

MAPPING CLIMATE RISKS AND PLANNING FOR RESILIENCY - WHAT DO RACE AND PLACE HAVE TO DO WITH IT?

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2018 CLIMATE RESILIENCE SUMMIT
JANUARY 6, 2018





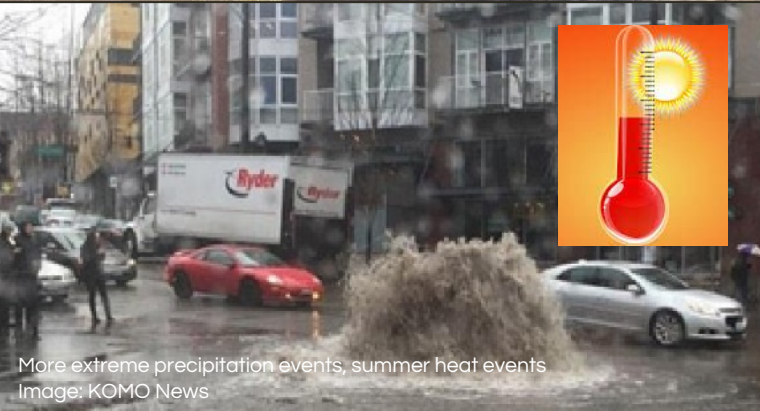
“CLIMATE CHANGE IS ONE OF THE
PARAMOUNT CHALLENGES FOR
OUR GENERATION AND
GENERATIONS TO COME.”



- Health
- Safety
- Economy
- Environm
ent



Impact of declining snow on summer water supply
Photo: Seattle Public Utilities (2015)



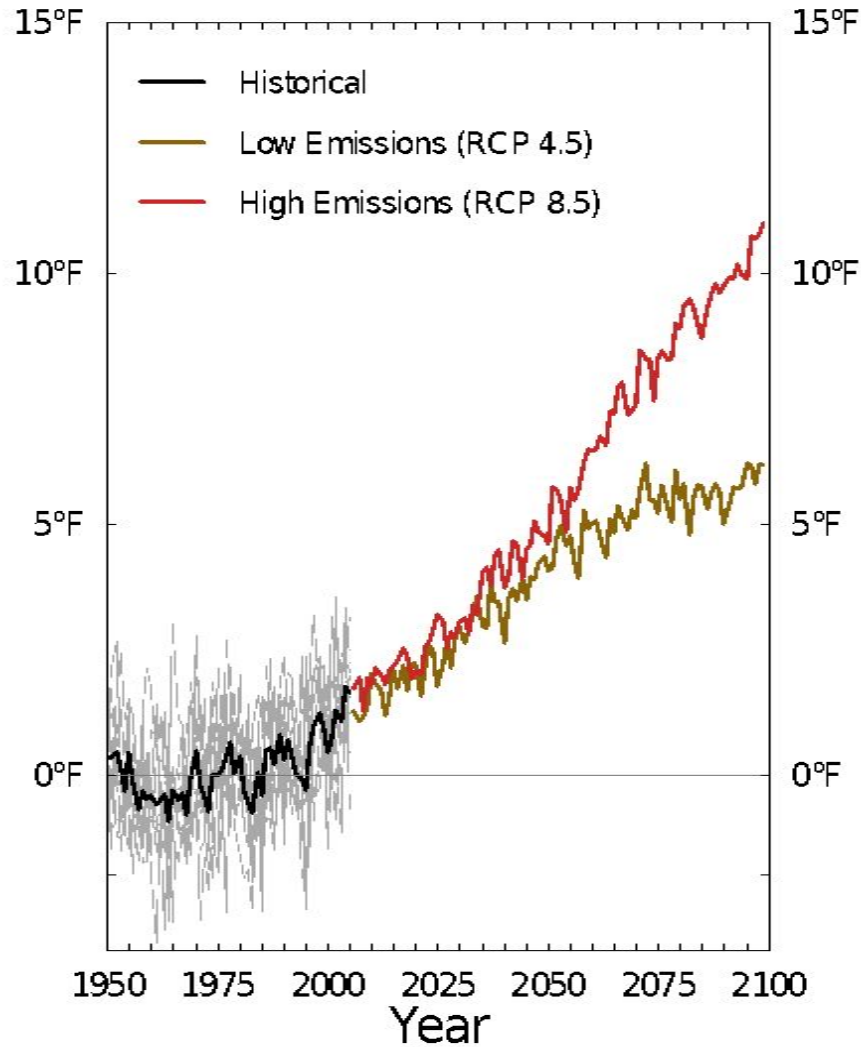
More extreme precipitation events, summer heat events
Image: KOMO News



Higher winter streamflows and potential for flooding
Photo: King County

Projected Change in Average Temperature, Puget Sound Region

(relative to 1950-1999 average)



Lower and warmer summer streamflows; increased stress on salmon
Photo: Oregon Department of Fish and Wildlife



Impacts on forest health;
Photo: The New York Times

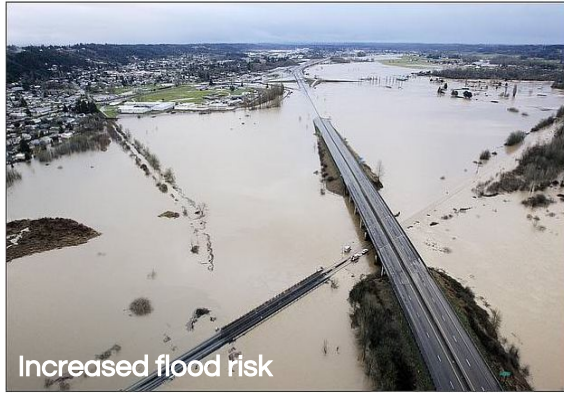


Sea level rise and higher coastal storm surge;
Photo: David Rosen/West Seattle Herald



