CITY OF IRVINE

Climate Action + Adaptation Plan

GREC Meeting
October 12, 2022

The CAAP

Pulling All Of Our Strategies Together Into A Unified Climate Action Plan

- **Create** a **bold, transformative, and engaging vision** for responding to climate change
- Provide the community with **meaningful opportunities** to provide **input** , including traditionally underrepresented groups
- **Reduce** emissions from government operations and communitywide activities
- **Identify** measurable actions to reduce emissions for all key sectors **within the jurisdiction or influence of the City government**
- **Prioritize** measures that prepare the community for a **changing climate** and build **resilience** among populations at greatest risk from climate hazards
- **Consider** a California Environmental Quality Act (CEQA) **"qualified" plan** that provides CEQA **streamlining benefits** for future development projects

PLANNING A CLIMATE-SMART FUTURE

Conserve IRVINE
SMALL CHANGES BIG IMPACT

CITY OF IRVINE 1971

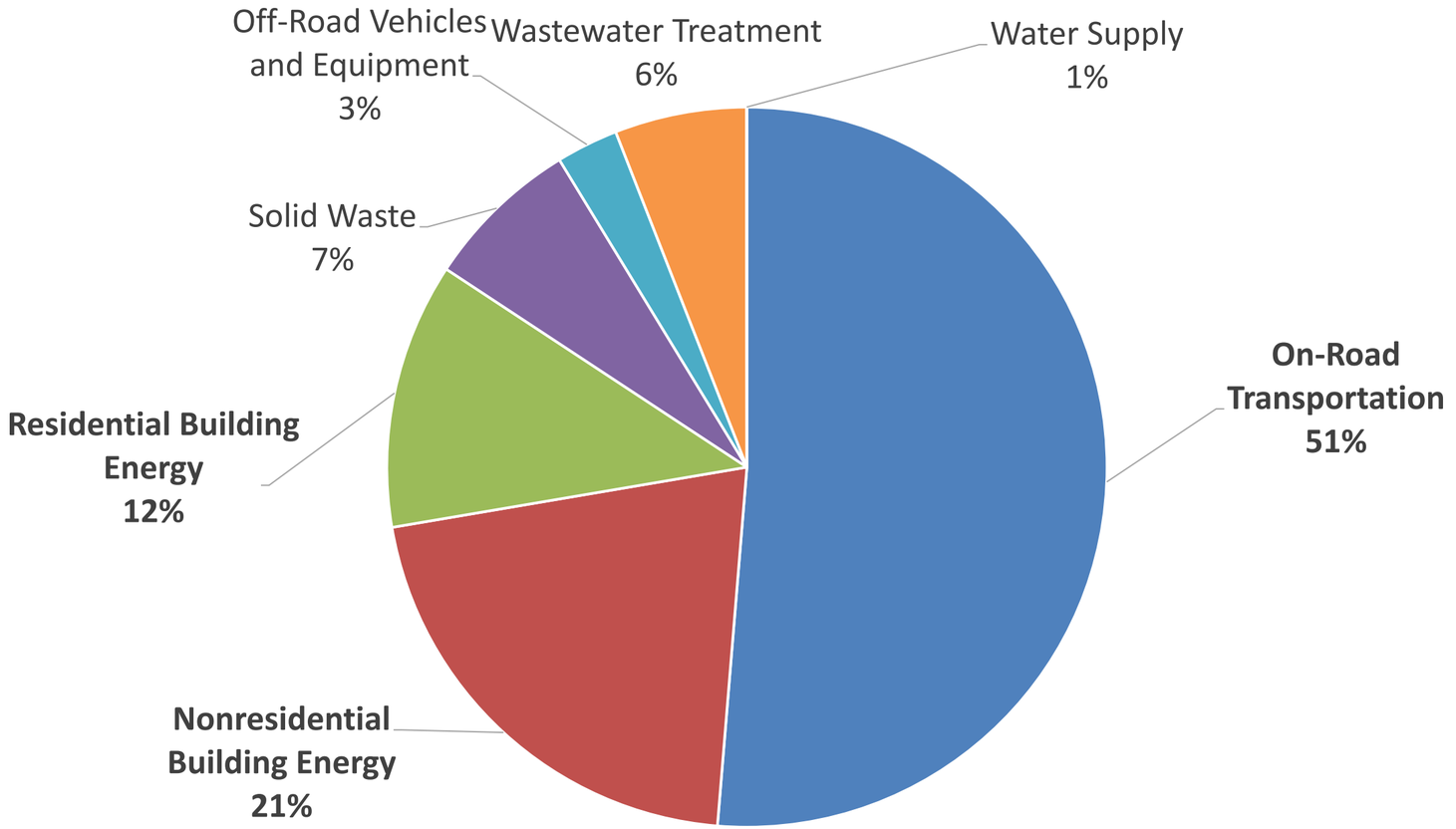
