2015 Municipal Green Initiatives in Broward County, FL

Local Governments in Action

Broward County Climate, Energy & Sustainability Program

Environmental Planning and Community Resilience Division

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Acknowledgments:

This report is produced by Broward County, in partnership with the 31 municipalities and 2 partners in higher education, as referenced. All participants have given Broward County permission to share and publish survey responses, contact information, case studies and photographs. A community-wide assessment takes a community-wide effort, and it is with great appreciation that we acknowledge the dedication and time contributed by sustainability managers and staff throughout local governments in Broward County to make this effort possible. Special thanks to our interns, Arthur Rose and Carole Wilschke, for their support in analysis and editing.

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2015 Municipal Green Initiatives in Broward County, FL

Introduction

For the last 6 years, local governments in Broward have worked together to collect and celebrate the truly impressive arrange of sustainability initiatives pursued, coalitions formed, and goals realized. This report is the third in a series, summarizing the results of the Municipal Green Initiatives Survey, a bi-annual assessment completed by Broward County and our local governments and partners. As in 2011 and 2013, we are pleased to announce that the 2015 survey had 100% participation by our 31 municipalities! As a voluntary community-wide assessment, we are grateful for the continuous support and dedication of sustainability staff throughout the county.

Before we delve into the new results, it is important to note the accomplishments of the previous survey efforts, and how it generated the momentum for a new collaborative resource sharing and program advancement paradigm. The effort has become a nationally-recognized model of intergovernmental cooperation, winning a 2012 Achievement Award by the National Association of Counties. Locally, we are seeing multiple benefits spin out from the original projects, with expanded participation across an array of new programs.

Our online Clearinghouse of Best Management Practices for Sustainability has become a regional and national model, the Sustainability Stewards of Broward (SSB) peer-exchange network has grown to more than 400 sustainability professionals in the public, private, and non-profits sectors, and the SSB Workshop Series has brought elected officials, municipal staff, environmental consultants and engaged citizens together 15 times to share their experiences and expertise on important topics and emerging trends in sustainability.

Results of the 2015 survey are presented in the pages to follow. As you will see, we have a lot to celebrate. There are many similarities between the 2015, 2013 & 2011 surveys. This is intentional by design, in order to preserve the ability to cross-reference municipal actions across years, benchmark our efforts, and measure our successes. At the same time, we have added questions to cover new methods, new tools for communicating, and potential program alignments, in what is still a developing field of study.

For example, we found that:

- Most municipalities (74.2%) included “green” goals, objectives, and policies into plans
- About half have staff dedicated to sustainability, and 10 have a Sustainability Office
- The top 5 modes of outreach are webpages, face-to-face events, E-newsletters, mailed newsletters, and Facebook
- Only 20% of Broward County municipalities have an award program for citizens or businesses that practice sustainability

General Program Information

Broward County and its 31 municipalities are addressing a wide range of sustainability issues. The 2015 Municipal Green Initiatives Survey has 17 categories of issues covered within 8 main topic areas. Municipalities are addressing these issues through multi-departmental and cross cutting programs. Every municipality has a different approach to achieving the goals set by their leadership and community, and we wanted to capture the level of importance each issue was given in their general sustainability, climate change and environmental awareness efforts.

Figure 1: Sustainability Word Cloud

The sustainability word cloud in Figure 1 is a visual analysis of the data reported with areas of greatest concern appearing in larger text. This is also summarized below by percentage ranking.

Most municipalities (75-89 percent) are addressing the following issues through their programs:

- Native Landscaping
- Recycle & Waste Management
- Urban Canopy & Open Space

Over half (51 – 74 percent) of Broward County municipalities are addressing:

- Water Conservation / Reuse
- Energy Efficiency & Conservation
- Community Education
- Promoting Alternative Modes of Transportation
- Green Building

Some (29 – 45 percent) are addressing these areas of sustainability:

- Green Purchasing
- Renewable Energy Generation
- Alternative Fuels
- Air Quality
- Local Food Systems

A few municipalities (25 percent or less) are also addressing these important sustainability issues:

- Green Economic Development / Jobs
- Climate Adaptation
- Reducing Vehicle Miles Traveled
- Greenhouse Gas Emissions Reductions

Main Benefits of Local Sustainability Initiatives

Protection of Resources is listed as the chief benefit from local sustainability initiatives (79 percent of the 30 municipalities who responded to this survey question).

Fiscal Savings is the second greatest benefit (52 percent).

GHG Emissions Reduction came in third (38 percent).

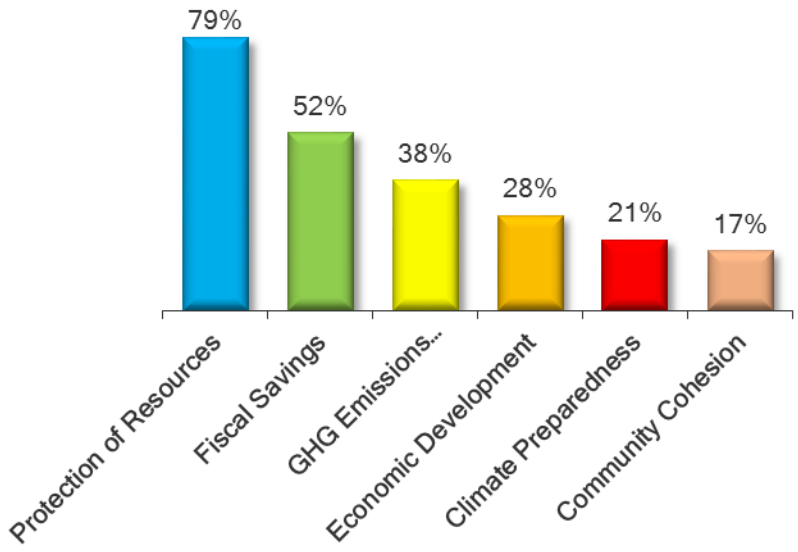


Figure 2: Main Benefits

Funding for Sustainability Initiatives

The majority of Broward County municipalities (87 percent), use general funds as a source for funding sustainability projects. This is a 15 percent increase in use of general funds from 2013 and 25 percent increase from 2011.

Half are also using Local Grants or Cost Share, up 16 percent from 2011. Federal Grants (43 percent), City Enterprise Funds (40 percent), State Grants (40 percent) and Public Private Partnerships (30 percent) are similarly a substantial source for funding sustainability initiatives.

Bonds or Low-interest Loans (10 percent) and Other (7 percent) forms of funding are also a source of funding.

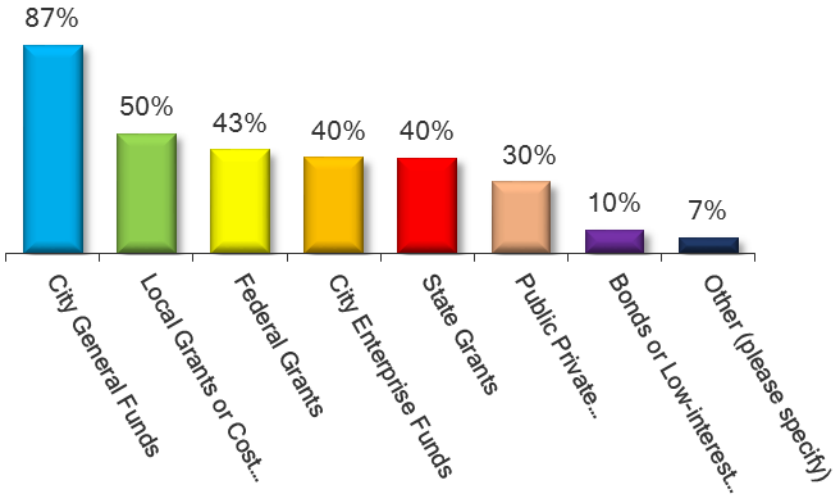


Figure 3: Funding Sources

The Biggest Obstacles to Developing and Implementing Sustainability Initiatives

Funding, while slightly less of a challenge than in 2013, is still the biggest obstacle to developing and implementing sustainability initiatives cited by all 32 respondents.

The second greatest obstacle to developing and applying sustainability initiatives in both 2013 and 2015 was *Staff Time*.

Complexity of Issue, which was ranked as the fifth greatest obstacle in 2013, is now ranked the third biggest obstacle.

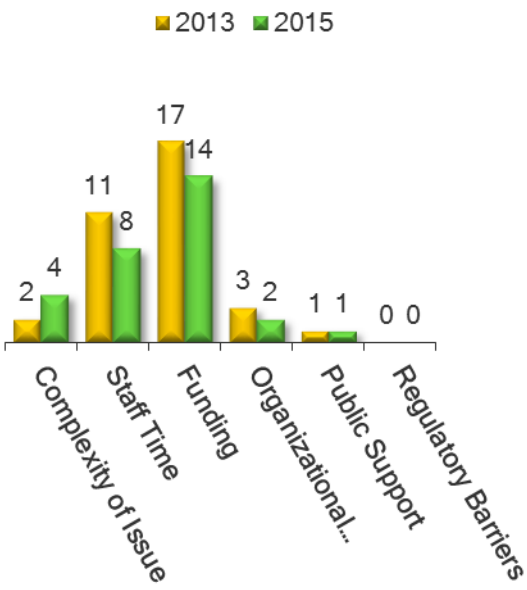


Figure 4: Biggest Obstacles

Local Sustainability Highlight: Seal of Sustainability Program

Green Project Certification, Broward County

Every project Broward County undertakes has the potential to address sustainability in different ways, from the construction of the new courthouse to shifting to easyPay for employee paychecks, which can serve the people, the planet, and save money.

Environmental Planning and Community Resilience Division's Seal of Sustainability program identifies those initiatives that provide better government today to ensure the future of Broward County's environment, economy, and community.

The program is used to gather the County's qualifying green programs and projects under a single brand to highlight the County sustainability efforts, to demonstrate to the public our government's commitment to sustainable operation, and to spread the culture of sustainability.

The Seal of Sustainability program offers agencies an opportunity to associate the "go green footprint" logo with their sustainability projects, as a seal of sustainability. The program encourages all county departments, divisions and employees to think about how their efforts meet the triple bottom line.

To learn more about the program and read about the 21 certified projects, visit http://www.broward.org/GoGreen/GreenGovernment/Pages/SealSustainability.aspx

Municipal Spotlight: Native Dune Vegetation & Signage

Community Outreach & Education, Lauderdale-by-the-Sea

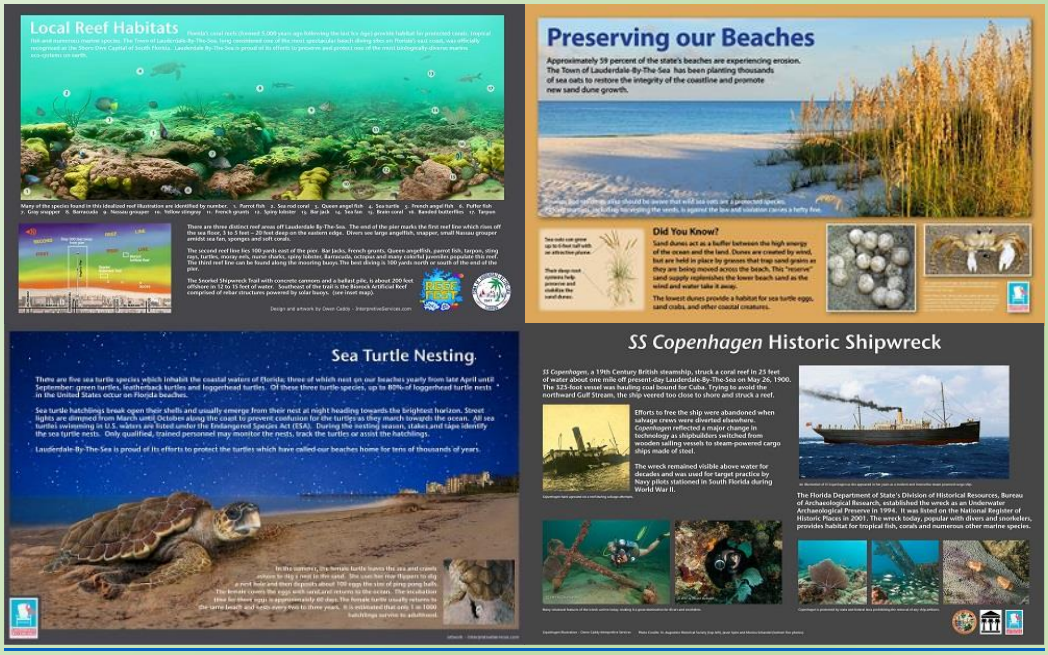
The Town has done an amazing job in engaging residents, volunteers and visitors on environmental and preservation issues at the beach.

Public education signs on the beach address protection of turtle nesting areas, fighting beach erosion through sea oat planting projects, and the variety of life on our near-shore coral reefs.

The Town works with the non-profit group Youth Environmental Alliance (YEA) to find volunteer groups or corporate sponsors/volunteers for the many planting projects at the beach. Sea oat and native dune vegetation helps to secure the sand, reduce beach erosion, and protect and create a habitat for birds and animals. The Town identifies the sites, gets the property owner to agree to the project and buys the plant materials.

The signs are truly a best-practice in communication, and the level of stakeholder engagement the Town gets through their volunteer efforts ensures that the projects do not just have buy-in from residents, but lasting power too. When one plants something themselves, they have an innate instinct to protect it, and experience joy as they see it grow.

