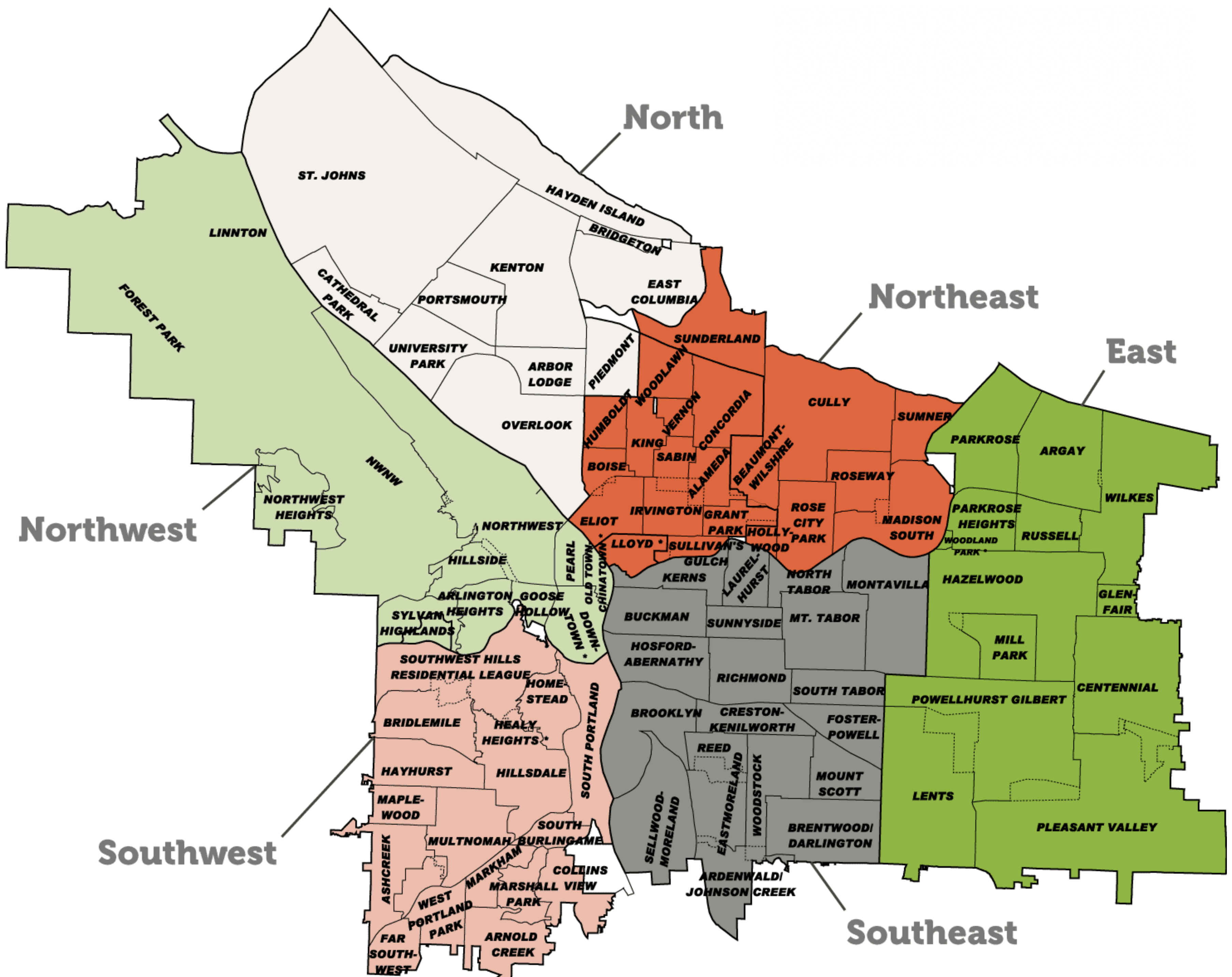


A Just City?

How Portland Neighborhoods Stack Up on Environmental Justice.



Source: Home Team Portland via <http://www.technocult.net/2014/11/16/mutation-vectors-east-bound-but-not-yet-down-edition/>

Introduction

The Braided River Environmental Justice (EJ) Scorecard is divided by neighborhood coalition and scores Portland neighborhoods based on the presence or absence of 13 EJ principles. Environmental justice addresses the fact that those who live, work, and play in the most polluted environments are commonly low income people and people of color. The modern environmental justice movement is usually traced back to Warren County, North Carolina in 1982 (Skelton & Miller, 2016). When the state decided that Warren County would make the perfect dumping site for toxic soils laced with polychlorinated biphenyls (PCBs). PCBs are a group of man-made chemicals that have a range in toxicity. Before their production was banned, PCBs were used in a variety of industrial and commercial applications such as electrical equipment and paint (EPA, n.d.). Predominately Black residents mobilized to block the dumping of this toxic material, laying in front of the trucks. However, the PCB-laced soil was still dumped in Warren County. Nonetheless, the national attention that the Warren County protests attracted is considered one of the first major milestones in the EJ movement (Skelton & Miller, 2016).

Prior to Warren County, Caesar Chavez organized Latine farmworkers to fight for workplace rights, including protection from toxic pesticides in the early 1960s. Black students in Houston took to the streets to protest the siting of a deadly city dump in their community in 1967. Then in 1968, residents of West Harlem unsuccessfully opposed a sewage treatment plant. Jumping ahead to the 1990s, the U.S. Environmental Protection Agency (EPA) created the Office of Environmental Equity after a campaign by environmental justice leaders (Skelton & Miller, 2016).

Environmental justice is an intersectional approach that acknowledges the environmental work done by people of color. As such, this scorecard was developed collaboratively with the input of Portland's environmental activists, non-profits, and community members. We believe that learning more about how different neighborhoods have been impacted by planning decisions will point us in a more equitable and sustainable direction. This scorecard is meant to shine a light on where support from community members and planners could be put to good use. We present this information with the hope that it will help you, a member of our community, know where to organize and what issues affect your neighborhood or adjacent areas. We envision an equitable, healthy, and resilient Portland. The first step to looking forward is understanding our past and the impacts of historic decisions.



Land Acknowledgement

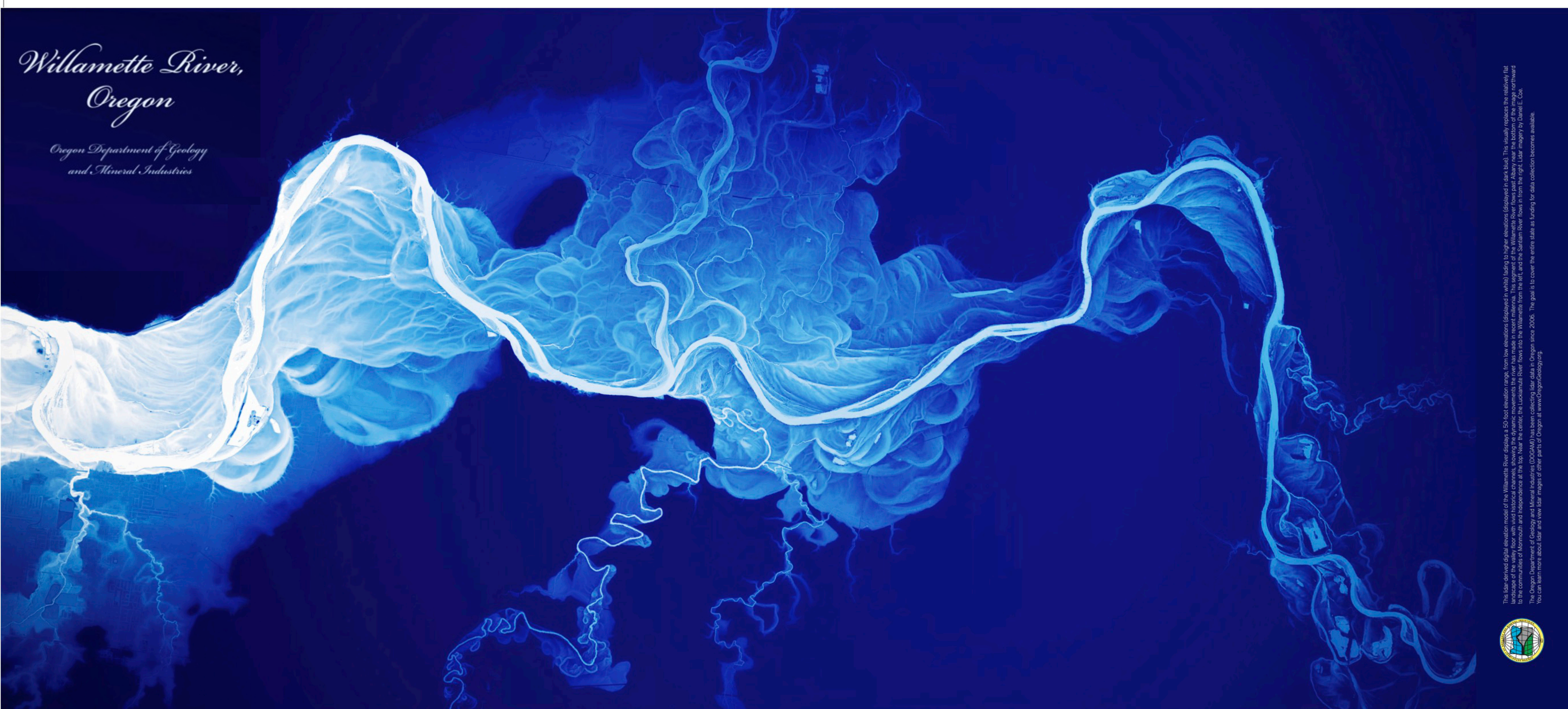
We acknowledge that we are on the traditional village sites of the Multnomah, Kathlemet, and Clackamas bands of Chinook, Tualatin Kalapuya, Molalla and many other tribes who made their homes along the Columbia River. The Multnomah are a band of Chinooks that lived in this area.

We thank the descendants of these tribes for being the original stewards and protectors of these lands and waters since time immemorial. We acknowledge that Portland, OR has the 9th largest urban Native American population in the US with over 380 tribes represented in the region. We also acknowledge the systemic policies of genocide, relocation and assimilation that impact many indigenous and Native American families to this day.

We are honored to be guests upon these lands and waters. We pay our respect to elders, both past and present, who have stewarded this land throughout generations, through today.

Who We Are

The Braided River Campaign (BRC) is a coalition of community members, Willamette River advocates, environmental nonprofits and communities in North and Northwest Portland who have a vision of creating a healthy, equitable, and green working waterfront in the North Reach of the Willamette River. We believe that thriving economic opportunities can coexist with the protection of natural resources and the environment. We are presenting a community-driven bold vision to guide the future of our Portland working waterfront that is inclusive of community concerns and priorities, easy to access, protects our natural resources, is diverse in its use and mindful of the next generations and future of the Harbor.



