



2009 TLG Case Study Application

Title: Energy Conservation Strategies Commission – Creating a Resource Efficient and Resilient Community

Jurisdiction: Alachua County Board of County Commissioners

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Synopsis:

Imagining Innovation: Engaging Citizens and Energy Issues with Advisory Boards:

Alachua County employed an innovative use of an all volunteer, 15 person advisory board in conjunction with web-based, information sharing technology and an aggressive community outreach program as a cost effective way of addressing the critical issues of reducing energy costs, energy use and related climate implications over the next 100 years. Alachua County has a long history of environmental stewardship which has evolved to encompass climate change and energy conservation/independence as part of energy reduction policies; comprehensive plan elements and through the construction of LEED standard county facilities. These innovations occur because of an active engagement of the community on these issues of profound consequence.

Background: Rising Energy Cost, Climate Change, and Peak Oil

Local governments are increasingly taking a leadership role in response to citizens' growing concern about rising fuel costs, climate change and Peak Oil. At the national level, from 2001 to 2008 the price of a barrel of oil has risen approximately 300% causing a ripple effect in gasoline (100% increase), food (29% increase) and electricity costs (23% increase). Throughout the Twentieth Century, fossil fuels provided the cheap, plentiful source of energy for modern, industrialized countries. Though largely, beneficial and necessary, the profligate use of these energy sources has not been without consequences as global demand begins to outstrip supply. United Nations estimates state that for all of humanity's poor to live at the same "energy-rich" standard as found in the United States of America would require the resources of at least nine additional Earths (United Nations Development Programme). However, energy from fossil fuels, especially petroleum, is now facing greater global demand than supplyⁱⁱ. (Energy Information Administration)

Chief among the consequences of the demand supply tension is the looming specter of "Peak Oil". Peak Oil means not 'running out of oil', but running out of cheap oil. In February, 2007 the US General Accountability Office released a report; Crude Oil: Uncertainty about future oil supply makes it important to develop a strategy for addressing a peak and decline in oil productionⁱⁱⁱ which found that: Peak Oil is real; decline in oil production will occur sometime between February 2007 and 2040.

Alachua County continues to improve internal operations and support their citizens' efforts to become an energy efficient and carbon neutral community. To that end the

2009 TLG Case Study Application: Energy Conservation Strategies Commission – Creating a Resource Efficient and Resilient Community

Alachua County Commissioners, in 2006, requested the creation of a citizen advisory board to be known as the Alachua County Energy Conservation Strategies Commission (ECSC). It was tasked with creating a “menu of options” of a short and long term nature for an effective and efficient community wide energy conservation program as well as implementation recommendations. Topics for consideration include, but are not limited to: energy efficiency standards for new County construction; County operations and maintenance; incentives for energy efficiency in private sector construction; County Land Development Regulations; land use planning; transportation; renewable energy options; and public education. A final report is due before the November 30, 2008 sunset of the advisory board.

Constructive Community Engagement: The Energy Conservation Strategies Commission

The ECSC’s primary work is to drafting a comprehensive report on energy use, its relationship to climate change and local socio-economic impacts, including actions that can be implemented by the Board of County Commissioners and the community at large. Through four subcommittees: Land Use and Transportation; Locally Applicable Alternative and Renewable Energy; Residential Buildings; and Waste and Energy Implications it crafts specific recommendations with the purpose of addressing rising energy costs, climate change and Peak Oil to create a resource efficient and resilient community. By establishing guiding principles of: first, practicing conservation (reduce consumption); second, making efficiencies in building envelopes and mechanical equipment; and third, investing in renewable power generation the ECSC set a framework for judging the relative priority of their recommendations and any future ideas that may come before the Board of County Commissioners.

Composed of 15 citizens plus an alternate member, the advisory board has twelve energy expert positions with demonstrated expertise and/or advanced training in the areas of energy demandside management, LEED or Green Building Code standards, renewable energy technologies, or a related field. One former Alachua County Commissioner and one former City of Gainesville Commissioner along with a representative of the University of Florida were also recruited. Through an innovative use of a web-based, extranet application, SharePoint the ECSC developed a library of documents, articles and work-in-progress to assist in the organization of the report and the demanding meeting schedule. Coupled with an aggressive community outreach and roundtable discussions calendar the structure of the advisory board was set to return results and recommendations on an ongoing basis over the time-limited life of the advisory board.

2009 TLG Case Study Application: Energy Conservation Strategies Commission – Creating a Resource Efficient and Resilient Community

Innovation/Creativity:

Alachua County takes to heart the words of Dr. Martin Luther King, Jr. “Everyone can be great, because anyone can serve.” Advisory boards provide the benefit of citizen input and expertise to the Alachua County Board of County Commissioners before making decisions that become law. Advisory boards provide a cost-effective way of deliberating in-depth on complex issues while ensuring that the citizen input reflects the demographic make up of our County.

Each advisory board has unique qualifications and expertise requirements of their citizen volunteers. However, typical advisory boards tend to “stove-pipe” information and ideas, rarely reaching beyond the bounds of the collective members’ knowledge and comfort zones. Furthermore, membership though ethnically and culturally diverse may still lack a diversity of vocational, academic and policy experience. Finally, advisory boards are often reticent to engage resources external to them or share their draft products until fully developed.

In contrast, membership of the ECSC was a dynamic cross-section of the community. Some members have advanced degrees or certifications, and some have decades of practical expertise in related, but not the same subject area. Other members had not yet graduated from high school. Of strategic value to the board, well-respected, former elected officials were sought as applicants because of their unique insight into local government operations and programs. And coincidentally, the alternate position was filled by the energy conservation manager of the local municipal utility. To assist in their deliberations, ex-officio members were frequently recruited by the advisory board because of their specific expertise in a particular area or discussion. Helping the members break through the barriers to creative recommendations they were directed to turn no idea away because of cost or assumed political inexpediency. This open-ended, blue-sky means of soliciting recommendations was further enhanced with a 100 year time horizon for implementation.