To learn more, visit www.lbts-fl.gov
Sea oat planting - Don Prince, donp@lbts-fl.gov
Educational Signs - Pat Himelberger, path@lbts-fl.gov



Municipal Spotlight: Food Systems/Community Garden

Community Outreach & Education, The City of Miramar

Located in Historic Miramar, a cultural melting pot with low-to-moderate income families, the Miramar Community Garden is a place for like-minded individuals to share best practices, learn, teach and socialize. Residents learn how to grow their own food and how to start their own garden at home.

The 3,100 square feet Miramar Community Garden (MCG) was inaugurated in May, 2010. The project is funded by corporate donations and assistance from partner agencies. The City has provided the land, basic materials and guidance. The MCG offers a "communal" system, a coop-style style system in which all members share and coordinate together. The Garden is run by member-volunteers who in exchange for their service have access to the harvest (sweat-equity).

Current membership consists of:

- 28 Residents
- 8 Master Gardeners
- 1 Master Canner
- 2 Le Cordon Bleu trained chefs
- 1 FAU professor with a PhD Natural Sciences

From May 2010 to date, the current MCG program offered 72 events organized by volunteers who donated 4,350 hours of service. In 2014, the MCG was awarded a $60K GRO1000 Grant to build an "Intergenerational Fruit & Vegetable Garden".

Facebook page: http://www.facebook.com/MiramarCommunityGarden1
Webpage: www.ci.miramar.fl.us/green/garden/
Garden Treasures Video Series: http://www.ci.miramar.fl.us/green/garden/treasures.html

For more information, contact: Elsi Rose 954-602-3270 erose@ci.miramar.fl.us

Greenhouse Gas Emissions

Measuring our Contribution

Twenty-four (24) percent of Broward County and its municipalities have recently performed a Greenhouse Gas (GHG) Emissions Inventory for government operations. This number is slightly higher than 2013 survey results where 22 percent of municipalities reported completing GHG inventories. An additional six percent of municipalities currently have GHG emissions inventories in progress for government operations. Only one (1) municipality reported completing a communitywide inventory (compared to three in 2013).

Cleaning the Air through Landscaping

Trees play a critical role in maintaining safe levels of oxygen and carbon dioxide in the atmosphere. Trees remove and store carbon dioxide from the atmosphere as they grow. They can also assist in preventing salinity and soil erosion, and providing shade, shelter, food and habitat to native animals.

Urban forests and urban canopies contribute to increased oxygen production and decreased air pollutants. Additionally, urban trees create natural environments that serve not only our communities through parks and recreational areas but provide habitat for birds and other fauna. At the same time, these systems can advance other sustainability goals like increasing energy conservation in our communities, by providing shade and cooling functions to the built environment.

Steps Municipalities are implementing to Increase Urban Forest or Urban Canopy:

	2013	2015	% Change
• Landscaping Ordinances and Codes	88%	97%	9% Increase
• Community Education and Outreach	59%	61%	2% Increase
• Native Trees Sales and Giveaways	56%	45%	11% Decrease
• Other Activity	28%	13%	15% Decrease
• Complete Streets Program	25%	48%	23% Increase

Table 1: Implementing Urban Forests/Canopy

Meeting Goals means Setting Goals

When asked if their community is meeting its greenhouse gas reduction goals, most of our municipalities (73%) are either are not tracking or do not have goals set at all. Just 23% of Broward County and its municipalities have community-wide greenhouse gas emissions reduction goals, and only 7% are meeting them.

While targets and programs focused on government operations are a critical first step (often touted as “leading by example”, “taking care of our own house first”) the truth is that when we look at community greenhouse gases divided by sector, government facilities and services are not a major contributor. Yet government action can significantly influence and support broader

emission reduction efforts, and opportunities by the public sector should be assessed and implemented based on their ability to produce community-wide impact. The next step is setting that community-wide goal, and then working across sectors, jurisdictions, age and political affiliation, to meet it. Perhaps a common target could be the County's goal of reducing greenhouse gas emissions by 2% per year by 2020, ultimately leading to a total 80% reduction by 2050.

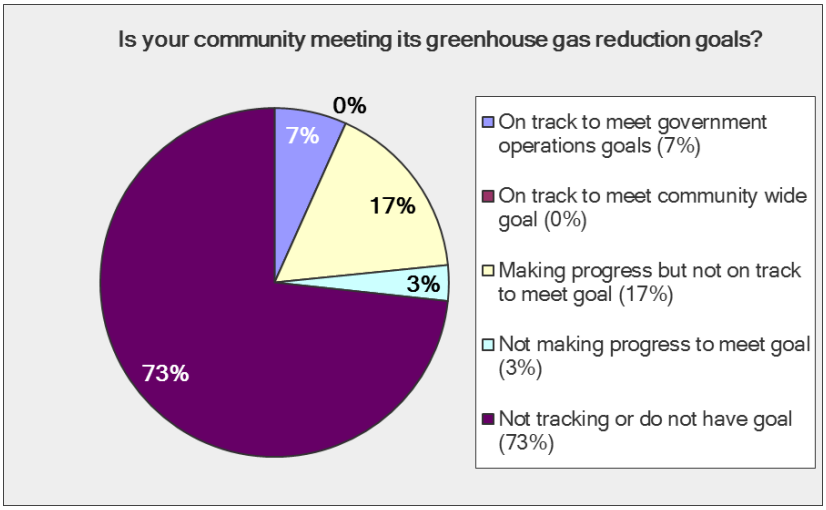


Figure 5: Meeting GHG Targets

Municipal Spotlight: Greenhouse Gas Emission Monitoring

Implementation of Climate Action Plan, The City of Tamarac

In 2008 The City of Tamarac announced its Climate Action Plan. The plan included greenhouse gas emissions inventory for the base year 2008; projecting emissions for the year 2015; setting a goal to reduce the governmental operation gas emissions by 7% by 2015; and finally, outlining the guidelines and measures that will be adapted to achieve the set goals.

Since 2008, The City of Tamarac implemented all the Climate Action Plan policies and measures including, but not limited to: solar panels on six City facilities, solar lighting, the installation of occupancy sensors, Data Center Virtualization, office paper recycling, water conservation program and ultra-low flush toilets, wastewater pump station rehabilitation and finally the van/ carpool program. Greenhouse gas emission inventory for each year was calculated using the ICLEI CACP software and periodic evaluations of the progress and reassessment of the goals and actions were required to ensure the effectiveness of the plan. The City of Tamarac is proud to announce that Greenhouse gas emission reduction mission is accomplished!

Contact: Samira Shalan (954) 597-3705 samira.shalan@tamarac.org

Water Conservation

Getting Involved

Within Broward County, our 31 municipalities are involved in several community water planning advisory bodies and training opportunities. These include: Broward Water Leaders Academy, Water Resources Advisory Board, Water Resources Task Force, NatureScape Broward Program, NatureScape Irrigation Services, Habitat Stewards Training, Broward County Everglades Working Group, and Surface Water Coordination Committee.

Participation in these programs allows local governments to strategically evaluate, develop, and manage water resources in an economically and environmentally sustainable manner. The table below lists the range of participation in local water conservation activities by all Broward County municipalities.

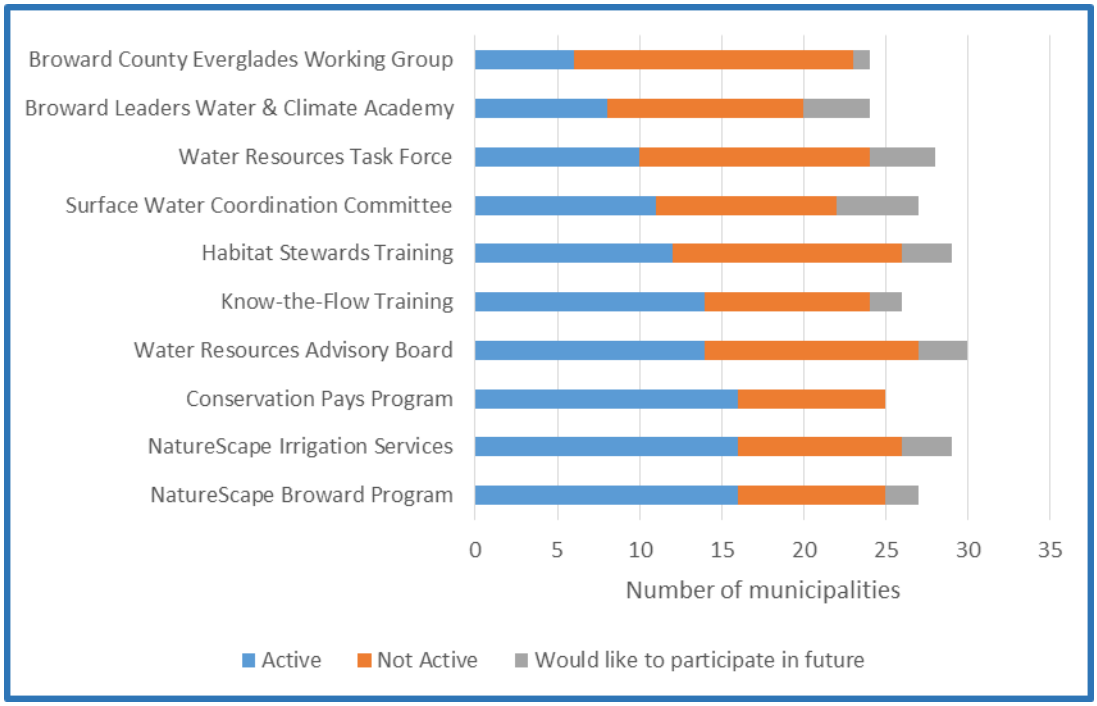


Table 2: Involvement in Water Planning and Programs

The Conservation Pays Program and NatureScape Broward Program had the two highest rates of participation (64 and 59 percent) by the municipalities. NatureScape Irrigation Services and Know-the-Flow Training had the next two highest participation rates at 55 and 54 percent, respectively.

All eight of the programs listed in 2013 had an increase in participation reported in 2015. New to this year's survey were the inclusion of the Conservation Pays Program and Know-the-Flow Training.

Over 65% of municipalities

- have a *water conservation specialist on staff*
- of municipalities have a *water conservation plan*

Less Than 35% of municipalities

- *track cost and benefit data* for specific water conservation practices
- of municipalities plan to *start construction on a reuse water project* in the next two years

Actions Taken to Build a Water Sustainability Ethic

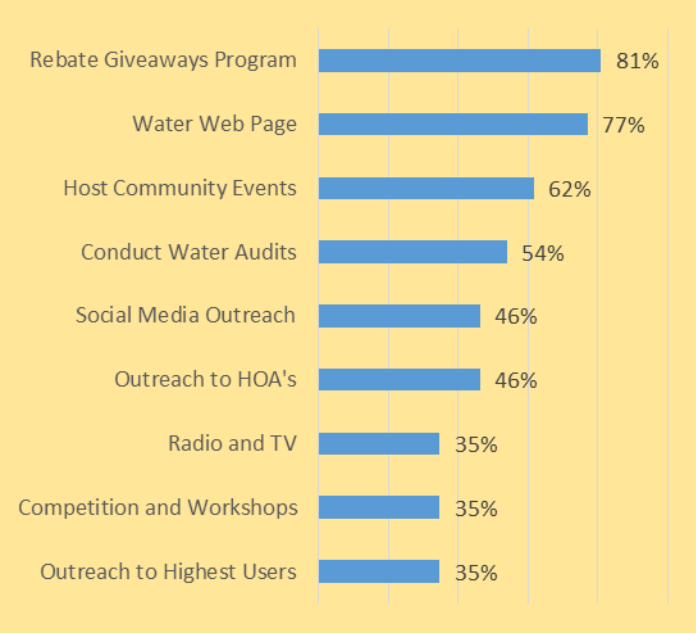
A variety of education and outreach activities are being employed to create a sustainability ethic throughout our community around water use.

Over three quarters of Broward's 31 municipalities have implemented a *Rebate Giveaway Program* for high efficiency fixtures (81 percent) and have a *Water Conservation Web Page* (77 percent).

Over half reported that they *Host Community Events* (62 percent) and *Conduct Water Audits* (54 percent).

Over one-third are using Social Media Outreach and Outreach to Homeowners Associations (46 percent each) as well as Radio and TV Public Service Announcements, Competitions and Workshops and Outreach to the Highest Users (35 percent each).

Table 3: Actions to Build a Water Conservation Ethic



Municipal Spotlight: Alternative Water Supply

Community-wide Water Conservation or Re-use, City of Pompano Beach

Pompano Beach's "I can water" single family reuse connection program has been in effect since July 2011 and has connected 700 homes to the reuse system to date.

The program slogan is "I Can Water" because there are no day-of-the-week restrictions for

This program not only saves about 92 Million gallons per year, but also serves as a public outreach tool to talk about other kinds of water conservation. The City also works to promote commercial and multifamily connections through OASIS "Our Alternative Supply Irrigation System", which saves about 4 Million gallons per day of drinking water.

The benefits include ocean outfall reduction, saltwater intrusion abatement and using our precious resource (water) more than once. This program is funded by water rates and is augmented whenever possible by local, state and federal grants.

Contact: Susyn Stecchi (954) 545-7015
Susyn.Stecchi@copbfl.com
Website: www.icanwater.com

Local Sustainability Highlight: Conservation Pays Program

The Broward Water Partnership

Broward Water Partnership
A Collaboration of Local Governments.

The Broward Water Partnership/Conservation Pays program is a water conservation program offered in partnership with 19 municipalities and water utilities who have come together to help save water, money and the environment. The goals of the Conservation Pays program are to encourage a stronger water conservation ethic among water users through increased public education and outreach and provide incentives and resources to residents for significant water savings through plumbing retrofits.

