Provide a Healthy Economy

A healthy economy is essential to sustainability, as it provides for the people and resources to support a strong community. In the same way we understand the natural world as an ecosystem of inter-connected organisms, a vibrant economy is an ecosystem of inter-connected products, services, and people working together in an intricate web.

Our sustainable future requires that we acknowledge the balance between economy, environment, and community to create new opportunities and build a diverse economic foundation.

Objectives

1. Develop a vision through consensus to promote, maintain, grow, and attract businesses.

Implementing Actions

- Continue assessing current economic initiatives and previous planning efforts.
- Identify barriers to maintain and grow industry.
- Identify champions within the business community to engage with, shape, and promote the vision.
- Identify incentives to maintain and grow current businesses.
- Provide public information describing current initiatives and opportunities, and share success stories.
- Create a Sustainable Business Alliance to assist business owners in reducing operating costs through resource efficiency.

2. Promote a broad range of jobs for all age groups and skill types.

Implementing Actions

- Create (or build with the Center for Business Excellence) a job placement and career center for students that focuses on keeping them within the county after graduation.
- Promote Business Assistance Service Providers such as the Small Business Development Center (SBDC), the University of Central Florida Business Incubation Program, and the SCORE small business mentoring program.

Economy or Environment?

Sustainability is often thought of as an environmental issue; one to be considered only from the perspective of natural resources. But in truth, our local, regional, national, and global economies are integral to sustainability planning. Stable jobs, housing, and food markets are required to protect environmental integrity. One only has to think about the unsustainable practices of some developing countries to realize that economic instability leads to greater environmental degradation.

As in all things, the economic needs of a community must be balanced. Rampant industrialization (or growth) without thought to protection of resources is unhealthy, just as protection of the environment to the exclusion of the economic and social needs of the community is unwise.

Environment, society, and economy work together to create a sustainable community.

3. Provide community amenities, such as recreational, entertainment, and cultural experiences, which enhance the quality of life in Volusia County and attract and retain businesses.

Implementing Actions

- Create a web page that identifies existing amenities, and promote the web page to residents and businesses.
- Where needed, improve access to community amenities.
- Conduct a gap analysis, and survey residents and businesses to determine the need for new community amenities.

4. Retain viable commercial agricultural operations in Volusia County.

Implementing Actions

- Support local food producers through county purchasing policies.
- Create a database of commercial agricultural operations within Volusia County and promote those businesses through a searchable web option.

5. Encourage low-carbon, and/or clean/green technology, businesses, and industry.

Implementing Actions

- Work with local universities and schools to promote and create internship opportunities, green careers and entrepreneurship opportunities, and to promote emerging technologies.
- Provide incentives for such businesses to locate in Volusia County.
- Encourage public/private partnerships to develop and utilize green technology.
- Integrate sustainability criteria into existing county economic development programs.

6. Expand (or support) our tourism and trade industries.

Implementing Actions

- Enhance and market the sustainability of the Ocean Center and Daytona Beach International Airport.
- Explore options for hosting green events, including working with Clean Cities and other organizations.
- Explore a voluntary carbon offset purchasing program for conventions, conferences, large events, and individual travelers.
- Work with the tourism authorities to promote Volusia County as a "sustainable" vacation destination.
- Encourage hotel/motel industry participation in the Florida Green Lodging Program to promote sustainable practices. Provide promotional opportunities for green lodgings.
- Promote green/sustainable building and renovation practices within the lodging industry.

"Sustainable communities are places that foster and maintain a high quality of life. This requires a strong local economy that provides all residents with the opportunity to share in prosperity and enjoy the benefits of a clean environment. A healthy local economy also helps to ensure the fiscal health of the community's public agencies."

Steve Sanders, Institute for Local Government

Maintain a Healthy Environment

Our natural environment, and the resources within it, form the foundation of our culture. The water, land, air, and animals that make up the ecology of Volusia County sustain us and provide a quality of life that supports our community and our economy. A healthy environment is fundamental to a healthy community and a healthy economy; we cannot truly have any one without the other.

Our sustainable future relies on understanding the dynamic nature of our environment and on protecting, enhancing, and restoring our natural environment, to ensure diversity and the ability to adapt to changing conditions. We must recognize that natural systems are the equivalent of green infrastructure and are neccesary to our way of life.

Objectives

1. Continue to cultivate a culture of natural resource protection to ensure that our residents, businesses, and visitors recognize the importance of clean water, clean air, and diverse, healthy ecosystems.

