Greater Orlando Aviation Authority

Sustainability Management Plan



Orlando International Airport at sunset

2014-2020

I. Program Summary

The airport is operated and managed by the Greater Orlando Aviation Authority (GOAA), which consists of a seven member board; five are appointed by the Governor of the State of Florida, The Mayor from the Orlando City Council, and The Mayor from the Orlando County Commission. The Board has responsibility for both Orlando International Airport and Orlando Executive Airport.

The Executive Director, who is appointed by the Authority Board, manages the airport system. The



Phil Brown, Executive Director

airport system has a staff of over 600 full time employees, but when combined with the business partners of the airport, there are over 17,000 people that work on the property.

The airport was developed as a total environmentally responsive complex that has high passenger convenience features, low maintenance and operational costs, accommodates a high growth rate, and reflects the unique character of the Central Florida environment. The Orlando Experience[®] is a design theme conveyed throughout the airport with unique architecture, aesthetics, and convenience amenities.

As we immortalize our longstanding Sustainable Initiatives we continue to weave together the overall Strategic - Goals, Objectives, and Strategies and further strengthen our plan. Our four Strategic Goals; Customer Service, Economic Development, Safe and Secure Facilities, and Fiscal Responsibility are explained and given focus by the Objectives and Strategies, which guide our implementation.

The airport has been involved with sustainable concepts from its original design stages to the present day. Concepts relate to the relationship between a healthy environment and a healthy economy; potential impacts of climate change, water quality and availability, waste reduction, and storm water management.

To further promote the total environment of the areas surrounding the airport properties, GOAA has embarked upon formalizing our long standing sustainable initiatives. GOAA staff continuously evaluates policy and procedures, along with our strategic planning efforts, to maintain our Mission, which is to "Provide safe, secure, customer friendly, affordable services and facilities that promote the Orlando Experience[®]".

To show our support to the Value of "Innovation, Sustainability and Flexibility" in relationship to "Fiscal Responsibility" and "Collaborative Relationships", GOAA staff developed a Sustainability Management Plan (SMP). The SMP develops a roadmap for our sustainable future, and in order to manage this plan effectively, there is an established "Green Team" named the Environmental Solutions Group. They will be instrumental in implementing the initiatives listed in this plan.

This SMP charts a course to reduce our dependency on fossil fuels; lower the demand on potable water; preserve natural lands; divert landfill waste to better uses, and support alternative transportation.

Customer Service Objectives have been incorporated into our action plan to establish a baseline for comparison in order to; 1. Identify improvements in facilities and operations 2. Promote the Orlando Experience[®] in all airport facilities by enforcing (and re-evaluating) design standards, and 3. Increase the use of technology to improve passenger process by streamlining operations and business processes.

GOAA works closely with its airline partners to assist in their own sustainability actions. We also work with and contribute to the City of Orlando and Orange County though community involvement with other sustainability efforts. Members of the Environmental Solutions Group meet regularly with groups such as the Orange County sustainability subcommittees, Green Destination Orlando (GDO) and the U.S. Green Chamber of Commerce, to highlight a few.

Efforts to improve sustainability have provided cost savings to the airport through reductions in energy, water, and other resource and operational costs. The Sustainable Initiatives and Actions recommended in this plan will also make the airport a healthier and more sustainable place to work for employees, and a seamless and more pleasant environment for passengers to travel through.

II. Sustainability Guiding Principles

The Orlando International Airport (OIA) and Orlando Executive Airport were founded on the principles of being a good steward of the environment and conservation practices. The Orlando Experience® has always encompassed Earth, Water and Sky as elements of the region, with a natural landscape that attracts visitors. GOAA has been involved with sustainable concepts from its original design stages of the airport facilities to the present day. Concepts relate to the relationship between a healthy environment and a healthy economy; potential impacts of climate change, water quality and availability, waste reduction and storm water management.



Poirtras property at sunrise

GOAA also recognizes that there is a balance to integrating conservation and sustainable programs, community awareness, and preserving the airport's financial health. This is accomplished through proactive and cost effective solutions, as well as using a phased and logical approach to our programs. GOAA is attentive to the needs and desires of the communities that surround the airport, and ensures there is a sense of community involvement with the employees of the airport and their business partners.



