

# ENERGY ELEMENT



## GOAL

REDUCE GREENHOUSE GAS EMISSIONS AND FOSSIL FUEL CONSUMPTION; MITIGATE THE EFFECTS OF RISING ENERGY COSTS; AND PROMOTE THE LONG-TERM ECONOMIC SECURITY OF ALACHUA COUNTY THROUGH ENERGY CONSERVATION, ENERGY EFFICIENCY AND RENEWABLE ENERGY PRODUCTION.

## STRATEGY

### Priority 1

Practice energy conservation.

### Priority 2

Maximize energy efficiency.

### Priority 3

Promote and invest in renewable energy production.

## 1.0 REDUCTION GOALS

### OBJECTIVE 1.1

Reduce countywide greenhouse gas (GHG) emissions by 80% from 2009 baseline emissions by 2050, with an intermediate goal of a 40% reduction by 2020 and a short term goal of 5% annual reduction.

**Policy 1.1.1** The County shall implement a plan to reduce GHG emissions per Objective 1.1. To accurately monitor progress, the County shall measure GHG emissions for County operations and implement a method for estimating countywide emissions. Findings shall be released in an annual status report for County operations, with an estimate of community emissions reported biennially (i.e. every two years.) In addition to changes in total GHG emissions, reports shall include indicators of improvements in efficiency such as reductions in emissions per person, per employee or per square foot, improvements in building performance ratings, or similar measures.

**Policy 1.1.2** The County shall work with other local governments, groups and organizations to achieve Objective 1.1 through coordinated reduction strategies, and to encourage adoption of a common method for estimating local and regional GHG emissions.

**Policy 1.1.3** As water conservation contributes to the reduction of greenhouse gas emissions, reduce total water consumption in Alachua County by 10% from 2010 levels by 2020 through the policies of the [Conservation and Open Space](#) and [Potable Water and Sanitary Sewer Elements](#). In addition to changes in total consumption, the County, in coordination with potable water suppliers, shall track and report on indicators of improvements in efficiency such as rates of participation in voluntary conservation programs like Florida Water Star<sup>SM</sup> or other similar measures.

## **2.0 THE BUILT ENVIRONMENT**

### **OBJECTIVE 2.1 - COMMUNITY**

Encourage energy conservation and energy-efficient design in the built environment of Alachua County.

**Policy 2.1.1** The land development regulations shall provide, and encourage the use of, energy efficient design techniques such as passive solar design for streets and houses, sustainable landscaping, and techniques identified in Objective 5.1 of the [Conservation and Open Space Element](#) and Policy 2.2.5 of the [Housing Element](#).

**Policy 2.1.2** Work with the community to develop an incentive program to encourage new structures and retrofits to exceed the required minimum energy and water efficiency standards of the Florida Building Code.

**Policy 2.1.2.1** As one incentive, the County shall develop a program where the efficiency rating of a structure, such as the Energy Performance Level (EPL) rating for residential structures or the equivalent for non-residential structures, can be used as a basis for recognition of buildings exceeding a defined threshold for efficiency.

**Policy 2.1.2.2** Owners of recognized structures shall be encouraged to participate in a performance monitoring program to track the energy usage of the buildings over time, as an indicator of success in achieving reductions.

**Policy 2.1.2.3** The incentive program shall be evaluated periodically to determine whether adjustments to the established threshold are warranted.

**Policy 2.1.3** Alachua County shall work with other local governments and local groups and organizations to develop a community weatherization program to improve the energy efficiency of existing structures.

### **OBJECTIVE 2.2 - COUNTY GOVERNMENT**

The County shall explore new opportunities and adopt measures to conserve energy, maximize energy efficiency and use renewable energy in County facilities.

**Policy 2.2.1** Weatherize all County buildings to the maximum extent practical.

**Policy 2.2.2** The County shall incorporate into its annual Capital Improvements budget a category for energy and water conservation and efficiency projects for County facilities.

