CITY OF Fremont

CLIMATE READY FREMONT

Fremont's pathway to a low-carbon, sustainable, and resilient future

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Table of Contents

APPENDICES

FIGURES

TABLES

List of Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
AB	California Assembly Bill
ABAG	Association of Bay Area Governments
AC Transit	Alameda County Transit
ACCMA	Alameda County Congestion Management Agency
ACE	Altamont Corridor Express
ACFCWCD	Alameda County Flood Control and Water Conservation District
Alameda CTC	Alameda County Transportation Commission
ACWD	Alameda County Water District
ADU	accessory dwelling unit
AMI	advanced water metering
APBP	Association of Pedestrians and Bicycle Professionals
ATP	Active Transportation Plan
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BayREN	Bay Area Regional Energy Network
BC3	Business Council on Climate Change
BCDC	Bay Conservation and Development Commission
BDC	Building Decarbonization Coalition
BIL	Bipartisan Infrastructure Law (also known as IIJA)
C&D	construction and demolition
CALGreen	California Green Building Standards Code
CalOES	California Governor's Office of Emergence Services
CAP	Climate Action Plan
CARB	California Air Resources Board
CCI	California Climate Investments
CDP	Carbon Disclosure Project
CEC	California Energy Commission

CEQA	California Environmental Quality Act
CIP	Capital Improvement Program
City	City of Fremont
CLEEN	California Lending for Energy and Environmental Needs
CMO	City Manager's Office
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CORE	California Clean Off-Road Equipment Program
CPUC	California Public Utilities Commission
DAC	disadvantaged community
DOE	United States Department of Energy
DOT	United States Department of Transportation
EBCE	East Bay Community Energy
EBRPD	East Bay Regional Park District
ECAA	Energy Conservation Assistance Act
EO	Executive Order
EPA	United States Environmental Protection Agency
EV	electric vehicle
FCEV	fuel cell electric vehicle
FEMA	Federal Emergency Management Agency
FMC	Fremont Municipal Code
FUSD	Fremont Unified School District
GCC	Green Cities California
GCoM	Global Covenant of Mayors for Climate & Energy
GHG	greenhouse gas
GSI	Green Stormwater Infrastructure
IBank	California Infrastructure and Economic Development Bank
ICARP	Integrated Climate Adaptation and Resiliency Program
ICLEI	Local Governments for Sustainability

IIJA	Infrastructure Investment and Jobs Act of 2021 (also known as BIL)
IPCC	United Nations Intergovernmental Panel on Climate Change
IRA	Inflation Reduction Act of 2022
kWh	kilowatt hour
LCFS	Low Carbon Fuel Standard
LED	light emitting diode
LHMP	Local Hazard Mitigation Plan
LOS	level of service
MAP	Mobility Action Plan
MRP	Municipal Regional Stormwater National Pollutant Discharge Elimination System Permit
MTC	Metropolitan Transportation Commission
$MTCO_2e$	metric tons of carbon dioxide equivalent
NACTO	National Association of City Transportation Officials
NEM	net energy metering
OBF	On-Bill Financing
ORRO	Organics Reduction & Recycling Ordinance
PACE	Property Assessed Clean Energy Financing
PDA	Priority Development Area
PG&E	Pacific Gas and Energy Company
PSPS	Public Safety Power Shutoff
RCI	Recycling Certification Institute
REC	Renewable Energy Certificate
RSCO	Rising Sun Center for Opportunity
RtZ	Race to Zero Campaign
SB	California Senate Bill
SFBACP	San Francisco Bay Area Conservancy Program

SFBJV	San Francisco Bay Joint Venture
SFBRA	San Francisco Bay Restoration Authority
SFEI	San Francisco Estuary Institute
SFPUC	San Francisco Public Utilities Commission
SOMAH	California Solar on Multifamily Affordable Housing Program
SOV	single occupancy vehicle
SRTS	Safe Routes to School
STEM	science, technology, engineering, and math
TDM	transportation demand management
TMA	Transportation Management Association
TOD	transit-oriented development
UNFCC	United Nations Framework Convention on Climate Change
USD	Union Sanitary District
USDN	Urban Sustainability Directors Network
VMT	vehicle miles traveled
VNEM	virtual net energy metering
VTA	Santa Clara Valley Transportation Authority
WELO	Water Efficient Landscape Ordinance
WUI	wildland-urban interface
ZEV	zero emission vehicle
ZNE	zero net energy

Glossary of Terms

Anaerobic digestion	A process through which bacteria break down organic matter—such as animal manure, wastewater biosolids, and food wastes—in the absence of oxygen.
Bay-Friendly Landscaping	Bay-Friendly Landscaping is a holistic approach to landscaping that works with the natural conditions of the San Francisco Bay Watershed. Now embodied by ReScape California's Eight Principles for Regenerative Landscapes, Bay-Friendly Landscaping fosters soil health, conserves water, sequesters carbon and protects valuable resources while reducing waste and preventing pollution.
Biogas	The gaseous product of anaerobic digestion, primarily consisting of methane (CH4), carbon dioxide (CO2), and hydrogen (H2) gas.
Carbon intensity / carbon-intensive	The carbon footprint per unit (such as lbs/CO2 per kWh of electricity); having a high carbon footprint in relation to a product's economic importance.
Carbon sequestration	The process of capturing and storing atmospheric carbon dioxide into a carbon pool. There are three types of carbon sequestration: biological (in vegetation such as grasslands or forests, as well as in soils and ocean), geological (in underground geologic formations, i.e. rocks), and technological (through graphene production, direct air capture, and engineered molecules).
Circular economy	An economic system based on the reuse and regeneration of materials or products, especially as a means of continuing production in a sustainable or environmentally friendly way
Climate change adaptation	Adjustments in ecological, social, or economic systems in response to the current or expected effects of climate change.
Climate change mitigation	Reduction or removal of greenhouse gas emissions from the atmosphere to prevent the planet from warming to more extreme temperatures.
Climate change resilience	The ability to anticipate, prepare for, respond to, and recover from hazardous events, trends, or disturbances related to climate.
Climate equity	Ensures the just distribution of the benefits of climate protection efforts and alleviates unequal burdens created by climate change.
Climate hazard overlay zone	Applies an additional layer of standards to all areas within a defined overlay boundary that have been identified by future climate change impact models as being at risk for future flooding, erosion, landslides, increase wildfire risk, or severe storm/high wind events, regardless of the underlying base zoning district.

Climate-smart	An integrated approach to planning and management that focuses on mitigating the impacts of climate change through GHG emissions reductions as well as adapting to the effects of climate change while at the same time enhancing economic development, ecological preservation, and social well-being.
Complete streets	Standards or policies that ensure the safe and adequate accommodation of all users of the transportation system, including pedestrians, bicyclists, personal conveyance and micromobility users, public transportation users, children, older individuals, individuals with disabilities, motorists, and freight vehicles.
Consumption-based GHG inventory	Accounts for upstream emissions of Scope 1 and Scope 2 (see definition for Production-based GHG inventory) as well as downstream emissions of Scope 3 (indirect emissions related to goods and services that are consumed within a defined geographic territory, regardless of where they are produced).
Decarbonization	The reduction or elimination of carbon dioxide emissions from a process such as manufacturing or the production of energy.
Electrification	The process of replacing systems that use fossil fuels (coal, oil, and natural gas) with ones that use electricity as a source of power.
Embodied carbon	The GHG emissions associated with the manufacturing, transportation, installation, maintenance, and disposal of building materials.
Green infrastructure	The range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspirate stormwater and reduce flows to sewer systems or to surface waters.
Heavy duty vehicle	Vehicles with a GVWR (gross vehicle weight rating) greater than 26,000 pounds. Includes weight classes 7 and 8.
Just transition	The transition from an extractive economy that is dependent on harvest or extraction of finite natural resources at a rate faster than the capacity of that system to regenerate to a regenerative economy based on the three pillars of ecological restoration, community resilience, and social equity that creates ever greater capacity for life without diminishing capital.
Last mile commute	Refers to the transportation method used during the final distance traveled to work, school, or an event, typically when public transit is the primary mode of transportation, but the system does not completely reach the desired destination.
Life Cycle Assessment	A method used to evaluate the environmental impact over the course of an entire lifecycle of a product, material, process, or other measurable activity. The stages of a life cycle include 1) raw material sourcing and extraction, 2) manufacturing, processing, and assembly, 3) packaging,

	transportation and distribution, 4) usage and retail, and 5) waste disposal, recycling, and resource recovery.
Light duty vehicle	Vehicles with a GVWR (gross vehicle weight rating) under 10,000 pounds. Includes weight classes 1 and 2.
Low-stress bicycle network	A continuous, comprehensive bicycle network that serves all ages and abilities and is particularly designed for those who tolerate a very low level of traffic stress, such as children, seniors, and those who may be new to biking and do not want to ride in traffic.
Medium duty vehicle	Vehicles with a GVWR (gross vehicle weight rating) between 10,001 – 26,000 pounds. Includes weight classes 3, 4, 5, and 6.
Microgrid	A local electrical grid with defined electrical boundaries, acting as a single and controllable entity, and with the ability to operate in grid-connected and in island mode.
Micromobility	Any small, low-speed, human- or electric-powered transportation device, including bicycles, scooters, electric-assist bicycles, electric scooters (e-scooters), and other small, lightweight, wheeled conveyances.
Mode share	The percentage of travelers using a particular type of transportation, such as by bicycle, by private vehicle (car, truck, taxicab, van, motorcycle), by public transportation (bus, rail, ferry), and by foot.
Natural gas	Naturally occurring mixture of gaseous hydrocarbons consisting primarily of methane (CH4) in addition to various smaller amounts of other higher alkanes. Each therm of natural gas consumed emits 11.72 lbs of CO2e. (also known as fossil gas or methane gas)
Production-based GHG inventory	The standard inventory utilized by local government agencies, it estimates GHG emissions generated within a defined geographic boundary during a single year. Production-based inventories take into account upstream emissions of Scope 1 (direct emissions from owned or controlled sources) and Scope 2 (indirect emissions from the generation of purchased energy).
Resilience hub	A community-serving facility augmented to support residents and coordinate resource distribution and services before, during, or after a natural hazard event.
Urban heat island effect	A phenomenon whereby urban areas experience higher air temperatures than surrounding non-urban areas due to dense concentrations of pavement, buildings, and other surfaces that absorb and retain heat. Trees, green roofs, and vegetation can help reduce urban heat island effects by shading building surfaces, deflecting radiation from the sun, and releasing moisture into the atmosphere.

Snapshot

Centrally located and serving as the eastern anchor of the Bay Area and Silicon Valley, Fremont is the fourth largest city in the Bay Area and prides itself on being a vibrant and strategically urban community. Previously an agricultural area comprised of five small townships, Fremont has developed into a technological and advanced manufacturing hub that captures modern living at its best and boasts one of the most ethnically and culturally diverse populations in the Bay Area.

The City of Fremont (City) has long been a leader in sustainability. Fremont was one of the first cities to incorporate sustainability in its General Plan in a significant way: sustainability serves as the first element and the central theme throughout the General Plan and puts forth a vision for Fremont to "serve as a national model of how an auto-oriented suburb can evolve into a sustainable, strategically urban, modern city." The City's 2012 Climate Action Plan (CAP) established a roadmap for achieving the sustainability vision of the General Plan through the implementation of local measures that together would reduce greenhouse gas (GHG) emissions by 25 percent from a 2005 baseline level by the year 2020.

Adoption of the first CAP accelerated the City's efforts related to energy and water use efficiency, renewable energy deployment, clean and multimodal transportation infrastructure, waste reduction and pollution prevention, and sustainable land use planning. Through a combination of the City's local implementation efforts paired with technology advancements and state and federal policy changes, the City achieved its 25 percent GHG reduction goal by 2018. Recognizing the need to update its GHG target, in 2019, the City adopted a Carbon Neutrality Resolution for Fremont to achieve a 55 percent GHG emission reduction from a 2005 baseline level by the year 2030 and to become a carbon neutral city no later than 2045.

Fremont's Vision

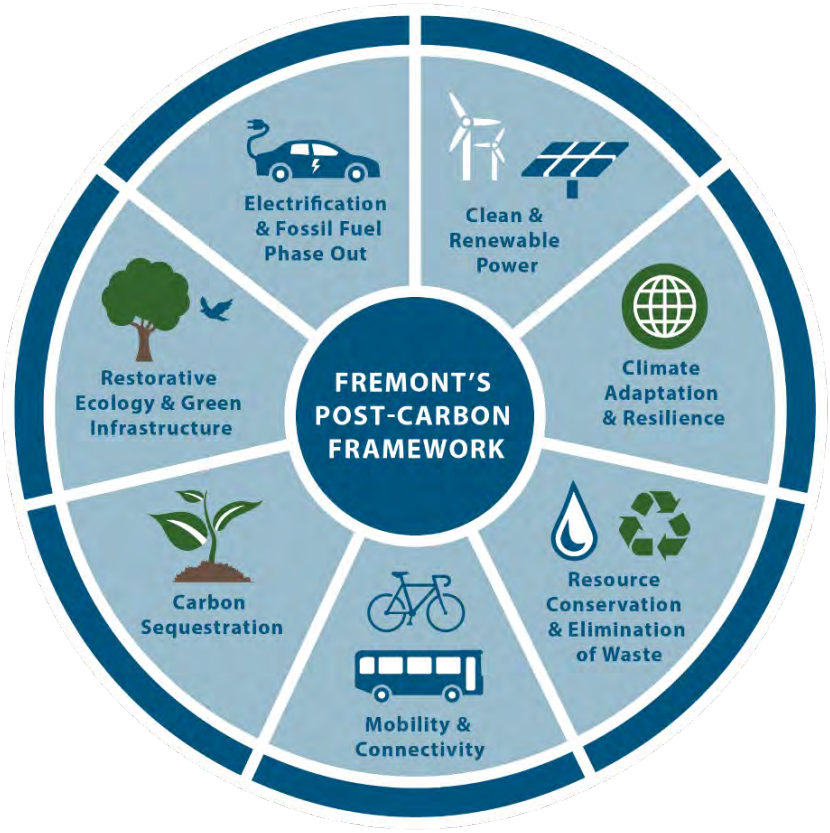
As part of the Carbon Neutrality Resolution, the City developed a Post-Carbon Framework to guide an update to the City's first Climate Action Plan. This document, titled *Climate Ready Fremont,* serves as the City's new plan for becoming a carbon neutral community.

The Post-Carbon Framework establishes the following guiding values that serve as the foundation of *Climate Ready Fremont*:

- **Equity & Access:** Ensure that all people have the opportunity to benefit equally from climate solutions, while not taking on an unequal burden of climate impacts.
- **Efficiency & Innovation:** Promote the efficient use of resources and the adoption of clean and climate-smart technologies and techniques.
- **Health & Wellness:** Safeguard and enhance the ability of the community to live, work, play, connect, and thrive in a healthy social and physical environment.
- **Resiliency & Capacity-Building:** Provide education and training on the opportunities offered by a more resilient future and encourage sustainable behaviors across all sectors of the community.

In addition, the Post-Carbon Framework identifies seven key strategies that are incorporated throughout *Climate Ready Fremont*. The strategies are shown in Figure S-1.

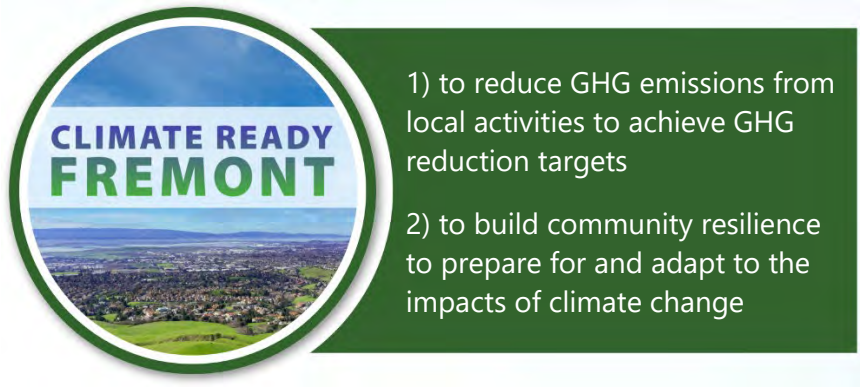
Figure S-1: Post-Carbon Framework Key Strategies



Source: Ascent Environmental, 2023

Purpose of *Climate Ready Fremont*

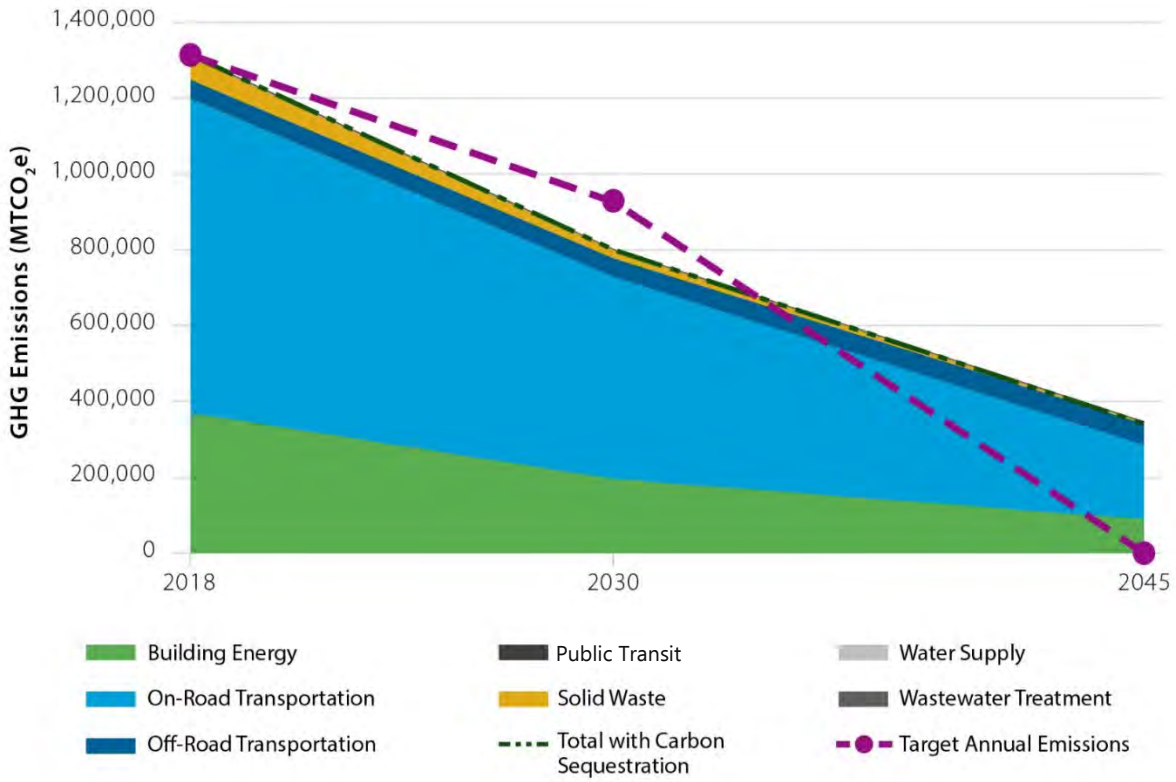
Climate Ready Fremont has two overarching objectives:



The plan presents mitigation and adaptation strategies, measures, and actions that, in combination, aim to achieve an interim GHG reduction target of 55 percent by 2030 (from a 2005 baseline year) as well as prepare the City for climatic changes that are already underway.

The measures presented in *Climate Ready Fremont* have been analyzed to quantify their GHG emission reduction potential for the target years 2030 and 2045. **Figure S-2** shows the community emissions by sector for 2018 and the GHG emission reductions to be achieved by *Climate Ready Fremont* measures. Figure S-2 displays the City's achievement of the 2030 target with the GHG reduction measures and demonstrates progress towards the City's goal of achieving carbon neutrality by 2045.

Figure S-2: *Climate Ready Fremont* Scenario by Sector Compared to Reduction Targets



Source: Ascent Environmental, 2023

It is important to note that some of the measures within *Climate Ready Fremont* have not been quantified due to lack of available data or quantification methods. In addition, some measures do not directly reduce GHG emissions, but rather are incorporated into *Climate Ready Fremont* due to their ability to help Fremont adapt and become more resilient to the effects of climate change.

Furthermore, while *Climate Ready Fremont* is primarily geared towards reducing GHG emissions and addressing climate change-related vulnerabilities within the City, its implementation will also result in numerous "co-benefits" to residents and businesses such as equity, air pollution prevention, benefits to health and well-being, increased infrastructure reliability, enhanced community resilience, local economic benefits, and resource preservation (**Figure S-3**). For example, the measure to transition to 100 percent clean power consumption will not only achieve a reduction in community GHGs, it will also reduce air pollution through the use of clean technologies, thereby also improving the health and well-being of community members. In addition, it will improve community resilience through reducing dependence on fossil fuels and improve equity by ensuring that all community members have access to clean power.

Figure S-3: *Climate Ready Fremont* Co-Benefits

Source: Ascent Environmental, 2023

The *Climate Ready Fremont* mitigation and adaptation strategies are organized into eight focus areas: Buildings and Energy, Infrastructure and Equipment, Land Use and Mobility, Materials and Waste, Natural and Urban Landscapes, Health and Resiliency, Green Economy, and Public Participation and Engagement. Each focus area presents strategies that serve as the foundation for reducing GHG emissions and advancing climate resiliency in Fremont. *Climate Ready Fremont* strategies and measures are outlined in the Plan-at-a-Glance section on the next page.

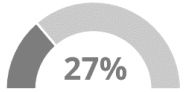
Plan-at-a-Glance

The following table provides a summary of the *Climate Ready Fremont* strategies and measures developed for each of the eight focus areas. For quantified community-level measures, the greenhouse gas (GHG) emission reduction potential is displayed. The "Quantified Community GHG Reduction" graphic represents the percentage of emissions reduction expected from a particular measure compared to the total calculated emissions reduction of 295,054 $MTCO_2e$ for Fremont by the year 2030. Additional details regarding the strategies and measures are provided in **Chapter 3** and specific implementation actions are presented in **Chapter 4**.

Table S-1: *Climate Ready Fremont* Plan-at-a-Glance

STRATEGY	MEASURE	QUANTIFIED COMMUNITY GHG REDUCTION
BUILDINGS AND ENERGY		
1. Clean and Renewable Power Use	**Measure BU-1:** Transition to 100 percent clean electricity consumption.	
2. Building Electrification and Low-Carbon Design	**Measure BU-2:** Require new residential construction to be all electric and low carbon.	
	Measure BU-3: Require new nonresidential construction to be zero net energy and low carbon.	
	Measure BU-4: Retrofit existing residential buildings to be all electric and low carbon.	
	Measure BU-5: Retrofit existing nonresidential buildings to be all electric and low carbon.	
	Measure BU-6: Require new City buildings to be all electric and low carbon.	GHG reduction captured within Measure BU-3
	Measure BU-7: Retrofit existing City buildings to be all electric and low carbon	GHG reduction captured within Measure BU-5

STRATEGY	MEASURE	QUANTIFIED COMMUNITY GHG REDUCTION
3. Building Energy Efficiency and Demand Management	**Measure BU-8:** Reduce energy consumption in buildings and operations.	—
	Measure BU-9: Promote building energy tracking and performance assessment.	—
	Measure BU-10: Reduce overall demand on the electrical grid.	—
4. Building Energy Resilience	**Measure BU-11:** Increase the development of microgrids at emergency facilities.	—
	Measure BU-12: Expand local clean backup power availability.	—
5. Water Conservation in Buildings	**Measure BU-13:** Reduce water consumption in buildings.	<1%
	Measure BU-14: Increase the capture of rainwater and use of greywater.	<1%
6. Waste Reduction in Building Construction and Demolition	**Measure BU-15:** Increase sustainable materials use and recovery in construction and demolition (C&D).	—
INFRASTRUCTURE AND EQUIPMENT		
1. Clean and Renewable Power Infrastructure	**Measure IN-1:** Upgrade infrastructure to support the transition to 100 percent clean power.	GHG reduction captured within Measure BU-1

STRATEGY	MEASURE	QUANTIFIED COMMUNITY GHG REDUCTION
2. Clean Freight and Delivery Infrastructure	**Measure IN-2:** Promote clean and efficient movement of goods.	GHG reduction captured within Measure IN-3
3. Clean Mobility Infrastructure	**Measure IN-3:** Install infrastructure to support electric vehicle (EV) charging and other zero-emission vehicle (ZEV) fueling needs.	
	Measure IN-4: Increase the use of smart mobility and modernize transportation infrastructure as identified in the City's Mobility Action Plan.	
	Measure IN-5: Improve pedestrian and bicycle infrastructure as identified in previous City plans and in the new Active Transportation Plan.	
	Measure IN-6: Replace the City's gasoline and diesel-powered fleet vehicles and other equipment with low-emission and zero-emission vehicles.	GHG Reduction captured within Measure IN-3
4. Critical Infrastructure Protection	**Measure IN-7:** Improve energy infrastructure resilience.	—
	Measure IN-8: Improve water and wastewater infrastructure resilience.	—
	Measure IN-9: Protect vulnerable transportation infrastructure, services, and systems from climate change impacts.	—
	Measure IN-10: Assess local climate vulnerabilities to climate change and incorporate climate adaptation and resiliency into City planning, policies, and infrastructure projects.	—
5. Clean Landscaping and Off-Road Equipment	**Measure IN-11:** Reduce emissions and air pollution associated with landscaping equipment.	
	Measure IN-12: Reduce emissions and air pollution associated with diesel fuel use in off-road equipment and stationary sources.	

STRATEGY	MEASURE	QUANTIFIED COMMUNITY GHG REDUCTION
LAND USE AND MOBILITY		
1. Clean and Multimodal Mobility and Connectivity	**Measure LU-1:** Promote and enhance active transportation options as identified in the City's Active Transportation Plan and Mobility Action Plan.	GHG reduction captured within Measure IN-5
	Measure LU-2: Reduce vehicle miles traveled (VMT) and single-occupancy vehicle trips, as identified in the General Plan.	
	Measure LU-3: Encourage the adoption of zero-emission passenger vehicles.	GHG reduction captured within Measure IN-3
	Measure LU-4: Increase transit ridership and promote transition to zero-emissions transit.	
	Measure LU-5: Increase implementation of Transportation Demand Management (TDM) strategies as identified in the General Plan.	
	Measure LU-6: Reduce the amount of parking to encourage transit-oriented development (TOD) as identified in the General Plan.	
2. Sustainable Land Use Planning	**Measure LU-7:** Apply smart growth and low-carbon land use development principles.	—
	Measure LU-8: Incorporate climate vulnerabilities in land use planning.	—

MATERIALS AND WASTE		
1. Materials Reuse and Plastic Waste Reduction	**Measure MW-1:** Promote responsible consumption of products and materials and reduce disposable packaging use.	—
	Measure MW-2: Encourage repair, reuse, and upcycling of materials.	—
2. Managing Recycling and Organics	**Measure MW-3:** Bolster recovery of organic and recyclable materials and increase landfill diversion rates.	
	Measure MW-4: Support methane recovery and reuse from organic sources.	—
	Measure MW-5: Establish and advance zero waste targets and policies.	GHG reduction captured within Measure MW-3
NATURAL AND URBAN LANDSCAPES		
1. Carbon Sequestration	**Measure NL-1:** Increase soil carbon content.	—
	Measure NL-2: Increase the carbon sequestration potential of the City's bayfront and bayland areas.	—
	Measure NL-3: Implement the City's Urban Forest Management Plan.	
2. Green Infrastructure	**Measure NL-4:** Expand and protect green infrastructure and biodiversity.	—
3. Water Conservation in Landscapes	**Measure NL-5:** Reduce water usage for irrigation and landscaping.	

