

Energy and Emissions Reduction Plan for Transportation

Decarbonizing Honolulu's Transportation Sector

Prepared by the City and County of Honolulu Office of Climate Change, Sustainability and Resiliency in Cooperation with the Oahu Metropolitan Planning Organization and the United States Department of Transportation. This report was funded in part through grants from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, with local matching funds provided by the Ulupono Initiative. This The views and opinions of the agency expressed herein do not necessarily state or reflect those of the U.S. Department of Transportation.

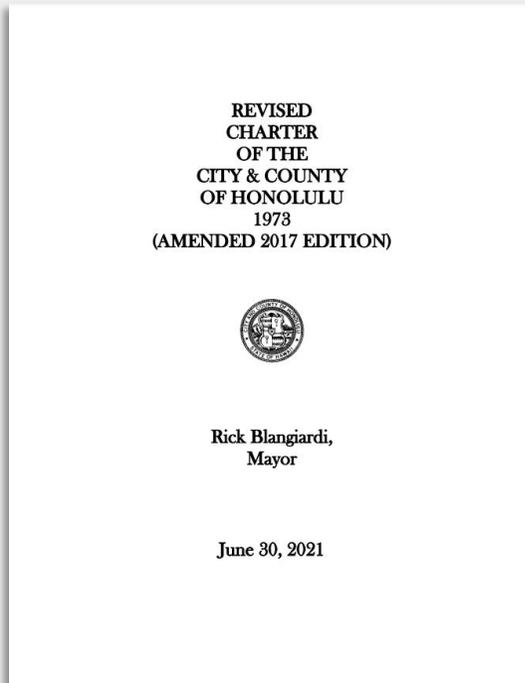
Agenda

- 1. Overview:** Discuss policy context and the stated objectives of the Energy and Emissions Reduction Plan for Transportation
- 2. Findings and Analysis:** Overview of findings and analysis
- 3. Questions and Answers**



Project Background

Section 6-1703(g), Article XVI Revised Charter of the City and County of Honolulu



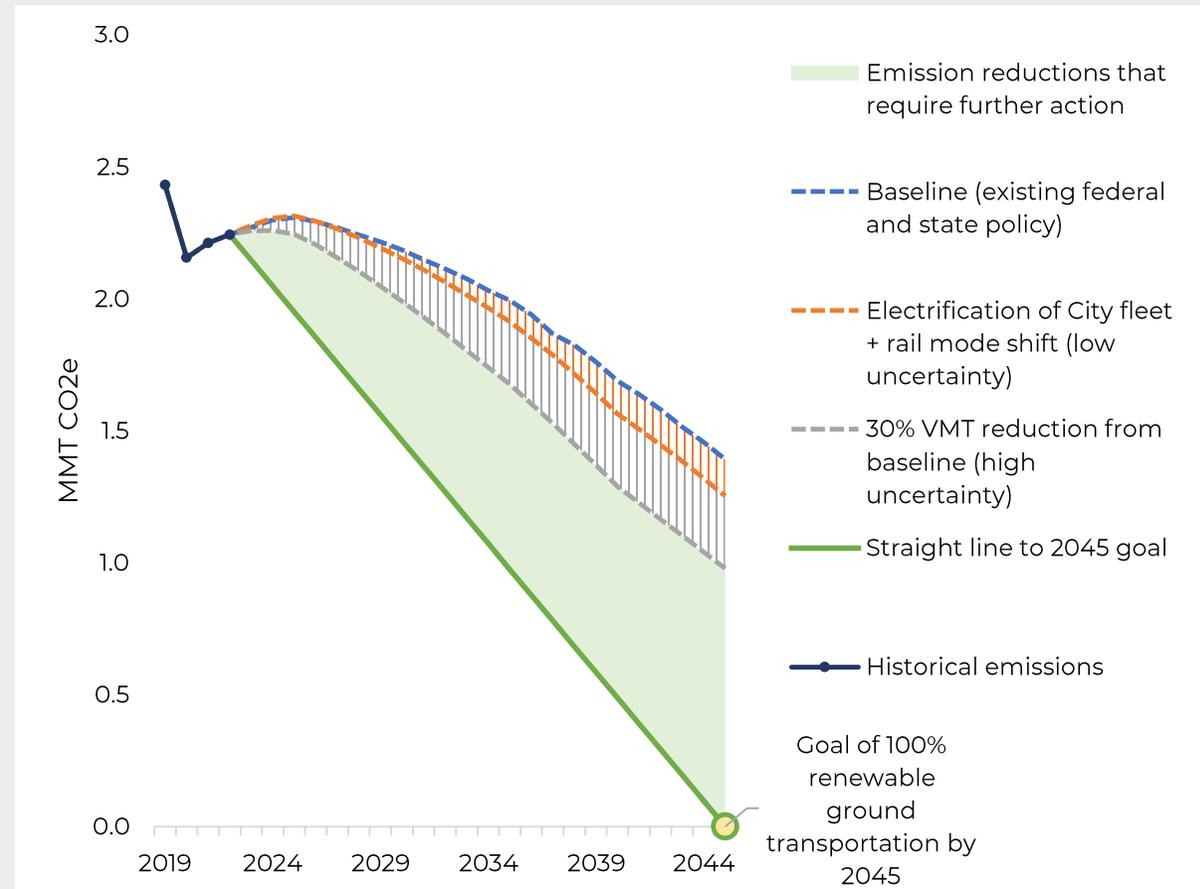
The Department of Transportation Services shall “*prepare an energy conservation and emissions reduction plan for city transportation systems which shall include methods to meet state greenhouse gas reduction and clean energy goals. The plan shall be for a thirty-year period with review and revisions every five years. The energy conservation and emissions reduction plan shall be reviewed and approved for consistency with the general plan and sustainable community plans by the planning commission.*”

Summary of Project Tasks

- Assessment of Transportation Trends, City Progress and Next Steps
- Examination of Capital Improvement Budget Prioritization
- Prioritization Framework for Transportation Demand Management
- Regional Mobility Corridor Scenarios
- Regional Parking Pricing Program Framework
- City & County Public Transportation Fleet Transition
- Capital Fleet Transition Plan
- Electric Vehicle Infrastructure Action Plan
- Public Engagement and Interagency Coordination

Transportation Emission Reduction Targets, Trends, and Mitigation Strategies

- **Projected Emissions:** GHG emissions are expected to decrease, but are not on track to meet the City's net-zero emissions goal.
- **CAP Implementation:** 8 CAP actions have significant progress; 10 have some progress; and 4 have not been initiated. No CAP actions have been completed.
- **Challenges to CAP Implementation:** Financial and human resources, institutional structures, and negative public sentiment.
- **Recommendations:** Focus on essential and priority actions; upgrade bus transit service; focus on equitable transportation outcomes.