**Policy 2.2.3** Construct all new County facilities to conform to a nationally recognized, high performance energy efficiency standard and to Florida Water Star<sup>SM</sup> standards.

**Policy 2.2.4** The County shall work with the School Board of Alachua County and other local governments to seek funding and develop strategies to build energy and water efficient schools, retrofit and upgrade existing schools to be more energy and water efficient, and use renewable energy sources for school facilities.

## 3.0 ENERGY EFFICIENT LAND USE

### **OBJECTIVE 3.1**

Promote energy-efficient land use patterns that reduce travel costs and encourage long-term carbon sequestration.

**Policy 3.1.1** Promote energy efficient land use patterns through the policies of the [Future Land Use Element](#), [Transportation Mobility Element](#) and this Element, including measures such as:

- (a) Mix of uses;
- (b) Transit supportive density;
- (c) Compact growth patterns;
- (d) Road connectivity and multimodal efficiency;
- (e) Pedestrian and transit oriented design techniques; and
- (f) Clustering techniques in the rural area.

**Policy 3.1.2** The Unified Land Development Code shall be reviewed for opportunities to promote the goals, objectives and policies of this Element, and updated as needed.

**Policy 3.1.3** Work with the community to develop an incentive program encouraging energy efficient, sustainable developments that exceed the minimum standards of the Comprehensive Plan and Unified Land Development Code.

**Policy 3.1.3.1** As one incentive, the County shall develop a program recognizing sustainable development projects incorporating the techniques identified in Policy 3.1.1.

**Policy 3.1.3.2** Owners of structures within participating developments shall be encouraged to participate in a performance monitoring program to track the energy usage of the development over time, as an indicator of success in achieving reductions.

**Policy 3.1.4** Promote redevelopment and infill within the Urban Cluster, and within municipal boundaries consistent with Policy 1.1.7 of the [Intergovernmental Coordination Element](#).

**Policy 3.1.5** The County shall work with the School Board of Alachua County and coordinate through the Elected Officials' Group and Staff Workgroup to evaluate the energy efficiency of the school siting standards in the Interlocal Agreement for Public School Facility Planning and [Public School Facilities Element](#), and encourage siting of new schools in locations that promote infill and compact growth patterns, minimize vehicle miles travelled, and promote walking and bicycling opportunities for students.

### **OBJECTIVE 3.2**

The County shall encourage long-term carbon sequestration practices on both public and private land.

**Policy 3.2.1** Promote retention of sustainable agriculture and conservation land uses that serve as stable carbon sinks.

**Policy 3.2.2** The County shall protect and seek to increase tree canopy in the Urban Cluster.

**Policy 3.2.2.1** The County shall partner with local groups and organizations to develop a community outreach program that encourages the public to plant trees and provides information on the resulting energy conservation and carbon sequestration benefits.

**Policy 3.2.2.2** Periodic reports on tree canopy coverage in the Urban Cluster shall be provided to the County Commission.

**Policy 3.2.3** Promote and provide incentives for the use of Low Impact Development strategies in new developments to protect natural ecosystems in accordance with Policies 5.11 and 5.12 of the [Stormwater Management Element](#) and Policies 3.6.15 and 4.5.21 of the [Conservation and Open Space Element](#).

**Policy 3.2.4** Alachua County shall develop and maintain a carbon sequestration inventory map to be used as a basis for long range planning and development of partnerships with other local governments to encourage carbon sequestration.

### **OBJECTIVE 3.3**

Identify key features within the County that help to further the energy conservation goals of the Comprehensive Plan in accordance with Florida Statutes.