Climate Action + Adaptation Plan

First …

The Data.

Irvine's GHG Emission Sources & Forecast.

2019 Greenhouse Gas Emissions Inventory – Community-wide



*2019 community-wide preliminary results

Community-wide GHG Emissions Results 2019

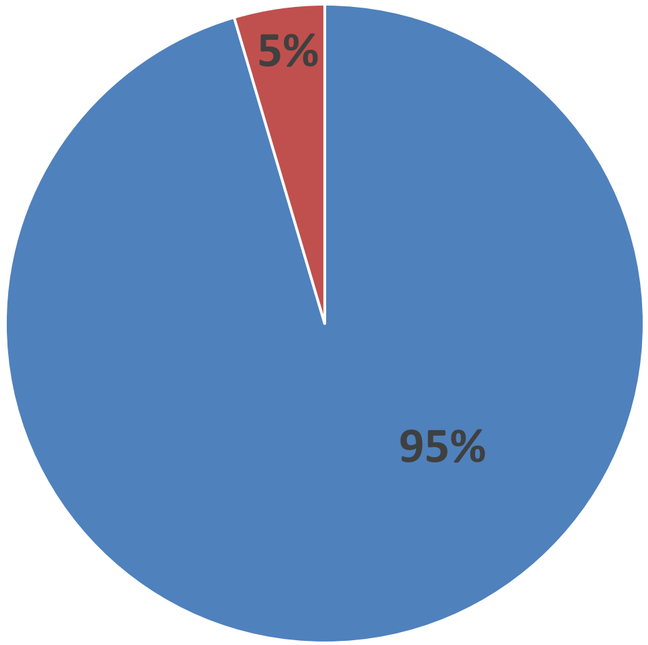
Included Sectors	GHG Emissions ($MTCO_2e$)	Percent of Total
On-Road Transportation	*1,175,634*	*51*
Nonresidential Building Energy	*481,539*	*21*
Residential Building Energy	*273,773*	*12*
Solid Waste	160,626	7
Wastewater Treatment	139,546	6
Off-Road Vehicles and Equipment	68,756	3
Water Supply	26,227	1
Total	2,326,101	100

*2019 community-wide preliminary results

Largest Community-wide Sector: On-Road Transportation

51% of community-wide emissions

On-Road Transportation Emissions by Vehicle Category
(1,175,634 $MTCO_2e$ in 2019)



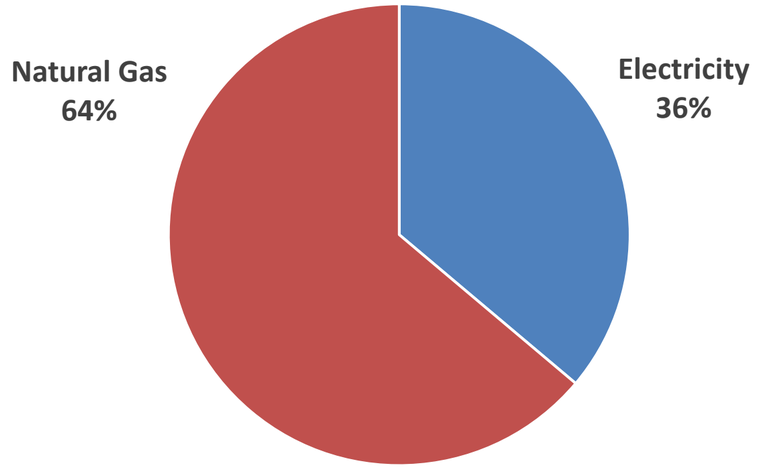
- **Activity Data:** vehicle miles traveled from Irvine Traffic Model
- **Emissions Factor:** Orange County-specific from CARB
- Based on origin-destination method for apportioning VMT to local jurisdictions

