



HONOLULU CITY COUNCIL
KE KANIHELA O KE KALANA O HONOLULU
CITY AND COUNTY OF HONOLULU

No. 26 - 206

RESOLUTION

ADOPTING THE 2025–2030 CLIMATE ACTION PLAN FOR THE CITY AND COUNTY OF HONOLULU.

WHEREAS, climate change is caused primarily by greenhouse gas ("GHG") emissions from human activities, particularly the burning of fossil fuels for transportation, electricity, buildings, and other uses, which trap heat in the atmosphere and contribute to long-term changes in global and local climate patterns; and

WHEREAS, O'ahu is already experiencing the impacts of a changing climate, including rising temperatures, fewer trade winds, less predictable rainfall, drought and wildfire, flooding, sea level rise, coastal erosion, extreme weather events, inequities, cultural loss, supply chain disruptions, and growing pressures on public health, infrastructure, natural resources, and critical ecosystems; and

WHEREAS, in 2021, the Hawai'i State Legislature became the first state legislature in the nation to declare a climate emergency through the adoption of Senate Concurrent Resolution 44, S.D. 1, H.D. 1, which acknowledges the threat that the climate crisis poses to humanity and the natural world and calls for statewide collaboration and action; and

WHEREAS, climate change mitigation, also referred to as climate action, means taking action to reduce and eliminate the emission of heat-trapping gases that accelerate climate change; and

WHEREAS, climate mitigation provides not only an opportunity to reduce GHG emissions and slow the impacts of climate change, but also to strengthen neighborhoods, lower costs for households, improve public health, and invest in infrastructure that benefits O'ahu communities for generations to come; and

WHEREAS, in 2016, O'ahu voters approved an amendment to the Revised Charter of the City and County of Honolulu establishing the Office of Climate Change, Sustainability and Resiliency ("CCSR") to coordinate, plan, develop, and implement policies, plans, and actions addressing climate change, sustainability, and resiliency for the City and County of Honolulu ("City"); and

WHEREAS, in 2018, the Honolulu City Council ("Council") adopted Resolution 18-221, CD1, FD1, affirming its commitment to climate action and requesting that the City Administration develop a Climate Action Plan ("CAP") to guide progress toward the City's climate goals; and



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WHEREAS, in 2021, the Council adopted the City's first CAP, One Climate, One O'ahu: Climate Action Plan 2020–2025, through Resolution 21-105, establishing a five-year framework for reducing GHG emissions from major sources across O'ahu; and

WHEREAS, Ordinance 20-47 codified the City's commitments to achieving 100 percent renewable energy and net-negative GHG emissions no later than 2045, consistent with State law, and requires a City CAP be updated every five years; and

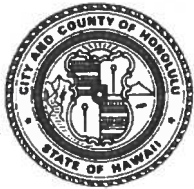
WHEREAS, in 2023, the Honolulu Climate Change Commission, which, pursuant to Section 6-107(h) of the Revised Charter of the City and County of Honolulu, is charged with gathering the latest science and information on climate change and providing recommendations to the Mayor, Council, and executive departments, issued an update to the Climate Change Brief, which presents the best available science on current and projected climate impacts affecting O'ahu and affirms that continued and accelerated action to reduce GHG emissions is necessary to achieve the City's and State's long-term climate goals; and

WHEREAS, CCSR coordinated the development of the 2025–2030 Climate Action Plan, the first five-year update, with partial funding support from the United States Environmental Protection Agency Climate Pollution Reduction Grants Program; and

WHEREAS, the 2025–2030 CAP incorporates updated data and technical analysis to provide a more complete picture of O'ahu's greenhouse gas ("GHG") emissions and climate impacts, including three complementary GHG emissions inventories that assess island-wide emissions, emissions from municipal operations, and consumption-based emissions; and

WHEREAS, the consumption-based inventory evaluates GHG emissions associated with the goods and services consumed by O'ahu residents, regardless of where those emissions occur, providing additional insight into how purchasing patterns, food systems, materials, and supply chains contribute to the island's overall GHG emissions; and

WHEREAS, development of the 2025–2030 CAP included discussions with City departments and agencies, technical experts, and industry stakeholders, as well as over two years of place-based engagement with businesses, local organizations, community leaders, and residents across every moku on O'ahu, which provided



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opportunities to integrate technical planning with community priorities and lived experiences; and

WHEREAS, the 2025–2030 CAP identifies 26 actions across five interconnected focus areas, including energy solutions, transportation, waste, food systems, and stronger public assets, that, if fully implemented, could reduce approximately 3.8 million metric tons of GHG emissions by 2030, advancing progress toward the statewide 2030 interim target of 50 percent emissions reduction below 2005 levels on the pathway to net-negative emissions by 2045; and

WHEREAS, achieving these goals will require continued partnership and shared responsibility across City departments, other government agencies, businesses, nonprofit organizations, and residents throughout plan implementation; and

WHEREAS, CCSR is charged with supporting implementation of the CAP by coordinating efforts across City departments, identifying State and federal funding, aligning staffing and resources, and tracking progress over time; and

WHEREAS, Revised Ordinances of Honolulu 2021 § 2-10.12 requires each update to the Climate Action Plan be adopted upon approval by the Council through a resolution by one reading; now, therefore,

BE IT RESOLVED by the Council of the City and County of Honolulu that it adopts the 2025–2030 Climate Action Plan for the City and County of Honolulu, attached hereto as Exhibit A, as the City's five-year roadmap for reducing GHG emissions while improving the daily quality of life for O'ahu residents; and

BE IT FURTHER RESOLVED that the Council supports continued coordination among CCSR, City departments and agencies, and other public and private partners, as appropriate, to implement the 2025–2030 Climate Action Plan consistent with applicable laws, available resources, departmental authorities, and future budgetary and legislative actions; and

BE IT FURTHER RESOLVED that CCSR is requested to track implementation of the 2025–2030 Climate Action Plan and regularly report the City's progress through the City's Annual Sustainability Report or other appropriate reporting mechanisms; and



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BE IT FINALLY RESOLVED that copies of this resolution be transmitted to the Mayor, the Managing Director, and the Executive Director of the Office of Climate Change, Sustainability and Resiliency.

INTRODUCED BY

Tony Wata

(br)

DATE OF INTRODUCTION:

SEP 15 2026

Honolulu, Hawai'i

Councilmembers

2025–2030 CLIMATE ACTION PLAN

City & County of Honolulu

**Submitted to the U.S. Environmental Protection Agency
June 1, 2026**

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List of Acronyms

ADU	Accessory Dwelling Unit
BFS	City and County of Honolulu Department of Budget and Fiscal Services
CAP	Climate Action Plan
CAPs	Criteria Air Pollutants
CBEI	Consumption Based Emissions Inventory
CCSR	City and County of Honolulu Office of Climate Change, Sustainability and Resiliency
CO	Carbon Monoxide
CPRG	U.S. EPA Climate Pollution Reduction Grants
DBEDT	Hawaii State Department of Business, Economic Development and Tourism
DDC	City and County of Honolulu Department of Design and Construction
DES	City and County of Honolulu Department of Enterprise Services
DFM	City and County of Honolulu Department of Facility Maintenance
DHHL	Hawaii State Department of Hawaiian Home Lands
DIT	City and County of Honolulu Department of Information Technology
DHLM	City and County of Honolulu Department of Housing and Land Management
DLNR	Hawaii State Department of Land and Natural Resources
DTS	City and County of Honolulu Department of Transportation Services
DOA	Hawaii State Department of Agriculture
DOH	Hawaii State Department of Health
DPP	City and County of Honolulu Department of Planning and Permitting
DPR	City and County of Honolulu Department of Parks and Recreation
ENV	City and County of Honolulu Department of Environmental Services
EPA	United States Environmental Protection Agency
ESPC	Energy Savings Performance Contract
EV	Electric Vehicle
GHG	Greenhouse Gas
HAPs	Hazardous Air Pollutants
HDOT	Hawaii Department of Transportation
HECO	Hawaiian Electric Company
HFD	Honolulu Fire Department
HGIA	Hawaii Green Infrastructure Authority
HNEI	Hawaii Natural Energy Institute
HPD	Honolulu Police Department
HRS	Hawaii Revised Statutes
HSEO	Hawaii State Energy Office
IECC	International Energy Conservation Code
IPPU	Industrial Processes and Product Use
LUC	Land-Use Change
MTCO₂e	Metric Tons of Carbon Dioxide Equivalent
NCO	City and County of Honolulu Neighborhood Commission Office
PCAP	Priority Climate Action Plan

PUC	Hawaii Public Utilities Commission
PV	Photovoltaic
ROH	Revised Ordinances of Honolulu
VOC	Volatile Organic Compound
VMT	Vehicle Miles Traveled

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Summary

The 2025–2030 Climate Action Plan (CAP) serves as the roadmap for the City and County of Honolulu (the City) to reduce greenhouse gases (GHG) while bolstering infrastructure and economic assets and improving the daily quality of life for Oahu residents. It functions as a technical framework and a public partnership built through trust, grounded in local practices, and guided by the needs of this island.

The CAP identifies 26 actions across five interconnected focus areas that meet people where they are to deliver real, local benefits. Transportation actions promote safer and stronger mobility. Energy Solutions advance efficient and affordable power. Stronger Public Assets actions support resilient, connected, and people-first places. Food Systems actions strengthen healthy, local, and culturally grounded food access. Waste actions ensure materials are reduced, reused, and safely managed.

These combined actions can reduce up to 3.8 million metric tons of GHGs by 2030—roughly equivalent to 4.75 million individual roundtrips by air between Honolulu and Las Vegas. The CAP emphasizes affordability, safety, and the public's well-being. This update builds upon the City's 2020–2025 CAP by deepening collaboration among residents, local organizations, and City agencies. It incorporates new data—including a consumption-based emissions inventory (CBEI)—to better capture the full footprint of what Oahu residents buy, eat, and use. The result connects the public's priorities to measurable outcomes for every district across the island.

Through engagement across Waianae, Koolaupoko, Koolauloa, Kona, Ewa, and Waialua—and through the CAP Platform—the City connected with residents where they already work and gather: local events, neighborhood meetings, schools, libraries, fairs, small businesses, private sector entities, and public centers. A wide range of voices shaped what is included in this plan and how these actions convey meaning. Insights from public consultations informed every stage of the process. Residents and local leaders across Oahu informed the action language, metrics, and framing from 2024 to 2025.

Interdepartmental discussions during this time period also incorporated lessons learned to align technical planning with lived realities. To ensure that the strategies in this plan for Oahu were built from the ground up and informed by the public that it is meant to serve, the CAP team assembled a CAP Steering Committee that carries a wide range of lived experience and institutional knowledge. The Committee helped shape the plan's framework, evaluate actions, and review the draft. While the CAP was built through relationships, trust, and collaboration, it is ultimately driven by the needs, priorities, and leadership of Oahu's people.

Reducing GHGs should also be a path towards improving affordability, health, and resilience on the island. To align with this goal, we developed three complementary inventories to analyze GHGs from different perspectives and to reveal where the City can make the greatest impact on people's everyday lives.

For instance, the Oahu-wide inventory measures GHGs from activities that happen on the island, while the consumption-based inventory estimates GHGs are tied to the products and services residents use, regardless of where they are made. Meanwhile, the municipal inventory provides an accounting of GHGs from city operations alone.

The consumption-based inventory reveals that more than half of household GHGs, or 54%, are from how we get around and how we power our homes, offering the largest opportunity to cut down GHGs. Food consumption is also significant, totaling 16% of household GHGs, highlighting the importance of food production and dietary choices.

The municipal-based inventory meanwhile reveals an opportunity for the City to lead by example through actions that cut energy used by City facilities and fuel consumed by the City fleet.

The actions in this CAP were designed to make the most out of these opportunities, and when paired with state and federal initiatives, they can cut more than half of our island-wide GHGs by 2050, while also delivering benefits such as strengthened infrastructure, lower utility bills for residents and businesses, cleaner air and water, safer streets, and stronger local food systems.

With adoption of the *2025–2030 CAP*, action implementation efforts will take place across City departments and City Council districts in collaboration with private sector, local organizations and residents. The City often faces significant implementation barriers due to limited resources, staffing, and funding. It is crucial for departments to work with the Office of Climate Change, Sustainability & Resiliency (CCSR) to establish available funding streams through state and federal programs, align or share staff capacity, and strengthen administrative systems that support long-term, effective actions.

Reflecting on learned experiences through the *2025–2030 CAP* engagement process, action implementation moving forward will require continued outreach, ongoing education, and clear transparency and accountability of action progress. As a result, the City will share key implementation updates and milestones through online dashboards, in-person talk story check-ins, and annual reporting updates. Progress is measured in reduced GHGs and in visible, daily improvements including lower utility costs, safer streets and workplaces, restored natural resources, resilient food systems, and trusted gathering spaces. These outcomes reinforce accountability and connection between people and place.

The *2025–2030 Climate Action Plan* represents a collective commitment to care for Oahu through action. Its next chapters unfold in neighborhoods and classrooms where people gather, and places are restored. The CAP stands as a living expression of shared purpose, guided by the public and grounded in relationship.

1. Introduction

The City and County of Honolulu (the City) is a consolidated city-county government encompassing the entire island of Oahu—home to nearly one million residents. From the dense urban core of Honolulu to the rural communities of Koolauloa and Waialua, and the suburban areas of Kapolei and Aina Haina, the City provides essential services and infrastructure across a remarkably diverse geographic and demographic landscape.

Established by a 2016 City Charter amendment, CCSR coordinates cross-sector initiatives, monitors latest related science and policy developments, and oversees the City's CAP planning, actions and their advancement. Its work is guided by the principles: building durable partnerships, planning for the long term, empowering leadership at all levels, and scaling proven solutions to meet the challenges of our time.

The City's first-ever CAP was adopted by the Honolulu City Council in July 2021. In accordance with §2-10.12 of the Revised Ordinances of Honolulu (ROH), the City must update its CAP every five years. The 2025–2030 CAP is the first update, charting a path to continue reducing GHGs and achieving net-negative GHGs by 2045. This goal aligns with the State of Hawaii's statutory commitment, as codified in §225P-5 of the Hawaii Revised Statutes (HRS).

The 2025–2030 CAP was supported by the U.S. Environmental Protection Agency's (EPA) Climate Pollution Reduction Grants (CPRG) program. The Plan fulfills the CPRG requirement for a Comprehensive Climate Action Plan (CCAP) and provides a forward-looking framework to reduce GHGs, improve public health, and guide investment across Oahu. The CCAP refines and expands initial efforts in the City's 2020 – 2025 CAP, integrates long-term strategies with priority measures, identifies solutions to implementation challenges, and continues robust and meaningful public engagement.

The Plan integrates numerous existing City plans, including *Ola: the Oahu Resilience Strategy*, the Oahu General Plan, district-level Development Plans and plans under Section 6-1509, Revised Charter, the 2023 Priority Climate Action Plan (PCAP), and sector-specific initiatives focused on Stronger Public Assets, Food Systems, Transportation, Energy Solutions, and Waste. The update builds on years of learning through hands-on implementation, public partnership and workforce development.

CCSR led this effort in collaboration with multiple City departments, technical consultants, business and industry, and public partners across Oahu. The process included updating GHG inventories, data modeling of future GHG scenarios, and extensive public engagement designed to center their knowledge and priorities.

To ensure the strategy for Oahu was built from the ground up and informed by the public it is meant to serve, the CAP was guided by a Steering Committee ("Steering Committee" or "Committee") carrying a wide range of lived experience and institutional knowledge. This volunteer group included policy representatives, government officials, and industry experts.

The Committee helped shape the plan’s framework, evaluate actions, and review the final draft. Their work ensured that this Plan balances social, cultural, economic, environmental, and political contexts of Hawaii while remaining grounded in actionable solutions. This Plan is organized into seven sections that align with both CPRG requirements and the City’s local planning priorities:

1. *Introduction*
2. *Public Engagement*
3. *GHG Emissions Inventories*
4. *GHG Reduction Pathways*
5. *Strategies & Actions*
6. *Funding Mechanisms*
7. *Conclusion*

Table 1: Mapping Required CCAP Elements to Relevant Sections of this Plan

Required CCAP Elements	CAP Section	Location in CAP
GHG Inventory	Sections 3.2 - 3.3	Pg. 15-26
GHG Reduction Targets	Section 4.2	Pg. 30
GHG Emission Projections	Section 4.2	Pg. 30
Quantified GHG Reduction Measures	Sections 4.3 & Section 5.3 - 5.7	Pg. 33, 43-111
Benefits Analysis	Sections 5.3 - 5.7	Pg. 43-111
Workforce Planning Analysis	Section 5.9	Pg. 115
Review Of Authority to Implement	Sections 5.3 - 5.7	Pg. 43-111
Intersection With Other Funding Availability	Section 6.1	Pg. 119

This project was supported in whole or in part by the EPA under assistance agreement **98T74101** (FAIN) awarded to CCSR. The contents of this document do not necessarily reflect the views or policies of the EPA, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

Data presented in this CAP are based on 2023 and 2024 data, with projections generated using 2022 data. Cost figures included do not represent budget commitments by the City; instead, they are preliminary cost estimates intended to help identify potential federal, state, local, and private funding sources that may support implementation of the CAP objectives. Unless otherwise noted, the actions outlined in this CAP are intended to be broadly available to all eligible entities within the Plan’s geographic scope, including those seeking CPRG Implementation funding or other complementary opportunities. For the purposes of this CAP, the geographic scope of actions are island-wide across Oahu.

1.1 Background

The 2025–2030 CAP commits to a way of governing that is led by the people of Oahu and carried by connections. This Plan remembers our responsibilities to one another and to this island that feeds, shelters, and nourishes us. We remain committed to futures shaped by the people who call this place home.

Collaboration: This Plan emerged through a collective effort of members of the public, City departments, industry experts, and private sector partners. The Interdepartmental Focus Area Discussions played a key role in ensuring that actions are viable and supported by the capacity of government agencies. These spaces foster dialogue, strengthen relationships, and result in strategies both practical and aligned with the public’s needs. Similarly, the CCSR Partnership Program, which evolved into public-led sessions, facilitated authentic engagement for deep learning and reciprocal relationships between the City and the public.

Transparency: From start to finish, the CAP process centered on transparency and a sense of accountability to the people of Oahu. This approach reflects established best practices in participatory governance, open communication, and meaningful public involvement. Decision-making criteria are clearly defined and communicated. The public was invited to give feedback at every stage of the process, and all feedback was carefully reviewed, honored, and integrated into the Plan. This commitment to transparency ensures that all stakeholders understand how decisions are made and that the Plan reflects collective voices.

Accountability: Accountability continued through intergovernmental meetings, Steering Committee sessions, and internal team discussions. These practices ensured that the public’s voices remained present throughout the process, not only at engagement events. The inclusion of an Other category in the evaluation criteria reflected the Plan’s openness to new ideas, concerns, and lived realities not anticipated by conventional government processes. By embedding transparency and accountability into every layer of the process, the CAP goes beyond collective input—rather, it prioritizes collective ownership of those on Oahu. As the CAP moves into implementation, transparency and accountability will continue to guide coordination, resource decisions, and progress reporting.

Feasibility: The CAP is developed with a focus on creating visionary, feasible, and ecofriendly action. The CAP evaluates each action for its public benefits and disbenefits, cultural and generational knowledge, environmental impact, departmental feasibility, alignment with existing policies, and identified roadblocks and limitations. The evaluation criteria ensure that selected actions are both practical and thoroughly address areas of public concerns with the intention of moving forward to make a real difference in how City agencies approach relevant solutions.

1.2 State and Local Commitments

This Plan is anchored in commitments established by the State of Hawaii and the City and County of Honolulu, while also reflecting global frameworks.

The CAP advances the State of Hawaii's commitment to achieve a GHG negative future by 2045 and builds on the City's first CAP adopted in 2021¹, which included nine strategies and 47 actions across the transportation, energy, and waste sectors. The actions in this 2025 to 2030 CAP expand upon those earlier efforts and incorporate new priorities identified through the City's Priority CAP submitted to the EPA in 2024², which identified ten priority actions. Together, these state, local, and public grounded commitments form the foundation for the strategies and actions in this Plan and set a clear path toward a better future for Oahu.

1.2.1 State-Level Commitments

State-level action is coordinated by the interdepartmental Commission established by the legislature in 2017 through Act 32.³ The State also submitted its own PCAP to the EPA under the CPRG Planning Grant program and is developing a statewide Comprehensive CAP (CCAP) that complements the City's CCAP and this CAP.⁴

In a landmark 2024 legal settlement, *Navahine F v Hawai'i Department of Transportation*, the state agreed to fully reduce its GHGs stemming from ground, sea, and inter-island air transportation systems by 2045.⁵ As part of this settlement, the Hawaii Department of Transportation (HDOT) developed an *Energy Security and Waste Reduction Plan* released in 2025.⁶ The settlement also established a youth advisory council.

1.2.2 Local Mandates

Local mandates provide the structure needed to implement the CAP in ways that honor both state law and public priorities. Ordinance 20-47 provides the legal foundation for this Plan by requiring the City to update the CAP every five years.⁷ The ordinance also aligns with state targets. The City's climate action efforts are further supported by additional City and County of Honolulu Ordinances, available upon request.

1.2.3 Related City Plans and Strategies

The CAP builds strategically on the City's existing policy foundation rather than creating separate or competing initiatives. The CAP aligns with the City's established transportation and public plans.

This alignment delivers multiple benefits: streamlined inter-agency coordination, more efficient use of public resources, and enhanced accountability through shared goals and metrics across City departments. The result is a strategy that leverages existing momentum while filling critical gaps. Key plans that informed the CAP development and demonstrate how they reinforce the CAP's strategic focus areas and implementation approaches, include:

- The Department of Planning and Permitting (DPP) develops long-range plans for eight regional planning areas across Oahu. The Primary Urban Center and Ewa each have a Development Plan, as most of the island's residential and commercial growth is directed to these areas. The remaining areas—East Honolulu, Koolau Poko, Koolau Loa, North Shore, Central Oahu, and Waianae—each have plans under Section 6-1509, Revised Charter focused on modest development and the preservation of rural character.⁸
- The Oahu General Plan establishes the City's objectives and broad policies for the long-range development of the island (Section 6-1508, Revised Charter). Developed in partnership with the public, it organizes policies and objectives into 11 key focus areas reflecting the needs of residents and the functions of government.⁹
- The City's Integrated Waste Management Plan, updated in 2019, addresses all aspects of waste management, including collection, storage, and disposal of waste, source reduction, recycling and composting, and facility operations. The Plan sets waste reduction targets for Oahu to achieve by 2030, including a 25% reduction in per-capita waste generation.¹⁰
- The Long-Term Disaster Recovery Plan, developed by CCSR and the Department of Emergency Management (DEM), provides a roadmap for how the City and the public can recover from major disasters quickly and efficiently.¹¹ It covers sectors ranging from infrastructure and transportation to neighborhood planning and capacity building.
- The City is developing its first Oahu Food Systems Plan, a strategic roadmap to guide City actions and investments, addressing food security, local food production, supply chain resilience, institutional procurement, and other key issues—complementing CAP Food Systems actions.¹²
- The Transportation Demand Management (TDM) Plan sets overarching TDM goals, outlines existing conditions, identifies best practices, and provides recommendations for a comprehensive TDM program. It includes the HNL Connect program, operated by City and County of Honolulu Department of Transportation Services (DTS) to serve residents, visitors, and employees island-wide.¹³
- The City's Transit Oriented Development (TOD) Neighborhood Plans, initiated in 2007, focus on planning around Honolulu Rail Transit stations under City jurisdiction. TOD plans have been developed for areas including Aiea-Pearl City, the airport, Ala Moana, Downtown Honolulu, East Kapolei, Halawa, Kalihi, and Waipahu, promoting mixed-use development within walking distance of transit.¹⁴
- The Oahu Pedestrian Plan is a long-term action plan to create vibrant, safe, and complete streets for people of all ages and abilities.¹⁵ CAP Action T-A—Implement safe street design and land use to support the reliability and efficiency for all transportation options—includes projects from this plan.

- The Oahu Bike Plan Update (2019) guides the expansion of bicycling as a safe, convenient, and affordable transportation option.¹⁶ Action T-A includes Bike Plan projects.
- In 2024, the City developed the Oahu Vision Zero Action Plan, a comprehensive strategy to eliminate all fatalities and severe injuries on Oahu roadways while increasing safe and healthy transportation choices for all.¹⁷ CAP transportation actions align with this plan to promote a safer, more comprehensive transportation system.
- The Oahu Regional Transportation Plan (ORTP) outlines transportation goals, policies, and projects for Oahu over a 25-year horizon and is updated every five years.¹⁸ CAP transportation actions align closely with the ORTP.

1.2.4 Select Municipal Initiatives

City agencies participate in multiple Energy Savings Performance Contracts (ESPCs) in partnership with private energy services companies (ESCOs) and other agencies to reduce energy consumption, water use, and utility demand.¹⁹ Under these agreements, the City funds building energy and water efficiency retrofits using future operational cost savings. The Department of Parks and Recreation's ESPC alone is projected to deliver \$97 million in utility savings over 20 years while improving park experiences and supporting resource conservation.²⁰

The City's 2020–2025 CAP recommended establishing an Oahu-wide building benchmarking program as a key strategy to reduce building sector GHGs across Oahu. In response, the City passed Ordinance 22-17 (2022), creating the Better Buildings Benchmarking program.²¹ This program requires large commercial and multifamily buildings to benchmark and report their electricity, gas, and water use annually. More than half of all covered buildings have submitted data, and the City maintains an interactive compliance map.²²

1.3 CAP Goal

This CAP identifies 26 priority actions across five key focus areas: **Stronger Public Assets, Food Systems, Transportation, Energy Solutions, and Waste**. These Focus Areas were selected to provide a clear, public-centered structure for the Plan. While presented separately for clarity, they are inherently interconnected and together form the backbone of the Plan's actions, metrics, and implementation pathways. The actions in this Plan are designed to advance Oahu toward the State interim GHG target of a 50% reduction below 2005 levels by 2030 and set the trajectory for achieving net-negative GHGs by 2045. Projections for these actions draw on available data, modeling, and assessments of implementation capacity across City departments.

This Plan fulfills the City's requirement for a CCAP under the EPA's CPRG Planning Grant Program and serves as the City's five-year CAP update, as required by Ordinance 20-47.

2. Public Engagement

From the start, the City intended and achieved updating the CAP while centering the public—shaping both the process and the Plan’s actions around the everyday realities, priorities, and perspectives. From the outset, it was clear that methods of engagement mattered just as much as the contents of the Plan.

To ensure that public input actively shaped the direction and content of the Plan, the City carried out a three-stage engagement strategy that took place over a year and a half, including: *Awareness & Initial Input*, *Targeted & Structured Engagement*, and *Validation & Finalization*. Each stage followed a cycle of preparation, engagement, and feedback, allowing for real-time learning, course correction, and collaborative decision-making throughout the process:

Table 2: Mapping Engagement Stages of this Plan

Stage	Description	Timeframe
Stage 1: Awareness & Initial Input	Introduction of CAP to the public, citywide survey	March 2024 – June 2025
Stage 2: Structured Engagement	Public workshops, outreach to various City departments	February – June 2025
Stage 3: Validation & Finalization	Talk story sessions and formal public comment period	June – October 2025
Stage 4: Plan Drafting	Drafting the 2025–2030 CAP based on the CCAP requirements and information gained during stages 1 -3	October 2025 – June 2026
Stage 5: Plan Adoption by the City	Adoption process for the City’s 2025–2030 CAP	June 2026 – October 2026

To detail some of the actions achieved during these stages, the following table outlines public engagement efforts that brought this CAP during Stages 1, 2, 3, and 4. There will be ongoing public engagement for Stage 5, as well.

Table 3: Public Engagement Efforts of this Plan

2025 – 2030 CCAP Public Engagement	
11	Public workshops across Oahu
42	Outreach events

4	Public learning sessions
1	Steering Committee
9	Steering Committee members
7	Steering Committee meetings and events
1	Public art contest
41	Public art submissions
1	Public survey
159	Public survey responses
5	Intergovernmental workshops
28	Intergovernmental participants
1	Public comment period
245	Public comments received

3. GHG Emissions Inventories

3.1 Why We Track GHGs

GHG inventories provide essential data for planning by identifying GHG sources and quantifying their contributions towards total GHGs. These assessments establish baseline conditions, measure progress over time, and inform resource allocation decisions for maximum impact. This data enables the evaluation of high-GHG sources, action effectiveness, and progress towards City and state goals.

3.2 Complementary GHG Inventories

Maximizing the opportunities to reduce GHGs requires a comprehensive understanding of where they come from. To expand our current knowledge of GHG sources, the City developed three complementary GHG inventories: an **Oahu-wide inventory**, **consumption-based emissions inventory (CBEI)**, and **municipal operations inventory**.

The City's 2021 GHG Oahu-Wide Inventory is an accounting of GHGs associated with activities that occurred on Oahu. Developed under the EPA's Climate Pollution Reduction Grant program, this inventory uses established methodologies and incorporates data from federal, state, and local agencies.

CBEI expands this view by capturing the GHGs associated with the goods and services used by residents, businesses, and institutions, regardless of where those goods and services are produced.

While the Oahu-Wide Inventory and the consumption-based inventory overlap, their different approaches allow us to identify a wider range of complementary strategies. For example, by measuring the GHGs associated with on-island agriculture, an Oahu-wide inventory may help us measure the importance of more ecofriendly ways of farming. On the other hand, when a

consumption-based inventory calculates GHGs from various food products, it may help us consider possible changes in food choices and preferences that favor products with lower GHGs.

Finally, the municipal operations inventory identifies GHGs associated with activities under the City's direct management or supervision, positioning the City to demonstrate leadership by implementing GHG reductions measures within its own operations and serving as a model for ecofriendly practices throughout the area.

The Oahu-wide inventory and municipal operations inventory categorize GHGs into *three scopes*. This allows for separate accounting of direct and indirect GHGs and provides useful frameworks for different types of policies and goals. The scopes are defined as follows:

- **Scope 1:** All **direct GHGs** that occur from *sources owned or controlled* by the reporting entity—*except* for direct carbon dioxide (CO₂) from biogenic sources¹ (such as combustion or decomposition of organic materials like plants, wood, or food waste).
- **Scope 2:** **Indirect GHGs** from the generation of *purchased or acquired electricity, steam, heating, or cooling* consumed by the reporting entity.
- **Scope 3:** All **other indirect GHGs** that occur as a result of activities from *sources not owned or directly controlled* by the reporting entity. These include GHGs from the extraction and production of purchased materials and fuels, employee commuting, business travel, outsourced operations, transportation in non-owned vehicles, and waste disposal.

These complementary inventories quantify both place-based and systemic GHGs, identify priorities, and ensure accountability in GHG reductions. All three inventories use 2021 as the base year, reflecting the most recent year with complete and reliable data at the time this CAP was initiated. Together, they form a comprehensive foundation for long-term planning under the CAP framework.