**Policy 3.3.1** The following maps identify energy conservation features and facilities that contribute to energy conservation, greenhouse gas reductions and carbon sequestration in Alachua County:

- (a) Urban Cluster Area on [Future Land Use Map](#)
- (b) [Rapid Transit Corridors, TME](#)
- (c) [Express Transit Corridors, TME](#)
- (d) [Existing and Future Bicycle and Pedestrian Network, TME](#)
- (e) Preservation Areas on [Future Land Use Map](#)
- (f) [Strategic Ecosystems, COSE](#)
- (g) Alachua County Forever Land Conservation Projects
- (h) Alachua County “GeoGreen Mapper” (<http://maps.alachuacounty.us/geogreen>)

## **4.0 ENERGY EFFICIENT TRANSPORTATION SYSTEM**

### **OBJECTIVE 4.1**

Develop a diversified transportation system that reduces per capita and total fossil fuel consumption through mechanisms that reduce vehicle miles travelled, enhance walking, cycling and transit opportunities, and encourage renewable fuel vehicles.

**Policy 4.1.1** Implement transportation mobility and capital improvements plans that promote compact, mixed use development patterns in accordance with Policies 3.1.1 of this Element. Plans shall include funding for transportation modes that provide an alternative to single occupant automobiles.

**Policy 4.1.2** The County shall collaborate with other local governments to investigate the use of alternative fuel sources such as biofuel, methane, electric and/or solar in government fleets.

**Policy 4.1.3** Work with other local governments and agencies to promote and expand use of fixed rail transportation.

## OBJECTIVE 4.2

Reduce vehicle miles of travel and increase non-automobile mode share in accordance with the policies of the [Transportation Mobility Element](#).

- Policy 4.2.1** Reduce vehicle miles traveled per capita within the Urban Cluster by 10% from 2010 levels by the year 2020.
- Policy 4.2.2** Increase non-automobile transportation mode share to 5% in the Urban Cluster by 2020 and 10% by 2030.
- Policy 4.2.3** To measure success in achieving the goals of this Objective, the County shall include analysis of vehicle miles traveled and non-automobile mode share within the Urban Cluster as part of the annual update of the [Capital Improvements Element](#) in accordance with Policy 1.1.6.1 of the [Transportation Mobility Element](#).
- Policy 4.2.4** The County shall work with the Metropolitan Transportation Planning Organization and other local governments to develop a baseline estimate of vehicle miles traveled and non-automobile mode share Countywide and adopt a long-term goal for reduction of vehicle miles traveled from the established baseline.

## OBJECTIVE 4.3

Encourage alternative transportation options not dependent on fossil fuels.

- Policy 4.3.1** Maintain and publish online a map that identifies where low speed, neighborhood electric vehicles can be legally driven.
- Policy 4.3.2** Identify areas with barriers to multimodal connectivity in the Urban Cluster and work to eliminate those barriers.
- Policy 4.3.3** Require new development to accommodate bicycle and pedestrian modes and seek opportunities to create connections to existing facilities in accordance with the policies of the [Future Land Use Element](#) and [Transportation Mobility Element](#).

# 5.0 COUNTY GOVERNMENT INITIATIVES

## OBJECTIVE 5.1

Adopt and implement practices within Alachua County Government that contribute to the energy conservation goals of the Comprehensive Plan.

- Policy 5.1.1** The County shall collaborate with other local government entities to share information and strategies on energy saving practices, and pursue joint funding opportunities.
- Policy 5.1.2** The County shall pursue development of a program to mitigate for greenhouse gas emissions and develop project ideas to offset carbon impacts of County operation, such as energy conservation and efficiency projects, ecosystem restoration projects or the County's Tree Planting Program.
- Policy 5.1.3** Alachua County shall develop a Energy Conservation Investment Program (ECIP) using savings from conservation and efficiency enhancements to County facilities. These

funds shall be reinvested in conservation enhancements through each year's capital improvements program.

- Policy 5.1.4** The County shall consider developing and implementing a plan to significantly reduce fossil fuel use in the County fleet for the transportation of waste to the landfill by creating a zero waste initiative in coordination with the municipalities and University of Florida.
- Policy 5.1.5** Energy usage and costs shall be considered as part of the life cycle analysis required for capital project decisions by the County.
- Policy 5.1.6** Promote the location and expansion of energy conservation, alternative energy, waste reuse/recycling-based and sustainable food production and processing industries as part of the County's economic development efforts.
- Policy 5.1.7** Promote telecommuting and use of teleconferencing in County operations.

