OREGON
Department of Land Conservation & Development

Community Assets & Harms Mapping Tool

Background & Sources Memo

Revised June 2026

This memorandum describes the background for, development of, and sources in the Community Assets & Harms Mapping Tool including description of methodological approaches and considerations.

Any application of the map *should not* make absolute determinations like "all or nothing" decisions about zoning, incentives, or investments. The tool is not designed for decision-making purposes. In other words, the scoring and information in the tool is, as with all data, imperfect. The scoring is not entirely comprehensive and is meant to be a starting place for understanding and analyzing locational trends in a particular area of the state. Any decision-making informed by this tool must be supplemented by local, contextual understanding of the community and considerations or indicators not currently captured by the tool.

Contents

Background

In 2024 and 2025 the Department of Land Conservation & Development (DLCD) and the Land Conservation & Development Commission (LCDC) completed a rulemaking process to integrate the Oregon Housing Needs Analysis methodology and the policy generally into the regulations for the state's land use planning goals #10 – Housing and #14 – Urbanization. This process illustrated a statewide need for support regarding mapped understandings of our communities: particularly[1], what assets or benefits may be present in some areas of our cities along with what harms or risks may be present, and how these trends may reveal potential fair housing issues needing further evaluation. While the tool was developed to meet these urgent housing planning needs, the department recognizes it may also benefit other applications.

[1] This mapping tool supports the Contextualized Housing Need requirement and its component fair housing issue area analysis regarding access to community assets and mitigation of exposure to harms under OAR 660-008-0075(1)(c)(D).

About

The Community Assets & Harms Mapping Tool is intended to help identify where in jurisdictions there is proximity or exposure to relatively more or fewer community assets and harms (see Appendix A for examples of "assets" and "harms"). The tool produces a map that gives an overall combined score for a geographic area that takes into account the presence of both potential assets and harms. This resource is one of many the State of Oregon has developed to operationalize Affirmatively Furthering Fair Housing and the pursuit of fair housing choice for all Oregonians. It also directly supports local governments ensure their Housing Production Strategy reports affirmatively further fair housing as required by ORS 197A.100(9).

The intention is to help jurisdictions apply another lens to understanding the more nuanced considerations around planning for housing options throughout a jurisdiction and other Affirmatively Furthering Fair Housing work like harm mitigation or increasing community assets where there are few. This information, in concert with other information (see OAR 660-008-0075(2), would be consulted in understanding the locational housing needs of a community when conducting a Contextualized Housing Need under Goal 10 – Housing. It would also be consulted after completing buildable lands inventories (BLIs) and development ready land inventories (DRLIs) when it comes time to select actions, including land use efficiency measures, as part of a city's Housing Production Strategy to ensure the city's housing actions affirmatively further fair housing.

Technical

As with any methodological design, there are numerous approaches that can be considered, numerous indicators that can be included as variables, and numerous ways to score the indicators. The process by which this mapping tool was developed is discussed in Appendix A, including a longer list of potential indicators that was narrowed and updated over time. As this tool evolves, additional changes are expected.

GEOGRAPHY

DLCD partnered with MultiCultural Collaborative and Knot Studio to develop a different mapping tool called the Community Explorer Tool[2] (map here and user guide here). The department intends for the Community Assets & Harms Mapping Tool to eventually merge with this other planning mapping resource. With this in mind, the Community Assets & Harms Mapping Tool uses the same geographic unit of analysis, approximately 25-acre "hexes," which provide a uniform and standardized unit of analysis that can capture multidirectional spatial patterns (rectilinear grids would bias orthogonal). Further, the standardized nature of the hex cells aids in readability, making spatial patterns (hot/cold spots) more perceptible and less misleading than when using enumeration units like census block groups or census tracts which have been commonly used in other research settings and mapping efforts.

[2] The Community Explorer Tool does not map any environmental data like community assets or harms. Instead, the Community Explorer Tool maps estimated distributions of demographics of the people living in jurisdictions across Oregon. In this way, the two tools would be complementary.

The maps rely on Urban Growth Boundaries (UGBs) and regions of analysis as determined in the Oregon Housing Needs Analysis (OHNA) Methodology. In the mapping tool's current iteration:

- All hex cells that are partially included inside the UGB are included in the map and relative calculations
- Hexes where 90% or more of the hex are located in parks are removed.
- Wherever indicators are calculated as the "distance to nearest," the centroid of the hex cell is used as the starting point of any distance measurement (unless otherwise noted)

