

CLIMATE ACTION & ADAPTATION PLAN

Presentation to Los Altos City Council

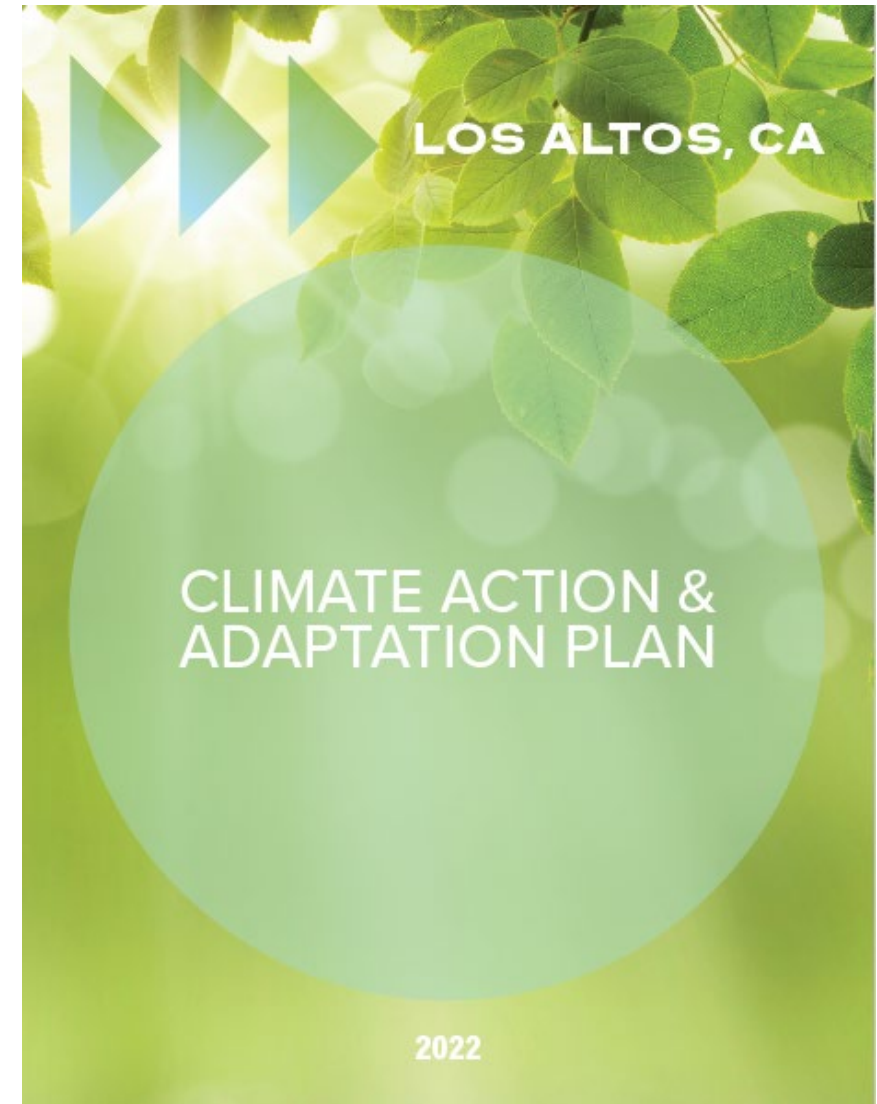
February 8, 2022

AGENDA

- Overview
- Climate Context
- Strategic Roadmap & Priority Actions
- Implementing the CAAP
- Benefits of the CAAP
- Conclusions & Keys to Success
- Q&A

ENVIRONMENTAL COMMISSION

- Bruno Delagneau (CAAP subcommittee)
- Raashina Humayan (CAAP subcommittee)
- Don Weiden (CAAP subcommittee)
- Laura Teksler, Chair
- Shiao-ping Lu
- David Klein
- Lei Yuan
- Neysa Fligor (Council Liaison)
- Ranu Aggarwal (Staff Liaison)



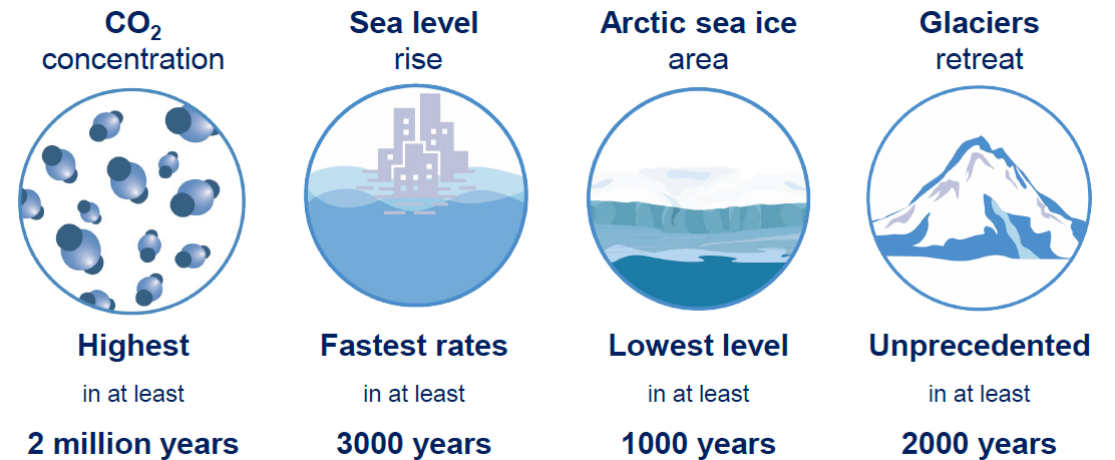
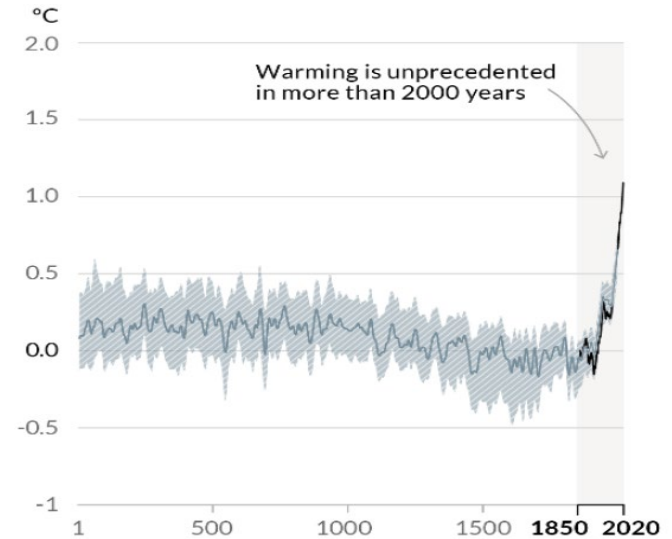
CAAP OVERVIEW