Methodology













The scorecard was developed through desktop research along with the feedback of neighborhood associations. Sources are listed at the end of the document. Maps developed through the use of GIS are also included to help visualize the results. Below are the working definitions for the EJ principles in the scorecard:

- Borders Superfund: The neighborhood sits along the Portland Harbor Superfund Site.
- Borders Highway: The neighborhood borders or is bisected by a highway or freeway.
- Industrial Zoning: The neighborhood contains land zoned for industrial uses.
- Heavy Industrial: The neighborhood contains land zoned for heavy industrial uses.
- Trains: The neighborhood borders or is bisected by railroad tracks (excluding light rail and streetcar tracks).
- Oil Tanks: The neighborhood houses fossil fuel infrastructure.
- Food Desert: Any portion of the neighborhood contains low-income Census tracts where residents are more than a ½ mile from the nearest grocery store.
- Displacement: The neighborhood or portions of the neighborhood are characterized by a history of or ongoing displacement of low-income residents and residents of color. This includes displacement due to urban renewal projects, gentrification, rezoning, and more.
- Lack of Playgrounds: The neighborhood does not have a park with a play structure within its boundaries.
- Tree Canopy < 40%: The neighborhood is not covered more than 40% by street and park trees. This acts a proxy for the urban heat island effect.
- Air Pollution: The neighborhood has higher air pollution measured by asthma rates. If the neighborhood has an asthma rate of over 13%, it was designated as having air pollution.
- Lack of Basic Infrastructure: Significant portions (how to quantify?) of the neighborhood are still without a connected sewer system and/or less than half the neighborhood has a connected sidewalk system.
- Redlining: The neighborhood was historically redlined.

Neighborhoods are given points for each injustice in the above categories. Like golf, a lower score is better. Sources for the food desert, tree canopy, and air pollution are based on Census tract data rather than aggregated neighborhood data. Therefore, some neighborhoods may have cleaner air or denser canopy in portions despite getting a point in that category.

This project includes a few limitations. First, all categories are weighted equally in contributing to the final score. It is certainly true that proximity to the Portland Harbor Superfund site could be seen as more detrimental than lack of nearby playgrounds. However, for ease of understanding, we have given all criteria equal weight. Adjusting the weighting would certainly be useful in future work. Furthermore, most of the data was collected through secondary sources. Some of these sources are a couple years old and could be out of date. The most up-to-date sources were used wherever possible. Finally, there are a variety of other criteria that could have been included in this analysis: other contaminated sites, income, food mirages/apartheid, etc. While these leave gaps in this analysis, they provide opportunities for future research.

Key

	The neighborhood borders the Portland Harbor Superfund Site
	The neighborhood borders or is bisected by a freeway
	The neighborhood contains land that is zoned industrial (excluding employment zones that allow industrial uses)
	The neighborhood contains land zoned heavy industrial
	The neighborhood borders or is bisected by railroad routes (excluding light rail and streetcar)
	The neighborhood houses Critical Energy Infrastructure (CEI) and fossil fuel companies
	Any portion of the neighborhood contains a food desert. Food desert is defined by low-income census tracts where residents are more than ½ a mile from a grocery store.
	The neighborhood has a history of and/or ongoing displacement of low-income residents and people of color.
	There is a lack of playgrounds within neighborhood borders.
	The neighborhood is covered by less than 40% tree canopy from street and park trees.
	The neighborhood has air pollution defined by asthma rates over 13%.
	The neighborhood does not have a well connected infrastructure measured by sidewalk and/or sewer connectivity

How To Use










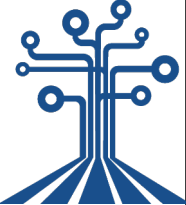





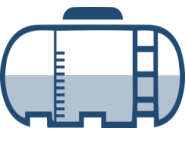



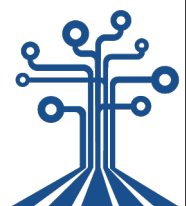
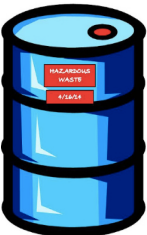



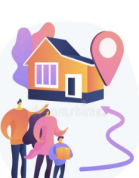
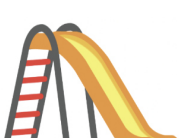
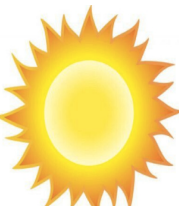


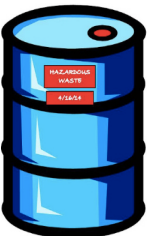








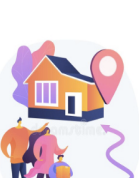








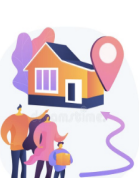





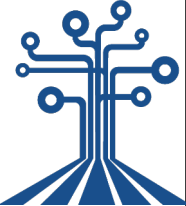


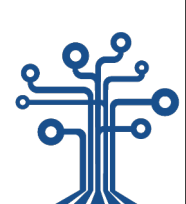
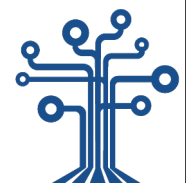
A higher score means that more inequities can be found in that neighborhood.

A score between 1-4 means that residents of the neighborhood have not been exposed to very many environment-related harms.

A score between 5-7 means that residents have been exposed to a large amount of environment-related harms.

A score between 8-10 means that environment-related harms have been concentrated in those neighborhoods.

Northwest Portland Environmental Scorecard

	Borders Superfund	Borders Highway	Industrial Zoning	Heavy Industrial	Trains	Oil Tanks	Food Desert	Displacement	Lack of Playgrounds	Tree Canopy < 40%	Air Pollution	Lack of Basic Infrastructure	Redlining	Total
Linnton														10
Northwest Industrial														10
Northwest District														9
Old Town Chinatown														7
Pearl District														6
Goose Hollow														5
Portland Downtown														5
Sylvan- Highlands														3
Northwest Heights														1
Arlington Heights														1
Forest Park														1
Hillside														1

Linnton was incorporated into the city of Portland in 1915.¹

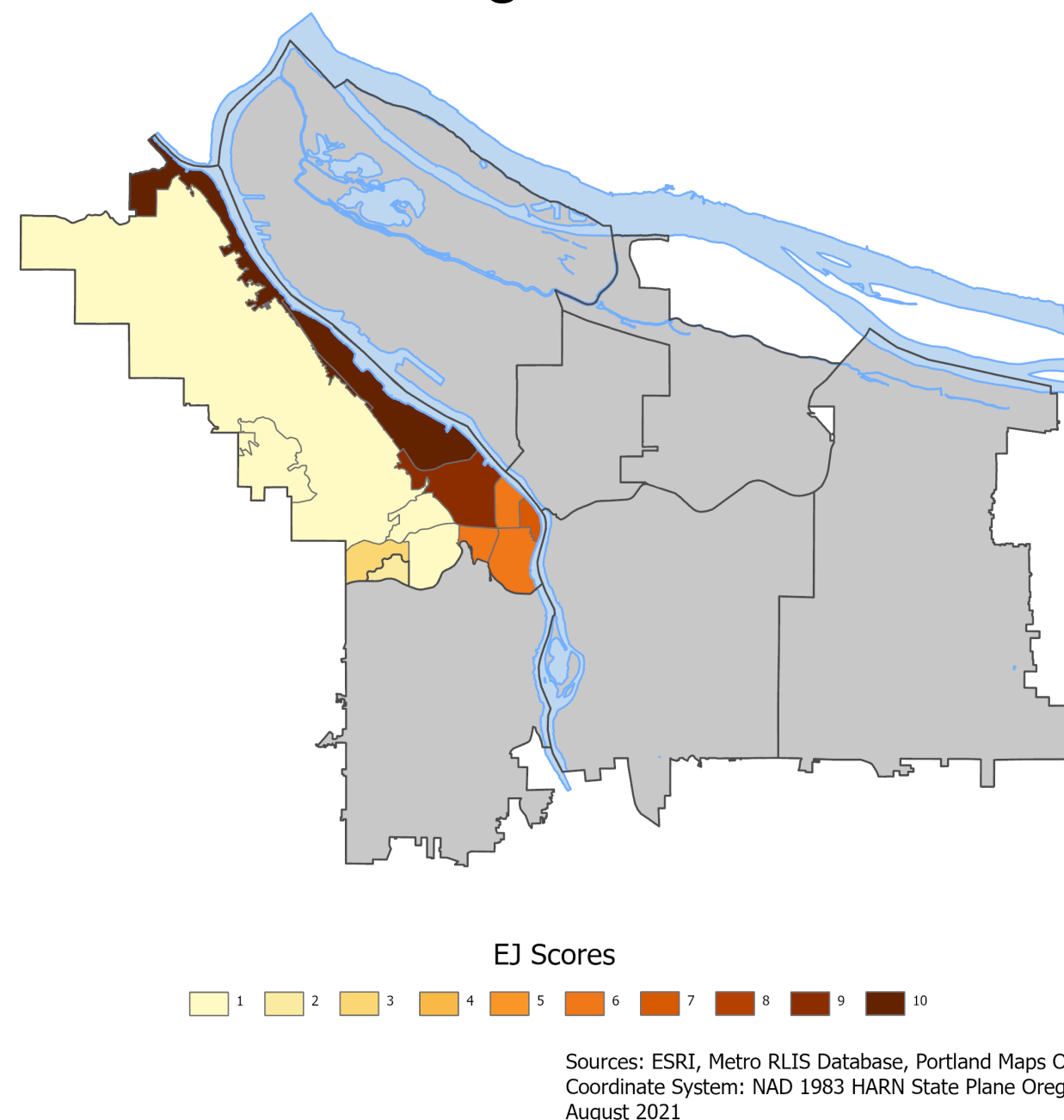
Northwest Industrial sits on top of what was once Guild's Lake.²

During the urban renewal era, Portland planners were concerned about Chinatown being redeveloped.³

Northwest Heights has one of the largest populations under 17 in the city.

Northwest Portland Summary and Notes

Neighborhoods on the northwestern shore of the Willamette River are home to Portland's fossil fuel industry. This part of the city also sits on top of the Portland Hills Fault Zone making the placement of large oil tanks environmentally hazardous in the event of an earthquake. The ground under the Critical Energy Infrastructure (CEI) Hub has been characterized as potentially liquefiable soil (Wang, Bartlett, & Miles, 2012). In the event of an earthquake, this furthers the risk of both fossil fuel pollution in the Willamette River and of the collapse of the state's energy system. Based on a report by the Oregon Department of Geology and Mineral Industries (2012), the CIE Hub in the Northwest Industrial neighborhood is essential to the state's electrical system and to airport operations. These technical risks could spell disaster for other neighborhoods and communities along the Willamette River.














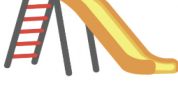
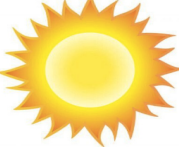


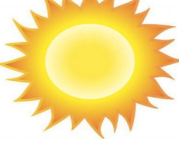



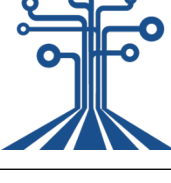

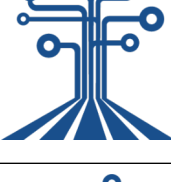

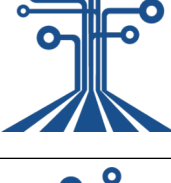

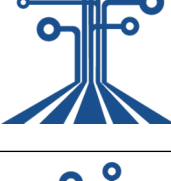

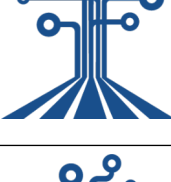

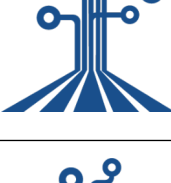



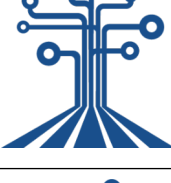
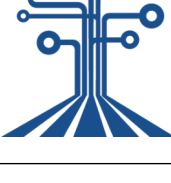
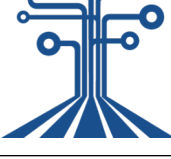



¹ Prior to its incorporation, Linnton's city government was in a political tug-of-war over banning oil tanks in the city after a Union Oil facility caught fire in 1911. While the city successfully banned oil tanks, the city of Portland quietly eviscerated the ordinance. Later, in the early 1960s, most of Linnton's downtown was razed to widen the St. Helens Freeway (Lee, n.d.).

