

open climate change and health equity data: access and use



Public Health
Seattle & King County



APA WA, Oct 13, 2022

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Health Community Planning
and Partnership Team

open climate change and health equity data

– **session overview** –

- **intros** – you, us, session
- **topic flyover** – scope, notable examples
- **table discussions** –
 - application and use cases
 - cross-sector collaboration
 - serving ‘where needs are greatest’
- **closing activity** –
 - what building blocks are missing?
 - what are early steps in your community?

open climate change and health equity data

– intros –

- **name**
- **home community**
- **main job or volunteer role**

open climate change and health equity data

– **session objectives** –

1) grow familiarity with:

- open data types and access platforms
- applications, use cases, and value proposition

2) grow access and use by considering:

- local use cases and applications
- civic-sector collaboration ingredients

open climate change and health equity data

– scope –

- **climate changes** – historic, current, and forecasted
- **climate change exposure and effects** – over time and place
- **climate change mitigation** – lifecycle benefit and burden patterns of emission countermeasures (historic, current, and proposed)
- **climate adaptation** – vulnerability and resiliency characteristics of communities, their infrastructure, and supporting ecosystems
- **health equity** –
 - **built environment characteristics** – social determinants (by place)
 - **social vulnerability** – and harm exposure levels (by place)
 - **health outcomes** – where environmentally-influenced (by race and place)

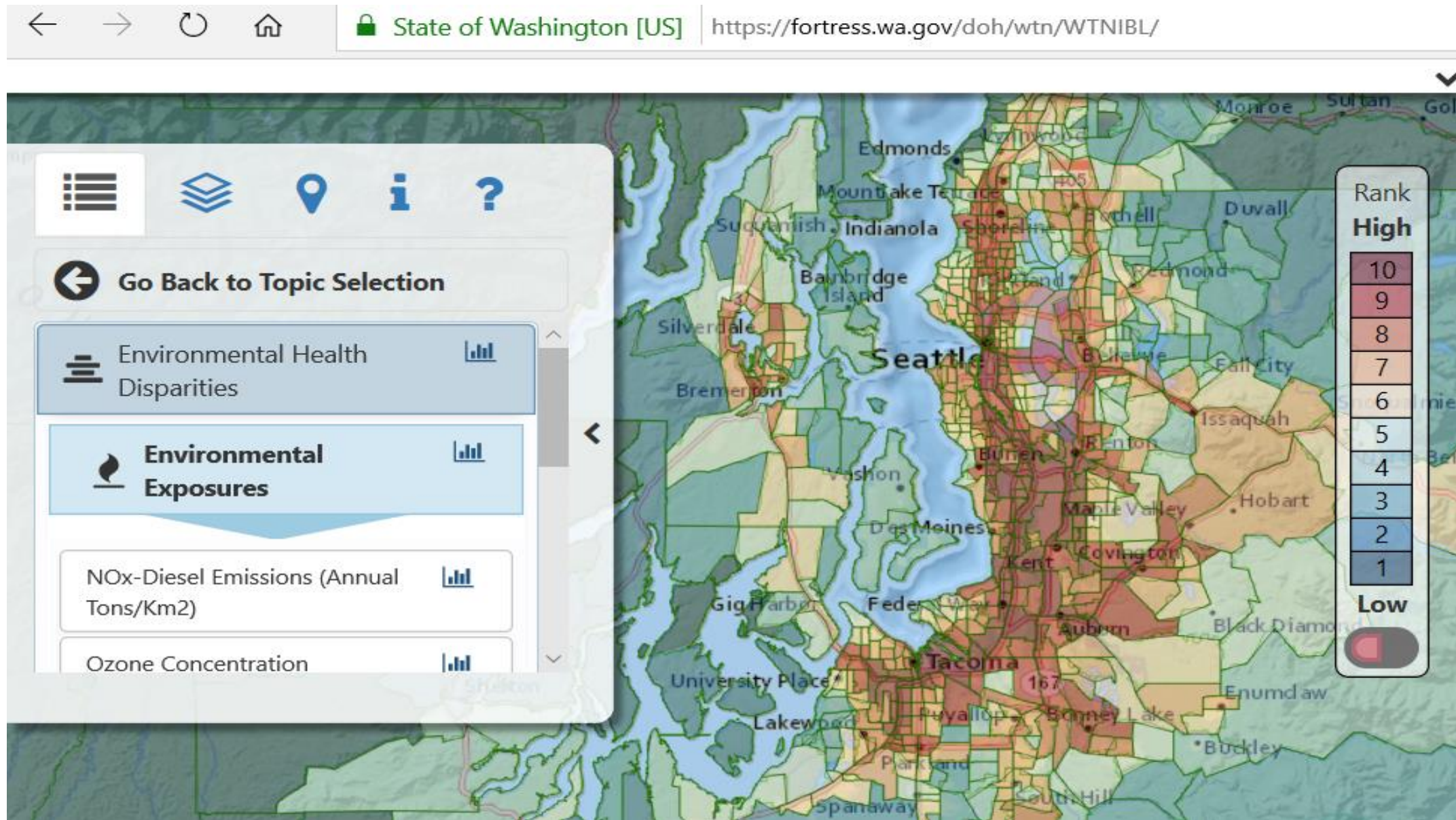
open climate
change and
health equity
data
—
**stakeholders,
uses, and value
proposition**
—



