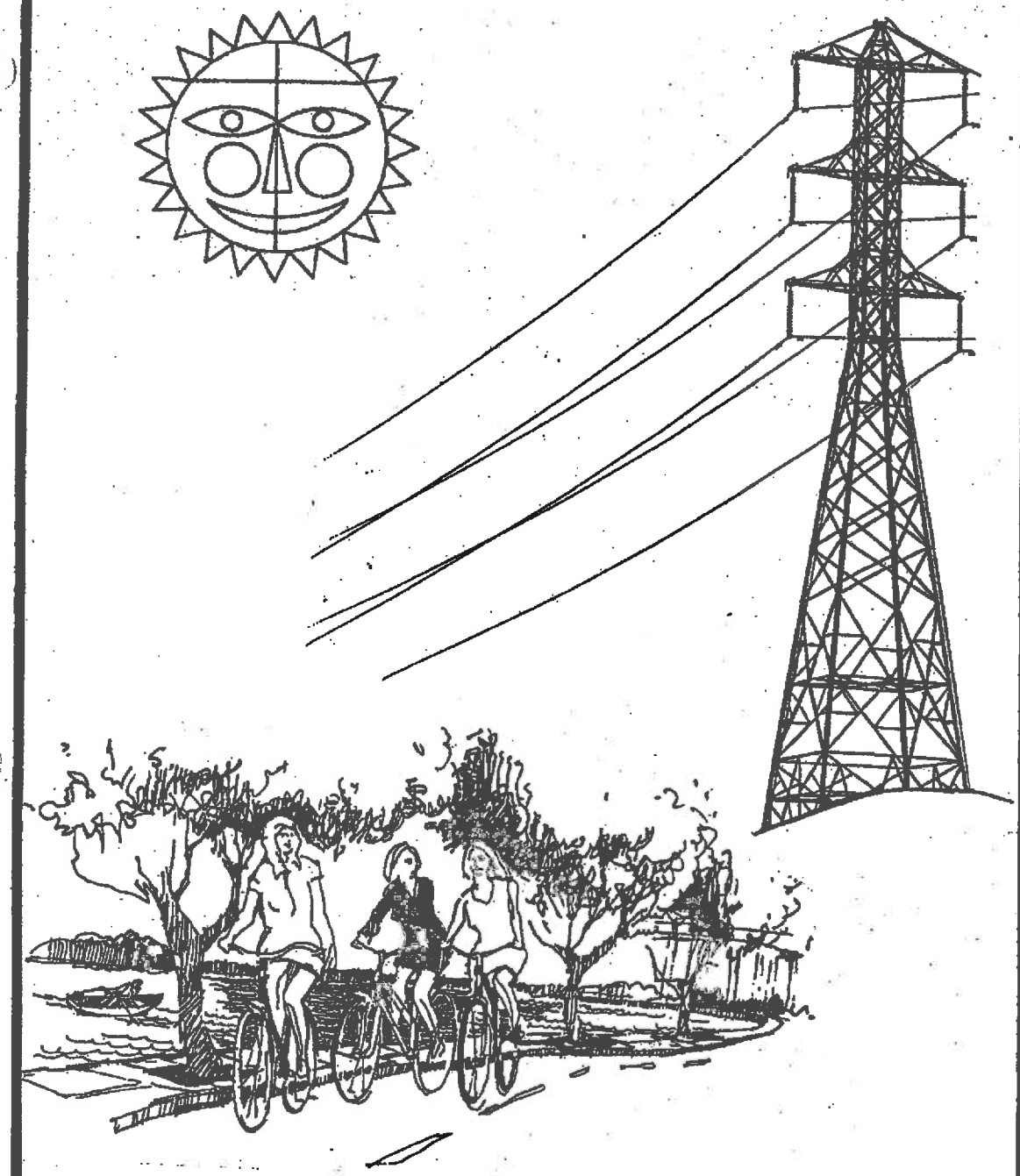

The Comprehensive Plan

X. ENERGY UTILIZATION

ENERGY UTILIZATION & CONSERVATION

The
COMPREHENSIVE PLAN
for
Central Point, Oregon

Prepared:
May 29, 1980

Revised:
Jan. 27, 1983

Prepared by:
ROGUE VALLEY COUNCIL OF GOVERNMENTS

CONTENTS

INTRODUCTION

For the past several decades, Oregon and the Northwest in general have enjoyed readily available and relatively low cost energy to heat homes and businesses, provide light, operate machinery and appliances, produce manufactured goods, and to fuel private and public transportation. A seemingly unlimited reserve of power was available at the push of a button or flick of a switch.

As we enter the decade of the 1980's, an unlimited availability of energy is no longer taken for granted. A number of factors have seriously affected supplies of foreign petroleum, domestic reserves of fossil fuels are now recognized as being limited, and a greater emphasis on environmental protection has resulted in major delays or elimination of new generating facilities.