We define sustainability as the responsibility to construct and operate our airport facilities in a manner that ensures future generations will enjoy the same environment that we experience today. Sustainability efforts are achieved by a balance between the environment and community outreach, and the economics of managing the airport.

Our Green Vision is to "Celebrate environmentally sustainable decisions, strengthen local partnerships with other governments and community organizations, and to share good community relations." We are conscious of our actions in Central Florida, which may have effects throughout the state and beyond. This vision begins with our Authority Board and is carried forward by all levels of GOAA management.

II. Overview of the Sustainability Planning Process

The objective of the SMP is continuous improvement in operations, maintenance, purchasing, engineering, and construction at GOAA. This SMP was developed to adopt established sustainability rating systems and certifications, including the United States Green Building Council (USGBC), Leadership in Energy and Environmental Design (LEED) standards, and ISO 14001.

Ensuring that objectives move from language to results is critical to the success of the SMP. To facilitate this, each sustainability goal and objective describes specific actions and responsibilities. In order to achieve success, the plan identifies Green Department Champions, who are responsible for each action, to include setting a timeframe for implementation and defining measures or indicators to track success.

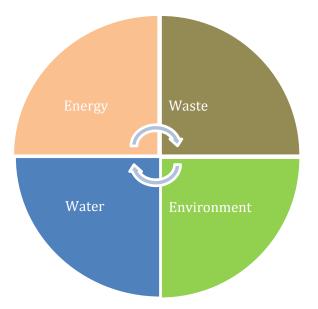


The airport will coordinate an annual evaluation of, and summarize progress toward, SMP objectives and targets in a brief report that describes:

- Achievement of Progress Indicators
- Participation Rates (where applicable)
- Remaining Barriers to Implementation

III. Focus Areas

The Orlando International Airport has identified four main areas of focus in the field of sustainability. They are Energy, Water, Environment and Waste. Within these four areas, there are nine main goals with action steps within each goal. We believe that maintaining a focus on the goals in each area will assist in the success of the plan.



GOAA Sustainability Initiatives

- Reduce Solid Waste to Landfills
- Reduce Energy Use Intensities
- Reduce Water Consumption
- Improve Operations and Maintenance Plans
- Improve Sustainable Construction, Engineering and Design Practices
- Develop Sustainable Concessionaire Practices
- Improve Environmental Practices
- Reduce Single Occupancy Commuting and increase Alternative Transportation
- Improve Alternative Energy Strategies

Sustainability Initiative #1:

Reduce Solid Waste to Landfills

Airports are unique in the arena of solid waste, and GOAA is no exception. The airport collects waste from the traveling public throughout the common corridors of the landside and airside terminal buildings. Our food service operators are governed by independent contracts in which each food service operator is responsible for their own waste. The airline companies are also responsible for their waste from their aircraft, and when the arriving flights are from countries outside of the United States there are federal regulations for their waste. The challenge for GOAA staff is to work closely with all of our airport partners to develop waste strategies that work within the balance of economics, community relations, and social responsibility.

A. <u>Strategies</u>

- Increase diversion rate to 50 percent by 2018
- Expand single stream recycling services to all GOAA facilities, parking areas, and garages
- Expand airport recycling efforts by coordination with airport stakeholders

B. Achievements

- Long standing practice of recycling wooden pallets, scrap steel, used asphalt and concrete, and other construction materials
- Established public recycling program in the landside terminal
- Established centralized recycling program for all airport staff offices
- Established recycling programs for airline and other back of the house areas
- Electronic Content Management (ECM) plans and review process implemented for all new construction projects
- Electronic Project Management document storage and filing systems implemented
- Expanded recycling programs to include carpet, batteries, and printer cartridges
- Replaced paper towel dispensers with electric hand dryers at landside terminal building ground transportation levels



Action Steps (How will you get to where you want to be?)	Responsibility (Who will make it happen?)	Timeframe (When will it happen?)
Benchmark current waste diversion rates	Airline Operations Environmental Solutions Group	2013
Meet with the airport's stakeholders	Environmental Solutions Group	2013
Develop a waste management plan with attainable goals	Environmental Solutions Group Airline Operations	2013-2018
Perform and report waste audit reports (annual review)	Airline Operations Environmental Solutions Group	2013-2018
Work with food court vendors to divert food waste from landfills and increase recycling in food courts	Concessions Environmental Solutions Group	2013 - 2018
Expand recycling efforts to surface parking areas, garages and cell phone lots	Airline Operations Environmental Solutions Group Airport Operations – Parking Division	2013-2018
Provide ongoing diversion rate reporting	Environmental Solutions Group	2013 – 2018
Increase education and participation in public awareness	Environmental Solutions Group	2013-2018

