



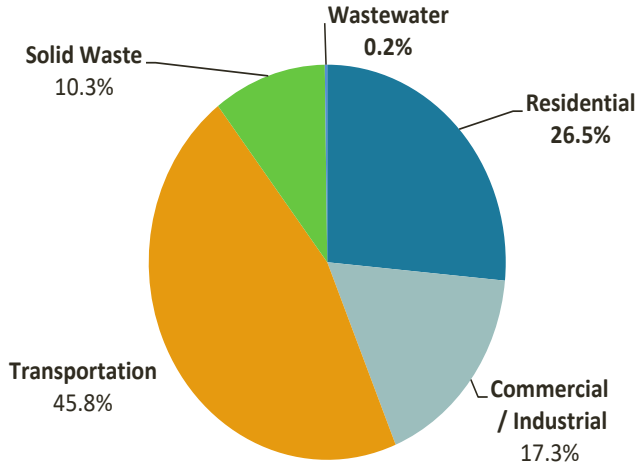
CITY OF CARMEL-BY-THE-SEA
**Greenhouse Gas Emissions:
Reduction Measures and Targets**

LSA

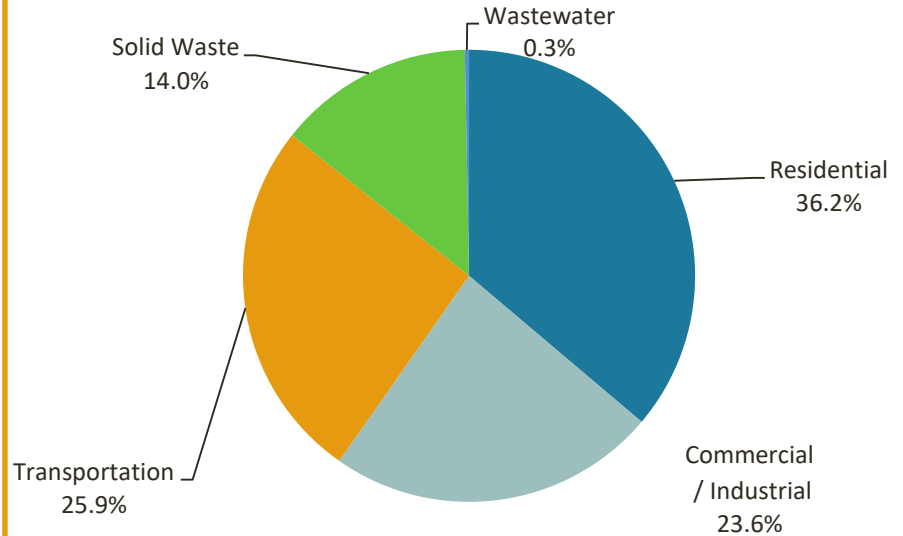
Climate Committee Meeting
February 17, 2022

Revised Inventory (Scope 1 and 2) with Updated VMT

City of Carmel 2019 GHG Emissions by Sector



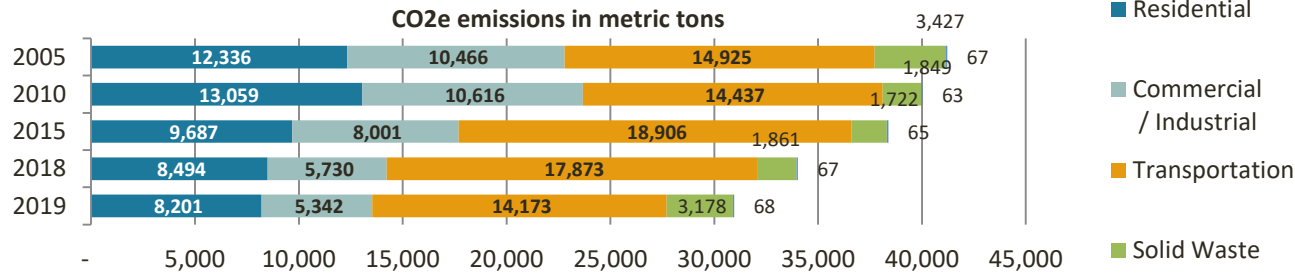
City of Carmel 2019 GHG Emissions by Sector



Inventory by AMBAG

Revised Inventories (Scope 1 and 2)

