# Portland Fire & Rescue
# Blueprint for Success

## Fire Management Area 22

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# The Blueprint for Success

In order to maintain response times alongside a growing population while continuing to improve quality of service to the City of Portland, Portland Fire & Rescue (PF&R) is working toward developing strategies to prevent emergencies from happening rather than solely responding to proactive strategies to reduce fire and medical risks before they become worst-case scenarios where a 9-1-1 call must be made. To this end, the City of Portland launched the Vision Zero Campaign for zero fire or traffic fatalities in the service area. The Blueprint for Success strategy, in turn, was created to act as the means of achieving this goal.

Blueprint for Success is intended to provide an example and methodology for preventative emergency planning in Portland. This report presents the initial Blueprint development and findings from developing and applying the process in Fire Management Area (FMA) 22. This Blueprint report contains:

- The Blueprint for Success Toolkit: A methodology for PF&R data analysis, outreach, and strategy development at the FMA level, and
- The FMA 22 Case Study: The pilot application of the Blueprint, including background research and data analysis, community engagement results, and final strategies prioritized by Station 22.

The toolkit is intended to be subsequently applied by PF&R Administration under close station collaboration to FMAs throughout Portland. Case studies of each application are intended to be shared throughout PF&R and built upon as the Blueprint develops further. The case studies coupled with the toolkit methodology provide reference and examples of specific process components outlined in the toolkit.

This toolkit presents data considerations and methods of analysis; outreach processes for community and firefighter engagement; and strategy development considerations. Area land use, demographics, livability and houselessness provide a snapshot of land usage and quality of life for those living within the FMA. The Social Vulnerability Index (SVI) provides a more in-depth predictive model of medical needs in the FMA. This data is then coupled with emergency medical and fire call responses in the FMA to determine patterns and trends, and a community asset inventory to identify existing organizations to potentially partner with on holistic community-led preventative strategies.

The accompanying case study presents this process as applied to FMA 22.

## Portland Fire & Rescue

Portland Fire & Rescue (PF&R) is the largest fire and emergency services provider in the State of Oregon, serving the City of Portland and the regional metropolitan area. Their mission is to protect life, property, and the environment, safeguarding the lives of every resident and visitor in the community. Traditionally, this has meant responding to fire, medical, and other emergencies. However, PF&R believes that its 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. PF&R pursued a partnership with the PSU Master of Urban and Regional Planning (MURP) workshop group ÆGIS NW to identify opportunities to address the underlying issues that generate 9-1-1 calls from the community, and to use the skills of graduate planning students to incorporate a collaborative urban planning process to setting priorities among the many root causes related to fire deaths, traffic fatalities, heart disease, drug addiction, hunger, or social isolation.

## ÆGIS NW Planning

To fulfill requirements for the 2018 Portland State University Masters of Urban and Regional Planning degree, planning team ÆGIS Northwest (NW) partnered with Portland Fire & Rescue (PF&R) to develop a toolkit for proactive strategy development at the Fire Management Area (FMA) level. As graduate planning students, ÆGIS NW provided theoretical and analytical approaches to planning processes. Pairing an academic and research background with boots-on-the-ground engagement and continued learning, the team worked to develop thoughtful, meaningful, and feasible strategies and a methodology for developing future strategies in FMAs throughout Portland.

# Portland Fire & Rescue
# Blueprint for Success
## Toolkit

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# The Blueprint for Success Project

The Blueprint for Success provides each FMA's station and staff a toolkit of information, considerations, processes, and strategies for preventative investments. This toolkit presents data considerations and methods of analysis; outreach processes for community and firefighter engagement; and strategy development considerations. Area land use, demographics, livability and houselessness provide a snapshot of land usage and quality of life for those living within the FMA. The Social Vulnerability Index (SVI) provides a more in-depth predictive model of medical needs in the FMA. This data is then coupled with emergency medical and fire call responses in the FMA to determine patterns and trends, and a community asset inventory to identify existing organizations to potentially partner with on holistic community-led preventative strategies.

The process begins with assembling your team and offering a clear understanding of who is involved in what stages. The graphic on the following page shows the four dominant groups identified for involvement - administrative staff (admin), graduate students, firefighters, and community members - and where to involve them in the process.

## Scoping and Data Analysis

Administrative staff will oversee toolkit implementation, and having a point person for direction and communication will clarify the process for all involved. Existing PF&R data analysts will also be essential at this stage, and the student role will work closely with these analysts on developing a scope of research and access to essential internal data.

## Outreach

The outreach stage is designed to be led by students with continued admin oversight, connecting students to existing outreach and asset inventory research being conducted. Outreach begins with firefighters and community members reviewing the data analysis conducted previously, and then extends into soliciting strategy considerations from firefighters and their surrounding community. It is important to note and involve strategy implementers during outreach.

## Strategy Development and Assessment

Incorporating data analysis and outreach to firefighters and the community, strategies will be identified collaboratively and decided based on feasibility of implementation and prioritization by toolkit team members. Assessment will be conducted by admin.

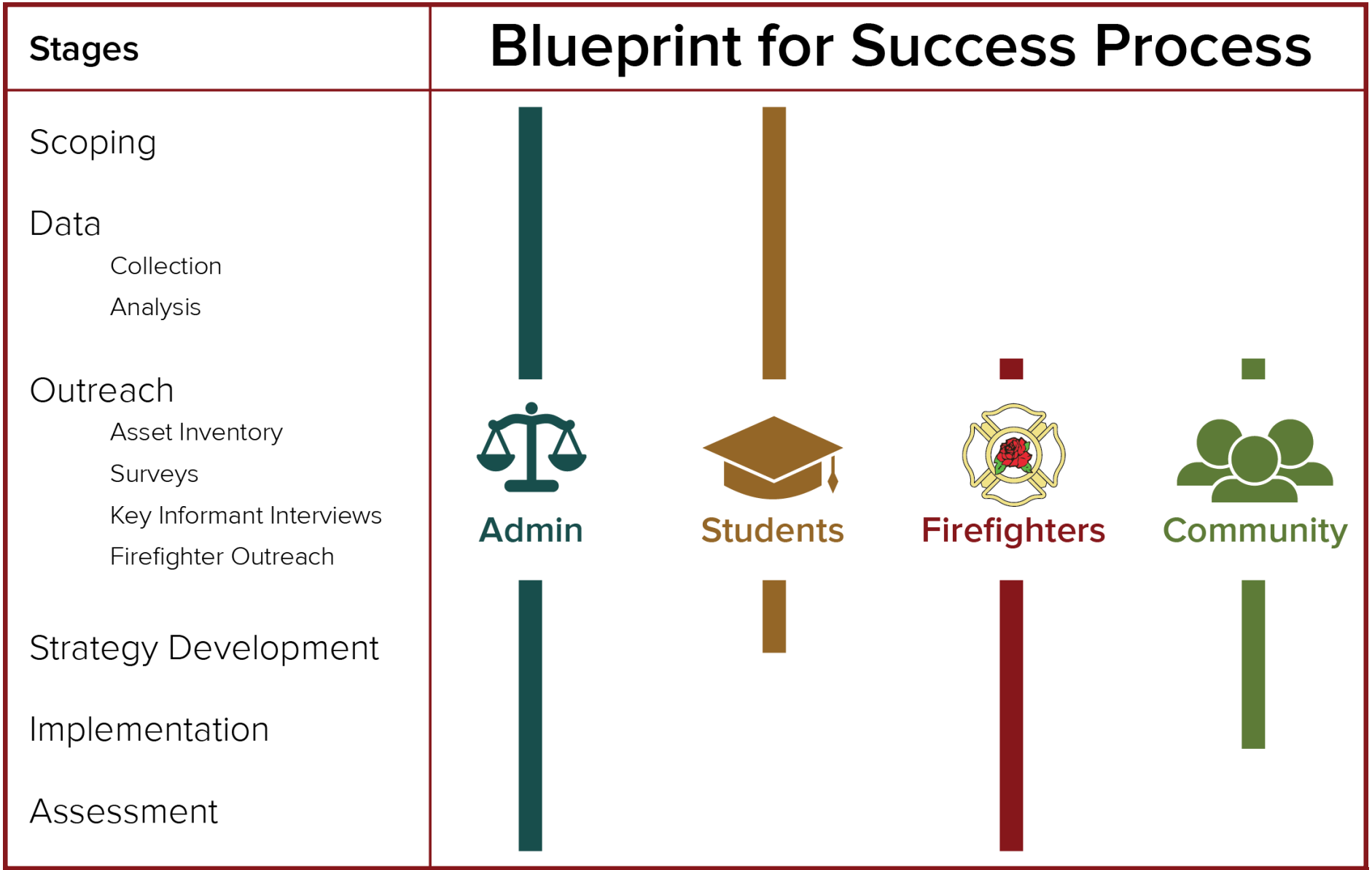


Figure 1: Blueprint for Success Process Stakeholders and Project Phases.

# Step 1: Data collection and analysis

Data analysis provides a more thorough understanding of area characteristics, context for strategy development, and a baseline for measuring program efficacy over time. Strategies emerge during every step of the process, and strategy development should be embedded in each step of data analysis, outreach, and strategy development. This process recommends analysis of urban form via area land use, demographics, and livability; the social vulnerability of community residents and the distribution therein; emergency medical and fire call response types as well as houselessness distribution; and key PF&R performance indicators. Analyses were completed using ArcGIS. Quantitative non-census data sources are specified.

## Urban Form

To understand the specific needs of FMA firefighters and community members, it is important to understand what makes each FMA different and how they compare to one another. Relevant information includes:

- FMA location within Portland and geographic size compared to other FMAs
- Population density and distribution
- Natural features and land uses
- Traffic thoroughfares and transit systems, including PF&R identified high-incident corridors
- Description of neighborhoods and commercial hubs

## Demographics

Racial and socioeconomic demographics influence social vulnerability and provide a basis for conducting equity analysis of an FMA. Education, employment, and income are all directly correlated with increased fire risk as well. When tracking program efficacy over time, it is important to also track changes in demographic distribution. Changes may suggest gentrification, displacement, or unequal distribution of efforts, and as such should influence PF&R strategies to ensure the program is serving all income classes, racial, and cultural groups equally and not negatively affecting particular groups.[1] Targeted outreach to these communities and alteration of strategy items to address input is recommended if changes are observed.

In Portland, strong significant correlations between socioeconomic status and health outcomes related to healthcare access and cardiovascular and respiratory diseases exist. To a lesser, but still significant extent, diet-related health issues such as obesity, diabetes, and high blood pressure also increase with declining socioeconomic status. Analysis from Harvard researcher John Jay also suggests that level of education correlates most closely with high residential fire risk.

Demographic information includes:

- Racial makeup by neighborhood compared to the City of Portland
- Income distribution, median household income, and percent under the poverty line
- Educational attainment compared to the City of Portland
- Employment rates

1 According to the Social Vulnerability Index outlined below

## Livability

Area livability influences the health, happiness, and cohesion of a community. Largely qualitative, livability characteristics identify apparent gaps in community development as well as strengths that may characterize a community. There is also potential for increasing livability to correlate with displacement, so livability for whom is an essential consideration. Livability components include:

- Walkability and bikeability via Walk Score or community observation and surveying
- Food access according to USDA Food Desert Criteria
- Canopy cover via Portland Parks and Recreation Street Tree Inventory map and data files
- Car dependence[2]

## Social Vulnerability

Social vulnerability analyses illustrate area characteristics that may suggest susceptibility to medical and fire response needs. The Center for Disease Control (CDC) Social Vulnerability Index[3] (SVI) comparatively assesses the ability of a census tract to rebound from a natural disaster. Vulnerability is broken down into four themes:

- Socioeconomic Status
- Household Composition and Disability
- Minority Status & Language
- Housing & Transportation

The CDC's 500 Cities Project[4] provides city- and census tract-level estimates for chronic disease risk factors, health outcomes, and clinical preventive service use for the largest 500 cities in the United States. Following correlations between SVI and 500 CP health factors (see Appendix D), SVI severity and distribution shows potential targeted health considerations for FMA residents. To analyze social vulnerability:

- Approximate census tracts to neighborhood boundaries
- Profile neighborhood SVI overall and breakdown by theme
- Identify primary health concerns based on 500 CP correlation
- Discuss neighborhood trends, contrasts, and standout findings

2 ÆGIS NW was unable to identify a single source that calculates vehicle dependence, but it can be approximated using walkability, distance from transit (½ and full mile buffers), and proximity to critical amenities (food, employment, schools, etc.). Additional resources include the Housing and Transportation Affordability Index from the Center for Neighborhood Technology: https://htaindex.cnt.org/map/

3 https://svi.cdc.gov/

4 https://www.cdc.gov/500cities/

## Medical Calls

Plotting medical call data by type offers a spatial visualization of call distribution in the FMA. Density of calls largely correlates with population density, but visualizing whether outliers exist helps prioritize focus areas and contributes to the definition of FMA subareas. Rasterized kernel density heatmaps of call data by TypeNature illustrated the distribution frequency of categories of calls (abdominal, breathing, traffic, etc.) throughout the FMA. To create call type heatmaps, import into ArcMap the FMA call data (points), select by the TypeNature or ID_911 attribute for the incident type under investigation, and use the spatial analyst tool Kernel Density. It may be worth considering tracking changes in incident distribution over time when tracking policies' effectiveness or changes in land use in Portland, which would add a date filtration step. No change over time analysis makes up the ÆGIS case study.

## Fire Calls

Spatial distribution of fire calls also largely correlates with population density, but provides clear visualization of area characteristics and patterns. This visualization can be coupled with John Jay's fire risk predictions model to identify high-risk areas, which uses taxlot-level data such as building square footage, building age, market and last sale values, and other publicly available property information to identify properties at greatest risk of fire. This risk is translated into a numerical score ranging from 1 to 100, with 100 being the highest risk.

Analysis of fire calls utilizes PF&R data of point layers of 9-1-1 call incidents, block-group level Census ACS 2015 demographic data, and an Excel spreadsheet of John Jay's parcel-level fire risk scores. To analyze fire risk,

- Import PF&R fire incidents and John Jay's predictions as points and rasterized using Kernel Density (with Area Units specified as Square Feet due to large map scale) to examine spatial distribution patterns.
- Fields of greatest use during fire incident analysis are TypeNatureCode, Situation Found_Sub, and Code Type (a proxy for Acuity Level, which appeared as 'null').
- For optimal precision, analyze only the parcels demonstrating High and Highest risk (Type_Risk). The remaining levels of risk contain so many points that mapping at FMA scale is of little use.

## Houselessness

While the biannual Portland State University Point in Time count shows that Portland's houseless population increased significantly between 2015 and 2017,[5] there are currently no publicly available datasets to assess these counts at the neighborhood or FMA level. Both the city and FMA are looking to address concerns around vehicles and camps being used by unhoused persons, as these are particular areas of concern for both fire and medical response. Generate the houselessness analysis using Portland Fire & Rescue's online spatial information dashboard, which combines call data with referrals and reports to city agencies to provide a general overview of incident trends and geographic distribution of FMA houseless population.

5 https://pdxscholar.library.pdx.edu/prc_pub/40/

# Step 2: Outreach

Outreach to firefighters and community groups informs FMA-specific assets and challenges, generates strategies, and establishes potential partners for collaboration and implementation. Outreach includes an inventory of relevant PF&R and community programs, organizations, interviews with key informants, and conversations with firefighters.

## Interview Methods

Key Informants can be identified according to the following areas of interest:

- Community health
- Disability & aging services
- Housing & houselessness
- Disaster preparedness
- Social services
- Faith-based organizations
- Schools
- Existing PF&R programs

Organizations can be identified by administration and station knowledge, online research, attending community events, and following lines of networks identified during these interactions and informant interviews. Building relationships with these organizations aids strategy development by identifying collaborators and implementers, and establishes a list of organization contacts for use by station firefighters.

Key informant interviews should be modified to the organization's specializations, but should address the following:

- Organization and individual duties and role in the community
- Identified community needs
- Identified community strengths and assets
- Other organizations meeting community needs
- Feedback on preliminary strategies

An interview guide of specific questions and the interview coding process is outlined in Appendix A. Results of interviews are to be relayed to firefighters during strategy development.

## Survey Methods

In conjunction with interviews, community surveys provide community member insight to inform the Station's decision making process, primarily advising on the community's interest in different engagement venues, as well as broad topics of concern which might draw the most community interest and attendance.

### Goals

The goals for surveying are to engage the community and elicit feedback around community contact with station employees, opportunities for education and outreach, priority actions around preventative strategies, and knowledge of community organizations relevant to station functions.

### Questions

Questions should be simple, understandable, answerable, and relevant to the community. Surveys should be able to be taken in less than 10 minutes. When discussing emergency incidents, trauma informed care guides[6] contribute to understanding the dynamics involved with asking questions relevant to potentially traumatic incidents. A trauma-informed lens includes the following considerations:

- Whether each question that relates to potential trauma is necessary
- Whether each question that relates to potential trauma is worded as sensitively as possible, and
- Whether these questions, and our presentation, offer the opportunity to engage as much as the survey respondent chooses, and disengage if they become uncomfortable.

Surveys were amended following feedback. An example survey is provided in Appendix A.

### Distribution

This survey was designed as a paper and digital written survey, with multiple choice questions and open-ended written questions. Distribution should include input from the general public, as well as particular groups not expected to be encountered at general community events:

- Community members who may have used 9-1-1 services or who have higher medical needs
- Low-income community members
- Houseless community members

In order to reach the diverse communities within the FMA, focusing on those for whom strategies will be most relevant, develop a list of survey distribution locations:

- Neighborhood Associations
- Contacts and networks from Key Informant Interviewees
- Free, local, community-serving events
- Door-to-door canvassing to identified high-risk areas

An example distribution plan is shown in Appendix A.

6 SAMHSA (Producer). (2013, September 11). Post-Disaster Retraumatization: Risk and Protective Factors [Online Video]. Retrieved from https://www.youtube.com/watch?v=1O7w6pu4BdI&feature=youtu.be

**Language**

The 500 Cities demographic analysis will aid in determining common languages spoken throughout the FMA. Non-English language-specific engagement strategies will be more important in FMAs where other language communities represent a larger population. These strategies will require:

- Securing professional translation and/or interpretation services
- The selection of community events held in languages other than English.

Non-English surveys should be distributed via key informant interviewees, and conducted by individuals comfortable with the language during door-to-door canvassing sessions.

**Analysis & Reporting**

Survey results should be shared with station firefighters during our focus group sessions, broken down into priorities by neighborhood. We recommend that in any survey report, while the local concerns shared will change, survey respondents' recognition and acknowledgement of the firefighters' work should be included, as a reminder that the public appreciates their services.