Ocean acidification; Photo: Seattle Times/NOAA

(SOME) IMPLICATIONS FOR COMMUNITIES



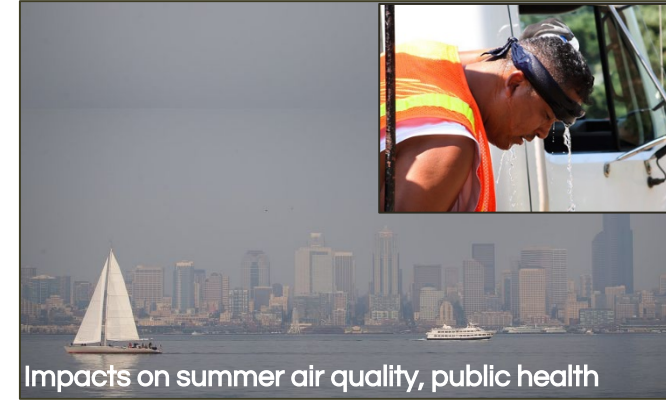
Increased flood risk



More challenges for urban drainage



Increased risk of landslides



Impacts on summer air quality, public health



Increased competition for summer water



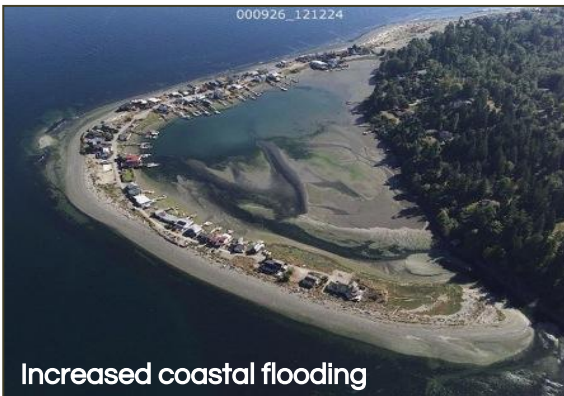
Impacts on water quality



Impacts on local food production



Increased wild fire risk to homes,



Increased coastal flooding



Increased potential for toxics



Increased risk to infrastructure



Impacts on fisheries and aquaculture

STRATEGIC CLIMATE ACTION PLAN (SCAP)

CLIMATE ACTION PLAN PARTNERSHIPS



EQUITY & SOCIAL JUSTICE STRATEGIC PLAN

King County **INVESTS...**



Upstream,
where needs
are greatest,



in
**community
partnerships,**



and in
employees,



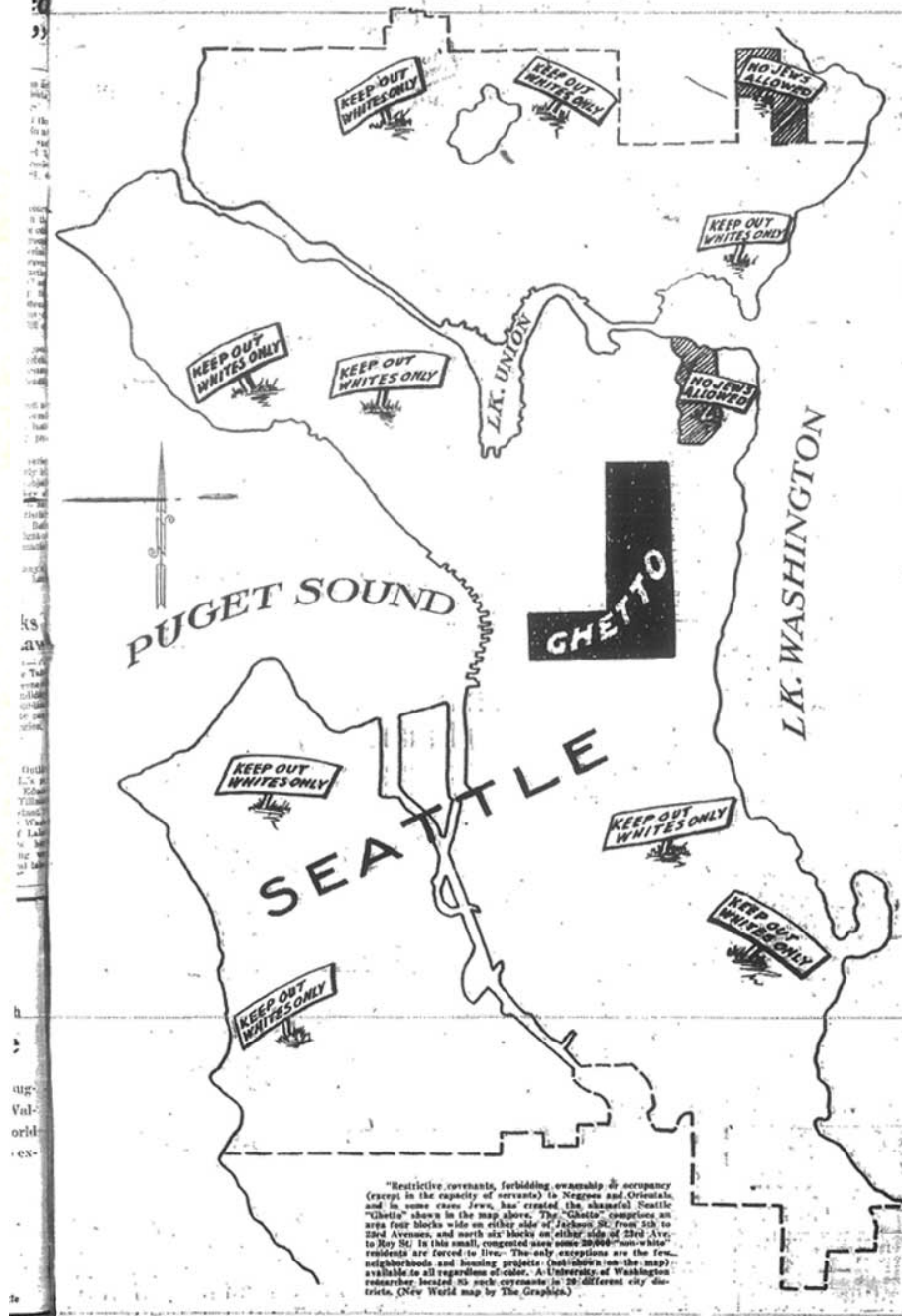
with **transparent
and accountable
leadership.**

CLIMATE CHANGE IMPACTS:
WHAT DO RACE AND PLACE
HAVE TO DO WITH IT?

14. **RACIAL RESTRICTIONS**...No property in said addition shall at any time be sold, conveyed, rented or leased in whole or in part to any person or persons not of the White or Caucasian race. No person other than one of the White or Caucasian race shall be permitted to occupy any property in said addition or portion thereof or building thereon except a domestic servant actually employed by a person of the White or Caucasian race where the latter is an occupant of such property.