	City and County of Honolulu now (2021)	10% VMT reduction	20% VMT reduction	30% VMT reduction
Example reference case	NA	Multnomah County	San Francisco County	Multnomah and San Francisco Counties composite and high bus ridership
Car (including carpooling)	80%	70%	54%	45%
Alternative mode share	20%	30%	46%	55%
Transit	9%	15%	22%	29%
Bike	1%	4%	2%	4%
Walk	10%	10%	22%	22%
Estimated VMT Reduction from 2019 levels for O‘ahu	NA	0%	-11%	-22%
Estimated VMT Reduction from Baseline for O‘ahu	NA	-10%	-20%	-30%

HDOT Navahine Settlement Agreement: Zero Emissions by 2045

Transportation Emissions to zero by 2045

GHG Reduction Plan

- Within 1 year, reviewed by plaintiff
- Inclusive of ground, marine, and air transport investments
- To include interim VMT, multimodal expansion, and vision zero, and electrification targets

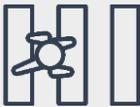
Revised Transportation Programming and Budgeting Process



Capital Improvement Budget Prioritization Tool

Purpose: To consider **GHG reduction potential** as a parameter in selecting projects for inclusion in the City's capital improvement program.

Project Types

	Bicycle Facility		Roadway and Intersection Improvements
	Pedestrian Facility		EV Charging Station Development
	Transit Service Improvements		Use of Cleaner Fuel Vehicles

Project Analysis Methods

Impact on GHG Emissions: Potential for GHG reductions through mode shift, cleaner fuels, and minimizing induced vehicle travel

Implementation Considerations: Best practices, project enhancements, and education and encouragement programs

Complementary Strategies: Other methods to support project outcomes

Co-benefits: Safety, public health, and/or economic development

Synergies with Other Projects: Complementary projects for co-development

Cost Considerations: Estimated costs per project

Methodology: Calculating emissions impacts at planning or programming stage

Transportation Demand Management (TDM) Framework

Modern commute options go far beyond driving & parking. DTS, CCSR, and other partners are developing a **new commute program** for City employees to maximize **choice** and **flexibility**.

Why Develop a Commute Program?



Workforce. Increase employee satisfaction, retention, and recruitment – as well as cost savings, health, and flexibility.



Finances. Parking operations cost the City \$4.75M annually. The direct ROI for a commute program is 10-14% over 10 years.



Equity. City employees who drive and park receive \$1,200 annually in subsidies, while non-drivers receive no incentives.



Sustainability. Advance our emissions reduction goals while leading by example for other downtown employers.

What does the Commute Program propose?



Daily parking at the same rate as a monthly pass



Free monthly transit pass



Free Biki bikeshare monthly membership



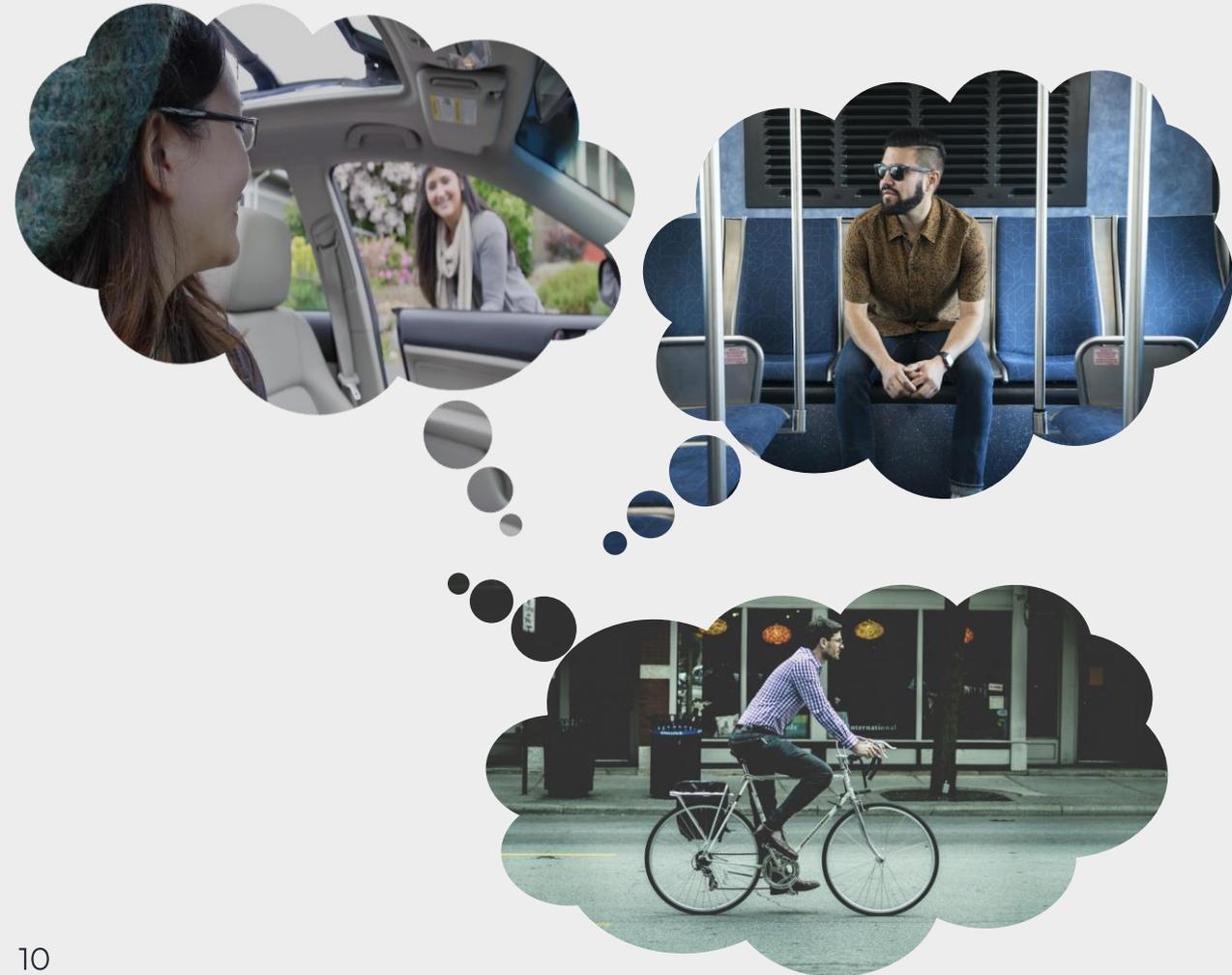
An easy-to-use technology platform for selecting commute options and tracking trips



Build on existing options such as telecommuting, carpool parking, flexible scheduling, and pre-tax commute expense deductions

City Employee TDM Framework Takeaways

- The 10-year expected **ROI** for the program ranges from **10-14%**
- In addition to cost savings from less parking subsidies, TDM reduces employee vacancy/turnover costs and mitigates need to construct new parking
- The recommended annual budget for the City Employee TDM program is \$1.11 million with \$70 thousand in initial capital investments
- Opportunity to leverage staff capacity from communitywide HNL Connect program operations (with federal funding)
- Implementation will be a cross-departmental effort, and we appreciate your collaboration!



