



Climate Neutral for a Healthy, Prosperous Menlo Park

Policies and Best Practices for a Sustainable General Plan Land Use Element



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The following information is intended to support a sustainable General Plan with examples of policies with representative projects that have been successful, as well as example planning language from other cities.

1) Accelerate implementation of California’s planned energy efficiency requirements by requiring that new construction in the M2 and downtown areas meet net-zero energy standards.

California has been a leader in energy savings with progressively more efficient building standards through “Title 24” building code. The California Energy Commission estimates that the regulations have saved residents \$74 billion in electricity costs since 1977. The next update to these standards, under development now, is slated to usher in the latest advances in renewable energy, efficiency and building design with a goal of “Net Zero” energy for new buildings. All residential construction must meet net-zero energy standards by 2020, and all commercial construction will need to meet that standard by 2030.¹ With solar, battery, and efficiency technologies rapidly dropping in price, the City of Menlo Park should set an example for the rest of the state, adopting these measures ahead of schedule and requiring that all new developments in the downtown/El Camino Real and M-2 districts employ these standards.

Net-zero energy buildings are designed to produce all of the energy that they need over the course of a year. There are five basic steps to achieving this for residential, commercial, or institutional buildings:

- Smart design, such as roof overhangs, window coverings, and a south-facing roof;
- Thorough building insulation, an airtight building envelope, and multi-pane windows;
- High-efficiency heating and cooling systems;
- Reducing energy use from appliances and lighting by using the most efficient models and limiting “plug load”; and
- Renewable energy generation, like rooftop solar panels.



Figure 1: The Zero Net Energy Center in San Leandro, CA, built by Menlo Park’s NOVO Construction.

¹ The [2013 Integrated Energy Policy Report](#) (see page 36) discusses these upcoming California Building standards. Note that these Energy Efficiency Standards are required to meet life cycle cost effectiveness requirements. This applies to any ZNE requirement included in those standards. We expect any additional or early requirements by the City of Menlo Park to take into account special and narrow circumstances in which achieving ZNE is not feasible and provide comparable, alternative compliance pathways in those instances. Further, early adoption by Menlo Park would presumably be supported by the California Energy Commission.

**Sustainability and Energy General Plan
Language Excerpt from San Jose**

**MS-2 – Energy Conservation and Renewable
Energy Use**

Maximize the use of green building practices in new and existing development to maximize energy efficiency and conservation and to maximize the use of renewable energy sources.

**MS-14 – Reduce Consumption and Increase
Efficiency**

Reduce per capita energy consumption by at least 50% compared to 2008 levels by 2022 and maintain or reduce net aggregate energy consumption levels equivalent to the 2022 (Green Vision) level through 2040.

MS-15 – Renewable Energy

Receive 100% of electrical power from clean renewable sources (e.g., solar, wind, hydrogen) by 2022 and to the greatest degree feasible increase generation of clean, renewable energy within the City to meet its own energy consumption needs.

Source: General Plan Chapter 3;
<http://www.sanjoseca.gov/DocumentCenter/Home/View/474>

Buildings seeking official net-zero energy status are certified by the International Living Future Institute through audits of meter data and energy bills and analysis of the design.² However, the City could choose to institute its own specific requirements in order to give developers more flexibility and tailor the metric to Menlo Park's needs (for example, the City could allow developers to include off-site solar on other Menlo Park buildings in their energy usage calculations). However, while individual buildings may incorporate different designs and have different needs, virtually any type of building is capable of meeting this requirement.³

With low or zero monthly energy costs and new financing options from the state and federal sources, these buildings make returns on the investment quickly. Other cities are embracing the quest towards net-zero energy, seeking not only to reduce their emissions but also to attract businesses and reduce costs for residents. At a time when demand for new development is proliferating across the region, it is especially important that new buildings be as advanced on clean energy technology as possible and support ambitious climate goals. If Menlo Park mandates that new buildings in its most active areas meet these requirements now, the City can attract pilot projects for new technologies and demonstrate how California cities can meet the upcoming requirements.

The neighboring cities of Palo Alto and Mountain View are currently considering NZE policies.

Example: Lancaster, California

Lancaster, a city of 156,000 in the Western Mojave Desert, has historically been known for its heat, suburban sprawl, and its heavy military and aeronautics influence. However, under the leadership of Mayor Rex Parris, the city has set the ambitious goal of becoming a net-zero energy city by 2020, and it has already made impressive strides towards that objective. Among the programs instituted by the city so far:⁴

- Requiring that all new homes include solar panels and many other mandated energy efficiency measures, the first such program in the country.⁵

² More details about the ILFI certification program are available [on their website](#).