- Update to 2013 Climate Action Plan
- Updated GHG inventories
- Updates GHG reduction target
- Vulnerability Assessment and Adaptation Framework



CALL TO ACTION

- IPCC states Climate Change is a crisis – **CODE RED FOR HUMANITY**
- Cities are responsible for **70%** of GHG Emissions
- Los Altos is a residential community with only small amounts of commercial and no industrial emissions
- Our actions will reinforce and inspire other Cities



VISION & MISSION

- Developed by Environmental Commission CAAP subcommittee
- Guided all efforts in CAAP development

Vision

“To place Los Altos on an accelerated, sustainable path to carbon neutrality by advancing bold and effective climate policies.”

Mission

The mission of our Climate Action and Adaptation Plan is to preserve the unique character of Los Altos and enhance its natural environment, while improving the quality of life and health of its people by supporting transformative change in the areas of climate action, resilience and equity.

BACKGROUND

- Los Altos produced 111,320 metric tons of carbon dioxide equivalent in 2018
- This is a 40% reduction from 2005 levels
- The largest sources of GHG emissions remain transportation and energy
- Emissions are forecasted to be 67,160 metric tons in 2035
- CAAP '22 actions can reduce 2035 emissions by 62,070 metric tons, leaving ~5,000 metric tons to be sequestered
- By sequestering remaining emissions, the CAAP sets a goal of Carbon Neutrality by 2035



Emissions Timeline by Scenario (MTCO₂e)

Scenario	2005 ¹	2018 ¹	2030 ²	2035 ²
BAU	184,725	-	112,670	113,650
ABAU	-	-	83,025	75,700
ABAU+Existing CAP '13	-	111,320	75,885	67,160
CAAP 2022	-	-	16,900	5,090

¹Historic Data (as data for 2006-2017 was not available, 111,320 MTCO₂e was used as the baseline for all scenarios), ²Projected data based on models

*BAU: Business-As-Usual

ABAU: Adjusted Business-As-Usual

STRATEGIC ROADMAP

- 8 Focus Areas
- 15 Strategies
- 30 Actionable Goals
- 68 Actions
- Actions are inter-related
- Developed with extensive City and community input



STRATEGIES BY FOCUS AREA	
Focus Area	Strategies
Transportation	Reduce City-Wide Vehicle Miles Traveled by 25% by 2035 Electrify Transportation Electrify Off-Road Mobile Sources
Energy	Reduce Emissions from Energy Consumption Facilitate Building Decarbonization Increase Solar Energy Production
Resource Conservation	Reduce Consumption and Waste Operate Sustainable Municipal Buildings
Municipal Operations	Promote Green Municipal Practices Reduce Municipal VMT Integrate Climate Action and Adaptation into City Functions
Green Community	Develop Nature-Based Solutions
Climate Risk	Understand and Reduce Physical Risk
Emergency Management	Integrate Adaptation into Emergency Preparedness and Response
Resilient Community	Educate and Protect Residents

STRATEGIES & GOALS

- Transportation is the largest source of emissions within Los Altos (58% of all emission).
- The goal is to make alternatives to single-occupant, fossil fuel trips easy, convenient, and attractive.
- The remaining vehicle travel, over time, will shift to a majority electric.
- Participation by all community members will be required to achieve the City's aggressive VMT reduction target.

FOCUS AREA 1 TRANSPORTATION

STRATEGY 1

Reduce Single-Occupancy Vehicle Travel

GOAL 1.1 CREATE A WALKABLE AND BIKEABLE CITY

GOAL 1.2 PROMOTE SMART GROWTH STRATEGIES

GOAL 1.3 SUPPORT SHARED MOBILITY

STRATEGY 2

Electrify Transportation

GOAL 1.4 REACH 80% COMMUNITY-WIDE ELECTRIC VEHICLE ADOPTION BY 2035

GOAL 1.5 ACCELERATE COMMUNITY-WIDE ELECTRIC VEHICLE SUPPLY EQUIPMENT SUFFICIENT TO SUPPORT 80% EVs

STRATEGY 3

Electrify Off-Road Mobile Sources

GOAL 1.6 ELIMINATE OFF-ROAD FOSSIL FUEL ENGINES

STRATEGIES & GOALS

- Energy is the second-largest source of emissions within Los Altos (39% of all emissions).
- The majority of emissions in this category are from methane gas use.
- Electrifying transportation and buildings will increase electrical energy consumption in the near term but reduces GHG emissions as methane gas use is reduced.