This approach ensures consistency across inventories and alignment with state-level methodologies. GHGs are reported in metric tons of carbon dioxide equivalent (MTCO₂e) using 100-year Global Warming Potentials (GWPs) from the Intergovernmental Panel on Climate Change (IPCC) *Fifth Assessment Report (AR5)*. Note that this CAP was developed in parallel with the HDOT *Energy Security and Waste Reduction Plan*, which may show different results due to varying methodological approaches and scope. However, MTCO₂e is used as the standard reference throughout this plan.

Data sources include local utility records; departmental fuel and electricity use; the State of Hawaii Department of Business, Economic Development & Tourism (DBEDT); U.S. Census data; EPA reporting tools (FLIGHT, MOVES); and peer-reviewed literature. Where data was incomplete or unavailable, proxy methods and scaling factors were transparently applied. The

¹ Biogenic CO₂ is carbon dioxide released from biological or organic sources as part of the natural carbon cycle, typically reabsorbed by new plant growth. Following international GHG accounting standards, biomass combustion GHGs are excluded from Scope 1 because this biogenic carbon would naturally return to the atmosphere through decay, unlike fossil fuel GHGs that introduce previously sequestered carbon.

CAP team identified assumptions and limitations such as data gaps in refrigerant use, employee commuting, or wastewater treatment, and conducted quality assurance checks through review and consistency testing with previous inventory efforts.

3.2.1 Oahu-Wide GHG Inventory

The Oahu-wide GHG inventory estimates all Scope 1 and 2 GHGs occurring on Oahu. The CAP organizes GHGs into major source categories, including agriculture, waste, industrial processes and product use (IPPU), military operations, transportation, energy, and land-use change (LUC). This sector-based view provides insights into the systems driving GHGs and informs GHG reduction strategies aligned with City's goals and state policy mandates.

Data for the inventory primarily comes from the 2021 Hawaii State GHG Inventory, with Oahu-specific estimates generated using population, fuel use, and transportation scaling factors.

The 2021 Oahu-wide GHG inventory quantifies total GHGs at approximately 13.1 million MTCO₂e, as noted in Table 2 below.

Table 42: Sector Breakdown of 2021 Oahu-wide GHGs

Category	2021 Oahu-Wide GHGs (MTCO ₂ e)	Percent of Total
Agriculture	35,276	0.27%
Waste	130,887	1.0%
Industrial Processes and Product Use	540,740	4.1%
Land Use	-324,033	-
Transportation - Total	5,302,636	40.5%
Transportation - Air	2,434,812	18.6%
Transportation - Ground	2,343,724	17.9%
Transportation - Water	524,100	4.0%
Energy - Total	6,507,933	49.7%
Energy - Residential	40,368	0.3%
Energy - Commercial	561,405	4.3%
Energy - Industrial	691,760	5.3%
Energy - Energy Industries	5,214,400	39.86%
Military	887,903	6.79%
TOTAL	13,081,342	

Key Findings

Energy and transportation are the largest sources of GHGs, together representing over 90% of the Oahu-wide GHGs total. To address this, the City's actions must prioritize reducing GHGs associated with electricity generation, improving transit ridership, accelerating transportation electrification, and implementing smart land use policies that reduce travel demand. Military

and industrial sources also contribute significantly to the GHG profile but require coordinated approaches with federal agencies and specialized policy instruments. Meanwhile, natural carbon sinks provide crucial GHG offsets, highlighting the importance of conservation and restoration as integral actions. Natural carbon sinks are ecosystems that absorb and store more carbon dioxide than they release, helping reduce GHGs in the atmosphere; in Hawaii, examples include traditional forests, wetlands, coastal soils, and nearshore marine ecosystems such as seagrass beds and coral reefs.

Energy

Energy is the single largest contributor to Oahu-wide GHGs, totaling approximately 6.5 million MTCO₂e. This includes two distinct categories: (1) GHGs from the energy industry itself, which contributes over 5.2 million MTCO₂e, primarily from burning up fossil fuels for electricity generation and distribution through the grid, and (2) GHGs from direct energy use across residential, commercial, and industrial buildings. Industrial energy use specifically refers to GHGs from fuel and electricity consumption within manufacturing and industrial facilities on Oahu, separate from the upstream GHGs associated with producing that energy. Addressing these energy GHGs offers the greatest potential for Oahu-wide GHGs reduction.

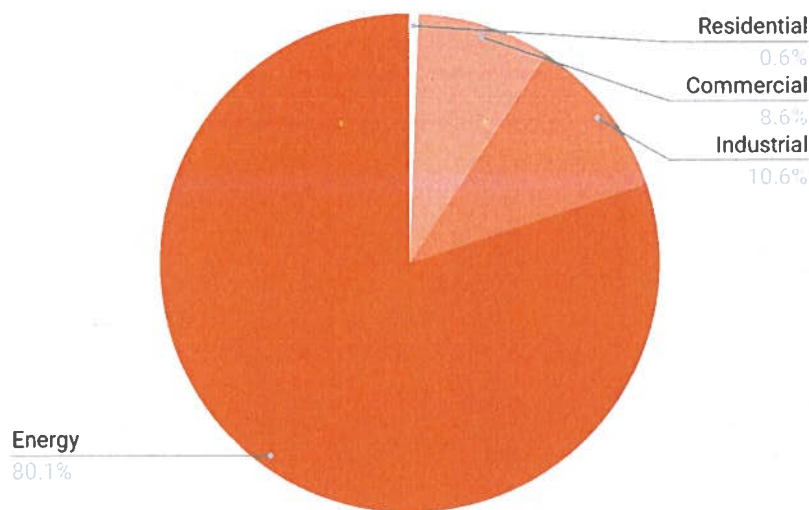


Figure 1: Oahu 2021 Oahu-Wide GHG Inventory - Energy Sector Breakdown

Transportation

Transportation GHGs account for just over 5.3 million MTCO₂e, making it the second-largest source of GHGs. The largest share comes from air travel (2.4 million MTCO₂e) and ground transportation (about 2.3 million MTCO₂e), with marine transport contributing an additional 0.5 million MTCO₂e. Reducing reliance on fossil fuels through transit, EV adoption, and urban planning will be critical to meeting the City's GHGs reductions goals.

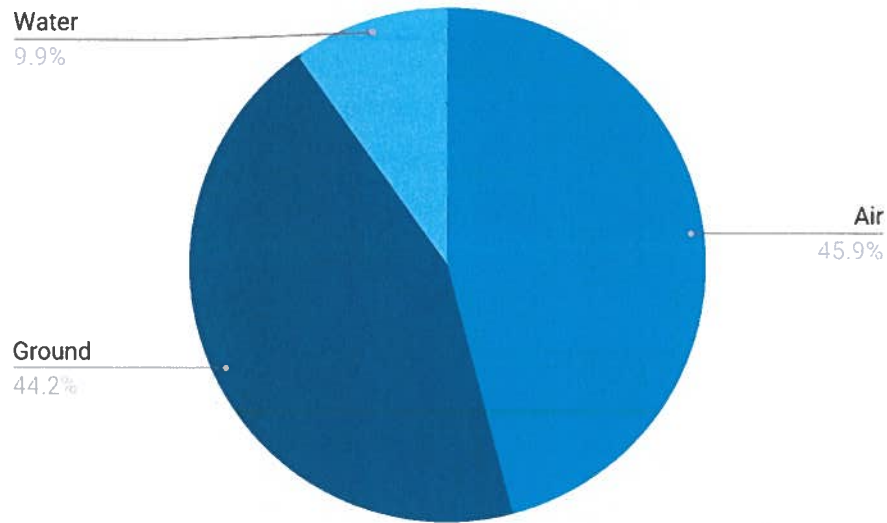


Figure 2: Oahu 2021 Oahu-Wide GHG Inventory - Transportation Sector Breakdown

Military

Military operations contributed approximately 888,000 MTCO₂e in 2021. These GHGs include both aviation and non-aviation fuel use and reflect the island's significant share of Hawaii's overall military presence.

Industrial Processes and Product Use (IPPU)

IPPU sources produced 540,740 MTCO₂e, primarily from refrigerant leakage and electrical transmission losses. These GHGs are largely unregulated under traditional energy or transportation frameworks and require sector-specific interventions.

Land Use Change (LUC)

LUC was a net carbon sink, offsetting 324,033 MTCO₂e through sequestration by urban trees, forested areas, and carbon stored in landfilled organics. Preserving and enhancing these carbon sinks can amplify mitigation efforts on O'ahu.

Waste Generation and Management

Waste sector GHGs totaled 130,887 MTCO₂e, with the largest sources being landfill methane and wastewater treatment. Enhancing composting, recycling, and methane capture can help reduce these GHGs.

Agriculture

Agricultural GHGs were relatively low at 35,276 MTCO₂e, with contributions from livestock, manure, and soil management. No significant field burning occurred in 2021 or is expected to occur in succeeding years.

3.2.2 CBEI

CBEI provides a broader perspective on the island's carbon footprint by accounting for the GHGs associated with everything residents, businesses, and governments consume—regardless of where those GHGs occur. While the Oahu-wide inventory focuses on GHGs generated by activities on the island, the CBEI captures upstream GHGs of the production, transport, and disposal of goods and services.

Key Findings

Consumption-based GHGs for Oahu tell a different story than traditional inventories. In 2021, these GHGs totaled 17.0 million MTCO₂e—about 30% higher than what shows up in the Oahu-wide inventory, which only accounts for GHGs occurring locally. This consumption-based total captures the full carbon footprint of everything Oahu residents, governments, and businesses consume, including goods shipped from elsewhere and services provided remotely.

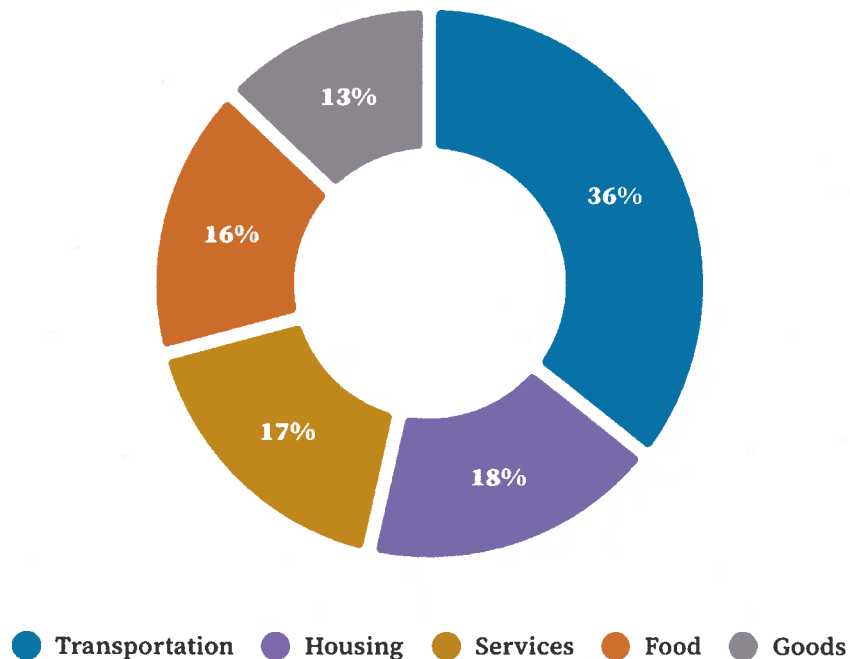


Figure 3: Oahu Household Consumption-Based GHGs by Sub-category (2021)

Household consumption drives the majority of GHGs. Families and individuals account for 73% of all consumption-based GHGs through their daily choices around transportation, housing, food, and purchases. Government consumption at all levels contributes 21%, while business consumption represents 6%.

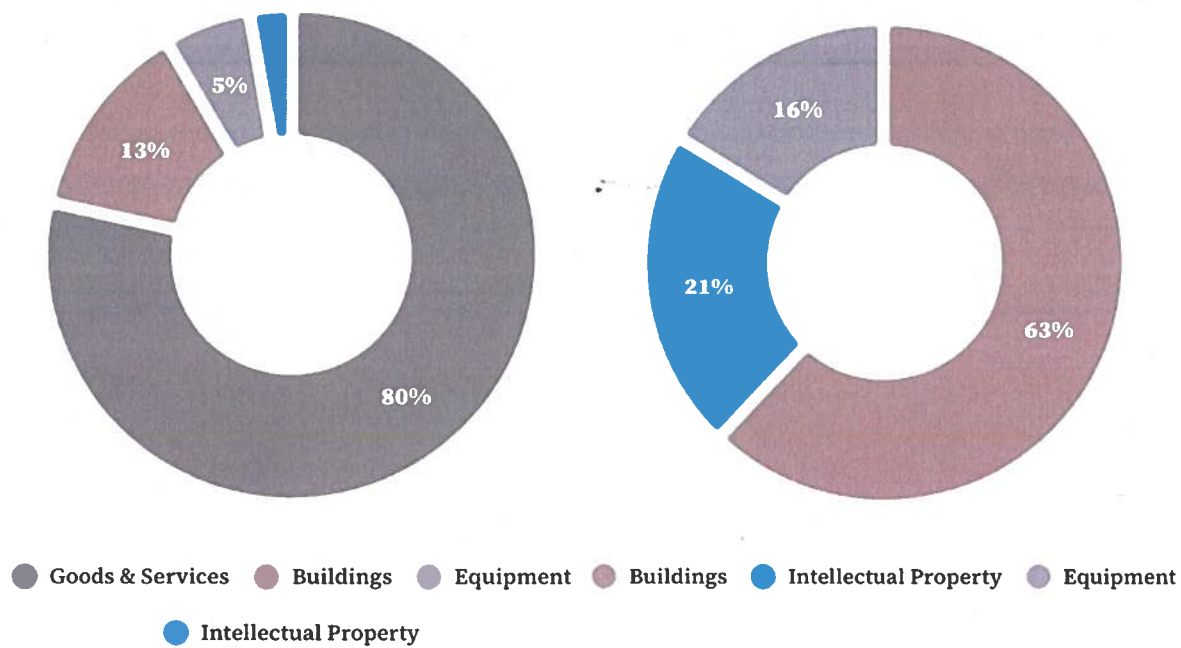


Figure 4: Government Sub-category Breakdown (2021) Figure 5: Business Sub-category Breakdown (2021)

Transportation leads household GHGs. Among household consumption categories, personal transportation has the largest impact at 36% of total household GHGs. Housing energy use and services contribute 18% and 17%, respectively. Food accounts for 16%, and consumer goods represent 13% of the household total.

The majority of an average household's consumption of GHGs stems from fuel and energy use, healthcare, and meat and dairy products. In 2021, the average Oahu household generated approximately 36.6 MTCO₂e in consumption-based GHGs. Four categories alone account for more than half of household GHGs: gasoline, electricity, healthcare, and meat and dairy products. Healthcare's significant contribution reflects the energy-intensive nature of medical facilities and equipment. Meanwhile, meat and dairy products represent a smaller share than some might expect, likely reflecting dietary patterns and the relatively high cost of these items on Oahu. Consumer goods GHGs suggest that the carbon footprint of manufactured products is less significant than daily energy and transportation choices for most families.

This analysis reveals that individual and family consumption patterns—especially how people travel, power their homes, and what they eat—represent the biggest opportunities for reducing the City's overall carbon footprint. While government and business GHGs are important, the path to significant GHG reductions depends largely on empowering residents to adopt lower-carbon choices in their daily lives.

3.2.3 Municipal Operations Inventory

The 2021 municipal operations GHG inventory quantifies GHGs from sources under the operational control of the City. This includes GHGs from City activities such as electricity use in

City buildings and fuel use in City fleet vehicles, as well as GHGs from public services provided by the City, such as water treatment, wastewater treatment, public transit, and solid waste management. Using information on City activities provided by CCSR, this inventory offers a baseline for understanding the GHGs associated with municipal services and infrastructure and supports the City's efforts to lead by example in reducing GHGs.

This inventory was developed using the Local Government Operations Protocol for Accounting and Reporting GHG Emissions (LGO Protocol), which offers a standardized approach for calculating municipal GHGs across all relevant scopes and sectors. The EPA's Local GHG Inventory Tool: Government Operations Module, which is based on the LGO Protocol, was used to develop the municipal GHG inventory.

Table 3 summarizes the GHG sources included in the municipal GHG inventory by activity.

Table 5: Sources Included in the Municipal GHG Inventory

Activity Type	Sources Included ¹
Stationary Combustion (Scope 1)²	- Propane combustion in City building kitchens - Diesel combustion in stationary units at H-POWER - Stationary municipal solid waste incineration at H-POWER, except biogenic CO₂
Mobile Combustion (Scope 1)	- Gasoline and diesel fuel combustion in City on-road fleet vehicles - Diesel fuel combustion in City off-road mobile equipment - Gasoline and diesel fuel combustion in on-road public transit vehicles (TheBus and TheHandi-Van)
Solid Waste (Scope 1)³	- Landfill gas from active Waimanalo Gulch Sanitary Landfill - Landfill gas from inactive Kapaa and Kalaheo Landfills
Wastewater (Scope 1)³	Wastewater treatment at nine City Wastewater Treatment Plants
Urban Forestry (Scope 1)	N/A
Electricity (Scope 2)	Electricity usage for all operations under City control, including City buildings, electric fleet vehicles and equipment, and provided services such as public transit, water treatment, wastewater treatment, and solid waste management
Employee Commute (Scope 3)	Fuel combustion for City employee commute trips
Imported Water (Scope 3)	N/A
Agriculture & Land Management (Scope 3)	N/A
Waste Production (Scope 3)⁴	N/A
Additional GHG Sources	- Refrigerant usage for air conditioning in City buildings (Scope 1) - Refrigerant usage for air conditioning in City fleet vehicles (Scope 1)
Biogenic Sources²	Biogenic CO₂ from stationary municipal solid waste incineration at H-POWER
Notes:	

¹ The municipal GHG inventory covers sources under the City's operational control. The LGO Protocol defines operational control as operations, facilities, and sources owned or operated by the City. Autonomous departments and semi-autonomous agencies managed by their own board are considered under the City's operational control if City officials appoint board members and have some level of oversight over the board.

² Following established international GHG management principles, CO₂ from incineration of biomass are not included as a Scope 1 source because the carbon concerned is of biogenic origin and would have been emitted to the atmosphere through the natural process of decay. However, in order to more completely represent energy use, the total CO₂ released from biomass incineration should be reported for informational purposes.

³ Electricity use is Scope 2 and accounted for under a separate activity type.

⁴ The City owns/operates the solid waste disposal facilities, so GHGs from waste generation at City facilities are already accounted for under Scope 1 and 2.

Key Findings

In calendar year 2021, municipal operations across the City generated an estimated 684,905 MTCO₂e. This inventory provides a detailed look at the GHGs associated with City-managed facilities, fleets, services, and infrastructure.

Table 6: Total 2021 Municipal GHGs

Scope	CO ₂ (MT)	CH ₄ (MT)	N ₂ O (MT)	HFCs (MT)	Total GHGs (MTCO ₂ e)	Percent of Total
Scope 1	372,766	60,408	65,300	494	498,968	73%
Scope 2	171,320	517	751	-	172,587	25%
Scope 3	13,349	-	-	-	13,349	2%
TOTAL	557,435	60,925	66,051	494	684,905	100%
Biogenic GHGs (Stationary MSW Incineration ¹)	415,365	-	-	-	415,365	-
Notes:						
¹ Per LGO Protocol, biogenic GHGs from combustion should instead be reported separately from the scopes for informational purposes only.						

Scope 1 GHGs—those produced directly by City operations—accounted for 73% of total municipal GHGs. This category includes on-site fuel combustion, landfill gas-related GHGs, wastewater treatment GHGs, and City vehicle use. Indirect Scope 2 GHGs from City electricity use made up 25%, while Scope 3 GHGs from employee commuting accounted for the remaining 2% of the total municipal GHGs.

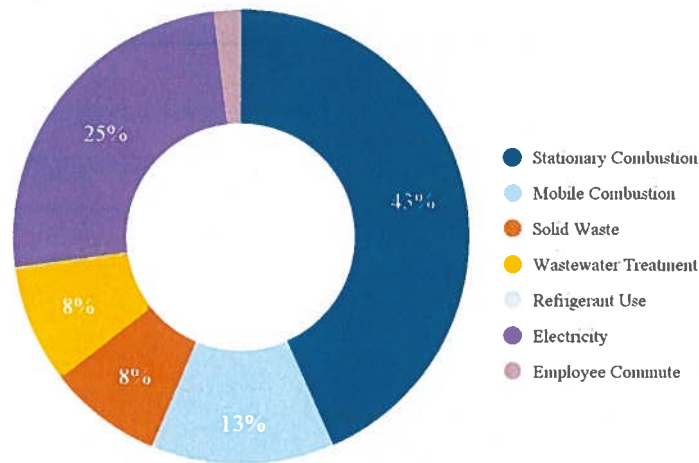


Figure 6: 2021 Municipal GHGs by Source

As shown in Table 5 and Figure 6, stationary combustion was the single largest GHGs source, accounting for 43% of total municipal GHGs—primarily from municipal solid waste (MSW) incineration. Under the LGO Protocol, CO₂ GHGs from burning the organic (biomass) portion of municipal solid waste are reported separately. These biogenic GHGs result from materials originally derived from living things—such as food waste—that would otherwise release carbon through natural decay.

Municipal solid waste incineration generated 415,365 MTCO₂e of biogenic GHGs, captured separately to provide a more complete understanding of the energy use and carbon dynamics associated with the City’s waste management activities. Municipal solid waste incineration is a notable contributor to the City’s GHG footprint, offering potential for reductions of both non-biogenic and biogenic GHGs through diversion strategies targeting the waste stream such as reuse, deconstruction, and repair programs.

Electricity use was the second largest source, responsible for 25% of municipal GHGs, underscoring the importance of expanding alternative energy generation and energy efficiency in City facilities. Mobile combustion from municipal vehicles and equipment ranked third, contributing 13% of total GHGs.

Table 7: 2021 Municipal GHGs by Activity Type

Activity Type and Scope	Total GHGs (MTCO ₂ e)	Percent of Total
Stationary Combustion (Scope 1)	296,692	43%
Mobile Combustion (Scope 1)	89,145	13%
Solid Waste (Scope 1)	54,968	8%
Wastewater Treatment (Scope 1)	57,668	8%
Refrigerant Use (Scope 1)	494	1%
Electricity (Location-Based) (Scope 2)	172,587	25%
Employee Commute (Scope 3)	13,349	2%

TOTAL	684,905	100%
Biogenic GHGs (Stationary MSW Combustion)	415,365	
Notes: ¹ Per LGO Protocol, biogenic GHGs from combustion should instead be reported separately from the scopes for informational purposes only.		

Figure 7 illustrates the City's electricity consumption during the 2021 inventory year and the four previous years, showing a steady decline in overall use over time.

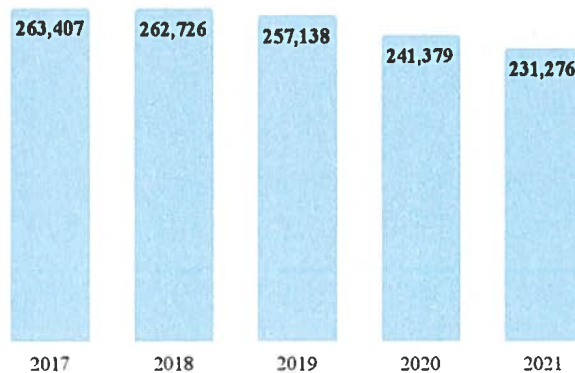


Figure 7: City Electricity Consumption (megawatt-hours, MWh)

Figure 8 presents the amount of municipal solid waste sent to H-POWER for incineration in 2021 and the four previous years, which has remained relatively consistent during this time.

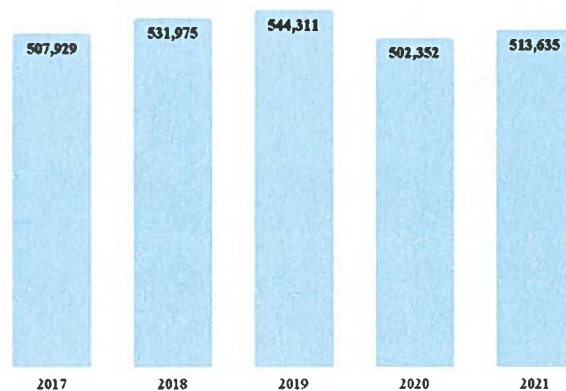


Figure 8: Municipal Solid Waste to H-POWER (tons)

As shown in Table 6, City departments that provide essential public services generated the largest share of municipal GHGs. The Department of Environmental Services, which manages solid waste and wastewater treatment, accounted for 69% of total GHGs, primarily due to these waste-related activities. The Board of Water Supply contributed 10%, largely from electricity use for water treatment and distribution, while the Department of Transportation Services accounted for 9%, reflecting GHGs associated with public transit operations.

This concentration underscores the ongoing challenge of balancing the delivery of critical services—such as clean water, waste management, and public transit—with the reduction of GHGs. Municipal operations present an important opportunity for the City to lead by example, developing and implementing GHG reduction strategies.

Table 8: Gross GHGs by Department

Department	GHGs (MTCO ₂ e)	Percent of Total
Environmental Services	474,722	69%
Board of Water Supply	68,201	10%
Transportation Services¹	62,728	9%
Facility Maintenance	15,673	2%
Parks and Recreation	12,850	2%
Police	15,428	2%
Fire	7,379	1%
Enterprise Services	5,376	1%
HART¹	189	0%
Other	22,360	3%
TOTAL	684,905	100%
Notes: ¹ The Department of Transportation Services is responsible for operating and maintaining the Skyline light rail, while HART is responsible for rail construction.		

3.3 What the Data Tells Us: Key Inventory Insights

The three inventory approaches—Oahu-wide, consumption-based, and municipal operations—collectively highlight critical opportunities for coordinated action across multiple scales and systems. Each approach may yield different results for the same sector due to variations in boundaries and calculation methodologies.

A significant portion of the island’s carbon footprint stems from supply chains and production processes that occur outside of Hawaii. The consumption-based inventory estimates GHGs roughly 30% higher than the Oahu-wide inventory, illustrating how much of the island’s impact is outsourced through imported goods, food, and services. This finding underscores the need to address both local production and consumption patterns. Meaningful GHGs reductions depend not only on decarbonizing local systems—such as electricity and transportation—but also on supporting residents in making lower-carbon choices related to food, housing, and consumption.

Finally, the inventories highlight the importance of a multi-sector approach to selecting, exploring, defining, and fine-tuning strategies with the understanding that each strategy has potential impacts on various activities, ecosystems, processes, consumption patterns, lifestyles, and even shared values, that in turn have associated benefits and costs.

3.3.1 Sector-Specific Insights and Opportunities

Transportation Emerges As a Consistent Driver Across All Three Inventories

This insight reinforces transportation electrification as a high-impact strategy. However, electrification alone will not be sufficient for all households, particularly renters and low-income residents who face barriers to vehicle ownership or ability to charge an EV.

Complementary investments in public transit and active transportation infrastructure are essential. The City's commitment to fully electrify TheBus fleet by 2035 provides an opportunity to expand service coverage and frequency, helping increase ridership and reduce household transportation GHGs. Every trip taken on Honolulu's transit system avoids approximately 2 kg CO₂e compared to driving. Similarly, expanding safe walking, biking, and micromobility infrastructure can help further reduce GHGs, particularly for households for whom vehicle electrification may remain out of reach for years to come.

Energy Systems Drive Half of Oahu-Wide GHGs and a Quarter of Municipal GHGs

Energy systems show similar cross-inventory importance, representing 50% of Oahu-wide GHGs, ranking among the top household consumption drivers, and accounting for 25% of municipal GHGs. Beyond direct household use, the consumption-based inventory shows that energy GHGs are also embedded in the goods and services that households purchase. Improving energy efficiency and expanding lower GHG electricity generation can therefore yield benefits beyond household savings, reducing the carbon intensity of Honolulu's goods and services.

Food Systems Emerged as a Major, Previously Underrepresented GHG Source

While absent from traditional inventories, food—particularly meat and dairy—ranks among the top five household consumption drivers. Total food-related GHGs exceed those from household electricity use, and GHGs from meat and dairy alone are estimated to surpass those from residents' air travel. Shifting toward plant-based alternatives just one or two days per week could deliver the same GHG benefit as improving household energy efficiency by 10%. This illustrates the value of consumption-based analysis in identifying high-impact opportunities—making a compelling case for integrating food systems as a core focus area.

3.3.2 Government and Business Consumption Patterns

Procurement of Goods and Services are Primarily Driving GHGs within Government

With 80% of government consumption concentrated on goods and services, the City has a clear opportunity to lead by making GHG-conscious purchasing decisions and supporting local businesses in developing alternatives.

Business Consumption is Heavily Concentrated in Buildings and Equipment

Although business consumption accounts for only 6% of total GHGs, it is largely concentrated in buildings and equipment—highlighting opportunities to reduce embodied carbon in commercial construction and advance business development initiatives across key sectors such as hospitality, healthcare, and construction. Achieving these goals will take time, as success depends on the availability of low-carbon materials and the development of local training and evaluation programs to support their use on Oahu.

3.3.3 Household Consumption and Reduction Pathways

Household GHGs are Driven by Both Local and Imported Sources.

The consumption-based analysis reveals that Transportation (largely local gasoline use) accounts for 36% of household GHGs, while goods consumption (primarily imported products) represents 13%. This split suggests that effective household-level strategies must address both local infrastructure and consumption choices—from expanding transit access to supporting alternative purchasing decisions.

Household GHGs are Largely Concentrated in Gasoline, Electricity, Healthcare, and Food.

These four categories alone account for 57% of average household GHGs, suggesting that targeted programs addressing transportation alternatives, energy efficiency, food access, and healthcare efficiency could drive substantial reductions.

3.3.4 Municipal Leadership and Institutional Change

Departments Providing Critical Public Services Drive the Majority of City GHGs

The municipal inventory shows that Environmental Services alone are responsible for 69% of municipal operations GHGs through waste management activities, highlighting the challenge of reducing GHGs while maintaining essential services and the opportunity for the City to demonstrate leadership in the sectors where it has direct operational control.

Municipal Operations Offer Immediate Opportunities to Lead by Example

Fleet electrification, building efficiency, procurement, and embedding GHG considerations into capital planning and budgeting processes can model pathways for broader public adoption while reducing the City's GHG impact. As a service provider, policy maker, convener, and public leader, the City can drive systemic changes that address local production and consumption-based GHGs.

4. GHG Reduction Pathways

4.1 How GHG Data Shapes CAP Actions

The 2021 Oahu-wide GHG inventory is used as the foundation for GHG reduction pathways modeling, quantifying total GHGs at approximately 13.1 million MTCO₂e. GHG by sector is shown in Figure 9 below.

