Bay Area Greenprint
Equity and Resilience Modules

February 21, 2024

SFEP Implementation Committee

TODAY'S AGENDA

AGENDA ITEM
Equity Module overview, goals, examples
Resilience Module overview
Q&A

www.bayareagreenprint.org

www.bayareagreenprint.org/**resources
to view past webinars**

BAY AREA GREENPRINT

The Bay Area Greenprint is a tool that reveals the multiple benefits of natural and agricultural lands, empowering users to inform land use and infrastructure planning decisions with better data, including hazard areas and conservation policies.

The Goal:
To foster growth that balances nature, agriculture and the needs of a growing region

Goal of the Equity Module

Provide support to on-the-ground work focused on environmental justice and elevate equity issues into planning

Where does the Greenprint's Equity Module fit with existing resources and efforts?

- **Provides a spatial view of environmental issues related to equity**

- **Custom area reporting and map layer transparency gives more control to the user to see how different issues are relational and overlap**

ENVIRONMENTAL JUSTICE RESOURCES AND TOOLS

The Greenprint provides links to complementary online tools and programs in the environmental justice field to connect the community of resources.

Equity Module in Greenprint Report
- Equity Atlas (PolicyLink)

Greenprint Resources Page
- Green Zones (CA Environmental Justice Alliance)
- Others?

PROCESS - ENGAGEMENT

The Bay Area Greenprint Equity Module concept was shared and discussed with the following groups:

PROCESS - FEEDBACK

The Bay Area Greenprint collected the following uses cases from collaborators for the Equity Module:

- **Support community work** at the intersection of social vulnerability, employment challenges, and housing burden, climate risk, and relevant environmental justice issues

- Provide community advocacy a **common baseline of information**

- **Empower smaller communities/places** and unincorporated county land to be evaluated for climate change and resilience issues

- Advancing **fair housing** initiatives and projects which limits displacement

EQUITY MODULE SECTIONS

Equity Overview

Disparities in Access

Disparities in Exposure

Housing

Demographics

EQUITY MODULE SECTIONS

Equity Overview

The environment around where we live, work, learn, and play are fundamental determinants of our health and well-being. Exposure to hazards, proximity to public resources, and access to stable housing are critical factors that influence our quality of life, with marginalized communities under greater stress from these environmental threats. Environmental justice demands that all people have the right to equal environmental protection under the law, and the right to live, work, learn, and play in communities that are safe, healthy, and free of life-threatening conditions.

The Bay Area Greenprint provides data that must be balanced with lived experiences and perspectives. When working locally, data will not capture the many local nuances and must be balanced with public input and lived experiences. For additional context, the Bay Area Equity Atlas supports land use planning by providing data and analysis that help inform policies and decisions aimed at promoting equity, addressing disparities, and creating more inclusive and sustainable land use strategies in the region.

EQUITY MODULE SECTIONS

Disparities in Access

Public resources that provide access to urban and open space areas for exercise and relaxation are vital for the health and well-being of communities. Neighborhoods lacking public amenities such as parks, bike paths, and trails can be prioritized for improvement through community engagement to understand and respond to the needs of the community.

Park-Poor Neighborhoods

Your area contains **13,264 acres** of park-poor neighborhoods. This area may be more than 10-minute walk to the nearest park following local walkable routes, considering physical barriers such as highways, train tracks, and rivers without bridge. This ParkScore analysis performed by Trust for Public Land calculated the walkability to the nearest parks and also considered demographic priorities related to race/ethnicity, age, and income.

7% of which are in Equity Priority Areas or Disadvantaged Communities.

Regional Trails

Your area contains **152 miles** of regional trails. Regional trails include individual trails and trail networks which cross over multiple Bay Area counties. They are a combination of those evaluated in the Bay Area Regional Trails Collaborative and other regional trails.

15% of which are in Equity Priority Areas or Disadvantaged Communities.

Bicycle Paths (Class I and II)

Your area includes **163 miles** of bicycle facilities which includes class I shared-use paths located off-street and class II bicycle lanes located on-street. These bicycle facilities provide a relatively safe healthy low-cost pathway of travel to access community resources.