15. **ANIMALS**. No hogs, cattle, horses, sheep, goats, or or similar livestock shall be permitted or maintained on said property at any time. Chicken hens, pigeons, rabbits and other similar small livestock, not exceeding a total of twenty-five in number, shall be permitted but must be kept on the premises of the owner. Not more than one dog and cat may be kept for each building site. No pen, yard, run, hutch, coop or other structure or area for the housing and keeping of the above described poultry or animals shall be built or maintained closer

This New World Map Shows Seattle's "Ghetto"



A New World map of Seattle's "Ghetto," 1948.

From: http://depts.washington.edu/civilr/covenants_report.htm



HOMEOWNERSHIP RATES



Seattle's overall homeownership rate is 47% while People of Color own homes well below the average at 35%.

The National Equity Atlas, 2016

Figure source: City of Seattle Environment and Equity Initiative

MAJOR ROADWAYS

ASTHMA RISK



of the heaviest roadways in Seattle are located within the EEI Focus areas.

Those living within EEI Focus Areas have a 48% higher asthma risk than the rest of the city.

Diesel contributes to nearly 80% of the potential cancer risk in Beacon Hill.
(The Puget Sound Air Toxics Evaluation Final Report by The Puget Sound Clean Air Agency)



Citywide

EEI Focus Areas

Figure source: City of Seattle Environment and Equity Initiative Agenda

LOWER DUWAMISH WATERWAY

58% of the population that lives within one mile of the Superfund boundary are **people of color**.

58%
People of Color

The Environmental Protection Agency's Superfund program is responsible for cleaning up some of the nation's most contaminated land.

COAL & OIL TRAINS

Nearly 40% of the residents living within one mile of the impact zone are **people of color**.

Over 50% of the land area in the **EEI Focus Areas** is located within one mile of the impact zone.



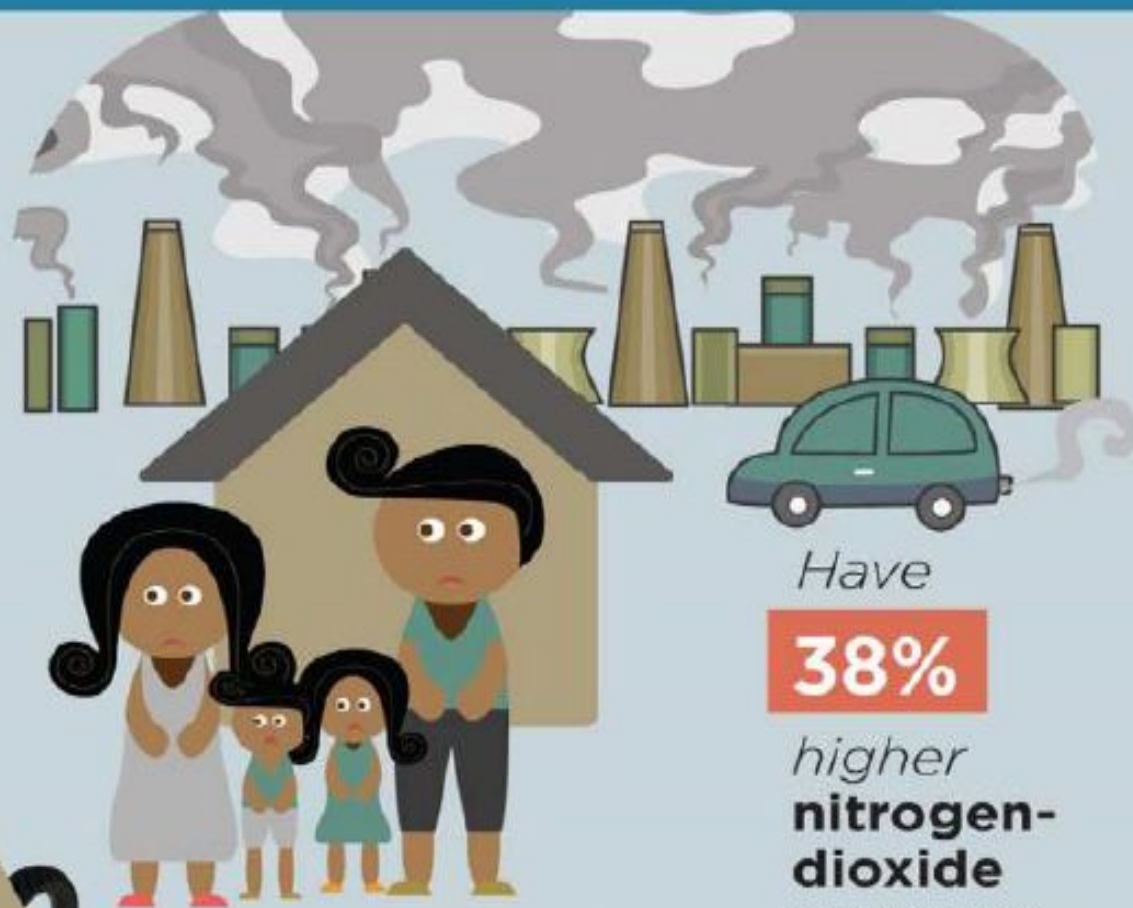
Environmental Racism Is Nothing New

Race is the most significant predictor of a person living near contaminated air, water, or soil.

56%

*of the population near **toxic waste** sites are people of color.*

THE
Nation.
100
1911-1912 THE PAPERWORK SINCE 1989



People of color:

Have seen

95%

*of their claims against polluters **denied by the EPA.***

Have

38%

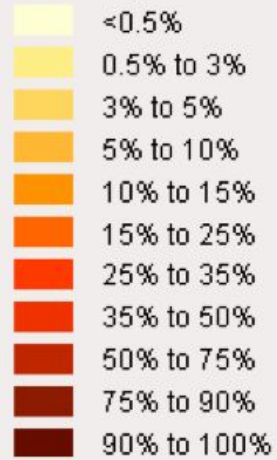
*higher **nitrogen-dioxide** exposure.*

Are

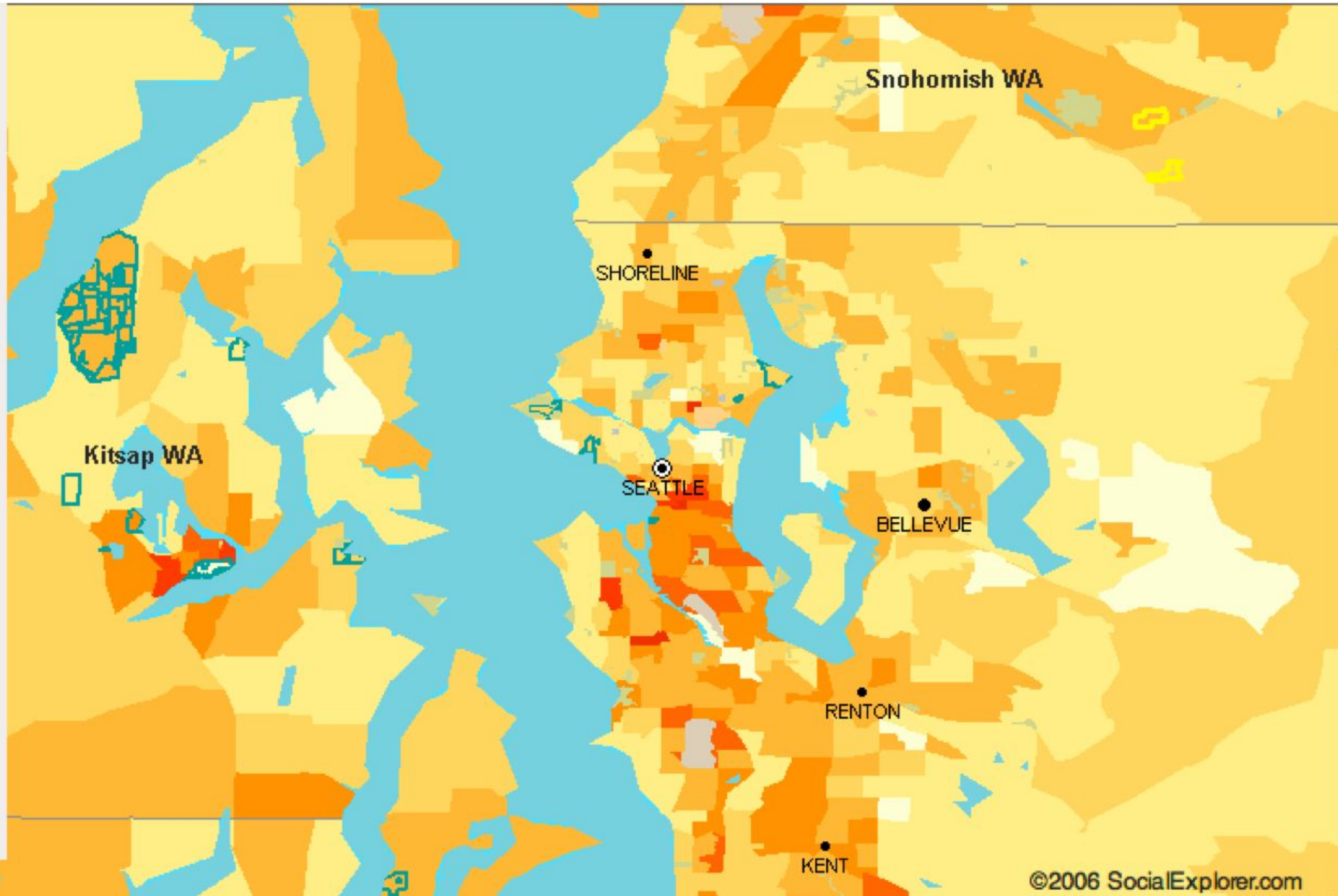
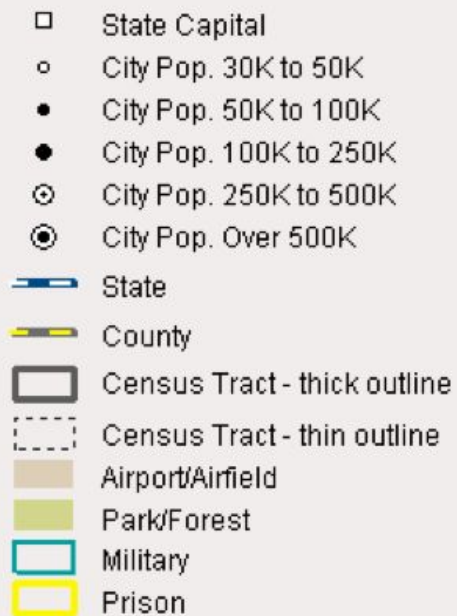
2x

