



KEY BISCAYNE SUSTAINABILITY PLAN

Laying The Foundation For An Eco-Conscious Tomorrow



April 2014



“Sustainable Development is the masterful balance of meeting our own needs without jeopardizing future generations ability to do the same.” - Unknown



The work of those passionate about a cause tends to yield impressive results. That is no doubt the case here, and I would therefore like to express my sincerest gratitude to all of the participating Green Committee members for their time, unwavering dedication and incredible insight. As a cohesive unit, the Green Committee has been able to effectively develop this Sustainability Plan to guide the Village of Key Biscayne on the path of a more eco-conscious tomorrow. It is my deepest wish and greatest aspiration that, via this Plan, the Village of Key Biscayne becomes a shining example of what is possible when a community rallies to accomplish and surpass expectations!

Derek Duzoglou – Green Committee Chair



VILLAGE OF KEY BISCAIYNE

VILLAGE COUNCIL

Franklin H. Caplan, Mayor
Michael W. Davey, Vice Mayor
Theodore J. Holloway, Liaison to the Green Committee
Michael E. Kelly
Mayra P. Lindsay
Ed London
James S. Taintor
Thomas Thornton

VILLAGE ATTORNEY

Weiss, Serota, Helfman, Pastoriza, Cole & Boniske, P.A.

OFFICE OF THE VILLAGE CLERK

Conchita H. Alvarez, MMC

ADMINISTRATION

John C. Gilbert, Village Manager
Jud Kurlancheek, AICP, Building, Zoning, and Planning Director



“Coming together is a beginning. Keeping together is progress. Working together is success.” ~ Henry Ford

Derek Duzoglou

Committee Chair

Founder and CEO of D Squared Engineering – a firm specializing in efficiency optimization coupled with a passion for eco-conscious initiatives. Masters degree in mechanical engineering.

Julie Dick

Committee Vice Chair

14+ years experience in operational, policy & legal aspects of environmental matters. Attorney with Everglades Law Center focusing on environmental & land use law & advocacy for South Florida.

Gretchen Clark

Committee Member

Ph.D. in political science with 13 years on Wall Street working in fixed income derivatives market, & previous Director of Finance to Monarch Wind Power, a developer of community wind farms in Midwest.

Antonio Gisbert

Committee Member

Pioneer in the use of non-active biocatalysts in industrial, agricultural and institutional maintenance settings for effective cleaning, degreasing and odor control applications, during the past 15 years.

Cindy Cutler

Committee Member

Miami native & Key resident since 1979. Involved in Girl Scouts on the Key for 9 years and the Youth Council for 6 years. Background in yoga & marketing, & studying sustainable living for the last 4 years.

Daniel MacCohon

Committee Member

Key resident since 1982, MBA from Lynn University, President & COO of Metro Gas FL – a company providing services for the transition to a compressed natural gas (CNG) infrastructure.

Monica Larriva

Committee Member

Senior financial executive with over 10 years experience and specialties of strategic financial planning & business analysis & developing and applying key performance metrics to drive business results.

Bernard Horowitz

Committee Member

Ph.D. in biochemistry. Led R&D into blood transfusion safety & the manufacture & licensure of novel blood products. Served as director for public/private companies & on scientific advisory boards.

Jud Kurlancheek

AICP, Director – Village Staff to the Committee

Theo Holloway

Councilmember – Council Liaison to the Committee

“A society is defined not only by what it creates, but by what it refuses to destroy.” ~ John Sawhill



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Laying the foundation for
 an **Eco-Conscious**
 tomorrow...

Planning For Tomorrow

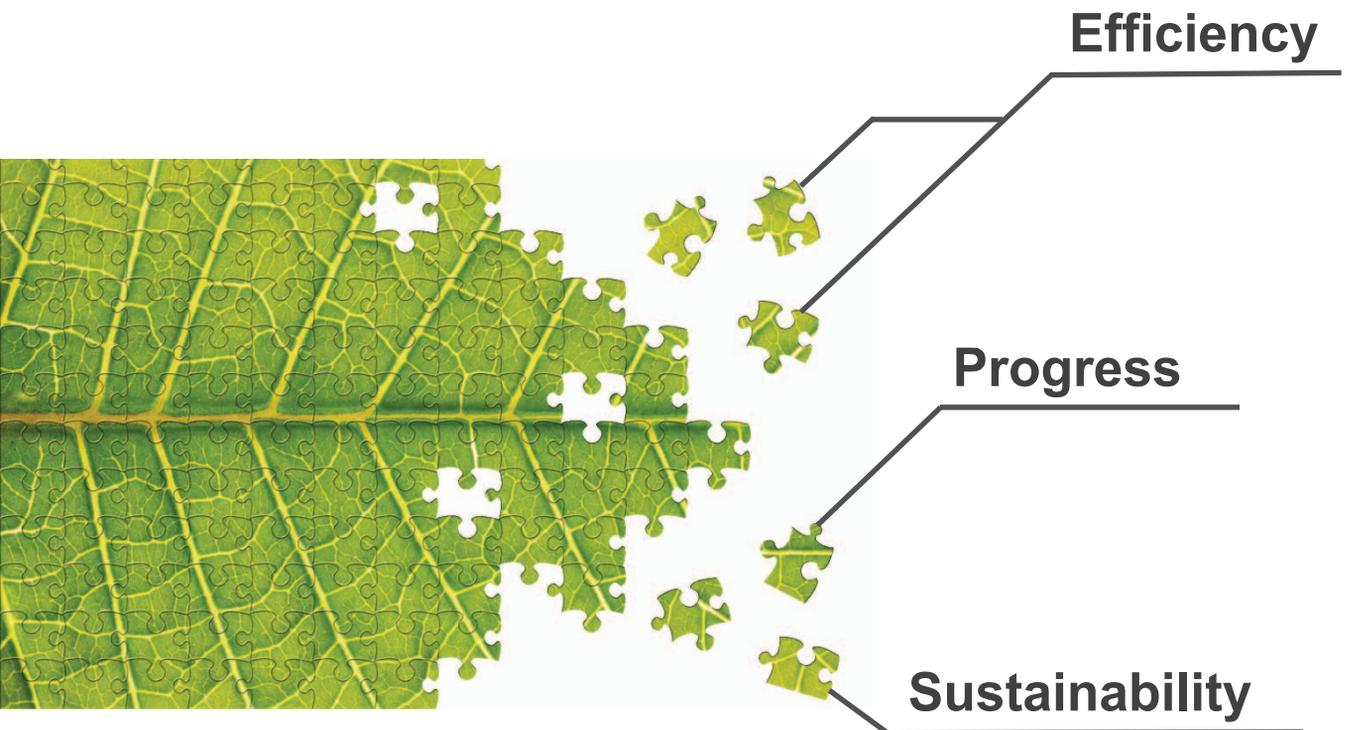
This Sustainability Plan is meant to help the Village of Key Biscayne government develop policies and initiatives consistent with responsible stewardship of Key Biscayne’s environment and infrastructure. It includes a series of short and long- term goals to be managed by a full time Sustainability and Procurement Director. Ultimately, these goals aim to protect the health and well being of the community for present and future generations.