Energy Conservation Strategies Commission and Alachua County staff used Microsoft SharePoint as a means of organizing a massive array of information and data into a library of resource documents, articles, work-in-progress, and calendar of meetings. The ECSC was the first Alachua County advisory board to use an external Microsoft Sharepoint site; see <http://energy.alachuacounty.us> . Each ECSC member was able to upload documents, pictures, links, and articles of interest. Uploaded information was ‘read-only’: discussion about the information and draft documents occurred only during publicly-advertised ECSC or subcommittee meetings.

2009 TLG Case Study Application: Energy Conservation Strategies Commission – Creating a Resource Efficient and Resilient Community

Alachua County staff support and use of this software allowed the ECSC and the public to obtain reading materials and ideas from each member. Thus, the links, and articles found on this site are part of the community's 'conversation' on energy efficiency and climate change. The archived information on the site generates on-going public conversations about future challenges and opportunities and ways that we, collectively, can thrive in an energy-uncertain world.

County Communications Office staff provided technical support posting video of ECSC events to the web for 24-7 rebroadcast. The web-based, video on demand site provided a dynamic means of archiving past community meetings and integration of the most recent research of the board.

The ECSC sets itself apart from the typical advisory board structure in that it engages with: a variety of related advisory boards; ongoing comprehensive plan review with County staff; and other local governments and agencies. It has promoted the immediate application of its findings before releasing its final report, such as a Civic Building Policy (see attachment) and Energy Element for the County's Comprehensive Plan. It has also supporting State legislation for renewable energy property tax exemption, in addition to promotion of modeling Peak Oil impacts to the 2035 transportation plan of the local Metropolitan Transportation Planning Organization.

Finally, a rigorous meeting schedule was maintained resulting in 39 topical presentations and 14 presentations to civic and community groups between July 2007 and October 2008 (see attachment). All while maintaining a bi-monthly regular meeting of the full advisory board from May 2007 – December 2007 and weekly meetings from January 2008 – October 2008. In 2008 alone, including subcommittee meetings, the ECSC met over 170 times on average of two-hours per meeting. This schedule of meetings served multiple purposes; first, providing valuable feedback and the vetting of critical County Commission issues. Second it also assisted in growing the community conversation by engaging large sectors of the public and allowing for the conversational focus, depth and breadth that these topics deserved.

Citizen Outcomes:

Since the mid 1990s, Alachua County has also experienced a sequence of extreme weather events, with historic floods, droughts, and wildfires culminating in a 2004 barrage of hurricanes. This extreme weather in addition to climate change are anticipated to accelerate population immigration with waves of environmental refugees from Florida's densely populated coastal areas that are becoming increasingly vulnerable to sea level rise.^{iv} Compounding this, Florida is also ground zero for

2009 TLG Case Study Application: Energy Conservation Strategies Commission – Creating a Resource Efficient and Resilient Community

hurricanes and the emerging science is telling us that more intense hurricanes are now more likely due to climate change. The insurance industry is well aware of this as over 50% of capital losses from these storms exists in the state of Florida due to these increased risks. (Nordhaus)

Faced with global challenges at the local level, governments, like Alachua County can engage citizen advisory boards in new, innovative ways for constructive, community oriented answers. Properly instituted and supported, advisory boards are uniquely suited to build bridges between different sectors of community, grow a deeper understanding of the underlying issues and to provide solutions that develop the local capacity of mitigation and adaption to these world changing issues.

ECSC solutions are organized into topical recommendation charts (see attachment), backup materials, libraries of resources and a final report. When enacted by the Board of County Commissioners some of the major outcomes of the recommendations will be a community wide reduction in energy consumption, promotion of local, waste-reuse base industries, promotion of alternative energy and energy efficiency jobs.

Reductions in energy consumption is projected to save money, provide improved building stock and create less dependence on foreign sources of energy. Waste-recovery and reuse based industries will save resources and develop a manufacturing sector for the community.

Alternative energy and building weatherization jobs will keep local dollars re-circulating within the community. And the health of the community will improve by the reduction of fossil fuel emissions. Financially, with a reduced carbon emission liability the County will be in a better position to capitalize on carbon exchange markets.

Land use decisions will have the vital element of energy overlaid in the development process. The expected outcome from this would be a greater preservation of agricultural lands for food and fuel sources as well as enhanced, multimodal transportation for bus rapid transit, and integration of neighborhood electric vehicles and bike paths.

2009 TLG Case Study Application: Energy Conservation Strategies Commission – Creating a Resource Efficient and Resilient Community

Applicable Results & Real World Advice:

The ECSC recommends creating a resource efficient and resilient community in the following five “opportunity” areas for all communities:

1. Implement a county-wide weatherization & energy efficiency upgrade program to all existing residential and commercial building stock.
2. Create community employment opportunities & grow new local businesses (“relocalization”) around discards and recyclable materials. This local economy should be based on low-energy consumption.
3. Develop sustainable mobility infrastructure (focus on public transportation) not primarily dependent on fossil fuel consumption.
4. Maximize local food production not dependent on fossil fuel based herbicides, pesticides and fertilizers.
5. Maximize local, renewable (non-fossil fuel based) energy production. For Alachua County this translated to solar power. Other communities may have wind, water, tide and geothermal options to choose.