*more likely to live without **potable water** and **modern sanitation.***

% Living in Poverty



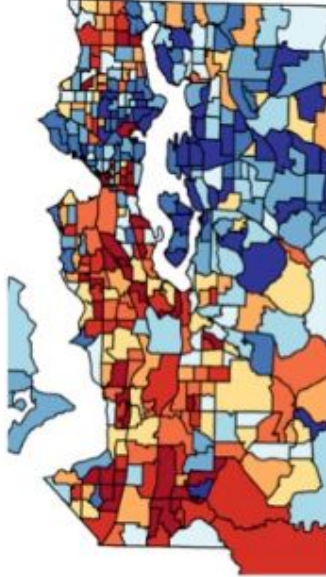
2000 Census Tract



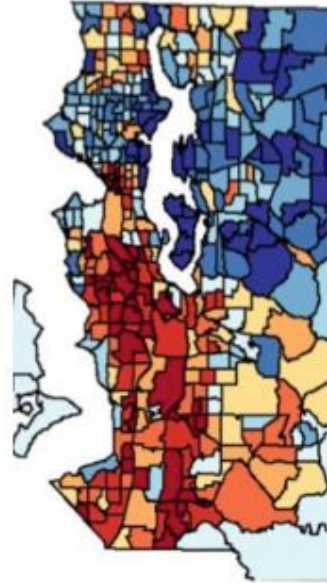
Public Health

KING COUNTY HEALTH AND WELL-BEING MEASURES

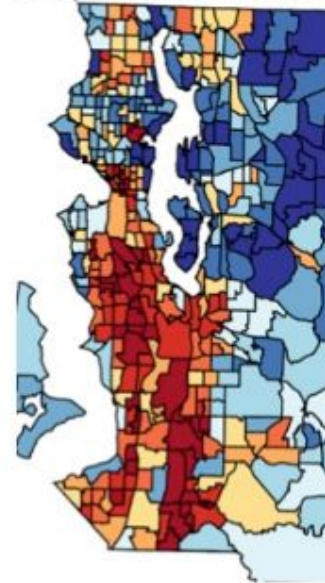
Life Expectancy



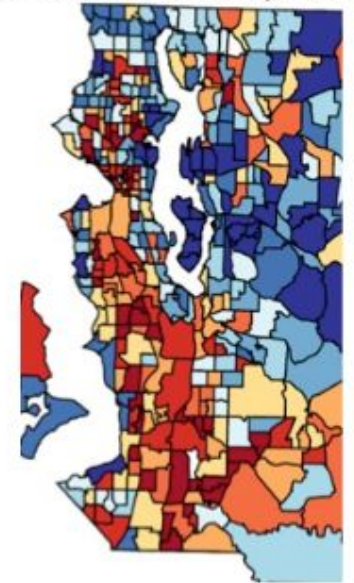
Tobacco Use



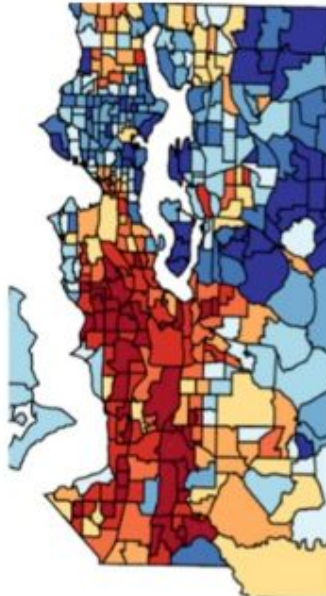
Frequent Mental Distress



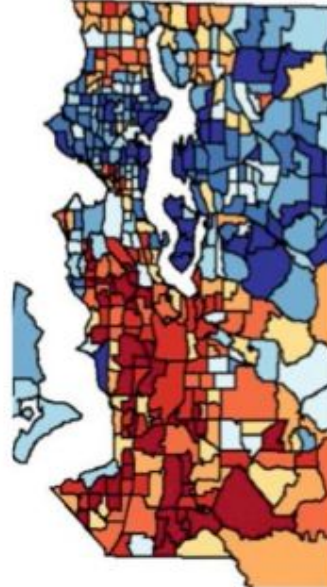
Adverse Childhood Experiences



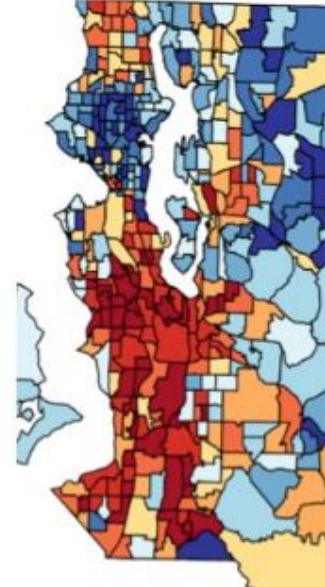
Lack of Physical Activity



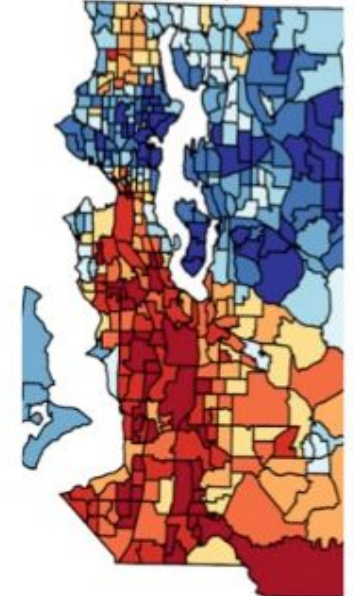
Obesity



Diabetes



Preventable Hospitalization



A KING COUNTY CLIMATE SCREENING TOOL

OVERVIEW

Goals: Advance climate resilience and equity goals by 1) making it easier for decision makers to factor climate impacts and equity considerations into decisions, and 2) enhancing the capacity of communities to understand and communicate climate impacts relevant to their interests.

How? By providing an integrated, spatial assessment of:

- 1) how and where climate change affects the County, and
- 2) who and what is affected by those impacts

Potential users:

- King County departments,
- cities,
- Community Based Organizations
- Tribes,
- “Friends of” groups,
- neighborhood associations,
- Port Authority,
- WRIAs,
- health boards, etc.

OVERVIEW CONT'D

The project will provide users with access to:

- GIS layers of projected climate change impacts and factors that influence vulnerability, downloadable for use in your own mapping programs; and
- An interactive screening tool that provides an integrated assessment of potential vulnerability to different climate impacts.

The project will incorporate county-owned and public data sets *[currently being identified]*

From initial prototype:



Climate Change Resiliency Tool

Extreme Heat Event

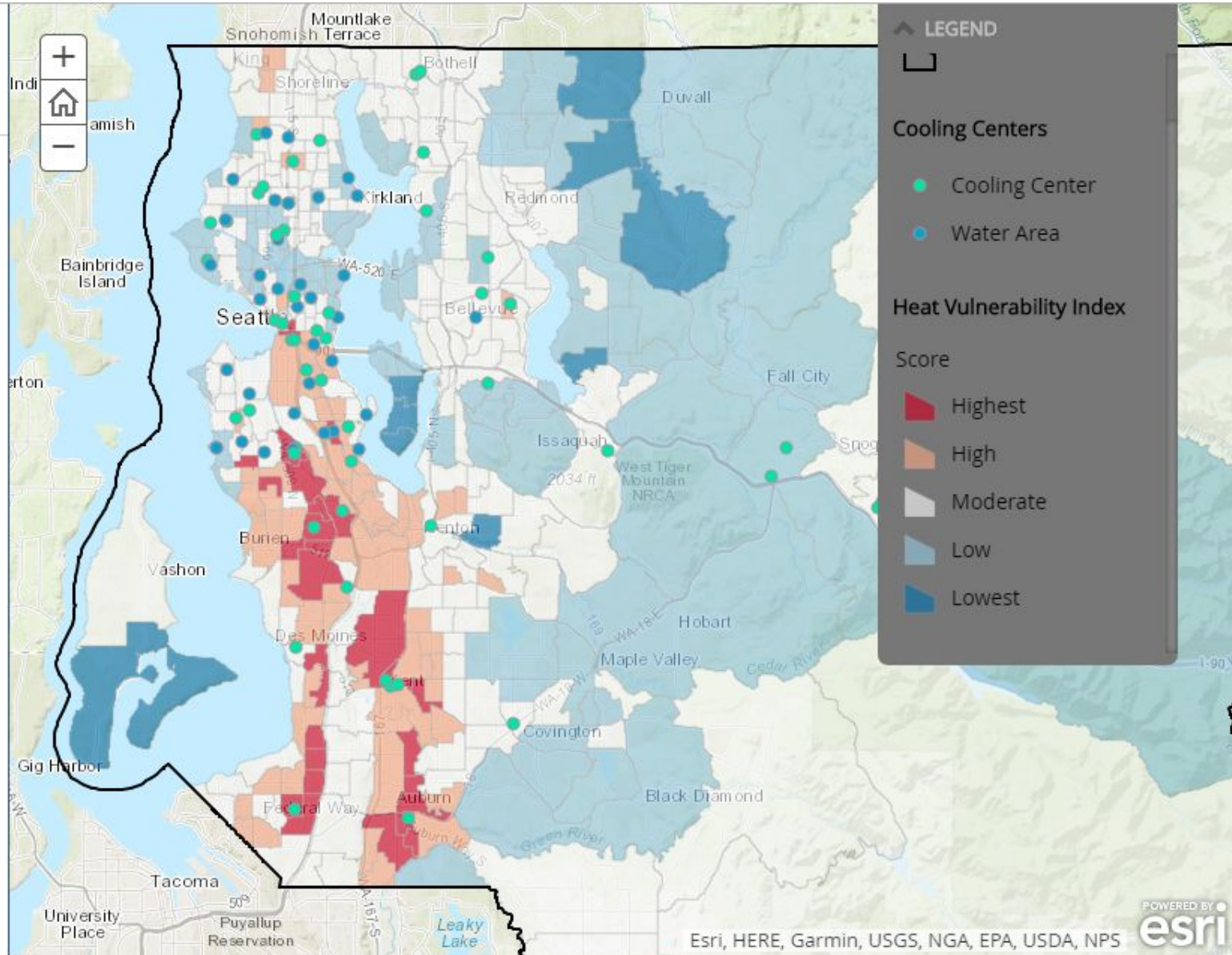
Depicted:

- Heat Vulnerability Index by Census Tracts
- Publicly-accessible Cooling Centers
- Parcels served by Heat pumps (**zoom in to view**)

Extreme Heat Event resiliency Index Variables:

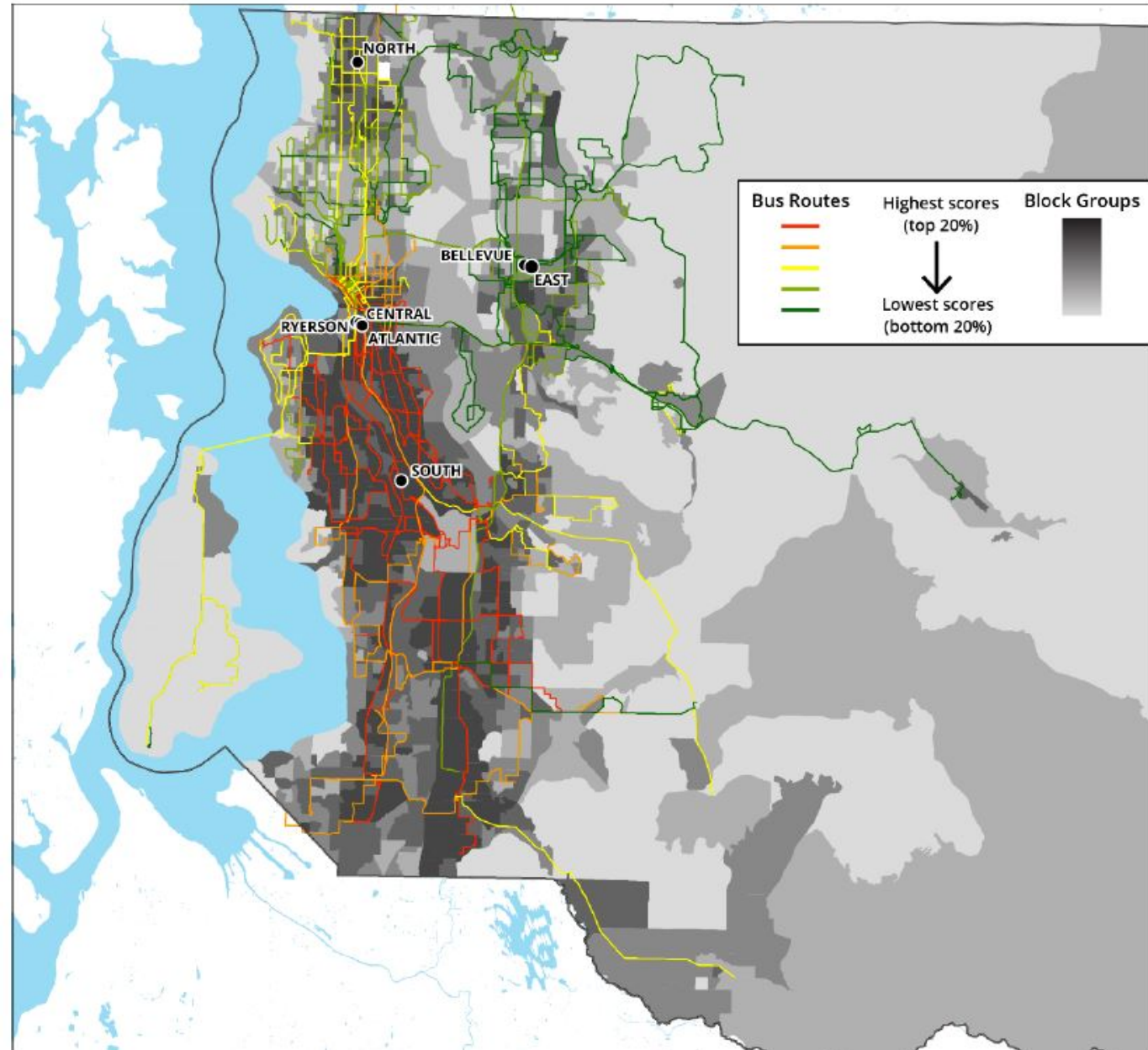
- Socioeconomic Status
- Household Composition & Disability
- Minority Status & Language
- Housing & Transportation
- Ground Cover
- Hospitalizations: asthma, diabetes, and heart disease
- Outdoor Labor Force
- Population with access to Heat Pumps

