

**SEMINOLE COUNTY GOVERNMENT
BOARD OF COUNTY COMMISSIONERS
AGENDA MEMORANDUM**

SUBJECT: ENERGY ELEMENT FOR VISION 2020

DEPARTMENT: Planning & Development **DIVISION:** Planning

AUTHORIZED BY: Don Fisher **CONTACT:** Alice Gilmartin **EXT.** 7383

| | | | |
|------------------------------------|--|---|--|
| Agenda Date <u>02/25/03</u> | Regular <input type="checkbox"/> | Work Session <input type="checkbox"/> | Briefing <input type="checkbox"/> |
| | Public Hearing – 1:30 <input checked="" type="checkbox"/> | Public Hearing – 7:00 <input type="checkbox"/> | |

MOTION/RECOMMENDATION:

1. Move to recommend transmittal of the proposed Energy Element for Vision 2020 - A Guide to the Journey Ahead (Seminole County Comprehensive Plan) to the Florida Department of Community Affairs for review and comment;
2. Move to recommend denial of the proposed Energy Element;
3. Move to continue the public hearing to (specify a date and time certain)

District - County Wide

Alice Gilmartin, Principal Coordinator

BACKGROUND:

On March 26, 2002, the BCC directed Staff to prepare an Energy Element for the Seminole County Comprehensive Plan. The BCC wished to ensure that energy conservation measures were in place for its buildings, facilities and fleet and wished to set an example to the public to save energy, resulting in saving taxpayer dollars. The Board also wanted to confirm that County Staff coordinated with the power companies to ensure the sharing of information. The Energy Element would become the fifth optional element added to the Comprehensive Plan.

Planning Staff in their research of current energy conservation practices in Seminole County found that the individual Departments and Divisions were very conscious of energy conservation and that a multitude of efforts by County Staff were actively in place and these are documented in the Element. The Element also explores additional conservation measures for consideration.

| | |
|---------------------|-----------------------------|
| Reviewed by: | <u>SC</u> |
| Co Atty: | <u>SC</u> |
| DFS: | <u> </u> |
| OTHER: | <u>MW</u> |
| DCM: | <u>SS</u> |
| CM: | <u>VB</u> |
| File No. | <u>ph130pdp02</u> |

STAFF RECOMMENDATION:

Staff recommends transmittal of the proposed Energy Element to the Florida Department of Community Affairs for review and comment.

HEARING RESULTS

1. **Land Planning Agency/Planning and Zoning Commission** – February 5, 2003.
Recommended approval of the Energy Element.
2. **Board of County Commissioners – Transmittal Hearing** - Scheduled for February 25, 2003
3. **Board of County Commissioners – Adoption Hearing** - Scheduled for June 27, 2003.

ATTACHMENT: Proposed Energy Element

ENERGY ELEMENT INTRODUCTION

The Board of County Commissioners wishes to further address energy conservation in its comprehensive plan, Vision 2020 – A Guide to the Journey Ahead. The Board directed staff on March 26, 2002 to prepare an optional comprehensive plan element addressing energy conservation. The Conservation Element of Vision 2020 addresses general energy conservation measures to be taken by the County. The Board wishes to set an example to its citizens and business community to actively participate in energy efficiency practices. It is the intent of the Board, to the greatest extent possible, that any new buildings and facilities are built with the most cost effective energy conservation measures and that any rehabilitative work on existing buildings or facilities be built or equipped with energy conservation in mind.

This element will demonstrate that there is a strong effort underway by the County departments to save energy and energy costs. It will also outline attainable policies to guide and increase energy conservation practices within the County government.

As part of the Board of County Commissioner's overall efforts in community planning for Seminole County, addressing energy related issues is important to achieve sustainability. Reducing energy consumption saves resources for now and in the future. Promoting infill development saves energy by making use of existing urban infrastructure in lieu of urban sprawl that can increase commuting distances, result in the duplication of infrastructure, can make commuters reliant on automobiles and causes mass transit to be impractical in some areas. The County is mandated by state law to enforce the Florida Energy Code which has governed the construction of homes and businesses through the boom of growth in Seminole County since 1979.