4. Habitat Restoration and Biodiversity		**Measure NL-6:** Conserve and protect natural habitats, ecosystems, and wildlife corridors impacted by climate change.	—
		Measure NL-7: Restore, rehabilitate, and repurpose degraded, damaged, or destroyed ecosystems through active interventions to enhance the natural adaptive capacity of biological communities.	—
		Measure NL-8: Prioritize nature-based solutions to improve coastal and watershed resilience while promoting biodiversity.	—
ADAPTATION AND RESILIENCY			
1. Extreme Heat Mitigation		**Measure AR-1:** Adopt heat island reduction design guidelines.	—
		Measure AR-2: Protect populations vulnerable to extreme heat and poor air quality.	—
2. Wildfire Risk Reduction		**Measure AR-3:** Reduce the wildland-urban interface (WUI) fire risk.	—
3. Flood Risk Reduction		**Measure AR-4:** Minimize risks to life and property resulting from flooding and flood induced hazards.	—
		Measure AR-5: Reduce flood and drought risk through integrated watershed management.	—
4. Sea Level Rise Preparedness		**Measure AR-6:** Evaluate proposed development in areas of the City subject to flooding impacts caused by rising sea levels.	—
		Measure AR-7: Protect existing development from sea level rise impacts.	—
		Measure AR-8: Minimize risks to life and property resulting from flooding caused by sea level rise.	—

5. Emergency Preparedness and Disaster Response		**Measure AR-9:** Revise emergency management plans, programs, and activities.	—
		Measure AR-10: Ensure emergency management activities are conducted equitably.	—
		Measure AR-11: Improve notification systems for natural hazards to reach the most vulnerable community members.	—
6. Community Resilience		**Measure AR-12:** Establish resilience hubs.	—
		Measure AR-13: Improve food security.	—
GREEN ECONOMY			
1. Green Businesses and Jobs		**Measure GE-1:** Support and encourage circular economy innovation and business leadership in Fremont.	—
		Measure GE-2: Incentivize and promote green business practices.	—
		Measure GE-3: Support green jobs in the City.	—
2. Climate Equity		**Measure GE-4:** Increase the resiliency of low-income or otherwise vulnerable housing.	—
		Measure GE-5: Ensure an equitable transition to 100 percent clean power.	GHG reduction captured within Measure BU-1
3. Climate-Friendly Purchasing, Budgeting, and Financing		**Measure GE-6:** Incorporate sustainability best practices into City purchasing decisions and City contracts.	—
		Measure GE-7: Modify the City's capital planning and budgeting processes to incorporate priorities established by *Climate Ready Fremont*.	—
		Measure GE-8: Establish financial mechanisms and pursue outside funding sources to support the implementation of *Climate Ready Fremont*.	—

PUBLIC PARTICIPATION AND ENGAGEMENT			
1. Access to Nature and Environmental Stewardship		**Measure PE-1:** Ensure availability and accessibility to healthy, natural spaces and safe outdoor recreation opportunities for all community members.	—
		Measure PE-2: Encourage residents and community members to act as environmental stewards.	—
2. Climate Action Engagement		**Measure PE-3:** Encourage community participation and ownership of *Climate Ready Fremont*.	—
		Measure PE-4: Increase public awareness and participation in climate planning, with a focus on equity and inclusion.	—
3. Climate Tracking and Reporting		**Measure PE-5:** Track climate and sustainability metrics accurately and transparently for the community.	—

How to Read This Plan

Climate Ready Fremont is divided into four main chapters plus appendices as follows:

Chapter 1 introduces the City's vision, outlines the objectives and organization of the plan, and describes existing legislation and efforts aimed at addressing climate change.

Chapter 2 summarizes the City's baseline greenhouse gas (GHG) emissions, presents a forecast of future emissions, and identifies the City's emissions reduction targets.

Chapter 3 is organized into eight focus areas: Buildings and Energy, Infrastructure and Equipment, Land Use and Mobility, Materials and Waste, Natural and Urban Landscapes, Adaptation and Resiliency, Green Economy, and Public Participation and Engagement. Each focus area contains strategies that serve as the foundation to help the City achieve its climate goals. Within each strategy are one or more measures that represent specific expressions of the broad strategies. Climate change mitigation and adaptation objectives are intertwined throughout the strategies and measures. Actions at both the community-scale as well as actions specific to City operations are included beneath each measure that define the activities, projects, programs, or policies that the City will implement or support to advance its GHG reduction and adaptation goals.

Chapter 4 presents the "Game Plan," a list of short-term priority actions intended to be implemented within the first 3 years of the plan's adoption. Chapter 4 also discusses CEQA streamlining with the plan for future development projects, presents intentions for ongoing monitoring and reporting of the plan, and highlights some of the funding mechanisms available for plan implementation.

Appendices include further information on GHG emissions inventories and forecasts and *Climate Ready Fremont* measure list quantification.

Introduction

> *"Climate change is a threat to human well-being and planetary health...The choices and actions implemented in this decade will have impacts now and for thousands of years.*[1] *"*

Vision for *Climate Ready Fremont*

The City of Fremont (hereafter referred to as "City") has long been a leader in sustainability. In 2008, the Fremont City Council adopted the City's first municipal and communitywide greenhouse gas (GHG) emissions reduction goal of 25 percent from a 2005 baseline level by the year 2020, a goal memorialized with the adoption of the General Plan in 2011. Fremont was one of the first cities to incorporate sustainability in its General Plan: sustainability serves as the first element and the central theme throughout the General Plan and puts forth a vision for Fremont to "serve as a national model of how an auto-oriented suburb can evolve into a sustainable, strategically urban, modern city."

The City adopted its first Climate Action Plan (CAP) in November 2012 which identified actions to meet the City's GHG emissions reduction goal of 25 percent below 2005 levels by 2020. Since then, the City has significantly reduced its GHG emissions while continuing to experience population and economic growth. In early 2019, the City Council adopted a resolution to achieve carbon neutrality no later than 2045 and established an interim target to reduce GHG emissions 55 percent below 2005 levels by 2030.

Climate Ready Fremont is an update to the first CAP and establishes a roadmap for achieving the GHG emission reduction targets envisioned by the City Council. The plan identifies sustainable and adaptive infrastructure, technologies, policies, and programs that the City will implement to address climate change, improve quality of life, promote equity, and bolster resiliency across the community.

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[1] Intergovernmental Panel on Climate Change. 2023 (March). AR6 Synthesis Report: Climate Change 2023: Summary for Policy Makers. Available: https://report.ipcc.ch/ar6syr/pdf/IPCC_AR6_SYR_SPM.pdf. Accessed March 30, 2023.

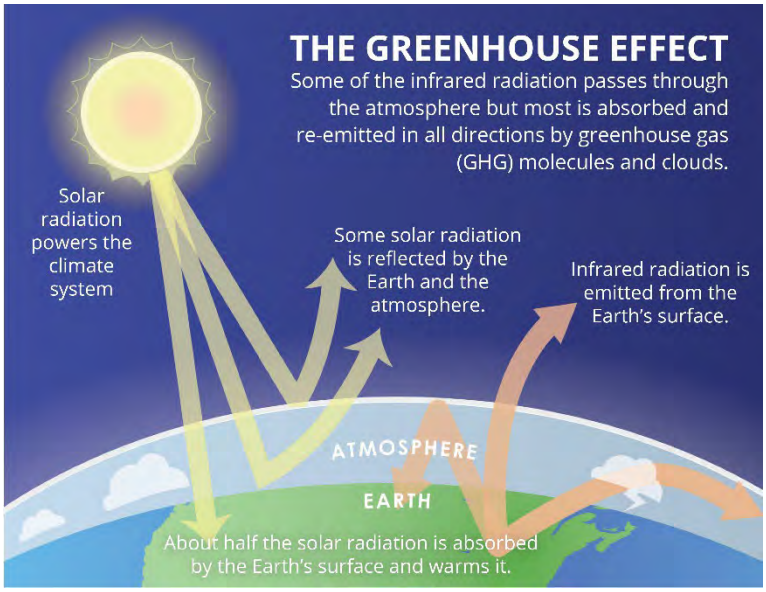
Vision for *Climate Ready Fremont*

Fremont is a healthy, safe, and livable climate ready community that provides for economic and social opportunity across all ages, cultures, and abilities through equitable, resilient, and adaptive technologies, infrastructure, policies, and programs.

Purpose and Objectives

The combustion of fossil fuels and other human-caused activities since the Industrial Revolution in the 19th century have introduced GHGs into the atmosphere at an increasingly accelerated rate. These significantly elevated levels of GHGs above natural ambient concentrations have intensified the greenhouse effect, illustrated in **Figure 1-1**, and have resulted in an impact known as global climate change.

Figure 1-1: Greenhouse Gas Effect



Source: Ascent Environmental, 2023

The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Working Group Report – AR6 Climate Change 2021: The Physical Science Basis, released in August 2021, finds that human activities are estimated to have caused over 2 degrees Fahrenheit (°F) of warming across the globe compared to pre-industrial era levels (i.e., before 1900), and global average temperature is expected to increase by up to approximately 8 °F by the end of the century unless additional efforts to reduce GHG emissions are made.[2] As communities throughout California continue to experience rising average temperatures, more severe storms, and intense drought, it has become evident that the effects of global climate change are already occurring.

[2] Intergovernmental Panel on Climate Change. 2021 (August). AR6 Climate Change 2021: The Physical Science Basis: Summary for Policy Makers. Available: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf. Accessed October 1, 2021.

Primary Objectives of *Climate Ready Fremont*

Local governments have an important role to play in reducing GHG emissions and preparing for the impacts of climate change in their communities. *Climate Ready Fremont* establishes locally based strategies, measures, and actions that will serve to achieve these objectives and simultaneously enhance the quality of life for residents, businesses, employees, and visitors of Fremont.

Climate Ready Fremont is intended to provide a pathway for the City to achieve two primary objectives:

1) to reduce GHG emissions from local activities to achieve GHG reduction targets

2) to build community resilience to prepare for and adapt to the impacts of climate change

Guiding Values and Key Strategies

Alongside the adoption of the 2045 carbon neutrality target, the City established a "post-carbon community" framework of key values and strategies to guide the update of the CAP. *Climate Ready Fremont* has therefore been developed in alignment with the following values:

Equity & Access:
Ensure that all people have the opportunity to benefit equally from climate solutions, while not taking on an unequal burden of climate impacts.

Health & Wellness:
Safeguard and enhance the ability of the community to live, work, play, connect, and thrive in a healthy social and physical environment.

Efficiency & Innovation:
Promote the efficient use of resources and the adoption of clean and climate-smart technologies and techniques.

Resiliency & Capacity-Building:
Provide education and training on the opportunities offered by a more resilient future and encourage sustainable behaviors across all sectors of the community.

In addition, the framework identifies the following seven key strategies for achieving carbon neutrality. These have been directly incorporated into *Climate Ready Fremont's* list of GHG reduction strategies and measures:

- **Clean & Renewable Power:** Deploy and efficiently use clean, renewable, and locally sourced electricity generated on site or transmitted through the power grid.
- **Electrification & Fossil Fuel Phase-Out:** Upgrade and replace carbon-intensive, fossil fuel-based infrastructure and combustion power throughout the transportation and building sectors with clean electric power.
- **Carbon Sequestration:** Drawdown carbon dioxide and other GHGs from the atmosphere through ecological and/or technological methods and capture and store in plants, soils, water systems, and other solid forms.
- **Mobility & Connectivity:** Develop and enhance safe, multimodal, accessible, equitable, intelligent, and clean motorized and non-motorized travel options, transit modes, transportation infrastructure, and community connectivity.
- **Resource Conservation & Elimination of Waste:** Conserve natural and manufactured resources by means of the responsible production, consumption, reuse, and recovery of products, packaging, and materials.
- **Restorative Ecology & Green Infrastructure:** Restore, rehabilitate, and repurpose degraded, damaged, or destroyed ecosystems and habitats through active interventions. Incorporate green infrastructure and ecosystem services into community design.
- **Climate Adaptation & Resilience:** Prepare for, limit, learn from, and adapt to the negative effects of climate change through proactive and holistic planning and response at infrastructural, cultural, and institutional levels.

Fremont's Climate Leadership

The City continues to lead in climate action and sustainability initiatives and has been recognized by a number of institutions. In 2021, Fremont was selected as a Beacon Vanguard Platinum Award winner by the California Institute for Local Government (one of only five cities in California to have ever received the award at the time). The City was selected for exceptional achievements in the following categories: community GHG reductions, agency GHG reductions, agency energy savings, agency natural gas savings, and sustainability best practices. The City was also honored as a 2021 Beacon Leadership and Innovation Award winner for using innovation to promote clean energy in Fremont with the Fire Station Microgrid Demonstration Project.

Other relevant awards and recognitions Fremont has received include:

- **U.S. Environmental Protection Agency (EPA) Green Power Partner** since 2015 for clean and renewable electricity use in City operations
- **SolSmart Gold Designee** with a "Special Award for Excellence in Permitting" in 2016 for programs and processes that encourage local solar market growth
- **American Public Works Association (APWA) Award for Exceptional Performance** in 2018 for implementing a comprehensive energy and water efficiency upgrade project at City facilities
- **CDP Cities "A List" Recognition** in the years 2018, 2019, and 2021 for climate implementation and reporting efforts

In addition, the City has made several commitments to combat climate change including:

- **Global Covenant of Mayors for Climate & Energy (GCoM)** – a global alliance for city climate leadership with a long-term vision of supporting voluntary action to combat climate change; Fremont achieved the GCoM Compliant badge in 2021
- **We Are Still In** – a joint declaration of support for climate action to meet the Paris Agreement that was signed by more than 3,900 CEOs, mayors, governors, college presidents, and others
- **Race to Zero (RtZ) Campaign** – a global campaign through the United Nations Framework Convention on Climate Change to rally leadership and support from businesses, cities, regions, and investors for a healthy, resilient, zero carbon recovery that prevents future threats, creates decent jobs, and unlocks inclusive, sustainable growth

The City recognizes that the need for climate action throughout the region and nation requires coordination amongst different jurisdictions and across sectors. The City works in regular coordination and collaboration with a number of local and regional entities, including: Alameda County Waste Management Authority/Alameda County Source Reduction and Recycling Board/Energy Council (operating as StopWaste), Alameda County Water District (ACWD), Alameda County Transportation Commission (Alameda CTC), Bay Area Air Quality Management District (BAAQMD), Bay Area Regional Energy Network (BayREN), East Bay Community Energy (EBCE), Fremont Unified School District (FUSD), Metropolitan Transportation Commission (MTC)/Association of Bay Area Governments (ABAG), and Pacific Gas & Electric Company (PG&E).

City representatives also actively participate in statewide and national networks and membership agencies dedicated to climate action—such as the Building Decarbonization Coalition (BDC), Climate Mayors, the Electrification Coalition, Green Cities California (GCC), ICLEI-Local Governments for Sustainability, the Urban Sustainability Directors Network (USDN), and the U.S. Green Building Council (USGBC)—to advance best practices, share resources, and scale impact.

City Actions, Plans, and Resolutions

As demonstrated by recent awards and recognitions, the City values sustainability and the importance of climate action and adaptation planning. The following actions, plans, and resolutions address climate change and GHG emissions and support *Climate Ready Fremont*.

2008 — Baseline Greenhouse Gas Emissions Inventory (2005)

Fremont partners with StopWaste and ICLEI – Local Governments for Sustainability to evaluate GHG emissions from City facilities and the Fremont community using a 2005 baseline.

2008 — Green Task Force

Fremont's mayor convenes a Green Task Force of community members who identify 20 ways Fremont could reduce its GHG emissions. The Green Task Force leads to the establishment of the City's Environmental Sustainability Commission.

2011 — General Plan 2030

Fremont's General Plan 2030 incorporates sustainability as the central theme throughout the document and includes both a Sustainability Element and a Conservation Element addressing climate-related policies.

2012 — Climate Action Plan (CAP) & Environmental Sustainability Commission

Fremont's CAP sets an ambitious GHG reduction goal of 25 percent from 2005 levels by 2020. The CAP provides a roadmap forward for achieving communitywide sustainability. To support CAP implementation, City Council establishes an Environmental Sustainability Commission.

2014 — Greenhouse Gas Emissions Inventory Update (2010)

Fremont partners with StopWaste to complete an update of GHG emissions using the newest calculation methodology, demonstrating a 10 percent decrease in communitywide emissions between 2005 and 2010.

2016 — Community Choice Energy

Fremont expands consumer energy choices by authorizing a new community choice energy provider, East Bay Community Energy (EBCE). This effort reduces GHG emissions from electricity use by 10 percent from 2015 levels.

2016 — Local Hazard Mitigation Plan (2016-2021)

Fremont's Local Hazard Mitigation Plan (LHMP) identifies and assesses the risk of three hazards caused by climate change: drought, extreme heat, and sea level rise. The LHMP includes strategies to address these identified risks.

2017

Greenhouse Gas Emissions Inventory Update (2015)

Fremont partners with StopWaste to complete an update of GHG emissions from City facilities and the Fremont community using a 2015 baseline.

2018

Fossil Fuel Divestment Resolution

Fremont adopts a Fossil Fuel Divestment Resolution to divest fully from the fossil fuel sector, commit to a fast and just transition to 100 percent renewable energy, and continue adopting regulations that support the transition to clean energy.

2019

Mobility Action Plan

Fremont adopts a Mobility Action Plan that identifies actions such as implementing transportation demand management plans and improving walking, biking, and transit infrastructure to support multimodal circulation and reduce GHG emissions.

2019

Carbon Neutrality Resolution

Fremont adopts a Carbon Neutrality Resolution, setting a 55 percent reduction target from 2005 levels by 2030 and a goal to achieve long-term carbon neutrality by 2045.

2020

Greenhouse Gas Emissions Inventory Update (2018)

Fremont partners with StopWaste to complete an update of the GHG emissions from City facilities and the Fremont community using a 2018 baseline. The 2018 Emissions Inventory highlights that Fremont exceeded the emissions reduction goal established in the first CAP.

2022

Parks and Recreation Master Plan Update

Fremont completes an update to the Parks and Recreation Master Plan, which provides guidance on how to meet the demands for future recreational, programming, environmental, and maintenance needs.

2023

Urban Forest Management Plan

Fremont adopts an Urban Forest Management Plan to create a shared vision and roadmap for Fremont's trees that enhances the quality of life in the City.

Climate Ready Fremont Co-Benefits

While *Climate Ready Fremont* is primarily geared towards reducing GHG emissions and addressing climate change-related vulnerabilities within the City, it will also result in numerous "co-benefits" to residents and businesses.

Co-benefits result from the implementation of *Climate Ready Fremont* measures and provide additional valuable outcomes, such as improvements to local air quality, increases in local green jobs and cost savings, and ecological resource preservation. Co-benefits identified in *Climate Ready Fremont*, as shown in **Figure 1-2**, include enhanced equity, air pollution prevention, benefits to health and well-being, improved reliability of critical infrastructure and services, strengthened community resilience, local economic benefits, and resource preservation.

For example, the measure to transition to 100 percent clean power consumption (Measure BU-1) will not only achieve a 17% reduction in community GHGs, it will also reduce air pollution through the use of clean technologies, thereby also improving the health and well-being of community members. In addition, it will improve community resilience through reducing dependence on fossil fuels and improve equity by ensuring that all community members have access to clean power.

Figure 1-2: *Climate Ready Fremont* Co-Benefits

Source: Ascent Environmental, 2023

Climate Mitigation and Adaptation

Addressing climate change requires an integrated approach that targets both its sources and its impacts. Efforts that focus on reducing the sources of climate change are commonly known as climate change mitigation, GHG mitigation, or climate action. The focus of climate change mitigation planning is to reduce communities' generation of GHG emissions and, therefore, minimize their contributions to climate change.

Climate change adaptation or climate change resilience efforts are those that serve to prepare for and reduce harm from future effects of a changing climate. Adaptation planning aims to analyze local climate-related vulnerabilities and enhance community resilience to climate change by developing strategies to respond to and prepare for its impacts.

Figure 1-3 illustrates the relationship between these two facets of climate change planning. State law requires communities to address climate change mitigation in local planning and environmental review processes and climate change adaptation in local long-range planning processes, such as general plans.[3]

[3] California Governor's Office of Emergency Services. 2020. California Adaptation Planning Guide. Available: https://www.caloes.ca.gov/HazardMitigationSite/Documents/APG2-FINAL-PR-DRAFTAccessible.pdf. Accessed October 2, 2021.

Figure 1-3: Relationship between Climate Mitigation and Adaptation

Source: CalOES 2020; adapted by Ascent Environmental in 2023

Climate change mitigation and adaptation are both crucial components of comprehensive climate change planning. While mitigation and adaptation are often separate planning efforts, it is important to consider both components within the overall climate action planning process. Many initiatives that focus on climate mitigation and reducing GHG emissions include co-benefits for adaptation and vice versa.

For example, a climate mitigation measure such as reducing water consumption in buildings (Measure BU-13) will reduce the amount of energy needed to transport, treat, and heat that water (reducing GHG emissions) and will also help preserve freshwater and groundwater resources that support the local ecosystem, especially during times of drought (enhancing climate resilience).

Conversely, an adaptation measure such as adopting urban heat island reduction design guidelines (Measure AR-1) that require the use of "cool" infrastructure to help mitigate the impacts of extreme heat events (enhancing climate resilience) will also reduce buildings' overall cooling demands, thereby saving energy (reducing GHG emissions).

Recognizing the importance and benefits of this symbiotic relationship, *Climate Ready Fremont* focuses on both climate change mitigation and adaptation to address climate change.

Local Climate-Related Impacts

Like many other Bay Area jurisdictions, Fremont is at risk from several climate-related hazards including inland flooding, sea level rise, extreme heat, and wildfires. The frequency of large storm sequences (i.e., atmospheric rivers) over short timeframes is projected to increase, causing flooding events that could affect portions of North Fremont surrounding Coyote Hills and portions of the City's industrial area west of I-880 and south of Stevenson Boulevard.[4] Permanent sea level rise and extreme tides and storm surge will result in impacts on low-lying areas in the City by 2050. The daily average temperature is projected to increase up to 3.5 °F by 2050 with approximately 12 to 16 days above 90°F by 2050.[5]

Fremont has moderate to high wildfire severity zones in many areas of the City. Climate change is projected to result in increased variability in precipitation and may lead to wetter winters and increased vegetative growth in the spring, providing increased fuel loads during wildfire events. The increase in fuel loads combined with the increasing frequency and severity of intense wind conditions will cause fires to spread rapidly and irregularly. [6] In addition, Fremont residents will be impacted by smoke from wildfires outside of the City. *Climate Ready Fremont* includes adaptation strategies to address these impacts.

Community Engagement and Public Outreach

While climate change is a global challenge, local community engagement and participation in climate action and adaptation efforts is a critical component of the solution. Local action on climate change cannot be achieved solely by one agency; it requires active and ongoing partnerships between residents, businesses, local government, and other organizations and stakeholders. To help inform the development of *Climate Ready Fremont*, the City actively engaged a cross-section of the community, with the goal of strengthening the implementation of strategies, measures, and actions. **Figure 1-4** and **1-5** summarize who City staff heard from and what they heard.

Figure 1-4: Community Engagement Participants and Groups

Source: Ascent Environmental, 2023

[4] Swain, D. L., B. Langenbrunner, J. D. Neelin, and A. Hall. 2018. Increasing Precipitation Volatility in Twenty-First-Century California. *Nature Climate Change* 8:427–433.

[5] Four Twenty Seven Climate Solutions. (February) 2017. *Fremont Climate Hazard Assessment and Adaptation Options*.

[6] California Office of Environmental Health Hazard Assessment. 2018. *Indicators of Climate Change in California*.

Figure 1-5: Community Engagement Feedback

Source: Ascent Environmental, 2023

What Comes Next

The next four sections of *Climate Ready Fremont* include three chapters and appendices.

Chapter 2 provides the foundation for *Climate Ready Fremont* implementation measures by describing current and forecasted GHG emissions and reduction targets.

Chapter 3 includes the strategies, measures, and actions that will be implemented to reduce GHG emissions and improve community resilience to the impacts of climate change.

Chapter 4 presents a list of priority short-term actions that the City will aim to implement within the first three years of adoption of *Climate Ready Fremont*.

Appendices include further information on GHG emissions inventories and forecasts and *Climate Ready Fremont* measure list quantification.

Greenhouse Gas Emissions Inventory, Forecasts, & Targets

This chapter provides the foundation for *Climate Ready Fremont* implementation measures by describing current and forecasted greenhouse gas (GHG) emissions and reduction targets. It summarizes the City's standard emissions inventories, presents a forecast scenario of possible future GHG emissions if no local actions were taken (i.e. if all measures within *Climate Ready Fremont* were not implemented and all existing City climate action implementation efforts were to cease), and establishes targets for reducing emissions consistent with statewide GHG reduction targets and goals for the years 2030 and 2045.

Determining a Baseline for Emissions Reductions

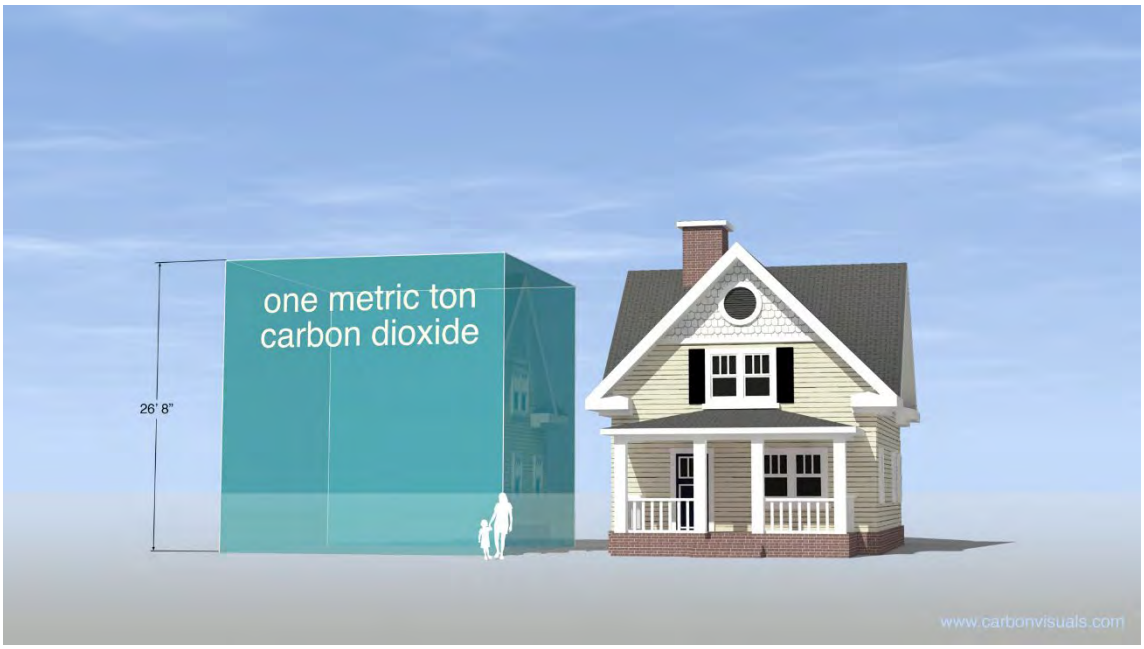
To develop and implement a Climate Action Plan (CAP) that will effectively reduce GHG emissions, local governments must first have a comprehensive understanding of the emissions that are generated by activities within their jurisdictions. This is done by conducting GHG emissions inventories at the community-wide scale as well as at a city operations level. GHG emissions inventories not only provide a snapshot of emissions the community is responsible for within a given year, but they also act as the basis for measuring progress and provide public agencies with a framework to track emissions over time and assess the effectiveness of CAP implementation.

