Oakland General Plan Update 2045

Safety Element Discussion Group 2

OAKLAND 2045 GENERAL PLAN

July 8, 2022

Agenda

- Timeline
- Climate Vulnerability
  - Climate Change Adaptation and Resilience
- Discussion
- Miro Activity
- Close

General Plan Background

EJ and Safety Element Timeline

SPRING 2022	SUMMER 2022	FALL 2022	WINTER 2022 AND SPRING 2023
LAYING THE GROUNDWORK	**CO-CREATION**	**REVIEW**	**REFINEMENT AND ADOPTION**
Collect and uplift known issues, key data, proposed solutions, goals and policies from current and past community-led planning initiatives and plans adopted by the City. **HEALTHY DEVELOPMENT GUIDELINES (2017)** **EAST OAKLAND NEIGHBORHOOD INITIATIVE (2019)** **WEST OAKLAND COMMUNITY ACTION PLAN (2019)** **2030 EQUITABLE CLIMATE ACTION PLAN (2020)**	**Review existing Safety goals/ policies: What is working well? Where are there gaps? Where is improvement needed?**	**Develop Draft Safety Goals, Objectives, Policies, and Programs** **Assess Impacts and Tradeoffs**	 **Public Draft Release in January 2023**
ONGOING GENERAL PLAN UPDATE ENGAGEMENT	**FOCUSED COMMUNITY ENGAGEMENT: FOCUS GROUPS, NEIGHBORHOOD WORKSHOPS, CULTURAL EVENTS, POP-UPS**		

Upcoming Community Engagement Events:

EJ Focus Group #2: Date TBD

All Community Events and Public Meetings:

oaklandca.gov/topics/meetings-and-events

Climate Vulnerability

SB 379 and Oakland

CITY OF OAKLAND
MEMORANDUM

DATE: **7.06.2022**
TO: **Rules & Legislation Committee**
ATTN: **City Administrator/Assistant City Administrator**
FROM: **Councilmember Dan Kalb**
PHONE NO.: **510-238-7001**
DEPT: **Oakland City Council**
SUBJECT: **REQUEST TO SCHEDULE AGENDA ITEM**

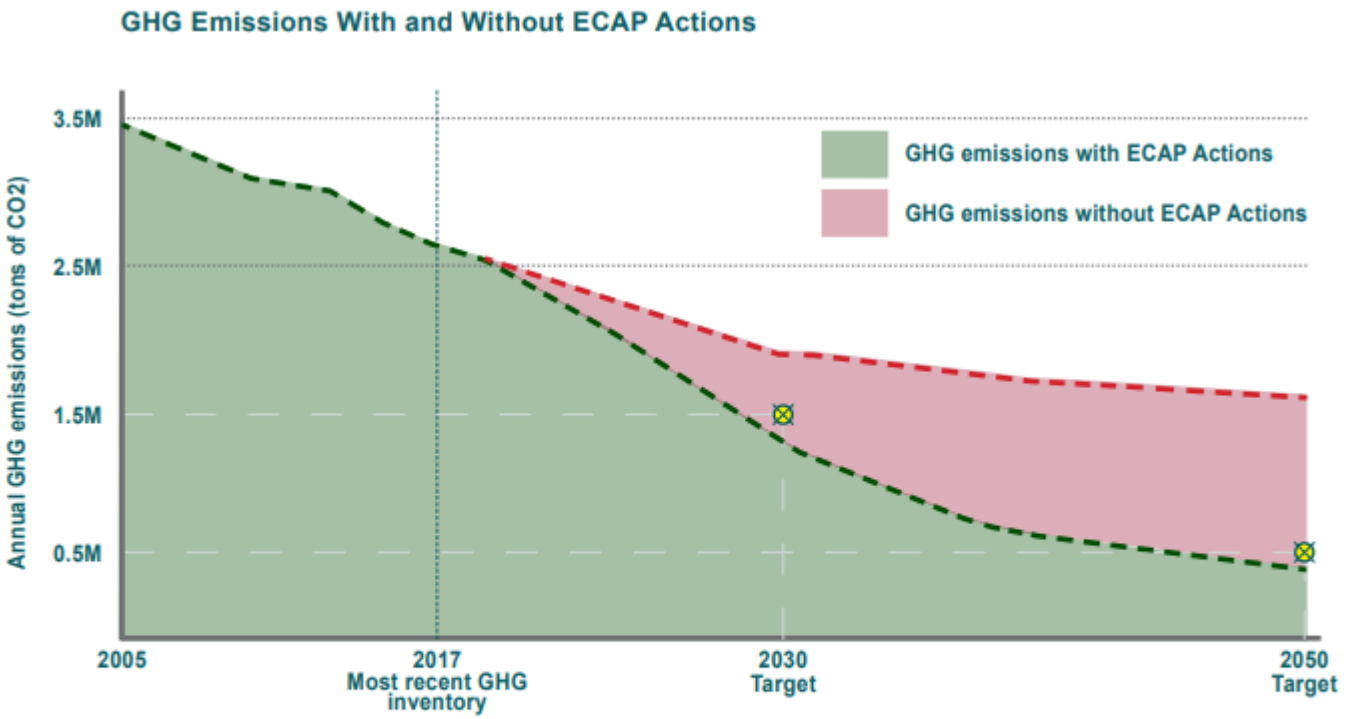
(Times New Roman, Size 12, Capitalize Each Word, Do Not Use Abbreviations)

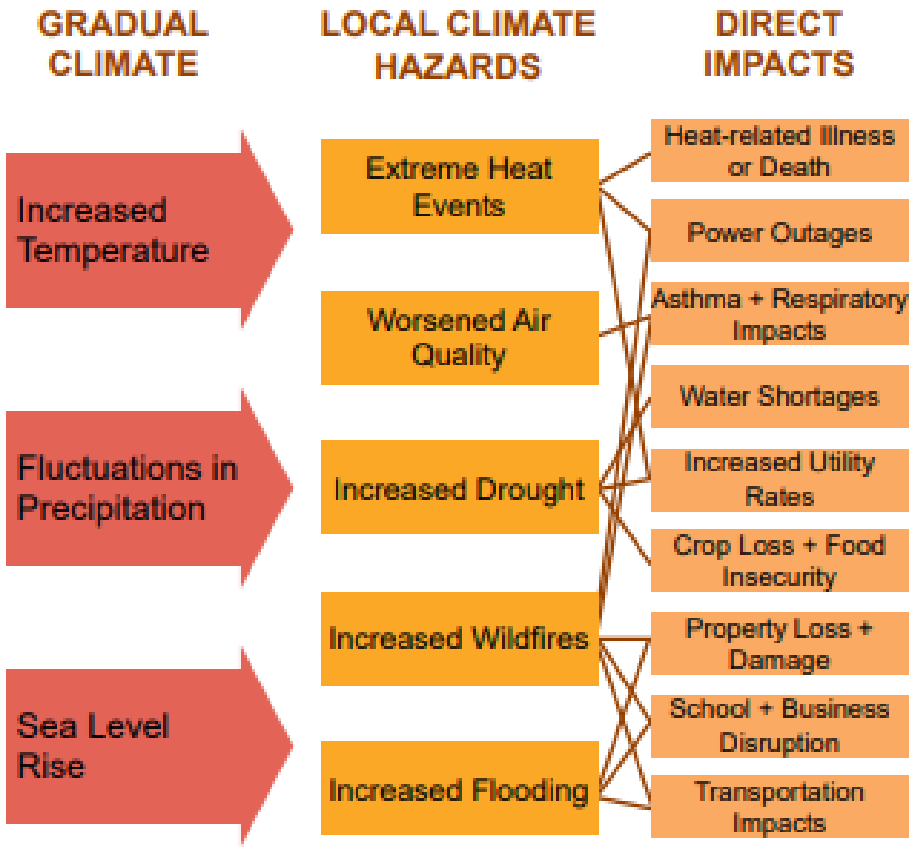
Subject (Short Title)**:** ADOPT A RESOLUTION INTEGRATING CLIMATE RESILIENCE AND MITIGATION INTO GENERAL PLAN ELEMENTS