² Northwest Industrial is not a residential neighborhood and is zoned fully for industrial use. The industrial neighborhood sits on top of what was once Guild's Lake. Displacement began at the end of the 19th century when white settlers stole the land from Chinook and Kalapuya people. The lake was filled in in the 1920s and in the 1940s temporary housing was built for shipyard workers, many of whom were Black. After the war, the housing was demolished and the Guild's Lake Black community was forced to move to the central east side (Oaster, 2021).

³ Just before the turn of the 20th century, Portland went through major building booms and targeted streets in Chinatown for demolition and rebuilding. Similarly, in the 1940s, Portland entered another era of rapid building to house shipyard workers. In addition to construction in the northeast portion of the city, many Chinese-owned buildings in Chinatown were also redeveloped. By the era of urban renewal in the 1970s and 1980s Portland Bureau of Planning expressed concern that Chinatown would be lost to urban renewal. Unfortunately, this sentiment was a little late as most Chinese residents had moved further east or elsewhere in the metro region (Tsai, 2016; Tsai, 2016).

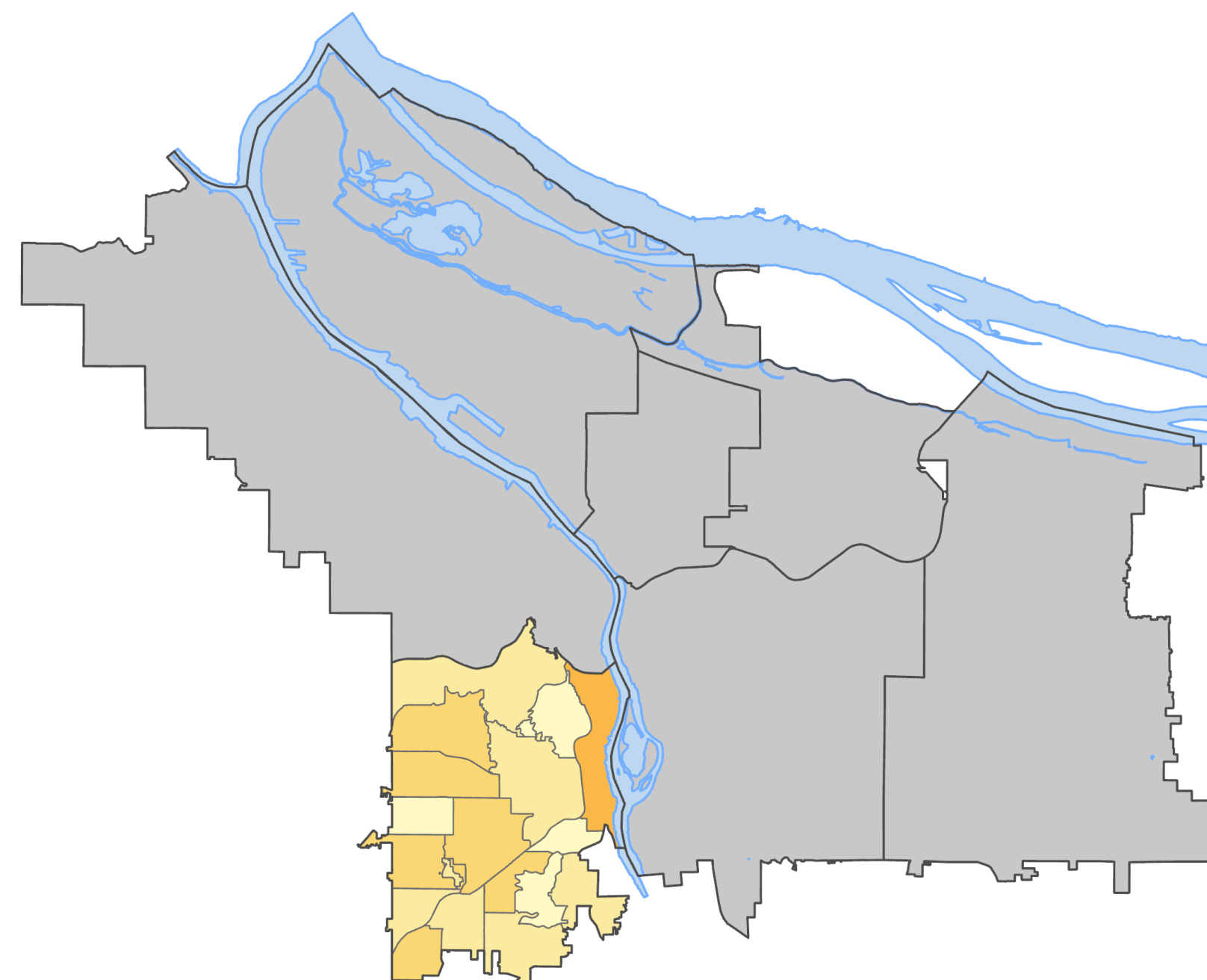
Southwest Portland Environmental Scorecard

	Borders Superfund	Borders Highway	Industrial Zoning	Heavy Industrial	Trains	Oil Tanks	Food Desert	Displacement	Lack of Playgrounds	Tree Canopy < 40%	Air Pollution	Lack of Basic Infrastructure	Redlining	Total
South Portland														4
Ashcreek														3
Bridlemile														3
Far Southwest														3
Hayhurst														3
Markham														3
Multnomah														3
Hillsdale														2
West Portland Park														2
Southwest Hills														2
Collins View														2
Arnold Creek														2
Crestwood														2
South Burlingham														1
Marshall Park														1
Maplewood														1
Homestead														1

 South Portland contains a legacy of redlining and of displacement from the city's first foray into urban renewal.
4

Southwest Portland Summary and Notes

The southwest coalition of neighborhoods has the lowest scores in Portland meaning that these neighborhoods enjoy a high quality of living based on our criteria. The average score in Southwest Portland is 2.2. Many neighborhoods have 1 or 2 points from either bordering a highway/freeway, lack of sidewalks, or a lack of playgrounds. The dearth of playgrounds in Southwest Portland is especially stark. This may be a result of the sprawling development in this part of the city. The South Portland neighborhood stands out with a score double that of the other southwest neighborhoods.










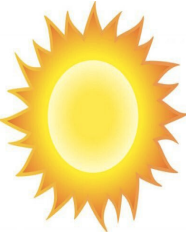










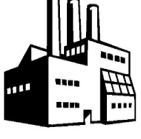











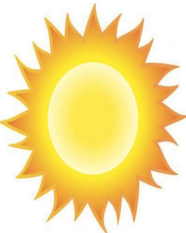


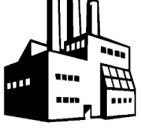



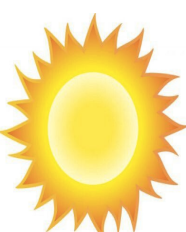





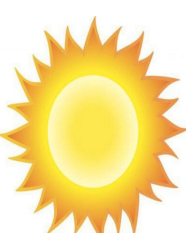





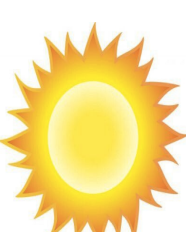



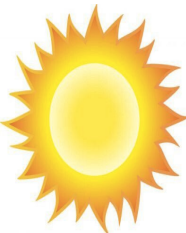

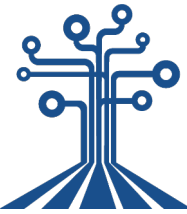


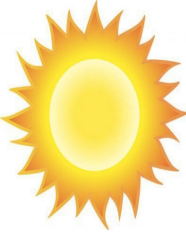



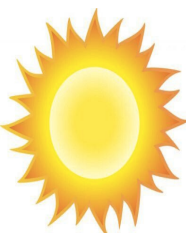



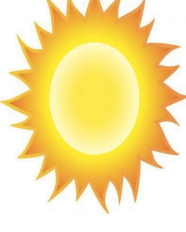

EJ Scores



Sources: ESRI, Metro RLIS Database, Portland Maps Open Data
Coordinate System: NAD 1983 HARN State Plane Oregon North FIPS 3601
August 2021

⁴ Beyond bordering a highway, South Portland has a history of displacement beginning with the South Auditorium urban renewal project. The neighborhood was also historically redlined mostly due to the large Asian community that resided there in the early 20th century. The South Auditorium project was the first urban renewal project that Portland Development Commission (PDC) took on. The project displaced the city's largest Jewish community along with low-income Chinese, Italian, Greek, and Irish immigrant communities. While the project was hailed as a success in revitalizing downtown Portland, the center of the city's Jewish subculture was mostly razed (Abbott, 2018; Killen, 2015; Wollner, Provo, & Schablisky, 2019).