The standard GHG emissions inventory used in the climate action planning process, known as a "production-based" inventory, estimates GHG emissions generated within a defined geographic boundary during a single year. It identifies the sources, activities, and sectors that are producing these emissions and the relative contribution of each, while also providing a baseline used to forecast emissions trends into the future. This differs from a "consumption-based" inventory, which analyzes the emissions related to goods and services that are consumed within a defined geographic territory,

regardless of where they are produced. The emissions captured by a consumption-based inventory in one community would be captured within the production-based inventory of another community. Therefore, utilizing a production-based inventory for climate action planning purposes helps to define the limits of what emissions a city ultimately accounts for and also prevents the double-counting of emissions across communities. [1]

The City has developed several GHG emissions inventories which provide detailed accounting of the sources and quantities of GHG emissions generated from activities within the community for different years. These inventories are used to 1) set reduction targets that are consistent with state objectives and 2) create solutions for reducing GHG emissions locally through the creation of a CAP. GHGs are quantified following methods outlined in the ICLEI – Local Governments for Sustainability (ICLEI) U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions (Community Protocol), Version 1.2.[2] Emissions are reported in metric tons of carbon dioxide equivalent ($MTCO_2e$), the standard measurement for the amount of GHG emissions produced and released into the atmosphere. See **Appendix A** for additional details.

One Metric Ton of Carbon Dioxide Gas



At standard pressure and 59°F, one metric ton (2,205 lb.) of carbon dioxide gas ($MTCO_2$) occupies 117,631 gallons. It would fill a cube 26 feet, 8 inches high.

Source: "Actual volume of one metric ton of carbon dioxide gas" (CC BY 2.0) by Carbon Visuals. https://www.flickr.com/photos/carbonquilt/8228691679

[1] While the City will utilize a production-based inventory exclusively for this plan, there is an increasing trend to look at local emissions from a consumption-based perspective as well. Providing insight to consumption habits shows the real impact of the materials used and the resulting waste produced by the local community. In 2016, the University of California, Berkeley's CoolClimate Network and the Bay Area Air Quality Management District conducted consumption-based inventories for communities throughout the San Francisco Bay Area, which can be accessed here: https://coolclimate.berkeley.edu/inventory.

[2] ICLEI – Local Governments for Sustainability USA. 2019. *U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions*. Version 1.2. Accessed January 26, 2021.

Fremont's First GHG Emissions Inventory (2005)

The City's first CAP, adopted in 2012, relied on a 2005 baseline GHG emissions inventory as the first community-wide accounting of Fremont's emissions. The 2005 baseline inventory estimated community emissions in eight sectors: Residential Building Energy, Nonresidential Building Energy, On-Road Transportation, Off-Road Vehicles and Equipment, Public Transit, Solid Waste, Water Supply, and Wastewater Treatment, as described in **Table 2-1** below.

Table 2-1: Fremont Community GHG Emissions Inventory Sectors

EMISSIONS SECTOR	DESCRIPTION
Residential Building Energy	Residential building energy emissions are associated with the consumption of electricity and natural gas in homes within the City.
Nonresidential Building Energy	Nonresidential building energy emissions are associated with the consumption of electricity, natural gas, and diesel in nonresidential buildings within the City.
On-Road Transportation	On-road transportation emissions are associated with gasoline and diesel fuel consumption from motor vehicles on local and regional roadways.
Off-Road Vehicles and Equipment*	Off-road emissions are associated with gasoline and diesel fuel use from construction and mining, entertainment, industrial, lawn and garden, commercial, and recreational equipment, as well as railyard operations and transportation refrigeration units.
Public Transit	Public transit emissions are associated with the consumption of electricity for passenger miles ridden on BART trains by residents.
Solid Waste	Solid waste emissions are associated with the decomposition of community-generated mixed and organic waste in landfills.
Water Supply	Water emissions are associated with the electricity used to supply, convey, treat, and distribute water in the City.
Wastewater Treatment	Wastewater treatment emissions include process and fugitive emissions, stationary emissions from the combustion of digester gas, and energy-related emissions.

*The Off-Road Vehicles and Equipment sector was not included in the original 2005 inventory that was incorporated into the City's 2012 CAP. *Climate Ready Fremont* adds the Off-Road Vehicles and Equipment sector to the 2005 baseline, 2018 inventory update, and all forecast years using the same methodology.

Source: Ascent Environmental, 2023

When additional GHG emissions inventories were conducted for subsequent years, the 2005 baseline emissions inventory was revised to reflect the most current methodology and to account for more accurate sources of data where available. Based on the most recent modeling conducted for the revised baseline inventory, community activities in the City generated 1,634,965 $MTCO_2e$ in 2005. The largest emissions-generating sectors included on-road transportation, nonresidential building energy, and residential building energy.

The City's 2005 baseline emissions by sector are presented alongside the 2018 inventory (discussed on the next page) in **Table 2-3** and **Figure 2-3**.

Fremont's Most Recent GHG Emissions Inventory (2018)

In preparation of *Climate Ready Fremont*, the City developed an updated baseline inventory which evaluated community emissions in 2018. While the City completed regular inventory updates for the years 2010 and 2015 in addition to the 2005 and 2018 inventories, *Climate Ready Fremont* will focus primarily on the total emissions reductions achieved between 2005 and 2018. The 2018 inventory is utilized as the new baseline in this plan for forecasting future emissions for the years 2030 and 2045, as well as for the emissions reduction calculations of *Climate Ready Fremont* measures presented in Chapter 3.

In general, the organization of the 2018 inventory is consistent with that of the 2005 inventory. Due to improvements in data collection and reporting, the 2018 inventory includes more accurate values in the off-road vehicles and equipment sectors than in past inventories, including emissions from nonresidential back-up generators not accounted for previously. Additionally, the 2018 inventory includes cleaner grid-based electricity offered by East Bay Community Energy (EBCE), which began serving the community in 2018.[3] A 2020 inventory is not being utilized as the baseline of this plan due to emissions anomalies resulting from the economic disruptions of the global COVID-19 pandemic.

Passenger and freight vehicles account for 63% of community emissions.

Homes and businesses account for 28% of community emissions.

As shown in **Table 2-2**, the 2018 inventory estimates that community emissions were 1,242,786 $MTCO_2e$ in 2018, a reduction of 24 percent from 2005.[4]

Table 2-2: Fremont 2018 Community GHG Emissions Inventory

EMISSIONS SECTOR	GHG EMISSIONS ($MTCO_2e$)	PERCENT OF TOTAL
On-Road Transportation	783,601	63.1%
Nonresidential Building Energy	177,163	14.3%
Residential Building Energy	172,974	13.9%
Solid Waste	57,018	4.6%
Off-Road Vehicles and Equipment	46,318	3.7%
Wastewater Treatment	4,135	0.3%
Public Transit	997	0.1%
Water Supply	577	0.0%
TOTAL*	**1,242,786**	**100%**

*Totals may not sum exactly due to independent rounding.

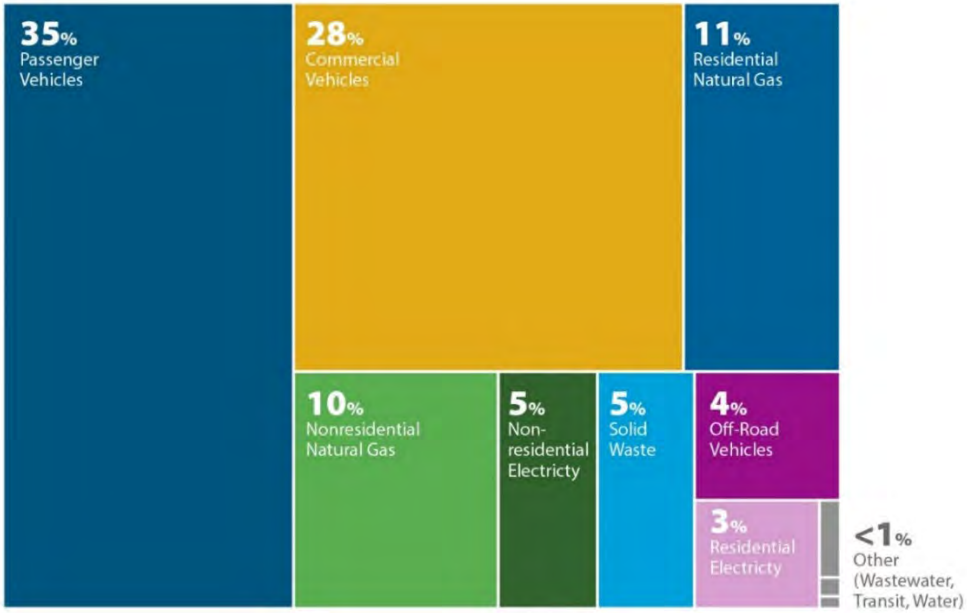
Source: City of Fremont, 2020

[3] Note: The 2018 GHG emissions inventory serves as the baseline for all emissions reductions calculations of *Climate Ready Fremont* measures. The City chose not to conduct a more recent inventory update due anticipated emissions anomalies from the global COVID-19 pandemic.

[4] City of Fremont. 2020. *2018 Greenhouse Gas Emissions Inventory.*

As can be seen in **Figure 2-1**, on-road transportation (passenger vehicles and commercial vehicles) accounts for the bulk of community emissions at approximately 63 percent. Nonresidential and residential building energy usage (natural gas and electricity) each contribute approximately 14 percent of community GHG emissions. Solid waste, off-road vehicles and equipment, wastewater treatment, public transit, and water supply each contribute 5 percent or less of total emissions.

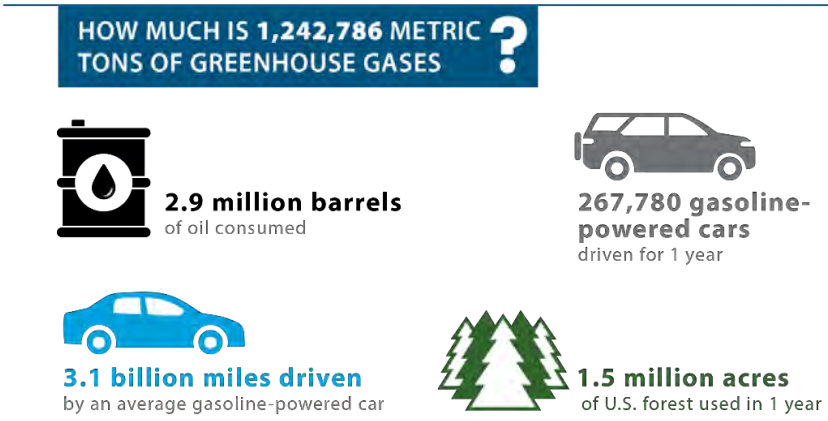
Figure 2-1: Fremont 2018 Community GHG Emissions Inventory by Percentage



Source: City of Fremont, 2020

As shown in **Figure 2-2**, 1,242,786 $MTCO_2e$ is equivalent to driving 267,780 gasoline-powered passenger vehicles for one year, traveling 3.1 billion miles in a gasoline-powered car, or consuming 2.9 million barrels of oil. It would require 1.5 million acres of forest to sequester that same amount of carbon in one year. (As a point of comparison, a total of 2.6 million acres of forest were burned in California wildfires in 2021.)[5]

Figure 2-2: Fremont 2018 Community GHG Emissions Equivalencies



Source: EPA 2022; adapted by Ascent Environmental, 2023

[5] U.S. Environmental Protection Agency. 2021. *Greenhouse Gas Equivalencies Calculator*. Available: https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator. Accessed October 1, 2021.

Emissions Reductions Achieved within First CAP

Evaluating community GHG emissions over time is a crucial element of climate action planning. Tracking and comparing emissions levels allows Fremont to assess where progress has been made and which emissions sources and sectors should be prioritized in planning. A comparison of the City's GHG emissions by sector in 2005 and 2018 is presented in **Table 2-3** and illustrated in **Figure 2-3**.

Table 2-3: Fremont Community GHG Emissions Inventories

EMISSIONS SECTOR	2005 GHG EMISSIONS ($MTCO_2e$)	2018 GHG EMISSIONS ($MTCO_2e$)	PERCENT CHANGE
On-Road Transportation	865,002	783,601	-9.4%
Nonresidential Building Energy	440,150	177,163	-59.7%
Residential Building Energy	245,222	172,974	-29.5%
Solid Waste	36,256	57,018	57.3%
Off-Road Vehicles and Equipment*	34,988	46,318	32.4%
Wastewater Treatment	7,025	4,135	-41.1%
Public Transit	4,210	997	-52.8%
Water Supply	2,111	577	-86.3%
TOTAL**	**1,634,965**	**1,242,786**	**-24.0%**

*The updated baseline includes the off-road sector, an emissions category not included in the 2005 baseline inventory reflected in the 2012 CAP due to lack of available data and quantification methodologies at that time.
**Totals may not sum exactly due to independent rounding.
Source: City of Fremont, 2020

Overall, community GHG emissions decreased by 24 percent between 2005 and 2018 despite increases in population, employment, energy consumption, and vehicle travel. All sectors showed decreases in emissions, except for solid waste and off-road vehicles and equipment, which increased primarily due to a difference in accounting methodology.

Primary Reasons for Emissions Decreases between 2005 and 2018 Inventories:

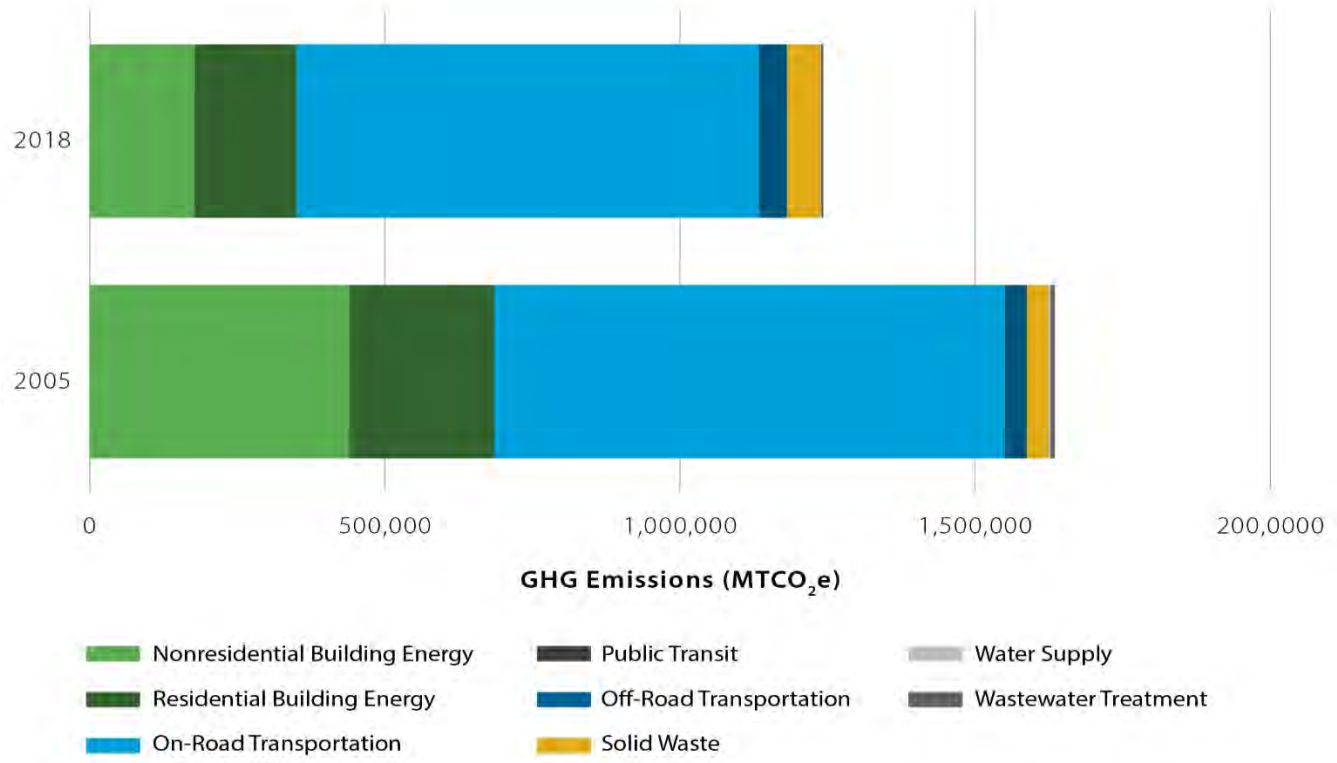
- the inclusion of cleaner electricity provided by EBCE
- improvements in energy efficiencies in the built environment
- increasing installations of rooftop solar photovoltaic (PV) systems
- improvements in the fuel efficiency of internal combustion vehicles
- increasing adoption of hybrid and battery electric vehicles

Other Differences in Emissions Calculations between 2005 and 2018 Inventories:

- the inclusion of emissions from nonresidential back-up generators and off-road equipment categories
- adjustments in calculation methodologies (e.g., equations and emission factors)
- differences in data sources between the two inventory years

Further details regarding differences between the inventories are included in **Appendix A**.

Figure 2-3: Comparison of Fremont Community GHG Emissions Inventories



Source: Ascent Environmental, 2023

Forecasting Future Emissions

GHG emissions forecasts provide a modeled estimate of future emissions levels based on a continuation of current trends in activity, population, and job growth, while also accounting for known regulatory actions by federal and state agencies—i.e., "legislative actions"—that are expected to reduce emissions in the future. Emissions forecasts provide insight into the scale of local GHG emissions reductions needed to achieve the City's targets after applying anticipated reductions from regulatory actions.

Climate Ready Fremont forecasts future emissions for the years 2030 and 2045, which align with the state's GHG reduction target years established in key legislation and policies, including Senate Bill 32 and Assembly Bill 1279 (see summary on next page). Forecasted emissions are based on a variety of scaling factors for each sector—or activities that occur within sectors in the City—and only account for emissions reductions associated with implementation of adopted federal and state legislation and regulations.

Forecasted emissions are based on growth projections provided by the Metropolitan Transportation Commission (MTC) and the California Department of Finance (DOF). **Table 2-4** shows projected growth for population, households, employment, and annual vehicle miles traveled (VMT) for each target year.

Table 2-4: City of Fremont Demographic Forecasts

FORECAST FACTOR	2018	2030	2045
Population	232,685	239,610	283,656
Households	73,467	79,215	89,560
Employment	115,403	110,300	140,683
Annual Vehicle Miles Traveled			
Passenger Vehicles	1,309,215,427	1,384,190,409	1,564,511,455
Commercial Vehicles	263,167,145	355,258,854	399,945,546

Source: MTC 2018; MTC 2020; DOF 2020; calculations conducted by Ascent Environmental in 2021

The 2030 and 2045 forecasts are presented together as the "No Local Action Scenario." The "No Local Action Scenario" represents the absolute minimum emissions reductions that could be achieved by currently adopted state legislation and regulations. It does not account for goals established by executive orders or targets established by federal or state agencies, nor does it factor in the potential reductions from forthcoming legislation that has yet to be written into law.

"No Local Action Scenario" is:

- A way to understand how currently adopted legislation will impact GHG reductions in the future
- A way to account for future population, jobs, and housing growth
- A snapshot in time of a future emissions trajectory if no new climate actions were implemented

"No Local Action Scenario" is not:

- A forecast based on goals and targets that have yet to be adopted as law
- A forecast based on forthcoming legislation
- A forecast based on possible future technology advances or behavior changes
- A realistic projection of future GHG emissions reductions trends

Details on how the forecasts were developed, legislative actions applied, and the activity data used to forecast emissions in each sector can be found in **Appendix A**.

California Climate Legislation and Regulations

Climate Mitigation Legislation

Executive Order S-3-05 (2005) directs California to reduce statewide GHG emissions to 1990 levels by 2020 and 80 percent below 1990 levels by 2050.

Assembly Bill 32, the **Global Warming Solutions Act of 2006**, establishes regulatory requirements to reduce statewide emissions to 1990 levels by 2020 and gives the California Air Resources Board (CARB) the authority to develop the regulations and market mechanisms necessary to achieve these reductions.

Senate Bill 32 (2016) codifies into statute the 2030 target of 40 percent below 1990 levels and places California on a trajectory toward meeting the goal of reducing statewide emissions to 80 percent below 1990 levels by 2050.

The **Climate Change Scoping Plan: A Framework for Change (adopted in 2008 and updated in 2014, 2017, and 2022 by CARB)** identifies the approach and framework California will take to meet its GHG reduction targets.

Assembly Bill 1279 (2022) requires California to achieve net zero GHG emissions as soon as possible but no later than 2045, to achieve and maintain net negative GHG emissions thereafter, and to ensure that by 2045 anthropogenic GHG emissions are reduced by at least 85 percent below 1990 levels.

Climate Adaptation Legislation

In response to **Executive Order S-13-08 (2008)**, the California Natural Resources Agency (CNRA) releases the State's first adaptation plan as the **2009 California Climate Adaptation Strategy**, summarizing climate change impacts and recommending adaptation strategies. The 2014 update, entitled ***Safeguarding California***, builds upon the 2009 plan while addressing gaps in the state's preparation for climate risks.

Assembly Bill 1482 (2015) requires that the **California Climate Adaptation Strategy** be updated by July 1, 2017, and every three years thereafter.

Senate Bill 246 (2015) directs the California Governor's Office of Planning and Research (OPR) to establish the **Integrated Climate Adaptation and Resilience Program (ICARP)** to coordinate regional and local climate adaptation efforts with State strategies. The updated ***California Adaptation Planning Guide*** was released in 2020.

Senate Bill 379 (2015) requires cities and counties to integrate climate change vulnerability, adaptation strategies, and emergency response strategies into the safety element of their general plans.

"No Local Action Scenario" Emissions Forecast

The "No Local Action Scenario" is included below in **Table 2-5**. According to this forecast, City's emissions would decrease by 13 percent between 2018 and 2045, despite increases in population of 22 percent during that same time period.

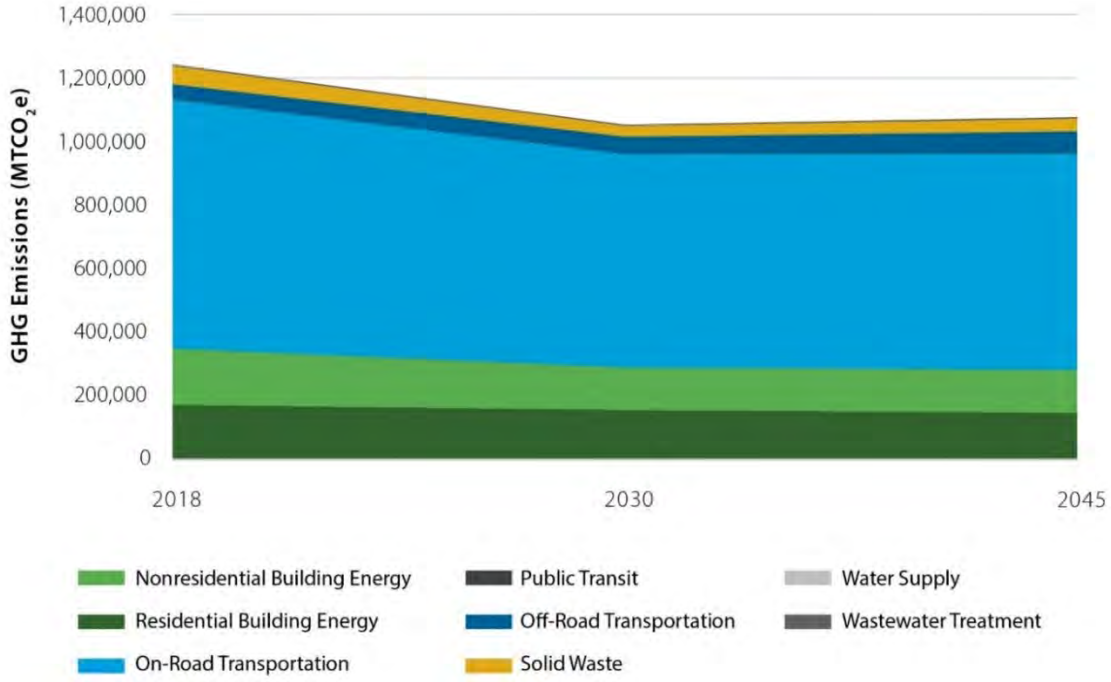
Table 2-5: Fremont 2018 Baseline Inventory and "No Local Action Scenario" Forecast

EMISSIONS SECTOR	Baseline Inventory	"No Local Action Scenario" Forecast	
	2018 ($MTCO_2e$)	2030 ($MTCO_2e$)	2045 ($MTCO_2e$)
On-Road Transportation	783,601	670,547	680,791
Nonresidential Building Energy	177,163	133,693	134,984
Residential Building Energy	172,974	157,096	147,281
Solid Waste	57,018	33,934	40,172
Off-Road Vehicles and Equipment	46,318	53,251	68,442
Wastewater Treatment	4,135	3,741	3,686
Public Transit	997	1,027	1,216
Water Supply	577	128	0
TOTAL*	**1,242,786**	**1,053,414**	**1,076,571**

*Totals may not sum exactly due to independent rounding.

Source: Ascent Environmental, 2021

Figure 2-4: Fremont Community GHG Emissions by Sector – "No Local Action Scenario" Forecast



Source: Ascent Environmental, 2023

Establishing Emissions Reductions Targets

Alignment with State Carbon Neutrality Targets

The emissions reduction targets in *Climate Ready Fremont* have been established to be consistent with statewide GHG emissions targets. As directed by Senate Bill 32 (2016) and Assembly Bill 1279 (2022), the State aims to:

- Reduce annual GHG emissions to 40 percent below 1990 levels by 2030,
- Achieve net zero GHG emissions[6] (i.e. carbon neutrality) no later than 2045,
- Achieve and maintain net negative GHG emissions thereafter, and
- Reduce statewide anthropogenic GHG emissions[7] to 85 percent below 1990 levels by 2045.

