Attachment 6

CLIMATE CHANGE ADVISORY TASK FORCE

September 2016

Final report for Resolution R-45-15 in support of the Sea Level Risk Task Force final recommendations

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Note on all figures: If you have any questions or trouble reading any of the figures, please contact the Office of Resilience at green@miamidade.gov to request additional information or a higher resolution version.

HISTORY

The Climate Change Advisory Task Force (CCATF) was created in 2006 and chaired by the Clerk of Courts, the Honorable Harvey Ruvin. The Task Force was supported by nearly 200 members of the community drawn from academia, the private sector, municipal and county government, and built on over a decade of climate change work within the County. The CCATF and its seven subcommittees reviewed information, hosted technical experts, and met over 50 times over a period of five years and developed a series of recommendations to both prepare our community for many of the expected impacts of climate change (also known as adaptation) as well as recommendations for how the County could reduce its own contribution to the problem of climate change (also known as mitigation). The majority of the recommended steps to reduce carbon emissions also have co-benefits such as increasing the County's operational efficiency, saving tax dollars, reducing local air pollution, improving public health, improving public spaces and natural areas, and ultimately improving the livability and attractiveness of our community. The CCATF released its first set of recommendations in April of 2008 and the Final Report and Recommendations in April 2011. These recommendations were taken into consideration in the development of initiatives for both GreenPrint, Miami-Dade County's community-wide sustainability plan, and the 2011 Regional Climate Action Plan, developed by the Southeast Florida Regional Climate Change Compact (Compact).

In January of 2015, the Board of County Commissioners passed Resolution R-45-15 directing the Mayor to review the status of the CCATF's recommendations and to put forward and action plan for implementation. This report is the final report in support of this Resolution.

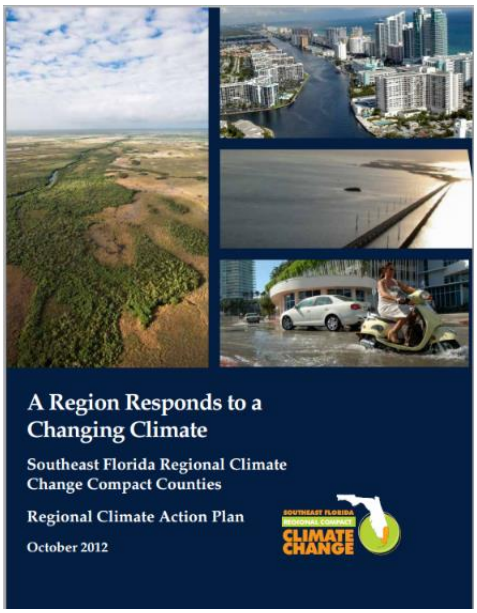
RECENT PROGRESS

In 2010, while the CCATF was still convening and developing recommendations, the **Southeast Florida Regional Climate Change Compact** was formed. The Compact has become the regional clearinghouse and forum for the much of the County's and region's work on climate change. Through this ground-breaking partnership, County staff work closely with peers in other county governments, municipalities, state and federal agencies, community-based and not-for-profit organizations, and universities. This close collaboration and pooling of resources has allowed the County to make substantially more progress on climate change efforts than would have been possible working independently. Furthermore, the collaboration facilitated by the Compact has helped the region secure additional funding and technical assistance grants from a number of federal agencies including the National Oceanographic and Atmospheric Administration (NOAA) and US Army Corps of Engineers as well as from private foundations. This external support has allowed County staff to work collaboratively on adaptation with experts from the Netherlands, New Orleans, New York and other areas.

Through the Compact Miami-Dade County works with other partners to develop an annual state and federal legislative program and jointly advocate for better state and federal climate policies and additional funding. The Compact also

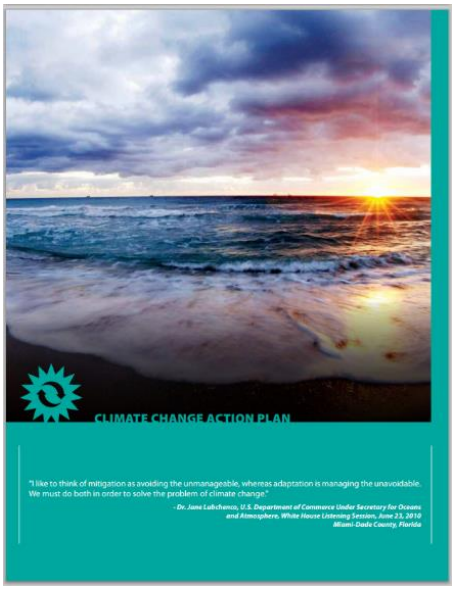
> The success of the Compact has been recognized internationally and nationally. President Obama recently remarked, "Five years ago, local leaders down here, Republicans and Democrats, formed the bipartisan Southeast Florida Regional Climate Change Compact -- an agreement to work together to fight climate change. And it's become a model not just for the country, but for the world."

annually convenes the Regional Climate Leadership Summit to mark progress and identify emerging issues. In 2014, Miami-Dade hosted the summit in Miami-Beach and welcomed experts from around the world to speak, including representatives from the White House, the business community, and the Consul Generals of Germany, Canada, France, the Netherlands and the United Kingdom. Most importantly, the Compact allows the County to coordinate adaptation and mitigation strategies across the region as well as with neighboring communities and municipalities within Miami-Dade County through the implementation of the Regional Climate Action Plan, described in the next section.



