
Chapter 17. Energy

BACKGROUND

Personal energy consumption is generally categorized into the categories of:

- transportation, which accounts for approximately 50 percent;
- space heating and cooling, which accounts for approximately 25 percent; and
- appliances and hot water heating, which accounts for approximately 25 percent.

Energy conservation efforts in Davis have involved various sectors of the community, including the City government, UC Davis, utility companies, architects, engineers, builders, and consumers. Energy conservation strategies have included the following:

- Subdivisions are planned to maximize natural heating and cooling opportunities, primarily through the climate orientation of lots and building "envelopes." State and City building codes require new buildings to meet minimum standards for energy conservation.
- The design review of multi-family residential and commercial projects includes the review of landscapes for water conservation and plantings which promote energy conservation and comfort. The shading of parking lots by trees is intended to reduce re-radiation of heat from pavement.
- The use and re-use of existing buildings is encouraged to conserve buildings materials and increase community identity.
- Bicycle facilities have been constructed to provide an alternative to automobile use. Public transit is provided by YoloBus and Unitrans, with subsidies from the City.
- Dispersed, smaller neighborhood shopping centers are encouraged to reduce the length of frequent trips.
- Reduced lot sizes, yielding higher population densities, have been encouraged to allow for more efficient use of existing public facilities, police and fire protection services, water and sewage services, and public transit.
- The City and PG&E are experimenting with propane, methanol, compressed natural gas and electric powered cars.

GOALS, POLICIES AND ACTIONS

There are many goals, policies and actions in other chapters of this General Plan that will help to conserve energy. Some of the most significant are included in Chapter 2, Mobility and Chapter 8, Computers and Technology.

GOAL ENERGY 1. Reduce per capita energy consumption in Davis.

Policy ENERGY 1.1 Develop programs to increase energy conservation on the household and business level.

Actions

- a. Complete a study of existing literature and of Davis-specific estimates to determine what percentage of the community's income goes to pay for energy bills.
- b. Develop and utilize a method to measure per capita energy use in Davis.
- c. Develop and distribute educational materials to Davis residents, including energy usage audits and analyses and information about the direct financial benefits and community benefits of reducing energy use.
- d. Pursue the creation of a community energy management corporation, whose purpose shall be to reduce energy use in the city.
- e. Study and implement options for providing incentives for property owners to upgrade their homes and businesses for improved energy conservation.
- f. Provide incentives for retrofitting existing homes and businesses for improved energy efficiency. An example of a retrofit feature would be a passive solar device.

Policy ENERGY 1.2 Develop a comprehensive program to reduce City government energy consumption.

Standards

- a. The City shall incorporate calculations of energy expenses into its purchasing decisions.

Actions

- b. Provide departments with information on their energy use to create awareness. Provide incentives (awards, money or other) to departments that meet efficiency objectives.
- c. Continue to provide education and information to City employees on energy saving opportunities.
- d. Continue to perform audits of City facilities for energy use and retrofit efficiency measures.
- e. Continue the city's vehicle fleet program to improve city vehicle energy efficiency, reduce emissions, and reduce costs. Program components should include purchase of fuel-efficient and alternative-fuel vehicles, and preventative maintenance.

Policy ENERGY 1.3 Promote the development and use of advanced energy technology and building materials in Davis.

Actions

- a. Use subsidies, expedited permit processing, density bonuses or other incentives to support implementation of photovoltaic and other renewable energy technologies to provide a portion of the City's energy needs.
- b. Promote energy-load management programs for both the residential and commercial sectors through an education and outreach program.

Policy ENERGY 1.4 Continue to enforce landscaping requirements that facilitate efficient energy use or conservation.

Standards

- a. City projects should be designed with accompanying trees and other vegetation to minimize pavement, provide shade and reduce energy use.
- b. Energy efficient landscaping and preservation of existing shade trees is encouraged on all building sites.

Actions

- c. Provide information and education to residents on how, what type, and where to plant trees to reduce energy demand.

Policy ENERGY 1.5 Encourage the development of energy-efficient subdivisions and buildings.

Standards

- a. Natural factors such as cooling breezes, solar access, wind protection, and shade shall be considered in site and building design.

See the separate General Plan policy interpretation document titled "Energy Efficient Subdivision Design".

- b. Site planning should maximize the effects of cooling southwest winds to the extent possible.

See the separate General Plan policy interpretation document titled "Energy Efficient Subdivision Design".

- c. At least 80 percent of all residential lots in any proposed new development should be oriented so that buildings have their long axes within 22.5 degrees of east/west. Allow a developer not providing the required percentage to demonstrate that other site design, building design or construction measures would provide similar opportunities for conserving energy.

See the separate General Plan policy interpretation document titled "Energy Efficient Subdivision Design".

Actions

- d. Develop and implement energy-efficient design requirements that go beyond the State building standards for energy efficiency.
 - e. Develop design guidelines for climate-oriented site planning, building design and landscape design to promote energy efficiency.
 - f. Establish a technical assistance program to help developers in complying with the energy code and implementing energy efficient technologies.
 - g. Offer incentives to developers for projects that result in energy savings of at least 20 percent when compared to the energy consumption that would occur under similar projects built to meet the minimum standards of the energy code.
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- h. Provide recognition for projects that maximize energy efficiency in the form of awards and presentations at council meetings.

- i. Develop an ordinance containing requirements and incentives for innovative, environmentally-friendly (also known as “green” or “sustainable”) development and building projects. Examples of projects that may qualify for such incentives may include:
 - Those incorporating innovative, technologically-advanced energy efficient design concepts significantly exceeding Title 24 standards.
 - Those utilizing “green” building materials and permaculture landscape concepts.
 - Those containing specific, implementable and sustainable measures for reduced dependence on automobile parking demand.

Possible development incentives to be considered in this ordinance could include density bonuses, setback variations, modified street standards, reduced parking standards, or similar modifications to standard requirements.

See “Green development and building” in the glossary.

