



February 2026

Methodology Report

Pierce County Community Impact Index

Prepared for: Pierce County Finance Department

ECOnorthwest

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1. Purpose

ECONorthwest (ECO) developed Pierce County's [Community Impact Index](#) — an online, interactive mapping tool that helps communities access data to inform decision-making processes.

The Community Impact Index combines dozens of indicators about community conditions (housing costs, air quality, job access, etc.) to highlight differences in opportunity and access across the County. By scoring in percentiles, the Community Impact Index makes it easy to understand where opportunity is high or low in Pierce County.

This report outlines the technical methodology behind the Community Impact Index. It includes:

- ◆ **Framework (how the Index is built):** Information on how data is grouped into indicators, categories, and the final Community Impact Index score.
- ◆ **Indicator Selection (how data indicators were chosen):** The process for choosing which data points, called indicators, to use and how they are grouped into categories.
- ◆ **Data Preparation (how data are analyzed):** The steps taken to prepare, clean, and combine the data.
- ◆ **Geographic Applications (how different geographic factors are handled):** Explains how data is aligned to Block Groups and aggregated to larger areas for consistent comparison.

The appendices include additional information, including a full data dictionary for indicators and reasons why some were not chosen.

2. Framework

This section explains how the Community Impact Index is structured. It describes how data (individual indicators) are grouped into categories and combined to calculate the overall Community Impact Index Score.

Indicators are the core data elements of the Community Impact Index. Each indicator measures something about a community, such as how affordable housing is or how easy it is to get healthcare. By looking at indicators, the Community Impact Index illuminates patterns for specific attributes and shows which areas differ from the rest of Pierce County. For indicators, the tool shows both the raw values and percentiles, which explain how each geographic area ranks compared to others.

Indicators are grouped into **Index Categories**. These categories combine related indicators to cover broader topics, like Education or Jobs. Each category gets a score, which is the average of relevant indicator z-scores¹ from that group.

All the data is then combined into the **Community Impact Index Score**. This is the average of the category scores for a geography and is shown as a percentile. The Community Impact Index Score gives an overall view of how one geographic area compares to others in terms of access, outcomes, and opportunity.

Figure 1: Summary of Index Construction

LEVEL	WHAT IT CAPTURES	HOW IT IS REPORTED	COUNT
Indicator	A single community attribute (examples: housing-cost burden, access to parks and open space, and broadband access).	Raw value and percentile (0-100)	43
Index Category	A group of related indicators (examples: Community Vitality, Education, Environmental Health, Health and Wellness, Housing and Infrastructure, and Jobs and Economy).	Average of relevant indicator z-scores ¹	6
Community Impact Index Score	A combined score showing overall opportunity for a geography.	Average of category scores (percentile)	1

¹ For more information on z-scores, refer to section [4. Data Preparation](#).

3. Indicator Selection

This section explains the process used to choose the indicators in the Community Impact Index. EConorthwest completed a wide search for possible measures and then narrowed them down using community impact-focused questions, data quality checks, and feedback from County staff and partners. The selected indicators are reliable, updated frequently, and relevant to County priorities and goals.

3.1 Potential Data Exploration

ECO identified over 400 potential indicators from 14 trusted national, state, and local sources. These sources included:

- [EPA EJScreen Map](#)
- [EPA Enviro Atlas](#)
- [Prosperity Now Scorecard](#)
- [The Educational Opportunity Project](#)
- [The Opportunity Atlas](#)
- [Tucson Equity Data Strategy \(TEDS\)](#)
- [US Census](#)
- [King County, WA Equity Index Map](#)
- [Open Pierce County](#)
- [Pierce County Equity Index \(retired site\)](#)
- [Pierce County Public GIS](#)
- [Puget Sound Regional Council Datasets](#)
- [Tacoma-Pierce County Health Department Community Profiles](#)
- [Washington State Education Report Card](#)

3.2 Indicator-Relevance Screening

Each indicator was reviewed for how it could help guide policies that impact local communities. Specifically, each indicator was reviewed with three questions²:

- ◆ **1. Who benefits the most?** Could some groups benefit more than others, potentially leaving others behind?
- ◆ **2. Who might be negatively affected?** Will this change have a greater negative impact on some groups than others?
- ◆ **3. Whose voices are included?** Are the right people involved in decisions?

² EConorthwest Equity Framework. 2024. This framework is informed and guided by the work of many partners and leaders, including the Government Alliance for Racial Equity (GARE), Race Forward, the People’s Institute for Survival and Beyond, researchers focused on Targeted Universalism, and the King County Office of Equity and Social Justice. <https://econw.com/about/equity/> Refer also to: Rudiger, Anja. 2022. *Advancing Racial Equity: A Framework for Federal Agencies*. Government Alliance on Race and Equity. https://www.raceforward.org/system/files/2024/03/GARE%20Advancing%20Racial%20Equity%20-%20A%20Framework%20for%20Federal%20Agencies_2022.02.02-1330.pdf

Indicators that focused only on negatives, commonly referred to as deficit-based framing, or could lead to unfair conclusions based on methodologies, were flagged for removal.³

3.3 Feasibility Test

Indicators were also examined based on the detail of the data, how often it is updated, whether it covers all of Pierce County, and whether it relies on a trusted source. Selected indicators must be:

- a) Updated every year or more often,
- b) Available at least at the Census Tract level, and preferably at the Census Block Group level,
- c) Cover the whole county, and
- d) Based on collected data, not estimates.

3.4 Community and Staff Engagement

Five focus-group sessions with County staff and local officials, totaling 28 participants, helped inform the tool's features and refine the list of indicators to match local needs.

³ Deficit-based information over-emphasizes what people lack rather than what they have and often leads to stereotyping. On the other hand, asset-based information values a person's existing abilities and qualities.

4. Data Preparation

This section outlines how the data was prepared for the Community Impact Index. Since indicators came from different agencies and varied in granularity (from individual addresses to large census areas), each dataset was adjusted to the Block Group level using spatial crosswalks and aggregation. To make indicators comparable, their distributions were checked for skew and transformed as needed to make them more symmetrical. Finally, indicators were standardized using z-scores and turned into percentiles, making the results intuitive to interpret and compare. These steps help ensure each indicator contributes fairly to the overall index and shows meaningful differences across geographic areas.

4.1 Crosswalks and Aggregation

All data were first adjusted to match Block Group boundaries. For some measures, different data points were combined. For example, “cost burden” adds households spending 30–50% of their income on housing, with those spending more than 50%, to find out how many households are heavily burdened by housing costs. Other measures were made by comparing two numbers, such as housing costs and household income, to determine whether housing is affordable. Refer to [Appendix A](#) for more details.

4.2 Transformations

To make indicators comparable, distributions were checked for skew and changed as needed to approximate symmetry.⁴

This process is called ‘normalization’ and is required for accurate z-score calculations.⁵

What is a Z-score?

A z-score shows how far a value is from the average, in units of standard deviation. For each indicator, the z-score indicates if a Block Group’s value is higher or lower than the Pierce County average, and by how much.

