion of strategies fall under the Outreach/Education category - this is likely results from the ease of implementability associated with outreach and educational efforts. While they are separated in the visual below, Dispatch strategies represent a sub-category of overarching Operational category. When combined these strategies are the next largest group and represent 35.4% of the total strategy submissions. This too would be expected, specifically due to the crew’s extensive interaction with PF&R’s operational systems. The presence of a social services section highlights the changing nature of the fire bureau and the increasing need for the provision of social services in our FMA.
Strategy Sector Distribution

- Social Services: 10.8%
- Dispatch: 16.2%
- Operational: 19.2%
- Outreach/Education: 42.3%
- Incentives: 11.5%
V. Evaluation and Monitoring

This section focuses on how Portland Fire & Rescue will measure progress of the strategies identify in our facilitation sessions with Station 12, over both the short and long term. Station 22 developed a list of performance measures, we have reflected upon the strengths, barriers and feasibility of those measures to incorporate into our evaluation and monitoring. The progress of the strategies proposed will require PF&R to collect additional data than what is already collected due to the recommendation of including a non-emergency number for community members to contact.

Performance Measures/Results

This section refers to the measures and results of performance that are direct internal impacts by PF&R.

1. Increase in 311 calls:

One of the easiest ways to know if the advertisement and implementation of the 311 or non-emergency number is effective is simply by how many calls are made directly to the 311 number. This will show that public and community awareness about the non-emergency number is growing and will infer that there are less low acuity calls being made to 911.

2. Reduction in burnout by fire crews:

Mental and/or physical fatigue is a difficult thing to quantify for an individual, let alone an FMA or an entire department. Firefighters often cite being inundated with low-acuity calls as a primary cause of burnout. While there is likely not a 1:1 relationship between low-acuity calls and fatigue, a reduction in these types of calls may be the best proxy for measuring burnout.

Another option could be to have firefighters take a short department-wide quarterly wellness survey. Once a baseline has been established, ongoing surveys could serve as a way to measure department fatigue.

3. Increased number of CHAT visits to target high frequency groups:

Expansion of the CHAT program has already produced tangible results and an increase in the number of CHAT members will
continue to add more tangible results. While it may be difficult to quantify the impact of each individual visit, on aggregate, they are likely a safety enhancer. Therefore, the quantity and nature of CHAT visits should be quantified. If possible, metrics should also be taken on demographics.

When PF&R responds to calls, the person can be checked against the database of previous CHAT visits. If PF&R is responding to an increasingly lower percentage of people that have previously received CHAT visits, this may indicate that they are indeed effective. Statistical analysis could be performed to determine if CHAT visits are continuing to have an impact, and specifically which types of visits and with which populations.

4. **Reduction in false alarms and lift assists**

One way to measure if this strategy is working is to continue to collect data on the number of calls PF&R goes on specific to lift assists and false alarms. We believe that through a fee for both of those types of calls, there will be a reduction.

5. **Increase in more collaborate events between PF&R and other City bureaus:**

We will measure the impact and increase in the collaboration of PF&R, the City of Portland, and other City and County bureaus and organizations by if there is an increase in collaborate projects and events coming out. For example, PF&R and the Joint Office of Homeless Services of Multnomah County could partner to educate firefighters on equity issues such as homelessness. Another example could be PF&R partnering with Trimet to ensure there is no

*Community Indicators/Results*

This section suggests community indicators that show improvement. Currently, this focus is upon those impacts which PF&R could hypothetically improve with collaboration from other partnerships and those indicators which measure community health according to the S-E model.

6. **Reducing low acuity calls**

One way to assess the results of reducing low acuity calls from a
community perspective is through the measurement of the community health in the FMA. If there could be a visual map where low-acuity calls are coming from, PF&R could see if over time through the establishment of 311, the number of calls is reduced.

The other way to assess the reduction of low acuity calls is by quantifying the amount of calls PF&R receives that are labeled low acuity calls. This can be cross referenced with the amount of 311 calls are received.