Data Sources

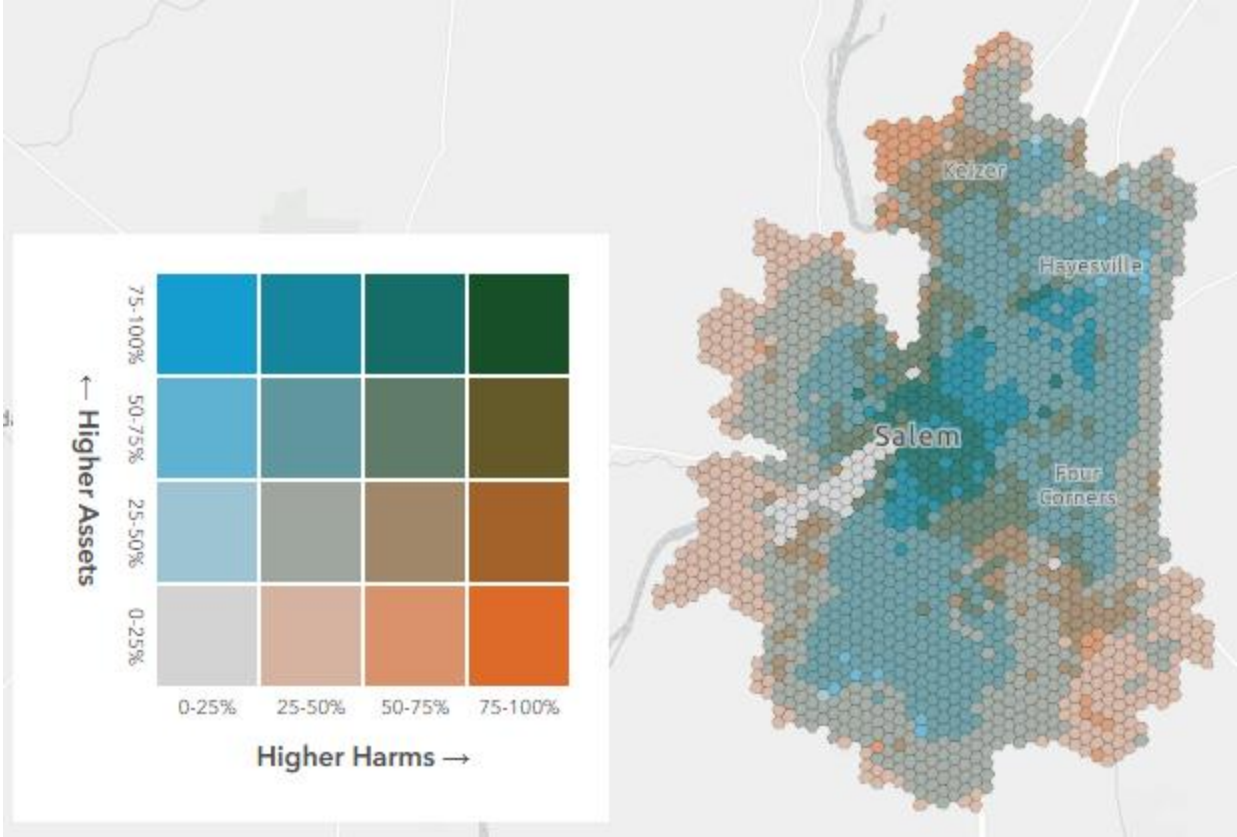
Sources for each indicator are listed along with the scoring details. The project team made every effort to use publicly available data from a government or otherwise reputable source that was 1) relatively up-to-date, 2) had statewide coverage, and 3) was of a geographic granularity that could be aggregated to our hex cell units of analysis. Exceptions to this preference include the use of OpenStreetMap street network data and the Trust For Public Land's Urban Heat Island dataset. OpenStreetMap, while open-source, maintains a data schema standardization that is intended to ensure a broad level of consistency across the globe.

The data used in this mapping tool will need to be updated periodically and replacement data sources may be needed or appropriate over time.

Methods

The methodology uses the list of indicators in the next section to determine areas of relatively high or low levels of assets as related to the same evaluation of relatively high or low levels of harms, based on the area's count of the assets and harms evaluated in the tool. The resultant categorizations are: High Harms-High Assets, High Harms-Low Assets, Low Harms-High Assets, Low Harms-Low Assets. This approach is called a bivariate score because it allows users to take into account both the levels of assets and harms without entirely collapsing that information and losing the insights of each of the two variables. Additionally, the methodology uses a relative scoring approach. This approach is motivated primarily by the goal of ensuring that decisions could be influenced by highs and lows within the scale of a jurisdiction. The image below displays a snapshot from the draft tool, showcasing the gradation of assets and harms.

DLCD pursued a bivariate scoring methodology to allow users to unpack the assets and harms so they can pursue a range of housing planning actions best suited for the hyperlocal conditions.



The intention of this method is to display hex cells as permutations or composite blends of harms and assets, revealing that in many UGBs across the state, residents can often live and work in areas rich with assets but also at risk of hazards in need of mitigation. A benefit of this methodology is that it addresses the conflicted site issue head-on and intends to prompt a user to consider strategies beyond, and more nuanced than, "build" or "don't build." The flip side to the flexibility in scoring is that this methodology results in more variation which can be less straightforward regarding how to interpret or implement the results. The methodology also limits the mapping to bivariate color schemes.

To complete the blended bivariate score, indicators are grouped into assets and harms. Each hex cell's indicators' nominal values are converted to percentile ranks, based on the universe of other hexes within its UBG, other hexes within its OHNA region, and other hexes within the state.[3] Then the harm and asset percentile ranks are averaged into two scores. For mapping and interpretability, the harms and assets average scores are binned into 0-25th, 25th-50th, 50th-75th, and 75th-100th. The maps display a color scheme like in the image above, to indicate whether the area has high or low harms and high or low assets.

[3] As described further in the Functionality subsection, users can change the "universe" view from the default of UGBs to evaluating opportunity areas relative to a city's OHNA region or relative to the state. If these alternate comparators are used, there are important implications for how to interpret the results.