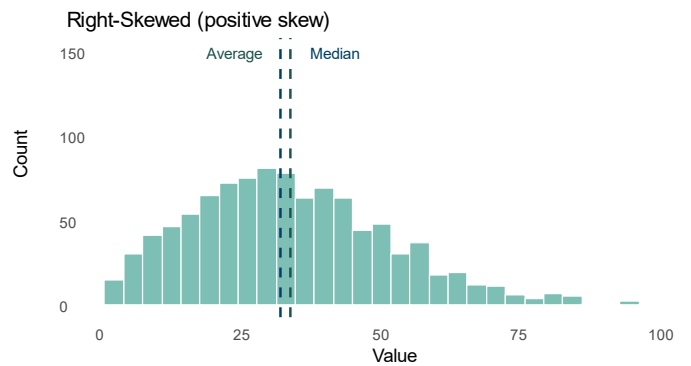
A score of 0 means the value is exactly average. Positive scores are above average, and negative scores are below. Using z-scores makes it possible to compare different indicators, even if they are measured in different units.

⁴ For details on the original skew for each indicator, refer to [Appendix A](#). Original skew was determined from Census Block Group level data.

⁵ For more detailed descriptions of data normalization and transformations, please visit: <https://openintro-ims.netlify.app/explore-numerical.html#sec-transforming-data>

- **Right-skewed (positive skew)**⁶: Most values are concentrated at the low end, with a few very high outliers pulling the distribution to the right. A **square-root** transformation is applied to the indicators to balance the scale and bring values closer to the center.

Figure 2: Right-skewed distribution



- **Left-skewed (negative skew)**: Most values are concentrated at the high end, with a few very low outliers pulling the distribution to the left. An **exponential function** is applied to the indicators to balance the scale and bring values closer to the center.

Figure 3: Left-skewed distribution

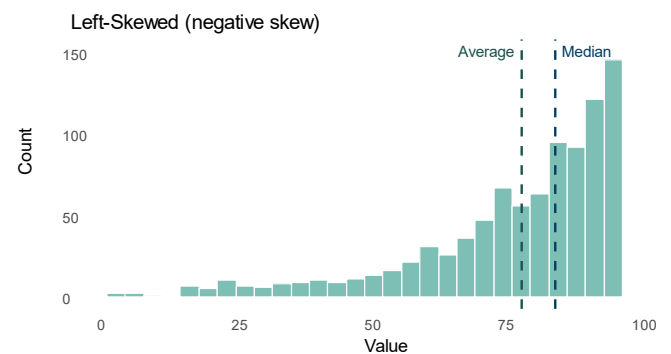
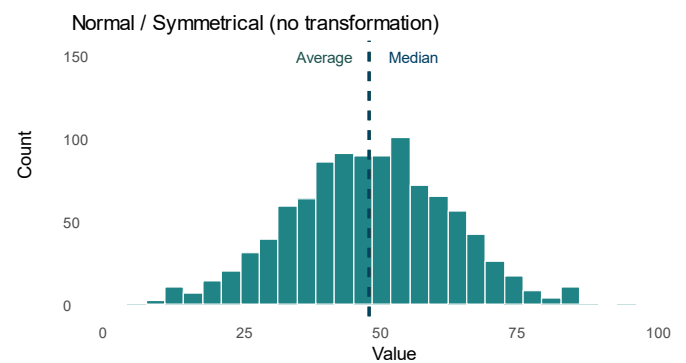
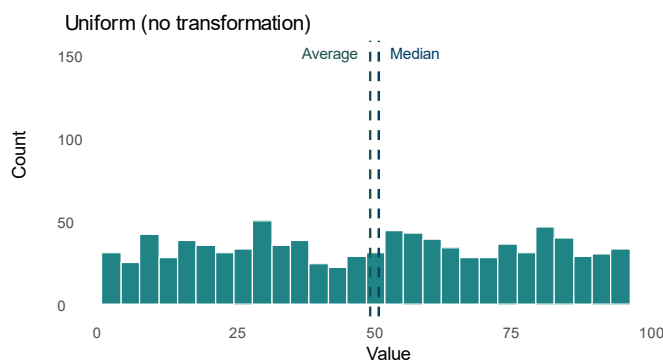


Figure 4: Uniform and Normal Distributions

- **Symmetrical or uniform distributions**: If the data is already balanced, **no transformation** is done.⁷



⁶ Images on this page were sourced from Pierce County.

⁷ Using Pearson's Second Coefficient of Skewness, values between -0.5 and +0.5 for each indicator were determined appropriately uniform or normal. Values outside this range required the relevant normalization process.

Z-scores are then turned into percentiles, making them easier to understand. For example, an 80th percentile score can show that a Block Group has a higher median income than 80% of other Block Groups in Pierce County.

The mapping of these percentiles uses a light-to-dark color gradient to enhance interpretability. Darker shades on the map correspond to higher scores, indicating areas with greater access to opportunity. Conversely, lighter shades represent lower scores, signaling areas that may have opportunities for reducing barriers or additional investment across key indicators.

4.3 Categorization

Indicators are grouped into categories based on their similarities and how they align with national guidance⁸ for using data in policy. Figure 5 describes each category and the types of indicators it includes.

Figure 5: Index Category Definitions

Category	Definition
Community Vitality	Measures community participation and connection, including access to amenities and services that contribute to the overall well-being of a community.
Education	Measures educational outcomes.
Environmental Health	Measures environmental factors that can impact community safety and health.
Health and Wellness	Measures health results and access to healthy living.
Housing and Infrastructure	Measures housing conditions and community access to important infrastructure.
Jobs and Economy	Measures the local economy and job access.
Context Variables	Describe the population by age, race/ethnicity, gender, immigration, veteran status, and more.

To create a category score, the z-scores of each indicator within that category are averaged. This ensures that all indicators have equal importance, regardless of their original units or scale. After the six category scores are calculated, they are averaged again across all categories to get the overall Community Impact Index Score.

⁸ ECO relied heavily on the Center for Disease Control’s (CDC) Social Determinants of Health (SDOH). In 2020, the CDC identified five SDOH domains as priorities for national objectives in their Healthy People 2030 plan to improve health and well-being. The SDOH are defined as “the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.” Accessed from <https://odphp.health.gov/healthypeople/priority-areas/social-determinants-health> on December 3, 2024.

5. Geographic Application

This section outlines how geographic factors were used to ensure the Community Impact Index remains precise, comprehensive, and relevant for local decision-making. The approach starts at the most granular level, Census Block Groups, and allows for aggregation to geographies like Census Tracts or school districts. Methodology related to boundary inclusion, missing data, and geographic exclusions helps maintain both consistency and integrity across the tool.

5.1 Area Aggregation

The Community Impact Index is calculated using Census Block Groups, which are the smallest areas for which most data are available. To maintain consistent comparisons across different regions, a Block Group is included in geographic aggregations if at least 10% of its land overlaps with that area. No Block Groups are split. This approach ensures that areas with irregular shapes or large sizes, especially in rural Pierce County, are not left out. For larger geography types, percentiles are always calculated compared to that same type of area (for example, school district percentiles are compared to other school districts in the County).

What is a Block Group?

A **Census Block Group** is a small geographic area defined by the U.S. Census Bureau that typically contains between 600 and 3,000 people. It is the smallest unit for which detailed demographic and economic data are widely available. Block Groups are made up of clusters of neighboring Census Blocks and are designed to provide a consistent and manageable way to analyze local patterns within larger areas like Census Tracts or counties.

5.2 Missing Data

Some Block Groups are missing data for one or more indicators. For example, industrial areas may not have information about housing costs or life expectancy. Because 87% of Block Groups are missing fewer than two indicators, scores were still made using what data was available. Refer to [Appendix A](#) for more information.

5.3 Exclusions

Areas outside the County's direct oversight, like Joint Base Lewis-McChord, Mount Rainier National Park, and McNeil Island, are not included in the Community Impact Index.