Second Largest Community-wide Sector: Building Energy

33% of community-wide emissions

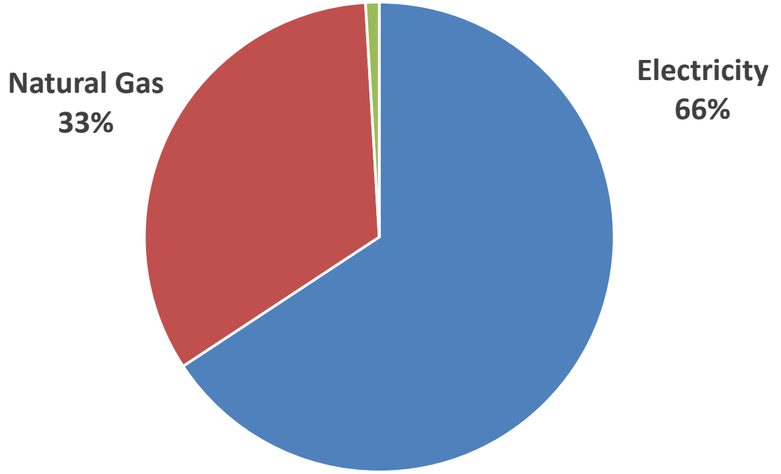
Residential Buildings

12% of communitywide total
(273,773 MTCO2e in 2019)



Non-residential Buildings

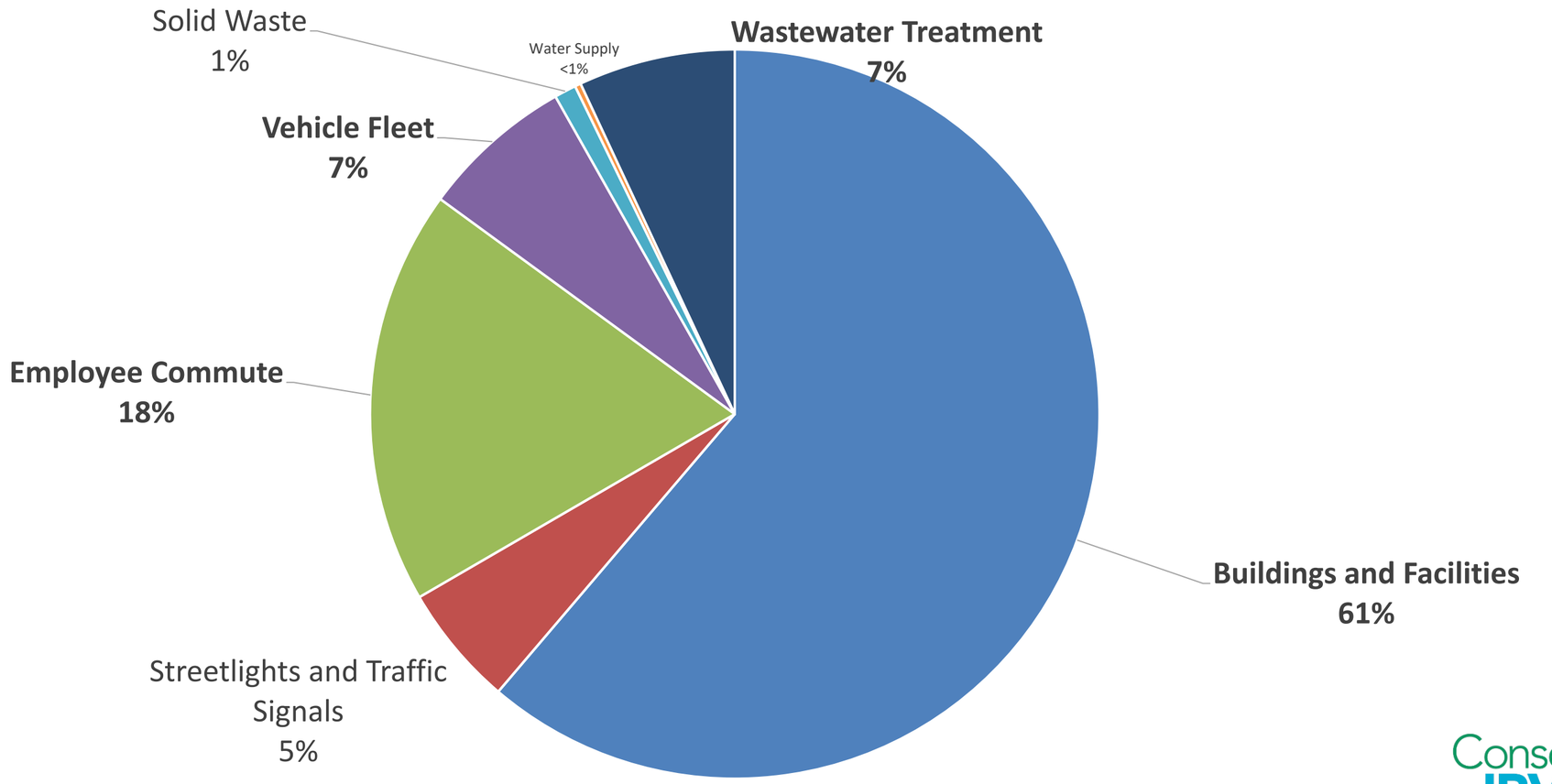
21% of communitywide total
(481,539 MTCO2e in 2019)