## Firefighter Structured Dialogue - Roll Call Sessions

Central to the Blueprint for Success is building a more comprehensive understanding of the issues station firefighters face working in their FMA. We designed a series of targeted questions to assess current conditions, barriers and opportunities, and potential strategies for implementation in their FMA. The process is designed/intended to be revised and updated; traditional qualitative methods such as surveys and written testimony don't allow for the same depth of information as structured dialogue. It allows participants to provide much more detail around nuanced topics, and when conducted in a way that meaningfully considers their ideas and concerns, it establishes trust and a willingness to participate.

"Roll calls" are morning meetings conducted by station personnel at 8 am. It is a time where they are all expected to gather around a table to discuss items related to their work, and we have found this to be an ideal time to conduct short (i.e. 30 min - 1 hour), structured dialogues. While our methodology followed a general structure, the topics we focused on were driven by the issues and concerns raised by Station 22. Each roll call typically includes an educational component (see Appendix A for examples), and follows-up with questions targeted to get a more comprehensive understanding of dynamics within the FMA.

**First Roll Call - Data Sharing**

Much of the call data that PF&R collects has not traditionally been aggregated and shared with individual stations, and as a result, many firefighters express interest to see what trends exist in their FMA. This first roll call serves as an opportunity to both educate firefighters on data trends in their neighborhood, and reflect on the implications and limitations of the data.

**Second Roll Call - Policy Discussion**

We have found that station personnel are often not involved in the creation or implementation of policy that affects their work or the general safety and health of their FMA. By presenting examples of decision-making processes and outcomes that affect their work, this roll call enables firefighters to consider their influence on decision-making processes and what barriers exist.

**Third Roll Call - Improving Engagement**

PF&R administration has articulated a goal to give individual stations more flexibility to change their operations in ways that suit their needs. This roll call provides the opportunity for firefighters to consider organizational structures and what they can change to improve their response.

**Fourth Roll Call - Strategy Review**

This roll call is typically longer than the previous three, as it involves going through individual strategies that have been formulated throughout the process in order to determine what strategies should be prioritized. It also enables firefighters to consider recommendations that may not have been presented. This session is described in more detail in the Strategy Development section of the FMA 22 Case Study.

## Step 3: Strategy Development

Strategy development incorporates data and outreach findings coupled with administrative capacity, ongoing efforts, and firefighter prioritization. Strategies emerge during every step of the process, and strategy development should be embedded in each step of data analysis, outreach, and strategy development.

Strategy development is an iterative process, and the identification of potential strategies and implementers is an excellent basis for conversation during outreach. Regardless of whether strategy ideas become action items, ideas from all levels of engagement should be considered.

Strategies should not be constrained to identified focus areas, but thinking about strategies in similar terms to the community asset inventory helps broaden the scope of potential actions. These categories include, but are not limited to:

- Community health
- Disability & aging services
- Housing & houselessness
- Disaster preparedness
- Social services
- Faith-based organizations
- Schools
- Existing PF&R programs

Strategies should also take into consideration ongoing projects, previously identified initiatives, partner organizations or the lack thereof, and firefighter needs and preferences. Example strategies are located in Appendix A, and strategies prioritized by process participants are coupled with implementers and timelines in the case study report.

## Step 4: Evaluation

Once strategy prioritization has been completed, it is important to consider how to assess the efficacy of different strategies after the process concludes. Evaluation measures should be based on implementer and beneficiary feedback as well as the assessment indices examined via the data analyses presented in this report. While this report has identified yearly performance reports as opportunities to conduct this assessment, specific strategies will identify specific measures of effectiveness as well. Metrics for assessment can include both quantitative (e.g. call data and social vulnerability indicators) and qualitative measures (e.g. dialogue or survey), and should consider whether conclusions drawn from these measures accurately assess outcomes of different strategies.

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# Portland Fire & Rescue

# Blueprint for Success

## Case Study of Fire Management Area 22

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# Introduction

## FMA 22 Case Study

This report presents findings from an applied methodology of data analysis, outreach, and strategy development in FMA 22. Area land use, demographics, livability and houselessness illustrate a snapshot of land usage and quality of life for those living within the FMA. Differences within subareas of the FMA and their respective challenges are explored to demonstrate how PF&R will need to vary its programming and outreach to suit different land uses, geographies, and variations in density and activity. The Social Vulnerability Index (SVI) provides a more in-depth predictive model of medical needs in the FMA. This data is then coupled with emergency medical and fire call responses in the FMA to determine patterns and trends, and a community asset inventory to identify existing organizations to potentially partner with on holistic community-led preventative strategies.

FMA 22 is located in north and northwest Portland, covering the neighborhoods of St. Johns, Cathedral Park, and Linnton. Its geographic, social, and development patterns present unique and varied communities. This case study identified five subareas within FMA 22 with distinct characteristics based on our findings from the application of the Blueprint for Success toolkit. We also present nine strategies to proactively address community risks and station functions, and a timeline upon which to implement them.

# Executive Summary

Using the process outlined in the Toolkit, ÆGIS NW identified a series of findings, which were then used to formulate various strategies (shown on the right of page 27) that PF&R Administration and Station members could elect to implement. The following sections list the highlights of our findings.

## Data Analysis

Socioeconomic status, disability and household composition, diversity, housing quality, and mobility are all associated with poorer health outcomes, with St. Johns displaying the highest vulnerability to these issues.

Prevalent health issues PF&R responded to included medical trauma, followed by breathing issues and chest pain.

Structure fires were most likely to occur around George Middle School and Roosevelt High, but the majority of these incidents were extinguished or "cold" on arrival. The next largest clusters are on the commercial district and a residential district on the 8500 blocks between Central and Hudson Streets.

## Community Outreach

Community Organizations that Station 22 can coordinate with include:

- St. Johns Center for Opportunity (SJCO)
- Multnomah County Health Clinic
- Neighborhood Emergency Teams
- Community of Hope
- AllOne Community Services

There are significant resource and capacity limitations in providing services for people in need of affordable housing, one-on-one support, or healthcare.

There is interest from local groups to bolster station involvement in community health and education, and there is interest in merging the goals of the station with other community partners including NET, the Multnomah County Health Clinic, SJCO, and others.

Among interview respondents, more than half had never met a local firefighter, and would like to through community events and workshops. Top issues of concern included house age and maintenance, earthquakes and landslides, and the health and wellness of older adults, houseless individuals, and people with disabilities.

## Firefighter Outreach

There are severe barriers for effective feedback and evaluation of response strategies including data collection redundancies, a lack of follow-up after responses, and miscategorization of incidents in triage.

Station 22 firefighters have capacity and willingness to employ community engagement and education targeting community health and safety.

There are many incidents that require support from non-emergency social and healthcare services that firefighters are unable to coordinate with due to a lack of contact information and centralized inventories of services.

Other city bureaus have not adequately consulted stations in the planning and development of infrastructure that directly affects their ability to respond to emergencies.

PF&R is in the process of changing its organizational structure to give stations more flexibility in their operations to adapt to the unique challenges of their FMA. Firefighters recognize and are in favor of this change, but there are still significant internal communication barriers between admin and stations including a lack of formal feedback channels, chain-of-command structures that discourage the upward flow of ideas and information, and policy that does not reflect the experience of responders.

| Strategy | Description |
|---|---|
| **Collaboration/Partnerships** | |
| MURP Planning Methods I | Partner with Portland State Master's in Urban and Regional Planning (MURP) faculty to roll out the Blueprint for Success to other FMAs |
| Internal Social Service Contact List | Share completed OHSU Social Services Contact List with Station 22 and develop an information maintenance plan. |
| Advocating for County Wellness Checks | Advocate for the renewed funding of Multnomah County's Home Health and Safety Assessments. |
| **Community Presence/Outreach/Education** | |
| Social Service Resources | Supply responders with hard copy information on location-specific social services. |
| Community Event Attendance | Further presence in community via event attendance. Educate other FMAs on event attendance. |
| Health and Safety Education | Offer health and safety education classes to the community and specific groups to address problem topics. |
| **Improving Relations & Communication** | |
| Internal Mental Health Resources | Increase PF&R staff mental health resources and work with area organizations to relay successful outcomes of emergency responses back to firefighters. |
| PF&R Internal Communication Mechanisms | Audit and restructure existing formal communication channels from stations to decision makers. |
| Notice and Comment for Development & Infrastructure Projects | Advocate for other agencies to provide meaningful opportunities for stations to provide feedback about projects that affect response. |

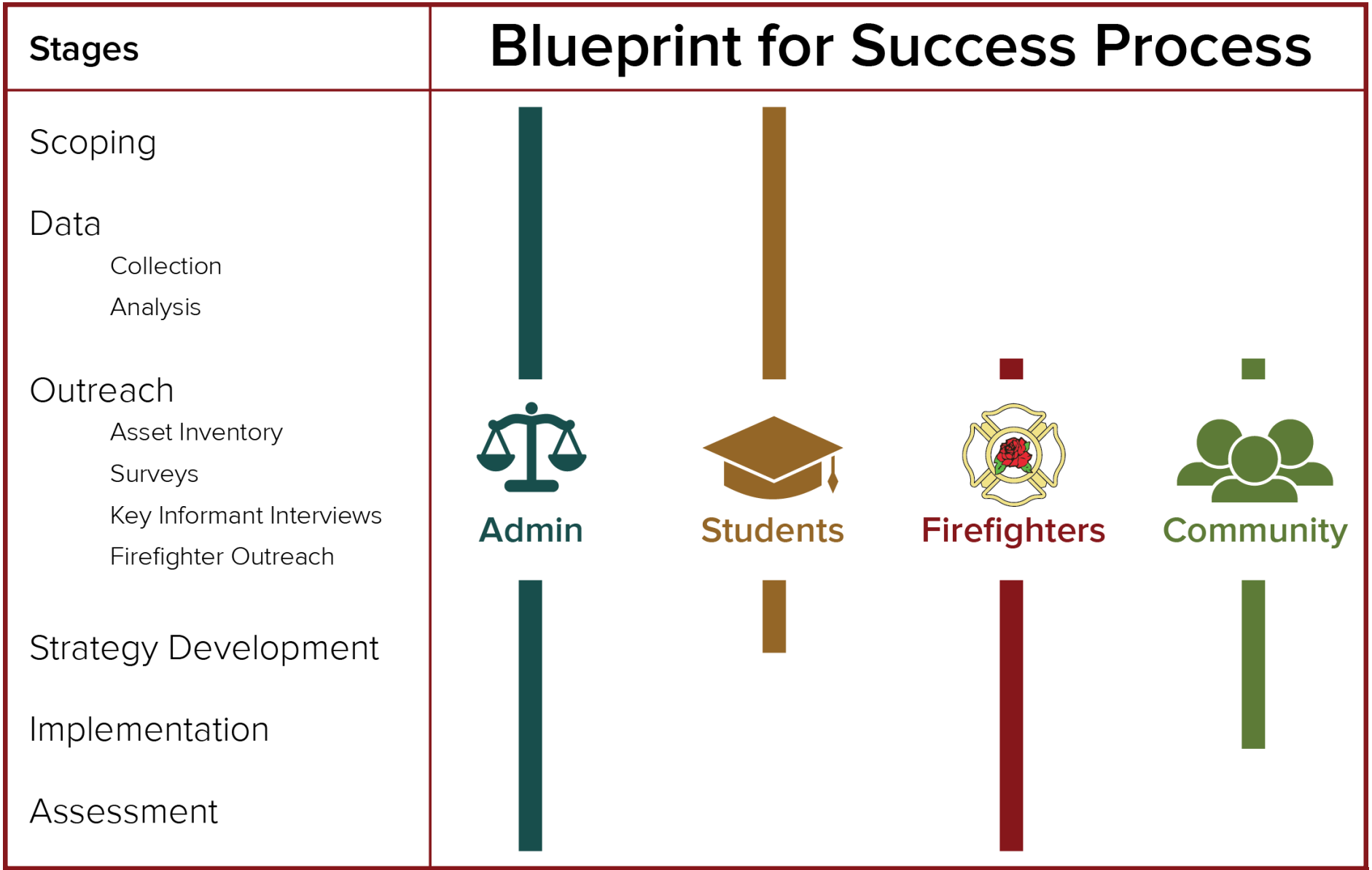



Figure 1: Blueprint for Success Process Stakeholders and Project Phases.

Participants in toolkit application included four categories:

**PF&R Administration (admin):** Fire Chief Mike Myers; Principal Management Analyst Mark Whitaker, followed by Robyn Burek; Senior Management Analyst Roy Lawson; and Management Analyst Justin Houck.

**Students:** Portland State University Masters of Urban and Regional Planning 2018 Workshop Group ÆGIS Northwest, comprised of Dani Schulte, Michael Kimble, Sean Edging, Tristan Sewell, and Thea Kindschuh.

**Firefighters:** PF&R Station 22, all shifts and station employees present during Roll Call work sessions and focus groups.

**Community:** FMA 22 community individuals, groups, and service providers. Specific participants are discussed in the Outreach section of this report.

The toolkit process as applied to FMA 22 is outlined below.

## Scoping and Data Analysis

Admin oversaw toolkit scoping, development, and implementation, and data analysis conducted by ÆGIS NW was conducted using admin-supplied data and processes, as well as outside research.

## Outreach

Outreach was conducted by ÆGIS NW with continued admin oversight, who connected students to existing outreach and asset inventory research being conducted. Outreach began with firefighters and community members reviewing the data analyses conducted by admin and ÆGIS NW, and then extended into soliciting strategy considerations from firefighters themselves as well as their surrounding community. Strategy implementers were intentionally involved during initial outreach efforts in order to establish contacts and strengthen relationships for successful strategy implementation.

## Strategy Development and Assessment

Incorporating data analysis and outreach to firefighters and the community, strategies were identified collaboratively and selected based on feasibility of implementation and prioritization by Blueprint participants. Assessment will be conducted by admin upon strategy adoption and implementation.

## Limitations

Noted project limitations include:

**Survey outreach:** We collected 69 surveys, reaching 0.4% of the FMA population. We intentionally did not sample randomly, as we were hoping to get input from people who may have called 911 in the past, so we asked our service providers to share the interviews in those communities. Over half of responses came from neighborhood associations, and digital outreach was largely unsuccessful. We hoped to attend a number of other in-person opportunities to share the survey, but schedule conflicts and illness interrupted two planned events. Sharing surveys in person is time consuming and costly, but is also far more effective than other outreach methods.

**Strategy development:** In deciding strategies, we were limited by the emergency prevention scope of the project, and the party responsible for implementing. Some ideas had strong support from the Station, but were ultimately out of scope as being primarily involved with emergency intervention, not prevention.

**Implementation:** We determined actions which would need to be led by parties outside PF&R to be out of scope, but tried to build partnerships where possible. In some cases where action by other bureaus significantly affect the prevention mission of this project, we proposed that PF&R Administrative Staff advocate for expansion of programs in other bureaus, and build partnerships around their mutual goals.

# Data Collection and Analysis Findings

Data analysis provided a more thorough understanding of area characteristics, context for strategy development, and a baseline for measuring program efficacy over time. Strategies emerged during every step of the process, and strategy development was embedded in each step of data analysis, outreach, and strategy development. This report presents area land use, demographics, and livability; the social vulnerability of community residents and distribution therein; emergency medical and fire call response types; and houselessness distribution.

## Urban Form

FMA 22 is the geographically largest FMA in Portland, with the fourth lowest overall population density of PF&R FMAs at 1100 residents per square mile, but this varies significantly within the FMA: the population density of St. Johns and Cathedral Park ranges from 6000 to 10000 people per square mile, which is nearly double that of Portland as a whole. (Figure 1) [Map of Population Density]

Forty-four percent of the FMA is parks and open space and another 40.4 percent is industrial land. Ninety-eight percent of the FMA's population lives within 2 square miles of residential zones (13 percent of total land area). Remaining land is mixed use (1.3 percent) and commercial (.85 percent). Housing is roughly sixty percent single-family residences and twenty percent apartments, as well as a mix of condominiums, duplexes, and other housing types. [1]

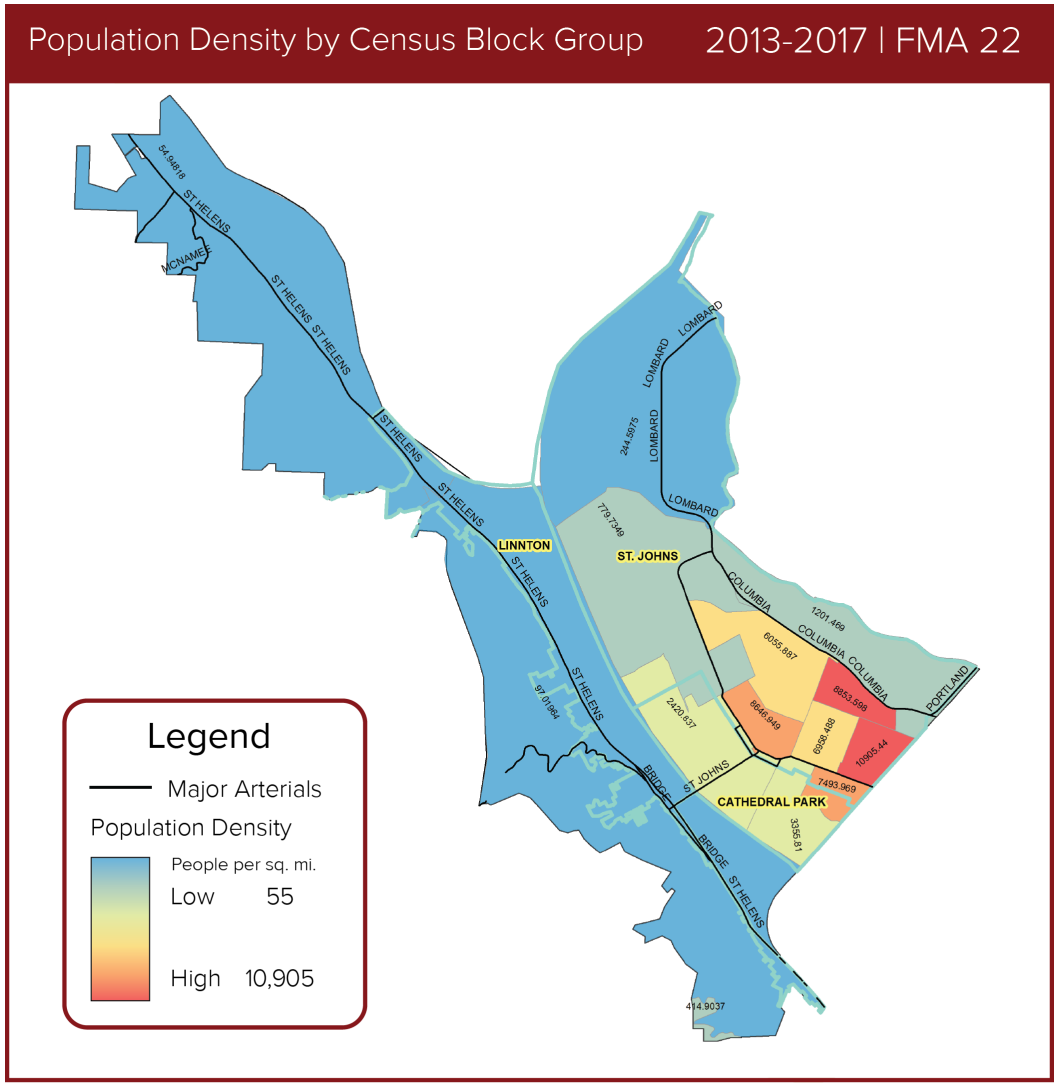
In addition to housing the majority of area residents, the neighborhood of St. Johns is the primary commercial hub for the FMA. Adjoining Cathedral Park encompasses primarily residences and the eastern waterfront, and across the St. Johns Bridge to the west side of the Willamette sits the neighborhood of Linnton, with approximately 300 houses distributed over 4,000 acres. One-fifth of the FMA (30 sq. miles) is designated rural, used primarily for parks and open space rather than residential development.