6. Conclusion

The Community Impact Index is a tool to explore and support data-informed decisions. It highlights patterns of need and opportunity, helping to guide resources, investments, or policy actions toward areas and populations that can benefit most while advancing broader community goals. By providing a clear and consistent framework for comparing different communities, the Community Impact Index serves as a starting point for deeper understanding and meaningful dialogue.

Findings from the Community Impact Index should be combined with partner insights, lived experiences, and other local contexts. These perspectives add critical context to the numbers, helping to explain why certain patterns exist and what actions might be most impactful. By combining data and engagement, additional insights and opportunities emerge that are grounded in both evidence and the voices of those most affected.

6.1 Resources

Important links for the Community Impact Index and additional resources are as follows:

- ◆ [Community Impact Index](#): an online, interactive mapping tool that helps communities access data to inform decision-making processes.
- ◆ User Support Guide and FAQ (*link in process*): the central hub for all information related to the tool.
- ◆ Tutorial Videos (*link in process*): videos explaining various features and functionalities of the tool as well as and videos highlighting examples of potential use cases for the Community Impact Index.

7. Appendices

Appendix A – Data Dictionary

Context Variables

AGE

Definition: Age distribution of residents

Measure Type: Context

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B01001](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: None

Original Data Skew: Not applicable because context variables are not included in the Community Impact Index Score.

Interpretation: Not applicable

Additional Notes: Raw data are disaggregated by gender. Therefore, a simple sum is conducted across genders for each age bracket.

FOREIGN-BORN POPULATION

Definition: Percent of residents who are foreign-born

Measure Type: Context

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B05002](#)

Update Frequency: Annual

Original Geography: Census Tract

Data Missing: None

Original Data Skew: Not applicable because context variables are not included in the Community Impact Index Score.

Interpretation: Not applicable

Additional Notes: Raw data are not available at the Census Block Group level. Therefore, the proportion of the total population within the Block Group relative to the Tract is multiplied by the proportion of foreign-born population in the Tract. That number is then divided by the Block Group population to calculate the percentage of the Block Group population who are foreign-born.

GENDER

Definition: Percent of residents by gender

Measure Type: Context

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B01001](#)

Update Frequency: Annual

Original Geography: Census Tract

Data Missing: None

Original Data Skew: Not applicable because context variables are not included in the Community Impact Index Score.

Interpretation: Not applicable

Additional Notes: Raw data are disaggregated by age group. Therefore, a simple sum is conducted across age groups for each age bracket. The total number of individuals by gender in a Block Group is divided by the total population of the Block Group. The U.S. Census currently only collects gender information as male and female.

DISABLED POPULATION

Definition: Percent of residents with disabilities

Measure Type: Context

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B18101](#)

Update Frequency: Annual

Original Geography: Census Tract

Data Missing: None

Original Data Skew: Not applicable because context variables are not included in the Community Impact Index Score.

Interpretation: Not applicable

Additional Notes: Raw data are disaggregated by age group and gender and are not available at the Census Block Group level. Therefore, a simple sum for each Tract is conducted across age groups and gender. This sum is then divided by the total non-institutionalized population within the Tract. The total proportion of the population within the Block Group relative to the Tract is multiplied by the proportion of individuals with disabilities in the Tract. That number is then divided by the Block Group population to calculate the percentage of the Block Group population who have disabilities. Disability is defined as self-reporting “having difficulty” with one or more of the six defined disability categories: hearing difficulty, vision difficulty, cognitive difficulty, ambulatory difficulty, self-care difficulty, and independent living difficulty.

EDUCATIONAL ATTAINMENT LEVELS

Definition: Percent of residents by educational attainment level

Measure Type: Context

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B15003](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: None

Original Data Skew: Not applicable because context variables are not included in the Community Impact Index Score.

Interpretation: Not applicable

Additional Notes: Counts of individuals by educational attainment levels (less than high school, high school diploma or equivalent, some college, Associate's degree, Bachelor's degree, or Master's degree or higher) in a Block Group are divided by the total population aged 25 or older in the Block Group.

MEDIAN HOME VALUE

Definition: 50th percentile home value of owner-occupied units

Measure Type: Context

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B25077](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: 44 Block Groups missing data

Original Data Skew: Not applicable because context variables are not included in the Community Impact Index Score.

Interpretation: Not applicable

Additional Notes: This indicator identifies the middle point of the housing unit values of Block Groups. The estimate does not include the values of renter-occupied units.

MEDIAN RENT

Definition: 50th percentile monthly rent cost

Measure Type: Context

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B25064](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: 129 Block Groups missing data

Original Data Skew: Not applicable because context variables are not included in the Community Impact Index Score.

Interpretation: Not applicable

Additional Notes: This indicator identifies the middle point of the monthly rent costs for all rental households in the Block Group. The estimate excludes the values of owner-occupied units and the costs of short-term rentals shorter than two consecutive months. Gross rent includes the average monthly cost of utilities to the renter (Electricity, natural gas, water, sewer, and heating fuels, etc.).

LIMITED ENGLISH PROFICIENCY

Definition: Percent of residents who self-identify as speaking English “not well” or “not at all”

Measure Type: Context

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B16004](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: None

Original Data Skew: Not applicable because context variables are not included in the Community Impact Index Score.

Interpretation: Not applicable

Additional Notes: The count of residents with self-reported limited English proficiency in a Block Group is divided by the total population within the Block Group.

TOTAL POPULATION

Definition: Total count of residents

Measure Type: Context

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B01003](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: None

Original Data Skew: Not applicable because context variables are not included in the Community Impact Index Score.

Interpretation: Not applicable

Additional Notes: None

POPULATION DENSITY

Definition: Residents per square mile

Measure Type: Context

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B01003](#), [TIGER/Line](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: None

Original Data Skew: Not applicable because context variables are not included in the Community Impact Index Score.

Interpretation: Not applicable

Additional Notes: The count of total residents in a Block Group is divided by the total square mile area of the Block Group. The area of each block group was calculated using U.S. Census TIGER/Line shapefiles.

POVERTY RATE (100% FEDERAL POVERTY LEVEL)

Definition: Percent of residents earning less than 100% of the Federal Poverty Level

Measure Type: Context

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [C17002](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: None

Original Data Skew: Not applicable because context variables are not included in the Community Impact Index Score.

Interpretation: Not applicable

Additional Notes: The count of residents in a Block Group earning less than 100% the [Federal Poverty Level](#) is divided by the total population for which the Census Bureau calculates poverty rates. Less than 100% of the Federal Poverty Level includes ratios under 0.50 or a ratio of 0.50 to 0.99.

RACE AND ETHNICITY GROUPS

Definition: Percent of residents by race and ethnicity group

Measure Type: Context

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B03002](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: None

Original Data Skew: Not applicable because context variables are not included in the Community Impact Index Score.

Interpretation: Not applicable

Additional Notes: The counts of residents within each Census-designated race and ethnicity group are divided by the total population of the Block Group. Race and ethnicity groups include: American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino of any race(s), Native Hawaiian or Other Pacific Islander, Two or More races, and White. Individuals who self-identify their ethnicity as Hispanic or Latino are reported as Hispanic or Latino regardless of their self-reported race category. For example, if an individual identifies as Black or African American and Hispanic or Latino, they would be categorized as Hispanic or Latino of any race(s).