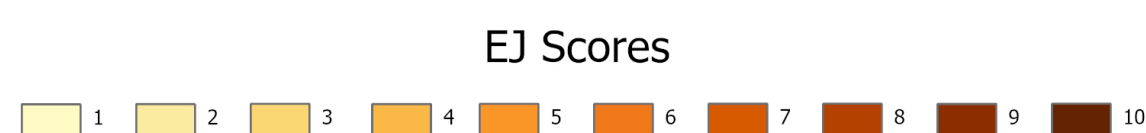
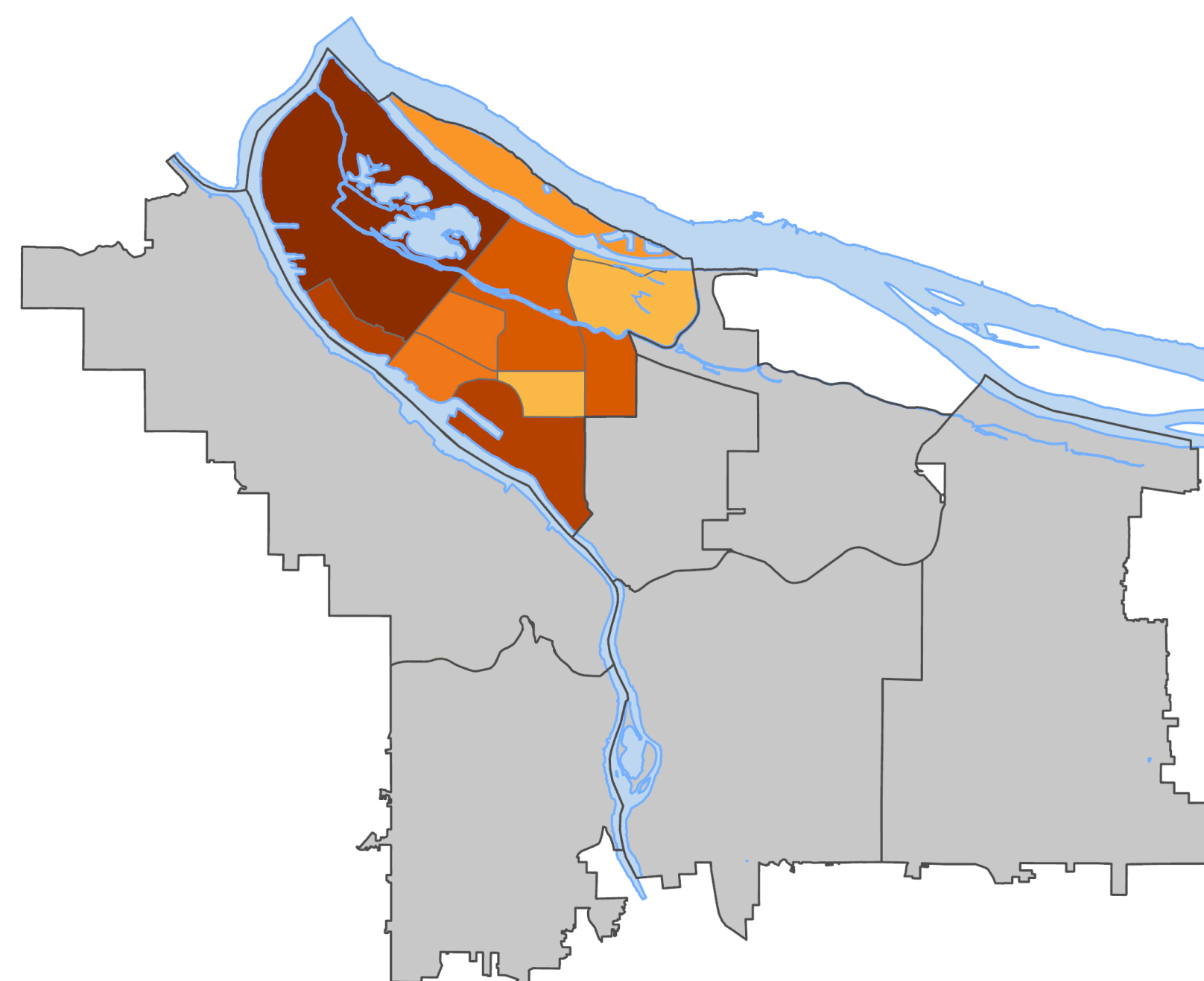
North Portland Environmental Scorecard

	Borders Superfund	Borders Highway	Industrial Zoning	Heavy Industrial	Trains	Oil Tanks	Food Desert	Displacement	Lack of Playgrounds	Tree Canopy < 40%	Air Pollution	Lack of Basic Infrastructure	Redlining	Total
St. Johns														9
Overlook														8
Cathedral														8
Kenton														7
Piedmont														7
University Park														6
Portsmouth														6
Hayden Island														5
East Columbia														4
Arbor Lodge														4
Bridgeton														4

Public opinion of St. Johns rapidly declined in the late 1940s as the neighborhood experienced more violent crime and housed the city dump.⁵

North Portland Summary and Notes





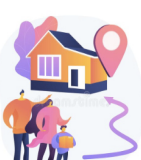
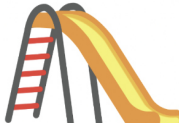
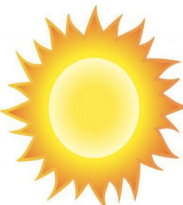





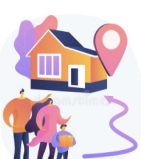
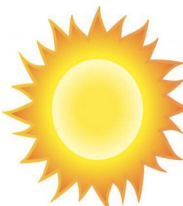





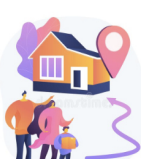







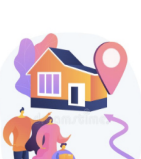



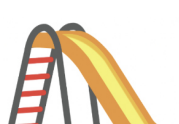




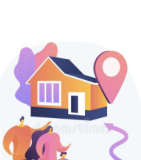



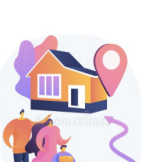




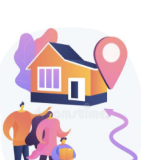



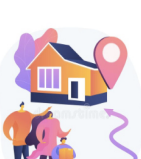



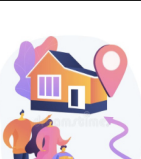



Like Northwest Portland, North Portland on the Willamette River's east side is significantly impacted by the Portland Harbor Superfund site. There are a variety of signs around Cathedral Park, in the Cathedral neighborhood under the St. Johns Bridge, warning of toxic fish. This is especially significant when considering the importance of the Lower Willamette in terms of tribal water and fishing rights as well as subsistence fishing done by North Portland residents. Those impacted by the toxicity caused by the Superfund site are indigenous people and low-income people or those experiencing homelessness demonstrate the clear environmental injustice at play.



Sources: ESRI, Metro RLIS Database, Portland Maps Open Data
Coordinate System: NAD 1983 HARN State Plane Oregon North FIPS 3601
August 2021

⁵ Historically, the St. Johns area was a camping and fishing ground for Indigenous tribes, including the Chinook, Multnomah, Siletz, Grand Ronde, and Cowlitz (Native Lands, n.d.). In 1805, Lewis and Clark camped in the area making York the first enslaved Black man in Oregon (a state with exclusion laws at the time). Later, the neighborhood housed the city dump. This combined with the rising violent crime around the Great Depression led to St. Johns' treatment as the city's dumping ground (Anderson, 2008). St. Johns has one of the highest scores, indicating that residents face significant environmental injustices. The northwest portion of the neighborhood, characterized by a food desert, is also home to the lowest income cost-burdened renters and in a dynamic state of gentrification. This portion of the neighborhood is at high risk for displacement (BPS, 2018).

Northeast Portland Environmental Scorecard

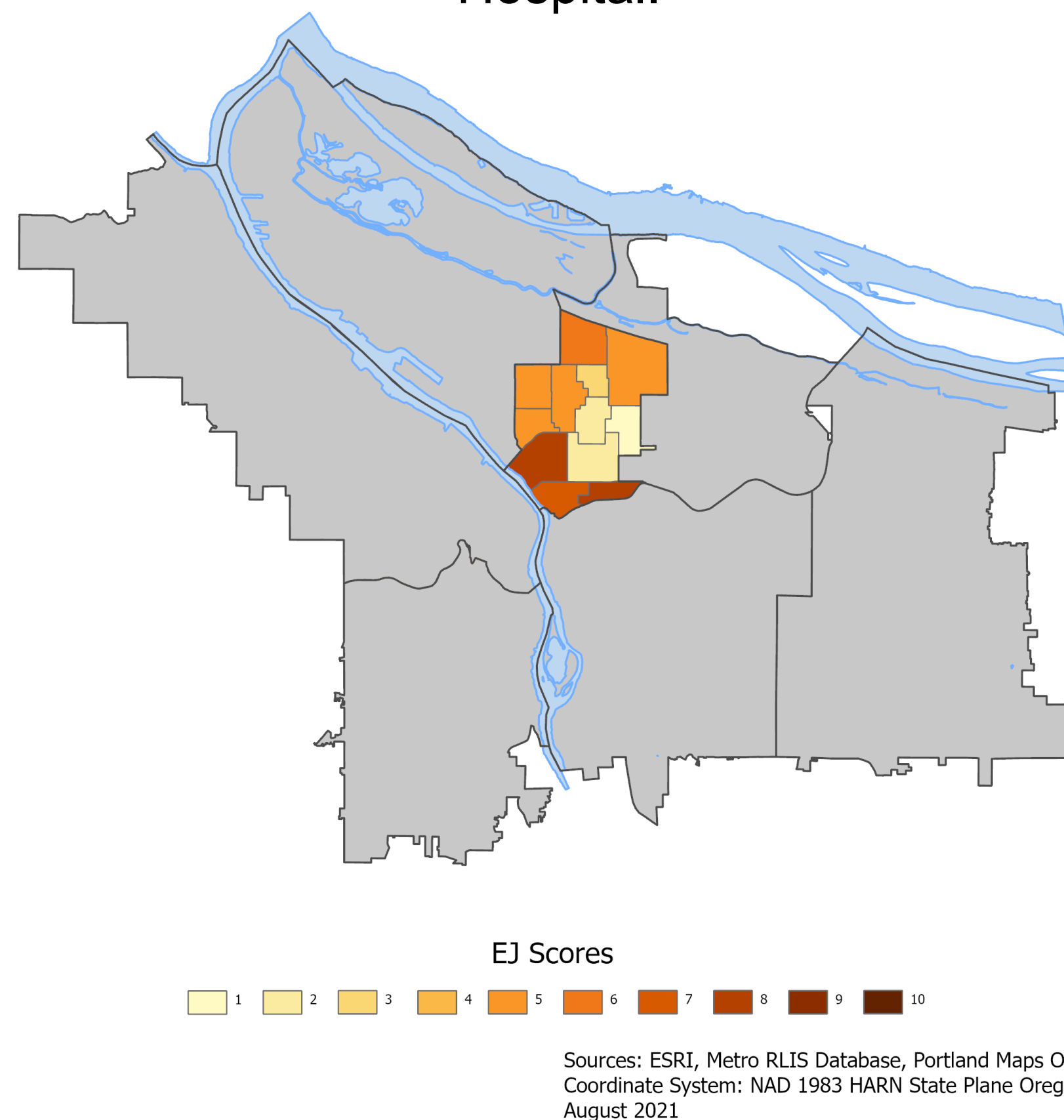
	Borders Superfund	Borders Highway	Industrial Zoning	Heavy Industrial	Trains	Oil Tanks	Food Desert	Displacement	Lack of Playgrounds	Tree Canopy < 40%	Air Pollution	Lack of Basic Infrastructure	Redlining	Total
Sullivan's Guich														8
Eliot														8
Lloyd District														7
Woodlawn														6
Humboldt														5
Concordia														5
King														5
Boise														5
Vernon														3
Irvington														2
Sabin														2
Alameda														1

▶ Eliot was once part of the thriving Black community of Lower Albina.⁶

▶ The Lloyd District faced displacement in the era of urban renewal.⁷

Northeast Portland Summary and Notes








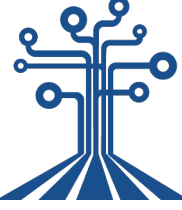







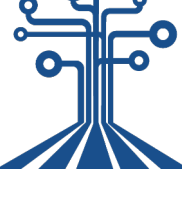










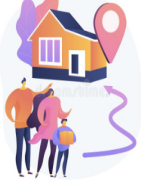
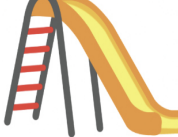










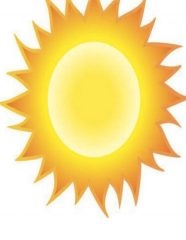

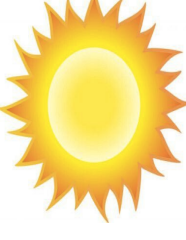
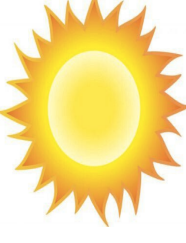
Much of Northeast Portland is mired by a history of displacement. The Northeast Coalition of Neighborhoods encompasses much of what was once the Albina District. When Vanport (now north of Kenton and St. Johns) flooded, and the housing developments in Guild's Lake (now NW Industrial), Black shipyard workers were ushered into the Albina District through insidious planning mechanisms like redlining, racially restrictive covenants, and more. In the years after World War II, Albina grew into a busy social and commercial hub for Black Portlanders. Then, beginning in the 1950s, the age of technocratic planning and urban renewal set in. Albina, especially, was targeted for urban renewal projects because planners and city officials designated the area as “blighted.” An estimated 450 homes were razed to make way for the Memorial Coliseum in the 1950s. Then, in the 1960s, more homes were destroyed along with the street connectivity to make room for the Interstate 5 freeway (Aleck, 2017). In the 1970s, residents in the Eliot neighborhood were disrupted by the expansion of the Emanuel Memorial Hospital.