Regional Mobility Corridor Scenario

Improving bus service to connect the Skyline rail system and inform the development of bus rapid transit (BRT) corridors.

Intersection Synchro Modeling: Nimitz Highway (US-92)/Waiakamilo Road

- If an existing general-purpose travel lane is converted to a bus/truck-only lane, the intersection is projected to operate at LOS E in the AM peak hour and LOS D in the PM peak hour
- Delays and queues would increase for the general purpose northbound and southbound Nimitz Highway movements at the intersection.
- The truck/bus lane, projected to carry approximately one-fourth of the volume of each general purpose through lane, is projected to operate at an acceptable level of service.

Bus Rapid Transit (BRT) Ridership Impacts

- Honolulu's proposed BRT network consists of four routes that will extend the reach of O'ahu's zero-emission Skyline rail, and are projected to increase time savings by ~20% along each corridor.
- BRT best practices include: maximizing dedicated right-of-way along all BRT corridors, providing pullouts for all BRT stations to limit conflicts with commercial trucks, designing frequencies and timetables to allow for timed transfers to the Skyline, and integrating fare systems between the BRT and Skyline.
- BRT projects are eligible for funding via FTA's Capital Investment Grants program (e.g., New Starts and Small Starts) and the Expedited Project Delivery Pilot program.

