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Annual Sustainability Report

CITY AND COUNTY OF HONOLULU



The 2023 Annual Sustainability Report tracks the City and County of Honolulu’s 2022 performance in meeting its established sustainability, climate change, and resilience objectives and targets. The data in this report is primarily tracked by calendar year (January 1-December 31), however, some are reported by the City fiscal year (FY, July 1-June 30), and are noted accordingly.

“Equity Indicators” throughout this report highlight further perspectives for consideration when evaluating traditional performance measures. These data sets allow us to better understand inclusion and impact in reaching our sustainability goals, and support more informed decision-making.



In February of 2022, the City unveiled ten new electric buses and nine charging stations at the Kalihi-Pālana Bus Facility. Pictured here: Allyn Lee (DDC), Robert Yu (OTS), Nicola Hedge (CCSR), Jon Nouchi (DTS), Mayor Rick Blangiardi, Councilmember Radiant Cordero, Roger Morton (DTS). (Credit: Hawai‘i Energy)

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Sustainable City Operations

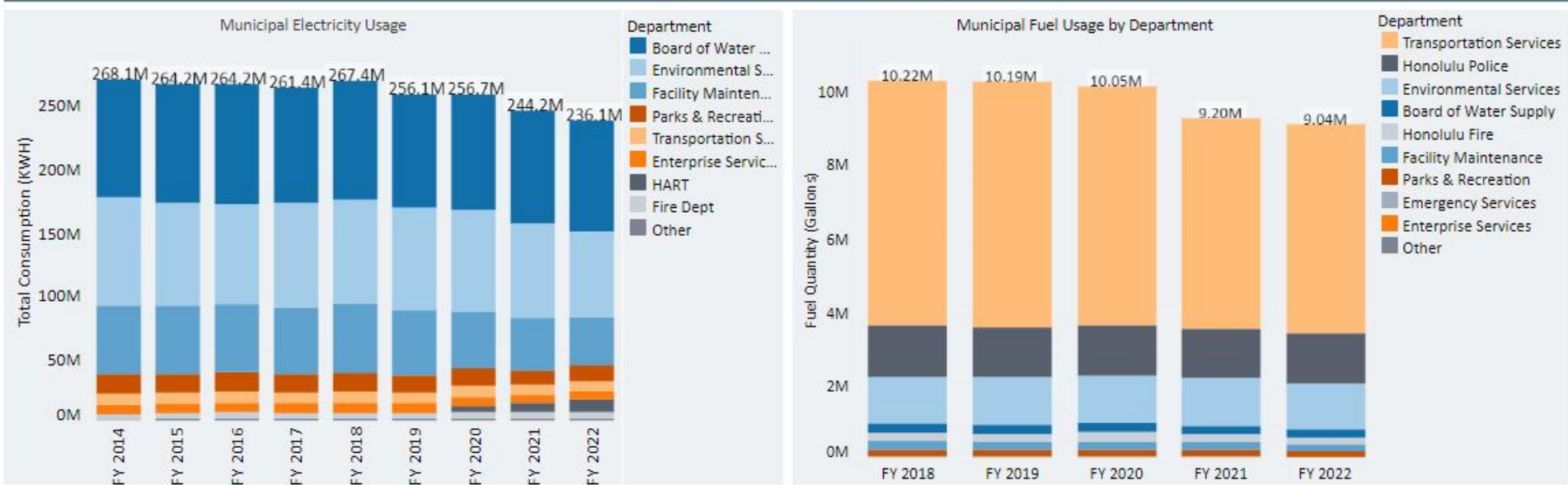
OBJECTIVE: Integrate sustainable and environmental values into City plans, programs and policies to improve environmental performance of City operations and advance sustainability and resilience priorities (Revised Charter of Honolulu Section 6-107).

The City's electricity consumption was down 3.3% in Fiscal Year 2022, a notable decrease from the prior year. Contributing to this reduction is a [City-wide Energy Savings Performance Contract \(ESPC\)](#), which began in 2020, and continues to bring significant energy, water and cost savings for City buildings and operations. The project includes many energy efficiency retrofits already installed, with over 400 kW of new solar photovoltaic (PV) systems brought online in 2022 across 12 facilities, and over 500 kW more PV in the pipeline for 2023. The [Department of Parks and Recreation ESPC](#) also launched in 2022 and is projected to provide \$97 million in energy savings over 20 years while improving park experience and benefiting the environment.

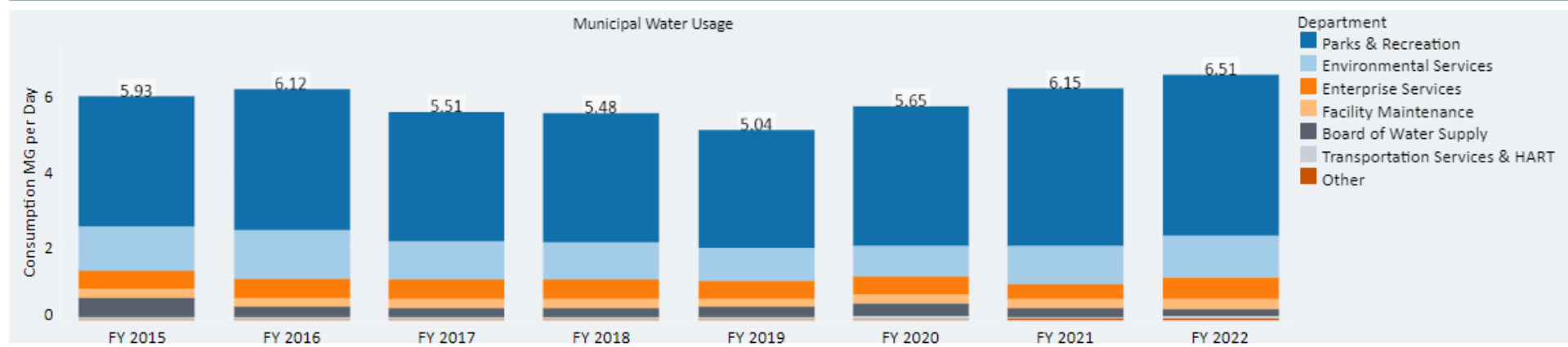


New 56 kilowatt solar photovoltaic system on the roof of the 'Ewa Beach Fire Station. (Photo Credit: Department of Design and Construction)

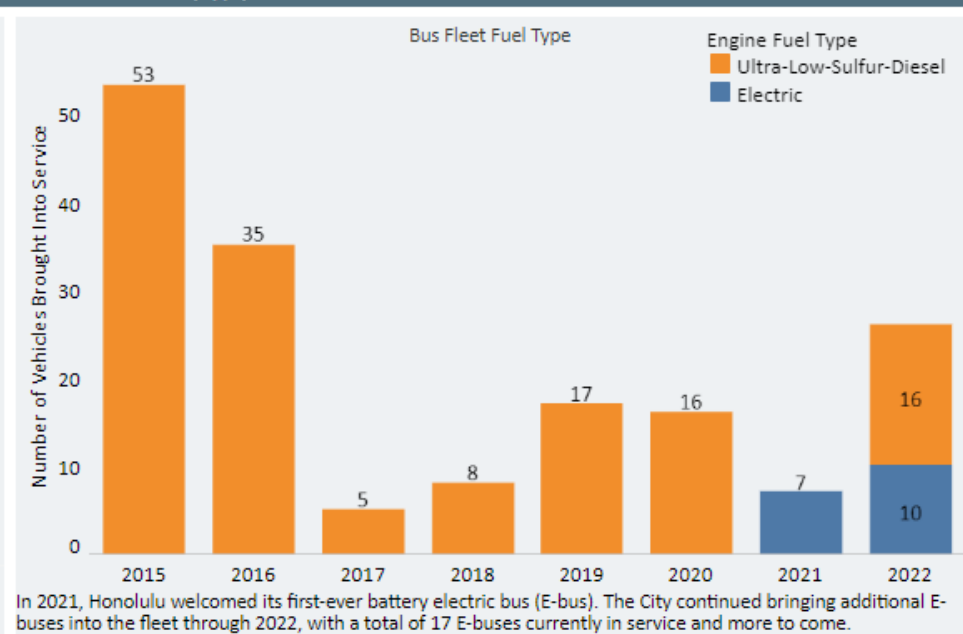
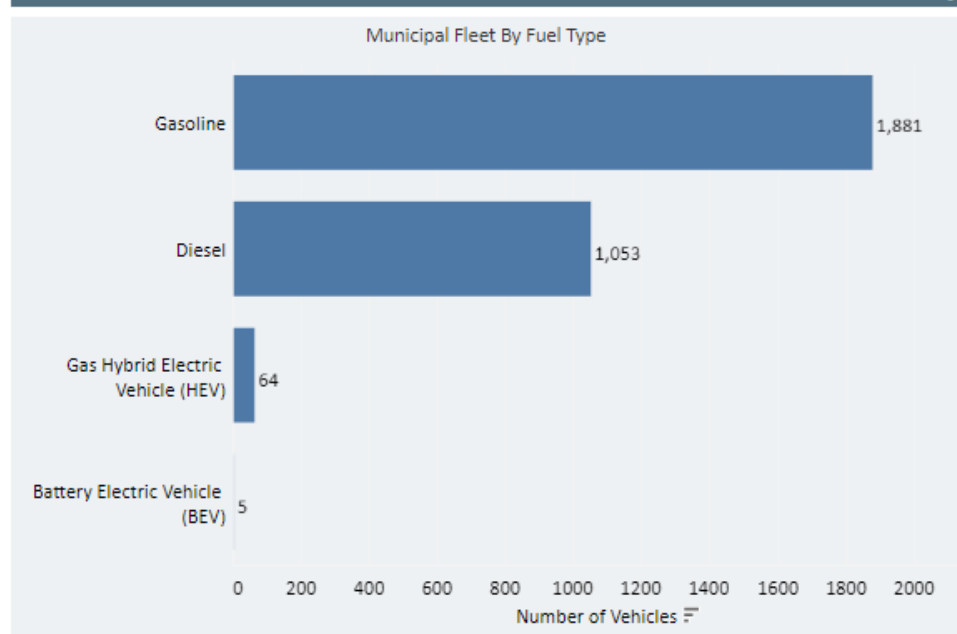
Municipal Energy Usage Revised Ordinances of Honolulu §2-10.3