Major thoroughfares Lombard and Columbia pass through industrial corridors to North Portland from the southeast, and the St. Johns Bridge crosses west to the Willamette River to Route

1 Portland Fire & Rescue/United States Census Bureau American Community Survey (2015)

30. Sixty-three percent of the population of FMA 22 is concentrated in the St Johns neighborhood. The Cathedral Park neighborhood runs along the northwest waterfront. The largely residential Linnton is on the southwest side of the Willamette, interspersed with heavy industrial areas and between large greenspaces of Kelley Point and Forest Parks. Station 22 is equipped and trained to respond to this broad variety of urban and periurban conditions, supporting the dense urban center of St. Johns and Cathedral Park as well as maneuvering the steep hillsides and narrow winding roads of Linnton and Forest Park.

Five bus lines serve FMA 22, two of which are frequent service lines (#4 and #75). NW Connector links Linnton with downtown St. Johns as well. There are 188 stops within the FMA boundary, occurring primarily along five major thoroughfares - St. Helens Rd./State Rt. 30, Columbia Blvd., Fessenden St., Lombard St., and Willamette Blvd. Bike lanes are present along major and minor arterials such as Fessenden, Smith, Central, and Willamette Streets. Three of the City's Vision Zero designated high-incident traffic corridors are within FMA 22 - Lombard and Columbia Streets and Marine Drive. All three neighborhoods are close to industrial and traffic corridors, with Linnton particularly exposed to long-term pollution from industrial uses such as Port facilities. St. Johns is also heavily impacted by a high volume of truck traffic. While trucks would ideally be confined to the larger arterials on the periphery of St. Johns, many still travel through smaller sub-streets, which presents pollution risks and transportation complications within the residential areas of FMA 22. The City of Portland has developed a St. Johns Truck Strategy to combat this issue, but the plan was adopted in 2001 and remains only partially implemented.



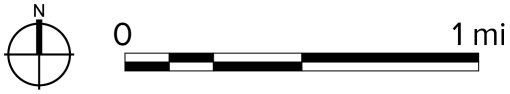




Figure 1: Population density (people/sq. mile) by block group in FMA 22. Created by Michael Kimble from Portland Fire & Rescue/U.S. Census Bureau ACS 2015

# Demographics

Racial and socioeconomic demographics directly influence social vulnerability and provide the basis for our equity analysis of FMA 22. When tracking program efficacy over time, it is important to also track changes in demographic distribution. Demographic information includes:

- Racial makeup by neighborhood compared to the City of Portland
- Income distribution, median household income, and percent under the poverty line
- Educational attainment compared to the City of Portland

## Racial Demographics

The racial makeup of FMA 22 (Table 1) is consistent with the rest of Portland; both the Cathedral Park and Linnton neighborhoods have larger white populations than the city as a whole. Non-white populations vary between the three neighborhoods: Linnton holds the highest share of white and asian populations while Cathedral Park shows a larger black population, and St. Johns contains a significantly larger latinx population than its neighbors.

| Neighborhood | St. Johns | Cathedral Park | Linnton |
|---|---|---|---|
| Total Population* | 13207 | 2795 | 629 |
| White | 74.7% | 87% | 87% |
| Black | 4.5% | 6.4% | 0.5% |
| Latino/a | 18.6% | 3.5% | 4% |
| Asian | 4.8% | 0.9% | 7.1% |
| Hawaiian/Pacific Islander | 2.8% | 0.6% | 0% |
| Native | 1.7% | 0% | 0.5% |
| Other/Two Races | 11% | 4.6% | 4.3% |

Table 1: Racial Demographics of FMA 22.
Source: ACS Community Survey/PF&R; Analysis: Michael Kimble *Total exceeds 100% due to some overlap between categories

## Income and Education

While 17.6 percent of FMA 22 households make $75,000 - $100,000 per year, another 11.1 percent earn less than $10,000 annually, with 1200 households under the poverty line. Median Household Income was $87,813 in 2015, above the city average. Linnton is the wealthiest neighborhood within FMA 22. Eleven percent of the FMA population has no high school diploma or equivalent, higher than the Portland average of 8.43 percent. As demonstrated later, income and educational attainment correlate with specific health outcomes in Portland. The socioeconomic theme indicators from the CDC's Social Vulnerability Index are poverty status, unemployment, household income, and high school diploma achievement.

In Portland, strong significant correlations between socioeconomic status and health outcomes related to healthcare access and cardiovascular and respiratory diseases exist. To a lesser, but still significant extent, diet-related health issues such as obesity, diabetes, and high blood pressure also increase with declining socioeconomic status. Analysis from Harvard researcher John Jay also suggests that level of education correlates most closely with high residential fire risk.

While this case study does not specifically recommend PF&R intervene in residents' education and employment outcomes, the relationship between low income and/or educational attainment and increased risks should be acknowledged.

# Livability

Area livability influences the health, happiness, and cohesion of a community. While these factors are not as easy to quantify as census data, livability characteristics identify apparent gaps in community development as well as strengths that may characterize a community. Livability for whom is an essential consideration given the potential for increasing livability to correlate with displacement. Livability components include:

- Walkability and bikeability via Walk Score or community observation and surveying
- Food access according to USDA Food Desert Criteria
- Connectivity

St. Johns is considered a partially walkable neighborhood according to WalkScore, although it scores lower than Portland as a whole. The area has two large grocery stores, one outlet store, and two smaller independent grocers, all located within St Johns and Cathedral Park. Isolated areas suggest increased car dependence. Residents of the Pier Park Apartment cluster, for example, are relatively isolated, as are parts of Cathedral Park, from Amherst through Kellogg Streets/Ida Avenue. Large portions of St. Johns meet USDA "food desert" criteria of low-income, low vehicle access, and limited accessibility to supermarkets, although smaller, predominantly ethnic food stores are sprinkled along Lombard St. Linnton's bike access is limited to stretches of US Route 30 and the nearest grocery amenities in Scappoose to the north, downtown Portland to the south, or across the bridge in St. Johns to the east.

Figure 2: St Johns Plaza. Photo Credit: Sean Edging

Figure 3: Commercial Establishments along Route 30. Image Credit: Sean Edging

# Social Vulnerability

The Center for Disease Control (CDC) Social Vulnerability Index (SVI) comparatively assesses the ability of a census tract to rebound from external stresses on human health. The CDC's 500 Cities Project provides city- and census tract-level estimates for chronic disease risk factors, health outcomes, and clinical preventive service use for the largest 500 cities in the United States. Following correlations between SVI and 500 CP health factors (See Appendix D), SVI severity and distribution show potential targeted health considerations for FMA residents. This social vulnerability analysis includes:

- Census tracts approximated to neighborhood boundaries
- Neighborhood SVI overall and by theme
- Primary health concerns based on 500 CP correlation
- Neighborhood trends, contrasts, and standout findings

Social vulnerability and health in FMA 22 was correlated by census tract for all tracts within city limits to observe patterns in relation to the rest of the city. In Portland, socioeconomic status correlated with overall vulnerability most out of the CDC's four themes. The high degree of correlation between the four themes in general indicates interrelationship or cascading impacts. Being below the poverty line correlates with populations of color, lack of access to a vehicle, disability, etc., and continued consideration of intersecting vulnerabilities is necessary.

In FMA 22, social vulnerability is highest in St. Johns (Table 2), which ranks within the top 25 percent most vulnerable census tracts in Oregon. St. Johns ranks most vulnerable in all four themes, but its vulnerability stems predominantly from Theme 3 - Minority Status and Language (87th percentile), and Theme 1 - Socioeconomic Status (76th percentile). In St. Johns, health and emergency preventative measures appropriate for minority and non-English speaking populations are most relevant.

Cathedral Park rates as the next most socially vulnerable for both Tracts 41.02 and 42. These tracts largely overlap with the St. Johns neighborhood on their northern sides, which draws their results closer to St. Johns.[2] Social vulnerability ratings for Cathedral Park are attributed to significant minority and low English proficiency populations. The other themes are of mid-ranking (~30-50th percentiles), with the exception of Household Composition and Disability, which ranked the lowest in Cathedral Park out of the whole FMA.

Linnton demonstrates very low vulnerability in three of the four themes, as well as overall. However, Linnton households contain moderate levels of disability, seniority, and single parents (40-50th percentiles), contributing to the moderate Household Composition and Disability score. Lastly, unincorporated Multnomah County served by FMA 22 is characterized by its household composition - specifically prevalence of older adults and people with disabilities (77th and 67th percentiles, respectively). The unincorporated area's only other moderately elevated ranking is Housing and Transportation (25th percentile), resulting from a high ranking in residents in group quarters (85th) and moderate rankings for mobile homes and lack of a personal vehicle (55th and 50th percentiles).

2 Neighborhoods' political boundaries, residents' understanding and identification of neighborhoods, and census tracts differ. This causes some alignment troubles for statistical analysis.

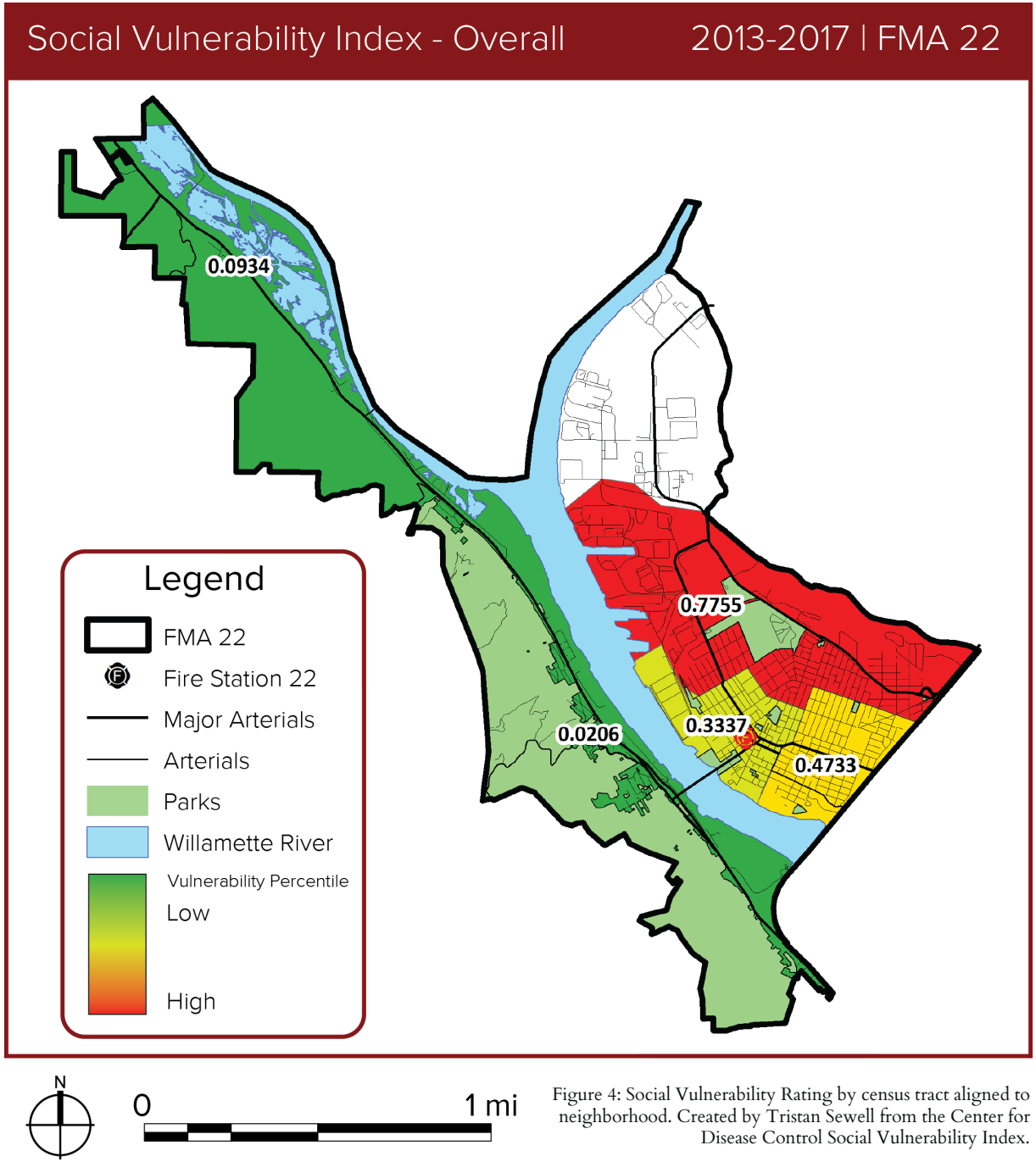



Figure 4: Social Vulnerability Rating by census tract aligned to neighborhood. Created by Tristan Sewell from the Center for Disease Control Social Vulnerability Index.

## 500 Cities Correlations with Social Vulnerability

By running a citywide correlation of the two CDC datasets, interrelationships emerged for potential targeted health programming and response. Through this analysis, all the 500 Cities health outcome crude prevalence data (rates of cancer, smoking, missed annual checkups, etc.) were correlated with the SVI and its four component themes – socioeconomic status, disability and household composition, diversity, and housing quality and mobility. While an analysis of each constituent variable of the four SVI themes versus each 500 Cities Project health outcome is possible, we deemed the themes sufficient. This analysis was done at a city level because its lessons should be applicable to any FMA and because that offers a stronger statistical backing than an FMA-level analysis.

Increasing social vulnerability correlated primarily with a strong presence of issues related to healthcare access – lack of insurance and out of date checkups and preventative care of any kind. This is particularly true for residents over the age of 50. Vulnerable populations also experience respiratory and cardiovascular problems – asthma, chronic obstructive pulmonary disease, strokes, and coronary heart disease. Unsurprisingly, an

| Census Tract | 41.01 | 41.02 | 42 | 43 | 71 |
|---|---|---|---|---|---|
| Approximate Neighborhood | St. Johns | | Cathedral Park | Linnton | Multnomah (unincorporated) |
| Overall Vulnerability | 77.6% | 47.3% | 33.4% | 2.1% | 9.3% |
| Socioeconomic Status | 76.0% | 50.9% | 31.1% | 1.1% | 6.8% |
| Household Composition and Disability | 60.8% | 20.5% | 13.2% | 28.0% | 39.9% |
| Minority Status and Language | 87.4% | 82.2% | 66.4% | 14.4% | 3.3% |
| Housing and Transportation | 52.2% | 36.0% | 41.0% | 5.1% | 25.7% |

Table 2. FMA 22 Social Vulnerability Index Statewide Percentile Ranking by Census Tract.
Source: CDC Social Vulnerability Index, 2016; Analysis: Tristan Sewell

increase in smoking prevalence is also correlated, along with no leisure exercise, and poor sleep. The only health outcome which declines with increasing vulnerability is binge drinking. Lower socioeconomic status appeared to be the primary driver of social vulnerability in Portland, and as such the pattern of significant correlations follows the SVI aggregate closely, with the addition of a declining cancer rate. These two negative correlations – declining binge drinking and cancer rates, lead to a hypothesis of some afflictions impacting the well off more than the vulnerable. More simply, vulnerable populations may never receive a cancer diagnosis due to lack of healthcare access or they may die from other causes first.

The other SVI component themes decreasingly contribute to vulnerability in Portland, but all retain significance and a strong correlation (~0.8+). That said, Theme 4, housing quality and vehicular mobility consistently presents the lowest strength, indicating that it is likely subordinate to elements of the other themes (ex.: residents of mobile homes or people without cars are likely to be of lower socioeconomic status). Please view the correlation table and summary in appendix D for further information.

# Emergency Call Data Analysis

Consistent with nationwide trends, the vast majority of PF&R responses are to medical calls. During fiscal year 2015-16, seventy-seven percent of emergency service calls in FMA 22 were due to medical emergencies, with seven fire deaths since 2012. This analysis examines fire and medical calls separately and presents spatial and topical trends from emergency response data for FMA 22.