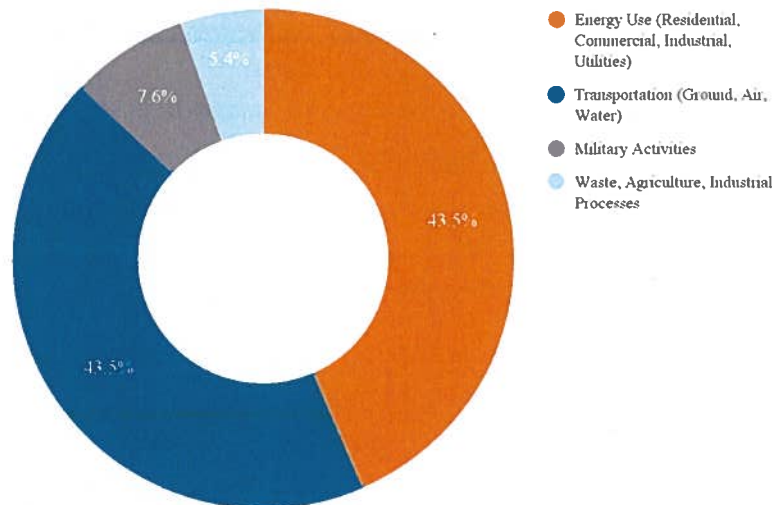


Figure 9: 2021 Oahu GHG Breakdown

Energy and transportation sectors account for more than 90% of total GHGs, making them the primary focus areas for reduction. The largest GHG drivers within these sectors include fossil fuel-based electricity generation, personal and commercial vehicle travel, and inter-island and trans-Pacific air travel. Land use and agriculture are also critically important sectors for climate action, especially in Hawaii. Natural ecosystems such as forests and wetlands not only pull in carbon pollution from the air, but they are also the bedrock of Native Hawaiian history, local practices, and everyday life.

The CAP team translated the conventional GHG inventory categories into 5 focus areas described below:

- **Stronger Public Assets:** Public needs such as affordable housing, public transit, and public infrastructure to increase the strength of public assets.
- **Food Systems:** Includes the processes and practices shaping how food is grown, food systems are shaped, and how food waste is managed.
- **Transportation:** Prioritizes safety, public transit access, and a variety of mobility options.
- **Energy Solutions:** Solutions to increase capacity for alternative energy generation, while minimizing environmental impact and maximizing public benefits.
- **Waste:** Strategies to reduce, reuse, and recycle, including lithium batteries and photovoltaic (PV) panels.

While GHG sectors and CAP focus areas use different classification systems, this framework identifies where each focus area can achieve the greatest impact within the CAP's five-year implementation window. This CAP translates technical GHG data into actionable strategies that improve daily life—reducing utility costs, improving mobility options, minimizing food waste, and strengthening neighborhood resilience.

As with forecasting future baseline GHG scenarios, projecting the exact benefits of each action is inherently uncertain, and this Plan does not aim to do so with absolute precision. Some actions will prove more effective than estimated, while others may underperform. This CAP represents the City's best estimate of the combination of actions required to put O‘ahu on a trajectory toward achieving both local and state GHG reduction targets.

4.2 GHG Reductions Pathways

The CAP models three different pathways or scenarios to understand possible futures with and without CAP action implementation.

Figure 10: GHG Reduction Pathways Scenarios

Scenario	State and Federal Climate Action?	City Action through CAP Implementation?
1	No	No
2	No	Yes
3	Yes	Yes

- 1

Scenario 1 models baseline GHG projections through 2030 and 2045, assuming no additional policy interventions at any level of government and not accounting for CAP action implementation. This is a pathway where the full extent of GHGs is estimated.
- 2

Scenario 2 models GHG projections including CAP action implementation through 2030 and 2050 and assuming external factors remain constant in the near- and long-term. This provides a conservative estimate of the CAP’s effectiveness on reducing GHGs.
- 3

Scenario 3 models GHG projections including CAP action implementation and assuming federal and state policy shifts that would result in a “best-case” pathway where the CAP has a greater impact on reducing GHGs due to favorable external factors.

Without policy interventions or CAP implementation, as modeled in Scenario 1, Oahu GHGs are projected to increase by 2030 and further increase by 2045. However, the City is committed to achieving net-zero GHGs by 2045. A linear trajectory toward this goal requires a near-term annual GHGs target of 7,241,141 MTCO₂e by 2030, representing the level needed to remain on track for the 2045 target. To meet the long-term target, additional reduction strategies beyond the actions included in this Plan will need to be implemented.

4.2.1 Baseline GHG Projections

To measure the potential impact of climate action across sectors, Scenario 1 projects baseline GHGs through 2030 and 2045, assuming no additional policy interventions.

Table 9: Scenario 1 GHG Projections by Sector

Sector	2021 GHGs (MTCO ₂ e)	2030 Scenario 1 Projection (MTCO ₂ e)	2045 Scenario 1 Projection (MTCO ₂ e)
Agriculture	35,276	34,059	32,504
Waste	130,887	133,360	136,430
IPPU	540,740	583,004	598,327
LUC	-324,033	-401,314	-498,382
Transportation	5,302,636	5,651,351	6,111,510
Air	2,434,812	2,586,231	2,838,593
Ground	2,343,724	2,504,964	2,674,785
Water	524,100	560,156	598,131
Energy	6,507,933	7,016,594	7,201,000
Residential	40,368	43,523	44,667
Commercial	561,405	605,284	621,192
Industrial	691,760	745,828	765,429
Energy Industries	5,214,400	5,621,958	5,769,711
Military	887,903	1,133,726	1,521,280
TOTAL	13,081,342	14,158,538	15,111,066

Under Scenario 1, population growth, ongoing fossil fuel use, and rising transportation demand cause GHGs to remain high or increase across several sectors. Total GHGs are projected to rise roughly 5% above 2021 levels by 2030 and 12% by 2045 in the baseline scenario. These increases are primarily driven by greater vehicle and aviation activity, electricity demand, military operations, and landfill GHGs. Although certain sectors show a modest decrease—such as agriculture and land use—the reduction is insufficient to offset projected growth in other sectors.

4.2.2 Quantified GHG Reduction Measures & Scenario Projections

GHG Reductions Measures Summary

The CAP models GHG reductions based on the estimated impact of each action—or the combined effects of multiple actions—using baseline inventory data and relevant factors. Each calculation incorporated available activity data and anticipated reductions to quantify total GHG savings.

Implementation Scenario Projections

The CAP team modeled GHG reductions from CAP actions under two implementation scenarios to reflect varying external conditions and policy environments. Due to timing of this award, the modeling and calculations used were based on federal policies prior to 2024:

- 2 Scenario 2 assumes external factors remain constant through near- and long-term projections, providing a conservative estimate of CAP effectiveness.
- 3 Scenario 3 incorporates federal and state policy shifts resulting in greater expected GHG reductions, particularly in the transportation and energy sectors.⁵²

Reductions in other sectors remain constant across scenarios, as they are less affected by external policy changes. CAP action reductions were subtracted from baseline projections to estimate remaining GHGs under each scenario, summarized in **Tables 8** and **9**.

Table 10: Sector-Level GHGs Under Scenario 2

Sector	Base Year GHGs (MTCO ₂ e)	Short-Term Implementation Scenario Year (2030) (MTCO ₂ e)	Long-Term Implementation Scenario Year (2050) (MTCO ₂ e)
Agriculture	35,276	33,741	31,256
Waste	130,887	127,149	115,800
IPPU	540,740	583,004	565,089
LUC	-324,033	-403,370	-539,868
Transportation	5,302,636	5,499,504	3,580,487
Energy	6,507,933	6,979,757	477,775
Non-Energy Uses	49,600	53,477	51,833
Military	887,903	710,774	747,792
TOTAL	13,130,942	13,584,036	12,876,395

Table 11: Sector-Level GHGs Under Scenario 3

Sector	Base Year GHGs (MTCO ₂ e)	Short-Term Implementation Scenario Year (2030) (MTCO ₂ e)	Long-Term Implementation Scenario Year (2050) (MTCO ₂ e)
Agriculture	35,276	33,741	31,256
Waste	130,887	119,383	115,791
IPPU	540,740	550,958	565,089
LUC	-324,033	-403,370	-539,868
Transportation	5,302,636	4,690,114	3,580,488
Energy	6,507,933	3,553,523	0
Non-Energy Uses	49,600	50,537	51,833
Military	887,903	710,774	747,792
TOTAL	13,130,942	9,305,671	4,552,381

In this context, non-energy uses refer to fossil fuel applications not used for energy production, such as fuels used as industrial feedstocks, lubricants, or asphalt. These are included in the GHG inventory to account for carbon stored in materials or released through industrial processes, consistent with IPCC and EPA inventory methodologies.

Long-term projections are limited to 2045 due to data constraints, particularly in the agriculture and land use sectors. However, the same trajectory was extended through 2050 for comparative purposes. Minimal reductions are assumed in agriculture, waste, land use change, and transportation across both scenarios to maintain methodological consistency.

The two scenarios demonstrate different levels of sector responsiveness to policy intervention. Ground transportation actions show the greatest potential for steep GHG cuts, particularly in Scenario 3. This sector is highly responsive to federal, state, and local level coordination.

Energy systems exhibit steady GHG reductions across both scenarios. Waste and consumption-related sectors show gradual, linear reductions, suggesting that long-term programs are needed to drive significant change. Overall, the buildings and transportation sectors emerge as the most responsive to policy-driven measures, offering the greatest potential for rapid, high-impact GHG reductions when local initiatives align with state and federal actions.

4.3 Potential GHG Reductions From Taking Action

This section discusses estimated GHG reductions from each action included in the Plan, providing the basis for modeling Scenarios 2 and 3. Unlike other CAPs that approach strategies using distinct GHG source sectors, this CAP groups actions by focus area, with the impact of each action modeled across all possible sources. This approach is also an effort to align with the complex but grounded and place-based perspective of local residents and area organizations.

4.3.1 Stronger Public Assets

The actions in this section focus on improving local infrastructure, updating building codes, and planning for long-term transit, housing, and open space needs. These investments help ensure neighborhoods remain livable, welcoming, and affordable as the island changes.

*Table 12: Projected GHG Reductions from
Stronger Public Assets Actions by 2030 and 2050 under Scenarios 2 & 3*

Action ID	Actions	GHG Reductions by 2030 (MTCO ₂ e)		GHG Reductions by 2050 (MTCO ₂ e)	
		2	3	2	3
SP-A	Continue to adopt policies that support greater housing affordability located near transit and in areas in proximity to job centers and key destinations.	3,952	2,966	34,352	21,597

SP-B	Reevaluate the management of City parking.	2,674	2,007	57,935	36,423
SP-C	Support ongoing City-supported and City-led tree planning and planting projects.	998		1,667	
SP-D	Strengthen building energy code update and review processes to increase efficiency.	21,734	21,734	359,078	478,000
SP-E	Continue to support trusted public infrastructure that strengthens neighborhoods and emergency readiness.	-*		-*	
SP-F	Support and expand public-led land stewardship and strengthening initiatives.	1,100		1,800	

* The reduction potential of this exploratory action will be estimated as more data becomes available through implementation.

4.3.2 Food Systems

This section highlights actions to reduce GHGs while strengthening the public's health and well-being. These actions support farmers, fishers, and hunters who use place-based, low-impact methods to care for natural systems. They also encourage shifts toward healthier, locally-based diets, and expansion of composting and food recovery programs, restoring value to food which might otherwise be wasted, while lowering GHGs from landfills.

Table 13: Projected GHG Reductions from Food Systems Actions by 2030 and 2050 under Scenarios 2 & 3

Action ID	Actions	GHG Reductions by 2030 (MTCO ₂ e)		GHG Reductions by 2050 (MTCO ₂ e)	
		2	3	2	3
FS-A	Educate and support existing programs and partners for edible food recovery.	536		2,775	
FS-B	Expand efforts to prevent food waste from entering the solid waste stream, including composting and education programs.	2,351		6,717	
FS-C	When feasible, promote healthy and ecofriendly food choices and options, which may include locally sourced foods.	317		756	
FS-D	Accelerate institutional purchasing of ecofriendly produced and local foods.	-*		-*	

FS-E	Develop local composting and soil health infrastructure while expanding local knowledge and education.	_*	_*
FS-F	Support traditional farming and fishing practices and programs.	_*	_*

* The reduction potential of this exploratory action will be estimated as more data becomes available through implementation.

4.3.3 Transportation

Transportation is one of the largest sources of GHGs on Oahu, accounting for approximately 41% of the island's total GHGs. The City's commitment to increase the share of commuters who carpool, use transit, bike, or walk to work reflects the understanding that improving transit, bike, and pedestrian infrastructure will reduce the need to drive.

Vehicle Miles Traveled

Personal vehicle travel remains one of the most significant contributors to GHGs on Oahu. Reducing overall vehicle miles traveled (VMT) is critical to achieving the City's goals. VMT reduction actions focus on expanding transportation alternatives and improving land use through transit-oriented development and multimodal mobility infrastructure.

As of 2025, Oahu contains 1,690 miles of roadway across an island of 597 square miles. Planned improvements include adding 191 miles of bikeways and 31 miles of pedestrian paths, projects expected to influence travel behavior, increase non-vehicular mobility, and reduce GHGs associated with short-distance trips. In combination with initiatives like the Skyline rail system and the *Transportation Demand Management Plan*, these investments are projected to reduce VMT-related GHGs by up to 26,000 MTCO₂e annually between 2030 and 2045—equivalent to removing approximately 5,600 passenger vehicles from the road each year, or about 2% of the island's current vehicle fleet.²³

In addition to reducing the amount of time spent driving, Oahu should reflect on opportunities to reduce the need for single passenger driving, and reduce GHGs associated with the remaining vehicle trips. The CAP prioritizes investments that improve traffic systems, connect travel modes, and help residents make alternative transportation choices. Collectively, these changes could reduce GHGs by an additional 15,500 MTCO₂e per year by 2045—equivalent to removing 3,300 passenger vehicles from the road annually.

The CAP models these projections under two future scenarios. Scenario 2 assumes national fuel economy standards remain consistent with current policies, while Scenario 3 reflects strengthened external policies. These scenarios illustrate the range of possible outcomes and underscore the importance of coordinating policy action.

Table 14: Projected GHG Reductions from VMT Actions by 2030 and 2050 under Scenarios 2 & 3

Action ID	Actions	GHG Reductions by 2030 (MTCO ₂ e)		GHG Reductions by 2050 (MTCO ₂ e)	
		2	3	2	3
T-A	Implement safe street design and land use infrastructure to support reliability and efficiency for all transportation options.	31,527	23,660	234,444	147,391
T-B	Enhance transit services.	80,455	60,377	402,276	252,905

Electric Vehicles

Accelerating the adoption of electric vehicles (EVs) is essential to reducing GHGs in the transportation sector on Oahu. Supporting this transition through targeted education campaigns, strategic investments in charging infrastructure, and enabling policies will be critical to reducing GHGs and achieving the City's goals. This CAP prioritizes municipal fleet electrification as a near-term action, with a goal of converting 20% of the City's fleet to EVs by 2030. As of 2024, hybrid, plug-in hybrid, and battery electric vehicles (BEVs) comprised only 2% of the City's fleet—demonstrating the opportunity to lead by example through accelerated fleet conversion.

GHG reduction estimates for EV adoption vary between scenarios due to differing assumptions about future electricity grid GHGs. The GHG benefits of EVs are directly tied to grid carbon intensity. Under baseline projections with static grid GHGs, reductions are modest. However, under Scenario 3, which models full grid net-negative GHGs by 2045, the GHG reduction potential from large-scale EV deployment rises significantly.

Table 15: Projected GHG Reductions from EV Actions by 2030 and 2050 under Scenarios 2 & 3

Action ID	Actions	GHG Reductions by 2030 (MTCO ₂ e)		GHG Reductions by 2050 (MTCO ₂ e)	
		2	3	2	3
T-C	Support EV adoption and charging infrastructure for those who need to drive.	16,199	13,105	308,455	496,261
T-D	Implement strategies and re-evaluate City procedures to support 100% electric or alternative fuel passenger fleet goal by 2035 and larger vehicles by 2040.	17,039	26,102	34,789	86,221

4.3.4 Energy Solutions

Energy Solutions actions lower GHGs through energy efficiency and alternative energy programs. Efficiency initiatives include energy audits and building retrofits. Alternative energy programs leverage PV to generate affordable electricity.

GHGs in this focus area are driven by electricity production and consumption, as well as the carbon intensity of the local grid. GHG reductions from energy efficiency upgrades are estimated as annual reductions in electricity use or as a percentage of baseline consumption by target year. Alternative energy generation is counted as a GHG reduction because it replaces fossil fuel-based electricity. Scenario 2 assumes static grid GHGs factors over time, while Scenario 3 reflects further GHG reductions from the grid as forecasted by Hawaiian Electric.

*Table 16: Projected GHG Reductions from
Energy Solutions Actions by 2030 and 2050 under Scenarios 2 & 3*

Action ID	Actions	GHG Reductions by 2030 (MTCO ₂ e)		GHG Reductions by 2050 (MTCO ₂ e)	
		2	3	2	3
ES-A	Support energy efficiency retrofit programs for affordable housing that serve the majority of Oahu residents and City-owned housing.	2,032	1,781	8,145	3,451
ES-B	Continue to support ecofriendly city operations using energy efficiency measures and further increase on-site alternative energy generation.	10,289	7,706	10,289	-
ES-C	Explore, and if feasible, pilot and implement flexible energy demand response programs for city operations.	_*	_*	_*	_*
ES-D	Explore and implement City policies that integrate waste diversion practices into public procurement and governmental operations, ensuring reduced negative impacts.	1	1	200	200
ES-E	Support programs and resources for PV.	367,400	324,000	884,000	533,400

* The reduction potential of this exploratory action will be estimated as more data becomes available through implementation.

4.3.5 Waste

GHG reductions from waste-related sources are expected from key interventions, including expanding composting and food waste diversion from landfills; improving management of construction and demolition (C&D) materials; optimizing landfill and wastewater operations through anaerobic digestion and methane capture; and aligning with Hawai'i State Department of Health waste reduction goals.²⁴

Waste-related GHGs are primarily generated during the decomposition of organic materials in landfills and from processing at wastewater treatment, composting, and recycling facilities. Preventing waste generation is the most effective way to reduce GHGs and diverting organic and recyclable materials from landfills further cuts GHGs, as these materials emit fewer GHGs when composted or repurposed. Improving facility efficiency and integrating methane capture technologies can achieve further reductions. GHG reductions under Scenarios 2 and 3 are projected to be similar for the near-term, as no major legislative changes or shifts in behavior are currently anticipated that would drive significantly greater reductions under Scenario 3.

Table 17: Projected GHG Reductions from Waste Actions by 2030 and 2050 under Scenarios 2 & 3

Action ID	Actions	GHG Reductions by 2030 (MTCO ₂ e)		GHG Reductions by 2050 (MTCO ₂ e)	
		2	3	2	3
W-A	Continue building deconstruction reuse and recycling program; enable reuse, recycling and repair systems.	5,242		5,569	
W-B	Develop waste policy and procedures for PV and other relevant energy technologies.	81		64	
W-C	Explore the feasibility of methane collection systems and anaerobic digester capacity or other resource recovery projects at City landfill and wastewater treatment facilities.	4,112		4,174	
W-D	Support the development of policies to include small food waste generators in waste diversion programs.	430		268	
W-E	Improve landfill diversion and alternatives to reduce unacceptable waste and find more options for lithium battery recycling.	1,216		1,216	

5. Strategies & Actions

5.1 Action Selection Framework

The CAP team created a process to identify and refine actions that reflect the needs, priorities, and values of the people of Oahu communities while remaining practical for City departments to carry out, emphasizing overall alignment rather than ranking by a single factor like cost or GHGs alone. Guided by six core evaluation criteria established by CCSR, each action was reviewed by the project team, Steering Committee, and City departments using input from public outreach and departmental consultations. Only actions meeting all six criteria and earning majority Steering Committee support moved forward, ensuring they address urgent challenges, reflect the values of the public, and are realistic to implement. Through this approach, the team selected five to seven high-impact, feasible actions across five focus areas—Stronger Public Assets, Food Systems, Transportation, Energy Solutions, and Waste, while leaving others under review for possible inclusion in the 2030–2035 planning cycle as conditions and needs evolve.

5.2 Action Navigator

Each CAP action is designed to stand on its own—a chapter in a shared story about the collective future of Oahu. Members of the public, partners, and City staff can use these action chapters to guide conversations, share information with neighbors, or shape new projects that bring each idea to life. Each action chapter includes the following elements.

Table 18: CAP Action Chapter Description

Implementing Agencies	Lead and support City departments and partners responsible for advancing the action.
Geographic Scope	All actions are designed to take place island-wide, across Oahu.
Action Description	Narrative overview that explains the purpose, strategies, partnerships, and public voices behind each action.
Anticipated Benefits	Describes how the action will improve daily life for residents—through cleaner air, safer streets, lower costs, or stronger local economies.
Anticipated Disbenefits	Identifies potential challenges or unintended impacts, emphasizing the importance of planning, and public guidance to ensure benefits reach everyone.
Cost & Savings Estimate	Outlines the resources required to carry out the action and the potential financial or social benefits those investments can deliver. Note: These costs should not be interpreted as formal budget commitments by the City, but rather as planning-level estimates designed to highlight potential federal, state, local, and private funding sources for advancing CAP initiatives.

Implementation Milestones	Schedule and milestones of the major steps for action implementation, guided by available resources and public feedback.
Authority to Implement	Clarifies which City departments and partner agencies have the responsibility and authority to carry out the work.

In terms of reporting structure for each action, the lead department and implementation partners will be responsible for reporting progress annually to CCSR, which will be reported through public platforms and relevant departmental updates.

Also, estimated reductions of co-pollutants are found in section 5.8 of this Plan.

Each action belongs to one of the CAP's **five focus areas: Stronger Public Assets, Food Systems, Transportation, Energy Solutions, and Waste.**

Table 19: CAP Action Navigator

STRONGER PUBLIC ASSETS	
<i>Stronger Public Assets enhance the relationship between people and place. These are neighborhoods where housing is affordable, services are attainable, and streets are safe for walking, biking, and gathering.</i>	
ACTION ID	DESCRIPTION SUMMARY
SP-A	Continue to adopt policies that support greater housing affordability located near transit and in areas in proximity to job centers and key destinations.
SP-B	Reevaluate the management of City parking.
SP-C	Support ongoing City-supported and City-led tree planning and planting projects.
SP-D	Strengthen building energy code update and review processes to increase efficiency.
SP-E	Continue to support trusted public infrastructure that strengthens neighborhoods and emergency readiness.
SP-F	Support and expand public-led land stewardship and strengthening initiatives.

FOOD SYSTEMS

Food is more than what we grow, cook, or consume—it reflects our values, beliefs, and relationship with the island and one another. On Oahu, the food system extends beyond production and supply. It represents a set of generative actions shaped by how we think, act, and care for the land, air, and sea. Food systems encompass what we eat, how we grow, where we gather, and how we share.

ACTION ID DESCRIPTION SUMMARY

FS-A	Educate and support existing programs and partners for edible food recovery.
FS-B	Expand efforts to prevent food waste from entering the solid waste stream, including composting and education programs.
FS-C	When feasible, promote healthy and ecofriendly food choices and options, which may include locally sourced foods.
FS-D	Accelerate institutional purchasing of ecofriendly produced and local foods.
FS-E	Develop local composting and soil health infrastructure while expanding local knowledge and education.
FS-F	Support traditional farming and fishing practices and programs.

TRANSPORTATION

We envision an Oahu where walking, biking, and public transit are not only safe and comprehensive but form the foundation of a healthier, more connected island. Whether walking a child to school, taking the bus to work, biking to the store, or driving to visit family, our communities should be built to support these everyday needs in ways that are safe, affordable, and respectful of our island home.

ACTION ID DESCRIPTION SUMMARY

T-A	Implement safe street design and land use infrastructure to support reliability and efficiency for all transportation options.
T-B	Enhance transit services.
T-C	Support EV adoption and charging infrastructure for those who need to drive.
T-D	Implement strategies and re-evaluate City procedures to support 100% electric and alternative fuels passenger fleet goal by 2035 and larger vehicles by 2040.

ENERGY SOLUTIONS

Affordable, reliable energy is essential for health, safety, and quality of life. Yet many households on Oahu face high electricity costs as a major share of monthly expenses. This section focuses on solutions that reduce energy use, expand alternative energy, and ensure benefits reach all those who need them.

ACTION ID	DESCRIPTION SUMMARY
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ES-A	Support energy efficiency retrofit programs for affordable housing that serve the majority of Oahu residents and City-owned housing.
ES-B	Continue to support ecofriendly city operations using energy efficiency measures and further increase on-site alternative energy generation.
ES-C	Explore, and if feasible, pilot and implement flexible energy demand response programs for city operations.
ES-D	Explore and implement City policies that integrate waste diversion practices into public procurement and governmental operations, ensuring reduced negative impacts.
ES-E	Support programs and resources for PV.

WASTE

On an island, everything we throw away must be managed here at home. We envision systems that prioritize reuse, repair, and keeping valuable materials circulating within our neighborhoods. Reducing waste must also mean protecting the public's health, and respecting the limits of our shared land and resources.

ACTION ID	DESCRIPTION SUMMARY
-----------	---------------------

W-A	Continue building deconstruction reuse and recycling program; enable reuse, recycling and repair systems.
W-B	Develop waste policy and procedures for PV and other relevant energy technologies.
W-C	Explore the feasibility of methane collection systems and anaerobic digester capacity or other resource recovery projects at City landfill and wastewater treatment facilities.
W-D	Support the development of policies to include small food waste generators in waste diversion programs.
W-E	Improve landfill diversion and alternatives to reduce unacceptable waste and find more options for lithium battery recycling.

5.3 Stronger Public Assets

SP-A	CONTINUE TO ADOPT POLICIES THAT SUPPORT GREATER HOUSING AFFORDABILITY LOCATED NEAR TRANSIT AND IN AREAS IN PROXIMITY TO JOB CENTERS AND KEY DESTINATIONS
IMPLEMENTING AGENCIES	
DPP (Lead), City and County of Honolulu Department of Housing and Land Management (DLM)	
ACTION DESCRIPTION	
This action supports a future where local families can afford to live near schools, work, and public centers, reducing long daily commutes. The City is strengthening policies that enable more affordable housing in areas with direct access to transit, jobs, and essential services. This requires rethinking how neighborhoods are planned, especially in urban areas like Kalihi, Manoa, and Kapalama, so residents can live in walkable communities with high-quality transportation options and everyday needs close by.	
Yet housing challenges vary across the island. Urban neighborhoods offer greater opportunities for multifamily homes, apartments, and mixed-use buildings located near transit. In rural communities, where infrastructure and land capacity are limited, the focus shifts to supporting single-family homes, Accessory Dwelling Units (ADUs), and multigenerational housing that reflects how many local families live.	
METRICS & SUCCESS INDICATORS	
• Affordable Homes Built Within a Half Mile of Frequent Bus Routes or Rail Stations: Tracks whether families have real access to transit-connected, lower-cost housing. • Adoption of New Zoning or Land Use Policies for Multifamily, Mixed-Use Development: Measures progress toward more walkable, flexible neighborhoods. • City-Led Rezoning or Planning Efforts with Public Benefits: Evaluates how well City efforts integrate affordability, open space, and cultural protections. • Infrastructure Investments (Sidewalks, Lighting, Sewer, Water): Ensures upgrades keep pace with housing growth and reach rural districts. • Tracking of Housing Types (Multifamily, Single-Family, Ohana Units, Multigenerational Housing): Acknowledges that housing must reflect how people actually live.	
ANTICIPATED BENEFITS	
• Reduced Commuting Burdens: Building affordable housing near transit and major job centers allows more residents to live close to where they work or attend school, cutting travel time, vehicle miles, and daily transportation costs. • Lower GHGs: Reducing car dependence helps lower transportation-related GHGs. • Improved Livability and Public Connection: When people live near reliable transit and	

essential services, they can spend less time in traffic and more time with family and others, strengthening local connection and well-being.

- **Access to Opportunity:** Placing affordable housing near employment hubs expands access to jobs, education, and upward mobility.
- **Economic Development and Land Use Efficiency:** Transit-oriented development supports compact, efficient growth that makes better use of existing infrastructure, reduces urban sprawl, and protects agricultural and conservation lands.
- **Cost-of-Living Reduction:** Pairing affordable housing with comprehensive, low-cost transportation options helps families save on major household expenses and improves overall financial stability.

ANTICIPATED DISBENEFITS

- **Infrastructure Strain:** Added density without adequate investment can overburden schools, parks, and utilities.
- **Resistance to Zoning Changes:** Some neighborhoods may oppose added density, often due to misinformation or fear of change.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$750,000 by 2030.

- **Full-Time Staff Position:** Funding for a full-time staff position is estimated at \$150,000 per year to support land use, zoning, and public engagement coordination.

Savings Estimate: Not Quantified.

- **Indirect Savings:** Focusing growth in urban areas with existing infrastructure will save money over time by avoiding sprawl, reducing road expansion, and lowering utility costs. However, these efficiencies must not cost-displace long-term residents or neglect rural neighborhoods.

IMPLEMENTATION MILESTONES

- **2025:** Finalize TOD zoning code updates, focusing on areas already served by rail and bus routes.
- **2026:** Launch neighborhood engagement sessions for TOD areas, with special outreach to elders, renters, and multigenerational families.
- **2026:** Identify City-owned land near transit and prioritize for truly affordable housing beyond “below market” units.
- **2027:** Begin mixed-use pilot projects that include public spaces and walkable services.
- **2027:** Create a framework that ensures new developments reflect affordability, cultural identity, and public space goals.
- **2028–2030:** Complete 1,000+ new affordable homes near transit, including multifamily and multigenerational options.
- **2030–Onward:** Expand TOD reforms and rural-specific zoning updates based on what has worked and where improvements are needed.

AUTHORITY TO IMPLEMENT

The City has authority under ROH, including Chapter 21 and Chapter 24, to implement Action SP-A. DPP leads implementation in partnership with Hawaii State Department of Hawaiian Home Lands (DHHL), and DHLM. This action builds on adopted TOD neighborhood plans and aligns with the Mayor's *Strategic Housing Plan* to create compact, connected neighborhoods that reduce both living costs and GHGs.

SP-B

REEVALUATE THE MANAGEMENT OF CITY PARKING

IMPLEMENTING AGENCIES

DTS (Lead), City and County of Honolulu Department of Facility Maintenance (DFM), City and County of Honolulu Department of Enterprise Services (DES), City and County of Honolulu Department of Parks and Recreation (DPR), City and County of Honolulu Department of Budget and Fiscal Services (BFS)

ACTION DESCRIPTION

The City is reevaluating how it manages public parking across Oahu to better align with the public's needs, reduce traffic-related GHGs, and improve land use efficiency. The goal is to support walkability, biking, transit use, and shared mobility options—key components of the City's broader *Transportation Demand Management Strategy*.

