



Land-use planning and conservation

EDITOR'S NOTE: This is the fifth of seven articles on the Energy Future Santa Cruz Advisory Board plan to reduce energy use in Santa Cruz by up to 35 percent. The plan was prepared under a grant from the National Science Foundation.

By GREG GARRY
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The home, the job, the shopping place — and the energy gobbling miles that lay between the three — supply the areas of focus for Energy Future Santa Cruz in the land-use planning section of its report.

In its recently released 100-page plan, Energy Future Santa Cruz, a local grassroots organization, takes a look at the possibilities of land-use planning as a means of saving energy rather than wasting it.

Traditional geographic segregation of the home from both work and shopping has increased energy use as citizens are forced to drive long distances to meet their everyday needs, according to the report.

Because of this energy waste, the report says, the segregation of residential, commercial and industrial areas is under re-examination in communities throughout the country.

In its report, Energy Future calls for the integration of energy-related land use actions into all appropriate General Plan Elements of Watsonville, Scotts Valley, Capitola and Santa Cruz.

Jeff Brody, an energy specialist who worked on the plan, says he sees only one real problem in getting the four cities to cooperate. The process would have to be slow due to the need for public hearings, according to Brody.

Energy Future, in its report, also states that the County and its four cities should discourage developments that promote energy over-use such as, dependence on the automobile, excessive pumping distances for water and sewage, and extensive grading for site preparation.

Brody says he doesn't see a possible conflict between developers and local government in this area. "Developers are

starting to realize the long-run implications of the way they build a home," he says.

He also states that buyers are looking more closely at long-range costs when they purchase a home, adding that many banks are willing to give lower interest rates for loans on homes that are energy efficient.

How can land-use planning affect energy waste? Two methods suggested by Energy Future are clustered and mixed-use developments. Brody describes mixed-use as a "way of integrating residential and commercial development.

This approach, says Brody, would result in more multiple family units. The idea behind this type of use is to lower overall energy costs. "People wouldn't have to get in their car and drive five miles to the supermarket," says Brody.

Energy Future's report also has suggestions for dealing with water-related energy waste. The report states that the city of Watsonville should implement siting criteria for all new construction which maximizes natural drainage and on-site water retention and minimizes the need for supplemental pumping of water.

In explaining this part of the problem, Brody says when a lot of grading is done at a construction site, large numbers of drainage ditches and runoffs also are required.

He says new construction which makes use of natural drainage on water retention will be the cheapest in the long run. As Brody explains it, the farther away the water is from the structure, the more expensive it is to pump. The on-site approach is cheaper than running massive sewer lines or water lines, says Brody.

Energy Future's report also has suggestions for the city of Scotts Valley. Among these is to integrate mass transit where feasible into all new developments. Brody says, ideally, the developer would sit down with the planner and work this out wherever possible, "before the developer spends millions and millions on architectural plans."

For Capitola, Energy Future's report suggests that the Capitola General Plan strongly encourage greater use of clustered, mixed-use development and higher density-zoned property where appropriate.

After a long look at improved energy planning for developments, Energy Future's report focuses on local governments themselves. According to Energy Future statistics, local government operations consumed 4 percent of the total energy in Santa Cruz County in 1981.

Local governments are among the largest single energy consumers in the county, says the report. The city of Santa Cruz municipal operations accounted for 14 percent of the total electricity and 19 percent of the natural gas used within the city, according to Energy Future statistics.

How much can local governments save by being more energy conscious? The report cites some examples of other cities. In 1976 the Metropolitan Government of Nashville-Davidson County, Tenn. instituted a no-cost energy management program that saved \$400,000 — or enough energy to provide the electrical needs for

1,000 average Nashville homes for a full year; according to the report.

The city of Seattle, the report continues, discovered that it could save up to 42 percent of its energy costs during the winter by turning down thermostats and hot water temperatures, turning off unnecessary lights, and by turning off the heating system on the weekends.

How can this be applied to the Santa Cruz area? The report suggests that local governments set up a mechanism to review operations and reduce energy consumption. The county should use its new energy specialist to take the lead in this area, states the report.

Brody says the county had begun the process of hiring the energy specialist when the winter storm struck. As he explains it, as a result of the storm, the specialist was not hired.

When the energy specialist is hired, says Brody, that person will have to have inter-departmental jurisdiction.

Solid waste also plays an important role in the energy problem, states the report. During 1981, approximately 170,000 tons of garbage was dumped in Santa Cruz County, according to Energy Future statistics.

The report continues by stating that, on the average, each household in the Santa Cruz area generates 180 pounds of trash each month, with half of the trash being potentially recyclable.

To cash in on this potential energy, the report suggests the development of curbside recycling for paper, glass, metals, and organic materials. As far as recycling bottles is concerned, Brody says they can be melted down for other uses or the bottles can be sterilized and reused.

The report states that start-up funds for a recycling program could be sought from the California Solid Waste Management Board, revenue bonds, franchise or contract agreement with private solid waste collection companies, assessment districts, or through other appropriate funding mechanisms.

Brody says the amount of start up funds needed would depend on the size of the operation. He adds that participation would have to come from the cities and the county.

The report also suggests studying present landfills to see what amounts of methane gas might be available for use. Brody says the land that the county is currently using for landfills is going to be quickly used up.

He says the energy needed for mining new aluminum is at least 10 times more expensive than for recycling that metal.

Energy Future's report points to sewage resource recovery as an impor-

tant consideration. It states that sewage treatment for Watsonville and Santa Cruz is the largest single energy expense for those two cities.

If current methods of waste treatment are not modified, continues the report, they will not only be an economic burden to local residents, but will place greater pressures on limited natural resources and environmental quality.

What can be done? The report suggests alternatives to centralized waste treatment, such as neighborhood waste treatment systems, composting toilets, and graywater system systems.

Brody describes composting toilets as "organic chemical toilets." The toilet is treated chemically in such a way that the bacteria is harmless. The gas produced by the decomposing waste is trapped and used for energy needs, says Brody. "Instead of pumping it out to sea, you are reusing it."

He also mentions a mechanism known as a methane digester. "It's just a big tank and it lets the methane decompose and it comes to the top." Brody also offers some examples of greywater systems, "like recycling dishwater to water your plants."

Another example of graywater use, according to Brody, is water trucks that wet the soil at grading sites. He says they bear the label, "reclaimed water" and "that's all it is — water that has been used before for something else."