Energy and adequate sources of energy are very important to Oregon, which is one of the fastest growing states in the nation. However, Oregon could be described as an "energy deficient" state. It has no major oil reserves, no capacity for refining petroleum products, and can presently produce only about 55 percent of its electric energy needs. Nearly all of the state's natural gas is imported from Canada or the Rocky Mountain states. Overall, Oregon is about 87 percent dependent upon outside sources for the energy supplies that are currently being used.

Although the utility companies that supply the energy we use will be attempting to meet all future needs, there are solid indications that all future needs will not be met, especially if we continue to utilize energy resources as we have in the past. Those closely involved in energy issues or in the business of supplying energy generally agree that alternative methods of generating or otherwise utilizing energy will have to be studied and implemented in the very near future to avoid energy shortages later on.

SCOPE & CONTENT OF THIS ELEMENT

The Energy Utilization Element of the Central Point Comprehensive Plan is intended to provide basic information pertaining to the current energy situation, major sources of "conventional" and "alternate" energy, possible activities or programs that Central Point may utilize, and policies to guide planning and energy-related decision-making. The Element is informational as well as action-oriented in order to provide a solid basis for future activities in both the public and private sectors of the Community.

GOALS

Statewide Planning Goal #13 (Energy Conservation) is:

"To conserve energy."

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

In addition to the Statewide Goal, the following goals have been developed to relate more specifically to Central Point:

1 -- To work toward optimum levels of energy efficiency and conservation in structures of all types throughout the Community.

2 -- To provide for energy efficient design in all new development that maximizes the use of natural environmental features, including topography, natural vegetation and trees, and proper solar orientation.

3 -- To ensure, through the Land Use Element and zoning, the most energy-efficient arrangement of land uses and neighborhoods.

4 -- To minimize transportation-related energy consumption through appropriate land use planning and an emphasis on non-motorized transportation alternatives.

5 -- To ultimately prepare an inventory of local energy resources and utilization rates.

The subject of energy utilization and conservation is discussed in all elements of the Comprehensive Plan. Energy considerations are important to all aspects of community planning and must be addressed in decisions relating to new development, housing, public facilities and services, parks and recreation, transportation, and even economics. Many of the goals or policies found in this Element will also be found in most other elements of the Plan, as appropriate. However, because of the importance of energy to the future of Central Point and its quality of life, this apparent duplication of goals and policies will only help to ensure that energy considerations are not overlooked in any aspect of future planning and development.

CONVENTIONAL ENERGY SOURCES

This section of the Energy Utilization Element describes the primary sources of energy that currently serve Oregon and, more specifically, Central Point. "Conventional" methods of producing energy are coal, nuclear, hydroelectric and petroleum. These are the major energy-producing resources in use today.

As stated earlier, Oregon is an energy importing state without major reserves of fossil fuels. Although there are many hydro-electric facilities throughout the state, this source accounts for a relatively small portion of the total energy demand.

ELECTRICITY

Oregon's electricity is supplied through a complex network of facilities that includes the Columbia River power system via the Bonneville Power Administration (BPA), and generating facilities operated by Portland General Electric (PGE), Pacific Power and Light (PP&L), Idaho Power Company, and the Eugene Water and Electric Board (EWEB).

Pacific Power and Light Company (PP&L) is the exclusive distributor of electricity in Jackson County, and serves electricity customers in six states (Oregon, Washington, Idaho, Montana, California and Wyoming). Since PP&L is our supplier of electricity, the following discussion will concentrate primarily on this company.

Of PP&L's power generating capacity, approximately 78 percent comes from thermal facilities, located primarily in Washington and Wyoming, and the remaining 22 percent from hydroelectric facilities. The company has 33 hydroelectric plants throughout the Northwest and seven steam-electric plants. During 1979, the hydro plants produced only about 13 percent of the total system load, due in part to low river flows. The steam-electric plants produced about 66 percent of the total. The remaining 21 percent of the load was purchased from other systems under long-term exchange agreements and contracts. Through such agreements, the company is able to sell excess summer energy to warm localities such as Southern California, then purchase additional energy to meet peak winter demands in colder areas. For example, during a prolonged period of cold weather during January and February, 1980, the demand on the total system reached a new peak of 4,222,000 kilowatts on January 30, 1980.

PP&L is also involved in the production of fossil fuels used in the generation of energy. NERCO, Inc. (Northern Energy Resources Company), a wholly-owned subsidiary of PP&L, controls coal reserves of 1.3 billion tons in Montana, Wyoming and Alabama.

PP&L also owns a 50 percent interest in a coal mine in Centralia, Washington, near the location of one of its plants.

According to PP&L's 1979 Annual Report, the coal business is currently "in the doldrums" with over 100 million tons of excess annual productive capacity. This results from lower than expected utility load growth and a slowdown in conversions from oil and gas, due to conflicts within legislative and regulatory processes, and to environmental problems related to siting and construction of new power generation facilities.

There are many obstacles in the path of electric utility operations at this time. These include the escalation of inflation and high costs of money, ever-increasing environmental requirements, regulatory lags (time delays) and supply problems. However, on the positive side, there is a growing awareness of impending electric energy shortages and signs of a growing understanding by the public and regulatory agencies of the necessity for higher rates to counteract the rising costs and make possible new facilities.

