

Green Works Orlando



2013 COMMUNITY ACTION PLAN



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MAYOR'S MESSAGE

In 2007, we launched Green Works Orlando – a generation-long endeavor to improve environmental sustainability in Orlando. Over the course of five years, we have made tremendous success through our efforts, including:

- Achieved more than \$1 million in annual energy savings
- Expanded the Downtown LYMMO bus circulator and began SunRail construction.
- Completed eight LEED-certified municipal buildings, including the first newly constructed LEED-certified NBA arena in the country
- Performed energy efficiency retrofits to 1,200 houses
- Planted 10,000 trees and established four community gardens

These accomplishments are a testament to our community's desire for a stronger, greener and more resilient Orlando.

I am proud of our accomplishments and the recognition we have received for our efforts to date, but we aren't finished. Now it is time to build on our success and continue to work towards an even greener Orlando. Under the leadership of my Green Works Orlando Task Force, businesses, agencies and residents gave generously of their time, expertise and passion to develop our Community Action Plan. This comprehensive plan will help guide our efforts to making Orlando the most sustainable City in America by the year 2040. The plan outlines a strategy to help us achieve our goals in seven focus areas: Energy and Green Buildings, Local Food Systems, Green Economy, Livability, Solid Waste, Transportation and Water.

To succeed, the Green Works Orlando Community Action Plan needs the support, cooperation and commitment of our entire City. Government, businesses and residents each have a critical role in the effort to make Orlando an environmentally sustainable, socially inclusive and economically vibrant community. I am confident that if we address these opportunities together, we will turn our goals into reality and continue to serve as a role model for other cities.

Working together, I know we can make a cleaner, greener and better Orlando for generations to come.

Sincerely,



Buddy Dyer



INTRODUCTION

Through the Green Works Orlando program the City of Orlando strives to become one of the greenest cities in America. Since 2007, the City has made significant progress in creating efficiencies in government operations and achieving reductions in costs, energy consumption, and associated greenhouse gas emissions. The City has also supported efforts to improve transit options, create green jobs, and transform into a pedestrian and bicycle friendly community. Leveraging this success, the City is now focused on fostering sustainability throughout the entire community, including residents, businesses and institutions.

Commitment to sustainability in these core areas will enhance quality of life, generate economic growth, and create equitable access to services for the entire Orlando community. On October 2, 2012, at the Mayor's State of Downtown Address, Orlando Mayor Buddy Dyer expressed his commitment to ensuring Orlando becomes the green city capital of the southeast United States. As a result, he launched the Green Works Community Action Plan process. This process resulted in the identification of ambitious goals and actionable strategies in seven distinct focus areas:



ENERGY/GREEN BUILDINGS



FOOD SYSTEMS



GREEN ECONOMY



LIVABILITY



SOLID WASTE



TRANSPORTATION



WATER

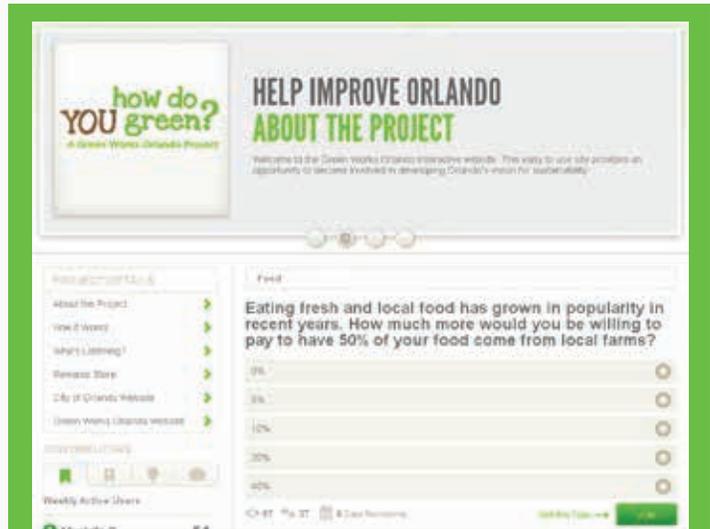
Community Engagement Process

Given the focus of this Plan on the entire Orlando community, the City invested great effort in gaining broad engagement by community representatives. The City sought to achieve this through the creation of a Task Force and focus area roundtables, hosting public forums and ongoing online engagement.

The Task Force is comprised of Orlando’s businesses, institutions and non-profit leaders. Each of the 20 Task Force members was appointed by Mayor Dyer and charged with developing recommendations on how to achieve Orlando’s goal of becoming one of the greenest cities in America. During the plan development process, the Task Force met on five separate occasions to review goals, prioritize strategies for each focus area, identify appropriate implementation plans and make final recommendations to the Mayor. The Task Force also shaped the overall development of the Plan and is anticipated to play a role in the implementation of the recommended strategies. The results of the Task Force’s efforts are reflected in this Plan.

A roundtable was created for each of the seven focus areas and consisted of technical experts from the respective focus area. A member of the Task Force was appointed as the chair for each of the roundtables. Two meetings were held per focus area over the course of a month, and more than 200 people attended at least one of the 14 meetings. At the roundtables, participants identified effective strategies for each focus area, prioritized the strategies and discussed implementation potential. Each roundtable provided the Task Force with a prioritized set of up to 10 strategies per focus area of the Plan for consideration.

Two public forums were held in late November 2012 to engage the broader community into the Community Action Plan development process. These intimate forums fostered in-depth dialogues between the City and the public on what a sustainable Orlando can look like and how it can benefit individuals.



ONLINE PARTICIPATION

To engage the general public in an on-going, meaningful way, the City created an online forum. The forum allowed the City to post questions and generate dialogue among participants to capture input and sustain ongoing dialogue around the Plan’s focus areas, goals, and strategies. Over the course of six months the site achieved the following results:

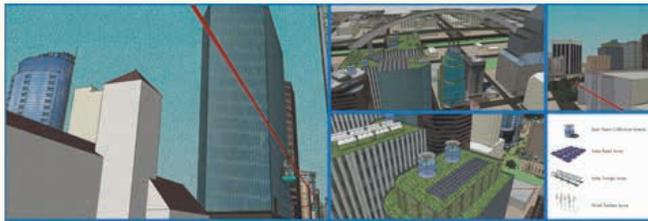
- 8,500 visitors to the forum
- 1,040 active participants
- 227 ideas provided
- 1,400 comments given
- 64,000 page views

All of the input from the public forums and the online engagement were summarized and provided to the roundtables and the Task Force for consideration and integration, as appropriate, into the final Plan.

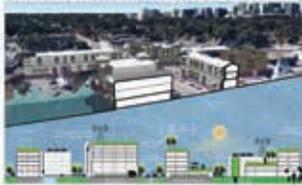


ENVISION 2040

Green Works Orlando launched a design competition, Envision 2040, to attract input from the design community and college students. This competition helped to visualize what Orlando, the most sustainable City in the southeast, will look like in 2040 if the Plan's strategies are implemented. The City received 28 entries from eight countries and nine states. Five professional judges, including Larry Scarpa, FAIA (Principal, Brooks + Scarpa Architects), and Mark Woodbury, AIA (President of Universal Creative, Universal Parks & Resorts) selected winners. A people's choice award was also selected through online voting.



PROMOTING CLEAN ENERGY



CREATING HEALTHY TRANSPORTATION



Envision 2040 Sponsors



Organization of the Plan

The Green Works Orlando Community Action Plan was developed to serve as the foundation for community sustainability. Achieving the vision as the greenest city in America was the primary driver in the process. Seven focus areas were identified along with goals, strategies, implementation plans and reporting metrics and targets were established for each. Goals were established for the year 2040 with interim targets for 2018. Additionally, two priority impact areas related to the economy and climate change were evaluated for each focus area and integrated into each chapter. Each focus area chapter is presented as follows:

Overview:

Why is the topic important to sustainability in Orlando and where is the City at today?

Impact:

► **Environmental Impact**

How will this topic area contribute to climate change or how will it be affected by climate change? Are there other environmental impacts?

► **Economy and Jobs**

How will this topic area create jobs or positively impact Orlando's economy?

2040 Goals and Interim Targets for 2018:

The identified goals and interim targets.

Priority Strategies:

Summary of the prioritized strategies for each focus area.

Best Practice:

Example from another city on how a related action was implemented and the benefits realized.



Green roof, installed on the City of Orlando fire station headquarters.

STRATEGIES

In addition to the strategies identified for each focus area, three overarching strategies have been developed to support overall implementation of the Green Works Community Action Plan. These strategies provide value to every focus area and will be a catalyst for implementation of other strategies to achieve Orlando's vision.

Creation of a Green Ribbon Commission

A plan on its own will not achieve the articulated vision. Implementation is essential. Far too often local governments attempt to take on the full burden of implementation, without necessary community support and buy-in. A body of committed stakeholders could assist in providing input on program prioritization and serve as a linkage to the broader community in implementing the Green Works Orlando Community Action Plan. The City will seek to create a diverse Commission that represents the residential, commercial, institutional and non-profit sectors of the City.

Education

Education is the cornerstone to every successful planning process. The majority of the recommended strategies will not be effectively implemented if the broader community is not fully aware of them or not aware of how to take action. The City will take significant strides to engage the entire Orlando community in the implementation of the Community Action Plan through a comprehensive three step process.

- **Marketing**

Successful Plan implementation must include an effective way to reach the community. Residents and businesses cannot participate in strategy implementation if they are not aware of them. The City's Communications and Neighborhood Relations office has significant resources and can work with key stakeholders to craft effective messages as a means to engage targeted audiences. Additionally, marketing and outreach tools such as the City's website, billboards, local groups, community centers and others can be leveraged to distribute information on the programs and opportunities to participate.

- **Training**

Engaging the community is simply the first step, the next is trying to effect behavior change. Many studies have shown that most Americans are interested in living in more environmentally friendly ways, but do not have the knowledge or the resources to easily do so. An effective training program could help build a more educated community that understands the connections between an individuals daily activities and Orlando's overall vision. Ideally, this program could lead to more ambassadors within the community promoting sustainable actions and the overall implementation of this Plan.

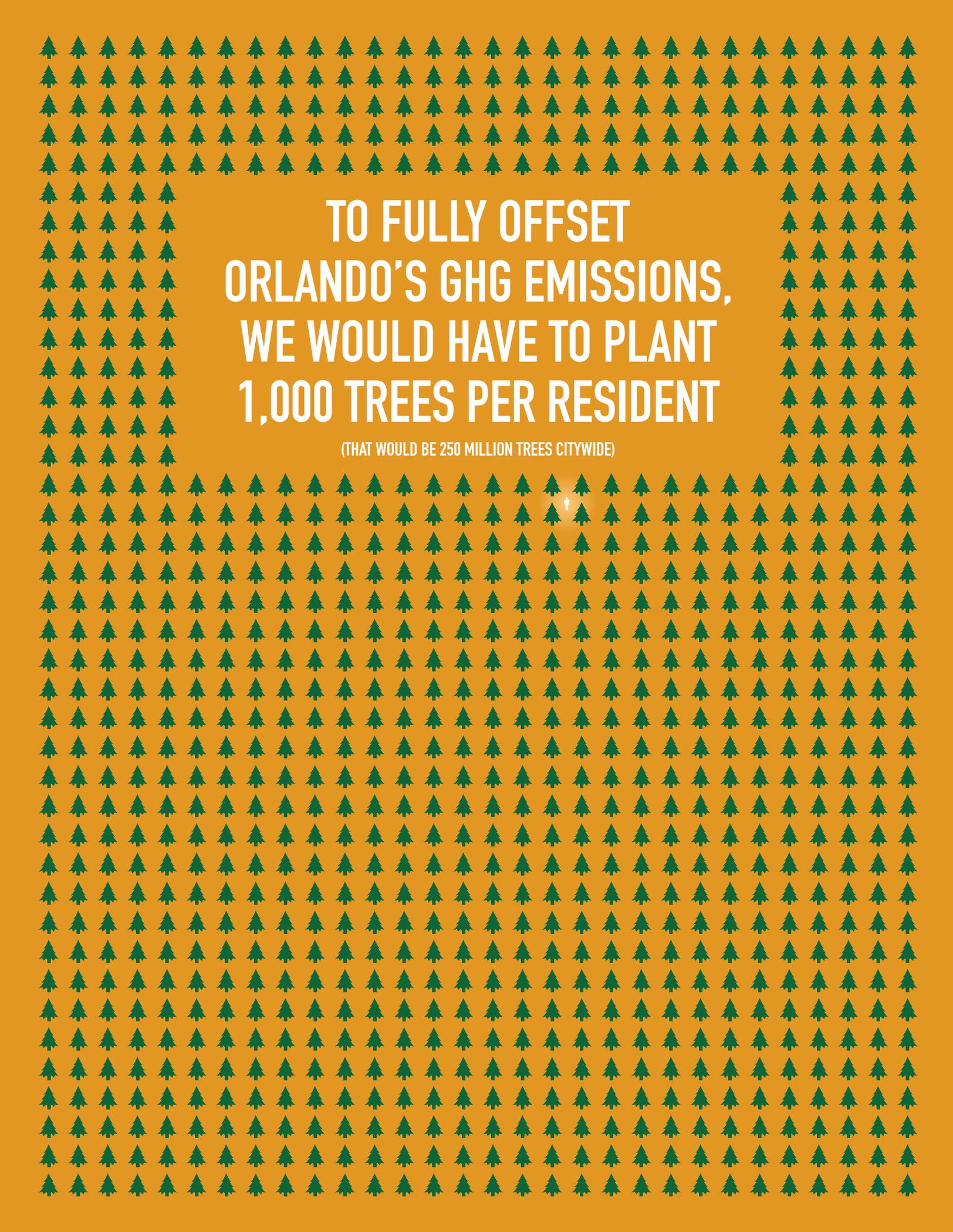
- **Celebrating**

Making these changes to our behavior is not easy and deserves to be acknowledged by the City and by others in the community. An annual report card tracking the implementation progress of each strategy will foster overall celebration, while a specific green awards or ambassadors program will allow the City to recognize those community members that are a part of the success.



Eco Districts

The eco district concept embodies everything that this Plan represents- livability, efficiency, neighborhoods, stewardship and a sense of place. "An eco district is a highly integrated neighborhood that is vibrant, resource efficient and engages residents in promoting human connections and well-being. It is home to smart buildings; strives to capture and reuse energy, water and waste on site; offers a range of transportation options; provides open space for people and natural areas for wildlife; and tracks tangible progress toward neighborhood sustainability over time." (Portland State University Institute for Sustainable Solutions). The City has begun to identify locations in Orlando where eco districts could thrive with the goal of creating a connected network of eco districts throughout the City minimizing sprawl and providing more services and options within walking distance to home and work.