⁶ The Eliot neighborhood, a historically Black neighborhood, has experienced intense displacement in the 1950s-1970s especially. The planned (but never finished) expansion of Emanuel Hospital and the I-5 freeway displaced countless families and left empty lots that continue to reopen those decades old wounds. Despite community planning efforts and protest, many of the residents were scattered throughout the metro region. Community groups are still fighting for reparations for their families' displacement (Ellis, 2020).

⁷ The Lloyd District faced displacement due to the development of the Memorial Coliseum in the 1950s. The predominately Black neighborhood was one of six areas designated as “blighted” in 1955 (FHCO, n.d.). The designation of “blight” is what allowed the Portland Development Commission to raze and “revitalize” the neighborhood.

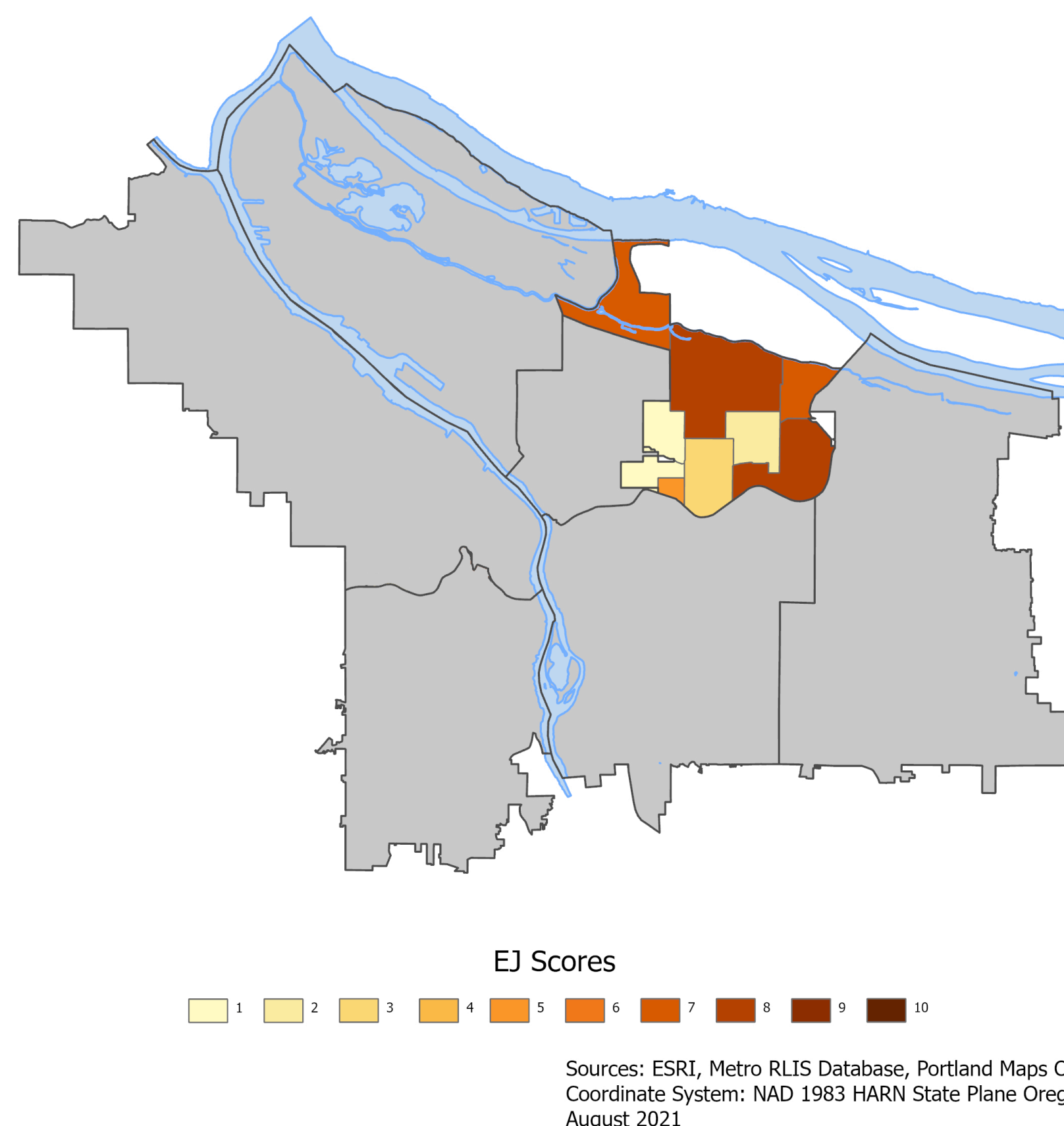
Central Northeast Portland Environmental Scorecard

	Borders Superfund	Borders Highway	Industrial Zoning	Heavy Industrial	Trains	Oil Tanks	Food Desert	Displacement	Lack of Playgrounds	Tree Canopy < 40%	Air Pollution	Lack of Basic Infrastructure	Redlining	Total
Cully														8
Madison South														8
Sunderland														7
Sumner														7
Hollywood														5
Rose City Park														3
Roseway														2
Beaumont- Wilshire														1
Grant Park														1

 Cully is one of the most diverse neighborhoods in the city.⁸






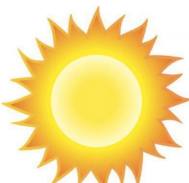





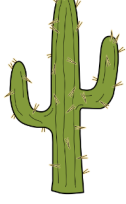
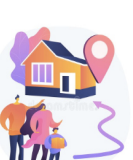


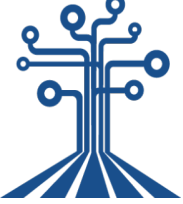



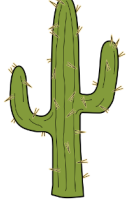
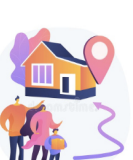
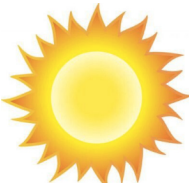




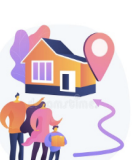
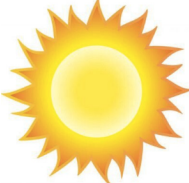

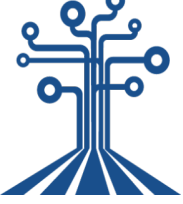




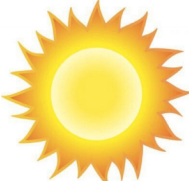

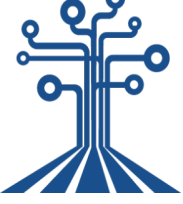



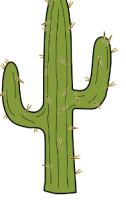






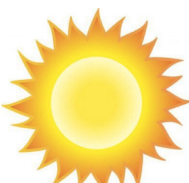

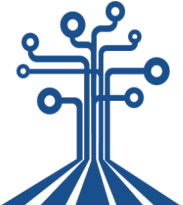











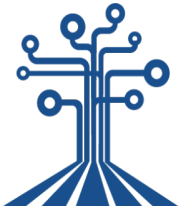



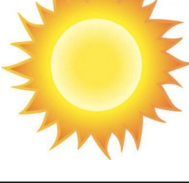





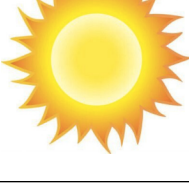


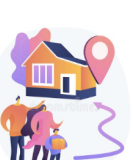
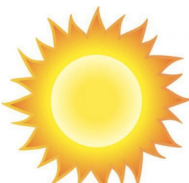

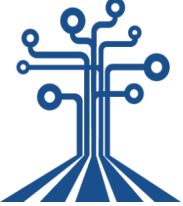


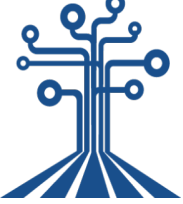
Central Northeast Portland Summary and Notes


The Interstate 84 freeway, officially the T.H. Banfield Expressway, cuts across some neighborhoods in the central northeast sector of the city. The freeway sits along old Union Pacific railroad tracks that still move freight today (Rose, 2014). Prior to World War II, Central Northeast Portland was largely rural. The Cully neighborhood, for example, was home to Italian market gardens (known as truck gardens in the late 19th and early 20th centuries) and Swiss-German dairy farms. After the war, this rural land was developed into suburban subdivisions. Industrial uses were also sited along main arterials including NE Columbia Blvd, Portland Highway (or Highway 30), and NE Killingsworth St (BPS, 2009).



⁸ Nearly half the of the population of Cully is people of color (Lynes, 2018). Cully was annexed into the City of Portland completely by 1985. At the time it was annexed, Cully did not have city sewer services. Residents were forced to pay expensive fees to disconnect their septic tanks and connect to the sewer system (Nelson, 2019). The neighborhood has been experiencing gentrification, but continues to push back to ensure that long-time residents are not priced out of their community (Lynes, 2018).