## **OBJECTIVE 5.2**

Increase the use of renewable energy in County government.

- Policy 5.2.1** The County's goal by 2030 is that 100% of energy purchased or produced for County facilities be from solar photovoltaic sources, with an interim target of 50% by 2025.
- Policy 5.2.2** The County shall incorporate renewable energy production into County facilities where appropriate.
- Policy 5.2.3** Pursue funding to develop alternative energy facilities that would be capable of producing energy from anaerobic digestion, solar energy, biodiesel or other forms of sustainable energy resources.

## **6.0 RENEWABLE ENERGY**

### **OBJECTIVE 6.1**

Encourage renewable energy production and a countywide system of distributed residential and commercial power generation.

- Policy 6.1.1** Encourage all utilities within Alachua County to retrofit existing systems to incorporate net metering and establish net metering agreements.
- Policy 6.1.2** Alachua County shall pursue implementation of an efficiency and renewable energy financing program, such as a Property Assessed Clean Energy (PACE) program.

### **OBJECTIVE 6.2**

Increase the use of solar and other forms of renewable energy by County residents, businesses and agricultural operations.

- Policy 6.2.1** Encourage and provide incentives for installing solar arrays on rooftops and other impervious spaces, and remove any barriers to their installation in such areas.
- Policy 6.2.2** Provide incentives for use of open space areas within Rural Clustered Subdivisions for renewable energy production in accordance with Policy 6.2.12 of the [Future Land Use Element](#).

## 7.0 SOLID WASTE

### **OBJECTIVE 7.1**

Reduce the solid waste stream generated by Alachua County.

- Policy 7.1.1** To help achieve the 75% waste recycling goal mandated by the state by 2020 and reduce greenhouse gas emissions associated with the transport of municipal solid waste, promote a cluster of waste to wealth industries at the Resource Recovery Park to make useful products from recycled materials. As a component of this, work to direct municipal solid waste to the Leveda Brown Environmental Park.
- Policy 7.1.2** Achieve a diversion rate from disposal of 40% by December 31, 2012; 50% by December 31, 2014; 60% by December 31, 2016, 70% by December 31, 2018; and 75% by December 31, 2020. Special waste being recycled such as tires, appliances, yard trash and construction and demolition debris will be included. The calculation will be made in accordance with the accepted methodology of the State of Florida Department of Environmental Protection. In addition to changes in total waste diversion, the County shall track and report on indicators of improvements in waste diversion such as percentage of businesses in compliance with the mandatory commercial recycling program, percentage of residential users voluntarily recycling, rates of recycled vs. disposed waste collected at rural collection centers, or similar measures.
- Policy 7.1.3** The County shall explore the feasibility of a program that requires source separated organic waste collection and processing.
- Policy 7.1.4** The County shall use a portion of the waste stream, such as food waste and brush cuttings, for composting and work with other local groups to make it available for use by community gardens and local farms.
- Policy 7.1.5** The County shall seek ways to reduce the amount of yard waste collected and transported to the Leveda Brown Environmental Park, including encouraging composting, mulching, and other onsite methods of yard waste disposal.

## 8.0 EDUCATION AND PUBLIC INFORMATION

### **OBJECTIVE 8.1**

Provide educational information to the public to promote and encourage energy conservation, energy-efficiency and renewable energy use.

- Policy 8.1.1** The County shall work with other local governments, groups and organizations to educate and inform the public regarding energy conservation practices, including strategies identified in Objective 2.2 of the [Housing Element](#).
- Policy 8.1.2** Make information available to the community on potential energy conservation incentives such as county recognition of energy efficient homes and developments, credits toward transportation fees, streamlined permitting requirements for redevelopment, and financial incentives available at the state and federal level.
- Policy 8.1.3** Partner with local utility providers, municipalities and the University of Florida to make information available to the public on their personal energy usage and possible conservation techniques, the benefits of using renewable energy, and the local, state



and federal incentives and programs available to assist with the installation of solar and other forms of renewable energy.

