



# Catholic Charities



Portland State  
Toulan School of Urban  
Studies and Planning

## Permanent Supportive Housing

City of Portland

Service and Resource Spatial Distribution Report 2020



## Introduction:

Like other major metropolitan regions, the City of Portland is experiencing a daunting housing crisis. For the region's most vulnerable populations, according to Marc Jolin, director of *A Home For Everyone*, these individuals are "going to pay more than 50 percent, and in some cases, more than 70 or 80 percent of their income toward rent" (OPB.org), if the ratio of built housing stock and population growth continue. Additionally, vulnerable populations need to have access to necessary and supportive resources.

Throughout the region various organizations have committed themselves to combating these increasing housing disparities and shortages. Catholic Charities (CC), an established worldwide nonprofit, is one of those committed to build and support the most vulnerable populations. Through implementing permanent supportive housing (PSH), defined as a "model that combines low-barrier affordable housing, health care, and supportive services to help individuals and families lead more stable lives (nhchc.org), this organization has continued to ensure vulnerable and underserved individuals are housed and provided the space to thrive within their community.

Partly, the successful implementation of PSH has relied on the spatial distribution of services within a neighborhood; though many projects offer onsite services, they are unable to provide all the necessary resources that encapsulates the differing needs of various demographics. By understanding the spatial distribution of resources, projects can be geared towards either utilizing or independently filling in these gaps.

Partnering with *Toulan School of Urban and Regional Planning's* 2020 cohort, this spatial analysis continues to support the successful development of PSH in the Portland-metro region. Through creating spatial maps and databases about relevant resources and services, this report will assist CC in determining areas for development that promote the wellbeing, success, and positive neighborhood integration of their current and future PSH recipients. These independent spatial features will also function as a starting point for future analyses; by outlining regions that are deemed resource and service rich, while also keeping in mind the potential populations that future projects may specifically serve, these maps provide a customizable spatial opportunity to add a multidimensional lens in PSH site selection. Furthermore, this report is supported and infused with academic research, professional interviews, spatial analysis, and additional quantitative research.

## **Regional Background:**

To accurately portray the existing conditions for PSH implementation within the City of Portland, it is necessary to provide a brief background information on state and local policies. These can either support, hinder, or complicate the viability of a project. This is particularly important for CC, since they advocate both on the local and state levels to expand affordable housing. Both the State of Oregon and City of Portland have made motions towards creating space for more affordable housing; the overall success of these goals have varied greatly, while equitable outcomes for low-income individuals and people of color have remained a challenge. Outlined below is a brief overview of these policies.

### **Oregon:**

Most of the state has been plagued with a shortage of affordable housing, particularly housing that supports extremely low-income households, whose incomes are at or below the poverty guideline or 30% of their area median income (AMI)(HUD.gov). Those who are severely cost burdened are more likely than others to sacrifice other necessities like healthy food and healthcare to pay their rent, and experience unstable housing situations, which has an extremely high impact on their overall quality of life (ODPHP.gov).

The state has implemented various programs and goals to combat these stressors, and under the *Statewide Planning Goal 10: Housing*, which outlines the local process of land use planning, resource preservation, and provide guidance for urban development, this goal encourages

*“the availability of adequate numbers of needed housing units at price ranges and rent levels which are commensurate with the financial capabilities of Oregon households and allow for flexibility of housing location, type and density.”*

**Portland:**

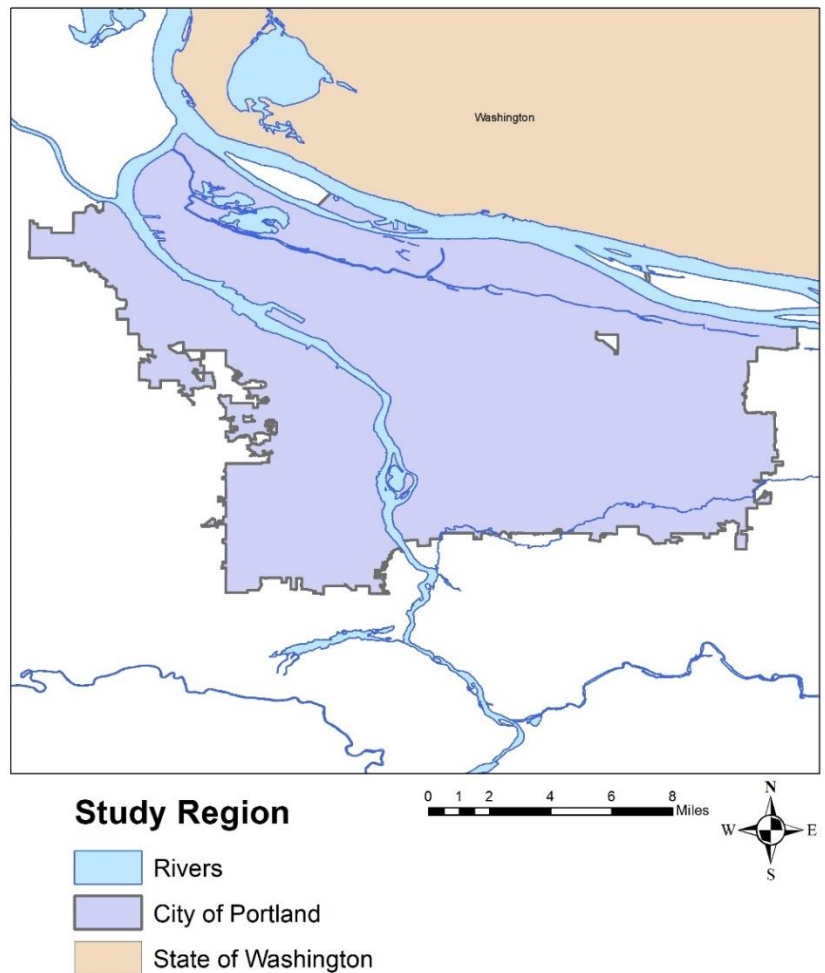
Additionally, housing issues within the city have also persisted greatly, while there's been a continued shortage of equity planning and protection for vulnerable populations integrated into with actions. Conversely, the adoption of the *Portland 2035 Comprehensive Plan: Chapter 5-Housing* outlines the city's commitment towards ensuring the following:

- Ensure adequate access to housing for a socially- and economically-diverse population.
- Support fair, equitable, healthy, resource efficient, and physically-accessible housing.
- Establish ways to mitigate gentrification and displacement.
- Concentrate new housing in and around centers and corridors near transit and services to reduce the housing/transportation cost burden.
- Maintain and promote a supply of permanently-affordable housing for Portland's most vulnerable residents.

These statements reflect a support for CC's continued investment and creation of PSH, among other housing types, which can adequately integrate recipients within a neighborhood that socially, financially, and equitably meets their needs. Both state and local policies are geared towards promoting the wellbeing of the community. Additionally, an array of other regional and local documents also supports this mission. It will be important for this organization to utilize and reference this material when seeking support for future projects within opportunistic areas.

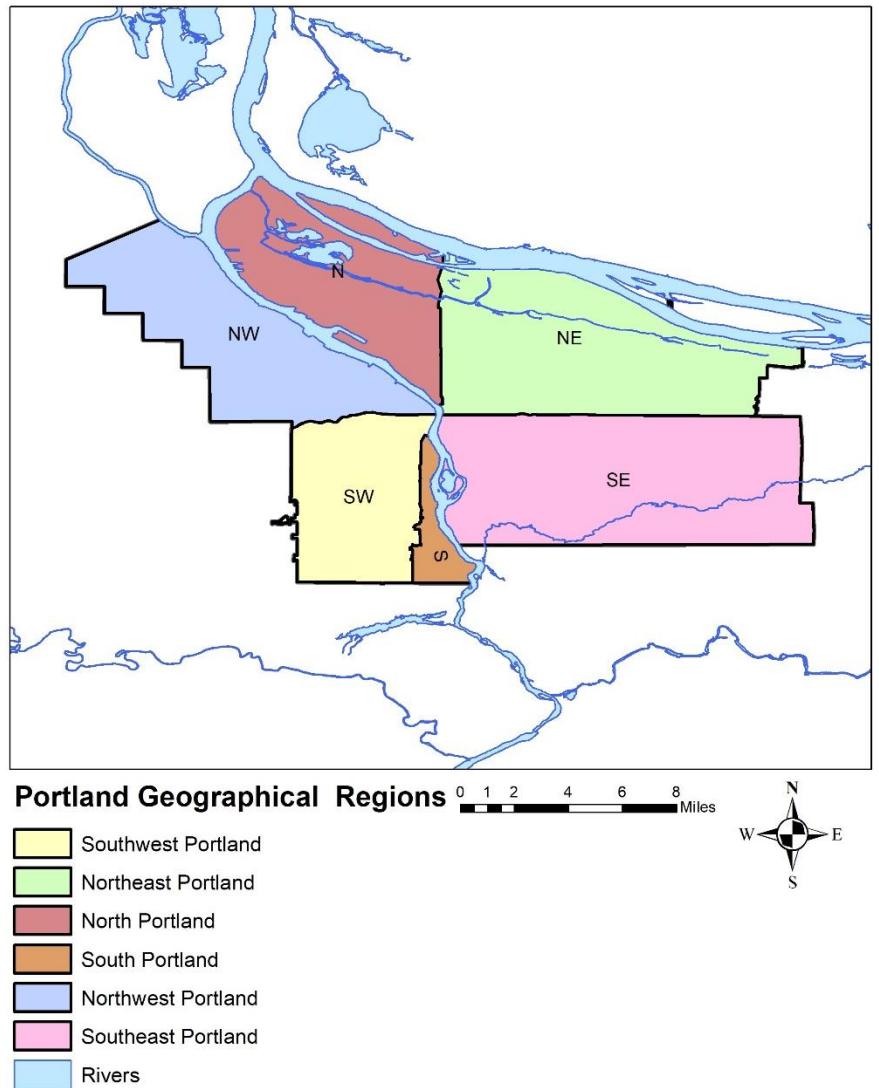
### **Geographical Criteria:**

The geographical location for this analysis, determined by CC, was the City of Portland. This was based on project time constraints and the availability of students to collect and interpret data. Though this organization develops and services properties outside of these areas, the reason for this focus was based on the abundance of existing and future pipeline projects meant to support the region.



**Region:**

For the purpose of this document, the following map stylization was utilized for this spatial analysis, which further splices the region into more focused and decipherable areas; This is meant to provide a more detailed image of each service and resource location, and allow for a more holistic and more transparent interpretation of accessibility and feature richness. For the purpose of CC, it would be advantageous to add a shapefile that depicts each neighborhood, to provide a deeper analysis for each feature, since this report is centered mostly on the macrolevel spatial distribution of resources.



## **Population Criteria:**

Throughout this process, special attention was given towards specific vulnerable and underserved populations when deciding what spatial features to include: seniors, families, homeless, behavioral health, veterans, physical disabilities, and those receiving recuperative care. These populations were predetermined by CC, and was meant to further dissect the complexities of providing resources and services to individuals who carry unique and individualized needs in order to thrive. Outlined below is some information regarding these populations, and how they may benefit from the implementation of PSH.

### ***Homeless:***

Existing studies regarding the impactfulness of PSH for homeless and other housing insecure populations is currently limited in availability, but current research has indicated that it's a powerful tool in supporting and sustaining these populations (Corinth 77). This demographic was the most encapsulating of the population's considered, because it includes a broad range of individuals from all backgrounds. Additionally, the research has indicated that PSH is able to improve the physical and behavioral issues of residents, while also easing them back into more traditionalized housing. This is something that all individuals who fall under this category could benefit from gaining.

### ***Seniors:***

As the United States population continues to grow older, aging in place may be not only a preference, but rather a necessity for seniors to continue enjoying a sense of self-determination. The average age of those experiencing housing insecurity has continued to rise, and is expected to double by 2050 (Henwood 80). Current research about seniors and housing have shown that "client choice, autonomy, and resiliency have positive aging effects comparable in size with that for physical health conditions" (Henwood 86). For this population, it's important that PSH connects this demographic to more health and community specific resources. This is partly driven by the substantially higher impact these resources have on their quality of life, and ability to retain independence.