Recommendation (Full Title)**:**

RESOLUTION (1) RECOGNIZING THAT CLIMATE CHANGE WILL DISPROPORTIONATELY IMPACT RESIDENTS OF OAKLAND WHO ARE LOWER INCOME, INDIGENOUS, AND OF COLOR AND (2) DIRECTING THE CITY ADMINISTRATOR TO ENGAGE IN AN EQUITABLE PROCESS FOR INTEGRETING CLIMATE RESILIENCE AND MITIGATION STRATEGIES AND POLICIES THROUGH THE GENERAL PLAN UPDATE PROCESS IN THE HOUSING, ENVIRONMENTAL JUSTICE, SAFETY AND LAND USE ELEMENTS OF THE GENERAL PLAN

GHG and Climate





The graph above makes it clear that additional action is needed. Analysis of the remaining emissions in 2030 and 2050 reveal that the most important factors to achieving Oakland's GHG targets will be:

- Changing land use policies and transportation patterns to reduce vehicle emissions
- Switching building energy systems from natural gas to electricity from clean sources
- Reducing solid waste emissions and building the local reuse economy

Climate Equity

The City of Oakland defines “climate equity” as inclusive of environmental justice and racial and economic equity.

Equitable climate actions reduce disparate harms from the effects of climate change by prioritizing frontline communities. They incorporate determinants of wellbeing and access to healthy living opportunities, such as clean air; good green jobs and supportive job pathways; reasonable costs of living and protection from displacement; improved public health and service access; and local resilience.

Climate Equity enables all people to thrive in an environment without toxic pollution or environmental degradation, and to take an active role in designing and implementing solutions. Because the impacts of climate change tend to affect frontline communities first and worst, “climate equity” inherently includes an end to the climate crisis.

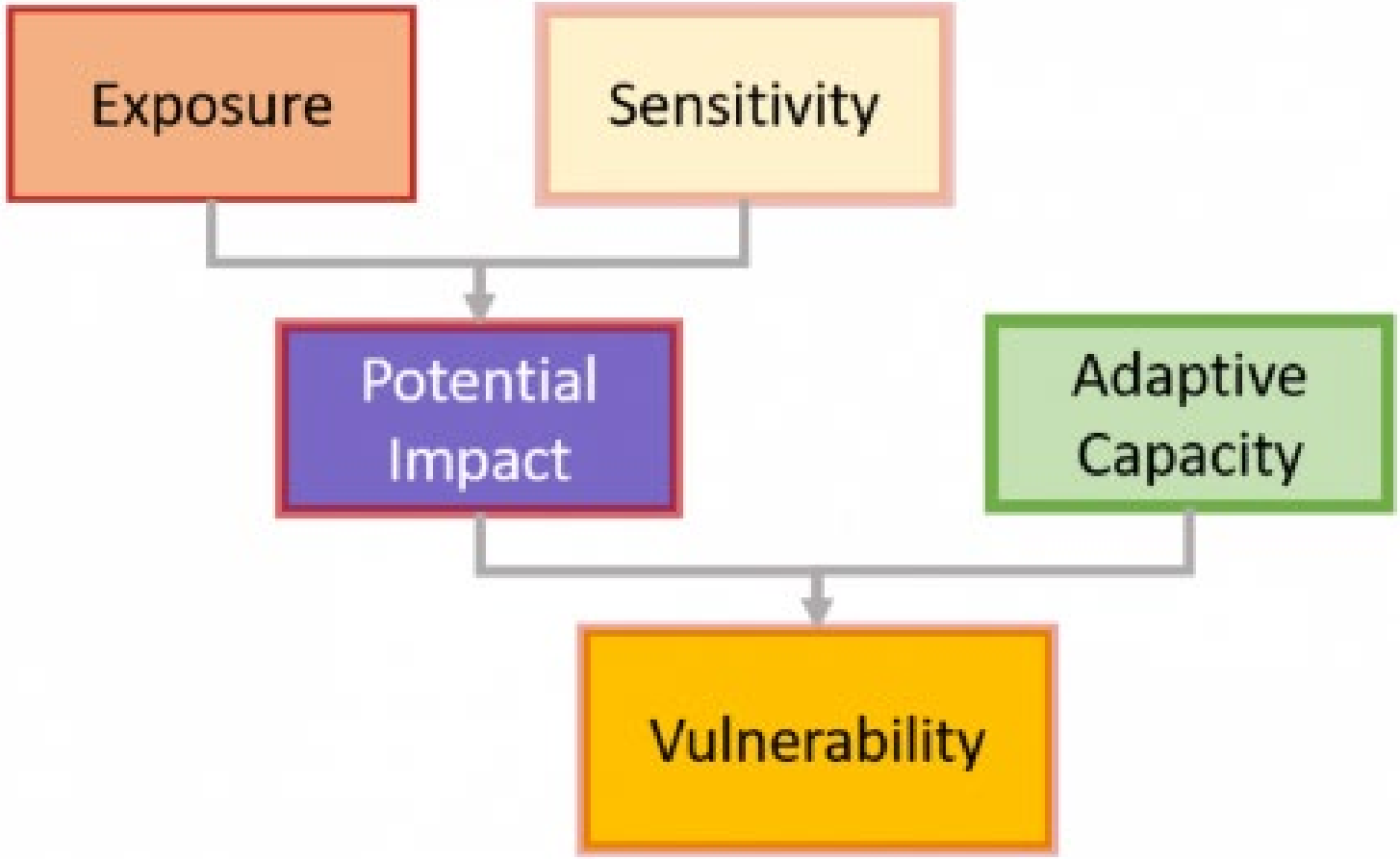
Health

Housing

Food

Jobs

Adaptive Capacity



Hazards and Safety Assessment: Initial Findings

Increased Temperatures

Primary Impact:	Secondary Impact:	Temporal Extent:	Spatial Extent:	Permanence:	Level of Disruption:	Level of Uncertainty:
Increased temperatures	Heat waves and infrastructure damage; Urban heat islands; Warm nights; Increased incidence of heat-related illness; Food insecurity	Effects will be most extreme in August and September, but may be felt anytime between May and October	Effects will be felt throughout the City, but will be most extreme in and around urban islands	The most extreme of effects will be seasonal, but average ambient temperatures will increase steadily over the course of the century	Possible disruptions include strains to energy infrastructure, increased risk of blackouts, and heat-related illness	Low

Extreme Heat Days

SELECT CLIMATE INDICATOR: Extreme Heat Days

Number of days in a year when daily maximum temperature is above a threshold temperature of **88.2 °F**

Note: Threshold temperature used in this tool is location specific. It is defined as the 98th percentile value of historical daily maximum/minimum temperatures (from 1961–1990, between April and October) observed at a location.

