

Sustainability, Climate Action, and Resilience Policy Framework

Introduction

The City of Palmdale has embarked on a comprehensive update to its General Plan, called “Envision Palmdale 2045: A Complete Community,” to create a forward-looking document that will serve as the blueprint for the City’s vision through the year 2045. The goals, policies, and actions in Palmdale 2045 will serve as a compass for decision-makers and will shape future plans and actions of the City. This revised policy document will replace the 1993 General Plan.

This sustainability, climate, and resilience policy framework is an interim step in the General Plan Update process prior to drafting the elements (or chapters). This framework highlights key outcomes and performance metrics related to sustainability and includes a draft policy framework that includes goals, policies, and implementation activities. This policy framework was developed by compiling feedback from community members, General Plan Advisory Committee members, Planning Commission, and City Council. This framework synthesizes critical issues and policy approaches by describing key strengths and opportunities, challenges, and threats, and what we heard from the community.

What is Sustainability?

Sustainability is often defined as the ability to meet the needs of the current generation without compromising the ability of future generations to meet their needs. Sustainability is a cross-cutting issue that centers on environmental, social equity, and economic considerations. In specific terms, taking a sustainability approach means conserving energy and water, diverting waste from landfills, preparing for the potential impacts of climate change, and reducing greenhouse gas emissions, among others.

The importance of practicing sustainability is becoming a greater priority due to the potential impacts of **climate change**. Climate is the long-term behavior of the atmosphere – typically

represented as averages – for a given time of year. This includes average annual temperature, snowpack, or rainfall. Human emissions of carbon dioxide and other greenhouse gases are important drivers of global climate change. Greenhouse gases trap heat in the atmosphere, resulting in warming over time. This atmospheric warming leads to other changes in earth systems, including changing patterns of rainfall and snow, melting of glaciers and ice, and warming and the changing chemistry of oceans.

California, the Antelope Valley, and the City of Palmdale are already experiencing the effects of a changing climate. Both gradual climate change (e.g., wildfire risk) and climate hazard events (e.g., extreme heat days or weather events) expose people, infrastructure, buildings and properties, and ecosystems to a wide range of stress-inducing and hazardous situations. These hazards and their impacts often have a disproportionate effect on the most sensitive populations in the City.

The impacts of climate change in the future depends in part on the amount of **greenhouse gas emissions** that are present in the atmosphere now and in the future. Greenhouse gas emissions are driven by economic systems, land use patterns, transportation and energy systems, resource use, and other social and political factors. By reducing greenhouse emissions, the City can help to mitigate the long-term impacts of climate change. Adaptation strategies such as increasing shade and increasing light-colored surfaces can reduce the negative effects of high heat days. Combining climate strategies with other efforts related to water conservation, energy efficiency, recycling, and ecosystem protection helps to increase the overall sustainability and livability of the community.