### ***Families:***

According to the 2017 federal Point-in-Time count, which is an unduplicated count of those experiencing homelessness (sheltered and unsheltered), Oregon had one of the highest numbers of families experience homelessness; roughly 10.9 families out of every 10,000 experienced homeless on any given night (NAEH.org). Out of the populations considered in this analysis, this demographic had the highest number of individuals per unit, since family can encompass two or more individuals, either familiar or chosen. Additionally, this population could require all the resources considered for this analysis, since families can vary by gender, race, age, disability, etc. What these demographics highlight is the need for PSH to capture as many resources as possible, so that they can meet needs of an enigma type definition of family.



**Behavioral Health:**

There is a growing amount of research that shows housing insecure populations with severe mental illness (SMI) “can maintain residential stability in community-based housing with ongoing support services” (Wong 423). Those who’ve experienced sporadic or chronic behavioral health issues, either as a result of substance abuse or genetic disposition, require additional resources to prevent health deterioration. Many health-related issues are connected to each other, which makes it even more pertinent that these individuals are connected with encompassing and quickly available care.

**Racial Equity Considerations:**

It’s important that CC and other institutions continually explore avenues of fostering equitable outcomes. There is a need to incorporate a racial equity lens when considering PSH, due to the overwhelming evidence of racialized and ethnic disparities for People of Color (POC) who have experienced homelessness and other forms of housing insecurity. According to HUD, data indicates that African Americans are significantly overrepresented among persons experiencing homelessness, and accounted for 41 percent of the homeless population (Caton 119). Within the scope of Portland, which has a long history of racialized injustices, it will be pertinent that CC explores opportunities to develop housing for these communities that is culturally and ethnically appropriate, while simultaneously avoiding further displacement and reinforced inaccessibility for existing residents within neighborhoods they enter.

**Feature Criteria:**

Considering these populations and their needs for successful PSH integration, CC devised a list of resources and services for these populations to thrive. These features were then further categorized into three distinct pillars: health, transportation, and institutional capacity. Each pillar functions as a conglomerate of similar features, and provides a clearer and more focused spatial representation of their distribution in relation to viable geography’s for site development.

PERMANENT SUPPORTIVE HOUSING.		
HEALTH	TRANSPORTATION	INSTITUTIONAL



# HEALTH

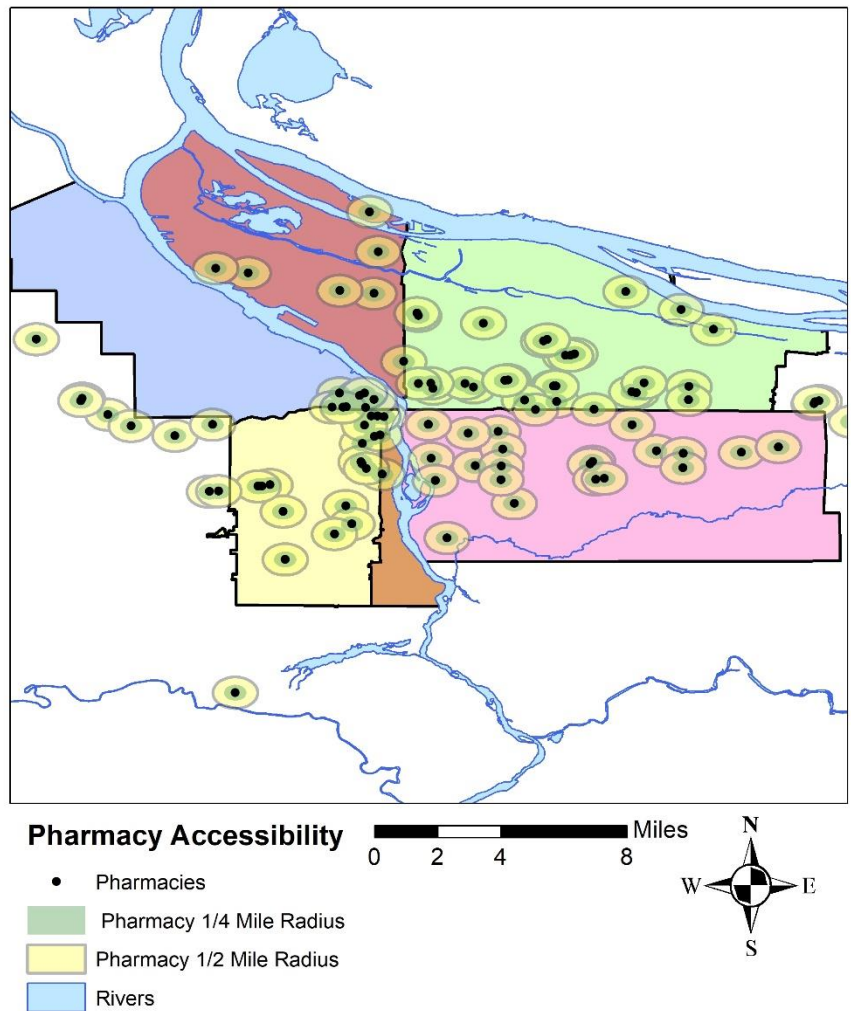


Health is an important pillar of PSH success, because “sustained housing provides a platform from which other physical, mental, and social concerns can begin to be addressed” (nap.edu 4). Though research is limited, there is indication that sustained housing of those experiencing homelessness do benefit from this model. Having residents within neighborhoods that provide the necessary social and physical resources to recipients creates an atmosphere of success and communal symbiosis. Utilizing spatial data, this section breaks down the nutritional, community, and health aspects important for the success of PSH development and implementation. More specifically, most scholars have compared two types of models as it relates to housing and health: “housing first” and “treatment first.” What they found was PSH yielded better health outcomes than the latter (Padgett 230); one notable outcome was those experiencing chronic condition had better medication adherence when provided adequate housing coupled with other supportive resources (Coe 5).

The features selected for this pillar included a range of attributes that directly impact an individual’s physical and behavioral health. They range from more immediate health services to those that carry impact overtime. The following sections provide a more detailed description why each feature was included in this analysis, and briefly indicates how the data for each map was gathered.

## Pharmacies

It is important for people to have convenient and consistent access to their medication and other forms of treatment. This spatial feature was considered important, because it's detrimental for residents needing to manage their behavioral and physical challenges through medication. For example, research has shown that housing insecure populations managing their chronic conditions, such as HIV/AIDS, have difficulty in maintaining medication adherence (Kidder 2243). The importance of pharmacies for PSH residents is multipronged, because it allows them to reach a level of stability and housing longevity that supports medication adherence. The following map depicts the spatial distribution of designated pharmacies within the Portland area. Notably, there are observable gaps in location accessibility, and potentially more depending on the types of medication or insurances accepted (this would require a deeper analysis).



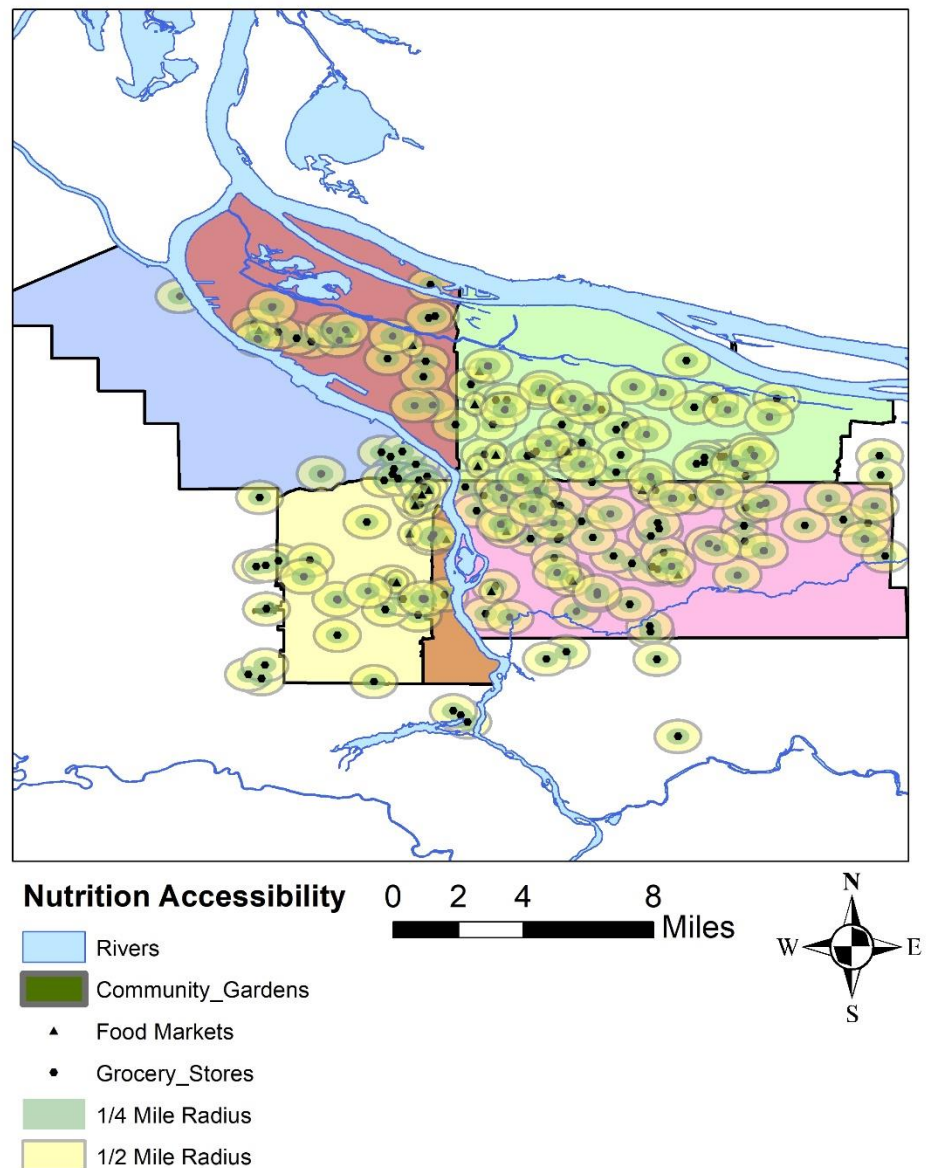
**Collection Method:** This data was collected through GoogleMaps and other similar business directories within Portland city limits. This file included locations specifically provided onsite pharmacy services.

## Nutrition

PSH residents should have access to nutrient-dense foods within a reasonable distance. This not only mitigates existing health problems tied to a poor diet, but can also improve residents' long-term quality of life. As stated by Wolf-Powers,

*“The idea that poor access to markets—in this case large food retail outlets—drives adverse health outcomes resonates with the broader idea that community development efforts can mitigate social distress not by redistributing wealth but by restructuring the choices available to consumers” (4).*

For PSH development this needs to be a factor of great consideration when placing deciding future sites. The following maps indicate the spatial distribution of community gardens, food markets, and grocery stores located within Portland. It can be observed that distribution of these points is fairly encompassing, but is limited by only accounting for physical presence and not nutrition density or affordability (this would require a deeper analysis).



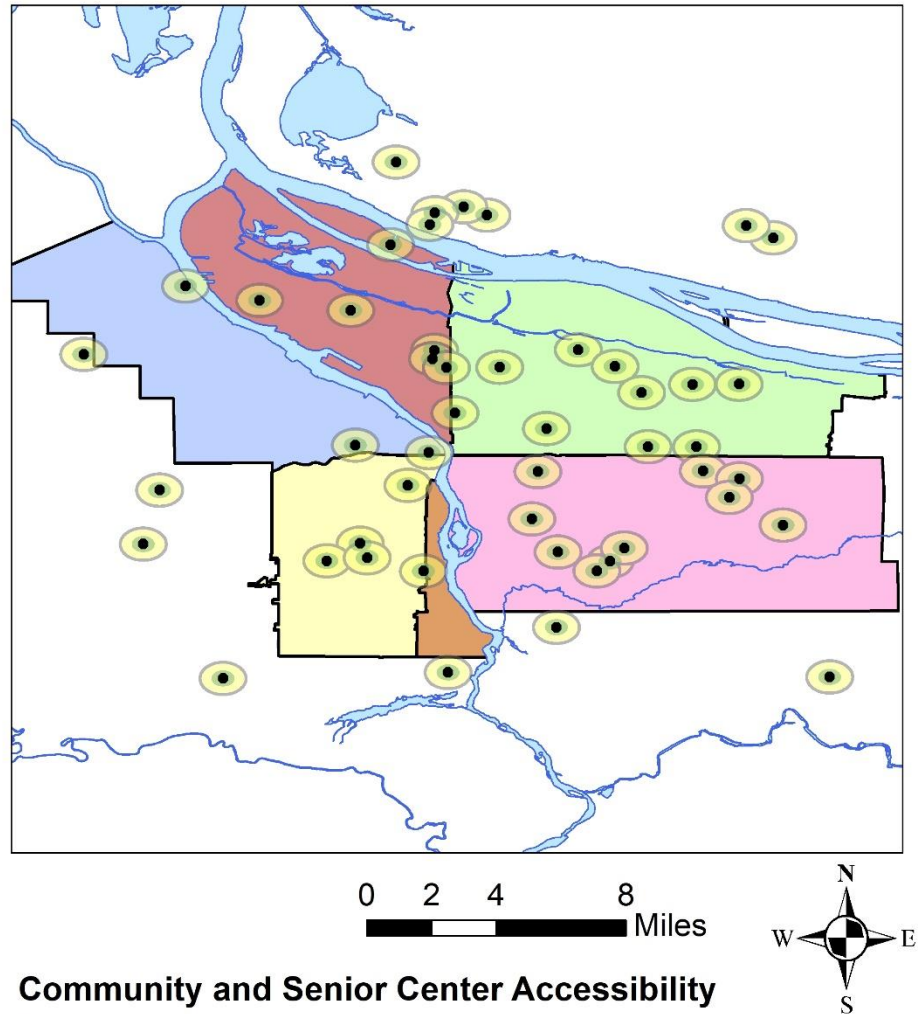
**Collection Method:** This feature is created and maintained by Portland Maps, a city managed geodatabase system, which included all major food retailers, farmers markets, and community gardens. These were chosen based on specificity to providing nutritional products.