Hex cells shown in brighter shades of blue have the highest levels of assets and fewest harms relative to the entirety of their UBG (or region or state if selected) while areas in brighter shades of orange have the fewest assets and highest levels of harms relative to the entirety of their UGB (or region or state if selected). Areas shown in grey and muted variations of colors have the fewest of each and areas shown in deeper shades of green have the most of both.

The indicator scores are currently unweighted and therefore contribute equally to the average asset and harm scores. However weights could be applied to the methodology or applied by an individual user in a dynamic scoring tool.

FUNCTIONALITY

In this web-based tool, users can also select which universe they wish to use for the relative computation of scores: UGB, region, or state. This functionality was built in to help different potential audiences evaluate areas with varying degrees of access to community assets and exposure to harms, and also to deepen an understanding of relative asset or harm presence that is appearing on one universe scale.

The default universe is the UGB, which means that the community asset and harm scoring are relative to each UGB. This is because the tool was designed primarily to support intrajurisdictional local government planning. For example, one part of town could see high Landslide Risk relative to the rest of its UGB, while having lower relative risk compared to its OHNA region or the entire state. It can be important to understand these relative conditions within a UGB to understand locational trends and needs within that community, however for other applications of this mapping tool the UGB universe could be the incorrect universe to engage. Additionally, even when using the UGB universe for local government planning, it can be valuable to understand whether or not there is also high or low relative prevalence of a given indicator regionally or statewide, or whether the trend is only present when isolating the local conditions. This is important to keep in mind when choosing a universe to review and when considering objective benefits or risks.

In the “Place” dropdown menu to select a UGB, UGBs are grouped by their OHNA region and then listed alphabetically within each group. Only hexes located within the UGB will be displayed. Users can turn individual asset and harm indicators on and off to have the composite score only take certain indicators into account. The composite score is calculated by averaging the scores of the indicators you select, with assets and harms scored separately. In each hex, every indicator already has a pre-calculated score for each universe (UGB, region, or state), ranging from 0 to 1 (ex: 0.23, 0.76, or 0.54), which represents that hex’s relative standing compared to all other hexes in the chosen universe. To compute the composite score, the app sums the relative scores for all selected indicators in each hex using the currently selected universe and divides by the number of indicators included, producing an average score between 0 and 1. That average is then mapped directly to a quartile range with no further adjustment (so an average of 0.45 appears as 25–50%, while an average of 0.76 appears as 75–100%.) Users can hover on individual hexes and see a popup with the quartile percentile by indicator group

(assets and harms) and click on individual hexes to see a deeper breakdown of each indicator score.

In addition, the tool displays three "screens." These variables are additional screens that users can view, but which are not included in the composite score. They include the tsunami zone, locations of interstate highways, and locations of electric transmission lines. The presence of these factors may be unique enough that they warrant being viewed independently from the composite harms. For highways and electrical transmission lines, the relative sparsity of their geographic spread could translate into a highly skewed distribution of scores. For the tsunami hazard layer, the geographic nature of this indicator meant that it would be meaningless for areas outside of the coastal portion of the state and while it could even get lost in the scoring in some coastal communities. Determining which indicators might be best understood as harms is an applied art and not a science – additional iteration may be pursued. More information on these "screens" is listed on pages 15 and 16.

Indicators

The following list of indicators is included in the Community Assets & Harms scores. The process to arrive at this list is described in a later section of this memo.

ASSETS

Prevalence of Nearby Childcare Centers

Data Sources

- Dataset: Childcare centers of various classifications
- Source: Oregon Department of Early Learning & Care (DELC)
- Year: 2025
- Update note: Unclear at which pace DELC updates this data, likely regularly
- Link: this dataset is confidentiality protected and not available to the public
- Caveats: no major caveats for this dataset

Details / Scoring

Count of licensed childcare centers within one mile of the hex boundary. Higher count yields a higher asset score.

Proximity to Community Centers

Data Sources

- Dataset: Any community center in OpenStreetMap
- Source: OpenStreetMap
- Year: 2025
- Update note: Can pull new data at any time
- Link: NA
- Caveats: OpenStreetMap is an open-sourced dataset and there is no strict definition of community center - specialized locations such as support centers or cultural centers or communal halls could count as community centers

Details / Scoring
Distance to point locations of nearest community center from the centroid of the hex. Shorter distance yields a higher score.

Proximity to Licensed Healthcare Providers

Data Sources
- Dataset: Licensed Hospital Satellites, Certified Rural Health Clinics and Licensed Hospitals
- Source: Oregon Health Authority
- Year: 2025
- Update note: Unclear at which pace OHA updates this dataset, can possibly switch to OpenStreetMap if needed
- Link: https://www.oregon.gov/oha/PH/PROVIDERPARTNERRESOURCES/HEALTHCAREPROVIDERSFACILITIES/HEALTHCAREHEALTHCAREREGULATIONQUALITYIMPROVEMENT/Pages/forms.aspx#Hospital
- Caveats: This dataset focuses on hospitals and clinics and does not include urgent care clinics (if they are located outside of hospitals), facilities like ZoomCare, or healthcare providers who are independently renting a commercial space.