*Back-up generators account for 1% of non-residential building emissions

- Electricity (18%), Natural Gas (14%), Generators (1%)
- **Activity Data:** aggregated metered energy usage provided by utilities
- **Emissions Factors:** SoCal Edison and USEPA (electricity), The Climate Registry (natural gas)

2019 Greenhouse Gas Emissions Inventory – Municipal Operations



*2019 municipal operations preliminary results

Municipal Operations
GHG Emissions Results 2019

Included Sectors	GHG Emissions ($MTCO_2e$)	Percent of Total
Buildings and Facilities	*10,081*	*61*
Employee Commute	*3,031*	*18*
Wastewater Treatment	*1,144*	*7*
Vehicle Fleet	*1,116*	*7*
Streetlights and Traffic Signals	889	5
Solid Waste	159	1
Water Supply	44	<1
Total	16,464	100

Municipal operations represent less than 1% (0.07%) of community-wide emissions

*2019 municipal operations preliminary results

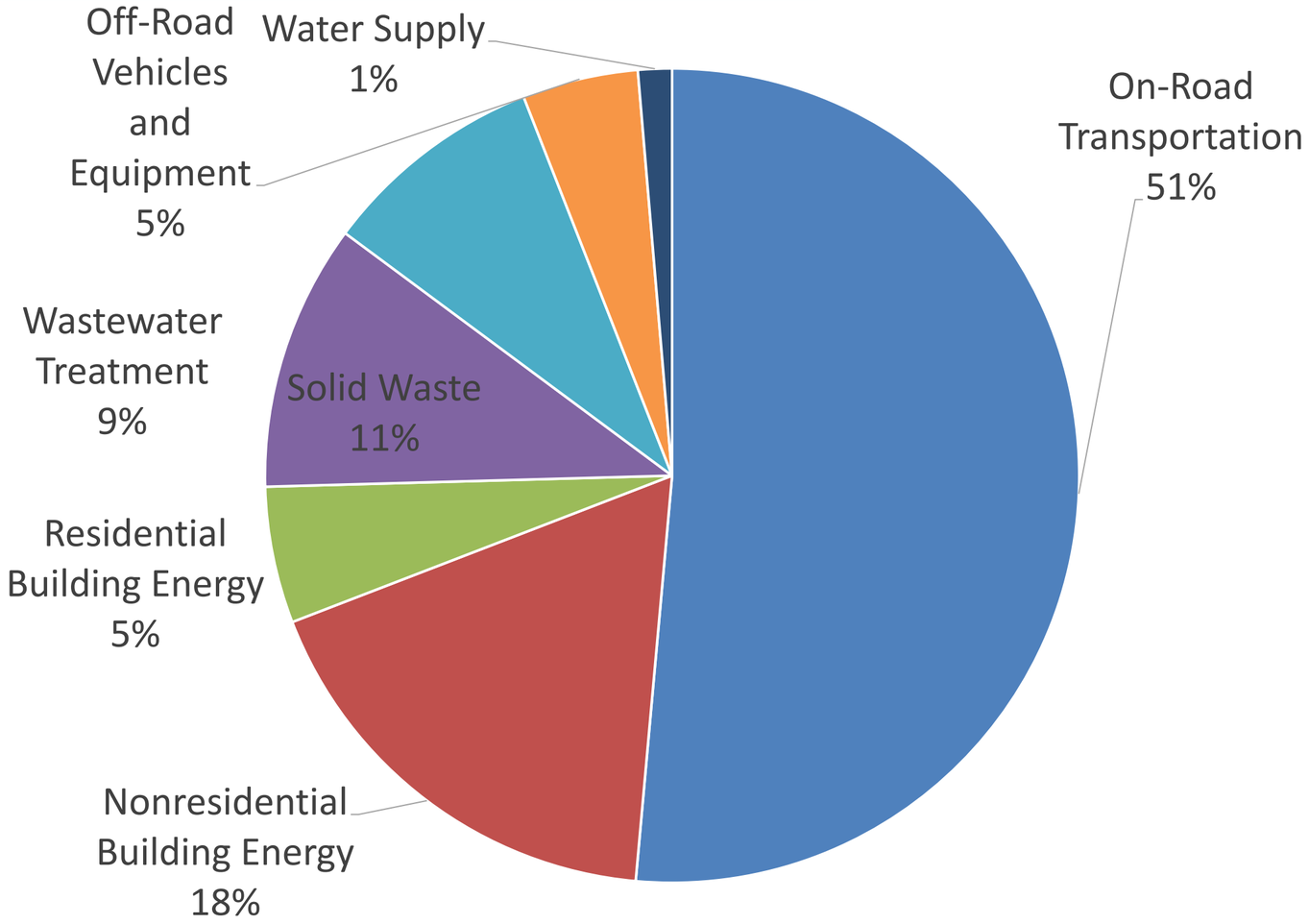
GHG Emissions Forecast
Purpose, Methods, Assumptions

- Understand how growth and federal, state, regional actions will affect local emissions in the future
- Start from baseline inventory results
- Estimate future emissions based on projected growth
  - Population, Jobs, Vehicle Miles Traveled (VMT)