Observed (1961-1990) 30yr Average: 4 days

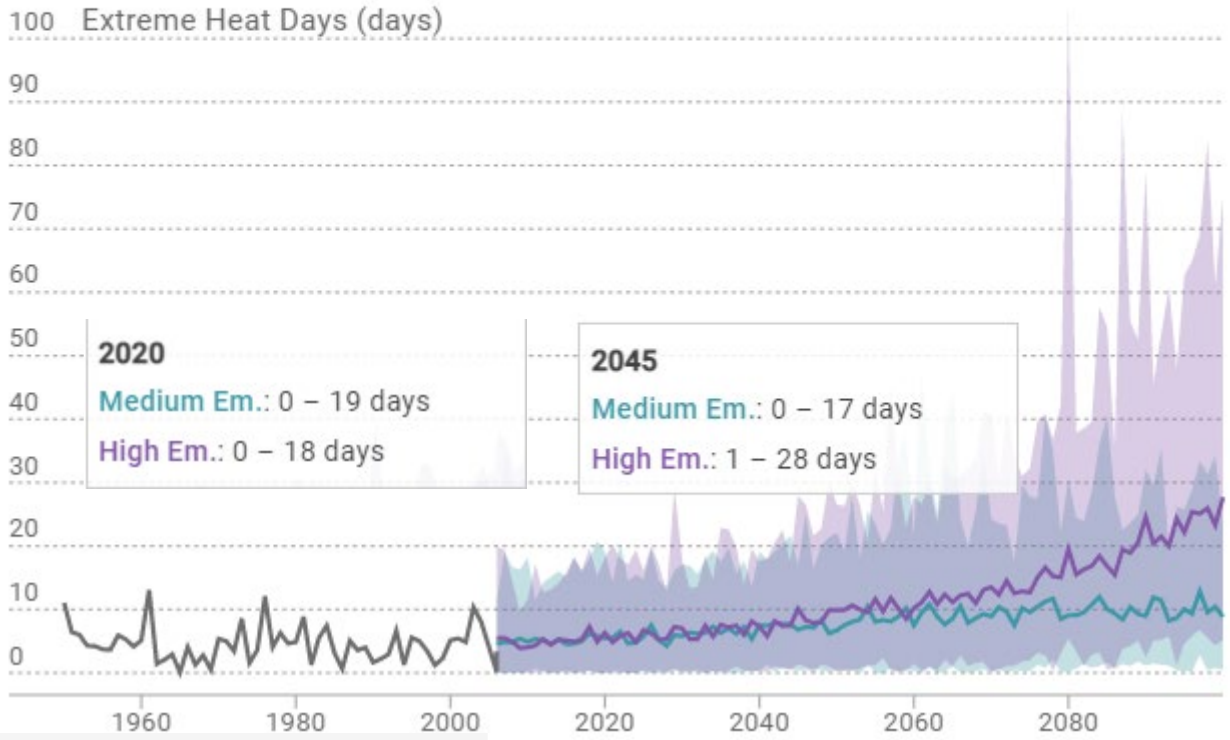
	Change from baseline	30yr Average	30yr Range
Baseline (1961-1990)			
MODELED HISTORICAL	-	3 days	1 - 5 days
Mid-Century (2035-2064)			
MEDIUM EMISSIONS (RCP 4.5)	+5 days	8 days	4 - 13 days
HIGH EMISSIONS (RCP 8.5)	+6 days	9 days	5 - 15 days
End-Century (2070-2099)			
MEDIUM EMISSIONS (RCP 4.5)	+7 days	10 days	6 - 18 days
HIGH EMISSIONS (RCP 8.5)	+15 days	18 days	10 - 40 days

Table 13-2. Sample of Past Extreme Heat Events in the Planning Area -1970 to 2020

Dates	Event Type	Losses/Impacts
09/07/2020	Excessive Heat	Numerous high temperature records were broken. Temperatures breached 110 degrees across the interior with 90s along the coast. Offshore winds increased flaring up some of the wildfires that had been ignited during August's lightning storm. These winds also enabled smoke from various wildfires across the state to blanket much of the Bay Area.
08/14/2020	Excessive Heat	A prolonged heat wave swept the Central Coast and Bay Area for almost a week with widespread record-breaking temperatures. Multiple days of triple digit afternoon highs were recorded inland with some coastal locations reaching the mid-90s.
06/10/2019	Excessive Heat	Multiple daily records were broken and multiple power outages were reported due to the heat. More than 50,000 people across the region lost power. One man died as a direct result of heat related illness and two others drowned while attempting to cool down. Hot temperatures and dry grass resulted in a vegetation fire that spread to a residence.