Through the Compact the County also contributed to the development of the **Regional Climate Action Plan** (RCAP). This plan contains over 100 recommendations which focus on sustainable communities, transportation planning, water supply, management and infrastructure, natural systems, agriculture, energy and fuel, risk reduction and emergency management, and outreach and public policy. Compact members, both municipalities and counties, track the implementation of these recommendations and share best practices through work groups. The lessons learned through implementation are shared with the wider public through the publication of case studies. There are also regular implementation workshops and accompanying guidance documents, which have focused on addressing some of the most challenging issues such as transportation, integrating climate change and water supply planning, stormwater management, and creating Adaptation Action Areas. The Regional Climate Action Plan is a living document, which has been successfully serving as a roadmap for the entire region since it was released in 2012, and has contributed to the implementation of Miami-Dade's own adaptation and mitigation strategies. It is also being actively implemented by local municipalities within Miami-Dade County such as Miami Beach. As seen below, there is significant overlap between CCATF and RCAP recommendations. The RCAP is a five year plan that will be revised in 2017 to reflect progress made and new priorities.

The nexus of the County-specific work on climate change is outlined in **GreenPrint**, a county-wide sustainability plan. This plan has a broad purview that extends beyond climate and includes goals that focus on strong leadership, water and energy efficiency, our environment, responsible land use and smart transportation, a vibrant economy, and healthy communities.



GreenPrint's final chapter contains the County's **Climate Action Plan**, which lays out aggressive goals to reduce the County's Greenhouse Gas (GHG) emissions by 80% by 2050. The plan also includes a number of measures to adapt to known climate impacts such as sea level rise. The Climate Action Plan also comprehensively reviews the current and future regional threats, such as salt water intrusion and coastal erosion, and provides a detailed analysis of emissions sources.

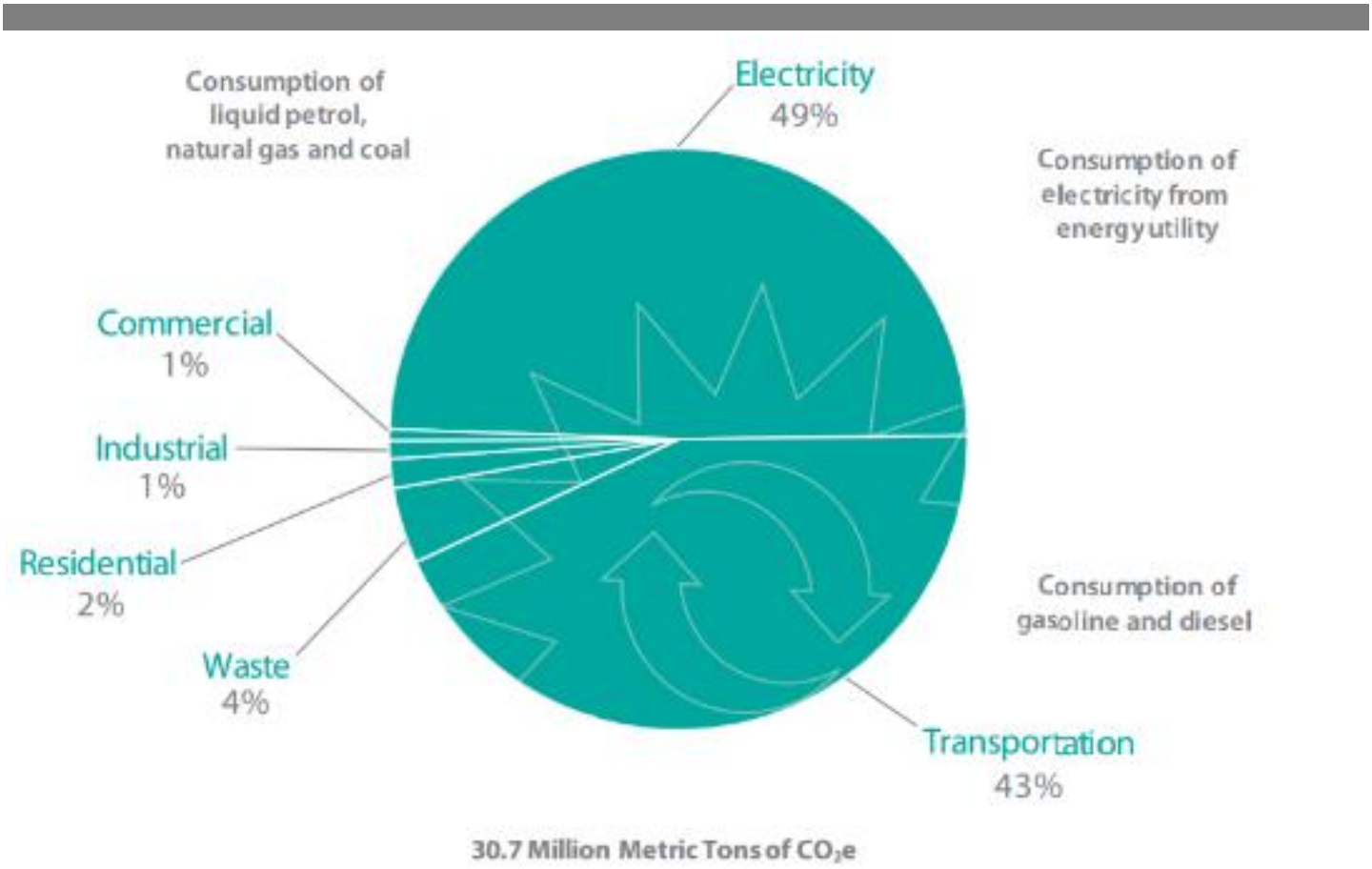
GreenPrint builds directly on the CCATF process. When GreenPrint was originally drafted, the planning team attended CCATF meetings throughout the entire process with the goal of incorporating its recommendations into GreenPrint where possible. As seen in Figure 3 many CCATF concepts were incorporated directly into GreenPrint. While the specific wording and emphasis is often different, many of the same themes are central to both. For example, both focus heavily on reducing the County's greenhouse gas emissions through greater energy efficiency, increasing the use of more fuel-efficient vehicles and public transportation, and increasing cooperation with other governments.