The Board acknowledges and commends the efforts of the two electric power companies that provide service within Seminole County, Florida Power and Light and Florida Power, for implementing many energy conservation/efficiency programs. Such efforts are important when understanding that Florida relies heavily on electricity, ranking third of all states in 1997.

Additionally, two natural gas companies provide service to residents and businesses in Seminole County. There are Teco Peoples Gas and Florida Public Utilities Company. Natural gas is considered an alternative fuel and is considered to be more energy efficient than other fuels.

The County's Fleet Services has explored a number of ways to conserve fuel and save fleet costs for County vehicles. Fleet Services actively joins in the bidding for fuel with other agencies to obtain a lower cost due to volume buying.

The Board of County Commissioners wishes to set an example to the citizens of Seminole County in leading energy conservation efforts in its buildings and facilities. Various programs to enhance energy efficiency will be explored for implementation by the County.

ENERGY ELEMENT ISSUES AND CONCERNS

Issue ERG 1 Efforts that Support Principles of Sustainability

Throughout other elements of Vision 2020, there are polices that promote sustainability. These are highlighted in the Future Land Use Element where there are polices and procedures "to promote community value and limit urban sprawl". Polices throughout Vision 2020 are setting the framework for the present and for generations to come for the protection of environment, protection of rural and agricultural areas, sustainable economic growth and maintaining or bettering the quality of life of its residents through neighborhood protection, parks and trails, quality of schools and design elements of the urban landscape. These are all efforts that support principles of sustainability. Conserving energy now and for the future is also an important part of achieving sustainability.

Land use patterns can affect energy conservation. The County has chosen through its comprehensive plan to limit urban sprawl, promote infill development and protect agricultural and rural lands and lifestyles in the designated Rural Area. With the promotion of infill development, vacant parcels that have been "skipped over" in the past will come into development where there is already the urban infrastructure (water and sewer lines, roads) to support development. Assembly of land and redevelopment may occur where needed. These factors contribute to keeping growth compact and not impacting environmental or rural lands. Gas consumption can be minimized through shorter commuting distances with infill development.

The County has adopted a lighting ordinance for the SR 46 corridor in the western portion of the County and is considering adopting a lighting ordinance countywide for roadway lighting. Results of implementation of the lighting ordinances will be to minimize light spillage off roadways and could reduce energy consumption by use of alternative types of lighting/bulbs.

Florida Energy Code

The Florida Energy Code has been in effect since 1979 and was recently amended and upgraded by the state legislators. The strengthened code went into effect in March of 2002. The Building Division of the Planning and Development Department administers the Florida Energy Code for all new construction and major renovations for compliance in unincorporated Seminole County. Since the code went into effect in 1979, Seminole County has experienced a boom in construction. Representatives of the Building Division are of the opinion that because most of the growth in Seminole County has happened since 1979 that the residents and business owners will reap long term benefits that their constructed homes or buildings will be more energy efficient and cost less to heat or cool. As required by law, Seminole County will continue to enforce the Florida Energy Code through the building codes.

The Florida Energy Code is a whole-building, performance code. This means that the building as a whole, rather than its component parts, must meet or exceed an energy standard. According to the publication, EnergyGauge, produced by the Florida Solar Energy Center, the greatest overall increase in energy efficiency will occur in Central Florida with the implementation of the upgraded building codes. This is reflected in the new requirements for the

installation in homes of a heat pump with a "Heating Season Performance Factor" (HSPF) of 6.8 over the previous requirement of a heating system with an HSPF of 3.4. Other improvements include upgrades in duct systems and improved solar control for windows.

Issue ERG 2 Population and Land Use Projections by the Power Companies

Electrical power is provided by two separate entities in Seminole County (see Exhibit ENG: Service Areas in Seminole County of Electrical Power Companies). The northern part of the County is served by Florida Power and Light Company and the southern part of the County by Florida Power. Both companies offer incentives and programs for saving energy for residences and for businesses. A description of the program the County participates in for energy conservation is discussed in Issue ERG 3.