### Community and Senior Centers

This feature functions as a connecting point for the community. They help support congregation and discourse, while also creating connections for PSH recipients by allowing them to participate in normal communal functions and events. They provide space to more readily access resources that are encapsulated as the

*“fundamental building blocks of nutrition, social work, housing, learning, and social integration”*  
(Pettigrew 35).

For PSH development it’s beneficial to locate projects near these social epicenters, and partner with these community organizations to foster a smoother transition for these new community members. Additionally, these spaces would also be particularly useful in creating or managing services locally if funding on a land parcel is limited.



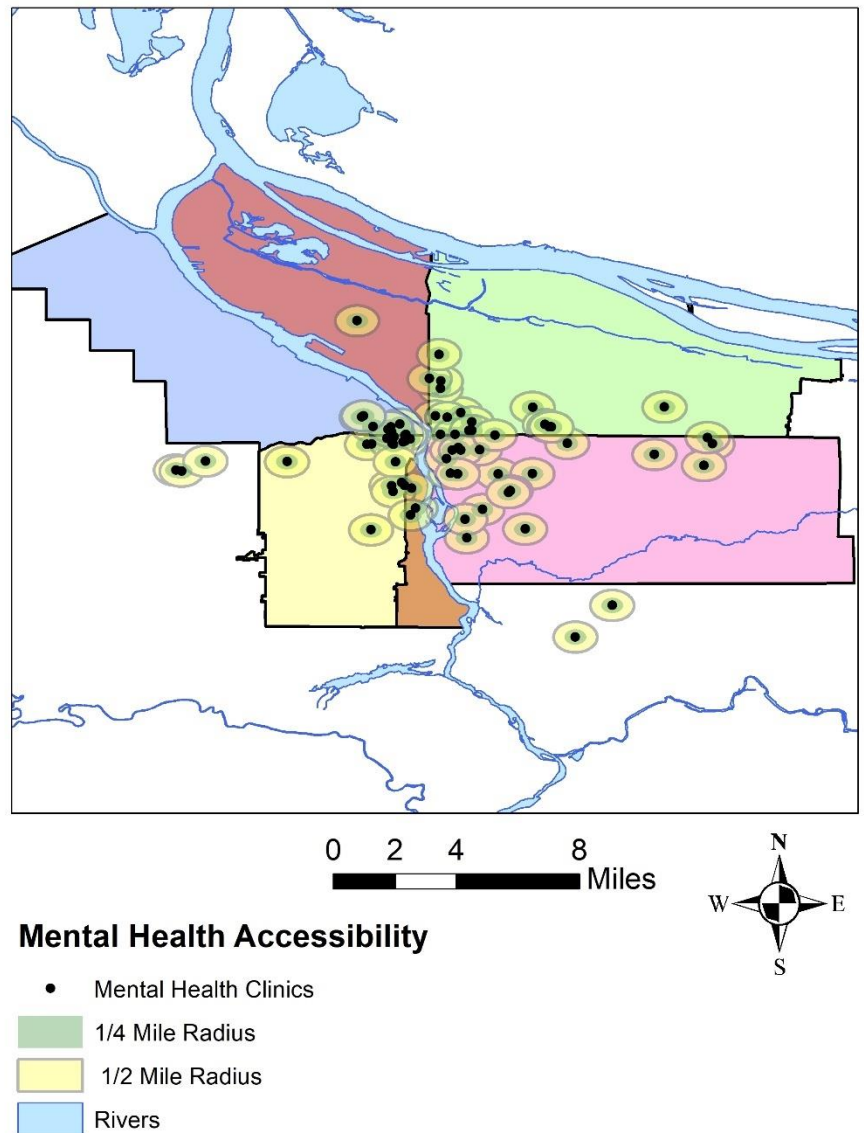
The following maps indicate the location of various community centers within Portland. It’s seeable that there are various gaps in accessibility, and furthermore there were several locations that were geared towards supporting specific populations. More detail regarding the populations they support, and services provided is needed (this would require a deeper analysis).

**Collection Method:** The data included centers that were listed under the City of Portland’s community and senior center website, and any place that was designated as a community asset through neighborhood websites, social media, or Google Maps.



## Mental Health Services

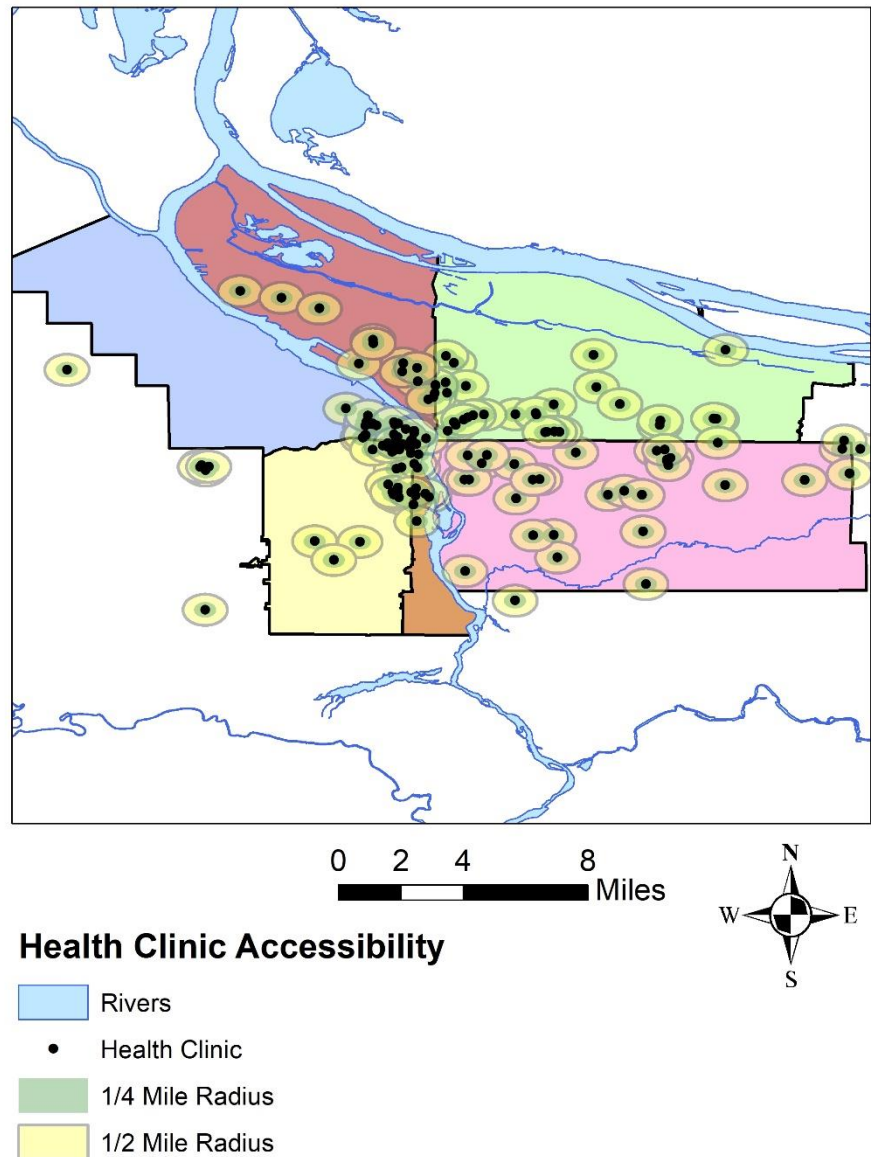
This feature is meant to ensure recipients of PSH can access care for their behavioral health, which can be often overlooked. Though mental health issues are not solely a homeless issue, it's important to address this component of health for its unique challenges with housing insecure populations. Research has shown that residents receiving PSH, with access to consistent mental health services, experienced overall better mental health outcomes. This is due to a variety of factors linked to a sense of safety, security, and routine (Harris 1844). Providing convenient and continual access to these services, if unable to provide onsite, creates an atmosphere of sustained treatment and consistent care. The following map depicts the spatial distribution of mental health clinics and services located within Portland. There is a notable pattern of services being concentrated towards the city center. This means that the outer regions of the city are undoubtedly being underserved.



**Collection Method:** This data was collected through GoogleMaps and other similar business directories within Portland city limits. This included any stand-alone mental health centers (not a sole therapist or provider).

### Health Clinic

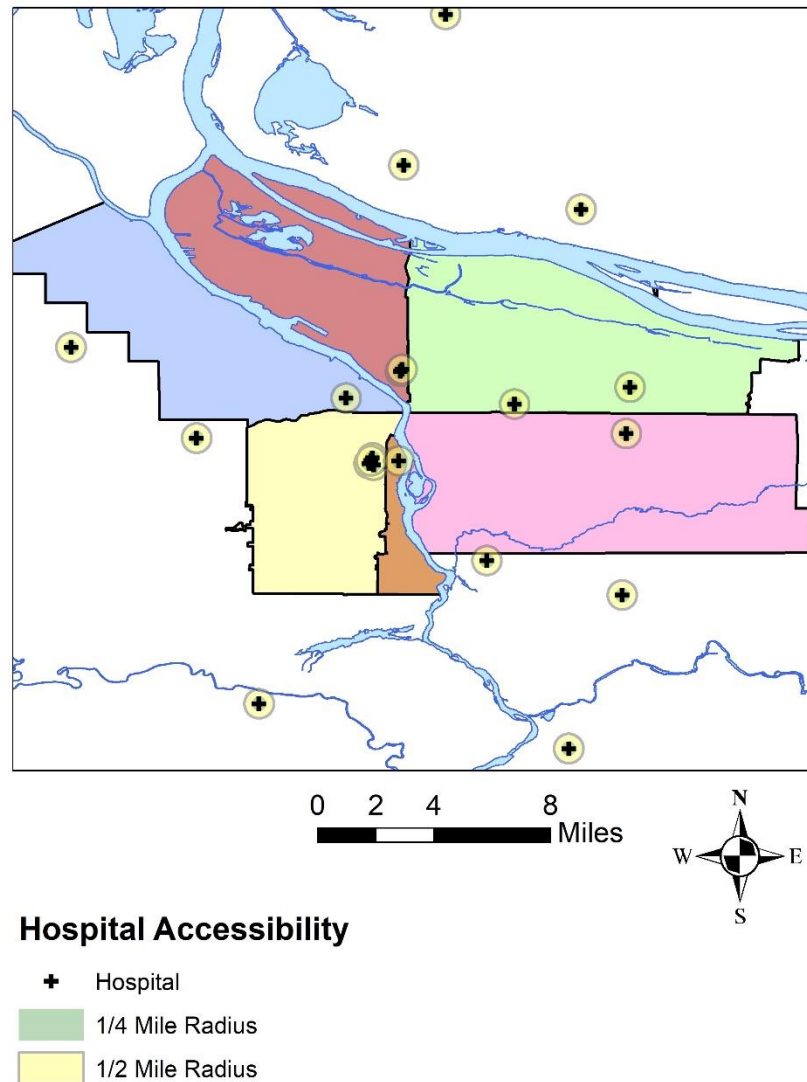
This feature focused on the physical aspects associated with health; behavioral services were also included in this feature, but it needed to be in conjunction with other physical health services. Research has indicated that the presence of health clinics, particularly if no onsite services were offered, was necessary for successful implementation of PSH. The hurdle for future developments is distinguishing the types of care most needed by PSH residents, and connecting them with healthcare facilities and professionals that can treat these issues. The following map depicts the spatial distribution of physiological health clinics and services located within Portland.