Implementing Actions

- Continue to educate our residents, businesses, and visitors regarding the valuable ecosystem services provided by natural lands, and the effect they have on quality of life.
- Continue to engage the community in natural lands protection efforts through volunteer activities and environmental education.
- Continue to be a leader in the preservation of natural resources, and publicize successful natural lands conservation efforts.

2. Expand, protect, and restore publicly-owned natural lands.

Implementing Actions

- Identify a process for the continued acquisition and long term management of conservation lands (e.g. continuation of Volusia Forever).
- Continue to manage the county's conservation lands using a program of professionally accepted principles of resource and ecosystem management for the benefit of, and enjoyment by, present and future generations. Management objectives may include:
  - carbon sequestration,
  - preservation of habitat for wildlife including threatened and endangered species, and
  - opportunities for public access.
- Explore alternatives for creating a carbon fund where individuals can contribute to offset their carbon footprint. Work with the Ocean Center and Economic Development Division to promote green meetings through this carbon offset.
- Continue to provide public information describing land management techniques and the interdependence of species and ecosystems.

What are ecosystem services?

Most people understand that natural ecosystems provide recreational and aesthetic benefits to humans as well as habitat to a myriad plant and animal species. Less understood are the many services that ecosystems provide behind the scenes.

The term ecosystem services refers to the natural functions of a complex system of physical, chemical, and organic components that produces resources that we depend on for survival. Some of the most important ecosystem services are maintenance of soil fertility, agricultural productivity, pollination, water filtration, flood and tidal protection, improved air quality, regulation of climate, urban heat island control, insect pest control, and maintenance of genetic resources.

Elimination of any of these, or the many other services provided by healthy ecosystems can result in significant costs to humans.

3. Incentivize the protection of natural areas on private lands, including agriculture.

Implementing Actions

- Implement policies to protect the Environmental Core Overlay (ECO) by encouraging development in urban areas.
- Develop policies to quantify and create a market for incentivizing the protection of ecosystem services on private lands.
- Work with private landowners to identify benefits for the sequestration of carbon in natural lands.
- Adopt policies that discourage the conversion of agricultural land to sprawl development.
- Encourage farmers to provide areas for native wildlife in their farming operations.

4. Manage and protect ground water and surface water bodies.

Implementing Actions

- Adopt restrictions on fertilizer application to reduce surface and ground water pollution.
- Promote the use of living shorelines, minimizing the armoring of natural shorelines.
- Adopt Low Impact Development strategies to mitigate flooding from stormwater, capture pollutants prior to release into receiving water bodies, and allow for recharge of our aquifer.
- Protect and restore wetlands and salt marshes, which act as natural filters for water quality.
- Promote public education relating to the effects of pollution on water bodies and wildlife.

5. Plan for adaptation to sea level rise and dynamic climate conditions.

Implementing Actions

- Incorporate potential sea level rise scenarios into land acquisition, public infrastructure, and land development decisions to ensure the ability to adapt to changing conditions.
- Incorporate changing climate conditions into hazard mitigation planning efforts.
- Encourage coastal cities to adopt adaptive design strategies, which could include coastal setbacks, density restrictions, and rolling easements.

Can ecosystem services be measured?

It is difficult to assign a monetary value to many of the services provided by ecosystems, as many of these services appear to be free. In truth, if these services are lost, the cost to replace them would truly be staggering.

For example, over 100,000 different animal species — including bats, bees, flies, moths, beetles, birds, and butterflies — provide pollination services. One third of human food comes from plants pollinated by wild pollinators. The value of pollination services from wild pollinators in the U.S. alone is estimated at four to six billion dollars per year (Ecological Society of America, 2000).

Other services, such as fertile soil, are related to the economic productivity of a region, and the prosperity of its residents and businesses. Maintaining functioning natural systems, and reaping the benefits of the services they provide, are critical to our society and economy.

- Continue to develop a high-value conservation core connected with statewide conservation lands that allow movement of plants and animals across the region.
- Encourage the restoration of tidal wetlands and salt marshes, as they are considered one of the most valuable ecosystems for the sequestration of carbon.

Promote a Healthy Community

Living sustainably results in a healthier community. Personal health is improved through access to fresh foods, recreational opportunities, and outdoor environments. In turn, these promote a quality of life that improves our local economy.

Our sustainable future depends upon a healthy, active population with less reliance on fossil fuels for transportation and the delivery of goods and services.