The first five year cycle of GreenPrint concluded in December 2015 and County staff are now working with internal and external stakeholders to revise each goal and reprioritize. This year's timely review of the CCATF recommendations has facilitated a thorough review of which concepts are most aligned with the strategic goals of the County. Many CCATF recommendations which were included in the first iteration of GreenPrint will be carried forward, and in some cases, the original CCATF recommendations will receive more emphasis in the second iteration. In some instances priorities have changed since the original task force. For example, many CCATF recommendations focused on improving the fuel efficiency of medallion-holding taxi cabs; however, because the market has changed so substantially over the past few years the next iteration of GreenPrint will strategically focus on other transportation initiatives. While reducing transportation emissions remains one of the County's top strategic priorities GreenPrint will strategically prioritize other reduction measures such as increasing transit ridership, walking, biking and transit-oriented development.

Due to recent improvements, the County is able to more strategically prioritize various GHG reduction strategies. By utilizing the Clearpath software to measure and monitor direct and community-wide emissions (Figure 1), the County can carefully track emissions through time and more accurately estimate the effectiveness of past reduction strategies. Clearpath is the newest emissions calculation software developed by ICLEI – Local Governments for Sustainability. Most importantly, Clearpath also allows users to evaluate the potential reductions from future initiatives. For example, the County is able to evaluate the relative efficacy of lighting retrofits, increasing transit ridership, or increasing water conservation efforts. Staff can also quantitatively determine how these efforts should be scaled up to reach the County's targets. This tool is currently being used to help determine the most impactful Greenhouse Gas emission reduction strategies which should be included in the next iteration of GreenPrint.

While the full analysis of reduction strategies is not yet complete, staff are able to utilize past GHG inventories to shape initial priorities. For example, as seen in Figure 1, transportation accounted for 43% of the County's emissions in 2005 and therefore is an important target area. Furthermore, the inventory indicates that the County's direct emissions are a relatively small (but still significant) portion of the community's entire emissions (less than 1/30th). Therefore it is important to focus on decision-making processes which have the greatest potential value to reduce community emissions, such as facilitating more sustainable transportation options.