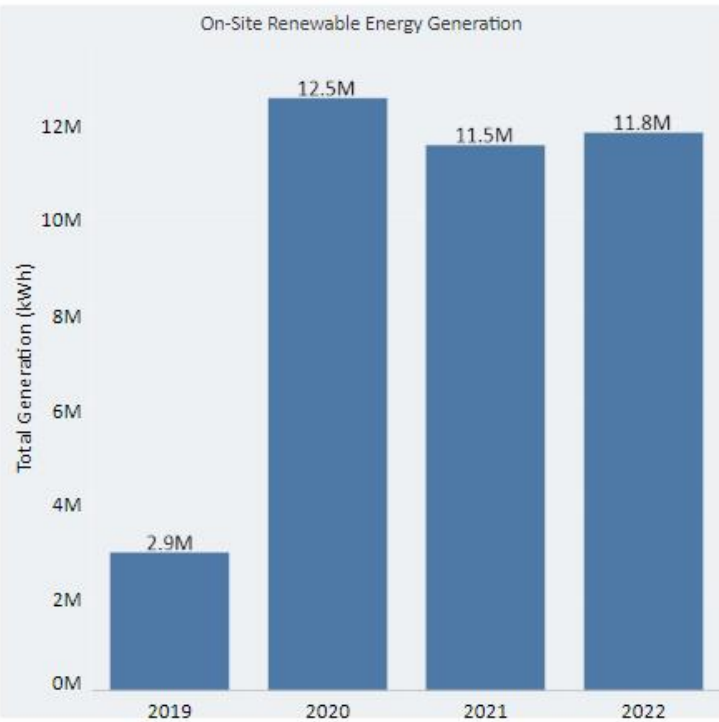
Municipal Water Usage
Revised Ordinances of Honolulu §2-10.6



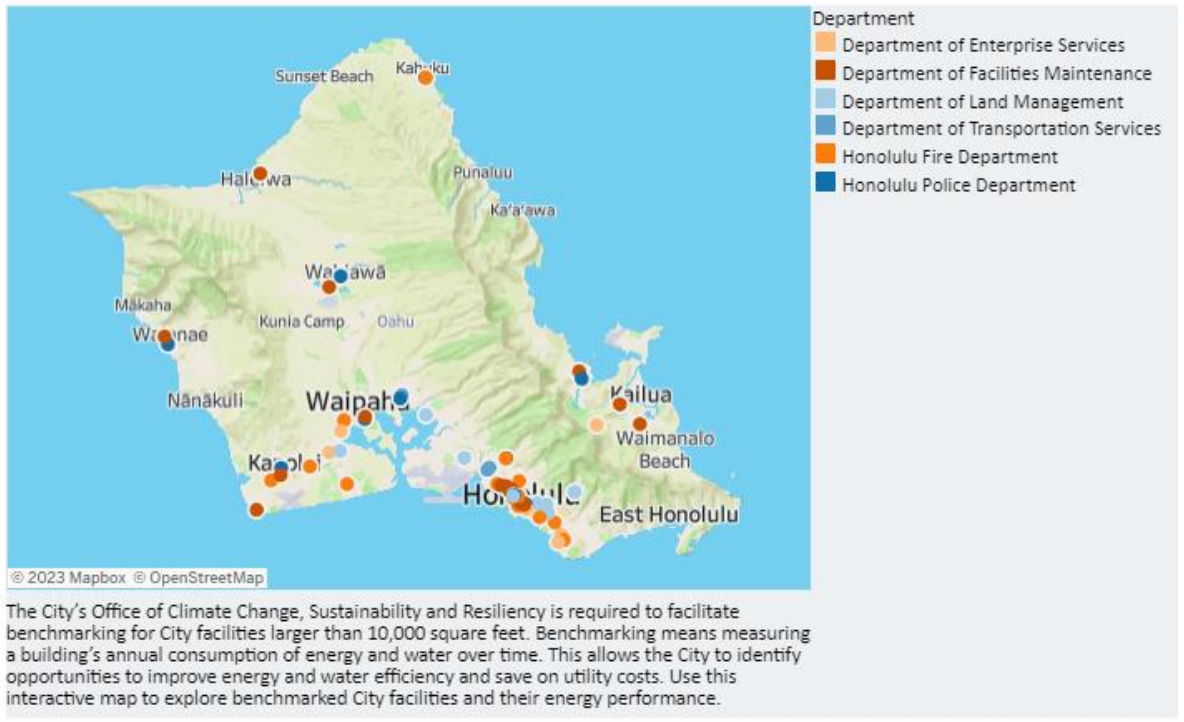
100% Renewable Municipal Fleet By 2035
Revised Ordinances of Honolulu §2-10.2(b)(3)



Increase On-Site Renewable Energy Generation by 200% by 2025
Climate Action Plan



Municipal Building Benchmarking
Revised Ordinances of Honolulu §2-10.4



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Climate Action

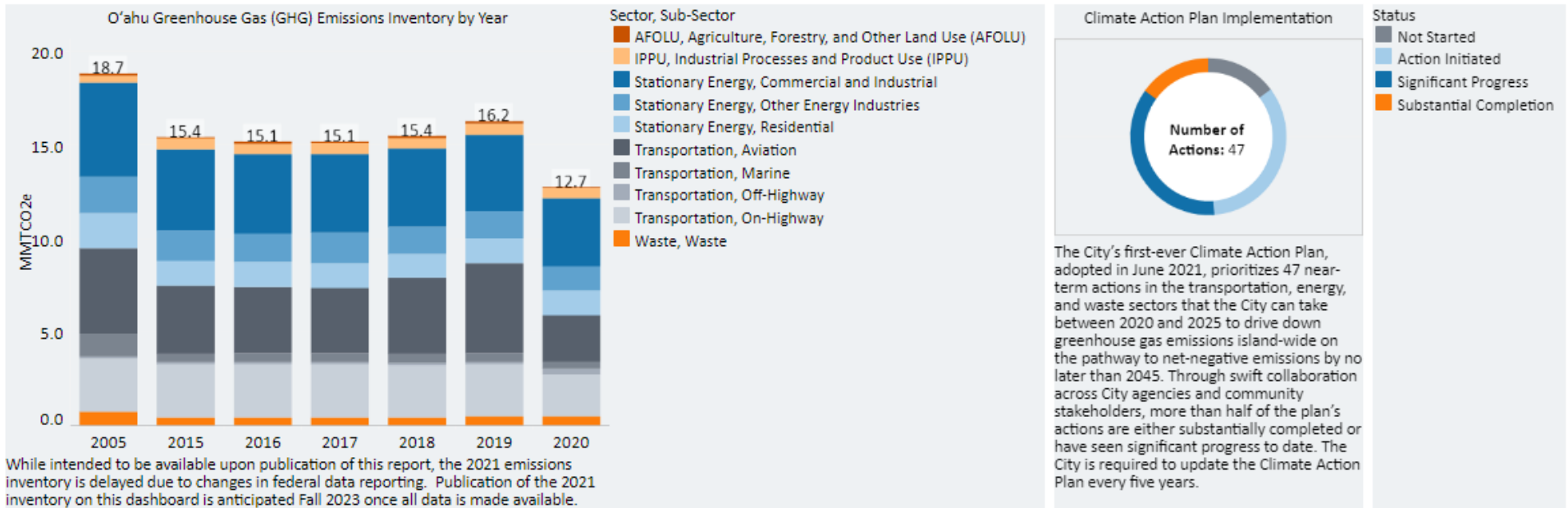
OBJECTIVE: Increase self-sufficiency through a transition to 100% renewable energy, and maintain an efficient, reliable, resilient, and cost-efficient energy system that achieves net-negative carbon emissions no later than 2045 (O'ahu General Plan & Revised Ordinances of Honolulu §2-10.12(a)).