open climate change and health equity data – notable national and regional examples –

- [Regional climate and health monitoring report, Oregon](#)
- [Oregon Metro Data Resource Center](#)
- [Metro Regional Barometer](#)
- [Climate Change & Health Vulnerability Indicators for California](#)
- [Boston's Climate Vulnerability Dashboard](#)
- [King County Open Data Hub - Climate, Equity and Social Justice](#)

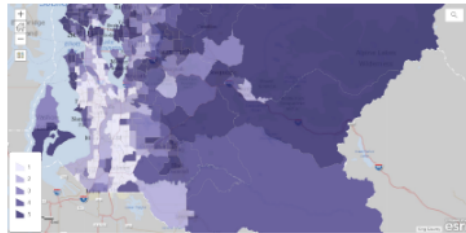
WA Tracking Network Environmental Health Disparities Map



King County maps of indexes provide robust set of indicators as backdrop to analyze services and programs

[Open Data Hub](#)[Equity Dashboards](#)[People & Place](#)[Community Indicators](#)[Disparity Analysis](#)[Glossary](#)[Terms of Service](#)

One method of calculating equity is to use indicators from many categories to have a broad view of conditions describing a geographic area. The following indexes include indicators from the **Census American Community Survey (ACS)**, **Centers for Disease Control and Prevention (CDC)**, **Public Health - Seattle & King County**, **Washington Tracking Network (WTN)**, and **EJSCREEN**.



CDC Social Vulnerability Index

CDC Social Vulnerability Index (CDCSVI)

The CDC Social Vulnerability Index shows which communities are especially at risk during public health emergencies because of factors like socioeconomic status, household composition, racial composition of neighborhoods, or housing type and transportation. It uses 15 U.S. census variables to identify communities that may need support before, during, or after disasters.

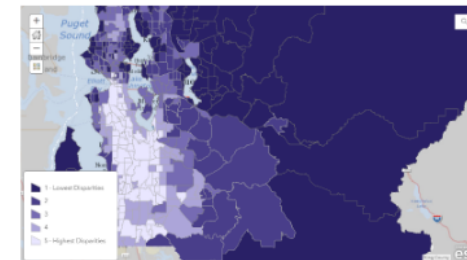
Source: Centers for Disease Control and Prevention, American Community Survey (ACS), 2014-2018 (5-year)

[Go to the map](#)

Environmental Health Disparities Index (EHD)

Washington State Department of Health provides an index of Environmental Health Disparities for all the census tracts in Washington. The model is based on a conceptual formula of Risk = Threat * Vulnerability, where threat and vulnerability are based on several indicators. For this layer, the index has been recalculated for just the census tracts in King County.

Source: Washington Tracking Network (WTN), American Community Survey (ACS), 2013-2017 (5-year), EJSCREEN



Environmental Health Disparities Index

[Go to the map](#)

[Maps | Equity and Social Justice Open Data \(arcgis.com\)](#)