The State's 2030 and 2045 targets are in line with the scientifically established levels needed to limit the rise in global temperature to no more than 2 degrees Celsius (°C) | 3.6 degrees Fahrenheit (°F) above pre-industrial levels. A 2°C rise in global temperature is the warming threshold at which major climate disruptions, such as super droughts and rising sea levels, are projected. These targets also pursue efforts to limit the global temperature increase even further to no more than 1.5°C | 2.7°F, in alignment with the goals of the United Nations Framework Convention on Climate Change (UNFCC) Paris Agreement of 2015.[8]

Fremont's Carbon Neutrality Goal

The City's 2030 target and 2045 carbon neutrality goal expressed in Fremont City Council Resolution 2019-03 are in alignment with the GHG emissions reduction targets of the State. GHG reduction targets for *Climate Ready Fremont* were developed relative to the City's updated 2018 baseline emissions inventory, consistent with guidance provided by the California Air Resources Board (CARB).

The City's community GHG reduction targets for *Climate Ready Fremont* are as follows:

- 2030 target: 55 percent below 2005 levels (approximately 30 percent below 2018 levels); and
- 2045 target: carbon neutrality.

The City's 2030 target requires annual GHG emissions to be reduced to 875,295 $MTCO_2e$ in 2030. The City has adopted a target to achieve carbon neutrality (0 $MTCO_2e$) no later than 2045, consistent with the State's goal under AB 1279.

Achieving Emissions Reductions Targets

The City has already made progress in reducing its GHG emissions. As of 2018, the City reduced emissions by 24 percent from its 2005 baseline level. To meet the City's future targets, the City needs to reduce emissions below 2018 levels by another 30 percent by 2030. The amount of GHG emissions reductions required to achieve this target is called the "Local Emissions Gap." **Table 2-6** and **Figure 2-5** display the City's forecasted emissions and targets.

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[6] Net zero GHG emissions means that GHG emission to the atmosphere are balanced by removals of GHG emissions over a period of time.

[7] Anthropogenic GHG emissions are human-caused GHG emissions. This target focuses on the gross GHG emissions to the atmosphere only and not on the balance of GHG emissions with removals (i.e. sequestration) of GHG emissions as the net zero emissions target does.

[8] United Nations. 2015. *Paris Agreement.* Available: https://unfccc.int/sites/default/files/english_paris_agreement.pdf. Accessed October 1, 2021.

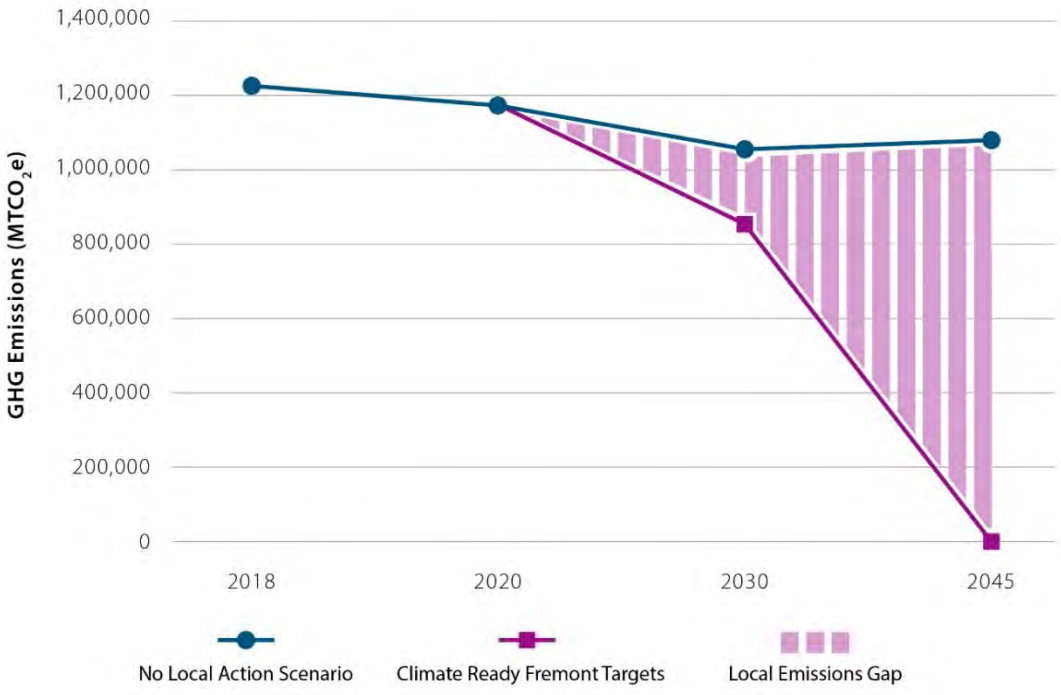
Table 2-6: City of Fremont GHG Emissions Reduction Targets and "No Local Action Scenario" Summary

EMISSIONS	2018	2030	2045
No Local Action Scenario Emissions ($MTCO_2e$)	1,242,786	1,053,414	1,076,571
Target Reduction below 2018 Levels	NA	~30%*	100%
Target Annual Emissions ($MTCO_2e$)	NA	875,295	0
Local Emissions Gap ($MTCO_2e$)	**NA**	**178,119**	**1,076,571**

*The 2030 Reduction Target is 367,491 $MTCO_2e$, or a 29.57% reduction from the 2018 baseline emissions level.
[Target Annual Emissions] = [2018 No Local Action Scenario Emissions] – [Target Reduction below 2018 Levels]
[Local Emissions Gap] = [No Local Action Scenario Emissions] – [Target Annual Emissions]
NA = not applicable.

Source: Ascent Environmental, 2021

Figure 2-5: Fremont Community "Local Emissions Gap"



Source: Ascent Environmental, 2023

Closing the "Local Emissions Gap"

State and federal regulations alone will not be sufficient to achieve the City's GHG emissions reduction targets and close its "Local Emissions Gap." The City aims to achieve these reductions through a series of local strategies, measures, and actions that can be implemented both within City operations as well as at the community-scale. The next chapter of *Climate Ready Fremont* presents the strategies, measures, and actions that have been quantified to close the Local Emissions Gap as well as increase community resiliency to climate change.

Climate Ready Fremont Strategies & Measures

Introduction to Strategies and Measures

This chapter includes the strategies, measures, and actions that the City, residents, businesses, and partner organizations will implement to reduce greenhouse gas (GHG) emissions and improve community resilience to the impacts of climate change. Collectively, the strategies, measures, and actions identified in this chapter will allow the City to meet its GHG reduction target for the year 2030, while demonstrating significant progress towards the longer-term goal of becoming carbon neutral by the year 2045.

This chapter outlines the **31 strategies** that will both mitigate GHG emissions and enhance the City's ability to adapt to the impacts of climate change. The strategies are organized under the following eight focus areas.

1) Buildings and Energy
2) Infrastructure and Equipment
3) Land Use and Mobility
4) Materials and Waste
5) Natural and Urban Landscapes
6) Adaptation and Resiliency
7) Green Economy
8) Public Participation and Engagement

Each focus area includes one or more strategies, and each strategy includes one or more measures to reduce GHG emissions and adapt to climate change. Measures may be applicable to the community, City operations, or both. Specific actions are listed under each measure that define the activities, programs, policies, and projects that the City will implement or support to achieve the objectives of *Climate Ready Fremont*. **Chapter 4** provides a "game plan" for the implementation of priority actions within three years of adoption of *Climate Ready Fremont*. Strategies and measures are by and large intended to reduce GHG emissions and enhance community resiliency. At the same time, the implementation of measures will also result in positive community co-benefits (identified in **Chapter 1**), including equity, air pollution prevention, health and well-being, infrastructure reliability, community resilience, local economic impact, and resource preservation.

The strategies and measures included in this chapter were based on a combination of factors, including the results of the City's 2018 GHG inventory and forecasts, robust community engagement, feedback from City staff, and the best available climate action planning guidance.

Figure 3-1 describes the hierarchy and provides definitions of strategies, measures, and actions.

Figure 3-1: Hierarchy of Strategies, Measures, and Actions for *Climate Ready Fremont*

Source: Ascent Environmental, 2023

GHG Emissions Reduction Quantification Analysis

To prepare *Climate Ready Fremont*, the City conducted GHG quantification analysis to estimate potential emissions reductions associated with all measures. GHG emissions reductions were quantified for community-wide measures when substantial evidence and reasonable assumptions were available to support calculations. Measures that are expected to reduce GHG emissions but could not be quantified due to a lack of available data or quantification methods are still included in *Climate Ready Fremont*.

The total GHG emissions reductions calculated from all quantified community measures is 295,054 metric tons of carbon dioxide equivalent ($MTCO_2e$) by 2030. Should Fremont implement all of the quantified measures presented within *Climate Ready Fremont* by 2030, the resulting local emissions reductions will surpass Fremont's established 2030 target. The results of the quantification analysis are shown in **Table 3-1** below.

Table 3-1: Fremont Community GHG Emissions Quantification Analysis

EMISSIONS	2018	2030	2045
No Local Action Scenario Emissions ($MTCO_2e$)	1,242,786	1,053,414	1,076,571
Target Percent Reduction Below 2018 Levels	-	30%	100%
Reduction Needed to Meet Target ($MTCO_2e$)	-	178,119	1,076,571
Total Reductions from Measures ($MTCO_2e$)	-	**295,054**	**741,870**
Remaining Gap to Target ($MTCO_2e$)	-	(116,936)*	334,701
Target Met?	**-**	**Yes**	**No**

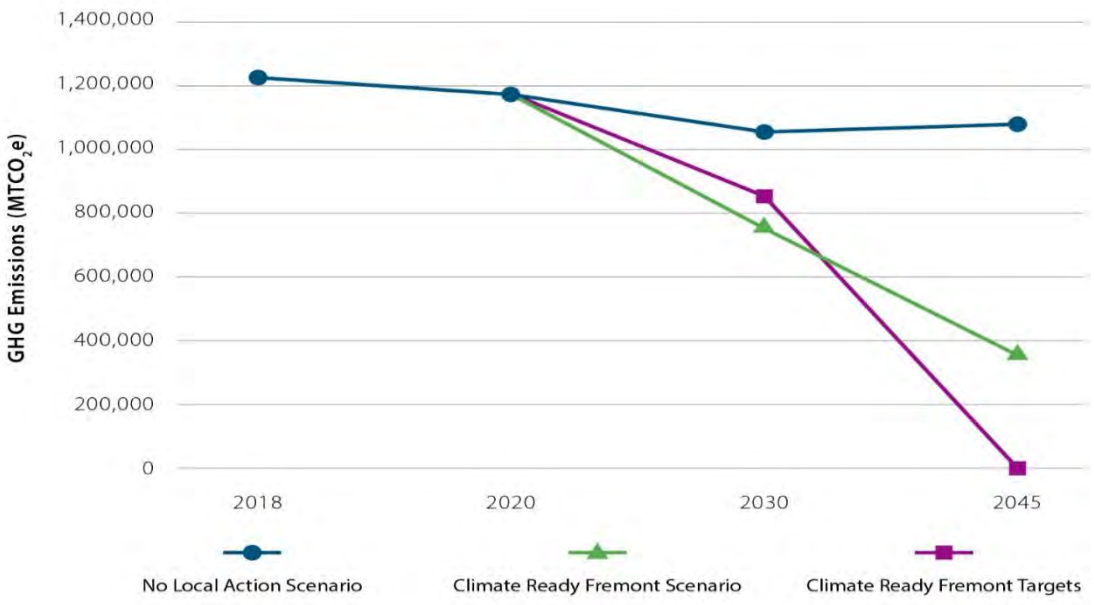
Notes: Totals may not sum exactly due to independent rounding.
*Indicates target has been achieved with a surplus of reductions.
Source: Ascent Environmental, 2021

If the City implements the GHG emissions reduction measures quantified within *Climate Ready Fremont*, it will achieve and, in fact, surpass its 2030 emissions reduction target. However, due to limitations in forecasting beyond 10 years regarding new state and federal climate legislation, Fremont is projected to fall short of meeting its 2045 carbon neutrality target. Therefore, as the City moves forward with implementing *Climate Ready Fremont*, staff will continue to monitor projections and the changing context and update the plan as needed.

Figure 3-2 shows the No Local Action Scenario trajectory in comparison to the City's GHG reduction targets and the *Climate Ready Fremont* scenario. This is what emissions would look like if the City did not take any additional action on climate change and there were no additional changes to climate policy at the regional, state, or federal level.

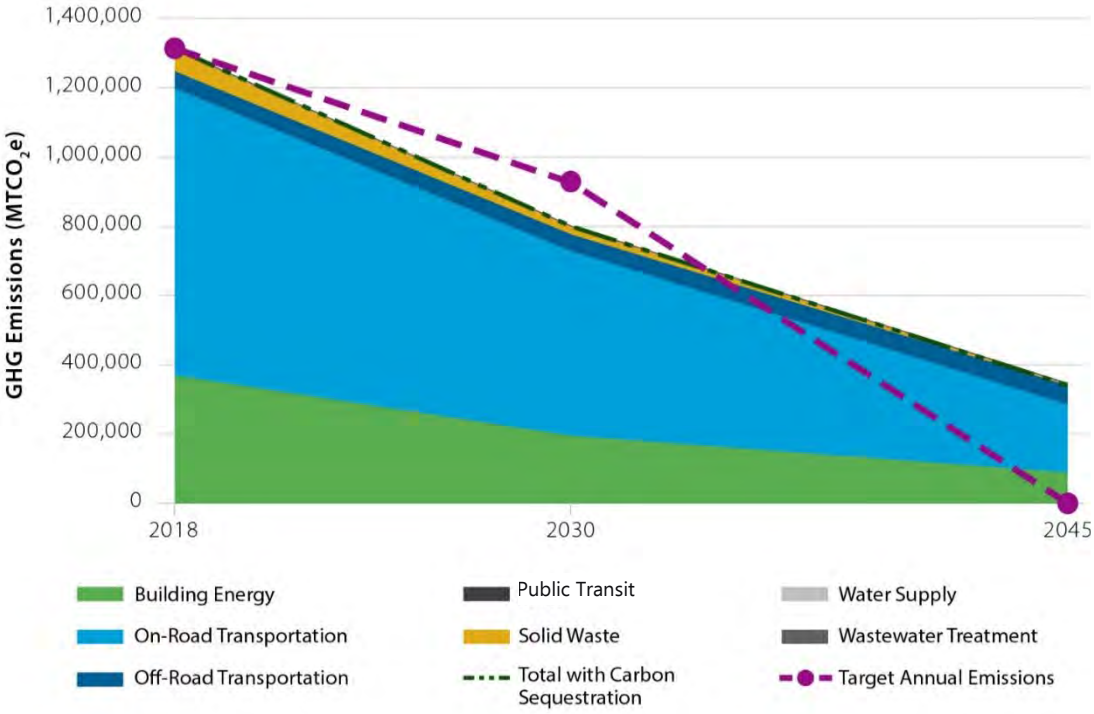
Figure 3-3 shows the community-wide GHG emissions reductions achieved through implementation of the *Climate Ready Fremont* strategies, measures, and actions that follow, organized by the sectors used for the inventory and forecasts.

Figure 3-2: *Climate Ready Fremont* Scenario and Targets Compared to No Local Action Scenario



Source: Ascent Environmental, 2023

Figure 3-3: *Climate Ready Fremont* Scenario by Sector Compared to Reduction Targets



Source: Ascent Environmental, 2023

Organization of Focus Area Sections

Each focus area, together with its associated strategies, measures, and actions, is presented in the following sections.

Each section begins with a cover page listing the **focus area** and the **strategies** within that area. Strategies serve as the foundation for reducing GHG emissions and strengthening community resilience to climate change.

Each strategy is then presented with the following information.

- **A long-term vision statement** is included and summarizes what a 2045 carbon neutral Fremont would look like if the strategy was fully realized.
- Information describing the **background and context** for the strategy is included.
- The **measures**—more specific expressions of the strategy—are listed along with their identifying measure code (e.g., BU-1, BU-2). This code corresponds with the detailed list of measures included in **Appendices B & C**. Measures may be applicable to the community, City operations, or both. The measure's **co-benefits**, described in further detail in **Chapter 1**, are shown as colored icons. These will benefit both Fremont residents and businesses.
- The **quantified GHG emissions reduction potential** for community-wide measures is also presented. These measures were quantified when substantial evidence and reasonable assumptions were available to support calculations. The "Quantified Community GHG Reduction" graphic represents the quantified percentage of emissions reduction expected from a particular measure compared to the total calculated emissions reduction of 295,054 $MTCO_2e$ for Fremont by the year 2030, as shown in **Table 3-1**. For measures where there is quantifiable emissions reduction potential but it has already been quantified by another measure, the text "GHG reduction captured within Measure XX-X" is displayed; this is to prevent double counting of emissions reductions. Measures that are expected to reduce GHG emissions but cannot be quantified due to a lack of available data or quantification methods are still included within each strategy. If the "Quantified Community GHG Reduction" percentage is not displayed for a specific measure, the measure has not been quantified.
- The **specific actions** within each measure are shown and grouped into two categories, "Community-Level" and "City Operations." The actions are specific activities, programs, policies, and projects the City will implement or support to achieve the measure and, ultimately, the objectives of *Climate Ready Fremont*.

Priority rankings and completion deadlines for the actions are not specified within Chapter 3. For quantified measures, assumptions regarding how measures will be implemented over time and the resulting emissions reductions that those measures will generate at different points of time are included in **Appendices B & C**. The time it takes to complete each action will vary.

Chapter 4 includes the City's "Game Plan" for implementing priority actions within the first three years of adoption of *Climate Ready Fremont*. The City is committed to implementing *Climate Ready Fremont* and achieving the 2030 emissions reduction target.

Quantification details and full descriptions of each action can be found in **Appendices B & C**.

BUILDINGS AND ENERGY

Strategy 1. Clean and Renewable Power Use

Strategy 2. Building Electrification and Low-Carbon Design

Strategy 3. Building Energy Efficiency and Demand Management

Strategy 4. Building Energy Resilience

Strategy 5. Water Conservation in Buildings

Strategy 6. Waste Reduction in Building Construction and Demolition

Strategy 1.
Clean and Renewable Power Use

Long-Term Vision: Buildings and operations throughout Fremont utilize 100 percent carbon free power, with many incorporating on-site renewable power sources.

The first strategy within the Buildings and Energy focus area is to use clean, renewable, and locally sourced electricity generated on-site or transmitted through the electrical grid. In 2018, East Bay Community Energy (EBCE), a local community choice energy authority, began operation as the default electricity provider in Fremont, offering low- and no-carbon options for grid electricity. By 2030, EBCE has mandated that it will provide 100 percent clean power across its service territory. Measures within this strategy focus on accelerating the City's transition to 100 percent clean power through the deployment of on-site renewable energy sources and clean power electricity service plans that are supported by Fremont's General Plan goals 7-9 and 9-2 to encourage renewable energy use in both private buildings and City facilities.

Measure BU-1: Transition to 100 percent clean electricity consumption.

Quantified Community GHG Reduction[1]

Specific Actions to Achieve Measure BU-1

Community Level

BU-C-1.1 Conduct outreach to residents and business owners to encourage voluntary opt-up to EBCE's 100 percent clean electricity service plan (Renewable 100) and educate them on the benefits of community choice energy

BU-C-1.2 Adopt a policy establishing EBCE's Renewable 100 as the default electricity service plan for all residential and commercial accounts

BU-C-1.3 Require all newly built multi-story parking structures to have solar generation capabilities

BU-C-1.4 Require the use of solar heaters for all new swimming pools

BU-C-1.5 Provide incentives for replacing existing swimming pool heaters with solar versions

BU-C-1.6 Encourage the installation of on-site renewable energy generation and clean energy storage systems through education, incentives, and streamlined permitting and inspection services

City Operations

BU-M-1.1 Continue to opt-up City accounts to EBCE's Renewable 100 service plan

BU-M-1.2 Where economically, operationally, and logistically feasible, develop solar generation capacity at City buildings and facilities

[1] Assumes that all electricity consumed by residential and nonresidential customers will be carbon-free by 2030.

Strategy 2.

Building Electrification and Low-Carbon Design

Long-Term Vision: Buildings and facilities are fully electric, emit zero net emissions during their operations, and have low embodied carbon.

The second strategy within the Buildings and Energy focus area is to upgrade and replace carbon-intensive, fossil fuel-based infrastructure and combustion power throughout the building sector with clean electric power and to implement low-carbon building design practices. Combustion processes within buildings—such as space and water heating and cooking—will need to be replaced with carbon-free alternatives that utilize clean electricity wherever possible. In addition, building construction materials—such as lumber, steel, and concrete—will need to reduce their embodied carbon (e.g., the carbon emissions associated with the extraction, manufacturing, and transport of those materials) in order for buildings to achieve carbon neutrality.

Measure BU-2: Require new residential construction to be all electric and low carbon.

Quantified Community GHG Reduction[2]

Specific Actions to Achieve Measure BU-2

Community Level

BU-C-2.1 Adopt a City reach code that requires new residential construction to be all electric

BU-C-2.2 Adopt a City reach code that reduces the embodied carbon in new residential construction such as through the use of low-carbon concrete

BU-C-2.3 Adopt California Green Building Standards Code (CALGreen) Tier 2 residential energy efficiency voluntary measures as local requirements

BU-C-2.4 Work with StopWaste and the Bay Area Regional Energy Network (BayREN) to develop a regional program that encourages the use of building materials that store carbon, such as wood and repurposed concrete

BU-C-2.5 Encourage new development to use high albedo material for walls, surfaces, driveways, parking lots, walkways, patios, and roofing

[2] Assumes that residential development built by July 2024 or later will be all-electric.

Measure BU-3: Require new nonresidential construction to be zero net energy and low carbon.

Quantified Community GHG Reduction[3]

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | EQUITY | LOCAL ECONOMIC IMPACT | RESOURCE PRESERVATION

Specific Actions to Achieve Measure BU-3

Community Level

BU-C-3.1 Adopt a City reach code that requires new nonresidential construction (excluding industrial) to be all electric; where full electrification is not technologically or economically viable, require zero net energy design and/or consider other potential mitigation measures

BU-C-3.2 Adopt a City reach code that requires electric-ready design in new industrial construction and that requires non-core industrial operations—such as space heating and cooling and domestic hot water—to be all electric

BU-C-3.3 Adopt a City reach code that requires new nonresidential construction to demonstrate reductions in embodied carbon, such as through reuse of existing buildings and/or completion of whole building life cycle assessment (WBLCA)

BU-C-3.4 Adopt California Green Building Standards Codes (CALGreen) Tier 2 nonresidential energy efficiency voluntary measures as local requirements

BU-C-3.5 Encourage FUSD and other public institutions to meet green building standards for buildings

BU-C-3.6 Work with StopWaste and BayREN to develop a regional program that encourages the use of building materials that store carbon, such as wood and repurposed concrete

BU-C-3.7 Consider providing development incentives to help offset the costs of building electrification, zero net energy design, and reductions in embodied carbon for both new nonresidential construction and for retrofit projects

BU-C-3.8 Consider providing development incentives such as reduced fees for industrial sites that achieve green certifications

[3] Assumes that all nonresidential development, excluding industrial development, built in 2026 or later will be zero net energy.

Measure BU-4: Retrofit existing residential buildings to be all electric and low carbon.

Quantified Community GHG Reduction[4]

Specific Actions to Achieve Measure BU-4

Community Level

BU-C-4.1 Establish electrification retrofit requirements for residential buildings at the time of substantial building retrofit/renovation or at the time of gas-powered equipment replacement

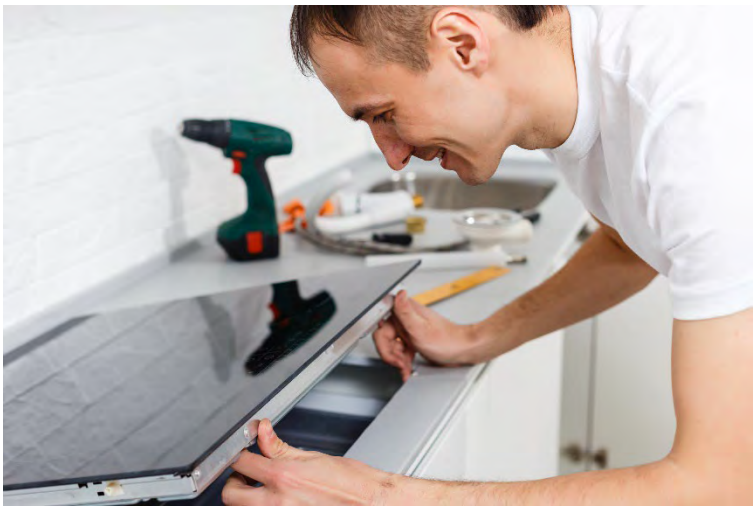
BU-C-4.2 Work with PG&E, BayREN, EBCE, and others to create financial incentives to electrify new and existing buildings

BU-C-4.3 Provide instant permitting of code-compliant residential rooftop solar through use of the U.S. Department of Energy supported SolarAPP+; explore additional opportunities for streamlining permitting of residential electrification projects

BU-C-4.4 Utilize state and federal funding programs to achieve energy efficiency improvements in existing and new buildings; consider matching or enhancing with City incentives where appropriate

BU-C-4.5 Pilot an electrification retrofit program for select existing homes that are low-income and/or health-vulnerable to achieve air quality improvements from methane gas removal

BU-C-4.6 Partner with regional energy agencies to support contractor training and resident education on electric appliances and their installation and maintenance



[4] Assumes that 36 percent of existing residential buildings will be retrofitted by 2030.

Measure BU-5: Retrofit existing nonresidential buildings to be all electric and low carbon.

Quantified Community GHG Reduction[5]

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | LOCAL ECONOMIC IMPACT

Specific Actions to Achieve Measure BU-5

Community Level

BU-C-5.1 Establish electrification retrofit requirements for nonresidential buildings at the time of building retrofit/renovation or equipment replacement (excluding core industrial equipment); design requirements to be proportional to the level of proposed building investment

BU-C-5.2 Require all nonresidential buildings with loading docks to supply sufficient electrical power for delivery trucks and associated equipment

BU-C-5.3 Research the feasibility of requiring electric service upgrades during major retrofits

BU-C-5.4 Partner with EBCE, BayREN, and others to complete a building baseline study and decarbonization roadmap for existing nonresidential buildings

BU-C-5.5 Expand the City's Green Manufacturing program to encourage zero net energy retrofits of manufacturing buildings; promote emerging low energy, low carbon industrial technologies (such as combustion melting, low-carbon cements, etc.)

BU-C-5.6 Partner with PG&E, EBCE, BayREN, and others to promote contractor training and education on electric equipment

Measure BU-6: Require new City buildings to be all electric and low carbon.

GHG reduction captured within Measure BU-3

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | LOCAL ECONOMIC IMPACT | INFRASTRUCTURE RELIABILITY | RESOURCE PRESERVATION

Specific Actions to Achieve Measure BU-6

City Operations

BU-M-6.1 Adopt a City policy to require all new City buildings to be all electric and zero net energy

BU-M-6.2 Encourage use of building materials that store carbon, such as wood, and require low embodied carbon materials in new City construction

BU-M-6.3 Utilize clean power options such as battery storage or hydrogen fuel cell systems for backup emergency power generation, and seek to partner with local technology companies and system providers for clean technology demonstrations

[5] Assumes that 13 percent of existing nonresidential buildings and 10 percent of existing industrial buildings will be retrofitted by 2030.