The Jim Bridger steam-electric generating plant in Wyoming is an important component of the entire system and will increase the capacity and energy supply for Southern Oregon. Work has started on a 500,000 volt transmission circuit that will strengthen the system in our area. Due to procedural delays and environmental litigation, this transmission line is now more than three years behind schedule. Although the Bridger plant was completed at a cost figure less than predicted, the delays have added millions of dollars to the cost of the transmission line.

With its vast coal reserves, PP&L appears to have adequate fuel sources for at least the next two decades. The largest coal operation is the Decker Coal Company in Montana which has reserves estimated at 522 million tons of strippable low-sulfur, low-ash coal, of which 307 million tons are committed to delivery through 2003. Decker is capable of producing up to 18 million tons annually. Although coal is available, the generation facilities do not have the capacity to meet future needs. Without new or expanded facilities or extraordinary conservation efforts, PP&L could experience an electrical energy shortage of as much as 34 percent by 1990.

Because of this possible shortage, PP&L is now looking at all potential methods of generating additional energy, including new hydroelectric locations, wind and geothermal facilities. Even if new generation facilities can be constructed in this short period of time, and with a concerted conservation effort on the part of the public, there could still be a 15 percent deficit by 1990.

PETROLEUM

Petroleum products are available primarily in the forms of residual oil, distillate oil, gasoline and diesel fuel. Unlike other forms of energy that are supplied by utility companies, these are provided through many private distributors and retail outlets.

Residual oil is used primarily for large-scale heat generation such as commercial and institutional space heating and industrial process heat. Distillate oil is used primarily for heat generation also, but usually for smaller applications. The main uses are for residential space heating and orchard heating.

Gasoline and diesel fuels are used almost exclusively for vehicular applications. The primary use is for highway transportation, although a smaller proportion is consumed in off-road use such as for agricultural and timber operations and for industrial machinery.

The future supply and availability of petroleum products is uncertain. The Country's partial reliance on foreign oil, combined with rising costs of imported and domestic oil and continuing political and economic unrest in the middle-eastern oil producing countries, has led to increased pressures to conserve gas and oil, turn to other energy sources, and increase domestic production.

The major oil companies claim to be affected by many of the same obstacles experienced by PP&L and other utilities. Increasing environmental regulations, public attitudes caused in part by rising prices, regulatory delays, and rising production costs are hampering efforts to produce additional energy. Given these factors, it is expected that gas and oil prices will continue to increase in the near future. However, it is impossible to forecast supply at this time. It will be to Central Point's advantage to seek ways to reduce community reliance on petroleum products and to ensure that future development is especially energy-efficient in the transportation sector, the area most vulnerable to fuel shortages.

NATURAL GAS

Natural gas is distributed in Jackson County exclusively by C P National, a private utility. C P National is also a distributor of electricity, water, natural gas, and telephone service in small urban and rural areas of Oregon, California, Nevada, Utah, and Arizona.

Approximately 62 percent of the natural gas supplies coming into our local area originate in Canada with the balance coming from domestic sources in the Rocky Mountain states, according to Chuck Gates and Murray Neal of the Medford office. Northwest Pipeline

Corporation transports the natural gas from the sources of supply in Canada and the Rocky Mountain area to the Northwest. This company has an aggressive exploration program which added substantially to their reserves in 1979. At this time, Northwest Pipeline has proven reserves that are equivalent to 16.7 times their 1978 production.

C P National also has an interest in storage facilities constructed by Northwest Pipeline. There are two liquified natural gas (LNG) facilities at Plymount, Washington; each capable of holding LNG convertible to 1.2 billion cubic feet of natural gas. The LNG plant takes gas from the Northwest Pipeline system during minimum use periods and liquifies it at the rate of 12 million cubic feet daily. The facilities can then regasify the LNG at the rate of 300 million cubic feet daily and deliver it to the Northwest Pipeline system during times of peak demand.

Another storage facility in the Northwest from which C P National draws natural gas is located at Centralia, Washington. This is known in the industry as a salt-dome aquifer. Again, during times of minimum demand, natural gas is pumped into the huge underground cavern and held under pressure. It is released to the Northwest Pipeline system for use by C P National and other distributors during peak demand requirements, normally during the winter months.

In Medford, C P National owns a peak shaving plant which is capable of making pipeline quality gas and sending it into the distribution system anytime there is a shortfall in supply during critical periods or in the event of a major disruption on the transmission line.

C P National serves over 50,000 natural gas customers throughout the system, most of whom are located in Southern Oregon. Residential customers in the local area use gas primarily for heating and water heating. Also, most of the mills in the Rogue Valley use natural gas for drying and steam processing.

The natural gas supplies for this area are foreseen by C P National as being adequate now and sufficient to meet demands well into the future. The price for this energy resource has risen dramatically over the past few years, primarily due to the Canadian export pricing policies and the deregulation of domestic natural gas. It is expected that natural gas prices in the future will continue to track the world price of imported crude oil insofar as that percentage which comes from Canada is concerned.