³ The extensive [Getting to Zero Buildings Database](#), compiled by the New Buildings Institute, lists and analyzes net-zero buildings of all kinds in the United States and Canada. One excellent local example is the groundbreaking [Zero Net Energy Center](#) in San Leandro, CA, built by [NOVO Construction](#), which is based in Menlo Park.

⁴ "[Alternative Energy Developments](#)." City of Lancaster, 16 June 2014.

⁵ Specifics of this requirement can be found [here](#).

- Partnering with KB Homes and Chinese battery company BYD to create the nation’s first net-zero affordable homes project, with two more such projects following (shown in Figure 2).⁶
- Creating a program to fast-track all renewable energy and energy efficiency permitting within the city, from commercial-scale solar facilities to residential installations and renovations.
- Founding a non-profit, community energy provider, Lancaster Choice Energy. This provider offers 100% renewable plans to residents and businesses at a small rate increase and provides assistance and further discounts to customers who add renewable energy generation to their own buildings.



Figure 2: A KB Net Zero Home in Lancaster, California

The city’s investments are already paying off greatly: over 50% of the city’s electricity needs were supplied by solar generated within the city as of June, 2014. Lancaster has received worldwide recognition for its efforts, including the Green California Leadership Award⁷ and the Energy Globe World Award.⁸ During the past five years, Lancaster’s economy has improved dramatically, and the city was recognized as Los Angeles County’s “Most Business-Friendly” city,⁹ in part due to its booming clean-energy industry. Lancaster has proven the viability of net-zero buildings and renewable energy generation on a large scale in California. Its policies can serve as a model for Menlo Park in expediting net-zero standards to help residents, businesses, and the environment.

Example: Cambridge, Massachusetts

In contrast to Lancaster, Cambridge, Massachusetts has long been known for its environmentally friendly policies, including its walkability, bicycle-friendliness, and smart urban growth. In the past few years, however, the city of 107,000 has turned its focus towards reducing carbon emissions, especially from buildings. Led by a group of citizens petitioning for net-zero energy requirements, Cambridge and its “Getting to Net Zero Task Force” recently formally adopted a comprehensive Net-Zero Action Plan, and has taken great steps to encourage building efficiency and increase renewable energy. These inventive policies include:¹⁰

- Strict commitments to building net-zero buildings, including immediate requirements for a percentage of each zoning area and a requirement that all new commercial, residential, and institutional buildings be net-zero by 2025.

⁶ Information about this groundbreaking project can be found on [KB Home’s website](#) or from the [Department of Energy’s Energy Efficiency and Renewable Energy](#) program.

⁷ Lancaster was awarded the [Green California Leadership Award](#) in the Renewable Energy Category in April, 2015 for the green policies and programs of Lancaster Choice Energy, the city-owned utility.

⁸ The city was awarded the [Energy Globe Award](#) for their efforts in promoting solar technology and energy-efficient buildings at the Energy Globe World Awards in Vienna, Austria in September, 2012.

⁹ “[Lancaster and La Mirada Recognized as Los Angeles County’s “Most Business-Friendly” Cities.](#)” Los Angeles County Economic Development Corporation, 2013.

¹⁰ “[The Getting to Net Zero Framework.](#)” Prepared for the Cambridge Getting to Net Zero Task Force by Integral Group. 29 April, 2015

- Creation of the Kendall Square EcoDistrict, a program to expedite and pilot sustainability projects, including many net-zero buildings and renewable energy sites, in the rapidly redeveloping Kendall Square neighborhood of Cambridge.¹¹
- Providing excellent assistance to residents who add green renovations or renewable energy and to developers starting new, sustainable projects through the Cambridge Energy Alliance and other initiatives, including the groundbreaking Solar System tool, which displays solar potential and possible systems for every rooftop in the city.¹²

Unlike in Menlo Park, where buildings produce slightly over half of carbon emissions,¹³ buildings are responsible for almost 80% of Cambridge’s emissions, largely due to lower driving rates (Cambridge has no major freeways) and higher heating requirements.¹⁴ However, net-zero buildings would generally be easier to build in Menlo Park than in Cambridge due to our mild climate and higher solar potential.¹⁵ Menlo Park should follow the lead of Cambridge in implementing a net-zero development district while capitalizing on our city’s strengths to become a model in this field.