Measure BU-7: Retrofit existing City buildings to be all electric and low carbon.

GHG reduction captured within Measure BU-5

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | LOCAL ECONOMIC IMPACT | INFRASTRUCTURE RELIABILITY

Specific Actions to Achieve Measure BU-7

City Operations

BU-M-7.1 Replace fossil-fuel supplied appliances and equipment with electric alternatives wherever technologically and economically feasible at the time of equipment replacement

BU-M-7.2 Develop a policy requiring that renovations of City facilities include electric equipment and renewable energy systems whenever feasible

BU-M-7.3 Pursue internal and external funding sources, such as state and energy utility grants, to finance electric appliance upgrades in City facilities

BU-M-7.4 Decommission existing diesel-fueled backup emergency power generators and replace with clean power options such as battery backup or hydrogen fuel cell systems wherever feasible

Strategy 3.

Building Energy Efficiency and Demand Management

Long-Term Vision: Buildings are highly energy efficient and incorporate smart energy management systems to balance peak energy loads.

The third strategy within the Buildings and Energy focus area is to implement energy efficiency and demand management systems in buildings to preserve energy resources, increase the climate resiliency of existing buildings, and reduce demand on the local electrical grid. Fremont's future building stock will consist primarily of existing buildings (i.e., those that are already built today), and new construction will account for a modest proportion of all buildings. Ensuring that buildings conserve energy and reduce their overall power demands will maximize the efficient use of clean electric power resources. This strategy supports goal 7-9 from Fremont's General Plan, which is to provide cost-effective methods to conserve energy. It also supports goal 9-2, which calls for energy-efficient City buildings and facilities.

Measure BU-8: Reduce energy consumption in buildings and operations.

GHG reduction captured within Measure BU-1

AIR POLLUTION PREVENTION | COMMUNITY RESILIENCE | EQUITY

Specific Actions to Achieve Measure BU-8

Community Level

BU-C-8.1 Partner with PG&E, EBCE, BayREN, and others to continue to offer and enhance energy efficiency education, technical assistance, and incentive programs

BU-C-8.2 Prioritize energy programs and incentives for renters, low-income households, and vulnerable community members

City Operations

BU-M-8.1 Implement energy efficiency in City facilities to reduce energy costs and emissions

BU-M-8.2 Upgrade inefficient lighting on City streets and within City parking lots, parks, and plazas and equip them with energy controls

BU-M-8.3 Establish energy conservation protocols for all building staff, including custodial and cleaning services

BU-M-8.4 Expand the use of energy management software and controls across City facilities

Measure BU-9: Promote building energy tracking and performance assessment.

Specific Actions to Achieve Measure BU-9

Community Level

BU-C-9.1 Collaborate with StopWaste to increase the number of homes receiving a voluntary Home Energy Score through BayREN

BU-C-9.2 Investigate requiring energy audits for nonresidential buildings prior to completion of sale to demonstrate potential cost savings from energy efficiency measures and identify available rebates and incentives

BU-C-9.3 Consider providing incentives or technical assistance to support low or no cost energy audits for nonresidential building operators

Measure BU-10: Reduce overall demand on the electrical grid.

Specific Actions to Achieve Measure BU-10

Community Level

BU-C-10.1 Facilitate the adoption of smart grid and other peak load reduction technologies in buildings, such as energy management systems and smart appliances

City Operations

BU-M-10.1 Continue to implement measures to reduce electricity consumption at City facilities during peak events (e.g., heat waves), thereby reducing demand on the grid and the need for the utilities to import power from highly polluting sources

BU-M-10.2 Evaluate opportunities and best practices to reduce peak energy demand and overall energy use in City operations

Strategy 4.
Building Energy Resilience

Long-Term Vision: Emergency facilities are equipped with renewable microgrids, and non-emergency facilities incorporate clean backup power systems.

The fourth strategy within the Buildings and Energy focus area is to increase the resilience of the energy sector to the direct and indirect impacts of climate change. Energy resiliency protects buildings from losing power during a grid outage, including rolling blackouts and Public Safety Power Shutoff (PSPS) events. This is achieved through decentralizing energy supplies through the development of local microgrids (solar + battery systems + smart controllers) and integration of energy storage technologies (e.g., batteries).

Measure BU-11: Increase the development of microgrids at emergency facilities.

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | LOCAL ECONOMIC IMPACT | INFRASTRUCTURE RELIABILITY

Specific Actions to Achieve Measure BU-11

Community Level

BU-C-11.1 Encourage public service facilities such as schools, hospitals, and community centers to develop renewable microgrids

City Operations

BU-M-11.1 Participate in EBCE's Critical Municipal Facilities program to procure renewable microgrid energy systems for City-owned, public-facing emergency facilities

Measure BU-12: Expand local clean backup power availability.

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | LOCAL ECONOMIC IMPACT | INFRASTRUCTURE RELIABILITY

Specific Actions to Achieve Measure BU-12

Community Level

BU-C-12.1 Encourage the installation of battery storage in conjunction with renewable energy generation projects

BU-C-12.2 Require battery storage readiness design in new nonresidential construction

BU-C-12.3 Evaluate opportunities for integrating battery storage readiness in existing homes and businesses at the time of retrofit and/or in conjunction with renewable energy generation installations

BU-C-12.4 Promote discount purchasing programs (e.g., Bay Area SunShares, EBCE's Resilient Home program) to encourage residential rooftop solar plus battery storage systems

Strategy 5.
Water Conservation in Buildings

Long-Term Vision: Buildings are highly water efficient, employ smart water metering, and use rainwater and greywater as appropriate to conserve freshwater resources.

The fifth strategy within the Buildings and Energy focus area is to efficiently use local water resources. With increasing and more severe droughts throughout California, proper water management is essential for the health of residents and the overall ecosystem. Water conservation can also help save energy associated with the pumping and treatment of freshwater and wastewater resources, thereby reducing GHG emissions. This strategy supports goal 7-4 from Fremont's General Plan, which is to have a water conservation program consistent with Alameda County Water District's (ACWD) urban water management plan and the City's GHG reduction goals.

Measure BU-13: Reduce water consumption in buildings.

Quantified Community GHG Reduction[6]

Specific Actions to Achieve Measure BU-13

Community Level

BU-C-13.1 Establish ultra-low-flow fixture retrofit requirements for residential and nonresidential buildings

BU-C-13.2 Continue collaborating with Rising Sun Center for Opportunity (RSCO) to conduct Green House Calls that include the installation of water-saving shower heads and faucet aerators in Fremont homes

BU-C-13.3 Collaborate with ACWD to encourage installation of water conservation measures in existing businesses and residences through surveys and incentive programs

BU-C-13.4 Collaborate with ACWD as they implement the rollout of advanced water metering (AMI) service area wide

City Operations

BU-M-13.1 Evaluate current City water management strategies and identify opportunities for water use reduction

BU-M-13.2 Use ultra-low-flow fixtures in existing and new City facilities wherever appropriate

[6] Assumes a 50 percent reduction in indoor water consumption in new development by 2030 and a 30 percent reduction in indoor water consumption in existing buildings by 2030.

Measure BU-14: Increase the capture of rainwater and use of greywater.

Quantified Community GHG Reduction[7]

COMMUNITY RESILIENCE | EQUITY | INFRASTRUCTURE RELIABILITY | RESOURCE PRESERVATION

Specific Actions to Achieve Measure BU-14

Community Level

BU-C-14.1 Adopt a drought-ready ordinance to require greywater readiness in new residential construction and alterations

BU-C-14.2 Encourage the use of on-site rainwater harvesting and recycled water systems

BU-C-14.3 Consult with ACWD in developing policies and regulations supporting the use of water conserving strategies, including onsite recycled water and greywater systems

BU-C-14.4 Encourage the use of rainwater capture and on-site recycled water for outdoor landscaping and gardening use as well as non-potable indoor use in toilets

City Operations

BU-M-14.1 Investigate opportunities for City use of recycled water, especially within parks and other landscaping

[7] Assumes that 20 percent of households will reuse greywater in 2030, and that those households will reduce their potable water use by 30 percent by 2030.

Strategy 6.

Waste Reduction in Building Construction and Demolition

Long-Term Vision: Materials from buildings and other structures that have reached the end of their useful life are repurposed, recycled, and reused for new construction.

The sixth and final strategy within the Buildings and Energy focus area is to conserve natural and manufactured resources by means of the responsible consumption and recovery of products and materials associated with the building construction and demolition. Waste diversion efforts—e.g. waste prevention and reduction of generated waste through source reduction, reuse, recycling, and composting—limit GHG emissions by reducing the use of raw materials in new construction, reusing and repurposing materials from existing construction into new construction as much as possible, and responsibly disposing of any deconstruction waste that does occur. This strategy supports goal 9-6 from Fremont's General Plan, which is to maximize waste diversion and eliminate landfill waste.

Measure BU-15: Increase sustainable materials use and recovery in construction and demolition (C&D).

AIR POLLUTION PREVENTION | INFRASTRUCTURE RELIABILITY | RESOURCE PRESERVATION

Specific Actions to Achieve Measure BU-15

Community Level

BU-C-15.1 Amend the Fremont Municipal Code to require source separation of nonhazardous C&D debris and consider increasing the required diversion rate from 65% to 70%

BU-C-15.2 Consider amending the Fremont Municipal Code to require new developments to incorporate a minimum of 15% of recycled materials into construction

BU-C-15.3 Consider amending the Fremont Municipal Code to require that all commercial tenant improvement projects and all residential remodels also meet the diversion requirement for nonhazardous C&D waste

City Operations

BU-M-15.1 Phase in higher standards for C&D debris recycled from City projects over time as feasible

BU-M-15.2 Encourage the Fremont Recycling & Transfer Station to obtain certification of its facility from the Recycling Certification Institute (RCI) to increase certainty and build confidence in the C&D recycling marketplace

INFRASTRUCTURE AND EQUIPMENT

Strategy 1. Clean and Renewable Power Infrastructure

Strategy 2. Clean Freight and Delivery Infrastructure

Strategy 3. Clean Mobility Infrastructure

Strategy 4. Critical Infrastructure Protection

Strategy 5. Clean Landscaping and Off-Road Equipment

Strategy 1.
Clean and Renewable Power Infrastructure

Long-Term Vision: All-electric buildings and transportation modes are supported by an advanced electrical transmission and distribution grid.

The first strategy within the Infrastructure and Equipment focus area is to deploy and upgrade public infrastructure that supports the distribution and use of clean, renewable, and locally sourced electricity across the built environment and transportation sectors. The electrical grid is vulnerable to climate change hazards such as wildfire and intense storm events, and electricity distribution is threatened by increasingly common Public Safety Power Shutoff events. Increasing the use of clean electricity reduces GHG emissions while strengthening community resilience to the effects of climate change.

Measure IN-1: Upgrade infrastructure to support the transition to 100 percent clean power.

GHG reduction captured within Measure BU-1

Specific Actions to Achieve Measure IN-1

Community Level

IN-C-1.1 Collaborate with PG&E as they strategically decommission methane gas pipelines in areas where electrification has been or could be implemented

IN-C-1.2 In partnership with regional organizations and state agencies, work with PG&E as they make key upgrades to transmission and distribution systems, substations, and other equipment to enable electrification and renewable energy integration into the electricity grid

IN-C-1.3 Explore the option of a final phase-out date for non-industrial methane gas procurement, infrastructure deployment, and use in Fremont

IN-C-1.4 Consider an ordinance restricting or prohibiting new gasoline service stations, encouraging the development of new cleaner and more sustainable vehicle fueling stations, and encouraging the transition of existing vehicle fueling stations to cleaner and more sustainable alternatives such as clean electricity and green hydrogen

Strategy 2.
Clean Freight and Delivery Infrastructure

Long-Term Vision: Local goods are distributed by a highly efficient, zero-emissions medium- and heavy-duty vehicle fleet.

The second strategy within the Infrastructure and Equipment focus area is supporting the electrification of medium- and heavy-duty vehicles used for freight and delivery by preparing electrical charging and hydrogen fueling infrastructure and grid capacity for this class of vehicles. This strategy builds upon goal 3-6 from Fremont's General Plan, which involves supporting the safe and efficient movement of goods to support the local economy with minimal impact on the community.

Measure IN-2: Promote clean and efficient movement of goods.

GHG reduction captured within Measure IN-3

Specific Actions to Achieve Measure IN-2

Community Level

IN-C-2.1 Assess the potential emissions reductions achievable by traffic control systems that inform drivers of existing conditions and route alternatives

IN-C-2.2 Engage with regional transportation stakeholders to develop policies that support the California Sustainable Freight Action Plan

IN-C-2.3 Collaborate with East Bay Community Energy (EBCE) to develop and implement a Medium- and Heavy-Duty Goods Movement Electrification Blueprint

IN-C-2.4 Streamline and expedite permitting for the deployment of direct current (DC) fast chargers that support medium- and heavy-duty electric vehicles (EVs) at Fremont-based companies

IN-C-2.5 Encourage incentive programs offered by EBCE to install infrastructure for DC fast chargers

IN-C-2.6 Support the implementation of the Medium- and Heavy-Duty Fuel Cell Electric Truck Action Plan for California developed by the Hydrogen Fuel Cell Partnership (H2FCP) and encourage the installation of public hydrogen fueling stations in Fremont that support medium- and heavy-duty hydrogen fuel cell electric vehicles (FCEVs)

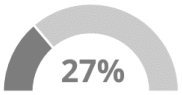
Strategy 3.
Clean Mobility Infrastructure

Long-Term Vision: Carbon-free local travel modes are supported by safe and connected micromobility infrastructure and robust electric vehicle charging capacity.

The third strategy within the Infrastructure and Equipment focus area is supporting clean and efficient multimodal mobility options by deploying electrical charging infrastructure, smart mobility solutions, and bicycle and pedestrian infrastructure improvements. This strategy supports goal 3-3 from Fremont's General Plan which is focused on maximizing the efficiency of the transportation network. This strategy also reinforces the City's 2019 Mobility Action Plan which includes a goal to shift "drive alone" travel and commuting from 73% to 50% by 2040 by increasing the amount of telecommuting, carpooling, transit use, bicycling and walking. Finally, this strategy supports the City's new Active Transportation Plan (ATP), which is currently in progress and combines the City's 2016 Pedestrian Master Plan and 2018 Bicycle Master Plan. The ATP will focus on continuing to enhance transportation infrastructure that creates an encouraging and safe environment for multimodal travel. City priorities for infrastructure investments that promote alternatives to driving include the new Irvington BART Station currently under construction, rapid bus service along the Decoto Road and Fremont Boulevard corridors, and major trail and bikeway projects including the East Bay Greenway Trail, Sabercat Trail, and Dumbarton to Quarry Lakes Trail.

Measure IN-3: Install infrastructure to support electric vehicle (EV) charging and other zero-emission vehicle (ZEV) fueling needs.

Quantified Community GHG Reduction[8]



Specific Actions to Achieve Measure IN-3

Community Level

IN-C-3.1 Encourage and consider incentives for existing gas stations and retail centers to add EV charging and hydrogen fueling stations

IN-C-3.2 Collaborate with EBCE to establish fast-charging mobility hubs at publicly accessible sites that support tenants of multifamily properties and rideshare drivers

IN-C-3.3 Adopt California Green Building Standards Code (CALGreen) Tier 2 residential and nonresidential EV readiness voluntary measures as local requirements

IN-C-3.4 Partner with regional and state agencies to incentivize EV charging at public facilities, office spaces, retail centers, multifamily residential properties, and other publicly accessible properties

IN-C-3.5 Partner with regional agencies to expand the public charging for electric micromobility devices

IN-C-3.6 Utilize the City's public communication channels to share information about existing and new charging locations

[8] Assumes that 29 percent of light duty and 11 percent of medium and heavy duty VMT will be electric by 2030.

Measure IN-4: Increase the use of smart mobility and modernize transportation infrastructure as identified in the City's Mobility Action Plan.

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | EQUITY | INFRASTRUCTURE RELIABILITY | RESOURCE PRESERVATION

Quantified Community GHG Reduction[9]

Specific Actions to Achieve Measure IN-4

Community Level

IN-C-4.1 Continue to implement all traffic signal modernization projects as identified in the Mobility Action Plan

IN-C-4.2 Continue efforts to implement smart mobility technologies for traffic signals, parking, and shared vehicles (e.g., cars, bikes, scooters)

IN-C-4.3 Seek creative solutions and opportunities to partner with other agencies and private sector companies for on-demand shuttle services, including autonomous shuttles

[9] Assumes that traffic signal modernization will reduce passenger vehicle emissions by 7 percent by 2030.

Measure IN-5: Improve pedestrian and bicycle infrastructure as identified in previous City plans and the new Active Transportation Plan.

Quantified Community GHG Reduction[10]

Specific Actions to Achieve Measure IN-5

Community Level

IN-C-5.1 Continue to enhance safe routes to schools through infrastructure improvements and student, parent, and school staff education and engagement

IN-C-5.2 Continue to enhance pedestrian and bicycle infrastructure to support an increase in these forms of transportation

IN-C-5.3 Continue to coordinate the planning of pedestrian and bicycle trail systems with adjacent city and county agencies and special districts

IN-C-5.4 Continue to implement the All Ages and Abilities Vision Bicycle Network (Bicycle Network) presented in the City's 2018 Bicycle Master Plan, with a focus on access to and connection between the Priority Development Areas (PDAs), transit stations, and employment centers

IN-C-5.5 Explore adding infrastructure for secure bicycle parking along the Bicycle Network and in transit-oriented development (TOD) centers

[10] Assumes 50 miles of new bike lanes and 45 miles of new pedestrian paths will be installed by 2030.

Measure IN-6: Replace the City's gasoline and diesel-powered fleet vehicles and other equipment with low-emission and zero-emission vehicles.

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | INFRASTRUCTURE RELIABILITY

GHG Reduction captured within Measure IN-3

Specific Actions to Achieve Measure IN-6

City Operations

IN-M-6.1 Assess need and current capacity and continue to add charging and refueling stations at appropriate City sites to service the fleet's low-emission and zero-emission vehicles

IN-M-6.2 Replace existing light-duty internal combustion engine City fleet vehicles with low-emission and zero-emission vehicles at the time of vehicle replacement, including vehicles used by Public Works, Community Services, Community Development, Police, and Fire

IN-M-6.3 Utilize bicycles or neighborhood electric vehicles (NEVs) for City operations when practical, and encourage sourcing from or partnering with local providers where possible

IN-M-6.4 Educate and encourage City staff to limit idling when using fleet vehicles

IN-M-6.5 Pilot low-emission and zero-emission vehicles for medium- and heavy-duty fleet

Strategy 4.
Critical Infrastructure Protection

Long-Term Vision: Safe, reliable, and resilient energy sources, water resources, and transportation networks protect the community against climate-related disruptions.

The fourth strategy within the Infrastructure and Equipment focus area is to implement climate-smart initiatives that protect critical energy, water, and transportation infrastructure in the City. GHG emission reduction measures alone will only address climate change mitigation; they will not do anything to protect the City from the changing climatic conditions already underway. Protecting and preparing critical infrastructure to be more resilient and adaptive to a changing climate is essential for the health and well-being of the community.

Measure IN-7: Improve energy infrastructure resilience.

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | EQUITY | INFRASTRUCTURE RELIABILITY

Specific Actions to Achieve Measure IN-7

Community Level

IN-C-7.1 Ensure adequate backup power is available to maintain critical facility operations during grid outages and other emergencies; for any diesel generators, ensure that they comply with the U.S. Environmental Protection Agency (EPA) Tier 4 final emissions standards

IN-C-7.2 Encourage installation of local, climate-smart renewable sources of energy, decentralize energy supplies, and increase energy storage capacity to improve energy independence

IN-C-7.3 Partner with PG&E and EBCE to identify and protect critical energy infrastructure from climate hazards including power outages, flooding, and wildfires

IN-C-7.4 Collaborate with PG&E as they modernize the electrical grid for variable and distributed power by upgrading transformers, lines, and other power equipment; support local, regional, and statewide coordination efforts that help to accelerate this transition

Measure IN-8: Improve water and wastewater infrastructure resilience.

HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | LOCAL ECONOMIC IMPACT | INFRASTRUCTURE RELIABILITY | RESOURCE PRESERVATION

Specific Actions to Achieve Measure IN-8

Community Level

IN-C-8.1 Collaborate with Alameda County Water District (ACWD), Union Sanitary District (USD), and Alameda County Flood Control and Water Conservation District (ACFCWCD) to protect vulnerable water and wastewater facilities to ensure an adequate clean water supply during emergencies and disaster recovery

IN-C-8.2 Partner with ACWD and USD as they upgrade water and wastewater systems to accommodate projected changes in water quality and availability

IN-C-8.3 Reduce reliance on external water supplies by shifting towards local sources of water such as greywater, rainwater, air conditioning condensate, and foundation drainage

Measure IN-9: Protect vulnerable transportation infrastructure, services, and systems from climate change impacts.

HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | EQUITY | INFRASTRUCTURE RELIABILITY

Specific Actions to Achieve Measure IN-9

Community Level

IN-C-9.1 Coordinate with community members, transportation agencies, and private entities to identify and protect local and regional transportation, transit, and active transportation corridors that are at risk due to climate change

IN-C-9.2 Use the best available science and resilient design features to improve resiliency in transportation infrastructure

IN-C-9.3 Modify pedestrian walkways and bus shelters to provide shading and install other heat-mitigating materials wherever feasible

Measure IN-10: Assess local vulnerabilities to climate change and incorporate climate adaptation and resiliency into City planning, policies, and infrastructure projects.

HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | EQUITY | INFRASTRUCTURE RELIABILITY

Specific Actions to Achieve Measure IN-10

City Operations

IN-M-10.1 Continue to review and update City maintenance protocols on an ongoing basis to incorporate best practices for preparing for climate vulnerabilities, including provisions for flooding, extreme temperatures, drought, wildfires, and poor air quality as recommended by the California Governor's Office of Emergency Services (CalOES)

IN-M-10.2 Utilize research and findings regarding the local risks of sea level rise from the Alameda County Flood Control and Water Conservation District (ACFCWCD), San Francisco Bay Conservation and Development Commission (BCDC), Metropolitan Transportation Commission (MTC), and Federal Emergency Management Agency (FEMA) to inform the City's capital planning and development processes

IN-M-10.3 As part of the City's Local Hazard Mitigation Plan (LHMP) update process, perform a climate risk analysis of City infrastructure including an evaluation of fire safety, energy and water resiliency, and flooding; based on this analysis, incorporate appropriate climate adaptation and resiliency measures into future capital improvements as funding is available

Strategy 5. Clean Landscaping and Off-Road Equipment

Long-Term Vision: Landscaping, construction equipment, and backup and mobile power sources have zero emissions.

The fifth and final strategy within the Infrastructure and Equipment focus area is to reduce the emissions and air pollution associated with landscaping and off-road equipment by replacing fossil fueled equipment with clean, low-carbon alternatives. This strategy builds upon goal 7-7 from Fremont's General Plan regarding implementation efforts to improve local air quality.

Measure IN-11: Reduce emissions and air pollution associated with landscaping equipment.

Quantified Community GHG Reduction[11]

COMMUNITY RESILIENCE

INFRASTRUCTURE RELIABILITY

Specific Actions to Achieve Measure IN-11

Community Level

IN-C-11.1 Encourage business owners to replace gasoline-powered landscaping equipment with electric equipment

IN-C-11.2 Evaluate a local ordinance that would ban the use of gas-powered landscaping equipment

IN-C-11.3 Partner with BAAQMD and other relevant agencies to support the development of a regional trade-in or rebate program to replace gas- or diesel-powered landscaping equipment with electric alternatives

IN-C-11.4 Support the continued funding and expansion of the State's Clean Off-Road Equipment (CORE) Voucher Incentive Project for zero-emission off-road technologies

City Operations

IN-M-11.1 Continue to replace gasoline-powered park maintenance and landscaping equipment with electric equipment as appropriate

[11] Assumes all new landscaping equipment is electrified starting in 2024 and that 60 percent of existing landscaping equipment will be replaced with zero-emission alternatives by 2030.

Measure IN-12: Reduce emissions and air pollution associated with diesel fuel use in off-road equipment and stationary sources.

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | EQUITY | LOCAL ECONOMIC IMPACT | INFRASTRUCTURE RELIABILITY | RESOURCE PRESERVATION

Quantified Community GHG Reduction[12] 1%

Specific Actions to Achieve Measure IN-12

Community Level

IN-C-12.1 Require new development projects to use renewable diesel in diesel-powered construction equipment; ensure that all relevant diesel equipment complies with the U.S. Environmental Protection Agency (EPA) Tier 4 final emissions standards

IN-C-12.2 Encourage the use of electric-powered construction equipment in all projects requiring City approval

IN-C-12.3 Require that new backup power installations consist of low-carbon technologies such as battery or hydrogen fuel cell technologies wherever feasible; where diesel generators are installed, require that they comply the U.S. Environmental Protection Agency (EPA) Tier 4 final emissions standards (currently required by BAAQMD for generators over 1,000 brake horsepower) and consider opportunities for supplying them with renewable diesel

IN-C-12.4 Collaborate with the California Air Resources Board (CARB), the Bay Area Air Quality Management District (BAAQMD), EBCE, and others on programs and incentives that support the development and distribution of low-carbon, less polluting backup power options and construction equipment

[12] Assumes that 40 percent of construction equipment will use renewable diesel in 2030 and that 40 percent of existing fossil fuel backup generators will be carbon-free by 2030.

LAND USE AND MOBILITY

Strategy 1. Clean and Multimodal Mobility and Connectivity

Strategy 2. Sustainable Land Use Planning

Strategy 1.

Clean and Multimodal Mobility and Connectivity

Long-Term Vision: Walking, biking, and other micromobility options are utilized for short trips; public transit is safe and reliable; carpooling and ridesharing are widely used; and all modes of transit are zero-emissions.

The first strategy within the Land Use and Mobility focus area is to 1) develop and enhance safe, multimodal, accessible, equitable, intelligent, and clean motorized and non-motorized travel options and transit modes, and 2) to enhance community connectivity. Paired with the clean mobility infrastructure measures listed earlier in this chapter, this strategy reaffirms and builds upon the multimodal mobility efforts found within several goals in Fremont's General Plan: goal 2-1 (reducing parking requirements), goal 3-1 (developing complete streets), goal 3-2 (reducing vehicle miles traveled), goal 3-3 (enhancing accessibility, efficiency, and connectivity), goal 3-7 (adopting parking maximums), and goal 4-2 (encouraging complete neighborhoods and sustainable site design). This strategy also supports implementation of the City's new Active Transportation Plan—which is currently in progress and combines the City's 2016 Pedestrian Master Plan and 2018 Bicycle Master Plan—and the City's Mobility Action Plan.

Measure LU-1: Promote and enhance active transportation options as identified in the City's Active Transportation Plan and Mobility Action Plan.