C P National is continuing its efforts to reduce our dependence on Canadian natural gas. The completion of the Alaskan gas pipeline will help, as will development of new domestic resources. Among the possibilities is further development of "geopressure"

gas which is available in large quantities in the Gulf Coast area and Rocky Mountain areas. Retrieval of this gas will require major technological changes and will be expensive. There are indications that natural gas resources exist in Jackson County and these too will eventually be explored in greater detail. Generally, the emphasis is on a greater reliance on local domestic natural gas sources, which should help to ensure an adequate and more reliable supply for the future.

NUCLEAR POWER

Although nuclear plants are now operating and providing electricity, the possibility of decreasing the 34 percent projected electrical energy shortage in 1990 through expanded nuclear facilities is considered unlikely. According to PP&L, nuclear plants contain financial risks, uncertainties related to fuel and waste disposal, and long time periods for development of the facilities. A new nuclear plant today would not be producing until well into the 1990s. Another obstacle that cannot be overlooked is the growing opposition to nuclear power on the part of the public, probably heightened somewhat by recent "accidents", uncertainties of waste disposal methods and locations, and the financial and planning problems related to the WPPSS project in Washington state.

ALTERNATIVE ENERGY SOURCES

Alternative methods of producing energy include the use of such resources as wind, sun (solar), geothermal, wood waste, and biomass. For the most part, these sources are currently in various stages of development, experimentation, or limited use.

WIND

Utilizing wind to produce energy is not new. Wind has been used for decades in Oregon, primarily for pumping water and small scale generation of electricity. There are two basic opportunities for generating electricity from the wind. These are (1) small local units to supplement other electricity sources and (2) large wind-powered generating units that are capable of contributing to the regional power grid. Small units are currently being used for a variety of purposes in Oregon. The south coast of Oregon is an area of high wind that may be suitable for larger scale generators. PP&L is presently constructing a wind-powered generator near Coos Bay. On a large scale the costs are considerably higher to produce electricity by this method, according to PP&L. The costs of electricity from the Coos Bay wind turbine will be in the neighborhood of 10¢ per kilowatt-hour, compared to the present average cost of 2.3¢ per kilowatt-hour.

Although small-scale wind generators could be effective in reducing total electrical consumption, the costs will be high for the individual and probably not cost-effective for larger scale application during the next five to ten years.

GEOTHERMAL

Geothermal energy production is a major possibility that is being studied by several utility interests. However, at this time, there are a number of unknown factors, including costs of production, environmental impacts, reliability, and availability of the needed technology. Without these issues solved, geothermal will not be an energy source that a large proportion of the State can rely on over the next ten years. Locally, there are no known geothermal sources. The nearest are in the Klamath Falls area.

SOLAR-ELECTRIC

Major solar-electric generating stations are a possibility for the future. However, because of inadequate technology, utility companies are reluctant to risk a major investment in this area.

BIOMASS

It has been estimated that about 15 percent of Oregon's total energy supply is produced from wood waste. In Jackson County the use of wood as a fuel accounted for a large percentage of the total per capita energy consumed in recent years, mostly by the wood products industry and, on a smaller scale, for home heating.

There are opportunities for much greater utilization of biomass waste materials to produce energy. Agricultural crops and residues, woodwastes, solid wastes and other materials which have very often been discarded, may well become important future energy sources. There may be a potential to grow certain crops strictly for their high energy content for use in methane gas or ethyl alcohol, an ingredient in gasohol. The economics of biomass energy generation is a major obstacle at this time, at least on a large scale. The future availability of wood products is not certain and there is the possibility that wood wastes could be more valuable for other uses. As a reasonable alternative to fill the 34 percent gap by 1990, the use of biomass is not expected to contribute significantly.

SOLAR

A study conducted by the U.S. Department of Energy in 1978, entitled "Solar Energy for Pacific Northwest Residential Heating", found that, based upon climatic factors, the attractiveness of solar heating is better for most Pacific Northwest locations studied than for other typical northern locations. This study also stated that the most attractive areas in the Pacific Northwest for solar heating applications are the Richland/Prosser area of Washington and the Medford area of Oregon.

The Oregon Department of Energy is actively promoting solar applications, both passive and active, and stated in its document entitled "Community Energy Planning" that, in general, passive solar design for residential and commercial use is cost-effective throughout Oregon. Many communities throughout the country are developing solar energy ordinances or modifying their building codes to include solar applications in new construction. It has been determined by numerous experiments and studies that relatively inexpensive solar applications, preferably included in new construction, can significantly reduce conventional energy utilization, primarily through water and space heating.

Unlike other forms of conventional or alternative sources, solar energy is readily available and solar energy considerations can easily be integrated into existing ordinances and applied to new development. In some cases, retrofitting of older structures can also be cost-effective. Solar energy development is currently quite popular, has little or no negative impacts on the environment, and is an alternative that can be utilized in Central Point.

ENERGY CONSERVATION

After considering all reasonable alternative energy sources and other approaches to dealing with possible energy shortages, Pacific Power and Light Company and others in the energy field tend to agree that the first and foremost priority should be voluntary energy conservation. This option currently has the greatest potential than any other alternative, although the average year-round savings will depend on the concerted efforts of individual consumers.