TO FULLY OFFSET
ORLANDO'S GHG EMISSIONS,
WE WOULD HAVE TO PLANT
1,000 TREES PER RESIDENT

(THAT WOULD BE 250 MILLION TREES CITYWIDE)



ENERGY AND GREEN BUILDINGS



Overview

Currently, only 1.8% of Orlando’s energy comes from renewable sources, so implementing low-cost, renewable energy generation techniques are crucial for Orlando’s long term environmental and economic sustainability. Our climate and geographic location provide for tremendous solar energy potential, providing Orlando an opportunity to lead the Sunshine State and the southeastern United States in the use of solar as a main energy source. A recent study concluded that installing solar photovoltaic panels on each eligible roof in Orlando would generate 52% of the community’s electricity demand. Orlando is already home to high-tech industries and could become a clean technology hub in the near future. OUC, a municipal utility owned by the citizens of Orlando, provides a significant opportunity to facilitate greater energy efficiency and renewable energy investments. OUC already has plans to build Florida’s first community solar farm and to install digital meters that better track electricity use.

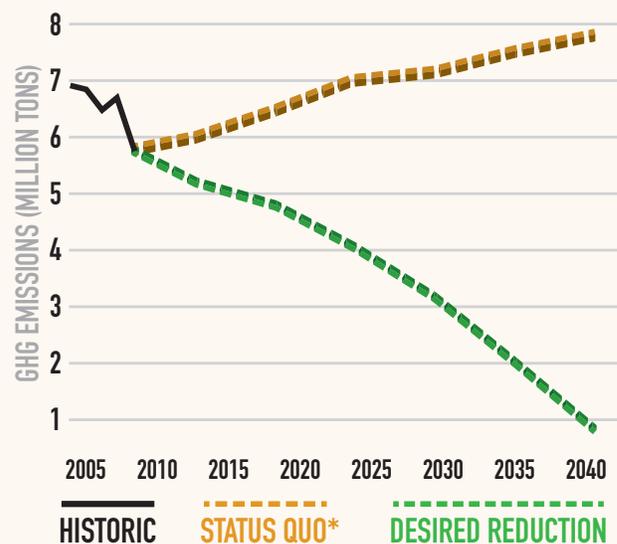
One of the greatest opportunities for Orlando to reduce energy consumption is to systematically perform energy retrofits to existing buildings and build “green” buildings – buildings that efficiently use energy, water and other resources, while reducing waste and pollution. Buildings are the number one contributor to greenhouse gas emissions and energy use, so ensuring new construction takes advantage of green building technology and aggressively pursues energy efficiency upgrades on existing buildings will have a large impact on sustainability goals. The City already realizes \$1 million in annual energy savings through its various green building and efficiency programs. In addition to

municipal buildings, there are approximately 100 certified green buildings in the City, along with hundreds of residential homes that have received some level of energy efficiency upgrades through though Federal, state and local programs.

Environmental Impact

Currently, most energy consumed in Orlando is generated through the burning of fossil fuels. This results in direct impacts on air quality and the emission of greenhouse gases (GHGs). Buildings are responsible for 76% of greenhouse gas emissions in Orlando. Clean, efficient energy consumption and green building design are critical for Orlando to minimize its environmental impacts and contributions to global climate change.

GREENHOUSE GAS EMISSIONS, PROJECTIONS THROUGH 2040



* 2011 per capita emissions multiplied by projected population growth



Economy and Job Creation

Energy efficiency and solar energy investments represent enormous economic opportunities for Orlando. Emerging as a leader in these industries will generate jobs around a new industry for Orlando, lower the energy cost burdens to residents and businesses and reduce Orlando's dependence on highly volatile fossil fuel prices. The design and construction of new green buildings and energy efficiency retrofits will create new professional and construction jobs, while the energy savings from the new greener buildings will translate to a lower cost of living and lower overhead for businesses. Increasing demand for renewable energy generation could attract additional clean technology research, development and manufacturing firms and other complementary industries. This will further spur economic growth and green job creation.

ENERGY BASELINE DATA (2012)

- Greenhouse gas emissions are 5,803,851 tons CO₂e
- 1.8% of electricity derived is from renewable sources
- Electricity consumption per capita is 12,003 kwh per year

2040 GOALS

The Task Force identified four core 2040 goals for Energy and Green Buildings:

- Reduce greenhouse gas emissions by 90% from 2007 levels.
- Obtain 50% of electricity from clean, renewable sources.
- Ensure 100% of new and existing buildings meet green building standards.
- Reduce total electricity consumption by 20% from 2010 levels.

2018 TARGETS

In order to ensure progress in the next five years, the Task Force also identified the following interim 2018 targets:

- Reduce greenhouse gas emissions 25% from 2007 levels.
- Obtain 8% of electricity from clean, renewable sources.
- Ensure 100% of new buildings meet green building standards.
- Reduce total electricity consumption by 5%.

STRATEGIES

Create a market-based program that offers incentives for building to meet green standards

A market-based program, such as a feebate system, rewards construction of green buildings over conventional buildings through incentives as opposed to requiring green building standards for all new construction. In a feebate system, builders have the option to use conventional approaches to development (i.e. building to standard code), but are assessed a fee to do so. Those that meet the green building standards receive financial incentives for their effort. This model provides more flexibility based on developer/builder preference and eliminates the need to adopt an entirely new building code. The feebate system can also be tiered to allow for different levels of improvement over the standard code. For buildings in specific areas, key green development priorities should be identified based on impact, such as green roofs or rain gardens for areas in need of improved stormwater management and builders should be encouraged to utilize those design methods to receive the rebates.

Develop financing programs for community-oriented energy efficiency upgrades and solar installations

Establishing a property assessed clean energy (PACE) financing program for commercial buildings would allow investments in energy improvements or renewable energy installations—considered improvements to the property—to be financed through a special assessment on the property paid back over a period typically up to 20 years. There are a number of commercial PACE programs in place throughout Florida that Orlando can look to for models. Legal restrictions will not allow a PACE program for residential properties at this time, but the City should pursue other creative financing options for residential energy improvements that reduce the up-front capital investment burden for the homeowner. Examples of such programs may include, but are not limited to establishing a revolving energy loan fund or enabling on-bill financing through utility billing provider.

Implement policies and technologies to take advantage of OUC's smart grid investments, focusing on EcoDistricts and market-based innovations

A smart grid enables greater monitoring, two-way communication and control over the energy system—both for the utility and the



consumer. A smart grid is an electrical grid that gathers information to improve system efficiency and reliability. OUC has made large investments in smart grid technology, such as automated “smart” meters. The City and OUC should explore opportunities to leverage these investments to further explore smart grid technology and to support district-scale sustainability efforts. For example, as part of the overarching strategy to create an eco district, the City and OUC can leverage public-private investments to benchmark energy use, monitor and provide performance feedback through smart grid technologies, implement energy efficiency improvements, expand upon district chilled water infrastructure and increase the use of renewable energy. Implementing a pilot eco district will provide opportunities to implement new technologies and financing mechanisms while it serves as a living laboratory and potential model for future investments in energy innovations throughout the City.

Establish an energy benchmarking and disclosure policy

Similar to an MPG rating placed on vehicles, energy benchmarking and disclosure provides essential information to consumers about the performance of the property they are considering purchasing or renting. This strategy establishes requirements for the benchmarking of energy performance for existing residential and commercial buildings as well as public disclosure of that information. Residential buildings should be audited and rated according to the Home Energy Rating System (HERS) and commercial buildings benchmarked through the EPA Portfolio Manager tool. A size threshold may be determined for the benchmarking requirement for commercial buildings, such as greater than 10,000 square feet. The City should explore partnerships to leverage funding and technical resources for providing free or discounted energy assessments and benchmarking services. The City will also need to create a database for tracking all benchmarking disclosures. OUC’s

access to consumption data will likely facilitate the benchmarking and disclosure process.

Develop a roadmap to position Orlando as the solar leader in the southeast United States

The City of Orlando and its partners will develop a roadmap for establishing itself as the solar leader in the southeast United States. This roadmap will provide resources and tools for cost-effective investments in residential, commercial, community and utility-scale solar. It will provide detailed plans for marketing new or updated solar programs and for financing mechanisms. The roadmap should include, but is not limited to the following programs:

- Community solar farms – building on OUC’s first community solar farm project that allows customers to purchase energy from the project at fixed prices on a consistent basis.
- A 10,000 Solar Rooftop or Net Zero Energy Home challenge – implementing a challenge and providing incentives and resources for installing solar on 10,000 rooftops in Orlando.
- Solar leasing and financing – low-interest financing and incentives that are in line with market prices and advance downward pressure on installation costs.
- Utility-scale solar – leveraging economic development policies and incentives to encourage solar companies to locate in Orlando.

Education and Outreach

Each of these strategies will require continued outreach and education to consumers, developers, project reviewers and others. Orlando is home to a wealth of knowledge on energy efficiency, green building design and clean technology development. It will be essential for Orlando to tap into the resources available through OUC, the Florida Solar Energy Center, the University of Central Florida and others for continued energy and green building innovation. Partnering with OUC and building on existing outreach materials, the City should establish a campaign to raise energy awareness among both residential and commercial consumers, while implementing highly visible pilot programs and demonstration projects throughout the City.

BEST PRACTICE

City of Austin, Texas

The City of Austin, Texas through its “rethink Austin” sustainability program and the efforts of its municipal utility, Austin Energy, has become a national leader in the area of energy and green buildings. Beginning in the 1990s, the city began implementing programs and policies to reduce the use of energy. Some of these programs include energy audit requirements for residential and commercial buildings prior to sale, low-interest loans for energy efficiency and solar installations, a green power energy pricing program that locks in long-term contracts from renewable sources and the nation’s first local green building program to support and rate buildings. In 2011, Austin made the policy decision to avoid future fossil fuel energy generation by focusing on efficiency and renewable energy first. Their 2020 goal is to eliminate 800 megawatts of peak energy demand and derive 35% of electricity from renewable sources. Austin Energy now invests more than \$17 million a year in energy efficiency and renewable energy programs. Through these programs, Austin has:

- Achieved 100% renewable energy for municipal buildings, including wastewater plants and the airport.
- Achieved more than \$170 million in customer utility savings.
- Supported the installation of 1,200 customer-owned solar energy systems with nearly 5 megawatts of generation capacity. Solar Austin estimates the programs support more than 600 jobs and 40 different companies performing solar-related business in Austin.
- Purchased more than 800 million kWh of clean energy each year through their GreenChoice program.
- Certified more than 10,000 green buildings through the Austin Energy Green Building rating program.
- Supported more than 200 energy auditor jobs in conjunction with the Energy Conservation Audit & Disclosure ordinance that requires houses more than 10 years old to receive an energy audit prior to sale.

More information is available in Appendix D.



ONLINE COMMENT – ENERGY:

Implement Building Energy Benchmarking and Disclosure. This is a fantastic way to catalyze small business and drive energy efficiency improvements. New York, Washington DC and other major cities have had some great success and adoption because of this simple policy. I’m in full support!

–Chris C



LOCAL FOOD SYSTEMS



Overview

Interest in locally grown and produced food has gained popularity in recent years, as consumers become more aware of their local food economies and seek out fresher food options for their families. A mild central Florida climate, cultural heritage of agriculture and passionate residents and business owners make Orlando well positioned to emerge as a leading local food hub. A food system that gives all residents and restaurants access to locally grown and produced products and healthy food items helps reduce the distance food has to travel to reach Orlando tables, enhances the health of residents and keeps more dollars in the local economy. Having food grown and produced locally makes Orlando more resilient to adverse effects of climate change and sea level rise, particularly disruptions related to hurricanes or other weather events.

A food system comprises the entire cycle of food production and consumption, including growing, transport and disposal. There are more than 12,000 acres of food-producing land in Orange County, mostly falling outside of the City limits. Opportunities for urban agricultural, such as urban farms, community garden plots and kitchen gardens, will be vital to increasing the share of food production provided within the City limits. In 2013, the City has 159 community garden plots, 7 farmer's markets and 83 grocery stores, but only about half of the City's residents have access to fresh food within a mile of their homes. And while Orlando is home to more than 70 food processing and distribution facilities, small and medium sized farms have expressed difficulties over accessing these facilities.

Environmental Impact

Conventional food production requires substantial use of fossil fuels, pesticides and fertilizers and often travels long distances to reach consumers. Local food production reduces the total miles that food needs to travel, decreasing fossil fuel use and greenhouse gas emissions related to the food system. Additionally, local farmers are often small farms, which tend to use fewer pesticides and have an overall smaller environmental impact from run-off, water usage and production techniques.

Economy and Job Creation

According to a 2007 study by the Orlando Farm Bureau, the agriculture and food industry sectors contributed \$7.2 billion to the local economy and created 77,091 jobs. Implementing strategies to increase and promote urban agriculture is likely to





increase the number of jobs associated with urban farms, food processing, distribution, learning farms, community gardens and farm-to-school or farm-to-hospital programs within the City. Giving people the ability to grow their own food helps ensure that families facing tough economic times retain access to fresh, healthy and affordable food. Increased access to fresh, local foods will help local restaurants and other entrepreneurs capitalize on the growing trend of “culinary tourism.” These efforts will help keep local dollars in Orlando, create marketing and business promotion opportunities and provide affordable, fresh, healthy food options for residents, bolstering a more robust and resilient local economy.

FOOD BASELINE DATA (2012)

- 52% of residents are within ½ mile of a grocery store, fruit and vegetable market or farmer’s market
- 159 community garden plots
- 1 food hub
- 71 distributors and processing plants

2040 GOALS

The Task Force identified two core 2040 goals for Local Food Systems:

- Ensure access to affordable, healthy food options (community gardens, grocery stores or farmers markets) within ½ mile of every resident.
- Increase local food assets (local food hubs, food production or distribution facilities, household gardens, community garden plots) by a factor of ten.

2018 TARGETS

In order to ensure progress in the next five years, the Task Force also identified the following interim 2018 targets:

- Ensure access to affordable, healthy food options within 1 mile of every resident.
- Double the local food assets.

STRATEGIES

Establish a Food Policy Council

The Food Policy Council will drive implementation on all issues related to creating and maintaining a sustainable local food system. A number of significant ideas related to a sustainable and equitable food system were generated through the sustainability



planning process. The Task Force prioritized the creation of the Food Policy Council so that experts can come together, on a regional scale, to vet and implement strategies that enhance local food production and increase equitable distribution of food throughout underserved areas in the region. The Task Force recommends that the Food Policy Council consider supporting the creation of more regional food hubs to connect growers and producers with consumers, implementing farm-to-school programs and partnering with other local governments and non-profits to establish learning farms and kitchens throughout the community.

