



Deerfield Beach



Florida

Sustainable Management

Executive Summary

The City of Deerfield Beach has been diligent in addressing the growing concerns of global climate change and sea level rise. The City has confronted these concerns through practical and local solutions focused in the areas of: energy efficiency, coastal resiliency, environmental conservation and protection, education and outreach as well as policy development. This document summarizes key initiatives that the City has implemented and intends to complete in the near future. Additionally, we have included a timeline of past projects that have been completed towards promoting environmental sustainability as well programs in progress and those that are planned for the future.

Energy Efficiency & Renewable Energy

Each year, the City of Deerfield Beach spends approximately 2 million dollars on electricity for City operations. In an effort to reduce overhead costs and resultant greenhouse gases, the City has completed a number of energy efficiency projects throughout City facilities.

In 2011, the City was awarded an Energy Efficiency and Conservation Block Grant (EECBG) through the Department of Energy. Through this grant, the City was able to leverage \$750,000 in awarded funds towards. These monies were directed towards a collection of energy efficient upgrades throughout City facilities. These included; energy efficient air conditioning systems in City Hall, LED lighting in the Commission Chambers, renewable energy generating solar panels and education system at the Central City Campus, as well as a host of energy efficiency upgrades at the City's water plant.



In 2016, the City began tracking and monitoring electricity usage. Through this intense tracking, the City has been able to create a baseline for energy usage and costs to better target higher impact projects and begin to develop energy reduction goals.

This year the City has embarked on pursuing Performance Based Contracting which will allow the City to fund energy efficient capital improvements through the estimated savings to be generated. This is a results-oriented contracting method which implements a range of efficiency improvements accompanied by a savings guarantee. These projects are completed with no up-front cost, and are only paid for based on the savings that are achieved through a stringent measurement and verification process. Eligible companies have submitted bids for this project, and are currently under review by the City's evaluation committee. It is anticipated that a contract will be rewarded later this year enabling the City to make a whole host of energy efficiency and sustainable upgrades to the City's facilities and related infrastructure.

Coastal Resiliency

Deerfield Beach is highly susceptible to the impacts of climate change and sea level rise. To combat these impacts at the coastline, we have implemented a variety of projects.



The City has engaged in multiple dune restoration planting projects as sand dunes are the first line of defense against storms and act as a buffer to protect upland property and infrastructure. These plantings were grant-funded and are part of a larger County-wide effort to stabilize Broward's shoreline. Dunes are the most cost effective and natural way for coastal communities to preserve their shorelines. Beach re-nourishment projects have also been completed in the past and are currently planned for the future in order to remediate the effects of erosion on our public beaches.

A project currently in the permitting stages is the installation of an artificial reef located nearshore and accessible by residents and guests. Aside from the anticipated eco-tourism and educational opportunities that reefs have to offer, coral reefs can also act as an additional line of defense to the coast in the event of storm surge or intense wave activity.

In addition to these active efforts, the City of Deerfield Beach also adopted the 2015 Update of the Unified Regional Sea Level Rise Projection for Southeast Florida, which is meant to support planning and investment activities to further advance shared efforts towards community resilience.

The establishment of a coastal fund in the proposed FY 18 budget will allow the City to develop a coastal management plan aimed at charting a sustainable and long term approach at conserving and enhancing our coastal assets for the enjoyment of current and future generations.

Environmental Conservation & Protection

The City of Deerfield Beach has also worked on several other environmental conservation and protection projects. For example, the current mooring buoy installation project helps to relieve stress on natural reefs by providing alternatives to anchoring and drag along the reefs.



Sea turtle friendly lighting has been installed along the beach to allow for sea turtle hatchlings and nesting turtles to follow the natural light of the moon back into the sea. This project is currently being used as a sea turtle lighting model program for other coastal communities to follow and is endorsed by State and Federal wildlife agencies. Furthermore, the \$500,000 project was funded completely through grant dollars and due to the use of energy efficient lighting, operational and maintenance costs were significantly reduced.

The regular work of the Sanitation Division and City-supported volunteer groups help to beautify our communities through litter and trash collection throughout the City's right-of-ways, along the coast and in canals and waterways.