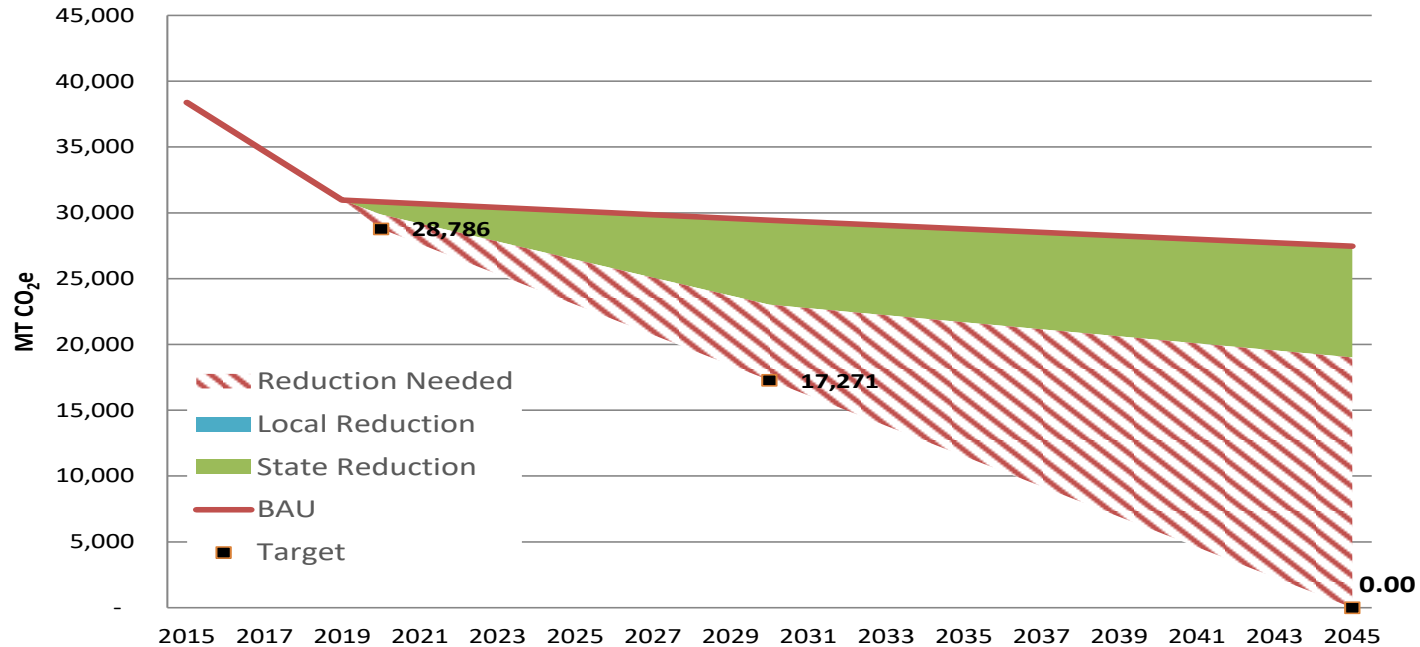
City of Carmel 2005 to 2019 GHG Emissions by Sector



City of Carmel 2005-2019 Community-wide GHG emissions						
Community CO2e Emissions by Sector	Residential	Commercial / Industrial	Transportation	Solid Waste	Wastewater	Total
2005	12,336	10,466	14,925	3,427	67	41,221
2010	13,059	10,616	14,437	1,849	63	40,024
2015	9,687	8,001	18,906	1,722	65	38,381
2018	8,494	5,730	17,873	1,861	67	34,026
2019	8,201	5,342	14,173	3,178	68	30,962
% change 2005 - 2018	-34%	-49%	-5%	-7%	1%	-25%