8. **Community surveys on 311 awareness**

By writing and distributing a survey on the awareness of 311 or the non-emergency number, PF&R will be able to not only gage public awareness on the non-emergency number but also spread awareness for people in the community who do not already do not know about the non-emergency number.
9. **Increased equity**

PBOT publishes an “Equity Matrix” which helps inform their work and guide investments. To calculate the Equity Matrix, median household income, and the percent of population of color by census tract is divided into quintiles and assigned a score of 1 through 5. Scores of 5 signify the lowest income tracts or the highest percentage of persons of color tracts. The two scores are added together so that each tract receives a score of 2 through 10, with 10 being the highest potential inequity tracts. These values are represented on a choropleth maps. Limited English proficiency census tracts are outlined in yellow. Limited English proficiency tracts are defined as those that are above the city-wide average of LEP, 3.8%.

This map, if updated regularly, can help visualize the spatial distribution of inequity in Portland. It is important to note that census tracts that lower their equity score over time may be depicting the process of gentrification and displacement rather than actual improvement in financial well-being. This is by no means a complete measure of equity, but a useful tool nonetheless. The “Equity Matrix” map can be found here:

Works Cited


Mapping Inequalities, *City of Portland,* https://dsl.richmond.edu/panorama/redlining/#loc=13/45.5460/-122.6060&opacity=0.8&city=portland-or


Appendix A

Interview Plan Team Interview Roles

Lead Interviewers - Dan Eddie, Hillary Harris
AV Leads - André Lightsey-Walker, Lydia Ness, Shiori Azumaya Lead
notetakers - Heide Camarata, Baxter Shandobil

Interview Locations

Interview locations will be determined on a case by case basis. The objectives are to make the meeting locations as convenient and comfortable for the interviewees.

Interview Materials

- Voice recorder (iPhone)
- Video record (optional)
- Paper and pens
- Multiple copies of questions
- Consent Form

Cross Cultural Interviewing - Strategies for Overcoming

- Acknowledging possible barriers beforehand (case by case)
- Ensure emotional correctness
- Plan ahead!
- Establish shared culture by creating ground rules for the current space
- Adapt

Trauma Informed Reflection

Trauma informed thinking realizes the widespread impact of trauma and understands potential paths for recovery; recognizes the signs and symptoms in clients, families, staff, and others involved with system; and responds by fully integrating knowledge about trauma into policies, procedures, practices, and seeks to actively resist re-traumatization

Keys to a trauma informed lens
1. Establish a safe space
2. Be transparent and build trust
3. Offer peer support
4. Embrace collaboration
5. Empower interviewee
6. Be conscious of cultural, historical, and social issues

*Reflexivity Debrief*

Following every interview our team will allocate at least 15 minutes to debrief on how various positionalities potentially impacted our interviews.

*Interview Steps*

- Introductions
- Explanation of interview goals and expected duration
- Rapport questions
- Foundational knowledge questions
- Key questions
- Probing questions
- Closing questions
- Summary
Appendix B

Interview Questions Robyn Burek

1. What are characteristics of an ideal community/neighborhood?
2. What are the best aspects of your position?
   a. Alternatively, the most difficult aspects of your job?
3. How long have you been at PF&R?
   a. How long have you been involved with the creation of this collaboration with PSU?
4. What do you want us to learn from this collaboration as students and as residents of Portland?
   a. What is something that every Portland Resident should know, in relation to your work and PF&R, that they don’t currently?
5. What do you think the biggest challenges in our community are?
   a. Has P&FR worked to address this historically?
6. What led to the formation of the CHAT Program?
   a. Are there other prevention and/or public health programs currently run or in development by PF&R?
7. Where do you think there are gaps in community services within the PF&R?
   a. How might PF&R close these gaps? Is the goal to house these services under the umbrella of PF&R or an alternative?
8. What types of public outreach and education programs already exist through PF&R?
   a. Are the participants of your outreach efforts exemplary of those most at risk for fire calls, medical calls, or something else specifically?
   b. In your opinion are there other creative ways to engage with communities that have been historically vulnerable to fire risk?

9. Can you tell us about community organizations you’re already working with outside of PF&R?
   a. Are there any that you’re interested in working with in the future?
   b. How would you like to see these partnership develop?

10. What do you think is PF&R’s role should be regarding homelessness?
    a. How has this role or perception of this role changed to this point?
    b. Are firefighters trained for the types of interactions the may have with houseless individuals?
    c. The previous Blueprint for Success for Station 22 included specific call data related to homelessness, but this is not included in our set of emergency call data. Is there a way to access this information through PF&R?