Review and amend code to allow more local food production

The City is amending codes to allow front-yard gardens and approved pilot program for urban chickens. However, a more comprehensive approach is desired for the long-term sustainability of the local food system. To increase the availability of locally grown produce and local products at farmer’s markets, the City should specifically allow for kitchen gardens, urban chickens, and other urban agriculture in residential districts; allow for off-site sales of extra crops from gardens and allow small-scale food production as a legal home-based business. Clarifying and simplifying rules and restrictions relating to food production will allow City residents to participate in the local food system as more than just consumers, while ensuring the quality of life in residential areas is preserved.



Establish a food labeling program

The food labeling program will allow consumers to readily identify locally grown or produced food items. When consumers show preference for purchasing local food, local growers and producers receive a higher percentage of the market share and may be able to expand production to meet a growing demand. The Roundtable and Task Force defined “local” as those food items grown or produced within Orange County, although this concept may be further vetted through the Food Policy Council. The University of Florida’s Institute for Food and Agricultural Sciences (IFAS) Extension in Orange County is well positioned to certify locally-produced foods sources, because they already work closely with local growers.

Create a preferred local purchasing plan

The preferred local purchasing plan will allow the City to offer a preference to locally grown or produced products when making purchasing decisions. A preferred local purchasing plan does not mandate that the City purchase local items, but rather assures preference for a local item when other factors such as price and availability are relatively equal. The concept is similar to preferences the City shows to local, minority and women owned businesses and would apply only to municipal contracts for facilities and municipal events. Through supporting local growers and producers, the City can help generate local jobs, stimulate economic growth and bolster the local food system to provide healthier food choices to residents.

Develop community gardens and urban farms to serve every neighborhood

The Task Force recommends increasing the number of community gardens and urban farms to increase access throughout the City’s diverse neighborhoods. Community gardens and urban farms create a space for Orlando residents to learn about food production; grow their own food; take advantage of amenities like compost, raised beds, and ideal sunlight; be more active and get to know their neighbors. Partnering with existing organizations and individuals and marketing broadly, the Food Policy Council can create a demand for more community gardens and urban farms.

Education and Outreach

The Food Policy Council will drive implementation on all issues related to creating and maintaining a sustainable local food system. Broad education will be required to ensure the community understands the impact and opportunity associated with the implementation of these strategies. The Food Policy Council will be instrumental in engaging the community to enhance knowledge of new zoning and land use changes, assisting with marketing for a new food labeling program, promoting local vendors to engage with the City through the local purchasing program and supporting the expansion of community gardens and urban farms throughout Orlando. The outcomes of a successful education and outreach program related to food systems could include healthier food for all, improved local economy, increase in job opportunities and a reduction in greenhouse gas emissions.





BEST PRACTICE

City of Cleveland, Ohio

In 2007, more than 26 organizations helped form the Cleveland-Cuyahoga County Food Policy Coalition. The Coalition is comprised of a diverse group of interests that include hunger advocacy, environmental protection, public health, urban and rural farmers, economic development, community organizing, sustainability and academia and local government. Start-up funding for the program was provided by two local community foundations. The Coalition's overall goal is to develop and implement a comprehensive approach to the Cleveland region's food system.

In the intervening years, the Coalition has facilitated tremendous success, including:

- Passage of the City of Cleveland's Local and Sustainable Purchasing ordinance, which provides a 2-4% bid preference for companies that source products locally and/or are certified sustainable businesses. The City also provides bid preference and evaluation credits for companies that buy at least 20% of their contract amount from regional food producers.
- Discounted water rates for markets and community gardens.
- Provision of multi-year licenses for community gardens, urban farms and greening projects.
- Adoption of regulations that allow for hens and bees.
- Issuance of economic development grants up to \$5,000 for equipment related to growing and selling produce.

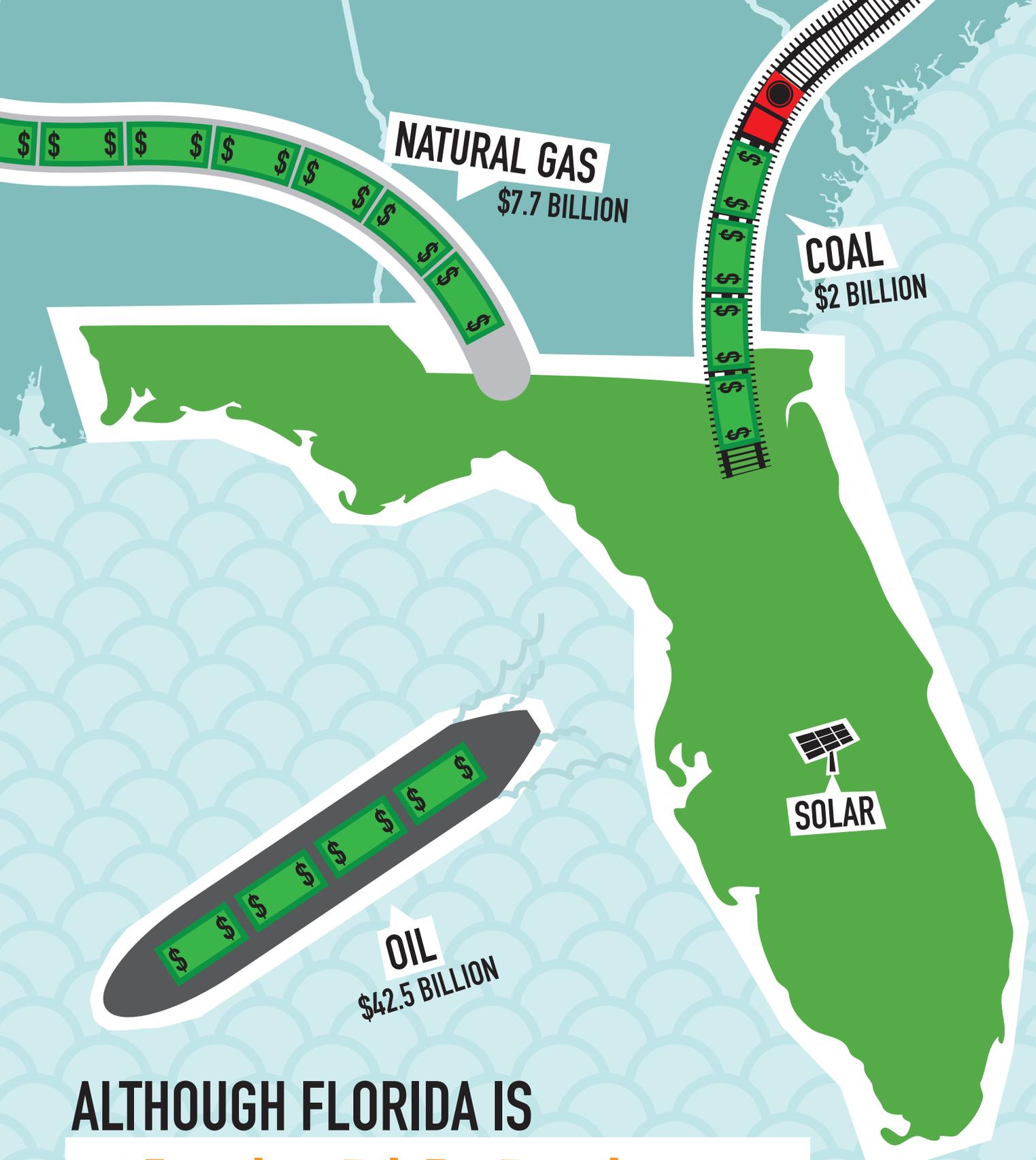
The City now has more than 200 community gardens, 20 urban farms and 25 community supported agriculture programs. The Coalition is not done. An economic analysis determined that the Cleveland regions spends \$3.4 billion annually on food purchases, with less than 1% of the food produced in the region. This report also found that increasing local food purchasing from 1% to 25% could "create 27,664 new jobs, providing work for about one out of eight unemployed residents."¹ Therefore, the Coalition and its partners issued an RFP in April 2013, to implement a sustainable food business cluster that will help the region get closer to the 25% goal.

More information is available in Appendix D.

ONLINE COMMENT – FOOD:

Often times, people use "urban farm" and "community garden" interchangeably. While community gardens are great, Orlando needs to start serious food production. The city should begin finding spaces that can be turned into real farms that can feed us well.

– Trevor F



ALTHOUGH FLORIDA IS
THE SUNSHINE STATE,
LESS THAN 1% OF OUR ENERGY
CONSUMPTION IS SOLAR.



GREEN ECONOMY



Overview

A healthy economy incorporates three integral pillars of sustainability and is often expressed as part of the “the triple bottom line” or “people, planet, profit”. Achieving the goal of becoming one of the greenest cities in the US will require Orlando to attract and grow companies that incorporate these values and create green jobs that benefit the environment or conserve natural resources. The green economy includes jobs like green building design and construction, clean technology, local food production, recycling and composting and sustainability consulting and education.

There are currently more than 11,000 green jobs in the Orlando region, including companies focused on solar manufacturing, recycling, bio-energy, wind turbines, advanced energy storage and green building design. To train students for the jobs of the future, more than 150 courses in sustainability and clean tech related fields are taught at local colleges and universities. This commitment to the future workforce will provide Orlando with a strong economic base that will be attractive to new businesses who wish to relocate or to home-grown businesses who wish to expand.

Green economic development also entails the greening of all segments of Orlando’s economy, including purchase of more sustainable products, reducing solid waste disposal, purchase of local food and investments in efficient and renewable energy. In many cases, efforts to improve environmental sustainability save money via saved utility, transportation or solid waste disposal costs.

Environmental Impact

By definition, green jobs contribute to the improvement of the environment through more efficient processes and reducing impacts on environmental resources. An increase in the number of businesses filling green jobs in the Orlando area will increase the knowledge of how to live and operate more sustainably and will reduce the overall impact of the business community on climate change. People with green jobs often act as ambassadors by introducing family and friends to new practices and concepts. Companies not directly participating in green business programs can also reduce their environmental impact by incorporating sustainable business practices. In many instances, reducing environmental impact reduces waste, which therefore reduces business cost.

CURRENT AND TARGETED GREEN JOBS IN ORLANDO





Economy and Job Creation

A skilled workforce with access to robust educational programs increases the economic competitiveness of Orlando and the Central Florida region. Participants at the Green Economy Round Table meetings voiced a desire for Orlando to be an exporter of green services and goods, rather than an importer from other communities. In turn, increased demand for Orlando green products and services will create new local jobs.

ECONOMY BASELINE DATA (2012)

- 11,066 green jobs in the Orlando-Kissimmee-Sanford MSA
- 16MWh of commercial electricity consumed per job per year

2040 GOALS

The Task Force has identified two core goals for Green Economy:

- Increase green job count by 35,000.
- Reduce the dependence of the local economy on energy.

2018 TARGETS

In order to ensure progress in the next five years, the Task Force also identified the following interim 2018 targets:

- Increase green job count by 5,000.
- Decrease average commercial electricity consumed per employee by 10%.
- Double the number of businesses participating in a green business certification program.

STRATEGIES

Create a green business certification program

The City or a partner non-profit should create a green business certification program to recognize and reward projects that meet this Plan’s sustainability goals. Components of this program should include a City certification for meeting a third-party green standard, recognition from the Mayor and City Council and possibly fee reductions for projects that advance this Plan’s goals. The City may also want to publicly acknowledge any local business, non-profit, academic, cultural or healthcare institution that demonstrates extraordinary performance regarding sustainability. An annual awards ceremony is an effective way to garner support for broader sustainability initiatives and to ensure that those that are operating

specifically in support of sustainability goals are praised, increasing their prominence in the community.

Invest in new sustainable infrastructure

To stay competitive in the global marketplace, the City and its partner utilities should continue to invest in new infrastructure, including fiber optics and smart grid technologies. Widespread availability of fiber optic infrastructure for high speed internet access and communications will provide Orlando with an economic advantage when competing with other cities for high tech and clean tech industries. Laureate Park, a newly developed residential neighborhood, offers fiber optic cable internet access at speeds up to 1,000 times faster than DSL. This allows more people to work from home, thus reducing the number of single occupancy vehicles on the road. A smart grid is an electrical grid that gathers information that will improve system efficiency and reliability. OUC has successfully installed components of a comprehensive smart grid system and is beginning to learn the best ways to use the information gathered. OUC should continue to leverage this asset to support energy efficiency and educate the public about energy use. Orlando must also continue to invest in public infrastructure that advances sustainability goals, such as advanced wastewater treatment facilities; reclaimed water utility lines; public transit facilities and service and multi-use trails for walking, biking and other non-motorized uses.



Create and implement an economic marketing program targeted at sustainable industries

The City and its partner economic development organizations should prepare a marketing strategy and program to attract targeted green industries, such as renewable energy, green construction and clean tech industries and promote local businesses in the same sectors. The City can work with local and national site selectors for clean tech and sustainable industries to prepare a marketing package for available inventory of land and buildings, which may include brownfields, greyfields or other sites suitable for infill redevelopment. In order to provide a clear path for potential investors, the inventory should include due diligence documentation and title reports necessary to satisfy lending requirements. This marketing program, combined with development incentives and outreach to site selectors, will highlight opportunities for businesses relocating to the area and home-grown businesses that are ready to expand.

Expand upon Green Destination Orlando tourism program

Tourism and hospitality is a major component of the metro Orlando's economy, with an estimated 50 million visitors per year. The City should partner with the United States Green Building Council (USGBC) Central Florida Chapter's Green Destination Orlando program to promote a complete sustainability experience for visitors. The program's vision is

that sustainability should be experienced "from the moment a visitor steps off the plane in Orlando, to the transportation to their hotel, from their stay at local lodging, to their daily activities (be it a conference or family vacation) and all the way back to the airport - a complete loop that never breaks." This program, currently in use by certain pilot hotels and entertainment venues, could be expanded to include the Orlando International Airport; taxi, bus and rental car companies; restaurants; shopping and retail centers; additional hotels and entertainment venues and other hospitality locations. Additionally, the City or a local non-profit could determine the feasibility of establishing a local carbon offset program, which allows visitors to pay into a fund to support greenhouse gas emissions reduction efforts locally to Orlando including tree plantings, installation of electric vehicle charging stations and the availability of hybrid rental cars.

Education and Outreach

Each of these strategies will require continued outreach and education to residents, developers, business owners, educators, elected boards and City staff. Through the Green Works Orlando program and website, the City can act as the clearinghouse for information. The City will need to leverage partnerships with external agencies, including Orange County, OUC and the USGBC to promote their existing programs to a larger audience.