Objectives

1. Create a culture that promotes sustainable and healthy lifestyles.

Implementing Actions

- Promote and support community initiatives in school systems to include:
  - school gardens,
  - healthy food in school cafeterias,
  - food education and awareness,
  - safe-routes-to-school programs, and
  - opportunities for active and healthy after school programs or activities on school properties.
- Increase safe walking, bicycling, and driving through educational and public awareness programs.
- Create public and private partnerships to foster and adopt these initiatives.
- Develop a funding mechanism to implement these initiatives.

2. Facilitate discussion and collaboration to improve awareness of preventive care and wellness.

Implementing Actions

- Connect regional healthcare partners in efforts to provide public health awareness.
- Develop private/public partnerships to develop an educational campaign on healthy eating and lifestyles.
- Develop and promote age-specific education initiatives on health maintenance by using data gathered on the healthcare trends of the target demographics.

3. Support and incentivize local food production and distribution.

Implementing Actions

- Remove regulatory barriers that prohibit private community gardens.
- Support initiatives to create community gardens on public lands where appropriate.
- Create public/private partnerships between grocers and food establishments to facilitate a distribution network for locally produced foods.
- Promote local farmers markets initiatives.
- Support a Buy Fresh, Buy Local campaign.

What is healthy community design?

Healthy community design is planning and designing communities to make it easier for people to live healthy lives. Healthy communities offer important benefits, such as:

- Decreased dependence on cars by building homes, businesses, schools, and parks closer to each other so that people can easily walk or bike between them, which promotes physical activities.
- Improved air quality from decreased vehicle use.
- Increased social connections and sense of community.
- Reduced contributions to greenhouse gases.

4. Promote ways to engage the community and market our public community assets (e.g., parks, greenways, blueways) to promote healthy outdoor activities.

Implementing Actions

- Develop a mechanism that allows community participation in the maintenance and support of public parks and community assets.
- Create an awareness campaign that identifies and publicizes opportunities for access to public lands and highlights free family activities available to the community.
- Support school trips to outdoor assets and county-owned public facilities.

5. Protect and promote an urban tree canopy that improves air quality.

Implementing Actions

- Identify areas in need of additional tree cover, and plant a minimum of 500 trees in year one, with an annual increase of 10% over the next 5 years. Encourage public participation in tree planting and restoration projects.
- Provide public information describing the benefits of planting additional trees.
- Partner with municipalities and private entities on tree planting programs, modeling the NASCAR Green "Clean Air Tree Planting Program" , to offset carbon emissions.

6. Design and enhance trail infrastructure that promotes and supports connectivity to community amenities and commercial enterprises.

Implementing Actions

- Support the creation of destinations along bike trails to encourage use of the trail systems.
- Reduce barriers to infill redevelopment and promote good community planning that includes design considerations for transit, walkability, and connectivity.
- Initiate bike share programs.
- Create an awareness campaign to promote events along the trail systems, such as an Annual Trails Day event.

7. Minimize the environmental impact of development within the county through sustainable building practices.

Implementing Actions

- Provide incentives for builders and developers to build green buildings and developments.
- Promote green building practices for new construction and for retrofits to existing buildings.
- Develop a public outreach campaign that identifies the benefits of green building practices.
- Construct all new county facilities to recognized green building standards [e.g. Leadership in Energy and Environmental Design-New Construction (LEED-NC) and FGBC].

"

To be sustainable, communities need more efficient and effective strategies and approaches that protect and improve community health, while they simultaneously protect and improve nature's benefits.

"

EPA, Science in Action, April 2011

Encourage Efficient Transportation and Community Design

Sustainability and resource conservation are inextricably linked to the way we design our communities. The quantity of fossil fuels consumed, and the amount of greenhouse gases (GHGs) released, is correlated with our transportation patterns and dependence on automobiles. Well designed communities and transportation systems can provide a high quality of life, revitalize economic activity, and provide numerous environmental benefits. Reducing vehicle miles traveled has direct benefits to air quality and reduction of GHG emissions.

Our sustainable future depends on our willingness to design our infrastructure and communities in a way that promotes walkable communities, affordable housing and transportation options, and preservation of natural resources. The objectives and action steps to meet this goal build upon the county's Smart Growth planning initiatives.

How does community design impact sustainability?

The only way we can make a real difference in our impact on the global environment and climate is through a holistic approach to policy, planning, engineering, and design, wherein all work collaboratively toward the common goal. That goal must be the functional integration of the built and natural environments. Built environments should be viewed as the extension of natural environments, allowing natural systems to function and working with these systems in high-performance buildings and landscapes. At the same time, we must not lose sight of our goals of economic productivity and social equity.