24% of which are in Equity Priority Areas or Disadvantaged Communities.

EQUITY MODULE SECTIONS

Disparities in Exposure

Urban areas, agricultural lands, and the natural environment contain immediate stressors from human activity (air pollution, urban heat island effect) and long-term threats from climate change (sea level rise, wildfires) that can degrade a person's quality of life if exposed. Marginalized communities may feel a greater burden due to the proximity of threats and fewer natural and built infrastructure investments that enhance the quality of life.

Urban Heat Island

Heat islands contribute to higher temperatures in urban areas and can lead to heat-related illness and death. In this area, **41,629 acres** are considered urban heat islands due to high temperatures, lack of canopy cover, and impervious surfaces.

22% of which are in Equity Priority Areas or Disadvantaged Communities.

Air Pollution Risk - Cancer-Causing

2,029 acres are in areas with higher air pollution risk due to cancer-causing emissions, which are a pathway from cancer-causing substances found in air pollution that may be absorbed into the body when inhaled. These substances include benzene, formaldehyde, polycyclic aromatic hydrocarbons (PAHs) and dioxins, among others.

22% of which are in Equity Priority Areas or Disadvantaged Communities.

Air Pollution Risk - Particulate Matter

3,788 acres are in areas with higher air pollution risk due to particulate matter. Particulate matter is composed of particles (tiny pieces) of liquids or solids, including dust, in the air. Breathing in unhealthy levels of fine particulate matter can increase the risk of health problems like heart disease, asthma, and low birth weight.

27% of which are in Equity Priority Areas or Disadvantaged Communities.

Wildland-Urban Interface

30,368 acres are in the wildland-urban interface (WUI). The wildland–urban interface is a zone of transition between wilderness and land developed by human activity. This area is where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. Human settlements in the WUI are at a greater risk of catastrophic wildfire.

1% of which are in Equity Priority Areas or Disadvantaged Communities.

EQUITY MODULE SECTIONS

Disparities in Exposure

Sea Level Rise

15,940 acres are at risk of inundation due to sea level rise. Sea level rise is an increase in the level of the world's oceans due to the effects of global warming. This is caused by glaciers and ice sheets melting worldwide and adding water to the ocean, the volume of the ocean expanding as the water warms, and a decline in the amount of liquid water on land.

30% of which are in Equity Priority Areas or Disadvantaged Communities.

CA Climate Priority Populations

51,798 acres are in areas identified as Climate Priority Populations. California Climate Investments are focused on providing benefits to the state's most disadvantaged communities and low-income communities and households, collectively referred to as California Priority Populations. These disadvantaged community census tracts and land areas are based upon CalEnviroScreen 4.0 and the American Indian Areas Related National Geodatabase.

25% of which are in Equity Priority Areas or Disadvantaged Communities.

Contaminated Sites

Soil and water contamination can pose health risks to adjacent residents and businesses. Go to the State of California websites EnviroStor and Geotracker and enter your address to find out if any contaminated sites exist in your area of interest.

EQUITY MODULE SECTIONS

Housing

Housing, displacement, and community development are closely linked to environmental concerns. Incentivizing affordable housing development in infill areas can reduce displacement and gentrification, with housing displacement often leading to residents leaving their community for lower-cost housing often much further away.

CTCAC/HCD Opportunity Area

123,284 acres in your area are identified by CTCAC/HCD's (California Tax Credit Allocation Committee/Department of Housing and Community Development) Opportunity Map as a Highest or High Resource area that supports positive economic, educational, and health outcomes for low-income families and children. These areas are near jobs for low- to moderate-skilled workers, show higher neighborhood quality, and have lower levels of harmful environmental exposures. The Opportunity Map guides the siting of affordable housing using the federal Low Income Housing Tax Credit (LIHTC).

< 1% of which are in Equity Priority Areas or Disadvantaged Communities.

Displacement Typologies

22,586 acres in your area are at risk of gentrification or are early/ongoing gentrification based on research by the Urban Displacement Project. It is possible to mitigate the short-term effects via anti-displacement policies (e.g., the construction or preservation of affordable housing), and when local communities can (and should) play a role in the selection of which anti-displacement policy is appropriate.