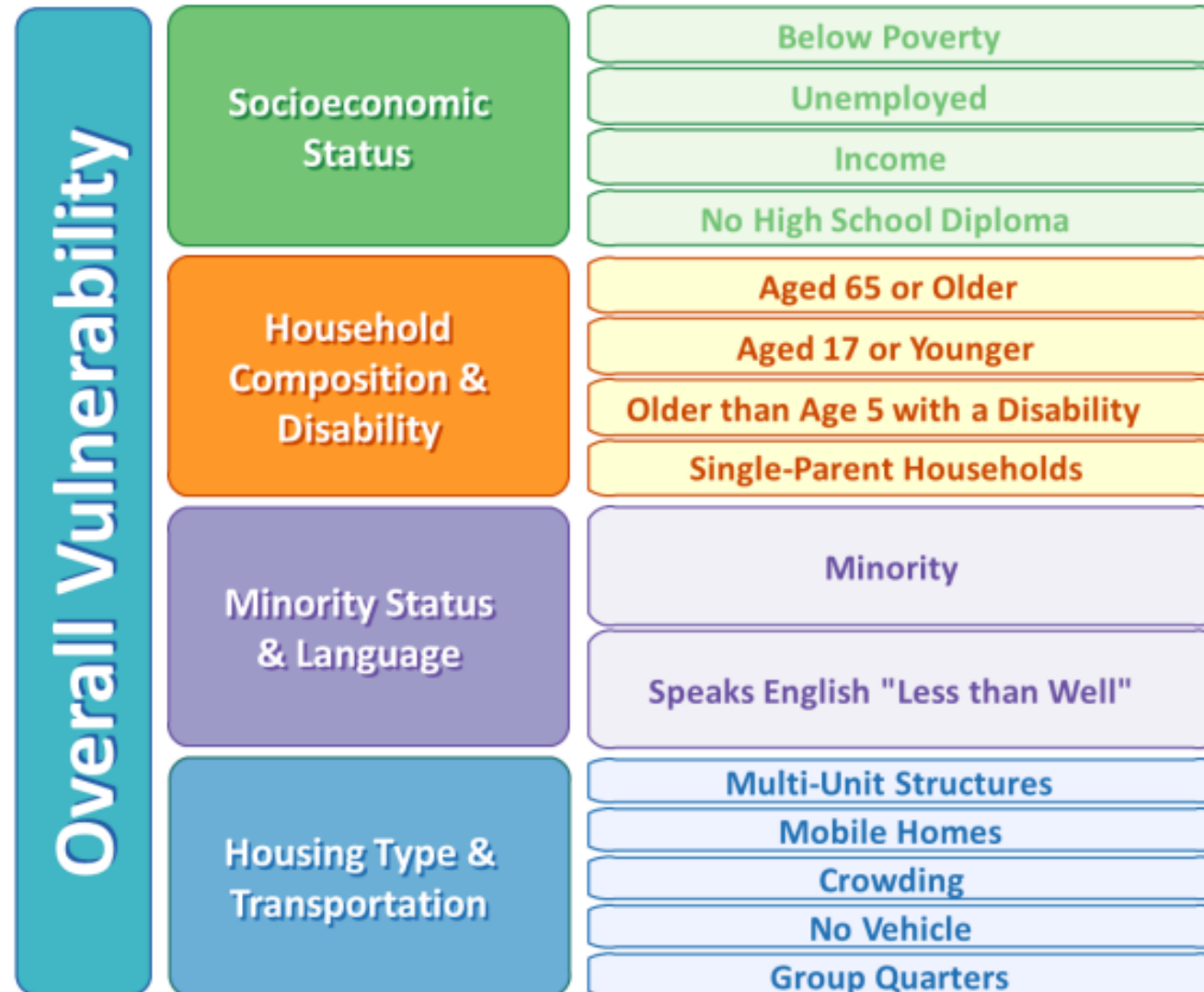


King County

What is the CDC Social Vulnerability Index?

Variables Used

American Community Survey (ACS), 2014-2018 (5-year) data for the following estimates:



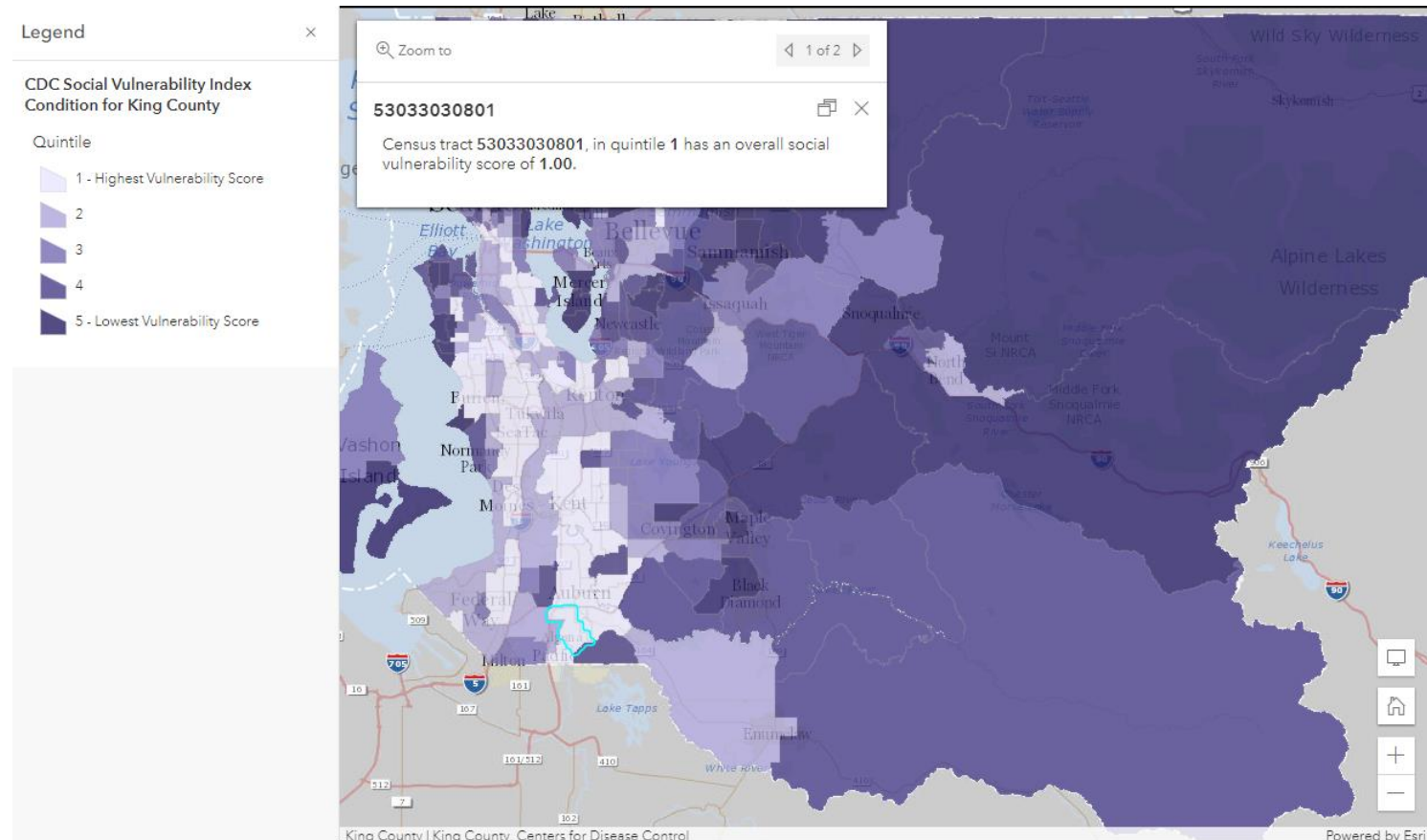
Video – Methods <https://youtu.be/REKFHOryfIA>

Documentation - https://svi.cdc.gov/Documents/Data/2018_SVI_Data/SVI2018Documentation.pdf

King County SVI backdrop

Methodology

- Rank tracts by CDC Social Vulnerability score
- Divide tracts into 5 equal groups (quintiles)
- Assign quintile value of 1 to 5 - where 1 indicates highest vulnerability score and 5 indicates lowest vulnerability score