- Joe Brown, Climate Design

Objectives

1. Create a culture of planning and designing our communities and transportation systems to encourage alternative forms of transportation.

Implementing Actions

- Inform residents and businesses of the benefits of efficient design.
- Inform residents and businesses of available public transit options between their neighborhoods and work and daily goods.
- Encourage the use of alternative transportation options including walking, biking, and public transit.

2. Reduce vehicle miles traveled for county business and for county employee commuting.

Implementing Actions

- Invest in technology to allow for remote access meetings (e.g., smart boards, conferencing software).
- Encourage ridesharing for county meetings in remote locations.
- Support options that allow inspectors and other field personnel to have remote access to inspection schedules to reduce trips to the duty station (for example, start from remote locations).
- Implement commute trip reduction programs for county employees. The program could include strategies such as:
  - participate in the Florida Department of Transportation Rethink commuter assistance program,
  - provide transit pass subsidies to employees,
  - encourage the use of vanpools among employees that serve as an additional workplace benefit, and
  - provide bicycle lockers, shower facilities, and changing rooms.

3. Promote opportunities and incentives for other employers in Volusia County to reduce vehicle miles traveled for employee commuting.

Implementing Actions

- Explore opportunities for shared telecommuting infrastructure among private employers and municipalities within the county.

- Provide incentives for major employers and local governments within the county to implement commute trip reduction programs.
- Promote existing carpool and vanpool services offered through Votran.

4. Encourage land use design that reduces vehicle miles driven and automobile dependence.

Implementing Actions

- Encourage and incentivize development within designated infill and redevelopment corridors. Infill development capitalizes on existing urban services, which can accommodate new or changing populations without stretching into remote areas of the county.
- Revise the zoning code to allow mixed use development within designated corridors. Mixed use development comingles residential uses with employment, entertainment, and convenience uses, creating vibrant live-work-play communities, thus reducing commuter trips.
- Revise the zoning code to incentivize neighborhood centers that place uses such as parks, schools and neighborhood-serving retail within walking distance of residential uses.
- Revise the zoning code to promote shared parking in mixed use areas and to establish maximum parking requirements instead of minimum parking requirements. Large and open expanses of underutilized parking areas push uses apart, which increase the reliance on driving personal vehicles.
- Revise the zoning code to promote bicycle parking requirements for new development.
- Promote land conservation programs that preserve land in outlying areas for rural and environmental uses. Maintaining low development intensities in these areas limits the potential for sprawl in outlying areas that results in increased vehicle miles driven.
- Explore zoning code revisions that increase allowable development intensities in areas served by transit. Accommodating population and employment growth in transit-served areas places more residents within access of existing services, while also allowing transit to be provided more cost-effectively.
- Promote existing standards and guidelines developed by Votran that address transit-supportive site and building design.

5. Encourage and implement transit infrastructure improvements, increased choice ridership, and alternative transportation opportunities.

Implementing Actions

- Invest in Complete Streets design and construction for designated county thoroughfares. Complete streets provide safe, attractive, and comfortable access for all users including pedestrians, bicyclists, motorists, and public transit.
- Explore funding options for transit that will allow for increased service, such as a dedicated funding source or a transit impact fee.
- Promote the safety and comfort of transit users through facilities such as covered waiting areas and information kiosks.

Automobiles account for nearly half of global oil consumption; individual transportation choices have a significant cumulative impact on the global climate.

Conserve Water and Promote Water Efficiency

Water is vital to the survival of everything on the planet and is limited in supply. While water may seem to be abundant, less than one percent of all water on earth is available for human use. Potable water is critical to every person in Volusia County; it is integrated into all aspects of our daily lives and is the foundation of our economy and environment.

Our sustainable future requires that we treat water as the finite resource that it is, and make wise use of all water sources available.

Objectives

1. Create a culture of examining water use holistically, with an overall strategy for potable water, alternative water sources, use of grey water, rainwater, and stormwater.

Implementing Actions

- Publicly celebrate water as an essential, shared community resource through all available venues.

2. Improve indoor water efficiency and conservation in county operations, and the treatment and delivery of water through the county's utilities.

Implementing Actions

- Conduct water audits in county facilities to identify potential improvements.
- Implement water efficiency and conservation improvements in county facilities to reduce water consumption by 7% by 2015 and 20% by 2025.
- Provide educational material to county employees regarding water consumption and conservation strategies.
- Improve water distribution efficiency through improvements in water and sewer infrastructure to reduce leakage and waste of water.