Early construction on Orlando SunRail Station, 2013





BEST PRACTICE

Montgomery County, Maryland

Businesses often use large amounts of energy and resources due to their large square footage, number of employees and operating practices. The Montgomery County Green Business Certification Program in Maryland was designed to recognize businesses and other entities that have taken voluntary steps to protect, preserve and improve the environment through their commitments to conserve energy and water, reduce their carbon footprint, generate less waste and recycle.

The program was developed with the help of the Montgomery Chamber of Commerce, Department of Environmental Protection and Montgomery College. Each business applies by achieving certain checklist actions and supplying a fee to the program ranging from \$100 to \$250. Certification, which is valid for three years, includes on-site verification conducted by trained experts. The program director estimates that a similar program could launch with \$40,000 and require less than two years of planning.

Each certified business benefits from enhanced reputation and recognition (website advertisement, window decal and program logo), cost savings through improved efficiency and a competitive advantage as a green business. At the program's two-year anniversary in 2012, 35 diverse organizations had been certified including a bank, orthodontist, furniture company, non-profit organizations and an international hotel chain.

More information is available in Appendix D.



ONLINE COMMENT – GREEN ECONOMY:

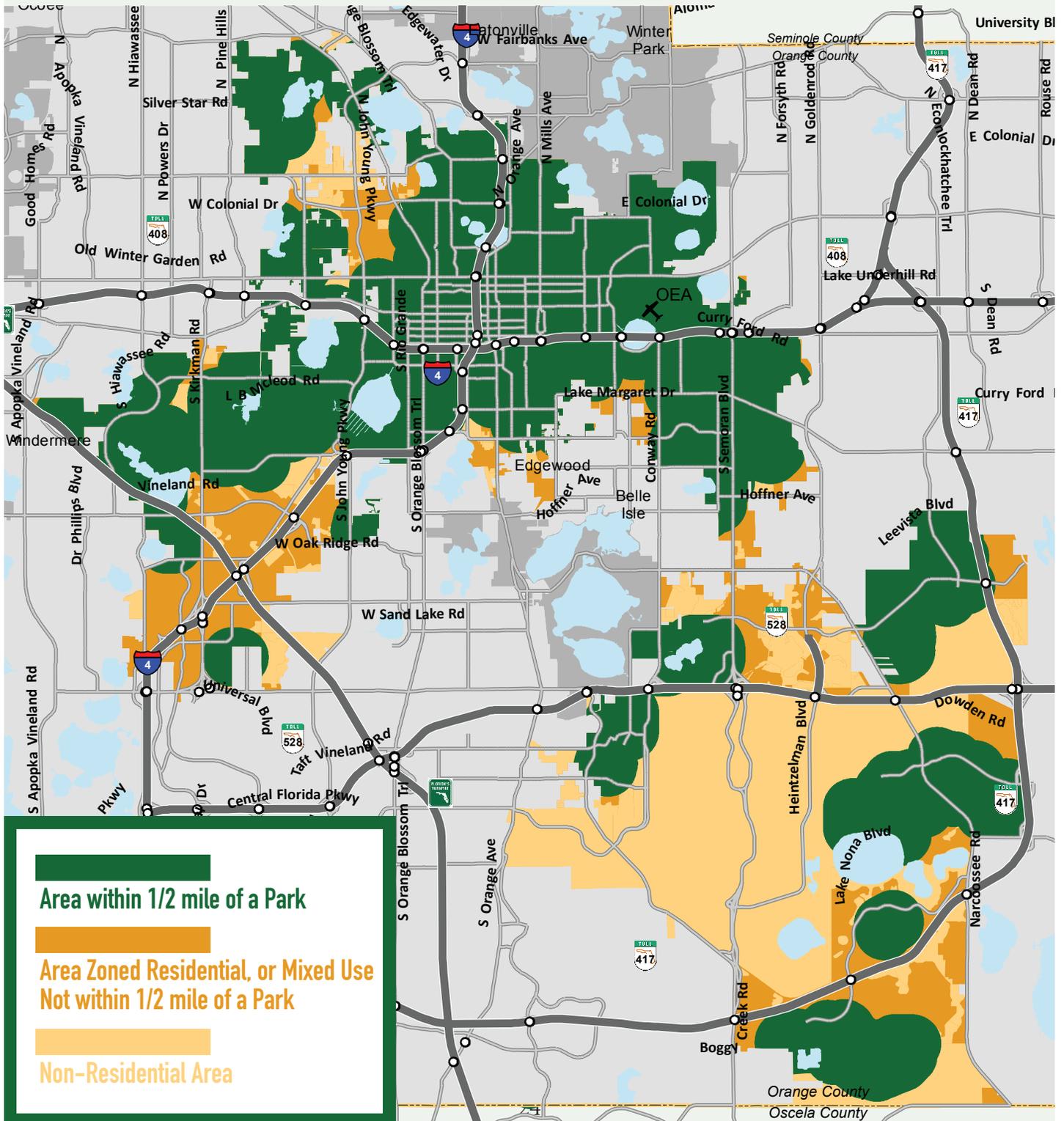
Create partnerships with local Central Florida renewable companies to implement job training and internship positions for local college students. These positions can range from electrical engineering and design to construction jobs.

– Lindsay H

CITY OF ORLANDO



Access to Parks 2012





LIVABILITY



Overview

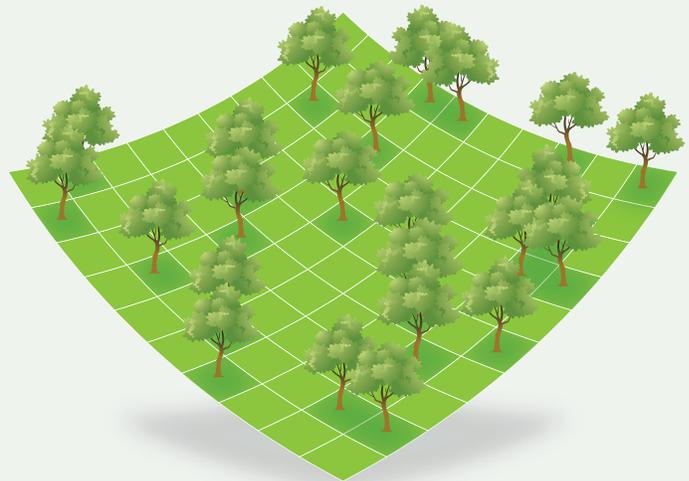
Orlando has a well-earned reputation as “The City Beautiful” due to its clean tree-lined streets, plentiful lakes, strong neighborhood connections and well-landscaped parks. These features create a feeling of “livability” that make the tasks of daily life in Orlando enjoyable and productive. Partners for Livable Communities states that “livability is the sum of the factors that add up to a community’s quality of life — including the built and natural environments; economic prosperity; social stability and equity; educational opportunity and cultural, entertainment and recreation possibilities”. This type of planning takes into account how we get around, what housing choices we need, whether jobs and shops are convenient, our ability to access parks and schools and what opportunities we have to get to know our neighbors.

Livable communities meet these planning goals by establishing a compact, dense, development pattern that efficiently uses land while providing opportunities for residents to live near schools, employment centers and public transit links. Livable communities balance the needs of the built environment and the natural environment by recycling previously developed properties, resulting in more infill redevelopment instead of “greenfield” development on agricultural, rural or environmentally sensitive lands.

In Orlando’s newest neighborhoods, such as Laureate Park in Lake Nona, the City has worked with the developer to plan for community gardens and neighborhood gathering spaces during the design phase. In established neighborhoods, impact

fee incentives for infill development seek to promote re-use of existing buildings and job creation near existing residential areas. However, some neighborhoods, particularly the “middle-aged” neighborhoods developed in the 1960s to 1990s, suffer from poor pedestrian and transit connectivity and lack of proximity to job hubs. In these areas, the City has an opportunity to promote social interaction and investments in the built environment by improving sidewalk connectivity, establishing community gardens and identifying commercial redevelopment opportunities in nearby corridors such as Orange Blossom Trail, John Young Parkway, Colonial Drive and Semoran Boulevard. The City’s Growth Management Plan and Land Development Code have been successful in creating the foundation for a

TREES COVER 23% OF ORLANDO





sustainable and livable community. The neighborhood is the primary building block for the City of Orlando. There are more than 100 named neighborhoods, each with a unique character and identity. There are 16 planned or emerging walkable neighborhoods in the City, and a key tool to create a more sustainable City is enhancing connectivity between neighborhoods, schools, transit and employment centers. For this reason, the Livability Focus Area is closely linked to the Transportation Focus Area.

Environmental Impact

Livable communities that are compact, walkable and bikeable encourage non-motorized trips, reducing vehicle miles traveled and associated greenhouse gas emissions. Communities with multiple entrances and exits disperse traffic to a roadway network, rather than focusing it on a single arterial road, which typically leads to congestion and increased emissions. Compact communities require a smaller development footprint than conventional highway commercial and suburban oriented development, resulting in a more efficient use of land and additional open space. If alternative transportation modes become widespread, demand for parking spaces will decrease, and surface parking lots and small infill lots will become an untapped resource for new development that are well served by existing infrastructure. This reduces the demand for “greenfield” site development, which consumes open space, requires construction of costly new infrastructure and increases vehicle miles traveled.

Economy and Job Creation

Enhancing the livability of Orlando will help attract and retain businesses here in Orlando. Not only are businesses prospecting for low costs, they are looking for locations that help attract top talent. Enhancing the quality of life will help Orlando compete for global talent and businesses and help attract even more tourists. Providing incentives and opportunities to increase residential density and non-residential intensity within the City of Orlando increases the overall tax base, which allows the City to continue to provide high quality municipal services to all residents. Creation of new employment centers within the City will result in temporary construction jobs as well as new direct jobs. Infill and redevelopment may use existing public

infrastructure, preventing the expense needed to extend roads, water, sewer and power lines.

LIVABILITY BASELINE DATA (2012)

- 1 Completed village
- 12 Emerging villages
- 23% Tree canopy coverage
- 82% of residents within ½ mile of a park
- 63% of adults are obese or overweight
- 9.9% of adults have diabetes

2040 GOALS

The Task Force identified four core goals for Livability:

- Develop and enhance 25 quality walkable villages inside the City.
- Ensure that 95% of residential addresses are located within ½ mile of a park or open space.
- Increase tree canopy to 40%.
- Reduce obesity and diabetes rates.

2018 TARGETS

In order to ensure progress in the next 5 years, the Task Force also identified the following interim 2018 targets:

- Increase the number of “completed” urban villages from one to three, and increase the number of “emerging” villages from 12 to 15.
- Ensure that 85% of residential addresses are located within ½ mile of a park or open space.
- Increase tree canopy coverage to 27%.

STRATEGIES

Create a series of unique, vibrant, pedestrian-friendly, walkable villages

Leveraging the existing neighborhood model, Orlando can promote the uniqueness of each area, while creating a more livable, pedestrian friendly environment. These villages will be planned with pedestrian and bicycle trails, shaded sidewalks and exciting destinations. Overtime, the villages should also demonstrate specific sustainability concepts, such as smart grid, integrated storm water management or solar orientation for buildings. To achieve success over the next five years, the City should:



- Ensure transit routes, bike lanes and pedestrian trails connect the villages with other established neighborhoods and destinations.
- Create a program for place-making strategies focused on the walkable villages and identify implementation projects in the capital improvements program.
- Evaluate the existing capital improvements program to determine if proposed projects need to be re-prioritized to better support urban villages.
- Establish development standards and design guidelines that ensure future development projects are consistent with the 2040 goals.



Increase density in mixed-use areas, especially those served by or planned for transit

Orlando’s zoning districts in mixed-use areas allow for relatively high densities and vertical mixed-use “by right.” The City should develop policies that facilitate greater mixed-use development and density within transit-ready neighborhoods. The City should further explore policies, programs and financial incentives to promote more infill development and a greater variety of housing types, like:

- Modify zoning rules to allow for well-designed accessory apartments, duplexes, townhomes and small multi-family projects (3-5 dwelling units for an infill site) in more zoning districts.
- Develop a program based on the successful downtown incentive program that sparked redevelopment

a decade ago to other key areas targeted for infill (e.g. Main Street districts).

- Implement financing options for vertical mixed-use, potentially partnering or supporting pilot projects in areas targeted for mixed-use.

Coordination with Orange County Public Schools is also key to address school concurrency requirements in areas targeted for more density, allow more children to walk and bike to school by addressing school location and design and link the marketing of residential units to quality and location of schools. This strategy should be focused to complement the creation of walkable villages or “eco districts,” in order to coordinate planning efforts and truly support the walkable, bikeable, transit-ready goals for these locations.

Promote quality urban design and landscaping, focusing on the villages and connections to villages

Dense urban villages work best when they have clear, consistent and high-quality urban design requirements. They also help maximize and protect property values. Where design standards exist today, the City should reexamine standards to ensure they are achieving the desired outcomes and revise as necessary. A developer’s forum can identify barriers or issues with the existing design standards, as well as identify potential design solutions for new and emerging product types. Within the walkable villages, adopt urban design standards or zoning overlays to prioritize pedestrian and transit-oriented design principles. Streetscape and sidewalk improvements should be prioritized within these villages. Signage standards that focus on the pedestrian rather than





automobile may also help further the unique design qualities for each village. The City and planning partners should sponsor an ongoing workshop for design through an established Orlando Urban Design Center, assisting residents and developers on creating better designs and advancing the dialogue on urban design through architectural libraries, lectures, workshops, and demonstration projects.



Implement a tree initiative to increase Orlando's tree canopy to 40%

The 2004 hurricane season produced substantial loss to Orlando's valued tree canopy. These trees were valuable for their natural beauty and for providing shade to pedestrians and buildings, providing habitat for wildlife and for sequestering carbon while releasing oxygen to the atmosphere. In order to increase overall tree canopy to the 2040 goal of 40% citywide, the City should champion the One Person One Tree Initiative through a coordinated marketing and outreach strategy. The City should streamline and incentivize the planting of trees on private property, including businesses, residences and non-profit organizations. The City should use tree canopy coverage GIS maps to identify locations with the greatest need for new trees, emphasis should be placed on increasing the number of trees planted on public property and partnering with non-profit organizations to further leverage City investments. The City should partner with local nurseries or landscaping material providers to purchase tree saplings in bulk.