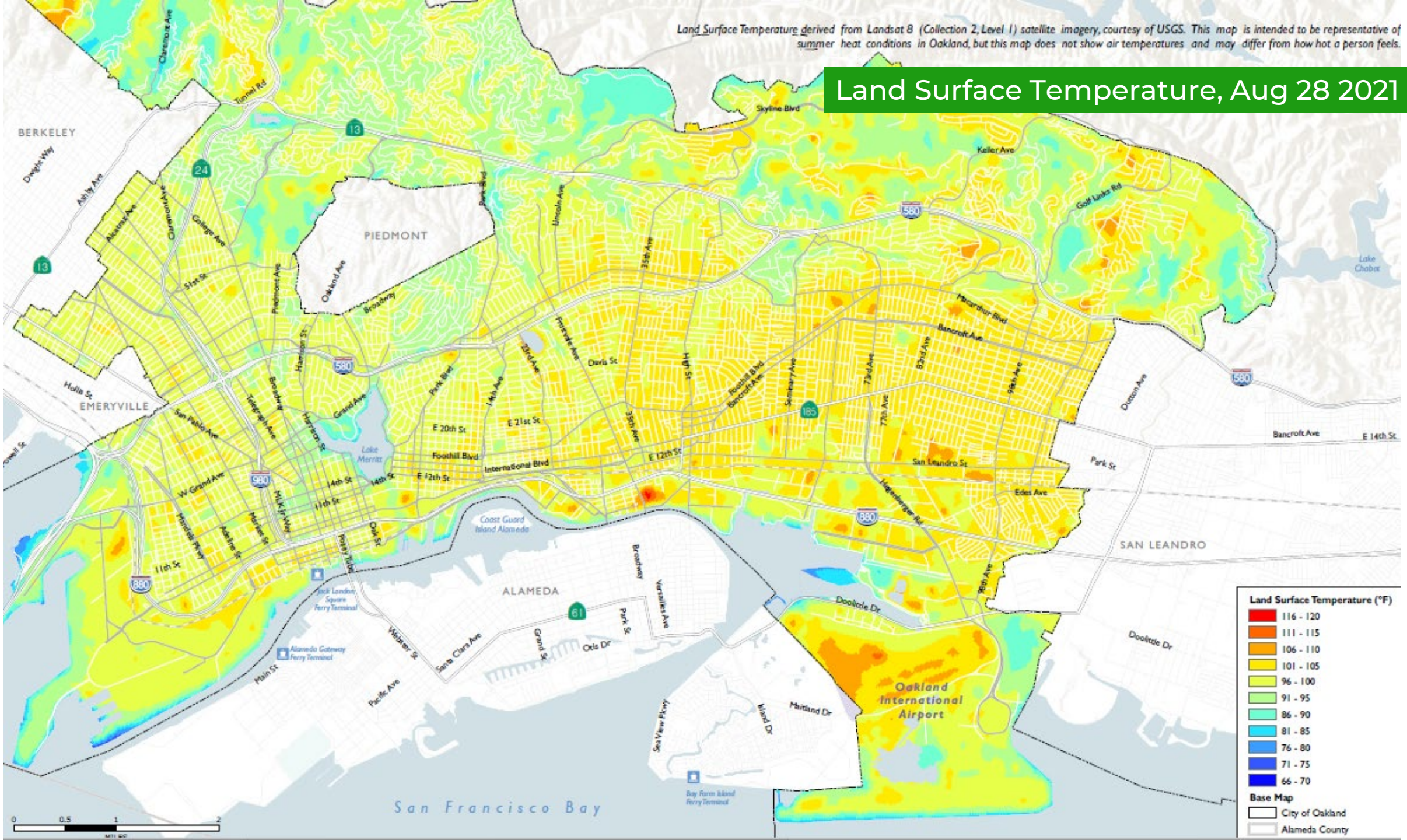
OBSERVED | MEDIUM EMISSIONS (RCP 4.5) | HIGH EMISSIONS (RCP 8.5)

MODELED HISTORICAL

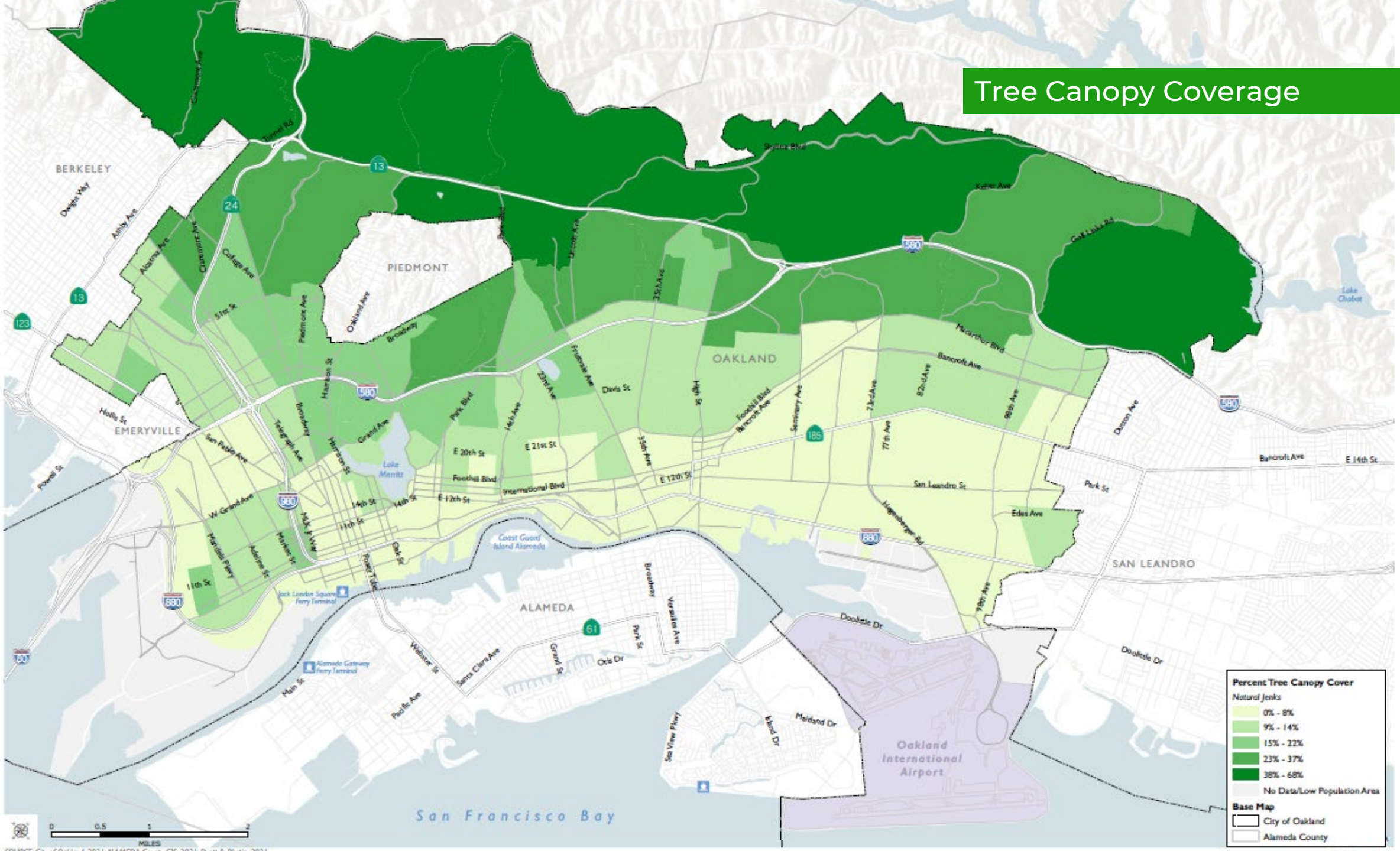


This visualization shows the most likely outcome (—, —) and range (▭, ▭) of future projections of Extreme Heat Days.