Florida Power and Light Company uses growth estimates from the Bureau of Economic Business Research (BEBR) of the University of Florida. This is the agency that is responsible by the state to update annual population and employment figures in between a ten year census. These estimates are also used by the State Department of Revenue in allocation of taxes based on population for counties and cities, so they are valid estimates. The County uses these figures also and compares them with estimates the County prepares. Since the County and Florida Power and Light are using a common set of growth estimates from the BEBR, the basis is there for information exchange. Seminole County makes available on its internet website land use, population and employment data for use by the service providers and any others. Also, the County has offered their growth estimates to the power companies and will strive to increase coordination with the power companies in the future. (County Staff contacted various offices at Florida Power but were unable to obtain information on how the company prepares for future demands.) The County will continue to notify each of the power and gas companies to ensure they are aware of the information the County has to offer for their use.

Other coordination efforts with the power companies are described in the Intergovernmental Coordination Element. These efforts include coordination with the siting of electrical stations and transmission lines or providing the opportunity for the utility companies to comment on requests to vacate rights-of-way.

Issue ERG 3 Current Energy Conservation Measures and Practices used by Seminole County

Power Related Conservation Measures

The Facilities Division of the Administrative Services Department, who is responsible for the maintenance and operations of the County buildings and facilities, is working hard to conserve energy and save tax payers money in energy consumption.

The Facilities Division practices the following energy savings measures:

- For the non-computer controlled Heating Ventilation Air Conditioning (HVAC) systems, these are replaced with units with the highest rated Seasonal Energy Efficiency Ratio (SEER) available and are controlled with programmable thermostats.

This prevents the systems from running twenty-four hours, seven days a week.

- Larger HVAC systems are controlled by a dedicated computer that saves energy by scheduling the operation of each individual system component. The schedule is based on programmed individual zone temperature requirements and zone heat loads.
- For interior lighting, currently all fluorescent lighting is with a more efficient fluorescent lamp which results in a twenty percent energy demand reduction.
- For exterior lighting, three park sites and twelve gateway road signs depicting the "Welcome to Seminole County" utilize one hundred percent solar power lighting consisting of solar energy collectors and storage batteries.
- Replacement units or machinery, such as copy machines, are more energy efficient than previous units.

The Facilities Division has a cooperative load control program with Florida Power and Light Company (FP&L). FP&L's Commercial Industrial Load Control program is an energy management tool that is saving Seminole County dollars in the purchase of electrical power. As an incentive to Seminole County, there is a 14% reduction in the Kilowatt-Hour rate by participating in this load control program. At the same time it helps FP&L more efficiently manage the supply of electricity to its customers. During times of high electricity demand, such as on hot summer or cold winter days, FP&L has the ability to remotely disconnect the electrical supply to the buildings under this program. This action prevents uncontrollable power outages without advanced notice to their customers. Seminole County Government has participated in this program since 1993. The following major buildings are on load control: the County Services Building, the County Courthouse and the Public Safety/Sheriff Complex. By participating in the load control program, the County has saved over one-half million dollars since 1993:

| | |
|-----------------------------------|---------------------|
| • County Services Building | \$224,242.00 |
| • County Courthouse | \$243,728.00 |
| • Public Safety/Sheriff Complex | <u>\$100,606.00</u> |
| • Total Savings Since 1993 | \$568,576.00 |

At this time, Seminole County does not have coordinated energy conservation measures in practice for leased space or noted in leasing contracts. However, the Facilities Division has indicated that they will look to include energy conservation measures in future leasing contracts.

In designing the new Seminole County Criminal Justice Center (the new courthouse building), Facilities Division took an active role to ensure that energy and water conservation measures were incorporated into the building and the landscape. The following features are in the design of the new facility.

- For landscaping, shrubs with low water needs are to be used. There will be reclaimed water for irrigation and the zoned irrigation system will have rain sensors.
- In the design of the building for insulation, the thermal envelope contains an energy efficient glazing system, roof insulation with a factor of R-20 and R-11 factor for batt insulation in the exterior walls.
- For the plumbing system, there are low water consumption plumbing fixtures to include toilets, urinals and lavatories.

- For the heating and air conditioning system, there are low kilowatt/ton centrifugal chillers, primary and secondary chilled water pumping and variable air volume air handling units.
- In the electrical design of the building, there is a low voltage lighting control system that is interfaced with the building management system and energy saving fluorescent lighting to be installed.