Most partners offer toilet rebates of up to $100 each for qualifying residents, businesses and nonprofits. Many partners also offer eligible residents water-efficient showerheads and low-flow faucet aerators. Through FY 2015, the program had issued over 7,300 rebates and saved over 826 million gallons of water annually.

Contact: Samantha Baker stbaker@broward.org
Website: http://conservationpays.com/

Energy

In this section, we look at four energy strategies: improving energy efficiency, reducing energy use, increasing production of renewable energy, and educating the community.

Energy Efficiency Upgrades and Retrofits
In the graphic below, we compare energy efficiency upgrades and retrofits from the 2011 and 2013 Municipal Survey to our 2015 results. Across Broward and our 31 local municipalities, we see a general increase in energy efficiency investments:

INCREASES

- *Streetlights and Exterior Lighting* had the highest increase from 50 percent to 65 percent.
- *Water Facility Pumps* increased from 30 percent to 41 percent.
- *Building Insulation* increased from 20 percent to 31 percent.
- *Office Lighting* increased from 76 percent to 86 percent.
- *LED Traffic Signals* increased from 17 percent to 21 percent.
- *HVAC (Heating and Air Conditioning)* increased from 76 percent to 79 percent.

DECREASES

- *Green Roofing* decreased from 53 percent to 44 percent.
- *Low Flow Water Devices* decreased from 67 percent to 66 percent.

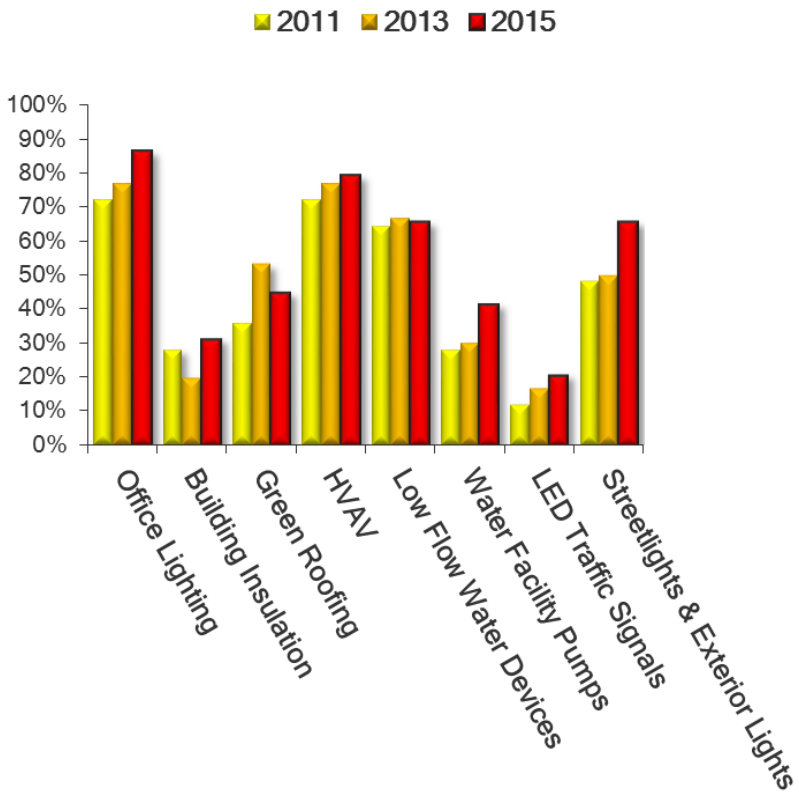


Figure 6: Energy Efficiency Upgrades and Retrofits

Actions Taken To Decrease Use of Energy

Broward's municipalities have also continued to take action to decrease energy usage through a variety of innovative strategies. The top 3 actions municipalities have taken to decrease its use of energy are: 1) Purchased Energy Star, "green" or EPEAT certified equipment, 2) installed charging stations for electric vehicles, and 3) Purchased alternative fuel vehicles. Installation of charging stations for electric vehicles has grown the most since 2011—from 4% up to 28%.

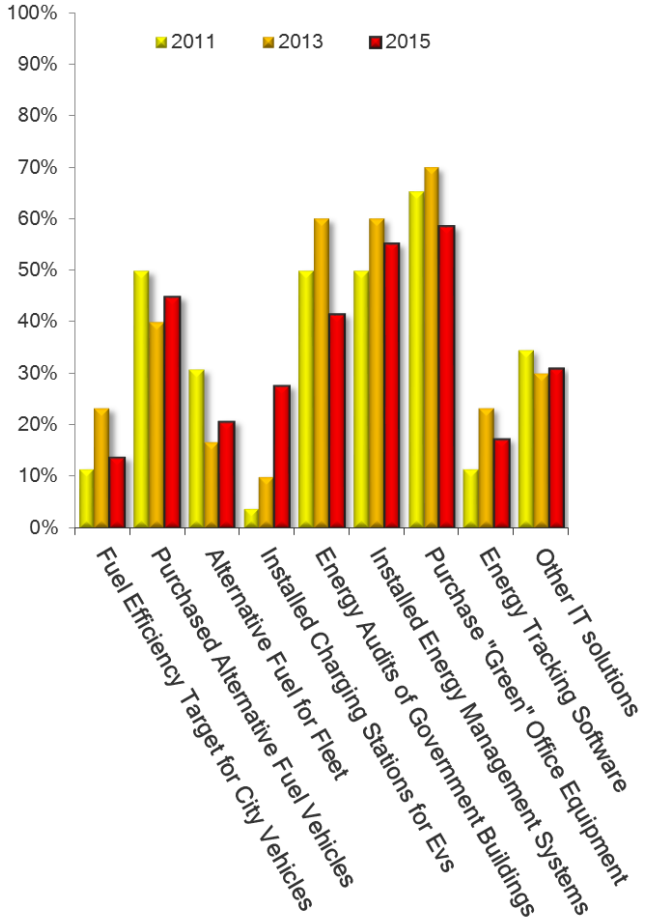


Figure 7: Action to Decrease Energy Usage

Since 2013, we have seen increases in:

- EV Charging Stations (up 18%)
- Purchased Alternative Fuel Vehicles (up 4%)
- Alternative Fuel for Fleet (up 4%)

And decreases in:

- Energy Audits of Government Buildings (down 19%)
- Purchase "Green" Office Equipment (down 11%)
- Fuel Efficiency Target for City Vehicles (down 9%)
- Installed Energy Management Systems (down 5%)
- Energy Tracking Software (down 4%)

Actions Taken to Increase the Production of Renewable Energy

Broward County and its 31 municipalities have taken strong actions to increase renewable energy production within their facilities.

As far as installations are concerned, over 1/3 (38 percent) have installed Solar Panels, followed by Geo-Thermal Systems (19 percent) and Wind Turbines (9 percent).

Other ways that cities are committing to renewables are: Prioritizing renewable energy Capital Improvements Forms (9 percent) and Incorporating Long-term Renewable Energy Goals (6 percent).

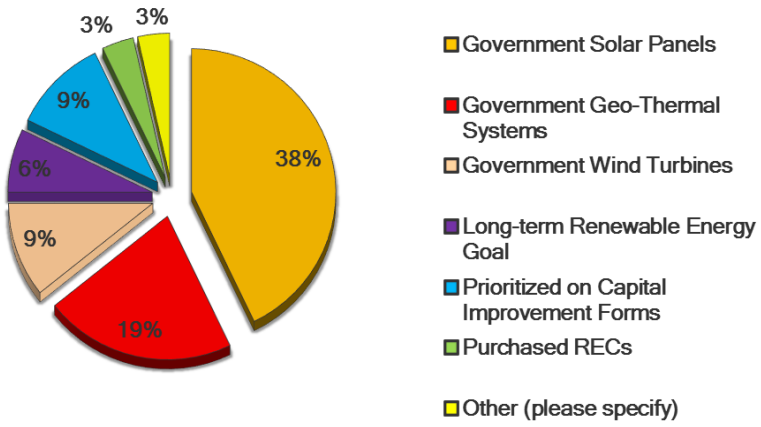


Figure 8: Actions to Increase Renewable Energy

Of Broward's municipalities:

84% Would or might support a **community-wide PACE** or another solar incentive program

84% Would or might participate in an **energy benchmarking** program for commercial buildings

90% Do **not** have an **energy manager** on staff

68% Do **not** have a **goal for energy** efficiency or conservation

65% Would or might be interested in developing a community-wide light policy, ordinance, or regulation to address light pollution as part of the **Dark Sky initiative**

Community-wide Education and Promotion of Energy Efficiency and Renewables

Education programs to promote renewable energy production and energy efficient consumption practices throughout our community are an important part of meeting our community-wide energy goals.

Unfortunately, while a variety of programs, incentives, demonstration projects and partnerships do exist, the level of education and outreach to the community by our local governments have generally decreased over the last two years, as shown in the figure below.

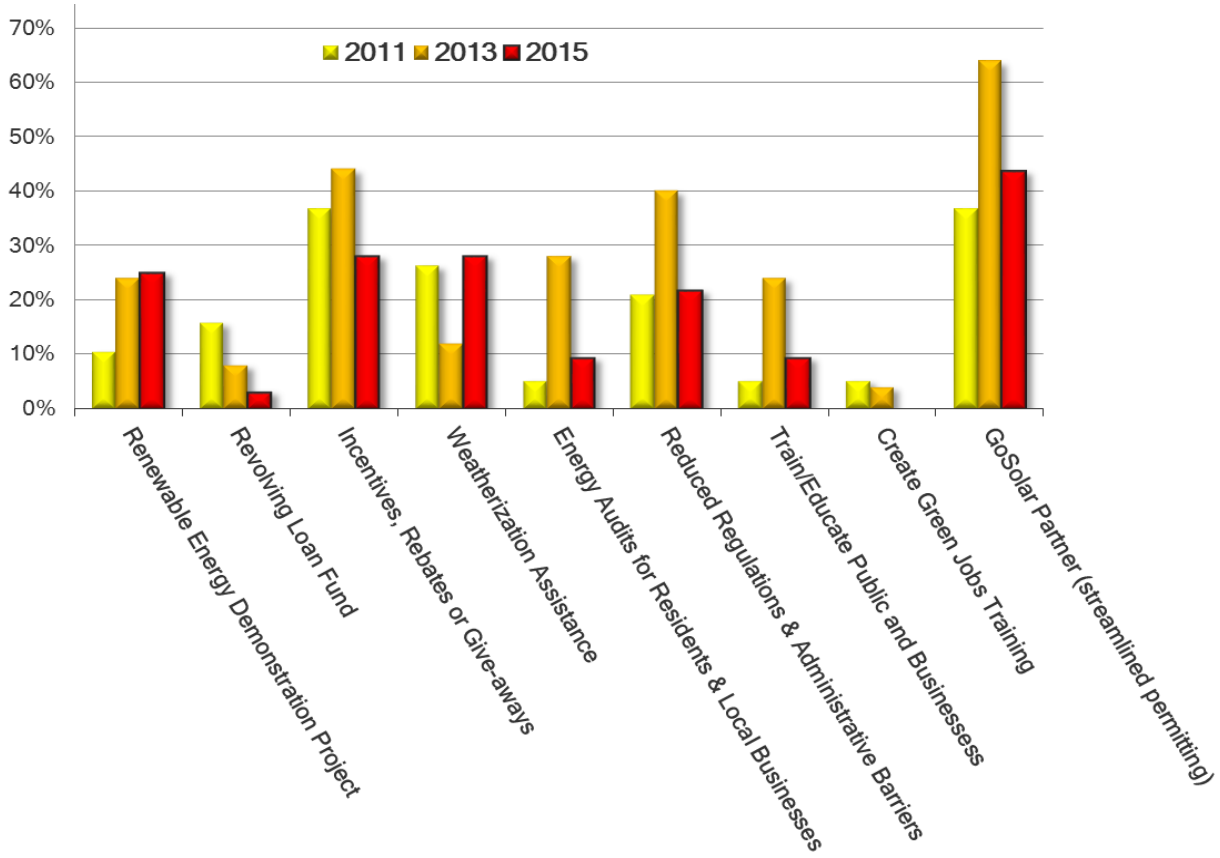


Figure 9: Community-wide Education and Promotion of Energy Efficiency and Renewables

Municipal Spotlight: Better Buildings Challenge

Energy Conservation & Renewables, The City of Margate
The City of Margate is a participant in the Department of Energy's Better Buildings Challenge and has committed to reduce the energy use intensity of its City facilities by 20% by 2020.

To date, the City has achieved over an 11% reduction in energy use intensity at its facilities compared to a 2011 baseline. While the City has not committed any additional funds to reach this goal, it has committed to reviewing and implementing the most energy efficient options that provide a reasonable payback period for all projects. For example, the pumps at the Calypso Cove pool facility were in need of replacement and, instead of replacing them with the same single speed pumps, variable frequency drive (VFD) pumps were installed instead. This one change has yielded an energy use intensity reduction of approximately 16% for the facility since installation. Utilizing this approach, the City is on track to meet its goal of a 20% reduction in energy use intensity by 2020.

Website: http://betterbuildingssolutioncenter.energy.gov/partners/margate-fl
Contact: Aaron Tauber 954-972-0828 atauber@margatefl.com

Local Sustainability Highlight: Energy Plans

In 2014 Broward County set goals for 20% use of energy from renewable energy sources and for 2.5% annual improvements in the energy efficiency of County buildings by 2020. The following plans support action toward the goals:

The **Renewable Energy Action Plan** (REAP) outlines five pilot projects, and encourages and promotes formalizing renewable energy through the capital budget process and planning. The REAP calls for: amending the Capital Budget Justification Form, requiring demonstrated consideration of renewable energy cost-benefits for each new construction project and major renovation, using Environmental Service Contracts to consider options that bundle short-term payback with long-term payback initiatives, and budgeting an appropriate amount of funds annually to support review of county facilities for renewable energy retrofits.