- Executive and senior management support
- Stakeholder buy-in and support
- Reinvest waste budget savings on future diversion projects
- Additional training to end users
- Additional recycling containers for public areas
- Marketing of sustainability efforts to traveling public

Sustainability Initiative #2:

Reduce Energy Use Intensities

Energy at GOAA is a large part of our sustainability program. The airports operate year-round and never close. Over 35 million passengers annually pass through Orlando International Airport and these passengers use the 60 elevators, 50 escalators, 20 moving sidewalks, 8 trains, and over 50 thousand lights required to operate the facility. Another challenge is that the airport is over 30 years old and is expanding. Using models that simply look at reducing energy will not adequately portray the success of the airports energy practices. We prefer to use models that evaluate energy use intensity (EUI), a model that looks at energy use much like vehicles use miles per gallons (MPG). We can benchmark EUI against other airports or other facilities in order to compare our energy reduction efforts.

A. Strategies

- Reduce energy use intensities by 10% by 2018
- Complete energy audits
- Prioritize Energy Cost Measures and develop capital funding plans for implementation

B. Achievements

- Benchmarked several of the airports facilities in Energy Star Portfolio Manager. These include the landside terminal, the four airsides, and the other buildings with GOAA offices
- Replaced three base load centrifugal chillers with high efficiency machines
- Developed operational schedules, which are reviewed regularly for optimal start and stop times for lighting, air conditioning, and temperature levels
- Installed occupancy sensors in large areas that are subject to periods of low occupancy. These sensors control lighting as well as temperatures
- Installed carbon dioxide sensors in large meeting rooms to control the amount of outside air being introduced during periods of occupancy
- Installed low E Glazing glass at transfer levels on Airsides 1 & 3
- Replaced Airsides 1 & 3 generators with new higher efficiency and lower emissions units and replaced 6 Landside generators with 3 high efficiency and lower emissions units
- Installed energy efficient glass skylights on Airsides 1 & 3
- Replaced canopy and walkway light fixtures in the employee parking lot with high efficiency LED lights
- Upgraded approximately 75% of airfield edge lighting to LED lamps, and Upgraded approximately 35% of taxiway centerline lights to LED lamps
- Installed high efficiency LED fixtures in baggage make-up area
- Upgraded all of the streetscape ambiance lighting in the East Atrium from incandescent to LED lamps
- Upgraded all lights on the Tram Tubes from incandescent to LED lights
- Replaced all light fixtures in the landside terminal loading dock and service road with high efficiency fixtures

 Replaced all of the older cathode ray tube (CRT) airport owned computer monitors and televisions throughout the airport with more efficient liquid crystal display (LCD) or light emitting diode (LED) monitors

Action Steps (How will you get to where you want to be?)	Responsibility (Who will make it happen?)	Timeframe (When will it happen?)
Benchmark current Energy Usage Intensity (EUI) values for all buildings larger than 15,000 square feet	Maintenance	2013
Review and update facility preventive maintenance practices	Maintenance	2013
Develop budgets and investment return goals for funding energy conservation opportunities	Maintenance	2014 - 2016
Continue to replace and upgrade to high efficiency lighting	Maintenance	2013 - 2018
Replace signage using high efficiency lighting technologies	Maintenance	2016 - 2020
Replace centrifugal chillers with high efficiency chillers	Maintenance	2019
Complete upgrades to the building automation systems	Environmental Solutions Group	2013 - 2018
Upgrade all GOAA facilities to the Building Automation System	Maintenance	2013 - 2018
Engage sustainability "teams" for outreach and behavior modification efforts	Environmental Solutions Group	2013 - 2018

C. <u>Resources</u>

- Executive and senior management support
- Reinvest energy budget savings into energy capital projects
- Additional training to end users
- Information sharing to employees and stakeholders
- Marketing to traveling public