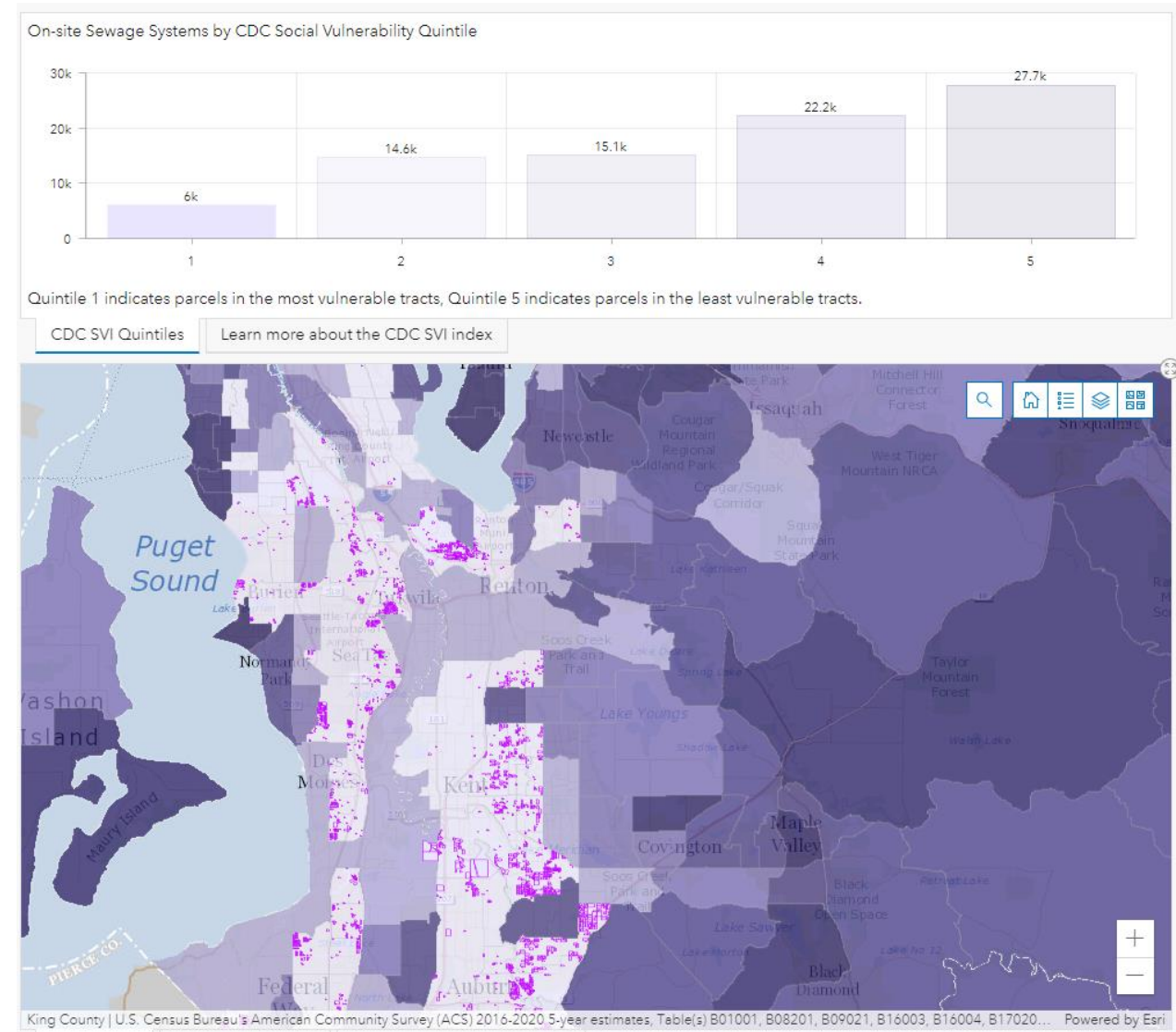


The symbology uses lighter colors for lower values (quintile 1) and darker colors for higher values (quintile 5) to avoid stigmatizing dark as bad.

OSS Vulnerability Dashboard

**Perspectives
on where constraints and needs
may be greatest**

Dashboard is lighting up parcels with On-site Sewer Systems in CDC Social Vulnerability quintile 1, where responses (e.g. technical assistance) will be pro-equity



Dashboards typically configured to present: 1) disparity predicament today, and 2) how actions are landing against this backdrop

Example here: % of parcel with an On-site Sewer System by CDC Social Vulnerability Index

King County on-site sewage systems (OSS) and social vulnerability dashboard

Since the beginning of 2020, due to increased water use as people have been home during the pandemic, Public Health has seen significant increases in failures of OSS. Failures can result in direct public health hazards -- untreated sewage in homes, yards, and nearby streams, lakes, and beaches. According to King County codes, properties in the Urban Growth Area must be connected to sewer if an OSS fails and sewer is available within 200 feet of the property boundary. Sewer connection costs are difficult for property owners to finance. The widespread OSS failures and associated costs disproportionately affect low-income, communities of color located in urban areas, who were previously left out of government- and developer-funded sewer infrastructure development.