The **Community Energy Strategic Plan** (CESP) recommends immediate and short-term actions for community-wide reduction in energy use by increasing energy efficiency, encouraging use of renewable energy sources and effecting behavioral change related to transportation use. As part of the development process for the CESP, a team of community stakeholders met regularly to develop a strategy that cultivated the vision for an energy resilient community. The review of local and regional plans provided the basis for the prioritization of recommended actions that, if implemented, will help our community become more energy efficient, environmentally conscious, and resilient to climate change.

For more information, contact: Carrie Kashar at ckashar@broward.org

Transportation

Transportation has a key role to play in making our communities more efficient, healthy, productive, and enjoyable. The issue is central, in that it connects many of the other areas of sustainability such as land use, building and landscape design, emissions reductions and climate change, and community health and livability.

We are pleased to report that Broward County and our 31 municipalities have made significant progress in expanding access and connection to pedestrian services, increasing the efficiency and use of our public transit systems, and incorporating alternative fuels and fuel efficient vehicles into our fleets.

Alternative Transportation Improvements

In the last two years, Broward County and its 31 municipalities have continued to make tangible progress in expanding alternative transportation in Broward County through significant investment in a variety of projects. As can be seen in the table below, 7 of the 8 improvement strategies has shown rapid growth in implementation since 2013, many increasing by 20-30%.

The top 3 alternative transportation improvements implemented by municipalities were:

- Bus shelter Improvements (63 percent)
- Dedicated Bike Lanes on Streets (59 percent)
- Biking and Walking Trails (59 percent)

Table 4: Alternative Transportation Improvements

Strategies	2015	change from 2013
Bus Shelter Improvements	63%	↑ 19%
Bike Lanes on Streets	59%	↑ 31%
Biking and Walking Trails	59%	↑ 21%
Bike Parking Facilities	38%	↑ 31%
Car-share &/or Bike-share	19%	↑ 6%
Install EV Charging Stations	19%	↑ 13%
None	16%	↓ 9%
Bus Fleet Improvement	13%	↓ 3%
Carpool Programs	9%	↑ 3%
Other	9%	same

Creating More Walkable Communities

To create more walkable communities, municipalities are adopting a Complete Streets Policy, Reducing Required Parking Standards, Improving the Grid Network, Enforcing Street-Tree Requirements, and Widening Sidewalks.

Other actions taken include providing shaded respites along walkways, implementing a Bicycle Master Plan and implementing elements of Complete Streets.

Table 5: Creating Walkable Communities

Strategies	Percent
Adopted a Complete Streets policy	42%
Reduced Required Parking Standards	36%
Improved Grid Network (connectivity)	32%
Enforce Street-tree Requirements	48%
Widened Sidewalks	36%
None	19%
Other	29%

Percentage of Alternative Fuel or Fuel Efficient Vehicles

About half of all municipalities have between 5 and 10% alternative fuel or fuel efficient vehicles.

Over one-quarter (27 percent) have between 10 and 20% alternative fuel or fuel efficient vehicles. Lakes, Coconut Creek, Lauderdale by the Sea, Fort Lauderdale, and Coral Springs reported 30-40%, and at least ***90% of Tamarac's*** vehicles use alternative fuel or are fuel efficient!

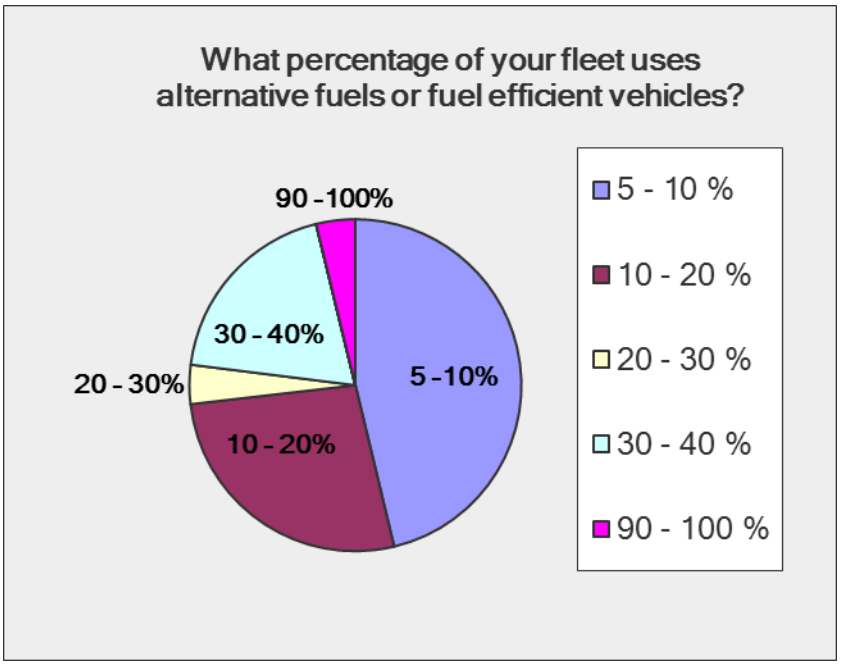


Figure 10: Percentage of Alternative Fuel or Fuel Efficient Vehicles

93%	Of Broward's municipalities do **not** have a **VMT** (vehicle miles traveled) **reduction goal**
Coral Springs	Has a VMT reduction goal for government operations
Oakland Park	Has both a government operations and community-wide VMT reduction goal

Municipal Sustainability Highlight: All Aboard Florida

Express Train Service, connecting Miami, Fort Lauderdale, West Palm Beach & Orlando

The Brightline service, by All Aboard Florida, will utilize a brightly colored fleet of locomotive and passenger cars, all manufactured in the USA. The fuel-efficient diesel-electric engines are designed to have lower emissions and reduced noise. The passenger cars will employ plus positive pressure clean air management and energy efficient LED lighting.

The new Brightline Fort Lauderdale station, located at NW 2nd Avenue between Broward Boulevard and NW 4th Street, will be connected to the Sun Trolley, Broward County Transit system, future Wave Streetcar and the planned Tri-Rail station. The nearly 60,000 square foot station includes a modern, multi-story lobby, elevated guest lounge, free Wi-Fi, and parking. The station in is the heart of the city's Regional Activity Center and is scheduled for completion between 2017 and 2018.

For more information, go to www.gobrightline.com

Built Environment

Local Leadership
Since 2008, Florida state statutes requires all new or retrofitted publicly financed buildings to be constructed and maintained to meet the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) rating system, or a similar nationally-recognized, high-performance green building rating system standard.

So far, 35 percent of Broward County and our municipalities reported having LEED certified government owned and operated buildings. Fort Lauderdale reported having achieved the LEED for Existing Buildings: Operations and Maintenance certification for 10 or more buildings (3 percent) while the majority of the municipalities report having no LEED certified for Existing Buildings: Operations and Maintenance (90 percent).

New LEED Projects

Most municipalities have not had new construction or major renovation projects in the last two years.

Those that did have significantly incorporated sustainability features in the design using LEED or similar rating systems.

- 42% had 1 - 3 projects
- 7% had 4 - 6 projects
- 10% had 7 - 10 projects
- *Pompano Beach & Fort Lauderdale* had more than 10 projects

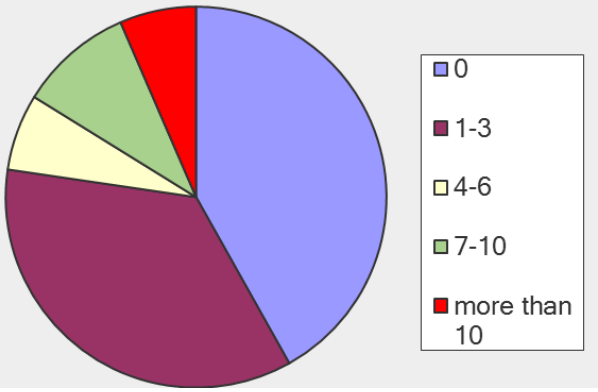


Figure 11: New LEED Projects

In-House Expertise
A critical practical step that is necessary to achieving our own sustainability goals, and being able to promote and enforce them in the community, is having personnel on staff with expertise in the technical aspects of green building design and construction.

Among Broward County and its 31 municipalities, more than half (62 percent) have staff with LEED accreditation. Planning and Facilities/Maintenance were the departments most likely to

house LEED accredited staff (78 percent), but Building Construction, Permitting, and Sustainability Programs also made significant investments in training their staff for knowledge in this field as well.

While LEED accreditation is tremendously beneficial, it also requires a significant commitment of time and resources to accomplish. At minimum, the Broward County Climate Change Action Plan recommends that all local licensed personnel in each municipality's building department have at least eight continuing education units (CEUs) of emerging energy efficiency and renewable energy technologies.

Incentives for Green Construction

A common and effective practice for positively influencing the private sector to incorporate sustainability is offering incentives for green construction. Currently, the following incentives are offered by survey participants in Broward County and our 31 municipalities:

Table 6: Incentives for Green Construction

Strategies	2015 results	Change from 2013
Streamlined Permitting Process	83 %	↑ 61 %
Increased Density of Height Allowances	42 %	↑ 29 %
Reduced Fees	25 %	↑ 19 %

Alternatives for Recognizing Green Building Practices

LEED isn't the only certification available for green construction. Other certification and assessment processes are generally recognized as acceptable and considered under the Florida State Statute. The following alternative approaches are recognized by Broward County and our 31 municipalities:

Table 7: Alternatives for Recognizing Green Building Practices

Strategies	2015 results	Change from 2013
Florida Green Building Coalition	89 %	↑ 51 %
Energy Star Home Certification	56 %	↑ 40 %
Green Globes	33 %	↑ 27 %

Of Broward's municipalities:

10% Said they are interested in **Participating in the Better Building Challenge**.

90% **Might be interested** and need more information.

Making Changes for Improvement

Half (50%) of all municipalities have incorporated green building guidelines or sustainability into their building and zoning codes, with 7 percent more in the process of updating at the time of the survey.

If Broward County or the Compact partners were able to advance an **amendment to the Florida Building Code**, these are the changes municipalities would like to see proposed.

Results are out of the 24 municipalities that responded to the question.

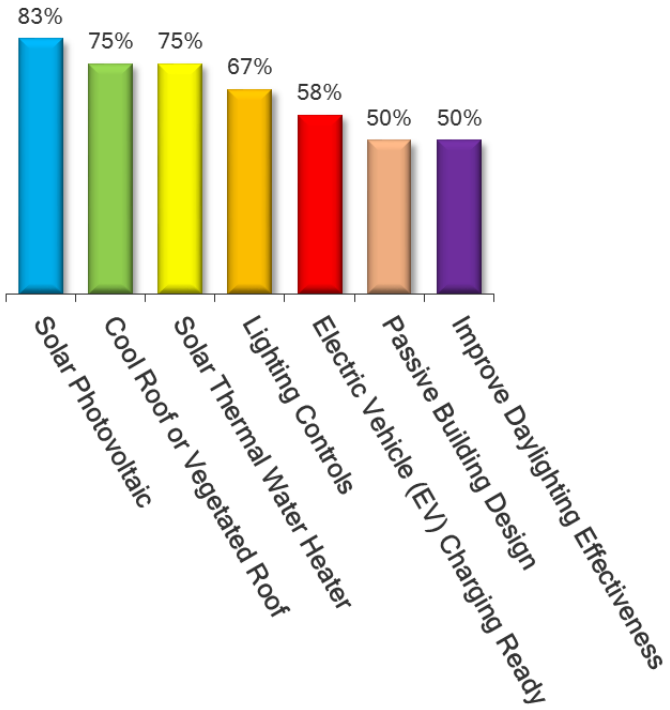


Figure 12: Popularity of Ideas to Amend the Florida Building Code

Measuring Success Starts with a Goal

Building and maintaining our own buildings to green standards, training our staff about energy efficiency, water conservation, and sustainable sites, and offering incentives for the private sector to join our lead, all make positive steps toward building a more sustainable community.

While these efforts by local governments should increase the number of LEED or similarly certified buildings in the community, it is hard to assess what is not measured. The first step is to establish a goal, so that progress toward a target can be measured.

Currently, only 23 percent of Broward County and our municipalities have a LEED certification goal for private construction, which has not changed from 2013.

Municipal Spotlight: Green Construction

LEED Certified Cultural Complex, The City of Pembroke Pines

Construction for Pembroke Pine's new City Hall and Civic Center is underway! The four story multi-purpose Cultural Complex will incorporate green development standards to deliver the following features:

- City Hall
- Stand-alone Commission Chamber
- 3,500 seat state of the art performance/conference space with retractable seating
- Loft Theater seating 750
- Two-story Frank C. Ortis Art Gallery and Exhibit Hall
- One acre Central Plaza for outdoor art, culture and entertainment event venue

The new Civic Center will be directly adjacent to City Center. Phase 1 is estimated to be complete by late 2016, early 2017.

The design and construction costs are estimated at $60 million paid for with grant funding, land sales and bonds.

Website: http://www.ppines.com/index.aspx?NID=855
Contact: Michael Stamm mstamm@ppines.com 954.435.6513

Waste Reduction & Recycling

A wide range of strategies are being employed across Broward County to reduce waste, encourage and support recycling, and redirect waste streams into more productive feedback loops.