TOP COUNTRIES OF IMMIGRATION *(IN PROGRESS)*

Definition:

Measure Type:

Data Source:

Update Frequency:

Original Geography:

Data Missing:

Original Data Skew:

Interpretation:

Additional Notes:

VETERAN POPULATION

Definition: Percent of residents who are veterans

Measure Type: Context

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B21001](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: None

Original Data Skew: Not applicable because context variables are not included in the Community Impact Index Score.

Interpretation: Not applicable

Additional Notes: The count of residents who are veterans in a Block Group is divided by the total civilian population of the Block Group. The Census defines veteran as a person 18 years old or over who has served (even for a short

time), but is not now serving, on active duty in the U.S. Army, Navy, Air Force, Marine Corps, or the Coast Guard, or who served in the U.S. Merchant Marine during World War II. People who served in the National Guard or military Reserves are classified as veterans only if they were ever called or ordered to active duty, not counting the four to six months for initial training or yearly summer camps.

Community Vitality

ACCESS TO COMMUNITY AND RECREATION CENTERS

Definition: Percent of Block Group areas within two miles of a community or public recreation center

Measure Type: Access

Data Source: Pierce County GIS, [Park Polygons](#)

Update Frequency: Annual

Original Geography: Property boundaries

Data Missing: None

Original Data Skew: Slight positive (right) skew

Interpretation: Positive (higher values desired)

Additional Notes: The square-mile area of Block Groups within two miles of a community or public recreation center is divided by the total area of the Block Group in square miles. This buffer aligns with Washington State Department of Community, Trade, and Economic Development guidance.⁹

ACCESS TO LIBRARIES

Definition: Percent of urban Block Group areas within one mile of a public library and percent of rural Block Group areas within two miles of a public library

Measure Type: Access

⁹ To learn more, please visit <https://rco.wa.gov/wp-content/uploads/2019/10/PlanningforParksOpenSpace.pdf>.

Data Source: Washington State Spatial Data, [Library Locations](#)

Update Frequency: Less frequent than annual

Original Geography: Address location

Data Missing: None

Original Data Skew: Positive (right) skew

Interpretation: Positive (higher values desired)

Additional Notes: The square-mile area of Block Groups within 1 mile of a library in urban areas and 2 miles of a library in rural areas is divided by the total area of the Block Group in square miles. These buffer distances align with national best practices for measuring library access.¹⁰ Smaller buffers in urban areas better reflect walkable access, and larger buffers in rural areas reflect reasonable access in less densely populated, more car-dependent areas.

ACCESS TO PARKS

Definition: Percent of Block Group areas within two miles of a park or designated open space

Measure Type: Access

Data Source: Pierce County GIS, [Parks Polygons](#)

Update Frequency: Annual

Original Geography: Property boundaries

Data Missing: 24 Block Groups missing data due to 0 parks being reported within 2 miles. These values are imputed to 0.

Original Data Skew: Negative (left) skew

Interpretation: Positive (higher values desired)

¹⁰ To learn more, please visit <https://journals.ala.org/index.php/ltr/article/view/7795/10835>.

Additional Notes: The square-mile area of Block Groups within 2 miles of a park or open space is divided by the total area of the Block Group in square miles. These buffers align with Washington State Department of Community, Trade, and Economic Development guidance. Smaller buffers in urban areas better reflect walkable access, and larger buffers in rural areas reflect reasonable access in less densely populated, more car-dependent areas.

ACCESS TO DAYCARE CENTERS

Definition: Percent of urban Block Group areas within one mile of a daycare center and percent of rural Block Group areas within two miles of a daycare center

Measure Type: Access

Data Source: Washington State Department of Children, Youth, and Families, [DCYF Licensed Childcare Center and School Age Program Providers](#)

Update Frequency: Annual

Original Geography: Location points (X, Y)

Data Missing: 24 Block Groups missing data due to 0 parks being reported within 2 miles. These values are imputed to 0.

Original Data Skew: Negative (left) skew

Interpretation: Positive (higher values desired)

Additional Notes: The square-mile area of Block Groups within 1 mile of a daycare center in urban areas and 2 miles of a daycare center in rural areas is divided by the total area of the Block Group in square miles. Smaller buffers in urban areas better reflect walkable access, and larger buffers in rural areas reflect reasonable access in less densely populated, more car-dependent areas.

PROPERTY AND PERSONAL CRIME RATE (PER 1,000 PEOPLE)

Definition: Rate of property and personal crimes reported per 1,000 population

Measure Type: Outcome

Data Source: Pierce County GIS, [Crime Data](#); City of Tacoma GIS, [City of Tacoma Reported Crime \(Tacoma\)](#)

Update Frequency: Annual

Original Geography: Location points (X, Y)

Data Missing: 78 Block Groups missing data due to 0 crimes being reported and/or being outside of the jurisdictions of the Pierce County Sheriff or Tacoma Police Department.

Original Data Skew: Positive (right) skew

Interpretation: Negative (lower values desired)

Additional Notes: The count of personal and property crimes within the past 2 years is divided by the total population of the Block Group and then multiplied by 1,000. Incidents include offenses such as assault, rape, murder, theft, vehicle theft, and vandalism. Using two years of crime data helps reduce the impact of short-term anomalies and random fluctuations that can distort spatial patterns.¹¹

PROXIMITY TO HEAVY TRAFFIC

Definition: Average percent of Block Group area near heavy traffic roadways

Measure Type: Access

Data Source: U.S. Environmental Protection Agency, [EJ Screen](#)

Update Frequency: Annual

Original Geography: Block Group

Data Missing: None

Original Data Skew: Slight positive (right) skew

Interpretation: Negative (lower values desired)

¹¹ To learn more, please visit https://www.researchgate.net/publication/263514425_Modifiable_Temporal_Unit_Problem_MTUP_and_Its_Effect_on_Space-Time_Cluster_Detection.

Additional Notes: This indicator is pre-calculated from the Environmental Protection Agency’s EJ Screen Map. The average count of vehicles per day on a roadway is divided by distance of the roadway from the center (centroid) of the Block Group. For more information, please visit [EJScreen Technical Documentation for Version 2.3](#).

TRANSIT ACCESS

Definition: Average percent of Block Group with access to transit services

Measure Type: Access

Data Source: Pierce Transit, [Transit System](#); Sound Transit, [Pierce Regional Agency File](#); Pierce County GIS, [Park and Ride Lots](#)

Update Frequency: Annual

Original Geography: Area polygons and point locations (X, Y)

Data Missing: None

Original Data Skew: Slight negative (left) skew

Interpretation: Positive (higher values desired)

Additional Notes: This measure combines three types of transit service coverage: (1) acreage within ¼ mile of rail and bus stops, (2) acreage within 3 miles of park-and-ride facilities, and (3) acreage within designated micro-transit service areas. These areas are summed, and the total is divided by the Block Group's total acreage. Overlapping coverage areas contribute to higher access values.

VOTER PARTICIPATION RATE

Definition: Percent of registered voters who returned a ballot in the general election

Measure Type: Access

Data Source: Pierce County GIS, [Voter Turnout](#)

Update Frequency: Annual

Original Geography: Voting Precincts

Data Missing: None

Original Data Skew: Negative (left) skew

Interpretation: Positive (higher values desired)

Additional Notes: The count of voters within a Block Group who returned a ballot in the general election is divided by the count of registered voters in the Block Group. The voter participation data included reflect only turnout during general presidential elections and do not include primaries or other election types.