The Sustainability Plan also guides the Green Committee in its mission:

Green Committee Mission Statement

“To advise and support the Village Mayor and Council by identifying efficient and ecological best practices and tangible protocols and recommending strategies to implement such practices, ensuring the sustainable management of Village resources for current and future generations of the Key Biscayne Community.”

Given the dynamic nature of codes, regulations, products, services, community needs and resources, this plan should be viewed as a living document, subject to change with changing inputs and needs.



Village Support

The Green Committee is pleased to recognize the guidance of Council member Theodore Holloway and the collaboration of Building Zoning and Planning Director Jud Kurlancheek to make this Sustainability Plan possible. We thank Mayor Franklin Caplan for his vision and commitment to making Key Biscayne a green and sustainable community.

The Benefits of Sustainable Planning

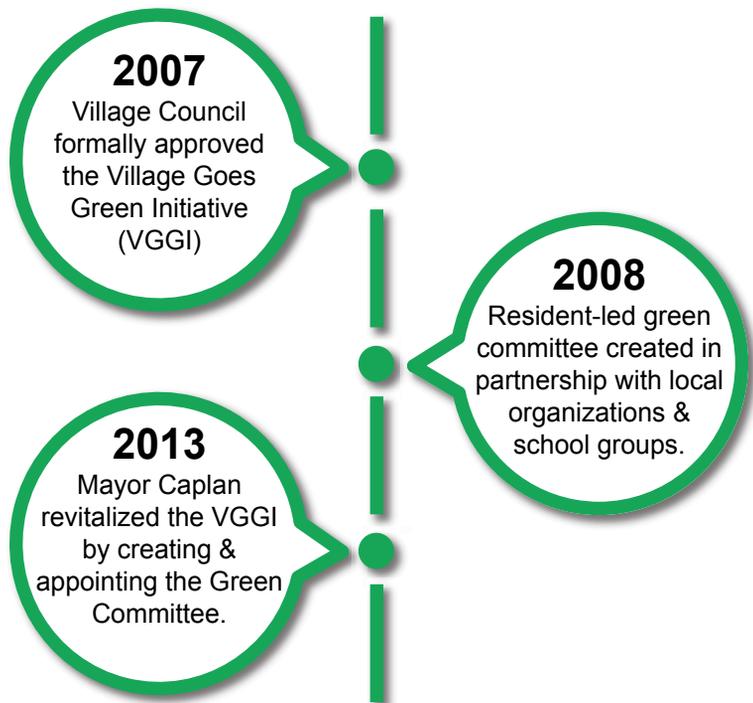


Through a conscientious and consistent effort, we have the potential to make changes and adopt practices that carry important benefits. These include decreased energy usage and costs; lower traffic volume; reduced liquid and solid wastes; and improved local air, water and soil quality. Taken together, these improve the quality of life and the public health of Key Biscayne residents and visitors. A secondary but not unimportant benefit is to increase environmental awareness and stewardship by all.

Longer term, reducing the Village’s carbon footprint contributes our share to climate impact mitigation. Improving the Village’s resiliency against the potential risks and costs from environmental impacts helps control insurance costs and helps preserve the Village of Key Biscayne as an “Island Paradise” for future generations.

A Green Foundation

The Village of Key Biscayne first launched efforts to increase awareness and promote environmental best practices during 2007. In April of that year, Mayor Robert Vernon signed the U.S. Conference of Mayors’ Climate Protection Agreement, and in September the Village Council formally approved the Village Goes Green Initiative (VGGI). The VGGI received funding in the FY 2008-2009 budget to support coordination and implementation of environmentally conscious projects, events and educational outreach opportunities. There should be funding set aside for further green initiatives through 2016 and beyond.



A resident-led grass roots green committee was created in 2008 and in partnership with the Key Biscayne Community Foundation, the Village, and local school groups held a successful Green Expo resulting in a light bulb and showerhead exchange and awareness campaigns.

A timeline and preliminary budget for longer-term items were also developed and approved by the Village Council. Momentum stalled on these initiatives over the subsequent five years as other Village priorities took precedence.

A Fresh Start

Mayor Frank Caplan revitalized the Village Goes Green Initiative (VGGI) by establishing the Citizen Scientist Project at the end of 2011 and by creating and appointing a Green Committee in 2013.

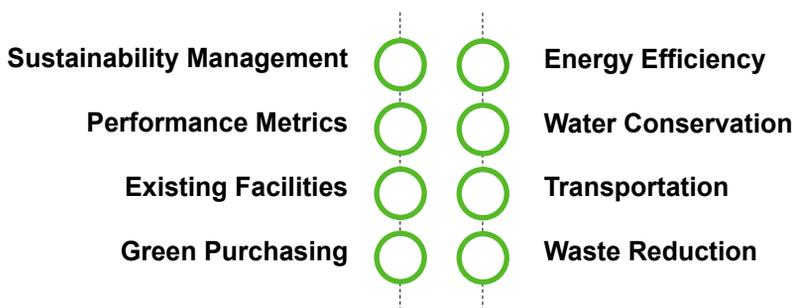


The Green Committee got to work reviewing the status of the VGGI and developing program areas, goals, and objectives for the Village’s consideration to plan for a sustainable community.

The Committee conducted an internal Green Initiatives Survey and met with Village department heads to establish an overview of what was currently being done within the Village government. The Committee reviewed sustainability programs established in neighboring communities and at the County and regional level. Committee members consulted with staff and elected officials from surrounding communities, Miami-Dade, Broward and Monroe Counties. Using this information the Green Committee developed this plan to reflect accepted best practices in municipal sustainability in a manner suited to the Village of Key Biscayne. This document is the result of those efforts.