East Portland Environmental Scorecard

	Borders Superfund	Borders Highway	Industrial Zoning	Heavy Industrial	Trains	Oil Tanks	Food Desert	Displacement	Lack of Playgrounds	Tree Canopy < 40%	Air Pollution	Lack of Basic Infrastructure	Redlining	Total
Lents														8
Parkrose														8
Wilkes														7
Hazelwood														7
Powellhurst- Gilbert														7
Argay														7
Centennial														6
Parkrose Heights														6
Glenfair														6
Russel														6
Woodland Park														5
Mill Park														5
Pleasant Valley														3

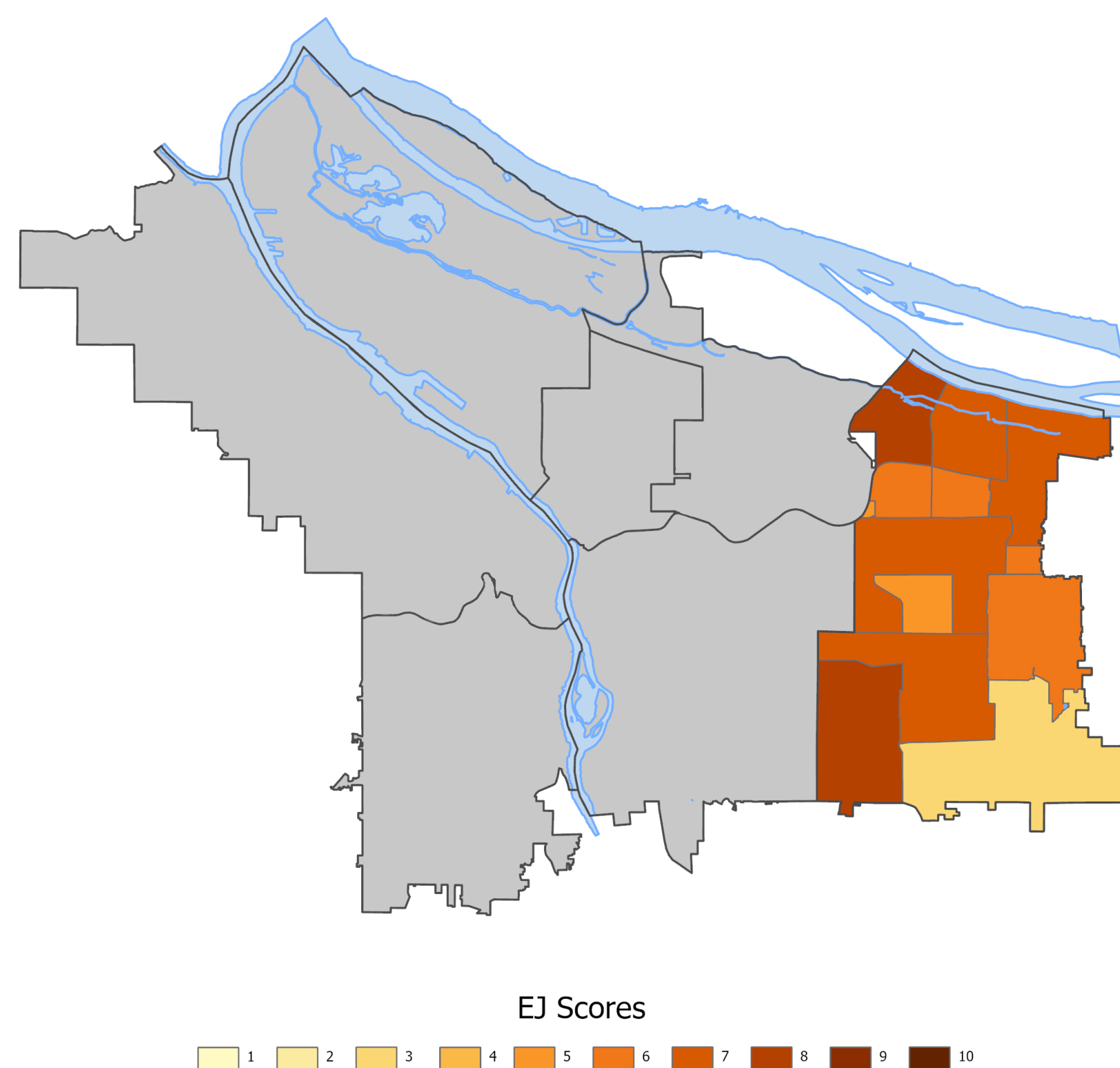
 Lents is currently undergoing urban renewal through the use of a TIF district.⁹

East Portland Summary and Notes

In their article examining uneven development, Goodling, Green, and McClintock (2015) demonstrate that the “sustainability fix” where the focus on green investments in Portland’s inner city has led to a lack of investment in the City’s annexed portions. East Portland is a clear example of the relationship between annexation and environmental hazards. East Portland neighborhood weren’t annexed until the 1980s and 1990s and clearly experience lacking food access, displacement, urban heat island based on low rates of tree canopy coverage, and air pollution than other portions of the city (especially on the west side of the Willamette).

Similarly, portions of North St. Johns, Hayden Island, Bridgeton, and East Columbia in North Portland were not incorporated until the 1970s and onward. Cully in the Central Northeast coalition was also not annexed until the 1980s (City of Portland, n.d.).























































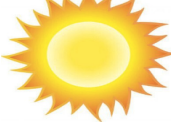














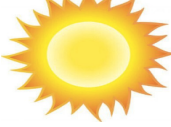







During the 2021 heat wave, East Portland clocked in with the highest temperatures in the city. Dr. Vivek Shandas found that the hottest intersection in the city was in the Lents neighborhood. The heat wave was one of the deadliest climate disasters to hit Portland (Peel, 2021). That harm was concentrated in neighborhoods that were annexed last, are home to non-native English speakers and people of color, and have very little urban canopy cover. Planners at BPS noted that East Portland was once home to Douglas fir groves before development happened (Peel, 2021).



Sources: ESRI, Metro RLIS Database, Portland Maps Open Data
Coordinate System: NAD 1983 HARN State Plane Oregon North FIPS 3601
August 2021

⁹ Lents was designated as a TIF (tax increment financing) district in 2000 by Prosper Portland (formerly PDC). Since 2000, there has been a seemingly paradoxical concern that all of the investment hasn’t been successful and that redevelopment will spark gentrification. Both are valid concerns. Many of the changes that Lents residents wanted to see as a result of investment, such as a grocery store in the neighborhood, have not materialized (Mesh, 2017; Soleil, 2020). At the same time, in 2018, the Bureau of Planning and Sustainability found that the neighborhood was experiencing an early stage of gentrification.

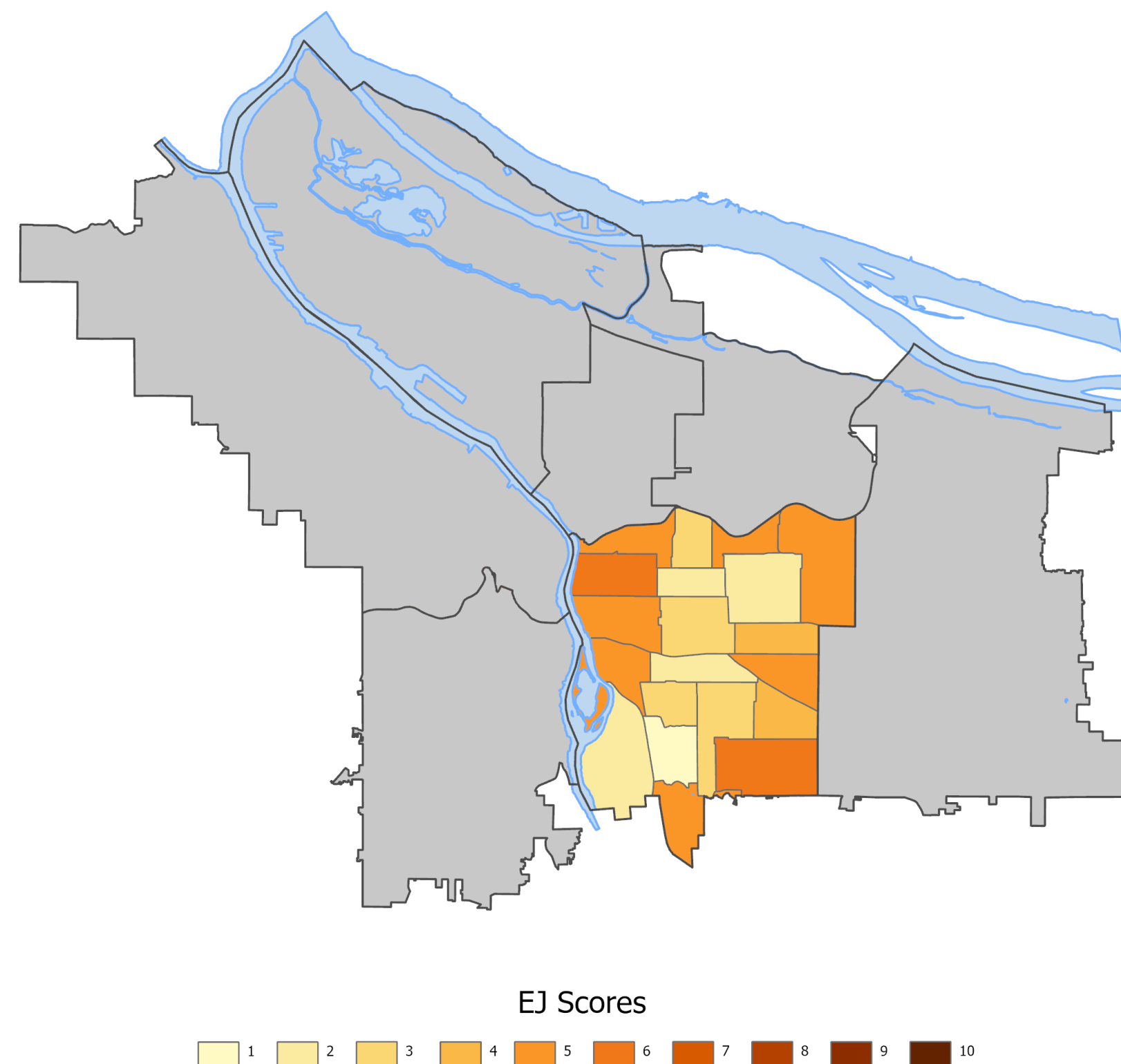
Southeast Portland Environmental Scorecard

	Borders Superfund	Borders Highway	Industrial Zoning	Heavy Industrial	Trains	Oil Tanks	Food Desert	Displacement	Lack of Playgrounds	Tree Canopy < 40%	Air Pollution	Lack of Basic Infrastructure	Redlining	Total
Buckman														6
Brentwood-Darlington														6
Ardenwald-Johnson														6
Brooklyn														5
Foster-Powell														5
Hosford-Abernathy														5
Kerns														5
Montavilla														5
North Tabor														5
Mt. Scott-Arleta														4
South Tabor														4
Laurelhurst														3
Reed														3
Richmond														3
Woodstock														3
Creston-Kenilworth														2
Mt. Tabor														2
Sellwood-Moreland														2
Sunnyside														2
Eastmoreland														1

Southeast Portland Summary and Notes

Like East Portland, Southeast Portland is also lacking in shade. Nonetheless, this portion of the city has a lower average score (3.9) than East Portland (6.2). This could be a result of the large number of neighborhoods and the diversity among the 20 neighborhoods in the Southeast Uplift Coalition. In the mid-1990s, the city of Portland developed the Outer Southeast Community Plan that led to significant upzoning of single-family zones in neighborhoods like Brentwood-Darlington, Mt. Scott-Arleta, Foster-Powell, South Tabor, and more (BPS, 2009). This is not problematic in and of itself, however, the community felt that they did not have notice of, much less a say in, the changes. Furthermore, because community planning and densification was implemented unevenly, neighborhoods in Outer Southeast along with Albina have felt a stronger displacement pressure (BPS, 2009).

A portion of the Foster-Powell neighborhood fell into the hottest zip-code along with Lents during the 2021 heat wave. Furthermore, the suburban geography of Southeast Portland means more parking lots and highways that trap heat as well. The east side of the river in its entirety has about half the tree canopy cover (20%) of the west side (46%) (Peel, 2021).



Sources: ESRI, Metro RLIS Database, Portland Maps Open Data
Coordinate System: NAD 1983 HARN State Plane Oregon North FIPS 3601
August 2021

Implications

This analysis presents equity concerns that can be extended to the impacts of climate disasters.