Develop a program to prioritize the relocation of overhead utility wires underground

Undergrounding utility wires advances multiple goals - it reduces visual clutter, increases locations available for street trees, prevents interruptions to sidewalks and reduces the potential for power outages during major storm events throughout the City, often caused by falling limbs or damage by lightning. The City should coordinate with OUC to identify a funding source and create a prioritized list of locations for the undergrounding of utilities. Partnership opportunities will allow for property owners to contribute funding to fast track projects. Utility easements for new development should allow for sufficient width for underground power lines and other utilities.

Education and Outreach

Each of these strategies will require continued outreach and education to residents, developers, consultants, elected boards and City staff. Many of the Livability strategies are extensions of existing City policies or codes and therefore additional outreach is needed to ensure that all stakeholders understand the intent of the new or modified policies and how they advance the City's vision to become a more sustainable community. Engaging institutional partners will contribute to the achievement of the Livability goals. Potential partners include the master of urban planning degree programs at the University of Central Florida and Rollins College and existing community planning and development organizations including the Orlando chapter of the Florida Chapter of the Congress for New Urbanism (CNU), Orlando Metro Section of the American Planning Association Florida Chapter (APA-FL) and Urban Land Institute (ULI) to promote the principles of livability to all members of the community.





BEST PRACTICE

City of Vancouver, British Columbia, Canada

Like many North American cities in the 1960s and 70s, Downtown Vancouver contained an abundance of surface parking lots. These parking lots resulted in negative environmental impacts, including urban heat island effect, increased stormwater runoff and dependence on the automobile as the primary mode of transportation. Downtown real estate was under-utilized and large surface parking lots contributed little in property tax revenue. New development was primarily located outside of the City because it was easier and faster to develop on a greenfield. This resulted in urban sprawl and leapfrog development. To curb these trends, the region established zoning that protected agricultural lands and concerns about protecting the downtown core led to a new urban planning and architectural technique, known as “Vancouverism.” Vancouverism promotes mixed - use development in buildings with commercial at the ground floor and tall, but narrow, residential floors above. These buildings fit comfortably on urban infill sites in the downtown core, while preserving views and adding density. Vancouver’s key strategies for creating a dense yet livable city include:

- Making water common space. The majority of waterfront in Vancouver is reserved for public uses.
- Ensuring residential high rises meet high levels of design by requiring preservation of views to the mountains, open spaces and setbacks that allow for light and air between high rises.
- Saying no to expressways. Vancouver’s 1997 Transportation Plan calls for prioritizing modes, not balancing them. Top priority goes to walking, followed by biking, transit, transport of goods and finally, vehicles.
- Allowing for small scale development that is “invisible” from the street by allowing garage apartments or second units on a single family lot. This “eco-density” concept allows residential areas to grow and add affordable housing options without changing the character of the neighborhood.
- Ensuring that Vancouver becomes the greenest city in the world by 2020.

Today, Vancouver is known as one of the most livable cities in North America. It has been able to demonstrate that additional, well-designed, density creates lively public spaces and allows most people to walk to daily needs while protecting open spaces.

More information is available in Appendix D.



ONLINE COMMENT – LIVABILITY:

Green up your little piece of Orlando. A lot of things being discussed here are big, top-down visions for greening up the City. If we each found a small-scale project that we are passionate about and did it – even once a month, we would, one barren patch of earth or polluting neighbor at a time, help move our city forward.

– Zac A

**DID YOU KNOW, ORLANDO RESIDENTS
DISPOSE OF ENOUGH WASTE TO FILL
UP LAKE EOLA MORE THAN
3 TIMES EACH YEAR?**





SOLID WASTE



Overview

“One man’s trash is another’s treasure” well describes Orlando’s vision for a fully sustainable solid waste program. Long-term Orlando hopes to become a zero waste community, eliminating all solid waste to landfills or incinerators. The zero waste concept seeks to change practices to ensure that all discarded materials become resources for others to use, mimicking a more natural cycle. Elimination of waste sent to landfills and incinerators will greatly improve the quality of life in Orlando by reducing pollution, reducing household and business waste disposal costs and producing jobs focused on the use of recycled materials.

Orlando currently has a curbside residential recycling rate of 27%, meaning that 27% of total waste generated is recycled. Due to Orlando’s recent switch to single-cart recycling, the community should soon surpass the US average of 34% recycled. Currently, curbside recycling is primarily limited to single family homes in certain neighborhoods. However, more than half of Orlando’s households live in multi-family buildings and must rely on landlords or condo associations to provide recycling options. Businesses often contract with private companies for trash collection and despite a lower collection fee for recycled materials, many of those businesses do not sign up for recycling service. Orlando could significantly improve its landfill diversion rates by removing barriers to providing services to businesses and multi-family buildings.

As Orlando reduces waste to landfills and incinerators, the additional materials that are made available from the recycling

process can create opportunities for economic growth. Instead of paying to haul, treat and dispose of solid waste, it can become the raw material for sustainable industries producing new products. In this way, Orlando can become a leader in proving that solid waste is a resource rather than an environmental liability.

Environmental Impact

The environmental impact of solid waste can be significant, impacting the air, land and water. Organic matter decaying in landfills emits methane, which is 21 times more potent as a GHG than carbon dioxide. Additionally, the transportation of solid waste to its final disposal site generates greenhouse gas as well as air pollutant emissions. Older landfills that do not meet today’s standards have impacted our land, groundwater and surface water as material leaks out of the landfill and into these areas. Fortunately, current regulations have helped minimize the contamination of the land and water by landfill leachate. Incinerators and the transportation to and from them, also contribute to air pollution.

Economy and Job Creation

As Orlando strives to reduce the amount of waste it sends to the landfill, local jobs supporting businesses that provide recycling, composting and reuse opportunities will increase. Strong zero waste focused programs have spawned the growth of new businesses, creating new jobs and more diverse local economies. Unlike the other sectors of the “green” economy, the solid waste industry provides employment opportunities across the educational spectrum.



SOLID WASTE BASELINE DATA (2012)

- 27% of the residential waste stream is recycled.

2040 GOALS

The Task Force has identified one comprehensive 2040 goal for Solid Waste:

- Eliminate waste going to landfills and incinerators.

2018 TARGETS

In order to ensure progress in the next five years, the Task Force also identified the following interim 2018 targets:

- Increase solid waste tonnage diverted from landfills and incinerators to 50%.

STRATEGIES

Support the development of technology that makes it easier to recycle materials

Policies and education alone will not achieve a 100% waste diversion goal. Emerging technologies enable communities to “mine” recyclable materials out of the landfill-bound waste stream. The City and its key partners should implement innovative technologies that mechanically extract recyclables from landfill-bound solid waste streams and utilize organic waste for energy production and composting.

Institute a Pay as You Throw program

A Pay As You Throw (PAYT) program adjusts the fee structure for collection of municipal waste services by eliminating the fixed fee and replacing it with pricing choices such as garbage cart size, frequency of pick-up or the weight of disposed material. Under PAYT, households are charged for waste collection in the same way that they are charged for electricity. Unit pricing takes into account variations in waste generation by charging households based on the amount of trash they place at the curb, thereby offering an incentive to reduce the amount of waste they generate and dispose. PAYT programs have proven very effective at increasing recycling and composting rates (in places where those services are also offered curbside) and reducing overall costs. PAYT fees should be established at a level to create a self-sustaining program. The City’s Solid Waste Division has

indicated that their current systems would accommodate a smooth transition to a PAYT program.

Develop a Construction & Demolition ordinance

A construction and demolition (C&D) debris diversion ordinance would require new construction, renovation and demolition projects divert a certain percentage of the C&D debris generated by the project from the landfill for recycling. Diversion of C&D debris can include options such as deconstruction (the careful disassembly of building components for reuse), reuse of recovered materials on-site or off-site, off-site recycling or converting waste to energy. Ordinances can also ban disposal of certain types of C&D debris from landfills or impose a C&D disposal surcharge. To design an ordinance that is most applicable to Orlando, the City will want to assess the current C&D waste stream, engage stakeholders from the building and development community, establish a diversion target and identify venues that will receive the materials. Once the ordinance is passed, education will be important to ongoing success.

Phase in commercial and multi-family recycling standards

More than half of the housing units in Orlando are within multi-family complexes. Currently, these units are not eligible for municipal curbside collection and therefore are reliant on the building owner to provide trash and recycling facilities, however there is no requirement to provide recycling options. Commercial businesses are in a similar situation, with little control over whether or not recycling is offered for the space they lease.

The City will phase in requirements for both commercial and multi-family units to provide recycling services. Initially, the

27% OF ORLANDO’S RESIDENTIAL WASTE IS RECYCLED





requirements would apply only to new construction, ensuring that space is made available to support both a trash and recycling program for the building. Eventually, depending on the success and demand generated, this requirement could extend into existing buildings. Similar policies in other communities are most effective when offering a high level of technical assistance and flexibility in how to achieve the program due to space constraint for buildings that were not designed for additional commercial size collection containers.

To achieve the increase in diversion rates the City is seeking, new recycling standards should take into account the types of materials that will be required to be collected at these buildings. These types of programs will be most effective with a single stream recycling model. In almost all instances, commercial recycling programs reduce solid waste costs. During the phase-in period, the City may also consider expanding its collection sites to serve residents and businesses that do not yet have on-site recycling but are willing to drop off materials.

Implement a curbside or backyard composting program

Decades of experience with recycling programs around the country have proven that the easier it is to recycle, the more likely households will do it. Similarly, municipal curbside composting programs are more successful than individual efforts. Orlando could implement this program utilizing its existing curbside recycling collection model. Residents would be provided a second bin for food scraps, food-soiled paper, yard trimmings, compostable utensils, etc. For those portions of the City without curbside collection, a backyard composting program could be initiated, which includes providing a bin and educational materials and/or classes on backyard composting. Alternatives could also be explored for multifamily residents, such as working with property managers to provide a common composting location. Regardless of the method of collection, a composting program will reduce greenhouse gas emissions from landfills and create cost savings opportunities through utilization of the finished compost as an alternative to petrochemical fertilizers. Effective implementation of this program will require significant education and outreach.

Education and Outreach

The success of the priority strategies identified for Solid Waste is directly linked to the level of engagement of the community. The City can provide the tools and technology, but individual households and businesses must do their part to achieve Orlando's 100% waste diversion goal. Education and outreach programs will be instrumental to ensure that the community is aware of new programs and clearly understands how to participate in them. Many residential customers may desire to recycle if they are personally approached to recycle. Marketing and educational materials, training and videos should provide details on how to participate while also highlighting the financial benefits of commercial recycling.





BEST PRACTICE

City of San Jose, California

In 2007, the City of San Jose, California adopted a goal of 100% waste diversion from landfills with an interim goal of 75% by 2013. In order to achieve the goals, the City developed a Zero Waste Strategic Plan, completed a number of baseline assessment studies and implemented waste diversion programs. These programs included single-stream recycling for single-family homes, mandatory recycling for commercial and multi-family buildings and mandatory construction and demolition debris recycling. In 2012, San Jose successfully diverted 73% of total waste from landfills as a result of their initiatives. The programs achieved the following results in 2012:

- 65% diversion of construction & demolition debris
- 87% diversion from 150 municipal facilities
- 70% diversion from commercial properties, up from 25% in 2011
- 92% diversion at 90 community events through San Jose's Zero Waste Event Program

San Jose partnered with companies that separate organic material (food waste and plant trimmings) from the waste stream, which is transferred to an aerobic digestion plant that composts the waste and extracts methane for energy use. The remaining garbage is processed to extract any remaining recyclables. As a large city, a program like this can have an impact on local jobs. The private sector has invested more than \$100 million in new recycling infrastructure, supporting more than 540 jobs.

More information is available in Appendix D.



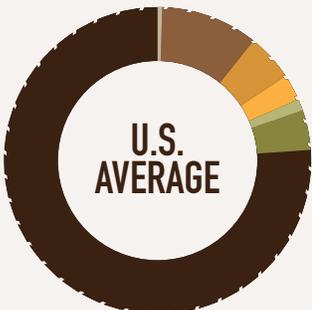
ONLINE COMMENT – SOLID WASTE:

Collect compost along with trash and recycling. Then encourage companies to use compostable plates and cups rather than styrofoam. The city could sell the compost back to the community as fertilizer and use it as cheap fertilizer for the community garden initiatives.

– Christina B

BICYCLE CARPOOL PUBLIC TRANSPORTATION

WALKED OTHER MEANS WORKED FROM HOME DROVE ALONE





TRANSPORTATION



Overview

Transportation choices have a profound impact on the health, safety, and viability of a community. For most Orlando residents, the automobile is the travel mode of choice, comprising 78% of all work commutes. Exciting changes to Orlando's transportation system are underway; with SunRail opening in 2014, planning for high speed rail between the Orlando airport and downtown Miami, expanding the LYMMO transit service beyond the Downtown core, and a resurgence of walking and biking within inner neighborhoods.

Heavy reliance on conventional private automobiles negatively impacts air quality, public health and pedestrian safety. Where private automobiles are the only option, lower income residents or those who cannot drive (like children or the elderly) are put at a disadvantage, making traveling to work, buying groceries or going to the doctor difficult. Encouraging travelers to shift their transportation choices to walking, biking, car-pooling, riding transit and using alternative fuel vehicles will be an important component in becoming the greenest city in the Southeast.

The City must take advantage of the momentum of transportation improvements to enable residents to reduce reliance on private automobiles and invest in infrastructure to encourage more sustainable choices like bike racks, sidewalks and electric vehicle charging stations. One of the challenges will be adapting the current automobile-dominated land use patterns to support and encourage other modes of transportation. In 2010, only 3.8% of Orlando's population lived within ½ mile of enhanced transit and

the pedestrian atmosphere along many busy roads is unsafe and uninviting. Intensifying mixed-use areas by adding additional residential units, improving sidewalks and streetscapes and expanding transit service will all help make more transportation options viable for City residents.

Environmental Impact

Transportation systems contribute to 24% of greenhouse gas emissions in the City of Orlando, which comes from burning fossil fuels. Increased walking, bicycling, carpooling and transit use will reduce the need for automobile trips, while compact land use patterns can lead to fewer miles traveled. Transportation-related energy consumption can also be reduced through fuel-efficient vehicles and the use of alternative fuel sources.





Economy and Job Creation

A strong transportation system increases the economic competitiveness of Orlando and the Central Florida region. Alternative transportation can reduce individual transportation costs giving people more money to spend locally. In addition, new transportation infrastructure creates both temporary construction jobs and long-term jobs for operations and maintenance. Florida Department of Transportation estimates that the four SunRail stations will create 28,500 permanent jobs. Providing more transportation choices also improves access to services and employment opportunities, benefiting Orlando’s residents and businesses.