11. Are the demographics of callers an accurate portrayal of the average demographics of Portland?
    a. Why do you think that is?
    b. Are there better ways of tracking this information for their benefit?

12. What types of backgrounds are seen in the hiring and training of Portland firefighters?
    a. Do you see there being a shift in seeking other backgrounds and skills for future crew members?
    b. Are firefighter crew demographics an accurate portrayal of Portland?

13. What is the long term trajectory of the Blueprint for Success Process?
a. What’s your ideal result from this project?

b. Are there parts of the previous Station 22 process or report that you wish were completed differently?

14. Do you have any concerns about our current project or process?
   a. How can we work together to mitigate those concerns?

15. There has been talks of resources being available for strategies that are prioritized in the future Open Mic Nights. Are the forms of these resources flexible?

16. Any other thoughts or conclusionary comments?
Alison Stoll Interview Questions

1. Could you tell us about your background and how you came to be the Executive Director of Central Northeast Neighborhood Coalition?

2. What are characteristics of an ideal community/neighborhood?

3. What are the best aspects of your position?
   a. Alternatively, the most difficult aspects of your job?

4. What should our student group and all of Portland know about the Central Northeast Neighborhood?
   a. Could you describe characteristics that make some of the neighborhoods within CNN unique compared to others?

5. What do you enjoy most about PF&R and being located in the same building as PF&R?
   a. How do you usually communicate with PF&R? Is this primarily in person with the Station 12 Crews or do you have a relationship with its administration?
   b. Is PF&R currently represented at Neighborhood meetings or CNN Board Meetings?

6. What types of collaboration or programming have you had with PF&R over your tenure?
   a. What has been most successful and what didn’t work as well?
   b. Are there opportunities for new programming with PF&R that could expand upon these successes?

7. What do you think the biggest challenges in our community are?
   a. What type of CNN or community efforts exist to address these challenges?
   b. Has P&FR worked to address this historically?
   c. How might PF&R move forward to address these challenges?
      i. Are there other organizations that
should be involved to address these challenges?

8. Where are there gaps in community services within the neighborhoods you serve?
   a. Could PF&R be utilized to close these gaps?
   b. If not, could they facilitate in any way?

9. What is your familiarity with the CHAT Program within PF&R?
   a. Are there other pilot programs that you could see PF&R creating that would help support the needs of your community?

10. What do you think is PF&R’s role should be regarding homelessness?

11. What are the most valuable partnerships CNN or the neighborhoods you represent have in the community?
   a. Are there other connections or partnerships that you are looking to create?
   b. What can these partnerships do?
12. What are ways that CNN assists those in poverty or experiencing housing insecurity?
   a. What are ways that CNN could be supported to grow programming to aid vulnerable people? Can PF&R fill this roll of support?

13. Having an education background, are there ways that CNN and PF&R can support higher performance in schools and greater long term success for children growing up in this area?
   a. Reading comprehension by 4th Grade, Housing Security/Stability, Food Security, Attendance?

14. What additional information do you think we should consider?

15. Could you recommend any readings/data we should look at for gaining in-depth understanding about the community within our research area?
   a. Alternatively, are there other individuals that should be part of this dialog that we have not contacted?

16. Any other thoughts or conclusionary comments?
Tremaine Clayton Interview Questions

1. Could you tell us about your background and history with PF&R?

2. What are characteristics of an ideal community/neighborhood?

3. What do you think are the biggest challenges in Portland? Community, neighborhood, cultural...
   a. Has P&FR worked to address this historically?

4. What led to the formation of the CHAT Program and your position?

5. What are the best aspects of your position?
   a. Alternatively, the most difficult aspects of your job?

6. The May 2018 Cogglevation was a great view into the work you’re doing. Beyond the Cogglevation, how much publicity has the CHAT Program received?
   a. Is there concern that if this is more publically known, that you will be stretched for resources?

7. How would you assess the work you’ve done in the CHAT Program, and how have you grown as a result of working in uncharted territory?
   a. What are some of the most impactful memories from the program to date?

8. What kind of support or collaboration is there between the CHAT Program and Fire Stations?
   a. How can FMA’s collaborate or utilize the CHAT Program more effectively?