WALKABLE STREETS

Definition: Weighed average of street intersections with pedestrian access per square mile

Measure Type: Access

Data Source: Environmental Protection Agency, [EPA Smart Location Database](#)

Update Frequency: Less frequent than annual

Original Geography: Block Group

Data Missing: None

Original Data Skew: Positive (right) skew

Interpretation: Positive (higher values desired)

Additional Notes: This indicator is pre-calculated from the Environmental Protection Agency's Smart Location Database. The number of qualifying street intersections with three or more legs within a Block Group is divided by the land area in square miles. Only intersections that allow pedestrian access are included. This produces a weighted estimate of pedestrian-oriented street connectivity for each Block Group. For more information, please visit [Smart Location Database Technical Documentation and User Guide Version 3.0](#).

Education

HIGH SCHOOL GRADUATION RATES

Definition: Percent of students who graduated in four years

Measure Type: Outcome

Data Source: National Center for Education Statistics, [School Geocodes & Geoassignments](#); Washington Office of Superintendent of Public Instruction, [Report Card Graduation](#)

Update Frequency: Annual

Original Geography: Point locations (X, Y)

Data Missing: Because of suppression rules used by OSPI, raw data are not available for all schools. This results in 70 block groups with missing data.

Original Data Skew: Slight positive (right) skew

Interpretation: Positive (higher values desired)

Additional Notes: The count of students who completed high school in four years is divided by the count of students who are in their “cohort”: those who started 9th grade at the same time. Cohorts are adjusted to reflect that some students may have moved in or out of the school to accurately track students. Public school locations are collected from the National Center of Education Statistics (NCES) and matched to enrollment data from Washington State Report Card. Values are calculated at the school level first. The Block Groups are assigned to their appropriate school districts and, from within each school district, the three closest corresponding schools are chosen. Each school is given an inverse distance weight to the center of the Block Group. The chosen schools’ numerator and denominator are weighted according to distance from the Block Group center (centroid) and then summed to get the result for each Block Group. If a school district does not have more than three schools, all schools were selected and weighted.

ASSESSMENT SCORES MEETING STANDARDS

Definition: Percent of students meeting 3rd grade reading assessment standards and 7th grade math assessment standards

Measure Type: Outcome

Data Source: National Center for Education Statistics, [School Geocodes & Geoassignments](#); Washington Office of Superintendent of Public Instruction, [Report Card Assessment](#)

Update Frequency: Annual

Original Geography: Point locations (X, Y)

Data Missing: None

Original Data Skew: Slight positive (right) skew

Interpretation: Positive (higher values desired)

Additional Notes: The count of students who met or exceeded the set testing standard in 3rd grade reading and 7th grade math assessments divided by the total count of 3rd and 7th grade students expected to be assessed. Public school locations are collected from the National Center of Education Statistics (NCES) and matched to enrollment data from Washington State Report Card. Values are calculated at the school level first. The Block Groups are assigned to their appropriate school districts and, from within each school district, the three closest corresponding schools are chosen. Each school is given an inverse distance weight to the center of the Block Group. The chosen schools' numerator and denominator are weighted according to distance from the Block Group centroid and then summed to get the result for each Block Group. If a school district does not have more than three schools, all schools were selected and weighted.

DUAL CREDIT ENROLLMENT

Definition: Percent of students who completed a dual credit course

Measure Type: Access

Data Source: National Center for Education Statistics, [School Geocodes & Geoassignments](#); Washington Office of Superintendent of Public Instruction, [Report Card SQSS](#)

Update Frequency: Annual

Original Geography: Point locations (X, Y)

Data Missing: Because of suppression rules used by OSPI, raw data are not available for all schools. This results in 3 block groups with missing data.

Original Data Skew: Negative (left) skew

Interpretation: Positive (higher values desired)

Additional Notes: The count of high school students who completed a dual credit course is divided by the total number of high school students. Dual Credit courses include Running Start, CTE Dual Credit (formerly Tech Prep), College in High School, Advanced Placement, International Baccalaureate, and Cambridge International. Public school locations are collected from the National Center of Education Statistics (NCES) and matched to enrollment data from Washington State Report Card. Values are calculated at the school level first. The Block Groups are assigned to their appropriate school districts and, from within each school district, the three closest corresponding schools are chosen. Each school is given an inverse distance weight to the center of the Block Group. The chosen schools' numerator and denominator are weighted according to distance from the Block Group centroid and then summed to get the result for each Block Group. If a school district does not have more than three schools, all schools were selected and weighted.

EDUCATIONAL ATTAINMENT

Definition: Weighted average index of educational attainment in the total population over 25

Measure Type: Outcome

Data Source: U.S. Census Bureau, American Community Survey 5-year Estimates: [B15003](#)

Update Frequency: Annual

Original Geography: Block group

Data Missing: None

Original Data Skew: Positive (right) skew

Interpretation: Positive (higher values desired)

Additional Notes: This measure is calculated by assigning a value of 1 to each person with an associate degree, 1.2 to each person with a bachelor's degree, and 1.5 to each person with a master's or doctoral degree, then summing those values for the block group for the respective population (25 and older).

KINDERGARTEN READINESS

Definition: Percent of kindergarten students who demonstrate readiness in at least five of six areas of development and learning

Measure Type: Outcome

Data Source: National Center for Education Statistics, [School Geocodes & Geoassignments](#); Washington Office of Superintendent of Public Instruction, [Report Card Kindergarten Readiness](#)

Update Frequency: Annual

Original Geography: Point locations (X, Y)

Data Missing: None

Original Data Skew: Slight negative (left) skew

Interpretation: Positive (higher values desired)

Additional Notes: The count of kindergarten students who demonstrate readiness in at least five out of six areas of development and learning (social-emotional, physical, language, cognitive, literacy, and math) is divided by the total count of kindergarten students. Public school locations are collected from the National Center of Education Statistics (NCES) and matched to enrollment data from Washington State Report Card. Values are calculated at the school level first. The Block Groups are assigned to their appropriate school districts and, from within each school district, the three closest corresponding schools are chosen. Each school is given an inverse distance weight to the center of

the Block Group. The chosen schools' numerator and denominator are weighted according to distance from the Block Group centroid and then summed to get the result for each Block Group. If a school district does not have more than three schools, all schools were selected and weighted.

CHRONIC ABSENTEEISM RATE

Definition: Percent of students who miss 10% or more of school days

Measure Type: Outcome

Data Source: National Center for Education Statistics, [School Geocodes & Geoassignments](#); Washington Office of Superintendent of Public Instruction, [Report Card SQSS](#)

Update Frequency: Annual

Original Geography: Point locations (X, Y)

Data Missing: None

Original Data Skew: Slight negative (left) skew

Interpretation: Negative (lower values desired)

Additional Notes: The count of students who missed at least 10% of school days (missing more than two days a month on average) is divided by the total count of students. Public school locations are collected from the National Center of Education Statistics (NCES) and matched to enrollment data from Washington State Report Card. Values are calculated at the school level first. The Block Groups are assigned to their appropriate school districts and, from within each school district, the three closest corresponding schools are chosen. Each school is given an inverse distance weight to the center of the Block Group. The chosen schools' numerator and denominator are weighted according to distance from the Block Group centroid and then summed to get the result for each Block Group. If a school district does not have more than three schools, all schools were selected and weighted.