- Apply reductions from federal, state, regional actions

Identifying Reductions from Federal, State, and Regional Actions

Government	Law, Regulation, or Action	Sectors Applied
Orange County Power Authority	Automatic enrollment City of Irvine customers in 100% renewable electricity option	Residential and Nonresidential Building Energy, Water Supply
State	California's Building Energy Efficiency Standards (2022 Title 24, Part 6)	Residential and Nonresidential Building Energy
State	Advanced Clean Car Standards I and II	On-Road Transportation
State	Truck and Bus Regulation	On-Road Transportation
Federal	Fuel Efficiency Standards for Medium- and Heavy-Duty Vehicles	On-Road Transportation
Federal	EPA Off-Road Compression-Ignition Engine Standards	Off-Road Vehicles and Equipment

2030 Greenhouse Gas Emissions Forecast – Community-wide



*preliminary results

Community-wide GHG Emissions Forecast - 2030

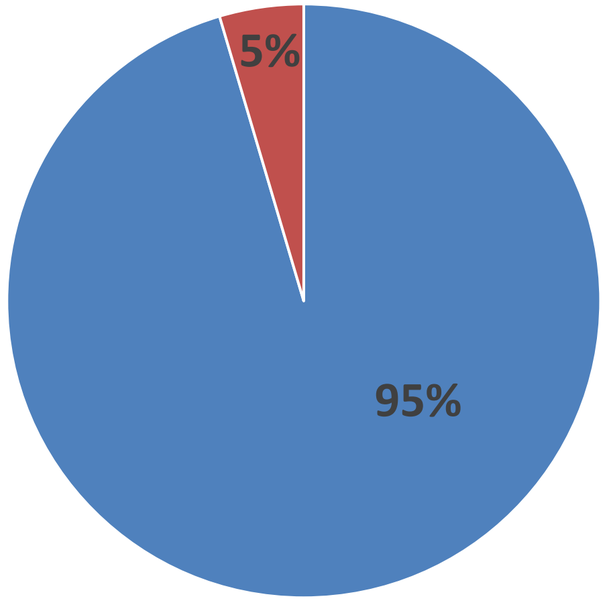
Included Sectors	GHG Emissions ($MTCO_2e$)	Percent of Total
On-Road Transportation	*850,024*	*51*
Nonresidential Building Energy	*292,851*	*18*
Residential Building Energy	*89,599*	*5*
Solid Waste	175,038	11
Wastewater Treatment	147,056	9
Off-Road Vehicles and Equipment	76,077	5
Water Supply	22,234	1
Total	1,652,880	100