FOCUS AREA 2 ENERGY

STRATEGY 1

Reduce Emissions from Energy Consumption

GOAL 2.1 ENCOURAGE ENERGY CONSERVATION MEASURES IN HOMES AND BUSINESSES

GOAL 2.2 REQUIRE ALL-ELECTRIC NEW BUILDINGS AND MAJOR RETROFITS

STRATEGY 2

Facilitate Building Decarbonization

GOAL 2.3 REDUCE OR ELIMINATE METHANE GAS USE IN EXISTING BUILDINGS BY INCREASING FUEL SWITCHING

GOAL 2.4 DISINCENTIVIZE METHANE GAS

STRATEGY 3

Increase Solar Energy Production

GOAL 2.5 EXPAND COMMUNITY SOLAR AND BATTERY STORAGE

STRATEGIES & GOALS

- Consuming and/or disposing of natural resources generates community GHG emissions.
- The effects of these activities can be reduced by diverting waste from the landfill, conserving water, and promoting sustainable consumption patterns.

FOCUS AREA 3 RESOURCE CONSERVATION

STRATEGY 1

Reduce Consumption and Waste

GOAL 3.1 DECREASE LANDFILL WASTE 15% AND ELIMINATE SINGLE-USE PLASTICS AND CONSTRUCTION WASTE BY 2035

GOAL 3.2 REDUCE WATER USE 15% BY 2030

GOAL 3.3 PROMOTE A CIRCULAR ECONOMY

STRATEGIES & GOALS

- The Municipal Operations focus area is the City's opportunity to lead by example.
- Emissions reduction measures may also reduce the cost of City operations.

FOCUS AREA 4 MUNICIPAL OPERATIONS

STRATEGY 1

Operate Sustainable Municipal Buildings

GOAL 4.1 REDUCE MUNICIPAL BUILDING ENERGY USE BY 30% BY 2035

GOAL 4.2 INSTALL SOLAR AND BATTERY STORAGE AT CITY FACILITIES

STRATEGY 2

Reduce Municipal VMT

GOAL 4.3 CONVERT 100% OF THE CITY'S FLEET TO ELECTRIC VEHICLES BY 2030

GOAL 4.4 DEVELOP GUIDELINES FOR SUSTAINABLE EMPLOYEE COMMUTE AND BUSINESS TRAVEL

STRATEGY 3

Promote Green Municipal Practices

GOAL 4.5 PROMOTE GREEN MUNICIPAL PRIORITIES

STRATEGY 4

Integrate Climate Action and Adaptation into City Functions

GOAL 4.6 INCORPORATE CLIMATE ACTION AND ADAPTATION INTO CITY POLICY, BUDGET, PLANNING, & INTERNAL STANDARDS

STRATEGIES & GOALS

FOCUS AREA 5 GREEN COMMUNITY

- Many projects in Los Altos contribute to an improved quality of life by providing economic, social, and environmental benefits.
- These projects also indirectly reduce GHG emissions.

FOCUS AREA 6 CLIMATE RISK

- Vegetation, pavements and other conditions at ground level influence both flood and heat risk.
- The city can't stop the rain or the heat, but it can magnify - or damper - their impacts.

FOCUS AREA 5 GREEN COMMUNITY

STRATEGY 1

Develop Nature-Based Solutions

GOAL 5.1 EXPAND GREEN INFRASTRUCTURE AND IMPROVE WATER RESILIENCE

GOAL 5.2 SEQUESTER ALL REMAINING CARBON BY 2035

FOCUS AREA 6 CLIMATE RISK

STRATEGY 1

Understand and Reduce Physical Risk

GOAL 6.1 REDUCE FLOOD RISK

GOAL 6.2 REDUCE HEAT RISK

STRATEGIES & GOALS

FOCUS AREA 7 EMERGENCY MANAGEMENT

- By integrating growing climate hazards into its planning, the City can be prepared for climate emergencies.

FOCUS AREA 8 RESILIENT COMMUNITY

- The City needs to find new ways to communicate with and ensure the comfort and safety of its residents.
- The City needs to create or enhance the capacity of existing buildings to shelter groups of residents.