Sustainability Initiative #3:

Reduce Water Consumption

In Central Florida, clean drinking water is one of our most precious resources and the staff at GOAA is dedicated to preserving it. Our strategies are intended to conserve the potable water use through strategies that find alternative ways to use water for cooling and irrigating, and other areas where using another source is environmentally practical

A. Strategies

- Reduce potable water use by 10% by 2018
- Develop plans to recover condensate to reuse in cooling towers
- Study the feasibility of using storm water runoff for cooling towers, irrigation, or other uses

B. Achievements

- Replaced 90% of bathroom fixtures to low flow devices. The remaining fixtures to be replaced in a future project
- Using more efficient base load chillers for cooling, reducing the water demand at the cooling towers
- Increased inspections and preventive maintenance in bathrooms to ensure prompt action is taken for any leaks

Action Steps (How will you get to where you want to be?)	Responsibility (Who will make it happen?)	Timeframe (When will it happen?)
Benchmark current water usage	Maintenance	2013
Meet with the airport's stakeholders	Environmental Solutions Group	2013
Develop a water use reduction plan with attainable goals	Environmental Solutions Group	2013 - 2018
Develop capital plans for goals	Maintenance	2013 - 2018
Provide ongoing water use reduction reports	Environmental Solutions Group	2013 - 2018

Describe the resources needed to carry out the action steps described above:

- Executive and senior management support
- Reinvest water budget savings on future conservation projects
- Stakeholder buy-in and support
- Additional training to end users
- Capital funding for potable to reclaim water conversions

Sustainability Initiative #4:

Improve Operations and Maintenance Practices

Orlando International Airport's North Terminal complex has been in operation since 1980 and has undergone a number of expansion projects. The staff at GOAA prides itself on proven purchasing, operations, and maintenance plans. The Environmental Solutions Group will review each of these practices to determine which areas can be improved to enhance the sustainable goals of the airport.

A. Strategies

- Modify Purchasing practices and policies
- Develop standard policies for 100 % recyclable materials delivered to the airport
- Incorporate green cleaning requirements to all custodial contracts

- Cleaning products are required to be green seal certified in the main terminal contract
- HEPA vacuums are required in the terminal and all airsides

Action Steps (How will you get to where you want to be?)	Responsibility (Who will make it happen?)	Timeframe (When will it happen?)
Review current purchasing practices and recommend updates to comply with sustainability standards	Maintenance	For all new contracts
Meet with airport stakeholders to discuss recommendations	Maintenance	For all new contracts and amendments
Develop recommendations and goals for future policies	Purchasing	2014
Modify service contracts to incorporate sustainable purchasing criteria	Purchasing	For new contracts and amendments
Provide annual performance reporting	Maintenance	Annually

- Executive and senior management support
- Stakeholder buy-in and support
- Additional training to end users

Sustainability Initiative #5:

Improve Sustainable Construction, Engineering and Design Practices

The Engineering and Construction staff at GOAA has always been committed to the highest quality of new construction and rehabilitation efforts in the community. GOAA staff will continue to look for new and innovative ways to construct and remodel using sustainable methods.

A. Strategies

- Develop and implement a construction and demolition waste plan for major renovations and new construction
- Require New and Renovation projects to use LEED, AP, and Green Globe guidelines for sustainable construction practices. Certification should be acquired whenever possible
- Use LEED compliant products in renovations to replace non-sustainable products

- Large and small projects are separating construction waste and recycling materials reducing the amount of material going to the landfill
- The front end specification now requires Designers and General Contractors to use LEED recommendations in the design, construction and commissioning of projects
- Designers and Contractors are replacing components with LEED compliant materials that meet sustainable guidelines

Action Steps (How will you get to where you want to be?)	Responsibility (Who will make it happen?)	Timeframe (When will it happen?)
Require all Construction and Demolition waste to be recycled or reused, to the extent possible	Construction	All new contracts
Consider the use of permeable surfaces for all horizontal work designed for parking or standing of vehicles, and pedestrian traffic	Construction/Engineering	All new contracts
Require third party commissioning for all new construction	Engineering	All new contracts

Describe the resources needed to carry out the action steps described above:

- Executive and senior management support
- Stakeholder buy-in and support
- Additional training to end users

Sustainability Initiative #6:

Develop Sustainable Concessionaire Policies

The companies and employees that serve the traveling public at Orlando International Airport are dedicated to high customer service but are also concerned with their impact on the environment. These companies practice green cleaning methods and recycle various items, such as cardboard, used food oil, outdated magazines, and other items that would otherwise end up in local landfills. GOAA staff works closely with airport companies and other community leaders to improve sustainable practices.