2009 TLG Case Study Application: Energy Conservation Strategies Commission – Creating a Resource Efficient and Resilient Community

Works Cited

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Attachments

1. PRESENTATIONS & ROUNDTABLE CONVERSATIONS - ECSC & SUBCOMMITTEE MEETINGS
2. ECSC PRESENTATIONS TO OTHERS
3. Example Recommendation: ALACHUA COUNTY “RESOURCE-EFFICIENT, HIGH PERFORMANCE” CIVIC BUILDINGS POLICY
4. Example Recommendation Chart: MAJOR STRATEGIC POLICIES

**PRESENTATIONS & ROUNDTABLE CONVERSATIONS - ECSC &
 SUBCOMMITTEE MEETINGS**

PRESENTER	DATE	PRESENTATION
Chris Bird, Director- Alachua County Environmental Protection Department	07.16.2007	Presentation to ECSC about Florida Gov. Crist's Climate Change summit 2007
Harry Kegelmann	07.30.2007	Presentation to ECSC about Florida Farm-to-Fuel conference; & Peak Oil production & decline
King County TeleBriefing	08.13.2007	Telebriefing (ECSC) on King County (WA) Climate Change Regulatory Ordinance
Dwight Adams, Ph.D.	08.27.2007	Presentation to ECSC - USEPA 3 rd edition, Solid Waste Management & Greenhouse Gas Report
Martin Gold & Ruth L. Steiner, Ph. D.	09.24.2007	ECSC - Architecture; and Land Use-Transportation Mix
Randall Reid, Alachua County Manager	11.05.2007	Presentation to ECSC of Alachua County Sustainability & Climate Change initiatives
Dr. Sam Brody, Texas A&M University	11.19.2007	ECSC - "Distribution of Risk from Climate Change" <i>Alachua County Video on Demand</i>
Marlie Sanderson, Director - Transportation Planning, Gainesville Metropolitan Transportation Planning Organization (MTPO)	12.11.2007	Presentation to LU&T about MTPO 2035 Transportation plan update
Dr. Ann Wilkie, Dr. Dave O'Keefe & Dr. Amir Varshovi	12.11.2007	Roundtable conversation with WEIS about anaerobic digestion
Steve Lachnicht – Director, Alachua County Growth Management	01.07.2008	Presentation to ECSC about LEED-ND (Neighborhood Development)
Mayor Pegeen Hanrahan	01.08.2008	City of Gainesville Greenhouse Gas (GHG) reduction initiatives
Stan Smith	01.09.2008	Director, Bureau of Economic and Business Research (BEBR),

2009 TLG Case Study Application: Energy Conservation Strategies Commission – Creating a Resource Efficient and Resilient Community

		University of Florida. Presentation to Land Use and Transportation subcommittee on population projections and methodology.
Pattie Glenn, ECSC member	01.24.2008	Presentation to ECSC – <i>“Beyond energy efficiency – what is green?”</i>
Construction & Demolition Debris Roundtable	01.29.2008	WEIS roundtable conversation with local construction & demolition debris contractors and “deconstruction” firms about challenges & opportunities in the field.
Dr. Neil Seldman, President & Co-Founder, Institute for Local Self-Reliance	02.15.2008	“Waste to Wealth” (community reinvestment, green-collar jobs & waste-based industry). Presentations to Alachua County Waste Management staff; “brown bag” lunch at Gainesville Area Chamber of Commerce; presentation to ECSC; and community presentation (at Alachua County Health Department site.) <i>Alachua County Video on Demand</i>
Rick Henn, Special Projects Mgr. – City of Norfolk (VA) Department of Development	02.18.2008	Presentation to ECSC & Florida Community Design Center: <i>“Light mil in 10 Years”</i>
Ken Zeichner, Principal Planner Alachua County Growth Mgmt.	02.18.2008	Alachua County Comprehensive Plan Evaluation & Appraisal Report (EAR)
Ken Forrow, ECSC member & HERS certified rater	03.17.2008	Presentation to ECSC about Home Energy Rating System (HERS)
DeDee DeLong pre-Johnston Director-University of Florida (UF) Office of Sustainability	04.07.2008	Presentation to ECSC about UF sustainability, energy conservation & climate change initiatives
Jeff Hays, Alachua County Growth Management	04.01.2008	Presentation to LU&T - Long-Term Concurrency Management System – Alachua County
Anaerobic Digestion – special ECSC-WEIS meeting with Sierra Club	04.03.2008	Panel discussion about anaerobic digestion with Dr. Ann Wilkie; Dr. Dave O’Keefe; and Dr. Amir Varshovi
Jonathan Paul, Alachua County Growth Management	04.07.2008	Presentation to ECSC - Long-Term Concurrency Management System – Alachua County
Field Trip to	04.11.2008	WEIS special meeting, field trip & tour of GRU facility

2009 TLG Case Study Application: Energy Conservation Strategies Commission – Creating a Resource Efficient and Resilient Community

Gainesville Regional Utilities (GRU) Kanapaha Wastewater Treatment Plant		
Field trip to Jacksonville Electric Authority (JEA) Buckman Wastewater Treatment Plant	04.14.2008	WEIS special meeting, field trip & tour of JEA facility – Jacksonville, FL
Elaine West, Alachua County SHIP Coordinator	04.16.2008	Residential Subcommittee discussion with Elaine West regarding the SHIP programs efforts to promote energy efficient affordable housing.
Martin Guttenplan, Florida Department of Transportation	04.16.2008	Presentation to LU&T about Florida Department of Transportation/Multi-Modal Transportation Districts (MMTD) and Transportation Concurrency Exception Areas (TCEA)
Sally Palmi, Waste Alternatives Manager - Alachua County Public Works/Waste Management	04.22.2008	Presentation to WEIS about “Zero Waste” and commercial recycling in Alachua County
Tom Webster, Alachua County Housing Programs Manager – SHIP program presentation	05.14.2008	Residential Subcommittee Presentation from Tom Webster regarding the SHIP programs efforts to promote energy efficient affordable housing.
Brian Becker, Ph.D. candidate - UF	05.15.2008	Grad. Student, UF School of Natural Resources & the Environment, presented to ECSC: “ <i>Overview of an Alachua County Carbon Sequestration Rapid Assessment Methodology</i> ”
Erich Christian, student – Oak Hall School (Gainesville, FL)	06.02.2008	Presentation to ECSC about Oak Hall School Biodiesel project
Michael LeBoeuf, AIA & Office Leader, DLR Group-Orlando, FL	06.02.2008	Presentation to ECSC - Alachua County consultant explained LEED certification levels for new Alachua County Court Support building
Charlie Jackson, Facilities Manager – Alachua County	06.02.2008	Presentation to ECSC – “ <i>Energy conservation and County facilities</i> ”
David Reed	06.06.2008	County Government’s Role for Reducing Energy Usage in and Encouraging Local Agriculture