O'ahu continues to see steady progress towards eliminating carbon polluting emissions in the electricity sector. In September of 2022, the island's last coal-fired power plant was closed as scheduled, marking the end of electricity from coal in Hawai'i. With tremendous leadership from government, industry, and community, O'ahu has accelerated the deployment of grid-scale solar projects, rooftop solar and battery backup around the island for cleaner, healthier energy sources. With the passage of City Ordinance 22-17 in 2022, buildings 25,000 square feet and larger are now required to benchmark and report their energy and water usage to the City annually. This [Better Buildings Benchmarking Program](#) is estimated to reduce the electricity consumption of large buildings by nearly 7% by 2030.

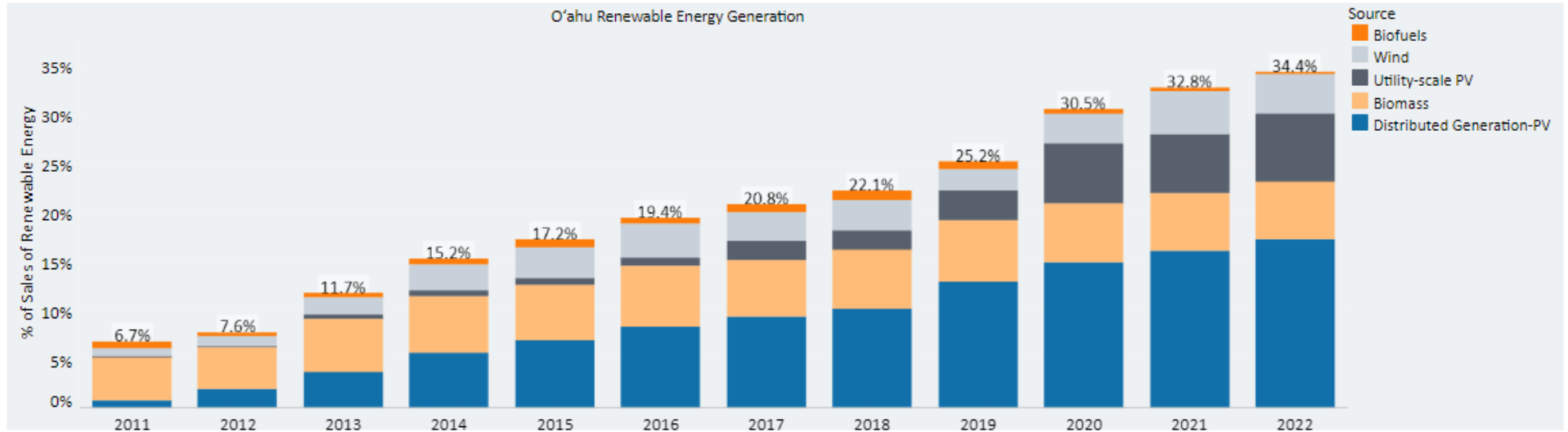


The last barge of coal arrives to O'ahu to fuel the coal plant, signaling the end of the island's dirtiest energy source. (Photo Credit: Hawai'i State Energy Office)

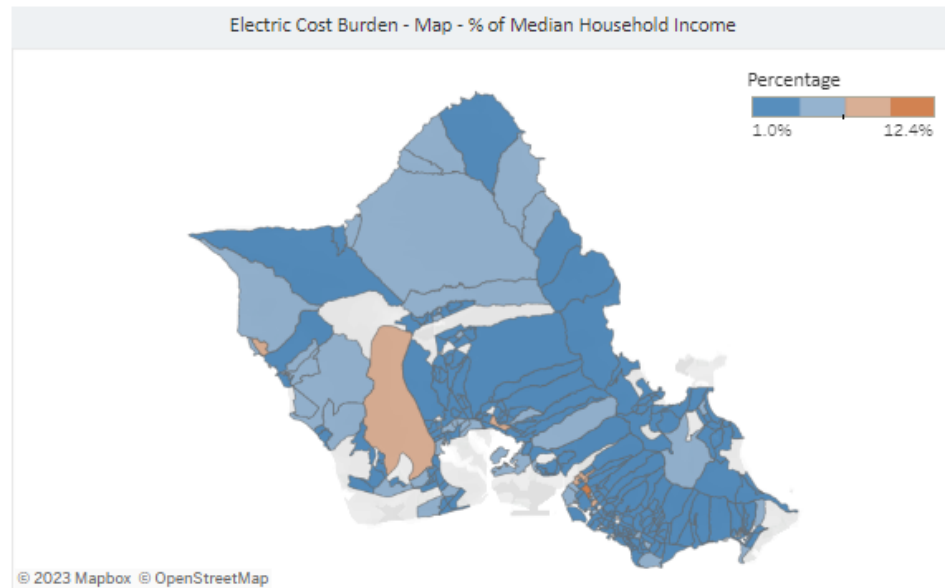
Net-Negative Carbon Economy By 2045 Revised Ordinances of Honolulu §2-10.12



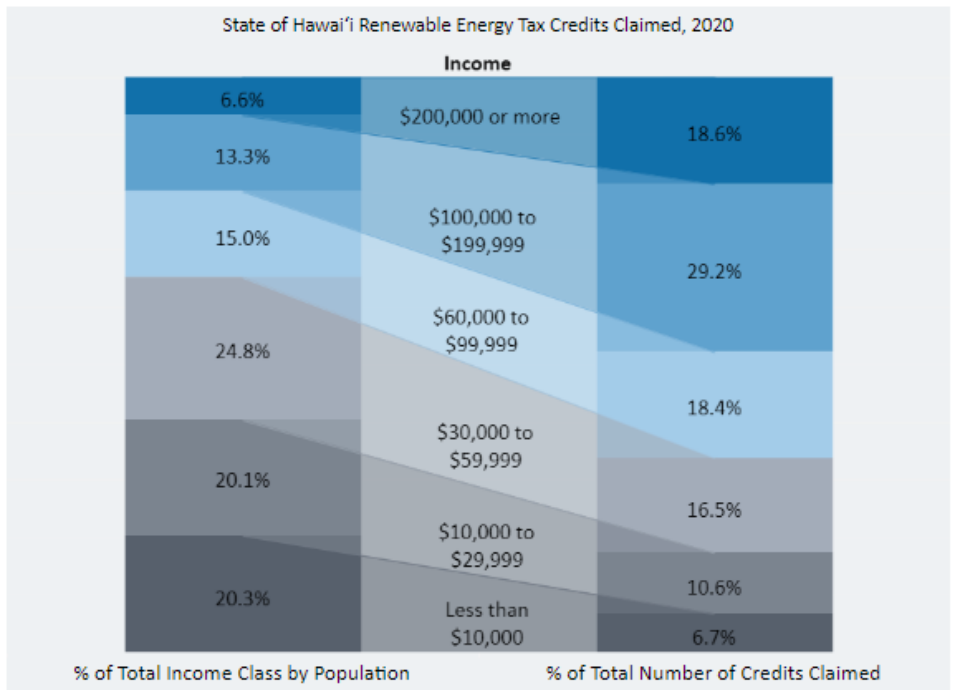
100% Renewable Energy by 2045
Revised Ordinances of Honolulu §2-10.12(a)



Equity Indicators



Energy burden is the percentage of household income spent on home energy bills. An individual or household's energy burden is considered high when it is above 6% of income and severe when above 10%. In 2022, O'ahu residents' energy burden ranged anywhere from 1% to 12.4%, with an average island-wide energy burden of 3.1%.