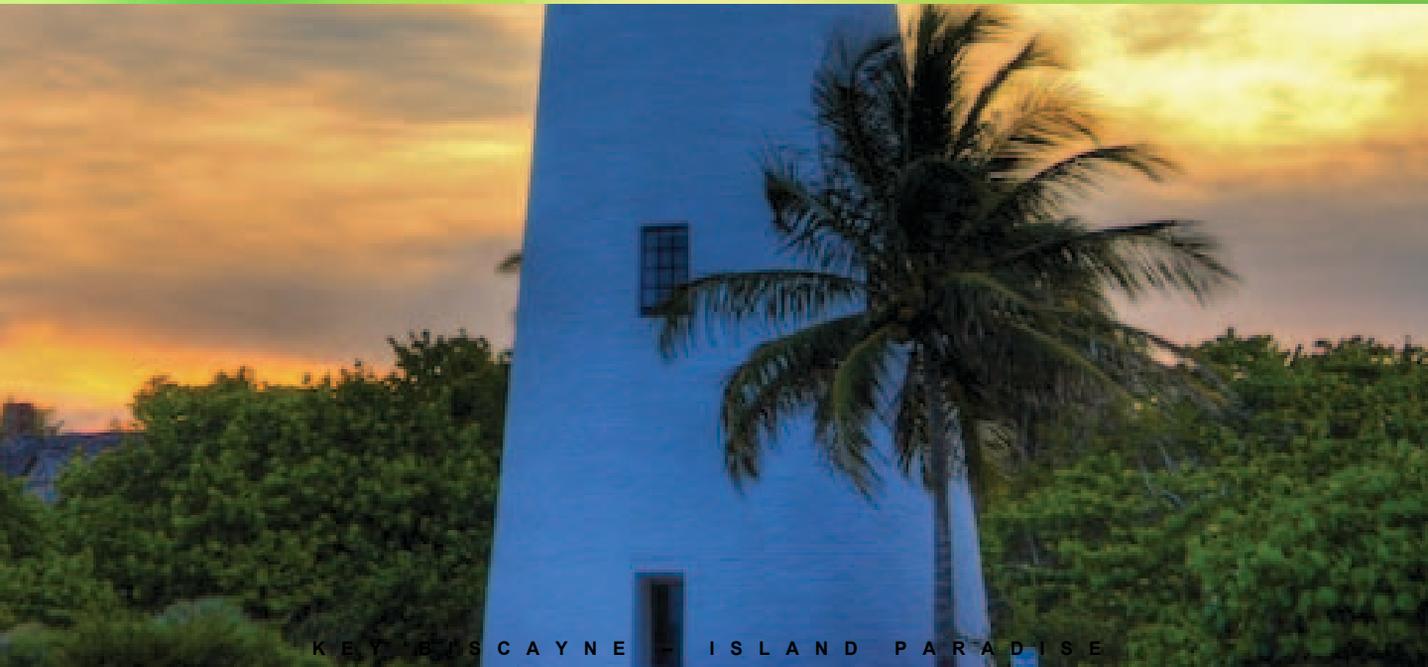
Green Initiatives Survey Background

The Green Initiatives Survey was initiated to get a “pulse” on existing conditions throughout Village Departments. The Survey was developed by the Green Committee over the course of several meetings, and is comprised of eight (8) sections. They are generic in nature, but still provide enough insight as to where we stand today. They are as follows:





SUSTAINABILITY PLAN ACTION ITEMS



Action Plan

We have identified what we believe to be the principal program areas in Table 1 (on the following page); each item is amplified in separate sections of this document. First, initiation requires the commitment of the Council through adoption of a resolution formalizing the Village’s commitment to becoming a “sustainable and green community”, communication of these commitments to residents and others through the Village website and other sources, and allocation of funding for a Sustainability and Procurement Director to manage implementation of key programs (detailed below).

Second, to understand the Village government’s current baseline performance in areas such as energy and water usage and waste management and to help with prioritization, we recommend studies to quantify these parameters and set goals based on successful implementation of best practices elsewhere.

Third, through 2016, we should address the “short-term goals” identified in each program area.

Fourth, we should examine these issues Village-wide, continually implementing and integrating sustainability goals into Village governance, educating residents on good stewardship practices, and establishing enforceable standards where possible.

Successful implementation of this plan will require a number of years. We’ve selected specific action items we believe can be accomplished in the short term while others will require additional time.

Progress should be monitored regularly, aided by an annual written report that details achievements and shortcomings and the objectives and proposed budget for the coming year.

Success on many aspects of this process will involve integrating the goals and actions stated here into the Village’s comprehensive planning and general decision-making processes. Table 2 in the appendices is set up to track accomplished, ongoing, short-term and long-term goals.



Table 1: Principal Program Areas



Village Commitment & Sustainability & Procurement Director

Adopt a resolution to commit to sustainable efforts & staff a full time position for implementation & oversight of this Plan.



Community Outreach & Communication

Formalize the environmental education and outreach platform for residents and businesses.



Waste Reduction, Reuse & Recycling

Improve recycling & waste reduction Village-wide and identify future waste management solutions.



Green Procurement

Adopt a green procurement resolution and initiate a green purchasing program.



Energy Conservation

Quantify energy usage, implement reduction measures and offset when/where feasible.



Green Building

Establish incentive criteria & encourage Village-wide green building for new construction & renovations.



Water Quality & Conservation

Adopt policies and implement programs to conserve water & reduce pollutants in storm water runoff.



Transportation

Support improved & eco-conscious public transportation and begin transition to a green fleet.

