❑ Goal 13: Energy Conservation

BACKGROUND

Statewide Planning Goal 13: Energy Conservation

"Land and uses developed on the land shall be managed and controlled so as to maximize the conservation of all forms of energy, based on sound economic principles."

In 1976, Goal 13: Energy Conservation, was added to the Statewide Planning Goals. In the 1970's it became evident that the energy picture for the United States was changing. For well over a quarter century, most Americans enjoyed the luxury of plentiful and inexpensive energy. When energy was cheap and easy to come by, cities were developed with little regard for energy consumption, in terms of travel patterns, use of renewable resources and energy efficient building materials and methods. As the availability of energy decreased and costs increased, the realization that resources were not in everlasting supply became evident.

Cities have not traditionally played a major and direct role in the development of new energy supplies. However, a city government uses or controls energy in many ways and can develop policies and development regulations to promote energy conservation, which has become the energy resource of "first choice" by the region. With a limited supply of energy available, and demand continuing to increase, conservation actions can postpone costly development of new power generation. Establishment of energy efficient programs is also less expensive than building new power plants and avoids negative environmental impacts.

Over the last 15, years energy efficient improvements to buildings, appliances, vehicles, and equipment retrofitting have already reduced energy consumption by 1/3 nationwide. The continuation of this trend is vital when considering the serious consequences of energy consumption, including smog, deforestation, acid rain, river pollution from coal mining waste, oil spills, and global warming.

Recycling as a method of reducing energy has also increased since 1976 when the initial comprehensive planning effort was undertaken. The region's Solid Waste Management Plan emphasizes reducing, reusing, recycling and recovering energy from waste, before landfilling.

Significant investments in conservation have been made by publicly owned utilities as the result of state and federal regulations. However, electrical utilities in Oregon forecast a 2.0% per year increase in electricity use between 1993 and 2012. Many programs and incentives are available through the state and local utilities, such as tax credits, free energy audits and energy efficient shower heads. In 1992, a drought year, the City of Lake Oswego distributed more than 2000 energy efficient shower heads as part of an effort to promote water conservation.

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Switching to renewable resources, like the power of the sun and wind, utilizes unlimited energy supplies. One way in which the City has encouraged this was by adopting a solar access ordinance in 1988. This ordinance ensures that land is divided so that structures can be oriented to maximize solar access and allows a property owner to apply for a permit to protect solar features, such as windows, greenhouses and solar panels, from being shaded by future vegetation.

The Energy Information Administration (EIA) estimates that transportation accounts for 63% of all oil nationally consumed. The ODOE projects that total miles driven will increase 60% in Oregon by the year 2010. Statewide Planning Goal 12: Transportation, and its supporting administrative rule OAR 660-12-(000-070) adopted in 1991, requires jurisdictions to reduce vehicle miles traveled by 10% by the year 2015. The Transportation Chapter of the Comprehensive Plan proposes that the City accomplish this through promoting efficient transportation systems, mixed use development, encouraging alternatives to auto trips, and making the design of new development more amenable to users of alternative transportation such as carpooling, walking, bicycling and transit.

The City of Lake Oswego has also made a commitment to energy conservation through investment in conservation and changing operational procedures to date. City Hall, which was constructed in 1985, utilized the latest energy-conserving building materials and heating and cooling systems. The City has also conducted energy audits on several buildings to determine where energy consumption can be reduced. The City also performs some functions at the Water Treatment Plant at night or during other non-peak hours, for which it receives a lower power rate. Filling reservoirs and operating pumps at these off-peak times helps spread energy loads throughout the day and helps reduce the need for new energy resources. Also, the local electric utility is gradually phasing out mercury vapor street lights and converting them to sodium vapor, which requires only half the energy used for mercury vapor. To assure future decisions regarding energy conservation are made in cost effective manner, a baseline accounting of current energy usage in the City would be useful. A baseline accounting could assist in determining priorities for efficiency improvements, the potential cost effectiveness of various measures and in evaluating the savings and calculating a payback period for conservation measures.

Housing construction materials and design is another area in which energy conservation has increased since the initial comprehensive planning effort in 1976. The Oregon legislature adopted the Oregon Residential Energy Code in 1991. This code requires buildings to be designed according to a performance calculation for energy conservation. Lake Oswego implements and enforces this Energy Code through building permit review. The new code is projected to cut energy used for heating by 30 to 40 percent over the past code.

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Summary of Major Issues

The following are some of the issues and changed circumstances and conditions which were considered in the update of this element of the Comprehensive Plan

- The Oregon Residential Energy Code was adopted in 1991. It has impacted building practices through stricter regulation and required performance standards and will play a significant role in energy conservation now and in the future.
- Energy conservation and efficiency can be recognized and utilized as an energy resource.
- Transportation systems and land use patterns are directly linked to energy conservation goals and have the potential to impact energy use.
- Energy production and use can impact the environment. When choosing policies, these costs must be considered.
- Awareness of solid waste management reduction, reuse, recycling and recovery of resources as a way to conserve energy has increased and programs have been put in place to encourage these activities.
- Establishing a baseline energy accounting and an acceptable payback period would assist the City in making decisions regarding energy efficiency.