## Medical Calls

The spatial distribution of medical calls largely correlated with increased population density. The most prevalent calls in FMA 22 were medical traumas (Figure 8), closely followed by high-acuity breathing calls (1,073 and 1,071, respectively) then particularly high-acuity chest pain calls. The next cohort included sickness, unconsciousness, abdominal issues, traffic incidents, and assault. Of these, only traffic calls show more high-acuity events than low-acuity events. Between 2013 and 2017, forty percent of medical incidents were high-acuity: predominantly cardiac and respiratory symptoms, followed by traffic accidents, unconsciousness, and seizures (Figure 5).[3]

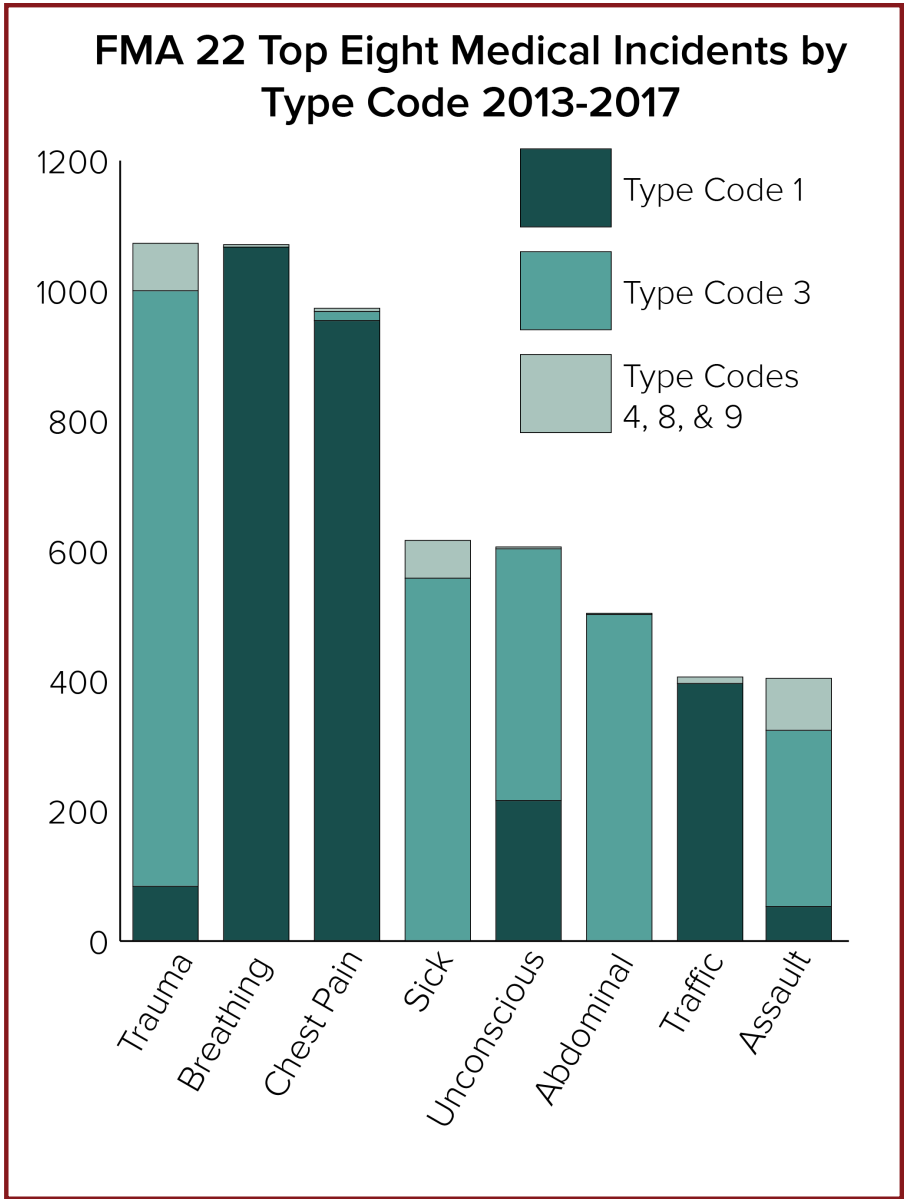



Figure 5: Top 8 medical service calls for FMA 22: 2013- 2017

3 This initial analysis is based on categories set by Portland Fire & Rescue at the time of initial dispatch. Therefore, there may be inconsistencies between the reported severity and actual severity of the incident. Further call code grouping and categorization as well as pairing with potential strategies with be developed through firefighter engagement.

## Fire Calls

Fire call location also largely correlated with population density, but provided clear visualization of area characteristics and patterns. This visualization was coupled with John Jay's fire risk predictions model to identify high-risk areas.

Between 2013 and 2017, there were a total of 668 fire or fire-related incidents within FMA 22; as shown in Figure 6, the most common situations were vegetation fires (131 incidents), wiring and equipment problems (128 incidents), structure fires (99), exterior garbage fires (62), and combustible/flammable substance spills and leaks (49).

Structure Fires were the third most common fire type with 99 events. The highest concentration of structure fires occurred in and around George Middle School (eight events) and Roosevelt High, however the majority of these fires were 'Cold' upon arrival. The second largest cluster occurred around the FMA commercial district, likely as a result of heavy commercial activity. The only exceptional cluster can be seen on the 8500 blocks between Central and Hudson Streets - this area is entirely residential and has no major land use or institutional focus that might explain heavy concentrations of structure fires.

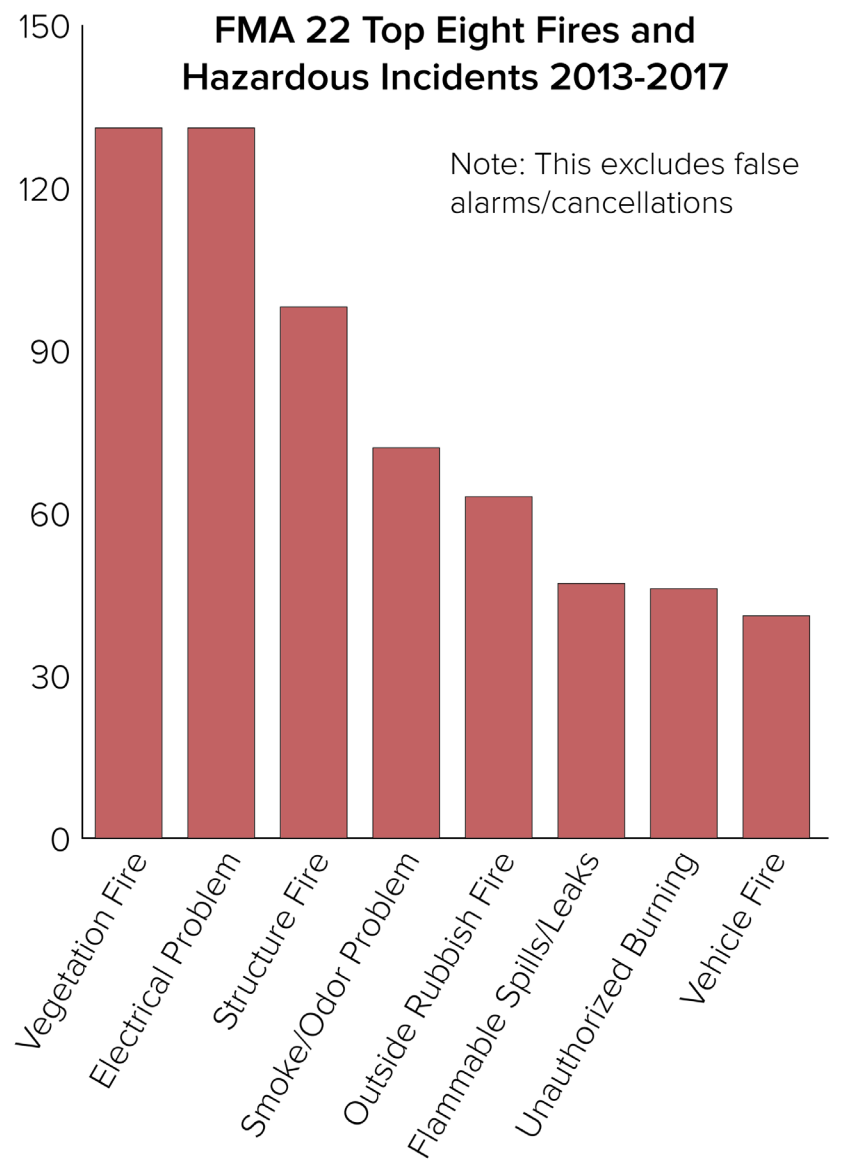
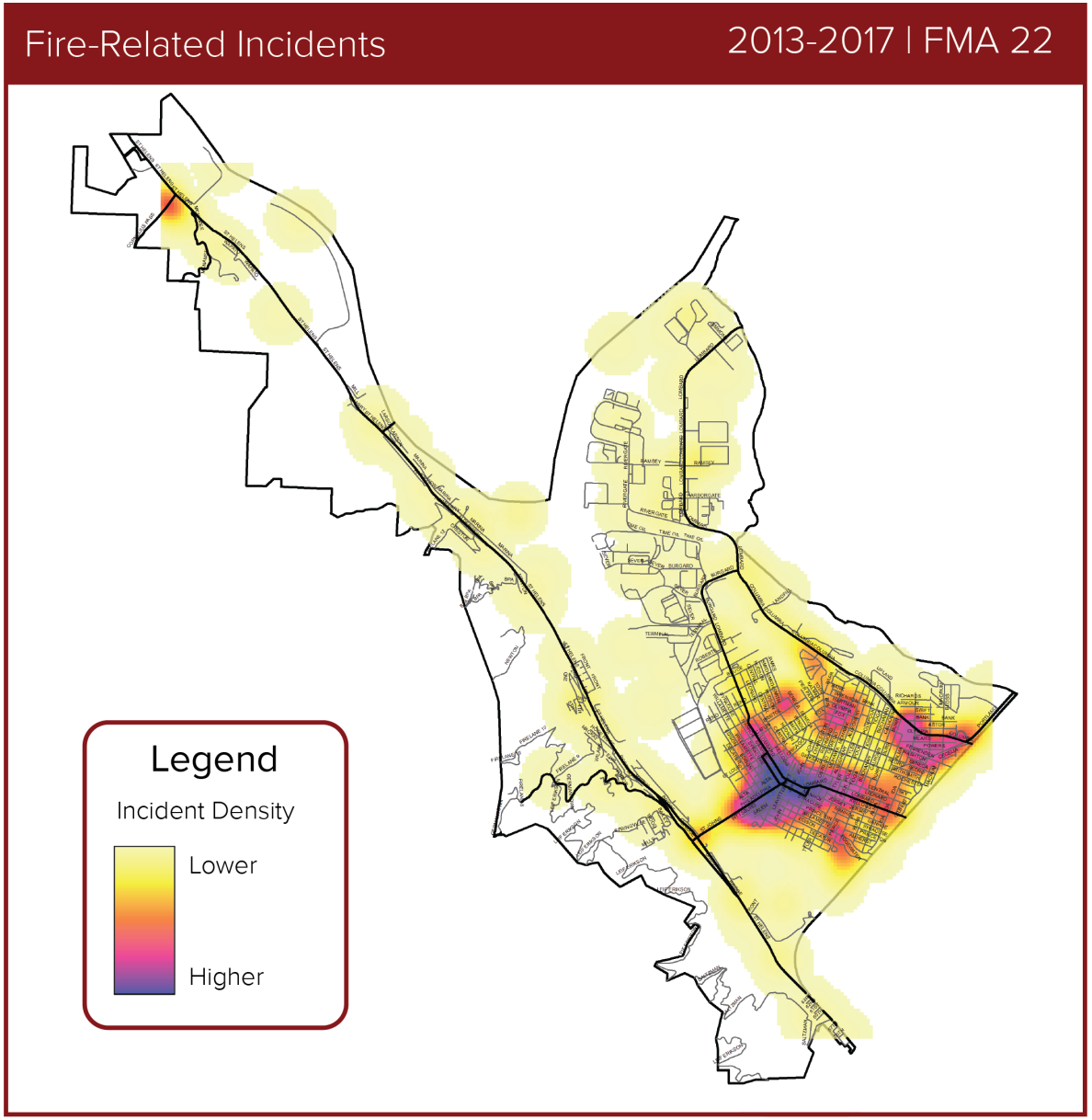



Figure 6: Top 8 fire-related emergency service calls for FMA 22: 2013-2017

Fire incidents were heavily concentrated around the St. Johns commercial district , shown in Figure 7 with incident density radiating approximately ½ mile in every direction along major thoroughfares (Lombard and Philadelphia Streets). Other significant incident clusters occurred in the following locations:

- Between Oswego and Charleston Avenues on the 9000 and 10000 blocks;
- The 9600 block between Seneca and Smith Streets;
- The area bounded by Columbia Blvd., Columbia Way, and Midway Ave. (This last cluster may be disproportionately affected by a large number of incidents at George Middle School)



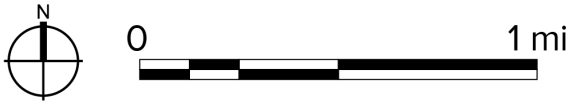




Figure 7: Fire Incident Density in FMA 22. Created by Michael Kimble, data courtesy of PF&R

## Fire Risk Predictive Model

Harvard researcher and PF&R contact John Jay is currently producing a fire risk analysis for the Portland Metro Area. Study data was provided through Jay and PF&R. For the purposes of this analysis, only tax lots with High (90-97th percentile) and Highest (98+ percentile) scores were mapped. Highest risk clusters according to Jay's methodology were visible at the following locations:

- A one-block radius around the junction of Mohawk and Hudson streets: while tax lot data shows recent sale prices far lower than assessed value and many buildings in the area are upwards of 80 years old, low activity and minimal signs of neglect suggest further analysis is needed.
- Along Lombard Blvd. from the junction at Ivanhoe & Philadelphia to N St Johns Ave - this area is the most spatially extensive, and contains both the commercial district of the FMA and several multi-family housing structures, including the Schrunk Riverview Tower. This finding is therefore most likely a function of acute density - both of activity and occupancy.
- The block constrained by Seneca, Trumbull, Pier Park Place, and Bristol Ave. - while this block displays similar characteristics to cluster 1 above (such as depressed sale price relative to market value and age of property), further study is required to assess these results.
- Fessenden/Columbia/Macrum St. Triangle - relative to its size, this cluster demonstrates a high number of fire incidences during the study period. Call data show that several of these fires were rubbish/dumpster fires, though two structure fires also occurred. This area is also among the least densely developed of the highest risk clusters.
- Smith/Ida/Gilbert/Rochester St - Northeast of Roosevelt High school.

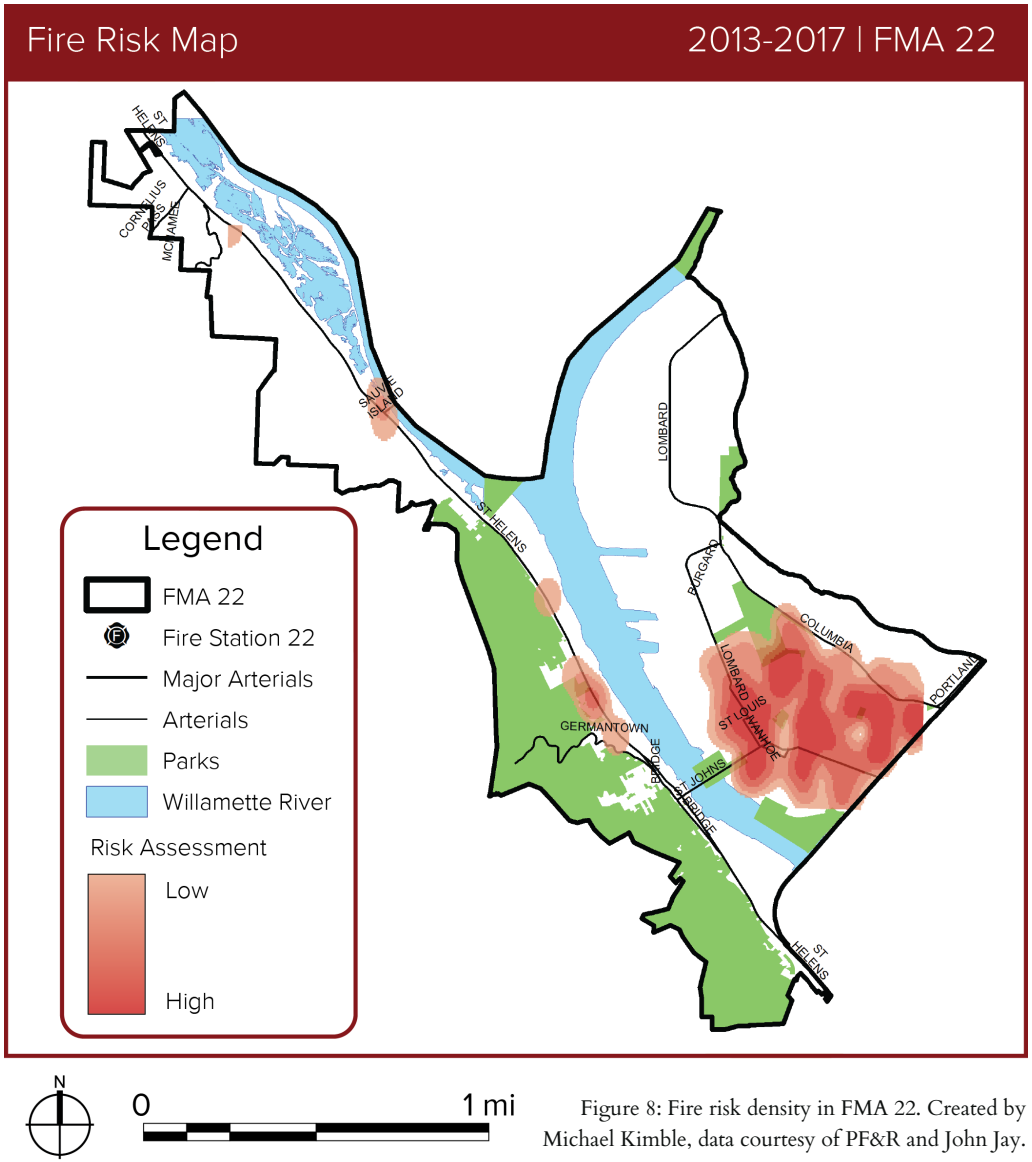



Figure 8: Fire risk density in FMA 22. Created by Michael Kimble, data courtesy of PF&R and John Jay.

## Houselessness

Since February 2017, there have been a total of 149 emergency calls related to houseless persons within FMA 22. Of these, 60 were medical calls, 27 service calls, 23 good intent reports, and 15 fires (Figure 2). One uncategorized situation was also reported, the details of which are unknown. There were a total of 85 temporary houseless residences reported within the FMA between January 2015 and April 2017; of these, slightly more than half (43) were vehicles, 23 were camps, and the remaining 19 were unclassified forms of shelter.

All reported encampments in FMA 22 are situated within either the Cathedral Park or St. Johns neighborhoods, and only 7 of the 149 total calls occurred in Linnton. Camp locations are overwhelmingly located near parks, open spaces, or unimproved/vacant areas. The only exceptions to this trend are small clusters around the secondary commercial corridor along Lombard St. and another on N Ramsey Blvd.

As with fire and medical calls generally, those involving houseless persons are most clearly clustered around the FMA's commercial district; however, none of the calls within this cluster were fire related. Fire call locations pertaining to houseless persons predominantly occur in isolated or unimproved areas such as traffic islands or near expansive lots such as parks or houses of worship. There is no substantial link between houselessness-related call volume and time of year.

The commercial district also shows a notable disparity between calls and encampments - while the majority of calls in this area occurred along Lombard St and its connecting streets, there are no camps there. The inverse is true as well - there is a large cluster of encampments 3-4 blocks southwest of the commercial district in Cathedral Park but very few of these camps show any reported calls to their location. This 2-3 block 'buffer' between camp and 9-1-1 call locations is not nearly as prevalent elsewhere in the FMA. As the details of each call are not included in the dashboard dataset, this finding merits further investigation.