FIGURE 1: MIAMI-DADE COUNTY 2005 EMISSIONS BY SOURCE AND SECTOR



THE STATUS OF THE CCATF RECOMMENDATIONS

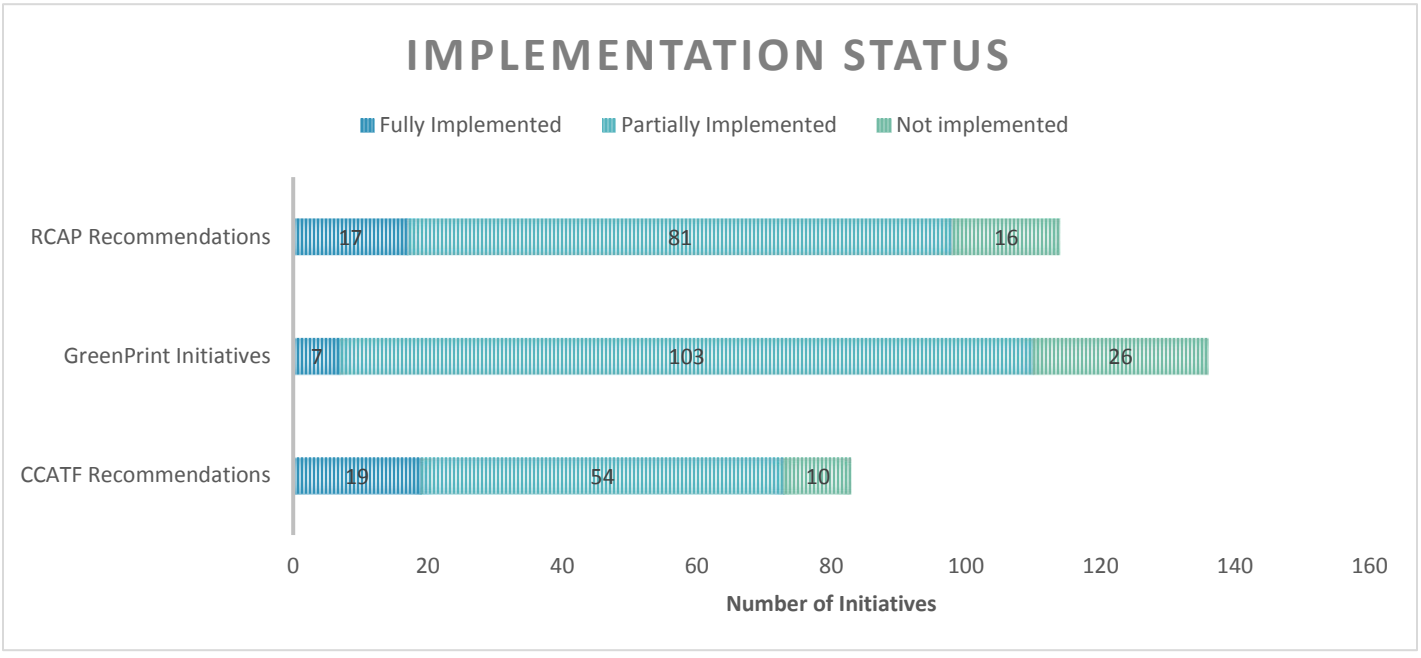
The following section provides a summary of the status of the CCATF recommendations including how many initiatives have been incorporated into more recent plans, their implementation status, and finally, the recommendations to accelerate implementation of the County's climate change goals. In retrospect, many of the CCATF recommendations were too specific, making it more difficult to implement them specifically, in whole. However the purpose or intent of many of them have been implemented in a variety of ways through various GreenPrint and RCAP initiatives. A review of the status of each CCATF recommendation is provided in Appendix 1.

Having completed their assigned task of developing recommendations to the Miami-Dade Board of County Commissioners for actions the County could take to continue Greenhouse Gas emissions reductions and begin preparing for expected impacts from climate change, the Climate Change Advisory Task Force was sunset in early 2011. Reports on the progress of the CCATF and development of recommendations were periodically published between 2007 and 2011, including an initial set of recommendations in 2008 and a supplemental set of recommendations in 2010; however, because many recommendations were incorporated into GreenPrint and the Regional Climate Action Plan, monitoring and reporting efforts shifted to GreenPrint after 2011.

Figure 2 shows the general implementation status of recommendations and initiatives in three primary plans. As can be seen in this chart, the vast majority of CCATF recommendations are at some stage

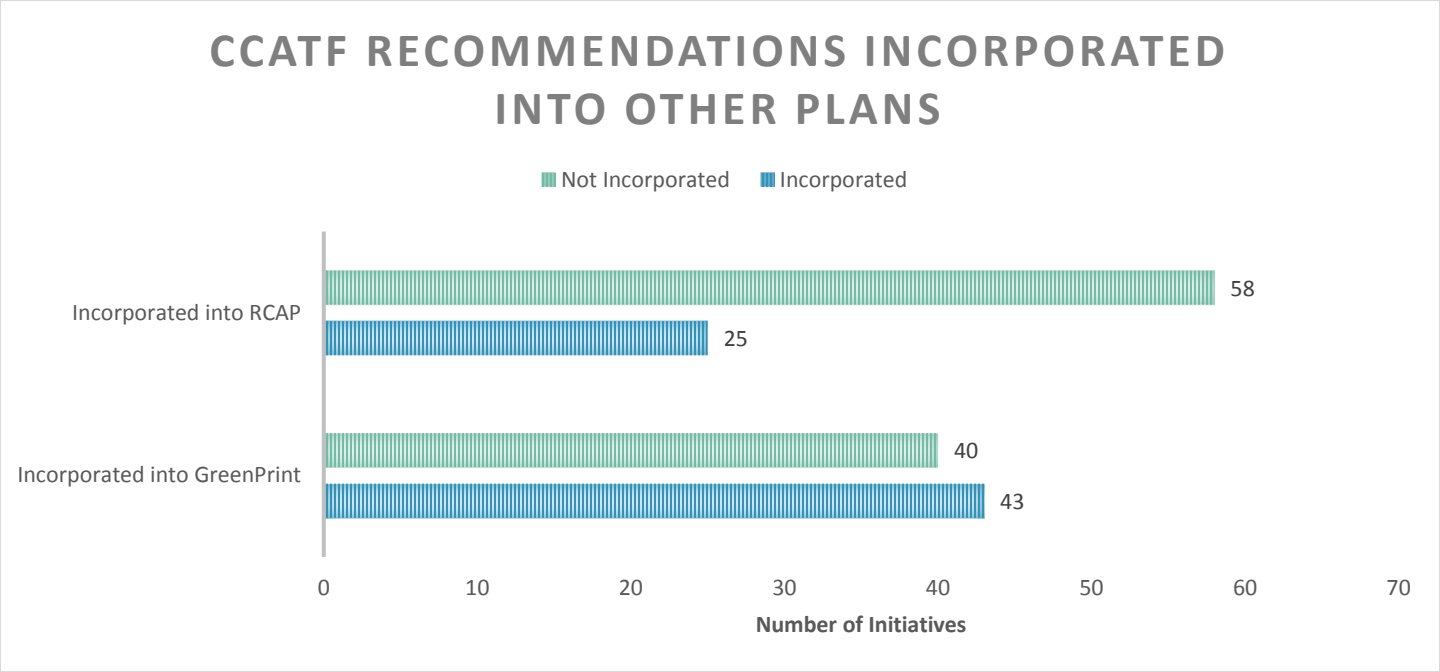
of implementation. For the purposes of this chart an initiative has been considered "partially implemented" if it is ongoing or being partially implemented as part of another related project or initiative. For example, recommendation C8 directed Miami-Dade to "advocate for amendments to the Florida Building Code that will reduce the impact of greenhouse gas emission and improve climate change resiliency." Since the recommendations were finalized there have been changes to the building code that improve energy efficiency and resiliency; however, the County and Compact continue to advocate for additional improvements and will continue to do so for the foreseeable future. This recommendation has therefore been classified as partially implemented. Many other recommendations are similarly on-going efforts that will continue to be implemented over the next several years. However, as illustrated by the earlier example relating to regulating medallion-holding taxi cabs, some priorities have shifted. For reference, the implementation status of the Regional Climate Action Plan and GreenPrint initiatives are also included in the figure.