2009 TLG Case Study Application: Energy Conservation Strategies
Commission – Creating a Resource Efficient and Resilient Community

Wendell Porter, Ph.D., Chair-Community Weatherization Coalition (CWC)	06.16.2008	Presentation to ECSC about CWC weatherization and energy conservation activities in local low-income & substandard housing
Ken McGurn	06.17.2008	Local investor/developer explained his solar energy proposal to ALT.
Ron Fuller, University of Florida Transportation and Parking Services	06.17.2008	Presentation to LU&T about the University of Florida's Sustainable Transportation Program
Matt Vargas, Florida Organic Growers (FOG)	06.30.2008	Presentation to ECSC about FOG application for a USDA community food project
Ed Regan, PE	07.29.2008	Assistant General Manager, Gainesville Regional Utilities; presentation on Germany's solar initiatives & policies
Energy Efficiency – special ECSC-WEIS meeting with Sierra Club	09.04.2008	Panel discussion about energy efficiency.

ECSC PRESENTATIONS TO OTHERS

ORGANIZATION	DATE	COMMENTS
Alachua County Tourist Development Council (TDC)	11.28.2007	Requested that the TDC consider the effects of Peak Oil production and decline on Alachua County tourism; and provide the ECSC with recommendations for energy and resource-efficient lodging properties, etc.
Alachua County Commission	1.08.2008	Interim ECSC report
American Association for Retired Persons (AARP)	02.04.2008	
Gainesville Metropolitan Transportation Planning	02.14.2008	Recommended that the MTPO require its consultant for the 2035 Transportation Plan update be required to review Peak Oil production and decline variables; and make transportation and land use recommendations in the 2035

2009 TLG Case Study Application: Energy Conservation Strategies Commission – Creating a Resource Efficient and Resilient Community

Organization (MTPO)		Transportation Plan update on how to mitigate those effects. MTPO adopted this recommendation.
County wide Visioning and Planning Committee (CVPC)	04.17.2008	CVPC amended its Conceptual Plan Objectives to include the following policy: "Promote the creation of local renewable energy and energy efficiency policies and goals, as well as implementation plans to achieve them."
Downtown Rotary Club	04.30.2008	
Sunrise Rotary Club	05.01.2008	
East Gainesville Community Development Corporation	07.10.2008	Discussion included the opportunity to invite Van Jones to speak about "green-collar" jobs and community reinvestment in energy security infrastructure.
Alachua County Planning Commission	07.16.2008	Planning Commission requested a copy of all materials sent by the ECSC to County Growth Management staff re: the Comprehensive Plan Evaluation & Appraisal Report Process (EAR). ECSC materials emailed to the Planning Commission Secretary on July 18 th .
Alachua County Community Planning Group	08.05.2008	
Bicycle Pedestrian Advisory Committee	09.02.2008	
Citizens Advisory Committee (CAC) & Technical Advisory Committee (TAC) - Gainesville Metropolitan Transportation Planning Organization (MTPO)	09.03.2008	
Alachua County Rural Concerns Committee	09.16.2008	
Alachua County Constitutional Officers	09.26.2008	Invited - Judiciary, Clerk of Court, Sheriff, Property Appraiser, Tax Collector, Supervisor of Elections, Public Defender & State Attorney

**KEY: ECSC=Energy Conservation Strategies Commission; ALT=Locally-applicable Alternative Energy options; LU&T=Land Use & Transportation subcommittee; WEIS=Waste & Energy Implications subcommittee; RES=Residential Buildings subcommittee

Example Recommendation to:

**ALACHUA COUNTY
“RESOURCE-EFFICIENT, HIGH PERFORMANCE”
CIVIC BUILDINGS POLICY**

ECSC RECOMMENDATION

Summary

Alachua County’s existing building inventory includes 1.3M square feet of buildings, from 144 square feet to 314,000 square feet in size, comprising simple work sheds and comfort stations to more complex facilities such as the County Administration building, jail and courthouses. Fifty (50) buildings are larger than 500 square feet. Total space leased for County operations is approximately 40,000 square feet.

The ECSC recommends that the Alachua County Commission adopt a “Resource-Efficient, High-Performance Buildings” policy for all civic facilities owned and/or operated by Alachua County government. The principles for such a policy are contained within this document. Development of such a policy is consistent with the County Commission’s vision statement: consensus language approved by Commissioners (December 14 2007) states that “The County will work to reduce its contribution to global climate change through policies which promote energy conservation in County Operations and in the community.”

The ECSC recommendations provide a framework and set of tools for Alachua County to construct government buildings in a more energy-efficient, healthy and ecologically-responsible manner. Adoption of the recommended policy is in the public interest because it would:

- conserve energy, water and other natural resources;
- result in life-cycle cost savings through increased efficiencies in operation and maintenance;
- improve indoor air quality and the health, well-being, and productivity of occupants and visitors;
- help reduce development-related public infrastructure costs;
- help minimize ecological degradation (air, water and soil);
- stimulate the economy by creating new local jobs and industries; and
- provide transportation choice, and reduce transportation costs, for those citizens who will require access to these civic buildings.

2009 TLG Case Study Application: Energy Conservation Strategies Commission – Creating a Resource Efficient and Resilient Community

Cost savings to County taxpayers would accrue through reduced life-cycle operating costs; address economic, environmental, and social stewardship; provide healthy work environments; and contribute to the goals of protecting, conserving, and enhancing our civic infrastructure. In addition, the County is in a position to join with others in setting a consistent regional standard for these civic building practices.