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Clean & Affordable Transportation

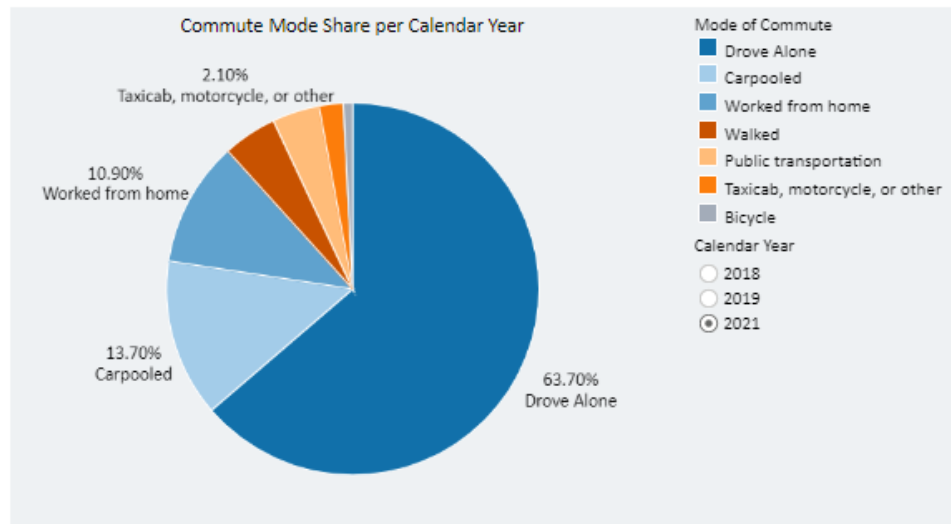
OBJECTIVE: Create an integrated multi-modal transportation system which serves all users; moves people and goods safely, efficiently, and at a reasonable cost; and minimizes fossil fuel consumption and greenhouse gas emissions (O’ahu General Plan).

Through a variety of adopted transportation planning documents such as the O’ahu [Bike Plan](#), [Pedestrian Plan](#), and [Climate Action Plan](#), the City outlines a comprehensive approach to develop a safe, clean, and affordable transportation network that is accessible and efficient for all users. Available data sets show that residents continue to choose single occupancy vehicles over alternative modes of transportation and that registration of electric vehicles continues to grow year over year. While electric vehicles are an important component of driving down greenhouse gas emissions, targeted investment in expanding the multimodal transportation network is necessary to create healthy, livable communities for people walking, rolling, or on transit.

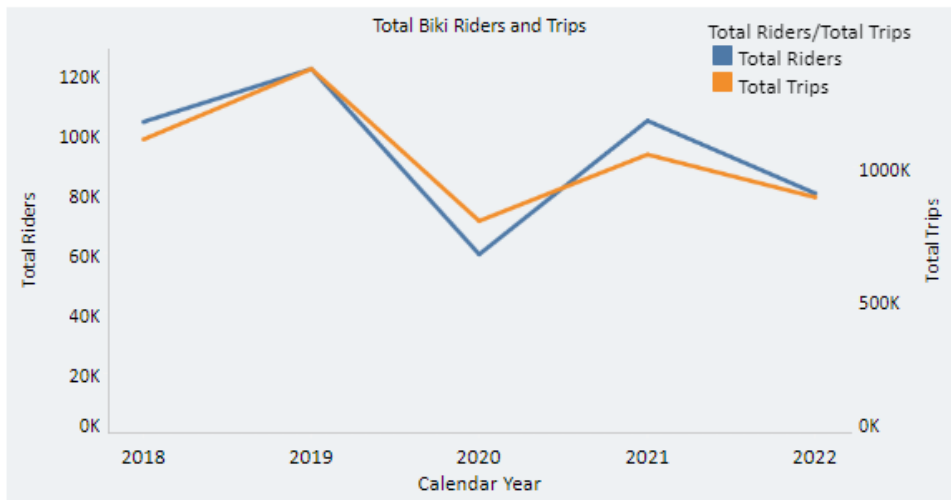


In 2022, the City adopted the first-ever [O’ahu Pedestrian Plan](#), a long-term action plan to create vibrant, safe, and accessible streets that enable those of all ages and abilities to get around safely and comfortably by walking. (Photo Credit: Department of Transportation Services)

Double the Bicycle Commute Mode Share by 2025 (from 2015) O’ahu Bike Plan



Due to the COVID-19 pandemic, 2020 commute data was unavailable, but pandemic impacts to commuter behavior are still evident in 2021: commute by public transportation decreased 43% and the number of residents working from home jumped 175% higher compared to 2019 levels.



[Biki](#) is O’ahu’s bikeshare system serving riders in Honolulu’s urban core. Launched in 2017, Biki has 1,300 bikes at over 130 self-service “Biki Stops.” Bicycling is a low-cost, convenient, zero-emissions transportation option that is healthy for riders and the environment. Bikeshares make this transit option more accessible to residents and visitors. Learn more about the City’s efforts to increase bicycling infrastructure island-wide in the [O’ahu Bike Plan](#).

Tracking Vehicle Miles Traveled

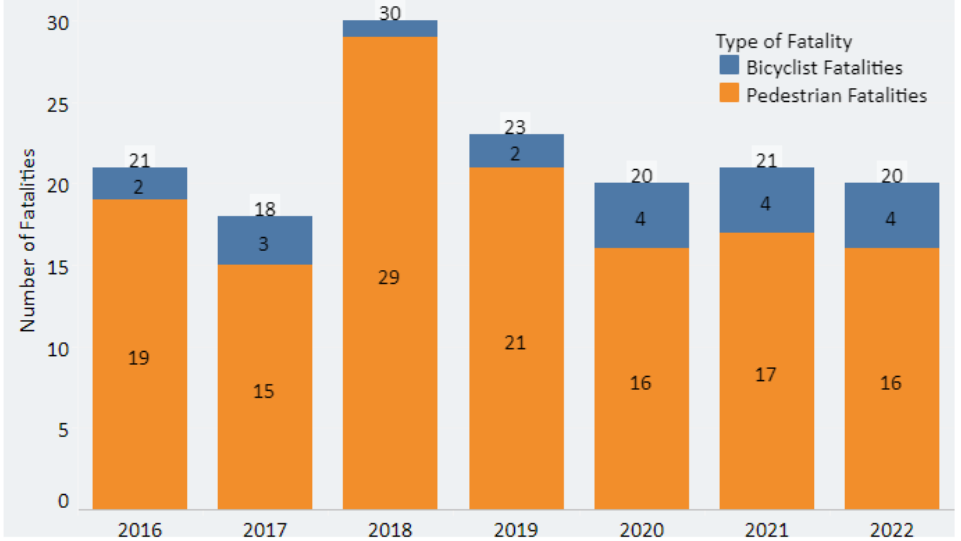
Annual Vehicle Miles Traveled Per Capita



Fewer miles traveled in cars means less traffic and less carbon pollution. Supporting and promoting alternative modes of travel like public transit, walking, and biking can reduce the number of vehicle miles traveled for cleaner air and less congestion while keeping us on track to reach our climate change targets.

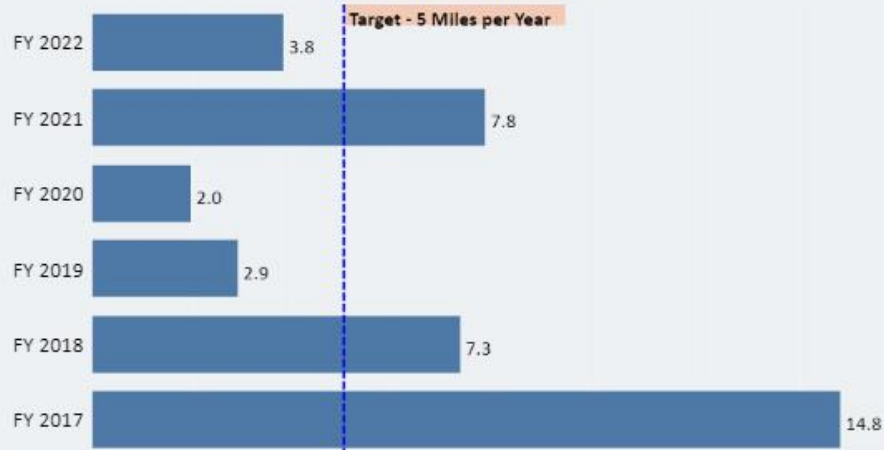
Vision Zero Strategy to Eliminate All Traffic Death by 2024 O'ahu Pedestrian Plan

Bike and Pedestrian Fatalities on O'ahu



Install 5 Miles Of Bike Infrastructure Per Year Department of Transportation Services