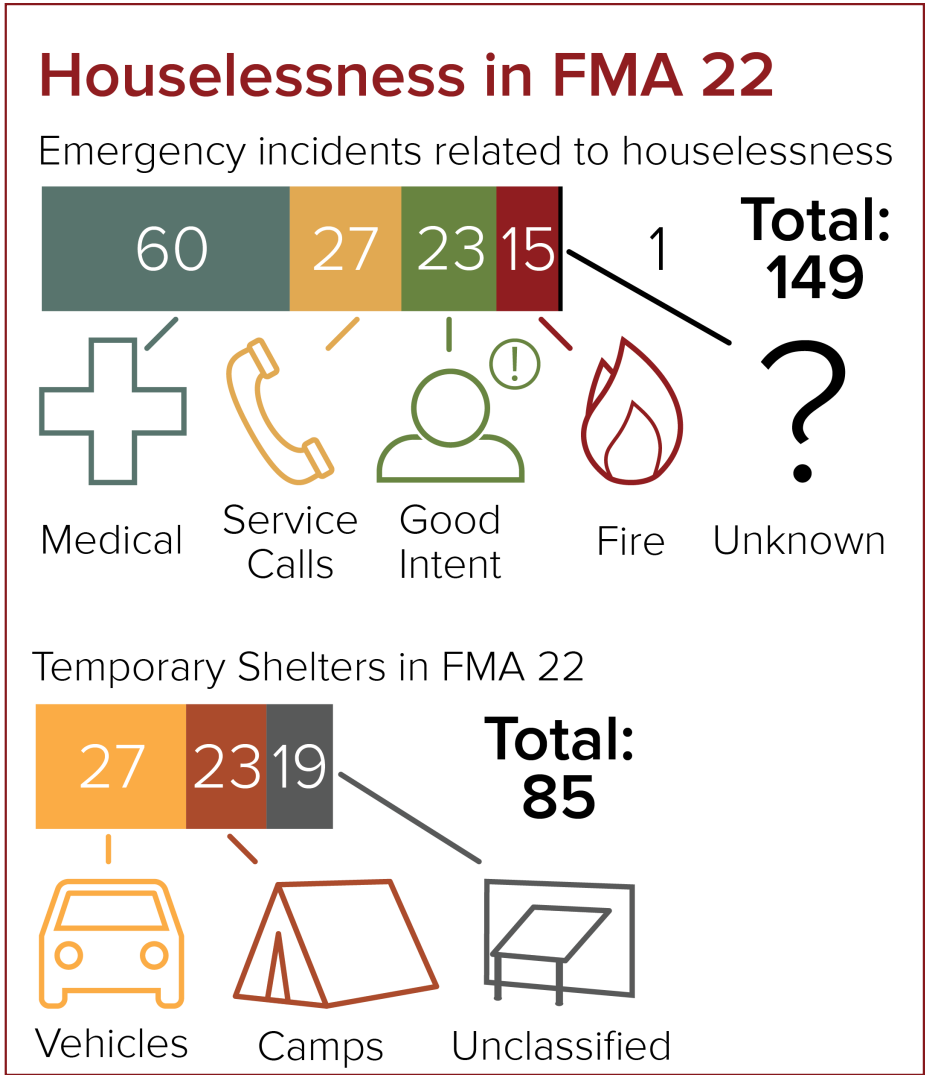



Figure 9: Houselessness in FMA 22. Created by Sean Edging, data courtesy of PF&R.

# Outreach Findings

Outreach to firefighters and community groups informed FMA-specific assets and challenges, generated strategies, and established partners for collaboration and implementation. Outreach included an inventory of relevant community groups, interviews with key informants, and conversations with firefighters. Participants were identified according to the following areas of interest:

- Community health
- Disability & aging services
- Housing & houselessness
- Disaster preparedness
- Social services
- Faith-based organizations
- Schools
- Existing PF&R program

## Community Asset Inventory

### PF&R Programs

**Community Health Assessment Team (CHAT)**

Due to the prevalence of medical calls received throughout PF&R, the department is seeking preventative medical interception to reduce non-emergency use of the emergency call system, as well as reduce the need for emergency response throughout the city. This will assist in PF&R maintaining current response times in light of growing populations.

The CHAT program was developed during FY 2015-16 to work with high utilizer groups (HUGs) to identify health and social service resources that will reduce their dependence on the emergency medical system for care. The CHAT program tracks 30 HUGs utilizing 9-1-1 more than three times per month to identify interventions and services needed.

**Station and Community Partnership Activities**

Each fire & rescue station plays an active role as a neighbor in its community. Station personnel interact with neighborhood associations and other community organizations throughout their FMA to varying degrees. All of Portland Fire & Rescue stations conduct station tours for school groups, families, and other citizens on request. During business hours, the public may also come to stations to get their blood pressure checked; find out about smoke and carbon monoxide alarms and earthquake and other disaster preparedness; and learn about the fire & rescue resources that protect their neighborhood. Stations also serve as no-consequence drop-off points for illegal fireworks, needles and sharps found in the community, and serve as a safe-haven for newborns. Outside the station, firefighters install smoke alarms on request at homes in their FMA. They also visit schools to give fire safety talks to students and partner in school programs such as Adopt-a-School and the Start Making A Reader Today (SMART) reading program.

## Community Organizations

There are a variety of community organizations that provide services that support PF&R's goals to reduce emergency incidents and improve services and outcomes. These organizations can provide services that directly advance that goal, either through medical assistance or emergency preparedness, or they can indirectly advance that goal by increasing the stability and livability of the area, especially for the most vulnerable residents. The following list are a few that operate within the FMA.

### St. Johns Center for Opportunity (SJCO)

SJCO is an equity-oriented, economic development and community building organization with a vision for "a thriving, diverse, and just community where everyone has access to affordable housing, benefits from economic opportunity, and is civically engaged". To support this vision, they engage in community capacity building, promoting access to healthy food and affordable housing, and connecting organizations to resources and information that help their work.

### Multnomah County Health Clinic

This clinic, located at 9000 N Lombard St is one of seven facilities throughout Multnomah County that offers care to all Multnomah County residents, including low-income and uninsured individuals. They offer services including adult care, children care, women's health, reproductive care, mental health, refugee screening, pharmacy, and dental care.

### Neighborhood Emergency Teams (NETs)

These teams are comprised of Portland residents trained by Portland Bureau of Emergency Management and Portland Fire & Rescue to provide emergency disaster assistance within their neighborhoods. Members are trained to help and train others, save lives, and mitigate property damage without putting themselves in harm's way until professional responders can arrive. FMA 22 has two NET teams - one in the Linnton neighborhood and one in St. Johns and Cathedral Park.

### Community of Hope

This organization is a collaboration of the faith-based network in North Portland that provides provides shelter, stability, and training to houseless single-parent families. Their program seeks to help individuals hold a job, manage finances, prevent addiction, develop positive relationships, improve parenting skills, and make healthy life choices, all within the context of community life.

Image Credit (Top to Bottom): SJCO, Mult. Co., Portland Prepares, and Community of Hope

## Informational Resources

Despite widespread need, the Portland area lacks a comprehensive social service provider catalog in an effective format for responder use.[4] 211.org provides statewide local resources for food, health, crises, reentry, veteran services, and more, and is the recommended resource by Multnomah County and others. However, 2-1-1 has a large service area and low capacity for quick and consistent response, and is not a primary resource for service providers or utilizers.[5] Street Roots is another area organization working to serve Portland's transient, houseless, and extreme poverty communities, in part by printing the Rose City Resource guide to offer a hardcopy service directory to those in need. This booklet is free and updated every six months, but requires regular re-stocking and information changes frequently. Emergency responders do not currently leave additional information during responses, other than to call 9-1-1.

4 Frequent subject of conversations both within and outside PF&R
5 Expressed by firefighters, service providers, and individuals seeking services

| Organization | Community Organization | Focus Area |
|---|---|---|
| Anarres Infoshop | 7515 N Alma Ave. | Anarchist community and event space; free hot meals Thursdays 4pm-6pm |
| Compassion North Portland | www.allonecommunity.org<br>contact via interest form | Quarterly free health and dental clinics in North Portland, locations vary |
| North Portland Emergency Warming Shelter | 4775 N. Lombard St.<br>www.allonecommunity.org<br>contact via interest form | Emergency warming shelter, open on nights when the temperature is below freezing |
| Neighbors Helping Neighbors | neighborshelp12@comcast.net | All-volunteer group in St. Johns providing garbage collection, snack and basic supplies provision for homeless camps. Currently looking for locations of camps to serve |
| Ride Connection | 503-226-0700 | Provides transportation (medical, groceries, work) for seniors (60+) and people with disabilities |
| Rivergate Community Church | 503-285-3138<br>4737 N. Lombard St. | North Portland church; free hot meals Thursdays 5pm-6pm |
| St. Johns Food Share | 503-286-0750<br>8100 N Lombard St. | Food pantry, no income or residency restrictions:<br>Mon, Wed, Fri: 9:00am – 12:30pm<br>Friday Evenings 5-7PM |

Table 3. Additional community organizations operating in the St. Johns area.

# Interviews

Interviews were conducted to identify available area resources and potential implementation partners. Ten interviews were conducted with area representatives. In addition to informing our strategy development, most of these local community members expressed interest in remaining connected with Station 22 past the toolkit application process.

On the following pages are key findings from the interviews detailing feedback on community needs and proposed solutions. Our interview analysis process included 25 codes; for the purposes of this report, we will focus on the concerns raised by a variety of interviewees, and highlight some concerns which were raised by fewer participants but were highly relevant to firefighter concerns. Below are key findings from the interviews detailing feedback on community needs and proposed solutions. Our interview analysis process included 25 codes; for the purposes of this report, we will focus on the concerns raised by a variety of interviewees, and highlight some concerns which were raised by fewer participants, but which were highly relevant to concerns raised by firefighters.

| Interviewee | Community Organization | Focus Area |
|---|---|---|
| Art Balk | Schrunk Tower (Home Forward) | Housing |
| Adriana Cardenas & Blanca Perez | Multnomah County Health Clinic - North Portland | Community Health |
| Chris Glanville | St. Johns and Cathedral Park NET Team | Disaster Preparedness |
| Lindsay Jensen | St Johns Center for Opportunity (SJCO) | Community Service |
| Pastor Carren Woods | Rivergate Community Church; AllOne Community Services | Faith-Based Community Service |
| Sarah Taylor | Linnton Neighborhood Association; Linnton NET Team | Disaster Preparedness |
| David Woodhouse | PF&R - Fire Marshal's Office | Emergency Prevention |
| Tremaine Clayton | PF&R - CHAT Program | Emergency Prevention |
| Kim Kosmas | PF&R - Public Education | Emergency Prevention |

Table 4. Individuals and Organizations Interviewed as Key Informants. Interviewer: Dani Schulte

| Interviewee | Availability | Services |
|---|---|---|
| St. Johns Center for Opportunity | 9am-5pm Tuesday-Friday | Clothing; computer access; minor resource access advice |
| Multnomah County Health Clinic | 8am-6pm Monday-Friday | Primary medical (no turn away policy); mental health and addiction counseling; case work; food; free community health activities; etc. |
| AllOne Community Services | Contact: info@ allonecommunity.org | Small quantity permanent housing; quarterly free mobile clinic; emergency warming shelters; free meals at member houses of worship |

Table 5. Local organizations interviewed which provide houseless services (not exhaustive). Interviewer: Dani Schulte

## Houselessness

This concern was brought up directly by five of our interviewees, three of whom provide services to houseless community members. These service providers are listed in Table 5.

Schrunk Tower Community Engagement Coordinator Art Balk noted that in public housing like Home Forward, which Schrunk Tower is part of, there is far more need than capacity. Some people remain on Schrunk's waiting list for 3 to 4 months. While the Multnomah County clinic provides whatever information they can when patients ask, they are not housing specialists, and questions about housing options are hard to answer. Interviewees were community members and service providers willing to help houseless community members, a few of them noted a remaining stigma that keeps the City from taking the kind of urgent action needed to address the needs of the growing population of houseless individuals in Portland. Many of those interviewed weren't sure where to start in supporting that community, but Pastor Carren Woods of Rivergate Community Church said that her church's strategy is to "just do it".

The primary method proposed to support houseless people is advocating for adequate funding of public housing programs, including appropriate wrap-around services.

Figure 10: The opening of the Community of Hope Shelter. Image Credit: Community of Hope

## One-on-One Support

Case work or less formal one-on-one support was noted as a community need by five interviewees. While these programs exist, many are spread thin - Multnomah County Community Health Workers Adriana Cardenas and Blanca Perez noted that the County clinic's case worker takes 10-12 cases at a time, and received about 65 referrals in the past month, not including walk-ins.

Interviewees noted overlap in the PF&R CHAT program, the county high frequency callers program, and Multnomah County clinic services. PF&R employee Tremaine Clayton, in charge of the CHAT program, juggles the duties of case worker, public health researcher, social services network developer, and community education resource developer in his role.

## Emergency Preparedness

Neighborhood Emergency Teams (NETs) were a primary target of outreach, and four interviewees addressed emergency preparedness during their interviews. These community teams prepare for environmental emergencies, addressing particular concerns based on local risks and neighborhood interest. Existing emergency preparedness work done by PF&R includes community education via flyers and events, training of NETs, and training of firefighters to respond to those emergencies. PF&R Senior Fire Inspector Kim Kosmas noted that NETs have been leveraged for minor incidents, such as to supervise downed power lines during wind storms. NET representatives were open to collaboration, and noted that they're "trying to figure out how to marry goals of NET with the goals of the station."

A common worry of NETs in both neighborhoods is the hazards associated with nearby industrial operations. The Linnton NET representative cited a 2015 traffic accident which resulted in an explosion as one of these risks, and expressed concern that the community does not believe that the industrial facilities are taking sufficient safety precautions. During focus groups, the firefighters reported that they are given regular tours of those safety precautions, and aren't concerned. While opening a dialogue between industrial facilities and the community was one considered strategy, Station 22 considered that to be the responsibility of the neighborhood and the industrial facility operators, potentially via the Neighborhood Association contacting those facilities, and not within the responsibilities or expertise of PF&R.

## Training and Community Education

Community education activities were brought up at multiple sessions with Station 22; many interviewees supported the Station's ideas, and had additional suggestions to share. These included:

- Community education events at Schrunk Tower (when to call 9-1-1 & other resources, home fire safety) - Art Balk
- Partnering with NET Teams to provide trainings that provide reciprocal value, useful to support the Station's capacity, and also in case of natural disasters - Chris Glanville, NET
- Collaborating for joint school-station fire drills - EMS Specialist Clayton

We recommend Station 22 contact these community members to decide next steps on ideas they want to pursue, as well as other ideas which might be relevant to their work.

## Community Health and Wellness

Programs that involve Station-level engagement on community health and wellness topics were supported by three of the individuals interviewed, with particular interest in partnerships with Schrunk Towers and the Multnomah County Health Clinic. Partnering with the Multnomah County clinic, Station 22 may be able to serve their target audience of low-income community members who have greater than average medical health care needs with health and wellness activities. They shared a resource guide with us to address hoarding,[6] a concern raised by Station 22 for its association with fire risk. Additionally, Art at Schrunk Tower and the staff at SJCO are valuable contacts for navigating local resources for houseless, low-income, and community members with disabilities. Community health ideas included:

- Partnering with Multnomah County Clinic on community health issues - Adriana Cardenas & Blanca Perez
- A health fair at the station, coordinated with education department staff presence so the station does not need to go out of service - EMS Specialist Clayton
- Work with Compassion Connect to get a mobile clinic at Schrunk (currently 4 clinics/year in North Portland) - Pastor Carren

6 Multnomah County hoarders resources: https://multco.us/ads/hoarding-resource-list

## Limited Resources

This was a common thread across most interviews - seven had seen critical prevention resources cut, expanding the workload for firefighters who act as the city's last safety net. The limited resources of the Home Forward public housing agency has led to insufficient staffing at Schrunk Tower, which serves older adults and people with disabilities living independently, who then rely on 9-1-1 outside 9am-5pm Monday-Friday office hours. Tremaine shared that one person he works with recently died from alcoholism, even with his extensive support, after three attempts to access over-capacity substance abuse programs. Community needs such as housing, substance abuse, mental health services, and case worker support are chronically underfunded.

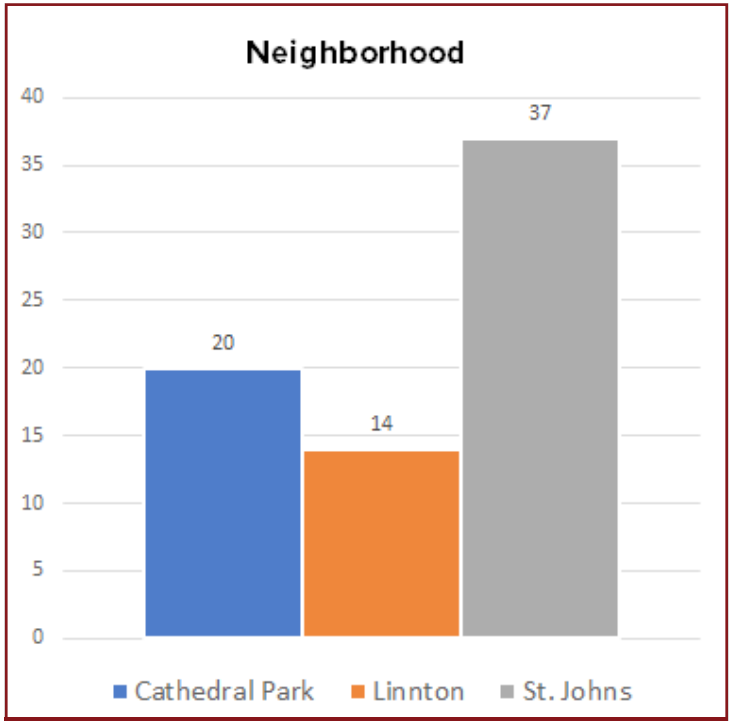



Figure 11: Respondent Neighborhood of Residence

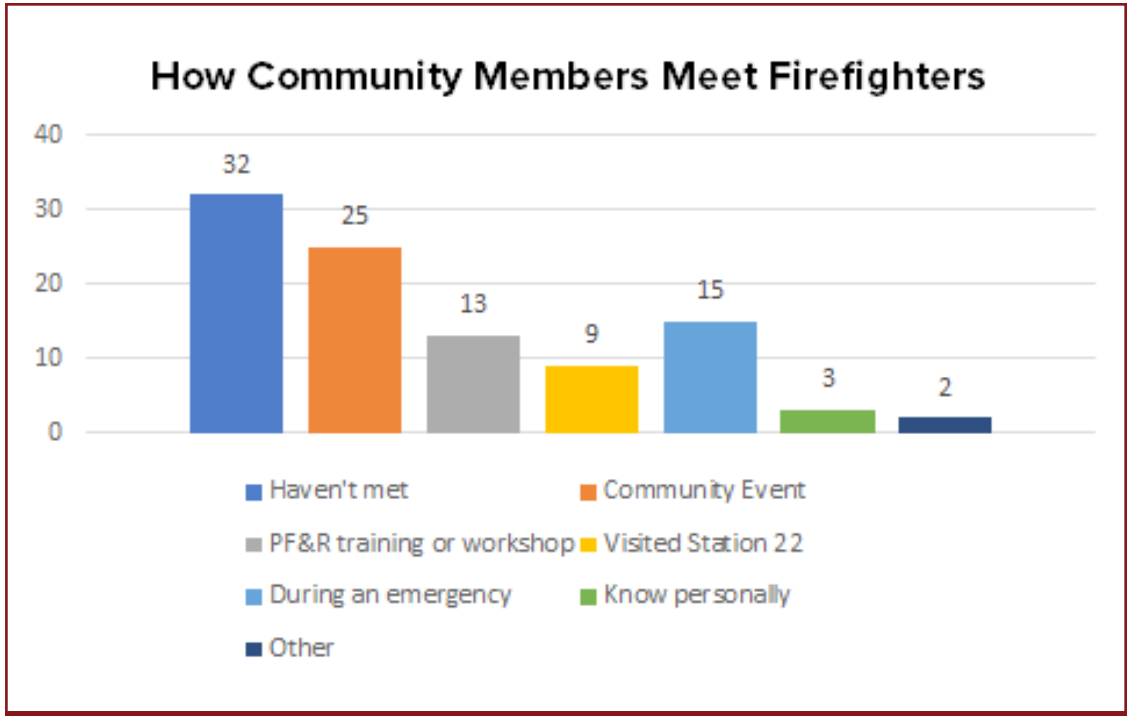



Figure 12: Respondent Interactions with Firefighters

# Survey

A brief community survey was distributed at meetings of each neighborhood association within FMA 22, as well as door-to-door at a Section 8 housing complex in northern St. Johns to reach a community with higher levels of social vulnerability. Key informants were also asked to distribute the survey within their personal and professional networks. As a result, St. Johns is most heavily represented in survey responses with 37 respondents (see Figure 1); 20 respondents listed themselves as residents of Cathedral Park and 14 were from Linnton.