Parking is a limited resource. In dense urban areas, spaces are scarce and often congested, while in other parts of the island, lots sit underused even as residents struggle with high transportation and housing costs. By rethinking how parking is priced, used, and repurposed, the City aims to create a more efficient system that reflects the realities of each neighborhood. This may include:

- Adjusting pricing in areas well-served by transit to reduce congestion and encourage alternative travel choices.
- Repurposing underused lots into shaded gathering spaces, food truck hubs, or open spaces that serve the public.
- Improving parking management in high-demand areas to make spaces easier to find, reducing the time and GHGs from circling vehicles.

These updates aim to use limited land more strategically while reducing car dependency. The City recognizes, however, that strategies effective in urban Honolulu may not work for rural communities where public transit options are limited. Any policy changes will need to avoid increasing burdens for residents who must rely on personal vehicles.

To move forward, the City is reviewing past parking studies, updating operator contracts, and preparing pilot programs to test dynamic pricing and alternative uses for parking lots. These pilots will evaluate what works and where adjustments are needed for urban vs. rural areas.

METRICS & SUCCESS INDICATORS

- **Percent of City-Managed Parking with Updated Pricing or Management Plans:** Tracks modernization progress and system efficiency.
- **Revenue from Dynamic Pricing:** Measures whether new pricing supports reinvestment and infrastructure upgrades.
- **Number of Parking Spaces Repurposed for Public Use:** Reflects progress in transforming unused lots into public amenities.
- **Change in Vehicle Miles Traveled or Time Spent Searching for Parking:** Indicates reductions in congestion and GHGs.

ANTICIPATED BENEFITS

- **Reduced Vehicle Dependency:** Appropriate pricing and improved management discourage single-occupancy trips, promoting walking, biking, and transit use.
- **Increased Space for Public Benefit:** Converting underused lots into parks, markets, or natural infrastructure provides new public amenities and revitalizes neighborhoods.
- **Air Quality Improvements:** Fewer idling cars mean lower GHGs.
- **Stormwater Management Benefits:** Replacing asphalt with permeable or vegetated surfaces reduces runoff and protects watersheds.
- **Improved Public Health and Safety:** More walkable, people-centered spaces encourage physical activity and improve street safety.
- **Support for Small Businesses:** Better management of curb space and short-term parking increases turnover and customer access.
- **Tailored Pricing:** Income-based or location-specific pricing ensures parking remains affordable for all residents.
- **Workforce Development Opportunities:** Projects to build parklets, shade structures, and mobility improvements generate planning, construction, and landscaping jobs.

ANTICIPATED DISBENEFITS

- **Accessibility Concerns:** Price or supply changes could affect seniors, people with disabilities, or those without reliable transit alternatives.
- **Business Concerns:** Some businesses worry that fewer parking spaces could deter customers.
- **Uneven Benefit Distribution:** If improvements concentrate in wealthier districts, lower-income neighborhoods may see fewer gains.
- **Public Resistance:** Parking changes can be contentious; without meaningful public engagement, reforms may face opposition.
- **Economic Burden on Frontline Entities:** Increases in parking costs could disproportionately impact residents already struggling with affordability.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$750,000 by 2030.

- **Full-Time Staff Position:** Funding for a full-time staff position estimated at \$150,000 per year to review policies, update pricing systems, and coordinate pilot projects informed by the public.

Savings Estimate: Not Quantified.

- **Indirect Savings:** This investment could yield revenue from dynamic pricing, especially in urban zones. These funds could be reinvested into public improvements like shaded walkways, bike infrastructure, and enhanced bus service. However, the City acknowledges that pricing reforms alone will not close budget gaps and require additional safeguards.

IMPLEMENTATION MILESTONES

- **2025:** Review prior parking studies and finalize updated management contracts.
- **2025:** Identify 2–3 pilot zones for dynamic pricing and adaptive reuse projects.
- **2026:** Launch pilot programs using real-time pricing and continuous public feedback.
- **2027:** Repurpose at least two underused lots into natural or gathering spaces.
- **2028:** Expand successful strategies to additional neighborhoods.
- **2029:** Integrate parking reforms into zoning, housing, and transportation plans.

AUTHORITY TO IMPLEMENT

The City has authority to manage public parking under its transportation and land use powers. Action SP-B is led by DTS, with support from DFM, DES, DPR, and BFS. Implementation builds on ongoing efforts in dynamic pricing, metered zone modernization, and public space repurposing. While no new authority is required, long-term success will depend on adequate funding, political support, and public trust to ensure that parking reforms advance goals.

SP-C

SUPPORT ONGOING CITY-SUPPORTED AND CITY-LED TREE PLANNING AND PLANTING PROJECTS

IMPLEMENTING AGENCIES

DTS (Lead), City and County of Honolulu Department of Design and Construction (DDC), BFS, Department of Urban Forestry (DUF), DPR, DFM

ACTION DESCRIPTION

Planting trees is one of the most visible and meaningful ways the City can care for the health and spirit of our island. When planted thoughtfully—the right trees, in the right places, with the right long-term care—trees do far more than cool streets. They create safe, shaded, and thriving environments that strengthen our relationships with the land and with one another.

The City will continue expanding tree planting efforts as part of roadway rehabilitation, transit access, and public infrastructure projects, ensuring trees are integrated into everyday urban spaces. These trees are intended not only to provide shade and reduce heat but also to feed families and create gathering places that foster wellbeing.

Across Oahu, residents have called for trees that restore both ecosystems and neighborhoods. Many supported planting communal fruit trees in public spaces but highlighted the need for clear guidelines to manage maintenance and remove barriers that make participation difficult—such as rules requiring residents to “gift” trees to the City. The public also connected tree planting to broader goals—calling for shaded, tree-lined streets that make walking, biking, and transit viable in heat-exposed and lower-income areas. Residents viewed local and culturally significant plantings not only as environmental benefits but also as tools for cultural preservation and intergenerational learning.

This action seeks to coordinate efforts across City departments—from planning and planting to care and stewardship—so that trees are prioritized in all public projects. By clarifying agency roles and responsibilities, the City can better integrate trees into infrastructure projects, strengthen public partnerships, and ensure a growing canopy for Oahu.

METRICS & SUCCESS INDICATORS

- **Trees Planted per Year:** Tracks City-led planting efforts and encourages public reporting.
- **Canopy Coverage Growth in Underserved Areas:** Measures shade expansion in heat-exposed and under-shaded neighborhoods.
- **Transit Corridor Shade Miles:** Monitors how many sidewalks, bikeways, and bus stops gain shade through infrastructure projects.
- **Surface Temperature Reduction:** Uses thermal mapping to measure cooling effects over time.
- **Cultural and Functional Plantings:** Tracks planting of species identified as public priorities.
- **Projects Integrating Trees from the Design Phase:** Evaluates how many capital projects embed tree planning early in design.

ANTICIPATED BENEFITS

- **Heat Mitigation:** Expanding tree canopy cools neighborhoods and offsets urban heat island effect.
- **Improved Public Health:** Trees filter air, reduce noise, and create more walkable, shaded streets that support physical and mental health.
- **Increased Active Transportation:** Shaded routes make walking, biking, and transit more comfortable, especially for the elderly and children.
- **Strengthened Stormwater Management:** Tree roots absorb rainfall and reduce runoff, protecting streams and nearshore waters.
- **Workforce Development Opportunities:** Tree planting and maintenance create jobs in

landscaping, arboriculture, and urban forestry.

- **Ecosystem Benefits:** Important species enhance ecosystems and reconnect the public with land and traditional practices.
- **Neighborhood Revitalization:** Targeting tree planting in neighborhoods that lack them helps build local pride and makes them more livable.

ANTICIPATED DISBENEFITS

- **Maintenance and Long-Term Care Needs:** Trees require consistent pruning, watering, and pest management. Without stable funding, they risk neglect or premature loss.
- **Infrastructure Conflicts:** Poor siting or coordination can lead to root damage to sidewalks or underground utilities.
- **Public Concerns:** Some residents raised concerns about fruit drop, blocked views, allergens, or reduced parking—issues that require thoughtful engagement and design.
- **ADA and Safety Issues:** Trees must be planted and maintained to meet ADA standards and ensure safe public access.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$35.1 million by 2030.

- **Tree Planting:** The City estimates that each tree costs approximately \$900 to plant and establish, including purchase, labor, and early care. Planting an additional 39,000 trees would total around \$35.1 million over five years.

Savings Estimate: \$2.8 million by 2030.

- **Quantified Public Benefits:** Each medium-sized tree provides about \$72 in annual public benefits, including energy savings, cleaner air, cooler surfaces, and improved walkability—adding up to more than \$2.8 million in annual value citywide.
- **Indirect Savings:** The greatest returns come from public value: fruit-bearing and lei trees reduce household costs, strengthen food systems, and perpetuate local traditions. To ensure long-term success, the City will explore public stewardship agreements, updated Adopt-a-Park rules, and funding mechanisms that support both maintenance and public participation.

IMPLEMENTATION MILESTONES

- **2025:** Identify priority planting zones using heat maps, canopy data, and public input to focus efforts in high-need areas.
- **2026–2027:** Integrate tree planting into roadway, sidewalk, and transit projects during design and planning.
- **2026:** Develop maintenance and stewardship plans, and expand public partnership models for long-term care.
- **2025–2030:** Increase plantings across City-managed lands, prioritizing local, edible, and culturally significant species.

AUTHORITY TO IMPLEMENT

This action is led by DTS, with support from DDC (project design), DPR and DUF (planting and care), BFS (budget), and DFM (maintenance). City Council Resolution 18-55 provides policy

direction toward achieving 35% canopy cover by 2035. Ongoing initiatives—including the *TOD Street Tree Plan* and the forestry program—serve as key vehicles for implementation.

SP-D	STRENGTHEN BUILDING ENERGY CODE UPDATE AND REVIEW PROCESSES TO INCREASE EFFICIENCY
IMPLEMENTING AGENCIES	
DPP (Lead), CCSR, Hawaii State Energy Office (HSEO)	
ACTION DESCRIPTION	
Buildings across Oahu are some of the island’s largest energy users, and how they’re designed and built has long-term impacts on utility costs, GHGs, and public health. As Oahu experiences hotter temperatures, stronger storms, and rising energy prices, it’s essential that new buildings and major renovations are designed to use energy efficiently and remain safe, comfortable, and affordable. This action focuses on strengthening and regularly updating building energy codes, which set the standards for how buildings use and conserve energy.	
The City is working to make these codes clearer, more predictable, and better aligned with state requirements so that homeowners, builders, and developers all understand what’s expected.	
At the same time, the City recognizes that frequent code changes or unclear rules can create challenges for builders and potentially increase housing costs. Currently, state and county level code updates happen on different timelines, creating confusion and delays. The City will work with state partners to synchronize update cycles, making the process more predictable and coordinated.	
This action also introduces performance-based design pathways for larger projects, allowing builders to meet efficiency goals flexibly rather than following a single prescriptive checklist. To make this approach successful, both design teams and City reviewers will need training, resources, and technical support. Without these supports, smaller builders could face added costs or delays. Ensuring that code updates come with clear communication and comprehensive assistance will be key to achieving long-term building practices across Oahu.	
METRICS & SUCCESS INDICATORS	
• New Permitted Buildings Subject to Updated Energy Codes: Tracks adoption rates and enforcement effectiveness across new construction projects. • Training for Builders, Architects, and City Staff: Measures capacity-building efforts to support code compliance and implementation. • Annual GHG Reductions: Quantifies the GHG reductions achieved through updated energy code requirements.	

- **Affordability Impact Assessments Completed per Update Cycle:** Ensures each code revision evaluates affordability implications and is attainable for all compliance pathways.
- **Projects Using Performance-Based Compliance Pathways:** Tracks flexible, innovative approaches to achieving energy goals beyond prescriptive requirements.

ANTICIPATED BENEFITS

- **Lower Energy Use and GHGs:** Updated codes require efficient lighting, HVAC, and insulation systems, cutting GHGs and utility costs.
- **Greater Energy Cost Savings:** Efficient design standards lower monthly bills for residents.
- **Improved Building Performance:** Modernized standards enhance comfort, reduce humidity and mold, and help buildings stay livable during heatwaves or outages.
- **Workforce Development Opportunities:** Strengthened codes support training and job growth in energy auditing, design, and code enforcement.
- **Enhanced Grid Support:** Efficient buildings ease grid strain in the long-term.
- **Improved Public Health:** Better air quality and cooler indoor environments reduce health risks.

ANTICIPATED DISBENEFITS

- **Higher Upfront Costs:** Meeting stronger standards may increase construction expenses unless offset by incentives or technical assistance, potentially affecting affordability.
- **Implementation Gaps:** Inconsistent enforcement could weaken the benefits of updated codes.
- **Burden on Small Businesses:** Smaller builders or contractors may struggle to stay current with changing requirements without targeted support.
- **Property Value Increases:** Energy-efficient construction can drive up property values, which can be mitigated by housing affordability measures.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$2.8 million by 2030.

- **Full-Time Staff Position:** Funding a full-time staff position estimated at \$150,000 per year responsible for managing updates and reviews.
- **Potential Additional Costs:** \$400,000 per year for workforce training for City staff, architects, and builders; convenings with developers and affordable housing advocates; development of performance-based guidance; and communication tools.

Savings Estimate: Not Quantified.

- **Indirect Savings:** The long-term savings are substantial, including lower utility costs, and stronger grid stability. Efficient building codes can prevent millions in future energy and maintenance costs while creating safer, healthier homes for Oahu's residents. To prevent affordability impacts, the City will work to create incentive and technical assistance programs.

IMPLEMENTATION MILESTONES

- **2025:** Establish a Code Enforcement Review Team to close gaps and ensure consistent application.
- **2025–2026:** Develop a three-year update cycle for energy codes.
- **2026–2027:** Integrate energy tracking tools into the permitting process to verify compliance.
- **2027:** Pilot stricter standards for City buildings and select developments.
- **2027:** Launch a performance-based compliance pilot for large buildings.
- **2027–2028:** Create support services for small builders and affordable housing developers.
- **2028:** Begin the next update cycle using data and public feedback to inform revisions.
- **2028:** Deliver comprehensive training for design teams and reviewers.
- **Ongoing:** Monitor and report long-term reductions in energy use and GHGs.

AUTHORITY TO IMPLEMENT

This action is implemented under the City’s permitting authority, led by DPP, with technical guidance from CCSR and HSEO. Honolulu adopts statewide building codes—currently the 2018 International Energy Conservation Code (IECC) with local amendments, finalized by the City Council and the Mayor in 2023—and may propose further local updates to accelerate GHG reductions. While no new authority is required, the City is exploring formal policies for regular energy code reviews and updates, ensuring that building standards evolve appropriately over time.

SP-E

**CONTINUE TO SUPPORT TRUSTED PUBLIC
INFRASTRUCTURE THAT STRENGTHENS NEIGHBORHOODS
AND EMERGENCY READINESS**

IMPLEMENTING AGENCIES

CCSR (LEAD), DEM, Hawaii Emergency Management Agency (HIEMA)

ACTION DESCRIPTION

Across Oahu, many people already turn to public infrastructure when they need help, information, or simply a safe physical space. These may be neighborhood centers, classrooms, churches, nonprofits, or even a family garage—spaces that function as lifelines not because of the building itself, but because of who runs them. They are led by those who carry deep relationships and lived experience in their neighborhoods.

This action supports those public, locally run spaces. Rather than focusing only on formal “resilience hubs,” it recognizes a broader network of human-centered, place-based, and relationship-driven spaces. During emergencies, they may provide food, water, charging, shelter, cooling, childcare, or trusted information. Day to day, they might host various programs, mental and physical health services, provide needed technology, youth mentorship, or neighborhood gatherings.

This is where the City can add value—not by taking over, but by showing up as a respectful partner. This action commits the City to providing flexible funding, technical assistance, better alignment with emergency planning, and institutional trust. This support can strengthen existing hubs and reduce administrative burdens. The focus is on honoring local leadership, restoring connection, and investing in the people who already care for others.

** While GHG reductions from this action are not yet fully quantified, we anticipate indirect reductions through lower household energy and travel needs. For example, cooling and resource centers closer to home can reduce residential air-conditioning use and vehicle miles traveled.*

METRICS & SUCCESS INDICATORS

- **Number of Spaces Supported:** Counts spaces receiving meaningful technical, financial, or coordination support.
- **Geographic Support:** Measures whether resources reach flood-prone and rural areas.
- **Types and Consistency of Services Offered:** Includes emergency services (cooling, food, shelter, charging) as well as everyday offerings (programs, mentorship, workshops, digital access).
- **Number of Formal Partnerships or Memorandums of Understanding (MOUs):** Reflects long-term, trust-based agreements between the City and neighborhood organizations.

- **Use of Spaces During Drills or Emergencies:** Evaluates whether these hubs are integrated into emergency plans and supported when activated.
- **Public Feedback on Support:** Uses listening sessions, surveys, and storytelling to assess whether City involvement is helpful, respectful, and responsive.

ANTICIPATED BENEFITS

- **Improved Public Health:** Public spaces can provide availability of cooling, shelter, food, water, basic health resources, and emergency aid, reducing health risks during disasters.
- **Disaster Preparedness and Resilience:** Neighborhood hubs can provide electricity, communications, and supplies during extreme weather events.
- **Everyday Public Benefits:** Year-round use for programming, youth activities, education, digital access, and mutual aid strengthens social cohesion and overall wellbeing. Many hubs also support food security and gardens or food distributions.
- **Workforce Development Opportunities:** Operating and maintaining these spaces creates roles in organizing, logistics, maintenance, teaching, outreach, and coordination.
- **Social Cohesion:** When rooted in local practice and leadership, hubs become trusted gathering places that reinforce identity and support networks.
- **Strengthened Neighborhood-Government Collaboration:** Supporting existing spaces builds coordination and trust between residents, grassroots organizations, and City departments.

ANTICIPATED DISBENEFITS

- **Long-Term Operations Risks:** Without long-term funding and partnership structures, hubs may struggle to maintain staff, programming, or infrastructure, which can erode trust when services are disrupted.
- **Coordination Complexities:** If roles and responsibilities between City agencies and area leaders are unclear, response efforts during emergencies may be slowed or complicated.
- **Funding Risks:** Reliance on short-term grants, donations, and volunteer labor can create unstable operations.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$750,000 by 2030.

- **Full-Time Staff Position:** Funding approximately 1.5 full-time staff positions estimated at \$150,000 per year dedicated to partnership, coordination, and technical assistance, along with flexible support for planning, training, and resource development in collaboration with area organizations.

Savings Estimate: Not Quantified.

- **Indirect Savings:** Residents, especially volunteers and underpaid staff, already carry the cost of maintaining these spaces. Without stable support, burnout and program closures will continue to threaten these lifelines. City investment can help stabilize critical services and reduce future emergency response costs by strengthening local preparedness.

IMPLEMENTATION MILESTONES

- **2025–2026:** Co-design support structures with area leaders, identifying priority needs, appropriate City roles, and a “wish list” of services.
- **2025–2026:** Launch a flexible funding program for small grants to such spaces, with a low-barrier application process.
- **2026–2027:** Develop and offer training shaped by neighborhood needs—for example, in safety and emergency planning, programming, communications, and basic infrastructure access—with neighborhood members as key trainers and co-designers.
- **2027–2028:** Formally integrate spaces into City emergency preparedness plans in collaboration with relevant agencies.
- **2028–2030:** Support hub organizers and residents to design and lead participatory evaluations based on real events and drills, using results to adjust City policies and demonstrate accountability.

AUTHORITY TO IMPLEMENT

The City has clear authority to support this action through its existing powers to fund, coordinate, and partner on area-based initiatives. The 2019 *Oahu Resilience Strategy* and the mandate of CCSR provide a strong foundation for advancing resilience for all residents. Within this authority, the City can enter into formal agreements (e.g., MOUs, grants) with organizations, provide technical assistance and planning support, align hub support with emergency management and other plans, and coordinate across departments to streamline resources and reduce administrative burden on partners. This approach requires no new legislative authority.

SP-F

**SUPPORT AND EXPAND PUBLIC-LED LAND STEWARDSHIP
AND STRENGTHENING INITIATIVES**

IMPLEMENTING AGENCIES

CCSR (Lead), City and County of Honolulu Department of Environmental Services (ENV), DPR, DPP, NCO

ACTION DESCRIPTION

Across Oahu, residents are already caring for the land—restoring native plants, growing food, removing invasive species, protecting streams and shorelines, composting, and teaching the next generation. These activities are grounded in deep relationships with the land. They strengthen neighborhoods, encourage biodiversity, and preserve knowledge passed through generations. Yet, area stewards face real challenges including limited land, complex permitting processes, inconsistent funding, and insufficient institutional support. Many groups are doing essential work without long-term stability or clear partnership pathways with the City.

A major gap is the lack of formal City mechanisms that allow partners to plant, harvest, and share food on public land. Although food production is deeply connected to stewardship practices, there is no established policy framework to support or scale this work. Addressing this gap is crucial to building a strong local food system.

This action commits the City to supporting and resourcing publicly-led stewardship. The focus is on removing systemic barriers and providing consistent, practical support. Efforts will include expanding access to public land for restoration and food production, simplifying permitting, offering technical and educational assistance, and providing flexible funding.

At its foundation, this action is about trust and relationship-building. Lasting partnerships depend on City staff who show up consistently, follow through on commitments, and respect area leadership. When one trusted local practitioner is resourced, it can spark a network of engagement, learning, and shared sense of responsibility across the island. The City is exploring funding mechanisms to support this work long-term—including opportunities to align with state funding.

METRICS & SUCCESS INDICATORS

- **Acres of Land Under Stewardship:** Public land actively cared for by partners.
- **Number of Supported Projects:** Total number of groups receiving funding, land access, or technical assistance.
- **Education and Training Participation:** Number of youth and residents engaged in environmental education or land-care training programs.

ANTICIPATED BENEFITS

- **Improved Public Health:** Increased availability of fresh, locally grown, and culturally relevant foods supports nutrition, wellness, and mental health.
- **Ecological Restoration:** Efforts to restore traditional taro wetlands, fishponds, and dryland forests improve biodiversity, prevent erosion, and protect watersheds.
- **Local Food Security and Economic Opportunity:** Supporting agroforestry and small-scale agriculture reduces reliance on imports, strengthens local economies, and creates jobs.
- **Waste Reduction and Regenerative Practices:** Composting, reuse, and circular practices decrease landfill waste and reduce GHGs.
- **Neighborhood Cohesion and Healing:** Stewardship connects people to place and each other, promoting wellbeing and intergenerational knowledge sharing.
- **Watershed and Stormwater Protection:** Restored landscapes absorb runoff and improve coastal and stream water quality.

ANTICIPATED DISBENEFITS

- **Regulatory Barriers:** Zoning, liability, and permitting could delay or limit public land access.
- **Burnout and Capacity Limits:** Without long-term funding and staff support, area leaders risk fatigue or project disruption.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$750,000–\$1 million by 2030, estimated at \$150,000–\$200,000 per year.

- **Staff Capacity:** Additional staff capacity for coordination and relationship-building.
- **Potential Additional Costs:** Direct investment in projects, education, and outreach; support for collaborative pilots between City agencies and local groups; and ongoing monitoring, evaluation, and technical assistance.

Savings Estimate: Not Quantified.

- **Indirect Savings:** The potential long-term savings include reducing disaster recovery costs through proactive land and watershed care, lowering landfill waste through composting and regenerative systems, and reducing maintenance costs for City-managed land.

IMPLEMENTATION MILESTONES

- **2026–2027:** Map potential stewardship sites and identify underutilized public lands for use.
- **2028:** Establish a clear, legally sound framework for local organizations to grow, harvest, and distribute food on City property.
- **2028:** Share success stories and models to inspire replication across neighborhoods and agencies.

AUTHORITY TO IMPLEMENT

The City implements this action under existing authority, led by CCSR in partnership with ENV, DPR, DPP, and Neighborhood Boards. Current pilot efforts already focus on reducing administrative barriers to land access. This action expands those initiatives by

institutionalizing support, aligning with programs like DPR’s garden program. No new authority is required. The City can act now by leveraging existing planning, budgeting, and partnership powers to support land care. Over time, it will explore long-term funding tools and partnership agreements to maintain and scale these efforts—ensuring that stewardship by the people, for the land, remains central to Oahu’s strategy.

5.4 Food Systems

FS-A	EDUCATE AND SUPPORT EXISTING PROGRAMS AND PARTNERS FOR EDIBLE FOOD RECOVERY
IMPLEMENTING AGENCIES	
CCSR (Lead), ENV	
ACTION DESCRIPTION	
Across Oahu, families continue to face rising grocery costs and food insecurity, even as thousands of pounds of perfectly good food are discarded every day.⁵⁶ This action addresses that disconnect by strengthening the systems that collect, store, and share surplus food, ensuring that edible food nourishes people—not landfills. By reducing food waste, this action directly cuts GHGs, extends landfill life, and supports Oahu’s broader goals.	
The City will expand its partnerships with nonprofit food recovery organizations such as Aloha Harvest and the Hawaii Foodbank, while also engaging more local businesses—supermarkets, wholesalers, restaurants, and schools—to participate as donation partners. This means making food donation easier, safer, and more worthwhile through clear guidance, public recognition, and potential tax incentives. Each new business that donates instead of disposes turns everyday operations into meaningful action.	
Food recovery is also a strategy to strengthen the supply chain. By reducing dependence on imports and building networks for local redistribution, Oahu becomes better prepared for supply disruptions or other emergencies. Partners have emphasized that this system must be designed for and with the people it serves—local networks, storage, and distribution. During CAP engagement sessions, the public repeatedly called for expanded, easier-to-access food recovery programs with better infrastructure.	
METRICS & SUCCESS INDICATORS	
• Amount of Edible Food Recovered: Tracks food redirected to people instead of landfills. • Number of Commercial Donors Participating: Measures engagement by grocery stores, restaurants, and institutions. • New or Upgraded Food Recovery Infrastructure: Tracks investments in cold storage, vehicles, and safety equipment. • Reduction in Food Waste at Disposal Sites: Measures GHG reductions associated with diverting food waste.	
ANTICIPATED BENEFITS	
• Improved Food Security: Expands access to nutritious food for all households. • Reduced Waste and GHGs: Keeps organic materials out of landfills, cutting GHGs and extending landfill lifespan. • Economic Relief: Reduces grocery costs for families.	

- **Local Job Creation:** Expands opportunities in logistics, coordination, and food handling for local nonprofits and CBOs.
- **Strengthened Public Networks:** Builds collaboration between donors, nonprofits, and neighborhoods.
- **Improved Public Health:** Increases access to fresh, healthy food and reduces diet-related illnesses.

ANTICIPATED DISBENEFITS

- **Operational and Health Risks:** Food safety concerns could deter participation without clear protocols and adequate infrastructure.
- **Volunteer Fatigue:** Many food rescue efforts rely on limited staff and volunteers who risk burnout.

COST & SAVINGS ESTIMATE

Total Cost Estimate: Not Quantified.

- **Spending Priorities:** While no formal cost estimate exists yet, preliminary input identified spending priorities. Priorities include funding for food rescue programs, investment in cold storage and refrigerated transport, staffing support for program coordination, and public outreach campaigns to raise awareness among both donors and recipients.
- **Financing Options:** Residents suggested exploring tax incentives and long-term funding sources to bolster food recovery and other efforts.

Savings Estimate: Not Quantified.

- **Indirect Savings:** Edible food recovery is projected to result in household cost savings and improved food security for Oahu families. It can also reduce the volume of organic waste entering the landfill, lowering associated GHGs, and strengthen area food networks.

IMPLEMENTATION MILESTONES

- **2028:** Hire a Program Manager to oversee the City's Zero Waste Program and expand edible food recovery efforts.
- **TBD:** Conduct a Food Recovery Landscape Assessment to identify gaps in infrastructure, partnerships, and services.
- **Annually:** Report progress on food recovered, GHGs avoided, and households reached, using maps and stories to share impact.
- **Ongoing:** Integrate food recovery into broader waste reduction strategies to ensure long-term alignment and leadership.

AUTHORITY TO IMPLEMENT

The City is authorized to implement this action under Revised Charter of Honolulu §6-803 and ROH §2-10.8. Under §6-803, ENV oversees waste systems and resource recovery, while §2-10.8 grants CCSR responsibility for food security coordination. CCSR will lead implementation in partnership with ENV.

FS-B

EXPAND EFFORTS TO PREVENT FOOD WASTE FROM ENTERING THE SOLID WASTE STREAM, INCLUDING COMPOSTING AND EDUCATION PROGRAMS

IMPLEMENTING AGENCIES

ENV & CCSR (Co-Leads), Hawaii State Department of Agriculture & Biosecurity (DAB)

ACTION DESCRIPTION

Across Oahu, a large share of food and plant waste still ends up in the island's solid waste stream. This action is designed to change that by turning organic waste into a resource that restores the land. Through composting, the City aims to transform what was once discarded into healthy soil—supporting local food production and caring for the places that uphold us.

Beginning in 2026, the City plans to launch curbside bin collection for food waste. Ahead of this rollout, the Department of Environmental Services is developing best practices and a clear container distribution plan so that families, apartment buildings, and businesses know exactly how to participate. Alongside large-scale infrastructure, this action prioritizes localized compost sites, education programs, and partnerships with schools, nonprofits, farmers, and neighborhood groups—ensuring the system works for everyone, from high-rise residents to backyard gardeners.

This action will succeed only if it reflects local values of caring for our land and responsibility. It also requires participation by all, particularly for residents in high-density areas or communities already leading composting efforts without City support. Composting should be a normal, easy, and respected practice across Oahu.

METRICS & SUCCESS INDICATORS

- **Food Waste Diverted:** Amount of food waste kept out of landfills.
- **Participation:** Number of household and business participants in curbside, school, or local composting programs.
- **Public Compost Sites Supported:** Growth of compost hubs in parks, schools, and farms.
- **Compost Education Participation:** Residents engaged through education and outreach.
- **Compost Returned to Land:** Volume of compost distributed to farms, gardens, and restoration sites.
- **Reduction in Food Waste:** Demonstrates long-term behavior change and system effectiveness.

ANTICIPATED BENEFITS

- **Landfill Diversion:** Keeping organic material out of landfills and incinerators reduces GHGs and groundwater contamination.
- **Healthier Soils:** Improved soil fertility, water retention, and erosion control benefits agriculture and stormwater systems.

- **Public Education and Engagement:** Enhanced composting efforts connect residents, schools, and farmers through hands-on learning and stewardship.
- **Economic Opportunity:** Increased composting creates jobs in compost processing, hauling, and sales.
- **Cleaner Waterways:** This action will reduce nutrient runoff and improve water quality.
- **Revived Local Knowledge:** Building awareness and connection through practices of waste-to-soil restoration revives and perpetuates local knowledge.

ANTICIPATED DISBENEFITS

- **Odor and Pest Concerns:** Waste mismanagement can lead to disturbances but can be avoided with proper guidance and design.
- **Contamination Risk:** Without clear education, incorrect inputs reduce compost quality.
- **Environmental Byproducts:** Off-gassing and runoff require monitoring and mitigation.
- **Volunteer Burnout:** Local compost sites often depend on small teams; however, funding and technical assistance can reduce strain.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$750,000 by 2030, estimated at \$150,000 per year.