GOALS, POLICIES AND RECOMMENDED ACTION MEASURES

GOAL

The City shall conserve energy.

POLICIES

1. Reduce the City's overall energy consumption.
2. Promote the use of renewable energy sources.

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3. Reduce energy consumption related to transportation by promoting a reduction in vehicle miles traveled through the use of alternative transportation.

4. Require energy-efficient land use and circulation patterns through mixed use development, promoting high density developments near transit and major employment and shopping opportunities, and design of developments to encourage alternative transportation.

5. Promote energy efficiency through site planning for all types of development including residential subdivisions, multi-family, commercial and industrial projects.

6. Require solar orientation for subdivision and partition layout, encourage planned unit developments and clustering, encourage appropriate landscape materials to reduce solar impact in the summer, minimize winter heat loss and buffer against prevailing wind sources.

7. Protect solar access to use natural heating and lighting opportunities.

8. Implement and enforce state energy codes through the building permit review process.

RECOMMENDED ACTION MEASURES

i. Establish an acceptable payback period for energy saving measures in municipally-owned buildings and facilities.

ii. Reduce residential energy consumption through informing the public on how to conserve energy.

iii. Support energy conservation measures by encouraging citizens to participate in available non-profit, county and utility programs such as:

   a. Energy audits;
   b. Home weatherization;
   c. Wrapping water heaters; and,
   d. Use of energy efficient shower heads.

iv. Consider the energy consequences in decisions regarding the construction, delivery and siting of urban services.

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v. Compile basic data on the sources, uses and costs of energy within the City to establish a baseline for energy-efficiency improvements and cost-effectiveness measures. Include information on energy use in City buildings, City vehicle fleets, City utilities, City equipment, vehicle flows on City streets, City regulated development and building and recycling, salvage and use of recycled materials.

vi. Coordinate with federal, state and regional agencies to promote energy conservation.

vii. Encourage concentrated developments of mixed uses in order to reduce auto trip length, encourage alternative transportation and to encourage the utilization of centralized heating systems.

viii. Site public buildings close to one another wherever possible, to promote reduction of auto trips and encourage shared use of facilities.

ix. Encourage transportation systems and programs designed to minimize energy consumption and reduce vehicle miles traveled through:

a. Ride sharing;
b. Employer development of ride sharing commuter programs;
c. Granting parking priority to ride share autos or vans;
d. Promoting pedestrian and bicycle travel by providing adequately surfaced, sidewalks, sloped curb crossings and bicycle racks;
e. Connecting bike paths and sidewalks to schools, parks, commercial and employment areas; and,
f. Requiring pedestrian and bicycle crossties between cul-de-sac and interblock cuts to reduce travel distances.

x. Require trees in parking lots to provide a shade canopy to decrease exposure to heat radiated from these surfaces.

xi. Promote tree planting as a way to reduce summer cooling loads and air pollution.

xii. Work with Tri-Met to provide commuter information and education, more efficient transportation, better schedules, mini-buses, coordinate locations for shelters and planning for park and ride stations.

xiii. Cooperate with Metro and Tri-Met to preserve railroad rights of way for future use.

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xiv. Encourage higher density residential developments near arterials, public transit routes, commercial areas and employment centers, where consistent with other Comprehensive Plan policies.

xv. Encourage transportation fuel efficiency through traffic light synchronization.

xvi. Promote energy efficient site design through the design review and subdivision process by such means as:

a. Permitting zero lot line siting and common wall construction;
b. Flexible setback requirements;
c. landscaping opportunities and sensitivity to the site's natural features;
d. Encouraging clustering of units to reduce the total amount of street and utility line footage and maximize usable open space; and,
e. Permitting the siting of residences on lots to provide solar exposure.

xvii. Conserve transportation energy and prevent traffic congestion by discouraging the development of drive-through businesses.

xviii. Take a leadership role in promoting energy conservation by seeking energy efficiencies in municipal building construction and operations, including:

a. Design, commissioning, operation, maintenance, renovation and landscaping of City buildings;
b. City vehicle usage;
c. City utilities including water pumping and street lighting; and,
d. City equipment usage including office equipment, heavy equipment and power tools.

xix. Develop an energy conservation program for City activities and property, including assessment of vehicle energy use and an energy audit of City buildings.

xx. Cooperate with the Lake Oswego Corporation to assure that the hydroelectric potential of Oswego Lake is preserved and utilized.

xxi. Continue to support both City and intergovernmental efforts in the recycling of office materials and curbside recycling.