GHG reduction captured within Measure IN-5

Specific Actions to Achieve Measure LU-1

Community Level

LU-C-1.1 Update the City's Bicycle Parking Standards in the Fremont Municipal Code to follow the Association of Pedestrian and Bicycle Professionals (APBP) Bicycle Parking Guidelines

LU-C-1.2 Continue to implement the most progressive safe and complete street design standards as recommended by the National Association of City Transportation Officials (NACTO).

LU-C-1.3 Continue to implement the transportation system improvements of Fremont's Vision Zero Action Plan to enhance pedestrian and bicyclist safety

LU-C-1.4 Achieve and maintain one hundred percent public school participation in Safe Routes to School (SRTS) programs

LU-C-1.5 Continue to raise public awareness of the available bicycle and trail facilities and programs, particularly the low-stress bicycle network proposed by the City's 2018 Bicycle Master Plan

LU-C-1.6 Promote adoption of personal e-mobility modes through outreach, education, and incentive programs from regional agencies, such as the Ride Electric E-Bike Adoption Program from East Bay Community Energy (EBCE)

City Operations

LU-M-1.1 Provide amenities for bicyclists such as secure bicycle parking, showers, and lockers at City facilities

Measure LU-2: Reduce vehicle miles traveled (VMT) and single-occupancy vehicle trips, as identified in Fremont's General Plan.

Quantified Community GHG Reduction[13]

Specific Actions to Achieve Measure LU-2

Community Level

LU-C-2.1 Encourage ride matching, carpooling, high-occupancy vehicle lanes, shuttles, preferential parking for carpools, expanded public transit, and similar strategies to reduce single occupancy vehicle trips

LU-C-2.2 Continue to support the use and expansion of Park & Ride parking lots to promote carpooling and express bus use, as described in Fremont's General Plan

LU-C-2.3 Collaborate with regional transportation agencies and business networks to provide information about, and access to, incentives and services that increase the use of alternatives to single occupant vehicle commuting, including the Bay Area Commuter Benefits Program, the Alameda County Guaranteed Ride Home Program, and the 511 SF Bay traffic information program

LU-C-2.4 Utilize vehicle miles traveled (VMT) (rather than Level of Service) as the criteria for transportation analysis under the California Environmental Quality Act (CEQA) for all development projects in accordance with California Senate Bill 743

City Operations

LU-M-2.1 Encourage City employees to choose alternatives to single-occupant vehicle commuting and advertise these benefits during employee recruitment

LU-M-2.2 During employee recruitment, advertise the City's existing incentives and subsidies for choosing alternatives to single-occupant vehicle commuting

[13] Assumes all new development complies with California Senate Bill 743 and that it achieves a 15 percent reduction in project generated VMT.

Measure LU-3: Encourage the adoption of zero-emission passenger vehicles.

GHG reduction captured within Measure IN-3

AIR POLLUTION PREVENTION | COMMUNITY RESILIENCE | LOCAL ECONOMIC IMPACT

Specific Actions to Achieve Measure LU-3

Community Level

LU-C-3.1 Continue to promote zero-emission passenger vehicle incentive and rebate programs

LU-C-3.2 Coordinate with the Metropolitan Transportation Commission (MTC), Bay Area Air Quality Management District (BAAQMD), and other regional planning agencies to develop action steps and goals to plan the transition to electric vehicles

LU-C-3.3 Partner with regional agencies to develop and promote EV adoption campaigns targeted at low-income and disadvantaged communities, such as BAAQMD's Clean Cars for All Program

LU-C-3.4 Encourage EBCE to offer additional incentives for EV leases/purchases and/or for the installation of residential EV charging units

City Operations

LU-M-3.1 Provide preferential parking for alternatively fueled vehicles at City facilities

Measure LU-4: Increase transit ridership and promote transition to zero-emission transit.

Quantified Community GHG Reduction[14]

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | EQUITY | INFRASTRUCTURE RELIABILITY

Specific Actions to Achieve Measure LU-4

Community Level

LU-C-4.1 As described in Fremont's General Plan, apply street design and development standards that require transit-supportive facilities such as bus stop curb extensions, bus shelters, benches, lighting, sidewalks, and convenient access to bus stops

LU-C-4.2 Coordinate with regional transit agencies—including AC Transit, Valley Transportation Authority (VTA), BART, Capitol Corridor, and Altamont Corridor Express (ACE)—on feasibility and timeline for transition to fossil fuel free transit

LU-C-4.3 Support regional campaigns to increase transit ridership and user safety and comfort

LU-C-4.4 Work with AC Transit to ensure that bus stops and shelters are designed to maximize rider comfort and safety and that they are located in areas that serve community members most dependent on public transit such as youth, seniors, people with disabilities, and low-income individuals

LU-C-4.5 Promote regional transit agencies' sustainability achievements to encourage public transit ridership

City Operations

LU-M-4.1 Continue to explore opportunities for alternative employee commute options including ridesharing and bikesharing programs that support the "last mile commute" from public transit

[14] Assumes that a comprehensive expansion of the transit network will result in a 10.3 percent reduction in passenger VMT in 2030, and that BART's electricity supply will be 95 percent carbon-free by 2030.

Measure LU-5: Increase implementation of Transportation Demand Management (TDM) strategies as identified in Fremont's General Plan.

Quantified Community GHG Reduction[15]

Specific Actions to Achieve Measure LU-5

Community Level

LU-C-5.1 Develop design standards for streets and parking lots to accommodate increased pick-up and drop-off for rideshare passengers

LU-C-5.2 Implement the City's Trip Reduction and Transportation Demand Management (TDM) Ordinance and consider updates to the ordinance that would expand the applicability to additional businesses

LU-C-5.3 Require new developments, particularly those within transit-oriented areas and along transit corridors, to comply with City standards for pedestrian, bicycle, and transit amenities

LU-C-5.4 Coordinate with Alameda County Transportation Commission (Alameda CTC), MTC, and BAAQMD to promote transportation demand programs to local employers, including rideshare, vanpool, telecommuting, transit subsidies, showers and changing facilities, bicycle racks and lockers, and other incentives

LU-C-5.5 Require employers to provide preferential parking for carpools

LU-C-5.6 Support the formation of Transportation Management Associations (TMAs) and other entities that promote TDM to reduce vehicle trips

LU-C-5.7 Evaluate options to incentivize new multifamily residential developments to include a GreenTRIP score in their submittal

LU-C-5.8 Encourage continued support for subsidized transit vouchers

[15] Assumes that the implementation of TDM strategies will result in a 15 percent reduction in passenger commute VMT by 2030.

Measure LU-6: Reduce the amount of parking to encourage transit-oriented development (TOD) as identified in Fremont's General Plan.

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | INFRASTRUCTURE RELIABILITY | COMMUNITY RESILIENCE | RESOURCE PRESERVATION

Quantified Community GHG Reduction[16]

Specific Actions to Achieve Measure LU-6

Community Level

LU-C-6.1 Modify the City's Zoning Code in accordance with California Assembly Bill (AB) 2097 to remove parking minimums for new developments within half a mile of public transit and consider establishing parking maximums in new developments

LU-C-6.2 Update parking standards and regulations to ensure that parking is 1) efficiently designed and addresses the desire to encourage walking, bicycling, the use of alternative fuel vehicles, and public transit use 2) aligns with AB 2097, and 3) considers changing business patterns, technology, consumer behavior, demographics, and changes in vehicle design and technology

LU-C-6.3 Manage the parking supply by implementing measures such as permit parking, parking time limits, and metered parking, especially in high use and transit-oriented development (TOD) areas

LU-C-6.4 Encourage the concept of shared parking for land uses where peak parking demand occurs at different times of the day, thereby reducing the aggregate number of spaces required

[16] Assumes a 10 percent reduction in passenger commute VMT from implementation of parking reduction and management actions by 2030.

Strategy 2. Sustainable Land Use Planning

Long-Term Vision: Land use design is strategically urban with low-impact, high-density, and mixed-use development concentrated near public transit hubs.

The second strategy within the Land Use and Mobility focus area is sustainable land use planning. Land use development directly impacts what method people use to travel and how often they travel by that method (i.e. mode share), and therefore has a significant impact on the resulting GHG emissions. By building mixed-use development near transit, new development projects can reduce the need of residents and employees to travel great distances to work, school, home, errands, and other amenities. By evaluating the environmental impact of land use activity over the entire life cycle of a project (i.e. life cycle assessment) the GHG impact of land use decisions can be further minimized. Sustainable land use planning also considers how the impacts of climate change may be experienced more intensely in certain areas of the City and/or by certain segments of the population and adjusts accordingly. The measures within this strategy reaffirm and build upon goal 2-1 in Fremont's General Plan, which is to transform Fremont from an auto-oriented suburb into a community with walkable neighborhoods and transit-oriented development.

Measure LU-7: Apply smart growth and low-carbon land use development principles.

Specific Actions to Achieve Measure LU-7

Community Level

LU-C-7.1 Continue implementing transit-oriented development (TOD) principles at the Fremont, Irvington, and Warm Springs/South Fremont BART Stations and the Centerville Train Station and consider other opportunities such as the Fremont Boulevard corridor, and look for ways to increase employment concentrations near regional transit

LU-C-7.2 Promote increased housing density and diversity in residential zones through zoning code updates, the permitting process, and development incentive programs, including allowing for construction of duplexes, triplexes, and accessory dwelling units (ADUs) within areas zoned for single-family homes

LU-C-7.3 Support and encourage low-carbon development through adoption of land use policies and regulations that require high efficiency/low-carbon design, increase density, and reduce VMT

LU-C-7.4 Coordinate with the Metropolitan Transportation Commission (MTC) and other agencies to 1) establish a method for analyzing the life cycle GHG emissions of land use and transportation planning decisions, and 2) align regional mode share targets with GHG emission reduction targets

LU-C-7.5 Ensure that local land use decisions recognize the opportunities and constraints presented by the City's transportation system, including road capacity, transit availability, and pedestrian and bicycle mobility

LU-C-7.6 Work with MTC, Association of Bay Area Governments (ABAG), BART, AC Transit, Valley Transportation Authority (VTA), and other regional agencies to implement future transportation plans and to promote land use decisions that reinforce regional transportation investments

Measure LU-8: Incorporate climate vulnerabilities into land use planning.

COMMUNITY RESILIENCE | EQUITY | LOCAL ECONOMIC IMPACT | INFRASTRUCTURE RELIABILITY | RESOURCE PRESERVATION

Specific Actions to Achieve Measure LU-8

Community Level

LU-C-8.1 Evaluate land use designations in areas subject to flooding from sea level rise to minimize risk to life and property

LU-C-8.2 Consider establishing "climate hazard overlay zones" whereby additional layers of zoning standards would be applied to defined geographical areas that have been identified as being more vulnerable to future flooding, erosion, landslides, wildfire, or severe storm/high wind events, regardless of the underlying base zoning district

LU-C-8.3 Coordinate with private landowners and property managers to support the upgrade of facilities vulnerable to the impacts of climate change, and consider managed retreat as a long-term strategy to reduce flood risk associated with sea level rise

MATERIALS AND WASTE

Strategy 1.
Materials Reuse and Plastic Waste Reduction

Strategy 2.

Managing Recycling and Organics

Strategy 1.
Materials Reuse and Plastic Waste Reduction

Long-Term Vision: Community members reuse materials and products and return them to the supply chain at the end of their useful life whenever possible.

The first strategy within the Materials and Waste focus area is reusing materials wherever possible and reducing the use of single-use disposable products, especially plastic products. This strategy supports and builds upon goal 9-8 in Fremont's General Plan, which is to continuously educate the public on ways to reduce waste through sustainable purchasing decisions and materials reuse. Rather than a "cradle-to-grave" approach to waste management, this strategy supports the concept of a circular economy where materials are reused for as long possible rather than being discarded in the landfill.

Measure MW-1: Promote responsible consumption of products and materials and reduce disposable packaging use.

HEALTH AND WELL-BEING

RESOURCE PRESERVATION

Specific Actions to Achieve Measure MW-1

Community Level

MW-C-1.1 Discourage single-use disposable consumer products and encourage reusable items

MW-C-1.2 Evaluate an ordinance requiring take-out food ware and other packaging to be reusable or compostable

MW-C-1.3 Support and advocate for legislation that aims to reduce pollution, increase reuse, require sustainable and circular redesign, and support end of life management of products and packaging

MW-C-1.4 Develop and support community education campaigns that encourage residents and businesses to purchase goods and services locally, with a preference for using Certified Green Businesses wherever possible

City Operations

MW-M-1.1 Require containers, take-out food ware, and other packaging in City food service areas and at City events to be reusable (wherever possible) or compostable; provide disposables only upon request

MW-M-1.2 Prohibit the purchase and use of plastic water bottles and other single-use, disposable containers by all City departments

MW-M-1.3 Install water bottle refilling stations in City buildings and at public-facing City facilities

Measure MW-2: Encourage repair, reuse, and upcycling of materials.

COMMUNITY RESILIENCE | EQUITY | RESOURCE PRESERVATION

Specific Actions to Achieve Measure MW-2

Community Level

MW-C-2.1 Promote materials reuse and sharing through outreach and education, community tool libraries, maker spaces, fix-it clinics, and material swaps

City Operations

MW-M-2.1 Continue to support and expand upon the City's internal FreeCycle Program for the reuse of surplus office supplies

Strategy 2.
Managing Recycling and Organics

Long-Term Vision: Waste materials are responsibly managed through recycling and composting.

The second strategy within the Materials and Waste focus area involves properly managing, recycling, and composting waste materials and organics. Many of the negative environmental impacts associated with goods and materials occur during extraction, production, and transport. The responsible production, consumption, and recovery of products, packaging, and materials will conserve natural and manufactured resources, thereby reducing GHG emissions and other associated environmental impacts. At the same time, proper management of materials helps improve local air and water quality and preserve ecosystems. This strategy supports Fremont's General Plan goal 9-6 to maximize waste diversion and eliminate landfill waste.

Measure MW-3: Bolster recovery of organic and recyclable materials and increase landfill diversion rates.

Quantified Community GHG Reduction[17]

Specific Actions to Achieve Measure MW-3

Community Level

MW-C-3.1 Continue to increase participation in curbside and drop-off recycling programs, reduce contamination, and identify new opportunities for items that can be recycled curbside or dropped off

MW-C-3.2 Continue to implement organics collection for all multi-family dwellings with five or more units for composting food waste and compostable paper and encourage multi-family dwellings with less than five units to subscribe to organics collection; provide education, audits, and other technical assistance to multi-family property owners and managers to increase waste diversion rates

MW-C-3.3 Implement programs to ensure edible food generators, food recovery services, and food recovery organizations increase recovery rates of edible food

MW-C-3.4 Develop waste reduction and diversion behavior campaigns in partnership with StopWaste and other relevant organizations

MW-C-3.5 Partner with Rising Sun Center for Opportunity (RSCO) to provide information on recycling and composting that can be distributed to residents through the Green House Call Program

MW-C-3.6 Increase commercial compliance with State waste recycling and composting mandates through outreach and education

MW-C-3.7 Require construction sites to separate waste for reuse, recycling, and increased diversion

MW-C-3.8 Minimize "upstream" (pre-consumer) food waste generation through robust community education and targeted partnerships with food waste generators and recovery organizations

[17] Assumes that landfill diversion rates will increase to 75 percent by 2030.

Measure MW-4: Support methane recovery and reuse from organic sources.

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | EQUITY | LOCAL ECONOMIC IMPACT | INFRASTRUCTURE RELIABILITY

Specific Actions to Achieve Measure MW-4

Community Level

MW-C-4.1 Encourage Fremont's waste collection service providers to seek new and improved processing and collection methods as well as new conversion technologies to increase energy recovery, adding to existing efforts such as the landfill gas to electricity and the landfill gas to Liquified Natural Gas (LNG) plants at the Altamont Landfill

MW-C-4.2 Encourage development of local and regional anaerobic digester facilities that use organic materials such as food, water, and animal waste to create biogas (a mixture of mostly carbon dioxide and methane) capable of replacing fossil fuels for electricity, vehicle fuel, and renewable natural gas

Measure MW-5: Establish and advance zero waste targets and policies.

GHG reduction captured within Measure MW-3

COMMUNITY RESILIENCE | RESOURCE PRESERVATION

Specific Actions to Achieve Measure MW-5

Community Level

MW-C-5.1 Update the Fremont Municipal Code to align with the statewide Short-Lived Climate Pollutant Policy (established by California Senate Bill 1383) to reduce the disposal of organic waste in landfills, including edible food

MW-C-5.2 Continue to pursue development of a citywide zero waste policy and/or high diversion plan

City Operations

MW-M-5.1 Develop a zero waste action plan for City operations

MW-M-5.2 Develop a City sustainable events policy, including requirements for reusable food ware and zero waste at City events

MW-M-5.3 Conduct periodic audits of City facilities to identify opportunities for increased waste diversion

MW-M-5.4 Ensure that City facilities have the access or capability to compost food scraps

NATURAL AND URBAN LANDSCAPES

Strategy 1. Carbon Sequestration

Strategy 2. Green Infrastructure

Strategy 3. Water Conservation in Landscapes

Strategy 4. Habitat Restoration and Biodiversity

Strategy 1. Carbon Sequestration

Long-Term Vision: A robust urban forest, well-managed wetlands, and healthy soils aid in drawing down carbon pollution from the atmosphere.

The first strategy within the Natural and Urban Landscapes focus area is to drawdown carbon dioxide and other GHGs from the atmosphere through ecological methods, capture it, and store it in plants, soils, water systems, and other solid forms. Measures that enhance the local ecosystem's ability to sequester carbon through trees, soils, and wetlands will help the City move closer toward achieving the goals of *Climate Ready Fremont* and ultimately carbon neutrality.

Measure NL-1: Increase soil carbon content.

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | EQUITY | RESOURCE PRESERVATION

Specific Actions to Achieve Measure NL-1

Community Level

NL-C-1.1 Encourage development projects to use locally produced compost and mulch for landscaping to sequester carbon and assist with soil water retention, erosion control, and weed abatement

NL-C-1.2 Require contractors to procure and use compost to meet the California Water Efficient Landscape Ordinance (WELO) requirements in new and renovated landscapes

NL-C-1.3 Support the establishment of compost distribution hubs that provide access to compost for urban farms, community organizations, and individuals growing food

City Operations

NL-M-1.1 Regularly apply locally produced compost and mulch to City landscapes to sequester carbon and assist with soil water retention, erosion control, and weed abatement

Measure NL-2: Increase the carbon sequestration potential of the City's bayfront and bayland areas.

COMMUNITY RESILIENCE | LOCAL ECONOMIC IMPACT | INFRASTRUCTURE RELIABILITY | RESOURCE PRESERVATION

Specific Actions to Achieve Measure NL-2

Community Level

NL-C-2.1 Support the development of a regional approach to aquatic sequestration in the San Francisco Bay by 2030 in collaboration with the San Francisco Bay Restoration Authority (SFBRA), San Francisco Bay Area Conservancy Program (SFBACP), San Francisco Bay Conservation and Development Commission (BCDC), San Francisco Bay Joint Venture (SFBJV), and other regional groups involved in wetlands restoration

Measure NL-3: Implement the City's Urban Forest Management Plan.

Quantified Community GHG Reduction[18]

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | RESOURCE PRESERVATION

Specific Actions to Achieve Measure NL-3

Community Level

NL-C-3.1 Continue to implement the residential tree planting, replacement, and maintenance program for single-family homeowners

NL-C-3.2 Protect, maintain, and enhance the City's existing urban forest and maintain healthy tree resources within the City

NL-C-3.3 Encourage planting native tree species in new development and redevelopment, replacing trees when proposed for removal, and planting trees to shade buildings and reduce energy requirements

NL-C-3.4 Track and increase the diversity of urban tree species, with an emphasis on native and drought-tolerant trees

NL-C-3.5 Identify priority areas to expand urban tree and vegetation planting, prioritizing tree planting in low-canopy corridors and in neighborhoods with increased risk of heat and/or air pollution

NL-C-3.6 Engage landscape companies, gardeners, nurseries, and other key stakeholders on the climate advantages of specific plant species selection, including carbon sequestration rates, drought tolerance, and fire resistance

City Operations

NL-M-3.1 Preserve the existing tree canopy and increase tree plantings on City-owned land and right-of-way

Strategy 2. Green Infrastructure

Long-Term Vision: Green and vegetated spaces support storm water management and reduce the urban heat island effect.

The second strategy within the Natural and Urban Landscapes focus area is to incorporate green infrastructure and ecosystem services into community design to enhance stormwater management, reduce heat stress, increase biodiversity, and support climate adaptation. This strategy supports goal 7-3 in Fremont's General Plan, which is to protect water from pollutants and meet the requirements of the Municipal Regional Stormwater National Pollutant Discharge Elimination System Permit (MRP).

Measure NL-4: Expand and protect green infrastructure and biodiversity.

HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | INFRASTRUCTURE RELIABILITY | RESOURCE PRESERVATION

Specific Actions to Achieve Measure NL-4

Community Level

NL-C-4.1 Continue to implement the City's Green Stormwater Infrastructure (GSI) plan to transform storm drainage system from traditional "gray" stormwater infrastructure to green stormwater infrastructure that slows stormwater flow by directing it to vegetated systems

NL-C-4.2 Develop permitting guidelines and best practices for green and vegetative roofs that can reduce runoff flow rates and volume, absorb and filter pollutants, supply green habitat and nesting areas, and reduce the urban heat island effect

[18] Assumes an increase in total tree canopy coverage to 15 percent of the City's land area by 2030.

Strategy 3. Water Conservation in Landscapes

Long-Term Vision: Landscapes are drought tolerant, conserve freshwater resources, and incorporate Bay-Friendly design principles.

The third strategy within the Natural and Urban Landscapes focus area is to efficiently use local water resources. This strategy supports goal 7-4 in Fremont's General Plan for a water conservation program consistent with Alameda County Water District's (ACWD's) urban water management plan and the City's GHG reduction goals. Implementation of actions that conserve the water used in landscapes will help the City adapt to changing climatic conditions by preserving local groundwater resources and increasing community resiliency.

Measure NL-5: Reduce water usage for irrigation and landscaping.

Quantified Community GHG Reduction[19]

Specific Actions to Achieve Measure NL-5

Community Level

NL-C-5.1 Require drought tolerant, water conserving, and/or native landscaping in new development and redevelopment projects

NL-C-5.2 Collaborate with ACWD to implement water conservation and reclamation programs, including landscape surveys and incentive programs

NL-C-5.3 Continue to enforce and strengthen as necessary the City's Water Efficient Landscape Ordinance (WELO) and standards for the use of Bay-Friendly Landscaping Requirements (now ReScape) to reduce outdoor water use in new developments

NL-C-5.4 Require a ReScape rating for all landscape projects over 2,500 square feet to foster soil health, conserve water, sequester carbon, protect natural resources, reduce waste, and prevent pollution

NL-C-5.5 Require weather-adjusting smart irrigation controllers and/or rain sensors in new development projects

City Operations

NL-M-5.1 Continue implementing Bay-Friendly Landscape requirements for civic improvement projects

NL-M-5.2 Reduce consumption of water in the operation and maintenance of parks and recreation facilities

NL-M-5.3 Enhance and expand weather-based irrigation controls throughout the City's park system

NL-M-5.4 Replace grass with artificial turf in cases where drought tolerant landscaping would not be appropriate (e.g., sport fields)

NL-M-5.5 Install drought tolerant landscaping and apply compost and mulch at City facilities

[19] Assumes an 80 percent reduction in outdoor water consumption in new development and a 50 percent reduction in outdoor water consumption in existing development by 2030.

Strategy 4. Habitat Restoration and Biodiversity

Long-Term Vision: The local ecosystem provides habitat for native plants and animals and supports biodiversity.

The fourth strategy within the Natural and Urban Landscapes focus area is to restore, rehabilitate, and repurpose degraded, damaged, or destroyed ecosystems and habitats through active interventions and to support wildlife biodiversity. This strategy supports goal 7-1 in Fremont's General Plan Goal for a thriving natural environment with protected habitat that enhances the biological value of the City and preserves open space.

Measure NL-6: Conserve and protect natural habitats, ecosystems, and wildlife corridors impacted by climate change.

HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | RESOURCE PRESERVATION

Specific Actions to Achieve Measure NL-6

Community Level

NL-C-6.1 Minimize impacts to and enhance the preservation of natural and semi-natural wetland areas—including riparian corridors, vernal pools, and their wildlife habitats—through the development and environmental review process

NL-C-6.2 Work with the Alameda County Flood Control and Water Conservation District (ACFCWCD) to evaluate the feasibility of revegetating watercourses that have been modified for flood control, erosion prevention, or other purposes

NL-C-6.3 Partner with regional conservation agencies and nonprofits to protect local habitats, enhance local ecosystems, and develop wildlife and pollinator corridors across the City

NL-C-6.4 Continue to evaluate development within 100 feet of the top bank of riparian areas and water bodies—including creeks, lakes, ponds, marshes, and vernal pools—and 200 feet in areas above the toe of the hill as established by the City's General Plan

NL-C-6.5 Continue to manage Fremont's bayfront and bayland areas as permanent open space

NL-C-6.6 Identify, preserve, and restore natural resources—such as wetlands, flood plains, recharge zones, riparian areas, open space, and native habitats—as valued assets for flood protection, water quality improvement, groundwater recharge, habitat, and overall long-term water resource sustainability

Measure NL-7: Restore, rehabilitate, and repurpose degraded, damaged, or destroyed ecosystems through active interventions to enhance the natural adaptive capacity of biological communities.

Specific Actions to Achieve Measure NL-7

Community Level

NL-C-7.1 Encourage restoration and preservation of former extraction areas (mineral/clay quarries and salt ponds) for open space, wildlife, and recreation purposes

Measure NL-8: Prioritize nature-based solutions to improve coastal and watershed resilience while promoting biodiversity.

Specific Actions to Achieve Measure NL-8

Community Level

NL-C-8.1 Maintain and enhance natural shoreline buffers to protect inland development through mechanisms such as conservation easements and establishment of priority conservation areas

NL-C-8.2 Enhance the drought and flood resistance of soils in publicly managed lands with compost and mulch

NL-C-8.3 Work with regional partners to build "living levees" to allow for natural, gradual transitions along the bay shoreline—from open water to tidal mudflat, to tidal marsh, to "ecotone" or transitional upland habitat

NL-C-8.4 Engage with regional partners such as the San Francisco Estuary Institute (SFEI), San Francisco Bay Conservation & Development Commission (BCDC), and federal entities such as Don Edwards Wildlife Refuge to increase sediment delivery to wetlands to protect against sea-level rise

ADAPTATION AND RESILIENCY

Strategy 1. Extreme Heat Mitigation

Strategy 2. Wildfire Risk Reduction

Strategy 3. Flood Risk Reduction

Strategy 4. Sea Level Rise Preparedness

Strategy 5. Emergency Preparedness and Disaster Response

Strategy 6. Community Resilience

Strategy 1. Extreme Heat Mitigation

Long-Term Vision: Cool infrastructure is integrated into urban design to mitigate the impacts of extreme heat.