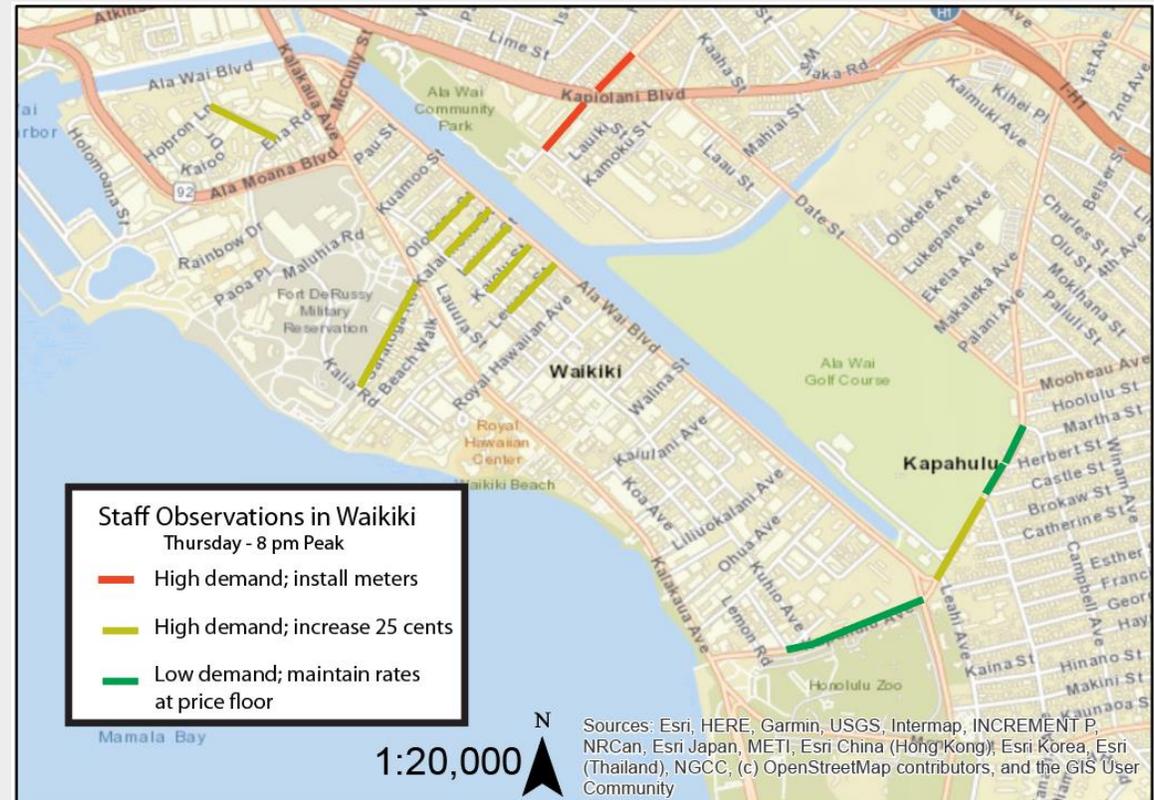
Regional Parking Pricing Program

Existing Conditions & Evaluation

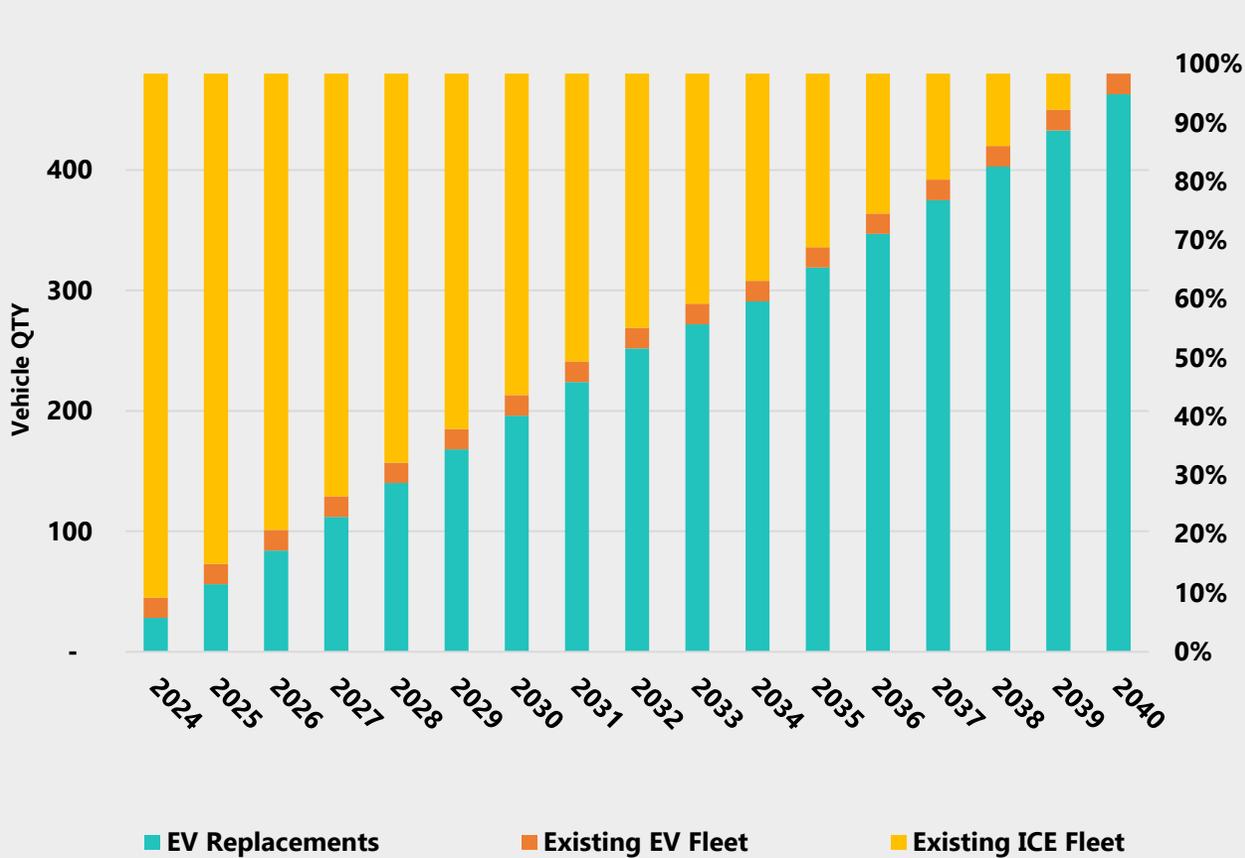
- GHG emissions from cruising and SOV travel
- High parking demand and utilization rates
- Evaluated different pricing models with environmental, economic, and social equity considerations

Recommendation: Demand-Based Pricing

- A strategy to use parking resources as efficiently as possible, and can account for demand by location and by time of day – with higher fees for popular areas during peak hours



Public Transportation Fleet Transition Plan



53.2 million additional costs due to purchasing electric buses and constructing accompanying infrastructure; **\$135.6M** savings on fuel and maintenance costs



625,870 MT GHG emissions reduction
68,969 lbs NOx emissions reductions over 28 years



33 million kWh annual energy fleet requirement by 2040; **0.5%** of O'ahu's annual energy production

Capital Fleet Transition Plan

• Department level electrification strategies

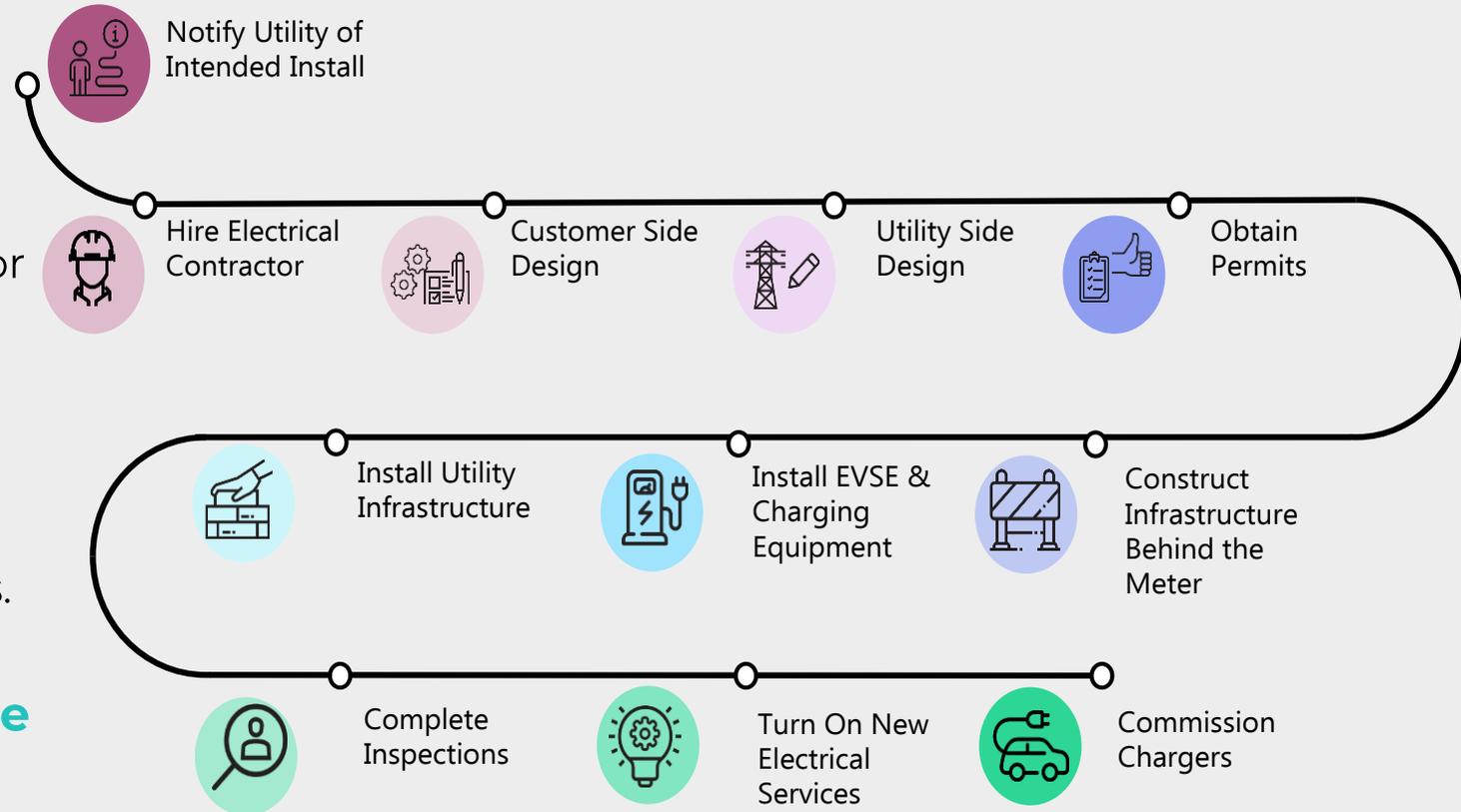
- For DFM, DPR, ENV, and HPD
- Includes strategies such as annual EV suitability review process; evaluate VaaS and IaaS options; identify priority sites for EVSE installation; and use telematics.