STUDENT-TEACHER RATIO

Definition: Number of students compared to teachers

Measure Type: Access

Data Source: National Center for Education Statistics, [School Geocodes & Geoassignments](#); Washington Office of Superintendent of Public Instruction, [Report Card Student Teacher Ratio](#)

Update Frequency: Annual

Original Geography: Point locations (X, Y)

Data Missing: None

Original Data Skew: Slight positive (right) skew

Interpretation: Negative (lower values desired)

Additional Notes: The count of students in schools is divided by the count of teachers. Public school locations are collected from the National Center of Education Statistics (NCES) and matched to enrollment data from Washington State Report Card. Values are calculated at the school level first. The Block Groups are assigned to their appropriate school districts and, from within each school district, the three closest corresponding schools are chosen. Each school is given an inverse distance weight to the center of the Block Group. The chosen schools' numerator and denominator are weighted according to distance from the Block Group centroid and then summed to get the result for each Block Group. If a school district does not have more than three schools, all schools were selected and weighted.

Environmental Health

NON-COMPLIANT DRINKING WATER SYSTEMS

Definition: Proportion of violations of the Safe Drinking Water Act by water system acreage

Measure Type: Access

Data Source: U.S. Environmental Protection Agency, [Water System Boundaries](#); U.S. Environmental Protection Agency, [SDWIS Report](#)

Update Frequency: Annual

Original Geography: Water system boundary polygons

Data Missing: None

Original Data Skew: Positive (right) skew

Interpretation: Negative (lower values desired)

Additional Notes: The count of violations of the Safe Drinking Water Act reported for water systems is divided by the share of the water system acreage within the block group.

EXTREME HEAT/URBAN HEAT ISLAND EFFECT

Definition: Average number of days with air temperatures over 90° F

Measure Type: Access

Data Source: Oregon State University, [PRISM data](#)

Update Frequency: Annual

Original Geography: 4 Km grid

Data Missing: None

Original Data Skew: Slight positive (right) skew

Interpretation: Negative (lower values desired)

Additional Notes: The count of days with air temperatures over 90° F is calculated from PRISM Climate Group's gridded daily maximum temperature (Tmax) estimates. This measure uses dry-bulb temperatures which do not factor in humidity. The data are originally in raster form, which is converted to point level data and then the count of days for each point within a block group is averaged to arrive at an average estimate for the block group.

FLOOD RISK

Definition: Share of block group within a FEMA-designated flood zone

Measure Type: Outcome

Data Source: U.S. Federal Emergency Management Agency [Flood Zones](#)

Update Frequency: Annual

Original Geography: Flood zones

Data Missing: None

Original Data Skew: Positive (right) skew

Interpretation: Negative (lower values desired)

Additional Notes: The total acres of the flood zone within a block group divided by the total acres of the block group. This data may not align with Pierce County's Regulated Floodplains data. To learn more about Regulated Floodplains, please visit [Flooding | Pierce County, WA - Official Website](#).

DIESEL EMISSIONS

Definition: Annual average air particulate matter from diesel engine emissions

Measure Type: Outcome

Data Source: U.S. Environmental Protection Agency, [EJ Screen Map](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: None

Original Data Skew: Slight positive (right) skew

Interpretation: Negative (lower values desired)

Additional Notes: This indicator is pre-calculated from the Environmental Protection Agency’s EJ Screen Map. The raw indicator is expressed in units of micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) and reported at the Census Block Group level. For more information, please visit [EJScreen Technical Documentation for Version 2.3](#).

OZONE CONCENTRATION

Definition: Annual average of 10 highest recorded ground-level ozone concentration days

Measure Type: Outcome

Data Source: U.S. Environmental Protection Agency, [EJScreen Map](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: None

Original Data Skew: Slight positive (right) skew

Interpretation: Negative (lower values desired)

Additional Notes: This indicator is pre-calculated from the Environmental Protection Agency’s EJ Screen Map. The raw indicator is expressed as the annual mean of the 10 highest MDA8 O3 concentration days. For more information, please visit [EJScreen Technical Documentation for Version 2.3](#).

PARTICULATE MATTER (PM) 2.5 CONCENTRATION

Definition: Annual average of potential exposure to tiny air particles that can be inhaled

Measure Type: Access

Data Source: U.S. Environmental Protection Agency, [EJ Screen Map](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: None

Original Data Skew: Negative (left) skew

Interpretation: Negative (lower values desired)

Additional Notes: This indicator is pre-calculated from the Environmental Protection Agency's EJ Screen Map. The PM 2.5 indicator measures potential exposure to inhalable particles 2.5 micrometers or smaller. It is measured in terms of the annual average concentration in air in micrograms per cubic meter. For more information, please visit [EJScreen Technical Documentation for Version 2.3](#).

PROXIMITY TO SUPERFUND SITES

Definition: Average distance to proposed or listed superfund sites

Measure Type: Access

Data Source: U.S. Environmental Protection Agency, [EJ Screen Map](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: None

Original Data Skew: Positive (right) skew

Interpretation: Negative (lower values desired)

Additional Notes: This indicator is pre-calculated from the Environmental Protection Agency's EJ Screen Map. The indicator is a total count of proposed or listed superfund sites divided by the distance to the Block Group centroid. Superfund sites are locations that have contaminated hazardous waste. For more information, please visit [EJScreen Technical Documentation for Version 2.3](#).

TREE CANOPY COVER

Definition: Percent of area covered by tree canopy

Measure Type: Access

Data Source: U.S. Multi-Resolution Land Characteristics Consortium, [NCLD Tree Canopy Cover \(CONUS\)](#)

Update Frequency: Less frequent than annual

Original Geography: 30 m grid

Data Missing: None

Original Data Skew: Positive (right) skew

Interpretation: Negative (lower values desired)

Additional Notes: The area of a Block Group covered by tree canopy is divided by the total area of the Block Group. The data are originally in raster form (at a square-30-meter level) with a value for the percentage of tree canopy cover within that square-30-meter area. The percent value is then multiplied by the square-30-meter area to get to a nominal amount of tree canopy which is aggregated for each respective block group and then divided by the total area of the block group.

FIRE RISK

Definition: The combined wildfire likelihood and intensity of flames within the region as a simulated model

Measure Type: Outcome

Data Source: U.S Department of Agriculture [Wildfire Risk to Communities](#)

Update Frequency: Annual

Original Geography: 30 m grid

Data Missing: None

Original Data Skew: Positive (right) skew

Interpretation: Negative (lower values desired)

Additional Notes: Modeled by the USDA as a combination of likelihood and intensity to measure the possible harm of structures in the region whether or no such structures are present. This indicator is the product of modeling, and as such carries an inherent degree of error and uncertainty. Fire risk is presented as a score for each 30-meter block. These blocks are then attributed to a block group and scores are averaged to represent risk for the included block groups.

Health and Wellness

CANCER INCIDENCE RATE

Definition: Percent of people 18 or older who have ever been diagnosed with cancer or melanoma by a health professional

Measure Type: Outcome

Data Source: U.S. Center for Disease Control, [CDC Places Data](#)

Update Frequency: Annual

Original Geography: Census Tract

Data Missing: None

Original Data Skew: Slight negative (left) skew

Interpretation: Negative (lower values desired)

Additional Notes: Raw data are not available at the Census Block Group level. Therefore, the proportion of the total population 18 or older within the Block Group relative to the Tract is multiplied by the proportion of the population who have ever been diagnosed with cancer or melanoma in the Tract. That number is then divided by the Block Group population to calculate the percentage of the Block Group population who have had cancer or melanoma.