The policy should govern new civic capital construction projects; renovations; operations of existing civic buildings; and leased facilities. The policy can be implemented in at least two phases: the first phase could include all the County's new facility construction projects; and the second would expand to include existing civic facilities. The analysis below suggests that the widely recognized Leadership in Energy and Environmental Design (LEED) Green Building Rating System should be adopted as the verifiable standard for measuring the implementation of resource-efficient, high-performance building practices.

As a consequence of the wide variety of buildings and program activities across the organization, a number of issues need to be considered to ensure that a resource-efficient, high performance standard is effective, and encompasses all aspects of County facility construction and building operations, including custodial practices.

Recommendations

1. That the Alachua County Commission adopt a Resource-Efficient, High-Performance Buildings policy for County facilities that would meet the minimum requirement of LEED Silver, with a goal of Gold; and
2. That the County Commission direct the County Manager to prepare an implementation plan outlining the issues, strategies and costs associated with incorporating these building design, construction and operating practices into County owned and managed facilities of all sizes, utilizing LEED-EB (Existing Building), or any other verifiable third party standard, and report back to the Commission;
3. Include, if funds are determined to be available, full US Green Building Council registration and certification for all new construction and additions larger than 500 square feet; and
4. In the design of civic buildings, provide transportation choice (in order to reduce transportation costs) for those citizens who will require access to these civic buildings.

Background

Throughout their existence, buildings consume large amounts of resources (materials, water, and energy) and generate significant volumes of solid waste, sewage and air emissions. Construction and demolition waste is a major component of solid waste, and in Florida, accounts for approximately 25% of the total waste stream. It is estimated that in the US alone, buildings account for:

70% of electricity consumption,
39% of energy use,
39% of all CO₂ emissions,
40% of raw materials use,
30% of waste output, and
12% of potable water consumption.

Alachua County has a history of involvement with energy-efficiency efforts in County buildings. Current County energy-efficiency and high-performance building initiatives include: continuous lighting and mechanical system retrofits; enhanced recycling programs in County buildings; construction (2004) of a criminal court building to Silver LEED standards; and construction (2008) of a resource-efficient fire station.

Issues and Analysis

What should be included?

Alachua County is the custodian of over 1 million square feet of facilities used to deliver public services. Alachua County also funds capital projects for new or renovated civic facilities. The ECSC recommends that the policy apply to all civic buildings, including new and existing facilities, and that the policy be applied and implemented in two phases (see below.)

What is the standard?

As a result of the ECSC review of various high-performance building methodologies, it is recommended that Alachua County adopt the LEED Green Building Rating System as the verifiable standard for measuring the implementation of these building practices. Leadership in Energy and Environmental Design (LEED) is a voluntary, consensus-based rating system for high-performance, green buildings.

Though there are a number of other industry 'green' building standards, LEED is the market leader, and has been adopted by a number of governments in the U.S. and Canada, including Seattle and King County, Washington; Clark County, Washington; Portland and Eugene, Oregon; Sacramento; Boulder; and Vancouver, British Columbia.

2009 TLG Case Study Application: Energy Conservation Strategies Commission – Creating a Resource Efficient and Resilient Community

According to the US Green Building Council (USGBC) website, the following Florida entities have adopted LEED in some manner:

- Sarasota County, FL
- Hillsborough County, FL
- Miami-Dade County, FL
- Miami Lakes, FL
- Tampa, FL
- Manatee County, Florida Public Schools
- University of Central Florida
- University of Florida

LEED provides a complete framework for assessing building performance and meeting sustainability goals. Based on well-founded scientific and industry standards, LEED emphasizes state of the art strategies for appropriate site development, water savings, energy efficiency, materials selection, and indoor environmental quality. A suite of rating systems has been developed, each addressing a different type of building construction, including new construction (LEED-NC), commercial core and shell construction (LEED-CS), tenant infill of an existing shell (LEED-CI), existing buildings (LEED-EB), and others.

Investigation suggests that the rating system recommended for the operation and maintenance of the County's existing building inventory is LEED-EB (LEED-Existing Buildings). The purpose of LEED-EB is to maximize operational efficiency and workplace environmental quality, while minimizing environmental impacts. Rather than a one-time rating, LEED-EB provides a continuing, performance-based benchmark for building owners and operators to measure current conditions and improvements covering chemical use, recycling programs, exterior maintenance programs, and systems upgrades to meet green building energy, water, indoor air quality, and lighting performance standards.

With respect to all the rating systems in the LEED portfolio, there is consistency in the nomenclature and application of credits, and the methodology to achieve certification for both new and existing buildings, thus simplifying the overall policy implementation. In addition, County staff is already familiar with the rating systems, and there are a significant number of qualified industry professionals in Alachua County and Florida available to assist in achieving these standards.

2009 TLG Case Study Application: Energy Conservation Strategies Commission – Creating a Resource Efficient and Resilient Community

To what should the standard apply?

For **new construction or additions of 500 square feet or larger**, it is recommended that the County achieve LEED-NC Silver as the minimum standard, with a goal of Gold (or even Platinum) where a LEED audit and/or lifecycle assessment warrants it. A trend is rapidly shifting from LEED Silver towards LEED Gold, due to the significant growth of green building in general, the rapid development of expertise throughout the buildings industry, and concurrent changes to building codes.

For new buildings under 500 square feet, it is recommended that LEED-NC be used as a guide in the planning, design and execution of the project. The ability of a renovation project to incorporate green features can be significantly dependent on the character of the building or the nature of the renovation. Each renovation project is a unique situation, and the feasibility of incorporating green features should be evaluated for certification on a case-by-case basis.

How much will this policy implementation cost?

The cost of meeting a green policy standard will vary due to a number of factors, based on the certification target level. These factors include building type, project size, climate conditions, specification flexibility, local green market maturity, and project team experience. It is recommended that any costs associated with implementing this Civic Buildings policy for new capital construction projects be identified and quantified as part of design development, and reported at the appropriate time during the project approval process.