• Minimizing EV chargers and grid and site-level upgrades

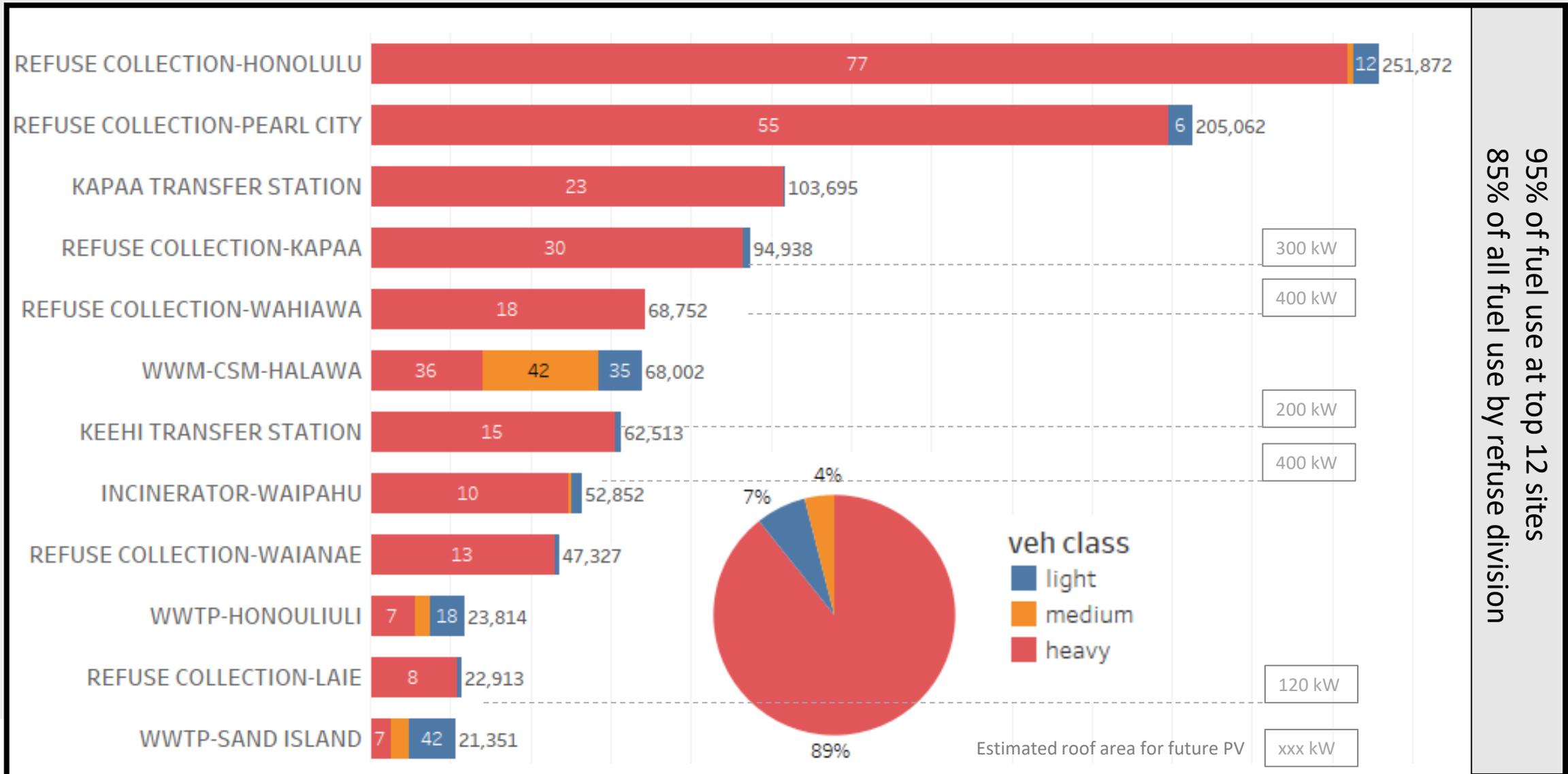
- Conducted analysis to find minimum number of chargers at 12 City sites and determine which sites require upgrades.

• Phased planning and budgeting timeline for City fleet EV infrastructure development

- By 2035, installing EVSE and charging equipment will be over \$12 million across four sites.



Example: ENV - Fleet Fuel Use by Site



95% of fuel use at top 12 sites
85% of all fuel use by refuse division

EV Infrastructure Action Plan

Charging Infrastructure Requirements: By 2045, O‘ahu will need more than **70,000** public charging stations.

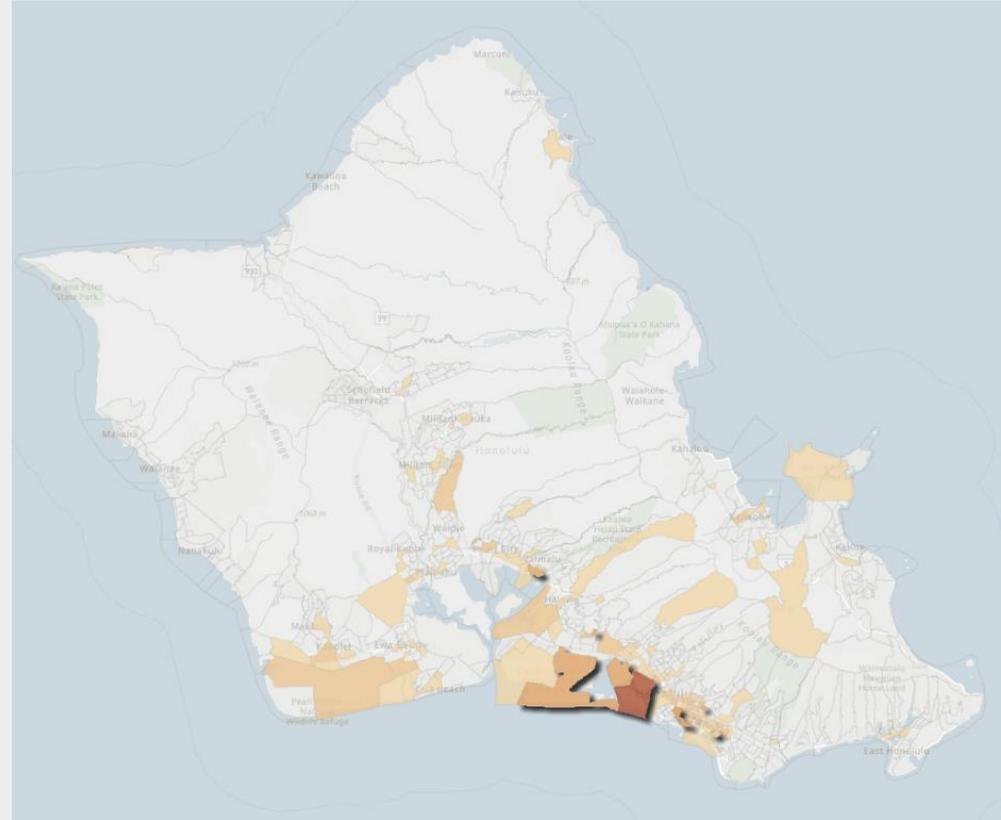
Siting Prioritization:

- Scenario 1: prioritize access for residents with limited access to home charging
- Scenario 2: prioritize equitable access in non-residential zones
- Scenario 3: prioritize convenience and accessibility to public fast charging

Deployment Strategy:

Funding opportunities and financing strategies; equity assessment and planning; infrastructure design; compliance and permitting; and installation and instruction.

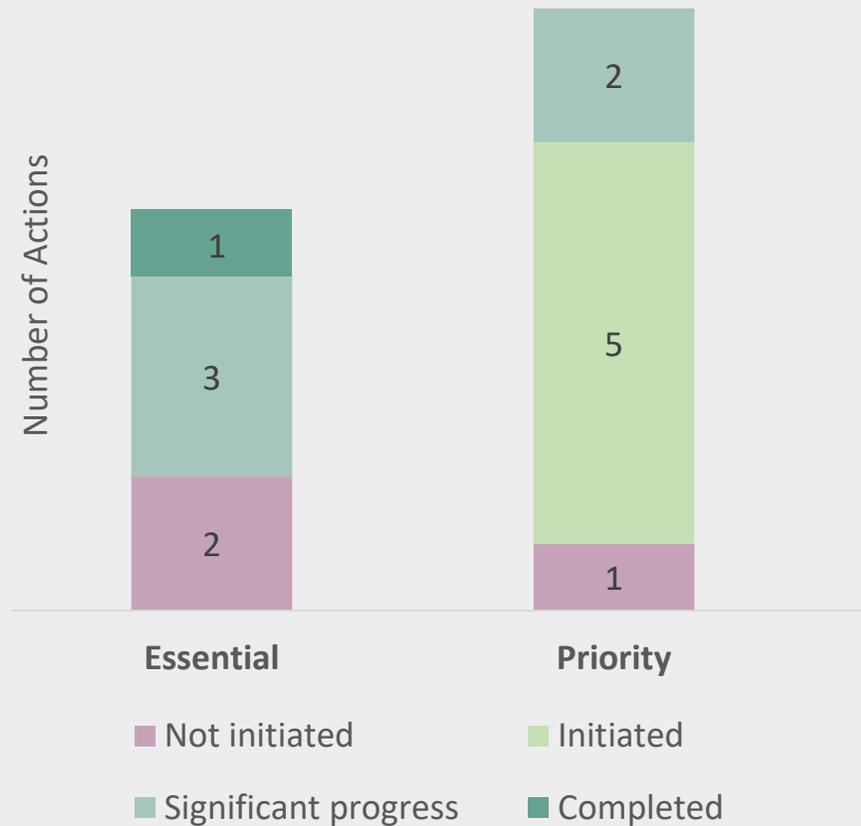
Scenario 1 Results



Public Engagement and Interagency Coordination

- Surveys – Internal City Employees and External Sector Stakeholders and Experts
- Departmental Electrification Workshops
- Transportation Demand Management Employee Flyers
- Public Facing Infographics
- Internal and Public Workshops: Transportation Trends, City Climate Action Plan Progress

Ongoing implementation



Ongoing

- Implement the Bike & Ped Plans
- Expand use of dedicated bus lanes
- Employee Transportation Demand Management
- Internal and Public Workshops: Transportation Trends, City Climate Action Plan Progress
- Elimination of parking minimums