Global warming and climate change inducing greenhouse gas emissions are targeted through a variety of avenues. The solid waste collection fleet is slowly being converted from diesel to compressed natural gas which significantly reduces emissions, improves safety and makes for a



quieter vehicle with lower operational and maintenance costs. Efforts to increase the urban tree canopy through tree giveaways and related programs also helps contribute to these reduction efforts. City staff is in the process of completing a Greenhouse Gas Inventory in order to develop a baseline of emissions, identify key contributors and set targets to implement additional measures to reduce the local impacts Deerfield Beach has on greenhouse gas generating emissions.

Last year, the City of Deerfield Beach Commission voted to opt-in to the Broward County Property Assessed Clean Energy Program (PACE). PACE is a financing mechanism for businesses and residents to install energy efficient and sustainable upgrades. This allows residents and businesses more opportunities to be better environmental stewards for the community and improve the resiliency of their properties. Additional investments in residential and commercial properties also improves the local economy through green job creation and increased property values.

Efforts within the Environmental Services Department are underway to implement long-term water resource conservation initiatives such as automated water metering and reclaimed water programs.

Education & Outreach

As home to the Department of Sustainable Management, the Central City Campus has become a hot spot for sustainable pilot projects and related education and outreach programs aimed at increasing the community's environmental awareness. The solar panels that were installed with the EECBG also included educational signage on the building to educate visitors of the City's efforts. In 2012, a building was constructed at the Recycling Drop-Off Center to demonstrate and promote green building practices including a rainwater cistern, recycled insulation, solar panels, energy efficient lighting and the use of other sustainable practices and materials.



Some newer projects at Central City Campus include a butterfly garden and a beehive, the first of many in the upcoming larger planned DFBee Apiary project. These programs aim to increase awareness on the importance of pollinators in our environment and promote community involvement in implementing programs to help preserve these important species. They will also provide the tools necessary for residents to implement similar programs at their homes to further benefit the cause.



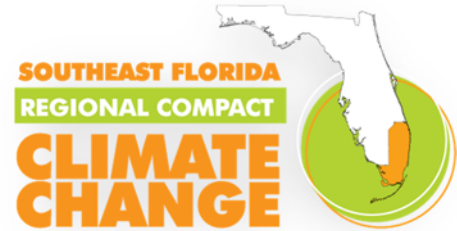
In addition to the educational efforts at Central City Campus, the City continues to work on educating the community on sustainable practices through community outreach and social media. Presentations at schools, summer camps, and community organizations are performed on a regular basis. The @DFB_Sustainable twitter and Facebook pages are used to give residents quick facts on local sustainability and environmental practices.

The City's annual "Spring Fest" event is another opportunity for our staff to bring the community together with sustainability experts and vendors and includes our popular annual tree giveaway. The Recycling Drop-off Center continues to serve as a valuable resource and way for our staff to keep in touch with our residents to promote sustainable practices.

Policy Development

As the backbone to all sustainable development in the City of Deerfield Beach, we have begun work to incorporate environmental practices in City resolutions, programs, ordinances, and policies.

In 2013, the City of Deerfield Beach Commission endorsed the Mayors Climate Action Pledge and the Regional Climate Action Plan, developed by Florida's southeast region. This commitment has given the City a baseline and strong foundation and resources for which additional sustainability planning can move forward from.



In 2015, the Department of Sustainable Management was formed with the goals of integrating sustainable and efficient practices in all municipal operations and promoting the environmental health, quality of life, and economic vitality throughout the community using innovative programming and technology.

The City has worked to incorporate sustainable practices in many ordinance revisions and on-going practices so the City can continue to lead by example. The Residential Land Development Code now includes Florida-friendly landscaping. The City has also passed a Litter in Waterways ordinance. In 2016, the Commission approved the Unified Sea Level Rise Projection updates put forth by the Regional Climate Action Plan. The City is also in the process of developing its own Sustainability, Climate, and Resiliency Action Plan.

Continued efforts towards the implementation of a needed stormwater utility as well as a coastal management fund will allow the City to continue to implement practical, local sustainable efforts aimed at improving the City's resiliency and combat the impacts of global warming, sea level rise and climate change now and adapt to future challenges.