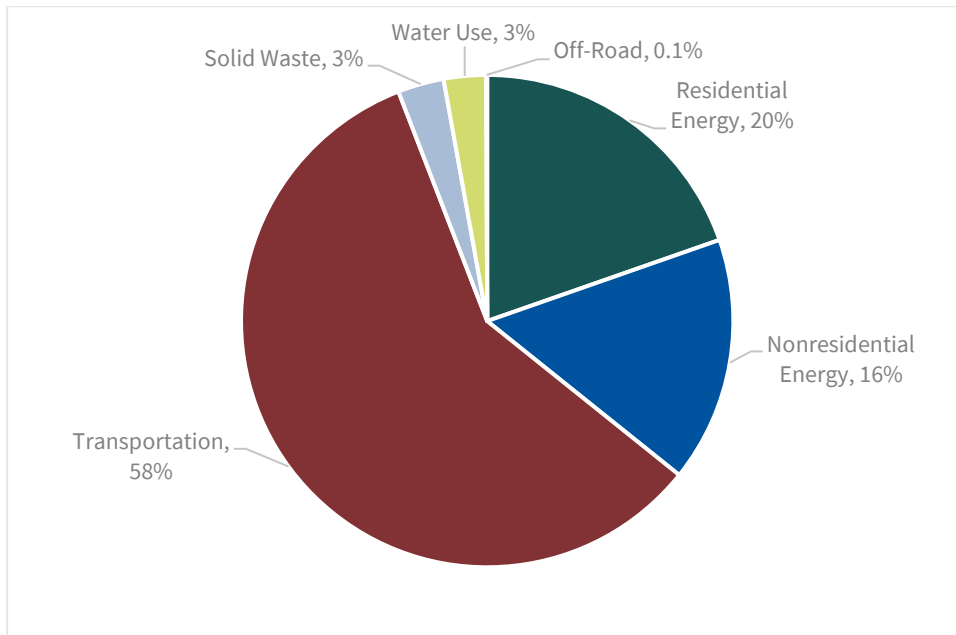
Where We Are Now

To date, the City has few key plans in place with the direct purpose of reducing greenhouse gas emissions citywide. The City has been implementing its 2011 Palmdale Energy Action Plan (PEAP). Efforts include implementing interior and exterior lighting and HVAC upgrades across City facilities and installing solar panels to generate renewable and carbon-free energy. The City has also installed 21 publicly accessible electric vehicle (EV) chargers, including five DC Fast Chargers to support the transition to EVs. Most importantly, the City is moving forward with a community choice aggregation program (CCA) to supply local carbon-free electricity to residents and businesses starting in October of 2022. Focusing on community emission mitigation provides the City with the greatest opportunity to reduce emissions and realize sustainability co-benefits of climate action measures.

The City's most recent greenhouse gas (GHG) inventory for calendar year 2017 estimates total community emissions of 1,005,891 Tonnes of Carbon Dioxide equivalent (MTCO_{2e}). Transportation related emissions are the largest contributor to community emissions, accounting for 59%, followed by residential energy use, accounting for 20%, and nonresidential energy use, accounting

for 15% of emissions. However, nonresidential energy use data is incomplete because of privacy and aggregation laws, it is likely higher, which would increase total emissions. The remaining 6% of emissions are made up of solid waste, off-road equipment, water and wastewater, and industrial sources (see Figure 1).

FIGURE 1: PERCENT OF PALMDALE COMMUNITY GHG EMISSIONS BY SOURCE IN 2017



Since transportation is the largest contributor to GHG emissions, the inventory suggests the need to pursue sustainable land use patterns of development, transportation-oriented development, public transit improvements, active transportation network enhancements, create programs to reduce vehicle use for short trips, and to better match Palmdale residents with employers to reduce vehicle miles traveled (VMT). Implementation of GHG reduction measures provides the City with the opportunity to realize co-benefits. For example, VMT reduction reduces GHG emissions, but also helps to improve air quality, lessen traffic and congestion, and create safer roadways for pedestrians and cyclists.

Furthermore, despite projected growth in population and jobs with the General Plan Update Preferred Land Use Alternative, the adjusted business-as-usual (ABAU) forecast projects that emissions are expected to fall from 919,905 MTCO₂e in baseline year 2005 to 803,309 MTCO₂e in 2045, a 13% decrease. This forecast illustrates the importance of supporting the State’s climate targets to reduce emissions statewide and kickstart local actions.

Resilience issues facing the City include increases in high heat days from 11 in 2017 to 17 in 2045 according to Cal-Adapt. Wildfires in the Angeles National Forest and other nearby forested and natural areas and the associated property damage and worsened air quality from wildfires are also

a concern. Other issues are related to potable water supply and impacts from climate-related persistent drought conditions. Land use modifications, water efficiency and stormwater management, renewable energy generation and storage, and increased organic waste diversion are all adaptive approaches that can improve sustainability on an ongoing basis while also increasing resilience to both the stressors and shocks related to climate change. The City is located close to the San Andreas fault and other seismically active areas. The Local Hazard Mitigation Plan (LHMP) provides guidance for preparing for and responding to earthquakes and other disasters. Many of the measures established in the LHMP can also be activated to respond to climate-related events such as high heat, poor air quality, extreme storm, events, or temporary disruption of electricity service.

In addition to climate concerns, sustainability issues to be addressed in the General Plan update include water quality and supply, waste management, ecosystem stewardship, increasing environmental literacy, providing equitable access to open spaces, and supporting the health, well-being, and spirit of the community.

What We Heard About This Topic

The General Plan Update incorporates community stakeholder input and feedback from the general public. To date, the project team has solicited feedback on the future vision and guiding principles for the City. In the first community survey, residents were asked to prioritize visioning themes and guiding principles and identify key community issues. The community described wanting the future Palmdale of 2045 to be eco-friendly. There is also a strong desire to protect landscapes and habitat and reduce pollution and waste.