Water conservation or water efficiency?

Many people use these terms interchangeably, however they really are different. Conservation refers to using less of something, like turning off the water to brush your teeth or eliminating outdoor irrigation. Efficiency is related to how much use we get out of each drop of water, such as using the same water more than once or buying a washing machine that washes more clothes per gallon.

Is one better than another?

A sustainable water strategy requires both conservation and efficiency. Throughout this chapter you will see actions that relate to both, so that we can best protect one of our most precious resources.

Turf grass is one of the most water-intensive plants in a landscape. Its high water demands and frequent maintenance needs make it a resource-intensive option. Reducing the amount of irrigated turf grass reduces GHG emissions. Planting vegetation with minimal water needs, such as Florida-native species, choosing vegetation appropriate for the conditions at the project site, and choosing complementary plants with similar water needs can dramatically reduce landscape water demand.

3. Improve outdoor water efficiency and conservation in county operations.

Implementing Actions

- Replace high water need landscapes with xeriscape or Florida-friendly landscaping to reduce potable water consumption.
- Eliminate potable water use for landscaping at all county facilities by 2015.

4. Promote indoor water efficiency and conservation in the community.

Implementing Actions

- Conduct free indoor and outdoor water audits for residential and commercial utility customers.
- Renew rebates for water-efficient appliances and fixtures for county utility customers.
- Promote third-party water conservation programs such as the St. John's River Water Management District's WaterStar to permit applicants.
- Adopt water conservation requirements in the building code.

5. Promote outdoor water efficiency and conservation in the community.

Implementing Actions

- Assure implementation of the county's Water Conservation Ordinance. The county would ensure compliance with the Ordinance through: (1) implementation of a post-construction spot monitoring program; (2) water efficiency training for irrigation designers and installers.
- Provide a rebate to county utility customers who replace turf grass with native drought-tolerant plant material.
- Promote greywater and rainwater systems for landscape irrigation. The program could provide: (1) county-sponsored demonstration projects; (2) provision of technical assistance regarding installation and maintenance; and (3) outreach and education to the building industry.
- Provide rebates to county utility customers for installation of water-efficient landscape irrigation control systems. The county would provide rebates to owners of existing landscapes that convert to weather-based smart irrigation technology.
- Provide Land Development Code incentives for development forms that require less landscaping and irrigation (e.g., clustering, central irrigation).
- Adopt building codes that allow and encourage the installation of rainwater harvesting systems in new construction.
- Approve an ordinance that restricts homeowners' associations (HOAs) from requiring sod lawns (i.e., universally allow Florida-friendly plants).
- Incrementally implement a policy to eliminate the use of potable water on landscapes.

6. Develop outreach and education programs to promote the importance of our water resources.

Implementing Actions

- Promote existing water conservation programs through additional outreach, including targeted marketing and workshops for residential and commercial customers.
- Work with the Volusia County School Board to ensure that a water conservation curriculum is mandatory in multiple grades.
- Broaden application of the St. Johns River Water Management District Great Water Odyssey curriculum to students.
- Educate consumers through advertisements in electronic media and social networks.
- Continue to update and market the county's water conservation efforts through our web page, Volusia.org/water.
- Partner with the University of Florida Institute of Food and Agricultural Sciences to educate homeowners about Florida-friendly landscaping.
- Promote and develop sites that show case water conservation practices. For example through landscaping, use of low flow fixtures, use of greywater.

7. Develop policies to ensure sustained recharge of the Floridan aquifer and the availability of stormwater for public use.

Implementing Actions

- Modify the Land Development Code (LDC) to promote pervious parking in appropriate locations.
- Adopt maximum parking standards.
- Support land acquisition in conservation corridors. Promote the benefits of the land for aquifer recharge.
- Promote the use of stormwater/reclaimed water for irrigation (reservoir), and consider ways to allow retention ponds to store reclaimed water.
- Encourage Low-Impact Development (LID) that uses methods of stormwater treatment closer to the source of runoff.
- Seek partnerships with universities for research and development into alternative water sources and treatment.

Water is one of our most precious resources, and the demand for it increases with each passing year. Conservation is the key to ensuring that we have a sufficient supply of this precious resource for generations to come.