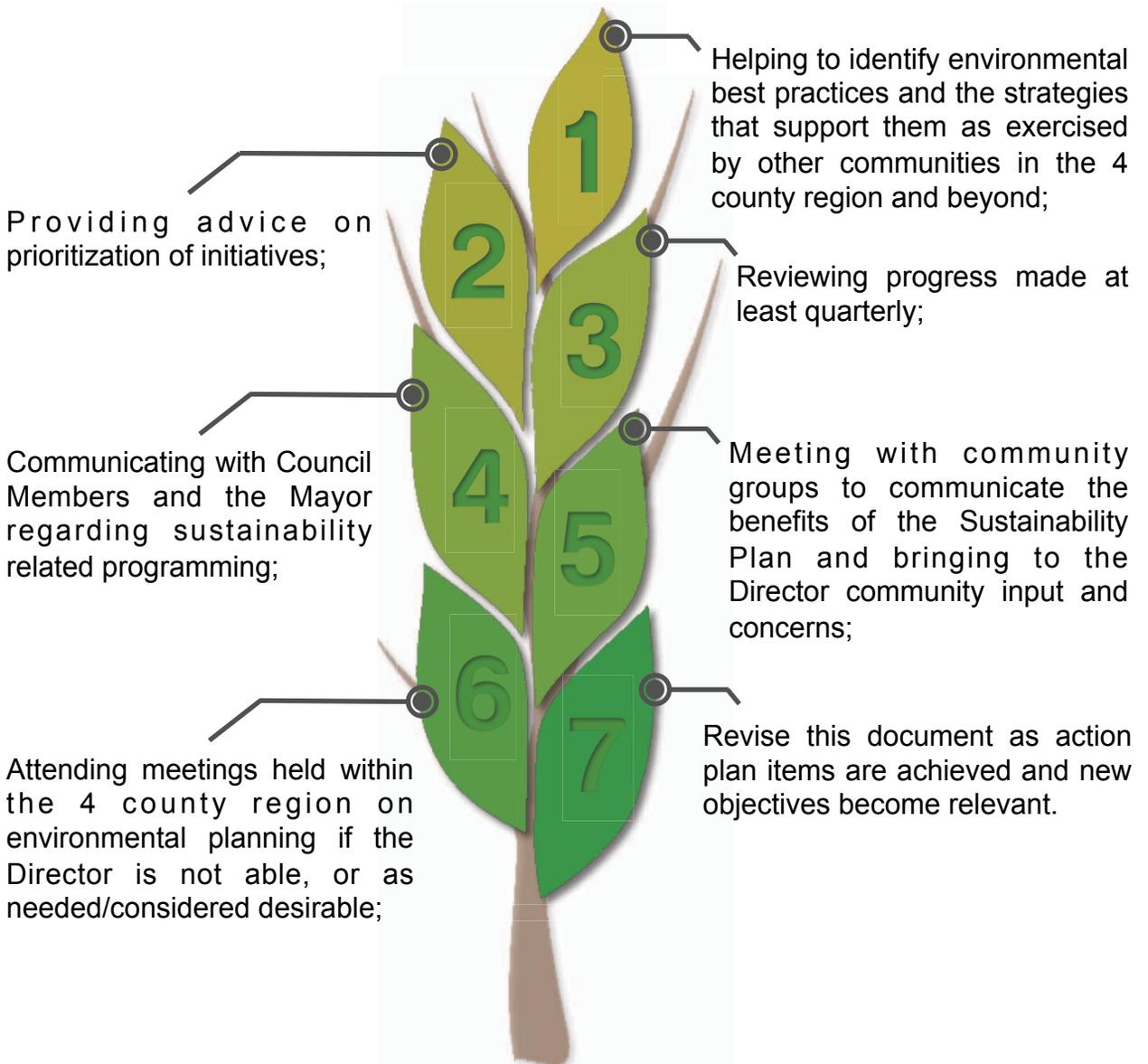


Climate Adaptation & Resiliency

Update environmental & sustainability policies & expand participation in outside initiatives. Fund measures that enhance resiliency.

Ongoing Responsibilities of the Green Committee

The Green Committee should be established by ordinance as a standing Committee and as an advisory board for implementation of the Sustainability Plan and related programming. The “Green Implementation and Advisory Board” can assist and support the Village and the Sustainability and Procurement Director in a number of ways:





SUSTAINABILITY PLAN PROGRAM AREAS

1. Village Commitment and Sustainability & Procurement Management



This Sustainability Plan contains multi-faceted recommendations to improve the health and well being of Key Biscayne residents and visitors, and reduce the overall environmental impact of the Village of Key Biscayne. These recommendations are aligned with established best practices that have been adopted and committed to by government bodies around the country and throughout the region.

The Village of Key Biscayne can formalize its commitment to being a sustainable community by adopting a resolution to formalize its commitment and to ensure underlying principles of sustainability and stewardship are integrated into planning, governing, and Village operations. Communicating these commitments through the Village website and other vehicles is needed to help ensure public support.

Effective implementation of this Plan's proposals will require substantial oversight. The Green Committee believes this oversight is best achieved through a qualified member of the Village staff and therefore recommends that the Village Council create a new position, Sustainability & Procurement Director, reporting to the Village Manager. This position will be partially funded through streamlined procurement processes and cost savings from the programs, such as lower utility bills.



The Sustainability & Procurement Director will be responsible for the implementation of the Sustainability Plan by holding the following responsibilities:

- Ensure that the sustainability goals are pursued and achieved within established time frames;
- Develop, implement, manage and centralize the Village's procurement processes related to products, services & contracts;
- Serve as the Village point of contact for the Village sustainability platform and partnerships within Village government, with other government bodies and organizations on matters related to sustainability;
- Attend Green Committee meetings, informing it of progress implementing the Sustainability Plan and seek advice and support when useful. The Director would be staff to the Committee, and the Committee would be reestablished as the "Green Implementation & Advisory Board" to oversee implementation of this Plan);
- Prepare an annual, written report detailing progress and shortcomings and the objectives and proposed budget for the coming year.

Short Term Goals

- 1S1. Pass resolution committing to incorporate sustainability plan goals and green priorities into Village governing and decision-making, including integration of these goals into strategic and comprehensive plans for the Village;
- 1S2. Resolve to hire Sustainability and Procurement Director and fill position by January 2015;
- 1S3. Formalize and finalize “Pledge of the Municipalities of Miami-Dade County Endorsing the Mayors’ Climate Action Pledge, Affirming Support for the Southeast Florida Regional Climate Change Compact, Agreeing to Consider Implementing the Regional Climate Action Plan and the GreenPrint Sustainability Plan in Whole or in Part”;
- 1S4. Adopt ordinance creating Green Implementation & Advisory Board with responsibilities that track the Sustainability Plan.

2. Community Outreach & Participation



The Sustainability Plan depends on community awareness and support. Education and outreach strategies should communicate the benefits of sustainability as exercised by the Village and by private businesses and individuals.



Short Term Goals

- 2S1. Obtain the assistance of the Key Community Foundation, its Citizen Scientist Project, Key Biscayne Community Partners, Key Biscayne schools, the Citizen Scientist Initiative, the Chamber of Commerce & the Condominium Presidents’ Council in communicating the benefits of sustainability planning;
- 2S2. As the Village contemplates decisions and expenditures reflecting sustainability goals, schedule lectures from experts and other programs to help residents understand the science, risk management, and economic reasoning behind the contemplated decisions;
- 2S3. Budget for and communicate sustainability initiatives at annual events organized by the Village and by community organizations. Reinforce the messages at recycling drives, Green Expos on the Village Green, and additional events such as an Environmental Film Festival;

2S4. Promote Village community gardening and food programs, farm share buying clubs and farmers' market.

3. Waste Reduction, Reuse and Recycling



Improperly managed solid waste poses a number of risks to human health and the environment, including water contamination; increased flooding due to blocked drainage canals, pumping stations and sewers; harm to aquatic species and birds; and increased greenhouse gas emissions. Activities to prevent or recycle waste reduce these problems and can lower waste management costs.