TRANSPORTATION BASELINE DATA

- 20% of work commutes are by carpool, transit, bicycle, working from home or walking.
- 18.8 miles of Complete Streets
- 33 public electric vehicle charging stations
- 321 days per year meet “good” rating on Air Quality Index.
- 200.8 lane-miles of on-street bike lanes or off-street trails
- 18.6 miles of dedicated transit routes

2040 GOALS

The Task Force identified five core 2040 goals and two subgoals for Transportation:

- Majority of trips made by foot, bike, carpooling, or transit.
 - Achieve a Gold ranking for the League of American Bicyclists Bicycle Friendly Community Score.
- Increase miles of safe, sustainable transportation infrastructure (bike lanes/paths, transit lines, sidewalks).
 - Eliminate pedestrian and bike fatalities .
- Double street miles within the City that meet “complete streets” criteria.
- Increase the use of electric vehicles/alternative fuel vehicles throughout the City.
- Attain a “good” rating on the Air Quality Index (AQI) 365 days/year.

2018 TARGETS

In order to ensure progress in the next five years, the Task Force also identified the following interim 2018 targets:

- Reduce daily trips by single occupancy vehicles by 10%.
- Decrease pedestrian and bike crashes and fatalities by 50%.
- Increase street miles within the City that meet “complete streets” criteria by 20%.

STRATEGIES

Establish dedicated funding sources for expanding public transit

One or more dedicated funding sources for transit will allow for more frequent bus and rail service, as well as expansions in underserved areas of the City. Currently LYNX does not have a dedicated funding source, which means that the agency must request funding annually from the City and its other funding partners. The uncertainty of LYNX funding commitments from year to year limits meaningful long-term planning for new and expanded services. The low levels of transit service are due to existing funding levels and are often cited as a primary barrier to increased transit use. With the addition of SunRail, there is additional opportunity for transit use. However, additional and sustained funding will be required for the bus connections to SunRail as well as for the long-term operations of SunRail itself. Implementing this strategy requires coordination between the City and other LYNX funding partners in Orange, Seminole and Osceola Counties. This strategy will also require community outreach and support from the business community.

Adopt Complete Streets policies

Complete Streets are designed to give equal weight to the safety and comfort of pedestrians, bicyclists, transit users and automobiles. The Central Florida region has been identified as one of the most unsafe regions in the country for pedestrians. City residents and Task Force members also identified pedestrian safety as the primary deterrent to walking and transit use. The City has already made extensive progress in implementing Complete Streets principles. A citywide Complete Streets policy would expand this effort by supporting the needs of all users when planning new streets or retrofitting existing ones. The policy would also give equal weight to all users when planning, designing, and funding transportation improvements. Updates to the City’s Major Thoroughfare Plan would reflect the revised priorities of the Complete Streets policy. Capital projects within the City would be re-prioritized to give more emphasis to pedestrian, bicycle transit projects and less emphasis to automobile capacity projects.

Enhance multimodal connectivity around SunRail stations and between villages

The opening of SunRail in 2014 represents the beginning of a significant opportunity for the City to increase transit use and



PHILADELPHIA

ORLANDO

**ORLANDO'S
SIDEWALKS
STRETCH
946 MILES**



reduce greenhouse gas emissions. SunRail's success in attracting riders depends on the transportation connections around the stations, particularly within a ½ mile radius. Improved pedestrian and bicycle connections will create a walkable environment that is more supportive of transit use. Specific projects can include a new sidewalk, bicycling infrastructure improvements, the completion of missing links, as well as safety improvements. When combined with land use strategies promoting transit-oriented development, these improvements create opportunities for the City's residents and employees to move without the use of a car. These same principles can also be applied to other villages within the City (see Livability chapter for more information about villages.) Improved transit service between these villages will allow the mobility benefits of SunRail to be shared throughout the City. Implementation of this strategy will require coordination with LYNX to identify priority transit improvements.

Re-evaluate downtown parking regulations and policies

As part of a balanced transportation system, parking strategies should be implemented that promote the use of alternate modes while accounting for the limited availability of parking. Improving the efficiency of parking within Downtown will allow for more development and bring more residents, employees and visitors to the Downtown core. This will result in more business activity and increased transit ridership. Potential actions include lowering the cost of parking during low-demand hours as an economic development strategy, while raising parking rates during higher demand periods. New parking technologies, such as dynamic pricing and real-time updates to garage capacity, should also be implemented. These actions should be coupled with efforts already underway to improve travel alternatives – for example, increased bicycle parking, expanded carpool programs through employers and expansion of LYMMO,



the City's free Downtown circulator. In implementing this strategy, it is important to encourage the use of non-automobile modes while not impacting existing businesses that rely on automobile access. Implementation will require coordination between the City, private garage owners, existing businesses and the development community.

Implement car sharing and bike sharing programs

A city-wide car sharing program and bike sharing program will provide increased mobility options for Orlando's residents, visitors and employees who do not have an automobile. As part of implementing these programs, the City will need to identify potential parking locations with the greatest connectivity to transit, bicycle and pedestrian systems. Implementation will also require partnerships between the City and private property owners to designate car sharing spaces and/or install bicycle parking facilities.

Provide infrastructure for alternative fuel sources

The City has an emerging program to promote alternative fueling sources such as electricity and compressed natural gas (CNG). As part of this program, OUC plans to install up to 200 electric vehicle (EV) fueling stations within Orlando, several of which have already been installed. Providing this network throughout the City increases the attractiveness and convenience of alternative fuel technologies, while also increasing overall community awareness. The City should continue to work with area agencies to dramatically increase the number of EVs in Orlando and in the municipal fleet.

Education and Outreach

Each of these strategies will require continued outreach and education to residents, developers, consultants, elected boards and City staff. Many of the Transportation strategies require increased community awareness of existing and planned programs – for example, existing transit services, carpooling opportunities and trail facilities. To achieve the City's vision, visitors, employees and residents must be aware of the transportation options available and be able to use them conveniently. For transit service, the City will need to work with transit partners such as LYNX and SunRail to implement these strategies. Other implementation partners include Orange County, Florida Department of Transportation and MetroPlan Orlando. Community outreach should include maps and information for visitors, residents and employees to understand the full range of travel options available.



BEST PRACTICE

Charlotte, North Carolina

In 1998, Charlotte voters approved a half cent sales tax to fund the completion of five transit corridors established in the region's long-range transportation plan. In planning for these corridors, the City of Charlotte and Mecklenburg County implemented land use regulations to increase density around proposed transit corridors and stations. The two agencies also identified pedestrian, bicycle and transit service improvements needed to support the proposed stations. The first of these transit lines, the 9.7 mile LYNX Blue Line light rail system, opened in 2007. When the line first opened, ridership was double the projected estimates and now supports 16,000 riders per day. Development along the line has reached \$1.9 billion within a half mile of the transit line, including more than 6,400 residential units. The new development generates more than \$20 million in annual tax revenue.

Charlotte has also evolved its streets strategy. The previous (and conventional) strategy was to reduce automobile congestion by maximizing the flow of automobile traffic. In 2005, a new planning paradigm was approved that ensured transportation investments are used to move people regardless of mode, create better places and make streets memorable. Since adopting the plan, Charlotte has invested more than \$400 million in road projects that are consistent with their complete streets policy, a policy that ensures quality streets create long-lasting value by equally accommodating pedestrians, bikes, transit and motorists. In the last five years, Charlotte has completed 24 road diets, seven are underway, and 20 more are under study.

More information is available in Appendix D.



ONLINE COMMENT – TRANSPORTATION:

A bike sharing program is EXACTLY what this city needs. Not only is it helping the environment by releasing significantly less CO2, but it would make the people of Orlando much more fit, and happy for not having to sit in congested traffic.

– Mercedes B

AVERAGE HOUSEHOLD IRRIGATION

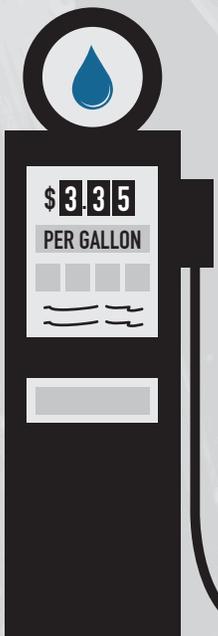
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GALLONS

IF WATER COST AS MUCH
AS GAS YOU'D SPEND

\$ 1 40,700

TO IRRIGATE YOUR
LAWN EACH YEAR





WATER



Overview

Freshwater is abundant throughout Central Florida; Orlando alone has more than 100 lakes, nearly 10% of the entire land area of the City. Many of Orlando's lakes are accessible from a public sidewalk or path, rather than hidden behind backyards. Recreational opportunities, including fishing, boating, swimming, parks and walking trails allow the public to build a connection with our lakes, enhancing livability and overall quality of life in Orlando's neighborhoods.

Orlando has a successful history of managing this valuable resource effectively. Gross potable water consumption dropped from 228 gallons per capita per day (gcpd) in 1999 to 166 gcpd in 2012 in OUC's territory, yielding a 27% savings. This dramatic improvement is the result of successful OUC conservation programs, reclaimed water use, tiered residential water rates, changing watering practices and the economic downturn. Orlando is also a leader in treating wastewater so that it is clean enough to use for irrigation. Over 95% of Orlando's treated water is reclaimed for irrigation and support for critical habitat. Orlando's "purple pipes" carry reclaimed water to irrigate yards, parks and agricultural lands throughout Central Florida.

Despite the large areas of freshwater in Central Florida, water availability and lake water quality continue to be a concern. The region experiences severe and prolonged periods of drought as well as episodes of intense rainfall and floods. Orlando is fortunate to have a clean, accessible source of water from the Floridian Aquifer. However, our

current demand for water, coupled with a rapidly growing population, exceeds the rate at which water underground can be naturally replenished.

Water not only supports the lives of people and wildlife, it is a valuable resource that could provide greater opportunity for economic development and recreation. To achieve this vision, we need to ensure site planning, architecture and landscape design celebrates and enhances our water assets, while simultaneously reducing stormwater pollution.

THE CITY OF ORLANDO IS HOME TO MORE THAN





Orlando needs to continue water conservation investments and begin searching for new supplies of drinking water so that it will be available to support future economic growth in the City and the region. Other communities in Florida have experienced “water wars” as local jurisdictions argue over who has the right to use underground supplies. This region can focus on conservation and the strategies highlighted in this document to prevent those arguments and reduce the need for costly supplements to the water supply, such as a desalination plant (conversion of sea water to drinking water).

Environmental Impact

Protection of water supplies is a vital component of creating a sustainable community. Scientists and researchers have gathered evidence about the potential for water shortages in Central Florida. This issue is discussed extensively by the Central Florida Water Initiative. Environmental concerns for water stem from three causes:

- Water pollution can impact the viability of our lakes and drinking water. Stormwater runoff, and the toxins it carries, produces a significant amount of lake pollution. Innovative methods to treat stormwater can improve the quality of runoff, resulting in less pollution in lakes and groundwater.
- Excessive water use from underground wells can lead to saltwater intrusion along the coasts or even the formation of sinkholes. The quality of the water withdrawn may also suffer if it must be taken from areas closer to the surface. Water conservation policies can reduce demand for drinking water from underground wells.
- Demand for new development in areas that were previously open space can create stress on natural systems. Protection of wetlands and floodplains allows for natural functions to continue during drought or wet periods, reducing flooding impacts on the built environment.

Economy and Job Creation

Orlando’s most accessible and economical source of water is directly underneath the community in the Floridian

Aquifer. If demand increases beyond what those wells can supply, expensive public works projects will be needed to develop new sources of water. These projects, such as surface water withdrawal, desalination, reverse osmosis and aquifer storage and recovery (ASR) will typically result in increased capital, operating and transmission costs. Conservation and preservation of existing water supplies are far less expensive to implement and will reduce the need for alternative infrastructure. Utilities can focus on providing high quality, reliable service at reasonable rates. Available and sustainable water supplies will also allow for continued population and tax base growth and business relocation to Orlando.

WATER BASELINE DATA (2012)

- 166 gallons of water used per capita per day.
- 78 out of 95 city lakes have Trophic State Index less than 61.

2040 GOALS

The Task Force identified four core 2040 goals for Water:

- Reduce gross potable water consumption per capita by 20% from 2012 levels.
- Increase number of lakes meeting good water quality standards (Trophic State Index less than 61) to 100%.
- Ensure Orlando has sufficient storage for water during extreme events.
- Enhance Orlando’s reputation as “The City Beautiful” by promoting sustainable landscaping practices.

2018 TARGETS

In order to ensure progress in the next five years, the Task Force also identified the following interim 2018 targets:

- Reduce gross potable water consumption per capita by 3% from 2012 levels.
- Increase number of lakes meeting good water quality standard to 85%.

STRATEGIES

Implement Low Impact Design development and site planning requirements

Low Impact Design (LID) is a land development approach to stormwater management that attempts to mimic natural drainage by capturing stormwater close to the source, rather than through long conveyance runs to traditional regional



stormwater management facilities. LID improves groundwater recharge and minimizes runoff through vegetated swales, pervious pavement, bio-retention basins (“rain gardens”), tree canopy and green roofs, and conservation of open space. LID uses natural planting materials to absorb nutrients and pollutants, improving the quality of stormwater runoff. LID practices may include rain barrels, cisterns and other catchment devices that can be incorporated into streetscapes or building site design. The City can provide resources to support developers and neighborhood associations that wish to incorporate LID into new development or redevelopment projects, including technical staff support, sample LID engineering calculations and specifications and assistance with permitting. These resources can also be available to homeowners or neighborhood associations who wish to implement LID practices on existing

lots. The City also has the opportunity to create pilot or demonstration projects within public rights-of-way, parks or other public and civic lands. Demonstration projects should include interpretive signage to educate the public on how the LID project works and identify advantages over traditional stormwater management practices.

Implement Integrated Water Resources Management (IWRM) policies

Integrated Water Resources Management (IWRM) is defined by the EPA as “a framework to holistically address current water resource issues and emerging climate change complications, such as increasing incidence of flood and drought.” IWRM takes into account the quantity and quality of surface water and ground water and the impacts from stormwater, reclaimed wastewater, salinity of coastal estuaries, land use, floodplain management, pollution sources and climate change. This holistic approach means that water from one source should be of sufficient quality to be used interchangeably with water from other sources. For example, stormwater should be clean enough to replenish lakes without diminishing their water quality. For the City to implement IWRM policies to manage “one water,” it must reach across jurisdictional boundaries to coordinate with other governmental entities that are within the same watershed basin. Because this issue cannot be limited to water that is inside City limits, the City should continue intergovernmental coordination to implement a vision consistent with regional water planning initiatives.