The Planning and Development Department through its Community Development Office offers a Home Repair Program that is a deferred payment loan to eligible low income homeowners which can be used for purchasing more energy efficient heating and cooling systems and repairs for weatherization to include insulation and replacement of doors. The County will provide a free inspection of a citizen's home and cost estimate for the work to be done. The County arranges the loan and writes the specifications for the work that needs to be done. Other efforts within the Planning and Development Department include that fact that the inspectors in the Building Division and Code Enforcement Division within Planning and Development Department use wireless laptops for inspections using the 800 MHz Radio Infrastructure to send documents and status of inspections to their offices to save time and fuel.

The Planning and Development Department is looking to implement an "Integrated Planning Services Initiative" with the development of a web based interactive land development code that can link to the new zoning and land use atlas. This effort will allow residents and business men and women to access detailed land use, parcel and zoning information via the internet, thus alleviating the need to come to the County buildings to seek such information.

There are additional energy efficiency efforts by County Departments and Divisions. The Parks Division of Library and Leisure Services has installed solar lighting at Red Bug Lake Park and the Cameron Wight boat ramp. Timers for turning lighting on and off are installed at the parking lots of Red Bug Lake Park, Sanlando Park, the Softball Complex, Greenwood Lakes Park and Sylvan Lake Park. Timers are also used to turn the lights on and off at basketball courts at neighborhood parks, such as, Midway, Sunland, Bookertown, Jamestown and Roseland.

The Information Technology (IT) Department has installed over 185 miles of fiber optic cable. Fiber optic transmission saves energy in that it takes less power to transmit longer distances. By using this technology, repeater equipment that would be necessary on copper transmission is no longer required to send signals from one end of Seminole County to the other. Thus, without repeater equipment, energy is conserved. By using information transmitted over fiber optic cable, information can be assessed without traveling in a vehicle to retrieve. An example of this is the ability of city law enforcement officers to gain access to electronic County Court records, thus saving a trip to Sanford to the Seminole County Courthouse for a hardcopy. The newest initiative with fiber optics is "Dense Wave Division Multiplexing" (DWDM). By deploying this technology, multiple paths of light can be utilized to expand the capabilities without adding additional fiber. This practice allows expansion without requiring the energy necessary to reconstruct the existing fiber paths and reproducing the equipment necessary to "light" the additional fiber. This practice conserves the required energy to install additional fiber and negates the energy necessary for redundant equipment for fiber optic transmission.

In addition, the IT Department has purchased computer equipment that is energy efficient, such as the current Profile desktop computers and the E4000 desktop. Representatives of the IT Department indicated that the computer industry is actively designing more efficient equipment for its customers.

It is the practice of the Planning, Engineering and Inspections (PEI) Division of the Environmental Services Department to incorporate energy conservation concepts in the design of new and/or rehabilitation projects which include the use of electric motors for various equipment. The PEI Division routinely specifies, through their design consultants, the use of high efficiency motors for equipment, such as high service pumps at the water treatment plants and for new or refurbished groundwater well pumps. In addition, where applicable, the PEI Division installs high efficiency motors at its two wastewater treatment facilities. Additional energy conservation has been achieved through the use of variable frequency drive controls for the high service pumps at most of the County's nine existing water plants. The new Markham Regional Water Treatment Plant will also benefit from these same energy efficient pumps and controls. The new treatment plant will be operational in mid-2003.

Fleet Related Conservation Measures

The County's Fleet Services has explored a number of ways to conserve fuel and save fleet costs for the County to include common sense practices of turning off engines of large vehicles during breaks. Administration at the Fleet Services Division currently participates in saving fuel costs or vehicle costs by joining in the bidding for fuel and vehicles with other agencies to obtain a lower cost due to volume buying. In regard to fuel conservation measures, Fleet Services has purchased a number of vehicles with flexible fuel engines at no extra cost than a regular gasoline engine vehicle. These vehicles can either run on gasoline or ethanol (known as Ethanol 85 or E85). The problem is that there is no where in the State of Florida to purchase E85 at commercial stations; therefore, the County has not been able to take advantage of the savings offered by this technology. Alternative fuels as compressed natural gas (CNG) have been explored. This technology is expensive to invest in due to the needed infrastructure for using the fuel. It requires its own storage containers and fueling stations which can be quite an expense as an upfront cost to establish its use. Fleet Services is also exploring other technologies as they become available that may reduce the County's fuel consumption.