**Collection Method:** This data was collected through GoogleMaps and other similar business directories within Portland city limits. This feature included all health clinics that offered any physical health services.

## Hospitals

People that have experienced housing insecurity and homelessness have an exuberantly higher hospital readmission rate than their housed counterparts (Doran 767). Though PSH housing has shown to reduce the “probability of hospitalization and mean number of admissions per person” (Martinez 997), there remains the desire to have PSH near emergency medical facilities. Particularly, those who have been unhoused for prolonged periods of time still experience long term health issues that can manifest into immediate life-threatening emergencies. Therefore, it’s important for PSH projects to be located near these features. The following spatial maps depicts the spatial distribution of hospitals within the region.



**Collection Method:** This data existed within Portland State University H-drive, and was utilized for this analysis.



# TRANSPORTATION



This pillar functions as a connector for PSH recipients to access wider a net of resources, services, and engage other communities. Research has highlighted that access to multimodal transportation is important for PSH recipients, because of their reliance on transportation for accessing resources and services outside of their immediate vicinity (Dickson-Gomez 8). It should be noted that even if a site meets the technical needs of all its residents, having adequate and reliable transportation is important. This provides these community members with a sense of spatial mobility and freedom. Additionally, when considering transportation rich areas for potential PSH development, it's necessary to study the cost constraints associated with transit accessibility; particularly in relation to rural homeless, affordable transportation becomes a larger component to sustained care. This is something that would require its own separate and individualized analysis.

The features selected for this pillar included a range of attributes that directly impact an individual's ability to access multimodal transportation, and includes information regarding transit, bikeways, and sidewalk connectivity. The following sections provide a more detailed description why each feature was included in this analysis, and briefly indicates how the data for each map was gathered.

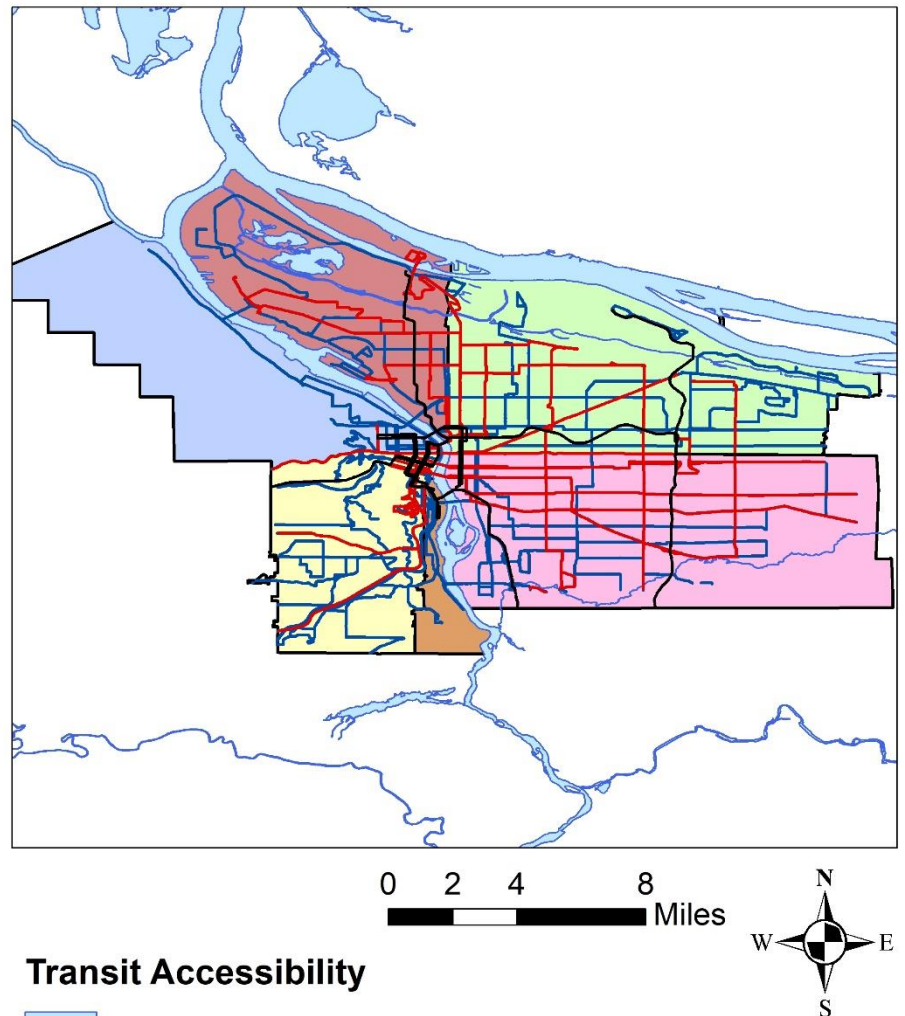
### Transit/Frequent Transit

This feature is crucial to analyzing appropriate areas for future PSH, due to how transit connects outside resources and communities in a quick and reliable manner. Not only would these routes provide PSH recipients flexibility and greater service choice, but having access to transit allows for residents to gain larger economic opportunities. Additionally, locality near reliable transportation combats geographic and social exclusion. Research has indicated that

*“homeless populations travel for similar reasons as homed populations...[and] Homeless people compose the most public transit dependent population” (Joycoy1944-1953)*

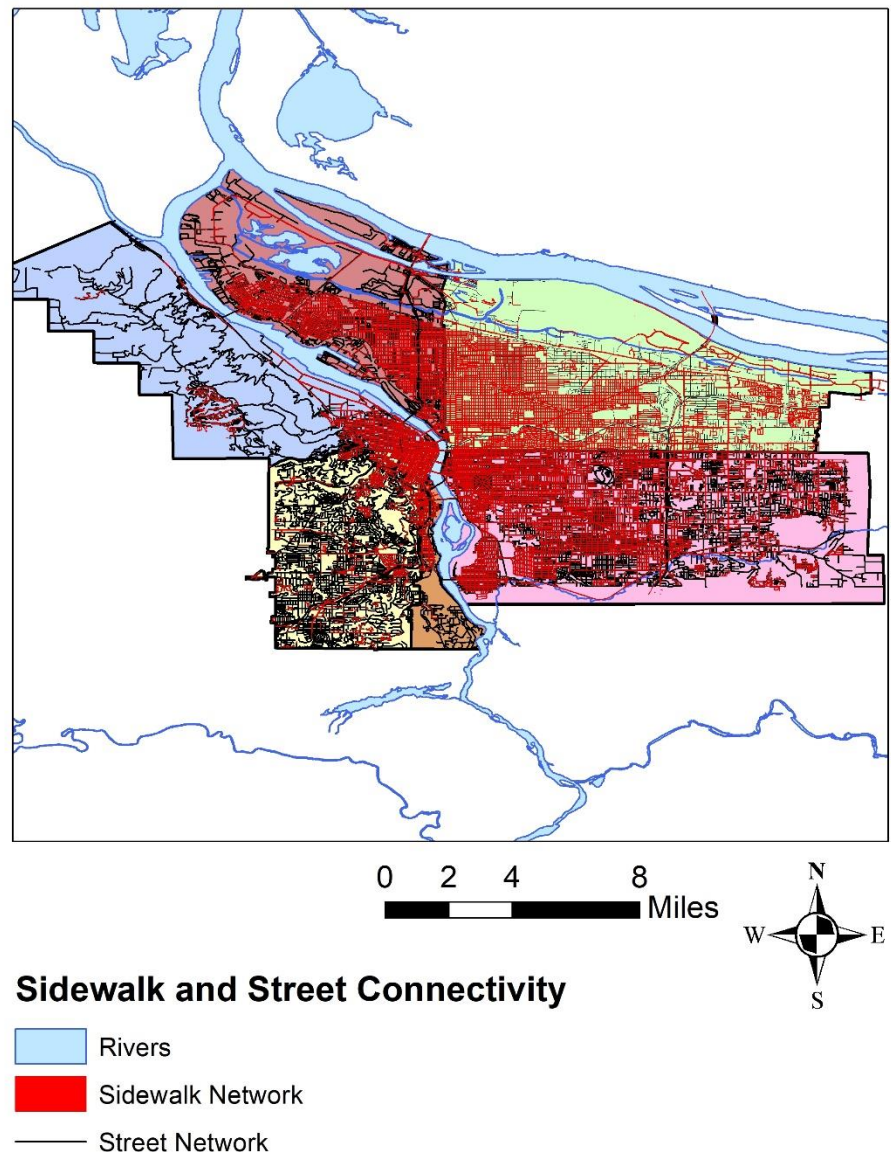
The following map depicts transportation accessibility, while also highlighting frequently serviced routes. It is observed that the transportation network system is fairly encompassing in terms of bus service, while conversely light rail and streetcar seem to be concentrated towards the center of the city. Further studies showing how travel times compare to both features would be advantageous in determining if there exists a substantial difference in commuting time and preference.

**Collection Method:** These shapefiles were created and maintained by PortlandMaps and Trimet.



## Sidewalks

This is an important feature that connects communities in an equitable and safe manner. Specifically, for those who are disabled, elderly, or an adolescent, having connected sidewalks is a necessity to navigate their community; lack of adequate infrastructure fosters an environment of social isolation and health problems for community members unable to easily navigate their surroundings. Additionally, research has highlighted sidewalk connectivity had a relationship with other modes of transportation. According to Werner research showed that, light rail use was associated with living on a block that had more walkable design features (210). The following spatial maps depict the amount of maintained sidewalk space in comparison to active streets and roads.



**Collection Method:** These shapefiles were created and maintained by PortlandMaps and Trimet.



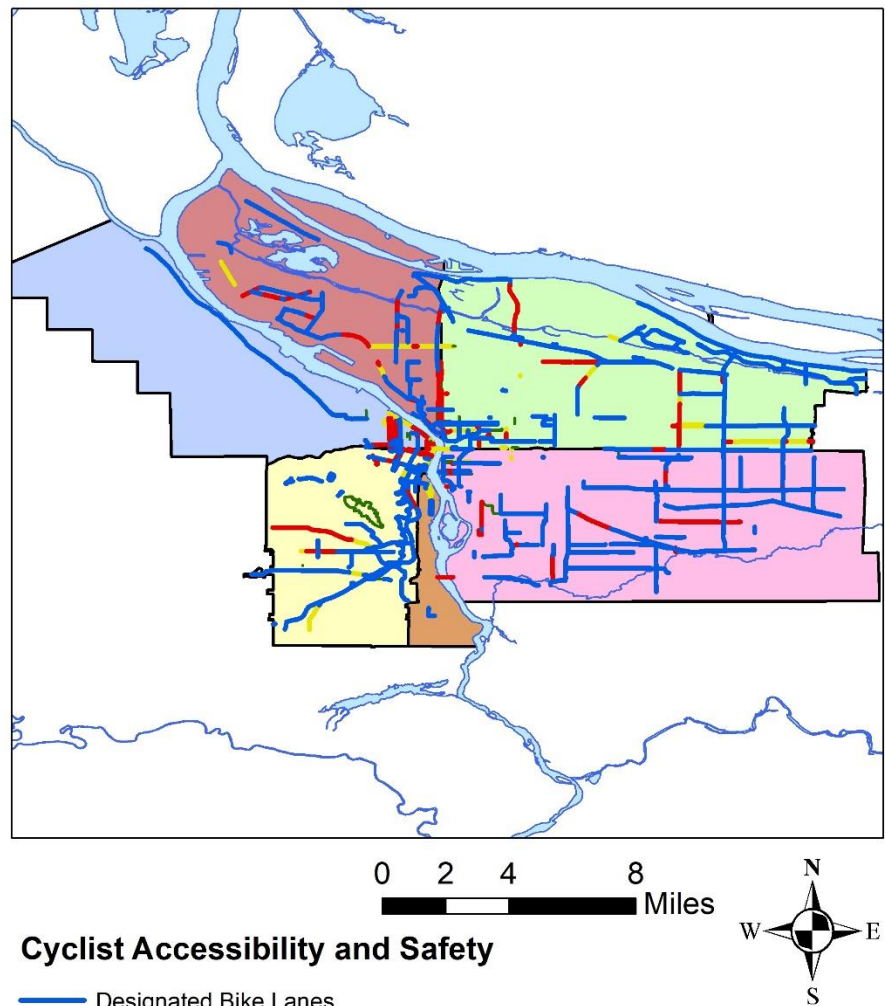
## Bikeways

This feature was deemed important since bikeways add another layer of opportunity for individuals to engage with their community and other modes of active transportation; greater access to these spaces have been linked to better physical and mental health outcomes. For able bodied housing insecure populations, this has been a method to retain transportation freedom and inclusion when other modal choices increase cost or generally inaccessible. According to Parker, the

*“qualities of the bicycle increase the fine-grained, neighborhood-scale accessibility of their bicycling movement (9).*

Within the scope of Portland, the following map depicts the spatial distribution of the following: buffered bike

lanes, enhanced shared roadways, protected bike lanes, and designated bike lanes. These were specifically chosen, due to their increased safety value. There are notable gaps in connectivity, which indicate there is variability in usage safety throughout the city.