Details / Scoring
Point locations of hospitals, rural health clinics, and Federally Qualified Health Centers which are community-based healthcare organizations that receive federal funding to provide comprehensive primary care services to underserved populations, especially those with limited access to healthcare. Score is the distance of the hex centroid to the nearest health center. A shorter distance to the closest healthcare provider yields a higher asset score.

Prevalence of Nearby Jobs

Data Sources
- Dataset: Longitudinal Employer-Household Dynamics
- Source: United States Census Bureau
- Year: 2022
- Update note: LEHD is updated on a lagged annual schedule usually every November, but not guaranteed
- Link: https://lehd.ces.census.gov/
- Caveats: Census Bureau data does not capture self-employment

Details / Scoring
Count of jobs within a half mile of the hex boundary. Jobs defined as covered employment (does not include self-employed). More jobs yields a higher asset score.

Proximity to Libraries

Data Sources
- Dataset: Any library in OSM

- Source: OpenStreetMap
- Year: 2025
- Update note: Can pull new data at any time
- Link: NA
- Caveats: OpenStreetMap is an open-sourced dataset

Details / Scoring

Distance to point locations of nearest libraries from the centroid of Hex. Closer libraries yield higher asset scores.

Prevalence of Parkland

Data Sources

- Dataset: Any named park or natural area in OpenStreetMap
- Source: OpenStreetMap
- Year: 2025
- Update note: Can pull new data at any time
- Link: NA
- Caveats: OpenStreetMap is an open-sourced dataset

Details / Scoring

Acreage of parkland within one mile of the hex boundary. Parkland is determined as any named park or natural area in Open Street Map's database. More acreage yields a higher asset score.

Prevalence of Nearby Schools

Data Sources

- Dataset: Educational locations OR7c
- Source: Oregon Department of Education
- Year: 2022
- Update notes: Periodic checking for updated data needed
- Link: https://www.arcgis.com/apps/mapviewer/index.html?url=https://services7.arcgis.com/tdHJEPIA4ngSGfpW/ArcGIS/rest/services/Educational_locations_OR7c/FeatureServer&source=sd
- Caveats: no major caveats for this dataset

Details / Scoring

Hex boundary is within one mile of a point location of a public school, private school, or higher education institution. All grades are considered. More schools yields a higher asset score.

Prevalence of Nearby SNAP Retailers

Data Sources

- Dataset: SNAP Retailer Location data
- Source: United States Department of Agriculture
- Year: 2023

- Update notes: Unclear at which pace USDA updates this dataset, can possibly switch to OpenStreetMap if needed
- Link: https://usda-snap-retailers-usda-fns.hub.arcgis.com/datasets/8b260f9a10b0459aa441ad8588c2251c_0/about
- Caveats: no major caveats for this dataset

Details / Scoring

Count of point locations of SNAP-accepting locations, such as superstores, grocery stores, farmers markets, and specialty stores. Count of "superstores" within one mile of hex boundary, all other types within a half mile. More SNAP retailers yields a higher asset score.

Street Network Connectivity

Data Sources

- Dataset: OpenStreetMap street network
- Source: OpenStreetMap
- Year: 2025
- Update note: Can pull new data at any time
- Link: NA
- Caveats: The open-source nature and data schema of OpenStreetMap does not easily allow removing certain irrelevant types of street segments (e.g. some commercial parking lot access roads), thus resulting in sometimes overestimating the accessibility of road networks.

Details / Scoring

This indicator looks at street network lines and points (representing intersections). It evaluates the connected node ratio, or the number of 4-way intersections divided by total number of intersections or dead ends within the hex. This is converted to percentile rank but averaged with the percentile rank of all nodes within the hex so that hexes with a very low number intersections that happen to be 4-way do not score highly. A higher share of four-way intersections of a higher total number of intersections yields a higher score.

Prevalence of Nearby Transit Stops

Data Sources

- Dataset: Oregon Department of Transportation (ODOT) TransGIS
- Source: ODOT
- Year: 2021
- Update note: Dependent on ODOT
- Link: https://gis.odot.state.or.us/transgis/
- Caveats: This dataset does not account for frequency of stops.

Details / Scoring

Count of transit stops within a half mile of the hex boundary. Point locations of transit stops, including Greyhound and Amtrak. More transit stops yields a higher asset score

Tree Canopy

Data Sources

- Dataset: NLCD 2021 USFS Tree Canopy Cover (CONUS)
- Source: United States Geological Survey
- Year: 2021
- Update note: Data is updated on a lagged annual schedule, unclear if it will continue to be maintained given federal cuts
- Link: https://www.mrlc.gov/data/nlcd-2021-usfs-tree-canopy-cover-conus
- Caveats: no major caveats for this dataset

Details / Scoring

Acreage of the hex that is covered by tree canopy, as determined by satellite imagery. Higher acreage yields a higher asset score.

HARMS

Prevalence of Cleanup Sites

Data Sources

- Dataset: Department of Environmental Quality (DEQ) Environmental Data Management System (EDMS) Cleanup All Sites
- Source: Oregon DEQ
- Year: 2025
- Update note: Data is updated on a rolling basis, can be pulled at any time
- Link: https://deqapps.oregon.gov/common/Reports/?Report=edms-cleanup-all-sites
- Caveats: dataset breaks often so updatability is not guaranteed

Details / Scoring

This indicator score considers the count of DEQ cleanup sites, leaking underground storage tanks, and leaking heating oil tanks. A greater count of sites yields a higher harm score.