FIGURE 2: THE STATUS OF THE CCATF RECOMMENDATIONS



As seen in Figure 3 many of the CCATF recommendations were incorporated into subsequent plans, namely GreenPrint and the Regional Climate Action Plan. The greatest areas of overlap are in terms of the recommendations pertaining to adaptation to sea level rise, energy efficiency and transportation.

FIGURE 3: CCATF RECOMMENDATIONS INCORPORATED INTO OTHER PLANS



It is important to remember that measuring the number of recommendations implemented is a process-based metric, and it could be argued that outcome-based metrics may be a better way to measure progress in the context of climate change. For example, an outcome-based metric of mitigation might be the reduction in greenhouse gas emissions on a project by project basis, with an overall goal of absolute emissions reductions within Miami-Dade County. Using this type of metric would shift the emphasis to the results and effectiveness of different initiatives and potentially could be more useful in measuring success toward the goal of reducing the County's contribution to global climate change. Miami-Dade County has completed greenhouse gas emissions inventories on a frequent basis, providing a baseline for evaluating the outcome of some of the recommendations considered in this report. However, it is important to note that absolute greenhouse gas emissions reductions are affected by other factors such as data accuracy, methodology/protocol used to complete greenhouse gas emissions inventory, and the economy of the region. Another example of an outcome-based metric could be the percent of critical facilities such as fire stations that are protected against flood risks. Using outcome-based metrics may be a more useful way to focus attention on the ultimate goals of all of these climate change plans.

PRIORITY INITIATIVES: ENHANCED IMPLEMENTATION NEEDS

Given the scale of the challenge, additional resources are required to more fully implement the County's climate mitigation and adaptation goals. At the same time there is also a need to be strategic and focus efforts on the most important initiatives that are likely to yield the most results. Therefore, the CCATF recommendations are grouped into three larger baskets that are critical priorities for Miami-Dade: reducing emissions by increasing energy efficiency, reducing emissions from transportation, and adapting to rising sea levels. These priorities encompass several key CCATF recommendations and are well aligned with the priorities outlined in other climate change plans. Most importantly, these three priorities address the two largest sources of emissions and the most pressing adaptation challenge.

The following section outlines the additional implementation needs required to make further progress toward these priorities.

Priority I: Reduce greenhouse gas emissions by increasing energy efficiency

Relevant CCATF recommendations: B11, B12, B13, B14, B15, B17, C1, C7, C8, F10, and F11

Resource and staffing needs:

Generally speaking, departments can be more successful in reducing energy and fuel consumption if they are provided incentives for doing so, and if they are held more accountable for the fuel and electricity they do use. There are several recommended actions or incentives with this in mind that can lead to further reductions in emissions from the County's own operations. For example, increasing direct engagement with the department heads to prioritize energy efficiency and integrating energy efficiency into departmental and staff performance metrics would help incentivize improvements. Similarly, tracking departmental energy and water consumption through the County's performance tool "Active Strategy" would help bring more awareness and accountability to all departments.

One important program the County should continue to use and expand is EnergyCAP. This tool is available to all department staff at no cost and includes a dashboard that is easy to use. Staff currently have the ability to use EnergyCAP to manage energy consumption, identify performance problems, and prioritize capital improvement projects and retrofits. The tool can also be used to compare all County buildings' energy consumption by square footage or building type and prioritize retrofits across all assets. However, it is not being used to its full potential. This tool, should be integrated into daily building management to maximize its full potential. One possible step to increase the use of EnergyCAP is to elevate energy efficiency as a priority across departments, as previously mentioned. This tool also has the capability to help manage water consumption and waste management and adding these two components to the system would further help improve the County's operational efficiency.