Many community members did make comments related to sustainability and the environment, including:

- Parks and open space preservation and improved access to nature trails and walking paths
- Improved public transit and more transportation options
- Healthier food options including a farmers' market and an expanded community garden program
- More trees and shade
- A more connected, inclusive, and civically minded community

Where we want to be in the future

Vision Themes and Guiding principles

Through the first phase of community engagement, the General Plan team explored how individuals envision the future of Palmdale, what makes it unique and special, and what things residents and businesses would like to change. Summarized into a stand-alone document, the General Plan Vision and Guiding Principles illustrate the future of Palmdale, capturing key values and aspirations, and providing a framework for future decision-making.

The list below represents vision themes and guiding principles that are most relevant to the topics of sustainability, climate action, and resilience. Visit the Palmdale 2045 website at <https://www.palmdale2045.org/resources> for the complete vision and guiding principles document.

A unified and welcoming community that we're proud to live in

- Respect and promote diversity within Palmdale
- Promote Palmdale's positive reputation in the region
- Boost community beautification
- Offer opportunities for youth to stay in Palmdale – jobs, housing, education
- Enhance partnerships with surrounding communities in the Antelope Valley

Diverse and resilient local economy

- Attract new sustainable employers and industries to Palmdale
- Maintain and enhance smart city technology in Palmdale to support local businesses and telecommuting

Safe, healthy place to live and work

- Improve access to parks and open space
- Foster active living with improvements to pedestrian environment
- Prioritize walking, biking, and access to local and regional transit
- Promote living and working in Palmdale and reducing commute times

Palmdale's beautiful natural setting

- Maintain safe and convenient access to open space and trails
- Improve connectivity and beautify trails and open space
- Expand and improve public parks and to meet the needs of current and future residents
- Maintain high air quality

Forefront of transportation innovations

- Leverage transportation investments in Palmdale
- Build on High Speed Rail opportunities

- Bring air service to Palmdale Regional Airport
- Improve local transit

Outcomes

- **Outcome:** Palmdale is a regional leader by integrating sustainability and climate action into all decisions and inspiring other communities to eliminate greenhouse gas emissions,
 - **Targets:** Carbon neutrality by 2045 (EO B-55-18).
 - **Key Performance Indicators:** Reduction in energy and water use, reduction in vehicle miles traveled, and increased diversion of waste from landfills.
- **Outcome:** New and existing buildings are decarbonized and able to operate on carbon-free energy.
 - **Targets:** 100% of new and 50% of existing buildings are all-electric and energy efficient with an average Energy Use Intensity (EUI) of 40 or lower. Energy supply is 100% renewable (SB 100).
 - **Key Performance Indicators:** Number of buildings retrofit per year to be all-electric. Source of electricity. Total kilowatts or megawatts of distributed renewables installed. Number of Envision certified buildings. Energy Use Intensity for existing buildings.
- **Outcome:** Secure water supply and efficient use through aquifer management and increased water reuse
 - **Targets:** Water use is 85 gallons or less per person per day.
 - **Key Performance Indicators:** Compliance with water quality regulations for potable water and stormwater quality. Water use per capita. Number of permitted greywater reuse systems.
- **Outcome:** Reduced emissions from transportation, increase access and safety for walking, biking, and transit use.
 - **Targets:** Zero pedestrian and cyclist fatalities. Increase in walking and biking mode share.
 - **Key Performance Indicators:** Number of pedestrian and cyclist accidents and fatalities, vehicle miles travelled, mode share, number of EV chargers installed, electric vehicle ownership, bus ridership.
- **Outcome:** Ecosystems and other existing or future natural open spaces are enhanced through restoration, redesign, and ongoing maintenance practices.
 - **Targets:** 80% of residents have nearby access to natural or open space.

- **Key Performance Indicators:** Total area of parks, park space per capita, distribution of open spaces and protected natural areas, percentage of people within a ½ mile walk to a park or open space.
- **Outcome:** Impacts of urban heat island are reduced and mitigated.
 - **Targets:** 30% of heat trapping surfaces converted to green space or reflective materials. 40% tree canopy cover.
 - **Key Performance Indicators:** Total area of green space and reflective roofs.
- **Outcome:** The most vulnerable residents are protected from climate and hazard impacts.
 - **Targets:** 10 community resilience hubs created, 50% of existing dwelling units received weatherization/upgrades, 15% reduction in heat-related hospitalization and emergency room visits.
 - **Key Performance Indicators:** Number of resilience hubs created, low-income and senior housing units receiving weatherization and energy efficiency upgrades, heat deaths, hospitalizations, and emergency room visits

Draft Goals and Policies

- Goal 1: Carbon neutral community by 2045 (EO B-55-18).
 - Maintain and regularly update a Climate Action Plan to reduce greenhouse gas emissions generated within the City.
 - Track progress towards achieving the City’s greenhouse gas reduction goal.
 - Seek funding to support implementation of GHG reduction projects for the City, residents, and businesses.

