**Collection Method:** These shapefiles were created and maintained by PortlandMaps and Trimet.

## INSTITUTIONAL



This pillar is meant to look at institutional capacity to support PSH and other housing insecure populations. The reason for including this within our analysis is to highlight the breath of services within the region that support housing insecure populations through governmental and other private sector channels. This is arguably the most encompassing pillar within this analysis, because it encompasses an array of services that support a multitude of populations. Specifically, this section addresses childcare, economic status, and ability to access spaces for religious or educational purposes.

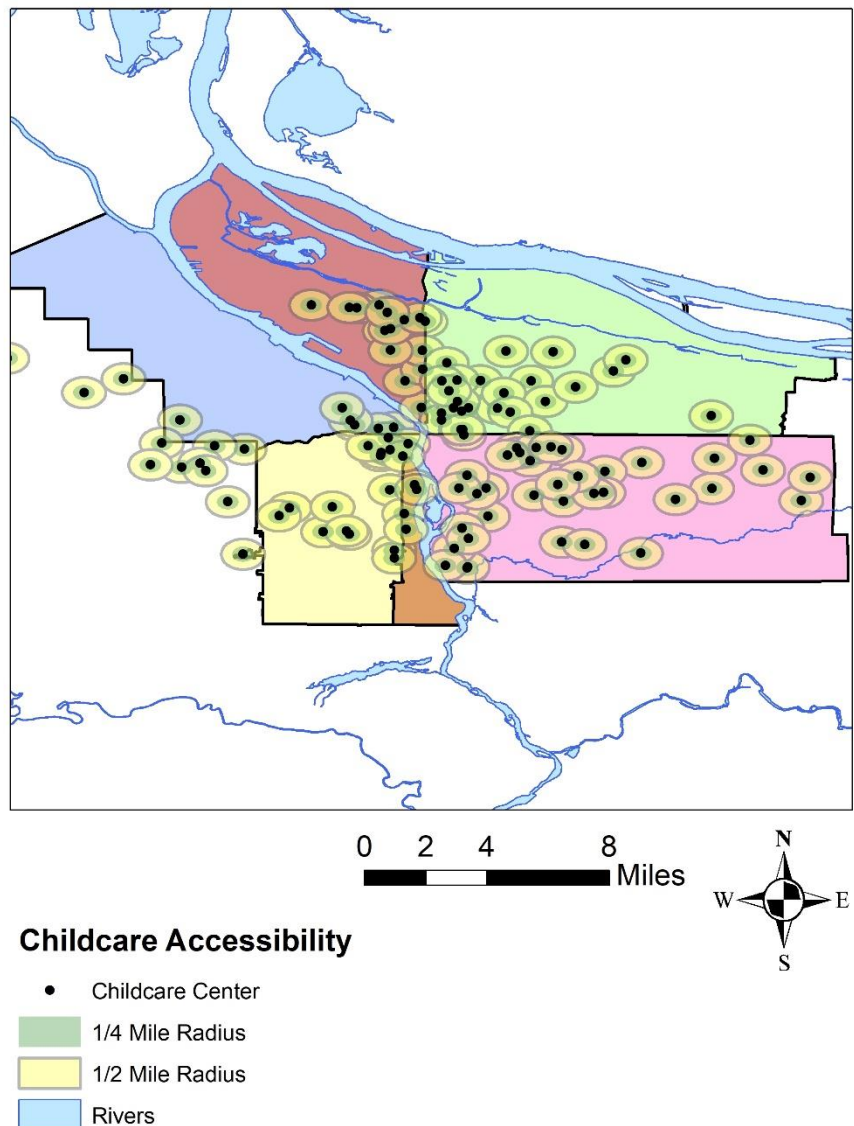
The features selected for this pillar included a range of attributes that directly impact an individual's access and navigate institutional resources, and includes information regarding childcare, job training, library, education, religion, and controlled substances. The following sections provide a more detailed description why each feature was included in this analysis, and briefly indicates how the data for each map was gathered.

## Childcare

This feature is specifically important for families receiving PSH. According to research,

*“earlier attendance in a center continues to predict higher cognitive proficiency” (Bassok 227).*

For families this is something that not only has an impact on their current earning potential, due to children requiring more frequent supervision and guidance, but also have an impact on the family’s multigenerational income earning potential. This means the availability of childcare has an immediate and prolonged impact on communities. This map depicts the spatial distribution of childcare facilities within the region. There are observable gaps in service, which are primarily clustered in the eastern part of the city.



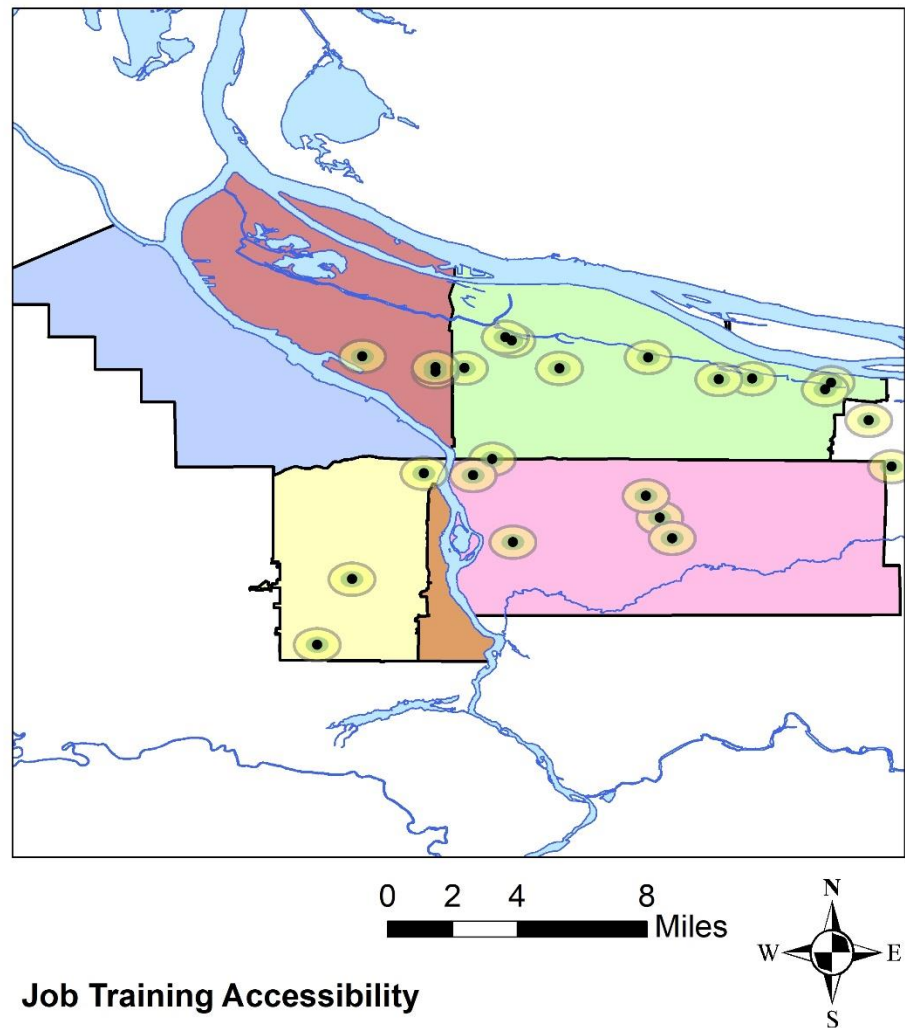
**Collection Method:** This data was collected through *GoogleMaps* and other similar business directories within Portland city limits. This feature included all childcare facilities ranging from infant to preschool/prekindergarten.

### Job training centers

Connecting PSH residents with training and skill fosters self-sufficiency, career advancement, and a sense of self determination. Particularly, for those who need to develop technical skills or are seeking a new professional path, these institutions prove to be important components of long-term success. This feature is something that can benefit a wide array of individuals at all stages of their life. Research regarding a similar program in New England amplified these types of program successes. The results showed overall improvements

*“in all types of work and related life skills... improvement was still evident at the 6-month follow-up...the biggest gains appeared in the workplace technology and social networking domains”*  
(Nelson 720).

The following map depicts the spatial distribution of job training sites throughout the city. Based on their location, it can be inferred that they exist primarily located near existing industrial area.

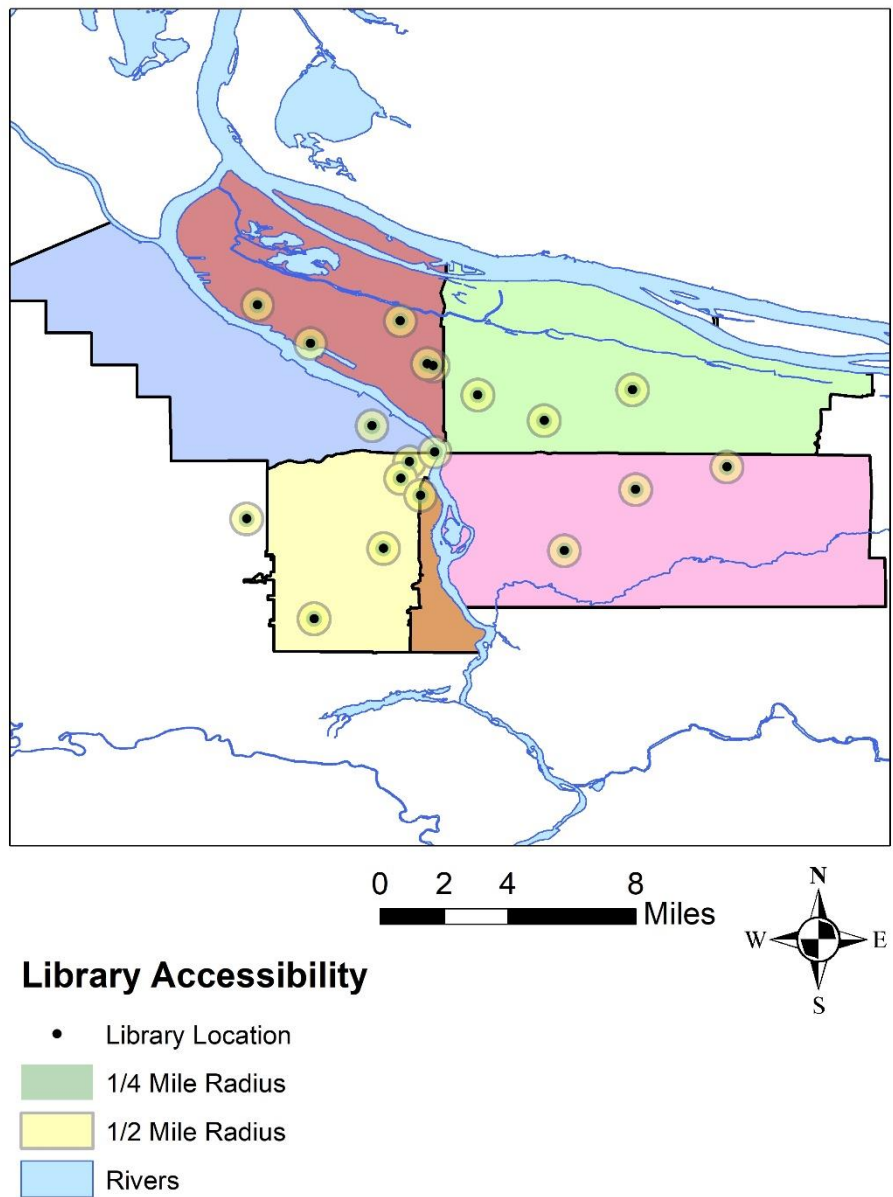


**Collection Method:** This data was collected through GoogleMaps and other similar business directories within Portland city limits.