County construction projects tend to be non-typical of the general commercial construction industry, and include facilities such as fire stations, parking garages, maintenance buildings, jails, courthouses and so on. The types of design and construction features may vary the costs somewhat from the typical factors noted above. Many of the added costs can be recovered through reduced consumption of energy, water and other consumables.

Cost estimates for Alachua County are primarily based on industry, research and average cost of data produced from the design and construction of numerous projects. The information listed below is provided by the United States Green Building Council (USGBC):

<u>LEED Level</u>	<u>Average Cost Premiums*</u>
Level 1 – Certified	0.66% above the traditional cost
Level 2 - Silver	2.11%

2009 TLG Case Study Application: Energy Conservation Strategies Commission – Creating a Resource Efficient and Resilient Community

Level 3 – Gold	1.82%
Level 4 – Platinum	6.50%

*This chart is cumulative. For example, the average cost premium for a Silver LEED building would be 0.66% (Level 1) + 2.11% (Level 2), for a total average cost premium of 2.77%.

How will the policy be implemented?

Regardless of whether individual projects obtain certification, the ECSC recommends that green construction practices for all major construction and renovation projects include three basic elements during the project implementation and construction phase: **integrated design, life cycle assessment and commissioning.**

Successful green buildings depend on an **integrated** approach to design. Early on in the process, a cross-disciplinary design team, together with facility staff and users, work together at the pre-design phase to establish environmental performance targets for the building. **Life cycle assessment (LCA)** evaluates the environmental impacts of the building through all stages of its life cycle. The goal of LCA is to achieve the highest, most cost-effective environmental performance possible over the life of the project. When integrated design and life cycle assessment are combined, better and more affordable development strategies emerge.

The adoption of **commissioning** as a standard practice ensures that specific performance standards for building systems are included in the project specifications, and that a building's systems meet the performance criteria once a project is completed. Commissioning will decrease the long-term operating cost of a building's heating and cooling systems, and overall energy use.

The ECSC recommends that this policy apply immediately to all new Alachua County capital construction projects. With respect to the County's existing facilities, further investigation is warranted. Also, the age of the County's current building stock may make a number of buildings ineligible for LEED-EB certification without some basic retrofits for meeting minimum requirements for mechanical and electrical systems.

Prior to making any significant commitment to meeting modern building performance standards, it is recommended that the County invest some resources to identify issues, strategies and costs associated with the adoption of verifiable green maintenance

2009 TLG Case Study Application: Energy Conservation Strategies Commission – Creating a Resource Efficient and Resilient Community

practices. The County should first consider “weatherizing” the envelope of all buildings to the maximum extent possible, and upgrading all appliances to Energy Star level.

Any policy exemptions?

The ECSC recommends that new buildings or major renovations to existing County-owned buildings should not be exempt from the policy, unless a LEED audit is performed that would support an exemption. Addressing the level of LEED performance during the budget process will ensure that any additional costs will be included in the project financing, as well as identify if achieving a given standard is impractical. The impracticality of applying LEED performance standards may be of particular relevance when considering projects associated with designated historic structures.

Other Policy Options

The County Commission can also:

- use a given LEED standard only as a benchmark, and not pay to achieve certification, thereby incurring no certification costs;
- implement both phases simultaneously (new construction and existing buildings);
- implement a higher certification standard, potentially incurring increased costs; and
- provide appropriate staffing and/or other resources to implement the policy.

RESOURCES

McKinsey & Company reports – [http://www.mckinsey.com/mgi/publications/Reducing U.S. Greenhouse Gas Emissions – How Much at What Cost? 12/2007](http://www.mckinsey.com/mgi/publications/Reducing%20U.S.%20Greenhouse%20Gas%20Emissions%20%E2%80%93%20How%20Much%20at%20What%20Cost%20?%2012/2007)
http://www.mckinsey.com/client-service/ccsi/pdf/US_ghg_final_report.pdf

United States Green Building Council - <http://www.usgbc.org>.

City of Austin, Texas - <http://www.ci.austin.tx.us/greenbuilder/>

State of California – Integrated Waste Management Board

A Blueprint for Sustainable State Facilities -

<http://www.ciwmb.ca.gov/Greenbuilding/blueprint/>

Sustainable (Green) Building Project Design Elements -

<http://www.ciwmb.ca.gov/Greenbuilding/Design/LEEDforCA.doc>

2009 TLG Case Study Application: Energy Conservation Strategies Commission – Creating a Resource Efficient and Resilient Community

End Notes

ⁱ Cost of Oil: Apr 13, 2001 United States \$/barrel of oil <http://tonto.eia.doe.gov/dnav/pet/hist/wtotusaw.htm> Apr 11, 2008 United States \$/barrel of oil <http://tonto.eia.doe.gov/dnav/pet/hist/wtotusaw.htm> A barrel of oil has seen a 343% increase in cost since 2001.

Cost of Gasoline: Feb 2001 US City average for retail gasoline all types of gas...includes taxes...cost per gallon from EAI: http://tonto.eia.doe.gov/merquery/mer_data.asp?table=T09.04 Feb 2008 US City average for retail gasoline all types of gas...includes taxes...cost per gallon from EAI: http://tonto.eia.doe.gov/merquery/mer_data.asp?table=T09.04

Monthly Food Cost for a Family of 4: See <http://www.cnpp.usda.gov/USDAFoodCost-Home.htm> For Feb 2001 <http://www.cnpp.usda.gov/Publications/FoodPlans/2001/CostofFoodFeb01.pdf> Row: Family of 4 Couple 19-50 years and children 2-3 and 4-5 years; Column, Moderate cost plan For Feb 2008 <http://www.cnpp.usda.gov/Publications/FoodPlans/2008/CostofFoodFeb08.pdf> Row: Family of 4 Couple 19-50 years and children 2-3 and 4-5 years; Column, Moderate cost plan

Average residential retail price of electricity: 2001 from EAI: <http://www.eia.doe.gov/cneaf/electricity/esr/backissues.html> See the excel spreadsheet here <http://tonto.eia.doe.gov/FTPROOT/electricity/8612001.xls> and look at tab 4 01 Table 4. Average Retail Price for Bundled and Unbundled Consumers by Sector, Census Division, and State, 2001; Residential Column For 2007 see Current and Historical Monthly Retail Sales, Revenues, and Average Retail Price by State and by Sector (Form EIA-826) http://www.eia.doe.gov/cneaf/electricity/page/sales_revenue.xls and look at tab Monthly Totals; Column P Avg Retail Price Residential at the bottom for 2007

ⁱⁱ According to the Energy Information Administration July 2008 Petroleum Monthly, the daily total world supply of petroleum was for the first quarter of 2008, 85.38 million barrels per day (mbd) with a demand of 85.69 mbd.