Local Government Actions Taken to Reduce, Reuse and Recycle

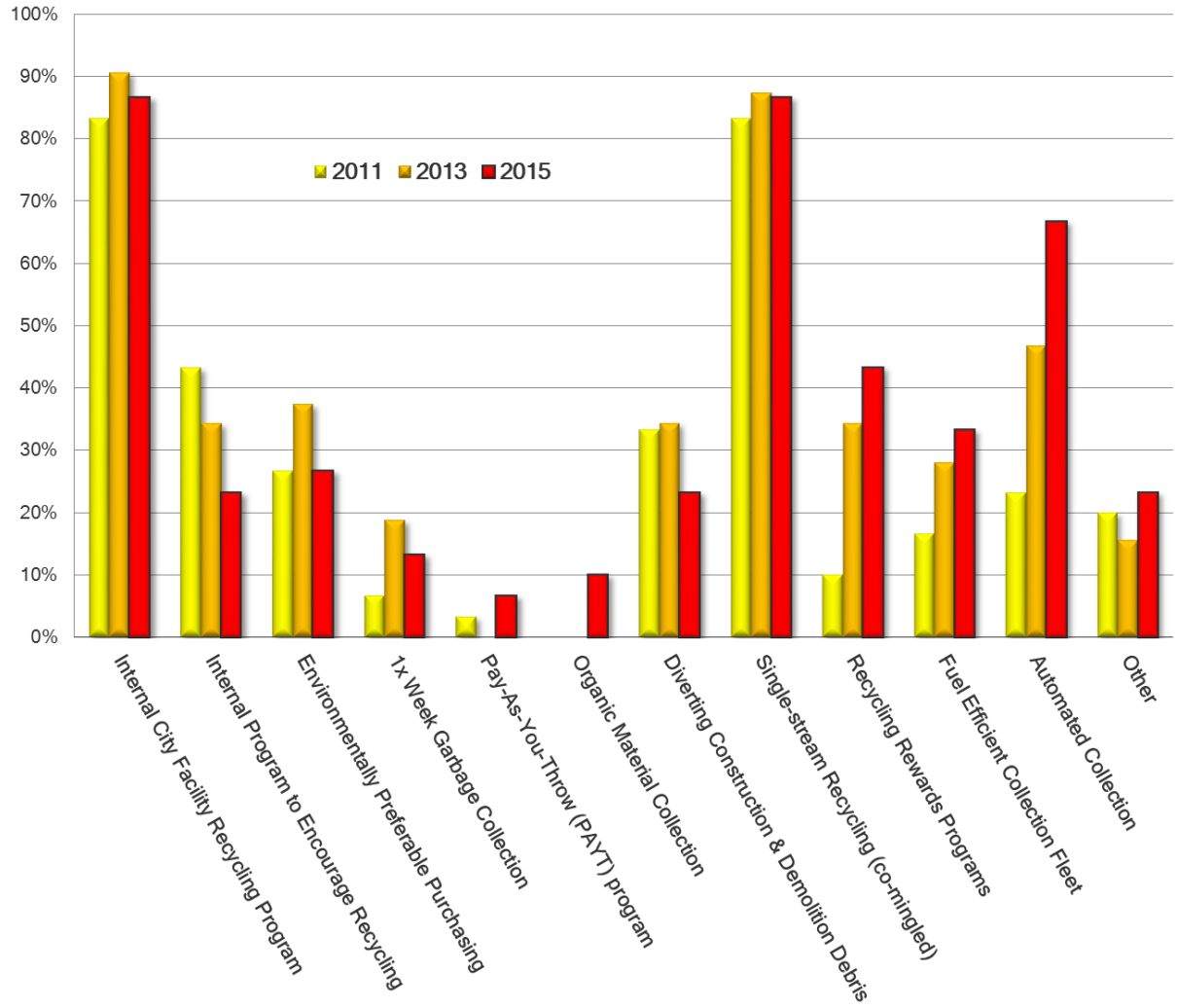


Figure 13: Actions Taken to Reduce, Reuse and Recycle

Continuing the trend from 2011 and 2013, the three largest actions to reduce, reuse, and recycle were: 1) Internal Facility Recycling Programs (87 percent), Single-stream Recycling (87 percent) and Automated Collection (67 percent). Recycling Rewards increased from 28 percent to 43 percent.

"Other" Types of Recycling Programs

Typically, three types of recycling programs are the most challenging for municipalities to implement; Multifamily Residential, Office Workplace, and Public Events. Tackling these three areas is critical to increasing the overall effectiveness of a waste reduction strategy in a

community. First, local governments need to have a policy in place. Then, we can measure the level of support a program is able to provide to implement the strategy. These range from *Encourage*, then *Mandate*, to *Provide (financial) Support and/or Enforce*.

The following results were collected from the 2015 Municipal Survey on these more challenging but critical programs and are compared to the results from the 2013 survey.

Table 8: Other Types of Recycling Programs

	Municipalities with No Policy		Municipalities who Encourage		Municipalities who Mandate		Municipalities who Provide Support/Enforce	
	2015	Trend since 2013	2015	Trend since 2013	2015	Trend since 2013	2015	Trend since 2013
Multi-family Residential	6%	↓ 3%	45%	↑ 9%	19%	↓ 3%	26%	↑ 1%
Office Workplace	6%	↑ 3%	65%	↑ 15%	10%	↓ 9%	16%	↑ 3%
Public Events	19%	↑ 13%	48%	↑ 1%	10%	↓ 3%	16%	No change

As evidenced by this table, the trend is moving in the wrong direction. When it comes to multi-family residential, office/workplace, and public events recycling programs; instead of providing stronger policy leadership and agency support (Mandate, Provide Support or Enforce), the survey shows a regressive trend toward "No Policy" or "Encouragement".

New Strategies and Waste Reducing Innovations
Let's congratulate these cities on their leadership!

Plastic Bag/Styrofoam Regulations

- The City of Coconut Creek joins the Town of Davie in having a resolution to urge the Florida Legislature to repeal Section 403.7033 of the Florida Statues and allow municipalities to exercise homerule regarding plastic bag regulations. (see more about this issue in the highlight box below)

Multi-family Recycling

- The City of Hollywood has an ordinance requiring commercial and multi-family buildings to have recycling. City staff and their citizen lead Green Team promote and work together to enhance compliance.

Clothing Donations, Food and Organics

- The City of Tamarac joins the Town of Davie and Deerfield Beach in having a "Clothing Donation Box Ordinance". Tamarac also reports "Redirecting Food Grade Waste to Local Food Banks" and "Sending Food Residuals to an Organics Recycling Facility"!

Issue Spotlight: State Legislature Rules on Product Bans

Since 2012, Broward County's Sustainability Stewards have been following this issue and looking for opportunities to advance limitations on plastic bags and use of polystyrene. Polystyrene foam is a major component of plastic debris in the ocean, where it becomes toxic to marine life. These products fill up 30 percent of limited landfill space, and do not biodegrade for hundreds of years. Furthermore, extruded polystyrenes are made with hydrofluorocarbons, which have global warming potentials of approximately 1000–1300 times that of carbon dioxide.

Despite efforts by the EPA to highlight this as a serious environmental problem, and local government interest in taking action, the Florida Legislature has repeatedly enacted legislation to prohibit local governments from regulating plastic and polystyrene products in their communities. In 2008 HB 7135, preempted local government action on plastic bags and "auxiliary products" until DEP could analyze and provide recommendations on the issue. The report by DEP, released in 2010, reconfirmed the significance of the problem and proposed a set of recommendations, but these were never considered by the legislature, nor was the "ban on bans" lifted, as originally proposed.

Some cities, feeling the direct impacts of ocean health and climate change in their communities, decided to take action, finding space in the vague reference to "auxiliary products" in the original ban. Two years ago, Miami Beach became the first city in all of Florida to enact a ban on polystyrene on city property. Last year, that ban was expanded to prohibit the sale of the plastic anywhere in Miami Beach. Other cities around the state took notice and began to pursue prohibitions as well.

Then, on March 16, 2016, Gov. Rick Scott signed a food safety bill into law which included an amendment that put the pre-empted local bans of polystyrene. The legislation gives "the state the authority to regulate the sale and use of polystyrene products by food service establishments like grocery stores and restaurants." Hollywood* and a handful of other cities in Florida (Miami Beach, Bal Harbour, Bay Harbor Islands, and Key Biscayne) passed bans before Jan. 1, 2016, which means they get to keep them in place. But Coral Gables, Orlando and others who either passed bans in the last few months, or were currently in the process of passing one, their prohibitions will be reversed.

While state standards are usually preferred for environmental protections, this example of local government's home rule being preempted is a detriment to innovation and leadership on local sustainability.

*Note; Hollywood's ordinance was actually passed in 1990. The city recently rediscovered it, and now is grandfathered in under the new law. Check your city's legal history. You may also have a hidden gem!

Community Resilience Planning

Broward County and our 31 Municipalities were asked to rank their level of concern regarding 14 potential impacts of climate change on our local community.

Table 9: Climate Change Issues of Greatest Concern

Climate Change Issues identified as being *"Of Great Concern"*	
Flooding/storm water management	66%
More intense hurricanes	47%
Impact to public infrastructure	44%
Drought	41%
Sea-level Rise	38%
Salt water intrusion into aquifer	38%
Impacts to natural systems	28%
Impact to private property	28%

Community Assets Assessed for Climate Vulnerability

Municipalities are taking stock and assessing their communities' vulnerabilities to climate change.

Critical Infrastructure was the biggest asset that was assessed for climate change vulnerability (94 percent).

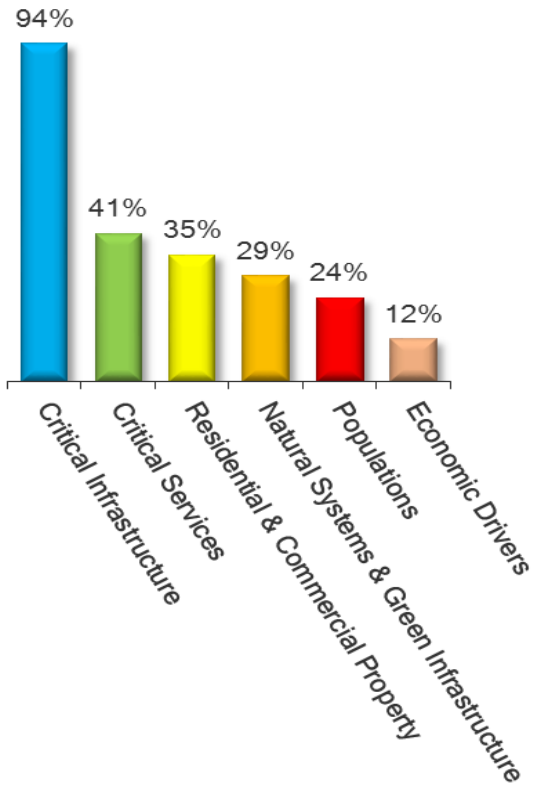


Figure 14: Community Assets Assessed for Climate Vulnerability

Recent Investments in Climate Adaptation

These are some of the ways Broward County and our municipalities are investing in climate adaptation:

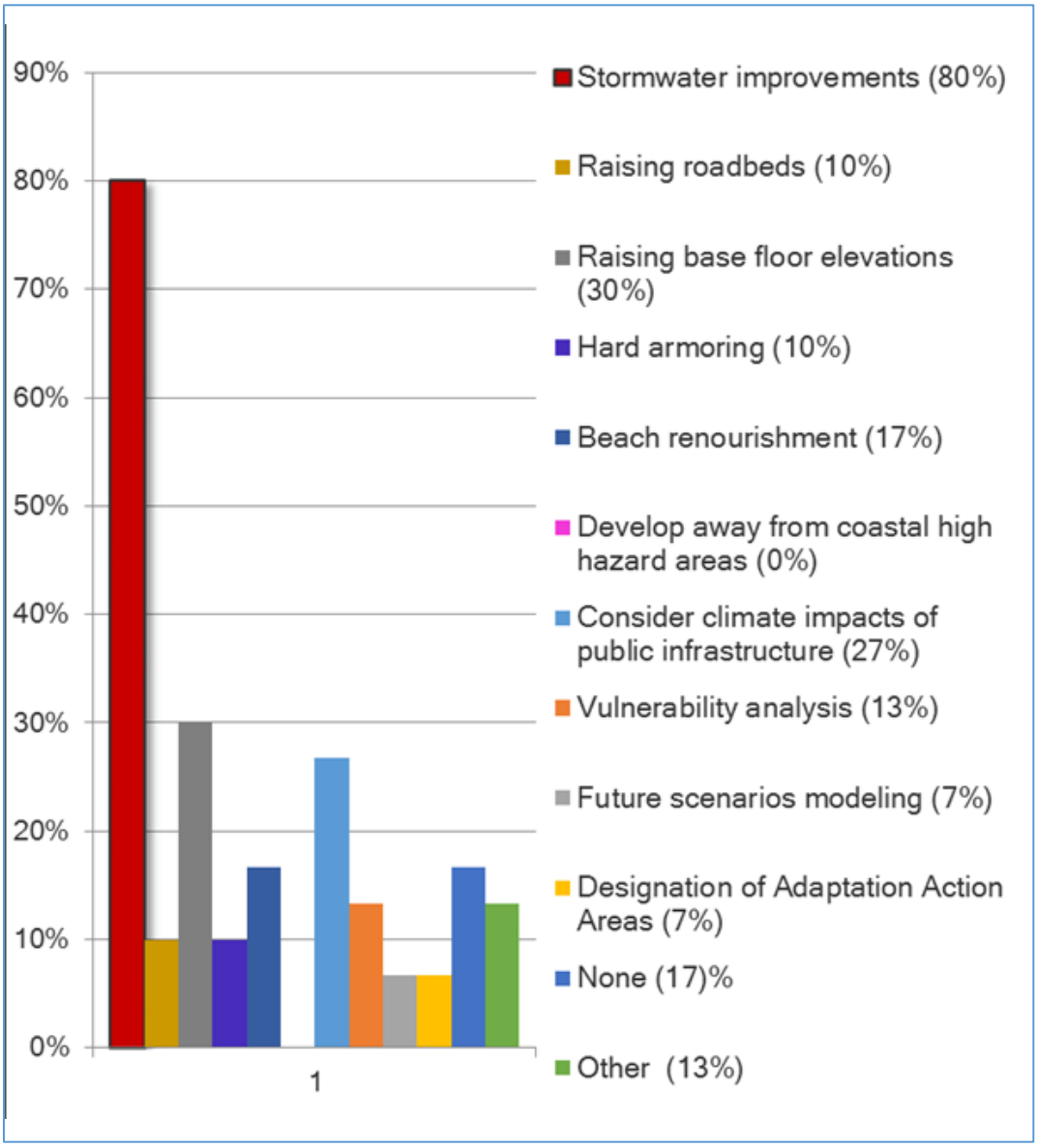


Figure 15: Investments in Climate Adaptation

Since 2011, the following climate adaptation actions have increased:

- Raising base floor elevations – Increased by 10%
- Consider climate impacts on public infrastructure – Increased by 10%

Including Climate Change into Comprehensive and Strategic Community Planning

The plans or procedures municipalities have updated to include climate are as follows:

- Comprehensive Plan (67%)
- Capital Improvement Plan (50%)
- Master Plan (44%)
- Budget process (39%)
- Sustainability Plan (28%)
- CRA Plan (6%)

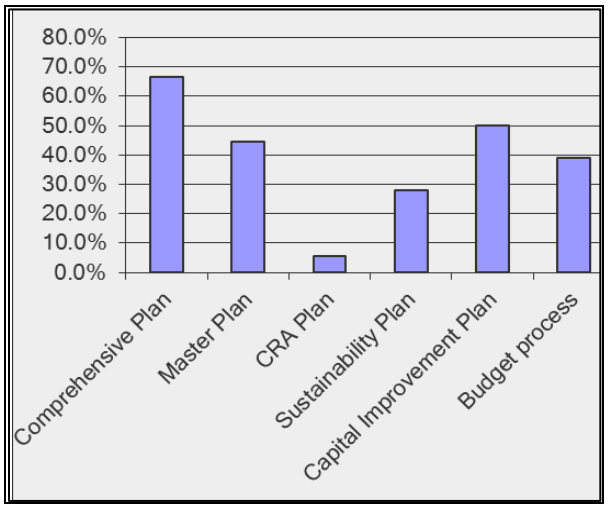


Figure 16: Including Climate Change into Planning

Resources Needed for Climate Adaptation:

- The majority of respondents (89%) identified *Funding* as their #1 need for Climate Adaptation
- *Technical Workshops for Staff and Elected officials* was the second highest need identified at 70%.
- *Maps of Vulnerable Areas* (33%) and *Community Support* (33%) were also identified as current needs.

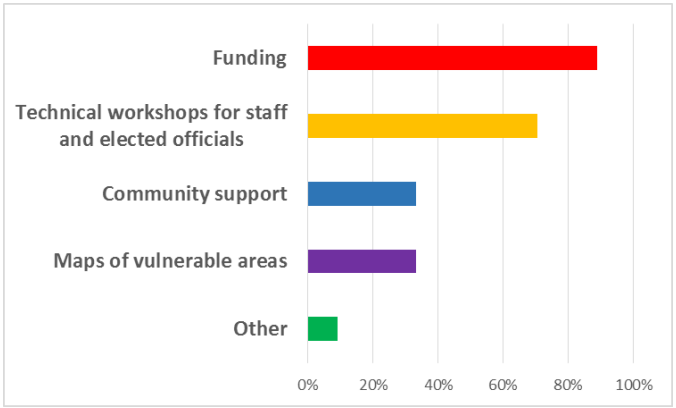


Figure 17: Resources Needed for Climate Adaptation

Information and Resources Needed for Climate Adaptation Planning

Recognizing that local governments differ in their ability to support adaptation planning, Broward County strives to be a leader in climate change by providing resources of value that can be shared throughout the in region. The County provides support through by collaborating on the creation of number of resources, listed below. In the 2015 Municipal Survey we asked local governments what else they need to better understand and prepare for risks associated with climate change. Results help to inform Broward County on how future programs can continue to meet this need.

Resources Currently Available

Broward County Climate Change Action Plan (updated 1/2016) *web link*
Broward County Climate Change Element (GOPs) (updated 12/2015) *web link*
Broward County Climate Change Element (support document) *web link*
Broward County Land Use Amendment for Climate Change *web link*
Priority Planning Areas for Sea Level Rise Map (updated 12/2015) *web link*
Unified Sea Level Rise Projection for Southeast Florida (updated 10/2015) *web link*
Regional Greenhouse Gas Emissions Inventory: Baseline Period 2005 -2009 *web link*
Analysis of the Vulnerability of Southeast Florida to Sea Level Rise *web link*
Southeast Florida Regional Climate Action Plan *web link*
Adaptation Action Areas Pilot Project Report *web link*

Ongoing Opportunities to Engage
Sustainability Stewards Workshops *web link*
Clearinghouse of Best Management Practices *web link*
Broward County Climate Change Task Force *web link*
Southeast Florida Regional Climate Change Compact *web link*
Annual Southeast Florida Regional Climate Leadership Summits *web link*
Southeast Florida Regional Climate Change Compact Municipal Working Group *web link*

Municipal Spotlight: Coral Reef Expansion

Community Resilience, Lauderdale-by-the-Sea

The Town signed a $59,000 contract with Nova Southeastern University to plant 2,000 staghorn coral fragments off its shores. The first 1,000 were planted in 2015. The second out-planting is scheduled for April.

Staghorn corals are important part of South Florida's marine environment. The fast growing and branching corals not only help build reefs, but provide needed habitat for fish, sea urchins and other vertebrates.
The Town's coral restoration partnership with NSU is unique. No other municipality has worked with the university on a joint project to help restore Florida's coral reefs.

The project between the city and NSU's Coral Reef Initiative will be featured in May on Fox Sun Sports ScubaNation TV program.

The Town hopes the re-planted staghorn coral fragments will grow into a significant reef that will help the environment within the next four or five years.

To learn more, contact Steve D'Oliveira steved@lbts-fl.gov 954-640-4209



Municipal Spotlight: Adaptation Action Areas

Community Resilience, The City of Fort Lauderdale

Adaptation Action Areas (AAAs) are a designation in the Coastal Management Element of a local government comprehensive plan which identifies areas experiencing coastal flooding due to extreme high tides and storm surge, and vulnerable to the related impacts of rising sea levels for the purpose of prioritizing funding for infrastructure needs and adaptation planning. AAAs provide a mechanism to identify neighborhoods at risk and improve climate resilience.

The City of Fort Lauderdale has adopted AAA policies to meet its climate resiliency, sea level rise, and natural resource protection goals. Policy development was made possible through funding from federal and state agencies. The South Florida Regional Planning Council (SFRPC), Broward County and the City of Fort Lauderdale collaborated to research Adaptation Action Area implementation strategies and adopt AAA policies.

Subsequently, City of Fort Lauderdale staff have developed a "Designated Adaptation Action Areas and Projects" map that will be incorporated into the FY2016 Capital Improvement Plan, designating AAAs and projects within the AAA boundaries. The City will either directly fund or pursue outside funding for these projects. Projects in AAAs may include investing in infrastructure, drainage systems, bridges, roads; protecting assets from inclement weather and high tides; and managing increased water supply demands.

http://gyr.fortlauderdale.gov/greener-government/climate-resiliency/innovative-pilot-projects/adaptation-action-areas

For more information, contact: Adrienne Saltik 954-828-5798 asaltik@fortlauderdale.gov

Partners in Higher Education

In 2013, local leaders in higher education joined the Broward Municipal Green Initiatives Survey effort. While responses by the universities are not included in the majority of the charts and figures referenced throughout this summary report, a recognition that many of the challenges and successes they experience managing sustainability on a campus is quite similar to the challenges and successes experienced by local governments does. This section of the report is to highlight some of the trends, opportunities, and successes learned from our partners in higher education.

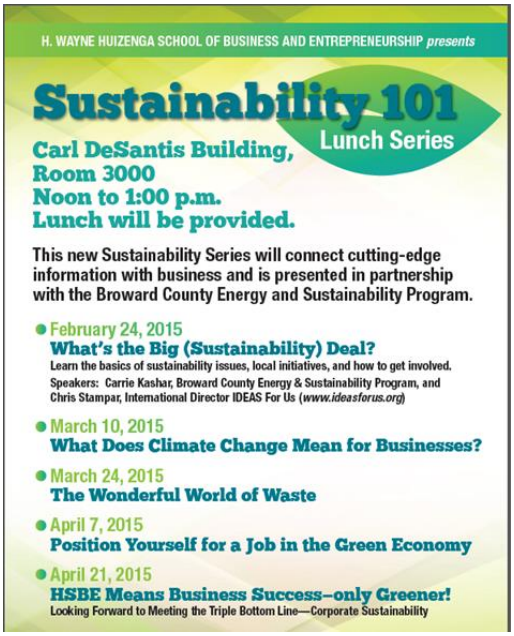
Reporting: Broward College & St. Thomas University

This year Broward College and St. Thomas University joined our 31 municipalities in completing the survey. Energy efficiency upgrades and energy use reduction were the two foremost actions taken by the universities. Both universities installed low flow water devices, upgraded or retrofitted office lighting, and installed charging stations for electric vehicles. Broward College also purchased alternative fuel vehicles, conducted energy audits of their buildings, installed energy management systems and use energy tracking software, upgraded exterior lighting and employed simple yet innovative strategies to reduce energy use (such as de-lamping over-lit buildings and installing light switches where they were not previously).

Broward College also reported a number of water conservation efforts, including participating in the NatureScape Broward program, conducting a reclaimed water feasibility study, hosting a water conservation public education program, and tracking cost and benefit data for water conservation practices.

New Partnerships: Nova Southeastern University & Florida Climate Institute

This year the Broward County Energy & Sustainability Program partnered with the H. Wayne Huizenga School of Business & Entrepreneurship at Nova Southeastern University to put on an educational series leading up to Earth Day. Five lunch workshops were developed with local and national leaders in sustainability to promote sustainability in the workplace.



The two programs have also been working together to track and make progress on sustainability indicators, to support Broward's 4-STAR rating, and in launching an inter-departmental campus sustainability team which can work from the staff level on collaborative and community-focused projects.

More great news!

In November 2015, the Southeast Florida Regional Climate Change Compact announced its intention to officially partner with the Florida Climate Institute (FCI). This collaboration between the Compact partners and the FCI's member academic institutions seeks to better align academic research with regional climate resiliency planning efforts and to improve the region's competitive position for external funding to support climate-related research, planning, and projects. The four county members of the Compact (Broward, Miami-Dade, Monroe and Palm Beach) will seek to adopt resolutions to support the partnership in 2016.

The Florida Climate Institute (FCI) is a network comprised of nine Florida universities, national and international research and public organizations, scientists, and individuals concerned with achieving a better understanding of climate variability and change.

Conclusion

For six years, the Broward County Municipal Green Initiatives Survey has provided biannual snapshots of the ever-growing achievements in our community sustainability efforts. Once again, all 32 local governments have come together to complete this voluntarily assessment, identify opportunities for advancements, and celebrate the results. This report helps Broward County and all our partners communicate the results of this assessment.

In general, there is a trend to use more general funds, public-private partnerships and local grants to support sustainability initiatives. Interestingly, *Climate Preparedness* became a more significant factor for why local governments take action in sustainability, growing from 11% to 21% as a main benefit. Somewhat unsurprising then, is that *Complexity of the Issue* reemerged as one of the top 3 obstacles cities have in developing and applying sustainability initiatives, as it was in 2011.

Public Support has fallen off the major obstacles list, which may suggest a natural progression of our programs' growth and maturity. Success builds on success, so programs with a track record have broader public support to rely on. On the other hand, now that the "low hanging fruit" has been plucked, the challenge of tackling more complex and possible systemic issues exists. To maintain progress, local governments, universities, and community partners will need to work even more collaboratively.

In regards to clean air, the leading actions taken by Broward's municipalities to increase urban tree canopy were landscaping ordinances and codes, utilized by a whopping 97 percent. Over 40 percent of municipalities have one or more departments that have gone paperless, a very popular strategy on the rise for its ability to both reduce waste and improve government efficiency. Unfortunately, only 7 municipalities have conducted a greenhouse gas emissions inventory in the last 2 years. As the saying goes, "you can't improve what you don't measure".

To build a water conservation ethic, most municipalities host community events to educate local residents, and offer rebates and incentives to replace old fixtures with high efficiency models. They also participate in a variety of local water conservation activities, such as *Conservation Pays Program, NatureScape Broward Program, NatureScape Irrigation Services, Water Resources Advisory Board,* and *Know-the-Flow Training*. Really noteworthy is that all eight of the programs listed in 2013 reported an increase in participation in 2015!

This year we have also seen a general increase in energy efficiency and renewable energy investments. Installations of charging stations for electric vehicles has grown the most—from 4 to 28 percent. Installations of solar panels on government buildings had only a slight uptick from 31 to 38 percent, with much more significant growth in other forms of renewables. Geo-thermal systems more than tripled, now utilized by 19 percent, and wind turbines nearly doubled at 9 percent.

Education programs to promote renewable energy production and energy efficient consumption practices throughout our community are also an important part of meeting our community-wide energy goals. Unfortunately, while a variety of programs, incentives, demonstration projects and partnerships do exist, the level of education and outreach provided to the community by our local governments have generally decreased over the last two years.