## Libraries

This feature is multifunctional in the sense that it functions as a connector between education and community; many of these institutions have expanded to include digital resources that offer an array of material that fosters more equitable and engaging learning opportunities. The social component of these spaces fosters an environment for PSH and other housing insecure populations to find a sense of social inclusion (Hodgetts 949). The duality of these spaces as educational, communal, and socially inclusive institutions gives PSH recipients the ability to achieve a semblance of both resources and normalcy. This map depicts the spatial distribution of library accessibility within the region. Again, it's observable that there are clear gaps in the eastern portion of the city, while overall service presence is dismal.



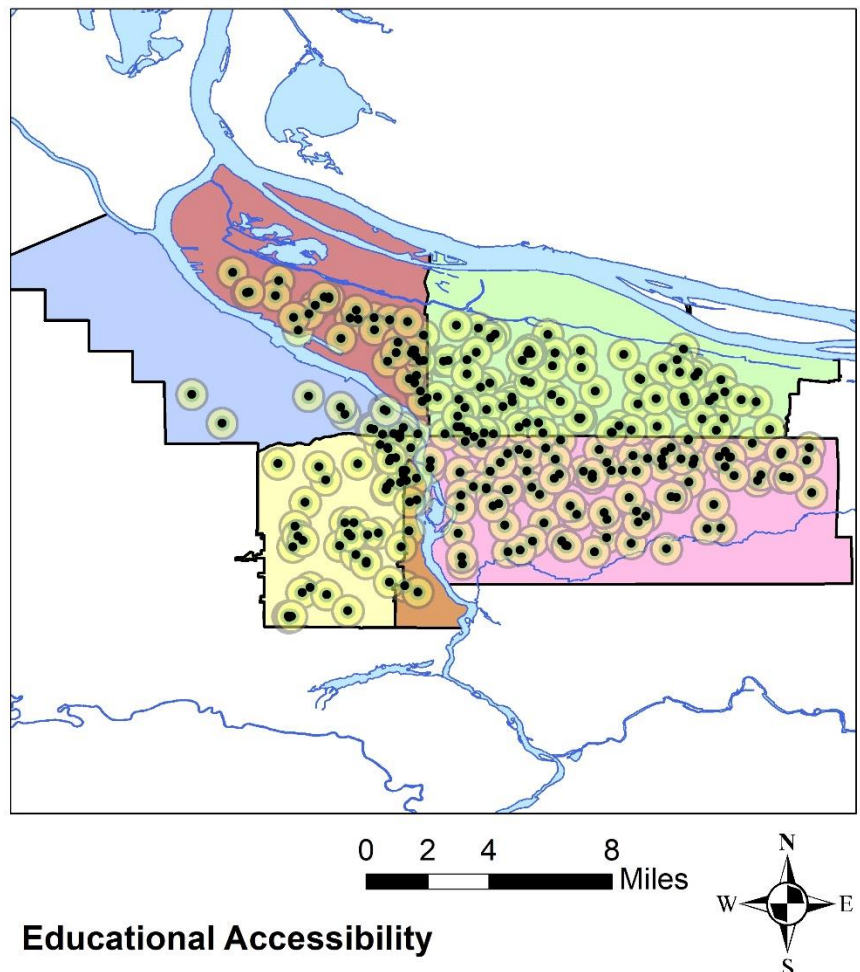
**Collection Method:** This data was collected through GoogleMaps and other similar directories within Portland city limits.

### Educational Institutions

The quality of these institutions is particularly important for families and youth receiving PSH. Not only do they provide the academic resources necessary for long term professional success, but they also offer a variety of services that's only accessible through their institution: food banks, technology access, youth skill training, etc. That's why it's important to note the versatility of these institutions. Regrettably, there is gaps in research about the connection between educational services and quality to PSH households.

Alternatively, there does exist studies that amplify the importance of having high quality institutions with additional services for local communities, particularly homeless youth populations. This map depicts the spatial distribution of various academic institutions within Portland, which includes elementary through universities. Without having the opportunity to further

sparse out the various academic levels, distributions of these institutions appear to be rather encompassing throughout the Portland region. Potential shortcomings of service can be observed in the southeastern region.



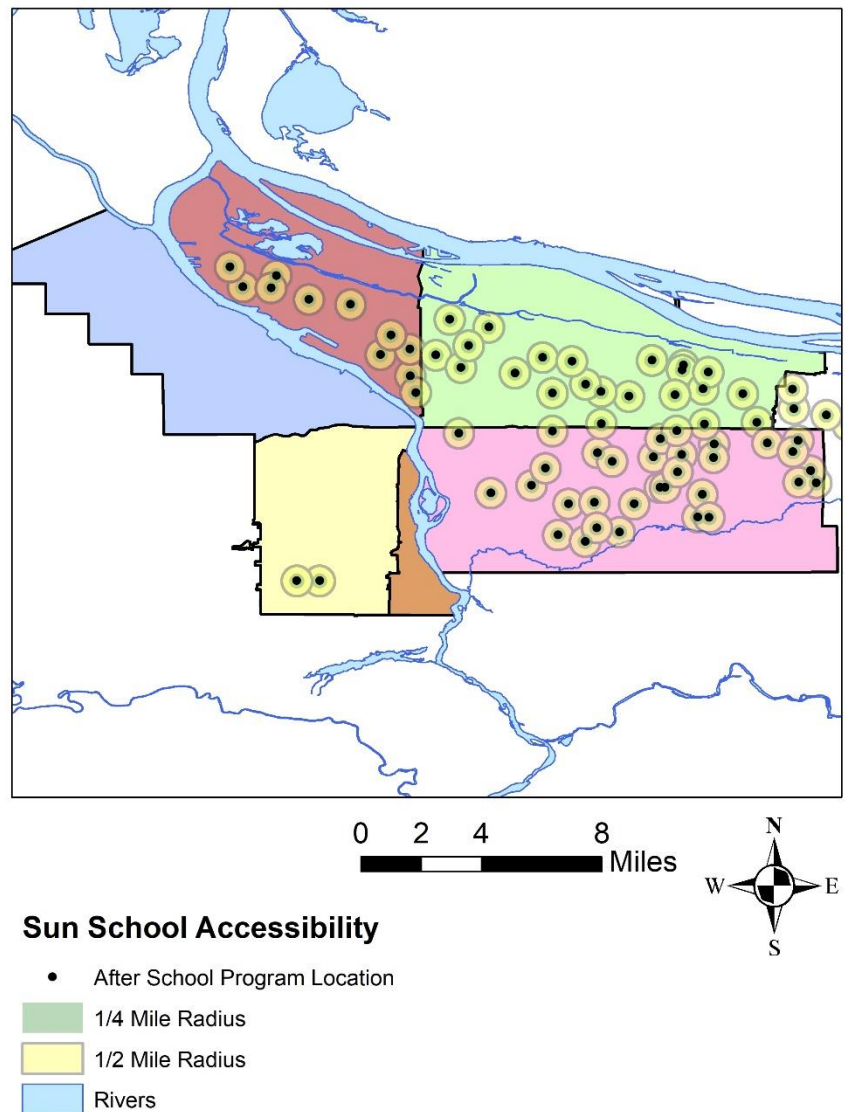
**Collection Method:** This data was collected through GoogleMaps and other similar directories within Portland city limits.

### After school programs

Studies have highlighted the benefits of afterschool programming, which provide a

*“sense of safety, family, and community that extends beyond the realities of homelessness and beyond traditional school hours by igniting hope and opportunities in the midst of trauma, uncertainty, and displacement” (Passafaro 64).*

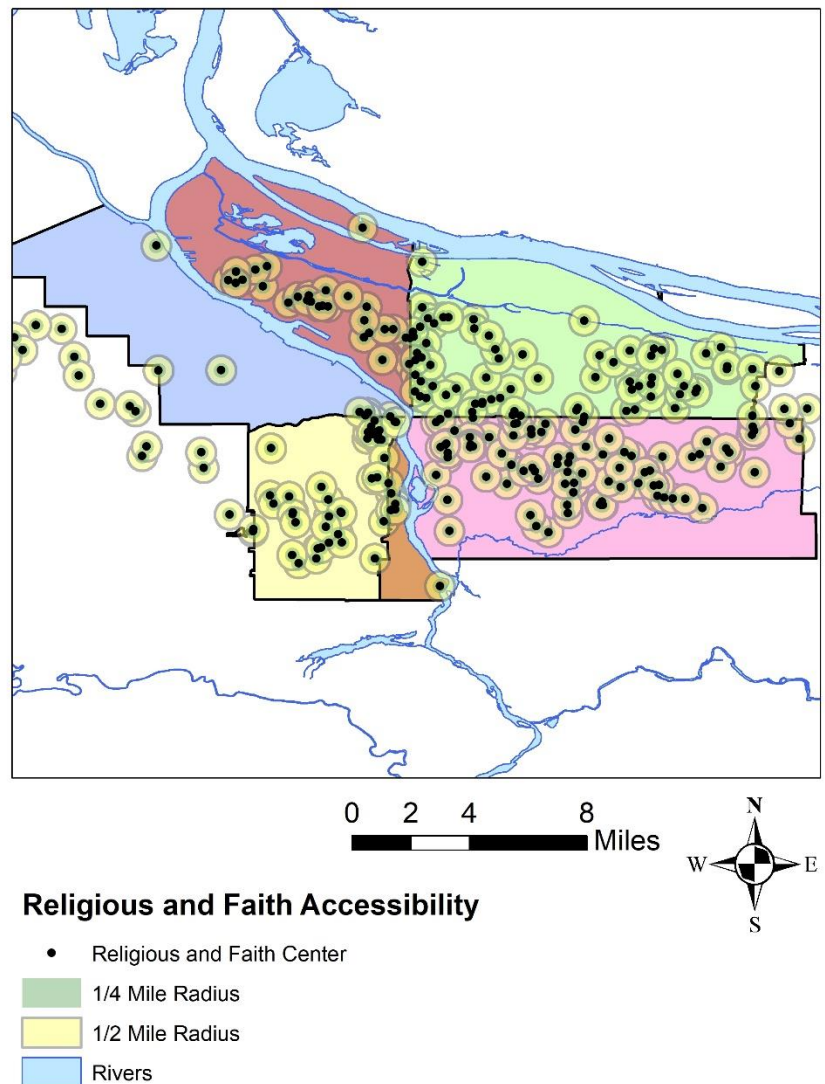
This feature was included, because of its heavy connection to educational institutions and youth success. Due to time constraints, and the complexity of determining viable programs in terms of availability and longevity, it was determined that this feature would focus on the “Schools Uniting Neighborhoods” (S.U.N) program; this most geographically dominant and respected programs in the region. For many families this means great support and development for their children in a safe and supervised location. Alternatively, housing insecure youth and their families can have access to resources, community networks, and safe spaces they wouldn’t have otherwise. This map depicts the spatial distribution of these programs. Opposite of other features, this resource is shown to cluster towards the eastern portion of the city.



**Collection Method:** This data was collected through the SUN programming website’s directory.

## Religious Centers

To those who've experienced housing insecurity or have transitioned to more permanent housing situations, religious faith has been a source of inner strength for individuals. Based on qualitative research, participants noted that they relied on religion as a complement to achieving overall physical and emotional stability (Bazari 201). For this analysis, it was important to include all different places of worship, based on the idea that religious institutions function as a place to strengthen your relationship with your individual god and/or spiritual beliefs. The following map depicts the spatial distribution of religious centers within Portland. Overall, distribution of these institutions was rather encompassing throughout the region. An additional layer of analysis would be required to better understand the types of institutions that are available, and really separate these locations based faith, denomination, and other services provided.



**Collection Method:** This data was collected through GoogleMaps and other similar directories within Portland city limits.