The County should also continue the Energy Performance Contracting program which has already significantly improved energy efficiency within government facilities. It is recommended that these efforts be expanded to result in increased savings in energy and money.

Rewarding success by allowing departments which reduce their energy costs to keep those savings would help build momentum behind energy efficiency projects. However, currently there

are not strong financial incentives for many departments to invest in energy efficiency. Therefore, it is recommended that departments be allowed to keep all, or a portion of, the savings achieved through energy efficiency/conservation projects. This would allow them to re-invest that savings into additional energy efficiency/conservation projects and create a mechanism to reward and incentivize further energy efficiency/conservation efforts by individual departments. Energy efficiency can be further supported by making it a priority for departments to implement the Electricity Master Plan and expand it to all sources of energy, including fuels for vehicles.

Reducing community-wide emissions through energy efficiency initiatives will require significantly increased public outreach and engagement on the topic. It is important to provide information about the various potential technologies which range from the small-scale, such as solar hot water heaters that have a very short payback period, to a larger scale solar installation of solar arrays at parking lots facilities which provide solar capacity and shade. Depending on the needs of the business or homeowner, there are a myriad of appropriate technologies that would reduce electricity costs and emissions. Benchmarking and transparency is one of these tools that when implemented will yield not only energy savings, GHG reductions but also will create jobs and financial savings for property owners. Furthermore, promoting financing options such as Property Assessed Clean Energy (PACE) programs can further incentivize investment in this area.

The County is only one player in a much larger effort, however, the County could increase its support of community efforts around water and energy efficiency by participation in the U.S. Environmental Protection Agency (EPA) Battle of the Buildings competition, or increasing the educational value of the County's own LEED-certified buildings by increasing their visibility and signage about efficient features. Most importantly, the County can increase the success of energy efficiency strategies by cultivating active partnerships with other organizations and universities that provide direct outreach. For example, the Association of Energy Engineers is creating a Sunshine Chapter, so becoming more engaged with this group could facilitate implementation of best practices locally. There are many successful examples from other metropolitan areas that can serve as models to emulate, such as the Southeast Energy Alliance (SEEA) which recently started serving the State of Florida and works on promoting energy efficiency as a catalyst for economic growth. The County can also play a more direct role by continuing to work with the Building Code officials to improve enforcement and compliance with the Energy Code and promote best practices including voluntary compliance with green building codes. This may be further accomplished by dedicating additional resources to code compliance and training to provide guidance and assistance with the Florida Energy Conservation Code to all municipalities within Miami-Dade County. The County should also continue to partner with Florida Power & Light to promote energy efficiency, smart metering, benchmarking and disclosure, and increasing renewable energy generation.

Priority II: Reduce greenhouse gas emissions from transportation

Relevant CCATF recommendations: B1, B2, B3, B4, B7, B8, B9, B10, B11, B14, and C1

Resource and staffing needs:

More significant and effective fuel related emissions reductions from the County's direct activities will require vesting new responsibilities to a designated department. Key information such as how much fuel is being used by the County overall and how much is being spent on fuel, is not centralized or consistently tracked. This, in turn, makes it more difficult to identify problems or identify opportunities to reduce costs and reduce emissions and quickly improve operational efficiency. Tracking departmental fuel consumption through the County's performance tool "Active Strategy" will bring awareness and accountability to all departments. Designating dedicated staff or a department section to oversee the fuel consumption, amount spent, and the type of vehicles procured, and vesting that department with the authority to make the ultimate decisions, would likely create opportunities to reduce costs and emissions. This department could also provide information and technical assistance to other County staff about how to improve their fleet efficiency.

Additionally, when the County considers adopting a new fuel type or substantially changing the amount of a certain fuel type purchased, it would be beneficial to comprehensively evaluate the life-cycle costs and environmental benefits and have those considerations incorporated into procurement policies.

In terms of transportation emissions, however, the County can have the greatest impact by addressing community-wide emissions. The County can help create the infrastructure to allow residents to choose more sustainable transportation options. Substantial work is underway in this regard and progress could be accelerated by increasing the resources and staffing dedicated to County and municipal initiatives which support public transportation, complete streets, transit-oriented development, and the safety and connectivity of bike and pedestrian paths. Mayor Gimenez took a significant step in this direction early in 2016 when he consolidated all transportation related departments and divisions into the new Transportation and Public Works Department. Continuing to focus specifically on promoting and facilitating more sustainable transportation and transportation options could help advance these efforts across all County transportation related activities and services.