A. Strategies

- Modify the Tenant Design Criteria to meet sustainability practices or LEED recommendations
- Minimize packaging material where applicable
- Eliminate food waste to landfills
- Use biodegradable tableware

- Waste food grease is being recycled
- Cardboard material is being collected and recycled

Action Steps (How will you get to where you want to be?)	Responsibility (Who will make it happen?)	Timeframe (When will it happen?)
Develop sustainable concessionaire operating plan	Concessions	For all new or amended contracts
Require food service operators to provide recycling containers for public use	Concessions	For all new or amended contracts
Encourage food service operators to consider alternatives to food waste, using composting, anaerobic digestion, or other means to divert waste from landfills	Concessions	For all new or amended contracts

Encourage concessionaires to use post consumable products and reuse practices to reduce amounts of waste	Concessions	For all new or amended contracts
Require retail stores to use high efficiency lighting for all new construction	Concessions	For all new or amended contracts

- Executive and senior management support
- Stakeholder buy-in and support
- Additional training to end users

Sustainability Initiative #7:

Improve Environmental Practices

Environmental stewardship is the cornerstone of the airport's continued development. The airport property contains over thirteen thousand acres but only 30 percent of the property is developed. The remainder of the acreage has been allowed to remain in its natural condition. This property is home to native wildlife, including deer, boar, fox, coyote, alligator, and many more species. The acreage is also diverse with wetlands, hardwood forest, and several lakes. GOAA maintains a responsibility to this property, not only for the airport infrastructure that lies on it but to the environment, native wildlife and community that surrounds it.

A. Strategies

- Replace asphalt and concrete surfaces designed for parking and standing with pervious surfaces during regular replacement schedules. These pervious surfaces allow storm water to filter into the soils, avoiding runoff into the lakes
- Continue dredging storm water ponds
- Reduce or eliminate potentially harmful chemicals introduced into the soils
- Enhance the controls of irrigation systems to eliminate overwatering
- Pursue GOAA staff certification for Master Gardner or similar programs
- Ensure "Florida Friendly" plant materials are used for new planting areas or replacements
- Consider the requirement of using Clean equipment for plant care



- Oil water separators, turbidity barriers and other efficient devices have been installed throughout the airport drainage system to remove pollutants from the storm water prior to their final discharge into the canals
- Long standing practice of recovering fluorescent light bulbs for proper disposal
- Replaced diesel fire pumps with electric ones

- Collect all unused paint, cleaners and other potential environmental hazards for proper disposal
- Required 100% reclaimed water for pressure washing/scrubbing of parking garages
- Diesel fuel ground support equipment used to power and cool aircraft while parked has been replaced with electric preconditioned air conditioning and ground power units, reducing the amount of exhaust fumes
- Implemented Dark Skies program at the airport for all new or replaced lighting
- The Storm Water Pollution Prevention Plan (SWPPP) requires contractors and tenants implement appropriate practices such as protection of existing draining structures, employee training, preventive maintenance spill prevention and response, housekeeping, etc., to prevent pollutants from entering the airport's drainage system
- Surface water samples are collected monthly when storm water from the airport enters the canals to measure for any pollutants
- Instrumentation installed to monitor water borne nutrient levels entering/leaving the airport
- Dredged 25 % of the airport's storm water ponds to design depths

Action Steps (How will you get to where you want to be?)	Responsibility (Who will make it happen?)	Timeframe (When will it happen?)
Incorporated cisterns into future development to capture and use rain water for irrigation and flushing	Construction/Engineering	2014 - 2015
Develop strategies to capture condensate in existing buildings for reuse	Maintenance	2015
Capture rainwater in all future construction projects for reuse in irrigation or flushing	Construction/Engineering	2014 - 2015
Implement new fertilization requirements in all new contracts. Procedures will require that no fertilizers are applied during the rainy seasons, never placed within ten feet of bodies of water, and only applied based on soil test results	Maintenance	2013 - 2014
Certify all staff associated with plant maintenance through Orange County Master Gardner program	Construction/Engineering	2014 - 2015
Study the availability and feasibility to eliminate fossil fuels from lawn care equipment	Maintenance	2014 - 2016