38% of which are in Equity Priority Areas or Disadvantaged Communities.

EQUITY MODULE SECTIONS

Demographics

Marginalized communities experience discrimination and exclusion due to inequitable power relationships across economic, political, social, and cultural dimensions.

Low Income

24% of households in this area are **low-income**. Low-income is defined as having an income that is 80% of the median household income for California.
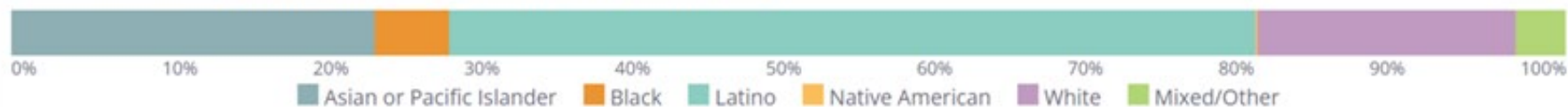
31% of which are in Equity Priority Areas or Disadvantaged Communities.

Race

There are **767,154 people** in this area.

| 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |

■ Asian or Pacific Islander ■ Black ■ Latino ■ Native American ■ White ■ Mixed/Other

22% of whom are in Equity Priority Areas or Disadvantaged Communities.

| 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |

■ Asian or Pacific Islander ■ Black ■ Latino ■ Native American ■ White ■ Mixed/Other

EQUITY MODULE SECTIONS

Demographics

Asian or Pacific Islander

30% of people in this area identify as **Asian or Pacific Islander** in the U.S. Census.

17% of whom are in Equity Priority Areas or Disadvantaged Communities.

Black

2% of people in this area identify as **Black** in the U.S. Census.

48% of whom are in Equity Priority Areas or Disadvantaged Communities.

Latino

24% of people in this area identify as **Latino** in the U.S. Census.

46% of whom are in Equity Priority Areas or Disadvantaged Communities.

Native American

< 1% of people in this area identify as **Native American** in the U.S. Census.

14% of whom are in Equity Priority Areas or Disadvantaged Communities.

White

39% of people in this area identify as **White** in the U.S. Census.

9% of whom are in Equity Priority Areas or Disadvantaged Communities.

Mixed/Other

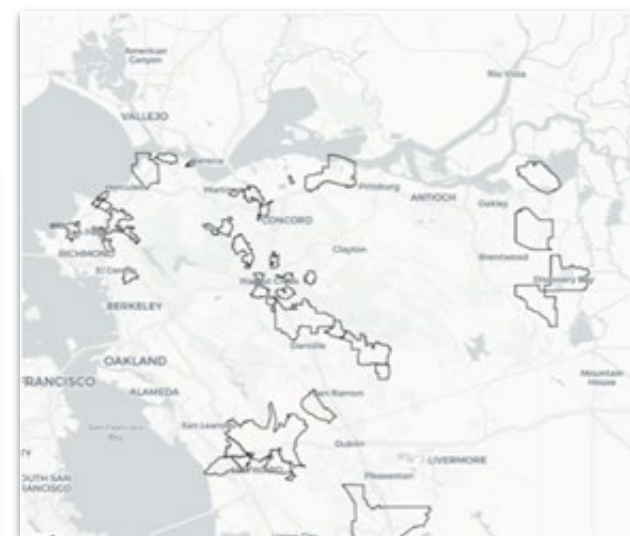**4% of people** in this area identify as **Mixed/Other** in the U.S. Census.