The first strategy within the Adaptation and Resiliency focus area is to mitigate the effects of extreme heat on the local community. Warming temperatures and extreme heat events are both a result of and exacerbated by climate change. Fremont is projected to experience increased annual average temperatures and additional heat waves over the coming decades. The urban heat island effect—i.e. higher temperatures due to increased density of pavement, buildings, and other surfaces that absorb and retain heat—contributes to additional localized temperature increases. Reducing extreme heat through cooling mechanisms will become crucial, as well as ensuring vulnerable populations have resources to manage extreme heat. In addition, local air quality can worsen during periods of extreme heat, especially considering that California's wildfire season occurs during the hottest and driest months of the year (late spring or early summer to late fall), with wildfire smoke creating increases in particulate matter in the atmosphere (e.g. air pollution) that can be unhealthy or even hazardous to health.

Measure AR-1: Adopt urban heat island reduction design guidelines.

HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | EQUITY

Specific Actions to Achieve Measure AR-1

Community Level

AR-C-1.1 Update "cool surface" regulations to require that at least 50% of all hardscapes meet certain criteria to reduce the urban heat island effect

AR-C-1.2 Develop a spatial map of heat risk to develop a strategy to retrofit existing roofs and hardscapes in areas of highest heat vulnerability

AR-C-1.3 Promote the use of cool and vegetative roofs, installation of shaded parking structures, selection of light-colored paving, and planting of trees and other vegetation to help reduce the urban heat island effect

Measure AR-2: Protect populations vulnerable to extreme heat and poor air quality.

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | EQUITY

Specific Actions to Achieve Measure AR-2

Community Level

AR-C-2.1 During and in advance of periods of extreme heat and poor air quality, continue to promote Fremont's Cooling/ Air Quality Centers to vulnerable populations through the development of multilingual resources and existing service networks

AR-C-2.2 Continue to coordinate with the Bay Area Air Quality Management District (BAAQMD) as they monitor air quality and notify the public when there are elevated levels of air pollution in the region

Strategy 2. Wildfire Risk Reduction

Long-Term Vision: Buildings and landscapes incorporate measures that mitigate the risk of damage from wildfire.

The second strategy within the Adaptation and Resiliency focus area is to reduce the risk of wildfires to the local community. Climate change is expected to worsen many of the factors that contribute to wildfire risk through increased intensity of droughts and creating hotter and drier landscapes more susceptible to burning. This strategy supports and builds upon goal 10-4 in Fremont's General Plan to minimize the risk to life and property resulting from fire hazards. Reducing the exposure of wildfire risk to residents, businesses, and infrastructure is of critical importance.

Measure AR-3: Reduce the wildland-urban interface (WUI) fire risk.

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | LOCAL ECONOMIC IMPACT | RESOURCE PRESERVATION

Specific Actions to Achieve Measure AR-3

Community Level

AR-C-3.1 Develop a fire risk assessment for all new development within fire hazard severity zones or the WUI

AR-C-3.2 Reduce fire risk in existing development through building and fire code updates and enforcement

AR-C-3.3 Promote and implement wildland fire mitigation measures to reduce WUI fire risk on public and private property (e. g., vegetation management, weed abatement, defensible space, home hardening), and enforce applicable rules as necessary

AR-C-3.4 Promote awareness and incentives to help landowners increase defensive space around structures

AR-C-3.5 Implement wildland fire mitigation measures to reduce WUI fire risk on public property (e.g., vegetation management, weed abatement, fire breaks)

AR-C-3.6 Provide an adequate level of fire service to protect the City in accordance with Fremont Fire's adopted Standards of Cover

Strategy 3. Flood Risk Reduction

Long-Term Vision: Integrated watershed management and green infrastructure mitigate the risk of damage from flooding.

The third strategy within the Adaptation and Resiliency focus area is to reduce the risk of flooding to the local community. Climate change is expected to increase the frequency and intensity of flood events in Fremont. Flooding threatens infrastructure and property, which can pose risks to health and safety. This strategy aligns with goal 10-3 in Fremont's General Plan to minimize risks to life and property resulting from flooding. This strategy also supports implementation of the 2016 Local Hazard Mitigation Plan (LHMP) to rehabilitate the City's storm water system. Reducing flood risks protects the community from these hazards.

Measure AR-4: Minimize risks to life and property resulting from flooding and flood induced hazards.

COMMUNITY RESILIENCE | LOCAL ECONOMIC IMPACT | INFRASTRUCTURE RELIABILITY

Specific Actions to Achieve Measure AR-4

Community Level

AR-C-4.1 Reduce local flooding through implementation of low-impact development, including features such as green infrastructure and pervious and climate-smart landscaped surfaces

AR-C-4.2 Coordinate with the Alameda County Flood Control and Water Conservation District (ACFCWCD) to repair and replace the City's stormwater pipelines, pump stations and storm drains on an ongoing basis to reduce local flooding of nearby streets, utilities, and buildings

Measure AR-5: Reduce flood and drought risk through integrated watershed management.

COMMUNITY RESILIENCE | INFRASTRUCTURE RELIABILITY | RESOURCE PRESERVATION

Specific Actions to Achieve Measure AR-5

Community Level

AR-C-5.1 Encourage Alameda County Flood Control and Water Conservation District (ACFCWCD) to preserve, enhance, and restore the wetlands in creek and flood control channels and Alameda County Water District (ACWD) to preserve, enhance, and protect water recharge areas

Strategy 4.
Sea Level Rise Preparedness

Long-Term Vision: New and existing developments are resilient to the impacts of sea level rise.

The fourth strategy within the Adaptation and Resiliency focus area is to protect against and prepare for the effects of sea level rise. Areas of Fremont along the bayfront may be impacted due to sea level rise over the coming decades. To better prepare for potential impacts, both existing and new development should be evaluated for risk. City infrastructure must also be considered to accommodate potential flooding due to sea level rise.

Measure AR-6: Evaluate proposed development in areas of the City subject to flooding impacts caused by rising sea levels.

COMMUNITY RESILIENCE | LOCAL ECONOMIC IMPACT | INFRASTRUCTURE RELIABILITY

Specific Actions to Achieve Measure AR-6

Community Level

AR-C-6.1 Sustain and promote open space in undeveloped areas at high risk of flooding from sea level rise as a strategy to reduce risk

AR-C-6.2 Implement risk-reduction measures, such as elevation setbacks and nature-based solutions, for proposed development in areas that would otherwise be at risk for flooding, storm surges, and/or sea level rise

AR-C-6.3 Evaluate building code updates—such as requiring raised floor levels—for new development in areas that are vulnerable to flooding

Measure AR-7: Protect existing development from sea level rise impacts.

COMMUNITY RESILIENCE | INFRASTRUCTURE RELIABILITY | RESOURCE PRESERVATION

Specific Actions to Achieve Measure AR-7

Community Level

AR-C-7.1 Evaluate City requirements for stored hazardous materials and update them as appropriate to ensure that any stored hazardous materials are protected from flood zones, rising sea levels, and tsunami inundation areas

AR-C-7.2 Evaluate vegetative- and soil-based solutions to improve stormwater filtration and flood prevention

AR-C-7.3 Evaluate improvements to stormwater design standards to address backwater effects caused by sea level rise, including storm surges

Measure AR-8: Minimize risks to life and property resulting from flooding caused by sea level rise.

HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | EQUITY

Specific Actions to Achieve Measure AR-8

Community Level

AR-C-8.1 Maintain sea level rise flood risk and hazard datasets in the City's GIS mapping

AR-C-8.2 Continue the City's participation in the National Flood Insurance Program

AR-C-8.3 Work with Federal Emergency Management Agency (FEMA) and nearby cities to update sea level rise flood zone maps

Strategy 5. Emergency Preparedness and Disaster Response

Long-Term Vision: City emergency planning ensures protections against climate-related hazards.

The fifth strategy within the Adaptation and Resiliency focus area is to prepare the community against both natural and human-caused disasters, especially those exacerbated by climate change. This strategy involves preparing for, limiting, learning from, and adapting to the negative effects of climate change through proactive and holistic planning and response.

Measure AR-9: Revise emergency management plans, programs, and activities.

COMMUNITY RESILIENCE

LOCAL ECONOMIC IMPACT

Specific Actions to Achieve Measure AR-9

Community Level

AR-C-9.1 Continue to plan for integration of persons with access and functional needs (AFN) into mass care, disaster relief, evacuation, and other emergency services

AR-C-9.2 Prepare an update to City's Local Hazard Mitigation Plan (LHMP), including applicable climate adaptation and resiliency strategies as required under California Senate Bill 379

AR-C-9.3 Enhance the City's capability to issue mass notifications via Wireless Emergency Alerts, AC Alert, Nixle Alerts, and other methods

AR-C-9.4 Coordinate with key public service providers to develop an energy assurance plan to support critical operations during and after disasters

AR-C-9.5 Ensure that traffic signals along evacuation routes are equipped with battery backup systems

AR-C-9.6 Develop Severe Weather and Evacuation Appendices to the City's Emergency Operations Plan

AR-C-9.7 Maintain a dedicated Emergency Operations Center (EOC) to accommodate efficient and effective City response in the event of a large-scale disaster

Measure AR-10: Ensure emergency management activities are conducted equitably.

COMMUNITY RESILIENCE EQUITY

Specific Actions to Achieve Measure AR-10

Community Level

AR-C-10.1 Conduct ongoing training for first responders and City personnel to deal with climate-exacerbated hazards, including how to better serve vulnerable populations

Measure AR-11: Improve notification systems for natural hazards to reach the most vulnerable community members.

COMMUNITY RESILIENCE EQUITY

Specific Actions to Achieve Measure AR-11

Community Level

AR-C-11.1 Develop an outreach plan to engage vulnerable populations to be prepared with emergency supplies

AR-C-11.2 Promote resident enrollment in hazard notification networks such as AC Alert

Strategy 6. Community Resilience

Long-Term Vision: Resilience hubs provide the community with ongoing access to food, shelter, power, and other amenities during times of emergency.

The sixth strategy within the Adaptation and Resiliency focus area is to increase overall community resilience to better respond to and prepare for the impacts of climate change. This includes ensuring residents have basic needs met such as food security and access to amenities, as well as preparing for emergency events by fostering social cohesion and providing resources.

Measure AR-12: Establish resilience hubs.

HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | EQUITY

Specific Actions to Achieve Measure AR-12

Community Level

AR-C-12.1 Develop government-facility resilience hubs throughout the community that provide backup power, shelter, and disaster assistance during extreme climate events and other emergencies (e.g., heatwaves and poor air quality days)

AR-C-12.2 Pilot a targeted grassroots community engagement strategy to create stronger connections between neighbors to advance climate and emergency preparedness

AR-C-12.3 Coordinate with local community-based organizations to activate neighborhood-level resilience hubs that offer emergency shelters during extreme climate events and other emergencies, as well as year-round services and amenities (e.g., food distribution and workforce development training)

Specific Actions to Achieve Measure AR-13

Community Level

AR-C-13.1 Support the development of farmers' markets and other venues where locally grown produce and fresh foods can be sold

AR-C-13.2 Support increased access to local food for limited income residents through promotion of food assistance programs/benefits and collaboration with local farmers' markets

AR-C-13.3 Support existing community and school gardens and facilitate opportunities to expand community growing spaces with a focus on youth, non-native English speakers, and low-income residents

AR-C-13.4 Partner with regional organizations to support organic and regenerative urban agricultural practices, including community gardens, edible landscapes, and pollinator habitats

AR-C-13.5 Encourage low-carbon plant-based diets and develop outreach and tips for residents to reduce the GHG emissions associated with their food consumption

GREEN ECONOMY

Strategy 1. Green Businesses and Jobs

Strategy 2. Climate Equity

Strategy 3. Climate-Friendly Purchasing, Budgeting, and Financing

Strategy 1. Green Businesses and Jobs

Long-Term Vision: A robust cohort of sustainably minded businesses actively contribute to the local circular economy through materials upcycling and green jobs training.

The first strategy within the Green Economy focus area is to promote green business and green jobs. Advancing economic development opportunities is a long-standing objective of the City. As part of *Climate Ready Fremont*, the City seeks to do so in a way that supports the circular economy, provides new green jobs, and promotes green business practices. This strategy supports goal 6-5 in Fremont's General Plan to promote sustainability in the business sector.

Measure GE-1: Support and encourage circular economy innovation and business leadership in Fremont.

LOCAL ECONOMIC IMPACT

RESOURCE PRESERVATION

Specific Actions to Achieve Measure GE-1

Community Level

GE-C-1.1 Encourage businesses creating recycling-based products to locate in Fremont and support zero waste business development

GE-C-1.2 Partner with local cleantech industry on used EV battery and solar panel reuse to encourage market development and materials upcycling

GE-C-1.3 Adopt policies and develop partnerships that enable clean, local manufacturing of goods that are designed to minimize wasted resources

GE-C-1.4 Promote the adoption of Fremont-based clean technologies, including through public-private demonstration projects and promoting their local market adoption

Measure GE-2: Incentivize and promote green business practices.

LOCAL ECONOMIC IMPACT

Specific Actions to Achieve Measure GE-2

Community Level

GE-C-2.1 Promote the development of a clean technology cluster by continuing specific incentives such as the "Clean Tech Business Tax Exemption"

GE-C-2.2 Increase the number of Fremont Certified Green Businesses each year in partnership with the Fremont Chamber of Commerce to recognize and promote current participants

GE-C-2.3 Encourage, support, and recognize local entrepreneurship that aligns with *Climate Ready Fremont* goals and focuses on materials upcycling and re-use for product innovation

GE-C-2.4 Promote green tenant leasing practices for commercial businesses to align tenant and landlord co-benefits, utilizing best practices such as the Green Tenant Toolkit developed by the Business Council on Climate Change (BC3)

GE-C-2.5 Collaborate with industry associations and other regional entities to develop recognition programs, peer learning opportunities, and technical assistance for outstanding sustainable business operations

City Operations

GE-M-2.1 Gather and track key sustainability performance metrics of City facilities and, where appropriate, certify them as California Green Businesses

Measure GE-3: Support green jobs in the City.

EQUITY

LOCAL ECONOMIC IMPACT

Specific Actions to Achieve Measure GE-3

Community Level

GE-C-3.1 Support the work of the Bay Area Regional Energy Network (BayREN) and others to conduct outreach and training with local contractors on building electrification and decarbonization efforts

GE-C-3.2 Partner with local employers, educational institutions, vocational service providers, and other community-based organizations to provide professional development and green jobs training programs for youth and residents

GE-C-3.3 Partner with local advanced manufacturers to provide on-the-job training and STEM learning for youth to encourage green job growth

Strategy 2. Climate Equity

Long-Term Vision: Community members experience the benefits of climate protection efforts, especially climate vulnerable and other traditionally disadvantaged populations.

The second strategy within the Green Economy focus area is to advance climate equity. Climate solutions are only effective if they are accessible to everyone. Ensuring an equitable and just transition to a clean energy community requires creative solutions that provide all community members with the resources they need to fully participate while also supporting quality jobs and facilitating the shift from an extractive economy to a regenerative economy.

Measure GE-4: Increase the resiliency of low-income or otherwise vulnerable housing.

COMMUNITY RESILIENCE

EQUITY

Specific Actions to Achieve Measure GE-4

Community Level

GE-C-4.1 Collaborate with Habitat for Humanity, Cal State East Bay, Rebuilding Together, GRID Alternatives, and the Cities of Berkeley, Oakland, and Hayward to perform holistic electrification upgrades and key repairs to eligible homes through the Home Electrification Equity Project (HEEP)

GE-C-4.2 Collaborate with PG&E, East Bay Community Energy (EBCE), and community nonprofits to create a targeted resiliency campaign for low-income and climate-vulnerable residents

Measure GE-5: Ensure an equitable transition to 100 percent clean power.

GHG reduction captured within Measure BU-1

AIR POLLUTION PREVENTION

EQUITY

Specific Actions to Achieve Measure GE-5

Community Level

GE-C-5.1 Explore opportunities for residents of multifamily properties to be able to access local solar generation, such as through Virtual Net Energy Metering (VNEM) or community solar programs

GE-C-5.2 Engage affordable housing property and asset managers to increase local participation in energy efficiency and clean energy incentive programs such as the Bay Area Regional Energy Network (BayREN) BAMBE program and the California Solar on Multifamily Affordable Housing (SOMAH) program

GE-C-5.3 Partner with EBCE to offer low-cost options and incentives for climate-vulnerable community members to access 100 percent renewable grid electricity

GE-C-5.4 Promote opportunities such as green leasing that would enable tenants to secure solar at their place of residence by overcoming the tenant-landlord split incentive

Strategy 3. Climate-Friendly Purchasing, Budgeting, and Financing

Long-Term Vision: Climate action implementation efforts are institutionalized into City processes and budgeting.

The third strategy within the Green Economy focus area is to integrate climate-friendly purchasing, budgeting, and financing into the City's business processes. To ensure effective implementation of *Climate Ready Fremont,* budgeting and financing mechanisms need to be established so that climate solutions can be appropriately funded and equitably achieved. The City seeks to demonstrate leadership by keeping sustainability at the forefront of purchasing and contracting decisions.

Measure GE-6: Incorporate sustainability best practices into City purchasing decisions and City contracts.

RESOURCE PRESERVATION

Specific Actions to Achieve Measure GE-6

City Operations

GE-C-6.1 Continue to require that the City purchase recycled content products and, where possible, purchase products with a higher percentage of recycled content than the minimum level required by the City's Green Purchasing Policy

GE-C-6.2 Update, implement, and monitor the City's Green Purchasing Policy to align with California Senate Bill 1383 targets and to incorporate new waste reduction strategies and programs in response to innovations in materials and technologies

GE-C-6.3 Establish an interdepartmental green purchasing training and champions program to support implementation of green purchasing policies

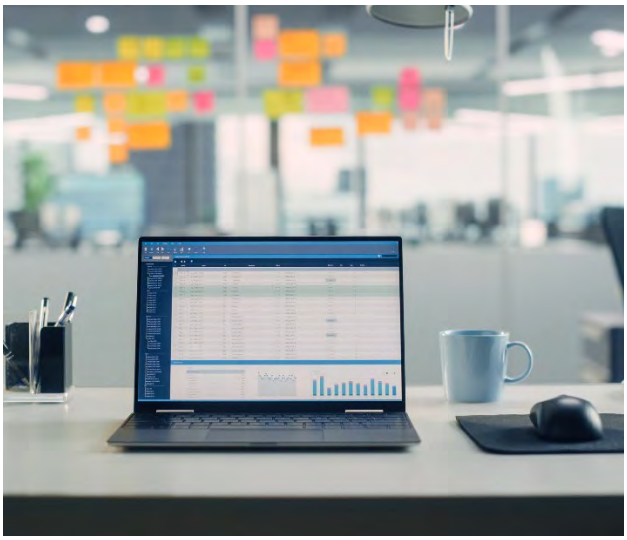
GE-C-6.4 Pursue opportunities in the City's solid waste collector contract and Ride On Tri-City contracts to use alternative fuel vehicles for the fleet servicing Fremont

GE-C-6.5 Require the use of new GHG emission reducing paving technologies for municipal street and parking lot pavement projects such as warm-mix asphalt, higher albedo (reflective) pavement, and low embodied carbon (recycled content) concrete

Measure GE-7: Modify the City's capital planning and budgeting processes to incorporate priorities established by *Climate Ready Fremont*.

AIR POLLUTION PREVENTION

Specific Actions to Achieve Measure GE-7



City Operations

GE-C-7.1 Include a reference within the Budget Principles section of the City's current-year budget to prioritize projects and programs that reduce GHG emissions and/or increase resiliency to climate change

GE-C-7.2 Add criteria to the evaluation process for the City's biannual Capital Improvement Program to prioritize projects and programs that reduce GHG emissions and/or increase resiliency to climate change

GE-C-7.3 Prepare a guidance document for incorporating adaptation to sea level rise into the City's capital planning process

Measure GE-8: Establish financial mechanisms and pursue outside funding sources to support the implementation of *Climate Ready Fremont*.

COMMUNITY RESILIENCE INFRASTRUCTURE RELIABILITY

Specific Actions to Achieve Measure GE-8

City Operations

GE-C-8.1 Evaluate existing and potential financial risks posed by climate change to the City and recommend strategies to mitigate these risks, including options for insurance products, real estate strategy, and other appropriate mechanisms

GE-C-8.2 Explore phasing in a methane gas use tax or similar strategy for assessing the environmental costs associated with gas consumption in buildings

GE-C-8.3 Provide necessary funding for municipal climate and sustainability infrastructure projects, such as through the City's Capital Improvement Program or other local revenue enhancements

GE-C-8.4 Pursue grant funding opportunities from public agencies at the regional, state, and federal level as well as from private corporations and foundations to support the implementation of *Climate Ready Fremont* measures

PUBLIC PARTICIPATION AND ENGAGEMENT

Strategy 1. Access to Nature and Environmental Stewardship

Strategy 2. Climate Action Engagement

Strategy 3. Climate Tracking and Reporting

Strategy 1. Access to Nature and Environmental Stewardship

Long-Term Vision: Community members enjoy a healthy natural environment and are actively engaged in its preservation.

The first strategy in the Public Participation and Engagement focus area is to ensure that all community members have access to healthy and safe natural spaces and to encourage community environmental stewardship. The American Public Health Association reports that access to nature can reduce levels of mortality and illness, increase levels of outdoor physical activity, provide stress relief, offer a greater sense of well-being, and improve social connection. As community members engage with nature and help enhance the local environment, they improve their health and well-being and become active participants in climate change solutions. This strategy supports the City's Parks and Recreation Master Plan goal of ensuring that all community members are within a 10-minute walk to a park. It also supports the City's Urban Forest Management Plan vision for establishing a working group of community volunteers to stimulate and organize tree plantings and maintenance.

Measure PE-1: Ensure availability and accessibility to healthy, natural spaces and safe outdoor recreation opportunities for all community members.

AIR POLLUTION PREVENTION | HEALTH AND WELL-BEING | EQUITY | RESOURCE PRESERVATION

Specific Actions to Achieve Measure PE-1

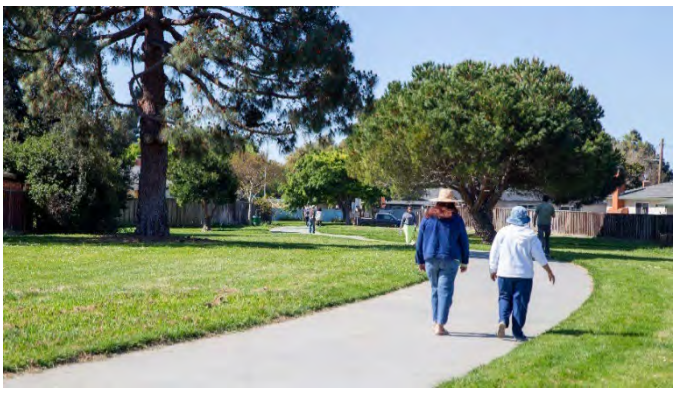
Community Level

PE-C-1.1 Collaborate with local and regional agencies to provide robust trail and park maintenance to prevent and respond to damage from climate change effects

PE-C-1.2 Ensure that new urban parks and trail systems are within walking distance of underserved populations and that they facilitate connections between homes and businesses

PE-C-1.3 Evaluate and enhance the availability of natural and artificial shading features in parks for cooling during outdoor recreation

PE-C-1.4 Partner with regional conservation agencies, local community groups, and schools to map urban biodiversity and promote its expansion



Measure PE-2: Encourage residents and community members to act as environmental stewards.

HEALTH AND WELL-BEING | COMMUNITY RESILIENCE | RESOURCE PRESERVATION

Specific Actions to Achieve Measure PE-2

Community Level

PE-C-2.1 Encourage community members to plant trees on private land

PE-C-2.2 Encourage the creation of community gardens and private lands by community groups

PE-C-2.3 Consider creating a tree giveaway event or providing lower-cost trees to the public through a bulk purchasing program

Strategy 2.
Climate Action Engagement

Long-Term Vision: Community members are educated on climate science, consulted on climate planning decisions, included in climate action implementation efforts, and empowered to act as agents of climate solutions.

The second strategy in the Public Participation and Engagement focus area is to educate residents and businesses about climate change, its projected impacts, and how individuals can participate in the solutions to climate change. Educating the community on the impacts of climate change can help to inspire local action. According to the United Nations Children's Fund (UNICEF), environmental education of youth in particular can help create a paradigm shift in solving the climate crisis, as they are projected to experience the impacts of climate change the most and for the longest period of time.

Measure PE-3: Encourage community participation and ownership of *Climate Ready Fremont*.

COMMUNITY RESILIENCE

EQUITY

Specific Actions to Achieve Measure PE-3

Community Level

PE-C-3.1 Continue to support and expand participation in the City's Fremont Green Challenge residential climate action engagement platform

PE-C-3.2 Partner with the Fremont Unified School District (FUSD), StopWaste, and other relevant organizations to offer opportunities for youth community engagement on climate change, building upon current youth sustainability programming and climate literacy curriculum

PE-C-3.3 Formalize a network of partners, businesses, community organizations, and volunteers for *Climate Ready Fremont* support and implementation efforts

PE-C-3.4 Provide resources to, support for, and recognition of local, community-driven sustainability projects and efforts

Measure PE-4: Increase public awareness and participation in climate planning, with a focus on equity and inclusion.

COMMUNITY RESILIENCE

EQUITY

Specific Actions to Achieve Measure PE-4

Community Level

PE-C-4.1 Develop a climate preparedness outreach program focused on local climate vulnerable populations that provides information on staying healthy and safe during hazardous events

PE-C-4.2 Raise public awareness of the public health impacts of climate change through partnerships with local hospitals, public health institutions, and other relevant social service organizations

PE-C-4.3 Engage with students and schools to incorporate climate mitigation, adaptation, and resiliency into the curriculum

Strategy 3.
Climate Tracking and Reporting

Long-Term Vision: Community climate action targets and progress are publicly reported, and community successes are regularly celebrated.

The third and final strategy in the Public Participation and Engagement focus area is to track the implementation progress of *Climate Ready Fremont* and to share that progress through various public outlets. Transparency is important for both increasing awareness about the ongoing efforts to address climate change as well as to celebrate the successes of past and ongoing implementation efforts. Solving the climate crisis will require a multifaceted approach from all sectors of society. It will require persistence, creativity, and cooperation. Recognizing significant accomplishments, while at the same time understanding the continued challenges that lie ahead, can help Fremont maintain its focus on becoming a climate ready community.

Measure PE-5: Track climate and sustainability metrics accurately and transparently for the community.