Land Surface Temperature, Aug 28 2021



Tree Canopy Coverage



ECAP REIA: Heat

Frontline Communities	Equity Gaps	Address Equity Gaps	Desired Equity Outcomes
✓ Residents in census tracts with the lowest tree canopy cover, who are most impacted by air pollution and the urban heat island effect ✓ African Americans ✓ Flatlands residents ✓ Low-income renters in low-tree canopy coverage neighborhoods prioritized for tree planting	✓ African Americans are most vulnerable to extreme heat ✓ Prioritize people of color owned tree planting and maintenance organizations and businesses for contracts to plant and care for urban forest ✓ Renters in Priority Conservation Areas being prioritized for tree planting and urban greening are vulnerable to gentrification and displacement with rising real estate expenses.	✓ Prioritize tree planting in neighborhoods with lowest tree canopy coverage ✓ Create or promote opportunities for local green jobs paying living wages, cooperative ownership and wealth building opportunities, for concrete cuts, tree planting, and maintenance. ✓ Prioritize establishing resilience hubs, providing resilience resources, and partnerships with community groups in majority POC neighborhoods/census tracts first.	✓ African Americans are as likely as whites to live in neighborhoods with healthy levels of tree canopy coverage. ✓ Majority POC census tracts are not disproportionately impacted by displacement due to increased real estate values resulting from urban greening and forestry. ✓ Majority POC communities have an equal or greater amount of Resilience Hubs and access to resilience resources as majority white communities. ✓ Low income POC are not disproportionately left behind or placed in danger during natural / climate disasters
✓ Low-income elders ✓ People with disabilities or mobility challenges ✓ People who are medically dependent on electricity (people with disabilities, chronic illnesses, etc.) ✓ Transit-dependent individuals ✓ Non-English speakers / Limited English Proficient communities	✓ Low-income elders, people with mobility challenges, medically dependent people with disabilities and people with chronic illness who rely on power are more likely be harmed during a wildfire and/or utility power shutoff. ✓ Low income residents have less access to solar+storage for resilience during power outages and for financial benefits for community-owned solar. ✓ In the event that public transit cannot run, transit-dependent individuals may be unable to travel to a resilience hub.	✓ Partner with community organizations like Disability Justice Culture Club who have established rapid response mutual aid networks ✓ Partner with local solar cooperatives and enterprises that enable community ownership of solar and storage facilities. ✓ Utilize City's ZEV fleet or partnerships with rideshare companies to supplement public transit in inaccessible areas ✓ Partner with organizations led by and serving Non-English speakers / Limited English Proficient communities for emergency updates	✓ Reverse disparities in deaths during extreme weather events. ✓ All Oaklanders have ample and equal access to resilience hubs or resources.

Wildfires

Primary Impact:	Secondary Impact:	Temporal Extent:	Spatial Extent:	Permanence:	Level of Disruption:	Level of Uncertainty:
Wildfires	Declines in air quality; Soil and water quality impacts; Infrastructure damage; Higher demand for firefighting services	Wildfire extent, severity, and frequency is projected to exhibit high levels of variability, but on average will increase	The entire Oakland Hills is designated as a Very High FHSZ and wildfire smoke will affect the entire city	Average wildfire intensity is expected to gradually increase over time, with significant year-to-year variability	The Oakland Hills are highly susceptible to wildfires and air pollution from wildfire smoke will impact the entire City	Moderate

Wildfires

SELECT CLIMATE INDICATOR: KBDI > 600

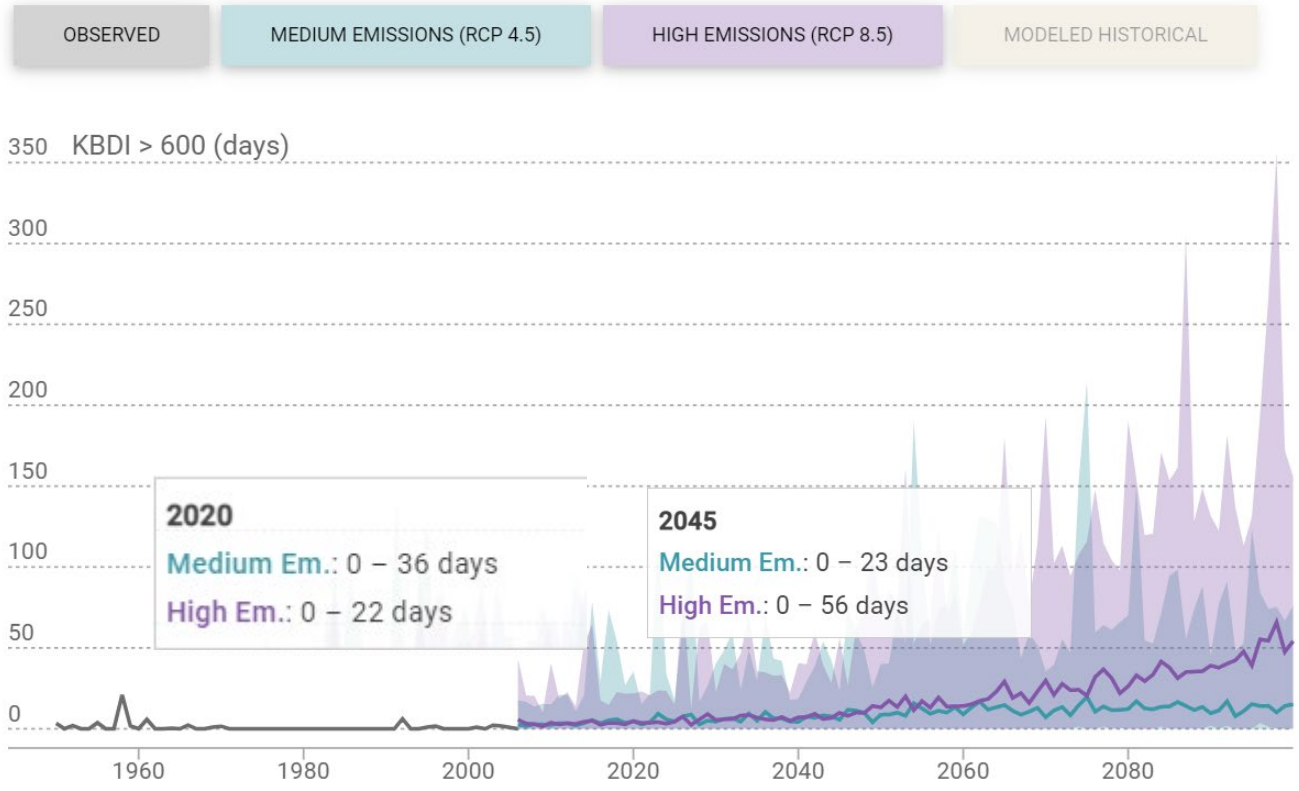
Number of days in a year where Keetch-Byram Drought Index (KBDI) > 600. KBDI provides an estimate for how dry the soil and vegetative detritus is.

KBDI is cumulative. The KBDI values increase on dry and warm days and decrease during rainy periods. In California we would expect KBDI to increase from the end of the wet season (spring) into the dry season (summer & fall). The list below explains what values of KBDI represent:

0–200	Soil moisture and fuel moistures are high, low wildfire risk.
200–400	Soil and fuels start to dry, average wildfire risk.
400–600	Onset of drought with moderate to serious wildfire risk.
600–800	Severe drought, extreme wildfire risk and increased wildfire occurrence.