Governor Atiyeh received authority in 1979 to appoint Oregon's first Alternate Energy Development Commission (AEDC). The Commission's mission is to quantify the realistic potential in each renewable resource area and to recommend measures to develop those resources. The Solar Task Force as selected as one of six task forces to assist the AEDC. During its work, the Solar Task Force found that the area of conservation is very closely related to solar application and has prepared a document entitled "Solar/Conservation Task Force Report" to outline policy options that are now under consideration.

The Solar Task Force has concluded that the Solar/Conservation combination is the best course of action for the state because:

Solar/Conservation is less inflationary -- It is cheaper than other energy sources and expenditures represent a smaller portion of gross disposable income over the long run. It will also reduce demand-induced price increases for scarce, non-renewable resources.

Solar/Conservation can stimulate the economy -- The saved capital resources can be invested in the production of other goods and services, and there is more capital recirculated within the state of Oregon.

Solar/Conservation will create more jobs -- Its technologies are more labor than energy intensive. The jobs will be more locally available than jobs involved in producing conventional energy supplies, and there will be more job opportunities for unskilled and semi-skilled laborers.

Solar/Conservation promotes individual freedoms -- By allowing for the production of other goods and services, it enhances the quality of life and offers expanded choices to individual citizens. It also reduces dependence on forces external to the state.

Solar/Conservation is more reliable than increasingly-scarce non-renewable out-of-state resources.

Solar/Conservation enhances planning flexibility and promotes local decision-making -- It can be implemented locally quicker than conventional energy sources and, thereby,

allows the more thorough evaluation of alternatives.

Solar/Conservation is environmentally benign -- The primary environmental impacts will likely be associated with the manufacture of the solar materials.

Solar/Conservation is something that is available to most individuals and businesses -- It is a dispersed energy source that enjoys considerable local support and does not require an extensive utility infrastructure.

According to the Solar Task Force, widespread conservation applications are the only energy options immediately available. Conservation is the most cost-effective energy option available and the only way to lower rapidly increasing energy costs and demands.

The Task Force proposes to achieve its goal of optimum conservation and efficient use of energy in all forms by meeting the following objectives:

1. To phase out the use of oil by 1990, and natural gas by 2000, except as backup, for direct space and water heat in the residential and commercial sectors. These fuels would be preserved for their more essential transportation and industrial applications.

2. To promote maximal use of electric generation from renewable sources by 2010 through natural market forces and accelerated by the following policy directions:

   a. Use electric resistance space and water heating in all new structures only if used as back-up to high-efficiency heating devices, such as passive and active solar and heat pumps.

   b. Convert all existing electric resistance heating by year 2000 by the same means.

   c. Increased use of more efficient residential and commercial appliances and lighting.

3. To phase out oil and natural gas for low-temperature industrial uses in favor of high efficiency and other renewable heat sources.

The Task Force concluded its report with a statement to the effect that consumption of conventional energy forms can be held to 1980 levels through the year 2000 if the state undertakes programs which will achieve all feasible conservation and solar applications in the residential and commercial sectors. This will require participation by individuals, energy suppliers and government and may require mandatory measures and some degree of financial assistance.

SPECIAL PROGRAMS & ACTIVITIES

The previous discussions have dealt with energy sources, alternative sources and suppliers. There are also a number of activities presently underway or contemplated by utility companies, various levels of government, and others that should be brought to the attention of the City for general informational purposes and to provide a partial listing of energy-related resources that may be valuable at some later date. This section could also be considered an inventory of energy-related programs and activities that may be of value to Central Point in dealing with its energy future.

OREGON DEPARTMENT OF ENERGY

The Oregon Department of Energy (ODOE) provides a wide range of energy-related public and private services, including:

- Promotes and requires efficient energy utilization through the State's Uniform Building Code and through mandatory lighting standards.
- Promotes energy conservation through various media.
- Provides tax credits for residential weatherization.
- Provides tax credits for installation of alternate energy devices on residences.
- Provides an energy grant program to provide financial incentives to create innovative local programs.
- Works with all levels of government and the Oregon Department of Education to promote energy awareness and to develop specific instructional projects.
- Coordinates the Governor's Transportation Energy Conservation Task Force and promotes other transportation related activities including carpooling, bikeway plans, speed enforcement, etc.
- Provides technical assistance and energy information to all land use planning units throughout the review of Energy Elements of Comprehensive Plans and through various documents provided to assist in energy planning.
- Administers an energy audit program for schools, hospitals, local governments, public care facilities and state buildings.
- Has staffed the Governor's Alternative Energy Development Commission and has implemented a variety of projects aimed at encouraging the use of renewable energy resources.
- Is implementing the alternate energy tax credit for business and industry that was passed by the 1979 Oregon Legislature.
- Will prepare an emergency energy conservation plan to be activated in the event of a Presidential declaration of a severe interruption of petroleum supplies.