The Village should work towards reducing waste by discouraging consumption of single-use disposable products, particularly polystyrene and plastic products, and by promoting increased recycling, composting of yard and kitchen waste, grease collection, white goods recycling, and construction and demolition waste reuse and recycling.



Short Term Goals

- 3S1. Establish a baseline and means of regular reporting of the landfill diversion rate, end market data for recyclables and compost materials, and additional relevant information, such as contamination of recyclables from haulers;
- 3S2. Evaluate current Village provided recycling and waste containers and where practical purchase and install more efficient recycling/disposal bins with better signage Village-wide;
- 3S3. Closely manage recycling and waste reduction programs including increased outreach and education of vendor(s) and staff to improve waste diversion and reduction rates;

- 3S4. Achieve 35% landfill diversion rate for single family residential and municipal buildings by January 2016;
- 3S5. Work with vendors to implement waste reduction and recycling measures during Village events & activities;
- 3S6. Work with businesses, commercial and residential buildings to reduce use of single use disposable containers, litter and waste and increase waste diversion rates and access to recycling;
- 3S7. Expand the current recycling drive to include other items, such as household hazardous waste, pharmaceuticals, and clothing, and establish permanent drop-off points for electronics, printer ink and compact fluorescent bulbs;
- 3S8. Promote use of reusable water bottles in lieu of single use bottled water by providing Village employees with reusable water bottles and easy access to water bottle refilling stations. Evaluate the potential of installing filtered and reusable-bottle-friendly water fountains in Village/community buildings and parks;
- 3S8. Work with restaurants in the Village to assist them in reducing use of plastics and polystyrene and in implementing grease recycling programs and drain maintenance to reduce fat oil and grease (FOG) related sanitary sewage overflows in the Village.

Long Term Goals

- 3L1. Reduce traffic and circulation of refuse trucks and containers;
- 3L2. Facilitate the collection for reuse and recycling of furniture, fixtures, electronics, construction and demolition waste, clothing, household items, white goods and hazardous items;
- 3L3. Achieve a landfill diversion rate of 50% through recycling and composting by 2020;
- 3L4. Achieve 90% landfill diversion by sending any waste that cannot be recycled or composted to low environmental impact waste-to-energy facilities;
- 3L5. Over the long term the Village should evaluate alternative waste diversion solutions, such as waste to energy, for remaining waste that would otherwise be landfilled.

4. Green Procurement



Everything created or purchased has a life cycle that impacts the environment from the moment of production to the final disposal stage. By practicing and encouraging the use of environmentally-friendly and non-toxic products, the Village will help the health and well-being of Key Biscayne residents, reduce the environmental and greenhouse gas footprint of its purchases, and reduce the amount of toxic or hazardous material introduced into the Village.

Green purchasing can include everything from office supplies and cleaning supplies, to fleet vehicles and construction materials, to service agreements for landscaping and waste hauling.

Short Term Goals

- 4S1. Adopt a green procurement resolution for Village procurement;
- 4S2. Develop guidelines using existing standards and guidelines (or better when applicable) such as the EPA's Comprehensive Procurement Guidelines, Design for the Environment standards, Energy Star, and Cradle to Cradle;
- 4S3. Begin implementation of a Centralized Procurement Program (CPP) with the goal of full implementation by June 2015.



Long Term Goals

- 4L1. Fully implement the Centralized Procurement Program (CPP). Build upon the program and its guidelines over time as new products and technologies become available;
- 4L2. Require purchase of safe and green products by permitted concessionaires/vendors in government maintenance operations and Village-sponsored special events;
- 4L3. Educate the Village staff and residents on the benefits of green products and the dangers of the hazardous ones they replace;
- 4L4. Promote the use of non-toxic, reusable, recycled, recyclable, and renewable goods by the Village and community-wide.

5. Energy Conservation



The fossil fuel based energy sources that we depend upon contribute to air pollution and greenhouse gas emissions. By reducing energy consumption and installing renewable energy sources at the municipal, commercial and residential levels, the Village can increase economic performance, decrease dependence on nonrenewable resources, and enhance air quality in our community.



Mitigation of climate impacts is an area Key Biscayne can lead in by example. Certainly our community's impact on overall greenhouse gas emissions is small.

However, as a community with significant assets at risk from the impacts of climate change and with likely significant upcoming costs to adapt to climate change, the Village has a lot to gain by becoming a leader in reducing its greenhouse gas emissions.

Short Term Goals

- 5S1. Augment and reinforce existing Village government policies that encourage computer/ancillary equipment to be turned off when not in use;
- 5S2. Following green procurement recommendations to ensure that new purchases meet high energy efficiency ratings;
- 5S3. Evaluate the cost effectiveness of replacing current lighting in all municipal buildings and streets with more efficient light bulbs and lamps. Establish a schedule for purchase and installation of those that are determined to be cost effective;
- 5S4. Evaluate the installation of renewable energy sources in existing and yet-to-be built Village-owned buildings and properties;
- 5S5. Join a Property Assessed Clean Energy (PACE) program to provide low interest financing for residents, businesses and condo boards looking to purchase renewable energy supplies and energy efficiency upgrades.

Long Term Goals

- 5L1. Encourage commercial and residential buildings to reduce energy consumption through community education, incentives to become Energy Star certified, and building codes that facilitate energy efficient residences and installation of renewable energy sources;
- 5L2. Facilitate integration of renewable, non-polluting energy sources Village-wide;
- 5L3. Decrease heat island effects by supporting increased canopy coverage (maintain and where feasible increase).

6. Green Building



Green buildings reduce energy use, water consumption and CO₂ emissions, while leading to significant savings in operational costs over time. While the energy aspects of green buildings are addressed in Section 5 above, green buildings also incorporate elements that improve the experience of occupants, such as increased day lighting, better indoor air quality and improved temperature control.

New buildings and properties developed by the Village should be built to the highest green standards to optimize these benefits. Existing Village-owned properties should be upgraded over time to environmental standards for green buildings. The Village should encourage green building and housing practices within the community to minimize environmental impacts and greenhouse gas emissions.