16% of whom are in Equity Priority Areas or Disadvantaged Communities.
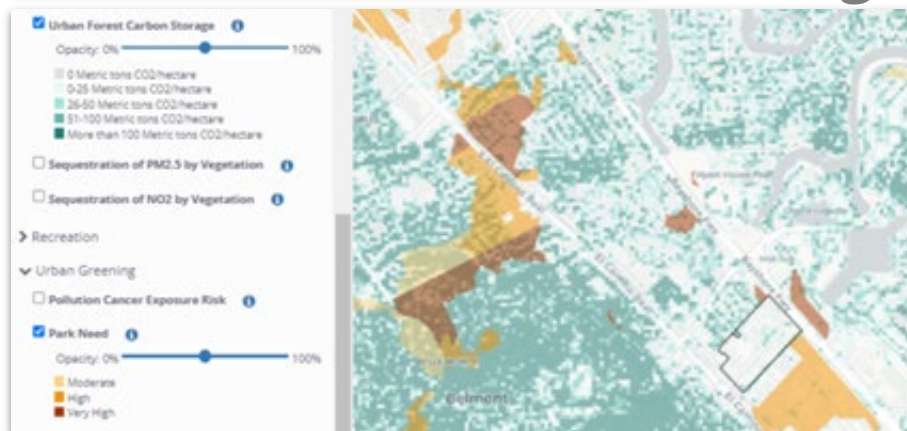
NEW GEOGRAPHIES, NEW TOOLS

Unincorporated County Areas

Census Tracts

Census Designated Places

Transparency

EQUITY ACROSS THE GREENPRINT

Urban Greening

Our cities are vibrant centers of life for many Bay Area residents, and they are habitat too. The Greenprint shows how urban greening can support human health, water and wildlife resources by investing in nature in our built environments.

Metric	Value	Unit	% of Shape	% Area Contributes to Bay Area Total	% Equity Priority or Disadvantaged	Map
Urban Heat Island - Air Temp	33,981	acres	3 %	7 %	21 %	☐
Air Pollution Risk - Cancer-Causing	743	acres	< 1 %	4 %	38 %	☐
Air Pollution Risk - Particulate Matter	1,060	acres	< 1 %	3 %	49 %	☐
Park Need - Very High & High	18,960	acres	2 %	15 %	11 %	☐
Priority Landscapes for Tree Planting - Very High & High	4,894	acres	< 1 %	7 %	34 %	☐

BAY AREA GREENPRINT

ENVIRONMENTAL JUSTICE RESOURCES AND TOOLS

Track Equity Issues, Inform Solutions

Evaluate Areas for Analysis

Take Action
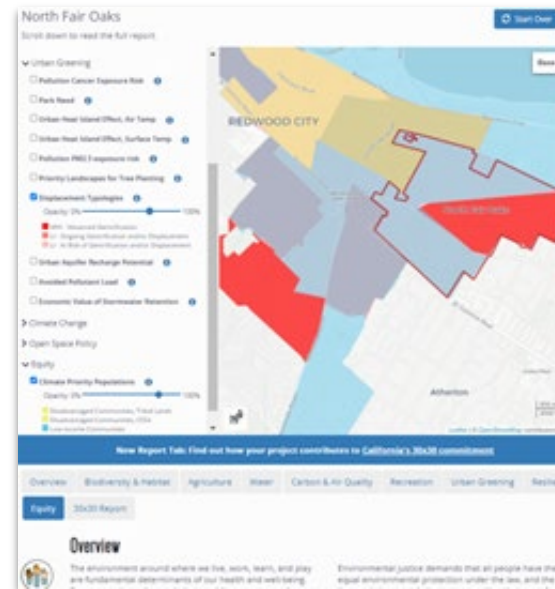
Bay Area Equity Atlas
Policy Link