PACIFIC POWER & LIGHT

PP&L is involved in energy conservation programs and operates an interest-free loan program for weatherization of homes having electric space heating. By the end of 1979, about 6,700 homes had been or were in the process of being weatherized. Under this plan, the homeowner requests PP&L to conduct a Home Energy Analysis (HEA) to be performed by an energy consultant. This determines whether insulation of floors and ceilings and the installation of storm windows and doors will be cost effective. The Company then offers to finance the necessary work through loans which are interest free until repaid. In Oregon, loans are to be repaid when the home is sold or transferred. In the long run, this program reduces capital outlays for new generating capacity and helps reduce overall cost of services.

In addition to electrical energy, PP&L is involved in investigations of solar applications, geothermal studies, wind power experiments, biomass studies and other forms of alternative energy sources. The company is currently building a wind generator at Coos Bay. In April 1980, PP&L sent out questionnaires to its customers to get input on energy issues.

C P National

Energy conservation is also a priority of the gas company. It is developing and pursuing conservation programs that include encouraging home energy savings through energy audits and providing assistance to homeowners with needs for additional insulation.

BIOMASS PROJECTS

The Oregon Economic Development Commission has approved the eligibility of two firms for tax exempt industrial revenue bonds to build plants designed to turn agricultural products into alcohol. The plants will use potatoes and grain, such as barley, corn and wheat to produce ethanol and power alcohol for use as fuels. One of the plants will be built in the Klamath Falls area and will utilize geothermal energy for heating.

SOLAR STUDIES

At the present time, Oregon State University is conducting solar-related meteorological measurements as a part of a national funded by the U.S. Department of Energy. OSU is responsible for Region 5, which includes Oregon, Washington,

Idaho, Montana and Wyoming. The purpose of the project is to help provide a data base for regional and national decision-making on solar energy developments in the future. The University of Oregon is also cooperating in this effort and maintains a five-station solar radiation network throughout Oregon.

PROJECT WARM

This program, administered by ACCESS, Inc., provides free home weatherization to low-income citizens in Jackson County, with priority to senior citizens. It is funded through federal grants that are administered by the Oregon Community Services Administration.

The services provided through this program include:

- Evaluation of the home for energy saving weatherization needs.
- Attic insulation.
- Weatherizing and Caulking to stop drafts.
- Storm windows to stop heat loss through the glass.
- Minor roof repairs.
- Hot water tank covers to reduce heat loss.
- Free firewood delivered to homes that need it.

ACCESS is a non-profit organization which administers supportive services for the senior citizens of Jackson County. Project Warm is only one of its many services.

SUNERGI

This organization has been very active in Southern Oregon in the promotion of energy conservation and solar applications. It provides a number of services and has held a series of energy fairs in valley communities.

The Southern Oregon Solar Energy Survey is currently being prepared and will be distributed as a door-to-door and mail out survey in Central Point to determine individual energy habits, economics and general opinions. The attitudes, energy needs, solar orientation and access, and other factors will help to determine the possibilities of solar application to homes in Central Point. It would also locate the people who have a need for energy information and services, and will provide the City with new tools with which to approach the present and future energy issues. The survey will also provide information that will be useful in physical planning and zoning to ensure proper solar application in new development.

CONCLUSIONS

From the discussions in this Energy Utilization Element, the following conclusions regarding energy in the Central Point and Jackson County area are outlined:

1 -- Energy conservation, in combination with solar applications, appears to be the most reasonable and cost-effective method of approaching possible future energy shortages.

2 -- Pacific Power and Light Company has estimated that it could experience an electrical energy shortage of as much as 34 percent by 1990. Increasing production, constructing new conventional generating plants, or developing new alternative energy sources were possibilities that were studied. However, no combination of these alternatives would effectively eliminate the 1990 shortage.

3 -- There appear to be adequate coal and natural gas supplies through the year 2000. However, energy costs will continue to rise, with the consumer absorbing the additional costs.

4 -- Because of limited generation facilities for electric power and delays in completing transmission lines, consumers can look forward to the possibilities of voluntary or mandatory cut-backs during peak periods.

5 -- Although the supplies of conventional energy sources will depend on factors beyond the control of the City or the County, demand can be adjusted somewhat within our local area through conservation and other alternatives.

6 -- Transportation is the sector of our economy that is most vulnerable to disruptions in the supply of energy, especially petroleum-based sources. This can cause negative impacts in all other sectors of the economy.

7 -- Although there are many alternative energy sources available locally (wind, solar, biomass, etc.), there is a need for further research and development of the needed technology to make their applications physically and economically feasible.

8 -- There are many ways to integrate solar and conservation measures into the Comprehensive Plan to help ensure that future development is more energy-efficient and not totally dependent on conventional energy.

ENERGY UTILIZATION STRATEGY

The information in this Element of the Comprehensive Plan has provided a fairly general description of the major conventional energy sources that Central Point residents and businesses are presently utilizing. The current status of energy supply and demand has been discussed, as have various special programs and activities that are being conducted or are available to Central Point. It was concluded that the City and County have very little control over the supply and distribution of the major sources since, in most cases, they originate outside the state and often outside the country.