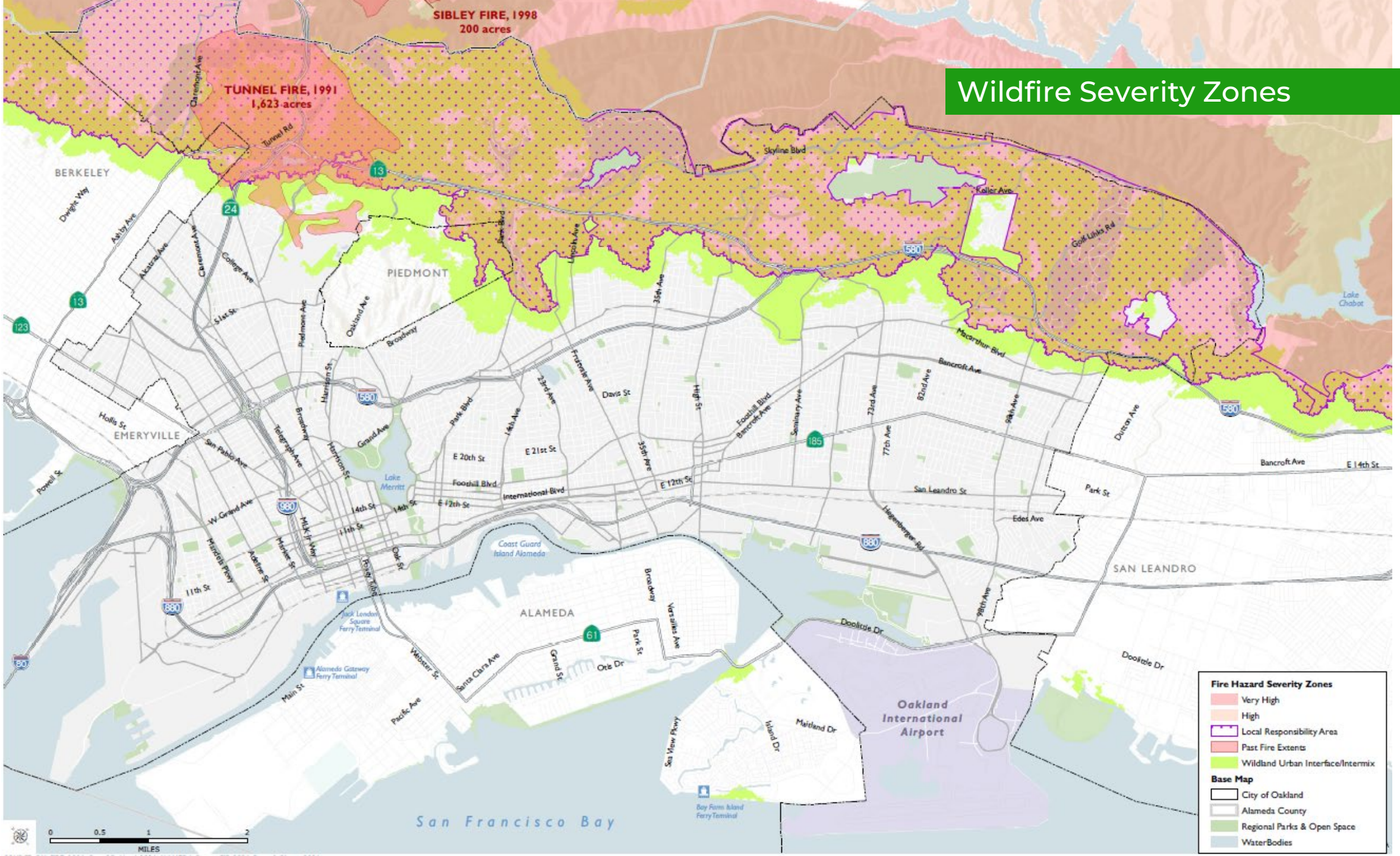
Observed (1961-1990) 30yr Average: 0 days

	Change from baseline ⓘ	30yr Average	30yr Range
Baseline (1961-1990)			
MODELED HISTORICAL	-	1 days	0 - 7 days
Mid-Century (2035-2064)			
MEDIUM EMISSIONS (RCP 4.5)	+8 days	9 days	1 - 29 days
HIGH EMISSIONS (RCP 8.5)	+11 days	12 days	2 - 34 days
End-Century (2070-2099)			
MEDIUM EMISSIONS (RCP 4.5)	+12 days	13 days	2 - 34 days
HIGH EMISSIONS (RCP 8.5)	+35 days	36 days	9 - 102 days



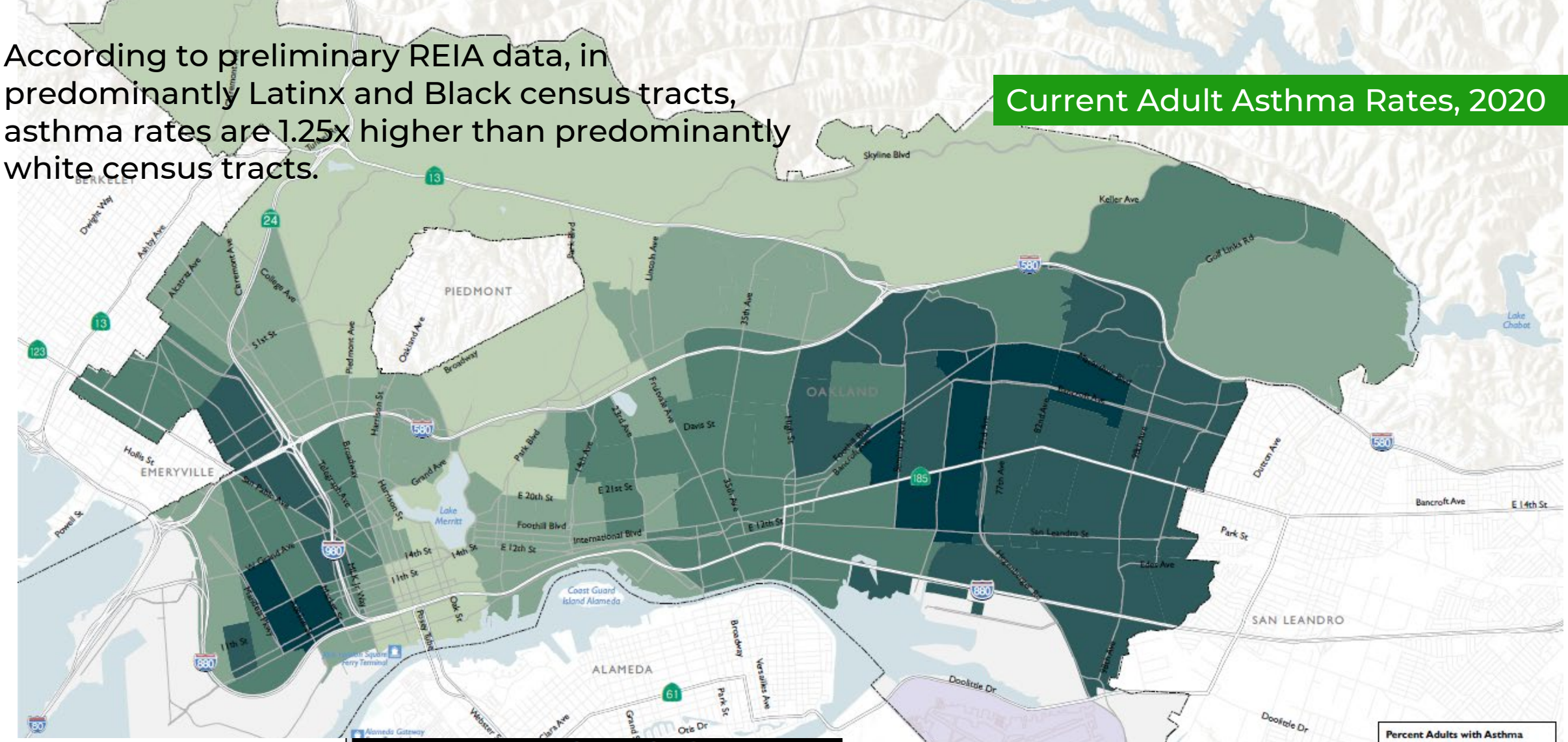
This visualization shows the most likely outcome (—, —) and range (▭, ▭) of future projections of KBDI > 600.