9. Separate from the services that you provide, do you know where there are gaps in community services within the neighborhoods you serve?
   a. Could a PF&R pilot program be created to close these gaps?
b. If not, could they facilitate in any way?

10. What are ways that community and neighborhood leaders can assist in decreasing the number of low acuity calls or invest in other areas of community health?
   a. Other classmates have told us about gathering socks, when and where would you like these?
   b. Are there other “drives” that can be supported by community leaders to assist your work?

11. We know of the Proposed Budget increases and additional resources that have been identified moving forward for the CHAT Program. Beyond this milestone, how does the program evolve or grow?
   a. What additional training or resources may be necessary for the expansion of CHAT’s programming from not only individuals in the high utilizer group but also those experiencing houselessness?
      i. Should this training required or available to other staff?

12. What are the obstacles to increasing staff and resources?
   a. How can the Blueprint for Success process aid the CHAT Program is removing these obstacles?

13. What do you think the CHAT Program is lacking, and/or what aspects of the CHAT Program are you concerned about?

14. Does the CHAT collect any data which is unique to the CHAT Program?

15. If you are comfortable telling us, what are the resiliency techniques you practice to assist with compassion fatigue?
   a. Are these practices you would suggest other PF&R crew utilize?

16. Is there research or information that has informed your work that you are willing to share?

17. Any other thoughts or conclusionary comments?
Terry Schrick Interview Questions

1. Could you tell us about your background and how you came to be in your current Chaplain position?

2. What are the best aspects of the various work you do?
   a. Alternatively, the most difficult aspects of your position?

3. What are characteristics of an ideal community/neighborhood?

4. What are the biggest challenges facing the residents in the area surrounding Station 12?

5. What are ways that residents can work together to solve the challenges they see in their neighborhoods?

6. You’re involved with programming to address some of these challenges, could you tell us about the various programs you are involved with or are adjacent to the work you do? (Rest Stop Program, Live Love Christmas, Vet Village)

7. When did Station 12 get adopted into the Rest Stop Program?
   a. Are other fire stations in Portland involved in this program at other locations in the city?
   b. Does the the Rest Stop Program also serve as a place to speak with someone about their job or receive counseling?

8. Could you tell us about the Foster Child services at City Bible College and your involvement?
   a. Is there programming that could happen between these children and first responders that could be of benefit?
      i. Outreach, education, support

9. Are there other community organizations that you work with closely in the neighborhoods surrounding Station 12?
   a. What are other programs or services that are needed in the area that don’t currently exist?
   b. Do you think Portland Fire & Rescue could help support that in any way?
10. Have you observed a difference in the demographics of houselessness individuals in the area around Station 12 and City Bible College versus the larger houselessness population in the City of Portland? (such as age, the rate of veterans, race, disabilities, etc.)

11. Are you aware of the significant increase in Portland Fire & Rescue calls since 2000?

a. There has been a 23% increase in call volume from 2000-2017, and the majority of this growth comes from ‘medical’ and ‘other’ calls.

12. Have you heard about the CHAT Program within Portland Fire & Rescue?

a. High frequency callers, mostly non-emergency medical callers

13. What should Portland Fire & Rescue’s role be to address homelessness in the area?

a. Is there a role?

14. What additional information do you think we should consider?

15. Any other thoughts or conclusionary comments?
Appendix C

Facilitation Session Plan and Agenda Student Roles

Primary Facilitators: André, Heide

Supporting Facilitators: Baxter, Dan, Hillary, Lydia, Shiori

Notes and Documentation: Baxter, Dan

Printing and Supplies: Heidi, Shiori

Organization of findings for final report: Dan Presentation Slides: Shiori

Station 12 Crew Roles Stay actively engaged. Be an active participant. Be comfortable sharing any ideas

Purpose

PF&R’s call volume has increased by 23% from 2000 to 2017; the majority of growth derived from “medical” and “other” calls. The need to call 9-1-1 isn’t as prevalent in vibrant, healthy cities. PF&R believes that smart urban planning (urban form, housing, zoning, and transportation) correlates to healthy and racially/economically equitable cities, and all of these factors have a direct and indirect impact on emergency call volumes. Because PF&R is responsible for safeguarding the lives of every resident of Portland, we believe that our service delivery model must evolve beyond a reactive, emergency response orientation and move towards proactively addressing community risks including those related to fire, public health, the physical environment, and social support networks.