### Liquor Stores/ Dispensers

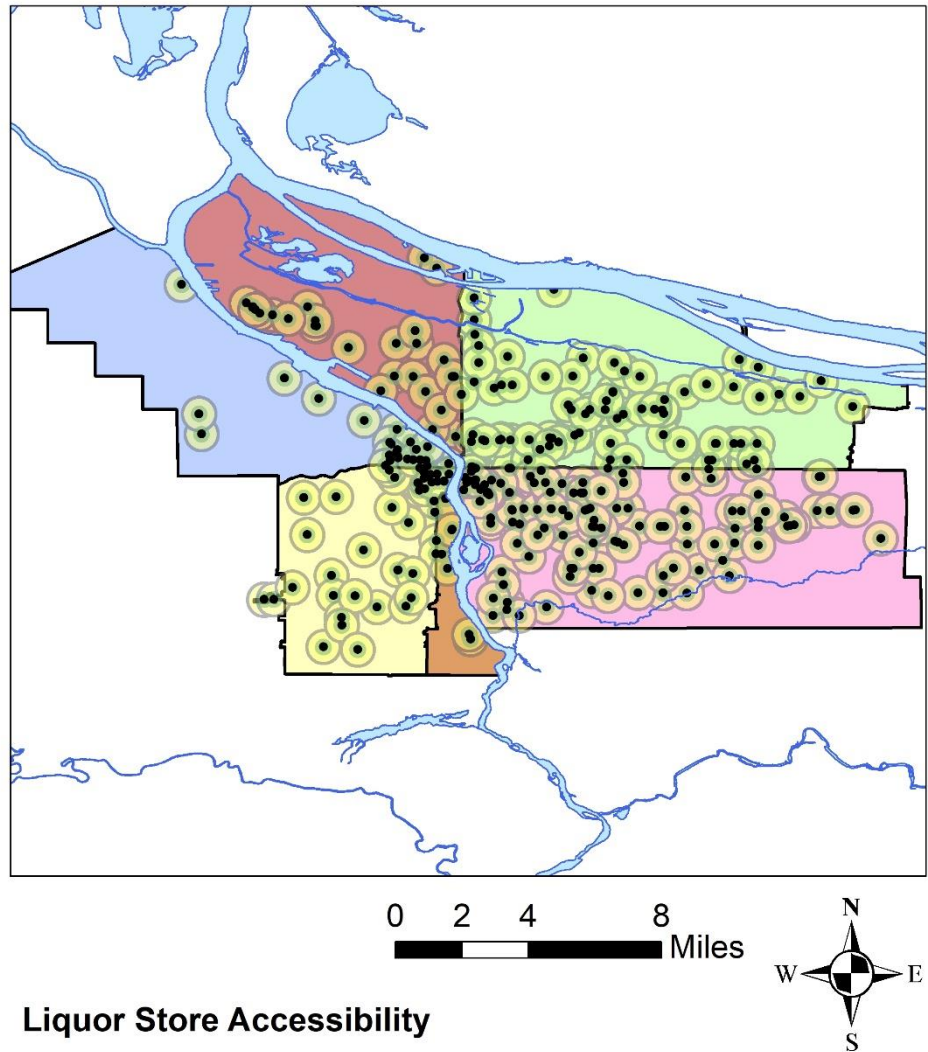
Both these features were combined, due to their classification as a controlled substance. Though it's important to not vilify individuals who are homeless and partaking in these recreational substances, it's important to be conscientious of the potential physical and emotional triggers associated with prolonged and excessive use.

Conversely, marijuana has been used to treat various physical and behavioral health issues; research is still emerging, since recreational usage was previously illegal. The following map depicts two sections:

convenience liquor store and marijuana dispensary accessibility. The first map depicts the spatial

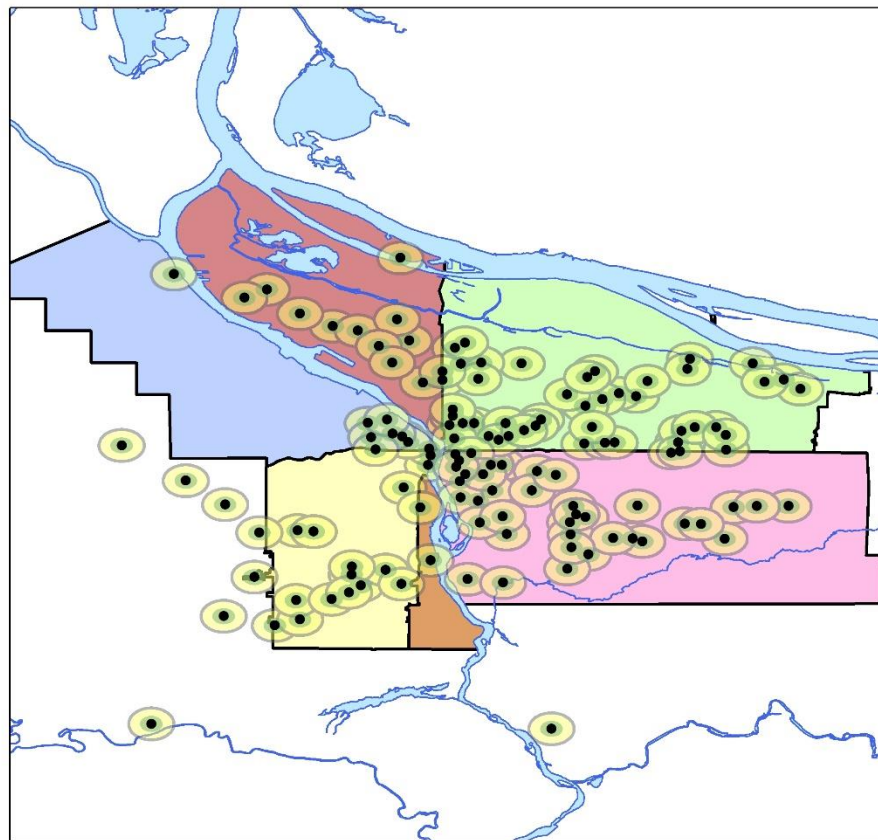
distribution of liquor stores in Portland. Observably, the presence of these locations is profound, and the only show absence in the deep southeastern region. The second map depicts marijuana accessibility, which appeared evenly distributed throughout the region. Moving forward it would be best to create neighborhood level maps that further depict these features spatial distribution to provide more detail in geographical concentration.

**Collection Method:** Convenience store liquor data was gathered from an existing PSU shapefile that was constructed by MURP students who wanted to analyze the existing spatial distribution of liquor students within the Portland Metro region. Marijuana locations were gathered through Google maps, business websites, and Portland business directory.



**Liquor Store Accessibility**

- Liquor Stores
- 1/4 Mile Radius
- 1/2 Mile Radius
- Rivers



### Marijuana Accessibility

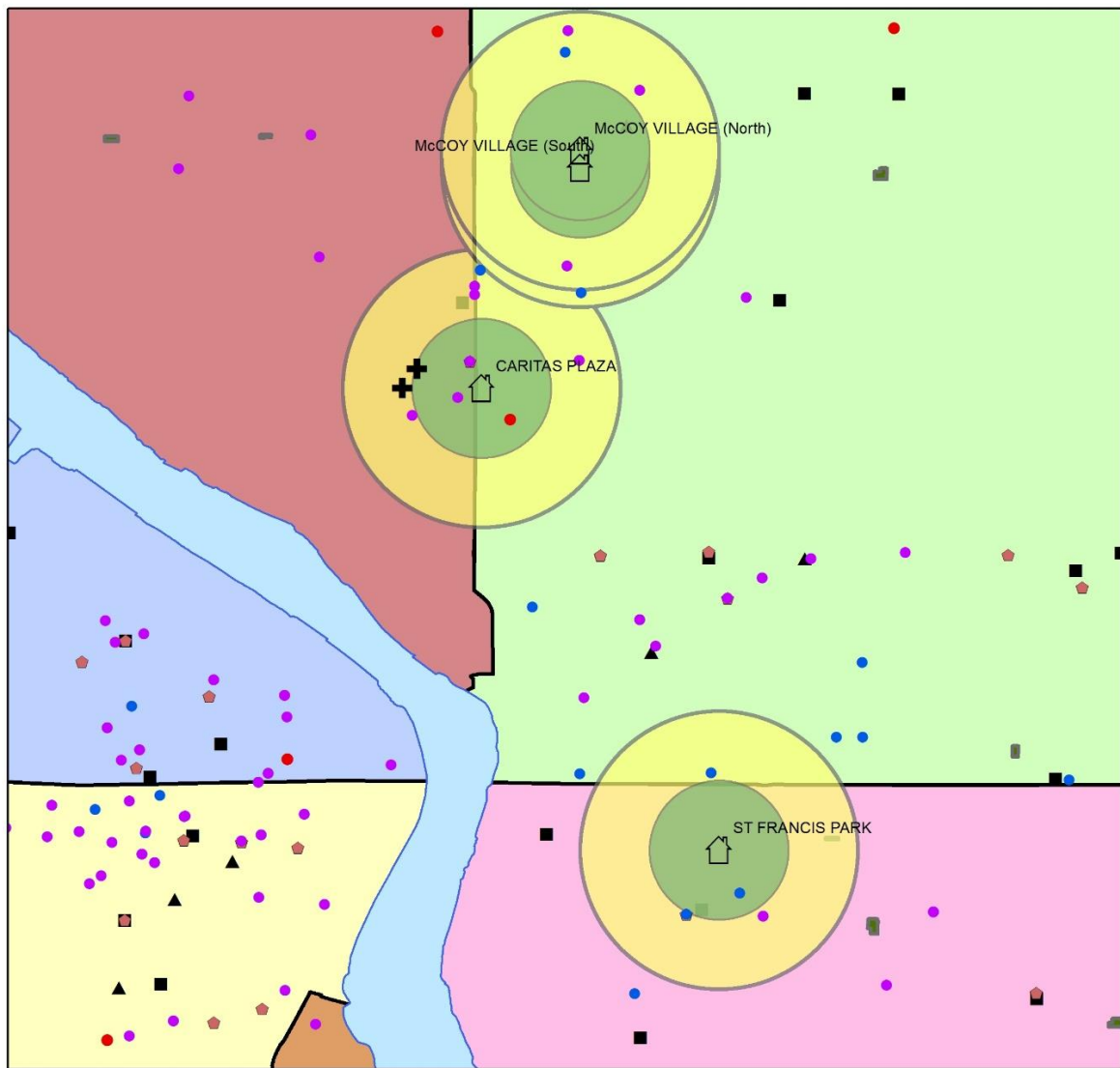
- Marijuana Dispensary
- 1/4 Mile Radius
- 1/2 Mile Radius
- Rivers

Throughout this analysis, we have treated each feature as its own separate entity. To further display the importance of spatially understanding resources and services, within the scope of PSH, it's necessary to contextualize these spaces against existing properties. The following maps depict three existing CC developments, and each spatial feature that surround the immediate area. By displaying these overlays, the goal is to display the symbiotic relationship between PSH and resource richness in a real-world context. The properties used for this section include the following:

- Caritas  
(senior and disabled)
- St Francis Park  
(low-income)
- McCoy Village(low-income)

Note: affordable housing development is influenced by many factors, and projects realistically won't be able to encapsulate all the features viewed important for specific populations. The proposed goal is to ensure that the resources deemed important for a community are available, and that viable future projects are built to support populations.