DEPRESSION PREVALENCE

Definition: Percent of people 18 or older who have ever been diagnosed as having a depressive disorder by a health professional

Measure Type: Outcome

Data Source: U.S. Center for Disease Control, [CDC Places Data](#)

Update Frequency: Annual

Original Geography: Census Tract

Data Missing: None

Original Data Skew: Slight positive (right) skew

Interpretation: Negative (lower values desired)

Additional Notes: Raw data are not available at the Census Block Group level. Therefore, the proportion of the total population within the Block Group relative to the Tract is multiplied by the proportion of population in the Tract who have ever been diagnosed as having a depressive disorder. That number is then divided by the Block Group population to calculate the percentage of the Block Group population who have been diagnosed with a depressive disorder.

POOR GENERAL HEALTH

Definition: Percent of people 18 or older who report having “poor” or “fair” overall health

Measure Type: Outcome

Data Source: U.S. Center for Disease Control, [CDC Places Data](#)

Update Frequency: Annual

Original Geography: Census Tract

Data Missing: None

Original Data Skew: Positive (right) skew

Interpretation: Negative (lower values desired)

Additional Notes: Raw data are not available at the Census Block Group level. Therefore, the proportion of the total population within the Block Group relative to the Tract is multiplied by the proportion of population in the Tract reporting “poor” or “fair” overall health. That number is then divided by the Block Group population to calculate the percentage of the Block Group population who report “poor” or “fair” overall health.

ACCESS TO HEALTHY FOOD

Definition: Percent of urban Block Group areas within one mile of a Women, Infants, and Children (WIC) Nutrition Program retailer and percent of rural Block Group areas within two miles of a WIC retailer

Measure Type: Access

Data Source: Washington State Department of Health, [WIC Retailers](#)

Update Frequency: Less frequent than annual

Original Geography: Point locations (X, Y)

Data Missing: None

Original Data Skew: Slight positive (right) skew

Interpretation: Positive (higher values desired)

Additional Notes: The square-mile area of Block Groups within one mile of a WIC retailer in urban areas and two miles of a WIC retailer in rural areas is divided by the total area of the Block Group in square miles. WIC retailers are used as a proxy for healthy food access as they must provide fresh produce to achieve WIC status.

LOW LIFE EXPECTANCY

Definition: Percent difference in life expectancy compared to the maximum life expectancy for the nation

Measure Type: Outcome

Data Source: U.S. Environmental Protection Agency, [EJ Screen Map](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: 31 Block Groups were missing data due to the lack of availability of CDC life expectancy data, typically from too few observations. When there are too few observations, confidentiality standards are not met and margins of error are too high.

Original Data Skew: Slight negative (left) skew

Interpretation: Negative (lower values desired)

Additional Notes: This indicator is pre-calculated from the Environmental Protection Agency's EJ Screen Map. For more information, please visit [EJScreen Technical Documentation for Version 2.3](#).

OVERDOSE CALLS PER 1,000 PEOPLE

Definition: Two-year rate of drug overdose calls to 911 services per 1,000 residents

Measure Type: Outcome

Data Source: South Sound 911, [Computer-aided Dispatch \(CAD\) log](#); U.S. Census Bureau, American Community Survey 5-Year Estimates: [B01003](#)

Update Frequency: Annual

Original Geography: Street address locations

Data Missing: None

Original Data Skew: Positive (right) skew

Interpretation: Negative (lower values desired)

Additional Notes: Counts include only calls that have been made. The count of actual overdoses in a Block Group may be higher, especially for underserved populations. The count of overdose calls within the past 2 years is divided by the total population of the Block Group and then multiplied by 1,000. Using two years of data helps reduce the impact of short-term anomalies and random fluctuations that can distort spatial patterns.¹²

HEALTH UNINSURED RATE

Definition: Percent of residents without healthcare insurance

Measure Type: Access

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B27010](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: 1 Block Group missing data

Original Data Skew: Positive (right) skew

Interpretation: Positive (higher values desired)

Additional Notes: Raw data are disaggregated by age group – counts are summed across age group. Then, the count of residents without healthcare insurance are divided by the civilian, non-institutionalized population.

Housing and Infrastructure

HOMEOWNERSHIP RATE

Definition: Percent of housing units occupied by owners

¹² To learn more, please visit

https://www.researchgate.net/publication/263514425_Modifiable_Temporal_Unit_Problem_MTUP_and_Its_Effect_on_Space-Time_Cluster_Detection.

Measure Type: Outcome

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B25003](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: 2 Block Groups missing data

Original Data Skew: Negative (left) skew

Interpretation: Positive (higher values desired)

Additional Notes: The count of housing units occupied by owners is divided by the total number of housing units. The Census defines a housing unit as, “a house, an apartment, a group of rooms, or a single room occupied or intended for occupancy as separate living quarters.” For more information, please visit <https://www.census.gov/housing/hvs/definitions.pdf>.

HOUSING AFFORDABILITY

Definition: Ratio of median home value to median household income

Measure Type: Access

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B19013](#); [B25077](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: 53 Block Groups missing data

Original Data Skew: Positive (right) skew

Interpretation: Negative (lower values desired)

Additional Notes: The median home value of owner-occupied units in a Block Group is divided by the median household income of the Block Group. The U.S. Department of Housing and Urban Development (HUD) defines affordability as a [rate less than 3.36](#).

INTERNET ACCESS

Definition: Percent of households with internet access

Measure Type: Access

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B28002](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: 2 Block Groups missing data

Original Data Skew: Negative (left) skew

Interpretation: Positive (higher values desired)

Additional Notes: The count of households with internet access in a Block Group is divided by the total households in the Block Group. Internet access includes both subscription and non-subscription access, subscriptions include dial-up, broadband, cellular data, and satellite.

TOTAL COST-BURDENED HOUSEHOLDS

Definition: Percent of residents paying more than 30% of their household income monthly on housing expenses

Measure Type: Access

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B25091](#), [B25070](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: 14 Block Groups missing data for owner cost burden; 20 Block Groups missing data for renter cost burden; 2 Block Groups missing both owner and renter cost burden

Original Data Skew: Positive (right) skew

Interpretation: Negative (lower values desired)

Additional Notes: The count of owners and renters paying more than 30% of their gross income on monthly housing expenses in a Block Group is divided by the total number of households in the Block Group.

AVERAGE TRANSIT STOPS PER HOUR

Definition: Total number of public transit service stops per hour

Measure Type: Access

Data Source: Sound Transit, [Pierce GTFS Schedule File](#)

Update Frequency: Annual

Original Geography: Point locations (X, Y)

Data Missing: None

Original Data Skew: Positive (right) skew

Interpretation: Positive (higher values desired)

Additional Notes: This measure reflects the aggregate frequency of public transit service (trips per hour) for rail and bus in each block group. Each transit stop contains data on the frequency of service, which is then averaged across all stops for the respective block group.

Jobs and Economy

POVERTY RATE (UNDER 200% OF FEDERAL POVERTY LEVEL)

Definition: Percent of residents earning less than 200% of the Federal Poverty Level

Measure Type: Outcome

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [C17002](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: 1 Block Group missing data

Original Data Skew: Positive (right) skew

Interpretation: Negative (lower values desired)

Additional Notes: The count of residents earning less than 200% of the [Federal Poverty Level](#) in a Block Group is divided by the total population for which the Census Bureau calculates poverty rates. Results for ratios under 0.50, 0.50 to 0.99, 1.00 to 1.24, 1.25 to 1.49, 1.50 to 1.84, and 1.85 to 1.99 are summed before being divided by the total population.