Priority III: Adapt to climate change and rising sea levels

Relevant CCATF recommendations: A1, A2, C1, C2, C5, D1- D10, E1-E4, F1-F9

Resource and staffing needs:

Adapting to rising sea levels is a long-term challenge within Miami-Dade County. Since it is very likely that the resources needed will evolve as different issues arise, it is recommended that the resource and staffing needs be reviewed on a regular basis to ensure they are adequate. As described in the final reports in response to R-46-15 and R-48-15, additional resources may be required to support those efforts. Additional funding and resources will be needed to address research gaps as they are identified. Increasing resources within the Water and Sewer Department

and the Water Management Division within the Regulatory and Economic Resources Department to improve monitoring and modeling of flooding and saltwater intrusion will help expedite adaptation efforts. Allocation of additional resources to the Stormwater Master Planning Program will expedite the integration of new information about groundwater levels into the stormwater modeling efforts. More information is needed on the elevation of key assets to assess exposure. Sustained funding to maintain current and more accurate elevation data would provide information critical to determining areas more vulnerable to inundation and flooding, which is important when prioritizing where to focus planning and resources needed to adapt or build resilience to those challenges. Again, as described in the final report of R-44-15, resources should be dedicated to identifying and addressing the first Adaptation Action Areas in the most vulnerable areas. Across all of these efforts it would be beneficial to increase the ability of the Office of Resilience to communicate with key stakeholders about climate change issues as well as directly with the general public and affected residents. Focusing staff with expertise in communications and climate science will help accelerate adaptation efforts, improve partnerships with private entities, and help the County speak with a unified voice on these issues. Continued participation in, and support of, the Southeast Florida Regional Climate Change Compact is also a key element in continuing the County's own adaptation efforts.

LOOKING FORWARD

Both the County and the Compact have laid out ambitious goals for reducing contributions to, and adapting to, climate change. Achieving these goals requires a sustained effort and closer collaboration across all government departments and with the wider community. For this reason both GreenPrint and the Regional Climate Action Plan were developed with the help of a wide range of representatives from different levels of government, academia, the private sector and community-based organizations. To successfully implement these recommendations, it is important to continue collaboration at multiple levels within and amongst County, state and federal organizations, as well as with a broad array of community stakeholders in order to move climate change from a standalone issue to something that is integrated seamlessly into County planning, operations, and delivery of services. As the next iteration of GreenPrint and the Regional Climate Action Plan are developed, due out in 2016 and 2017 respectively, the recommendations made by the Climate Change Advisory Task Force will continue to serve as a foundation upon which to build and implement more current and relevant initiatives. Furthermore, the CCATF recommendations, as well as GreenPrint, and the Regional Climate Action Plan, will serve as a source of information and inspiration as the County works with its partners, the City of Miami and the City of Miami Beach, to develop a resilience strategy for Greater Miami and the Beaches, as part of the Rockefeller 100 Resilient Cities designation, awarded in May of 2016. It is through these key action documents that implementation of the Climate Change Advisory Task Force recommendations will continue, and these recommendations will serve as a sound foundation for action well in to the future.

APPENDIX 1: QUARTERLY REPORT

FIRST QUARTER UPDATE (JANUARY 3, 2015 – APRIL 30, 2015)

On January 21, 2015, the Board of County Commissioners passed seven separate resolutions, each supporting the implementation of one of the seven recommendations included in the "Miami-Dade Sea Level Rise Task Force Report and Recommendations." Resolution R-45-15, which requires quarterly status reports and a final report within one year of adoption, directs the Mayor or his designee to prepare an Action Plan and Report to implement the Miami-Dade County Climate Change Advisory Task Force Recommendations of (I) establishing departmental oversight for the implementation of the Task Force recommendations and (II) dedicating sufficient resources and staffing to review, update, and implement the Miami-Dade County Climate Change Advisory Task Force recommendations. Pursuant to R-45-15, this first Quarterly Status Report is submitted for your review. In accordance with Ordinance 14-65, this memorandum and report will be placed on the next available Board of County Commissioners (Board) meeting agenda.

Background

In July 2013, the Board created the Miami-Dade Sea Level Rise Task Force (Task Force) for the purpose of reviewing current and relevant data, science and reports, and to assess the likely and potential impacts of sea level rise and storm surge to Miami-Dade County over time. On July 1, 2014, the Task Force presented a report to the Board entitled, "Miami-Dade Sea Level Rise Task Force Report and Recommendations," providing the requested assessment along with recommendations of how Miami-Dade County may more specifically begin planning and preparing for projected sea level rise impacts. In addition, Resolution R-451-14 and Ordinance 14-79 were adopted in 2014, requiring that planning, design and construction of County infrastructure consider potential sea level rise impacts.

The Miami-Dade Climate Change Advisory Task Force (CCATF) referenced in Resolution R-45-15 was established in 2006 to review existing science and projections of climate change impacts to Southeast Florida, and to develop recommendations for further action by the County to further reduce Greenhouse Gas Emissions and begin climate adaptation planning for community resilience to extreme weather and other projected climate change impacts. Many of the CCATF recommendations were incorporated into the County's Sustainability Plan, "GreenPrint, Our Design for a Sustainable Future" in 2010 and were also incorporated into the Regional Climate Action Plan, developed by the Southeast Florida Regional Climate Change Compact.

In November of 2013, a review of the implementation status of the CCATF recommendations was conducted and an update provided to the Miami-Dade Sea Level Rise Task Force. At that time, it was determined that 33 of the 55 CCATF recommendations, or 60 percent, were in progress and 20 recommendations, or 37 percent, were slated for future implementation.

Quarter 1 Progress (January 31, 2015 – April 30, 2015)

The following steps have been taken during the first quarter towards implementation of Resolution R-45-15:

- Staff of the Office of Sustainability, within the Planning Division of the Department of Regulatory and Economic Resources, began reviewing the current implementation status of the CCATF

recommendations in December of 2014. This review and update of CCATF recommendation status is continuing as part of the GreenPrint data collection being compiled in preparation for the final progress report of GreenPrint's first five (5) years of implementation.