Bay Area Greenprint
Equity Module

Green Zones
CA Environmental Justice Alliance

CASE STUDY: CENSUS TRACT

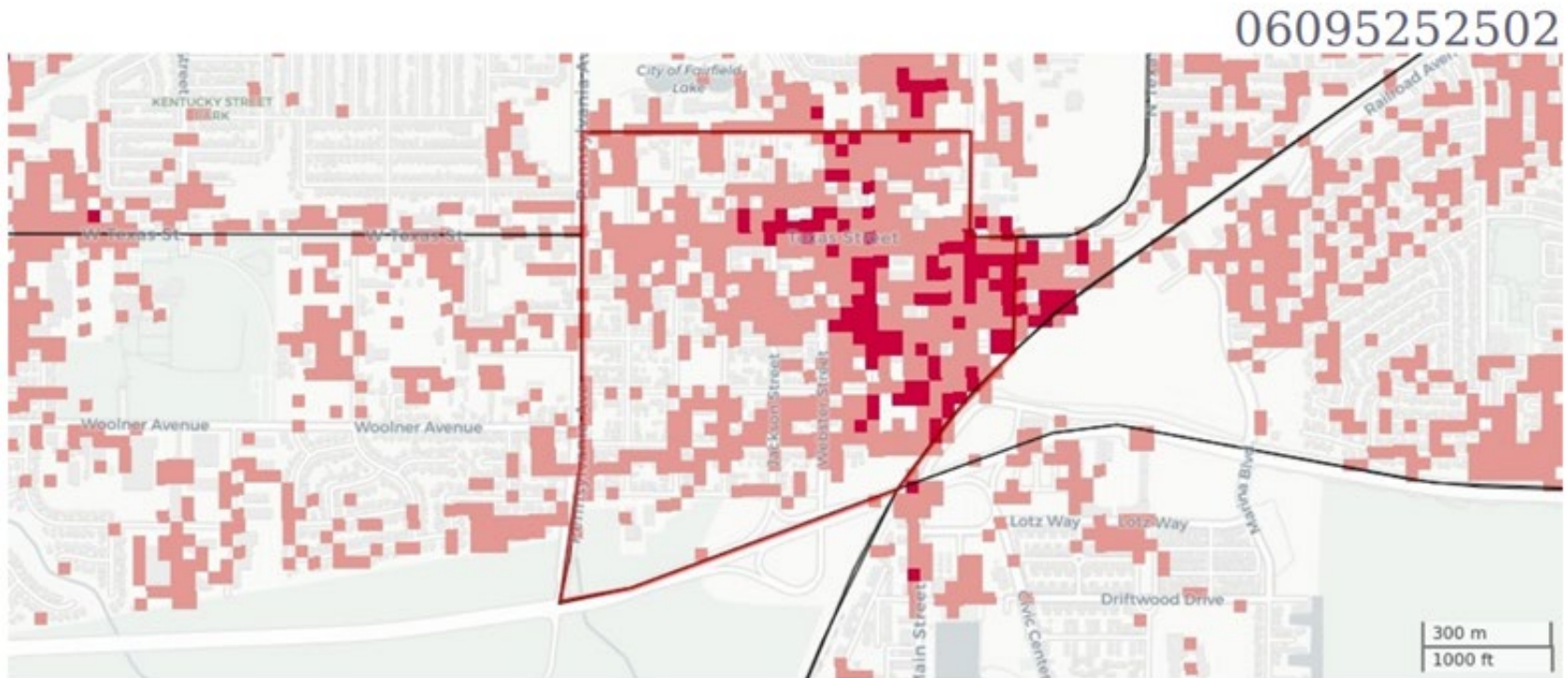**Evaluate neighborhood issues at the Census Tract level**