Miles of Completed Bike Projects

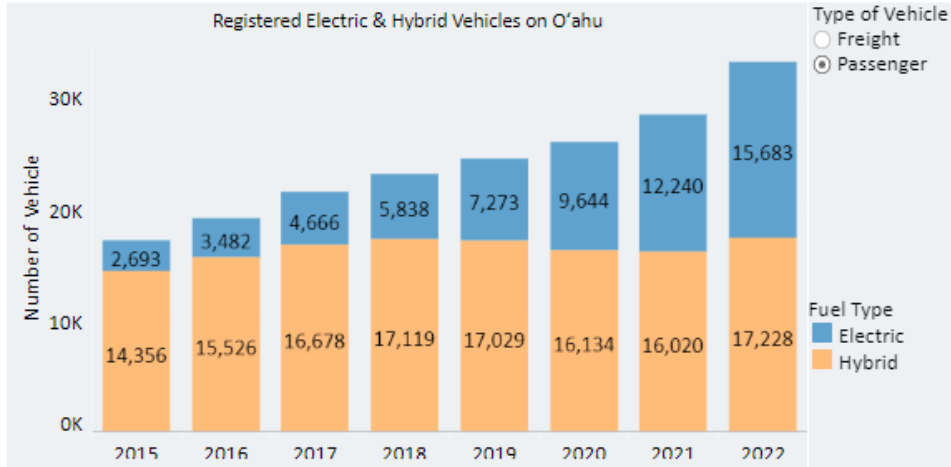


Equity Indicator Complete Streets Projects in Environmental Justice Areas

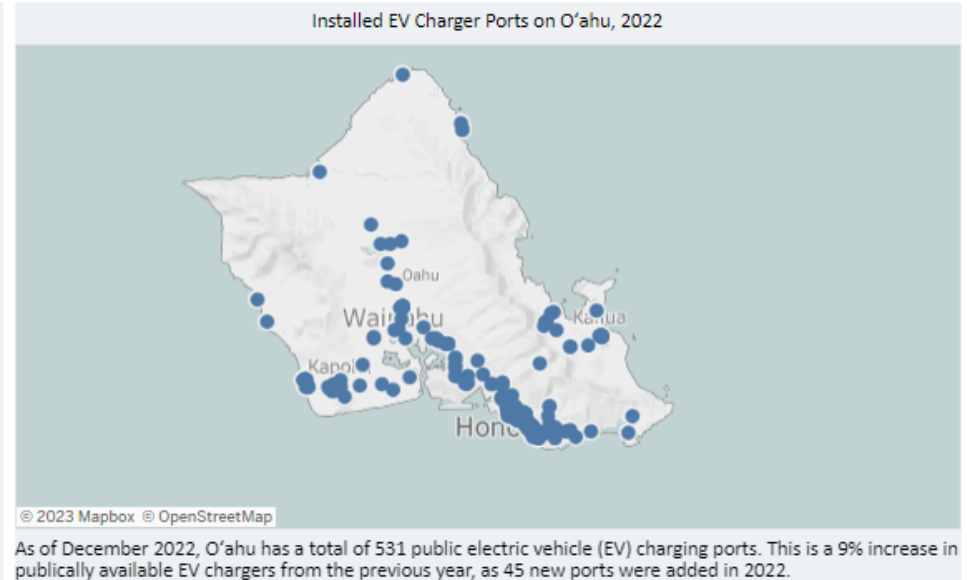


Click on the map to open for interactive features. In Fiscal Year 2022, 44% of active, City-led Complete Streets Projects were located in [environmental justice \(Title VI\) communities](#). These environmental justice areas represent roughly 30% of O'ahu's population.

100% Renewable Ground Transportation By 2025
Four County Public and Private Ground Transportation Commitment



In 2022, there were over 675,000 registered passenger vehicles on O'ahu. Electric vehicles (EVs) currently only make up about 2.5% of vehicles, but EV adoption is increasing rapidly. There was a 15% increase in the number of registered EVs in 2022 alone compared to the previous year, and EVs have seen a 65% increase since 2015, demonstrating the significant growth of EVs on the market in a short amount of time.



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Climate Adaptation & Resilience

OBJECTIVE: Protect and preserve the natural environment by preparing for the impacts of climate change, planning for natural and coastal hazards, integrating and protecting trees in development, and implementing One Water principles for climate change adaptation solutions and maintenance of a safe, reliable, and sustainable supply of water (O'ahu General Plan & Revised Ordinances of Honolulu §2-10.13).

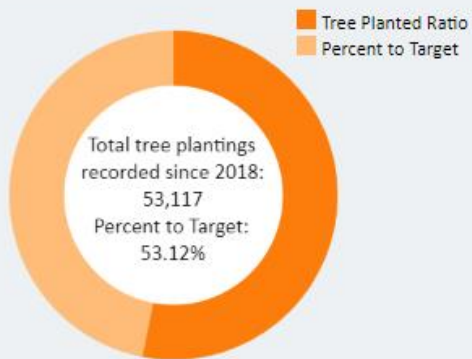
Higher temperatures, shifting precipitation patterns, rising sea levels, and coastal erosion challenge our well-being as an island community. The urgency to adapt to a changing climate was made crystal clear in 2022 when a Rocky Point house slid into the ocean, threatening the safety of its occupants, first responders, and access to public beaches. Actions are underway to prepare and thrive in the face of changing climate hazards. As of May 1, 2022, all real estate transactions in Hawai'i must include disclosures about the risk of sea level rise to the property. Additionally, the Honolulu Climate Change Commission updated its [Sea Level Rise Guidance](#) based on the most recent scientific data available to better inform our adaptation plans, policies, and programs.

The City continues to advance development of [Climate Ready O'ahu](#), the City's first climate adaptation strategy. The Office of Climate Change, Sustainability and Resiliency partnered with Mālama Learning Center on a community outreach campaign to ensure the strategy reflects the perspectives of frontline communities that are often underrepresented in traditional outreach efforts. Workshop participants played the "[Are You Climate Ready?](#)" games, which won the 2022 Public Education & Outreach Award from the American Planning Association, Hawai'i Chapter.

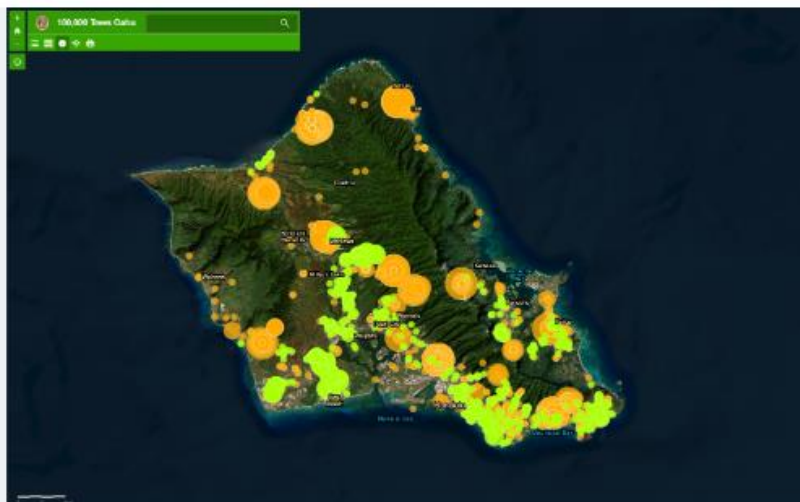


Climate Ready O'ahu workshop participants collaborate to adapt to increasing temperatures in the "Are You Heat Ready?" game at the Ka'ala Cultural Learning Center. (Photo Credit: Office of Climate Change, Sustainability and Resiliency)

Plant 100,000 Trees By 2025
 Department of Parks and Recreation 2019 Functional Plan

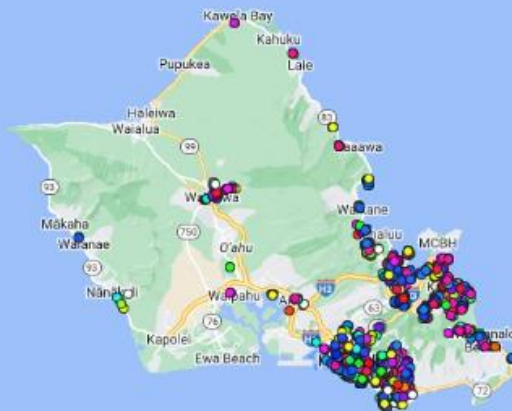


Across O'ahu in 2022, community members and the City together planted a total of 2,449 trees. This brings the cumulative total number of tree plantings recorded since 2018 to 53,117 trees. Don't see your individual or group tree planting on the map from the past few years or you've recently planted a tree? Let's get it on the map! You can view newly planted trees and contribute your own at the [100k Trees Map](#)



Click on the map to open for interactive features.

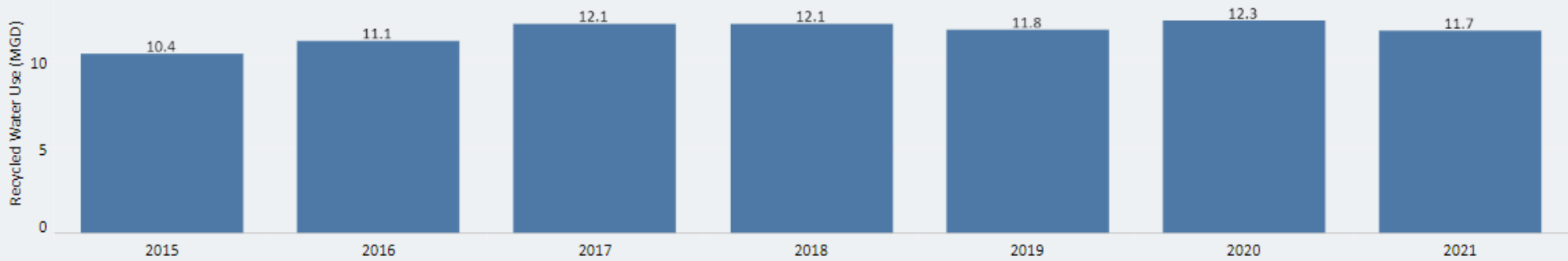
Increase Urban Tree Canopy Cover to 35% by 2035
 Resolution 18-55



Click on the map to open for interactive features. In 2022, O'ahu's Citizen Forester program trained and mobilized 193 community volunteers to map and assess 3,981 City street and park trees across O'ahu. Since 2017, over 503 volunteers have worked to inventory 22,627 trees to date.