Crash Rate – Pedestrian and Bicycle

Data Sources

- Dataset: ODOT TransGIS
- Year: 2022
- Source: ODOT
- Update note: Dependent on ODOT, but data appears to be released on a lagged annual schedule. Next vintage release data is unknown
- Link: https://gis.odot.state.or.us/transgis/
- Caveats: no major caveats

Details / Scoring

This indicator score takes into account the number of car crashes involving pedestrians or cyclists within a half mile of a hex boundary. Higher crash counts yield a higher harm score.

Flood Risk

Data Sources

- Dataset: Oregon Statewide Flood Hazard Database
- Source: Federal Emergency Management Agency (FEMA)
- Year: 2025
- Update note: Dependent on FEMA
- Link: https://www.arcgis.com/home/item.html?id=b1249fe6c1d743f7b9fd2474055293e1
- Caveats: based on insurance models

Details / Scoring

This indicator is scored based on the portion of the hex cell that is within a special flood hazard area as determined by FEMA. These zones have a 1% annual change of flood, and FEMA codes these zones as A and V zones. Higher flood risk yields a higher harm score.

Urban Heat Island Effect

Data Sources

- Dataset: Urban Heat Island Severity
- Source: The Trust for Public Lands
- Year: 2023
- Update note: Dependent on TPL, data is largely reliant on NLCD data from USGS
- Link: https://tpl.maps.arcgis.com/apps/webappviewer/index.html?id=1b6cad6dd5854d2aa3d215a39a4d372d
- Caveats: collection based on major cities, smaller jurisdictions may be undercounted

Details / Scoring

The Trust for Public Lands created this raster model, with five tiers of heat island severity, with "one" being a relatively mild heat area (slightly above the mean for the city), and "five" being a severe heat area (significantly above the mean for the city). The hex score is calculated as the average relative heat severity within a hex cell. Higher heat severity yields a higher harm score.

Landslide and Debris Flow Hazard

Data Sources

- Dataset: Statewide Landslide Susceptibility Overview
- Source: Oregon Department of Geology and Mineral Industries (DOGAMI)
- Year: 2023
- Update note: Dependent on DOGAMI
- Link: https://www.oregon.gov/dogami/slido/Pages/data.aspx
- Caveats: no major caveats

Details / Scoring

This indicator uses an area-weighted average of a 10-meter raster of landslide susceptibility. A higher landslide susceptibility score yields a higher harm score.

Liquefaction – Earthquake

Data Sources

- Dataset: Statewide Earthquake Hazard
- Source: Oregon Department of Geology and Mineral Industries (DOGAMI)
- Year: 2024
- Update note: Dependent on DOGAMI
- Link: https://geohub.oregon.gov/maps/c0e6948bb6d54f3884635fcc2f94e581/explore?location=1.802324%2C-9.323900%2C0.00
- Caveats: Based off liquefaction which is susceptibility to major damage from earth quakes

Details / Scoring

This indicator uses a five- tiered earthquake hazard scoring, with one equal to anticipated slight damage to buildings and five equal to catastrophic damage. Scores are calculated as the area-weighted average tier of the hex cell. Higher tier yields a higher harm score.

Radon Risk

Data Sources

- Dataset: DOGAMI indoor radon hazard
- Source: Oregon Department of Geology and Mineral Industries (DOGAMI)
- Year: 2018
- Update note: Dependent on DOGAMI
- Link: https://pubs.oregon.gov/dogami/ofr/p-O-18-01.htm
- Caveats: harm that is fixable but may be more accessible for higher income households

Details / Scoring

This indicator uses a three-tiered radon risk assessment. The score is the area-weighted average value of the three-tiered radon risk within a hex cell. A higher score yields a higher harm score.

Toxic Emissions Site Distance

Data Sources

- Dataset: National Emissions Inventory Facility Point Sources
- Source: U.S. Environmental Protection Agency (EPA), Office of Air and Radiation (OAR), Office of Air Quality Planning and Standards (OAQPS)
- Year: 2020
- Update note: Dependent on the federal agencies listed above
- Link: https://www.arcgis.com/apps/mapviewer/index.html?layers=72ed295d9f3d41f19db72c6bc0308a7e
- Caveats: Variety of toxins included, different sites have different levels of harm

Details / Scoring

This indicator score takes into account the distance to point locations of the closest toxic emissions site. A shorter distance yields a higher harm score.

Wildfire – Burn Probability

Data Sources

- Dataset: Oregon Burn Probability
- Source: Oregon State University Oregon Explorer
- Year: 2023
- Update note: Unknown, dependent on OSU
- Link: https://hub.oregonexplorer.info/maps/55a7c77f09064571ae3d06dc76411cef/about
- Caveats: probability scores reflect long-term annual averages based on simulation outputs from the PNW Quantitative Wildfire Risk Assessment

Details / Scoring

The average burn probability within a hex. A higher probability yields a higher harm score.

Wildfire – Flame Length

Data Sources

- Dataset: Oregon Average Flame Length
- Source: Oregon State University Oregon Explorer
- Year: 2023
- Update note: Unknown, dependent on OSU
- Link: https://hub.oregonexplorer.info/maps/OSUGISci::oregon-average-flame-length-2023/about
- Caveats: No major caveats

Details / Scoring

This indicator score takes into account the average flame length [4]within a hex. A higher flame length yields a higher harm score.