FOCUS AREA 7 EMERGENCY MANAGEMENT

STRATEGY 1

Integrate Adaptation Into
Emergency Preparedness
and Response

GOAL 7.2 ENSURE
SAFETY DURING
WILDFIRES AND
UNHEALTHY AIR
EVENTS

GOAL 7.1 ENSURE SAFETY
DURING EXTREME
HEAT

FOCUS AREA 8 RESILIENT COMMUNITY

STRATEGY 1

Educate and Protect
Residents

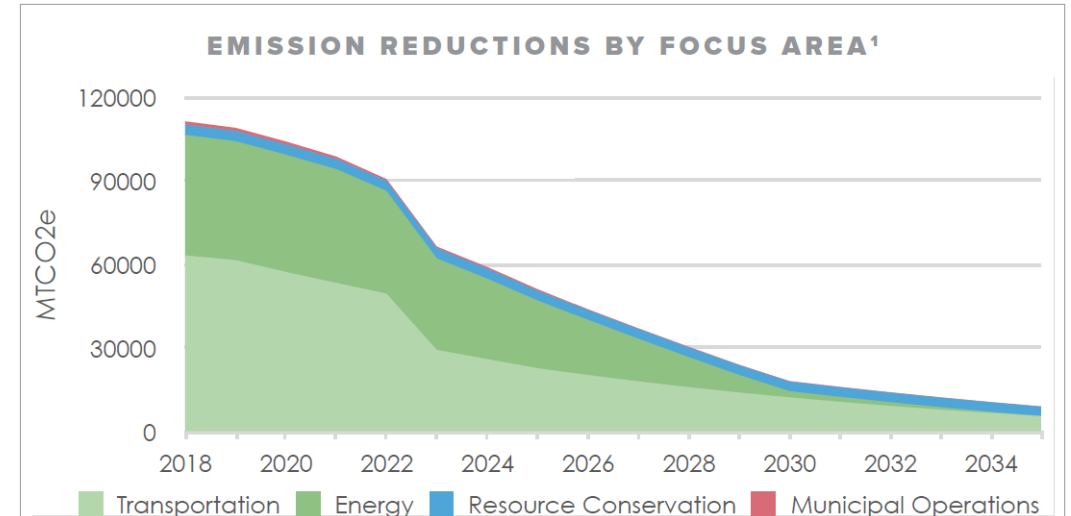
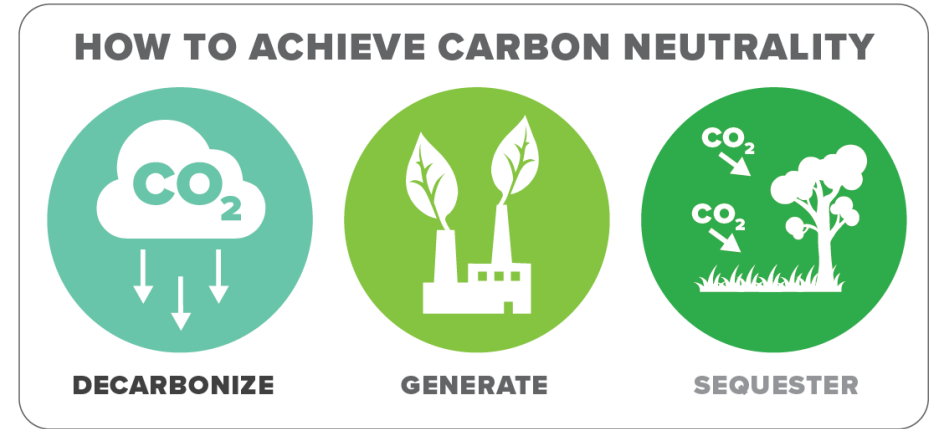
GOAL 8.1 ESTABLISH
RESILIENCE HUBS

GOAL 8.2 IDENTIFY AND
PROTECT
VULNERABLE
COMMUNITY
MEMBERS

GOAL 8.3 IMPROVE CLIMATE
LITERACY
AND RISK
UNDERSTANDING

CARBON NEUTRALITY PATHWAY

- Milestones:
 - 17,000 MTCO₂e by 2030 (85% reduction from 2018 levels)
 - ~5,000 MTCO₂e by 2035 (Carbon Neutral)
- Some emissions will still need to be sequestered
- The City will need to stay flexible with CAAP implementation
- The CAAP is a living plan that can and should evolve over time





- Transit Oriented Development requirements developed
- EV supply needs assessment completed
- Solar requirements updated
- Residential fuel switching program launched
- Urban Forest Master Plan developed
- Heat Safety and Air Quality protocols implemented
- Resilience Hubs identified and scoped
- EV supply equipment to support 80% EV installed
- City-wide electric shuttle launched
- Net Zero requirements for new construction adopted
- Commercial fuel switching program launched
- Water use reduced by 15%
- 100% of City fleet converted to EV
- Riparian Ecosystem Restoration Plan developed
- Community Climate Action Grant launched
- 2022 Complete Streets Master Plan implemented
- 80% EV adoption reached
- Community-wide energy use reduced by 20%
- Methane gas use eliminated or greatly reduced
- Landfill diversion increased to 95%
- At least 10,000 new city trees planted

*Impacts of Covid taken into account

2022 PROPOSED ACTIONS

- Development of yearly EV fair program
- Draft ordinance to phase out off-road fossil fuel engines
- Residential and commercial energy audits support tools set up
- Task Force on methane gas user fee established with recommendation to Council by end of year
- New ordinance banning single-use plastics passed
- Energy efficiency audits of city buildings
- Establish policy to facilitate alternative work schedule or telecommuting options for city staff
- Zero waste policy for city facilities and city-sponsored events in place
- Integrate CAAP goals into city projects
- Ban use of non-organic pesticides and herbicides
- Set up stock of N95 masks to distribute to vulnerable populations

COST AND STAFFING ESTIMATES

- Rough order cost estimates based on FTE time, infrastructure, and consultant fees
- Approx. \$15M total over 13 years
- Some costs included as parts of other plans
- Cost of inaction can be much higher