Among the conclusions outlined on P.14 were that (1) energy conservation, in combination with solar applications, appears to be the most reasonable and cost-effective option and (2) there are many ways to integrate solar and conservation measures into the Comprehensive Plan. These conclusions will form the basis of Central Point's "Energy Utilization Strategy".

The following components of the Strategy correspond to the City's Energy Utilization Element goals (P.2) and include policies to guide implementation.

1 -- OPTIMUM ENERGY EFFICIENCY IN STRUCTURES

Energy consumed for space heating and water heating accounts for about three-quarters of total residential energy consumption. There are many opportunities for significant conservation in this area in Central Point. Efforts should aim at proper insulation, prevention of heat loss through windows and doors, and assuring that new residential structures (and commercial) are properly oriented on the site to maximize the sun's heating potential.

Steps can be taken by the City to ensure that commercial buildings are also weatherized, properly insulated, solar oriented, landscaped for climate improvement, and situated within the urban environment to maximize transportation efficiency.

The City should promote weatherization during the initial construction, which is the most cost-effective time. Since the 1979 adoption of energy conservation standards in the Oregon Uniform Building Code, all new housing must be insulated to R-30 in ceilings, R-19 in floors, and R-11 in walls. Windows must be double-glazed. Enforcement of these standards will help to implement this energy strategy.

Solar orientation will only be effective if the building is properly weatherized. If the structure is designed properly, the sun will be able to provide heat in the winter and roof overhangs or trees will effectively block the sun for summer cooling.

It has been determined that passive solar design for residential and commercial structures is cost-effective throughout Oregon, and especially so in the Central Point area. In addition to favorable location, there are other incentives that, if publicized and promoted, could aid in solar development. In 1977 the Oregon Legislature established a tax credit for installing alternate energy devices which provide 10 percent or more of a home's energy needs. A Federal tax credit is also available.

Although not recommended at this time, Central Point should consider developing a city-wide mandatory weatherization program that would be enforced at the time of sale of the structure. Such programs are already being used in some communities as a way to ensure that existing older homes are eventually brought up to the City's energy conservation standards.

Goal: To work toward optimum levels of energy efficiency and conservation in structures of all types throughout the community.

Policies:

a. The City shall weatherize all public buildings under its jurisdiction to the maximum extent possible, within its economic limitations.

b. The City, through modifications to existing codes and ordinances, will ensure that new construction will be energy efficient and will take advantage of solar energy.

c. The City will continue to work toward completion and adoption of solar energy applications that are currently being developed.

d. The City will consider future development and implementation of energy efficiency requirements, to be met at time of sale.

e. The City will encourage Central Point residents to participate in weatherization programs that are currently offered by various agencies and utility companies.

f. The City will provide information to the public pertaining to the availability of weatherization and solar system financial assistance, including information on State and Federal tax credits.

2 -- MAXIMUM USE OF NATURAL FEATURES IN DESIGN

Because solar orientation and other energy factors were not considered when many of Central Point's homes were constructed, there are now major difficulties in adapting many homes to solar systems. With today's knowledge of solar systems and effective conservation measures, Central Point is better able to ensure that future development is properly oriented to the sun and that other environmental features are integrated into the plan.

Solar rights, until recently, were not generally considered an important design factor. Now, with increased technology and awareness of solar potential, it is increasingly important to guarantee that the designer and future owners of a structure know what will happen to their access to the sun. Since solar systems are often expensive, any blockage caused by other buildings, large trees, etc., can seriously reduce the system's energy and cost effectiveness. Central Point is already working on the development of solar access requirements that will be integrated into existing ordinances.

Landscaping materials are very important to the energy-efficient structure in providing summer shade, reducing winter heat loss, providing evaporative cooling, or used as a windbreak. The landscaping plan should work in harmony with the solar or other conservation features of the structure. In areas of natural vegetation and trees, it is generally more cost-effective to retain the native materials and position the new structure in such a way that it will achieve the best overall results. If existing landscaping is saved, landscaping and maintenance costs are often reduced and the residents will not have to wait for several years for their trees to reach maturity.

Storm water management is useful in preserving the natural environment if storm water can be handled in a natural way that does not significantly alter the environment. Through "natural" development, water can be channeled through natural or man-made swales and detained, if space allows, to allow water to percolate into the ground, rathern than run off through expensive storm drains and street gutters. This approach has been used successfully in other communities and has helped reduce costs by eliminating the need for curbs and gutters. The result is a more informal "rural" neighborhood appearance that can be very attractive. Clustered housing, planned unit developments, or other types of developments that contain common open space areas are best suited to the development or preservation of natural water channels.

Goal: To provide for energy efficient design in all new development that maximizes the use of natural environmental features, including topography, natural vegetation and trees, and proper solar orientation.