- **Full-Time Staff Position:** Funding for a program coordinator to oversee citywide implementation.
- **Potential Additional Costs:** Additional costs include multilingual outreach and educational materials; grants for schools, nonprofits, and neighborhood sites; and technical assistance for composting infrastructure.
- **Financing Options:** Long-term funding may come from state funding under Act 96 (of 2025) or other resilience funding sources.

Savings Estimate: Not Quantified

- **Indirect Savings:** This investment lays the foundation for island-wide behavior change. Composting reduces GHGs, lowers landfill costs, and creates new local jobs. Public priorities include free or affordable compost availability with programming for schools and dense housing, while managing pests to avoid unintentional costs.

IMPLEMENTATION MILESTONES

- **2025:** Finalize program and bin design, ensuring clarity, pest-proofing, and adaptability.
- **2025–2026:** Launch public outreach using plain language, visuals, and translated materials delivered through educators.
- **2026:** Begin compost distribution to schools, farms, and gardens.
- **2026–2028:** Expand local compost hubs and provide grants for parks, schools, and apartments.
- **2026–2030:** Grow composting infrastructure by partnering with regional facilities to increase processing capacity.
- **2028:** Hire a Program Manager to oversee food recovery and zero waste initiatives under CCSR.
- **Ongoing:** Report results through data and stories to maintain transparency and accountability.

AUTHORITY TO IMPLEMENT

Action FS-B is authorized under the Mandatory Food Waste Recycling Ordinance (ROH Chapter 42, Article 3, Section 42-3.5), which mandates diversion of food waste by large food establishments. ENV and CCSR will co-lead implementation, supported by DAB. New compost facilities require permitting under HRS Chapter 342H, administered by the Hawaii State Department of Health (DOH), with City assistance provided to partners navigating these processes. Ordinance 25-24 mandates residential food waste collection beginning April 1, 2026, allowing households to place food scraps in carts—advancing Honolulu toward a more circular system of waste and soil renewal.

FS-C

WHEN FEASIBLE, PROMOTE HEALTHY AND ECOFRIENDLY FOOD CHOICES AND OPTIONS, WHICH MAY INCLUDE LOCALLY SOURCED FOODS

IMPLEMENTING AGENCIES

CCSR (Lead)

ACTION DESCRIPTION

Many families continue to face challenges finding and affording nutritious, culturally appropriate food—especially in rural areas, older neighborhoods, and among the elderly who depend on others for groceries. In places like Kalihi, Waianae, and Pearl City, residents often rely on processed foods because they are cheaper and more readily available than fresh, local options. Residents across the island have called for better food education, stronger local food systems, and easier access to healthy, affordable, locally grown food. This action strengthens Oahu’s local food economy while promoting access to healthier foods.

The City will:

- Increase healthy, local food options at City facilities, parks, events, and recreation sites.
- Support local producers, including farmers, fishers, food hubs, and small food businesses.
- Provide education about food’s connection to health, environment, and the economy.
- Integrate considerations into planning for new housing, transit, and infrastructure.

CAP workshop participants widely supported expanding farmers markets and mobile markets and noted that processed foods are often perceived as cheaper, underscoring the need for public education about cost, nutrition, and local options.

By prioritizing locally grown food, this action reduces dependence on imports. It focuses on expanding choice rather than prescribing diets—recognizing that food is deeply personal.

METRICS & SUCCESS INDICATORS

- **Funding Distributed to Partners:** Measures annual financial support for organizations advancing healthy food initiatives.
- **New Partnerships Formed:** Tracks collaborations with farmers, fishers, food hubs, and area food groups, reflecting growth in the local food economy.

ANTICIPATED BENEFITS

- **Improved Health and Wellbeing:** Expanding availability of nutritious, culturally relevant foods helps prevent chronic diseases and supports dignity and quality of life.
- **Stronger Local Food Systems:** Prioritizing local sourcing reduces reliance on imports and builds demand for island-grown products.
- **Economic Strength:** Buying locally keeps dollars circulating in the area, supporting farmers and small businesses.
- **Environmental Impacts:** Local and plant-forward food choices reduce GHGs, food miles, and packaging waste.

ANTICIPATED DISBENEFITS

- **Cultural or Dietary Misalignment:** Well-intentioned campaigns promoting plant-based diets may alienate people if not framed inclusively. Messaging must celebrate all traditions rather than prescribe specific diets.
- **Vendor Resistance:** Changes to City venue offerings may face pushback due to cost or supply challenges. The City can ease transitions by offering technical assistance, bulk purchasing support, and phased implementation.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$1.5 million by 2030, estimated at \$300,000 per year.

- **Full-Time Staff Position:** Funding one full-time staff position dedicated to advancing outreach, education, and partnerships.
- **Outreach and Education Costs:** Additional costs include creation and distribution of educational and promotional materials and public engagement events to promote healthy, local food.

Savings Estimate: Not Quantified.

- **Indirect Savings:** Though modest, this investment offers significant returns. Improved health can reduce long-term healthcare costs, while local purchasing boosts the economy, and less reliance on imports enhances food security during disruptions or disasters.

IMPLEMENTATION MILESTONES

- **2026–2028:** Expand availability to healthy, local food at transit hubs and Skyline rail stations.
- **2026–2027:** Revitalize the People's Open Market program to increase affordable, local produce.
- **2026–2028:** Create more food-growing opportunities on City land including public housing.

- **2026–2028:** Expand the recreational gardening program and home garden initiatives.
- **2028:** Pilot expanded elderly food programs that provide fresh, locally sourced meals.
- **Ongoing:** Build and maintain partnerships with organizations, farmers, food hubs, and land-based groups that promote access to healthy, ecofriendly food.

AUTHORITY TO IMPLEMENT

The City’s authority to implement FS-C is established under the Revised Charter of Honolulu §6-107, which empowers CCSR to integrate ecofriendly practices into City policies and programs. Additionally, Hawaii Public Procurement Code HRS §103D-1002 allows the City to prioritize Hawaii-grown agricultural products when price and quality standards are met. Led by CCSR, this action advances a stronger, culturally grounded local food network through policy coordination, public education, and direct area partnerships—ensuring all residents have access to healthy, ecofriendly, and locally grown food.

FS-D

ACCELERATE INSTITUTIONAL PURCHASING OF ECOFRIENDLY PRODUCED AND LOCAL FOODS

IMPLEMENTING AGENCIES

CCSR (Lead)

ACTION DESCRIPTION

The City is committed to leading by example—changing how food is purchased for City programs to strengthen Oahu’s local food economy and advance ecofriendly goals. Rather than focusing only on cost, this action centers on food purchasing: sourcing food in ways that support local producers, the public’s health, and environmental stewardship. Through this approach to institutional purchasing, the City will consider:

- Whether food purchases support local farmers, ranchers, fishers, and food producers.
- How far food travels before reaching Oahu and whether it can be sourced closer to home.
- How food choices impact public health, especially in frontline areas.
- How surplus or unused food can be redistributed or composted to prevent waste.
- Whether food aligns with local practices, tastes, and traditions.

This action goes beyond procurement—it’s about shifting mindsets. It calls on City departments, schools, and institutions across public and private sectors to rethink how they buy food and how their choices shape the island’s economy and environment. The City can act as a connector and convener, helping institutions work directly with food hubs, farmers, and distributors.

** While GHG data is still being refined, purchasing more local and ecofriendly produced food is expected to reduce GHGs associated with transport and packaging.*

METRICS & SUCCESS INDICATORS

- **Institution Participation:** Number of institutions participating in OGFP and adopting values-based purchasing.
- **Local and Ecofriendly Purchasing:** Share of food procured locally or ecofriendly by City departments and partner institutions.
- **Healthy Menu Options Offered:** Number of City-run venues providing healthy, culturally relevant, and local menu options.
- **Food Hub and Cooperative Purchasing:** Volume of food procured through local food hubs, cooperatives, or producer networks.
- **Procurement Policies Adopted:** Adoption of procurement policies that align with health, local practices, and ecofriendliness.

ANTICIPATED BENEFITS

- **Local Market Growth:** Creating steady demand for local farms and food businesses drives rural economic development.
- **Strengthened Food Systems:** This action will reduce dependence on imports and support food security during supply disruptions.
- **Reduced GHGs and Waste:** Fewer imports mean shorter food miles, less packaging waste, and lower transport GHGs.
- **Improved Nutrition:** Healthier, fresher meals in public programs support children, the elderly, and exposed populations.
- **Support for Small Producers:** Creating reliable revenue streams supports small and mid-sized farmers and ranchers.
- **Ecosystem Resilience:** Encouraging agriculture practices that improve soil and water quality.

ANTICIPATED DISBENEFITS

- **Higher Short-Term Costs:** Local and ecofriendly foods can cost more due to smaller production scales or certification expenses. This can be reduced by phasing in new requirements.
- **Administrative Barriers:** Procurement processes may be complex for small producers, requiring streamlined paperwork and technical support for successful implementation.
- **Capacity Constraints:** Local producers may struggle to meet large institutional demand.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$18 million by 2030.

- **Local Food Procurement:** The State aims for 18% local food procurement by 2030, meaning the City would need to grow from 10% in 2025 to 18% by 2030—an increase from roughly \$10 million to \$18 million in local food purchases. Achieving this through procurement will require upfront investment and funding for both policy implementation and capacity-building, but will generate long-term economic and social benefits.

Total Savings: \$28.8 million by 2030.

- **Dollars Reinvested in the Local Economy:** Every \$1 spent locally can return \$1.60 to the island economy through jobs, sales, and area reinvestment.⁵⁸ Over time, the benefits—economic strength, health improvements, and reduced environmental impact—will far outweigh the costs.

IMPLEMENTATION MILESTONES

- **2026:** Hire a dedicated coordinator for the Oahu Good Food Program.
- **2026–2028:** Develop purchasing data and reporting standard operating procedures (SOPs).
- **2026–2028:** Update City food service contracts to reflect procurement principles.
- **2026–2028:** Support producers and food hubs in scaling operations to meet institutional demand.
- **2027–2030:** Adopt a Citywide procurement policy.
- **2028–2029:** Update concession and recreation site contracts to include healthier, local food options, with vendor transition support.
- **Ongoing:** Monitor progress, collect feedback, and adjust strategies with public and departmental input.

AUTHORITY TO IMPLEMENT

FS-D is authorized through the Hawaii Public Procurement Code (HRS §103D), which empowers government agencies to prioritize Hawaii-grown agricultural products when price and quality standards are met. The Hawaii State Planning Act (HRS §226-7) also establishes policy goals for food self-sufficiency and local procurement. Implementation will be led by CCSR under the authority of the Revised Charter of Honolulu §6-107, which directs CCSR to integrate ecofriendly practices into City operations. No new legislation is required; however, ongoing coordination, funding, and training will be essential to embed local food purchasing into everyday City practice.

FS-E

**DEVELOP LOCAL COMPOSTING AND SOIL HEALTH
INFRASTRUCTURE WHILE EXPANDING LOCAL KNOWLEDGE
AND EDUCATION**

IMPLEMENTING AGENCIES

CCSR (Lead), ENV, DPR

ACTION DESCRIPTION

This action expands composting and soil-building infrastructure to help residents grow food while reducing waste and restoring the land. This includes incentivizing existing and building new collection processing, sorting, finishing, and distribution facilities. Across Oahu, families, schools, and neighborhood groups are already tending backyard gardens, school plots, and shared spaces—but one of the biggest barriers they face is access to healthy soil and compost. Many areas lack nearby compost sites or organic bin pickup, leaving residents without the materials they need to grow food in a more ecofriendly manner.

By creating and enhancing public physical infrastructure and spaces to increase access to locally produced compost and natural fertilizers, the City can help residents care for the land, divert organic waste from landfills, and strengthen food self-reliance. This action focuses on City partnerships with trusted local organizations and neighborhood leaders who already practice and teach regenerative soil care. It promotes composting not as a technical process but as an act of stewardship and connection.

Composting, when done right, is more than waste diversion—it’s a way of nurturing living soil, supporting local food systems, and caring for future generations. By investing in local composting infrastructure and education, the City can help families grow food close to home, reduce fertilizer imports, and build long-term resilience.

METRICS & SUCCESS INDICATORS

- **Use of City-Supported Compost:** Number of sites using compost produced or distributed through City-supported programs.
- **Compost Production and Waste Diversion:** Measures the tons of compost produced and the percentage of food and organic waste diverted from the waste stream.
- **Public Compost Infrastructure Projects Supported:** Reflects the number of composting projects receiving City support.
- **Compost and Soil Education Participation:** Captures participation in composting and soil health education programs across neighborhoods.

ANTICIPATED BENEFITS

- **Reduced Chemical Exposure:** Expanding use of organic fertilizers reduces reliance on synthetic inputs, protecting soil, water, and human health.
- **Improved Soil Health:** Compost and regenerative practices enhance microbial activity, water retention, and sequestration.
- **Strengthened Local Food Production:** Locally produced compost keeps money circulating on-island and cuts GHGs from importing fertilizers.
- **Public Learning and Leadership:** Education builds capacity for residents to manage soil health and food systems in an ecofriendly manner.
- **Healthier Ecosystems:** Restored soils support biodiversity and improve watershed health.
- **Waste Diversion and Resource Recovery:** Diverts food and organic waste from the landfill and increases reuse of organic materials.
- **Workforce Development:** This action will create local jobs in composting, distribution,

and education while building practical skills in soil care.

ANTICIPATED DISBENEFITS

- **Odors and Pest Issues:** Improperly managed compost sites may cause nuisance or health concerns, which can be mitigated through site design, sealed systems, operational standards, and public training.
- **Contamination Risks:** Compost streams may be affected by contamination requiring monitoring, education, and operational oversight.
- **Operational and Maintenance Needs:** Compost systems and drop-off locations may require ongoing maintenance, monitoring, and coordination.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$2.7 million by 2030.

- **Infrastructure Costs:** Funding would support compost infrastructure planning, site assessments, permitting, pilot-scale facility development, neighborhood compost hubs, food scrap drop-off locations, school compost systems, monitoring systems, and other associated costs. This may include financial incentives for public/private partnerships for facilities operated on non-City property.
- **Full-Time Staff Position:** Funding for one full-time staff position to coordinate compost programming, implementation partnerships, reporting, and operational oversight, estimated at \$150,000 per year.
- **Potential Additional Costs:** Funds will support trusted program delivery. Support includes outreach, materials, and education in multiple languages; and support for school and garden compost systems.

Savings Estimate: Not Quantified.

- **Indirect Savings:** This investment will yield meaningful returns: reduced landfill disposal volumes and costs, improved soil health, and greater food security. Additional long-term savings may include reduced pressure on disposal infrastructure, avoided waste transport costs, and expanded participation in composting and soil stewardship practices. To honor feedback, funds to the extent possible will be directed to local contractors, organizations, and practitioners rather than external (non-Hawaii) contractors—ensuring the benefits stay in and for the area.

IMPLEMENTATION MILESTONES

- **2026–2027:** Determine range of composting infrastructure projects. Expand compost access through partnerships with local compost producers.
- **2028:** Grow neighborhood compost systems and education programs across schools and gardens.
- **2028:** Review procurement policies to prioritize local compost providers.
- **Ongoing:** Construct and complete composting infrastructure projects. Support school, garden, and neighborhood compost projects; secure long-term funding sources for long-term operation.

AUTHORITY TO IMPLEMENT

FS-E is authorized under the Revised Charter of Honolulu §6-107, which directs CCSR to embed ecofriendly practices into City programs and strengthen resilience. Implementation partners include ENV and DPR. This action aligns with Ordinance 25-24, mandating residential food scrap collection, and supports expansion of compost use across the island. Compost facility siting requires approval under HRS Chapter 342H (DOH Solid Waste Permitting), where the City can help groups navigate permitting and compliance. By centering leadership and shared stewardship, this action turns waste into resources—and neighbors into partners in resilience.

FS-F	SUPPORT TRADITIONAL FARMING AND FISHING PRACTICES AND PROGRAMS
IMPLEMENTING AGENCIES	
CCSR (Lead), ENV, DHLHM	
ACTION DESCRIPTION	
This action focuses on reviving and supporting traditional food systems—the land- and ocean-based practices that have maintained life on Oahu for generations. These include cultivating kalo in loi, maintaining dryland farms, managing nearshore fisheries, and practicing regenerative agriculture that aligns with natural cycles. These systems embody a worldview of reciprocity and care, where tending the land and sea is inseparable from caring for family, area, and future generations.	
Over time, these practices were disrupted by colonization, land tenure changes, and regulatory systems that did not reflect local stewardship values. Yet across Oahu, farmers, fishers, and cultural practitioners are restoring them—reviving loi, clearing auwai, rebuilding fishponds, and teaching youth. They face ongoing barriers: limited land access, slow permitting, and inconsistent City support.	
Area leaders emphasized that this action must be guided by those already doing the work, not imposed from above. Support should be flexible, culturally grounded, and free of restrictive requirements that dilute meaning or ownership. The City’s role is to listen, remove barriers, create enabling conditions—opening land, providing technical assistance, and generating funding so area practitioners can thrive on their own terms.	
METRICS & SUCCESS INDICATORS	
• Locally-Based Farming or Fishing Programs Supported: Measures City investment reaching locally led agricultural and aquaculture initiatives through grants, land access, or direct assistance. • Number of Formal Partnerships with Area Food Organizations: Assesses whether City support is delivered through collaborative structures that communities shape and trust.	

ANTICIPATED BENEFITS

- **Health and Safety:** Traditional farming and fishing methods minimize chemical inputs, improving worker and ecosystem health.
- **Cultural Continuity:** Revitalizing traditional knowledge systems supports language, education, and intergenerational storytelling.
- **Ecosystem Restoration:** This action improves biodiversity, water infiltration, and carbon sequestration while reducing runoff and erosion.
- **Productive Land Use:** Overgrown or underused lands can be converted into thriving area resources such as loi, dryland farms, and fishponds.
- **Economic Opportunity:** Creating local jobs in farming, restoration, education, and youth mentorship keeps dollars circulating in rural economies.
- **Ecological Literacy:** Hands-on learning and volunteer programs strengthen environmental awareness and skills across generations.
- **Cross-Sector Collaboration:** Building bridges between practitioners, scientists, and government aligns research, policy, and practice.
- **Policy Alignment:** This action advances priorities of the *Oahu Food Systems Plan* and supports constitutional and cultural rights of Native Hawaiians.

ANTICIPATED DISBENEFITS

- **Uneven Access:** Inconsistent or opaque distribution of City funding or land could create tension among groups.
- **Short-term Funding:** Many efforts lack ongoing financial support, limiting long-term planning.
- **Bureaucratic Barriers:** Permitting delays, unclear farm definitions, and complex compliance systems discourage small ohana farms.
- **Limited Departmental Readiness:** Progress may stall without dedicated roles and coordination.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$750,000 by 2030.

- **Implementation Costs:** Costs are estimated at \$150,000 per year, with funding supporting dedicated staff capacity for coordination and partnership, public outreach and education to encourage participation, direct investment in traditional initiatives and pilot projects, and collaborative programs linking City agencies and area organizations.

Savings Estimate: Not Quantified.

- **Indirect Savings:** While modest, the investment has outsized benefits—enhancing food security, ecological restoration, and the public’s wellbeing. Transparent and consistent funding is essential to prevent inequities and build trust.

IMPLEMENTATION MILESTONES

- **2026–2028:** Fund and scale projects led by traditional farmers, fishers, and educators.

- **2026–2028:** Integrate traditional food systems into City climate and food security planning.
- **Ongoing:** Coordinate resources and support for farms rooted in local practices and leadership.

AUTHORITY TO IMPLEMENT

FS-F is authorized under the Revised Charter of Honolulu § 6-107, which directs CCSR to embed ecofriendly practices into City policies. Implementation will be led by CCSR, in collaboration with ENV, and area-based partners.

5.5 Transportation

T-A

IMPLEMENT SAFE STREET DESIGN AND LAND USE INFRASTRUCTURE TO SUPPORT RELIABILITY AND EFFICIENCY FOR ALL TRANSPORTATION OPTIONS

IMPLEMENTING AGENCIES

DTS (Lead), DPP, DDC, DFM, City and County of Honolulu Department of Information Technology (DIT), Honolulu Police Department (HPD), HDOT, OahuMPO

ACTION DESCRIPTION

The City is committed to making it easier, safer, and more affordable for residents to travel without relying on a car. Whether walking, biking, rolling, or riding public transit, this action invests in infrastructure and programs that expand low-GHG, multimodal transportation options—linking neighborhoods to schools, jobs, shopping centers, parks, and transit hubs.

Guided by the Complete Streets principles, this work prioritizes streets designed for all users—not just drivers. It recognizes that how people move shapes how they live, and that safe, connected, and comprehensive transportation is fundamental to the public’s well-being. Key infrastructure advancing this work include:

- **Protected Bikeways:** The City will continue implementing the *Oahu Bike Plan* by constructing approximately five miles of new protected bike lanes each year. These lanes physically separate bicycles from car traffic, creating safer routes to schools, commercial centers, and transit stops—especially in areas where biking is currently unsafe or disconnected.
- **Pedestrian Sidewalks and Walkways:** Under the *Oahu Pedestrian Plan*, the City will build 31 new pedestrian walkways by 2030, prioritizing areas with missing sidewalks, poor lighting, or high vehicle traffic. In locations where sidewalks are not feasible, alternative improvements—such as protected shoulders, shared-use paths, or street-level walkways—will provide safe, comprehensive routes for walking and rolling.
- **Dedicated Bus Lanes:** To improve transit reliability and speed, the City will add 22.8 miles of bus-only lanes along key corridors. These lanes prioritize public transit during peak hours, shortening travel times and increasing dependability for workers, students, and families.
- **Multimodal Connection Planning:** As new Skyline rail stations open, TheBus routes will be adjusted to better connect bus and rail service. New extensions—such as service from Ahua to UH Manoa and from Lelepaaua to Waikiki—will help residents complete their trips more efficiently and affordably.
- **Curb Space and Mobility Management:** In high-demand areas near rail stations and dense developments, the City will improve curb management to accommodate pick-up/drop-off zones, delivery vehicles, and bike or scooter parking.

- **Shared Micromobility Expansion:** In partnership with private service providers, the City will expand shared bikes and scooters beyond the urban core, extending access to the public.

While these strategies build on years of transportation planning, their success depends on deep public participation and designs that reflect local values.

Across nearly every conversation, people voiced concerns about unsafe conditions for those walking or biking to transit. By mid-2025, Oahu had experienced more than double the traffic fatalities compared to the same period in 2024—approximately 40% involving pedestrians—highlighting the urgent need to achieve the City’s *Vision Zero* goal of zero traffic deaths by 2040.⁶¹ Residents called for safer routes, stronger bus and rail connections, and investment in sidewalks and bike lanes.

The public also emphasized that transportation design should reflect the identity, values, and lived experience of the people it serves.

METRICS & SUCCESS INDICATORS

- **Commute Mode Share (Walking, Bicycling, Transit, Carpool):** Measures how many people are choosing commuting transportation options.
- **Transportation Mode Shifts:** Tracks changes in travel behavior.
- **Traffic-Related Fatalities and Serious Injuries:** Tracks how safe our roads are, especially for children, elders, walkers, and bikers.
- **Participants in Vision Zero Education Campaigns:** Shows how members of the public are learning about safe and respectful travel habits.
- **Number of Safety and Mobility Projects Implemented:** Counts new crosswalks, walkways, bikeways, and traffic calming installations.
- **Miles of New Bikeways, Pedestrian Walkways, and Transit Priority Lanes:** Tracks new infrastructure supporting safe, GHG-friendly access to schools, jobs, and everyday needs.
- **Percent Reduction in VMT:** Measures how much car travel is avoided thanks to better transit and improved land use, biking, and walking options.
- **Travel Time:** Compares how transit-only infrastructure affects travel time, potentially making it competitive with driving, which may be an indicator of mode shift.

ANTICIPATED BENEFITS

- **Safer Active Transportation:** Protected bike lanes, widened sidewalks, and traffic calming measures reduce collision risk and support active transportation. Electrified options can appeal to a wider range of users.
- **Improved Public Health:** Safer streets encourage walking and cycling, improving resident health outcomes. 34% of Biki users reported weight loss, demonstrating the links between infrastructure and health outcomes.
- **Air Quality:** Decreased single-occupancy vehicle use cuts NO_x and PM_{2.5}, benefiting individuals with respiratory conditions like asthma, especially in urban “hotspots.”
- **Expanded Access for All:** Transit-oriented development co-locates housing, essential services, and jobs near transit hubs, reducing transportation costs and improving access

to education and employment for all.

- **Enhanced Stormwater Management:** Bioswales, permeable paving, and rain gardens on “Complete Streets” improve water infiltration, reduce runoff, and protect coastal ecosystems from nutrient pollution.
- **Strengthened Local Economy:** Infrastructure projects create jobs in construction, maintenance, engineering, and landscaping. Further, businesses near improved streets experience an increase in foot traffic, benefiting the local economy.
- **Fostered Public Cohesion:** Public space improvements like benches, street trees, and improved lighting can foster social interaction, increase perceptions of safety, and enhance neighborhood identity.
- **Strengthened Neighborhoods:** Elevated crosswalks and shaded pathways—both elements of Complete Streets designs—can reduce urban heat island effects, lowering heat-stress risks for exposed populations.
- **Reduced Commute Times:** Improved active transportation infrastructure and transit reliability can shorten average commute times for all modes of travel.
- **Improved Pedestrian Safety:** Complete Streets design elements such as enhanced crosswalk visibility, curb extensions, and refuge islands reduce pedestrian-vehicle conflicts.

ANTICIPATED DISBENEFITS

- **Rising Displacement Pressures:** Improved walkability and TOD can increase rent, mortgages, and association fees, risking gentrification in absence of concurrent affordable housing measures.
- **Ongoing Maintenance Needs:** Maintaining lanes, pavements, and vegetation infrastructure requires dedicated budgets and staffing, and without them, upkeep is often deferred, reducing both safety and GHG benefits.
- **Disruptive Construction Impacts:** Temporary detours, noise, and dust may disrupt businesses and residents, potentially eroding support for long-term infrastructure improvements. Minimizing these disruptions through careful phasing, clear communication, and public engagement will be key to implementation.
- **Cost of Micro-Mobility Systems:** Electrification of micro-mobility options may result in new user costs due to subscription fees or reliance on electronic payment systems.
- **Inconsistent Infrastructure Implementation:** Poorly implemented infrastructure, such as incomplete bike lane networks or confusing curb layouts can create conflicts among users.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$604.3 million by 2030.

- **Implementation Costs:** Estimated cost to complete 25 miles of bikeways, 31 miles of pedestrian walkways, and 22.8 miles of transit-priority bus lanes.

Savings Estimate: \$5.2 million by 2030.

- **Reduction in Driving:** 10.5 million VMT avoided from 2025–2030, assuming planned infrastructure projects are on track to meet the 50% milestone by 2025 and full implementation by 2030.
- **Fewer Cars on the Road:** 17% reduction in VMT by 2030 due to new bikeways, safer walkways, street improvements, and TOD policies.
- **Fuel and Vehicle Maintenance Savings:** With fuel and maintenance costs averaging \$0.50 per mile, the projected VMT reduction of 10.5 million would result in \$5.2 million in direct savings for Oahu households during this timeframe.
- **Indirect Savings:** Helping people get to where they need to go without having to rely on a car can result in GHG reductions, improved public health, fewer traffic injuries, reduced family transportation costs, and more time at home.

IMPLEMENTATION MILESTONES

- **In Progress:** Complete corridor prioritization and planning for high-injury intersections and corridors per the Pedestrian Priority Network.
- **2025:** Launch bus-rail coordination with adjusted routes and wayfinding updates to improve transit connectivity. Including adjustments to bus routes and wayfinding with the opening of the four new Skyline stations at Ahua and Lelepaua.
- **2026:** Deliver quick-build bikeway and walkway safety improvements and begin expanded shared micromobility pilot projects in initial areas.
- **2027:** Complete all planned 22.8 miles of dedicated bus-only lanes, and integrate mobility and curb management policies at TOD sites.
- **2028:** Complete 31 miles of prioritized pedestrian walkways and safety infrastructure, including mid-block crossings and lighting upgrades.
- **2029:** Construct 40 additional miles of high-priority bikeways based on Tier 1 of the *Oahu Bike Plan*.
- **2030:** Complete at least 88 miles of multimodal corridor improvements including Complete Streets redesigns, buffered bike lanes, and mobility enhancements.

AUTHORITY TO IMPLEMENT

The City has authority to implement Action T-A through the Complete Streets Ordinance (ROH 2021, Chapter 14, Article 18) and HRS §264-20.5, which support multimodal street design. This work aligns with the Revised Charter of Honolulu § 6-1703, which empowers DTS to lead planning, engineering, and construction of transportation projects, including bikeways and pedestrian infrastructure. Implementation builds on over a decade of planning efforts, including the Complete Streets program, TOD neighborhood plans, and TDM strategies. With DTS as the lead agency and support from DPP, DDC, DFM, DIT, HPD, and HDOT, this action aligns with the OahuMPO's *Regional Transportation Plan for 2045* (currently being updated for 2050), ensuring progress toward long-term GHG reductions.

IMPLEMENTING AGENCIES

DTS (Lead), HDOT, DDC, CCSR, HSEO, DFM, DES, OahuMPO

ACTION DESCRIPTION

The City is working to expand and improve public transit across Oahu—enhancing options like the rail, bus service, bike-share, and scooters. The goal is clear: to make getting around easier, and more affordable without always relying on a car.

Stronger, more comprehensive transportation options for all reduce GHGs, reduce the stress of commuting, help households save money, and protect open spaces by limiting the need for new roads and unchecked development. These benefits are deeply tied to the public’s health, well-being, and quality of life. Initiatives support local jobs and create new opportunities in transit planning and mobility services.

Public feedback directly shaped this action. During public workshops across the island, residents shared firsthand experiences of long waits, missed connections, and unsafe transit conditions, especially in areas like Waianae, Ewa, Central Oahu, and Waimanalo.

This action recognizes that public transit is more than simply a means to get from one place to another; it is part of a broader effort to connect people to opportunity. While not every request can be met immediately due to funding or infrastructure constraints, this action provides a framework for identifying and addressing the most pressing transit gaps. It lays the foundation for a more connected and stronger Oahu.

METRICS & SUCCESS INDICATORS

- **Unlinked Transit Trips:** Tracks how many times people board a transit vehicle to measure ridership.
- **Vehicle Revenue Miles per Capita:** Measures active service per person, identifying whether neighborhoods receive adequate coverage.
- **Reported Safety Incidents and Complaints:** Monitors safety of vehicles, bus stops, and transfers.
- **Transit Seat Utilization:** Indicates how efficiently buses and trains are being used.
- **Transit Cost Recovery:** Tracks operating costs offset by fare revenue while balancing affordability.
- **Reduction in Vehicle Miles Traveled:** Monitors GHG reductions and cost savings from reduced car use.
- **Active Transportation Trips (“Walk, Bike, Roll”):** Tracks participation in active modes as they become safer and more complete.