VEHICLE ACCESS

Definition: Percent of households with at least one vehicle available to household members

Measure Type: Access

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B25044](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: 2 Block Groups missing data

Original Data Skew: Negative (left) skew

Interpretation: Positive (higher values desired)

Additional Notes: The count of households that have at least one vehicle in a Block Group is divided by the total number of households in the Block Group. Vehicles that are dismantled or immobile are not included in the count of "vehicles available" to a household.

COMMUTE TIME UNDER 15 MINUTES

Definition: Percent of commuters who spend fewer than 15 minutes getting to work

Measure Type: Access

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B08012](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: None

Original Data Skew: Positive (right) skew

Interpretation: Positive (higher values desired)

Additional Notes: The count of commuters in a Block Group who spend fewer than 15 minutes getting to work is divided by the total number of commuters in the Block Group. The population does not include individuals who work from home.

MEDIAN HOUSEHOLD INCOME

Definition: 50th percentile of household income

Measure Type: Access

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B08012](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: 15 Block Groups missing data

Original Data Skew: Positive (right) skew

Interpretation: Positive (higher values desired)

Additional Notes: This indicator identifies the middle point of the income distribution of Block Groups. It includes the gross, pretax cash income of the householder and all other people 15 years old and older in the household, regardless of relation to the householder. This does not represent net (or “take-home”) income.

HIGH-QUALITY JOBS

Definition: Percent of jobs within the Block Group with monthly wages of \$3,333 or greater

Measure Type: Access

Data Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics (LEHD): [Origin-Destination Employment Statistics \(LODES\)](#)

Update Frequency: Less frequent than annual

Original Geography: Census Block Group

Data Missing: 1 Block Group missing data

Original Data Skew: Positive (right) skew

Interpretation: Positive (higher values desired)

Additional Notes: The count of jobs within a Block Group that have monthly wages of \$3,333 or greater is divided by the total number of jobs in the Block Group. The U.S. Census Bureau's Longitudinal Employer-Household Dynamics

(LEHD) program classifies jobs with monthly earnings exceeding \$3,333 (equivalent to roughly \$40,000 annually) as the highest of three earnings categories. While the broader concept of a "high quality job" may include additional attributes such as benefits or job stability, this income threshold is commonly used in the LEHD Origin-Destination Employment Statistics data to identify higher-wage employment.

UNEMPLOYMENT RATE

Definition: Percent of residents 16 years or older who are unemployed

Measure Type: Access

Data Source: U.S. Census Bureau, American Community Survey 5-Year Estimates: [B23025](#)

Update Frequency: Annual

Original Geography: Census Block Group

Data Missing: None

Original Data Skew: Slight positive (right) skew

Interpretation: Negative (lower values desired)

Additional Notes: The count of people who are unemployed in a Block Group is divided by the total workforce over 16 years of age in the Block Group. In order to be unemployed, the individual has to be seeking a job. People who are not able to work or who are not seeking to work are not included in this estimate.

Appendix B: Excluded Indicators Justifications

The following indicators were excluded because of overlap with other indicators:

- ◆ Air Toxics Cancer Risk ([EPA EJScreen](#))
- ◆ ALICE Rate ([UnitedforAlice](#))
- ◆ Average Class Size ([Washington State Report Card](#))
- ◆ Cardiovascular Mortality Rate ([Justice Outcomes Explorer Data Tool](#))
- ◆ Employer-provided insurance Coverage ([Prosperity Now Dashboard](#))
- ◆ Employment Rate ([ACS 5 Year](#))
- ◆ Food Deserts ([EPA EJScreen](#))
- ◆ Income Inequality ([Prosperity Now Scorecard](#))
- ◆ Heart Disease ([EPA EJScreen](#))
- ◆ Residents Employed in Pierce County ([Open Pierce County](#))
- ◆ Student Growth ([Washington State Report Card](#))
- ◆ Student Poverty: Free and Reduced Lunch ([PSRC Opportunity Index](#))

The following indicators were excluded because there was insufficient geographic coverage or granularity:

- ◆ Average Pavement Conditions (Pierce County Planning and Public Works)
- ◆ Average Student Load Debt ([Prosperity Now Scorecard](#))
- ◆ Disconnected Youth ([Prosperity Now Scorecard](#))
- ◆ Displacement Risk ([Prosperity Now Scorecard](#))
- ◆ Drug-Induced Death Rate ([Open Pierce County](#))
- ◆ Foregoing Doctor Visits Due to Costs ([Prosperity Now Scorecard](#))
- ◆ Household Child Care Expenditure ([Department of Labor](#))

- ◆ Incarceration Rate ([Opportunity Atlas](#))
- ◆ Infant Birthweight ([Open Pierce County](#))
- ◆ Number of Complaints Against Law Enforcement ([Open Pierce County](#))
- ◆ Opioid-Related Death Rate ([Open Pierce County](#))
- ◆ Pierce County Parks ADA Improvements ([Open Pierce County](#))
- ◆ Teenage Birth Rate ([Opportunity Atlas](#))
- ◆ Suicide Rate ([Open Pierce County](#))

The following indicators were excluded because of unclear directionality of community impacts or data interpretation:

- ◆ Employment to Housing Ratio ([EPA Enviro Atlas](#))
- ◆ Retail Services Access ([Puget Sound Regional Council](#))
- ◆ Asthma Prevalence ([EPA EJScreen](#))
- ◆ Drive Commute Cost ([PSRC Opportunity Index](#))
- ◆ Hazardous Waste Proximity ([EPA EJScreen](#))
- ◆ Housing Stock Conditions ([PSRC Opportunity Index](#))
- ◆ Lead Risk from Housing ([EPA EJScreen](#))
- ◆ Number of Farmers' Markets ([EPA Enviro Atlas](#))
- ◆ Percent of Housing Units Built Before 1950 ([EPA Enviro Atlas](#))
- ◆ Stormwater Infrastructure (Pierce County Planning and Public Works)
- ◆ Teacher Gender Breakdown vs Student ([Washington State Report Card](#))
- ◆ Teacher Race Breakdown vs Student ([Washington State Report Card](#))

The following indicators were excluded because it is not feasible to compare time-based changes or use indexes within the index:

- ◆ Change in Foreign-born Share ([US Census Opportunity Atlas](#))
- ◆ Change in Fraction of College Graduates ([US Census Opportunity Atlas](#))
- ◆ Change in Fraction of Non-White Population ([US Census Opportunity Atlas](#))
- ◆ Change in Median Household Income ([US Census Opportunity Atlas](#))
- ◆ Change in Poverty Rate ([US Census Opportunity Atlas](#))
- ◆ Job Growth Rate ([US Census Opportunity Atlas](#))
- ◆ FEMA National Risk Index ([FEMA](#))
- ◆ Housing Affordability Index ([Washington Center for Real Estate Research](#))

The following indicators were excluded because of lack of geographic variation:

- ◆ Broadband Access Gaps ([ACS 5 Year](#))
- ◆ Drinking Water Service Areas ([EPA EJScreen](#))
- ◆ Pedestrian/Bicyclist Crashes ([WSDOT](#))
- ◆ Percent of Households with Zero Vehicles ([EPA Enviro Atlas](#))

The following indicators were excluded because of data quality or timeliness concerns:

- ◆ Pierce County Point-in-Time Homelessness Count ([Pierce County Human Services](#))
- ◆ Single Parent Families Living in Poverty ([ACS 5 Year](#))
- ◆ Covered Population ([Census](#))
- ◆ Percentage of Households Below the Quality-of-Life Threshold Income ([EPA Enviro Atlas](#))