Policies:

a. The City will encourage attached or clustered housing whenever such development would result in substantial energy conservation; or in areas of natural vegetation where conventional housing or subdivisions would have a detrimental impact on the natural environment.

b. The City will encourage the retention of existing trees and other natural vegetation in areas where they would be useful in energy conservation, such as providing shade, cooling, windbreaks, etc.

c. The City will integrate solar access requirements into existing codes and ordinances, as appropriate, to protect residential solar rights.

d. The City will consider the possibility of additional landscaping provisions in the subdivision ordinance to help ensure energy-efficient development.

e. The City will consider the potential use of natural land features for the disposal of storm water, as an alternative to expensive storm drains and street gutters.

3 -- ENERGY-EFFICIENT ARRANGEMENT OF LAND USES

Each individual element of the Comprehensive Plan contributes to the ultimate arrangement of land uses, as depicted and described in the Land Use Element. The Energy Utilization Element provides important energy-related considerations that will help determine the most appropriate locations, densities, and configurations of future land uses. Specific energy-related considerations included in the City's Zoning and other ordinances will ensure that the Comprehensive Plan is implemented in accordance with the goals and policies of this Element.

In order to maximize energy efficiency in future development, the Comprehensive Plan provides for a "neighborhood concept" of development that will help to ensure that schools, park and recreation facilities, and commercial centers are within easy reach of those who will use these facilities. Within the neighborhoods, energy conservation will focus primarily on residential and transportation sectors through the energy-efficient planning of single residences, groups of residences, open space areas, walkways, bikeways, parking and street systems. Energy-efficient provision of public facilities and services will also be incorporated into the total Plan.

Goal: To ensure, through the Land Use Element and zoning, the most energy-efficient arrangement of land uses and neighborhoods.

Policies:

a. The City will strive for energy-efficient future neighborhoods by providing for future residential development that is based on the "neighborhood concept".

b. The City will minimize the costs of and energy consumed in the provision of urban facilities such as streets, sidewalks, curbs and gutters, etc., through the encouragement of planned unit developments and cluster housing that utilize cul-de-sac streets, private streets, and interior common areas with walkways and bikeways.

c. All land uses will be planned so as not to block the solar access of adjacent land uses.

d. The City will remain aware of new innovations in land use planning that may be applicable to the Central Point area for energy conservation purposes.

4 -- TRANSPORTATION-RELATED ENERGY CONSERVATION

The private automobile is a major energy consumer and a prime target for conservation activities and policies. With the exception of the airplane, the private auto consumes more BTU's per passenger mile than any other form of transportation.

At the other extreme, railroads are the most fuel-efficient means of moving freight over land areas. Central Point will encourage further development of industrial facilities adjacent to rail facilities both for energy conservation and economic purposes.

The four most energy-efficient ways of getting around within a community, or between communities, in order of energy conservation, are walking, bicycling, public transit, and the private auto. The Comprehensive Plan provides Central Point with the opportunity to emphasize the important of non-motorized systems, such as pedestrian/bicycle facilities. A basic change in design philosophy will be needed to provide well-designed sidewalks that encourage pedestrian traffic rather than simply provide access to parked cars. Since the City's subdivision regulations already require sidewalks, and other amenities, it should not be difficult to modify these regulations to include pedestrian/bicycle paths, especially in larger subdivisions and in planned unit developments.

Public transit systems require high densities of living areas and working/shopping centers along major transportation corridors. The distribution of the population and businesses over a large area makes public transit too costly and inefficient to operate. Generally, transit use increases as residential densities increase. A strong central business district may also increase transit use. Neighborhood shopping centers or recreational centers can provide an activity node away from the downtown area at which people congregate. However, transit service cannot be financially successful if it must operate in low-density residential areas where the family car is the most convenient means of transportation.

Carpooling may be a viable alternative to public transit buses in the Central Point area until adequate bus service is provided. One way to possibly increase energy efficiency in the transportation sector might be to encourage carpooling in business and industry. The City should also explore the possibility of the establishment of "park-and-ride" locations where commuters could park their cars or bicycles and carpool or ride a bus to work.

Goal: To minimize transportation-related energy consumption through appropriate land use planning and an emphasis on non-motorized transportation alternatives.

Policies:

a. Energy efficiency should become the principal criterion in evaluating all future modes of transportation, both public and private.

b. The City will continue to support and promote carpooling and public transit (bus) service to Central Point.

c. The City will continue to plan for new industrial development that is located adjacent to rail facilities, and encourage energy-efficient rail freight transport.

d. Through the Land Use Element, the City will provide for highest residential densities along major arterial streets and in the vicinity of major activity centers in order to maximize convenience and access, encourage pedestrian trips, and maximize the cost-effectiveness of public transit.

e. Whenever possible, the City will encourage non-motorized forms of transportation to lessen the dependence on the private automobile for short trips and commuting.

f. The City will work toward the development of a city-wide pedestrian/bicycle system as described in the Parks and Recreation Element of this Plan.

g. The City supports the County's proposed development of the Bear Creek Greenway pedestrian, bicycle and equestrian system as an important project that will encourage non-motorized travel.

h. The City will consider major improvements to the pedestrian environment within the business district for energy conservation and economic purposes.

i. The City will consider modifications to existing ordinances that will add requirements for bicycle paths and walkways within planned unit developments, clustered residential development and other proposed development that includes common open space areas suitable for such trails.

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