- Goal 2: Fossil fuel free energy system (SB 100).
 - Pursue options to provide 100% carbon-free or renewable energy to residents and businesses.
 - Explore the development of community solar projects and microgrids.
 - Encourage use of solar + storage in new development and major renovations.



- Goal 3: Green and decarbonized buildings for new construction and major renovations.
 - Integrate CALGreen green building and energy efficiency standards into new construction and major remodels.
 - Encourage new buildings to be all-electric through a local reach code.
 - Require installation of photovoltaic panels and battery storage on all new construction.



- Establish a streamlined approval process for battery storage systems.
- Establish an energy and water efficiency upgrade program for existing buildings, focusing resources on the most underserved populations.
- Register municipal buildings with Energy Star Portfolio Manager and report energy and water use (AB 802).
- Goal 4: Reduced greenhouse gas emissions from transportation (SB 379, EO N-79-20).    
 - Increase pedestrian and cyclist safety by increasing sidewalks, protected bike lanes, and redesigning high incidence intersections.
 - Promote bicycle use with new private development projects through requirements for bicycle parking, lockers and showers, bike share facilities, and when feasible, connections to City bike lanes.
 - Expand the public transit system and increase frequency of service.
 - Install EV chargers at suitable public facilities, including Downtown parking structures and community parks.
 - Give preference to fuel efficient vehicles, including the use of zero emission vehicles, when purchasing City vehicles.
 - Require use of clean fuels for construction and maintenance vehicles and equipment.
- Goal 5: Increased resource capture and reduced waste sent to landfills (SB 1383).  
 - Create a zero-waste plan that institutes cost-effective diversion programs for municipal operations and the community.
 - Establish programs to comply with requirements for organics and food waste diversion.
 - Develop an education program to encourage all residents and businesses to participate in composting and recycling programs, and to reduce production and increase reuse of materials.
 - Explore modifying waste franchise agreements to establish rate structures to encourage nonresidential collection frequency efficiency.
- Goal 6: Secure and safe water supply.    
 - Maintain and improve the viability of local water supply.
 - Increase the availability of recycled water supply (i.e., installation of purple-pipe infrastructure).

- Establish water efficiency standards that are more stringent than CALGreen and the State Model Water Efficient Landscape Ordinance requirements.
- Implement the City’s landscape planting list and use of low-water, plants in landscaped areas.
- Encourage water capture and use of cisterns for outdoor watering purposes.
- Establish a streamlined permitting process for greywater systems.
- Goal 7: Open spaces provide multiple climate and sustainability functions.
 - Plant additional trees on streets, parks, and other public spaces to sequester carbon, provide shade, contribute to stormwater management, provide habitat, and enhance community character.  
 
 - Encourage tree planting on private property.
 - Integrate green infrastructure stormwater management practices into the design of open spaces and public rights-of-way.
- Goal 8: A City that proactively advances community resilience.
 - Build on the existing LHMP and acknowledge the LHMP in the General Plan per AB 2140.  
 
 - Address areas of vulnerability, exposure, and sensitivity for both physical infrastructure and communities.
 - Work with energy supplier to minimize the impacts of Public Safety Power Shutoffs.
 - Add resilience features to community facilities to provide basic services during disruptive events or disasters.
 - Create a pre-disaster recovery plan that sets up post-disaster policies and programs naming which areas will be replanned and when, and that shows where and how rebuilding will occur.
 - Develop policies to ensure that housing units damaged during a natural disaster are repaired or replaced in ways that advance the policies, objectives, and actions of the General Plan during rebuilding and recovery.
- Goal 9: A City that is aware of its environmental past and present.
 - Integrate environmental and sustainability issues into City decision-making processes, operations, and community activities.  
 
 - Acknowledge and celebrate the indigenous history and tradition of the area now known as Palmdale.

- Include sustainability criteria in budgeting and prioritization efforts through a “triple bottom line” approach.
- Provide interpretive displays and other information on natural systems at parks, nature centers, and trailheads.