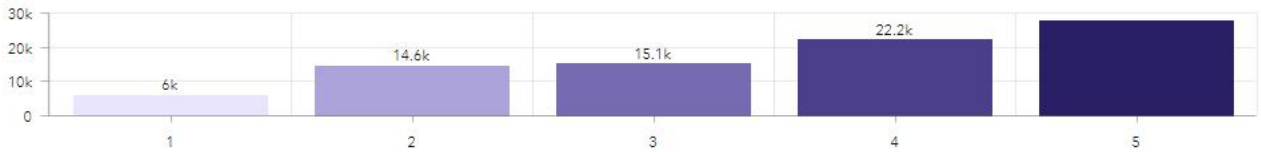
There is an imminent need for neighborhood or community-level planning and broadscale capital

- Urban Growth Area
- Rural Growth Area

OSS Parcels

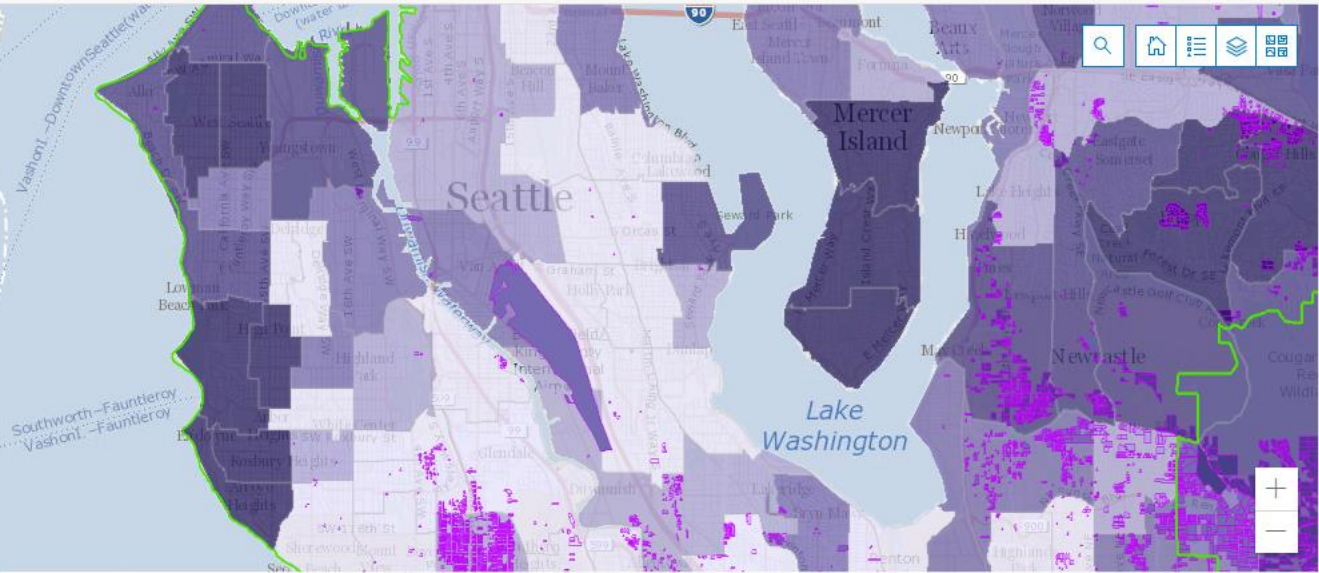
- Quintile
- 1 - Located in most socially vulnerable tracts
 - 2
 - 3
 - 4
 - 5 - Located in least socially vulnerable tracts

On-site Sewage Systems by CDC Social Vulnerability Quintile



Quintile 1 indicates parcels in the most vulnerable tracts, Quintile 5 indicates parcels in the least vulnerable tracts.

[CDC SVI Quintiles](#) [Learn more about the CDC SVI index](#)



King County | U.S. Census Bureau's American Community Survey (ACS) 2016-2020 5-year estimates, Table(s) B01001, B08201, B09021, B16003, B16004, B17020... Powered by Esri

[OSS Parcels](#) [OSS by Age Range](#) [OSS Failures from 2016 Study](#)

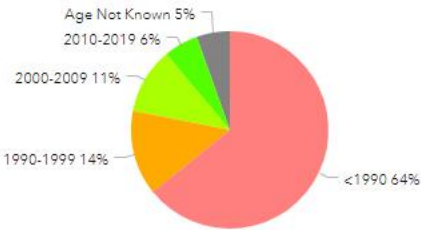
Systems 30 years or older

56,588

Total Systems

85,566

Sewage System Age Range



For OSS without any records, age estimated from age of structure.