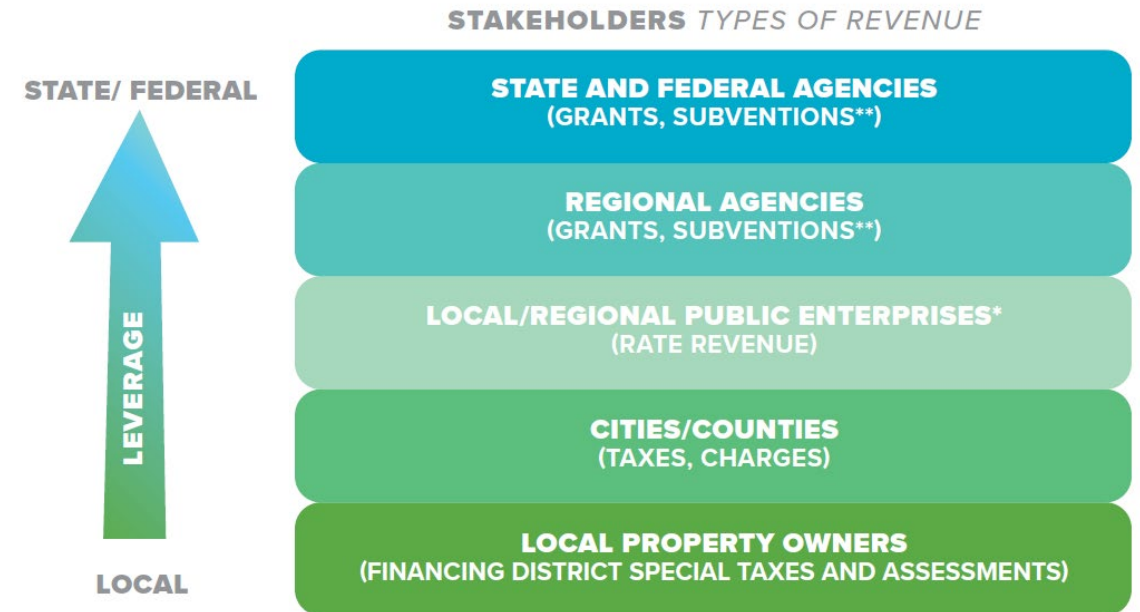


- | | | |
|-----------------|-----------------|---------------|
| • \$4.1 million | • \$5.4 million | • \$5 million |
| • 2 new FTE* | • +2 new FTE* | • +2 new FTE* |

*In addition to Sustainability Director

EXISTING FUNDING STREAMS

- Over 50 local, State, and Federal sources listed in the plan
- Over \$15 billion in climate change-related funding approved by CA legislature and signed by Gov. Newsom



COMMUNITY PARTNERS

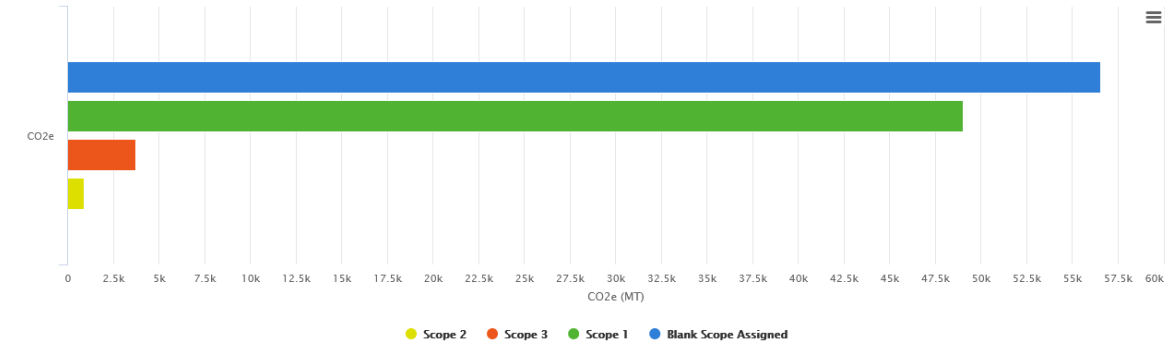
- Council and Commissions
- Business community
- Youth groups
- Residents
- Other cities
- Utilities
- Regional partners

MONITORING & REPORTING

- Update plan every 3-5 years
- Inventory emissions (at least) every 2 years
- Monitor and report to the Council every 2 years

CO2e by scope for the selected inventory year.

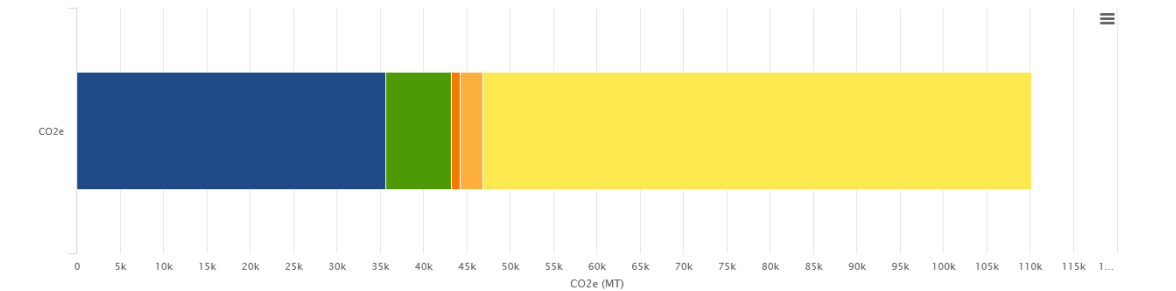
Scope	CO2e
Blank Scope Assigned	56,562
Scope 1	49,019
Scope 3	3,716
Scope 2	905



Inventory By Sector

CO2e by sector for the selected inventory year.

Sector	CO2e
Transportation & Mobile Sources	63,288
Solid Waste	2,653
Water & Wastewater	1,063
Commercial Energy	7,537
Residential Energy	35,661



BENEFITS

- Address climate change by reducing GHG emissions
- Become more resilient in the face of inevitable climate change
- Increase human health and wellness
- Increase social equity
- Increase community connectivity and vibrancy
- Benefit the economy
- Address a concern of residents
- Demonstrate local and national leadership



COST
EFFECTIVENESS



COMMUNITY
BENEFITS



ECONOMIC
BENEFITS



LOCAL POLICIES
ALIGN WITH
STATE AND
NATIONAL



PROMOTES
JUSTICE,
EQUITY &
CLIMATE

KEYS TO SUCCESS

- Be aggressive in applying for funding – have project ideas ready to go
- Focus on Priority I actions first
- Don't go it alone – work with community and regional partners
- Provide City resources when needed
- Monitor, report, adjust, repeat

CONCLUSIONS

- The City's goal is bold but achievable
- The goal is necessary based on climate science
- Los Altos residents support climate action
- Funding is available now, with more expected in the future
- Not everything needs to be done at once, but everything needs to be done
- Follow the roadmap and be flexible



QUESTIONS?