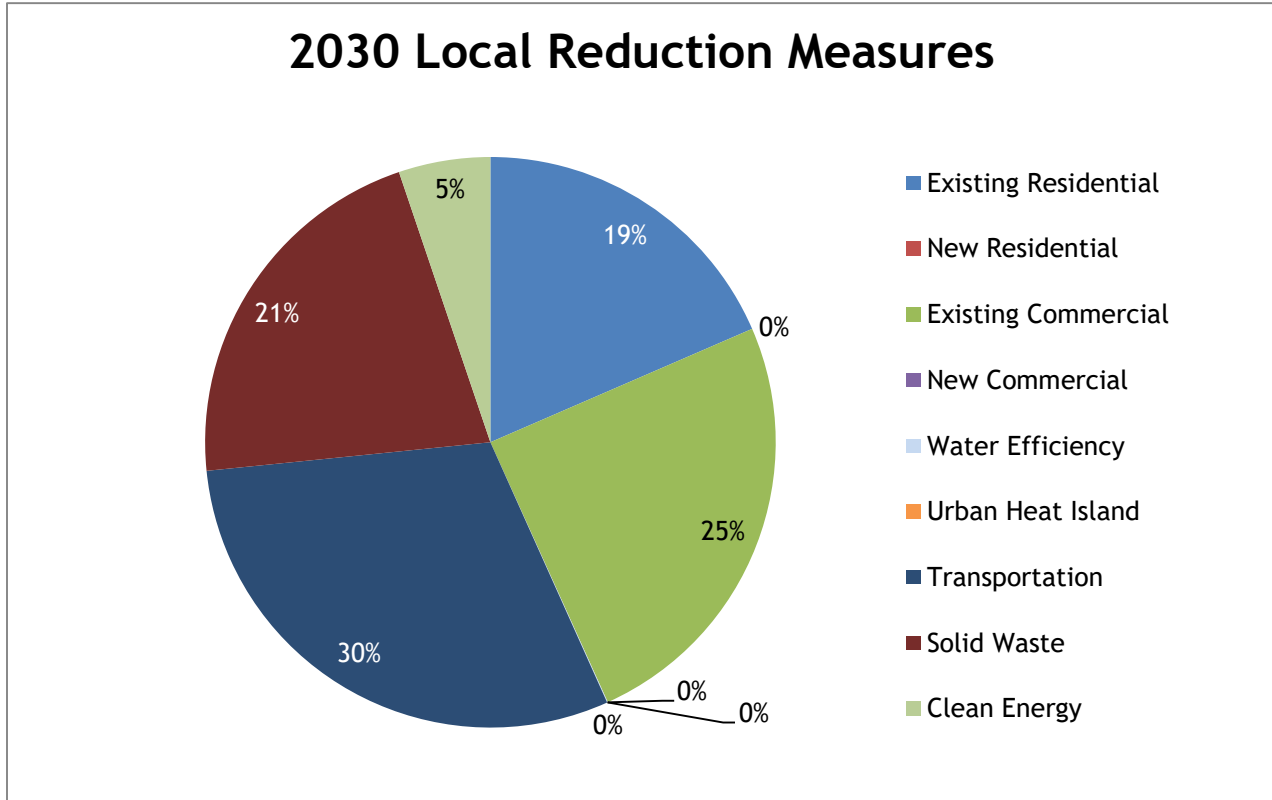
Emission Forecasts and Recommended Targets

City of Carmel-By-The-Sea, 2015 - 2045



Total State Reductions in 2030: 6,432 MT CO₂e

Local Reduction Measures



Total local
reductions:
7,010 MT CO₂e

Local Reduction Measures



Goal 1: Increase Energy Efficiency in Existing Residential Units

- Energy Efficiency education and recognition in the residential sector (Supporting Measure)
- Increase participation in existing energy efficiency programs (1.7 MT CO₂e Reduction)
- Home Energy Evaluations (Supporting Measure)
- Residential home energy renovations.
 - Promote participation in green building programs (Supporting Measure).
 - Provide incentives to homeowners to convert to electrification (**259 MT CO₂e Reduction**)
 - Require major home renovations to convert to electrification (**1,035.6 MT CO₂e Reduction**).
 - Initiate a Green Citizens Program (Supporting Measure).
 - Streamline the permitting process for energy efficiency retrofits (Supporting Measure).

Local Reduction Measures

Goal 2: Increase Energy Efficiency in New Residential Units

- Educate City staff and the community on future Title 24 compliance (Supporting Measure).
- Promote Tier 1 and Tier 2 Green Building Standards (Supporting Measure).
- Require electrification in new residential units (0.01 MT CO₂e Reduction).
- Streamline the permitting process for Tier 1 and Tier 2 Green Building applications (Supporting Measure).