Double the Amount of Wastewater Reused by 2030 (From 2015)
Board of Water Supply Master Plan

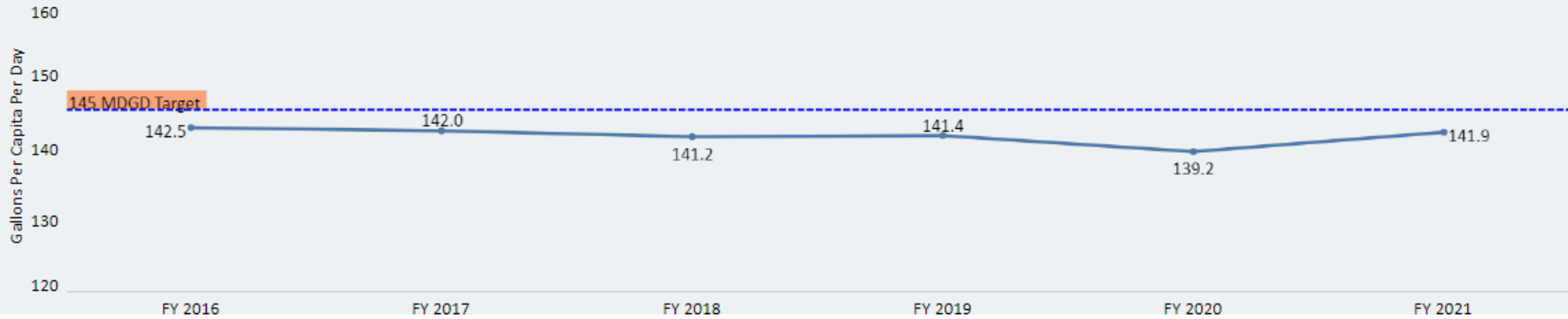
O'ahu Annual Recycled Water Use



Calendar Year 2022 recycled water data will be made available and added to this dashboard later this year.

Reduce Per Capita Water Consumption to 145 Gallons Per Day By 2040
Board of Water Supply Water Master Plan

O'ahu Per Capita Water Consumption



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Food Security & Sustainability

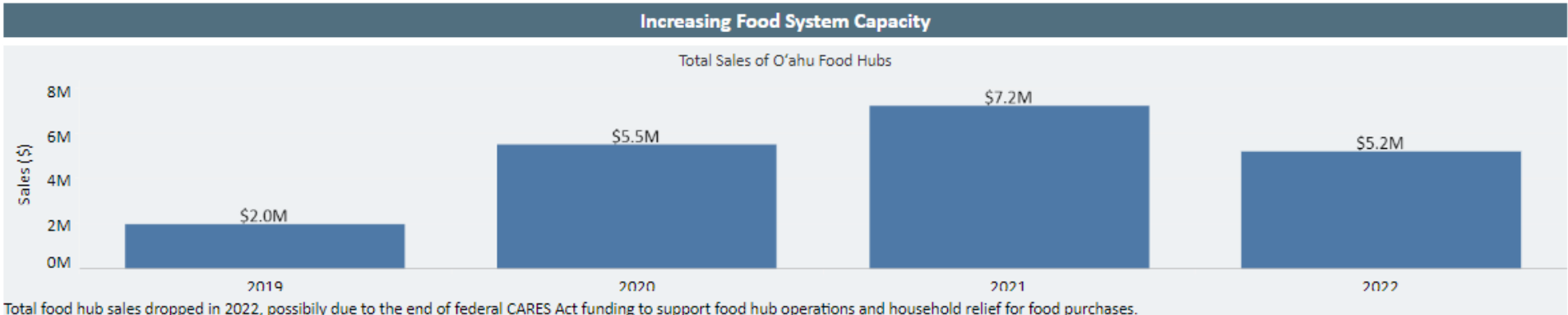
OBJECTIVE: Support long-term agricultural diversification and productivity, and foster market opportunities that increase access to and promote consumption of safe, fresh, and locally grown food (O’ahu General Plan).

According to the Hawai’i Foodbank, 1 in 6 Hawai’i residents are food insecure, and 1 in 4 of those residents are keiki or kūpuna. In 2022, the City developed a \$3 million agricultural grant program for O’ahu farmers, ranchers, and growers to promote food sovereignty with American Rescue Plan Act State and Local Fiscal Recovery Funds. Following program workshops and application translation services in 8 different languages, more than 60 farmers will each be provided with up to \$50,000 of COVID-19 relief funding.

In September 2022, Mayor Blangiardi launched the [O’ahu Good Food Program](#) to better connect local food growers and producers to industry representatives through semi-annual events. The program also encourages industry partners to sign the [O’ahu Good Food Pledge](#), which commits members to use their purchasing power to encourage the production and consumption of locally grown food that is healthy, affordable, and sustainable.



At the City’s O’ahu Good Food Show on September 5, 2022, leaders from the education field, government offices, and the healthcare industry pledged to promote local food purchasing across O’ahu. (Photo Credit: Office of Economic Revitalization)



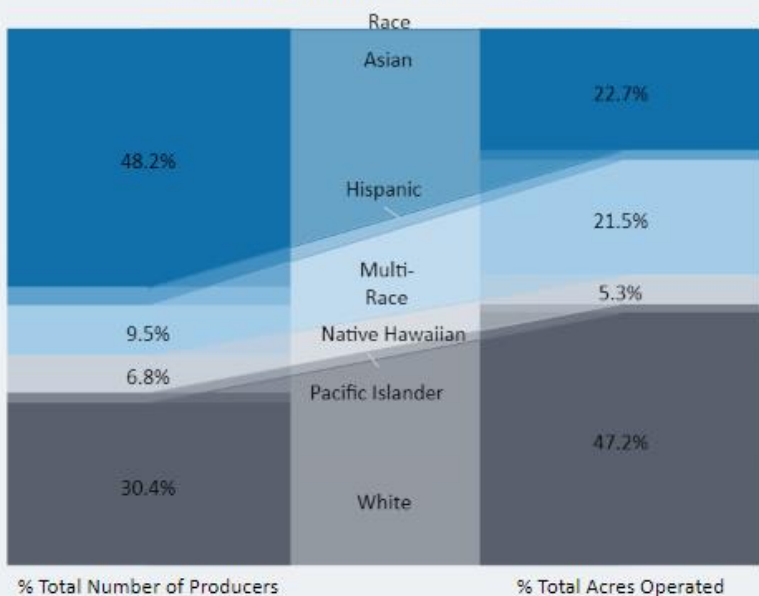
Supporting Workforce Development

Average Wages of Farm Workers in Hawai'i



Equity Indicators

Total Operations and Acre by Race, 2017



This chart displays the percentage of farmers who are of any given race (left-hand side) and the corresponding number of acres operated by the farmers in that race category, as a percentage of total acreage (right-hand side). For example, almost half of our farmers identify as Asian, but operate less than a quarter of the total acreage. Demographic information about O'ahu's farmers helps us understand who grows the food we eat, which allows the City to provide more targeted assistance, like language and translation services.



Click on the map to open for interactive features. Supplemental Nutrition Assistance Program (SNAP) is a federal program that provides food and nutritional support to qualifying low-income households. Creating more SNAP enabled food access points in more food insecure communities is essential to equitable access to good nutrition. Many farmers markets, which support our local agriculture industry, have SNAP access, and it is a great way to eat local!

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Sustainable Waste Management

OBJECTIVE: Manage an integrated and sustainable waste system that minimizes the generation of waste, maximizes energy and material recovery from waste, and provides safe, reliable, and environmentally sound collection and disposal systems (O’ahu General Plan & 2019 Integrated Solid Waste Management Plan).