Conserve Energy and Promote Renewable Energy

Energy, in the form of electricity, natural gas, and vehicle fuels, quite literally powers our community. We depend on a reliable source of energy for powering our homes, schools, businesses, and vehicles. Our primary sources of energy are fossil fuels, the consumption of which releases carbon dioxide and other GHGs into the atmosphere, with deterimental effects on both human health and the global climate.

Our sustainable future relies on reducing consumption of fossil fuels through conservation and efficiency, and on the use of alternative and renewable energy sources that are less harmful to people and the environment and create a financial benefit.

County Operations Objectives

1. Create a culture of energy efficiency and conservation that encourages the use of alternative energy sources.

Implementing Actions

- Identify and publish successes and programs to the public and commercial businesses through an annual report card, and creation of a media press kit as appropriate.
- Promote energy awareness through education on energy efficient improvements and available programs.
    - Provide and regularly update a website with a living document theme, with educational information, and links to other agencies and resources.
- Identify and publicize best energy practices for residential and business properties.

2. Improve energy efficiency and conservation in existing county buildings and reduce energy use by a minimum of 10% below 2007 levels by 2015, and a minimum of 15% below 2007 levels by 2025.

Implementing Actions

- Perform building energy audits to assess performance and identify areas for energy improvements.
- Install smart grid or smart metering technology to show exactly where and when electrical power is being used.
- Implement low-cost to no-cost energy efficiency measures as a preliminary first effort toward efficiency to reduce county facility energy use. These would include controlling temperatures 2-3 degrees higher in the summer and 2-3 degrees lower in the winter, installing automated thermostats that assure lights and HVAC systems are turned off or down when buildings are not occupied.
- Prioritize other energy improvements and implement as funding is available.
- Install solar thermal hot water systems in county facilities, where appropriate.
- Provide employees with information about saving energy in the workplace (e.g., water management, HVAC control, appliances, and lighting).
- Reduce energy consumption and major energy loads by cutting back on power usage at peak times (demand-side management).

What is solar photovoltaic?

Photovoltaic (PV) systems generate electricity by exposing silicon chips to light from the sun. The silicon chips are arranged into two layers of semiconductors, one with a positive charge and one with a negative charge, similar to a battery. When these two semiconductors absorb light, their electrons get excited, and travel through a circuit as electricity.

Solar PV systems consist of many semiconductors put together in arrays, which can be installed on all types of surfaces including roofs, parking structures, stand alone structures, and even vehicles. In this way, electricity can be generated right where you need it, rather than created and distributed through a larger grid system. Perhaps the greatest benefit is that solar PV creates no harmful GHGs.

3. Improve energy efficiency and conservation of public realm lighting, which includes streetlights, pedestrian pathway lights, area lighting for parks and parking lots, and outdoor lighting around public buildings.

Implementing Actions

- Retrofit county-owned streetlights and parking lots with higher efficiency technologies.
- Install a pilot project for high efficiency or solar ballfield lighting.
- Promote the retrofit of existing parking lot lighting through targeted outreach to landowners and tenants.
- Adopt an ordinance that requires new commercial development to utilize high efficiency lamp technologies, and/or solar light fixtures.

4. Ensure that 10% of the county's utility consumption is from renewable sources by 2015, 20% by 2025.

Implementing Actions

- Install solar PV at the county facilities, potential sites include the closed landfill in DeLand, the Tomoka Landfill, or Airport property.
- Investigate wind-generation research in conjunction with the Department of Economic Development to partner with wind generation researchers on a pilot installation project.
- Partner with organizations (such as the Florida Solar Energy Center and local universities) on alternative energy projects.

5. Reduce the amount of petroleum-based fuels used in county vehicles by 15% by 2015 and by 30% by 2025.

Implementing Actions

- Complete an alternative fuel plan that will address the use of biodiesel, compressed natural gas (CNG), propane, ethanol, and electricity as an alternative for petroleum-based fuels.
- Increase alternative fuel vehicles in the county's fleet.
- Explore the use of emerging technologies that prolong the useful life of oil.
- Provide an electrification infrastructure throughout Volusia County to provide appropriate support for electric and plug-in hybrid electric vehicles.
- Partner with existing efforts in the state of Florida, including Clean Cities, Get Ready Groups, Regional Planning Councils, and Economic Development groups, to identify funding sources.
- Install and operate a biodiesel processing plant using local waste vegetable oil from restaurants as feedstock.
- Partner with a local university and the Clean Cities Program to evaluate the efficiency of CNG and propane vehicles. Determine the efficiencies Volusia County can gain by acquiring these vehicles.
- Participate in Fleet Management efforts to integrate alternative fuels in solid waste vehicles.