"Since most homes in the Puget Sound region lack central air conditioning, many residents will be seeking cool relief. Washington Information Network (WIN 211) maintains a [list of publicly-accessible sites operating as cooling](#)



METRO ZERO EMISSION BUS EQUITY ANALYSIS

- Combined air quality, health, and other demographic risk factors to determine communities most vulnerable to air pollution
- Bus routes highest priority for zero-emission
- Deploying at South Base greatest equity benefit – 62% routes serve most vulnerable communities
- Analysis reviewed and informed by a community stakeholder panel



From initial prototype:



Climate Change Resiliency Tool

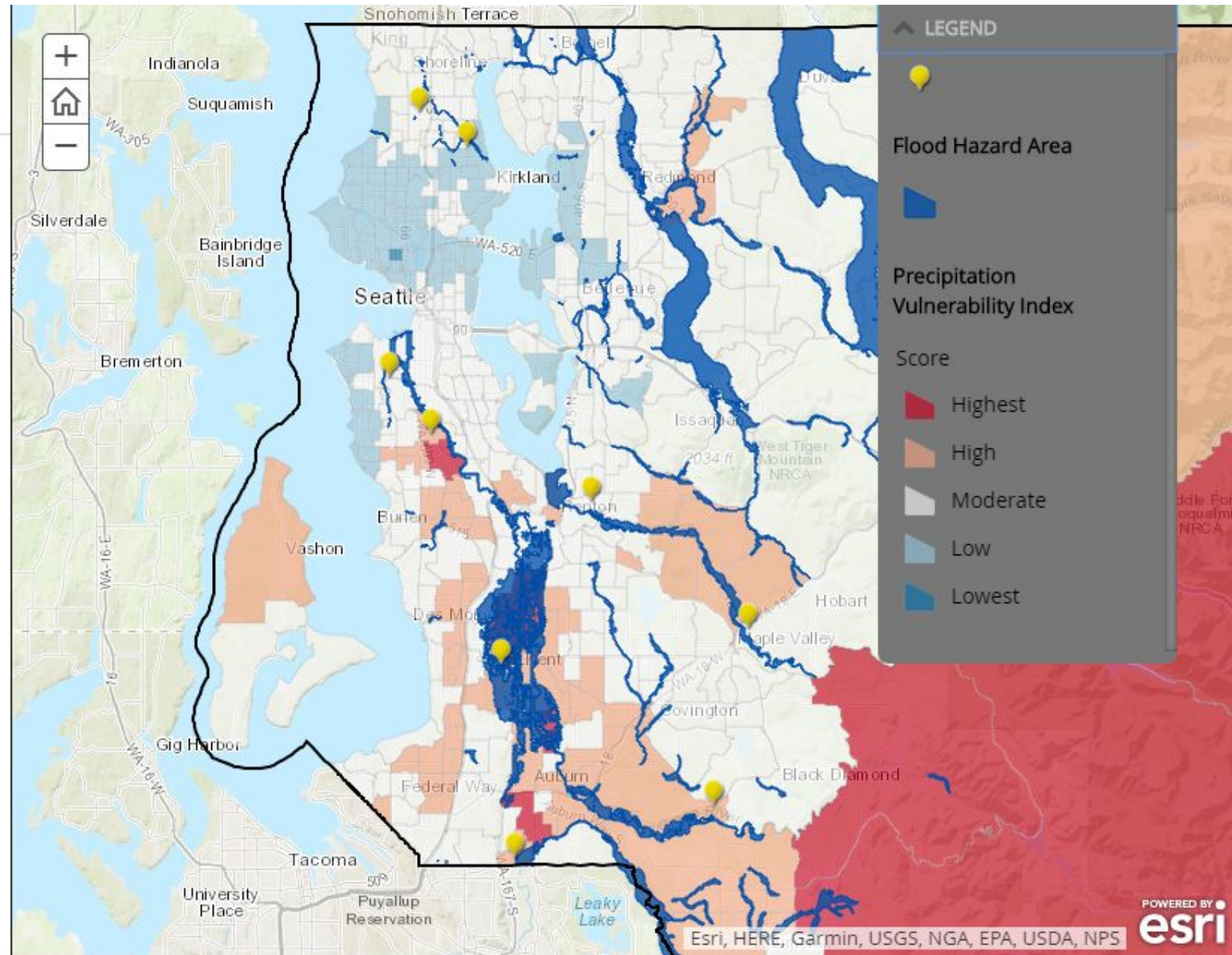
Heavy Precipitation Event

Depicted:

- King County Sandbag distribution locations
- Floodplain Areas
- Precipitation Vulnerability Index by Census Tract
- Steep Slope Areas (zoom in to view)
- Private Wells (zoom in to view)
- Parcels served by septic systems (zoom in to view)
- Drainage Complaints (zoom in to view)

Precipitation Vulnerability Index Variables:

- Socioeconomic Status
- Household Composition & Disability
- Minority Status & Language
- Housing & Transportation
- Outdoor Labor Force
- Population served by a Septic System
- Population served by a Private Well
- Drainage Complaints
- Steep Slope Area



DISCUSSION QUESTIONS

1. Do you use spatial information now to accomplish your goals?
 - If so, how do you use it? Where do you go for that information?
 - If not, why not?
2. What are the climate-related issues your organization is concerned with, and what information or data would help you better understand and communicate those concerns?

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Extra slides

2015 SCAP Basics

Reducing Greenhouse Gas Emissions



REDUCING CARBON POLLUTION: UP NEXT

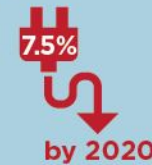
TRANSIT

- Metro Transit will acquire at least 120 all electric zero-emission buses by the end of 2020 and prioritize deployment to communities most vulnerable to air pollution.
- King County will convert the entire bus fleet to zero emissions technology by as soon as 2034.



ENERGY EFFICIENCY AND GREEN BUILDING

- Develop at least 10 net zero energy or Living Building Challenge government sponsored green building projects by 2020.
- Partner with cities and the construction community to update energy and green building development codes.
- Reduce energy use in County facilities by 7.5% by 2020, compared to 2014.