ⁱⁱⁱ See <http://www.gao.gov/new.items/d07283.pdf>

^{iv} The Miami-Dade Climate Change Advisory Task Force (CCATF) including the imminent local scientists Drs. Leatherman and Wanless estimate a non-linear 3-5 ft rise by 2100. (Miami-Dade Climate Change Advisory Task Force (CCATF))

Item	Title	Recommendations	Timing	COMMENTS & COLLABORATION OPPORTUNITIES
1	Energy and Sustainability	Acknowledge that energy issues will, in perpetuity, affect Alachua County residents' financial security, and the economy and livability of our countywide community. Add energy security & sustainability to the Alachua County Commission-adopted Comprehensive plan and vision statement.	Short Term (1-3 years)	Alachua County Comprehensive Plan Commission Vision
2	Reduce fossil fuel use:establish timeline	Establish a timeline for County government to reduce use of fossil fuel, consistent with the goal of a 50% Greenhouse gas (GHG) reduction by 2030, and an 80% GHG reduction by 2050. Use 1998 as the base year (2001 Alachua County Greenhouse Gas report.) Encourage others within the community to meet the same or similar targets.	Immediate Term (within 1 year)	Alachua County Comprehensive Plan Re-envision public service delivery
3	Energy and Water: Consumption & Conservation Principles	Reduce energy and water consumption on a per capita basis through effective education, programs, marketing and sustainable policies, and legislation. Establish specific goals and target dates by which to achieve them. Adopt a strategy of (1), practicing energy and water conservation; (2), achieve maximum efficiencies in building envelopes, machinery, and appliances; and then (3), effect optimum use of local renewable energy resources.	Short Term (1-3 years)	
4	Maximize Carbon Sequestration	Maximize carbon sequestration throughout all County operations. Additionally, Alachua County government should develop the organizational capacity to participate in carbon markets as a source of revenue, while minimizing the carbon credits that must be purchased for government operations and power production.	Mid Term (4-10 years)	Alachua County Comprehensive Plan Re-envision county operations. Source of revenue for County government, & economic development opportunity for local businesses; green-collar jobs.
5	Local Food Shed: Maximize Food Production & Processing	Maximize local resource & energy-efficient food production and processing within Alachua County's local food shed.	Mid Term (4-10 years)	Economic development opportunity; green-collar jobs.
6	Business Development: Energy Conservation	As a primary economic development strategy, encourage within Alachua County the location and development of businesses and industry clusters that create, manufacture and install conservation materials; provide other energy and conservation-related services; and those which upgrade the operational efficiency of structures. Support existing local businesses engaged in same.	Short Term (1-3 years)	Economic development opportunity; green-collar jobs. Consider whether, and how, the cost of permit fees may affect new business development opportunities.
7	Business Development: Alternative Energy	As a primary economic development strategy, encourage the location within Alachua County of businesses and industry clusters that create, manufacture and install innovative and alternative energy technologies. Support existing local businesses engaged in same.	Short Term (1-3 years)	Economic development opportunity; green-collar jobs. Consider whether, and how, the cost of permit fees may affect new business development opportunities.
8	Business Development: Waste-Based Industries	As a primary economic development strategy, further develop the Alachua County Transfer Station for use by clusters of waste-based industries. Issue Request for Proposals (RFP) for industry to use Alachua County waste & discards in manufacturing or related activity.	Short Term (1-3 years)	Economic development opportunity. Create green-collar jobs, reduce GHG, and avoid landfill disposal costs.
9	Optimize Conservation Programs	Provide educational information about energy and conservation to effect the optimum conservation of energy use within Alachua County. Promote efficient use and management of non-fossil fuel energy resources, through a series of incentives, initiatives, and mandates. Promote the use of energy audits, rebates & energy-efficiency programs offered by private businesses and utility providers.	Short Term (1-3 years)	See www.energysmackdown.com for example of an energy-conservation "reality TV" program offered over the Internet. Alachua County can develop one and also show it on Channel 12.
10	Increase Demand Management: Reduce Electricity Consumption	Aggressively cut our community's electricity consumption. Match (or exceed), on a per capita basis, the energy efficiency of Austin, Texas; Portland, Oregon; Burlington, Vermont; and California. Create a measurable plan with benchmarks to achieve these goals. Request that the Gainesville City Commission & other utility providers adopt an expanded portfolio of demand management programs; and a peak/non-peak hour electric rate structure.	Short Term (1-3 years)	Also consider policies and programs implemented in Denmark, Japan, and Germany. Potential partners: all utilities which serve County customers; banks and financial institutions; business, non-profit and neighborhood organizations, Gainesville City Commission