SCREENS

As noted on page 7, the tool includes three "screening" variables that users can turn on to layer over the Community Assets & Harms map. Hexes are included if any part of the cell is included in the buffer distance for the variable.

Tsunami Zone

Data Sources

- Dataset: Tsunami Regulatory Line
- Year: 2014
- Source: Oregon Department of Geology and Mineral Industries
- Update note: No update planned

[4] Wildfire intensity if often measured in terms of flame length.

- Link: https://geohub.oregon.gov/datasets/41bbd07e3a1444448d4b9d076dd21636_0/explore?location=44.011173%2C-124.033658%2C7.43
- Caveats: up to date sea level change may not be accounted in line

Details / Scoring

This screen highlights the hexes where any part of the hex is within the tsunami regulatory line.

Proximity to Highway

Data Sources

- Dataset: Major highways from OSM
- Year: 2025
- Source: Open Street Map
- Update note: Can pull new data at any time
- Link: NA
- Caveats: No major caveats

Details / Scoring

This screen highlights the hexes where any part of the hex is within the 500 feet of a major highway.

Proximity to Electronic Transmission Lines

Data Sources

- Dataset: Electric Transmission Lines
- Year: 2025
- Source: Homeland Infrastructure Foundation Level Database
- Update note: Updated regularly
- Link: https://hifld-geoplatform.hub.arcgis.com/datasets/geoplatform::transmission-lines-1/about
- Caveats: No major caveats

Details / Scoring

This screen highlights the hexes where any part of the hex is within 200 feet of an electric power line with a voltage of 230 or greater.

Floodway

Data Sources

- Dataset: Oregon Statewide Flood Hazard Database
- Year: 2025
- Source: Federal Emergency Management Agency (FEMA)
- Update note: Dependent on FEMA
- Link: https://www.arcgis.com/home/item.html?id=b1249fe6c1d743f7b9fd2474055293e1
- Caveats: based on insurance models

Details / Scoring

This screen highlights the hexes where any part of the hex is within a 'Floodway' as determined by Federal Emergency Management Association (FEMA). FEMA defines a floodway as “the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.”

Appendix A: Development Considerations To-Date

This appendix includes a review and narrative log of past process and considerations that have been explored in the course of developing the Community Assets & Harms Mapping Tool.

2025

Scope

Community Assets & Harms Mapping Tool project began in spring 2025 and originally conceived of locational environmental conditions (and potential conditions, all known as assets and harms) as well as locational socioeconomic and demographic trends. However, an early decision was made to not include socioeconomic and demographic data in the assessment of geographic trends in an area and omit it from the aggregated score. There are many reasons for this. One is that Oregon Housing and Community Services (OHCS) has produced a separate analysis to analyze racially and ethnically concentrated areas of affluence (R/ECAAs) and racially and ethnically concentrated areas of poverty (R/ECAPs) as part of the state's Fair Housing Plan. Additionally, OHCS recently launched the Housing Equity Indicator dashboard which provides substantial demographic information and in some cases locational information often at the census tract level. Lastly, DLCD itself has already launched the Community Explorer tool, focusing substantially on these variables. Adding a similar analysis into this mapping exercise would be unnecessarily redundant and potentially confusing, thus it has been omitted.

Additionally, the rulemaking which spawned the Community Assets & Harms Mapping Tool originally sought to define "high-opportunity areas" as it relates to understanding where housing is needed within a community, and what kinds of housing. After significant discussion across the project team, committee meetings, and public input, it became clear that absolutely defining this concept with a map that has imperfect and limited data sources, and particularly directly tying regulatory meaning to that definition, was fraught and may do more harm than good. Instead, the bivariate scoring method was pursued. Contrastingly, this method does not seek to evaluate one typology of hex as better or worse than another nor does it directly link to exactly a course of action that should be pursued based on hex typology. The bivariate scoring method focuses on providing insightful information that may help illuminate where in a local government various housing interventions may be indicated.

Surveying Other Indicators

To arrive at the draft list of indicators described on pages 6-16 above, the project team crosswalked several existing lists and indices that attempt to identify community assets and harms. These other sources included:

1) **The definition of "Location" in the DLCD OHNA rules, specifically OAR 600-008-0005(27), which included the following:**

> (27) "Location" means a specific geographic area or series of areas within a city's boundaries or approved expansion areas. Locations can significantly impact equity, quality of living, and access to opportunity. Locations include at a minimum but are not limited to areas with proximity to:

(a) Community assets, including but not limited to:
(A) Key destinations as defined by OAR 660-012-0360(2);
(B) Areas with multimodal connectivity infrastructure, including the availability of road networks, public transit and paratransit options, bike lanes, and pedestrian pathways; and
(C) Areas with community based supportive services.
(b) Harms, including but not limited to:
(A) Environmental conditions that may lead to harm such as areas prone to natural hazards, industrial uses, and highways and freeways; and
(B) Areas that are segregated by race and income.[5]

2) The definition of "Key destinations" in the DLCD Transportation Planning rules referenced above in OAR 660-012-0360(2) which included the following:

(2) Key destinations may include, but are not limited to
(a) Climate-friendly areas;
(b) Pedestrian-oriented commercial areas outside of climate-friendly areas;
(c) Transit stations, stops, and terminals;
(d) Retail and service establishments, including grocery stores;
(e) Child care facilities, schools, and colleges;
(f) Parks, recreation centers, paths, trails, and open spaces;
(g) Farmers markets;
(h) Libraries, government offices, community centers, arts facilities, post offices, social service centers, and other civic destinations;
(i) Medical or dental clinics and hospitals;
(j) Major employers;
(k) Gyms and health clubs;
(l) Major sports or performance venues; and
(m) Other key destinations determined locally.