Short Term Goals

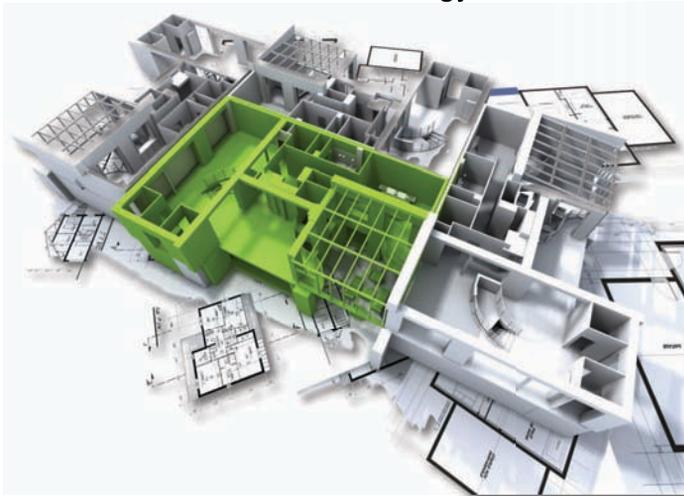
- 6S1. Evaluate current Village properties to determine what changes would be required to obtain LEED (Leadership in Energy and Environmental Design) for Existing Buildings certification;
- 6S2. Adopt a resolution for all new construction projects to be built to meet LEED Platinum standards or better;



- 6S3. Review approaches adopted by other communities to determine the changes that would incentivize green building initiatives in businesses and private structures;
- 6S4. Adopt a sustainable building ordinance and an electrical energy reduction resolution.

Long Term Goals

- 6L1. Construct new government buildings and facilities to LEED (Leadership in Energy and Environmental Design) Platinum standards and utilize the LEED Existing Buildings or Commercial Interiors specifications for any existing buildings that undergo renovation;
- 6L2. Require staff to attain LEED accreditation where relevant to job responsibilities;
- 6L3. Incorporate bonuses into the zoning code for “Green Initiatives” such as buildings that are LEED, Florida Green Building Council (FGBC) or Energy Star certified; reduce storm-water runoff; incorporate alternative energy systems; incorporate climate resiliency measures; and/or utilize water capture and reuse systems;
- 6L4. Implement programs to assist and support high-density residential buildings and unit owners to apply sustainable design measures;
- 6L5. Achieve responsible growth management objectives.



GREEN
buildings are a hallmark of
economically sound
BUSINESS
decisions, thoughtful **environmental**
decisions, and smart
HUMAN IMPACT decisions. ~ Rick Fedrizzi

7. Water Quality & Conservation



Located on a barrier island, the Village is particularly sensitive to the conditions of its waterways – including the beaches, canals, & Biscayne Bay – and should support their preservation and conservation. By encouraging the protection of both potable and wastewater, the Village will preserve the quality of life and values of waterfront properties, the safety and viability of water-related recreational activities, and the habitat of the aquatic ecosystem.

Short Term Goals

- 7S1. Work with Citizen Scientist Project and other outside groups on initiatives to preserve water quality in our beaches, canals and irrigation;
- 7S2. Evaluate automation of watering systems that avoid watering fields when irrigation is not needed;
- 7S3. Coordinate with agencies responsible for water quality testing;
- 7S4. Adopt internal practices and ordinances to reduce pollutants in storm water runoff in Village operations and facilitate best practices to reduce pollutants in storm water runoff from privately owned properties.



Long Term Goals

- 7L1. Decrease water consumption at the community and municipal levels by communicating the importance of conservation by use of water capture and reuse systems, purple pipes and low flow technologies;
- 7L2. Maintain or improve water quality of discharges entering Biscayne Bay and reduce flooding by improving the capacity of the Village storm water system. Continue to implement best practices related to landscaping of Village managed properties, and encouraging best practices to reduce runoff from all property types;

- 7L3. Encourage private property owners to incorporate landscaping and building designs such as green roofs and collection vessels that support natural storm-water filtration and reduced flooding;
- 7L4. Support community education initiatives such as Florida Yards and Neighborhoods “Right Plant, Right Place” initiative;
- 7L5. Work with the Miami-Dade County and other governmental bodies to monitor and mitigate risks from the wastewater treatment plant and landfill on Virginia Key.

8. Transportation



Most of our modern means of transportation are powered by fossil fuels, which contribute to local air pollution and greenhouse gas production. In a community where transportation distances are minimal and the availability of solar power is abundant, the transition to a “green fleet” should become an integral objective in the cultivation of a sustainable community.

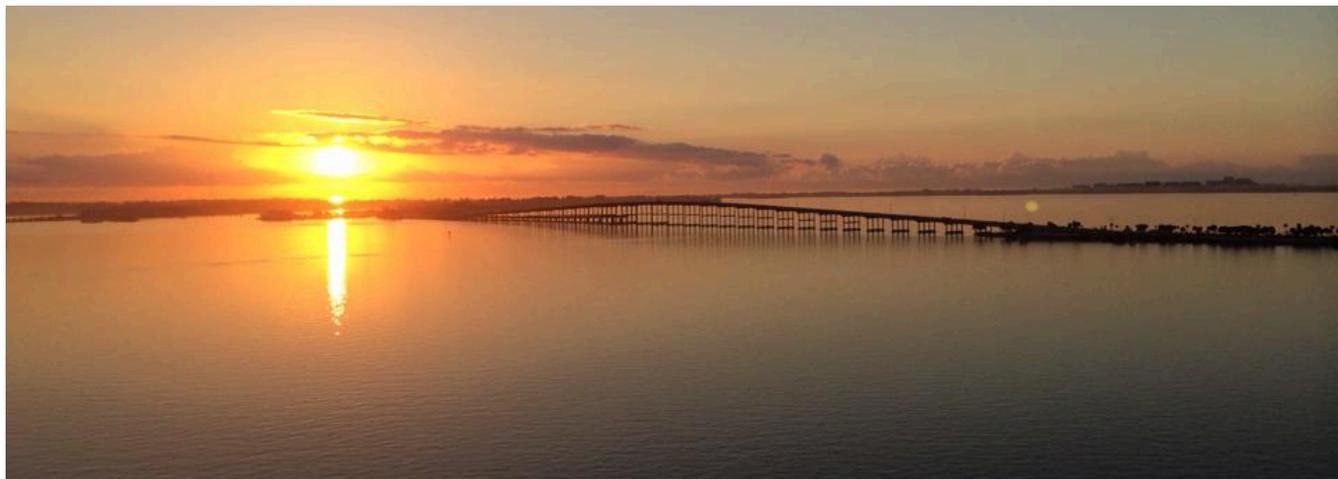
Short Term Goals

- 8S1. Purchase electric and hybrid vehicles when feasible during the normal replacement cycle for Village vehicles;
- 8S2. Engage with Miami-Dade Transit, Miami-Dade Metropolitan Planning Organization, Citizen’s Independent Transportation Trust (CITT) and other relevant entities to improve transit options and in particular bus service for Key Biscayne residents, employees and visitors, including increasing frequency and reliability of service and establishing routes that increase user convenience;
- 8S3. Adopt and implement a gasoline reduction resolution;
- 8S4. Evaluate internal transit options for the Village;
- 8S5. Provide preferred parking to electric vehicles and golf carts in public parking spots;