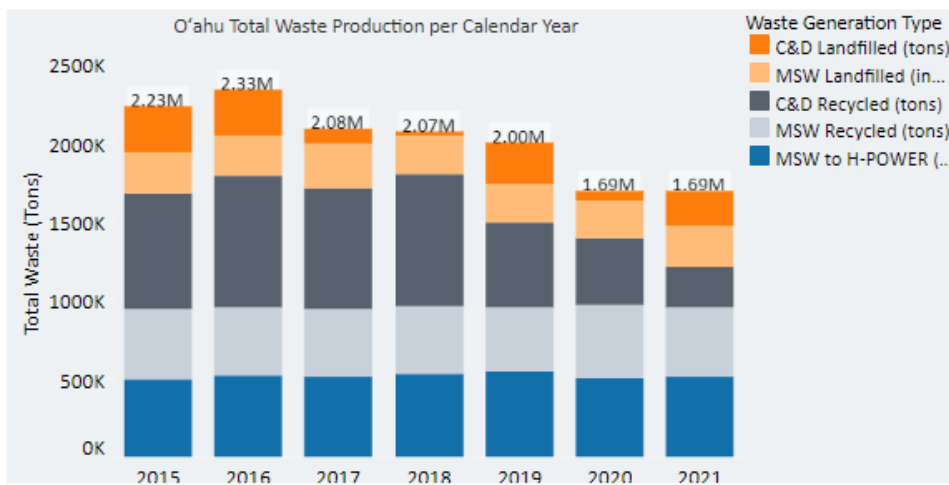
In 2021, over 1.7 million tons of waste were produced on O’ahu. Almost three quarters of that waste was municipal solid waste (MSW) - or your everyday discarded items like packaging, food scraps, and junk mail - and more than a quarter of that ‘ōpala ended up at the landfill. The need to reduce waste was especially underscored in 2022 as the City considered potential sites for the next municipal solid waste landfill. Following the input of a [Landfill Advisory Committee](#), siting is ongoing and presents a case for identifying new solutions for source reduction and environmental justice while evaluating how to best manage waste on a small island.

The [Disposable Food Ware Ordinance](#) went into full effect in 2022, regulating single-use plastics at the source to prevent their harmful impact to people and the environment. In partnership with community organizations, the City also launched the [O’ahu Compost Project](#) to reduce the most prevalent material in our waste stream—food waste. This pilot program works with multiple Chinatown restaurants to redistribute excess food to feed people and compost food waste in Hawai’i’s first in-vessel composting unit.

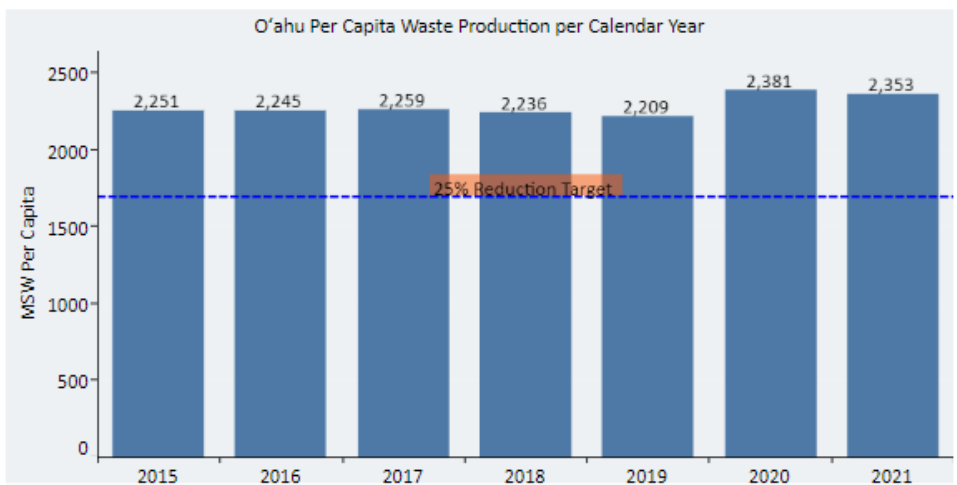


The O’ahu Compost Project rescues and redistributes uneaten food and composts excess scraps in a solar-powered composting machine in Waimānalo. (Photo Credit: Aloha Harvest)

Reduce Per Capita Waste Generation By 25% By 2030 2019 Integrated Solid Waste Management Plan

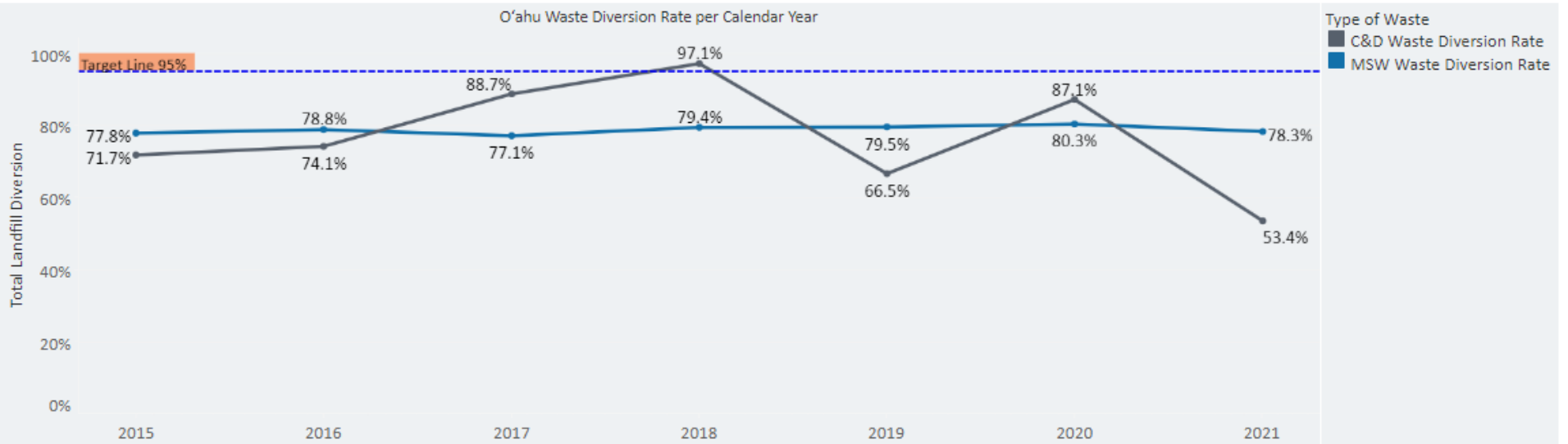


MSW refers to municipal solid waste, or your everyday discarded items like packaging, food scraps, or junk mail. C&D refers to construction and demolition waste, usually made up of materials like wood, metal, or concrete.



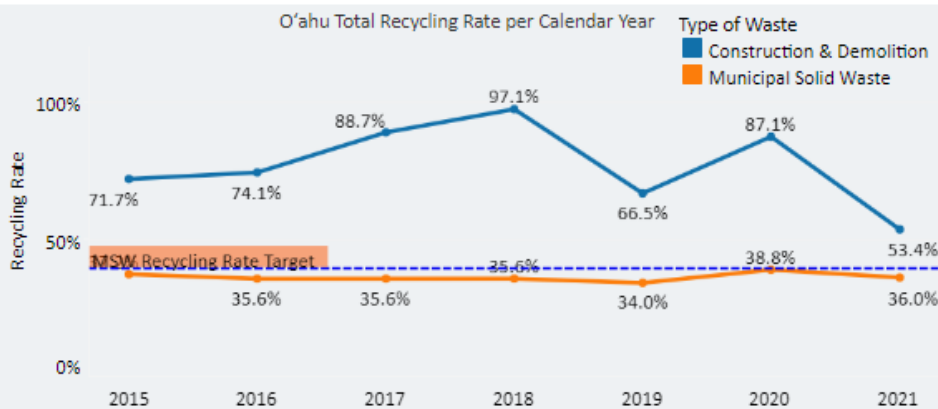
In 2021, each O’ahu resident generated over 6 pounds of trash per day. The City’s Integrated Solid Waste Management Plan set a target to reduce the amount of waste per person 25% or down to about 4.8 pounds per day by 2030.

Increase Landfill Diversion Rate to 95% By 2030
 2019 Integrated Solid Waste Management Plan



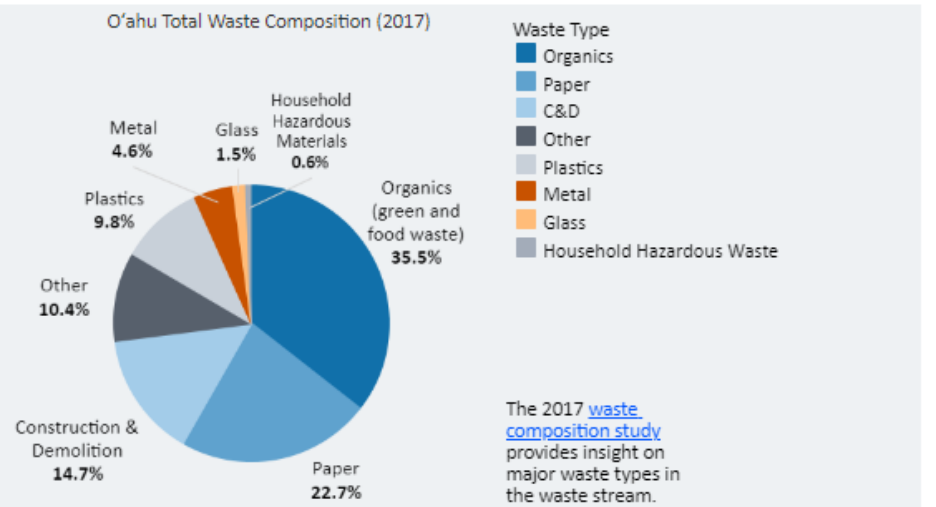
The decrease in waste diversion in 2021 is due to the discontinuation of recycling operations at the privately-owned PVT C&D landfill. C&D waste that could previously be recycled by PVT is now being sent to landfill.