Example shown for Fairfield

Evaluate neighborhood issues across the county
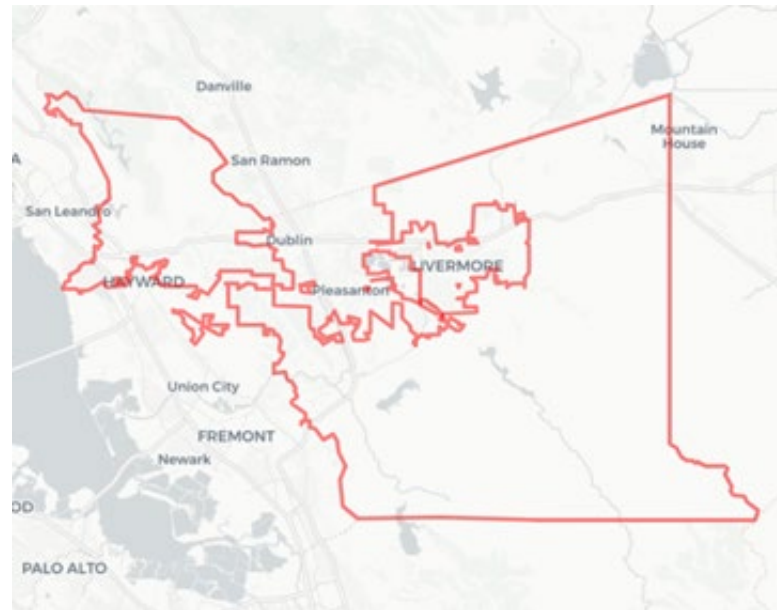
Unincorporated
Alameda County
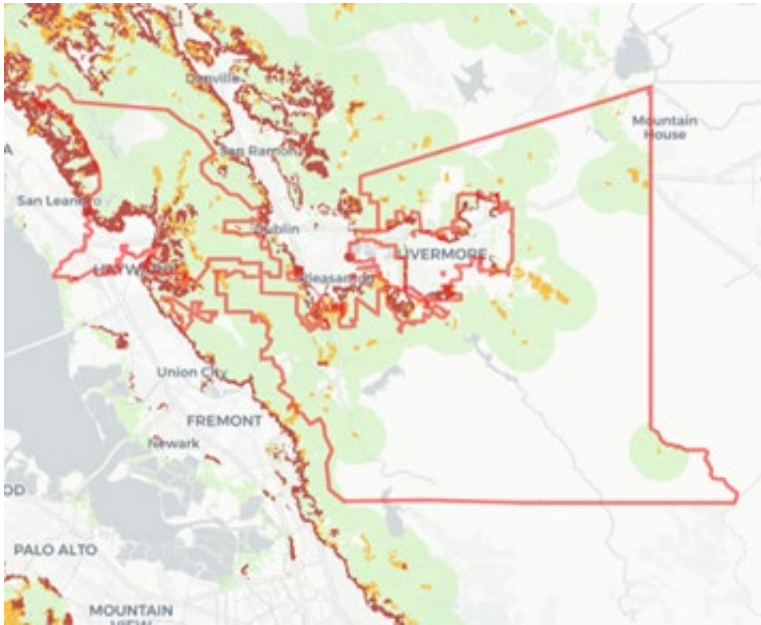
CASE STUDY: COUNTY UNINCORPORATED LAND

Evaluate neighborhood issues across the county:

Park-Poor Neighborhoods
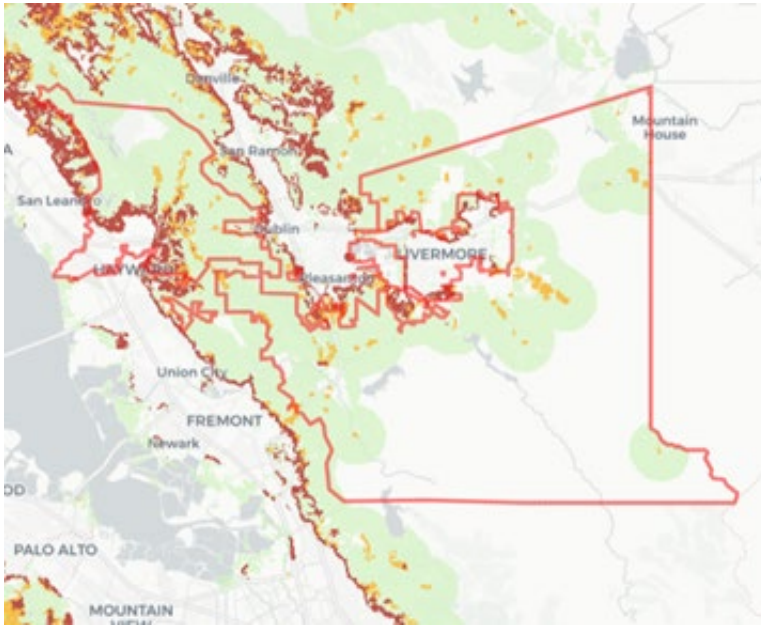
Disparities in Access

Park-Poor Neighborhoods

Your area contains **3,086 acres** of park-poor neighborhoods. This area may be more than 10-minute walk to the nearest park following local walkable routes, considering physical barriers such as highways, train tracks, and rivers without bridge. This ParkScore analysis performed by Trust for Public Land calculated the walkability to the nearest parks and also considered demographic priorities related to race/ethnicity, age, and income.

13% of which are in Equity Priority Areas or Disadvantaged Communities.