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BACKUP SLIDES

INCORPORATION OF EC & COUNCIL FEEDBACK

<u>Question/Comment:</u>	<u>Proposed Resolution:</u>
How are GHG emissions calculated? Need to reference and explain the methodology in the plan.	Action: Create tables describing data sources and calculation methods
Need to clarify the goal of 10% of population in multi-housing. What does it mean? What is the % today? How does it compare to the required increase in low income and multi-family housing for Los Altos?	Action: Increase TOD target to at least 20%
Need to explain what carbon neutral means.	Action: Add carbon neutral description to draft CAAP
Can we accomplish these goals with the limited budget and staff? Highlighting possible funding sources to alleviate direct costs to the city and making it clear how much staffing will be needed will be important.	Current FTE needs = ~6 FTE for mitigation actions Action: schedule/prioritization will be key
Need to have a priority order and specific actions that the city can/should take to keep things moving.	Action: Priority Scores developed
What were the lessons learned from the 2013 CAP? What actions had the greatest impact?	Action: table with most impactful 2013 actions added to Draft CAAP
Consider adding reference about integration with City's Housing Element (ensure meeting RHNA commitments encourages high-density & affordable housing in transit-accessible/walkable areas)	Action: Update action

TRANSPORTATION

- **1.1 B** Create a pedestrian-friendly Downtown and other community and commercial spaces throughout the city
- **1.1 C** Develop and implement a new Parking Management Plan that supports strategic VMT reduction
- **1.2 A** Support Transit-Oriented Development
- **1.2 B** Encourage Live Near Work incentives
- **1.2 C** Promote Work From Home policies and infrastructure
- **1.3 A** Develop an electric shuttle program as an alternative to SOV travel
- **1.4 B** Actively promote EV adoption and require EV-only parking
- **1.5 C** Expand the current Electric Vehicle charging and pre-wiring requirements in future Reach Code updates
- **1.6 A** Phase out off-road fossil fuel engines such as landscaping equipment

ENERGY

- **2.1 A** Support third party residential and commercial energy audits
- **2.1 B** Increase residential and commercial energy efficiency
- **2.2 A** Adopt evolving Reach Codes and expand to include large additions and major remodels
- **2.3 A** Accelerate residential HVAC replacements
- **2.3 B** Accelerate residential water heater replacements
- **2.3 C** Accelerate commercial HVAC replacements
- **2.3 D** Accelerate commercial water heater replacements
- **2.5 B** Adopt Net Zero Building requirements for new construction by 2030

RESOURCE CONSERVATION

- **3.1 A** Increase the landfill diversion rate
- **3.1 B** Eliminate non-essential single-use plastics
- **3.1 C** Reduce waste from demolition, construction and building materials
- **3.2 A** Increase community-wide water efficiency

MUNICIPAL OPERATIONS

- **4.2 A** Build new City buildings to Net Zero standards
- **4.3 A** Develop a phase-out schedule to replace all City-owned fleet vehicles with electric vehicles
- **4.4 B** Develop Work From Home and flexible schedule policies
- **4.5 A** Adopt a zero-waste policy for City facilities and City-sponsored events
- **4.6 A** Account for climate change in all new City projects
- **4.6 B** Incorporate climate preparedness into City programs, operations, and maintenance protocols
- **4.6 C** Integrate CAAP goals into City projects as an order of business

GREEN COMMUNITY

- **5.1 A** Create water-efficient buildings and landscapes
- **5.2 A** Increase urban tree canopy
- **5.2 D** Eliminate the use of non-organic pesticides and herbicides

CLIMATE RISK

- **6.1 C** Expand green infrastructure program to reduce impermeable surface areas and capture runoff from paved areas

EMERGENCY MANAGEMENT

- **7.1 B** Adjust/extend park and public facility hours during heat waves
- **7.2 A** Update wildfire warning and evacuation protocols
- **7.2 C** Ensure high-air-quality indoor spaces and purchase and distribute N-95 masks to vulnerable outdoor populations

RESILIENT COMMUNITY

- **8.3 A** Update Community Emergency Response Training (CERT) to include growing climate hazards

Data Sources (2018)

Community sector	Activity Data	Units	Sources
Residential electricity	80,391,486	kWh	SVCE, PG&E
Residential natural gas	6,640,225	therms	PG&E
Commercial electricity	58,760,342	kWh	SVCE, PG&E
Commercial natural gas	1,329,206	therms	PG&E
On-Road transportation	166,865,877	VMT	SVCE
Off-Road transportation	6,725	MTCO _{2e}	SVCE
Municipal solid waste	9,273	tons	MTWS, R3
Water energy	5,596,927	kWh	Cal Water
Wastewater electricity	2,257	kWh	City of Palo Alto
Wastewater natural gas	9,794,797	scf	City of Palo Alto
Government sector	Activity Data	Units	Sources
Electricity use	4,634,143	kWh	SVCE
Natural gas use	25,355	therms	PG&E
Street lighting	220,386	kWh	SVCE
Traffic control	56,891	kWh	SVCE
Fleet fuel use	39,679	gallons	City of Los Altos
Employee commutes	1,599,147	VMT	City of Los Altos
Municipal solid waste	278	tons	MTWS, R3
Water energy	12,970	kWh	Cal Water
Wastewater energy	724	therms	City of Palo Alto
Process & fugitive emissions	0.013	metric tons	Scaled based on population growth