EQUITY

Specific Actions to Achieve Measure PE-5

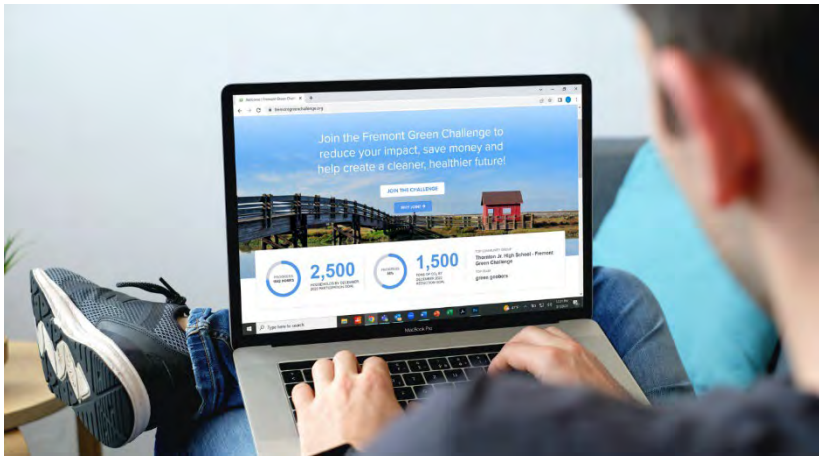
Community Level

PE-C-5.1 Establish and track metrics to monitor progress of *Climate Ready Fremont* goals and report data through an online platform, such as a digital portal or dashboard on the City's website

PE-C-5.2 Include sustainability features within the City's Open Data Hub, such as displaying solar installations and electric vehicle charging stations on City maps

PE-C-5.3 Develop comprehensive qualitative and quantitative metrics to measure the progress of *Climate Ready Fremont* implementation efforts

PE-C-5.4 Regularly report updates and accomplishments of neighborhoods, teams, and individuals on the Fremont Green Challenge platform to the community and highlight their successes in community outreach efforts



Climate Ready Fremont Implementation & Monitoring

This chapter presents a list of priority short-term actions (nicknamed the "Game Plan") which the City will aim to implement within the first three years of adoption of *Climate Ready Fremont*. The priority actions selected for the Game Plan are based on an assessment of the various criteria described on the next page and developed in consultation with the City departments and divisions integral to their implementation. This chapter also discusses how the actions and measures within *Climate Ready Fremont* will be applied to future development projects and describes the process for assessing and monitoring progress of *Climate Ready Fremont* to ensure the City is effective in reducing greenhouse gas (GHG) emissions and improving resilience to climate change. Finally, this chapter highlights some of the funding mechanisms available for implementation of *Climate Ready Fremont* actions—including rebate and incentive programs, grants, financing, and technical assistance.

Implementation Strategy

Effective implementation of *Climate Ready Fremont* will require ongoing management and oversight. To gauge progress over time, it will also require updates to the City's GHG emissions inventory. The success of *Climate Ready Fremont* is dependent on achieving the emissions reductions and resilience improvements targeted by the strategies, measures, and actions identified in Chapter 3. Achieving these goals will require investments and long-term commitments from the City. The success of *Climate Ready Fremont* implementation will also depend on the participation of residents, businesses, and other stakeholders in the City and region.

In developing the list of priority short-term actions for implementation within the first three years of the plan, the City considered a number of criteria, including:

- **GHG Reduction Potential.** Staff utilized the results of the City's GHG emissions reduction quantification analysis, which was conducted in preparation of *Climate Ready Fremont* (see **Appendices B & C** for more details). The greater the reduction associated with the action, the higher the action ranked on this criterion.
- **Cost-Effectiveness.** Staff made qualitative assessments of either City cost-effectiveness or residential and business cost-effectiveness, depending on the applicability of the action. The more cost-effective the action, the higher the action ranked on this criterion.
- **Up-Front Cost.** Staff estimated up-front costs for the actions and evaluated whether there were known funding sources to carry them out. Actions with lower up-front costs and known funding sources ranked higher on this criterion.
- **Technological Feasibility.** Staff evaluated whether actions could be implemented using existing technologies, technologies expected to be deployed in the near term, or technologies that are further in the future. Actions possible with current technology ranked highest on this criterion.
- **Current Policies or Ordinances.** Staff determined whether existing policies and/or ordinances support the action, including those previously adopted by Fremont or similar communities, as well as those identified and supported by regional and statewide plans such as Plan Bay Area 2050 and the California Climate Change Scoping Plan. Actions supported by existing policies or ordinances ranked the highest on this criterion.
- **Jurisdictional Control/Ease of Implementation.** Staff evaluated whether actions could be taken unilaterally by the City, as part of a partnership between the City and other organizations, or without any City involvement or control. Actions totally within the control of the City ranked the highest on this criterion, followed by partnerships involving the City.
- **Community Support.** Staff qualitatively estimated the level of community support for the actions based on feedback received throughout development of the plan. Actions judged by staff to have widespread support ranked higher on this criterion than those projected to face more opposition.
- **Co-benefits.** Staff evaluated whether actions have positive benefits beyond GHG emission reductions (such as equity, air pollution prevention, health and well-being, infrastructure reliability, community resilience, local economic impact, and resource preservation). Those with benefits beyond GHG emission reductions ranked higher on this criterion.

The "Game Plan"

The *Climate Ready Fremont* Game Plan of short-term priority actions is presented in the following table. The table includes:

- Focus Area and Strategy – the focus area and strategy in which the measure and action are located; focus areas, strategies, measures, and actions are included in Chapter 3
- Priority Short-Term Action – the action that will be implemented; the actions in the table may be more detailed than those in Chapter 3 and may combine a few different actions into one
- Related Measure – the measure number associated with the action
- Completed Date, Start Date, and/or Target Date – the date when the action was completed, started, and/or is expected to be completed
- Costs/Savings – if applicable or known, the cost to implement the action (including the type of funding that is available or needed) and/or the anticipated savings after it is implemented
- Lead and Supporting City Department and Division – the City department and division most responsible for implementing the action and, if applicable, any supporting departments and divisions

Details regarding California Environmental Quality Act streamlining, monitoring and updates, ongoing community engagement, and potential funding sources are included in the sections following the table.

Table 4-1: *Climate Ready Fremont* Game Plan

Focus Area & Strategy		Priority Short-Term Action	Related Measure	Completed Date, Start Date, and/or *Target Date*	Costs/Savings (if applicable/known)	Lead Dept. & Division/ *Supporting Dept. & Division*
BUILDINGS & ENERGY	Clean & Renewable Power Use	COMMUNITY LEVEL: Adopt a policy establishing East Bay Community Energy's (EBCE's) Renewable 100 as the default clean power service plan for all Fremont residents and businesses.	BU-1	*Late 2023 to early 2024*	For residents, adds ~$5/month to electricity bill and for small businesses, adds ~$20/month to bill	· **Community Development (CD)–Sustainability** · *Economic Development*
		CITY OPERATIONS: Opt-up to EBCE's Renewable 100 service plan for all City operations.	BU-1	**Completed in 2022;** *ongoing tracking*	Projected $100k annual increase in electricity bill	· **CD–Sustainability** · *Finance*
	Building Electrification & Low-Carbon Design	COMMUNITY LEVEL: Adopt electrification and green building reach codes for new residential and nonresidential construction and retrofits.	BU-2 BU-3	*Early to mid-2024*		· **CD–Sustainability** · *CD–Building & Safety* · *Economic Development*
		COMMUNITY LEVEL: Evaluate development incentives (including development fee reductions) and other technical assistance for nonresidential developments and businesses installing zero net energy facilities and other qualifying low-carbon/green features.	BU-3	*2024*	Reduced development fee would result in less income to the City (financial analyses needed)	· **CD–Planning** · **Economic Development** · *CD–Sustainability* · *Finance*
		CITY OPERATIONS: Establish an all-electric/zero net energy design requirement for all new City facilities.	BU-6	*Early to mid-2024*		· **CD–Sustainability**
		CITY OPERATIONS: Replace existing gas-powered HVAC units at City facilities with electric-source heat pumps wherever technologically and economically feasible.	BU-7	*Begin implementation in 2024*	$9M allocated in 2023/24 Capital Improvement Program (CIP) for HVAC upgrades at 13 facilities	· **Public Works (PW)–Maintenance** · *CD–Sustainability*
	Building Energy Resilience	CITY OPERATIONS: Partner with EBCE to install microgrids (solar + battery systems) on City-owned public-facing emergency facilities, allowing for onsite clean energy generation plus resilient backup power.	BU-11	*Contracting and project planning in 2023; installation in 2024/25*	Power purchase agreement with EBCE to result in utility bill savings; $1M in federal funding secured by EBCE to support project	· **CD–Sustainability** · *PW–Engineering* · *CD–Building & Safety* · *Fire–Emergency Services*

Focus Area & Strategy		Priority Short-Term Action	Related Measure	Completed Date, Start Date, and/or *Target Date*	Costs/Savings (if applicable/known)	Lead Dept. & Division/ *Supporting Dept. & Division*
INFRASTRUCTURE & EQUIPMENT	Clean Mobility Infrastructure	COMMUNITY LEVEL: Adopt a City reach code to enhance EV readiness requirements for new construction of homes and businesses.	IN-3	*Early to mid-2024*		· **CD–Sustainability** · *CD–Building & Safety*
		COMMUNITY LEVEL: Partner with EBCE to install fast-charging mobility hubs on public-facing City owned property serving local multifamily property residents.	IN-3	**Project planning in 2023;** *installation in 2024/25*	City provides site access, and EBCE operates and maintains mobility hubs	· **CD–Sustainability** · *CD–Building & Safety* · *PW–Engineering*
		COMMUNITY LEVEL: Continue implementation of the City's Mobility Action Plan (MAP), including traffic signal modernization and mode shift efforts to decrease driving and increase travel by walking, bicycling, carpooling, telecommuting, and transit.	IN-4	**MAP adopted March 2019;** *implementation underway*		· **PW–Transportation**
		CITY OPERATIONS: Replace conventional City fleet vehicles with electric vehicles (EVs) according to City vehicle replacement schedule; install necessary EV charging infrastructure to support full fleet conversion.	IN-6	*Begin implementation in 2024*	$5M allocated in 2023/24 CIP for EV infrastructure including any necessary electrical power upgrades	· **PW–Engineering** · *CD–Sustainability* · *PW–Maintenance*
LAND USE & MOBILITY	Clean & Multimodal Mobility & Connectivity	COMMUNITY LEVEL: Amend Fremont's General Plan to replace Level of Service (LOS) with Vehicle Miles Traveled (VMT) as the criteria used for transportation analysis under the California Environmental Quality Act (CEQA) for all development projects.	LU-2	**General Plan amended June 2020;** *implementation underway*		· **CD–Planning** · *PW–Transportation*
		COMMUNITY LEVEL: Continue implementation of active transportation options, including achieving a robust level of participation from schools in the Safe Routes to Schools (SRTS) program.	LU-1	*Targeting 100% school participation at a robust level by spring 2024*		· **PW–Transportation**
		CITY OPERATIONS: Adopt, implement, and promote a Hybrid Telework Policy for City employees as well as other existing benefits that support GHG-reducing commute alternatives such as carpooling, public transit, micromobility options, and electric vehicle use.	LU-2 LU-3	**Hybrid Telework Policy adopted April 2023;** *implementation underway.*		· ***Human Resources (HR)*** · CD–Sustainability · *PW–Transportation*

Focus Area & Strategy		Priority Short-Term Action	Related Measure	Completed Date, Start Date, and/or *Target Date*	Costs/Savings (if applicable/known)	Lead Dept. & Division/ *Supporting Dept. & Division*
MATERIALS & WASTE	Materials Reuse & Plastic Waste Reduction	COMMUNITY LEVEL: Evaluate the forthcoming model plastic waste/reuse ordinance being developed by StopWaste for potential adoption in Fremont.	MW-1	*Late 2023 to early 2024*		· **Community Services (CS)–Environmental Services**
		COMMUNITY LEVEL: Partner with Rethink Disposables (under contract with StopWaste) to offer technical assistance to food service establishments to adopt reusables for dine-in situations.	MW-1	**Pilot completed early 2022 (4 sites);** *expand in 2023/24*	Current pilot funded through StopWaste and the City's Solid Waste Collection Fees	· **CS–Environmental Services** · *Economic Development*
		CITY OPERATIONS: Complete a pilot project integrating reusable food ware options at the Aqua Adventure Water Park in Fremont; evaluate expanding to other community-facing City services and programming.	MW-1	**Pilot implemented mid-2022;** *expand in 2023/24*		· **CS–Environmental Services** · *CS–Recreation* · *Human Services (HS)*
	Managing Recycling & Organics	COMMUNITY LEVEL: Develop and implement a plan for education and outreach, technical assistance, and enforcement of ORRO/SB 1383 non-compliant commercial facilities and diversion from large organics generators including edible food.	MW-3	*Develop plan in 2023; begin implementation in 2024*	Inspections supported by StopWaste and the City's Solid Waste Collection Fees	· **CS–Environmental Services** · *City Manager's Office (CMO)–Communications* · *Economic Development*
		COMMUNITY LEVEL: Update Fremont Municipal Code to align with the requirements of Senate Bill 1383 and adopt the countywide Organics Reduction & Recycling Ordinance (ORRO).	MW-5	**Adopted November 2021;** *implementation underway*		· **CS–Environmental Services**

Focus Area & Strategy		Priority Short-Term Action	Related Measure	Completed Date, Start Date, and/or *Target Date*	Costs/Savings (if applicable/known)	Lead Dept. & Division/ *Supporting Dept. & Division*
NATURAL & URBAN LANDSCAPES	Carbon Sequestration	COMMUNITY LEVEL: Adopt the City's Urban Forest Management Plan; review City ordinances, policies, and regulations to support the plan's goals.	NL-3	**Adopted March 2023;** *Evaluate City ordinances late 2023 to early 2024*	Ongoing management costs unknown	· **CS–Urban Forestry**
		CITY OPERATIONS: Regularly apply compost/mulch to landscapes at City facilities to improve soil water retention and carbon sequestration properties and align with Senate Bill 1383 procurement targets.	NL-1	**Pilot implemented in 2022 (3 sites);** *expand in 2023/24*		· **CS–Parks Maintenance** · *CS–Environmental Services*
		COMMUNITY LEVEL: Begin tree plantings in targeted neighborhoods with lower urban tree canopy and in underserved areas, with a goal of 800 trees annually.	NL-3	*Begin implementation in 2023/24; expand in 2025*		· **CS–Urban Forestry** · *CS–Environmental Services*
GREEN ECONOMY	Green Businesses & Jobs	COMMUNITY LEVEL: Collaborate with industry associations and other regional entities to host green business events for Fremont businesses to share clean energy and sustainability best practices.	GE-2	*2023-2025*	Any costs would be associated with necessary upgrades or purchasing changes	· **Economic Development** · *CD–Sustainability*
		CITY OPERATIONS: Gather and track key sustainability performance metrics of City facilities and, where appropriate, certify them as California Green Businesses.	GE-2	*2023-2025*		· **CD–Sustainability** · *CS–Environmental Services* · *PW–Maintenance*
	Climate-Friendly Purchasing	CITY OPERATIONS: Update the City's Green Purchasing Policy; implement an interdepartmental green purchasing training and champions program.	GE-6	**Policy update mid-2022;** *engagement/ training program 2023-25*		· **CS–Environmental Services** · *CD–Sustainability*

Focus Area & Strategy		Priority Short-Term Action	Related Measure	Completed Date, Start Date, and/or *Target Date*	Costs/Savings (if applicable/known)	Lead Dept. & Division/ *Supporting Dept. & Division*
PUBLIC PARTICIPATION & ENGAGEMENT	Climate Action Engagement	COMMUNITY LEVEL: Partner with Community Climate Solutions (CCS), community-based organizations, and Fremont Unified School District (FUSD) educators and students to expand participation in the City's Fremont Green Challenge (FGC) residential climate action engagement platform.	PE-3	**FGC engagement pilot implemented in 2021;** *expand in 2023-25*	City contract with CCS would cost $52k/year for 20 hours/week of community engagement	· **CD–Sustainability**
	Climate Tracking & Reporting	COMMUNITY LEVEL: Launch a *Climate Ready Fremont* online platform for tracking and reporting key metrics and action implementation efforts.	PE-5	*Late 2023 to early 2024*	Explore utilizing City's new MyFremont community engagement platform; separate platform estimated at $10k/year	· **CD–Sustainability** · *CMO–Communications*

California Environmental Quality Act Streamlining

Implementation of *Climate Ready Fremont* will require that new development is constructed with more sustainable and low-carbon features than existing development. New development projects that are consistent with the growth projections and applicable GHG reduction measures in *Climate Ready Fremont* are eligible for California Environmental Quality Act (CEQA) streamlining, per the provisions of State CEQA Guidelines Section 15183.5. Under these provisions, a project that is subject to discretionary review and is consistent with the City's General Plan growth projections can show consistency with applicable GHG reduction measures in *Climate Ready Fremont*, and the level of analysis for the project required under CEQA can be streamlined. Furthermore, a project's incremental contribution to cumulative GHG emissions may be determined not to be cumulatively considerable in such cases.

Climate Ready Fremont is a "qualified" climate action plan which will allow project-specific environmental documents, if eligible, to tier from and/or incorporate by reference *Climate Ready Fremont's* programmatic review of GHG impacts in their cumulative impact analyses. *Climate Ready Fremont* meets the requirements under Section 15183.5 of the State CEQA Guidelines as a qualified plan for the reduction of GHG emissions for use in cumulative impact analysis pertaining to new development projects.

A CEQA guidelines and consistency review checklist that aligns with *Climate Ready Fremont* will be provided to project developers by staff. This will serve as the mechanism that is used to demonstrate consistency with *Climate Ready Fremont* and contains GHG reduction measures applicable to development projects that are required to be implemented on a project-by-project basis to ensure that the specified emissions targets identified in *Climate Ready Fremont* are achieved. New development projects will need to incorporate all applicable *Climate Ready Fremont* measures to demonstrate consistency. These measures will be enforced as conditions of approval for ensuring that compliance can be confirmed before the project can be implemented.

Monitoring and Updates

The City will begin implementing *Climate Ready Fremont* measures and actions upon adoption, and data tracking will begin the following year. As measures and actions are implemented, the effects on emissions trends and climate resilience in the City will necessitate maintenance and updates to *Climate Ready Fremont* to ensure relevancy and effectiveness. Therefore, City staff will need to evaluate and monitor performance of *Climate Ready Fremont* over time and alter or amend the plan if it is not achieving the desired outcomes. This will include conducting periodic GHG emissions inventories as well as analyzing individual action performance.

City staff will evaluate the performance of each GHG reduction action that has been implemented. This entails monitoring the level of community participation, costs, benefits, effectiveness, and barriers to implementation, as well as actual reductions in activities that result in GHG emissions. By evaluating whether the implementation of an action is on track to achieve its objective, the City can identify successful actions and reevaluate or replace underperforming measures.

City staff anticipates utilizing an online community platform to track and transparently report on *Climate Ready Fremont* implementation progress. This platform will enable staff to prepare a monitoring report annually that will provide updates on progress, including the status of actions

implemented to achieve GHG reductions and improve resilience as well as other important milestones in the implementation process. As technologies and markets change and the City implements the actions in *Climate Ready Fremont*, these reports will be used to track progress and identify actions that need to be improved, adjusted, or removed. The report will also be used for periodic presentations to the Fremont City Council and Environmental Sustainability Commission about implementation progress on actions and overall progress towards achieving the objectives of *Climate Ready Fremont*. The report would also serve to provide transparency and promote engagement with the public for implementation of *Climate Ready Fremont*.

City staff will also update the City's GHG inventory on a regular basis. Staff currently utilizes the ICLEI ClearPath tool to conduct community-scale and municipal GHG emissions inventory updates. This tool is available to ICLEI members as part of its annual membership fee, and ICLEI regularly maintains and updates the tool to align with the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC) and other relevant best practices. Should new tools become available or should regional or state agencies begin offering local governments support with their GHG inventory updates, the City would adjust its approach accordingly.

Finally, the City will provide updates to the plan as necessary to account for any new state or federal legislation that may affect the plan and to focus on GHG reduction measures and actions that may have been difficult to implement previously due to a lack of available technologies or high upfront implementation costs. Any updates will reflect the findings and recommendations of the monitoring reports and inventory updates.

Ongoing Community Engagement

Continued engagement with and active participation by the community is critical for successful implementation of *Climate Ready Fremont*. As the City implements and monitors measures and actions, engagement with residents, businesses, community organizations, developers, property owners, and other local, regional, and state agencies will ultimately guide measure implementation and promote achievement of *Climate Ready Fremont* objectives. While a handful of measures will be led solely by the City, many will require partnerships and collaboration.

Effective and long-term climate action and resilience building in the community depends on efforts that continue to change the way individuals interact with the environment. Numerous measures require participation from residents, businesses, and visitors to fully implement, and the City is committed to continuing its outreach efforts through implementation, monitoring, and future plan updates. Many of the measures in **Chapter 3** are focused on increasing community awareness and participation in existing programs and connecting the community with new information, tools, funding, and resources.

Fremont is a diverse community, both ethnically and economically. As with all City plans and programs, the City will strive to ensure that all community members are aware of and continue to have the opportunity to provide input regarding the City's climate action efforts. The City is committed to overcoming any barriers to engagement, such as lack of access to technology and language barriers, to ensure an equitable implementation process.

Potential Funding Sources

The City will incur costs to implement the measures included in *Climate Ready Fremont*. These include initial start-up, ongoing administration, staffing, and enforcement costs. While some measures will only require funding from the City and other public entities, others will result in cost impacts for businesses, developers, and residents. However, implementation of many of the measures will result in substantial cost-savings for the City, residents, and business owners in the long term. The City will be proactive in seeking cost-effective implementation and strategic funding opportunities and developing partnerships to lessen the burden of implementation costs.

Funding to support climate action implementation efforts through the City budget can happen through either the General Fund or the Capital Improvement Program (CIP). The General Fund—the City's primary operating fund—provides the majority of resources for most of the services the City typically delivers, including the public safety, maintenance, and general government functions required to support direct services to the community. The General Fund accounts for the City's discretionary funding sources (e.g., property tax, sales tax, franchise fees, and business tax) and can contribute to spending on climate-related measures such as energy and water efficiency, waste reduction, building and landscape maintenance, and community engagement efforts.

In addition to the General Fund, the City's Capital Improvement Program provides investments to improve infrastructure related to the City's transportation system, parks, and building facilities. Primary funding for these investments comes from development impact fees; funding from federal, state, and regional sources; and ongoing transfers from the General Fund. Also, on occasion, the City Council may approve transfers from the General Fund of unanticipated general revenue or expenditure savings to provide a source of funding for future CIP projects or to augment previously approved projects. The fiscal year 2021/22 CIP programs $189 million over the next five years and includes an unfunded "Clean Energy Infrastructure" project line item, which is slated to receive funding under the fiscal year 2023/24 CIP.

Beyond the City budget, other funding options such as rebates, grants, credits, financing, technical assistance, and green jobs training are available from a variety of outside organizations, including local utilities, regional regulatory agencies, joint power authorities, and state and federal agencies. Below is a summary of potential funding sources that could support climate implementation efforts identified in *Climate Ready Fremont*. Some of these funding sources, such as utility rebate and incentive programs, have already been utilized extensively to support Fremont's ongoing climate implementation efforts, while others represent new opportunities for the City to explore.

- **Voucher, rebate, and direct install programs** are offered to residents and businesses by energy and water utilities such as PG&E, East Bay Community Energy (EBCE), and the Alameda County Water District (ACWD) and regional, state, and federal public agencies such as the Bay Area Air Quality Management District (BAAQMD), California Air Resources Board (CARB), California Public Utilities Commission (CPUC), and the U.S. Department of Energy (DOE). Rebates and vouchers help subsidize the upfront cost of the purchase and/or installation of cleaner and more efficient equipment, and direct install programs will install this equipment directly within a home or a business. Examples of eligible products include LED lighting, energy efficient (ENERGY STAR) appliances, insulation and weather-sealing, heat pump water and space heating, induction stovetops, water efficient (WaterSense) products, battery-storage systems, electric-powered landscaping and construction equipment, zero-emissions vehicles, and EV charging stations.

- **Regional grants and sponsorships** are offered by public agencies such as EBCE, StopWaste, and BayREN to residents, businesses, and nonprofit organizations to support waste reduction and energy implementation efforts within the community. Regulatory agencies such as the BAAQMD and Metropolitan Transportation Commission (MTC) also offer grants supporting air quality improvements, vehicle miles traveled (VMT) reductions, complete streets, clean transportation, and zero emissions off-road equipment.
- **Subsidies for income-qualified residential and disadvantaged communities** are offered by utilities and state and federal public agencies for home weatherization, energy and water efficiency upgrades, solar energy systems, and clean vehicles. In addition, state and federal agencies often offer enhanced incentives for efforts that benefit disadvantaged communities, which are geographic areas that are most impacted by a combination of economic, health, and environmental burdens.
- **State formula and competitive grants** are awarded to public agencies and private entities alike for renewable energy, public transportation, zero-emission vehicles, environmental restoration, sustainable agriculture, and recycling. Most of the climate grants coming from state agencies are supported through California Climate Investments (CCI), the state's cap-and-trade program for projects and programs that work to reduce GHG emissions.
- **Federal formula and competitive grants** have been substantially magnified through two recent federal laws: the $1.2 trillion Infrastructure Investment and Jobs Act (IIJA) of 2021 (now known as the Bipartisan Infrastructure Law (BIL)) and the $737 billion Inflation Reduction Act (IRA) of 2022. Some of the funding from the IIJA/BIL and IRA will take the form of grants from agencies such as the U.S. Department of Energy (DOE), the U.S. Department of Transportation (DOT), and the U.S. Environmental Protection Agency (EPA) to directly support state and local governments with climate implementation efforts.
- **Federal tax credits** are offered by the federal government for the purchase of new or used zero-emission vehicles (up to $7,500 for passenger vehicles and $40,000 for commercial vehicles) as well as for the purchase and installation of clean energy systems such as solar, wind, geothermal, and battery-storage (30% of the installed system cost). Under the Inflation Reduction Act, these tax credits will remain in place until at least 2032. Previously only available as a credit to residents and businesses with federal tax liability, the IRA also establishes a direct pay option so that nonprofits and government agencies like the City of Fremont can also access these incentives.
- **Low- and no-interest government loans**—such as PG&E's On-Bill Financing (OBF) program, IBank's California Lending for Energy and Environmental Needs (CLEEN) direct loans, and California Energy Commission's (CEC's) Energy Conservation Assistance Act (ECAA) direct loans—help local governments and schools fund energy efficiency and clean energy projects.
- **Private clean energy financing** programs such as GoGreen Financing and Property Assessed Clean Energy (PACE) provide financing specifically to residents and businesses for energy and water efficiency clean energy projects.
- **Market-based carbon credits** such as Low Carbon Fuel Standard (LCFS) and Renewable Energy Certificates (RECs) are incentives regulated by state and federal entities that provide direct payments to the owners or producers of low-carbon fuels, electric vehicle charging infrastructure, and renewable energy systems on a per ton of carbon reduction basis.

- **Green jobs training and apprenticeship opportunities** such as Rising Sun Center for Opportunity's (RSCO's) regional Climate Careers Program and the statewide California Climate Action Corps and CivicSpark AmeriCorps Fellowship programs offer youth and young adults opportunities to have hands-on experience implementing climate action within local communities while at the same time earning money. The AmeriCorps supported programs also provide those who complete their fellowships with an educational award that can be used to pay off student loans or to help support future educational opportunities.

Successful implementation of *Climate Ready Fremont* will require continued funding for capital improvements, increased investments in public infrastructure and community programs, and ongoing support for operations and maintenance. The City will monitor private and public funding sources and will proactively seek funding through rebates, grants, partnerships, and other relevant opportunities to support the direct implementation of measures identified within *Climate Ready Fremont*.


CITY OF
Fremont