2) Require electric-vehicle charging stations at all new multi-family residences, businesses, and public parking facilities.

The San Francisco Bay Area is the country’s number one region for electric vehicles,¹⁶ and Silicon Valley has led the way in research and innovation on this new technology. As prices for new electric vehicles continue to fall and technical issues like range improve, they will be available to an ever-growing section of the public. Menlo Park’s infrastructure and buildings should be built to encourage and accommodate this trend to support carbon-free transportation. To this end, all new multi-family residences, commercial buildings, and public parking facilities should be built with EV charging stations.



Figure 3: A set of EV charging stations at the Westlake Shopping Center in Daly City

In 2013, the California Department of Housing and Community Development created regulations requiring new residential construction to be “EV-ready,” with the correct electrical infrastructure in place for future EV charging.¹⁷ While this does eliminate much of the cost of retrofitting a building to accommodate electric vehicles, it still requires residents to install chargers, presenting time and cost barriers to this environmentally friendly technology. Building

¹¹ A summary of the EcoDistrict Framework from the [Cambridge Redevelopment Authority](#).

¹² “[Policy Best Practices - Cambridge Getting to Net Zero Task Force](#),” Prepared by Integral Group. 29 May, 2014

¹³ Menlo Park Climate Action Plan Assessment 2013

¹⁴ “[Energy Efficiency and Renewable Energy](#).” *Community Development Department*. Cambridge, MA,

¹⁵ The direct normal irradiance (DNI) in Menlo Park is 6.05, compared to 4.11 in Cambridge, 47% higher. DNI measures the amount of solar radiation received per unit area by a surface that is always held perpendicular to the sun’s rays in a given location. Figures come from National Renewable Energy Laboratory [solar maps](#).

¹⁶ As determined by ChargePoint, taking into account number of electric vehicles and charging infrastructure relative to population. Reported by [CleanTechina](#).

¹⁷ [2013 Intervening Code Cycle Significant Changes](#), CALGreen.

EV chargers into all new multi-family residences and commercial developments will dramatically improve the convenience and reduce the cost of owning an electric vehicle and make the city a showcase for this rapidly expanding technology. Similarly, providing prioritized, convenient spaces in all public parking areas would allow shoppers and visitors to charge their cars and clearly show the city's commitment to carbon-free transportation. And whenever possible, the chargers should be attached to solar panels and batteries in order to ensure that the cars truly run without fossil fuels.

Example: Tacoma, Washington

Tacoma, a suburb of Seattle with a population of 203,000, has invested heavily in electric vehicles, creating some of the most progressive policies in the country to support this developing mode of clean transportation. The city has installed twelve electric charges in public spaces in order to promote the vehicles,¹⁸ and Pierce County has added two additional free chargers.¹⁹ In total, there are over 25 public charging stations, which is higher than most cities of this size.

Tacoma also requires new businesses and commercial buildings to include electric chargers in their parking areas.²⁰ The ordinance, adopted in July, 2014, requires that 1-3% of parking spaces be served by Level II electric chargers, with caps for different types of buildings. Some buildings, including Tacoma's largest mall, have already added charging stations to comply with the rule.²¹ Although this law doesn't yet mandate residential chargers, it recommends that 50% of spots support electric vehicles. With electric vehicles continuing to grow in popularity, especially in Silicon Valley, Menlo Park should take similar actions to Tacoma by building chargers in public spaces and requiring chargers at all new commercial *and* multi-family residential buildings.

Example: Palo Alto, California

Palo Alto, has been a leader supporting electric vehicles since the earliest days of the technology. The City has an extensive network of chargers available for public use, many without cost.²² Since June, 2014, new commercial developments, hotels, and apartment complexes in Palo Alto are required to provide public electric charging stations, making it easy to charge one's EV at work or while shopping.²³ Currently, 5% of commercial parking spots, 10% of hotel spots, and one spot per unit in residential projects must be served by charging equipment, with up to 30% of spots required to include the conduits and wiring to include future charging equipment.

Palo Alto's former mayor declared EVs "the wave of the future," a sentiment echoed by Santa Clara County when they adopted regulations supporting EVs in 2013.²⁴ In addition to the requirements for new developments, which are intended to make sure that all commuters can

¹⁸ [Electric Vehicles](#), City of Tacoma Washington.