Use pricing strategies to encourage water conservation and efficiency

Water conservation is a primary strategy for protecting and sustaining potable groundwater supplies by reducing demand. Potable water is provided by OUC. OUC has a block (tiered) rate structure that allows low rates to be charged for small amounts of water use (for life-sustaining needs) and increased rates as usage goes up. The City should continue to work with water utilities to adjust block rates to better promote conservation. Water rates should also be structured to provide sufficient revenue to finance incentives and matching funds to retrofit customers’ homes and businesses with water conservation devices, such as low flow fixtures or rain barrels.





Strategically expand reclaimed water opportunities

In 1986, the City of Orlando and Orange County created Water Conserv II, the largest reclaimed water reuse project of its kind in the world at that time. Reclaimed water is domestic wastewater that has been treated and is suitable for landscape irrigation, but not potable consumption. The reuse of reclaimed water helps to conserve potable water supplies by replacing potable water for uses such as irrigation. It also helps to recharge groundwater supplies through soil infiltration. Today the primary users of this supply are residential and commercial irrigation customers and the agricultural and citrus industries. The City should require installation of reclaimed water utility lines in all major new developments if there is sufficient supply. Pre-installed reclaimed lines will remove the need to disturb soil, vegetation, and pavement when reclaimed water supplies have increased, which will reduce erosion and sedimentation. While there is an initial cost associated with installing the reclaimed utility lines, it is more efficient to install all potential utility lines at the time of development. Additionally, the City should evaluate reclaimed water alternatives to make the best use of the resource. Examples include groundwater recharge and lake or wetland mitigation.

Education and Outreach

Education and conservation are lower cost strategies than developing new water supply sources or cleaning up polluted water bodies. The City and OUC have lead successful programs to better reduce the use of potable water and ensure proper lake and stormwater quality practices.

Education programs promoted by OUC and the City should continue to include the Florida WaterStar Program of the St. Johns River Water Management District, Florida Friendly Landscaping Program and EPA Water Sense. Future conservation best practices should consider policies, such as additional landscaping regulations or rebates for physical devices, such as rain and soil moisture sensors or low flow appliances.

The City should partner with appropriate state and area government organizations to provide more activity-based outreach, such as landscaping classes or presentations to neighborhood associations. The outcomes of a successful education and outreach program related to water conservation could include increased potable water supply, decreased water rates and reduced stormwater runoff pollution.



BEST PRACTICE

City of Philadelphia, Pennsylvania

Philadelphia's Green City, Clean Waters program is a 25-year plan to protect and enhance watersheds by managing stormwater with innovative green infrastructure. Like Orlando, Philadelphia struggles with surface water quality and flooding. By investing approximately \$2.5 billion over 25 years, Philadelphia intends to reduce flooding and eliminate pollutants that run into rivers by investing in green infrastructure. These investments include removing impervious cover and replacing it with green space, green roofs, trees, permeable pavement and rain barrels for gardening water.

The innovative program is explicitly leveraging stormwater investments to further economic development and public health goals, while ensuring Philadelphia becomes a more sustainable community. Over the life of the program, focusing on green infrastructure rather than conventional approaches will save Philadelphia over \$8 billion. Officials expect additional economic and health benefits via green job creation, increased property values, improved air quality, energy savings, and better water quality. After the first year, the Green City, Clean Waters program resulted in:

- Completion of 17 green stormwater infrastructure projects and the design of 184 others.
- Engagement with more than 9,300 residents through educational activities, lessons, or events.
- Distribution of 478 rain barrels.
- Completion of Penn Park, a 24-acre green space with athletic fields, which will divert approximately two million gallons of rain water from the Schuylkill River each year.

More information is available in Appendix D.

ONLINE COMMENT – WATER:

Make rain gauge irrigation sensors part of the building code. The worst is when you pass by a property and it's raining or has just rained and the sprinkler system is going full-force.

– Andrea M

ACKNOWLEDGMENTS

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ENVISION 2040 SPONSORS

- Society of American Registered Architects
- Herman Miller
- Lake Nona, Inc.
- OUC, The Reliable One
- TLC, Engineering for Architecture
- VHB, Inc.
- Universal Studios
- uOwn Real Estate

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APPENDIX A: INDICATORS

ENERGY AND GREEN BUILDINGS

Indicator		2012 Baseline	Sources (All data from 2012 unless otherwise indicated)
EN1	Greenhouse gas emissions	5,803,851 tons CO2e	Calculated using Clean Air and Climate Protection Software
EN2	Electricity derived from renewable sources	1.8%	OUC
EN3	Buildings meeting green building standards	107 buildings	City Inventory, Energy Star, USGBC
EN4	Green buildings per 1,000 residents	0.45 buildings per 1,000 residents	City Inventory
EN5	Electricity consumption per capita per year	12,003 kwh	OUC
EN6	Electricity consumption per household per day	33.4 kwh	OUC

LOCAL FOOD SYSTEMS

Indicator		2012 Baseline	Sources (All data from 2012 unless otherwise indicated)
FD1	Farmer's markets within City limits	7 farmers markets	Simple Living Institute Local Food Guide
FD2	Grocery stores within City limits	83 grocery stores	Orange County Planning data
FD3	CSA participants (for CSAs within Orange County)	105 participants	Obtained from 3 CSAs
FD4	Residents within 1/2 mile of a grocery store, fruit and vegetable market, meat market, seafood market or farmer's market	52%	City data, 2010
FD5	Square feet of community gardens	36,100 sq. ft.	Central Florida Food Guide, aerial photos, 2011
FD6	Community garden plots	159 plots	Central Florida Food Guide, aerial photos, 2011
FD7	Number of household gardens	unknown	To be developed as programs are implemented
FD8	Food hubs within City limits	1 food hub	City data
FD9	Distributors and processing plants in City limit	71	Orange County Planning data
FD10	Food-producing land in Orange County	12,624 acres	Orange County Planning data

GREEN ECONOMY

Indicator		2012 Baseline	Sources (All data from 2012 unless otherwise indicated)
EC1	Green jobs in the Orlando-Kissimmee-Sanford MSA	11,066 green jobs	Brookings Institution, 2011
EC2	Courses in sustainability- and cleantech-related fields available at local universities.	153 courses	As reported by Valencia, UCF and Rollins
EC3	Cleantech companies created through local business incubators	14 companies	UCF business incubator
EC4	Cleantech jobs created through cleantech companies in local business incubators	47 jobs	UCF business incubator
EC5	Commercial electricity consumed per job	16,000 Kwh per job	OUC, City data
EC6	Businesses participating in green business programs/initiatives.	46 businesses	OUC, City data
EC7	Average household energy cost	\$1,369/year	OUC, 2011

LIVABILITY

Indicator		2012 Baseline	Sources (All data from 2012 unless otherwise indicated)
LV1	Completed villages	1	City data
LV2	Emerging villages	12	City data
LV3	Potential villages	14	City data
LV4	Density within 1/4 mile of transit corridors	3,306 persons per sq. mi.	City data, 2010
LV5	Bicycle Friendly Community Score	Bronze	League of American Bicyclists
LV6	Residents in neighborhoods with a Walkable Community Score of 60 or more	19.1%	walkscore.com
LV7	Residents that live within 1/2 mile of park space	82%	City data, 2010
LV8	Parkland per 1,000 residents	7.43 acres	City data
LV9	Tree canopy coverage	23%	Study for City using UFORE model
LV10	Street trees per linear mile of road	88 trees per mile	City data
LV11	Conservation land	11,408 acres (16% of total acreage)	City data
LV12	Obesity rate	27.8% obese adults and 35.5% overweight adults	Florida Health Department, 2010 data for Orange County
LV13	Diabetes rate	9.9% of adults	Florida Health Department, 2010 data for Orange County

SOLID WASTE

Indicator		2012 Baseline	Sources (All data from 2012 unless otherwise indicated)
WS1	Residential recycling rate	27% of waste stream	City data
WS2	Solid waste collected per capita per year	438 lbs	City data
WS3	Yard waste collected per year	14,634 tons	City data
WS4	Percentage of commercial and multi-family properties participating in recycling programs	Unknown	To be developed as programs are implemented.
WS5	Residential customers eligible for curbside recycling collection who participate	52%	City data

TRANSPORTATION

Indicator		2012 Baseline	Sources (All data from 2012 unless otherwise indicated)
TR1	Mode split for work commutes	78.7% Drove alone 9.9% Carpool 4.5% Public Transportation 0.5% Bicycle 1.8% Walked 1.2% Other means 3.3% Worked at home	Census data from 2011 5-year American Community Survey
TR2	Population served by enhanced transit within 1/4 mile (BRT, rail)	1.5% (3,600 people)	City data, 2010
TR3	Employees served by enhanced transit within 1/4 mile (BRT, rail)	14.5% (34,571 workers)	City data, 2010
TR4	Transit ridership per month	2,335,265 passenger trips	As provided by Lynx for FY 2011

TRANSPORTATION (CONTINUED)

Indicator		2012 Baseline	Sources (All data from 2012 unless otherwise indicated)
TR5	On-street bike lanes	184.42 lane miles	City data, 2011
TR6	Off-street bike trails	16.52 miles	City data, 2008
TR7	Sidewalk	946 miles	City data
TR8	Dedicated Transit Routes	18.6 miles	BRT and SunRail existing & under construction
TR9	“Complete Streets” in commercial and mixed use areas.	18.8 miles	City data
TR10	Bike or car share program members	0 residents	No programs operational
TR11	Pedestrian and cyclist casualties	168 pedestrian crashes 5 pedestrian fatalities 55 cyclist crashes 2 cyclist fatalities	National Highway Traffic Safety Administration, 2011
TR12	Public Electric Vehicle charging stations	33 charging stations	Alternative Fuels Data Center
TR13	Days per year when air quality is unhealthy to sensitive groups	7 days	EPA Data, 2011
TR14	Days per year not meeting minimum standard for “good” air quality	44 days	EPA Days exceeding a score of 50 on the AQI, 2011
TR15	Asthma rates in Orange County	8.6 % Adults 11.9% Middle Schoolers 10.8% High Schoolers	Florida Health Department, 2010 (adults), 2012 (school age)

WATER

Indicator		2012 Baseline	Sources (All data from 2012 unless otherwise indicated)
WR1	Gross water use per capita per day (includes water used by residents and businesses)	166 gallons per day	OUC
WR2	Residential water use per capita per day	92 gallons per day	OUC
WR3	Treated waste water used for secondary purposes	93% diverted	City data
WR4	Lakes with Good Water Quality (Trophic State Index less than 61)	78 out of 95 city lakes meet standard	City data, 2010 The City has more than 100 lakes and 95 are tested for TSI
WR5	Ranking on FEMA’s Community Rating System	Ranked 6 on a 10-point scale	FEMA data

Note: A more comprehensive description of Sources and 2012 Baseline methodologies is maintained by the City of Orlando Planning Division’s Comprehensive Planning Studio.

APPENDIX B: GOALS, TARGETS, AND STRATEGIES

ENERGY AND GREEN BUILDINGS

2040 Goals	2018 Targets	Strategies
Reduce greenhouse gas emissions by 90% from 2007 levels.	Reduce greenhouse gas emissions by 25% from 2007 levels.	<ul style="list-style-type: none"> • Create a market-based program that offers incentives for buildings to meet green standards. • Develop financing programs for community-oriented energy efficiency upgrades and solar installations. • Implement policies and technologies to take advantage of OUC's smart grid investments, focusing on EcoDistricts and market-based innovations. • Establish an energy benchmarking and disclosure policy. • Develop a roadmap to position Orlando as the solar leader in the Southeast United States.
Obtain 50% of electricity from clean, renewable sources.	Obtain 8% of electricity from clean, renewable sources.	
Ensure 100% of new and existing buildings meet green building standards.	Ensure 100% of new buildings meet green building standards.	
Reduce total electricity consumption by 20% from 2010 levels.	Reduce total electricity consumption by 5%.	

LOCAL FOOD SYSTEMS

2040 Goals	2018 Targets	Strategies
Ensure access to affordable, healthy food options (community gardens, grocery stores, or farmers markets) within ½ mile of every resident.	Ensure access to affordable, healthy food options within 1 mile of every resident.	<ul style="list-style-type: none"> • Establish a Food Policy Council. • Review and amend code to allow more local food production. • Establish a food labeling program. • Create a preferred local purchasing plan. • Develop community gardens and urban farms to serve every neighborhood.
Increase local food assets (local food hubs, food production or distribution facilities, household gardens, community garden plots) by a factor of ten.	Double local food assets.	

GREEN ECONOMY

2040 Goals	2018 Targets	Strategies
Increase green job count by 35,000.	Increase green job count by 5,000.	<ul style="list-style-type: none"> • Create a Green Business Certification Program. • Invest in new sustainable infrastructure. • Create and implement an economic marketing program targeted at sustainable industries. • Expand upon Green Destination Orlando tourism program.
Reduce the dependence of the local economy on energy.	Decrease average commercial electricity consumed per employee by 10%.	
	Double the number of businesses participating in a green business certification program.	

LIVABILITY

2040 Goals	2018 Targets	Strategies
Develop and enhance 25 quality walkable villages inside the City.	Increase the number of “completed” urban villages from one to three, and increase the number of “emerging” villages from 12 to 15.	<ul style="list-style-type: none"> • Create a series of unique, vibrant, pedestrian-friendly, walkable villages. • Increase density in mixed-use areas, especially those served by or planned for transit. • Promote quality urban design and landscaping, focusing on the villages and connections to villages. • Implement a tree initiative to increase Orlando’s tree canopy to 40%. • Develop a program to prioritize the relocation of overhead utility wires underground.
Ensure that 95% of residential addresses are located within ½ mile of a park or open space.	Ensure that 85% of residential addresses are located within ½ mile of a park or open space.	
Increase tree canopy to 40%.	Increase tree canopy coverage to 27%.	
Reduce obesity and diabetes rates.		

SOLID WASTE

2040 Goals	2018 Targets	Strategies
Eliminate waste going to landfills and incinerators.	Increase solid waste tonnage diverted from landfills and incinerators to 50%.	<ul style="list-style-type: none"> • Support the development of technology that makes it easier to recycle materials. • Institute a Pay As You Throw program. • Develop a construction and demolition ordinance. • Phase in commercial and multi-family recycling standards. • Implement a curbside or backyard composting program.