3) The OHCS Oregon Centralized Application (ORCA) location preferences and definition of opportunity areas (pg.26-27) for funding regulated affordable housing developments. These included:

1. Parks and public spaces within a half (1/2) mile
2. Grocery store within a half (1/2) mile
3. Walk Score over 70
4. Transit Oriented Development (zoned by a city to foster transit-supportive development, or can be accessed by frequent bus or streetcar service, or being within a half (1/2) mile of fixed transit stop)

[5] As noted, socioeconomic and demographic data are not being considered in the scoring of high opportunity areas so this indicator is not included.

5. A co-located (on the site of the property) Early Care and Education (ECE) facility or an ECE facility within a half (1/2) mile
6. Near a high performing public elementary school (GreatSchools rating of 7 or above)

4) The OHNA Policy Objectives for Safe Harbors and Minimum Requirements, which included:

1. Access to high quality amenities including frequent transit access and community resources like recreation centers with youth and older adult programming, safe streets, parks with playgrounds and fields, and schools.
2. Incentivizing development patterns that mitigate risk including natural hazards [and] climate-related disasters.

5) The Pierce County Washington Equity Index Tool, which included:

1. Access to Community and Recreation Centers
2. Property and Personal Crime Rate (per 1,000 people)
3. Access to Daycare Centers
4. Proximity to Heavy Traffic
5. Access to Libraries
6. Access to Parks
7. Transit Access
8. Voter Participation Rate
9. Walkable Streets
10. Assessment Scores Meeting Standards
11. Chronic Absenteeism Rate
12. Dual Credit Enrollment
13. Educational Attainment
14. High School Graduation Rates
15. Kindergarten Readiness
16. Student-Teacher Ratio
17. Diesel Emissions
18. Non-Compliant Drinking Water Systems
19. Extreme Heat Days
20. Fire Risk
21. Flood Risk
22. Ozone Concentration
23. Tree Canopy Cover
24. PM2.5 Concentration
25. Proximity to Superfund Sites
26. Cancer Incidence Rate
27. Depression Prevalence
28. Access to Healthy Foods
29. Health Uninsured Rate

30. Opioid Overdose Call Rate (per 1,000 people)
31. Low Life Expectancy
32. Poor General Health
33. Housing Affordability
34. Average Transit Stops Per Hour (per square mile)
35. Total Cost-Burdened Households
36. Homeownership Rate
37. Internet Access
38. Commute Times Under 15 Minutes
39. High-Quality Jobs
40. Median Household Income
41. Poverty Rate (Under 200% of Federal Poverty Level)
42. Unemployment Rate
43. Vehicle Access

6) The California 2025 Methodology for Opportunity and High-Poverty & Segregated Area Mapping Tools, which included:

1. Poverty Rate
2. Adult Education Rate
3. Employment Rate
4. Median Home Value
5. Environmental Burden
6. Math Proficiency (4th grade)
7. Reading Proficiency (4th grade)
8. High School Graduation Rate
9. Student Poverty Rate

Draft Indicators

After reviewing the methodologies and indicators listed above and in use elsewhere, the project team reviewed data availability within Oregon for replicability, and determined which indicators were redundant or could be used as proxies for other indicators. At the conclusion of this step, the project team arrived at the following early list of potential indicators to consider in community asset and harm mapping in this context. Preference was given to datasets maintained on the Oregon GeoHub data portal and federally maintained datasets, with exceptions made for private/open source datasets where needed.

- Early List of Potential Assets:
    - Schools
    - SNAP Retailers
    - Licensed Healthcare Providers
    - Park land
    - Libraries
    - Jobs
    - Transit Stops

    - Community Centers
    - Street Network Connectivity
    - Early Childcare Education Facilities
    - Tree Canopy
- Early List of Potential Harms:
    - Hazardous Materials Storage Sites
    - Tsunami Regulatory Line
    - Earthquake Hazard
    - Wildland Urban Interface
    - Wildfire Risk
    - Oregon Department of Transportation (ODOT) Pedestrian / Bike Crashes
    - Proximity to Highways
    - Electric Transmission Lines
    - Radon Risk
    - Landslide and Debris Flow Hazard
    - Environmental Data Management System (EDMS) Toxic Cleanup Sites
    - Flood Risk

Surveying Other Methods

To arrive at the methodology outlined in the Technical section of this memo, the project team looked at other typical ways of building indices like this. Variations on these methodologies can be found in other similar indices/dashboards. For instance, if an index contains a large number of indicators, they might be grouped under “themes” (as the Pierce County Equity Index Tool does) or “clusters,” and these smaller themes are scored based on the average or aggregate score of its constituent elements, and then a final index score is calculated on the average or aggregate of the theme scores. This is a means of “smoothing” scores and can prevent outliers from affecting a final index score. It can also help in interpretability, though it can also obfuscate what elements are truly impacting a score.