Local Reduction Measures



Goal 3: Increase Energy Efficiency in Existing Commercial

- Energy Efficiency education in the commercial sector compliance (Supporting Measure).
- Increase business participation in existing energy efficiency programs (**69.4 MT CO₂e Reduction**)
- Business Energy Evaluations (Supporting Measure).
- Commercial energy renovations.
 - Promote participation in green building programs (Supporting Measure).
 - Provide incentives to businesses that convert to electrification (**333 MT CO₂e Reduction**).
 - Require major commercial renovations to convert to electrification (**1,333 MT CO₂e Reduction**).
 - Initiate a Green Business Certification Program (Supporting Measure).
 - Streamline the permitting process for energy efficiency retrofits (Supporting Measure).

Local Reduction Measures

Goal 4: Increase Energy Efficiency in New Commercial

- Educate City staff and the community on future Title 24 compliance (Supporting Measure).
- Promote Tier 1 and Tier 2 Green Building Standards (Supporting Measure).
- Require electrification in new commercial development with exemptions for restaurants and other businesses that can demonstrate a need for natural gas (0.0 MT CO₂e Reduction).
- Streamline the permitting process for Tier 1 and Tier 2 Green Building applications (Supporting Measure).



Local Reduction Measures

Goal 5: Energy Efficiency Through Water Conservation

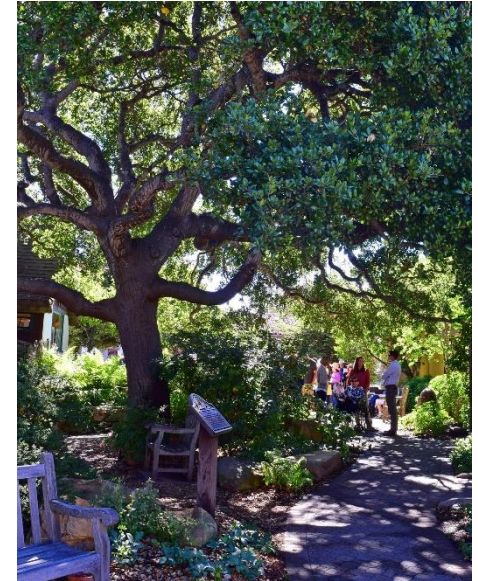
- Exceed State Water Efficiency Standards.
- Recycled water for certain types of commercial and multi-family landscaping.
- Grey Water Systems.
- Promote rainwater harvesting.
- 3.0 MT CO₂e Reduction combined



Local Reduction Measures

Goal 6: Decrease Energy Demand by Reducing the Heat Island Effect.

- Maintain the health of the Urban Forest Canopy (City already does this. Therefore no additional reduction, but need to continue to maintain urban forest).
- Require light reflecting surfaces on rooftops (cool roofs, not quantified).
- Use cool pavement options when repaving roadways (not quantified).



Local Reduction Measures



Goal 7: Decrease GHG Emission By Reducing VMT.

- Develop Bicycle Master Plan (10 MT CO₂e Reduction).
- Ride Sharing and Bike to Work Programs.
- Identify and promote existing shuttle services to area airports for visitors to use.
- Neighborhood Electric Vehicles (NEV) and NEV Shuttles (**563 MT CO₂e Reduction** when combined with ride sharing /bike to work programs, and existing shuttle services).
- Shuttle service between the Monterey Airport and destinations in the City (not quantified).
- Explore the feasibility of increasing land use density in downtown (not quantified).
- Develop an Origin/Destination Transportation Model focused on the City.

Local Reduction Measures

Goal 7: Electrify the Fleet.

- Electric Vehicle Infrastructure (**1,538 MT CO₂e**).
 - Work with community and businesses to install additional e-chargers.
 - Provide priority parking at hotels for electric vehicles with e-chargers.
 - Provide priority parking for bus tours that use electric buses.
 - Require major commercial building renovations to install e-chargers.
 - Initiate a Green Visitor Program that awards tourists that use electric vehicles
 - Also provide carbon offsets for air miles traveled.



Local Reduction Measures

Goal 8: Reduce Solid Waste (1,500 MT CO₂e Reduction)

- Promote Zero Waste events.
- Promote home composting and require SB 1383 compliance.
- Promote reuse containers rather than recyclables.
- Educate the community on use of City provided containers.



Local Reduction Measures

Goal 9: Increase Clean Energy Use (364 MT CO₂e Reduction)

- Incentivize solar panel installation for residential and small commercial.
- Promote energy storage systems installation with solar panels.
- Require large commercial renovations to install solar panels.
- Encourage residents and businesses to participate in the 3CE 100 percent renewable Program.



Emission Forecasts with Local Reductions