## ENERGY ELEMENT DEFINITIONS

**Alternative energy:** see renewable energy

**Carbon sequestration:** The placement of carbon dioxide into a repository, such as geologic formations and terrestrial ecosystems, in such a way that it will remain permanently sequestered.

**Carbon Sink:** A natural or manmade reservoir that accumulates and stores some carbon-containing chemical compound for an indefinite period.

**Consumptive water use:** Water removed from available supplies without return to a water resources system, e.g. water used in manufacturing, agriculture, and food preparation.

**Diversion rate:** The percentage of waste materials diverted from traditional disposal such as landfilling or incineration to be recycled, composted, or re-used.

**Energy Conservation:** The implementation of practices or strategies that reduce the amount of energy consumed (e.g. turning off the lights, opening windows in moderate temperatures, weatherization, setting thermostats governing heating systems at lower levels and thermostats governing air conditioning at higher levels)

**Energy Efficiency:** The implementation of practices, strategies and technologies that reduce the amount of energy consumed to achieve a desired effect (e.g. use of engines that provide more miles per gallon of gas, use of heating or cooling appliances that produce more BTU's per watt of electricity consumed, patterns of land use that result in lower greenhouse gas emissions per household)

**Greenhouse Gases:** Gases that trap heat in the atmosphere that are emitted both through natural processes and human activities, including gases such as carbon dioxide, methane and nitrous oxide.

**Green roof:** A roof of a building that is partially or completely covered with vegetation and a growing medium, planted over a waterproofing membrane. It may also include additional layers such as a root barrier and drainage and irrigation systems.

**Low Impact Design (LID):** See Stormwater Management Element Definitions

**Net metering:** A process that enables utility customers to use their own renewable energy generation to offset their consumption and sends excess energy back to the grid thus allowing their electric meters to turn backwards when they generate electricity in excess of their demand. This offset means that customers receive retail prices for the excess electricity they generate.

**Passive solar design:** A broad term used to describe non-mechanical design of a building's infrastructure that allows regulation of internal temperature. Principles include orientation of room, location of windows and thermal mass (a material's ability to store heat).

**Property Assessed Clean Energy (PACE) Program:** A financing structure that enables local governments to raise money through the issuance of bonds or other sources of capital to fund energy efficiency and renewable energy projects. The local government establishes an assessment district and issues bonds to fund renewable energy projects. The property owners that benefit from the improvement repay the bond through property assessments, which are secured by a property lien and paid as an addition to the property tax bill.

**Renewable Energy (see also Alternative Energy):** Systems that generate energy from non-fossil fuel resources that are locally harvested, collected or concentrated in such a way as to not deplete nor imperil the resource base from which they are derived. These systems are meant to *supplant* fossil fuel based energy production and are best implemented after conservation and energy efficiency

opportunities have been maximized. (e.g. solar photovoltaic panels or solar thermal systems, geothermal energy for heating or cooling of structures, biomass, biodiesel, cellulosic ethanol, wind turbines, methane production via anaerobic digestion from organic materials and discarded foodstuffs)

**Sustainability:** Development that meets the needs of the present without compromising the ability of future generations to meet their own needs, recognizing the interdependence and mutual importance of environmental, economic and social equity requirements to achieve these ends. The term sustainability is used in Alachua County to describe activities that include, but are not limited the following goals:

- Tend to improve social conditions for all kinds of people
- Increase economic opportunities
- Improve environmental protection or restoration efforts
- Will continue to have these effects for the foreseeable future

**Weatherization:** The practice of protecting a building and its interior from the elements, particularly from sunlight, precipitation and wind, and of modifying a building to reduce energy consumption and optimize energy efficiency.