Even for neighborhoods with a score of 1, there are distinct differences in the impacts on the east and west sides of the Willamette. On the west side, neighborhoods like Arlington Heights, Forest Park, Hillside, Marshall Park, Maplewood, and Homestead like basic sidewalk infrastructure. On the east side, however, neighborhoods like Alameda, Beaumont-Wilshire, and Grant Park lack tree canopy. As demonstrated by the June 2021 heat wave, more of the east side of the city suffers from the urban heat island effect. Notably, urban heat islands are related to industrial zoning in Portland. Despite covering 20% of the city's land, industrial zones only contain about 6% of the city's urban canopy (PPR, 2018). Furthermore, heavy industrial zones along with a variety of industrial uses (including rail, waste, and mining uses) are exempt from on-site tree density standards contributing to greater urban heat in those surrounding areas (Title 11.50.050.B). While industry and industrial zoning is essential to Portland's prosperity, it is clear that regulations that cater to industry can put surrounding communities at risk.

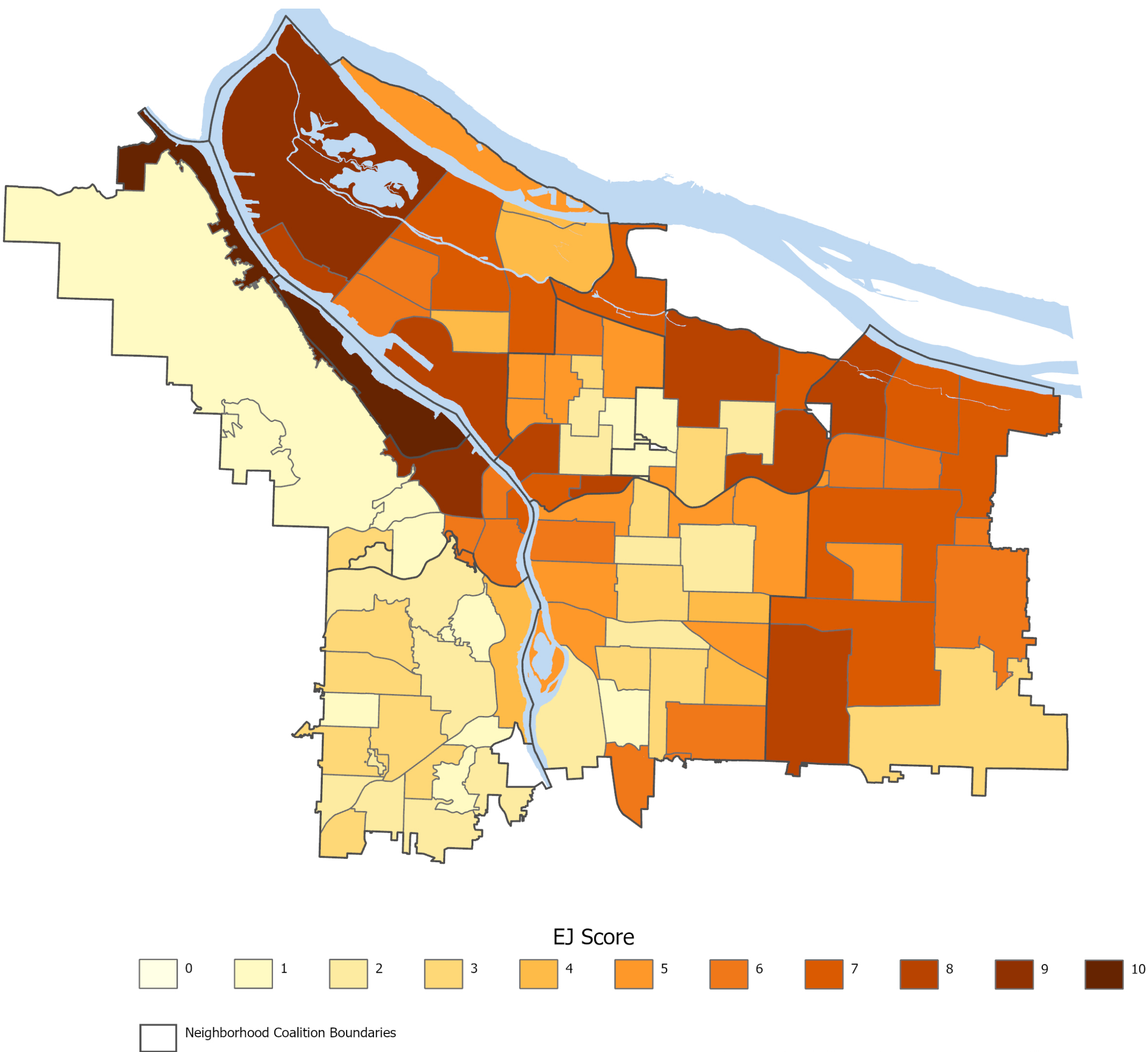
The state's primary fossil fuel hub is located on the west side of the river placing large oil tanks on the shores of the Willamette in the NW Industrial and Linnton neighborhoods. These neighborhoods are undercut by the Portland Hills Fault Line which puts the wellbeing of the river, its inhabitants, and Portland's residents at risk. In this case, pass-through industries that have planted their roots in Portland could have a major impact on long-term residents.

With climate change looming on the horizon and a history of harmful environmental decisions, it can be easy to feel hopeless or cynical. It's important to remember that now is the time to make changes informed by the past and the current state of our city. Each challenge or problem is an opportunity to learn and change the course of the city. **Call to action?**

Neighborhood Statistics

Coalition	Northwest	Southwest	North	Northeast	Central Northeast	East	Southeast
Mean/ Average Score	5.1	2.2	6.2	4.8	4.7	6.2	3.9
Median Score	6	2	6	5	5	6	4

Map of EJ Scores by Neighborhood Portland, OR



Sources: ESRI, Metro RLIS Database, Portland Maps Open Data
Coordinate System: NAD 1983 HARN State Plane Oregon North FIPS 3601
July 2021

Neighborhood Coalition by Criteria

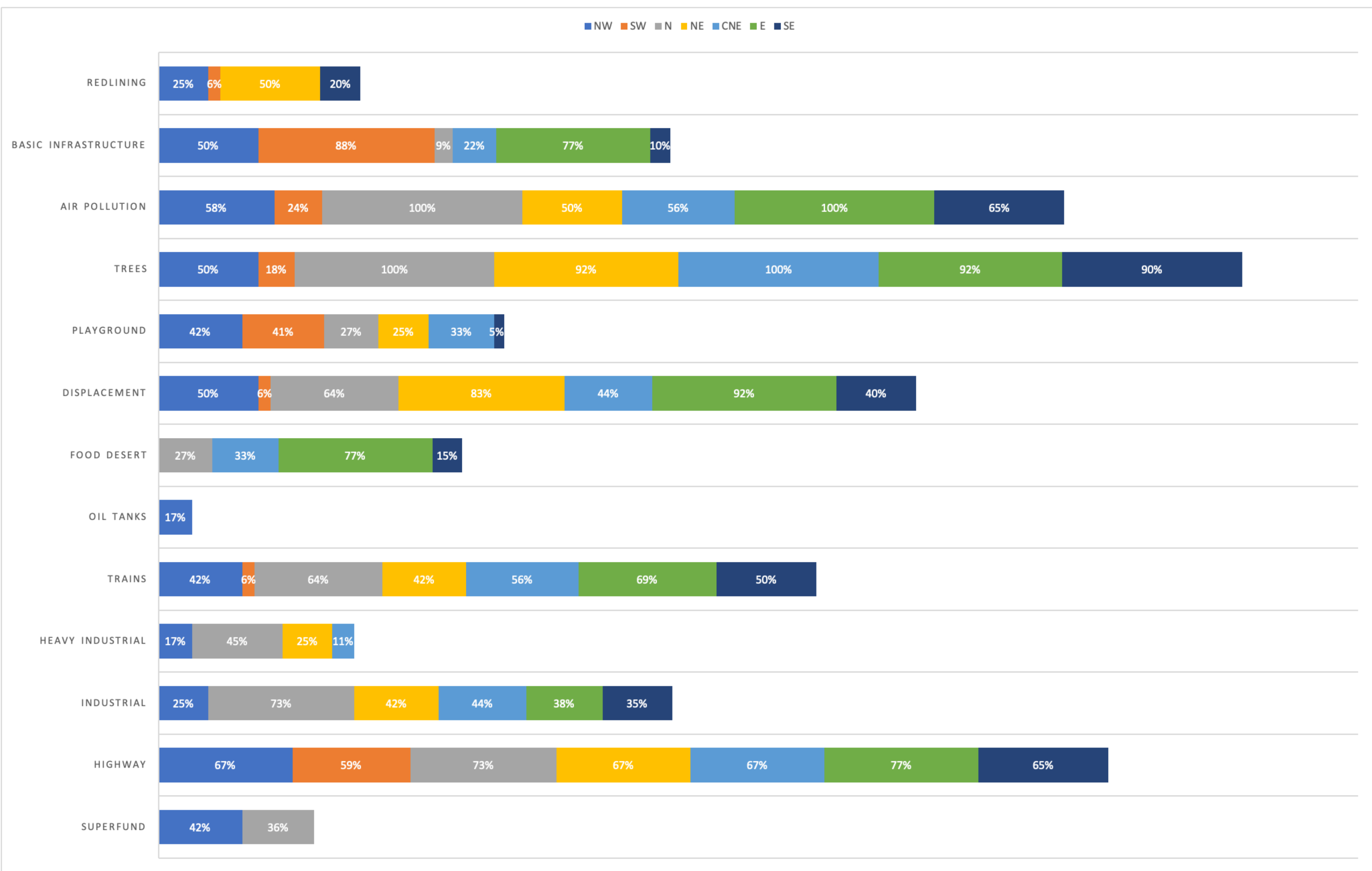


Figure X. Percent of each neighborhood coalition that fulfills each criteria.

Definitions

Blighted: A prerequisite to urban renewal. By law in Oregon, blight is defined as areas that, “by reason of deterioration, faulty planning, inadequate or improper facilities, deleterious land use or the existence of unsafe structures, or any combination of these factors, are detrimental to the safety, health or welfare of the community” (ORS 457.010(1))

Food Desert: A geographic location where residents do not have physical and geographic access to fresh food. This generally means that residents are located far away from a supermarket. There is no standard definition of food deserts so, for this scorecard, food deserts are defined by the physical distance between people and fresh food.

Gentrification: A process characterized the changing character of a neighborhood through housing market, economic status, and demographic changes. Neighborhoods undergoing gentrification usually have attractive qualities, but remain relatively low in value. Gentrification is defined through displacement of those vulnerable to housing change including low income, renter, low educational attainment, and/or persons of color households (Bates, 2013).

Liquefaction: A process in which loosely packed, water-logged sediments at the surface of the ground lose strength in the event of an earthquake or similar ground-shaking event (USGS, n.d.).

Oregon’s Critical Energy Infrastructure (CEI) Hub: A six-mile stretch along the lower Willamette that houses liquid fuel, natural gas, and electrical infrastructure and facilities. Petroleum products from Washington all pass through the CEI Hub before being distributed to Oregon’s end users.