A sustainability steering committee is anticipated to be created later this year consisting of City staff as well as business leaders and residents to collaborate on integrated efforts to ensure the long term viability and prosperity of the community and the City of Deerfield Beach.

Below is a project timeline illustrating past, current and proposed initiatives as the City endeavors to continue to lead by example through the implementation of practical and sound sustainable actions to the benefit of our local and global environments.

Project Timeline

Past Initiatives

- 2010 – Reclaimed Water Feasibility Study performed using Integrated Water Resources Program (IWRP) Grant funding
- 2011 – Energy Efficiency and Conservation Block Grant Projects: Solar Panels at CCC, Lighting in Commission Chambers, New energy efficient water plant pumps, High efficiency HVAC systems in city hall, sea turtle-friendly, energy efficient lighting
- 2012 – Green Building Exhibit at Recycling Drop-Off Center
- October 2012 – Implemented All-In Recycling Program
- March 2013 – Commission Endorsed Mayors Climate Action Pledge and the Regional Climate Action Plan
- October 2014 – Sanitation Division established
- 2015 – First Compressed Natural Gas powered truck purchased
- 2015 – Installed compost bin at Central City Campus
- February 2015 – Aerators for the Kingfisher Canal installed
- April 2015 – Beach nourishment project completed
- May 2015 – New pier facility awarded LEED Gold rating (constructed in 2013)
- June 2015 – Litter in Waterways Ordinance passed
- July 2015 – Responsible Pier Initiative partnership with Loggerhead Marinelife Center established
- September 2015 – Canal Watch program established
- September 2015 – JM Family Dune Restoration project completed
- October 2015 – Department of Sustainable Management created
- December 2015 – Annual Southeast Florida Regional Climate Leadership Summit Participation
- February 2016 – Commission approved the Unified Sea Level Rise Projection Updates
- July 2016 – Signed on to the Covenant of Mayors
- July 2016 – Butterfly garden installed at Central City Campus
- July 2016 – Began regular facility energy use monitoring and baselines
- September 2016 – Began Greenhouse gas inventory development
- September 2016 – Installed Solar window tinting on CCC, Building A
- October 2016 – Property Assessed Clean Energy (PACE) approved
- November 2016 – DART Container Company Dune Restoration project completed
- November 2016 – Hillsboro Canal Dredging Project completed
- November 2016 – First DFBee Apriay Bee Hive installed at Central City Campus
- January 2017 –Teacher Energy Education Kits delivered to DFB schools
- March 2017 – TD Bank Dune Restoration project completed
- April 2017 – Coastal Bird Hazards Awareness Program implemented
- April 2017 – LED pilot project installed in conference room at Central City Campus
- June 2017 – Cigarette Litter Reduction Program implemented
- June 2017 – Residential Land Development Code amended to support Florida Friendly landscaping

Ongoing Initiatives

- Participation in Broward Sustainability Stewards Program & Climate Change Task Force
- Coastal Education Program
- Annual Spring Fest Celebrating Earth & Arbor Day
- Recycling & Sustainability Presentations at Schools, Community Meetings and Summer Camps
- DFB Beach Cams
- Expansion of the CNG fleet
- Coastal Fund Establishment
- Pollution Control Device installed at western end of Kingfisher Canal
- Conservation Pays – Broward Water Partnership
- Complete Streets implementation
- Volunteer collection programs including Adopt-A-Road and Beach Cleanups

Planned Initiatives

- Sustainability, Climate, and Resiliency Action Plan development
- Sustainability Steering Committee formation – city staff, residents and businesses
- Greenhouse Gas Inventory completion
- Performance Based Contracting – Building Automation, Lighting Retrofits, HVAC Replacements, Water Plant Efficiency Upgrades
- Automated Meter Reading / Automated Metering Infrastructure
- Installation of an on-Site CNG Fueling station
- Tidal Gauge Installation
- Flood Elevation Planning
- Reclaimed water programs in partnership with Broward County
- Establishment of a Stormwater Utility – Infrastructure Improvements
- Development of a Coastal Management Division
- Policy and ordinance revisions and changes
- Adoption of additional County and regional climate change and resiliency plans