ANTICIPATED BENEFITS

- **Reduced Vehicle Miles Traveled:** Car-share fleets, ride-pooling, and micro-mobility options lower per-capita VMT, reducing household transportation costs.
- **Enhanced Public Spaces:** Dynamic curb space utilization reduces the space needed for parking and supports more vibrant public spaces.
- **Improved Mobility Access:** Micro-mobility hubs near libraries, schools, and senior centers improve first-mile/last-mile connections.
- **Lower Household Transportation Costs:** Shared mobility options reduce household transportation expenses compared to private car ownership.
- **Data-Driven Service Planning:** The City's data usage in its service planning supports responsive service adjustments.
- **Enhanced Public Health:** Less traffic congestion and GHG reductions improve respiratory health and reduce commuting stress.

ANTICIPATED DISBENEFITS

- **Pedestrian Right-of-Way Conflicts:** Unregulated e-scooter or bike parking can obstruct sidewalks and curb ramps, creating hazards for people with disabilities or families with strollers.
- **Unregulated Safety Concerns:** Mixed-use paths without dedicated micro-mobility lanes can increase collision risks, potentially undermining public trust in these services.
- **Uneven Service Provision:** Private providers may prioritize densely populated, high-income areas.
- **Maintenance Challenges:** Remote locations face higher risk of vandalism and upkeep costs.
- **Affordability Limitations:** Subscription or rental fees may be cost-prohibitive for low-income users.
- **Unregulated System Expansion:** Rapid growth of micro-mobility networks without planning can lead to safety issues and backlash.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$52.7 million by 2030.

- **Neighborhood Transportation Management Expansion:** \$10 million to expand the Waikiki Transportation Management Association (TMA) model into other dense urban areas like Chinatown and Downtown.
- **Bike Maintenance and Expansion:** \$22.7 million total by 2030, projecting \$19.3 million for maintenance of 1,288 bicycles across 136 stations based on \$3,000/year per bike and \$3.4 million for 500 new bikes and 50 additional docking stations.
- **City Car-Sharing Program:** \$15 million for a five-year pilot, modeled after Los Angeles's BlueLA program, to expand vehicle affordability.
- **Transportation Demand Management (TDM) and Innovation Pilots:** \$5 million to support programs like HNL Connect that reduce single-occupancy vehicle use through education and incentives.

Savings Estimate: \$2.5 million by 2030.

- **Reduction in Driving:** 4.9 million VMT reduced from 2025 to 2030.
- **Fuel and Vehicle Maintenance Savings:** With fuel and maintenance costs averaging \$0.50 per mile, the projected VMT reduction of 4.9 million would result in \$2.5 million in direct savings.
- **Indirect Savings:** While the investment is significant, this action can save families money, reduce GHGs and make everyday life healthier and easier with safer streets, lower transportation costs, and more time to spend at home.

IMPLEMENTATION MILESTONES

- **2025:** Start new transit service improvements in high-need areas based on CAP workshop feedback.
- **2025:** Begin bus stop upgrades with lighting, shade, and safety improvements in places where the public reported discomfort or danger while waiting.
- **2026:** Conduct a safety audit for bike-share and scooter use in rural areas to better understand where these options are realistic or where safer infrastructure is needed first.
- **2027:** Update the *Oahu Regional Transportation Plan* to reflect what we've learned from the public, usage data, and the City's goals.

AUTHORITY TO IMPLEMENT

Action T-B is authorized under Ordinance 19-19 (Car Share Ordinance) and Hawaii Administrative Rules Title 23, Chapter 6, which govern transit-supportive services. Led by DTS, in partnership with HDOT, DDC, CCSR, HSEO, DFM, and DES, this action advances VMT reduction through expanded shared mobility, micro-mobility, and TDM strategies. DTS continues to coordinate with TMAs and aligns efforts with the Honolulu Car-Sharing Program, micro-mobility expansion, transportation plans, and business partnerships.

T-C

**SUPPORT EV ADOPTION AND CHARGING INFRASTRUCTURE
FOR THOSE WHO NEED TO DRIVE**

IMPLEMENTING AGENCIES

DTS, CCSR, DFM (Leads), DDC, DPR, HPD, Honolulu Fire Department (HFD), BFS, Hawaiian Electric Company (HECO), HDOT, HSEO

ACTION DESCRIPTION

The City is exploring ways to expand EV charging infrastructure across Oahu—especially for residents who still need to drive based on where they live, work, or go to school.

The City will work in alignment with the Hawaii Department of Transportation’s *Energy Security and Waste Reduction Plan*, which includes incentives to increase Electric Vehicle Supply Equipment (EVSE) installations, battery recycling and disposal planning, and other actions. The City is also exploring the feasibility of curbside charging in Honolulu as a potential solution to bridge charging infrastructure gaps.

Increasing the number of EV chargers in public spaces, apartment buildings, and other areas is essential to enabling more residents to make the switch to EVs.

The public across Oahu expressed strong support for expanding EV charger availability—particularly for residents living in condos and apartments—and advocated for installing chargers at every district park. In rural and remote communities like the North Shore and Waianae, residents noted the near-total absence of public charging stations, making EV ownership feel unrealistic even for those eager to adopt EVs. In dense neighborhoods with rental or multi-generational housing, people explained that home charging is simply not an option, and current incentives tend to exclude renters or those without secure housing. Others emphasized that chargers should be placed in public spaces like parks, schools, and shopping centers where people already gather and feel a sense of trust and familiarity.

In urban areas, residents raised concerns about charger installation reducing walkability or open space and called for thoughtful design. Across all groups, questions emerged about EV affordability, battery waste and disposal, and whether the grid can reliably support widespread electrification.

Expanding adoption of EVs is one part of a broader push to support more connected and affordable neighborhoods across Oahu. Whether it’s investing in public transit, safer streets, or micromobility options, the City’s goal is to build a transportation system that works for everyone. This work will continue in close collaboration with the public and local partners, ensuring that the transportation transition on Oahu reflects shared values and diverse needs.

METRICS & SUCCESS INDICATORS

- **Public EV Charging Station Installation:** Tracks the distribution of publicly available EV chargers across shared spaces island-wide.
- **Residents Living Within a 10-minute Drive of a Public Charging Station:** Responds to feedback from residents in remote areas like Waianae and Kahaluu who noted that “no chargers near us” makes EV ownership unrealistic.
- **Chargers Installed per Registered EV:** Ensures that charging infrastructure keeps pace with vehicle adoption, reducing wait times and improving convenience for EV drivers.
- **EV Charging Hubs Near Multifamily Housing Units:** Addresses the needs of renters who reported having “no way to charge at home,” ensuring availability for all.

ANTICIPATED BENEFITS

- **Accelerated EV Adoption:** Expanding availability of charging infrastructure makes EV ownership more practical and convenient, directly supporting broader adoption across all neighborhoods.
- **Integration with Distributed Energy Systems:** Pairing public EV chargers with distributed energy systems, such as PV-plus-storage microgrids enables daytime charging to align with peak energy generation, maximizing energy usage.
- **Economic and Workforce Development:** Installing and maintaining chargers creates new jobs and certification pathways for electricians and energy technicians, strengthening local economies and workforce growth.
- **Public-Private Collaboration:** Partnerships with charging manufacturers, service providers, and utilities extend infrastructure beyond City-owned sites, improving public access.
- **Improved Public Health:** Increased EV use reduces GHGs that contribute to asthma, cardiovascular disease, and other chronic conditions.
- **Household Cost Savings:** Rising EV adoption helps reduce the upfront cost of vehicles over time while lowering long-term expenses for fuel and maintenance.
- **Expanded Curbside Charging Infrastructure:** Installing curbside chargers can greatly increase EV charging for all.
- **Environmental Co-Benefits:** Widespread EV adoption reduces both GHGs and noise pollution, and when thoughtfully planned, limits the need for new fueling stations or road expansions—preserving open space and minimizing land impacts.

ANTICIPATED DISBENEFITS

- **Grid Stress Risks:** High-power EV chargers can create localized spikes in electricity demand, increasing the risk of voltage drops or brownouts if not supported by transformer upgrades and smart charging management.
- **Modal Funding Trade-offs:** Prioritizing EV infrastructure investments may constrain funding for other essential transportation improvements—such as bus rapid transit, rail expansion, or protected bike lanes—potentially undermining a balanced, multimodal system.
- **Curb Space Competition:** Installing curbside chargers can reduce on-street parking availability, creating tension with residents and businesses that rely on limited urban parking.

- **Energy System Mismatch:** Chargers not paired with energy storage systems may draw power during peak demand periods—such as early mornings and evenings—reducing GHG reductions benefits and adding strain to the grid.
- **End-of-Life Battery Management:** Without strong recycling and disposal systems, the growing number of retired EV batteries presents long-term environmental challenges.
- **Public Space Conflicts:** Chargers placed in high-traffic public areas can impede pedestrian flow, availability, or Americans with Disabilities Act (ADA) compliance, while limited charger availability in busy locations may lead to long wait times and user frustration.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$421.2 million by 2030.

- **Meeting EV Charging Demand:** To meet projected EV growth, 2,400 public charging ports will be needed by 2030. As of mid-2025, only 656 ports were in place, leaving a gap of 1,744 ports that must be built within the next five years.
- **Types of Chargers Needed:** Determining the right mix of chargers—specifically Level 2 (L2) versus Direct Current Fast Chargers (DCFC)—requires careful analysis of demand, vehicle types, and site-specific constraints. These factors can be particularly challenging at older facilities or multifamily housing sites that may need substantial electrical upgrades.
- **Local Costs:** Cost estimates reflect Hawaii’s unique construction conditions, grid limitations, and installation requirements. The analysis includes:
 - 1,395 Level 2 (L2) ports at \$83,000 each = \$115.8 million
 - 349 Direct Current Fast Chargers (DCFC) at \$875,000 each = \$305.4 million
- **Maximizing the Investment:** Expanding the EV charging network on Oahu to meet island-wide demand will require major investment and long-term coordination between public and private partners to ensure the benefits reach all residents—especially in area-centered spaces like parks and schools where people already gather and where private development is unlikely to occur.

Savings Estimate: \$277.8 million by 2030.

- **Fuel and Vehicle Maintenance Savings:** With an estimated 36,770 new EVs expected by 2030, residents could collectively save up to \$277.8 million.
- **Indirect Savings:** Switching from gas to EVs can save households money and improve public health through GHG reductions. However, EVs also create new challenges, including the safe management of large batteries that are costly to dispose of. Transitioning to EVs will require coordinated systems for battery recovery, reuse, and recycling—alongside targeted public investments that prevent future waste impacts.

IMPLEMENTATION MILESTONES

- **2026:** In alignment with HDOT’s *Energy Security and Waste Reduction Plan* (ESWR), fully implement the HDOT *NEVI Plan*, which includes 13 charging stations across key corridors.

- **2027:** Launch an incentive pilot program under HDOT's ESWR to retire older internal combustion engine (ICE) vehicles and replace them with EVs.
- **2028–2029:** Conduct a curbside charging feasibility study to evaluate potential locations and design standards for implementation.
- **2029:** Evaluate EV network distribution, identify underserved areas, and adjust planning accordingly—responding to feedback from residents in Waianae, Koolaupoko, and Central Oahu seeking public chargers in their neighborhoods.
- **Ongoing:** Collaborate with CBOs to promote EV awareness and affordability, ensuring all residents have information about available incentives and programs.
- **Ongoing:** Integrate EV infrastructure planning across City departments so that all City capital improvement projects (CIPs), fleet transitions, and land use reviews consider EVSE requirements.
- **Ongoing:** Seek and apply for federal, state, and private funding for EV infrastructure expansion. As funding becomes available, align applications with public priorities and incorporate EVSE into capital projects by default wherever feasible.
- **2029–2030:** In line with HDOT's ESWR, establish a fully operational EV battery recycling and recovery program to ensure safe management of end-of-life batteries.

AUTHORITY TO IMPLEMENT

The City's authority for this action is established through Ordinance 23-25, which adopts the Energy Code and mandates EV-ready infrastructure in new developments. This work is led by DTS, CCSR, and DFM, with support from DDC, DPR, HPD, HFD, BFS, HSEO, HDOT, and HECO, in coordination with state policies including: HRS 291-71, designating parking spaces for EV charging systems and HRS 195-7.5, ensuring access to charging in multifamily residential spaces and townhomes. Local and statewide tools—such as CCSR's EV charging tracker, Hawaiian Electric's Smart Charge incentive, and Hawaii Energy's EV Charging Station Rebate—further support the City's expansion of public and fleet charging infrastructure.

T-D

IMPLEMENT STRATEGIES AND RE-EVALUATE CITY PROCEDURES TO SUPPORT 100% ELECTRIC AND ALTERNATIVE FUEL PASSENGER FLEET GOAL BY 2035 AND LARGER VEHICLES BY 2040

IMPLEMENTING AGENCIES

DFM (Lead), CCSR, DTS, BFS, DDC, CCSR, HSEO, HDOT, HECO, OahuMPO

ACTION DESCRIPTION

The City is advancing a comprehensive transition to a 100% electric/alternative fuels fleet, with the goal of replacing all City passenger vehicles with electric or alternative fuels vehicles by 2035, and all medium- and heavy-duty vehicles (M/HDVs) by 2040. This shift is anchored in key regulatory commitments—City Ordinance 20-47, the *Navahine F. v. Hawaii* settlement, and the State of Hawaii’s electric/alternative fuels fleet targets—and represents a fundamental transformation in how the City purchases, operates, and maintains its transportation systems. Beyond GHG reductions, this transition is an opportunity to improve public health, enhance government efficiency, and create new career pathways in vehicle maintenance, infrastructure, and technology.

The City recognizes that electrifying M/HDVs—such as refuse trucks, construction equipment, and emergency vehicles—presents unique technical and operational challenges. These vehicles have longer duty cycles, higher power demands, and limited fuels alternatives in the current market. To maintain flexibility and ensure continued progress, the City may pursue ordinance amendments that allow alternative fuels to serve as a bridge toward its 2040 fleet goal. This aligns with the Hawaii Department of Transportation’s emerging statewide vehicle replacement (HDOT ESWR) strategy, which emphasizes a pragmatic mix of electrification and alternative fuels based on vehicle type and feasibility.

METRICS & SUCCESS INDICATORS

- **Light-Duty Passenger Vehicles Electrified:** Measures progress toward full passenger fleet electrification by 2035.
- **Medium- and Heavy-Duty Fleet Electrified:** Ensures efforts are progressing for buses and larger city vehicles toward electrification targets.
- **Fuel Consumption Reductions:** Measures the reduction in gasoline and diesel consumption as EVs replace fossil fuel-powered vehicles.
- **Workforce Training Programs Implemented:** Supports operations and maintenance of EVs with trained local labor.

ANTICIPATED BENEFITS

- **Reduced GHGs and Healthier Air:** Reduced CO₂, NO_x, and PM_{2.5} GHGs will improve air quality, especially near fleet depots and industrial corridors.

- **Improved Public Health:** Lower exposure to GHGs will reduce asthma and cardiovascular and respiratory disease rates.
- **Operational Savings:** Lower fuel and maintenance costs from EVs can free up resources for other essential City services.
- **Market Leadership:** As one of Hawaii's largest fleet owners, the City's transition will strengthen the local EV market and create a more affordable secondhand EV supply.
- **Workforce Opportunity:** Training programs will upskill current staff and open new jobs in vehicle maintenance, EVSE infrastructure installation, and fleet management.
- **Grid Innovation:** Integration with managed charging and vehicle-to-grid (V2G) systems could help stabilize the electric grid and provide emergency backup power.

ANTICIPATED DISBENEFITS

- **Service Disruptions:** Fleet depot upgrades may require phasing or temporary closures that disrupt essential services like emergency response or trash collection. Contingency planning and complementary CAP actions—such as energy waste management and alternative transportation infrastructure—can help mitigate these challenges.
- **High Upfront Costs:** Significant capital investments in EVs and charging infrastructure can strain budgets, placing pressure on the City's overall capital plan and potentially delaying other priorities such as affordable housing and public transit.
- **Battery Waste Management:** The island currently has limited recycling and disposal infrastructure for EV battery technologies.
- **Workforce Transition Needs:** Mechanics and operators will require extensive retraining, necessitating time and resources to ensure safety and efficiency.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$260.1 million by 2030.

- **Light-Duty Vehicle Replacement Cost:** Approximately \$31.9 million by 2030 to replace 1,664 light-duty vehicles with EVs, assuming an incremental cost of \$20,000 per vehicle.
- **Bus Replacement:** Approximately \$47.8 million by 2030 to replace 233 City buses with electric models, reflecting an incremental cost of about \$205,000 per bus.
- **Fleet Charging Infrastructure:** \$59.9 million by 2030.
- **Bus Depot Charging Infrastructure:** \$116.5 million by 2030.
- **Planning and Program Management:** \$2.5 million.
- **Training and Operations:** \$1.5 million.

Savings Estimate: \$119.8 million by 2030.

- **Annual Fuel Savings:** 4.8 million gallons avoided, totaling \$23 million/year by 2030.
- **Maintenance and Operations Savings:** \$4.6 million/year by 2030.

Calculations reflect current technology and fuel cost trends and may be adjusted as the City explores alternative fuels for M/HDVs and as state and federal incentives become available.

IMPLEMENTATION MILESTONES

- **2026:** Complete fleet inventory and baseline GHG assessment.

- **2026–2027:** Develop the fleet transition plan with public input.
- **2027–2028:** Launch public engagement to inform siting and prioritization.
- **2028–2029:** Begin phased replacement of light- and medium-duty vehicles.
- **2029–2030:** Scale up procurement of electric passenger vehicles and alternative fuel M/HDVs.
- **2030:** Finalize procurement policies and update ordinances to allow alternative fuels for hard-to-electrify vehicles.

AUTHORITY TO IMPLEMENT

Action T-D is authorized under Ordinance 20-47, mandating a fully electric/alternative fuels City fleet by 2035, and reinforced by the Mayor’s Directive 24-1, which requires departments to plan for non-fossil-fuel vehicles in all Capital Improvement Projects. Led by DFM, with partners CCSR, DTS, BFS, DDC, HSEO, HDOT, and OahuMPO, this action is guided by the DTS’ *Fleet Transition Plan* which targets full bus electrification by 2040, and the TCAP *Departmental Fleet Electrification Strategies*, ensuring progress toward Honolulu’s transportation goals.

5.6 Energy Solutions

ES-A

SUPPORT ENERGY EFFICIENCY RETROFIT PROGRAMS FOR AFFORDABLE HOUSING THAT SERVES THE MAJORITY OF OAHU RESIDENTS AND CITY-OWNED HOUSING

IMPLEMENTING AGENCIES

CCSR (Lead), DCS, DDC, DFM, DHR, DPP, HSEO, Hawaii State Public Utility Commission (PUC), Hawaii Natural Energy Institute (HNEI), DHLM, Hawaii Energy, HECO

ACTION DESCRIPTION

Older buildings across Oahu use disproportionate amounts of energy and contribute significantly to GHGs. Many of these homes and apartments rely on aging appliances, poor insulation, and outdated cooling systems, which drive up monthly bills, reduce comfort, and increase exposure to extreme heat and other hazards. A large share of these properties are owned or occupied by working-class families who do not qualify for subsidized housing programs but still face high housing and energy costs. Others are part of the City's housing portfolio, where upgrades have been limited to individual units rather than whole-building or single-family retrofits.

To address these gaps, the City is developing the Affordable Housing Retrofit Accelerator, a two-track program designed to make both naturally occurring affordable housing (NOAH) and City-owned housing more energy efficient, and affordable to maintain.

The Accelerator will have two distinct but complementary workstreams:

- **Private Affordable Housing (NOAH):** Support for non-subsidized properties, such as older condominiums and small apartment complexes.
- **City-Owned Housing:** Whole-building and single-family retrofits for public housing and City-managed units that have not yet benefited from energy upgrades.

Retrofits will include energy-efficient appliances, better insulation, cool roofs, rooftop PV, and battery storage. These upgrades lower household utility costs, improve air quality, and reduce exposure to heat and other stressors. The program will also connect participants with financial incentives—such as rebates from Hawaii Energy, state and federal funding through the Home Electrification and Appliances Rebate (HEAR) and Home Efficiency Rebates (HOMES) programs, and Commercial Property Assessed Clean Energy and Resiliency (C-PACER) financing to spread costs over time.

The Accelerator aims to reach at least 4% of the combined stock of NOAH and City-owned housing, providing technical assistance to identify cost-effective upgrades and help families and property owners access financing. The City's progress retrofitting municipal buildings—

like wastewater plants, public area centers, and administrative offices—provides a strong technical foundation for this next step: bringing energy savings home to all residents.

METRICS & SUCCESS INDICATORS

- **Program Launch and Participation:** Number of participants enrolled in both City-owned and NOAH retrofit programs.
- **Housing Units Retrofitted:** Total homes upgraded, disaggregated by ownership type and location.
- **Public Access and Outreach:** Number of families supported through outreach and enrollment; feedback on program satisfaction.
- **Energy and Cost Savings:** Annual electricity reductions (~1,080 kilowatt-hours or kWh per home) and average savings (~\$464 per household).
- **Health, Comfort, and Energy Upgrades:** Number of homes with improved indoor air quality and energy infrastructure upgrades.
- **Property Owner Engagement:** Participation by landlords, managers, and associations offering upgrades to tenants.

ANTICIPATED BENEFITS

- **Greater Energy Cost Savings:** Retrofits reduce utility bills, easing the cost burden for working families and seniors while improving housing stability.
- **Improved Public Health:** Replacing gas appliances and improving ventilation lowers indoor air pollution (PM_{2.5} and VOCs), while better cooling systems protect residents during heat waves.
- **Enhanced Comfort and Livability:** Weatherization, cool roofs, and efficient HVAC systems make homes more comfortable in Hawaii's humid weather.
- **Cultural and Housing Preservation:** Retrofitting older buildings helps preserve neighborhood character and reduces displacement risk from redevelopment or teardown projects.
- **Workforce Development Opportunities:** Expanding retrofits will create local trade and technician jobs in energy auditing, HVAC, and installation—supporting a growing workforce.
- **Reduced Imported Fuel Dependence:** Lower energy use and PV adoption decrease Oahu's reliance on imported fuels.

ANTICIPATED DISBENEFITS

- **Construction Disruptions:** Retrofit work may temporarily displace tenants or cause noise and air quality impacts, which can be mitigated by proactive communication and relocation support.
- **Funding Limitations:** High upfront costs may prevent full program reach or limit implementation.
- **Public Awareness and Trust Gaps:** Some residents may distrust government-led programs due to past history.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$26.3 million by 2030.

- **Retrofitting Costs:** Estimated retrofitting 4,325 homes at \$6,077 per retrofit.

Savings Estimate: \$10 million by 2030

- **Total Energy Reduction:** 4.67 million kWh/year.
- **Savings Per Household:** \$464/year.
- **Indirect Savings:** Though upfront costs are significant, long-term gains in affordability and energy self-sufficiency outweigh the investment. Safeguards are needed to ensure savings actually improve affordability for tenants rather than being offset by rent increases or added fees.

IMPLEMENTATION MILESTONES

- **2026–2027:** Launch Affordable Housing Retrofit Accelerator Pilot, including separate programs for City-owned and naturally occurring affordable housing.
- **2027–2028:** Conduct targeted outreach to tenants, owners, and neighborhood groups, with enrollment support.
- **2027–2030:** Retrofit 4,325 housing units across Oahu.

AUTHORITY TO IMPLEMENT

The City holds authority through energy code updates such as Ordinance 23-25 and provisions under the Revised Charter of Honolulu §6-106, which supports affordable and special needs housing.⁷⁰ Implementation is led by CCSR, with collaboration from HSEO, PUC, DPP, DDC, HNEI, DHLM, DFM, Hawaii Energy, HECO, DHR, and DCS to align local efforts with state energy and housing initiatives. Additional authority or funding may be established through the Hawaii Public Utilities Commission (PUC) or Hawaii State Legislature partnerships to expand retrofits at scale to ensure that every family, regardless of income or housing type, has program access.

ES-B

**CONTINUE TO SUPPORT ECOFRIENDLY CITY OPERATIONS
USING ENERGY EFFICIENCY MEASURES AND FURTHER
INCREASE ON-SITE ALTERNATIVE ENERGY GENERATION**

IMPLEMENTING AGENCIES

DDC, DFM (Leads), DPR, DFM, ENV, DHLM, BFS, CCSR, HSEO, HECO

ACTION DESCRIPTION

To lead by example, the City is expanding efforts to improve energy performance across its own facilities—including offices, wastewater treatment plants, bus and rail stations, and other public serving government buildings. This action centers two core goals: using less energy through lighting, air conditioning, and controls systems upgrades; and generating more alternative energy through rooftop PV and battery storage on existing sites like roofs and parking structures. The City’s target is to continue increasing PV energy production and improve efficiency wherever feasible, ensuring that public investments reflect both economic and environmental stewardship.

By continuing this work, the City seeks to ensure its leadership is both visible and measurable—something residents can see, understand, and benefit from in their daily lives. Recognizing past barriers such as permitting delays, design constraints in historic buildings, and cross-department coordination challenges, the City is now committed to faster, better-integrated implementation so that energy investments directly serve everyone on the island.

METRICS & SUCCESS INDICATORS

- **Total Energy Savings (kWh/year):** Measures reduced energy use after upgrades, linking efficiency to cost and GHG reductions.
- **Alternative Energy Generation (MW Installed):** Tracks expansion of PV and battery capacity across municipal facilities.
- **Number of City Facilities Upgraded or Retrofitted:** Reflects progress in modernizing government infrastructure across districts.
- **Number of Local Jobs Created or Supported:** Tracks workforce participation in alternative energy and building upgrades.
- **Number of Public Feedback Incorporated:** Evaluates how public input—such as calls for rooftop gardens—is integrated into project design.

ANTICIPATED BENEFITS

- **Lower Operational Costs:** Energy efficiency and on-site PV systems reduce electricity bills for public facilities, freeing resources for other programs and services.
- **Visible Leadership:** City projects demonstrate what’s possible, helping normalize alternative energy adoption across homes, schools, and businesses.
- **Improved Contingency Energy Operations:** Battery storage can keep critical facilities—like emergency shelters and cooling centers—operational during grid disruptions.

- **Workforce Development Opportunities:** City-led projects that prioritize local hiring and Hawaii-based suppliers create skilled jobs and strengthen the regional economy.
- **Leadership in Energy Transition:** The City can serve as a model for the energy transition, inspiring broader participation across Oahu.

ANTICIPATED DISBENEFITS

- **Capital and Maintenance Costs:** Upfront and ongoing expenses for new systems require long-term financial and maintenance planning.
- **Barriers to Inclusive Procurement:** Complex procurement processes may unintentionally exclude smaller, local, or area-based alternative energy providers.
- **Permitting Delays:** Regulatory or interagency approval processes may delay energy projects, increasing costs and frustration.
- **Limited Transparency of Public Benefits:** Without clear reporting, communities may not see how energy savings translate into public benefits.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$58 million by 2030.

- **Implementation Costs:** Costs include ESPC and other projects, based on costs and performance from the City's existing ESPC projects. A portion may be financed through performance contracts or external funding programs.

Savings Estimate: \$10.4 million by 2030.

- **Current PV Capacity:** ≈ 6 MW (FY25)
- **Potential Additional Capacity:** ≈ 3 MW (to reach 9 MW ESPC cap)
- **Cost Savings:** in energy cost reductions
- **Indirect Savings:** Residents have consistently voiced the need for smart, transparent use of public funds. These upgrades will reduce operational costs and support essential services. To maximize public value, benefits should be shared openly and paired with local job creation, infrastructure improvements, or shared rooftop spaces where possible.

IMPLEMENTATION MILESTONES

- **Ongoing:** Continue ESPC projects and efficiency upgrades across City facilities.
- **2027–2028:** Identify additional feasible sites for PV and battery storage systems.
- **2030:** Achieve continued reductions in City energy use and expand alternative energy generation within departmental capacity limits.

AUTHORITY TO IMPLEMENT

The City has clear authority to execute Action ES-B under its home rule powers (Hawaii State Constitution, Article VIII, Section 2) and its mandate to manage and finance municipal energy use. Through this authority, the City has implemented Energy Savings Performance Contracts that fund energy efficiency upgrades and alternative energy systems in municipal facilities. This action will be led by DDC and DPR, in coordination with DFM, ENV, DHLM, BFS, CCSR, HSEO, and HECO. These partnerships demonstrate how municipal agencies can leverage existing assets to enhance energy across Oahu. No additional statutory authority is required;

however, streamlined permitting and interagency coordination remain essential for accelerating implementation and ensuring public benefits are realized.

ES-C	EXPLORE, AND IF FEASIBLE, PILOT AND IMPLEMENT FLEXIBLE ENERGY DEMAND RESPONSE PROGRAMS FOR CITY OPERATIONS
IMPLEMENTING AGENCIES	
DDC, DPR, BFS, HECO	
ACTION DESCRIPTION	
The City is exploring how flexible energy use—also known as demand response—can support its GHG reductions goals, improve energy performance at municipal facilities and reduce strain on Oahu’s electric grid. Demand response programs enable buildings to shift when and how they use electricity, moving consumption to lower-GHG energy sources, when alternative energy is abundant. This can include adjusting cooling schedules, reducing equipment use during peak periods, or drawing on battery-stored PV power.	
While a few commercial buildings on Oahu have already tested these strategies, this action is intentionally structured as a learning and feasibility effort for City-owned facilities. Its purpose is to determine whether demand response is technically feasible, cost-effective, and scalable across different City operations—recognizing that some essential facilities operate 24 hours a day or currently lack backup storage.	
As part of this evaluation, the City also plans to explore the potential of “intragovernmental wheeling”—using a utility’s transmission and distribution system to move power from one City generation site to another. Wheeling could be especially valuable where one facility has large rooftop PV potential but low on-site demand, paired with another building that has high demand but limited PV capacity. This forward-looking approach also prepares the City for potential changes in electricity pricing, such as time-of-use rates, ensuring municipal operations are ready to adapt to shifting energy and regulatory conditions.	
<i>* As a planning and pilot-focused action, GHG impacts cannot yet be quantified. However, GHG reductions are anticipated through energy savings, peak demand load shifting, and deployment of demand response technologies in City facilities.</i>	
METRICS & SUCCESS INDICATORS	
• Reduction in Electricity Use During Peak Hours: Indicates how effectively participating facilities can shift demand away from the most carbon-intensive and expensive times. • Operational Cost Savings: Tracks reductions in utility expenses, freeing funds for public area-serving programs and potentially helping avoid costly rolling blackouts.	

- **GHG Avoided:** Measures reductions in electricity use during peak demand periods and resulting GHG reductions.
- **Battery Storage Capacity Tested and Deployed:** Demonstrates readiness to rely on stored alternative energy—especially at critical facilities.