Survey results show that slightly less than half of respondents had previously interacted with Station 22; of 69 total survey responses,[7] 32 had never talked to a firefighter. Many of those that had talked with firefighters did so in multiple settings - the 71 respondents gave a total of 99 responses (see Figure 2). The most common occasions that respondents had met firefighters were community meetings (25 times), in regards to an emergency situation (15 times) and trainings, workshops, or other presentations (13).

7 Respondents were allowed to answer multiple times if they had met a firefighter in more than one situation.

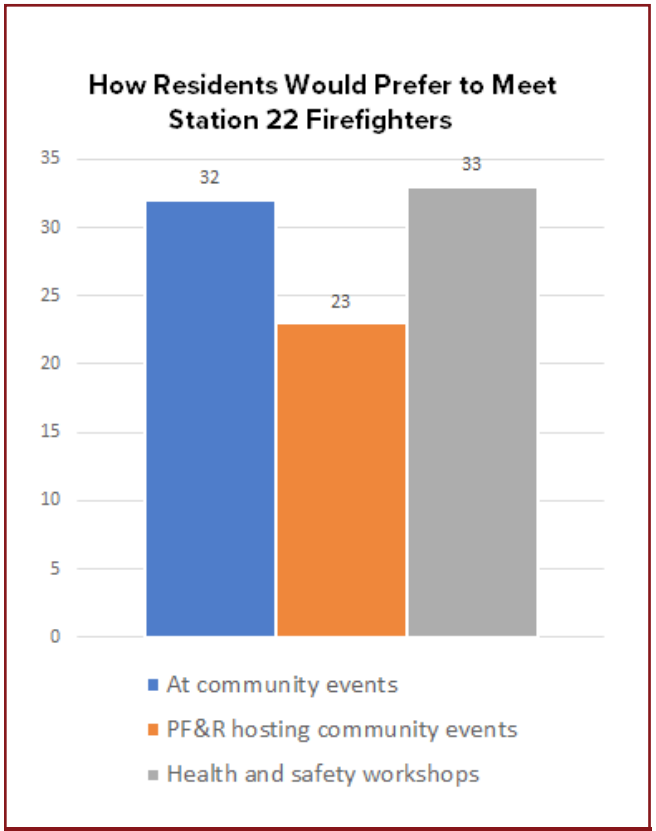



Figure 13: Respondent Preferred Engagement with Station 22

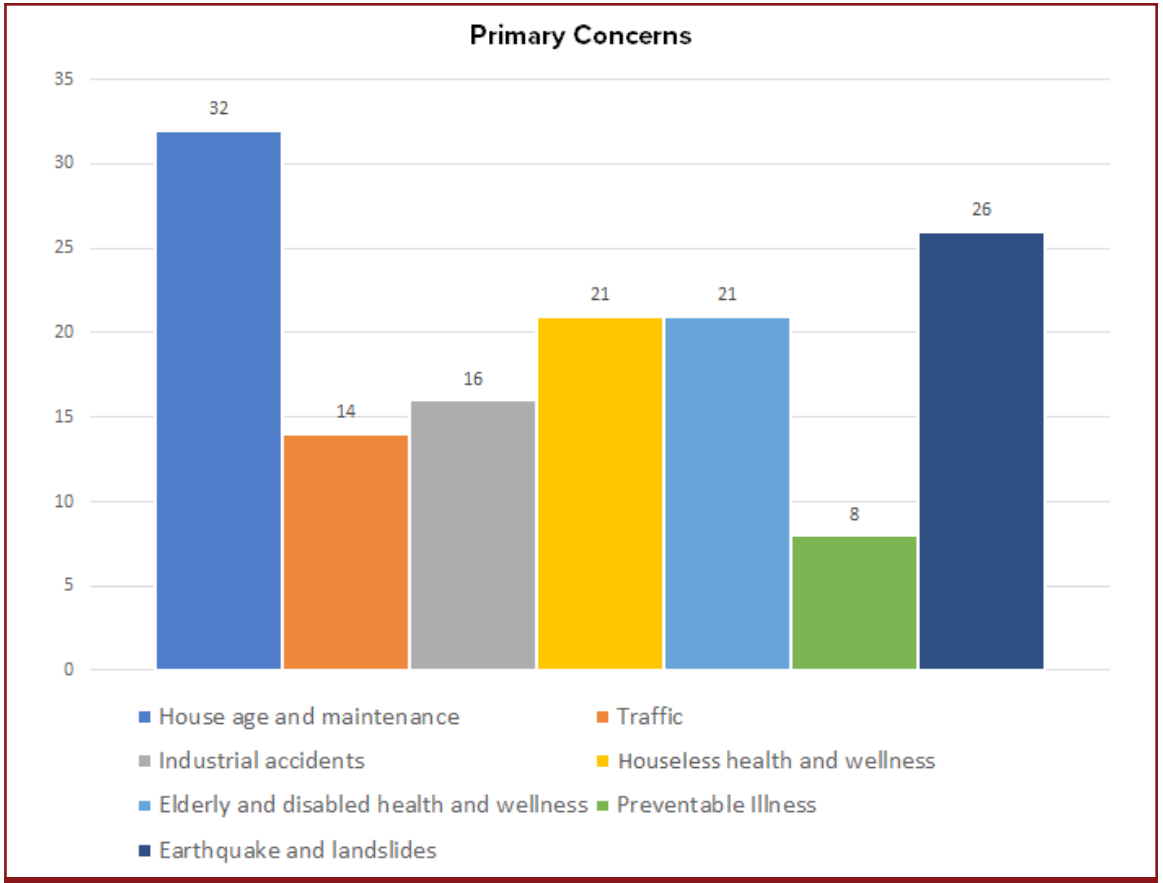



Figure 14: Emergency Incidents that Respondents Most Want Station 22 to Help Prevent

There was very little difference in the number of residents interested in seeing firefighters host community health and safety workshops (33) and those who simply wanted to see firefighters attend more community events (32), suggesting they are equally worthwhile options (see Figure 3). While it was presented as a survey option, firefighter testimony later revealed that hosting events at the station is not viable due to the possibility of receiving an emergency call mid-meeting. However, firefighters did express interest in attending community events elsewhere.

Respondents were provided a list of incident types and asked which they would like to see PF&R doing more work to prevent (see Figure 11). The most popular incident types were fires related to house age and maintenance (31), earthquakes/landslides (26), health emergencies related to houseless persons (21), and health emergencies related to older adults/people with disabilities (21).

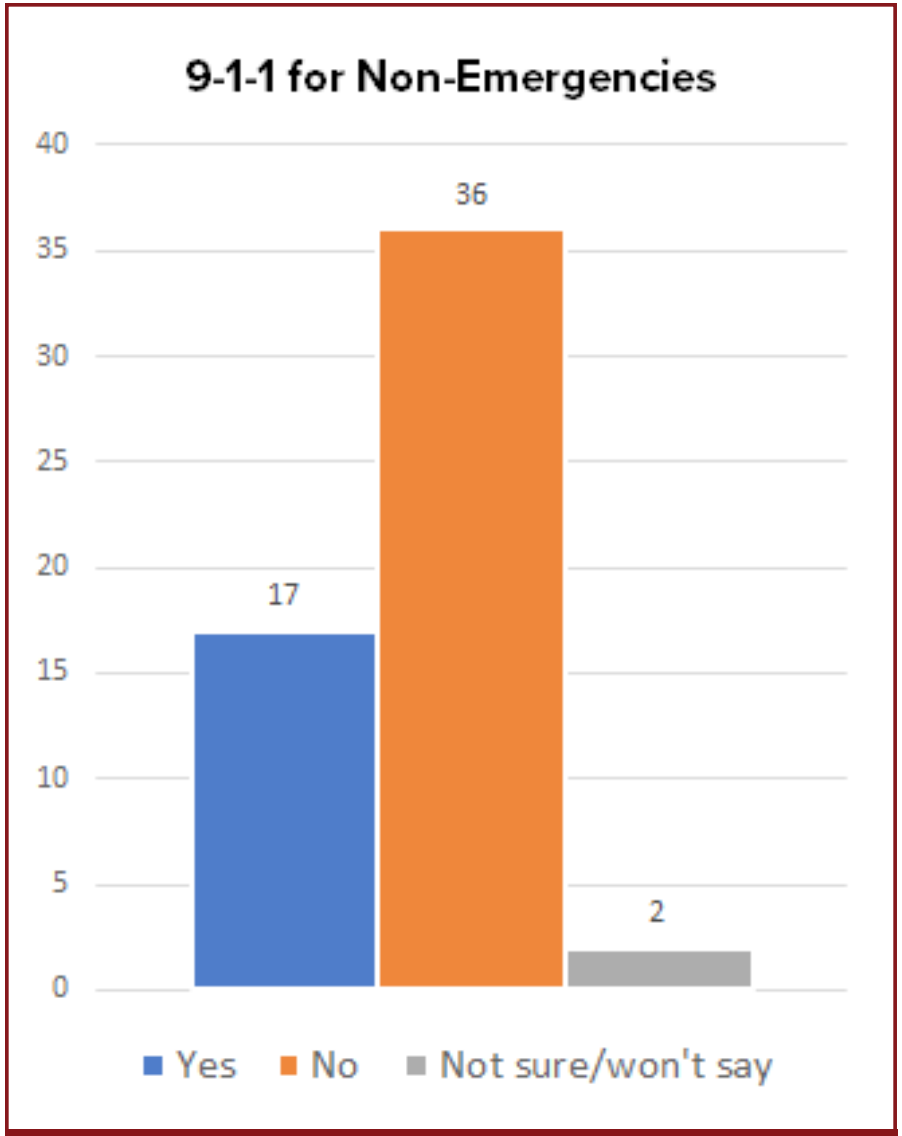



Figure 15: Has Respondent Called 9-1-1 in a Non-Emergency Situation?

Seventeen people out of fifty-three total respondents claimed to have called 9-1-1 in a non-emergency situation. Generally, these occasions were good intent calls; respondents claimed to have been reporting suspicious activity, possible fires, hazardous situations, or houseless persons. A considerable majority of those who had called 9-1-1 for these reasons were attendees of Neighborhood Association meetings, which may demonstrate a relationship stemming from overall civic involvement.

Primary topics for future FMA 22 education and outreach were home age and maintenance-related fires, earthquake and landslide safety/preparedness, and how to support health and wellness for houseless, older adults, and neighbors with disabilities.

Respondents identified several community organizations working to address areas of concern in the community - the most common answers were Neighborhood Associations and NET teams (6 responses each). Other groups and agencies included local aging-in-place nonprofit Northstar Village (3 times) and the Multnomah County Clinic (2). Miscellaneous suggestions included North Portland Aging and Disability (1), St. Johns Food Share (1), Lions Club, local food pantries, and police (1 each), "B-town kids" and "Because People Matter" (1 each).

# Fire & Rescue Station 22 Roll Call Sessions

In order to develop strategies that met station and community needs, we found it was necessary to develop a better understanding of the lived experiences of firefighters responding to emergencies within FMA 22. To facilitate this, we conducted a series of roll call sessions to provide a more nuanced understanding of the barriers and opportunities Station 22 members face.

Each session involved attending Station roll calls at the beginning of each of the three shifts. Once morning agenda items were completed, ÆGIS members presented informational materials (see Appendix A) and facilitated a dialogue about firefighter's experiences and observations working in the FMA. The issues and concerns discussed in these conversations informed strategy development.

| Roll Call | Themes |
|---|---|
| Session 1 - Call Data | Factors affecting medical risk |
| | Internal communication limitations |
| | Resources for vulnerable communities |
| Session 2 - Comprehensive Planning | Multi-story structures |
| | Traffic |
| | Inter-bureau communication |
| Session 3 - Internal Organization | Deliberate communication |
| | Barriers for feedback/change |

Table 6. Summary of themes discussed during roll call sessions

## Session 1 - Call Data

The first session was structured around a preliminary analysis of call data within FMA 22 (see Appendix A for materials). Our goal in this discussion was to assess the accuracy and limitations of existing call data in comparison to firefighter observations, and to discuss barriers and opportunities of preventative measures for socially vulnerable groups. The conversations in this session generally fell into one of three themes:

**Factors leading to increased risk of medical incidents** - This included examples such as unsafe road conditions resulting in increased risk of traffic collisions, lack of access to primary care for low-income individuals, and older residents failing to seek out emergency assistance in situations that warrant emergency response.

**Limitations of internal communication and feedback mechanisms** - Examples of discussion items in this theme included data collection redundancies, a lack of feedback mechanisms to evaluate response effectiveness, and triage structures that direct station response to situations where they are unable provide much help.

**Resources to educate or connect vulnerable communities** - Firefighters discussed a variety of measures to bridge the gap of resources they observe within their FMA including community training and educational workshops regarding emergency prevention and connecting low-acuity callers with medical or social services that can serve their needs.

## Session 2 - Comprehensive Planning

It became clear to us that Station 22 members had an interest in discussing how patterns of development affect their response, especially related to traffic and multi-story structures. For this session, we provided Station 22 members with a basic overview of Portland planning issues that affect their work (see v A for materials). Discussions during this session took four themes:

**Multi-story structures** - Firefighters noted an increasing prevalence of multi-story design that is less intuitive for emergency responders, where factors like point of entry, water and gas access points, on-street parking, and overhead wiring can hinder their ability to navigate structures effectively. There is also a lack of reliable pre-fire information that enable them to prepare emergency response before it happens. They compensate this deficiency with in-depth local knowledge of building layout, but this is often lost during personnel change.

**Traffic** - Firefighters who have worked at Station 22 for a long time have expressed concerns about the general trend of increasing traffic, increasing utilization of on-street parking, and traffic calming measures that don't take emergency response into consideration.

**Inter-bureau communication** - Many firefighters discussed feelings of "placation" whenever they have expressed concerns to other bureaus. With traffic calming devices implemented by PBOT, they described not receiving any kind of notification prior to construction, and when they discussed their concerns with a representative, they didn't observe any meaningful changes to accommodate their concerns.

**Internal PF&R communication** - Additionally, they described a feeling of disconnect between the code and operation branches of PF&R, noting that many of their organization's policy responses sometimes appear to be reactionary or out-of-touch.

## Session 3 - Internal Organization

PF&R administration and firefighters have articulated that the structure of the organization is changing to give more flexibility to individual stations to operate in ways that suit their needs. The purpose of this session was to articulate more clearly what that means for Station 22, and what barriers and opportunities exist towards implementing changes. This conversation included the following themes:

**Deliberate communication between administration and station** - Station 22 firefighters expressed praise for some of the policy directions the current PF&R administration has taken. They note that they are more able to manage station-level matters on their own, including issues like apparatus setup, response practices, and personnel organization. They report positively to newer proactive measures to reduce call volume, such as the CHAT program or Chief Mike Myers' decision to reduce response to back and abdominal pain calls after dialogue with individual stations.

**Barriers for giving feedback or implementing change** - Many of the ideas that originate at the station level typically need to travel up a chain of command to be implemented, and these ideas are often lost as there aren't clearly defined processes that facilitate input and feedback. Station 22 members express some frustration regarding their ability to influence decision making processes, and during these dialogues, several ideas to improve this situation were discussed including regular Battalion Chief visits, formal suggestion/comment channels, decision makers coming to them for input, and leveraging future in-house inspectors to serve as liaisons between firefighters and administration.

# Incident Clusters

Three locations within FMA 22 demonstrate noticeable incident clusters: The Schrunk Riverview Tower, the NARA Residential Treatment Center, and the group of multi-family residential structures in the northwest corner of the FMA. These locations experience high occupant density, space use, and call volume. Disparate factors affecting these structures illustrate possible trends as density continues to increase across the FMA.

## Schrunk Riverview Tower

Operated by government housing agency Home Forward, the Schrunk Tower serves older adults and people with disabilities whose incomes fall below 80 percent of Area Median Income[9]. The largest residential structure within the FMA, this apartment complex contains 118 units on 11 floors. The tower is one of Station 22's most common call locations, receiving 427 calls (5 of which were fires) between 2013 and 2017. This structure is located a little over a block away from Station 22, and as such response times are minimal at approximately 3 minutes. Breathing troubles make up the largest share of calls (78), followed by chest pain, sickness, abdominal distress, and trauma[10] (51-37).

Incident patterns differ significantly from the rest of the FMA at Schrunk Tower (Figure 14), predominantly by the lack of trauma calls. Strokes and assaults in particular are far less common here than elsewhere in the FMA. Traffic incidents were nearly nonexistent, as could be predicted based on the smaller geographical space compared to the Pier Park complex, let alone the FMA at large.