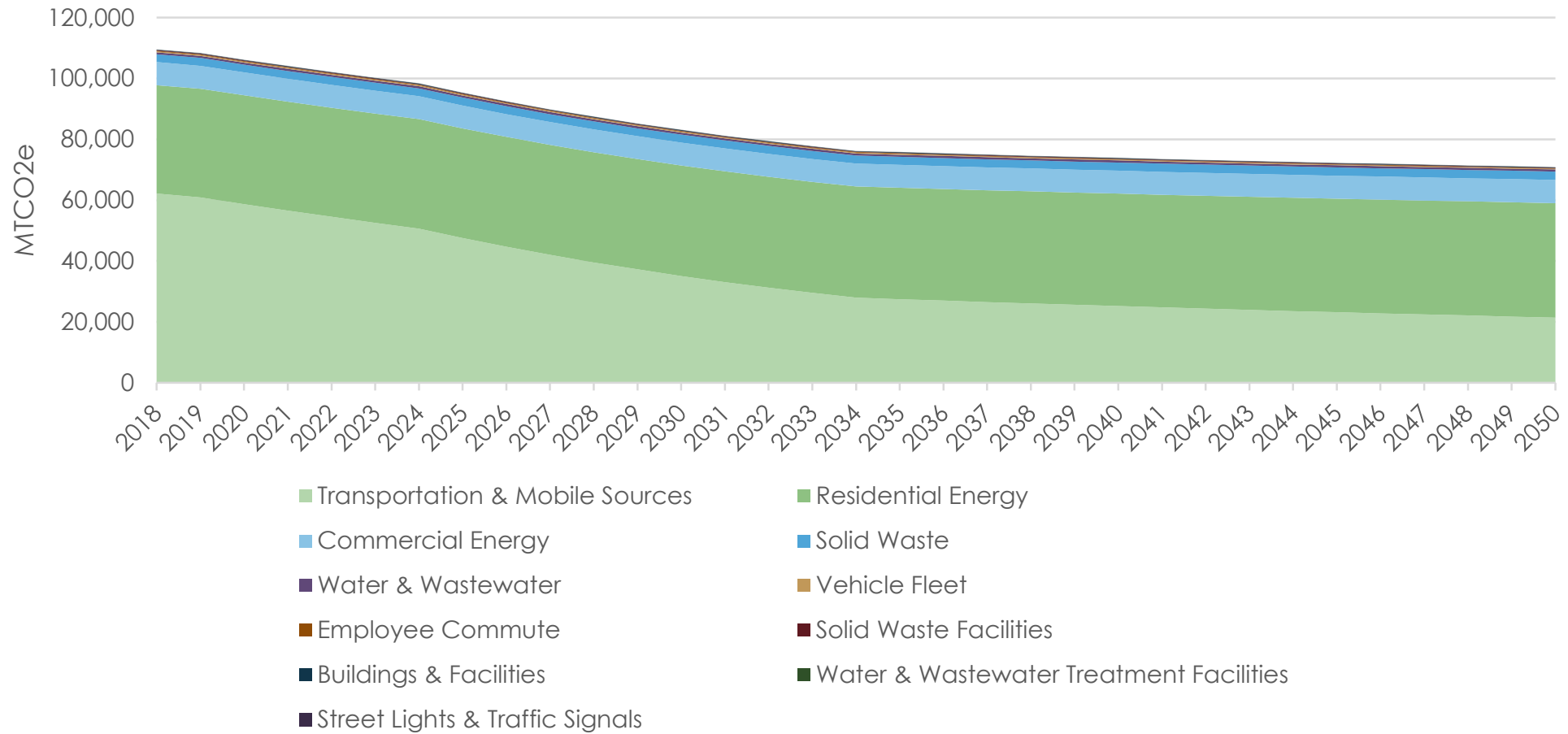
Emissions Comparison table

Government sector	2005 emissions	2018 emissions	% change	Emissions reduction (MTCO ₂ e)
Buildings & Facilities	428	134	-69%	294
Street Lights & Traffic Signals	130	<1	100%	130
Vehicle Fleet	420	351	-16%	69
Employee Commute	697	445	-36%	252
Solid Waste Facilities	197	172	-13%	25
Water & Wastewater Treatment Facilities	3	5	67%	(2)
Process & Fugitive Emissions	20	21	5%	(1)
Government total	1,895	1,128	-40%	767
Community sector	2005 emissions	2018 emissions	% change	Emissions reduction (MTCO ₂ e)
Transportation & Mobile Sources	96,610	63,288	-34%	33,322
Solid Waste	3,950	2,653	-33%	1,297
Water & Wastewater	2,250	1,063	-53%	1,187
Commercial Energy	20,070	7,537	-62%	12,533
Residential Energy	59,950	35,661	-41%	24,289
Community total	182,830	110,202	-40%	72,628
Total	184,725	111,330	-40%	73,395
<i>2020 target</i>		155,410	-15%	43,660

	Entity	Year	1st Target	2nd Target
International, National and State	U.S. NDC ¹	2021	50-52% below 2005 levels by 2030	-
	IPCC/U.S.	2020	net zero by 2050 at the latest	-
	B-55-18	2018	carbon neutral by 2045	-
	SB 32 (2016)	2016	40% below 1990 levels by 2030	-
In line with State targets	Oakland	2020	56% below 2005 levels by 2030	-
	San Mateo	2020	4.3 MTCO ₂ e per-capita by 2030	Reduce emissions to 1.2 MTCO ₂ e per-capita by 2050
	San Anselmo	2019	45% below 2010 levels by 2030	80% below 1990 levels by 2050
	San Rafael	2019	40% below 1990 levels by 2030	80% below 1990 levels by 2050
More aggressive than State targets	Menlo Park	2020	Zero Carbon by 2030	-
	Sunnyvale	2019	56% below 1990 levels by 2030	80% below 1990 levels by 2050
	Alameda	2019	50% below 2005 levels by 2030	Net Zero Emissions as soon as possible
	Albany	2019	70% below 2004 levels by 2035	Carbon Neutral by 2045
	San Francisco	2019	-	Net Zero emissions by 2050
	Palo Alto	Updating	80% below 1990 levels by 2030	-