Increase Recycling Rate 10% By 2030
 2019 Integrated Solid Waste Management Plan



The drop in the recycling rate in 2021 is due to a decrease in the amount of construction and demolition (C&D) waste recycled following the discontinuation of recycling operations at the privately-owned PVT C&D landfill.

Reduce Single-Use Plastics In The Waste Stream
 2019 Integrated Solid Waste Management Plan



The 2017 [waste composition study](#) provides insight on major waste types in the waste stream.

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Disaster Preparedness

OBJECTIVE: Create disaster-prepared communities that protect residents, visitors, and property against natural disasters, environmental stressors, climate change, and other emergencies and enable cost-effective disaster response and recovery that enhances community resiliency (O’ahu General Plan).

Pre-disaster planning improves our ability to recover following a disaster event. In 2022, the City secured over \$2.5 million dollars from the Federal Emergency Management Agency for hazard mitigation projects, including the [Tsunami Evacuation Sign Project](#), which installs evacuation signage in parks and along roadways to increase awareness and safety.

Alongside community partners, the City also launched the Resilience Hubs Planning project. Resilience Hubs are community-operated buildings that provide resilience-enhancing services before, during, and after disaster events. Outcomes from islandwide survey responses and community workshops will help determine next steps in development of a resilience hub network in line with Action 15 of the [O’ahu Resilience Strategy](#).

Education and awareness on reducing personal risk can also improve community resilience. [HNL.info](#) gives users real-time access to City disaster announcements and updates. Join the more than 73,000 users who have already downloaded the app to receive important updates.

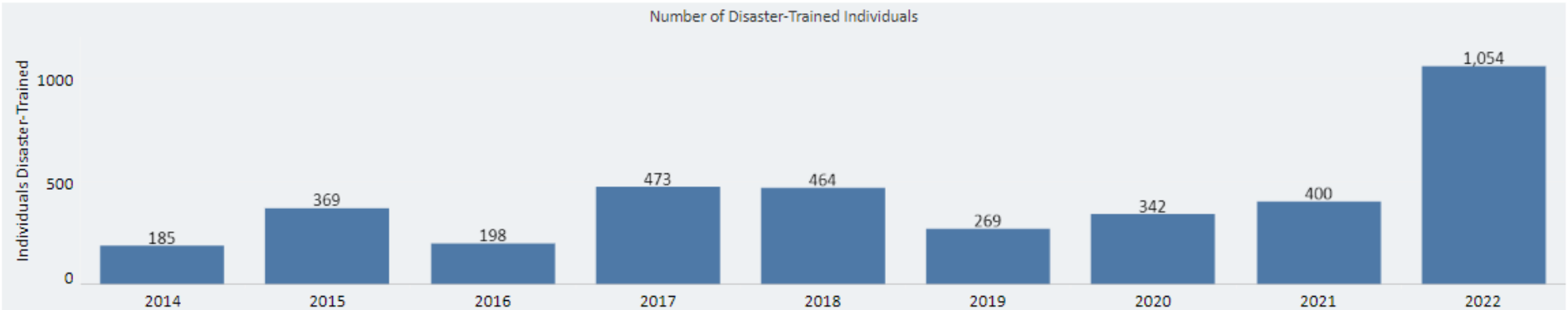


Mayor Blangiardi and Department of Emergency Management Director Hirokazu Toyia with new tsunami evacuation signs installed at Kalaniana’ole Beach Park in Nānākuli in December 2022. (Photo Credit: Department of Emergency Management)

Maximizing Funding Opportunities



Providing Community Training



Beginning in 2020, the Department of Emergency Management (DEM) began offering virtual trainings given COVID-19 pandemic restrictions. In 2022, DEM resumed in-person [Community Emergency Response Team \(CERT\) training](#), a free service where community members can proactively learn essential disaster management and response skills.

Improving Home Safety

1

On O'ahu, approximately **71% of single-family homes** were built before 1988, and due to building codes until then, **lack sufficient hurricane wind resistance measures** to prevent roofs from blowing off in strong winds. Not sure if your home has sufficient hurricane wind resistance? Check the City's real property tax map to find out when it was built (<https://www.qpublic.net/hi/honolulu/search.html>).

2

1. Rafter-to-Top Plate Connections
2. Top Plate-to-Stud Connections
3. Floor-to-Floor Connections
4. Stud-to-Sill Plate Connections
5. Sill Plate-to-Foundation Connections

Homes with insufficient wind resistance can be made safer with **continuous load path retrofits**. These create a continuous connection between a house's roof and foundation to **help keep the roof from blowing off** during a hurricane. The goal of retrofitting is to add as many as reasonably possible, starting at the top (A1) and working down (C5).

3

The **Homeowner's Handbook to Prepare for Natural Hazards – Fourth Edition** is a free resource with a wealth of personal resilience information. The Handbook covers how to install retrofit measures for your home like hurricane clips, window protection, and roof strengthening. A digital copy is available at <https://bit.ly/homeowners-handbook-4>.

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Learn More & Get Involved

About the Annual Sustainability Report

In coordination with City agencies, the [Office of Climate Change, Sustainability and Resiliency](#) prepares this annual accounting of sustainability and resilience measures and indicators to assess progress and ensure accountability and openness in our movements towards equitable climate action and community resilience. This new interactive dashboard provides a higher level of data access than ever before. New measures and indicators in this year's Report include data sets related to City buildings' energy, farmer economics and demographics, Biki bikeshare ridership, and TheBus, as well as tracking implementation of the City's Climate Action Plan (CAP). Taking stock annually is an important check-in on our commitments and goals. The City's Annual Sustainability Report is defined in City Charter Section 6-107(f) and Revised Ordinances of Honolulu Chapter 2, Article 10.15.

Grades & Ratings

O'ahu is unique, but it can be helpful to see how we stack up to other communities similarly doing the important work to become more sustainable and resilient. Annually, we report to or are scored by third-party evaluators to celebrate what we do well, benchmark our performance against peers, and identify areas and opportunities for progress.

 <p>AMERICAN COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY</p> <p>Clean City Energy Scorecard</p> <p>#24 Out of 75 U.S. Cities</p> <p>Previous Scores: #41 (2020), #47 (2019)</p>	 <p>CARBON DISCLOSURE PROJECT</p> <p>Scored in Progress towards Environmental Performance</p> <p>B Scale: A to D-</p> <p>Previous Scores: B (2021), B (2020), C (2019)</p>	 <p>ENVIRONMENT AMERICA</p> <p>America's Top Shining Cities for Solar PV Installed per Capita</p> <p>#1 Out of 50 U.S. Cities</p> <p>Previous Scores: #1 (2021), #1 (2020)</p>	 <p>TRUST FOR PUBLIC LAND</p> <p>ParkScore®</p> <p>#43 Out of 100 U.S. Cities</p> <p>Previous Scores: #57 (2021), #41 (2020)</p>
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O'ahu Resilience Strategy

The O'ahu Resilience Strategy is a guiding pathway for the City to address the challenges of our time: long-term affordability; preparing for and recovering from climate and other disasters; eliminating carbon pollution and adapting to a changing climate; and building community cohesion. Since its adoption in late 2019, the City continues to advance progress on the strategy's 44 Resilience Actions. Learn more at resilientoahu.org/resiliencestrategy.

Resilience Strategy Actions Implementation



Action Status

- Not Started
- Action Initiated
- On Hold
- Significant Progress
- Substantial Completion

Get Involved

Every action that we take today helps build a safer and more resilient future for O'ahu. Visit resilientoahu.org/getinvolved for simple ways you can take action now to support our collective goals and save your household money. Mahalo nui loa to the many City departments, industry associates, community groups, nonprofits, and individuals who have come together to advance sustainability. It takes all of us.



Pāhonu restoration with 808 Cleanups in support of the Waimānalo Limu Hui. (Credit: Office of Climate Change, Sustainability and Resiliency)



Waipi'o cleanup organized by the Department of Facility Maintenance Storm Water Quality Division (SWQ). (Credit: SWQ)



Lo'i work at Ka'ala Farm during a community engagement event for Climate Ready O'ahu. (Credit: Office of Climate Change, Sustainability and Resiliency)