Goals

Establish strategies to address contributing factors of low acuity/non-emergency calls.

Contributing factors may be or are directly related to the following:

- Racial Equity (and other equity- the City of Portland prioritizes racial equity, so we will. But we will also think intersectionality here as possible)
- Public Health (Think: S-E model of Community Health)
- Mental Health
- Housing/Other Resources
- Safety

Organize strategies based on time required to implement ideas.
Prioritize strategies based on importance or perceived need if pilot program could be launched tomorrow implement these strategies.

**Facilitation Methodology**

Our team used an Impact Effort Matrix for our strategy sessions. An impact effort matrix is a tool that helps decide which solution a team should pursue based an array of possible solutions, our array was produced on the spot as crewmembers of station 12 suggest ideas they had. By using an Impact/Effort Matrix we were able to visually prioritize solutions based on the ease of implementation. The matrix allowed for us, and crewmembers of station 12 to determine which solutions are most logical to implement in relation to their impact and assumed output. With regard to the actual activity, we dedicated approximately 70 minutes per session to strategizing. The lead facilitator oversaw pulling the conversation along and keeping everyone on track while maintaining a safe space that allowed for creativity and trust. The secondary facilitator was charged with writing down all of the ideas shared and handing sticky notes to crewmembers to be placed along the matrix. Finally, our team and crew members were given 10 minutes to come up with final ideas on their own, post them on the matrix, followed by a round table where each individual was allowed to share their ideas and why they chose them. After the roundtable the session was concluded.
Schedule

00:00  Introductions and Purpose of Facilitated Session 00:05  Ground rules
00:15  Existing Conditions of FMA 12 00:25  Findings from Interviews
00:35  Discussions on Existing Conditions and Interview Findings 00:45  Strategizing & Measuring Strategies
01:15  Break
01:25  Prioritizing Strategies
01:45  Conclusions and Final Comments 02:00 End of Charrette

*Questions during presentation of findings or discussion are encouraged! The session should be a dialog of talking with and not a talking at scenario.

Full Strategy List

The following a complete strategy list with duplicate strategies removed.

- Partnering with Multnomah health for fee physicals
- Opportunities to connect with NET
- Educational flyers
- Provide workplace experience for children
- Post non-emergency number across city
- Banners on Station
- Block off areas for campers in current spots
- Billboards
- Offer alternative number for non emergency number that is not 311
- CES events at local elementary schools
- Neighborhood newsletter
- Free swag from PFR
- Radio information advertisements that target commuters
- Collaborate with Portland Sports teams to promote education
- LED promotional boards at Tri-Met bus and light rail stops around the city
- Social media advertising campaign
- Flyer to handout after dispatched calls with follow up number for future issues
- Monthly events with Central Northeast Neighborhood Coalition using community room
- Call back from first responder when it is a low acuity call, talk through emergency call options
- Fines for persistent low acuity calls
- Fines for lift assist at care centers
- Incorporate Portland Fire & Rescue information and promotion in neighborhood newsletter
- Expand CHAT Program
- Provide sharps containers and trash bags to houseless community to keep community clean
- Handout flyers and smoke detectors while grocery shopping every day
- Expand backyard burn regulations to accommodate the houseless community
- Get rid of all cell phones so people have to be more purposeful on when and how they call 911
- Automated programming to identify frequent callers
- Provide universal healthcare
- Improve houseless services
- Internships with high-schoolers within FMA
- Program that discounts/provides free Lyft or Uber rides to hospital
- Attending school events above grade school level
- Mandatory public school curriculum to become first responders
- Ban houselessness
- Use firefighters to triage calls, would be light duty crew members
- Take national survey of dispatch best practices, and implement into Portland services
- 9:00AM - 5:00PM light duty 2 person rig that responds on queued low acuity calls
- Put non-flammable materials in areas where bark dust fires occur near transit centers
- Heavier fines for commercial alarm violations
- Pay houseless individuals to clean up garbage on streets and near camps, prevents larger fires and gives a small source of income
PF&R Agency Efficiency

- Low Effort/High Impact
- High Effort/High Impact
- Low Effort/Low Impact
- High Effort/Low Impact

Impact/Effort Matrix
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