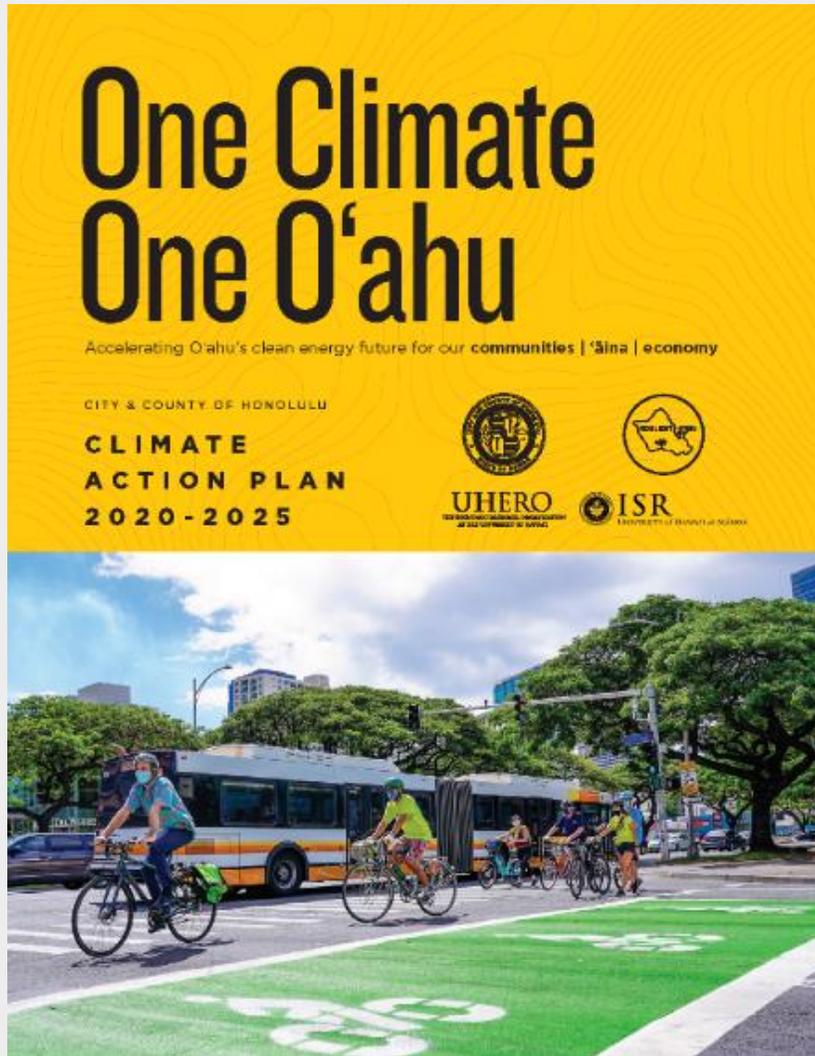
Completed

- Mobility Manager hired
- TOD plans adopted

To be initiated

- Enhanced parking management
- Curb management in TOF

CAP Update



CCSR's directive per Ordinance 20-47:

- Update the climate action plan every five years
- Identify affordable solutions to advance implementation of climate action plan

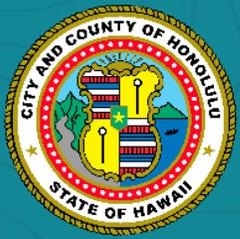
2025-2030 CAP update:

- Supported with EPA Grant funding
- Contracting underway, kickoff in next month
- Includes a CBO led process for frontline community engagement & empowerment
- Anticipated Council intro: late 2025

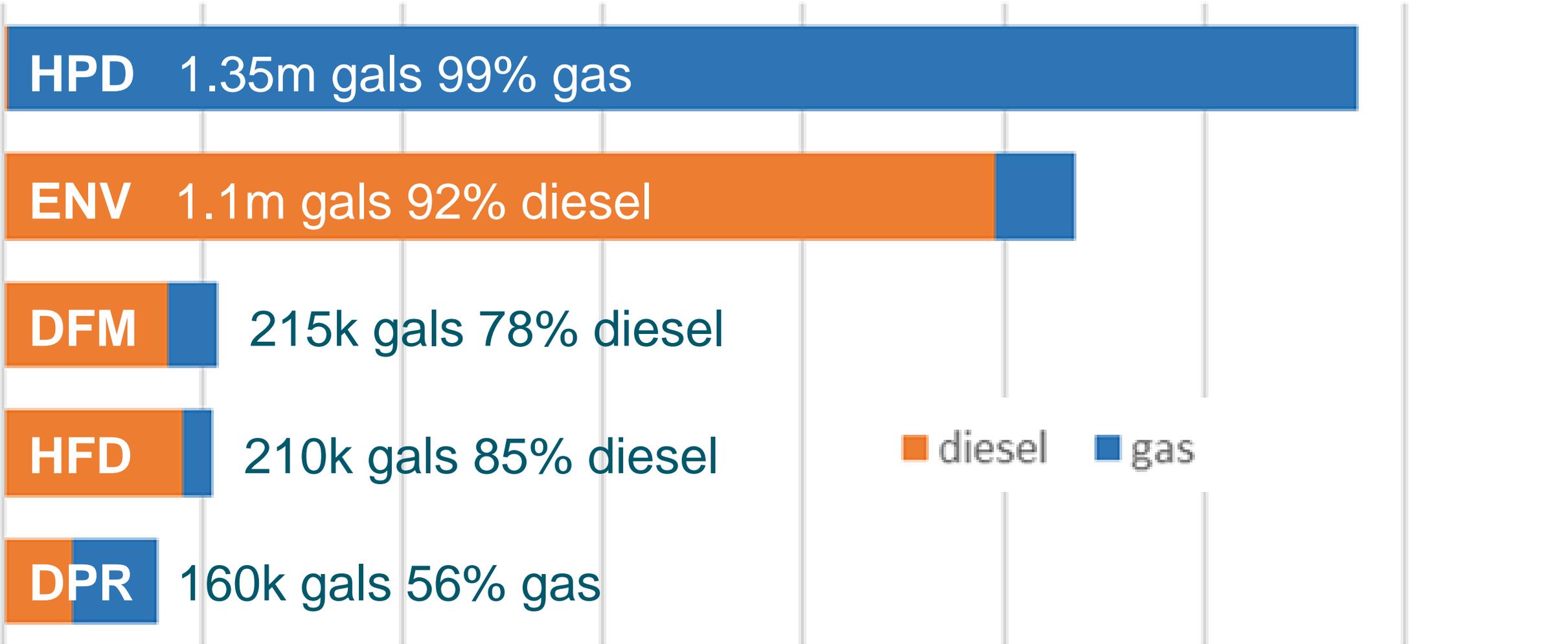
Questions?