Community-wide Objectives

6. Promote energy efficiency and conservation in existing commercial and residential buildings with a target of 10% reduction in energy usage from 2007 levels by 2015, and 15% by 2025.

Implementing Actions

- Educate residents and businesses about the commercial and residential audits that are available from utility companies.
- Encourage building owners and tenants to utilize the EPA ENERGYSTAR Portfolio Manager to monitor their building energy efficiency.
- Promote existing incentive programs through additional outreach, for example: (1) create a one-stop center for information on energy conservation (greenvolusia.org); and (2) organize workshops with information from utilities or agencies.
- Develop a shade tree assistance program and provide subsidized shade trees to residential and commercial property owners.
- Explore opportunities to partner with the Division of Economic Development on incentive programs for Volusia County businesses that reduce energy use in their buildings.
- Work with utility companies, other jurisdictions, and organizations to accelerate Smart Grid technology integration in the community.

7. Improve energy efficiency and conservation in new private buildings, with a target of 20% of new construction built to ENERGY STAR standards.

Implementing Actions

- Provide incentives for new developments that voluntarily achieve or exceed ENERGY STAR standards. Incentives can include reduced permitting fees and priority permit review.
- Adopt the 2009 International Energy Conservation Code, which will increase energy efficiency in new buildings by 17%.

- Promote green building practices and existing utility incentive programs and provide additional outreach to promote these programs.
- Require planting of building shade trees in new communities to reduce summer air conditioning electricity demand.
- Require preservation of existing vegetation in new developments to reduce energy requirements, and to improve water and air quality.

8. Promote the development and use of alternative energy sources in the community.

Implementing Actions

- Inform businesses and residents of available solar energy rebates.
- Provide targeted outreach to developers and builders about renewable energy incentives and energy efficiency programs offered by the Florida Solar Energy Center, U.S. Department of Energy and energy utilities when they apply for permits, and encourage them to participate.
- Partner with local environmental groups to promote available alternative energy sources.
- Develop a streamlined permitting program for installation of PV systems and solar hot water heating systems.
- Adopt a county policy providing preference to vendors who use a percentage of alternative fuel vehicles.

9. Promote the use of alternative fuels community wide.

Implementing Actions

- Work with Clean Cities to develop a local marketing program.
- Expand the electrification infrastructure to allow private, fee-based use of charging stations.

What is solar thermal?

Solar thermal energy is anything, usually air or water, warmed up directly by the sun's rays.

The sun's heat can be used in two ways within homes and businesses. The sun is used to heat water for domestic hot water systems, or the sun's light can be concentrated and water temperatures increased to make steam and electricity.

Residential solar hot water heaters can reduce natural gas consumption by 40-70%, in addition to not producing air pollution or GHGs.

Reduce Waste and Promote Recycling

County governments are often tasked with the collection and disposal of solid waste, which requires land and energy and contributes to the generation of GHGs. Volusia County has been a leader in responsible waste management and continues to move toward more sustainable practices in waste diversion and disposal.

Our sustainable future requires that we reduce waste generation, responsibly manage the disposal of waste, and capitalize on waste by-products.

Objectives

1. Divert 10% below 2007 levels of waste from the landfill by 2015 and 30% by 2025.

Implementing Actions

- Increase recycling of yard waste and other organic materials in the community.
  - Increase curbside yard waste collection practices to implement composting project (eliminate plastic bags).
  - Support/adopt legislation supporting additional recycling.
  - Educate the public regarding the benefits of organic material composting.
  - Promote education for recycling.
  - Provide waste audits for commercial businesses.
  - Develop partnerships with businesses (point of sale education).
  - Create partnerships with cities and local businesses for amnesty days.
  - Identify a bio-mass vendor for disaster debris andor recycled mulch.
  - Advocate for recycling credits for asphalt/concrete/mulch as a landfill cover.
  - Incentivize possible partnerships for recycling with the business community.
  - Create a solid waste management and recycling task force of private employers and the public.
- Encourage practices that re-use products within the community.
  - Work with Economic Development to recruit companies that use recycled materials in their production processes.
  - Work with state and regional entities on the creation of additional markets for recycled materials.
  - Educate the public regarding the benefits of organic material composting.
- Decrease waste produced by county operations.
  - Establish green purchasing guidelines within the county, requiring the purchase of products which use less packaging.
  - Enforce recycling collection at county facilities and events (i.e., leading by example). Use events as educational opportunities and educate staff on the benefits of the recycling on waste reduction.