Polychlorinated biphenyls (PCBs): A group of man-made organic chemicals consisting of carbon, hydrogen, and chlorine. PCBs have no taste or smell and can range in consistency from a light-colored oil to a waxy, black or yellow solid. PCBs were popular in industrial and commercial applications before their manufacture was banned in 1979. They do not readily break down once in the environment and can be absorbed into plants and crops from the soil or into fish from the water and sediment. PCB exposure has been associated with a variety of adverse health risks including cancer, immune effects, reproductive effects, neurological and memory effects, decreased thyroid functioning, and more (EPA, n.d.).

Polycyclic Aromatic Hydrocarbons (PAHs): A class of chemicals made of up to six benzene rings that are fused in such a way that adjacent benzene rings share a carbon bond. They are primarily produced by burning carbon-containing compounds (i.e. wood and fuel). PAHs can break down when reacting with sunlight and can be broken down by microorganisms in soil and water. They do not readily dissolve in water as they bond with solid particles in the water. PAHs have been connected with lung, skin, and urinary cancer (OSU, n.d.).

Portland Harbor Superfund Site: An EPA Superfund site designated in 2000 that covers an approximately 11 mile stretch of the lower Willamette River.

Superfund: A program through the U.S. Environmental Protection Agency (EPA) that was established in 1980 with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The program was developed to investigate and clean up hazardous and contaminated sites that are referred to as “Superfund sites” (EPA, n.d.)

Tax Increment Financing (TIF): Tax increment financing is a popular funding mechanism for economic development at the local level. The mechanism works by freezing a property tax base in a designated area for 20 to 40 years. Residents continue to pay property taxes as normal, usually increasing each year and the municipality or urban renewal agency collects the “increment” that grows above the frozen base to fund economic development projects.

Tree Canopy: The tree canopy refers to the amount of trees and their geographical distribution throughout the city. The canopy is closely tied to urban heat as well as air and water quality.

Urban Heat Island Effect: A phenomenon that happens when cities replace natural land cover with dense concentrations of buildings, pavement, and other materials that absorb and retain heat. Urban heat islands can have severe impacts on the health of a community, especially in the hotter months.

Urban Renewal: A process that involves designating areas deemed “blighted” to encourage redevelopment. While it’s not always a negative process, urban renewal is associated with a history of racism and displacement. Historically, it has been used to justify the destruction of Black, Indigenous, and people of color neighborhoods as well as low-income neighborhoods of all racial/ethnic makeups.

Sources

- Abbott, C. (2018). South Portland/South Auditorium Urban Renewal Project. Oregon Encyclopedia. https://www.oregonencyclopedia.org/articles/south_portland_south_auditorium_urban_renewal_project/#.YPclwpNud_R
- Aleck, J. (2017). Displacement of black Portlanders began long ago. KOIN 6. <https://www.koin.com/news/displacement-of-black-portlanders-began-long-ago/870080775/>
- Anderson, M.R. (2008). History Under the Bridge. OregonLive, The Oregonian. https://www.oregonlive.com/stjohns/2008/06/history_under_bridge.html
- Bates, L.K. (2013). Gentrification and Displacement Study: Implementing and Equitable Inclusive Development Strategy in the Context of Gentrification. PDX Scholar. https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1082&context=usp_fac
- Bellinson, R. (2016). The Pearl: A Gentrification Story from Portland. The Protocity.com. <http://theprotocity.com/the-pearl-gentrification-portland/>
- City of Milwaukie. (n.d.). Milwaukie Zoning. <https://www.portlandmaps.com/bps/zoning/#/map/>
- City of Portland. (n.d.). City of Portland Annexation History. <https://www.portlandoregon.gov/cbo/article/339545>
- City of Portland, Title 11.50.050 (Updated 2020). <https://www.portland.gov/code/11/50/050>
- Ellis, R. (2020). Portland took these Black families' homes. Some of their descendants want reparations. Oregon Public Broadcast. <https://www.opb.org/article/2020/12/16/portland-oregon-affordable-housing-reparations/>
- Fair Housing Council of Oregon. (2020). Urban Renewal History and the I-5 Rose Quarter Improvement Project. <http://fhco.org/index.php/news/blog-2/item/32-urban-renewal-history-and-the-i-5-rose-quarter-improvement-project>
- Goodling, E., Green, J., & McClintock, N. (2015). Uneven Development of the Sustainable City: Shifting Capital in Portland, Oregon. Urban Studies and Planning Faculty Publications and Presentations. https://pdxscholar.library.pdx.edu/usp_fac/107
- Killen, J. (2015). Throwback Thursday: 60 years ago, Portland began urban renewal plan for South Auditorium District. OregonLive, The Oregonian, https://www.oregonlive.com/history/2015/02/throwback_thursday_60_years_ag.html
- Lee, R. (n.d.). History of Linnton. Linnton Neighborhood Association. <https://linntonna.org/about/historical-linnton/>
- Lynes, A. (2018). 'Not in Cully': What happened to the neighborhood that was supposed to stay affordable? OregonLive, The Oregonian. https://www.oregonlive.com/business/2018/06/not_in_cully_what_happened_to.html
- Mesh, A. (2017). Razed and Confused. Willamette Week. <https://www.wweek.com/portland/article-21792-razed-confused.html>
- Metro. (2020). Regional Barometer: Tree Canopy. <https://regionalbarometer.oregonmetro.gov/maps/drcMetro::tree-canopy/explore?location=45.433923%2C-122.587910%2C2.62>
- Native Land Digital. (n.d.). Native Land. <https://native-land.ca/>
- Nelson, S. (2019). History of Cully. The Cully Association of Neighbors. <http://www.cullyneighbors.org/history-of-cully/>

Oaster, B. (2021). Uncovering industrial NW Portland's twisted past in an effort to save its future. Street Roots. <https://www.streetroots.org/news/2021/06/09/digging-industrial-nw-portland-s-twisted-past-effort-save-its-future>

Oregon Department of Transportation. (2021). ODOT TransGIS. <https://gis.odot.state.or.us/transgis/>

Oregon Revised Statutes, State of Oregon § 457.010(1) (2019). https://www.oregonlegislature.gov/bills_laws/ors/ors457.html

Oregon State University. (n.d.). All About PAHs. <https://superfund.oregonstate.edu/all-about-pahs>

PedPDX. (n.d.). Portland's Citywide Pedestrian Plan. <https://pdx.maps.arcgis.com/apps/MapSeries/index.html?appid=f0b9f95b3fc44cff946bd58707e99bb2>

Peel, S. (2021). This Is the Hottest Place in Portland. Willamette Week. <https://www.wweek.com/news/city/2021/07/14/this-is-the-hottest-place-in-portland/>

Portland Bureau of Planning. (2003). Northwest District Plan and Appendices. <https://www.portland.gov/sites/default/files/2020-01/northwest-district-plan-appendices-2003.pdf>

Portland Bureau of Planning and Sustainability. (2009). Portland Plan: Map 3-10. Pedestrian System Infrastructure Condition and Capacity. <https://www.portlandonline.com/portlandplan/index.cfm?a=288100&c=52256>

Portland Bureau of Planning and Sustainability. (2018). 2018 Gentrification and Displacement Neighborhood Typology Assessment. https://www.portland.gov/sites/default/files/2020-01/gentrification_displacement_typology_analysis_2018_10222018.pdf

Portland Bureau of Planning and Sustainability. (2009). East Portland Historical Overview and Historic Preservation Study. <https://www.portlandonline.com/portlandplan/index.cfm?a=346260&c=51427>

Portland Bureau of Planning and Sustainability. (2019). Historical Context of Racist Planning: A History of How Planning Segregated Portland. <https://www.portland.gov/sites/default/files/2019-12/portlandracistplanninghistoryreport.pdf>

Portland Housing Bureau. (n.d.). Displacement in North and Northeast Portland- A Historical Overview. <https://www.portlandoregon.gov/phb/article/655460>

Portland Maps. (n.d.) Portland Zoning. <https://www.portlandmaps.com/bps/zoning/#/map/>

Portland Parks and Recreation Urban Forestry Staff. (2018). Tree Canopy and Potential in Portland, OR. <https://www.portland.gov/sites/default/files/2020-08/tree-canopy-and-potential-2018.pdf>

Regional Equity Atlas. (n.d.). Asthma. <http://www.equityatlas.org/atlas-maps-print-view/asthma>

Rose, J. (2014). Joseph Rose: I-84s odd lack of freeway exits in Portland messes with human evolution. OregonLive, The Oregonian. https://www.oregonlive.com/commuting/2014/10/joseph_rose_i-84s_odd_lack_of.html

Skelton, R. & Miller, V. (2016). The Environmental Justice Movement. NRDC. <https://www.nrdc.org/stories/environmental-justice-movement>

- Soleil, C. (2020). New Businesses in East Portland Were Accused Last Week of Contributing to Gentrification. Willamette Week. <https://www.wweek.com/news/2020/01/28/new-lents-businesses-were-accused-of-contributing-to-gentrification-last-week/>
- Sullivan's Gulch Neighborhood Association. (n.d.). Sullivan's Gulch Neighborhood Plan: Foreword. <https://www.sullivansgulch.org/neighborhood-plan.html>
- Tsai, M. (2016). Our Heritage, Our History Part 1: Portland Chinatown's Beginnings and Displacement. Asian Pacific American Network of Oregon. <https://www.apano.org/2016/05/09/our-heritage-our-history-part-1-portland-chinatowns-beginnings-and-displacement/>
- Tsai, M. (2016). Our Heritage, Our History Part 2: Portland Chinese-American Displacement and Migration. Asian Pacific American Network of Oregon. <https://www.portlandonline.com/portlandplan/index.cfm?a=346260&c=51427>
- United States Department of Agriculture. (2019). Food Access Research Atlas. <https://www.ers.usda.gov/data-products/food-access-research-atlas/>
- United States Environmental Protection Agency. (n.d.). Learn about Polychlorinated Biphenyls (PCBs). <https://www.epa.gov/pcbs/learn-about-polychlorinated-biphenyls-pcbs>
- United States Environmental Protection Agency. (n.d.). What is Superfund? <https://www.epa.gov/superfund/what-superfund>
- United States Geological Survey. (n.d.). What is liquefaction? https://www.usgs.gov/faqs/what-liquefaction?qt-news_science_products=0#qt-news_science_products
- University of Richmond, Digital Scholarship Lab. (n.d.). Mapping Inequity: Redlining in New Deal America. <https://dsl.richmond.edu/panorama/redlining/#loc=11/45.513/-122.817&city=portland-or>
- Urban Nest Realty. (2016). An All-Purpose Guide to the Concordia Neighborhood in Portland. <https://www.urbannestpdx.com/life-in-portland/2016/8/25/an-all-purpose-guide-to-the-concordia-neighborhood-in-portland>
- Wang, Y., Bartlett, S.F., & Miles, S.B. (2012). Earthquake Risk Study for Oregon's Critical Energy Infrastructure Hub. Department of Geology and Mineral Industries. <https://www.oregongeology.org/earthquakes/CEI-Hub-report.pdf>
- Wollner, C., Provo, J., & Schablisky, J. (2019). Brief History of Urban Renewal in Portland, Oregon. <https://prosperportland.us/wp-content/uploads/2019/07/Brief-History-of-Urban-Renewal-in-Portland-2005-Wollner-Provo-Schablisky.pdf>