Figure 16: Schrunk Riverview Tower. Image Credit: Sean Edging

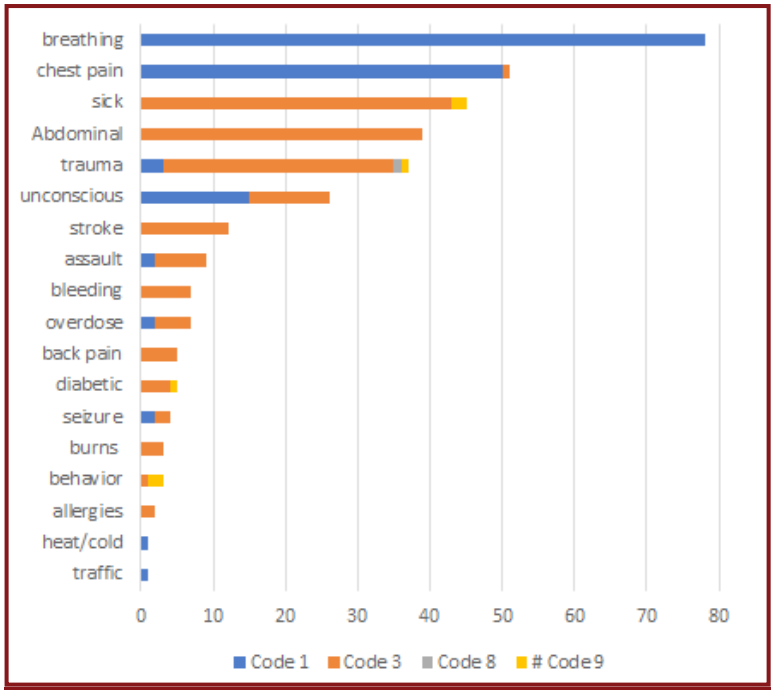



Figure 17: Schrunk Tower Medical Calls by Type Code, 2013-2017

9 http://www.homeforward.org/sites/default/files/Schrunk-Riverview-Tower_Fact-Sheet_4.pdf

10 Trauma is a broad category of calls that includes incidents characterized by sudden onset, and is distinct from the lay use of the word. It includes: falls in the home, head injuries, accidents involving factory equipment, broken bones, and wounds related to assault such as knife or gunshot wounds. Station reported that Schrunk has a high volume of falls in the home, which fall under the "trauma" umbrella.

## NARA Residential Treatment Center

The Native American Rehabilitation Association (NARA) Residential Treatment Center inpatient addiction treatment facility provides culturally informed strengths-based treatment for persons in addiction recovery. Nearly 7 miles northwest of Station 22 along Route 30, expected response times are nearly 10 minutes[11]. The center experienced 151 incidents during the study period, of which only 2 were fires. Common medical calls include chest pain (47 calls), followed by breathing, unconsciousness, seizure, sickness, and trauma (13-8 calls). Emergency responses to the NARA center (Figure 16) are predominantly chest pain, likely due to associations with addiction recovery. Next most prevalent are breathing, unconsciousness, seizure, and sickness, whereas trauma, a frequent cause of calls FMA-wide, is significantly less common.

Figure 18: NARA Residential Treatment Center.
Image Credit: Native American Rehabilitation Association

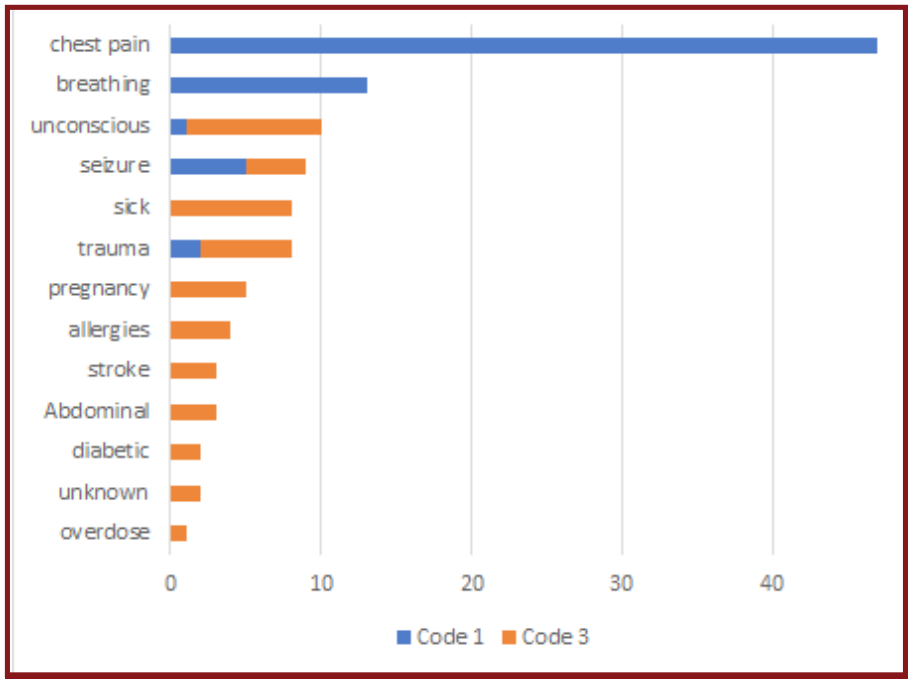



Figure 19: NARA RTC Medical Calls by Type Code, 2013-2017

11 Estimated via google maps and confirmed using incident response data

## Multi-Family Cluster

Comprised of the Ridgecrest Timbers, Pier Park Apartments, Cathedral Gardens, and Parkside Commons developments, this cluster was identified due to its unusual concentration of multi-family buildings - these four developments total 85 separate structures containing 487 residential units. Some of these are affordable housing units, as well. Calls for trauma and breathing problems were equally frequent (114 calls), however all breathing-related calls received a Code 1 designation, whereas nearly 90 percent of trauma calls received a Code 3. The cluster of multifamily units near Pier Park reflected the FMA at large in the top incidents (Figure 16) - trauma and breathing are equally prevalent, followed by chest pain. Unconsciousness and stroke were lower than the FMA as a whole. The remaining call types are consistent with the FMA at large.

Figure 20: Pier Park Apartments Rental Office.
Image Credit: Pier Park Apartments

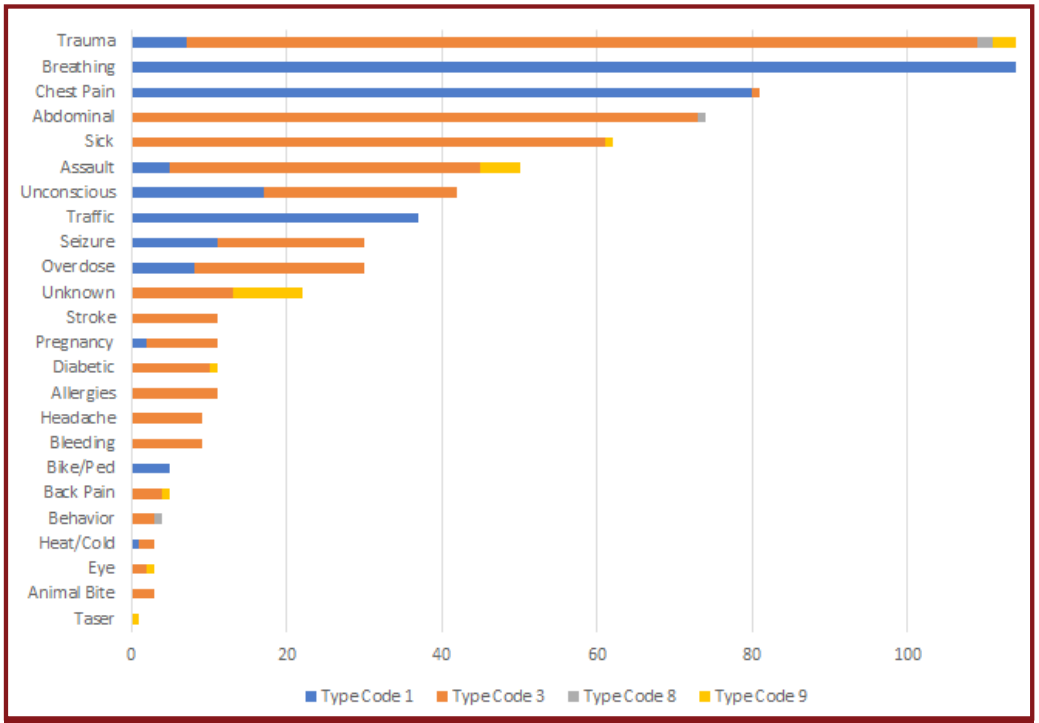



Figure 21: Pier Park Apartments Medical Calls by Type Code, 2013-2017

# Subarea Characteristics

The above analysis identified five subareas within FMA 22 with different characteristics to be taken under consideration during strategy implementation. Aligning with PF&R's "Zero Neighbors Neglected" Vision Zero goal, subareas may help address the varied needs of all community members rather than high-call areas alone. Each subarea is described by data trends and preliminary opportunity areas are discussed.

FMA 22's varied land uses present unique challenges. The west side of the Willamette River and the north central portion of St. Johns are highly industrial, and present risks exclusive to industrial activity. The St. Johns/Cathedral Park commercial district and its surroundings have the highest population density and volume of emergency calls. The FMA's numerous parks and open spaces are occasionally used by houseless populations for overnight camp sites generating smoke and fire calls. Finally, FMA 22's considerable size and extent leave areas at the extreme edges of the FMA especially vulnerable, as response times from Station 22 can exceed 10 minutes or more.

## Subarea 1: Urban Residential and Commercial

*e.g. N. Lombard St. and Adjacent Blocks*

FMA 22's commercial district has the highest population density in the FMA and consequently the highest fire and medical call concentrations. Multi-family residential structures such as Schrunk Tower concentrate highly vulnerable people in a small space, resulting in increased density of emergency calls. The high volume of services and amenities within the commercial core is also a likely driver of the high number of calls relating to houseless populations in this area. Finally, certain varieties of medical calls only occur in residential areas – such as animal bites, bleeding calls, eye injuries and allergy calls.

Subarea 1 presents opportunities for analyzing how proximity to services and amenities relates to emergency response, what is working well, and what isn't. If proximity to services isn't enough, what other interventions are feasible? What elements of the living situation would continue to foster emergency situations? Targeted outreach to residents of these areas will aid in understanding use of services and remaining needs, and comparison to similar area densities with fewer calls provides best practices for safe living within high density areas. Particular emphasis should be paid to areas with high concentrations of 'front line' communities – as this subarea contains the overwhelming majority of FMA 22's populations of color, persons with disabilities, persons in the most vulnerable age brackets (<15, >65), analysis of service and amenity provision should address how well these populations are served.

Figure 22: N Lombard St and Philadelphia Ave. Image Credit: Sean Edging

## Subarea 2: Industrial and Manufacturing Zones

*e.g. Northern St. John's, Portions of N. Crawford St.*

Industrial areas demonstrate lower call volume due to sparse populations, but present the potential for high-acuity events due to the nature of the work, traffic, and activities in these areas. These risks are largely mitigated by OSHA protocols, but more open communication with municipal emergency responders is needed. Some portions of the industrial area are frequented by houseless populations, particularly individuals living in vehicles; a combination of distance, volatile heating fuels, and high combustibility lends added risk in these areas, particularly on cold nights.

Traffic concerns related to high levels of truck traffic have prompted the City of Portland to publish a St. Johns Truck Strategy to ensure that these vehicles are kept to the larger arterials at the FMA periphery rather than traveling through the heavily populated residential core of St. Johns and Cathedral Park.

The substantial spatial extent and disparate group of actors within these areas suggests that an outreach-based approach would be ideal in this area. Leveraging the substantial interest of both Neighborhood Associations, NET teams, and non-profit community organizations (such as Neighbors Helping Neighbors), as well as coordinating with the Portland Police Bureau to align interactions with the houseless community could be very beneficial.

Figure 23: Industrial Lands south of the St. Johns Bridge.
Image Credit: Sean Edging

Figure 24: Petroleum Storage Tanks along NW St. Helens Rd.
Image Credit: Sean Edging

## Subarea 3: Parks and Open Space

*e.g. Forest Park, Cathedral Park, Pier Park*

Open space areas present unique access challenges for fire apparatuses, and the ends of Pier and Forest Parks are likely to experience longer response times due to their distance from the station. Germantown Road also poses a significant traffic threat due to its tight corners, low visibility, on-street parking, and significant pedestrian traffic from Forest Park visitors. Open spaces and parks are frequently used by houseless populations for temporary campsites, which may contribute to increased fire events. As Portland increases in temperature, this will become an increased risk in the form of increased frequency of vegetation fires - already the most common fire type in the FMA, these locations may require careful monitoring during prolonged dry spells. The Cathedral Park area is the largest single concentration of houseless campsites in the FMA, but does not generate nearly the call volume as the nearby commercial district. Because this buffering effect is not as present or acute elsewhere in the FMA, this phenomenon could be used as a case study to identify its causes and possible means of mitigation.

Figure 25: Cathedral Park. Image Credit: Sean Edging

Figure 26: Forest Park. Image Credit: Sean Edging

## Subarea 4: Waterfront Areas

*e.g. All locations bordering the Willamette*

On-water emergencies require specialized approaches and equipment from Station 22; as with industrial areas, calls along the river are likely low-frequency but high-acuity. These calls may involve drowning or boat/mobile property fires. As populations continue to grow and spread in urban areas, Station 22 may experience more difficulties when responding to the complex and variable emergencies present in these areas.

Figure 27: Docks near Cathedral Park. Image Credit: Sean Edging

## Subarea 5: High-Response Time Areas

*e.g. NARA, Kelley Point Park*[8]

These subareas are defined by their extreme distance from the fire station - with response times upwards of 10 minutes, the presence or absence of on-site medical personnel may be of vital importance. Some situations may resolve before Station 22 arrives on scene, which suggests the need for clear lines of communication with partner agencies who may be able to lend aid while awaiting emergency crews.

Additionally, the Smith and Bybee Wildlife area is not included within the FMA, but firefighter testimony suggests that Station 22 does render assistance there on occasion. This area is extremely remote and emergencies will likely be well underway or largely resolved by the time responders reach the area. The only unique health risk generating calls in this subarea is behavior calls on the St. Johns Bridge; these relate to persons contemplating or attempting suicide.

Figure 28: Linnton. Image Credit: Sean Edging

8 As of this draft date, plans to convert the Wapato Jail site to a houseless shelter are still pending and the proposed on-site services for such a facility are unknown. Should they be completed, this location would also fall into Subarea 5.

# Strategy Development

Strategy development incorporates data and outreach findings coupled with administrative capacity, ongoing efforts, and firefighter prioritization. This qualitative process involved using data analysis and community background findings to inform our Roll Call discussions with the firefighters; using firefighter and key informant interviews to develop strategies, either by direct recommendation or indirectly by developing recommendations based on firefighter or informant perceived gaps; and using both firefighter input from the final Focus Group and Administrative Staff review to determine the final solution priorities. Following this process, we developed the following strategies:

- Implementation steps
- Types of strategies to consider
- Example strategies
- Efficacy measures

## Process - Focus Groups

The purpose of this focus session was to present all of the candidate strategies we have collected from our data analysis and outreach process to Station 22 firefighters in order to determine their buy-in for different strategies and how our team should consider prioritization. In addition to the strategy recommendations presented below, we also discussed the following themes:

1. Feedback mechanisms – One deeper frustration that was expressed during these conversations related to a lack of feedback mechanisms to let firefighters know if and how their response helps individuals. This frustration is partially pragmatic; firefighters want to know the outcomes of situations to inform their future practices, but it is also existential; while they understand the work they do is necessary, they often don't see that their intervention helps the communities or individuals they serve.
2. Involvement in decision making – In the past, Station 22 firefighters have typically been excluded or placated during decision making processes, and there is a degree of skepticism about whether efforts to involve them in the process will have any effect. This suggests that any process aiming to bridge communication with firefighters will need to meaningfully incorporate their ideas and concerns, otherwise those processes will not be utilized.

## Strategies

Strategies were assembled throughout the toolkit implementation process and vetted through both admin and firefighter focus groups. Strategies outlined on the following pages are based on feasibility of implementation, prioritization by firefighters, and administrative support.

| Strategy | Description | Lead | Timeline |
|---|---|---|---|
| **Collaboration/Partnerships** | | | |
| MURP Planning Methods I | Partner with Portland State Master's in Urban and Regional Planning (MURP) faculty to roll out the Blueprint for Success to other FMAs | Admin | 5 - 6 years |
| Internal Social Service Contact List | Share completed OHSU Social Services Contact List with Station 22 and develop an information maintenance plan. | Station 22 | Immediate & Ongoing |
| Advocating for County Wellness Checks | Advocate for the renewed funding of Multnomah County's Home Health and Safety Assessments. | Admin | 4 months |
| **Community Presence/Outreach/Education** | | | |
| Social Service Resources | Supply responders with hard copy information on location-specific social services. | PF&R Public Education | 3 - 6 months |
| Community Event Attendance | Further presence in community via event attendance. Educate other FMAs on event attendance. | Station 22 | Immediate & Ongoing |
| Health and Safety Education | Offer health and safety education classes to the community and specific groups to address problem topics. | PF&R Public Education, Admin, & Station 22 | 3 - 9 months |
| **Improving Relations & Communication** | | | |
| Internal Mental Health Resources | Increase PF&R staff mental health resources and work with area organizations to relay successful outcomes of emergency responses back to firefighters. | Admin | Fiscal Year 2019-20 |
| PF&R Internal Communication Mechanisms | Audit and restructure existing formal communication channels from stations to decision makers. | Admin | 6 months - 1 year |
| Notice and Comment for Development & Infrastructure Projects | Advocate for other agencies to provide meaningful opportunities for stations to provide feedback about projects that affect response. | Admin & Station 22 | 1 year |

Table 7. A Summary of Recommended PF&R Strategies.

# Hard Copy Social Service Resources

**Action:** Supply responders with hard copy information on location-specific social services to aide individuals requiring non-emergency care in accessing the services they need.

Description: During emergency response, firefighters recommend individuals go to the hospital, seek primary care, or call 9-1-1 again if there is another emergency. By leaving contact information for nearby services, responders could increase the likelihood that the individual would seek relevant services. This would prevent another emergency situation.

Street Roots maintains the Rose City Resource, a directory of social services in the Portland area. It provides names, addresses, phone numbers, hours, services eligibility, and bus lines to get to hundreds of area organizations that serve houseless and extreme low-income individuals. PF&R may secure a city-wide guide to distribute by contacting Street Roots. Street Roots updates the Resource every 6 months. The development of a digital version is underway. This includes a mapping application accessible on mobile devices available fall 2018.

PF&R Public Education is willing to draft a neighborhood- or quadrant-level trifold. They request that stations set an annual calendar notification to review the handout. This would ensure it remains up-to-date. Partnering with the North Portland Multnomah Health Center and the St. Johns Center for Opportunity would be valuable developing this guide. Next, Station 22 should request copies of the Rose City Resource Guide or request Public Education drafts a North Portland guide.