[By Percent](#) [By Quantity](#)

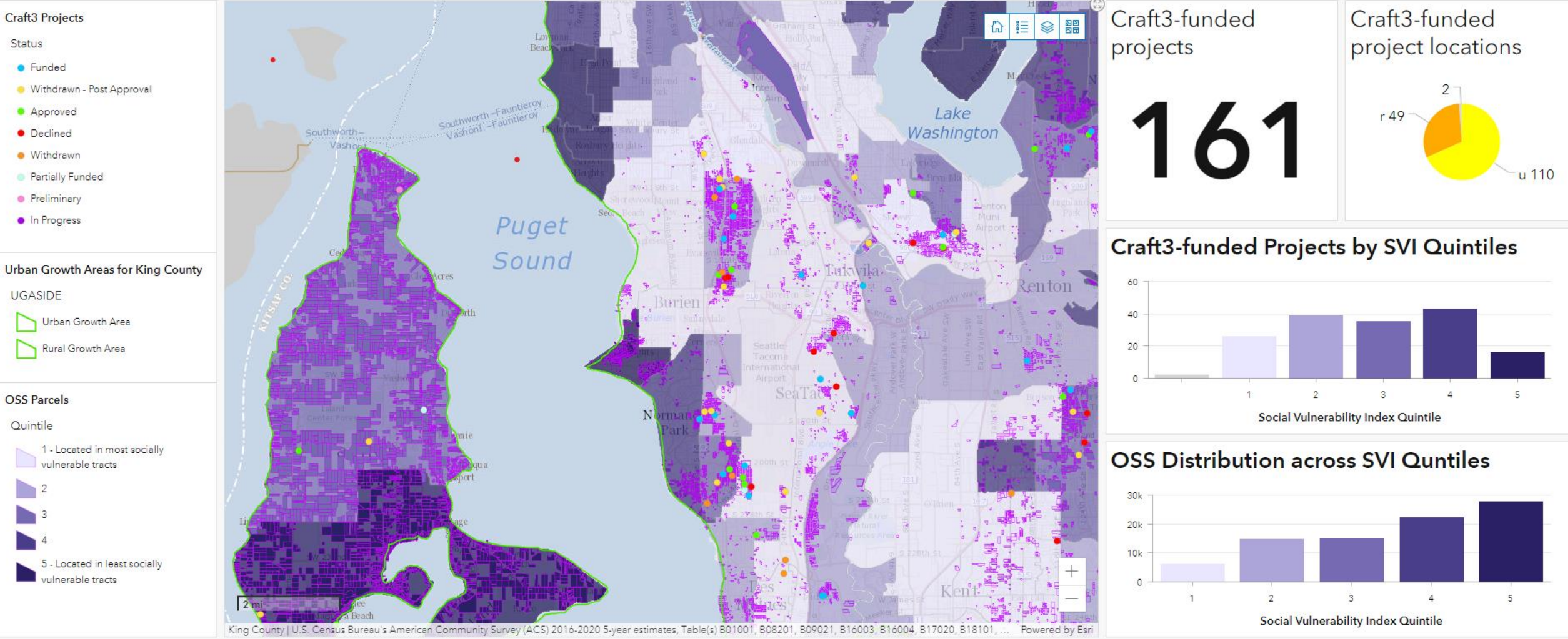
Growth Area



[By Percent](#) [By Quantity](#)

Dashboards typically configured to present: 1) disparity predicament today, and 2) how actions are landing against this backdrop