Wildfire Severity Zones



According to preliminary REIA data, in predominantly Latinx and Black census tracts, asthma rates are 1.25x higher than predominantly white census tracts.

Current Adult Asthma Rates, 2020



Indicator	Average Score by Racial Plurality of Census Tract				
	Latinx	White	Black	Asian	Oakland
Adult Asthma Percentage of adults (18 years +) with current asthma	10.91	8.72	10.87	9.19	9.77

ECAP REIA: Wildfire

Frontline Communities	Equity Gaps	Address Equity Gaps	Desired Equity Outcomes
✓ Residents of urban-wildland interface in Oakland hill neighborhoods (D1, D4, D6, D7) ✓ Homeowners in Oakland hills without fire insurance ✓ Renters in Oakland hills ✓ Elderly, people with disabilities, and people with mobility challenges in Oakland hills ✓ Transit dependent people in Oakland hills	✓ Oakland hills neighborhoods are at greatest direct risk of wildfires. ✓ Low-income homeowners and renters may not be able to pay to maintain defensible space and implement even low-cost fire prevention measures. ✓ Elderly people, people with disabilities, people with mobility challenges, and transit-dependent people are less likely to be able to escape in time in the event of a wildfire.	✓ Prioritize Oakland hill neighborhoods for fire-prevention measures, starting with low-income homeowners, homeowners without fire insurance and renters. ✓ Implement progressive public funding measures to pay for wildfire prevention measures ✓ Implement community-driven wildfire disaster preparedness plans at the neighborhood level	✓ People of color, particularly African Americans, are as likely as whites to access and participate in creating and benefiting from fire-prevention measures and wildfire disaster preparedness plans
✓ People with asthma and other respiratory illnesses ✓ Residents of flatland communities already disproportionately impacted by air pollution	✓ Communities in flatland neighborhoods already bear the brunt of disproportionately toxic air quality, which is exacerbated by wildfires	✓ Prepare small-scale Resilience Hubs with N95 masks, low-cost DIY air filtration systems, and multilingual climate disaster warning systems in flatlands neighborhoods. ✓ Partner with OUSD to install the latest air filtration technology in flatlands neighborhoods schools.	✓ Residents in flatlands neighborhoods are as prepared to deal with the impacts of wildfires as residents in the hills ✓ People with asthma and other respiratory illnesses are equipped with N95 masks and low-cost DIY air filtration systems.

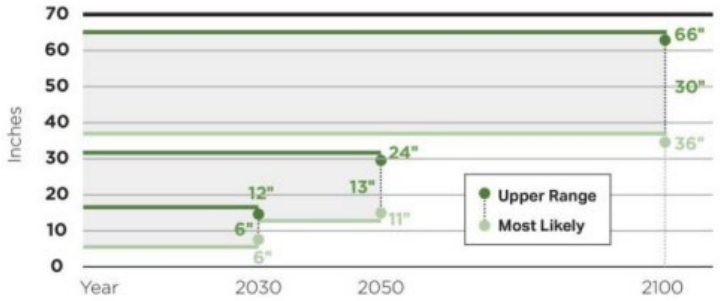
Sea Level Rise & Flooding

Primary Impact:	Secondary Impact:	Temporal Extent:	Spatial Extent:	Permanence:	Level of Disruption:	Level of Uncertainty:
Sea Level Rise & Flooding	Flooding ecosystem impacts; infrastructure damage; drinking water contamination	Sea level rise is projected to occur gradually over the course of the century	Coastal and lowland areas are projected to experience periodic coastal and/or urban flooding	High	Effects may be more severe when coinciding with urban flooding	Low

Sea Level Rise

Name of Study, Date, Lead	SLR Scenarios
Adapting to Rising Tides Transportation Vulnerability and Risk Assessment (2011); BCDC, MTC, Caltrans	16, 55 inches
Adapting to Rising Tides Alameda County Pilot Project (2012); BCDC	16, 55 inches
Community-Based Adaptation Planning: Case Study of Oakland, CA (2012); Pacific Institute, OCAC	1.0, 1.5 meters (39.4, 59 inches)
BART Climate Change Adaptation Assessment Pilot Study (2013)	16, 55 inches
Climate Change and Extreme Weather Adaptation Options for Transportation Assets (2014) BCDC, MTC, BART, Caltrans	12, 24, 36, 48, 72, 96 inches
Adapting to Rising Tides Alameda County Shoreline Vulnerability Assessment (2015); BCDC, ACFCD	12, 24, 36, 48, 72, 96 inches
Stronger Housing, Safer Communities (2015) ABAG, BCDC	24, 36, 48 inches + seismic
Bayland Ecosystems Habitat Goals, 2015 Update	20.5, 65 inches
Oakland Local Hazard Mitigation Plan (2016) City of Oakland	48 inches
Oakland/Alameda Resilience Study (2016) BCDC	12, 24, 36, 48, 72, 96 inches + seismic

Figure 1 Sea Level Rise Projections for Oakland Relative to the Year 2000



Source: NRC (2012) Lower range projections are excluded as they are not recommended for planning purposes.

Indicator	Average Score by Racial Plurality of Census Tract				
	Latinx	White	Black	Asian	Oakland
Sea Level Rise Percent of population living in 100-year flood zone and 66 inches of sea level rise.	0.06	0.06	0.09	0.06	0.06

According to preliminary REIA data, predominantly Black census tracts have a 1.5x higher percentage living in a 100-year flood zone and 66" of sea level rise than the rest of the entire city.

Figure 4: MHHW* + 48 Inches and 72 Inches of Sea Level Rise

*MHHW - Mean Higher High Water is calculated as the average of the higher of the two daily tides over a 19 year tidal epoch.
Disclaimer: These maps are intended as planning-level tools to illustrate the potential for coastal flooding as sea levels rise and do not represent the exact location depth of flooding. The maps are based on model outputs and do not account for all the complex and dynamic Bay processes or future conditions.
Data Sources: BCDC, Alameda County Flood Control, Pacific Institute, TANA