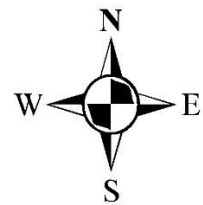


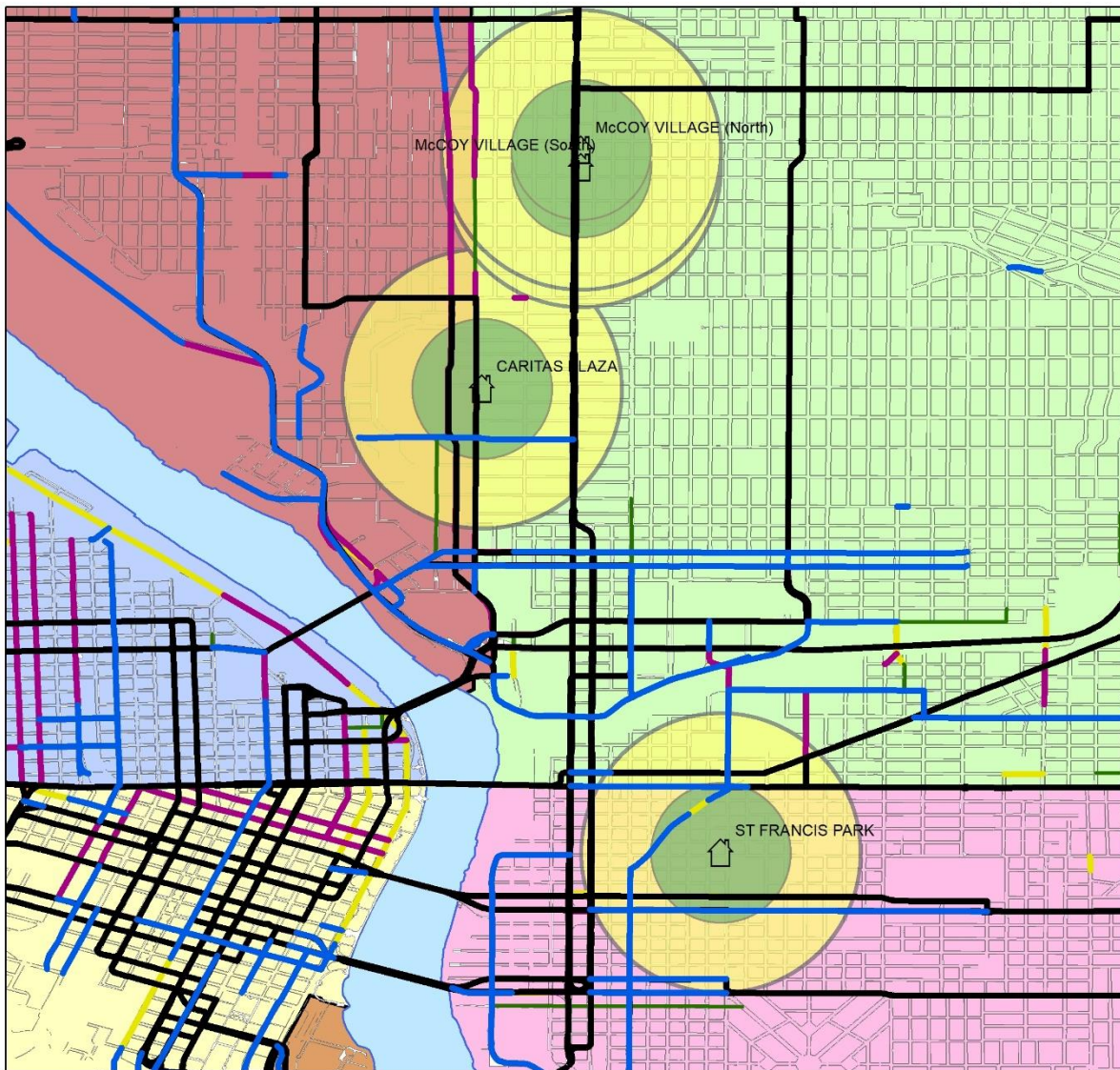


### Health Feature Accessibility

- Properties
- Hospital
- Pharmacies
- Grocery Stores
- Food Markets
- Community Gardens
- Community Centers
- Mental Health Clinics
- Health Clinic
- Hospital
- Rivers










0 0.25 0.5 1 Miles

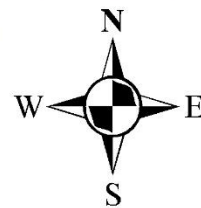


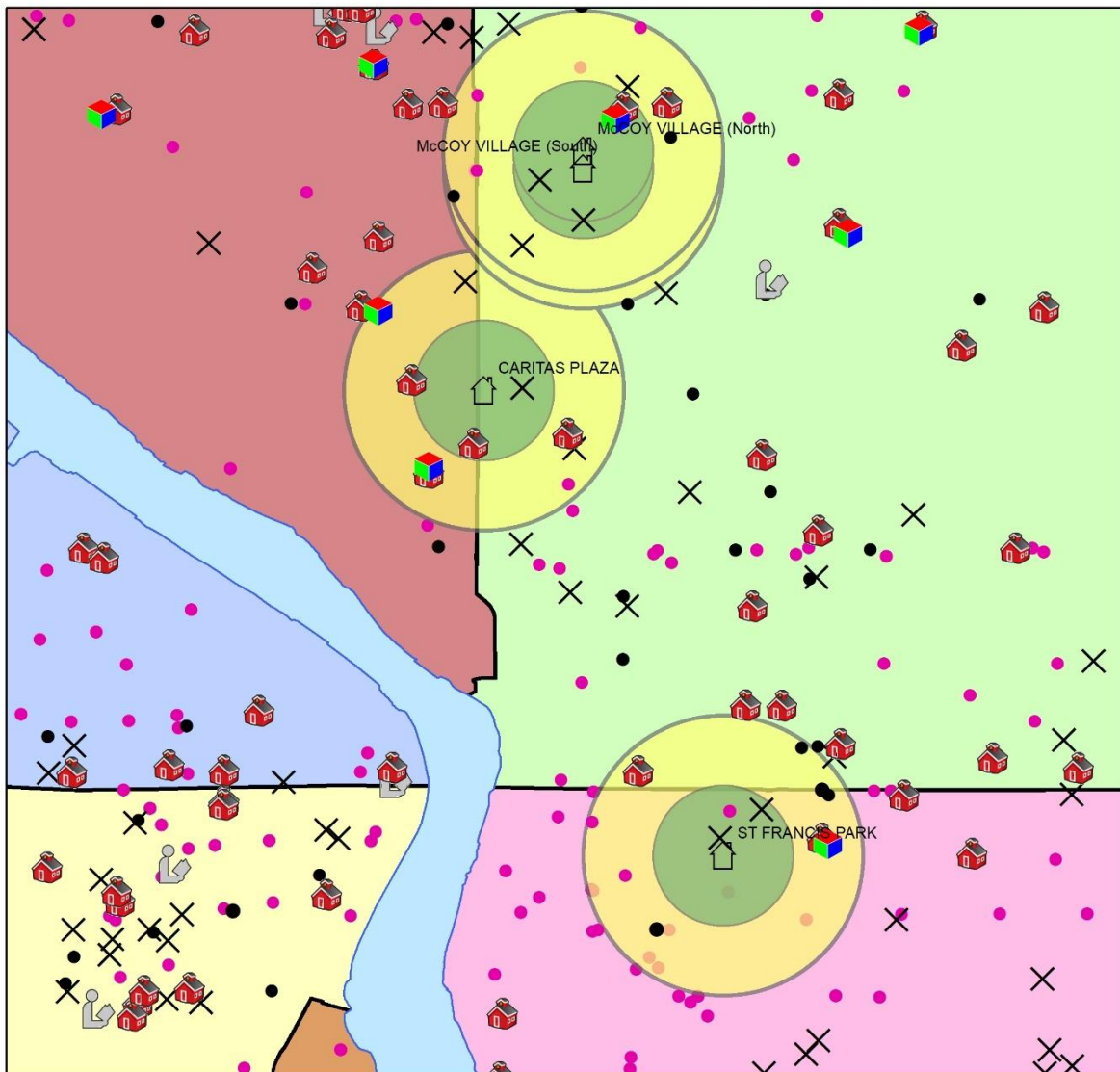


### Transportation Feature Accessibility











0 0.25 0.5 1 Miles

-  Properties
-  Light Rail/Streetcar Routes
-  Frequent Bus Routes
-  Designated Bike Lanes
-  Buffered Bikelanes
-  Enhanced Shared Roadways
-  Protected Bike Lane
-  Sidewalks
-  Rivers

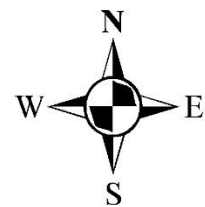




### Instituional Feature Accessibility

-  Properties
-  Childcare Center
-  Library Location
-  Educational Institution
-  After School Program Location
-  Religious and Faith Center
-  Job Training Centers
-  Marijuana Dispensary
-  Liquor Stores
-  Rivers

0 0.25 0.5 1 Miles



## Future Analysis Opportunity

Due to limitations and time constraints of this analysis, partially fueled by the Covid-19 epidemic, we were unable to create an additional layer of analysis that specifically targeted neighborhoods and communities that were most suitable for PSH housing development. To provide guidance towards potential next steps, utilizing the framework of a suitability analysis, the following outlines an additional level of insight and individualization necessary for creating a clear portrait of appropriate areas PSH.

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### *Defining Factors:*

To determine the geographical locations suitable for PSH development when considering resource richness and demographic specificity, the utilization of a weighted GIS analysis becomes necessary. This type of analysis ranks and score areas based on a multitude of criteria. This isn't meant to separate sites based on absolutes, since this analysis can vary based on the resourced needed by a population, but rather may highlights sites more suitable for a project. These scores may appear in the following format, based on the various amenities being considered for development, which could be later replaced with numerical values.

Development Index	
Required	++
Preferred	+
Neutral	+/-
Unnecessary	-
Undesirable	--

### *Defining Score:*

The reason for converting information to a numeric score is to create a spatial weighting system that prioritizes certain resources more than others. Normally, models are created with a “yes or no” criteria, which can be limiting. Furthermore, a higher degree of information can provide more variance to various locations within a specific spatial feature. When converting amenities to a numerically weighted feature, it’s important to also consider the following:

- **Amenity strength**

When assigning values to each feature, it’s important to rank what values are seen as valuable to the community. This chimes at the development index, and its function as further categorizing the various features included in this analysis.

- **Demographic Relevance**

Which amenities are the most appropriate will change based on the demographic being considered, which requires more targeted research and data analysis to quantify what features are most appropriate for that particular population. This is something that will affect both the amenities and distance scores, because different populations may need and perceive these things differently in terms of necessity and viability.

- **Distance**

An appropriate distance would need to be adjusted based on the demographic population being considered, whereas the further away the appropriate amenities becomes the more value it loses.

Distance	Score
$\leq 0.5$ miles	+10
0.51-2 Miles	+7
2.1-4 Miles	+5
> 4 Miles	+3

Once these factors are all addressed and assigned values, then there can be weighted analysis performed. This can be as integrated and detailed as the organization desires, but the purpose is to have enough factors incorporated into the final analysis that allows for a more holistic view of the region and the viable site development within. Lastly, conducting a sensitivity analysis would be necessary, because it would address the following:

- How does the model change when varying/scores and weights?
- How does the model change with changes in criteria?
- How does the model change with data sources?

Moving forward this document sets the groundwork for more advanced analysis to gauge where it's most advantageous for PSH development; this allows for a more tailored and holistic approach when trying to support specific populations by placing projects towards resources needed to thrive. Additionally, the research that's incorporated throughout this document may also provide support in determining criteria weighted criteria, while also providing some guidance in areas worth future research. It's indisputably that having access to uplifting and supportive resources is necessary in giving vulnerable populations the capacity to thrive.

**Discussion:**

Throughout this analysis, spatial data was presented that highlighted the distribution of various resources deemed pertinent for successful PSH development. With special consideration towards specific underserved and marginalized populations, various features were selected that were deemed important for their continued success and longevity within various communities; these were further infused with academic research to support their inclusions. These features were formed into pillars and grouped together based on similarities to provide focus and organization. Additionally, these pillars were contrasted against existing CC projects, to better understand the dynamic relationship between both PSH and resource richness. Regrettably, the time constraints and the Covid-19 epidemic made performing a deeper analysis unreasonable. Future steps were outlined for another CC analyst to create a deeper more multidimensional report when selecting a site potential development.

Reflecting on each feature mentioned in this report, it was observed that some regions carried a higher concentration of resources than others; while more centrally located regions were resource rich across all features analyzed, other areas are left completely under equipped to provide adequate support for homeless and other housing insecure populations. Notably, the more eastern a geography became, the frequency of resources appeared to dwindle; this indicates a potential inequity within the region that has a huge effect on lower-income and other vulnerable populations already existing within these spaces. This is something that will play a role in deciding future CC developments as it relates to project locations and PSH strengthening; it should be noted that it's important to provide housing and care for individuals that want to stay near their communities, while also not building housing resources that ultimately concentrate PSH recipients all in a particular area.

For CC this report functions as a starting point to better serve marginalized and underserved communities. Though they've made strides in supporting homeless and other housing insecure populations, adding a multidimensional approach to PSH development is important. Notably, these communities aren't static, and require dynamic solutions that provide the care they need.

**Methodology:**

Quantitative and qualitative methods of research were used in this analysis, which included academic articles, professional interviews, and residents surveying. These findings were synthesized into the final report. Conversely, there does exist gaps in research regarding the successful components of PSH; a lot of research focuses on various case studies and examples of where implementation has been a success. Though these are helpful in establishing a case for the success of PSH, there still lacks an abundance of quantitative research regarding these types of development. That's why it's important for CC to maintain a holistic and multidimensional approach to housing vulnerable populations.



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