ANTICIPATED BENEFITS

- **Reduced Peak Demand:** Expanding demand response practices in City facilities by pre-cooling buildings, shifting major loads to midday, and using battery storage can ease peak demand.
- **Improved Energy Cost Savings:** More efficient energy use and active demand management lowers overall utility expenses for City operations.
- **Enhanced Power Systems:** When paired with storage, smart energy systems can maintain power during outages and support critical functions, increasing energy reliability on Oahu.
- **Public Sector Leadership:** Demonstrating modern, efficient building management can influence other institutions and businesses to adopt similar strategies.
- **Grid Resilience and Reduced GHGs:** Flexible energy usage supports grid stability and reduces reliance on additional large-scale energy infrastructure.
- **Workforce Development Opportunities:** Implementing demand response programs will generate jobs in energy technology, building automation, and controls, while expanding opportunities for training and upskilling in smart building systems.

ANTICIPATED DISBENEFITS

- **Technology Learning Curve:** New systems require staff training and clear communication for safe and effective operation.
- **Comfort and Service Trade-offs:** Automated load shifting may temporarily affect indoor temperatures or lighting if not designed with occupants in mind. Real-time adjustments could disrupt services at offices, transit hubs, or water facilities—especially for exposed groups relying on consistent access. These risks can be mitigated by proactively communicating potential disruptions and alternatives.
- **High Upfront Equipment Costs:** Smart controls, sensors, and storage systems may be costly without state or federal incentives.
- **Technical Challenges or System Failures:** Shifting loads or depending on automation during peak conditions can introduce reliability risks, especially during heat waves or disasters when demand is high. Malfunctions could undermine energy system resilience or compromise emergency operations. These risks must be managed through robust backup plans, battery strategies, and clear emergency protocols.

COST & SAVINGS ESTIMATE

Total Cost Estimate: Not Quantified.

- Precise costs and savings cannot yet be modeled at this exploratory and pilot stage.
- Initial investments are expected to include building-level energy assessments, planning and technical support, limited technology upgrades, staff training, and capacity building.

Total Savings: Not Quantified.

- **Indirect Savings:** Previous pilot projects outside of City operations have shown promising reductions in utility costs and peak demand charges, but outcomes vary significantly based on building type, existing infrastructure, and usage patterns. For this reason, the current phase does not commit to full implementation and does not provide citywide cost or savings projections. Instead, it focuses on building internal readiness, avoiding future energy cost shocks, and preparing for shifts in utility rates and grid conditions.

IMPLEMENTATION MILESTONES

- **2026–2027:** Assess building energy use and identify candidate sites for demand response pilots, prioritizing facilities with high evening loads and operational flexibility.
- **2026–2028:** Conduct training and internal capacity building on demand response technologies, safety, and operational protocols.
- **2027–2028:** Develop and distribute a plain-language toolkit for City staff and facility managers explaining demand response goals, roles, and procedures.
- **2027–2028:** Provide training on energy codes and building systems to align future upgrades with demand response and efficiency goals.
- **2029–2030:** Analyze pilot outcomes, evaluate feasibility of broader rollout, and publicly report findings, challenges, and recommended next steps.

AUTHORITY TO IMPLEMENT

Action ES-C is authorized under the City’s operational control of municipal facilities and its home rule authority (Hawaii Constitution, Article VIII, Section 2). Led by CCSR, in partnership with DDC, DFM, DPR, ENV, BFS, and HECO, the City is exploring policies, protocols, and tools to better manage electricity use in real time, especially during periods of high grid demand. Ongoing coordination with HECO supports participation in utility-led demand response programs, including the ability to shift or curtail load at select City facilities during emergency grid events, such as rolling blackouts. Through this coordination, the City is preparing for future energy challenges and opportunities while ensuring that facility operations remain reliable and aligned with long-term goals.

ES-D

EXPLORE AND IMPLEMENT CITY POLICIES THAT INTEGRATE WASTE DIVERSION PRACTICES INTO PUBLIC PROCUREMENT AND GOVERNMENTAL OPERATIONS, ENSURING REDUCED NEGATIVE IMPACTS

IMPLEMENTING AGENCIES

CCSR (Lead), ENV, DDC, DES

ACTION DESCRIPTION

As Oahu transitions to alternative energy and advanced technology, the City is ensuring that alternative energy projects are safe and strong from start to finish. This means proactively planning for how materials will be reused, recycled, or responsibly managed once they reach the end of their useful life—whether during construction, equipment upgrades, or day-to-day operations.

Currently, this type of waste planning is not applied consistently across departments. Without it, equipment such as PV panels and batteries risk becoming hazardous waste, ending up in landfills, or creating long-term environmental and health risks.

This action will establish clear policies requiring all City departments to plan for waste and material reuse from the start of every project—not after disposal becomes a problem. Departments will take early responsibility for integrating lifecycle planning into design, procurement, and operations. For example, when installing new PV panels, a department must plan how panels will be reused, recycled, or safely disposed of once retired. The same applies to batteries and alternative energy equipment, which can be hazardous if mishandled. The City will also encourage “second life” uses—such as reusing old batteries for energy storage in facilities or infrastructure.

The action shifts the City from a reactive model of waste management to a proactive, circular economy model that prevents waste before it occurs and strengthens local reuse and recycling markets, including:

- Require departments to include waste planning in all City-led projects from inception.
- Encourage use of recycled or reused materials in construction and operations.
- Support “second life” applications for batteries and PV equipment.
- Strengthen local reuse, recycling, and repair businesses by creating steady demand for their services.
- Ensure City events follow low-waste practices, leading by example.

These steps reduce impacts and demonstrate that the City is acting on public priorities. Successful implementation will require staff training, updated internal processes, and support for vendors to meet new requirements.

METRICS & SUCCESS INDICATORS

- **Percentage of City-led Projects with Documented Waste or Lifecycle Planning:** Tracks whether departments are planning ahead for reuse, recycling, or disposal.
- **Volume of Alternative Energy Components Diverted from Landfill:** Measures tangible progress in waste reduction.
- **Number of City Contracts Including Ecofriendly or Reuse Requirements:** Demonstrates institutional change and accountability.
- **Amount of Reused or Recycled Materials Used in City Projects:** Reflects circular operations.
- **Number of Staff Trained in Ecofriendly Procurement and Lifecycle Planning:** Captures capacity-building progress across departments.

ANTICIPATED BENEFITS

- **Reduced GHGs:** Using lower-GHG construction materials and efficient equipment supports long-term viability and GHG reduction goals.
- **Market Influence:** By leading on ecofriendly purchasing, the City incentivizes vendors to meet higher standards and drives broader private-sector change.
- **Improved Transparency and Accountability:** Clear procurement policies allow residents to see how public spending aligns with goals.
- **Reduced Harm:** Less landfill and incineration of materials minimize toxic leaching, improves air and water quality, and protects ecosystems.
- **Strengthened Local Economy:** Expanding reuse and recycling infrastructure creates jobs, enhances local supply chains, and supports ethical, area-based businesses.

ANTICIPATED DISBENEFITS

- **Higher Cost Premiums:** Ecofriendly materials and services may cost more upfront.
- **Increased Administrative Workload:** Updating systems, training staff, and monitoring compliance will require time and coordination.
- **Vendor Access Barriers:** Smaller or local businesses may find it difficult to meet new criteria. To prevent exclusion, the City will provide technical assistance and phased implementation.
- **Greater Project Complexity:** Requiring waste management and lifecycle planning adds new steps to project design and contracting but ensures long-term financial and other benefits.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$500,000 by 2030.

- **Full-Time Staff Position:** Funding a full-time coordinator to lead implementation, policy updates and training across departments, and development of tracking tools and resources for compliance.
- **Additional Costs:** To mitigate potential vendor barriers, the City is considering technical assistance and simplified compliance options for local small businesses.

Savings Estimate: Not Quantified.

- **Indirect Savings:** While new requirements may increase short-term workload, they will reduce long-term costs related to hazardous waste management, landfill operations, and environmental cleanup. They will also support local circular economy businesses.

IMPLEMENTATION MILESTONES

- **2026:** Develop draft policy requiring lifecycle waste planning in all City projects.
- **2027:** Adopt a formal procurement directive embedding Citywide practices.
- **2027–2028:** Provide staff guidance, checklists, and training to ensure compliance and consistency.
- **2028:** Create an internal tracking system for recycled/reused materials and vendor compliance.
- **Ongoing:** Integrate public-facing reporting to keep communities informed on progress and changes.

AUTHORITY TO IMPLEMENT

The City has authority under HRS §103D (Hawaii Public Procurement Code), which permits agencies to prioritize ecofriendly practices in purchasing when cost and quality standards are met. ES-D is led by CCSR, in partnership with ENV, DDC, DES, and local research institutions. This work is further supported by the Revised Charter of Honolulu §6-107, which directs the CCSR to integrate environmental values into City operations and policies. No new legislative authority is required, but effective implementation will depend on cross-department coordination, training, and collaboration with private sector and research partners to ensure lasting, measurable impact.

ES-E

SUPPORT PROGRAMS AND RESOURCES FOR PV ADOPTION

IMPLEMENTING AGENCIES

CCSR (Lead), Hawaii Green Infrastructure Authority (HGIA), HSEO, DHHL, Homestead Community Development Corporation, DPP, DHLM, PUC, Hawaii State Department of Land and Natural Resources (DLNR), HECO, Power providers

ACTION DESCRIPTION

This action aims to make PV energy attainable, affordable, and understandable for everyone on Oahu. The City will expand programs that help residents learn about their PV options, avoid predatory lease agreements, and connect with trusted local organizations for support. Through partnerships with local organizations and initiatives, the City will support collective approaches to PV adoption. In parallel, the City will invest in PV workforce training to prepare local residents for installation and maintenance careers, creating a skilled, trusted workforce that advances both economic opportunity and energy goals.

METRICS & SUCCESS INDICATORS

- **Kilowatts of PV Energy Installed:** Tracks new PV capacity added through rooftop or shared PV programs.
- **Local Residents Trained and Hired:** Measures workforce participation and job creation, especially for residents from underrepresented communities.
- **Policy or Permitting Barriers Resolved:** Indicates progress in addressing outdated housing codes or structural barriers to PV readiness.
- **Local Partnerships Launched:** Reflects collaboration with trusted local organizations

ANTICIPATED BENEFITS

- **Expanded PV Adoption:** Supports both rooftop and shared PV, reducing fossil fuel dependence and strengthening Oahu's energy system.
- **Improved Grid Stability:** Distributed energy reduces strain on the central grid and increases backup capacity during outages.
- **Lower Household Energy Bills:** Savings on utility costs reduce financial pressure for households.
- **Better Air Quality:** Replacing fossil-fueled power with PV energy cuts harmful pollutants like SO₂ and NO_x, improving health outcomes.
- **Workforce Development:** Expanding alternative energy access creates new jobs in PV installation, maintenance, and customer service, while training a local energy workforce.
- **Stronger Local Partnerships:** Building trust through local collaborations ensures PV adoption reflects area priorities and knowledge.

ANTICIPATED DISBENEFITS

- **Financial Barriers:** Even with incentives, upfront costs and subscription fees may still deter some residents.
- **Information Barriers:** Complex enrollment, financing, and tax credit systems may discourage participation.
- **Trust Concerns:** Past predatory PV contracts and poor-quality installations have damaged public confidence.
- **Financing Exclusions:** Some shared PV programs require membership fees or buy-ins, which could exclude households without subsidies or flexible payment models.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$1.5 million by 2030.

- **Full-Time Staff Positions:** Two full-time staff, each estimated at \$150,000 per year for five years will coordinate area partnerships, education and outreach, and workforce development.
- **Local Program Support:** Additional costs may be required to manage and coordinate local PV programs.
- **Public Outreach Costs:** Funding for outreach materials and hosting events.

Savings Estimate: Not Quantified.

- **Indirect Savings:** This estimate does not include funding for home repairs, electrical upgrades, or direct incentives—barriers that remain significant for many families. Additional funding or permitting reforms will be essential to ensure participation. If fully supported, this action could yield substantial economic and environmental benefits—including lower household energy costs and a stronger energy workforce that keeps dollars circulating locally.

IMPLEMENTATION MILESTONES

- **2025–2027:** Launch PV education and outreach campaign, including plain-language materials and workshops on installation options and consumer protection.
- **2026–2027:** Finalize program design, prioritizing shared housing and rentals.
- **2026:** Establish partnerships for contractor training and workforce development.
- **2026–2029:** Support first installations under programs.
- **2027–2029:** Expand financial and permitting pathways, including incentives for electrical upgrades and roof repairs.
- **2027–2029:** Institutionalize staffing and outreach infrastructure to ensure program longevity.

AUTHORITY TO IMPLEMENT

The City has authority under Revised Charter of Honolulu §6-1503, which grants DPP zoning and permitting powers to support PV expansion. Implementation will be led by DPP in partnership with CCSR, HGIA, DHHL, HSEO, and HECO. While state utilities and energy regulators manage grid access, the City plays a critical role in enabling PV adoption through land use decisions, permitting processes, and local program design. Ongoing coordination and funding will be essential to close affordability gaps and achieve PV adoption across Oahu.

5.7 Waste

W-A	CONTINUE BUILDING DECONSTRUCTION REUSE AND RECYCLING PROGRAM; ENABLE REUSE, RECYCLING AND REPAIR SYSTEMS
IMPLEMENTING AGENCIES	
ENV (Lead), CCSR, DPP, DOH	
ACTION DESCRIPTION	
This action centers a simple but transformative principle—preventing waste before it happens. The City is supporting programs, policies, and businesses that emphasize reuse, repair, and recycling of materials such as building components, tools, furniture, and everyday goods. The goal is to reduce landfill waste and move toward a circular economy where materials are kept in use for as long as possible.	
Projects like the building deconstruction pilot at the Kapaa Transfer Station demonstrate how older structures can be carefully dismantled rather than demolished, allowing materials like wood, fixtures, and hardware to be salvaged and reused. This process not only reduces disposal costs but also gives valuable materials a second life. The City is also exploring ways to expand local participation in circular economy practices through:	
• Tool libraries that allow residents to borrow instead of buy. • Refill and compost stations to reduce packaging and food waste. • Public repair events and education programs that teach maintenance and repair skills.	
These initiatives have multiple benefits—reducing pollution, creating jobs, and saving households money by encouraging repair and reuse over disposal. However, barriers remain: deconstruction is often slower and more expensive than standard demolition, and reuse facilities are limited.	
For this action to succeed, it will require funding, space, and public engagement, as well as alignment with existing efforts such as Council Resolution 23-168 and the City's ongoing building deconstruction pilot. Key strategies include strengthening partnerships with nonprofits, reuse centers, and construction industry stakeholders; expanding drop-off locations and storage for reusable goods; supporting local businesses and public initiatives that reduce upstream consumption; and facilitating the redistribution of salvaged materials for affordable housing, public projects, or resale.	
During public CAP workshops, residents across Oahu shared innovative and grounded ideas for making reuse and repair systems more approachable and effective. Residents broadly supported elevating circular economy initiatives within the CAP and suggested integrating	

reuse and deconstruction principles into the building code to make these practices standard, not optional.

These perspectives underscore where existing systems fall short and where targeted investment could make the greatest impact. While not all ideas can be implemented immediately, they provide a roadmap for expansion of reuse and repair systems that reflect local values.

METRICS & SUCCESS INDICATORS

- **Online Resource Map Launch:** A public directory of local reuse and repair facilities.
- **Long-Term Framework for Material Recovery:** A Citywide policy for integrating reuse services into public and private projects.
- **Partnerships Formed:** Number of active partnerships with nonprofits, schools, trade groups, and businesses supporting reuse and repair.
- **City Program Adoption:** At least one new City program supporting circular business models or product life-extension efforts.
- **Tons of Reusable Materials Diverted:** Quantifies material recovered and kept out of the landfill.
- **Reuse Events, Tool Libraries, and Local Businesses Supported:** Tracks public participation and business engagement.

ANTICIPATED BENEFITS

- **Waste Diversion & GHG Reduction:** Increased reuse and recycling of materials reduces landfill-bound waste and associated GHGs.
- **Resource Conservation:** Salvaging structural materials minimizes raw materials extraction and lowers embodied GHGs in new construction.
- **Local Economic Growth:** Improved materials reuse and recycling retain material value in the local economy, supports small businesses, and reduces reliance on imports.
- **Job Creation & Workforce Development:** Anticipated expansion of employment opportunities in deconstruction, repair, and resale sectors.
- **Affordable Access to Materials:** Repurposed materials provide low-cost options for home repairs and public projects, offering more affordable construction materials.
- **Efficient Land Use:** Reduced landfill demand will delay the need for new waste disposal sites.

ANTICIPATED DISBENEFITS

- **Higher Costs & Time Requirements:** Deconstruction can take longer and cost more than demolition, potentially increasing project expenses.
- **Burden on Small Contractors:** New waste separation or tracking rules could deter participation, but the City could offset this impact through incentives and subsidies.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$29.1 million by 2030.

- **Meeting C&D Waste Reduction Targets:** The City aims to reduce construction and demolition waste by 50% from 2023 levels by 2030, keeping roughly 147,000 tons of material out of landfills—about 29,000 tons per year.

- **Building Deconstruction Needed:** Achieving this will require the deconstruction of approximately 23 buildings annually, based on average waste generation of 1,295 tons per structure. At an estimated \$244,500 per building, the total program cost would be about \$29.1 million.

Savings Estimate: \$11.9 million by 2030.

- **Tipping Fee Savings:** Avoiding H-POWER tipping fees at \$81 per ton would generate roughly \$2.4 million in annual savings and \$11.9 million total by 2030.
- **Indirect Savings:** Healthier neighborhoods through reduced waste and pollution, while conserving resources, creating local repair jobs, and making affordable building materials.

IMPLEMENTATION MILESTONES

- **Ongoing:** Partner with nonprofits and area groups to pilot tool libraries, neighborhood repair hubs, and deconstruction initiatives that make reuse affordable and practical.
- **2026–2027:** Launch a comprehensive Reuse and Deconstruction Strategy, including policies, partnerships, and public outreach.
- **2026–2027:** Launch an interactive online map of reuse and repair resources.
- **2026–2028:** Pilot a Workforce Training Program in partnership with trade schools and nonprofits to build local expertise in deconstruction, repair, and materials recovery.
- **2027–2028:** Finalize a long-term reuse and materials framework for public and private projects to ensure consistency and alignment with waste reduction goals.

AUTHORITY TO IMPLEMENT

Action W-A is authorized by City Council Resolution 23-168, which established the Kapaa Quarry Transfer Station pilot to explore building material recovery and deconstruction. Led by ENV, with support from CCSR, DPP, and DOH, this action aims to reduce C&D waste through permanent reuse and recycling infrastructure. The City's permitting updates, education programs, and partnerships with private and nonprofit entities will complement implementation. As the pilot evolves, coordination between City departments and building code integration will be critical to scaling circular economy principles.

W-B

DEVELOP WASTE POLICY AND PROCEDURES FOR PV AND OTHER RELEVANT ENERGY TECHNOLOGIES

IMPLEMENTING AGENCIES

ENV (lead), CCSR, DPP, DOH

ACTION DESCRIPTION

This action seeks to establish clear policies and procedures for the safe recycling, reuse, and disposal of energy equipment and infrastructure, including batteries. The City is planning ahead—recognizing that early preparation will prevent future waste problems, reduce pollution, and benefit the entire public. Responsible management of waste from PV and other relevant energy technologies is essential to achieving the City’s circular economy and other goals—extending the lifespan of valuable materials, reducing landfill dependence, and supporting workforce development.

METRICS & SUCCESS INDICATORS

- **Tons of Alternative Energy Systems Waste Diverted from Landfill:** Quantifies progress toward waste reduction and recycling goals.
- **Number of New Jobs Created in Alternative Energy Systems Recycling:** Tracks workforce expansion and training outcomes.
- **Participants in Alternative Energy Systems Recycling Training Programs:** Measures local workforce readiness.
- **Reduction in Contracted Hazardous Waste Disposal:** Indicates progress toward long-term, in-state recycling capacity.
- **Implementation of New Policies or Ordinances:** Marks institutionalization of alternative energy systems waste management frameworks.

ANTICIPATED BENEFITS

- **Enhanced Environmental Protection:** Recycling PV panels and batteries reduces leaching of hazardous materials like lead, cadmium, and lithium into soil and water.
- **Improved Public Health:** Proper waste handling minimizes exposure to toxic materials and lowers respiratory and cardiovascular risks.
- **Resource Recovery:** Recapturing valuable materials such as aluminum, copper, silver, and glass for reuse advances circular economy principles.
- **Job Creation:** This action is anticipated to expand local employment in recycling, logistics, and materials recovery industries.
- **Energy Security:** Recycling reduces reliance on imported materials for alternative energy infrastructure.

ANTICIPATED DISBENEFITS

- **Limited Existing Infrastructure:** Oahu currently lacks local facilities for large-scale PV waste processing, potentially causing storage backlogs or high export costs.

- **High Recycling Costs:** Without subsidies or incentive programs, disposal costs may fall on consumers, discouraging proper handling of waste.
- **Coordination Challenges:** Managing logistics across agencies and contractors will require robust communications and accountability systems to prevent illegal dumping or unsafe storage.
- **Policy Delays:** Slow development of regulations could result in stockpiles of damaged or expired equipment, heightening the risk of toxic leaks and economic harm.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$5.4–\$7.6 million by 2030.

- **Implementation Costs:** Primary costs include policy development and legal review, public engagement and outreach, end-of-life infrastructure, data tracking systems, and pilot recycling programs. Costs are estimated based on the assumption that ~100,000 PV panels are recycled by 2030.

Savings Estimate: \$6–\$14 million by 2030.

- **Landfill Cost Avoidance:** \$5–\$10 million based on \$50–\$100/panel disposal fees avoided.
- **Material Recovery Value:** \$1–\$4 million from recycling aluminum, silver, glass, and copper.
- **Indirect Savings:** Safe management of PV panels and batteries requires major upfront investment, as the City currently lacks the authority, funding, and facilities to process hazardous alternative energy systems waste. Out-of-state recycling can cost thousands per unit. Passing those costs to residents will hinder PV adoption. In the long run, however, investing in responsible recycling will reduce cleanup costs, protect public health, and create local jobs.

IMPLEMENTATION MILESTONES

- **2025–2026:** Pilot takeback and drop-off program.
- **2025–2026:** Identify sites and partners for long-term e-waste processing facilities.
- **2026–2028:** Launch a jobs and recycling training initiative.
- **2026–2029:** Integrate waste requirements into procurement and permitting policies.
- **2025–2030:** Conduct islandwide outreach and public education campaigns.
- **Ongoing:** Develop partnerships with PV installers, recyclers, and waste management organizations to expand capacity and best practices.

AUTHORITY TO IMPLEMENT

Action W-B is led by ENV, in collaboration with CCSR, DPP, and DOH. While the City currently lacks ordinances specific to alternative energy systems waste, it holds authority over waste diversion and resource recovery under ROH Chapter 9. Moving forward, the City will work with state agencies and neighboring counties to develop a regulatory framework for safe handling, storage, and recycling of PV infrastructure. This includes evaluating new technologies, setting clear contractor requirements for disposal, and aligning policies with State goals.

W-C

EXPLORE THE FEASIBILITY OF METHANE COLLECTION SYSTEMS AND ANAEROBIC DIGESTER CAPACITY OR OTHER RESOURCE RECOVERY PROJECTS AT CITY LANDFILL AND WASTEWATER TREATMENT FACILITIES

IMPLEMENTING AGENCIES

ENV (Lead), BFS, DOH, CCSR

ACTION DESCRIPTION

The City is exploring ways to use waste as a local energy source by capturing methane from landfills and wastewater treatment plants. This approach takes a powerful GHG that would otherwise pollute the air and converts it into usable energy to power facilities. When left unmanaged, methane significantly worsens air quality—especially for people living near these sites. By capturing and converting methane, the City can reduce pollution, strengthen energy systems, improve odors, manage wastewater more safely, and create local jobs.

METRICS & SUCCESS INDICATORS

- **Metric Tons of Methane (CH₄) Captured Annually from Landfills and Wastewater Systems:** Quantifies the volume of methane diverted.
- **Improved Air Quality Index (AQI) in Surrounding Areas:** Measures local air quality improvements in neighborhoods near landfills and wastewater facilities.
- **Megawatt-Hours (MWh) of Alternative Energy Generated from Captured Methane:** Tracks the alternative energy produced by converting captured methane into electricity or fuel.
- **Job Creation Tied to Construction, Operation, and Maintenance of Systems:** Counts new opportunities created through building and managing methane capture infrastructure.
- **Number of Feasibility Studies Completed:** Documents the research and analysis conducted to identify viable methane capture opportunities across City facilities.
- **Number of Pilot or Demonstration Projects Launched:** Tracks early-stage implementation efforts that test technologies and inform full-scale deployment.

ANTICIPATED BENEFITS

- **Local Energy Generation:** Recovered methane can be used to generate electricity or heat.
- **Greater Nutrient Recovery:** Digestate, the byproduct of anaerobic digestion, can be processed into compost or soil amendments to support local agriculture and landscaping.
- **Improved Waste Diversion:** Routing organic waste to digesters rather than landfills reduces leachate and extends the lifespan of existing landfill space.
- **Workforce Development Opportunities:** Designing, building, and operating these systems create skilled jobs and training pathways in digester construction, maintenance,

and operations.

- **Improved Air Quality:** Methane collection and anaerobic digestion reduce methane and volatile organic compound (VOC) gases by diverting organics to controlled energy recovery systems.
- **Water Safety:** Digesters can improve water quality by recovering nutrients such as nitrogen and phosphorus before they enter waterways.
- **Protection of Ecosystems:** Recommended actions help protect surrounding ecosystems from long-term damage.

ANTICIPATED DISBENEFITS

- **Odor and Air Quality Concerns:** Without strong controls, anaerobic digestion and gas recovery systems can emit odors and VOCs, worsening local air quality and quality of life.
- **Upfront Capital Costs:** Methane capture systems and digesters require significant initial investment, which may limit scale without state or federal support.
- **Operational Complexity:** Systems must be carefully designed and monitored to manage contamination, equipment failures, and variability in feedstocks.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$4.37 million by 2030.

- **Estimated Capital Cost:** Approximately \$3.27 million to install two mid-sized gas recovery systems, based on EPA-informed cost estimates adapted to Oahu.
- **Annual Maintenance:** Roughly \$275,000 per year to operate and maintain the systems safely, or up to \$1.1 million depending on when systems are constructed (2026 or later).

Savings Estimate: Not Quantified.

- **Indirect Savings:** Investing in waste-to-energy systems protects land and health while lowering energy costs and cutting pollution from organics. Without action, residents risk paying the price through ongoing pollution, higher costs, and local job opportunity loss.

IMPLEMENTATION MILESTONES

- **Short-Term:** Conduct feasibility and technical studies to identify viable technologies and candidate sites; begin early engagement with affected communities before decisions are finalized.
- **2025–2026:** Select one or two pilot sites based on technical readiness, and risk.
- **2026–2028:** Begin construction of at least one methane capture or anaerobic digestion system.
- **2029–2030:** Evaluate performance and impacts; refine program design and expand to additional sites as funding and capacity allow.

AUTHORITY TO IMPLEMENT

Action W-C builds on the City's existing authority over solid waste and wastewater systems. Led by ENV, with support from BFS, DOH, and CCSR, this action focuses on capturing methane for beneficial use and evaluating anaerobic digestion at key facilities. Although a recent landfill gas

recovery RFP received no bids, the City is actively exploring alternative strategies, contract models, and funding sources to move this work forward. Regulatory authority is in place, but progress will depend on market interest, permitting pathways, and infrastructure funding.

W-D	SUPPORT THE DEVELOPMENT OF POLICIES TO INCLUDE SMALL FOOD WASTE GENERATORS IN WASTE DIVERSION PROGRAMS
IMPLEMENTING AGENCIES	
ENV	
ACTION DESCRIPTION	
The City is expanding its food waste diversion programs to include smaller waste generators—restaurants, apartment buildings, and small businesses. Under current regulations such as Ordinance 96-20, only large businesses must separate and recycle food waste. As a result, many smaller entities that produce significant organic waste lack the tools, resources, or support to participate.	
This action aims to close that gap by updating local policies, expanding pilot programs, and providing education and on-site support to make food waste separation available for everyone. By including more households, schools, and area institutions, the City can reduce landfill-bound food waste, cut methane, and produce high-quality compost that strengthens local agriculture and gardens.	
Expanding food waste diversion offers wide-ranging benefits, including methane reductions from organic waste decreases, leading to cleaner air, and reduced waste volumes help extend landfill life. More compost becomes available to nourish soils, supporting farms and area gardens. The shift also creates local jobs in composting, food recovery, and hauling while reducing disposal costs.	
However, the transition may pose challenges. Smaller generators often face limited space, staffing, and financial capacity. Without proper planning, early adopters could experience service delays or confusion, especially if rollout outpaces investment in education and infrastructure. In response, the City is committed to planning that is informed by the public by updating Ordinance 96-20, scaling the Oahu Compost Pilot, and investing in decentralized composting infrastructure that can serve smaller sites. Education and operational support will expand in step with service availability.	
METRICS & SUCCESS INDICATORS	

- **Tons of Food Waste Diverted from Small Waste Generators:** Measures the total weight of food scraps redirected from landfills through composting and other recovery programs.
- **Percent of Small Businesses, Residential Complexes, and Schools Enrolled in Diversion Programs:** Tracks adoption rates among key small-scale generators to assess program reach.
- **Volume of Compost Produced and Distributed to Local Farms, Gardens, and Schools:** Quantifies the compost created from diverted food waste and returned to the public for agricultural use.
- **Benefits to the Environment:** Assesses benefits from keeping organic waste out of landfills.
- **Number of Decentralized or Area Composting Hubs Supported:** Counts neighborhood-scale composting facilities that make food waste processing more available.
- **Participation Rates and Geographic Distribution of Enrolled Entities:** Evaluates both the level of engagement and availability by mapping where diversion programs have been implemented.

ANTICIPATED BENEFITS

- **Increased Waste Diversion:** Composting organic waste reduces methane and landfill usage.
- **Improved Soil Health And Local Food Production:** Compost enhances soil fertility and water retention, supporting farms, gardens, and school agriculture programs.
- **Expanded Education And Engagement:** Composting hubs can serve as learning centers.
- **Strengthened Advocacy:** Local compost programs build civic stewardship.
- **Enhanced Neighborhoods Benefits:** Compost supports vegetation growth, cooling, and stormwater.
- **Workforce Development Opportunities:** Creates new jobs in composting and food recovery.
- **Reduced Environmental Impacts:** Cleaner air and less waste-related habitat loss.
- **Reduced Costs For Local Food Establishments:** Lower disposal costs and greater compost access.

ANTICIPATED DISBENEFITS

- **Operational Management Challenges:** Poorly managed sites can emit odors or attract pests.
- **Capacity Constraints:** Neighborhood programs may need funding and staff to meet demand.
- **Contamination Risks:** Improper sorting can reduce compost quality.
- **Compliance Burdens:** New requirements could strain small businesses or renters.
- **Eroded Public Confidence:** Service gaps or confusion during rollout could damage trust.