*preliminary results

GHG Emissions Forecast
On-Road Transportation in 2030

51% of community-wide emissions in 2030

On-Road Transportation Emissions by Vehicle Category
(850,024 $MTCO_2e$ in 2030)



*preliminary results

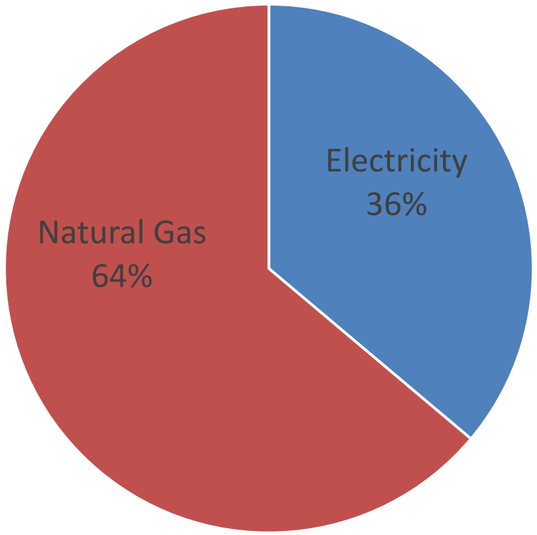
Cars and Light Duty Trucks
Medium and Heavy Duty Trucks

GHG Emissions Forecast
Building Energy in 2030

23% of annual community-wide emissions in 2030

Residential Buildings

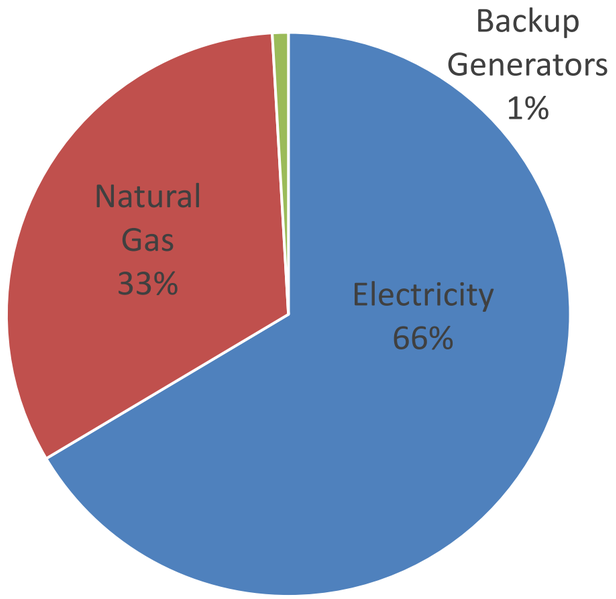
5% of communitywide total
(89,599 MTCO2e in 2030)



*preliminary results

Non-residential Buildings

18% of communitywide total
(292,851 MTCO2e in 2030)



*preliminary results

Next …

Possible GHG Reduction Measures / Strategies To Pursue.

Decarbonization Strategies Per GHG Emission Sector

- GHG emission reduction strategies can be assessed by sector (transportation, building energy, solid waste, wastewater, etc.)