Goal setting and building institutional capacity is at the heart of any progress we can hope to make, and here again we are seeing a gap between what we aim to achieve as a community, and the tools we have given ourselves to achieve them. Only 32 percent of the municipalities said they have an energy efficiency or energy conservation goal, and only 10 percent of the municipalities have an energy manager on staff.

Of Broward's municipalities:

- **73%** Attend Sustainability Stewards workshops
- **59%** Use survey report to compare our efforts with that of our neighbors
- **88%** Support aligning the municipal green initiatives survey with **4-STAR.Broward**

Perhaps community-wide programs are the answer. Resource sharing has worked well for the technical and legislative needs of our four Southeast Counties through the climate Compact, and our water conservation program has a long history of support and shared success. Perhaps our energy program could walk a similar path.

In this year's survey, 84 percent of our municipalities said they were or might be interested in supporting a community-wide PACE or similar solar incentive program. The same figure was reported in support of an energy benchmarking program for commercial buildings. And even the Night Skies initiative, an issue just beginning to get notice in our energy circles, had 65 percent positive feedback for considering a community-wide light policy, ordinance, or regulation to address light pollution.

While there is no “silver bullet” for transportation, and every municipality is different, many of Broward’s local governments have made progress in this arena as well. A significant increase in alternative transportation investments have been documented in the last two years. About half of survey respondents are creating more walkable communities by enforcing street-tree requirements and adopting complete streets policies. Tamarac emerged this year as a leader in fleet management, reporting at least 90% of their vehicles as fuel efficient or using alternative fuel!

In regards to green construction, 35 percent of Broward’s municipalities reported having LEED certified government owned and operated buildings. Fort Lauderdale and Pompano Beach reported having achieved the LEED for Existing Buildings: Operations and Maintenance certification for 10 or more buildings. The practice of offering incentives for green construction saw a major increase in the survey, as ways to spark the private sector to incorporate sustainability. *Streamlined Permitting Process* rose the most, from 22 percent in 2013 up to 83 percent in 2015. While we still have only a small proportion setting LEED certification goals for private construction, half (50%) of all municipalities have incorporated green building guidelines or sustainability into their building and zoning codes, with 7 percent more in process.

For waste, we have seen a decrease in single stream recycling, diverting construction and demolition debris, internal city facility and education programs, and environmentally friendly purchasing. Support and enforcement of multi-family residential, office/workplace, and public events recycling programs also showed a negative trend. Broward’s municipalities did report increases in automated collection, recycling rewards programs, and organic materials collection.

Finally, Broward County and our municipalities are taking action to plan, prepare, educate and respond to the risks posed by climate change. Ninety-four percent have included *Critical Infrastructure* in their climate change vulnerability assessments. *Stormwater Improvements* was the leading investment by municipalities, at 80 percent. *Funding* is still the #1 need identified for implementing climate adaptation (89%) with *Technical Workshops for Staff and Elected Officials* coming in at 70 percent as the second highest need.

As one of many outcomes of this survey, results will be shared though the Online Clearinghouse of Best Management Practices for Sustainability featured on the County’s GoGreen web site, and discussed at future Sustainability Stewards of Broward workshops. The community of sustainability practitioners that was born out of this survey process continues to inform and inspire each other, others in the region and beyond. For six years now, we are advancing sustainability, across program and jurisdiction boundaries, and in doing so increasing the efficiency and effectiveness of our programs. Together, we are working to (and measuring our ability to) positively impact the health, vitality, resiliency, and sustainability of our collective Broward community.

Broward Municipal Green Initiatives 2015 Survey Participant Contact List

Municipality	Lead Point of Contact	Contact Position	Department	Contact Phone	Email
Broward County EPCRD	Samantha Danchuk	AD	EPCRD	954-519-1295	sdanchuk@broward.org
Coconut Creek	Linda Whitman	Senior Planner	Sustainable Development	9549736756	lwhitman@coconutcreek.net
Cooper City	Matthew Wood	Growth Management Director	Growth Management	954-434-4300 x296	mwood@coopercityfl.org
Coral Springs	Casey K. Lee	Environmental Coordinator/City Forester	Community Development Division	954-344-1117	clee@coralsprings.org
Dania Beach	Corinne Lajoie	Principal Planner	Community Development	954-924-6805 X3704	cchurch@ci.dania-beach.fl.us
Davie	Lise Bazinet	Planner II	Planning & Zoning	(954)797-1180	lise_bazinet@davie-fl.gov
Deerfield Beach	Chad Grecsek	Director	Department of Recycling & Solid Waste Management	9544205562	cgrecsek@deerfield-beach.com
Fort Lauderdale	Glen Hadwen	Sustainability Manager	Public Works - Sustainability Division	954-828-6138	ghadwen@fortlaudedale.gov
Hallandale Beach	Susan Fassler	Green Initiatives Coordinator	Public Works	954-457-1617	sfassler@cohb.org
Hillsboro Beach	Robert Kellogg	Town Manager		954-427-4011	rkellogg@townofhillsborobeach.com
Hollywood	Lindsey Nieratka	Environmental Sustainability Coordinator	City Manager's Office	954-921-3201	lnieratka@hollywoodfl.org
Lauderdale Lakes	Danny A. Holmes	Director	Development Services Department	954-535-2482	danh@lauderdalelakes.org
Lauderdale-by-the-Sea	Connie Hoffmann	Town Mgr		954-640-4200	connieh@lbts-fl.gov
Lauderhill	Jane Sullivan	Grant Manager	Administration	954-730-3001	jsullivan@lauderhill-fl.gov
Lighthouse Point	Charles R. Schramm	Public Works Director	Public Works	954-946-7386	cschramm@lighthousepoint.com
Margate	Aaron Tauber	Sustainability Coordinator	Environmental and Engineering Services	954-972-0828	atauber@margatefl.com
Miramar	Elsi Rose	Development & Capital Management Cordinator	Community & Economic Development	954-602-3270	erose@ci.miramar.fl.us
North Lauderdale	Rodney Blanc	Grants Administrator	Community Development	954-722-0900 ext.4743	rblanc@nlauderdale.org
Oakland Park	Rick Buckeye	Senior Planner	Engineering & Community Development	954-630-4345	rickb@oaklandparkfl.gov
Parkland	Ronald Zasloff	Director	Public Works	954-757-4108	rzasloff@cityofparkland.org
Pembroke Park	Todd Larson	Public Works Director	Public Works	954-966-4600 ext. 238	tlarson@townofpembrokepark.com
Pembroke Pines	Christina Fermin	Community Planner	Planning and Economic Development Division	954-435-6513	cfermin@ppines.com

Municipality	Lead Point of Contact	Contact Position	Department	Contact Phone	Email
Plantation	Carlos Andres Gonzalez	Redevelopment Administrator/Chair Climate Change Task Force	Planning, Zoning & Economic Development	954-585+2330	cgonzalez@plantation.org
Pompano Beach	Kerrie MacNeil	Zoning Technician	Planning and Zoning Division	954-786-4662	kerrie.macneil@copbfl.com
Sea Ranch Lakes	Starr Paton	Village Clerk	City Hall	954 943-8862	cityclerk@searanchlakesflorida.gov
Southwest Ranches	December Lauretano-Haines	PROS Coordinator	Parks Recreation and Open Space	954-343-7452	dlauretano@southwestranches.org
Sunrise	Chelsea Albucher	Sustainability Officer	Utilities Department	954-888-6043	calbucher@sunrisefl.gov
Tamarac	Samira Shalan	Assistant City Engineer	Public Services	954-597-3705	samira.shalan@tamarac.org
Village of Lazy Lake	Joseph Fodera	City Clerk			lazylake123@aol.com
West Park	Carol M. Aubrun	Programs & Services Manager	City Manager's Office - Administration	954-989-2688	caubrun@cityofwestpark.org
Weston	Karl Thompson	Director	Public WOrks	954-385-2600	kthompson@westonfl.org
Wilton Manors	Roberta Moore	Community Development Services Director	Community Development Services Department	9543902180	rmoore@wiltonmanors.com
University					
Broward College	Susyn Stecchi	Energy Conservation Director	Operations Division/Energy Conservation Department	954-201-6241	sstecchi@broward.edu
St. Thomas University	Monique Brijbasi	Associate Director, Risk Management, Environmental Compliance & Emergency Management	Physical Plant	(305) 628-6648	mbrijbasi@stu.edu

Appendix B: Matrix of 2015 Municipal Green Initiatives in Broward County, Florida

	Sustainability Actions Taken								**Award Programs/Businesses that Practice Sustainability**			**Greenhouse Gas Reduction Goal**			**Initiatives to Increasing the Urban Forest & Tree Canopy**							**Greenhouse Gas Emissions Inventory (Last 2 Years)**			**Meeting Greenhouse Gas Reduction Goals**	
	Established a citizens committee or advisory green team	Established an internal green committee or task force	Adopted a sustainability plan with specific targets or benchmarks	Included "green" goals, objectives, and polices into existing plans	Provided a budget specifically for the sustainability effort	Dedicated staff to the sustainability effort			Yes	No		Yes, for government operations	Yes, community-wide		Landscaping Ordinances and Codes	Complete Streets Program	Native Tree Sales and Giveaways	Community Education and Outreach		Plan-it Green Program	Yes, we could Promote the program		Government Operations - Yes	Community-wide - Yes		Yes, we are on track to meet our gov ops goal.	Yes, we are on track to meet our community-wide goal.
City of Miramar		X		X	X	X				X		X			X	X		X		X			X				
City of Tamarac		X		X	X	X				X		X			X	X	X			X			X				
City of Lauderdale Lakes, Florida		X	X	X	X	X				X		X	X		X					X							
Village of Lazy Lake										X																		
City of Coconut Creek									X			X			X	X	X	X		X			X			X	
Broward County EPCRD	X	X	X	X	X	X			X			X	X		X	X	X	X		X			X				
Hillsboro Beach	X	X	X	X	X	X				X										X							
City of Wilton Manors										X					X	X											
The City of North Lauderdale				X						X					X												
Lauderdale-by-the-Sea			X	X	X					X					X			X									
Town of Pembroke Park				X						X					X												
City of West Park				X						X					X												
City of Weston				X						X					X												
Town of Southwest Ranches				X						X					X			X									
Village of Sea Ranch Lakes				X											X												
The City of Pompano Beach									X						X	X	X	X									
Lighthouse Point				X	X	X				X					X			X									
City of Sunrise	X			X		X				X		X			X	X	X	X									
City of Pembroke Pines	X			X	X	X				X					X		X	X		X							
City of Dania Beach	X	X	X							X					X			X									
City of Oakland Park	X									X					X	X	X	X									
Davie		X			X				X			X			X	X	X	X		X			X				
City of Fort Lauderdale	X	X	X	X	X	X			X			X	X		X	X	X	X		X			X	X			
City of Plantation	X	X	X	X	X	X																						
City of Lauderhill										X					X												
Cooper City										X					X		X	X									
City of Parkland	X			X						X					X		X	X									
City of Deerfield Beach		X		X		X				X					X	X	X	X		X							
City of Margate				X		X				X					X												
City of Hallandale Beach				X		X				X					X	X	X	X		X							
City of Coral Springs				X	X	X			X			X			X	X	X	X		X			X			X	
City of Hollywood		X	X	X		X				X					X	X				X							
Total Municipalities	**9**	**11**	**8**	**23**	**12**	**15**			**6**	**24**		**9**	**3**		**29**	**14**	**14**	**18**		**13**			**7**	**1**		**2**	**0**
University																												
St. Thomas University										X																		
Broward College									X																			

Updated 9/23/2016. Changes may not be reflected in charts and images presented in report.