One other potential methodology that was considered is a Percent Rank Score which takes assets and inverted harm counts and then averages their percent rank into one final score. Areas of “high opportunity” could be defined as being above some chosen score, such as the 75th or 90th percentile. This approach is simple, easy to understand, and offers an easy way to communicate results. It also is helpful for highlighting areas of extreme benefit or harm. However it does not allow a user to see conflicted areas, or those that have both harms and assets, limiting the utility of the results. And these outliers or extremes can skew results.

The other potential methodology considered was a Net Threshold Score which considers whether an area is above the median for a given asset or harm to determine the indicator score and sums the totals. In this case areas receive a positive “point” if they are above the median on an asset, and they receive a negative “point” if they are above the median on a harm. The total is summed and presented as the net score on the final map. The threshold for “high-opportunity area” could be set amongst the distribution of scores, such as above 5 or 10. One benefit of this approach is that it is more direct and clear-cut than a continuous scoring methodology. It also

highlights areas of extreme benefit or harm. A downside is that it does not allow users to see what goes into the score nor does it showcase conflicted areas, or those that have both harms and assets.

These other methodologies were not pursued because they did not adequately address the issue of conflicted sites. The bivariate approach is more appropriate for DLCD's objective of providing another lens for jurisdictions to consider in taking various kinds of housing actions.

Input & Collaboration
The development of the Community Assets & Harms Mapping Tool was subject to the rulemaking efforts to implement the Oregon Housing Needs Analysis. It was included in publicly available meeting materials and was raised in advisory committee meetings for discussion. Perhaps because the tool was not indicated for use in direct regulatory application, the tool did not receive extensive comment. One committee member did raise that during the course of the tool's development, the legislature repealed some formal statewide maps related to wildfire risk. The department replaced the repealed indicators in 2026 as noted below. Otherwise, the tool was largely praised by community and committee members as a step in the right direction to support meeting Oregonians' housing needs.

DLCD also participated in interagency, cross-project communications to support as much alignment, harmonization, and efficiency as possible in meeting various state program goals and requirements. This type of collaboration is an ongoing effort to ensure best outcomes for state governments, local governments, interested parties, and all Oregonians.

2026

Hosting
While initially developed with the expertise of consultant ECOnorthwest, DLCD's Data Management and Production Services team and has since redeployed and refined the concept in an arcgis platform instead of the preliminary beta phase of shinyapp. DLCD will be hosting the tool in perpetuity.

Indicator Updates
The two originally drafted indicators relating to wildfire – Wildland Urban Interface and Wildfire Risk – relied on state-adopted maps that were repealed by the Oregon Legislature in 2025. In 2026, various subject matter experts at the department spanning natural hazards, housing, and GIS expertise identified appropriate replacement indicators from the Oregon State University's Oregon Explorer tool. Those updates have been integrated.

Additionally, some interagency conversation in 2025 yielded the recommendation to utilize a state dataset for childcare centers rather than the originally drafted federal dataset. Because of data confidentiality it took some time to take the appropriate precautions at the state enterprise to pursue data sharing, however in early 2026 this indicator replacement was also completed.

Launch
In the course of the implementation of the new housing planning paradigm under the Oregon Housing Needs Analysis methodology, the department is rolling out the Community Assets &

Harms Mapping Tool as one guidance resource among many that local governments may use to fulfill their Goal 10 – Housing planning obligations.

Ongoing

The scoring methodology does not currently apply weights to the indicators as a way to differentiate the values of assets or intensities of harms. Whether or not to weight indicators remains a consideration and can be reevaluated in service to the goal of the tool. Any indicator weighting would require additional research on how to score the indicators, particularly those harms that can be mitigated or those that are not linearly harmful to human health and need a more nuanced scoring technique.

DLCD also intends to align this tool with other mapping efforts that have similar or tangential functions. The user interface of this tool will be streamlined with the Community Explorer Tool at a later date so that a user can easily toggle between the same area or hex/es and its values in both the Explorer tool (generally demographic conditions) and the Assets & Harms tool (generally environmental conditions). Alignment or harmonization with the OHCS ORCA location priorities and the Environmental Justice Council's Mapping Tool may be warranted. While these tools are similar, they have different purposes, guiding policies, and intended audiences. They also have different variables and methodologies, driving different geographies (like census tracts rather than hexes). Furthermore, they are being released on different timelines. While the Community Explorer tool and ORCA location preferences are already publicly available, both are subject to revisions as needed. The Environmental Justice Council Mapping Tool is slated for completion by the end of 2027.

The department looks forward to receiving feedback on the utility of the tool and potential improvements[6] for consideration as users begin to interact with it. DLCD is particularly interested in understanding how useful local governments find the tool in providing a starting place for understanding locational trends in their communities and empowering them to ground-truth those trends and take responsive housing actions.

Please send feedback to housing.dlcd@dlcd.oregon.gov.

[6] The department received requests for a one-click data download button on the mapping tool such that users could download all of the underlying indicator data sets/mapping layers. Based on how the tool is built and that hex values are determined without the underlying dataset being present in the tool, this functionality is not currently possible. Instead, the department provides this memo to ensure transparency regarding the data sets used and access to all of the data that is not confidential.