Fleet Services Administration is of the opinion that a major cost savings in fuel consumption can be accomplished by purchasing hybrid vehicles, known as HEVs. These are vehicles that are a combination of an internal combustion engine with the battery and motor of an electrical vehicle. The vehicle starts off by using the battery and upon acceleration to approximately twenty-five miles per hour, then the gasoline engine kicks in and powers the vehicle. Using the bid process with other agencies, these hybrid vehicles can be purchased at prices comparable to gasoline engine vehicles. Maintenance of the vehicles could be contracted with the dealerships. At this time, Fleet has ordered one hybrid vehicle for testing and evaluation and will determine the steps necessary to order additional vehicles should that be desired.

Issue ERG 4 Initiatives to Conserve Energy

Planning Staff researched what model programs are underway by local governments around the country to conserve energy. If these programs worked elsewhere, could Seminole County do something "outside-the-box" to help set the example for the community to reduce energy consumption? Cities like Boulder, Colorado have a program within its Building Department to promote use of solar energy in construction. San Diego County in California has been faced with energy shortages. Through a regional association of governments in the County, a regional energy office has been set up that works directly with interest groups to promote energy conservation and efficiency. The regional energy office set up a program called "Cool Savings with Cool Roofs" program to promote incentives to install highly reflective roofing materials which lower air conditioning demands. San Diego County uses a 7.5 percent permit fee reduction for buildings that exceed California's already stringent building energy codes.

Here in Florida, Metro-Dade County in conjunction with a local non-profit organization is developing a \$17 million, 200 model home community for low-income families, specifically targeting families who were affected by Hurricane Andrew. The housing development will feature energy-efficient technologies with other aspects of conservation, such as recycling, water tolerant landscaping and other water conservation methods.

The City of Portland, Oregon has created a means to raise money to finance energy-efficiency projects for city buildings/facilities. The program is called "One Percent for Energy". The City imposes upon itself a fee of one percent on all city government building/facility energy bills and uses the money to finance an energy management program for the City's 70 buildings/facilities. In its first four years of operation, the program has completed energy efficiency projects that have saved taxpayers over \$700,000 each year in energy bills.

How can the Board of County Commissioners initiate a coordinated effort among its Departments and Divisions to further energy conservation and save taxpayers additional dollars on county power and fuel bills?

To begin with, a basic energy conservation education program is needed that makes employees aware of what simple practices could be used to reduce energy conservation. A common sense example is turning the light off in one's office when leaving the office for a duration of time. This simple measure results in a building's air conditioning system not having to try to cool the room down from the heat of the overhead lighting system while the office is not occupied.

Second, The County should provide an incentive for employees to join in together to conserve energy in their building or at their facility. This could be accomplished by periodically notifying County employees through the internal newsletter of energy savings and the cost savings in buildings or facilities and providing some reward to the employees in the building or the facility that saved the most money in energy bills from the previous year. Efforts like these through press releases demonstrates to the taxpayer in Seminole County that County employees are attempting to "make a difference" in the community and set an example for residents and business owners. Once a simple employee driven-energy conservation program is successful, the Board of County Commissioners may wish to initiate other programs as the ones described above that are happening across the nation.

Planning Staff wishes to work with the Facilities Division and other County Departments and Divisions to explore the possibility of beginning an education program and an employee energy conservation program. In addition, Staff can jointly work together to come up with innovative ways to further energy conservation in County buildings and facilities.

ENERGY ELEMENT GOALS, OBJECTIVES AND POLICIES

GOAL

Conserve and properly manage energy consumption in Seminole County to the best of the County's abilities for existing and future generations. The Board of County Commissioners of Seminole County will strive to set an example of practicing energy conservation in County buildings, in its facilities and fleet services.

OBJECTIVE ERG 1 SUPPORT MEASURES OF SUSTAINABILITY FOR ENERGY CONSERVATION

The County will continue to support efforts for achieving sustainability for energy conservation in its growth management practices and its regulation of permitting new construction.

Policy ERG 1.1 Discourage Urban Sprawl and Promote Infill Development

In conjunction with strategies to discourage urban sprawl and promote infill development as mandated by the Future Land Use Element, the County will strive to ensure that energy conservation measures are an outcome to the implementation of these strategies.