¹⁹ [Electric Vehicle Charging Stations](#), Pierce County, Washington

²⁰ "[Tacoma to require electric vehicle charging stations](#)." The News Tribune, 22 July 2014.

²¹ "[Tacoma Mall outfitted with electric vehicle charging stations](#)." Business Examiner, 27 May 2015.

²² A map of EV chargers can be found on the City website [here](#).

²³ "[Palo Alto speeds ahead with new electric-vehicle requirements](#)." Palo Alto Weekly, 3 July 2014.

²⁴ Santa Clara's 2013 regulations include pre-wiring of all new buildings, and are described in [this press release](#).

drive EVs to work, Palo Alto has expedited the permitting process for installing chargers in homes to make it more appealing for residents to buy EVs.²⁵ Similarly, Menlo Park could become a model city for zero-carbon cars by ensuring that new commercial and multi-family residences, as well as public parking areas, include public charging stations.

3) Restructure public benefits and development fees to include transportation-in-lieu fees, credits for positive renewable energy generation, and other considerations to incentivize sustainability. **Create a clear, standardized system** to facilitate greener developments.

Smart growth ordinances can sometimes conjure up fears among residents of higher density, increased traffic, and a lack of safe, inviting public spaces. Similarly, sustainability requirements and neighborhood-character regulations can lead to concerns among developers that they will increase bureaucracy and costs. The key to balancing these competing interests is a clear, comprehensive public benefits policy, which permits developers specific, limited exceptions to building codes in exchange for providing valuable benefits to the community.

These policies have become popular in cities of all sizes in the past decade, and they have had remarkable success in improving cities for residents while also allowing developers to pursue higher value projects that can improve the City's economy. The most successful programs have been those that provide clarity and consistency in their requirements. While it may be tempting to seek the greatest public benefits by working with developers on an individual basis, this approach can backfire by making permitting slow and difficult, as in neighboring Palo Alto.²⁶ Menlo Park can attract smart growth and sustainable development while ensuring that these developments improve the City's quality of life, by creating a clear, standardized rubric of developer bonuses and community benefits, following successful programs in other cities.²⁷

Example: Redwood City, California

With the explosion of development in Redwood City's downtown area, the city has been working to create a structured, quantitative public benefits program to improve its commercial districts and make permitting easier for businesses. In their 2010 General Plan Update, Redwood City added language supporting density bonuses for developers if they provide community benefits in the following categories:²⁸

- Superior design and integration of a mix of uses
- Incorporation of affordable housing
- Incorporation of public or community facilities
- Transportation demand management

²⁵ "[Palo Alto embraces new laws to promote electric vehicles](#)." Palo Alto Weekly, 24 September 2013.

²⁶ After the 15-year permitting process for the Alma Plaza development in Palo Alto (where Planned Community zoning was used to extract maximum public benefits), the developer said he was "unlikely to ever pursue a PC rezone in Palo Alto again," and temporarily created a "chilling effect" on development in Palo Alto. "[Public Benefit Bonus Policy Brief](#)," Greenbelt Alliance.

²⁷ [The Public Benefit Bonus Policy Brief](#), created by the Greenbelt Alliance for the City of Mountain View in November, 2012, reviews additional examples of good and bad public benefits policies and makes suggestions that are applicable to Menlo Park.

²⁸ Redwood City General Plan, Built Environment section— [Urban Form and Land Use chapter](#), policies BE-23.10 and BE 25.6

- Innovative use of shared parking
- Efficient and innovative use of infrastructure and renewable resources
- Supportive of new transit such as streetcars

The city is now adding consistent metrics to these requirements so that developers can confidently plan projects with community benefits for the city. One proposed plan offers points for each designated public benefit (including renewable energy integration) – the points earned by the development correspond to the degree of relaxation on Floor Area Ratio and other building standards.²⁹ The city is creating these new metrics with extensive public engagement by meeting with neighborhood groups in each region of the city and hosting online forums to determine which community benefits are most desired and what the true worth of such projects would be.³⁰ Menlo Park could use a similar citizen engagement process to determine the most-desired benefits in each development area and create a similarly clear, well-structured guide to make new construction straightforward and productive for developers and residents.

²⁹ [Redwood City Community Benefits Program Brief](#), prepared by Dyett & Bhatia.

³⁰ These processes, as well as some of the community benefits programs, are outlined in the [Partnership Redwood City Framework Brochure](#), adopted in early 2015.