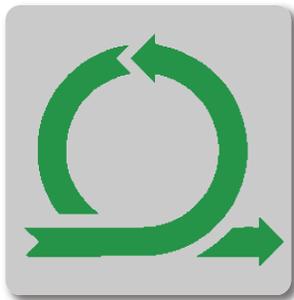
Long Term Goals

- 8L1. Purchase electric golf carts for Village use wherever golf carts can feasibly replace motorized vehicles;
- 8L2. Install solar charging stations for Village fleet of electric vehicles, golf carts and employee owned electric vehicles and consider installing solar charging stations for electric vehicles and golf carts in public parking spots;
- 8L3. Incentivize Village staff, residents and visitors to use vehicles with alternative fuels by encouraging Miami-Dade County Causeways to reduce toll tariffs for “Green Vehicles”;
- 8L4. Suggest Miami-Dade County provide the Village with “Green Transportation,” such as hybrid buses which are currently not included in the route to Key Biscayne;



- 8L5. Evaluate feasibility of local transit/bus/trolley options for residents;
- 8L6. To reduce traffic onto and off of the island, evaluate with CITT and other appropriate entities the possibility of providing free trolley service, with free park entry for trolley riders, to Crandon and to Bill Baggs State Park on weekends;
- 8L7. Encourage multi-family buildings to establish Green Vehicle parking spots and install charging stations for electric vehicles and golf carts;
- 8L8. Encourage school transit options that reduce congestion and save energy, such as voluntary no driving days for school drop offs and increased crosswalk protection for children that walk or bike to school;
- 8L9. Incorporate transit, walking and biking options into comprehensive and land use planning for the Village.

9. Climate Adaptation & Resiliency



The Southeast region of Florida is considered one of the most vulnerable areas in the United States to the impacts of global climate change. Anticipated effects include sea level rise, storm surge exacerbated by sea level rise, beach erosion, and heavier and more frequent coastal rains. The average elevation of the island is less than five feet, and the island's subsurface, consisting of layers of weak 'shelly sandstone,' creates particular challenges in addressing flooding or sea level rise.

Many of the initiatives described above, in addition to their potential to reduce costs and enhance the quality of life, contribute our share to preventing the worst of projected outcomes resulting from climate change. The Village of Key Biscayne should recognize the island's vulnerability and work to understand and develop short-term and long-term adaptation strategies to improve the Village's resilience.



Short Term Goals

- 9S1. Continue and expand participation and coordination with governments and regional planning entities addressing climate adaptation and planning, including, but not limited to, Miami-Dade County, the Southeast Florida Regional Climate Compact, the South Florida Regional Planning Council and the Federal Emergency Management Agency;
- 9S2. Establish sea level rise levels for planning purposes to integrate into building, zoning, planning and public works decisions. (US Army Corps of Engineers and Southeast Florida Regional Climate Compact use 3-7 inches by 2030 and 9-24 inches by 2060);
- 9S3. Expand vulnerability analysis of flood prone areas of Key Biscayne to include sea level rise projections and storm surge risks, asset level evaluation of critical infrastructure vulnerabilities and greater understanding of system wide water retention capacity;



Long Term Goals

- 9L1. Through the RFP process identify and work with a consultant to develop an adaptation plan to address flooding and drainage concerns in a manner that accounts for 2030 and 2060 projections through comprehensive inundation mapping and re-zoning to include adaptation action areas, possible downzoning, flood attenuation through natural systems and engineering solutions;
- 9L2. Evaluate measures that Key Biscayne would be required to implement to qualify for each class, 9 to 1, of FEMA's community flood insurance rating program. Classes correspond to various discounts in the National Flood Insurance Program Community Rating System, with Class 9 being the lowest and Class 1 being the highest, resulting in a 45% discount in flood insurance for residents. Apply such evaluation to determine what rate of discount the Village will seek in implementing community flood control measures;
- 9L3. Evaluate parametric hurricane insurance coverage for Village assets;
- 9L4. Participate in the formulation of crisis management plans that address flood, fire, evacuation and storm water inundation among others;
- 9L5. Require new structures (private and Village owned) incorporate designs that protect against sea level rise projections and exacerbated storm surges;
- 9L6. Work with governmental partners to find solutions for beach erosion including the possibility of a sand bridge or pump to carry sand to Key Biscayne's beaches that would otherwise naturally nourish our beaches, but for Government Cut.





APPENDICES



For information on the Mayors’ Pledge and Southeast Florida Regional Climate Compact and Action Plan:

www.southeastfloridaclimatecompact.org

Municipalities that have signed the Pledge include:

- | | | |
|-------------------|--------------------|--------------------------|
| ■ Ft. Lauderdale | ■ Davie | ■ Lauderdale-By-The –Sea |
| ■ Key West | ■ Hallandale Beach | ■ Deerfield Beach |
| ■ Boynton Beach | ■ Miami Beach | ■ Margate |
| ■ Hillsboro Beach | ■ Pompano Beach | ■ Sunrise |
| ■ Pinecrest | ■ Oakland Park | ■ Surfside |
| ■ Dania Beach | ■ Wilton Manors | ■ South Miami |
| ■ Hollywood | ■ Coconut Creek | ■ Bay Harbor Islands |
| ■ Lauderhill | ■ North Lauderdale | ■ Delray Beach |

For more information on the Miami-Dade County Green Print Plan see:

www.miamidade.gov/greenprint/

Programs and resolutions currently being implemented in Miami-Dade County include:

- Miami-Dade Ordinance 07-65 – an ordinance concerning the sustainable buildings program;
- Implementing Order 8-8/Resolution No. R-1200-05 - establishing the Miami-Dade County policy of incorporating sustainable development building measures into the design, construction, renovation and maintenance of County-owned, County-financed, and County-operated buildings;
- Electrical Energy Reduction Resolution R-228-09 - directing that a plan be developed to reduce electric energy usage in County governmental operations by 20 percent relative to 2007 consumption levels (or 234,000 Megawatt hours) by no later than 2014;
- Gasoline Reduction (See M-D County R-969-03);
- Miami-Dade County Resolution R-1053-09 - directing the county mayor or county mayor’s designee to prepare and present to the board a “green” procurement preference program for the purchase of environmentally responsible products and services;
- Miami-Dade County Administrative Order 11-3 (Life Cycle Costing Procedure);
- Miami-Dade County Resolution R-228-09 - a policy directing that a plan be developed to reduce electric energy usage in County governmental operations by 20 percent relative to 2007 consumption levels (or 234,000 Megawatt hours) by no later than 2014.