ECAP REIA: Sea Level Rise and Flooding

Frontline Communities	Equity Gaps	Address Equity Gaps	Desired Equity Outcomes
✓Undocumented residents ✓ Unhoused residents ✓ Low-income renters ✓ Low-income homeowners	✓ Undocumented and unhoused residents are less likely to engage the City, or feel safe cooperating with the City ✓ SLR predominantly impacts communities that may not have flood insurance. ✓ SLR may cause toxic groundwater intrusion in low-lying areas and mobilization of contaminants from wastewater and legacy soil pollution. ✓ Flooding from SLR predominantly impacts low-income communities of color in Oakland's flatlands neighborhoods.	✓ Comprehensive Adaptation Plan must include community-driven strategies that protect unhoused and undocumented residents ✓ Address sea level rise with an eye to understanding the impacts of legacy groundwater threats. ✓ Address SLR with an eye to understanding the disproportionate impacts on flatlands residents near the shoreline.	✓ Undocumented and unhoused residents, particularly African American residents, are treated with the same dignity and respect as housed White residents ✓ Sea level rise and groundwater intrusion does not disproportionately impact low-income communities of color.
✓ Renters in Oakland flatland neighborhoods adjacent to creeks with potential for flooding, without flood insurance ✓ Homeowners and renters near Oakland shoreline, vulnerable to sea level rise. ✓ People adjacent to underground sites of toxic groundwater pollution, vulnerable to air and water pollution from groundwater intrusion due to sea level rise.	✓ Communities in flatland neighborhoods adjacent to toxic groundwater sites have no way to protect themselves from groundwater intrusion mixing, and accompanying undetectable air and water pollution. ✓ Low-income homeowners and renters lacking flood insurance have no way to recoup or pay for damages from flooding of creeks or sea Level Rise. ✓ People living near underground sites of toxic groundwater pollution suffer health impacts resulting from exposure to air and water pollution	✓ Partner with outside agencies and community-based environmental justice and health organizations to monitor, test, and remediate toxic sites vulnerable to groundwater intrusion due to sea level rise. ✓ Consider strategies for increasing access to flood insurance.	✓ Residents in flatlands neighborhoods are as prepared to deal with the impacts of wildfires as residents in the hills ✓ People with asthma and other respiratory illnesses are equipped with N95 masks and low-cost DIY air filtration systems.

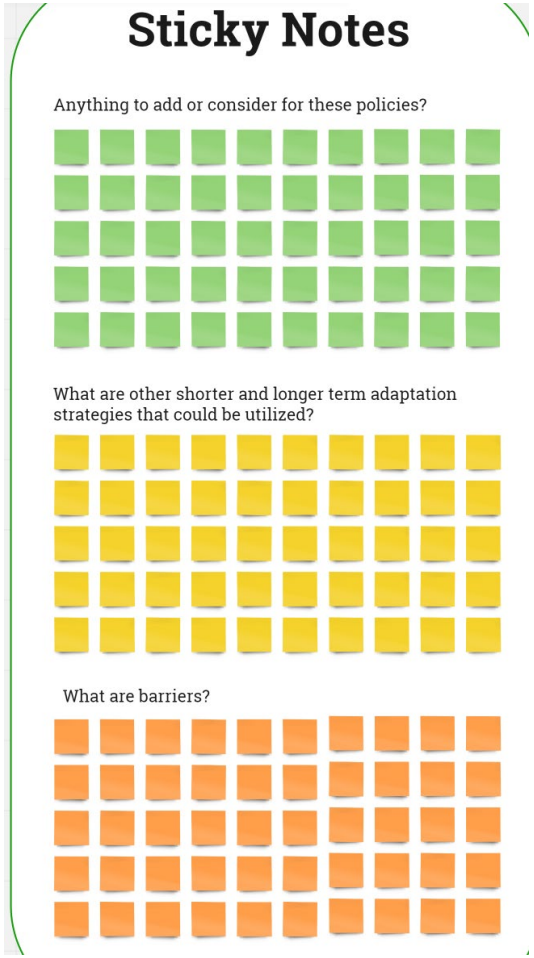
Discussion

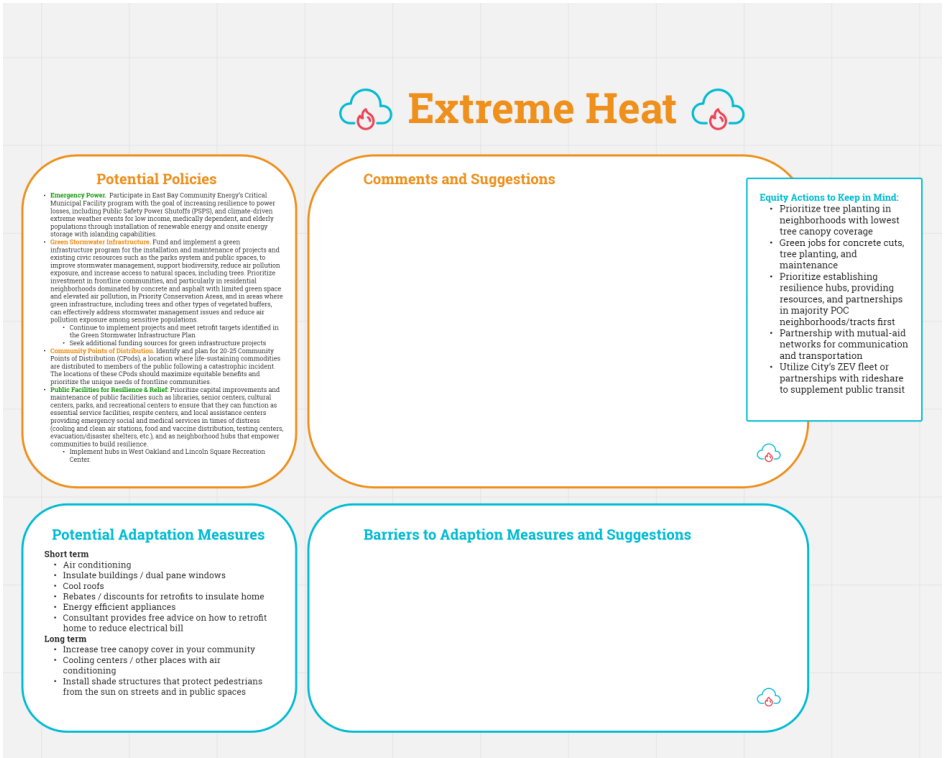
Discussion

- How do groups you work with in Oakland currently experience, manage, and adapt to climate hazards?
- What key actions are needed to prepare for, mitigate, and recover from the potential impacts of natural disasters and climate change?
- Which policies, regulations, and data analysis systems can support decision-making (to the year 2045 and beyond) around how land use, building, and zoning can advance Oakland's long-term sustainability, climate resilience, housing, and job growth?
  - **How should this General Plan address various projections for climate change acceleration (e.g., sea level rise)?**

Miro Activity

- What should be added/what are other considerations for some of the policy suggestions?
- What are other shorter and longer term adaptation strategies that could be utilized?
- What are barriers to implementing these adaptation strategies? What are other equity considerations?





Next Steps

- How would you like to be engaged in policy development and review moving forward?
- Continue adding your thoughts on the Miro: https://miro.com/app/board/uXjVOnMLdFw=/
- Complete the Oakland Visioning Survey to let us know what issues you care about, and what the priorities for Oakland's future should be. The survey will remain open until July 11, 2022.
- Attend a cultural event or visit us at a pop-up!
  - All Community Events and Public Meetings: **oaklandca.gov/topics/meetings-and-events**

OAKLAND 2045
GENERAL PLAN

Visit the general Plan Update website for more information and to sign-up for regular updates:

www.oaklandca.gov/topics/general-plan-update