How Does Solid Waste Disposal Contribute to Greenhouse Gas Emissions?

The garbage picked up from our homes and businesses is brought to a landfill. There, the organic matter in the garbage breaks down and releases a combination of gasses, including methane. Methane is a greenhouse gas, which is twenty times more potent than carbon dioxide.

Unchecked, methane is a large GHG contributor, however, it can be harnessed and put to good use. To release the methane, landfill gas wells are drilled into a landfill. Then pipes from each well carry the gas to a central point where it is filtered and cleaned before burning. This process taps one of society's least desirable items, garbage, and turns it into a useful alternative energy source.

- Minimize the amount of waste produced in the community.
  - Distribute information to businesses on waste-reducing purchasing policies.
  - Educate consumers about product life-cycles, and encourage them to make purchases that provide long term benefits.
  - Work with Economic Development to link industrial and commercial businesses to close the waste loop, by developing markets for by-products or identifying users for waste materials.
- Offer waste audits to commercial entities and the hotel/motel industry to help them find ways to reduce waste.

2. Maximize revenue and minimize operational cost from waste management services.

Implementing Actions

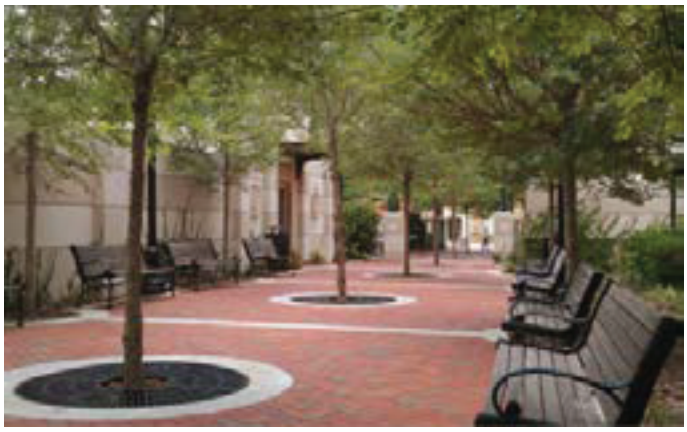
- Capture all household waste generated in Volusia County through the implementation of inter-local agreements with Volusia County municipalities.
- Routinely monitor operations and maintenance costs for additional savings.

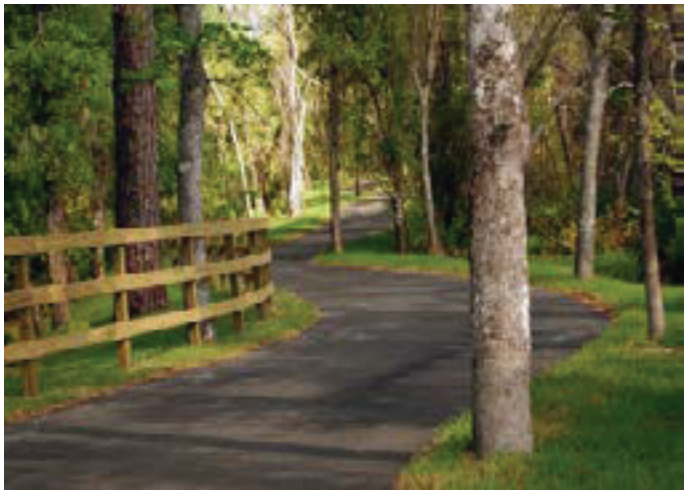
3. Use waste resources to create alternative energy at the landfill.

Implementing Actions

- Expand methane-to-energy generation at the landfill.
- Identify a pilot project for location of solar/wind electricity generation at the Tomoka Landfill.

In one day, the average person creates about 4.7 lbs of waste. Recycling provides us with a means to use that waste by turning it into something new, allowing us to further preserve the natural resources that would have been otherwise used to create those products.





Sustainability Summary

The objectives and implementing actions outlined in this chapter cover a wide range of issues and sectors of our community. While they are presented in one of the seven discrete goals of the SAP, oftentimes there are multiple benefits to an individual objective. **Table 2.1** lists each objective and demonstrates the sustainability benefits it provides. Those objectives that have a measurable GHG reduction benefit are indicated by a check in the GHG column of the table. The GHG reduction objectives are further explored and quantified in Chapter 3 to guide county decisions regarding future implementation.