COST & SAVINGS ESTIMATE

Total Cost Estimate: \$750,000 by 2030.

- **Full-Time Staff Position:** Funding a full-time staff position estimated at \$150,000 per year

responsible for policy review, partnership coordination, and implementation.

- **Potential Additional Costs:** As infrastructure expands, additional costs may arise. Public feedback underscores that adequate resources are essential.

Savings Estimate: Not Quantified.

- **Indirect Savings:** The potential long-term savings include reduced hauling and landfill costs, avoided landfill expansion, composting that reduces reliance on synthetic fertilizers, and economic benefits redirected to local entities.

IMPLEMENTATION MILESTONES

- **2026:** Draft updates to Ordinance 96-20 or propose new policy.
- **2026–2027:** Complete legal review and public consultation.
- **2026–2027:** Introduce and pass ordinance amendments.
- **2027–2028:** Issue City compliance guidance for small generators.
- **2026:** Select and onboard composting partners and service providers.
- **2027–2028:** Expand to additional neighborhoods and school networks.
- **2029:** Evaluate pilot performance and integrate public feedback.

AUTHORITY TO IMPLEMENT

The City holds authority over solid waste management under Ordinance 96-20, which mandates food waste separation for large producers. ENV leads this action with support from DOH and CCSR, focusing on expanding participation to small businesses and multifamily housing. The Oahu Compost Pilot (OCP) confirmed the viability of small-scale food waste diversion using Hawaii’s first in-vessel composting facility. Siting new compost facilities requires solid waste permitting through DOH under HRS Chapter 342H Part I, with City assistance for applicants. Additionally, Ordinance 25-24—effective April 1, 2026—mandates residential food waste collection via dedicated carts, reinforcing this action’s goals and advancing island-wide composting and waste diversion.

W-E

**IMPROVE LANDFILL DIVERSION AND ALTERNATIVES TO
REDUCE UNACCEPTABLE WASTE AND FIND MORE OPTIONS
FOR LITHIUM BATTERY RECYCLING**

IMPLEMENTING AGENCIES

ENV

ACTION DESCRIPTION

To reduce risk, protect critical infrastructure, and advance waste reduction goals, the City is taking action to keep hazardous materials—especially lithium-ion batteries—out of the municipal waste system. These batteries have become a growing fire hazard at facilities like H-POWER, where accidental combustion threatens worker safety, damages equipment, and disrupts operations.

This action focuses on three primary priorities: improving landfill diversion within City operations, reexamining the long-term role of H-POWER in the City’s waste system, and significantly expanding safe battery disposal and recycling access across the island. Key strategies include decentralized collection programs, stronger public education, and partnerships with area-based organizations to ensure convenient disposal options across Oahu. These efforts aim to reduce hazardous waste, extend landfill lifespan, limit toxic pollution, and recover valuable materials for alternative energy systems.

The rapid growth of large-scale batteries from EVs presents an increasingly complex challenge. While oversight of these batteries falls largely under state authority, the City recognizes the urgent need to prepare for rising management, transportation, and storage costs. This action supports collaborative efforts to develop safe, affordable, and environmentally responsible solutions—protecting workers and preventing harm to neighborhoods.

METRICS & SUCCESS INDICATORS

- **Number of Fire Incidents at Waste Facilities Caused by Lithium-Ion Batteries:** Tracks safety improvements as proper battery disposal reduces dangerous fires at recycling centers, transfer stations, and landfills.
- **Tons of Unacceptable Waste Diverted from the Waste Stream Annually:** Measures hazardous materials, including batteries, that are redirected from landfills to processing facilities.
- **Number of New Lithium Battery Drop-Off Locations Established Island-Wide:** Counts convenient collection sites added across Oahu to increase public access to safe battery disposal.
- **Citywide Landfill Diversion Rate:** Reflects overall progress in keeping materials, including lithium batteries, out of landfills through expanded collection and processing infrastructure.
- **Volume of Lithium Batteries Collected and Safely Processed Per Year:** Quantifies the total weight of batteries captured through collection programs and properly recycled or disposed of.
- **Progress in Coordinating EV Battery Waste Solutions with State and Private Partners:** Assesses collaborative efforts to develop end-of-life management systems for EV batteries.

ANTICIPATED BENEFITS

- **Proactive Pollution Prevention:** Proper handling of hazardous waste reduces contamination.
- **Disaster Risk Reduction:** Removing flammable materials from waste streams prevents fires and enhances worker safety.
- **Increased Resource Recovery:** Valuable metals can be reclaimed, reducing mining impacts.
- **Strengthened Public Health Protection:** Safe recycling limits toxic exposure.
- **Enhanced Local Economy:** Battery recycling could boost local manufacturing through recovery of critical minerals.

- **Workforce Development Opportunities:** New jobs in hazardous waste management, battery recovery, and e-waste logistics will upskill local workers.

ANTICIPATED DISBENEFITS

- **Limited Public Awareness:** Without education, unsafe disposal may increase fire risks.
- **Irregular Collection Schedules:** Infrequent events can cause household stockpiling of batteries, raising fire hazards.
- **Facility Siting Concerns:** New recycling centers may face local opposition from residential areas.
- **Transportation-Related Impacts:** Off-island processing increases costs.
- **Upfront Investment Costs:** Establishing specialized facilities requires significant funding.

COST & SAVINGS ESTIMATE

Total Cost Estimate: Not Quantified.

- Cost estimates are still under development, but the City anticipates that infrastructure for safe lithium battery collection, transport, and storage—especially for EV batteries—will require significant investment and public-private partnerships.

Savings Estimate: Not Quantified.

- **Indirect Savings:** Preventing battery-related fires and facility damage will yield major cost savings through reduced emergency response, avoided downtime, and extended equipment lifespan. Establishing public drop-offs at trusted local sites—such as clinics or neighborhood centers—can reduce costs.

IMPLEMENTATION MILESTONES

- **2026–2027:** Complete a baseline fire risk audit assessing lithium battery-related incidents and unacceptable waste.
- **2026–2027:** Launch a citywide education and outreach campaign through local organizations.
- **2027:** Establish landfill diversion and battery recycling goals for the City.
- **2027–2028:** Design and pilot safe drop-off systems.
- **2027–2028:** Assess feasibility of an Advanced Disposal Fee for hazardous materials.
- **2029:** Conduct a comprehensive H-POWER system review evaluating costs, contracts, and long-term role in the City's waste system.

AUTHORITY TO IMPLEMENT

While no existing ordinance specifically addresses lithium-ion battery recycling, the City holds authority to advance landfill diversion and hazardous waste programs under ROH Chapter 9. The law also establishes a Hawaii State Energy Office working group to identify best practices and recycling solutions. Action W-D will be led by ENV, in coordination with CCSR, DOH, and BFS, ensuring alignment between City and State programs to create a comprehensive system for managing hazardous materials.

5.8 Co-Pollutant Reductions

Many of the City's CAP actions not only cut GHGs but also deliver significant health and economic benefits. In particular, a number of actions improve local air quality.

This analysis evaluates anticipated reductions in non-GHG air pollutants—often referred to as **co-pollutants**—including Criteria Air Pollutants (CAPs) and Hazardous Air Pollutants (HAPs). CAPs, as defined by federal regulation, include ozone (O₃), particulate matter (PM_{2.5} and PM₁₀), carbon monoxide (CO), lead (Pb), sulfur dioxide (SO₂), and nitrogen dioxide (NO₂). Ozone is not emitted directly, but forms in the atmosphere through chemical reactions involving precursors such as volatile organic compounds (VOCs) and nitrogen oxides (NO_x). PM_{2.5} can be emitted directly or form secondarily from reactions involving NO_x, SO₂, VOCs, and ammonia (NH₃). HAPs, or air toxics, comprise 188 regulated pollutants known to pose significant health risks, particularly in dense urban areas. These pollutants are linked to serious health impacts. For example:

- **NO_x** exacerbates asthma and respiratory illnesses;
- **PM_{2.5}** is associated with cardiovascular disease and degraded air and water quality;
- **SO₂** harms respiratory health and damages native ecosystems;
- **CO** impairs cognitive function and worsens heart conditions; and
- **VOCs** contribute to ground-level ozone, which aggravates respiratory diseases.

The U.S. EPA's tools and technical assistance for co-pollutant benefits analysis (developed for the CPRG program) outline methods for estimating changes in CAPs and HAPs resulting from GHG reduction measures.

To estimate co-pollutant reductions on Oahu, a custom spreadsheet-based tool was developed to tailor to local conditions. This tool combines factors per co-pollutant with projected percentage changes in GHGs and changes in activity levels—such as vehicle miles traveled or energy consumption—to estimate air quality co-benefits. Additional guidance was drawn from the California Air Pollution Control Officers Association's (CAPCOA) guidelines, which provide detailed approaches for evaluating co-benefits and health impacts.

5.8.1 Co-Pollutant Reductions Analysis

For the energy sector, co-pollutants were calculated by multiplying the projected reduction in electricity consumption (kWh) from each measure by pollutant-specific factors. These factors were sourced from the U.S. EPA's eGRID database for the Hawaii Operating Area (HIOA) subregion and expressed in metric tons per megawatt-hour (MT/MWh), as summarized in Table 18 below.

Table 20: 2023 eGRID Co-Pollutant Factors for HIOA^{25, 26}

Co-Pollutant	Factor (MT/MWh)
PM _{2.5}	0.00024154*
NH ₃	1.81892E-05*

VOC	1.59213E-05*
CO₂	0.675587408
NO_x	0.001772657
SO₂	0.001940942

*2021 rate

For the transportation sector, co-pollutant reductions were estimated using absolute reductions in VMT under the GHG mitigation scenarios. Pollutant-specific factors using U.S. EPA's MOVES model were used for gasoline-fueled passenger vehicles for 2030 and 2050. These co-pollutant factors (grams/mile) are shown below in Table 19.

Table 21: 2023 & 2050 Co-Pollutant Factors

Co-Pollutant	2030 Factor (grams/mile)	2050 Factor (grams/mile)
CO	2.831	0.554
PM_{2.5}	0.0015	0.0001
PM₁₀	0.0017	0.0001
NH₃	0.0376	0.0138
VOC	0.0017	0.0026
NO_x	0.0472	0.0016
SO₂	0.0016	0.0004

To estimate air pollution benefits from GHG reduction measures in the agriculture and waste sectors, a base year inventory for CAPs and HAPs was developed using the EPA's Emissions Modeling Platform (EMP). The EMP compiles data for air quality modeling based on the National Emissions Inventory (NEI). Data for the year 2032 was used as the closest available proxy for the 2030 year of analysis. The full inventory appears in Table 20.

Changes in co-pollutant from agricultural sources—specifically NH₃, PM_{2.5}, PM₁₀, and VOCs—were estimated using 2032 EMP data for Oahu (see Table 20). The projected reductions in GHGs (MTCO₂e) from agricultural measures in the 2030 Scenario 1 and Scenario 2 models were compared to total agricultural GHGs to calculate a percentage decrease. The percentage reduction was then applied to the 2032 co-pollutant levels in the EMP to estimate associated reductions.

Changes in co-pollutants from agriculture—specifically NH₃, PM_{2.5}, PM₁₀, and VOCs—were estimated using 2032 EMP data for Oahu (see Table 19). The projected GHG reductions from agricultural measures were used to calculate a percentage decrease, which was then applied to 2032 co-pollutant levels to estimate reductions.

Table 22: 2032 Baseline Co-Pollutants Inventory (MTCO_{2e})²⁷

Sector	CO	NH ₃	NO _x	PM _{2.5}	PM ₁₀	SO ₂	VOC
Agriculture	-	33	-	37	180	-	17
Waste	3,522	281	87	408	447	35	478

5.8.2 Changes in Co-Pollutants by CAP Action

For detailed, action-specific estimates—including impacts by individual criteria pollutants—refer to Tables 21 and 22. In some cases, measures were grouped when combined implementation was required to achieve projected pollutant reductions. In others, actions were disaggregated to improve precision.

Actions marked “N/A” were excluded from modeling based on their scope: ES-E addresses policies and procedures; SP-B and SP-C involve parking management and tree planting; SP-E supports expanding the City’s role in trusted public-serving spaces; and T-A focuses on public-private collaboration to improve transportation connectivity. Although T-C was not modeled directly, anticipated reductions in fossil fuel combustion from this measure are still expected to yield meaningful decreases in criteria pollutants.

Table 23: 2030 Changes in Co-Pollutants by CAP Action (MTCO_{2e})

Action ID	CO	NH ₃	NO _x	PM _{2.5}	PM ₁₀	SO ₂	VOC
ES-A	-	-0.1	-7.5	-1.0	-	-8.27	-1.1
ES-B	-	-1.7	-18.5	-0.92	-	-15.9	-0.39
ES-C	-	-0.5	-47	-6	-	-51	-0.4
ES-E	N/A						
FS-A	-	1.8	-	-	-	-	13.0
FS-B	-	-0.3	-	-0.3	-1.7	-	-0.2
FS-C	-	-0.3	-	-0.3	-1.7	-	-0.2
FS-D	-	-0.3	-	-0.3	-1.7	-	-0.2
SP-A	N/A						
SP-B							
SP-C							
SP-D	-	-12.8	-52	-2.6	-	-45	-1.1
SP-E	N/A						
SP-F	-	-1.0	-	-1.1	-5.6	-	-0.5
T-A	-10.9	-0.1	-0.2	-0.006	-0.007	-0.006	-0.07
T-D	-10.9	-0.1	-0.2	-0.006	-0.007	-0.006	-0.07

T-B	-13.2	-0.2	-0.2	-0.007	-0.008	-0.007	-0.08
T-C	N/A						
W-A W-D	-68.6	-4.8	-1.7	-8.7	-8.7	-0.7	-4.7
W-C*	-294	-23.4	-7.3	-34.1	-37.4	-3.0	-40
CES-D W-E	-669	-53.3	-16.5	-77.6	-85	-6.8	-90.1

**Changes in co-pollutant due to methane capture and reuse were not included.*

Table 24: 2050 Changes in Co-Pollutants by CAP Action (MTCO_{2e})

Action ID	CO	NH ₃	NO _x	PM _{2.5}	PM ₁₀	SO ₂	VOC
F-A F-B	-	4.5	-	-	-	-	31.7
T-A T-D	-2.4	-0.06	-0.007	-0.0004	-0.0005	-0.002	-0.01
T-B	-2.6	-0.07	-0.007	-0.0005	-0.001	-0.002	-0.01
W-A W-D	-112	-7.8	-2.8	-14	-14	-1.1	-7.7
W-C	-277	-22	-6.8	-32	-35	-2.8	-37.6
CES-D W-E	-823.4	-65.6	-20.3	-95.5	-104.7	-8.3	-111.9

5.9 Workforce Planning for a Climate Resilient Future

The implementation of this CAP depends on a skilled local workforce ready to deliver solutions. This section identifies priority occupations, assesses labor trends, and outlines strategies to build a stronger workforce aligned with the City's goals.

5.9.1 Priority Occupations by Sector

The CAP actions span five primary workforce categories, each requiring unique skills across short- and long-term horizons. Cross-sector roles in public engagement, construction, and maintenance are foundational to nearly all actions. Other critical but often underrecognized needs include childcare (SP-E), general construction and maintenance (SP-E), and public service programming (all actions)—all of which support being able to work and participate in training.

Sector-Based Occupational Needs

Without dedicated investment in training and recruitment programs, workforce gaps could delay or limit the implementation of more than one-third of the Plan's actions.

Table 25: Workforce Needs for Each CAP Focus Area

Focus Area	Key Actions	Near-Term (<5 Years)	Long Term (>5 Years)	Occupation Roles
Stronger Public Assets	SP-B, SP-C, SP-F, FS-F	Urban forestry, farming	Land restoration	Manage natural spaces, plant trees, restore native ecosystems
Food Systems	FS-A to FS-E, ES-D, W-D	Food recovery & logistics	Soil and food distribution	Recover surplus food, manage local transport and storage, distribute soil and produce
Transportation	T-A, T-C, T-D, SP-A, SP-B	Infrastructure & EV charger installation	Road & EV maintenance	Install, inspect, and repair EV chargers; maintain road and energy networks
Energy Solutions	ES-A to ES-E, SP-D	PV installs, appliance retrofits	Energy auditing, energy code compliance, grid maintenance	Install alternative energy systems, improve energy efficiency, monitor grid performance
Waste	W-A to W-E	Salvage, battery recycling, digester operations	System maintenance	Sort and recover materials, manage battery and organics processing, operate energy conversion systems

5.9.2 Historical and Projected Industry Growth

The economic base of Oahu is shifting in ways that affect CAP-related job creation. Between 2018 and 2028, total employment is projected to grow by 12,140 jobs (from 512,390 to 524,520). CAP-relevant sectors—construction, transportation, and installation and repair are projected to expand, while waste management is projected to contract.

- Construction (+7.5%) is projected to add nearly 2,000 jobs, driven by infrastructure upgrades, building retrofits, and housing development.
- Transportation and warehousing (+5.2%) will grow through increased logistics, public transit, and EV infrastructure needs.
- Conversely, administrative, support, waste management, and remediation services (-20%) are expected to lose over 7,000 jobs, posing a risk to waste diversion and circular economy efforts unless retraining and workforce programs are implemented.

The agriculture, forestry, fishing, and hunting sector (+0.8%)—adding only about 20 jobs—remains underdeveloped relative to its importance for food and restoration actions.²⁸ Historic

data show that between 2007 and 2012, the number of Hawaii farms declined from 7,500 to 7,000, while production costs increased by \$107 per acre between 2010 and 2013. The shift toward smaller, diversified farms presents promise for regenerative agriculture but will require new training and financing models to stabilize labor and production. These macroeconomic trends underscore the need to align workforce development with CAP priorities and to invest strategically where labor shortages could slow implementation.

Local Labor Forecasts

While industry-wide projections show overall growth, sector-specific forecasts reveal critical gaps. Construction and transportation will generate strong gains supporting infrastructure and logistics roles, while farming, forestry, and fishing are projected to decline—the very sectors underpinning ecofriendly food and restoration strategies.

This mismatch suggests that the City should prioritize workforce development within the administrative, support, waste management, and remediation services sector, which underpins actions W-A through W-E, ES-D, SP-F, FS-A, FS-B, and FS-E. Additionally, enhanced investment in agriculture and forestry training is needed to support implementation of SP-B, SP-C, SP-F, and FS-F, despite limited sectoral growth.

Historic and projected data together highlight an urgent need for targeted training programs, strengthened recruitment pipelines, and expanded supportive services such as childcare, transportation assistance, and on-the-job mentorship. This dual approach—growing capacity in high-demand fields while protecting exposed sectors—will be critical to achieving the City’s goals.

Table 26: Projected Job Growth by Sector

Sector	Projected Job Growth	Total Jobs (2028)	Notes
Construction & Extraction	+5.4%	30,080	Strongest CAP-sector growth
Transportation & Material Moving	+3.4%	33,390	Steady demand for EV/logistics jobs
Architecture & Engineering	+2.3%	9,400	Wages lag national average
Installation, Maintenance & Repair	+1.9%	20,190	Key to alternative energy systems
Farming, Fishing & Forestry	-2.4%	1,650 ²⁸	Small decline, but critical for CAP

5.9.3 Workforce Shortages and Solutions

Addressing Workforce Shortages

Analysis of both economic trends and public feedback reveals multiple sectors at risk of labor shortages without proactive intervention. The most exposed areas include agriculture and farming, waste management, land restoration, and alternative energy. Together, these sectors

support actions W-A through W-E, ES-D, SP-B, SP-C, SP-F, FS-A, FS-B, FS-E, and FS-F—representing more than one-third of all CAP actions. Without investment in job training and career pathways, these initiatives could face delays in implementation.

Throughout CAP engagement, members of the public emphasized the need for more farming education and alternative energy trainings—particularly for installation and maintenance work related to actions ES-B, and ES-E. Expanding these programs presents an opportunity to raise job quality and align wages with Hawaii’s high cost of living.

Strengthening Workforce Ecosystems

To close these gaps, the City will enhance existing workforce programs and adopt supportive policies that expand cross-department collaboration—guided by the U.S. Department of Labor’s Good Jobs Principles. At the state level, several initiatives already lay the groundwork:

- The Hawaii Department of Land and Natural Resources (DLNR) operates the Green Jobs Youth Corps and the Hawaii Youth Conservation Corps, together providing more than 68,000 paid youth work hours each year in the conservation field.²⁹
- The Hawaii State Energy Office (HSEO) leads the Good Jobs Hawaii initiative and the Clean Energy Sector Partnership (CESP), which connect workers to alternative energy training and job placement. The State also currently hosts six AmeriCorps Volunteers In Service To America (VISTA) members.³⁰
- Programs hosted by local organizations such as the Hawaiian Council, Alu Like, and others expand access for residents, ensuring career pathways are locally led and grounded.

These networks form the backbone of both the island and state’s CAP workforce. Future strategies should deepen investment in such trusted local programs.

The City participates in HSEO’s wayfinders program, a youth workforce initiative supporting energy and conservation careers.³⁰ On Oahu, Wayfinders engage directly with schools, local groups, and households to reduce energy costs through education and job training.

The City also partners with the Oahu Workforce Development Board to oversee the American Job Center Hawaii, providing career services, training, and youth employment programs. The City’s WorkHawaii Division further supports job seekers with training, resources, financial assistance, and placement opportunities.³¹

Building on these successes, the City will scale and replicate programs that have demonstrated strong outcomes in relevant sectors. Through expanded outreach and recruitment, the City will raise awareness of available workforce programs. Particular emphasis will be placed on promoting Hawaii’s 100+ Registered Apprenticeship Programs (RAPs), which offer greater job stability and higher wages for participants.³²

The City will expand pre-apprenticeship programs and explore adoption of procurement policies that ensure high-quality jobs. Potential measures include:

- Apprenticeship utilization requirements for public contracts;
- Local and economic hiring preferences;
- Project labor agreements for construction;
- Prevailing wage standards and worker protections.

Additional strategies will address barriers to participation and retention, such as transportation, childcare, financial hardship, and lack of mentorship. To institutionalize these efforts, the City will appoint a Workforce Liaison to coordinate with local, state, and industry partners, including the Oahu Workforce Development Board and the Hawaii Workers Center. This liaison will convene regular meetings with trades councils, contractors, and nonprofits to identify needs, co-design solutions, and monitor outcomes.

Key Partners Include:

- Oahu Agriculture and Conservation Association (OACA)³³
- Hawaii Farmers Union United (HFUU), Oahu Chapters³⁴
- Oahu Resource Conservation and Development Council (RC&D)³⁵
- Re-use Hawaii³⁶
- Kupu³⁷
- Hawaii Forest Industry Association (HFIA)³⁸
- International Brotherhood of Electrical Workers (IBEW) Local 1186³⁹
- Hawaii Chapter National Electrical Contractors Association (NECA)⁴⁰
- Laborers' International Union of North America (LiUNA) Local 368⁴¹
- Hawaii and Hawaii's Pacific Area Building Construction Trades Council (B.C.T.C.)⁴²

Through collaboration with these partners, the City can build a robust, inclusive workforce pipeline—one that reflects Oahu's communities, strengthens local industries, and ensures the energy transition, delivering shared prosperity and opportunity.

6. Funding Mechanisms

The City recognizes that successful CAP implementation depends on diverse funding sources and strategic resource allocation. Leveraging federal, state, local, and philanthropic resources is a core component of the City's broader strategy to fund CAP actions.

6.1.1 Current Funding Landscape

The City has taken important steps to align CAP actions with available funding. At the same time, Oahu continues to navigate challenges such as limited local revenue options, capacity constraints, and a need for more coordinated public-private-philanthropic partnerships. Many projects continue to rely on short-term grants, which can disrupt long-term implementation and hinder meaningful engagement with the public. Cost & Savings Estimates included in the action tables are not budget commitments by the City; rather, they are cost estimates intended to

identify potential federal, state, local, and private funding sources that could be leveraged to advance the objectives of the CAP.

At the federal level, programs like CPRG and Better Utilizing Investments to Leverage Development (BUILD) present opportunities for Oahu, though future availability may shift as federal priorities evolve. Obtaining federal funding also requires dedicated staff capacity and technical expertise—resources that can be difficult to maintain amid competing municipal priorities.

6.1.2 Strategies & Funding Challenges

In this context, developing innovative local funding and financing mechanisms is essential to maintain momentum in pursuing CAP actions. In 2024, Oahu voters took a significant step in 2024 by approving Resolution 23-162, CD1, establishing a fund capitalized through 0.5% of annual property tax revenues.⁴³ CCSR's role in managing the use of this Fund is central to the City's comprehensive finance strategy.

Although Oahu is home to several established philanthropic institutions, funding CAP actions remains a relatively new priority. Expanding partnerships with foundations and mission-aligned investors can help fill critical gaps, build capacity in impacted areas, and support innovation.

Oahu can better align philanthropic capital with its CAP by creating a clear pathway of public-driven projects and strengthening relationships with funders. National philanthropies have shown increasing interest in funding these areas, and greater visibility and coordinated infrastructure have constrained access to these resources to date.

6.1.4 Opportunities for Local Funding Mechanisms

Supporting long-term CAP implementation will require continuing existing funding strategies as well as implementing other approaches that can help strengthen Oahu's local finance infrastructure:

- **Budgeting Across Departments:** Embedding CAP action targets into departmental budgets and Capital Improvement Programs will help align City spending with CAP goals.
- **Scale the Ordinance 25-23 Fund:** The City's fund under Ordinance 25-23 provides a strong operational foundation for financing CAP actions. As implementation proceeds, the City will continue refining revenue sources, allocation processes, and reporting practices to ensure the fund remains transparent, accountable, and responsive to the public's priorities, consistent with its existing governance and oversight framework.
- **Strengthen Philanthropic and Private Sector Partnerships:** The City already coordinates portfolios of investment-ready projects that can help attract blended funding from federal, state, philanthropic, and private capital. These partnerships can help close funding gaps and accelerate CAP initiatives that require diverse resource streams.

6.1.5 Opportunities for Federal Funding

Federal funding remains an important, but competitive, component of CAP implementation. The City will continue seeking partnerships with federal agencies—including through grants, tax credits, and technical assistance—to advance CAP implementation. Availability will depend on evolving federal agency priorities and program timelines. This list shows potential federal funding opportunity targets, contingent on funding availability.

- **U.S. Department of Transportation**
 - Pilot Program for Transit-Oriented Development
 - Buses and Bus Facilities Program
 - Low or No Emissions Program
 - Surface Transportation Block Grant (STBG) Program
 - Better Utilizing Investments to Leverage Development (BUILD) Program
 - Transportation Infrastructure Finance and Innovation (TIFIA) Program
- **U.S. Department of Energy**
 - Resilient and Efficient Codes Implementation (RECI) Initiative
- **U.S. Department of the Treasury, Internal Revenue Service**
 - Advanced Energy Project Credit
 - Cost Recovery for Qualified Clean Energy Facilities, Property and Technology Tax Credit
- **U.S. Environmental Protection Agency**
 - Solid Waste Infrastructure for Recycling (SWIFR) Grant
 - Consumer Recycling Education and Outreach Grant Program
- **U.S. Department of Agriculture**
 - Farmers Market Promotion Program (FMPP)
 - Local Food Promotion Program (LFPP)
 - Regional Food System Partnerships (RFSP) Program

6.1.6 Funding Secured To Date

The City recognizes that successful CAP implementation will require diverse funding sources and strategic resource allocation. Leveraging federal, state, local, and philanthropic resources is a critical part of the City's broader strategy.

The City is committed to pursuing funding opportunities that directly align with and support CAP actions consistent with departmental capacity and implementation readiness. Specific funding mechanisms, grant applications, and resource allocation decisions will be made at the implementation level for each action, allowing flexibility in responding to emerging opportunities and evolving program priorities. This approach enables the City to:

- Align funding strategies with action timelines and the public's needs;

- Pursue diverse funding sources as they become available;
- Adapt to changing federal, state, and local funding landscapes; and
- Direct resources toward the highest-impact actions.

As implementation progresses, the City will continue to identify, apply for, and secure funding that supports CAP actions while delivering co-benefits to the people of Oahu. Progress on funding secured and resource allocation will be tracked and reported as part of ongoing CAP monitoring and evaluation efforts.

7. Conclusion

This plan reflects the collective work, knowledge, and commitment of the public across Oahu. Building on the City's first CAP and the momentum of local, state, and federal efforts, this Plan outlines a clear, actionable pathway toward net-negative GHGs by 2045. It advances the City's statutory responsibilities and honors its broader obligation to protect people, place, and future generations.

This CAP is a place-based framework for action. Across Oahu, residents, local organizations, industry stakeholders, and government partners shared their perspectives, priorities, and experiences. The knowledge they offered—grounded in place, history, and lived reality—has been woven into every part of this Plan. It shapes how actions are designed, how benefits are understood, and how implementation will unfold. Guided by this collective direction, the City has centered strategies that uplift the public's well-being and deliver measurable GHG reductions while building the foundation for long-term strength.

While this Plan identifies 26 actions across five focus areas—Stronger Public Assets, Food Systems, Transportation, Energy Solutions, and Waste—it also establishes structures for ongoing collaboration, adaptive learning, and policy innovation. These include oversight by the public, annual progress reporting, and coordinated interdepartmental work that help ensure the CAP remains grounded, responsive, and aligned with the needs of Oahu's people.

Maintaining this work will require long-term commitment and investment. The City will continue to seek federal, state, and philanthropic resources; strengthen partnerships; and support models that elevate local leadership and public-defined solutions. By embedding CAP actions into everyday governance, the City can lead by example and support a stronger future for all who call Oahu home.

Through shared responsibility and a collective vision, Oahu moves toward becoming a healthier, more connected, and stronger island. This plan marks an important step forward and extends an open invitation for communities, partners, and leaders at every level to continue advancing the work together.

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CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII
CERTIFICATE

RESOLUTION 26-206

Introduced: 09/15/26 By: TOMMY WATERS - BY REQUEST Committee: ENERGY, ENVIRONMENT & SUSTAINABILITY (EES)

Title: ADOPTING THE 2025—2030 CLIMATE ACTION PLAN FOR THE CITY AND COUNTY OF HONOLULU.

Voting Legend: * = Aye w/Reservations

09/15/26	INTRO	Introduced.
09/22/26	EES	Reported out for adoption.
		CR-258(26)
		4 AYES: DOS SANTOS-TAM, TULBA, TUPOLA, WEYER
10/07/26	CCL	Committee report and Resolution were adopted.
		9 AYES: CORDERO, DOS SANTOS-TAM, KIA'ĀINA, NISHIMOTO, OKIMOTO, TULBA, TUPOLA, WATERS, WEYER

I hereby certify that the above is a true record of action by the Council of the City and County of Honolulu on this RESOLUTION.



CHADD KADOTA, ACTING CITY CLERK



TOMMY WATERS, CHAIR AND PRESIDING OFFICER