- Given where the City has direct operational control, coupled with our eventual carbon neutrality goal, we should likely focus our initial efforts on transportation (51%) and building energy (33%) GHG reduction measures – they constitute 84% of Irvine's emissions profile

Transportation Measures

Emissions Sector	Strategy	Measure
On-Road Transportation	Sustainable Transportation and Land Use Planning	Increase high-density, transit-oriented development.
		Create car-free areas.
	Low- and Zero-Emission Vehicles	Increase electric vehicle (EV) charging infrastructure.
		Increase EV and low-carbon vehicle adoption.
		Support EVs in new development.
		Reduce use of fossil fuel-powered vehicles.
	Transit System Improvement	Enhance and expand transit facilities and infrastructure.
		Increase transit ridership.
	Active Transportation	Improve active transportation options.
	Transportation Demand Management	Increase implementation of transportation demand management (TDM) strategies.
		VMT reductions from businesses.
	Vehicle Idling	Reduce vehicle idling.
	Parking	Reduce the amount of parking such that it meets the needs of residents, workers, and visitors in a way that is consistent with the City's sustainability goals.

Building Energy Measures

Emissions Sector	Strategy	Measure
Building Energy	Energy Efficiency and Electrification	Facilitate energy audits for existing buildings to identify energy efficiency retrofit and electrification opportunities.
		Retrofit existing buildings to improve energy efficiency and facilitate fuel switching.
		Reduce plug loads in existing buildings.
	Low Carbon Development	Eliminate the use of natural gas in new development by 2025.
		Implement and enforce REACH building codes and Green Building Standards.
		Require smart grid technologies.
		Facilitate net zero energy projects.
		Reduce high-GWP refrigerants.
		Expand the City's Green Building Program.
	Clean Energy	Enroll 100% of community-wide accounts in 100% renewable/zero carbon option from OCPA.
		Increase renewable energy installations in existing buildings.
		Increase renewable energy in new development.
		Develop innovative approaches to energy generation, distribution, and storage.
	Energy Education	Strengthen community awareness of energy efficiency, energy conservation, electrification, and clean energy.

City Ops – GHG Reduction Measures

Emissions Sector	Strategy	Measure
Buildings & Public Lighting	Energy Efficiency and Conservation	Reduce lighting-related energy consumption.
		Increase energy efficiency.
		Implement conservation best practices to reduce energy use.
	Electrification	Transition municipal buildings and facilities to be all-electric.
	Clean Energy	Use OCPA-supplied 100% carbon-free electricity.
		Transition to 100% zero-carbon energy for municipal operations
Vehicle Fleet	Zero- and Low-Emission Fleet / Equip.	Convert the City's fleet vehicles and equipment to all-electric or alternative fuels, such as renewable diesel, by 2030.
Employee Commute	Sustainable Employee Commutes	Reduce vehicle miles traveled and single-occupancy employee commute trips.
Solid Waste	Zero Waste	Increase waste diversion and achieve zero waste by 2030.
	Responsible Consumption	Implement an environmentally preferable purchasing policy.
Water	Water Efficiency and Conservation	Reduce municipal water consumption.

Next …

Consideration of a CEQA-Qualified CAAP

What is a CEQA-Qualified Plan?

CEQA Guidelines Section 15183.5 criteria

Quantify baseline and projected GHG emissions for defined time period and geographic area
Establish emissions reduction **target(s)**
Specify **measures** , including performance standards, that collectively meet the target(s), as demonstrated by **substantial evidence**
Establish **mechanism** to monitor progress toward target(s) achievement and **require** amendment if not on track
Adopted in public process following environmental review

Implementing A CEQA-Qualified Plan

CEQA Guidelines Section 15183.5 criteria

Quantify baseline and projected GHG emissions for defined time period and geographic area
Establish emissions reduction **target(s) that comport with State GHG reduction goals**
Specify **measures** , including performance standards, that collectively meet the target(s), as demonstrated by **substantial evidence**
Establish **mechanism** to monitor progress toward target(s) achievement and **require** amendment if not on track
Adopted in public process following full environmental review (either Mitigated Negative Declaration or Full EIR)

Considerations for Preparing a CEQA-Qualified Plan

CEQA-Qualified

- CEQA streamlining benefits
- Standard approach to project-level mitigation
- Consistent with CARB, OPR Guidance
- Requires greater level of detail and evidence
- Requires ongoing monitoring / amendments

Non-Qualified

- No CEQA benefits
- Allows for different types of project-level mitigations
- Less level of detail and evidence
- No requirement for ongoing monitoring / amendment
- Quicker to prepare, easier to implement

Questions?