Appendix B: Matrix of 2015 Municipal Green Initiatives in Broward County, Florida

	Community Water Planning Activities/Broward County Services											**Water Conservation Plan**						**Water Conservation Ethic Actions Taken**		**Tracked Cost and Benefit Data for Water Conservation Practices**		**Energy Efficiency Upgrades & Retrofits Undertaken (Last 2 Years)**								
	Water Resources Advisory Board/technical advisory committee - Yes	Water Resources Task Force/technical team - Yes	NatureScape Broward Program - Yes	NatureScape Irrigation Services - Yes	Habitat Stewards Training - Yes	Conservation Pays Program - Yes	Know-the-Flow Training - Yes	Broward Leaders Water & Climate Academy - Yes	Broward County Everglades Working Group - Yes	Surface Water Coordination Committee - Yes	An ordinance requiring implementation of Florida-friendly landscaping	Adoption of water conservation rate-based structures	Determination of the feasibility for making reclaimed water available	Implementation of water conservation public education programs	Conduct water audits at city-owned facilities	Yes	Office lighting	Building insulation	Roofing	Heating and air conditioning systems (HVAC)	Low flow water devices	Pumps in the water or sewer systems	LED traffic signals	Streetlights and/or and other exterior lighting
City of Miramar	X			X	X	X				X		X	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X
City of Tamarac	X	X	X	X		X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X
City of Lauderdale Lakes, Florida																			X	X	X		X							
Village of Lazy Lake																														
City of Coconut Creek	X	X	X	X		X	X	X			X	X	X	X	X	X			X			X	X			X	X	X	X	X
Broward County EPCRD	X	X	X	X	X	X	X	X		X	X	X	X	X	X				X		X	X	X							X
Hillsboro Beach						X													X			X								
City of Wilton Manors			X	X						X	X								X			X								
The City of North Lauderdale	X														X				X		X	X								
Lauderdale-by-the-Sea								X											X			X	X							X
Town of Pembroke Park							X												X		X									X
City of West Park	X						X							X									X							X
City of Weston	X	X				X	X		X		X			X					X			X	X	X						X
Town of Southwest Ranches			X		X		X		X					X								X	X							
Village of Sea Ranch Lakes																														
The City of Pompano Beach	X	X	X	X			X	X		X	X	X	X	X	X	X			X			X	X	X						
Lighthouse Point			X	X	X						X		X		X				X			X								X
City of Sunrise	X	X	X	X	X	X	X	X		X			X	X	X				X		X			X						X
City of Pembroke Pines		X	X	X	X	X			X		X		X		X	X			X			X	X	X						
City of Dania Beach																			X			X								X
City of Oakland Park	X	X	X	X	X					X	X			X	X				X	X		X	X	X						
Davie			X		X	X	X				X	X	X	X	X				X	X	X	X	X	X						X
City of Fort Lauderdale	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X											X
City of Plantation																														
City of Lauderhill															X															
Cooper City			X			X	X				X	X		X	X				X		X	X	X							
City of Parkland														X														X	X	
City of Deerfield Beach						X							X	X					X	X	X	X	X	X						X
City of Margate				X		X					X	X	X	X		X			X		X	X	X	X						X
City of Hallandale Beach	X		X	X		X					X		X	X		X			X	X	X	X	X							X
City of Coral Springs			X	X	X		X		X	X	X	X	X		X	X			X	X		X	X					X	X	X
City of Hollywood	X	X	X	X	X	X	X	X		X		X	X	X	X	X														
Total Municipalities	**13**	**10**	**16**	**15**	**11**	**15**	**14**	**8**	**6**	**10**	**15**	**11**	**15**	**18**	**14**	**8**		**24**	**8**	**12**	**22**	**18**	**11**	**5**	**18**					
University																														
St. Thomas University																			X	X		X	X							
Broward College			X										X	X		X			X				X	X						X

Appendix B: Matrix of 2015 Municipal Green Initiatives in Broward County, Florida

	Actions Taken to Reduce Energy Use	Established a fuel efficiency target for city vehicles	Purchased alternative fuel vehicles	Have alternative fuels available to your fleet	Installed charging stations for electric vehicles	Conducted energy audits of government buildings	Installed energy management systems to control heating and cooling (HVAC) in buildings	Purchased Energy Star, "green" or EPEAT certified equipment when available	Used energy tracking software	Other IT solutions	Actions Taken to Increase Production of Renewable Energy	Installed solar panels on government or institutional facilities	Installed a geo-thermal system on government or institutional facilities	Installed wind turbines on government or institutional facilities	Established a long-term goal for renewable energy production as part of your city's energy portfolio	Added renewable energy as a priority consideration on capital improvement forms	Purchased renewable energy credits	Energy Efficiency & Energy Conservation Goals	Yes	Energy Manager On Staff	Yes	Actions Taken to Promote Renewable Energy Production & Reduce Energy Consumption	Have a renewable energy demonstration project	Revolving Loan Fund for energy efficiency and renewable energy improvements	Incentives, rebates or give-aways of energy efficient fixtures and appliances	Weatherization assistance	Energy audits for residents and local businesses	Reduced regulations and administrative barriers to residential renewable energy production	Provide training and education to local business and public on renewable energy production	Partner with community colleges and workforce development centers to create green jobs training	Participate in the GoSolar partnership to streamline solar permitting
City of Miramar			X			X	X	X		X		X	X										X	X	X	X	X	X	X	X	X
City of Tamarac						X	X	X	X	X		X	X						X		X										X
City of Lauderdale Lakes, Florida							X	X																		X					X
Village of Lazy Lake																															
City of Coconut Creek		X	X		X	X	X	X		X									X				X		X	X	X	X			X
Broward County EPCRD			X		X		X		X							X			X		X		X			X			X		X
Hillsboro Beach																																
City of Wilton Manors			X					X																							X
The City of North Lauderdale							X																								
Lauderdale-by-the-Sea			X																												
Town of Pembroke Park																															
City of West Park								X																							
City of Weston							X			X																					
Town of Southwest Ranches																															
Village of Sea Ranch Lakes																															
The City of Pompano Beach						X	X					X																X			X
Lighthouse Point			X					X				X																			
City of Sunrise								X		X																					
City of Pembroke Pines			X	X			X	X		X			X										X		X	X		X			
City of Dania Beach					X			X				X																			X
City of Oakland Park		X					X	X		X																					X
Davie			X		X		X	X								X			X				X		X		X				X
City of Fort Lauderdale		X			X					X		X	X	X	X				X				X		X		X	X			X
City of Plantation																																
City of Lauderhill																								X	X	X						
Cooper City						X	X	X																	X			X			X
City of Parkland					X		X	X				X													X						
City of Deerfield Beach			X	X	X	X						X						X					X								X
City of Margate				X		X		X	X			X	X						X				X					X			X
City of Hallandale Beach			X	X		X	X		X																X						X
City of Coral Springs		X	X	X		X	X	X	X					X	X	X			X		X		X		X	X					
City of Hollywood			X	X	X							X		X														X			
Total Municipalities		**4**	**12**	**6**	**8**	**11**	**15**	**16**	**5**	**8**		**10**	**5**	**3**	**2**	**3**	**1**		**7**		**3**		**8**	**1**	**9**	**8**	**3**	**7**	**1**	**0**	**14**
University																																
St. Thomas University					X																											
Broward College			X		X	X	X	X	X										X		X		X									

Appendix B: Matrix of 2015 Municipal Green Initiatives in Broward County, Florida

	Alternative Transportation Improvements Implemented (Last 2 Years)	Bus Fleet Improvement	Bus Shelter Improvements	Contract with private entity for Car-share &/or Bike-share program	Installation of Electric Vehicle Charging Stations	Expanded dedicated bike lanes on streets	Added biking and walking trails	Added bike parking facilities	Carpool Programs	**Actions Taken to Create More Walkable Community**	Adopted a Complete Streets policy	Reduced Required Parking Standard	Improved Grid Network	Enforce Street-tree Requirements	Widened Sidewalks	**VMT (Vehicles Miles Traveled) Reduction Goal**	Yes, for government operations	Yes, community-wide	**Community-Wide LEED Certification Goal for Private Construction**	Yes	**Green Building Guidelines Incorporated Into Building & Zoning Codes**	Yes	**Departments with LEED Accredited Staff**	Building Construction	Permitting	Planning	Facilities/Maintenance	Sustainability Program	**Offered Incentives for Green Construction**	Increased Density or Height Allowances	Streamlined Permitting Process	Reduced Fees
City of Miramar			X			X					X	X									X			X		X	X	X			X	
City of Tamarac			X	X		X	X		X		X	X		X	X						X									X	X	
City of Lauderdale Lakes, Florida			X			X	X																									
Village of Lazy Lake																																
City of Coconut Creek			X		X	X	X	X			X	X		X	X					X	X				X					X	X	X
Broward County EPCRD		X	X	X	X	X	X	X	X		X				X									X		X	X	X				
Hillsboro Beach																					X											
City of Wilton Manors			X		X	X	X	X			X	X		X						X	X										X	X
The City of North Lauderdale		X	X																													
Lauderdale-by-the-Sea			X	X		X		X						X	X																X	
Town of Pembroke Park			X																													
City of West Park			X				X	X			X		X	X	X																	
City of Weston							X						X		X										X							
Town of Southwest Ranches							X	X																								
Village of Sea Ranch Lakes																								X								
The City of Pompano Beach				X		X						X	X	X	X						X				X	X					X	X
Lighthouse Point																					X											
City of Sunrise			X			X	X				X			X	X										X	X						
City of Pembroke Pines						X	X					X		X												X						
City of Dania Beach			X									X									X					X				X		
City of Oakland Park			X			X	X	X			X	X	X	X	X		X	X		X	X					X				X		
Davie		X			X	X	X				X		X	X							X					X	X			X	X	
City of Fort Lauderdale				X	X	X	X	X			X													X	X	X						
City of Plantation																																
City of Lauderhill			X				X																									
Cooper City			X				X						X	X																		
City of Parkland					X	X	X						X																			
City of Deerfield Beach						X		X																			X					
City of Margate			X			X	X	X				X	X	X	X						X							X				
City of Hallandale Beach			X			X	X	X			X		X	X							X				X			X			X	
City of Coral Springs		X	X	X		X	X	X	X		X	X		X	X		X			X	X					X					X	
City of Hollywood			X										X	X							X					X		X				
Total Municipalities		**4**	**19**	**6**		**6**	**18**	**19**	**12**	**3**		**12**	**10**	**10**	**15**	**11**		**2**	**1**		**4**		**14**		**4**	**4**	**13**	**4**	**5**		**5**	**9**	**3**
University																																
St. Thomas University				X	X				X																							
Broward College			X	X	X			X	X												X											

Appendix B: Matrix of 2015 Municipal Green Initiatives in Broward County, Florida

	Actions Taken to Reduce, Reuse, & Recycle	Internal recycling program in your city's facilities	Internal program that changes workplace behavior	Environmentally Preferable Purchasing	1x week garbage collection	Pay-As-You-Throw (PAYT) program with charges based on the amount of waste discarded	Community-wide collection of organic material for composting	Diverting Construction and Demolition (C&D) Debris from landfill to a materials recovery facility (MRF)	Single-stream recycling	Recycling rewards programs	Fuel efficient collection fleet	Automated collection	New Strategies & Innovative Policies to Reduce Waste	Plastic bag/Styrofoam regulation	Clothing donation box ordinance	Food residuals to an organics recycling facility
City of Miramar	X							X		X	X					
City of Tamarac	X			X	X			X	X		X			X	X	
City of Lauderdale Lakes, Florida	X						X	X	X		X					
Village of Lazy Lake																
City of Coconut Creek	X	X	X				X	X	X		X		X			
Broward County EPCRD	X	X					X	X	X		X					
Hillsboro Beach	X							X			X					
City of Wilton Manors	X		X								X					
The City of North Lauderdale																
Lauderdale-by-the-Sea	X							X			X					
Town of Pembroke Park								X								
City of West Park								X			X					
City of Weston	X										X					
Town of Southwest Ranches	X							X								
Village of Sea Ranch Lakes	X							X			X					
The City of Pompano Beach	X							X								
Lighthouse Point	X							X								
City of Sunrise	X							X	X		X					
City of Pembroke Pines	X		X				X	X		X	X					
City of Dania Beach	X															
City of Oakland Park	X	X	X	X	X	X	X	X	X	X	X					
Davie	X	X	X	X				X	X					X		
City of Fort Lauderdale	X	X				X	X	X		X	X					
City of Plantation																
City of Lauderhill								X	X							
Cooper City	X	X	X					X	X		X					
City of Parkland	X		X					X		X						
City of Deerfield Beach	X						X	X	X	X	X					
City of Margate	X							X	X	X	X					
City of Hallandale Beach	X			X				X		X	X					
City of Coral Springs	X	X	X			X			X	X						
City of Hollywood								X	X							
Total Municipalities	**25**	**7**	**8**	**4**	**2**	**3**	**7**	**25**	**13**	**9**	**19**		**1**	**2**	**1**	
University																
St. Thomas University	X							X								
Broward College		X	X					X								

Appendix B: Matrix of 2015 Municipal Green Initiatives in Broward County, Florida

	Climate Adaptation Incentives (Last 2 Years)	Stormwater improvements	Raising roadbeds	Raising base floor elevations	Hard armoring	Beach renourishment	Encouraging development away from Coastal High Hazard Areas (CHHA)	Consider climate impacts in the location, design and construction of public infrastructure	Vulnerability analysis	Future scenarios modeling	Designation of Adaptation Action Areas	Community Assets Assessed for Climate Vulnerability	Critical Infrastructure	Critical Services	Residential and Commercial Property	Natural Systems & Green Infrastructure	Populations	Economic Drivers	Are You Benefiting From Policy Support & Technical Assistance Offered by the Southeast Florida Regional Climate Change Compact	Yes, we have signed the Mayors' Climate Action Pledge in support of the Regional Climate Action Plan (RCAP)
City of Miramar	X																			
City of Tamarac	X												X							X
City of Lauderdale Lakes, Florida	X		X																	X
Village of Lazy Lake																				
City of Coconut Creek	X		X										X							X
Broward County EPCRD					X		X		X	X	X		X	X	X	X				X
Hillsboro Beach																				
City of Wilton Manors	X		X										X	X	X	X	X			
The City of North Lauderdale																				X
Lauderdale-by-the-Sea	X				X								X							X
Town of Pembroke Park	X																			
City of West Park	X												X							
City of Weston	X												X							
Town of Southwest Ranches																				
Village of Sea Ranch Lakes																				
The City of Pompano Beach	X	X	X		X		X		X				X							X
Lighthouse Point	X			X									X	X						
City of Sunrise	X						X		X					X						X
City of Pembroke Pines	X		X																	X
City of Dania Beach	X												X		X		X			
City of Oakland Park	X	X	X	X			X		X	X			X	X	X	X	X	X		X
Davie	X						X						X							X
City of Fort Lauderdale	X		X				X				X		X	X	X	X				
City of Plantation																				
City of Lauderhill																				
Cooper City	X		X				X						X							X
City of Parkland																				
City of Deerfield Beach	X				X															X
City of Margate	X												X							X
City of Hallandale Beach	X		X	X	X															X
City of Coral Springs	X	X					X						X	X	X	X	X	X		
City of Hollywood	X																			X
Total Municipalities	**23**	**3**	**9**	**3**	**5**	**0**	**8**		**4**	**2**	**2**		**16**	**7**	**6**	**5**	**4**	**2**		**16**
University																				
St. Thomas University																				
Broward College																				