¹Nationally Determined Contribution

Adjusted BAU Forecast (2018 - 2050)



Local Funding Mechanisms

Type	Examples	Description
Financing District	<p>Special Benefit-Based Assessments</p> <p>Community Services/Facilities District Special Taxes</p> <p>Property Tax Increment</p>	<p>Levied on property owners in a neighborhood, business area, or defined geographic area in order to provide a benefit which that area receives.</p>
Tax	<p>Property Tax</p> <p>Utility User Tax</p>	<p>Existing City tax on real estate, based on value of land and improvements</p> <p>Cities and counties may impose UUTs on users' consumption of certain utility services such as utility delivered methane gas</p>
Fees	<p>Parking Fee</p> <p>Enterprise Fund</p> <p>Development Fee</p> <p>Carbon Development Impact Fee</p> <p>Congestion Pricing</p>	<p>User fees that can generate ongoing revenue, but may disincentive activities. For instance, a congestion pricing program set up to reduce driving may have a different structure than a program meant to raise funds. Enterprise funds require voter approval.</p>
Bond		<p>Bond measures are exclusively for capital improvements and require financing.</p>

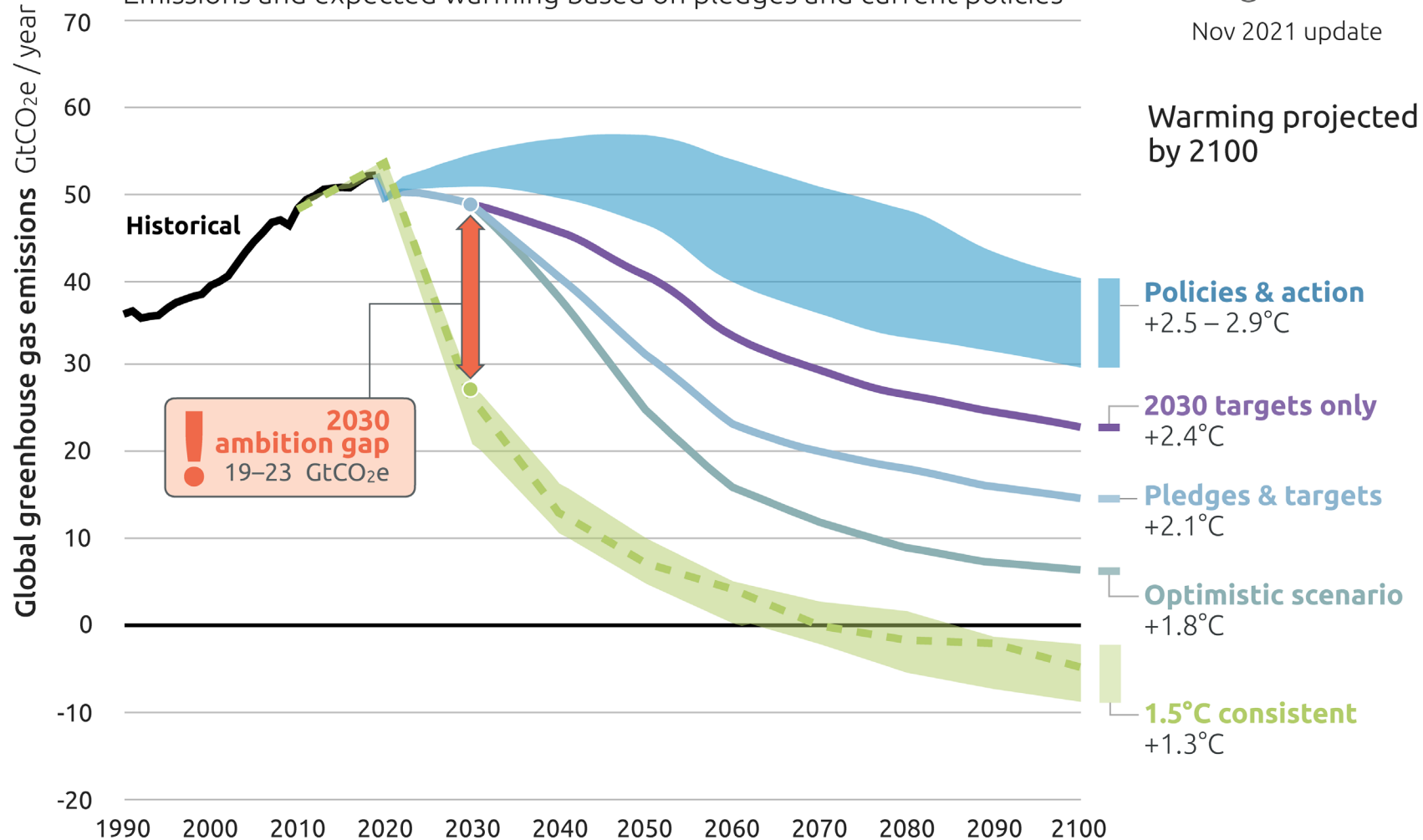
UPDATED WARMING PROJECTIONS POST-COP 26

2100 WARMING PROJECTIONS

Emissions and expected warming based on pledges and current policies



Nov 2021 update



STRATEGIC ROADMAP

- Mitigation Actions
- Adaptation Actions
- Cross-Cutting Actions