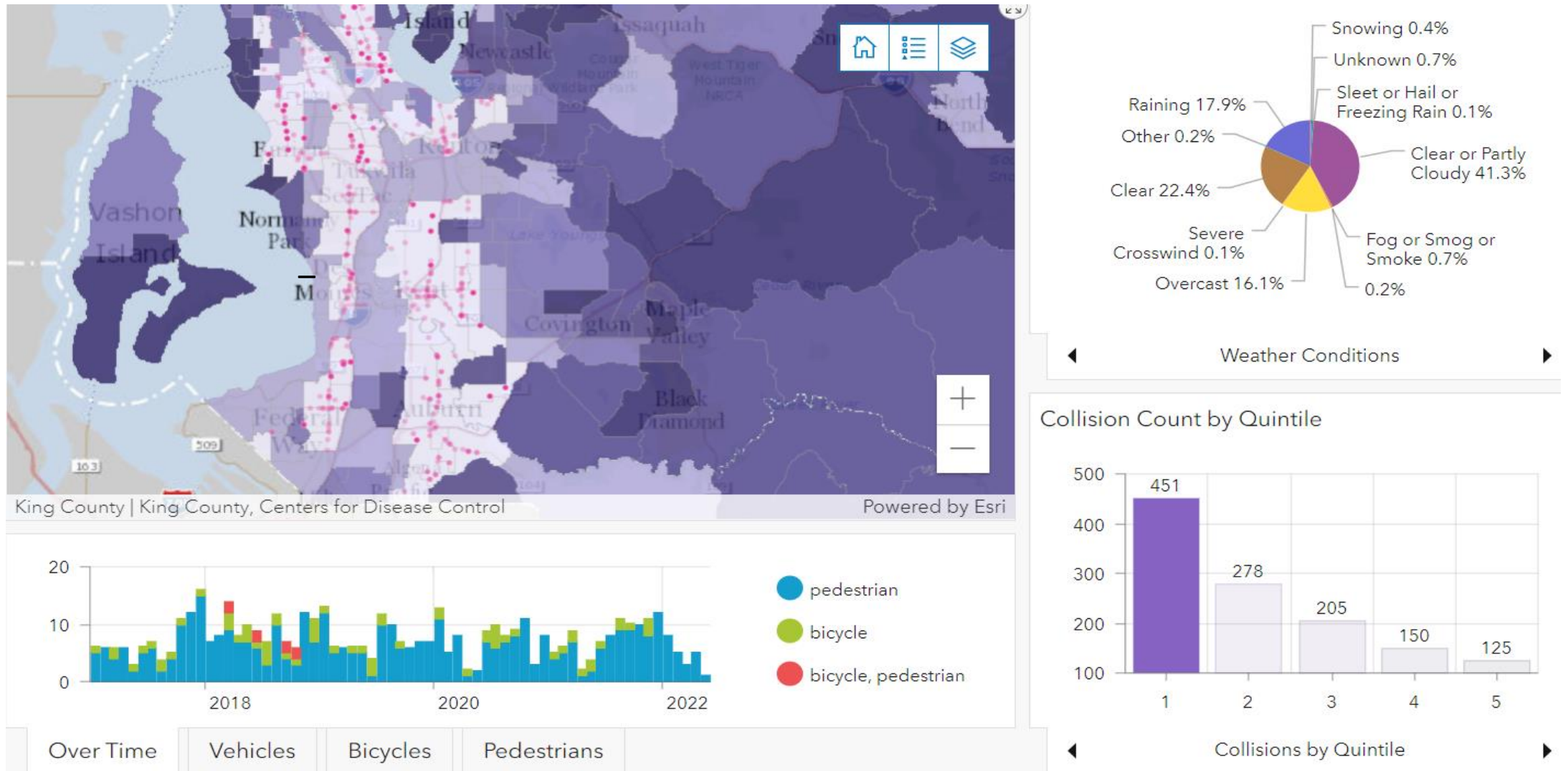
Example here: How ‘Craft3 funding’ (technical assist resource) is landing against CDC SVI backdrop



Standard method for considering ‘where needs are greatest’, using quintiles of CDC Social Vulnerability Index (SVI), or King County Environmental Health Disparity index (local recalc of WA State Environmental Health Disparity Index)

Example here: Occurrences of traffic injuries and deaths (‘17-’22) within SVI quintile 1 – highest vulnerability

** Note % of total within Quintile 1*



– questions? –

– table discussions –

1 – “....at my jurisdictional scale, a promising use case or application domain is/might be.....”

2 – “in my example, stakeholders who are/maybe relevant include”

3 – “ to empower those whose needs are greatest might require”

– report outs –

1 – use cases and application areas

2 – stakeholder considerations

3 – empowerment tools

– full group popcorn –

common barriers and countermeasures – to access and use

- local/municipal
- county
- regional/multi-county/mpo
- state

potential collaborators – to build shared capacity

baby steps – for me/us

– contact info –



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