- Executive and senior management support
- Stakeholder buy-in and support
- Additional training to end users

Sustainability Initiative #8:

Reduce Single Occupancy Commuting and Increase Alternative Transportation



One of eight Automatic People Movers

Orlando International Airport has over 17 thousand employees working within the hundreds of companies that support the aviation industry. Although many of these employees use public transportation, the majority do not. The overall goal is to increase the percentage of employee's who use public transportation, carpooling, and in the future, commuter trains. GOAA staff will work closely with groups like Rethink, a service provided by the Florida Department of Transportation, to assist workers with transportation alternatives.

A. Strategies

- Replace car pool vehicles with high efficiency, hybrid or electric vehicles
- Convert buses to compressed natural gas engines
- Increase employee participation in car-pools and public transportation
- Communicate opportunities with Lynx and Sunrail
- Have airline partners replace or upgrade ground support equipment to alternative fuel or electric equipment

- Consolidated Rental Car facility completed, integrating the majority of the rental car companies into the landside parking garage
- Policies to restrict standing vehicles from idling. Commercial operators are required to turn their engines off while waiting for passengers in our express parking and commercial lanes.
- Constructed a Cell Phone waiting area in the south end of the airport for friends and families to wait for passengers to arrive, reducing the number of vehicles on the roadways
- Installed nine electrical charging stations in the public parking areas
- Using bio-diesel fuels in buses
- Purchased five hybrid vehicles which are for airport staff
- Secured contract for the airport's first compressed natural gas service stations

Action Steps (How will you get to where you want to be?)	Responsibility (Who will make it happen?)	Timeframe (When will it happen?)
Benchmark current commuting practices and use of alternative vehicles and establish goals	Planning Maintenance Airport Operations	2014
Replace vehicles with high efficiency ones through the capital funding process	Maintenance	During capital replacement program
Improve the roads to allow for safe bicycle travel	Planning Construction/Engineering	2020
Construct second cell phone waiting area on the north end of the airport.	Construction/Engineering	2016
Provide initiatives for employees using alternative transportation	Human Resources	2014 - 2015

- Executive and senior management support
- Stakeholder buy-in and support
- Additional training to end users

Sustainability Initiative #9:

Review Alternative Energy Strategies

There are challenges to alternative energies in any environment, and it is no different at Orlando International Airport or Orlando Executive Airport. The use of solar arrays must be carefully studied in order to avoid any hazards to aircraft operations. GOAA staff will continue to remain open to opportunities that may be commercially viable to the airport and its surrounding community.

A. Strategies

• Consider the use of and application of solar, wind, geothermal, or hydro-electric possibilities

B. Accomplishments

- Using solar power for small applications, such as traffic signal devices
- Buses and other large vehicles are using biofuels

Action Steps (How will you get to where you want to be?)	Responsibility (Who will make it happen?)	Timeframe (When will it happen?)
Study feasibility of using photovoltaic systems on the airport property, determine best locations and benefits	Maintenance	TBD
With the millions of gallons of water flowing continually around the airport, study possibilities of harnessing the hydro-electric possibilities	Maintenance	TBD
Increase the use of biofuels and compressed natural gas vehicles	Maintenance	2016
Study feasibility of using wind technologies	Maintenance	TBD

C. <u>Resources</u>

- Executive and senior management support
- Stakeholder buy-in and support
- Additional training to end users

Sustainable Future

Next Steps

Like any operations plan, the Sustainability Management Plan requires careful planning, solid management, executive support, and funding. The following is a proposed schedule for the implementation of this plan.

Brief Executive Staff	Maintenance	November 2013
Finalize SMP with input of the Environmental Solutions Group and stakeholder's green teams	Maintenance	December 2013 - January 2014
Meet with airport departments	Environmental Solutions Group	November - December 2013
Finalize SMP	Maintenance	December 2013
Brief the Authority Board	Maintenance	January 2013
Brief Airlines	Maintenance	February 2013
Annual Review	Maintenance	March 2015