Unincorporated
Alameda County

CASE STUDY:
COUNTY UNINCORPORATED LAND

Evaluate neighborhood issues across the county:

Wildland-Urban Interface

Unincorporated
Alameda County

Disparities in Exposure

Wildland-Urban Interface

11,368 acres are in the wildland-urban interface (WUI). The wildland–urban interface is a zone of transition between wilderness and land developed by human activity. This area is where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. Human settlements in the WUI are at a greater risk of catastrophic wildfire.

7% of which are in Equity Priority Areas or Disadvantaged Communities.
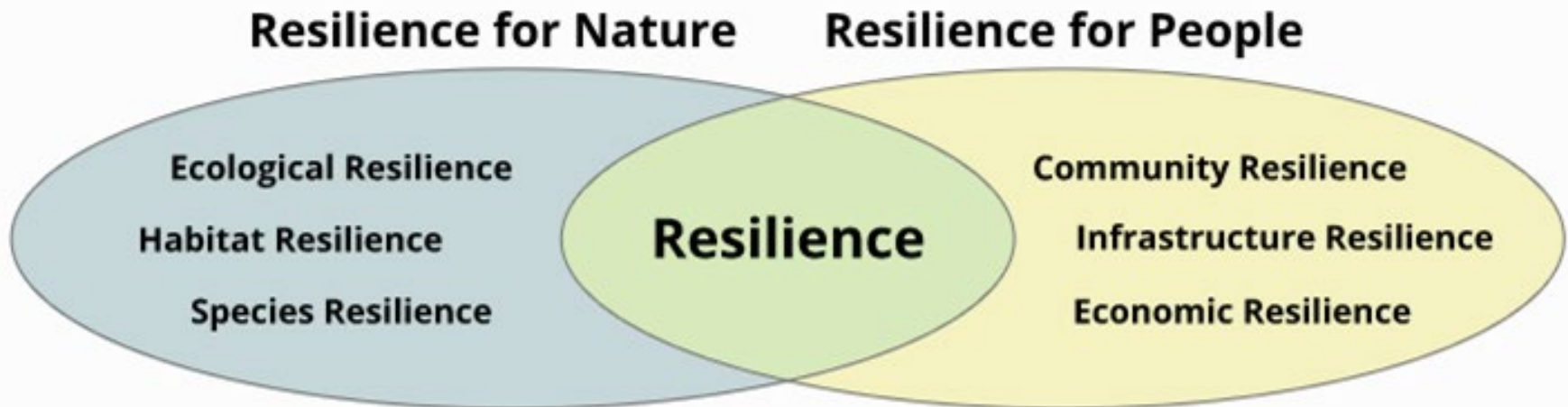
GREENPRINT'S RESILIENCE MODULE

Goal of the Resilience Module

- To support the planners, government agencies, organizations, consultants, and others working across the region to **build climate risk and resilience into projects, plans, and policies**.

- To **communicate climate risks** and **highlight nature's role as critical infrastructure** for climate mitigation, making communities and ecosystems more resilient to climate change.

- To **bring together climate resilience conversations** between biodiversity/ecosystems and people/communities

CLIMATE RESILIENCE

Climate Resilience
Systems that are **robust** enough to **persist** and **adapt** over the long run

Resilience for Nature   **Resilience for People**

Ecological Resilience   **Resilience**   Community Resilience

Habitat Resilience   Infrastructure Resilience

Species Resilience   Economic Resilience

RISK & RESILIENCE

Community Risk and Resilience

- Fire risk
- Sea-level rise
- Floods
- Heat Islands
- Air quality
- Water Supply

Food Production Risk and Resilience

- Food production

Ecological Risk and Resilience

- Prioritized Habitats
- Connectivity
- Species that require mitigation

Risk:	Resilience:
What are the risks to communities that are exacerbated by climate change? What are the risks to Resources due to climate change?	What nature-based solutions protect these communities or resources given a changing climate?

RESILIENCE MODULE SCREENSHOT

Climate Change

Carbon Storage

Risk

Heat-trapping gasses, especially carbon dioxide, released into our atmosphere are the leading cause of climate change. In addition to energy use, vehicle miles traveled and other emission sources from the built environment, disturbance of vegetation and soils release carbon into the atmosphere.