Item	Title	Recommendations	Timing	COMMENTS & COLLABORATION OPPORTUNITIES
11	Locally Based Weatherization Bank	Create property tax-based and other local financing mechanisms to encourage, promote and effect the optimum use of insulation, weatherization, energy-efficiency upgrades (to building envelopes and machinery), and other energy saving measures to all existing structures.	Short Term (1-3 years)	90% of structures in Alachua County were built prior to 1999; Florida minimum energy standards first required in 1993. Expect significant efficiencies, community reinvestment & "green-collar" jobs to be achieved by retrofitting existing structures.
12	Rental Property Energy Efficiency	Create incentives and/or legislation to encourage owners of rental properties to effect the optimum use of insulation, weatherization, energy-efficiency upgrades (to building envelopes, machinery and appliances), and other energy saving measures. Require full disclosure (using an approved energy rating system, such as Home Energy Rating System - HERS) of total monthly costs, including rent and all utilities. Consider adoption of a County landlord licensing program, with requirements for energy efficiency upgrades to obtain license; and eliminate or reduce licensing fee for a specified period, if the landlord upgrades the property to a set of minimum energy standards.	Short Term (1-3 years)	Rentals comprise almost 50% of all residential structures in Alachua County. [US Census data] Currently, HERS- Home Energy Rating System - is the only nationally recognized rating system. The HERS Index is a scoring system established by the Residential Energy Services Network (RESNET) in which a home built to the specifications of the HERS Reference Home (based on the 2006 International Energy Conservation Code) scores a HERS Index of 100, while a net zero energy home scores a HERS Index of 0. The lower a home's HERS Index, the more energy efficient it is in comparison to the HERS Reference Home. http://www.energystar.gov/index.cfm?bldrs_lenders_raters.nh_HERS
13	Energy Efficient Land Use and Transportation	Adopt land use & development policies that maximize energy efficiency. Make energy security & sustainability the primary consideration in decisions about land use mix, density with amenities, and design – that will at the same time improve affordability and livability. Develop land use projects and patterns in the County that result in reduced community and countywide energy consumption.	Short Term (1-3 years)	County Commission can amend the Comprehensive Plan to include these & other energy policies over the two-year Evaluation & Appraisal report process.
14	Transportation and Energy Goals	Reduce use of, and dependence on, liquid fossil fuels. By 2020: <ul style="list-style-type: none"> • Increase vehicle occupancy/ridership by at least 25%. • Double (at least) the fuel consumption efficiency (mpg) of the Alachua County government fleet. Encourage commercial & private fleets located within Alachua County to accomplish the same. Move to non-fossil fuel fleets as soon as possible. • Reduce by half the approximately 13, 5000 annual (2008) miles driven by each registered Alachua County driver. • Multimodal Transit: Maximize opportunities for use of other modes of transportation through intervention at the neighborhood and regional scale. Expand the regional cycle network and mass transit system with the goal of reducing single occupancy vehicle trips by 25%-2020. <p>Encourage the MTPO to also adopt these policies and goals.</p>	Mid Term (4-10 years)	Use of van pools; car pools; ridesharing; car share companies; increased public transit; use of hybrid and electric vehicles; flexible operating hours; telecommuting. Economic opportunities for private transport providers and other business ventures.
15	Liquid Transportation Fuels	Support within Alachua County the production of a minimum of 5.0 million gallons per year of non-fossil fuel based transportation fuels, with feedstock grown in a certified sustainable manner. Ensure feedstock does not compete with food production. Sustainable growth of energy crops on environmentally damaged lands, like closed County landfills, could provide revenue or liquid fuel for Alachua County government.	Mid Term (4-10 years)	The Energy Crop Plantation is growing about 250,000 eucalyptus and cottonwood trees on a closed phosphate mine in central Florida. The project is currently the largest tree biomass energy crop plantation in the U.S.
16	Life-cycle analysis of Greenhouse Gas Emissions (GHG)	Life-cycle analysis of Greenhouse Gas Emissions (GHG) should form the basis of any decision on use or generation of fuel sources. Equal consideration should be given to minimizing toxic pollutants and strict enforcement of US EPA guidelines.	Short Term (1-3 years)	Transportation fuels
17	Renewable Energy Production:Guiding Principles	The guiding principles for renewable energy production should be development of distributed residential and commercial power generation, and development of a countywide smart grid. Evaluate and institute fair and equitable net metering and feed-in tariffs, which have as their primary goal the creation of distributed power production.	Mid Term (4-10 years)	Work with utility providers and State government to accomplish.

Item	Title	Recommendations	Timing	COMMENTS & COLLABORATION OPPORTUNITIES
18	Renewable Energy	Increase use of solar energy and other renewable energy resources in new and existing development within Alachua County. Alachua County government should enter the renewable energy market, either through distributed production (for example, solar panels on roofs of Alachua County government buildings), or utility-scale production (development of a large-scale solar site.)	Short Term (1-3 years)	Accomplish through distributed and/or utility-scale solar generation.
19	Life-cycle analysis of GHG Emissions: County Purchasing	Life-cycle analysis of Greenhouse Gas Emissions (GHG) and energy costs should be adopted and required as the basis of all County government decisions, particularly: <ul style="list-style-type: none"> • any decision on use or generation of fuel sources. Equal consideration should be given to minimizing toxic pollutants and strict enforcement of US EPA guidelines. • all County building construction and purchasing decisions. • waste management policy. Such an analysis precludes incineration (burning) of solid waste for power generation. 	Short Term (1-3 years)	The County should reevaluate its purchasing policies for life cycle GHG emissions and begin asking its vendors to supply this information about their products.
20	Funding Sources: Energy Conservation & Sustainability Activities	Direct that County staff identify, and become familiar with, potential funding sources for energy conservation, energy efficiency, renewable energy and sustainability activities. Establish priority to continuously identify & mobilize potential private sector & foundation grants & other funding sources. Add this issue to both State and Federal legislative efforts. Consider use of Interlocal Agreements to accomplish county-wide energy self-sufficiency goals, carbon credit trading, countywide purchasing, and other opportunities.		Form strategic partnerships with energy-efficiency and sustainability-related businesses, local industry, non-profit organizations, community leaders, and employers in Alachua County. Ecivis software & partnership program is critical to accomplishing this goal.
21	Amend Comprehensive Plan: Add Major Energy Strategies	Amend the Alachua County Comprehensive Plan to include, in the appropriate locations, the goals, objectives and policies included in this chart. Amend the Comprehensive Plan to add an Energy Element.	Immediate Term (within 1 year)	