TRANSPORTATION

2040 Goals	2018 Targets	Strategies
Majority of trips made by foot, bike, carpooling, or transit.	Reduce daily trips by single occupancy vehicles by 10%.	<ul style="list-style-type: none"> • Establish dedicated funding sources for expanding public transit. • Adopt Complete Streets policies. • Enhance multimodal connectivity around SunRail stations and between villages. • Reevaluate downtown parking regulations and policies. • Implement car sharing and bike sharing programs. • Provide infrastructure for alternative fuel sources.
Achieve a Gold ranking for the League of American Bicyclists Bicycle Friendly Community Score.		
Increase miles of safe, sustainable transportation infrastructure.		
Eliminate pedestrian and bike fatalities.	Decrease pedestrian and bike crashes and fatalities by 50%.	
Double street miles within the City that meet “complete streets” criteria.	Increase street miles within the City that meet “complete streets” criteria by 20%.	
Increase the use of electric vehicles/ alternative fuel vehicles throughout the City.		
Attain a “good” rating on the Air Quality Index (AQI) 365 days/year.		

Appendix B: Goals, Targets, and Strategies

WATER

2040 Goals	2018 Targets	Strategies
Reduce gross potable water consumption per capita by 20% ⁽¹⁾	Reduce gross potable water consumption per capita by 3% ⁽¹⁾	<ul style="list-style-type: none"> • Implement Low Impact Design (LID) development and site planning requirements • Implement Integrated Water Resources Management (IWRM) policies • Use pricing strategies to encourage water conservation and efficiency • Strategically expand reclaimed water opportunities
Increase number of lakes meeting good water quality standard (Trophic State Index less than 61) to 100%	Increase number of lakes meeting good water quality standard to 85%	
Ensure Orlando has sufficient storage for water during extreme events		
Enhance Orlando's reputation as "The City Beautiful" by promoting sustainable landscaping practices		

(1) OUC has a large commercial water use, including hotels, which causes the gross per capita consumption to be higher than for utilities that serve predominately residential customers. About 55% of consumption in OUC's territory is residential, while 45% is commercial.

APPENDIX C: GLOSSARY

Bike share program allows people to rent a bicycle from racks placed throughout the City, ride short distances to their destination and return the bicycle to other racks. Examples include Deco Bike in West Palm Beach and Capital Bike Share in Washington DC.

Car share program allows people to rent a car for short term (hourly) use from designated parking spots located throughout the City. Examples include Zipcar in Miami and many other cities, and I-GO carsharing in Chicago, where one membership card works for carshare, bus and train trips.

Clean, renewable energy sources include wind, solar, biogas, biomass, geothermal, low-impact hydroelectric, waves or tidal.

Community garden is a piece of land gardened collectively by members of a neighborhood or other geographic community, typically with plots “rented” or assigned to individuals and families to grow food for their personal use.

Community Supported Agriculture (CSA) is provided by a network of local farmers to consumers. Each consumer pays for a subscription to the CSA, and receives a box of produce or other agricultural products on a regular basis. Local examples include Sundew Gardens, Crispy Farms, and Shaolin Gardens.

Complete Streets connect people with places in a safe and comfortable environment. They also accommodate people of various ages, abilities and modes of travel.

EcoDistrict is a systematic approach to implement sustainability at the neighborhood level. EcoDistricts combine community planning, sustainability and infrastructure investments to achieve economically and environmentally vibrant districts.

Enhanced transit includes bus rapid transit (BRT), rail (including SunRail) or buses with headways that are 10 minutes or less.

Food distributors are counted in the City’s baseline indicators and include businesses classified as “confectionery merchant wholesalers,” “dairy product except dried or canned merchant wholesalers,” “fish and seafood merchant wholesalers,” “fresh fruit and vegetable merchant wholesalers,” “general line grocery merchant wholesalers,” “meat & meat product merchant wholesalers,” “other grocery and related products merchant wholesalers,” “packaged frozen food merchant wholesalers” and “poultry and poultry product merchant wholesalers.”

Food hub is an organization that creates a distribution network from local food providers to local restaurants, food stores and consumers. This can be done through on-site collection, storage, distribution and sales of products or through marketing and facilitation. Some food hubs are consumer-oriented, while others focus mainly on wholesale trade.

Food processors are counted in the City’s baseline indicators and include businesses classified as “miscellaneous food manufacturing,” “coffee and tea manufacturing,” “commercial bakeries,” “fluid milk manufacturing,” “frozen fruit juice & vegetable manufacturing,” “frozen specialty food manufacturing,” “other snack food manufacturing” and “retail bakeries.”

Food sources are counted in the City’s baseline indicators and include businesses classified as a “fish & seafood market,” “fruit and vegetable market,” “meat market” or “supermarket/other grocery (excludes convenience) store.” Liquor stores convenience stores, candy stores, or specialty stores like a coffee shop are not included.

Feebate is a program that collects fees from development projects that are built to conventional standards. Those that meet green building standards will not be assessed a fee. Those that exceed a certain green building threshold may receive a rebate from the program to offset the additional costs they may have incurred to meet the threshold.

Green building standards are established by various organizations to improve the environmental sustainability of buildings and the sites they are located on by establishing standards for water use, indoor air quality, energy use, re-use and reduction in materials, site planning and other characteristics. Examples include Leadership in Energy and Environmental Design (LEED), administered by the US Green Building Council; Energy Star, offered by the US Environmental Protection Agency and Green Globes, operated by the Green Buildings Initiative.

Green business programs are designed to recognize and promote businesses that follow a set of best practices for energy efficiency, water use, or other environmental initiatives. A local example is Orlando’s Think Blue program, which promotes businesses that prevent water pollution in industries such as lawn care, restaurants, vehicle maintenance or pet grooming.

Green jobs are generated by businesses in the fields of public transit, waste management, environmental services, energy saving building materials, conservation, regulation and compliance and renewable energy research and production. Cleantech jobs are also included in this definition.

Greenfields is a term given to undeveloped areas that are typically farms, grasslands, wetlands or forests.

Greenhouse gas emissions are caused by the burning of fossil fuel for electricity and transportation, as well as from agricultural activities. The four main greenhouse gases are carbon dioxide, methane, nitrous oxide and fluorinated gases. When released into the atmosphere, greenhouse gases build up over time and contribute to global warming.

Lake water quality is measured by the City using the Trophic State Index. The maximum value is 100, and any value over 61 is considered “good.” The TSI measures the amount of nitrogen, phosphorous and other nutrients. A low TSI indicates that high concentrations of nutrients are present, which generates growth of algae and aquatic plants that can impair the lake’s clarity and reduce oxygen levels. A high TSI indicates clear water that has oxygen levels high enough to support fish species.

Orlando Utilities Commission (OUC) is the City’s municipal utility operator and partner in sustainability programs. OUC provides water and electricity services to most City residents and businesses. Its territory also extends outside City limits. Small portions of the City are not in OUC’s service area for water and/or electricity.

Property Assessed Clean Energy Financing (PACE) is a program that allows companies and/or residents to obtain a loan to pay for energy improvements. The loan is paid back through a special assessment on the property tax bill that remains in place even if the property is sold to a new owner.

Recyclable materials are determined by the agency collecting the material. Orlando’s curbside pickup for residential includes most types of plastic containers, paper, cardboard, aluminum cans and glass. Other items such as computers, plastic bags, Styrofoam or mattresses may be collected by specialized recyclers.

Road diet is a term for reducing the number of vehicle travel lanes on a road. Typically, the additional space is used for improvements to other modes, such as adding bicycle lanes, increasing sidewalk and parkway width or adding transit lanes.

Smart Grid is an electrical grid that uses digital technology to gather information about demand, network capabilities and supply sources. The smart grid can improve reliability by detecting faults and deploying fixes. It allows for new sources to provide energy by offering two-way information from small suppliers (such as solar) to feed into the network. The smart grid also provides real time demand information that allows a utility to create a dynamic pricing system to reduce peak demand, which is typically the most expensive electricity to produce.

Solar photovoltaic panels convert sunlight into electricity that can be used, stored in batteries or distributed back into the electric grid.

Villages

- **A complete village** has a mix of land uses, enhanced transit, complete streets and a built form that addresses the street. Residential density supports transit and includes mixed-use and multi-family residential units in addition to single family.
- **An emerging village** has the potential to become a complete village, but is missing a few key elements, such as complete streets or enhanced transit. In most cases, the land use mix and built form has emerged as people-oriented. Residential units are present, but may not achieve densities needed to support transit.
- **A potential village** has a composition of future land designations that would support a

mix of residential and commercial uses, including multi-family. It may have major employment centers or regional destinations, but is currently auto-oriented or has large undeveloped areas. Through introducing transit, complete street improvements, and a variety of residential densities, a walkable village atmosphere can be created.

Walkable community score was developed by the website walkscore.com. A score out of 100 is determined based on a formula that accounts for the distance to various types of amenities, such as schools, shops and restaurants. A score of 100 is a walker’s paradise. Scores less than 50 are largely car-dependant neighborhoods.

APPENDIX D: SOURCES

In addition to the sources identified in Appendix A, the following information was used to produce this report.

INTRODUCTION

EcoDistricts. Portland State University Institute for Sustainable Solutions.
pdx.edu/sustainability/

Online forum
GreenWorksOrlando.com

Envision 2040
cityoforlando.net/elected/greenworks/2040.htm

ENERGY AND GREEN BUILDINGS

Infographic: As of 2012, Orlando's annual GHG emissions are 5,803,851 tons of CO₂e, the City's population is 249,562, and the average tree absorbs 48 pounds of CO₂e per year. Based on these calculations, Orlando would need to plant approximately 1,000 trees per resident to fully offset Orlando's GHG emissions.

A breakdown of Orlando's energy sources by type is available from OUC's 2013 Annual Report.
ouc.com/about-ouc/company-publications/annual-financial-reports

A breakdown of Orlando's GHG emissions by source was generated for Orlando's Green House Gas Inventory, utilizing the 2009 Clean Air and Climate Protection software.

An analysis of feasibility for installing solar PV panels was done for the OUC/Orlando Solar America Cities study.
orlandorunsonsun.com/solar-resources/solar-rooftop-analysis/

EPA Portfolio Manager Tool.
energystar.gov/benchmark

Home Energy Rating System.
resnet.us/energy-rating

Local solar initiatives.
orlandorunsonsun.com/

Austin Energy.
austinenergy.com/energy%20efficiency/

FOOD

In 2007 the agriculture and food industry sectors contributed \$7.2 billion to the economy and created 77,091 jobs in Orange County.

The Contributions of Agribusiness to Orange County, Florida. Craig Evans, 2007. Cited in this report:
slideshare.net/luisnvrz/food-production-in-orange-county

Cleveland-Cuyahoga County Food Policy Coalition
ccfoodpolicy.org/history-structure

"THE 25% SHIFT. The Benefits of Food Localization for Northeast Ohio & How to Realize Them."
By Brad Masi, Leslie Schaller, and Michael H. Shuman. December 2010.
neofoodweb.org/sites/default/files/resources/the25shift-foodlocalizationintheNEOregion.pdf

GREEN ECONOMY

The Orlando MSA includes approximately 11,000 green jobs. Sizing the Clean Economy: A National and Regional Green Jobs Assessment. By: Mark Muro, Jonathan Rothwell and Devashree Saha. Brookings Institution report, July 2011.
brookings.edu/research/reports/2011/07/13-clean-economy

Laureate Park's fiber optic cable and other technology services.
bizjournals.com/orlando/print-edition/2012/01/20/healthy-houses.html?page=all

OUC Smart Meters
ouc.com/residential/my-meter/digital-meters

US Green Building Council's Green Destination Orlando program
usgbc-cf.org/laws/CFGBC/pt/sp/committee_hospitalityadvocacy

Montgomery County Maryland Green Business Certification Program
mcgreenbiz.org

LIVABILITY

City of Orlando Growth Management Plan
cityoforlando.net/planning/cityplanning/GMP.htm

Partners for Livable Communities defines livability
livable.org/about-us/what-is-livability

Livability in Vancouver, Canada
vancouver.ca/home-property-development/urban-planning.aspx
theglobeandmail.com/commentary/doug-saunders-the-world-wants-vancouverism-shouldnt-canada/article8981162/

SOLID WASTE

US Average recycling rate is 34%.
2.epa.gov/recycle/recycling-basics

Appendix D: Sources

Methane is a greenhouse gas that is 21 times more potent than carbon dioxide.

epa.gov/climatechange/ghgemissions/gases/ch4.html

San Jose, CA Zero Waste and recycling initiatives

sanjoseca.gov/index.aspx?nid=1554

sanjoseca.gov/DocumentCenter/View/14467

TRANSPORTATION

3.8% of Orlando's population live within ½ mile of enhanced transit according to an analysis in the City of Orlando Growth Management Plan, Future Land Use Support Document, page 127.

cityoforlando.net/planning/cityplanning/PDFs/GMP/02_%20Future_Land_Use_Support_10-5-10.pdf

A breakdown of Orlando's GHG emissions by source was generated for Orlando's Green House Gas Inventory, utilizing the 2009 Clean Air and Climate Protection software.

FDOT estimates that the City's four SunRail stations will create 28,500 jobs.

business.sunrail.com/uploads/docs/340.pdf

business.sunrail.com/uploads/docs/343.pdf

business.sunrail.com/uploads/docs/347.pdf

business.sunrail.com/uploads/docs/350.pdf

Lynx Funding Sources

golynx.com/about-lynx/how-lynx-is-funded.stml

Complete Streets

cityoforlando.net/transportation/TransportationPlanningDiv/BikesPeds/eng/condition.htm

Lymmo Expansion Plans

golymmo.com/

Charlotte, NC best practices presentation

atlantaregional.com/File%20Library/Land%20Use/LCI/lu_lci_sponsors_mtg_12_14_2012_charlotte_dot_presentation.pdf

WATER

Infographic: According to OUC, the average household uses 106,000 gallons of water per year in 2012. Of that amount, approximately 40% is used for irrigation. Therefore, the average household irrigation is 42,000 gallons. This irrigation demand is met with both potable and reclaimed water.

Central Florida Water Initiative

cfwiwater.com

Low Impact Design

water.epa.gov/polwaste/green/

Integrated Water Resources Management

water.epa.gov/scitech/climatechange/upload/epa_2012_climate_water_strategy_full_report_final.pdf

Philadelphia's Green City, Clean Waters Program

phillywatersheds.org/what_were_doing/documents_and_data/cso_long_term_control_plan

Green Works Orlando

400 S. Orange Ave., 6th Floor

P.O. Box 4990

Orlando, FL 32802-4990

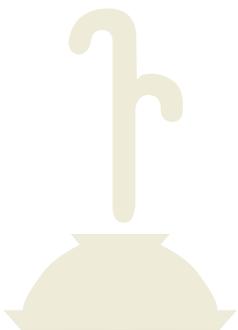
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