Annual average **extreme heat days** (over 85°F) in the Bay Area may increase by **15 to 40 more days per year** by 2050, and potentially 90 more days per year by 2100.

Nature-based Solution

Healthy habitats are one of our only tools to help fight climate change by capturing and storing carbon both in the trunks and stems of vegetation and belowground in the soil.

This area stores **5,589,043 metric tons of CO2 equivalent** in vegetation, soils, and street trees. Avoiding disturbance in this area would have greenhouse gas emissions reduction benefits equivalent to getting at least **2,829,182 passenger vehicles** driven for one year off of the road, or benefits equivalent to planting at least **342,410,354** seedlings and letting them grow for 10 years.

Community Risk and Resilience

Sea-level Rise

Risk from Sea-level Rise

Sea level rise and storm surges may increasingly inundate coastal areas.

2% of your area is within projected **sea-level rise inundation**.

Resilience

Natural lands in inundation zones can reduce the velocity and intensity of storm surges.

Within this area, **7,461 acres within the sea-level rise inundation area** have natural or semi-natural land cover.

Floods

Flood Risk

Climate change may increase the frequency and extent of potential inland floods.

16% of your area is within the **100-year floodplain**. **19%** of your area is within the **500-year floodplain**.

Resilience

Natural lands in inundation zones can reduce the velocity and intensity of flood events.

Within this area, **73,419 acres within the 500-year floodplain** have natural land use.

Fire Risk

Catastrophic Fire Risk

Extreme heat and dry conditions brought by climate change have exacerbated recent fires and complicated efforts to control them.

In your area of interest **172,735 acres are in high or very high fire hazard severity zones** and **30,477 acres have burned in wildfires** since 1950 and **353,029 acres are within the wildland-urban interface**.

Resilience

Greenbelts and resilience parks may provide a buffer for the wildland-urban interface, helping to reduce the destructive-ness of fires. Fuels management and controlled burns can help return fire to its historic regime.

Water Supply

Climate Risk

With potential decreases in water supply and increases in water demand as the region becomes hotter and drier, and droughts become more frequent, groundwater basins will be increasingly stressed.
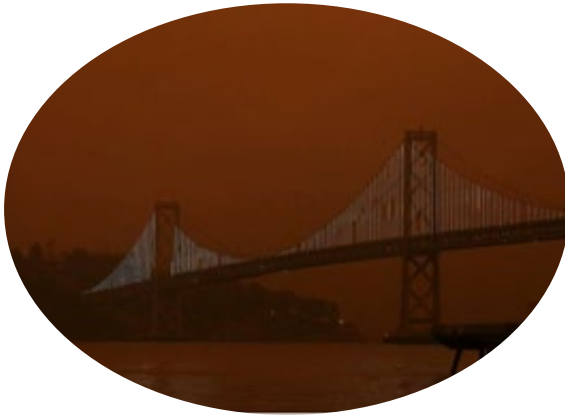
Resilience

Maintaining the infiltration potential of areas with soil and geologic conditions that are most suitable for direct aquifer recharge will become increasingly important in a changing climate.

AIR QUALITY

Climate Risk

In 2020, fires from within and beyond the Bay Area caused particulate matter in the Bay Area to exceed the national standard for 20 days.

Lea Suzuki / The Chronicle

Resilience

Vegetation helps filter pollutants and clean our air, supporting the health of Bay Area communities.

In your area, **124,955 grams per year of particulate matter** are sequestered by natural vegetation.

URBAN HEAT

Climate Risk

Heat islands contribute to higher temperatures in urban areas and can lead to heat-related illness and death.

In this area, **707 acres are considered urban heat islands** due to high temperatures, lack of canopy cover, and impervious surfaces.

Resilience

Tree canopy and open space can provide shade and cooling.

10 acres in this area are priorities for **street tree planting** and **2 acres** are in areas designated as high or very high park need.

WE WANT YOUR FEEDBACK

info@bayareagreenprint.org

BayAreaGreenprint.org

THANK YOU

In appreciation:

QUESTIONS?

Photo source: Middlefield Road mural in North Fair Oaks. Courtesy Anonymous Recipes