Policy ERG 1.2 Florida Energy Code

The County as required by State Statutes will continue to enforce the Florida Energy Code to ensure that construction meets or exceeds required energy conservation requirements.

Policy ERG 1.3 Promote Alternative Modes of Travel as a Means to Minimize Fuel Consumption

Continue to support efforts put forth in the Transportation Element to increase mass transit ridership and provide for alternative modes of travel as a means to minimize fuel consumption.

OBJECTIVE ERG 2 COORDINATION WITH POWER COMPANIES

The County will strive to increase coordination efforts with the power companies, such as, periodically sending them notices of the availability of updated socio-economic data and other information to assist them in forecasting energy demand.

Policy ERG 2.1 Sharing of Data with Power Companies

The County will provide growth projections and other data, as needed, to the power companies to coordinate better on estimating future energy consumption by new growth.

OBJECTIVE ERG 3 CONTINUE TO IMPLEMENT ENERGY CONSERVATION MEASURES AND PRACTICES IN COUNTY BUILDINGS AND FACILITIES

The County will continue to implement energy conservation measures and practices in its administration and construction of County buildings and facilities to save energy consumption and tax dollars spent on power and fuel use.

Policy ERG 3.1 Energy Conservation in Existing Buildings and Facilities

The County will strive to see that in any rehabilitation of structures or replacement of equipment that the most cost effective, energy conservation materials or equipment will be used.

Policy ERG 3.2 Use of Alternative Energy Sources

The County will continue to use solar power or other forms of alternative power where feasible, such as in the use of solar lighting.

Policy ERG 3.3 Energy Efficiency Measures in Fleet Services

The County will continue to explore the evolving field of alternative fuels and alternative engines for potential use in the County's fleet, to save not only fuel consumption, but the cost of fuel to supply the County's fleet of vehicles.

Policy ERG 3.4 Energy Conservation and Efficiency Planning in New County Buildings or Facilities

The County will strive to see that the most cost effective energy conservation measures are incorporated in the design of new buildings or facilities, such as was used in the designing of the forthcoming new Seminole County Criminal Justice Center.

OBJECTIVE ERG 4 PLANNING FOR FUTURE ENERGY CONSERVATION

The County wishes to implement additional energy conservation practices to ensure energy conservation and set an example for such practices to its residential and business community.

Policy ERG 4.1 County Pilot Program

The Board of County Commissioners, by December 31, 2003, will review an action plan that explores implementing an employee education effort on energy conservation and a pilot employee energy conservation effort for its buildings and facilities.

Policy ERG 4.2 County Initiatives

The County will study other initiatives that the County could undertake "to make a difference" in energy conservation in Seminole County, not only with its own buildings and facilities, but as a community conscience-building effort.

Policy ERG 4.3

Energy Conservation Measures in Leased Space

The County when entering into contracts for leased space will request energy conservation measures to be included in the contract from the leasing agency.

OBJECTIVE ERG 5

ENERGY CONSERVATION

The County shall, with each Evaluation and Appraisal Report, provide an analysis of existing Countywide energy conservation measures and provide if necessary, new Comprehensive Plan policies and/or elements that will further the goal of measurable results in energy conservation.

Policy ERG 5.1

Incorporated Policies

The following policies from the Conservation Element are hereby incorporated into the Energy Element by this reference thereto as if fully forth herein verbatim:

Policy CON 6.1 State and Federal Incentives

The County shall support incentives by the state and federal governments to promote energy efficiency and conservation and the use of solar and other clean alternative energy sources.

Policy CON 6.2 Coordinated Energy Conservation

The County shall endeavor to continue to coordinate with the municipalities to promote energy conservation and education.

Policy CON 6.3 Alternative Energy Sources

The County shall encourage the development of power generating facilities that are more energy efficient and rely on clean alternative energy sources, such as natural gas, fuel cells, or solar energy.

Policy CON 6.4 Energy Programs

The County shall encourage participation in the following programs, as well as others that may apply:

- U.S. Environmental Protection Agency's Energy Starr Buildings and Green Lights Program to increase energy efficiency through lighting upgrades in buildings,
- Rebuild America
- Building for the 21st Century
- Energy Smart Schools
- National Industrial Competitiveness through Energy
- U.S. Department of Environmental Protection's Pollution Prevention (P2) Program