Other resources include:

The Miami-Dade county “Buy Green” Purchasing Guide found at:

<http://www.miamidade.gov/green/library/green-purchasing.pdf>

For more information on the YGreene’s Green Corridor see:

https://ygreene.us/fl/green_corridor

Key Biscayne Village Goes Green Initiative:

<http://keybiscayne.fl.gov/>

[index.phpsubmenu=Green_Initiative&src=gendocs&ref=VGGI_MainPage](http://keybiscayne.fl.gov/index.phpsubmenu=Green_Initiative&src=gendocs&ref=VGGI_MainPage)

Village Staff (prior Green Committee contact: Henny Groschel-Becker

Rosensteil School of Marine & Atmospheric Science 305-421-4000

www.rsmas.miami.edu (past Green Committee member was Laura Bracken)

Nature Center

Theodora Long (executive director

Lainey Grossman Program coordinator (also assisted with prior Green Committee)

305-361-6767

Key Biscayne Community Foundation

Melissa White (executive director)

Key Biscayne Principals Coalition for the good of children

Citizens Scientist, www.keysicence.org, 305-361-2770

Miami Dade

<http://www.miamidade.gov/oos/>

<http://www.miamidade.gov/green/>

<http://www.miamidade.gov/GreenPrint/pdf/scorecard.pdf>

http://www.miamidade.gov/greenprint/planning/cities_organizations.asp

Miami-Dade Green Cities and Organizations

Miami-Dade County is collaborating with municipalities and other organizations in order to collectively achieve our communitywide greenhouse gas reduction goals and ensure a sustainable future for our community. Municipalities are in different stages of actual planning and implementation.

Miami-Dade municipalities engaging in Green efforts:

Aventura
Coral Gables
Cutler Bay
Doral (Green Master Plan - 36 MB)
Key Biscayne
Miami
Miami Beach
North Miami
North Miami Beach
Palmetto Bay
Pinecrest

Miami-Dade colleges, universities and organizations engaging in Green efforts:

Miami Dade College Earth Ethics Institute
FIU Green
University of Miami -- Green U
Greater Miami Chamber of Commerce

Best Practices & Resources

ICLEI - Local Governments for Sustainability
ICLEI - A Comparative Analysis of Sustainable Community Frameworks
PlaNYC
Chicago Climate Action Plan
The Baltimore Sustainability Plan
Montgomery County, Md. Smart Growth Initiative
City of Portland, Ore. Bureau of Planning and Sustainability

City of Miami Beach, Florida

Betsy Wheaton, Environmental Resources Manager

elizabethwheaton@miamibeachfl.gov

Margarita Wells, Environmental Specialist

margaritawells@miamibeachfl.gov

<http://web.miamibeachfl.gov/green/default.aspx?id=63975>

Environmental Resource Division

1700 Convention Center Drive

Miami Beach, Florida 33139

Telephone: 305-673-7080

Fax: 305-673-7028

[http://www.resilientcity.org/index.cfm?PAGEPATH=Competition/
2010_Design_Ideas_Finalists_/Miami_Beach&ID=23130](http://www.resilientcity.org/index.cfm?PAGEPATH=Competition/2010_Design_Ideas_Finalists_/Miami_Beach&ID=23130)

City of Clearwater, Florida

Green Print

http://www.myclearwater.com/gov/depts/planning_dev/long_range/plans/greenprint/index.asp

For more information, please contact Lauren Matzke at the City of Clearwater: (727) 562-4547 or lauren.matzke@myclearwater.com.

Florida Green Building Coalition

<http://floridagreenbuilding.org/db/?q=node/5751>

Florida Green Building Coalition

1415 E. Piedmont Dr., Suite 5

Tallahassee, FL 32308-7954

PH: 850-894-3422

FAX: 850-671-4897

Email us at: info@floridagreenbuilding.org

City of Ft Lauderdale (gets local gov't green certified)

Sustainability plan at www.fortlauderdale.gov/gyr.

Sustainability Division's Board Liaison Heather Steyn at hsteyn@fortlauderdale.gov.

ICMA/Leaders at the Core of Better Communities

<http://icma.org/en/Article/104107/>

[Fort Lauderdale FL Earns Gold Certification from Florida Green Building Coalition](#)

ICLEI local governments for Sustainability <http://archive.iclei.org/index.php?id=801>

Preparing for climate change: <http://ces.washington.edu/db/pdf/snoveretalgb574.pdf>

The Star community rating system (includes Broward)

http://webapps.icma.org/conference_Handouts/handouts2013/ICMA_STAR%20presentation%2009%2023%2013%20-%20template%20version.pdf

<https://www.starcommunities.org/shop/product/200-20130415> \$500.00 per year subscription and self assessment tool

Miami Dade Green Print 2015 environment plan

<http://www.miamidade.gov/greenprint/environment.html>

Risk and Response: sea level rise summer, 2012 future of Florida and the coast

http://www.ces.fau.edu/files/SLR2012/CES_RiskResponse_SLR2012_Summary.pdf

Florida Green Building Coalition

<http://www.floridagreenbuilding.org/local-governments-certifications>

Green Local Government Standards to be certified (Miami Dade obtained Gold in 10/12)

Climate Change Regional Compact

<http://southeastfloridaclimatecompact.org/>

<http://southeastfloridaclimatecompact.org/mayors-climate-action-pledge/> (list from 11/07 summit does not include key Biscayne..added 12/12/13)

Nichole Hefty

Chief, Office of Sustainability

Mark Woerner

Assistant Director, Department of Regulatory and Economic Resources

Alison Higgins

Sustainability Manager, City of Key West

Institute for Sustainable Communities**Steve Adams**

Senior Program Director – US Climate Adaptation Program and Regional Compact Staff Steering Committee Coordinator

South Florida Water Management District**Rod Braun**

Intergovernmental Policy & Planning and Liaison to the Compact

The Nature Conservancy – Florida Chapter**Chris Bergh**

Director of Coastal and Marine Resilience

South Florida Regional Planning Council**Jim Murley**

Executive Director

CLEO (prior director of Fairchild challenge) Caroline Lewis <http://www.cleoinstitute.org/>

Other:

TOOLS Eight elements of Green Procurement Calif Sustainability Alliance

http://sustainca.org/tools/green_procurement_toolkit

Sustainability Positions Information

University of Miami

http://um.hodesiq.com/job_detail.asp?JobID=4286970&user_id=&ViewAll=&emid=3640

Director Sustainability Salaries in Orlando, FL

<http://www.simplyhired.com/salaries-k-director-sustainability-l-orlando-fl-jobs.html>

City of Miami Office of Sustainable Initiatives

<http://www.miamigov.com/msi/pages/OSI/default.asp>