SMART GROWTH, FORESTS, FARMS

- Permanently conserve remaining high-priority farm, forest, and other open spaces throughout King County within 30 years.
- Plant at least one million trees in King County in cooperation with public, private and community partners.



CLEAN ENERGY FUTURE

In partnership with the King County-Cities Climate Collaboration, the utilities, and others, research and develop a plan to achieve a countywide 90% renewable electricity target.



WASTE PREVENTION AND RECYCLING

Continue to increase recycling towards a 70% target, including by implementing a separation requirement for cardboard, metal, and yard and wood waste at King County Transfer Stations.

MATERIALS RECYCLED AT TRANSFER STATIONS INCREASED BY 40%



- **Goal Area 1:** Transportation & Land Use
- **Goal Area 2:** Buildings & Facilities Energy
- **Goal Area 3:** Green Building
- **Goal Area 4:** Consumption & Materials Management
- **Goal Area 5:** Forests and Agriculture

2015 SCAP Basics

PREPARING FOR CLIMATE IMPACTS

RESILIENT COUNTY OPERATIONS, FACILITIES

King County is planning for climate change impacts on wastewater, stormwater, transportation, emergency management, public health, flood risk reduction, and salmon recovery.



STRENGTHENING REGIONAL RESILIENCE

King County is working with local cities, organizations, communities and partners to improve regional coordination on climate change preparedness.



ENHANCING REGIONAL UNDERSTANDING

King County is partnering with researchers, local communities, state agencies, and others to address key information gaps related to climate preparedness goals.

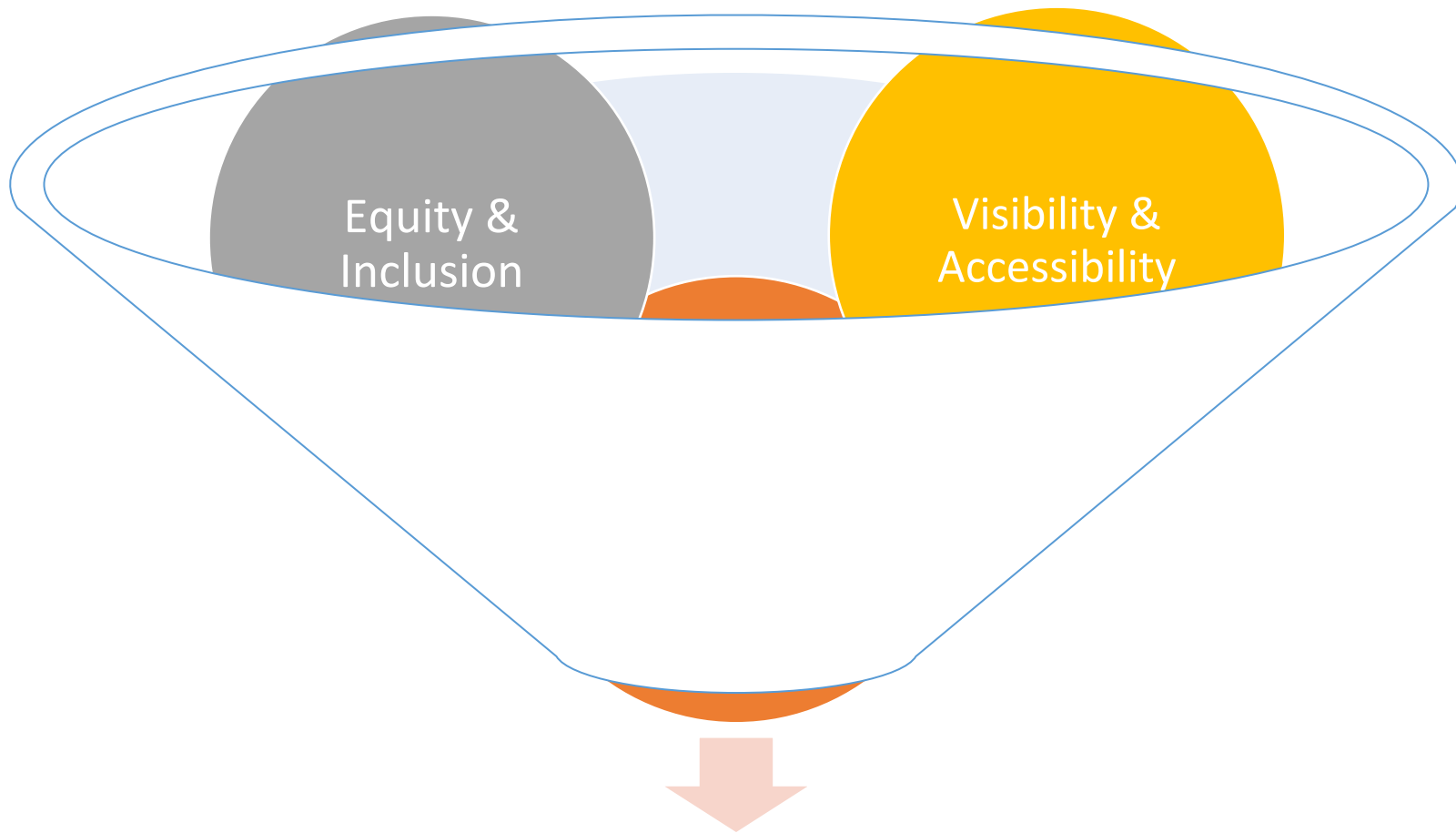


ENGAGING COMMUNITIES AND PARTNERS

WORKING TOWARDS EQUITABLE OUTCOMES

King County is building strategic partnerships to ensure that County actions on climate change reflect the needs, priorities, and solutions of communities who are most disproportionately impacted by climate change.







Equitable outcomes for all, especially our frontline communities;
Communities feel invested & included in climate action

The burdens and benefits of climate change will affect residents, communities, and businesses in different ways; **equity and social justice are intrinsically linked to climate change, and climate solutions must reflect the needs and feedback from our constituents.**

Redlining Map & Racial Restrictive Covenants in Seattle - King County, WA

Legend

-  Covenants_Final
-  Water



Public Health 
Seattle & King County

0 0.5 1 2 3 4 Miles

Source: Seattle Civil Rights & Labor History Project - Racial Restrictive Covenant Database