Appendix

Extra slides



Dept level planning fuel usage by type across departments



Example: ENV - Fleet Fuel Use by Vehicle Type

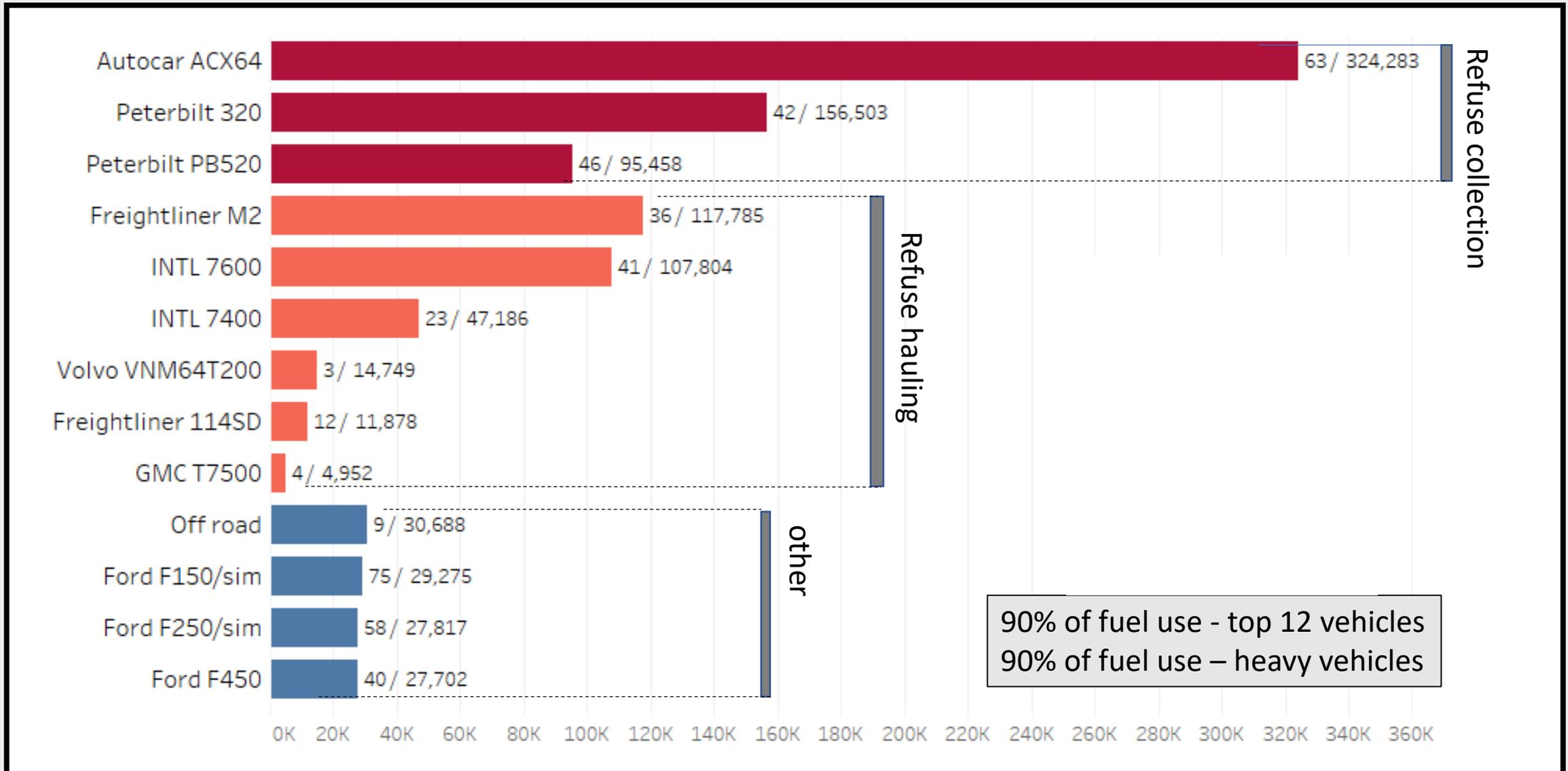
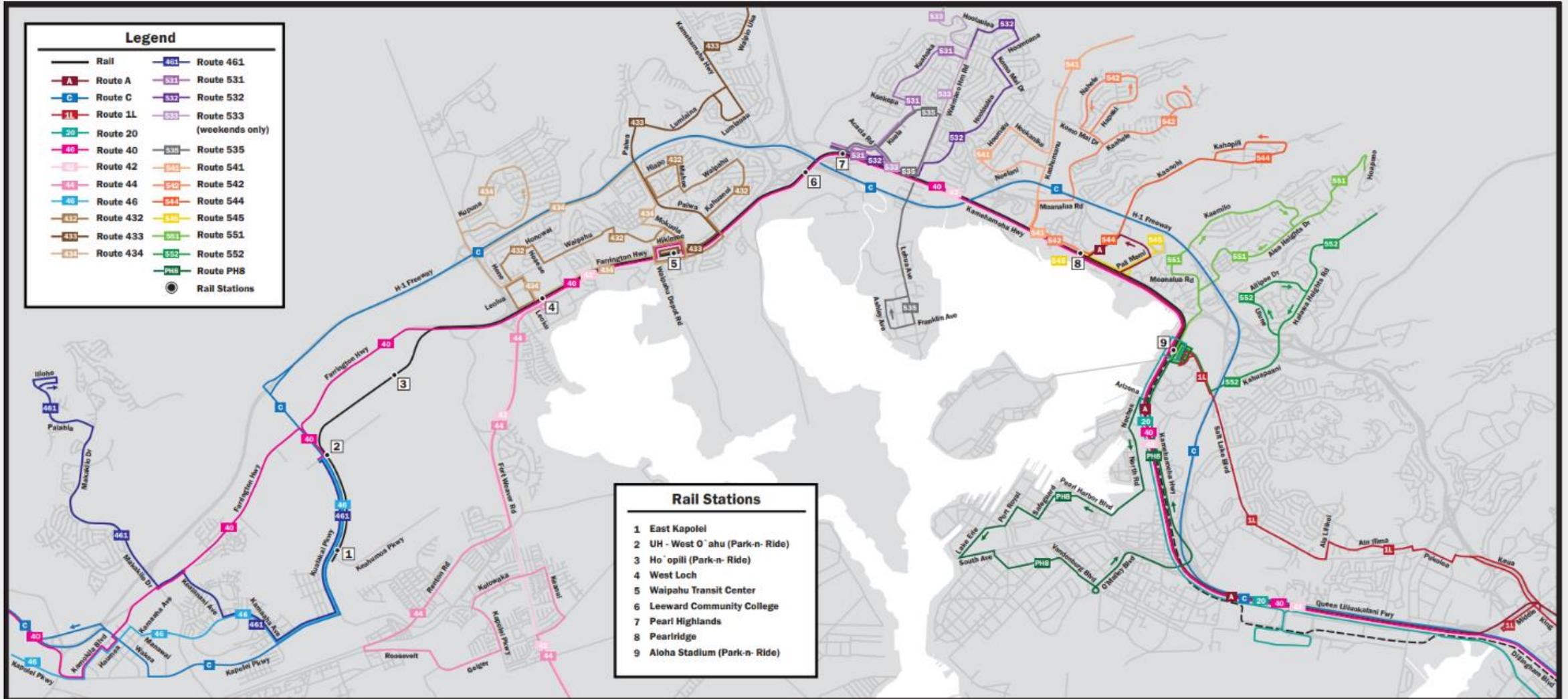


Figure X. Bus Routes servicing Skyline Stations
 2023 Bus-Rail Network Phase 1: East Kapolei to Aloha Stadium,



Transportation Demand Management (TDM) Framework

Goals for City Employee TDM Program	Alignment with Communitywide TDM Program
Increase employee commute options and flexibility	Long-Term Resilience
Reduce costs for employee access as the workforce grows	
Enhance employee recruitment and retention	
Support employee health through increase in active living	
Optimize use of City assets and facilities	Land Use & Development
Lead by example as a major employer implementing TDM in the downtown area	Equity
Reduce employee cost of living	
Reduce employee commute-related emissions	Environment