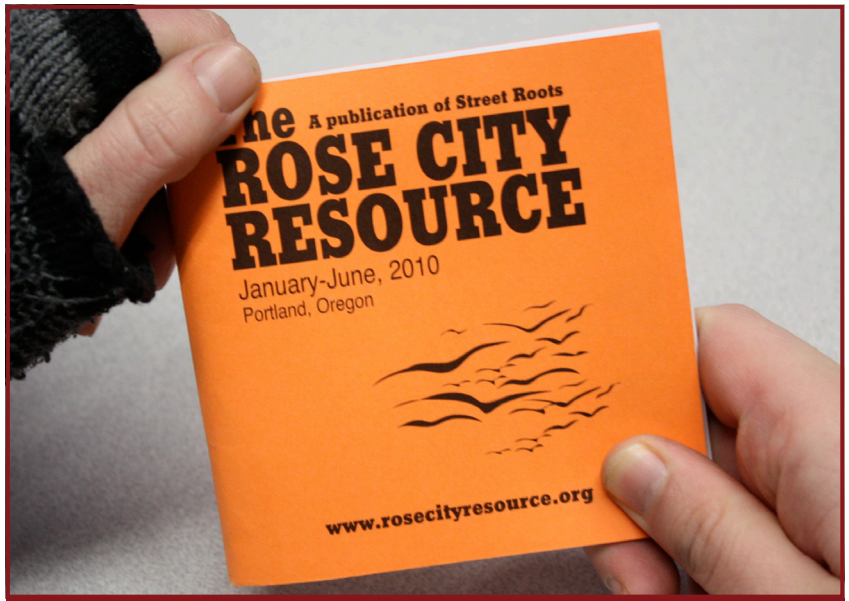



Figure 29: The Rose City Resource. Image Credit: Street Roots

**Lead:** PF&R Public Education

**Partners:** Station 22, Street Roots, OHSU, SJCO, North Portland Multnomah County Health Center

**Timeframe:** 3 - 6 months

Est. Resources

Est. Benefit

# PF&R Internal Communication Mechanisms

**Action:** Audit existing formal communication channels from stations to decision makers to identify opportunities and barriers. Restructure channels to ensure that firefighters can submit testimony, influence policy decisions, and receive responses or feedback from decisionmakers. Leverage in-house inspectors to facilitate formal communication mechanisms and serve as liaisons.

**Description:** According to both emergency operators and administration, there have been organizational changes. Many of the ideas that originate at the station level "fizzling out" on their way up the chain of command. Various barriers and roadblocks prevent proposals from reaching the necessary audience. Station 22 firefighters expressed fatigue about their participation. Input they provided rarely seemed to influence decision making. They perceive their input as receiving placation rather than solution or integration.

For example, Station 22 finds the systems providing pre-fire information insufficient to serve their needs. There are alternative national systems that exist. Firefighters expressed to administrators that these systems may be better than the current in-house system. The response was to submit the suggestion to the Research and Strategy Committee. Firefighters found that there was no formal comment pathway to the Committee. The communicative barriers in this example are two-fold. Not only did decisionmakers not request feedback from stations, but the formal feedback process was either nonexistent or inaccessible.

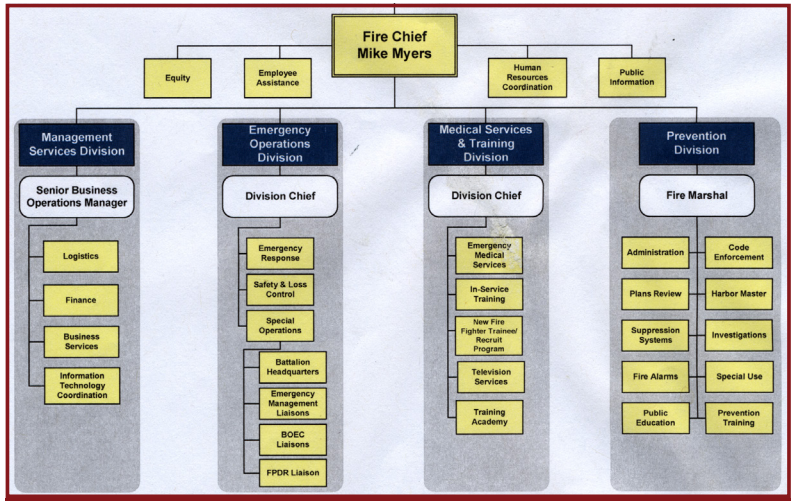



Figure 30: PF&R Organizational Structure. Image Credit: PF&R

### A Best Practice Model – Type Code Response Changes

PF&R faces increasing budget constraints due to population growth without funding increases. In 2017, Chief Myers determined that without more personnel funding, it would be necessary to reduce or end response to certain type codes. In the past decisions like this came from the top down. Chief Myers made a point to get input from individual fire stations to inform his decision. The administration went to individual stations to discuss call details with personnel. After this, the Chief determined to end PF&R responses to back and abdominal pain calls. This decision was well received by Station 22 firefighters. They felt it was the right decision and the administration used their input. They had a reasonable influence on the outcome through their participation.

**Lead:** Admin

**Partners:** N/A

**Timeframe:** 6 months – 1 year

Est. Resources

Est. Benefit

# Notice and Comment for Development & Infrastructure Projects

**Action:** Advocate for other agencies to provide meaningful opportunities for stations to provide feedback about projects that affect response. For example, traffic calming devices on major emergency response routes.

**Description:** Station 22 firefighters described feelings of placation when expressing concerns to PBOT. They state they rarely receive notice of upcoming transportation projects that affect response routes. When they express concern to an agency, they rarely find their input reflected in the project outcomes.

PF&R Special Operations, which manages multi-bureau coordination, responded to this by participating in the upcoming Transportation System Plan Update. It incorporates the following changes:

- Adding a new street classification: Secondary Emergency Response Streets Routes
- Stipulating that higher traffic classifications will not be eligible for traffic slowing devices
- Requiring replacing existing speed bumps on Major Emergency Response Routes with speed cushions when repaved or when other major improvements occur.
- Requiring approval from PF&R all future traffic control calming devices

Figure 31: An example of PBOT improvements. Image Credit: Bike Portland

Additionally, PF&R administrators coordinated with PBOT to ensure station inclusion when PBOT communicates about upcoming projects. While this is progress, these changes do not guarantee firefighters meaningful feedback, nor do they incorporate large multifamily or commercial structures. We recommend that stations join local land use committees affiliated with Neighborhood Associations. This way stations receive notices about upcoming projects and take part in hearings about projects that could affect their operations.

**Lead:** Admin and Station

**Partners:** Local Neighborhood Association Land Use Committee Boards, PBOT

**Timeframe:** 1 year

Est. Resources

Est. Benefit

# Health and Safety Education

**Action:** Offer health and safety education classes to the community and specific groups to address problem topics.

**Description:** Station 22 expressed concern about residents lacking knowledge that result in increased demand. To mitigate this, Station 22 could organize and host educational opportunities for target audiences to improve resident knowledge. The premise is simple. Residents that know how to take care of their households reduce both frivolous and significant calls.

This recommendation evolves the role of the station from a reactive force to a proactive one. Additionally, the station staff increases their exposure to and relationships with their community. This would increase understanding and awareness of issues and concerns.

Financial support or the know-how of Public Education would expand Station 22's capacity. Station 22 staff believe their role in local education and outreach would be best as the 'props'. Public Education would provide the bulk of the curricular components. Station 22 would contribute local knowledge and concerns.

Station 22 could work with PF&R Public Education, the local schools, housing for older adults and people with disabilities, and other partner organizations. These groups can identify needs and appropriate approaches. Some example topics include healthy eating, life skills for high schoolers, community exercise lessons, how to combat hoarding, or household safety for the older adults and their caretakers.

Figure 32: Firefighter Liz Thompson teaching a first-grade classroom. Image Credit: PF&R

**Lead:** PF&R Public Eductation, Admin, and Station

**Partners:** Portland Public Schools, local houses of worship, neighborhood associations, independent living facilities, affordable housing management

**Timeframe:** 3 - 9 months

Est. Resources

Est. Benefit

# Advocating for County Wellness Checks

**Action:** Advocate for the renewed funding of Multnomah County's Home Health and Safety Assessments.

**Description:** Current funding for the Multnomah County Home Health and Safety Assessments limits the program's capacity. As a result, the County underserves, decreasing safety for the older adults and people with disabilities. This leaves vulnerable individuals without access to resources to improve quality of life and reduce risks.

With better funding, some of the most vulnerable residents will have their service gaps filled. This would reduce demand from high users, focus on prevention, and connect people to needed services.

Reducing the CHAT workload frees up its capacity for other, deeper work that aligns with the County's. Advocacy work and integration with the County happens on the administrative level. PF&R's administration interacts with decision makers and the budgetary process. This would benefit stations citywide.

The timeframe for budgetary advocacy would begin after the County adopts its Fiscal Year 2019 budget May 31st, 2018. Based on that budget's calendar, the budgeting process begins in late October. That gives PF&R no more than 4 months to prepare its advocacy for the County's Home Health and Safety Assessments.

Figure 33: A case worker with Portland residents. Image Credit: Jerome Choain under CC BY 2.0

**Lead:** Admin

**Partners:** Other City and County Bureaus

**Timeframe:** 4 months

Est. Resources

Est. Benefit

# Community Event Attendance

**Action:** Further presence in community via event attendance. Educate other FMAs on event attendance benefits and resources.

**Description:** Station 22's presence in their community has been exemplary. Testimony acquired during ride-alongs suggests that this is not universal across all FMAs. Additionally, survey results show that many people in FMA 22 have yet to encounter firefighters. While types of community events and meetings are not uniform city-wide, the number and type of events FMAs attend are rarely discussed with other stations. This presents an opportunity for knowledge sharing.

PF&R administrative staff and Station 22 should create a community engagement model for other FMAs. Station 22 can both learn from their peers and educate other firefighters on their outreach. To avoid replicating work, consult local community calendars to produce FMA-specific event listings. Consider new types of events in the community and which populations have high need.

Figure 34: Station 22 Firefighters and ÆGIS Group Photo.
Image Credit: Captain Eric Pedersen

**Lead:** Station 22

**Partners:** Other Fire Stations, Neighborhood Associations, Local Community Organizations

**Timeframe:** Immediate and ongoing

Est. Resources

Est. Benefit

# Internal Mental Health Resources

**Action:** Increase PF&R staff mental health resources and work with area organizations to relay successful outcomes of emergency responses back to firefighters.

**Description:** Testimony from Station 22 and ride-alongs revealed post-incident trauma and 'empathy burnout' afflict many firefighters. These conditions impair firefighters' long-term health and lead to empathy fatigue with high utilizer communities. PF&R's single part-time counselor under the Employee Assistance Program falls far short of addressing these concerns. During one focus group, a firefighter referred to this program as one that exists on paper, but is not really available.

Immediate action can be undertaken by working with emergency service providers to create communication channels for successful recoveries, and thus responder efficacy, back to firefighters. Right now, firefighters lack closure and see no success stories. They never learn whether a drug addict receives treatment and recovers, or whether a car crash victim regains the ability to walk.

Figure 35: Portland firefighters pulling a crew member from debris after a house collapsed. Image Credit: KGW News

**Lead:** Admin

**Partners:** Healthcare professionals, social service providers, recovery advocates

**Timeframe:** Prepare for October budget proposal for Fiscal Year 2019

Est. Resources

Est. Benefit

# Internal Social Services Contact List

**Action:** Share completed OHSU Social Services Contact List with Station 22 and develop an information maintenance plan.

**Description:** Firefighter maintain a list of specific contacts at social service and healthcare providers, and other key community organizations determined by firefighters. With this list, firefighters could refer individuals to proper care providers. This would be useful when the individual refuses care, or when onsite care or transportation to a hospital are inappropriate. CHIERS uses a similar network for public drunkenness calls, and the Gatekeeper Program for at-risk older adults. This new list expands to include a broader variety of public health resources. This strategy is in progress currently with the OHSU School of Nursing. In mid-June, 2018, we recommend Station 22 follow up with Tremaine Clayton to find out the status of that contact list. Because it is student work, Public Education may want to review the materials before use. Recommended annual review of contact list to ensure that information remains current.

Figure 36: Portland fire victim being treated by PF&R firefighters. Image Credit: PF&R

**Lead:** Station 22

**Partners:** Other Fire Stations, Neighborhood Associations, Local Community Organizations

**Timeframe:** Immediate and ongoing

Est. Resources

Est. Benefit

# MURP Planning Methods I

**Action:** Partner with Portland State Master's in Urban and Regional Planning (MURP) faculty to roll out the Blueprint for Success to other FMAs, increasing engagement capacity and reducing labor costs of the Blueprint for Success roll out.

**Description:** ÆGIS NW Planning Group's work makes up only the initial step for the Blueprint for Success. This report serves as a model for rollout of this program in other FMAs based on local needs and resources. We recommend PF&R continues its collaboration with the MURP program. The Planning Methods I: Qualitative Methods course can use the Blueprint for Success Toolkit as a model. An 11-week fall course, these students would conduct a shorter case study. Program leaders are open to expanding this collaboration for the benefit of the program and of PF&R as the opportunity arises. For program coordination support, and to enable more professional level drafting, we recommend PF&R contribute to a paid Graduate Assistantship (GA) position each fall term. The GA is not required to make this partnership possible, but would improve work quality above a class supported by the professor alone. This would create a reciprocal benefit to the program in exchange for the student labor.

Figure 37: PSU Urban Center.
Image Credit: Tim Hursley, THA Architecture

**Lead:** Admin

**Partners:** PSU MURP Program, Megan Horst (course instructor), Other PF&R Stations

**Timeframe:** 5-6 years (with 6-8 FMAs engaged per year depending on annual cohort size)

Est. Resources

Est. Benefit

# Evaluation

Portland Fire & Rescue currently publishes internal Annual Performance Reports for individual FMAs. These reports include a series of Key Performance Indicators that roughly assess efficiency of services and incident volume, which are used in part for budgetary reasons. We recommend using these reports as an opportunity to evaluate strategies adopted as part of the Blueprint for Success.

PF&R admin has access to a variety of data sources that they can use for quantitative evaluation metrics. Existing monitoring of standard performance indicators like call volume and type can be linked with social data to better understand who is affected. For medical calls, this would mean monitoring which demographic or socioeconomic groups to assess whether strategies are successfully linking vulnerable groups with resources they need. Current evaluation is based on key performance indicators (KPI), which when coupled with additional data considerations and John Jay's predictive correlates would provide a broader, more prevention-aimed assessment.

Improvements in these categories should be considered alongside changes in social vulnerability, as changes in responses from socially vulnerable groups could be the result of confounding factors. Displacement of socially vulnerable groups to other FMAs could lead to a reduction in incidents, and it would be easy to mistakenly attribute that reduction to implemented strategies. Increases of call volume also don't necessarily indicate that strategies are failing, as socially vulnerable groups may report feelings of increased trust in emergency services such that they would be willing to call 9-1-1 in situations where they previously may not have.

Because many of the proposed strategies have nuanced and abstract effects, quantitative measures are unlikely to capture the whole picture. Therefore, it will be necessary to engage in dialogue with station operators and community members to assess efficacy of different measures. While it is possible to use surveys as assessment tools, engaging in dialogue with station and community members is likely to be better received by participants and yield a richer understanding of strategy implementation than surveys.

# Conclusion

FMA 22 is a complex area with a variety of needs based on urban, rural, commercial, industrial, and recreational open space land uses. Livability and vulnerability factors contribute to the emergency response needs of the FMA, and are an important part of the FMA assessment for proactive emergency management. Overall comparisons should be made to the city at large to encourage FMAs to address where to focus efforts and how to improve city-wide response.

Focusing on place-based, community-sourced solutions rather than data-driven findings alone is essential in order to understand the dynamics faced by emergency responders at Station 22, and likely at all stations across the city. Preventative emergency response is reliant on assessing on-the-ground experience of both firefighters and community members, and linking these experiences with strategies and tools for implementation. This toolkit is meant to be iterative, to improve continuously with use. Feedback on the toolkit development process and limitations is discussed on the following pages.

# Feedback about Process

Station feedback on toolkit process development and application was largely positive, and interest from the community has been enthusiastic. One firefighter noted that the ambiguity of the project during early stages made it difficult to get behind, but through engagement over the course of the project recognized it as valuable in the end. Firefighters expressed gratitude for facilitating the opening of communication channels that are likely to have long-term positive impacts, regardless of the effectiveness of programs that will be implemented based on strategies outlined herein. It was valuable to recognize that negative past experience with former PF&R Administration has colored their willingness to share critical feedback. Our outsider status allowed them to speak freely without fear of retaliation, and with the knowledge that critical input shared through our project would be taken seriously by PF&R decision makers.

Engagement in this project focused heavily on breadth rather than depth, with at least 20 hours of engagement with Station 22 (five sessions at least an hour long with each of the three shifts), and sought to leverage key informants to provide an in-depth understanding of community needs, in order to understand the specific needs of community members who may have used 911 emergency services in the past, without directly engaging that community to avoid retraumatization. Surveys played a small but valuable role in our engagement, providing a starting point for ideas on what community education activities would be well-received in this FMA, however some community members were unsatisfied with the depth of that engagement. We do not have a great answer to how to produce a survey that allows the desired engagement level, except to go to more community events and share the survey more broadly to get input from a larger part of the community. In the future, narrowing the scope of surveys to specifically request input from people who have called 911, and incentivizing those survey respondents, might be a way to gather more in-depth information responding to the needs of callers that would be valuable to the Blueprint for Success project.

# ÆGIS NW Planning Group

# Team Bios

## Sean Edging

*Editor & Design Specialist*

*Housing, Equity, and Land Use*

Sean is an emerging equity planner specializing in analysis and communication techniques to support planning efforts for Portland residents with few, if any, choices. During his time at Cogan Owens Greene, he worked on a variety of equity-focused planning projects related to housing, transportation, public safety, municipal waste management, and natural resource management.

## Mike Kimble

*Lead Data Analyst*

*Urban Design and Geographic Information Systems (GIS)*

Mike has collaborated on three research projects focusing on resilience and sustainability, as well as two urban design projects. He is dedicated to pursuing more equitable planning initiatives by merging high-level GIS Analysis and literature reviews with local knowledge and site-specific qualitative analysis.

## Thea Kinschuh

*Outreach & Communications Coordinator*

*Land Use and Community Development*

Thea is the Project Coordinator for CRUX Portland, assessing and strategizing climate change resilience at the campus-community level. She strives for meaningful collaboration both academically and professionally, identifying opportunities for resource-sharing over reinvention, and mobilizing existing resources and networks to build community capacity and learning.

## B. Danielle Schulte

*Project Manager*

*Environmental Sustainability and Food Systems*

Danielle has served as project manager for two research projects on local environmental challenges, and three programs involving complex multi-departmental collaborative efforts while working at Portland State University and Free Geek during the past 4 years. She is an efficient and creative coordinator who focuses on compassionate communication to foster team synthesis and community trust.

## Tristan Sewell

*Lead Researcher*

*Energy and Climate Change*

Tristan administers the City of Milwaukie's climate action planning process, melding his climate action planning skills and community engagement education from Portland State. Increasingly he looks to expand his capacity in equity-related resilience work and energy economics.