If you have questions concerning the above, please contact Mark R. Woerner, AICP, Assistant Director for Planning, Department of Regulatory and Economic Resources, at (305) 375-2835 or mwoerner@miamidade.gov .

cc: Honorable Harvey Ruvin, Clerk of Courts, Eleventh Judicial Circuit
Robert A. Cuevas, Jr., County Attorney
Office of the Mayor Senior Staff
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Lourdes M. Gomez, Deputy Director, Department of Regulatory and Economic Resources
Christopher Agrippa, Clerk of the Board
Charles Anderson, Commission Auditor
Eugene Love, Agenda Coordinator

SECOND QUARTER UPDATE (MAY 1, 2015- JULY 30, 2015)

R-45-15: Prepare an Action Plan and Report to Implement the Miami-Dade County Climate Change Advisory Task Force Recommendations

This resolution directed the Mayor or the Mayor's designee to prepare an action plan and report to implement the Miami-Dade County Climate Change Advisory Task Force Recommendations of (I) establishing departmental oversight for the implementation of the task force recommendations and (II) dedicating sufficient resources and staffing to review, update, and implement the Miami-Dade County Climate Change Advisory Task Force recommendations.

The following steps were taken during the Second Quarter in order to prepare the report referenced in this resolution:

- Staff of the Office of Sustainability within the Planning Division of the Department of Regulatory and Economic Resources (RER) is continuing to review the current implementation status of the Climate Change Advisory Task Force (CCATF) recommendations and is approximately 75 percent complete with that review. Currently, the majority of staff time for this effort is dedicated to coordinating with staff in other divisions and departments who manage specific aspects of the CCATF recommendations such as taxi cabs, the county fleet, and procurement. These consultations with other divisions and departments are also serving as the basis for broader conversations about alternative ways climate change considerations might be integrated into these various operations.
- Staff of the Office of Sustainability have fully completed a review to determine where the CCATF recommendations directly overlap with current recommendations in GreenPrint and the Regional Climate Action Plan, drafted by the Southeast Florida Regional Climate Change

Compact (Compact). The Office of Sustainability is currently in the process of revising GreenPrint in preparation for the release of the next five year plan in 2016, and has fully integrated the review of the individual CCATF recommendations into that planning process. Staff are currently considering the inclusion of additional CCATF recommendations into the next version of GreenPrint as one component of revising the climate mitigation and adaptation strategies. This internal review is scheduled to be completed this fall. For each recommendation, staff have already begun assessing the resources required for further implementation and efforts in the next Quarter will be focused more heavily on preparing the action plan. Finalizing the action plan and articulating the resources needed for implementation will be developed in consultation with other departments and divisions, and will be the focus of the Fourth Quarter.

THIRD QUARTER UPDATE (JULY 31, 2015- OCTOBER 31, 2015)

R-45-15: Prepare an Action Plan and Report to Implement the Miami-Dade County Climate Change Advisory Task Force Recommendations

This resolution directed the Mayor or the Mayor's designee to prepare an action plan and report to implement the Miami-Dade County Climate Change Advisory Task Force Recommendations of (I) establishing departmental oversight for the implementation of the task force recommendations and (II) dedicating sufficient resources and staffing to review, update, and implement the Miami-Dade County Climate Change Advisory Task Force recommendations. This resolution requires quarterly status reports and a final report within one (1) year of the effective date.

The following steps were taken during the third quarter in order to prepare the report referenced in this resolution:

- As of this quarter, Department of Regulatory and Economic Resources (RER) staff have completed the analysis comparing the Climate Change Advisory Task Force (CCATF) recommendations to the Regional Climate Action Plan and GreenPrint and have identified where CCATF recommendations were integrated into these subsequent plans. The staff will consider the incorporation of the other recommendations into the next iteration of GreenPrint where the recommendations are still relevant and appropriate.
- The staff have also completed the research on the implementation status of each recommendation and have prepared a first draft of that component of the final report which will be submitted to the Board in January of 2016.
- During the final quarter, staff will work with other departments and divisions to finalize the determination of resources and staffing that will be necessary to implement the remaining relevant recommendations

Climate Change Advisory Task Force Recommendations

Science Recommendations

Recommendations	GreenPrint	Regional Climate Action Plan	Implemented
A1. The County should use the Science Committee's Statement on Sea Level in the Coming Century to guide future climate change mitigation and adaptation policy.	Yes	Yes	Yes
• The Southeast Florida Regional Climate Change Compact (Compact) published *A Unified Sea Level Rise Projection for Southeast Florida* which is available at http://www.southeastfloridaclimatecompact.org//wp-content/uploads/2014/09/sea-level-rise.pdf. The Compact Counties recognized the critical need to unify the existing local sea level rise (SLR) projections to create a single regional projection. • Scientists specializing in the areas of sea level rise and climate change were invited to participate as the Compact Technical Ad hoc Work Group (Work Group). The Work Group reviewed the existing projections and the current scientific literature related to sea level rise with particular emphasis on the impact of accelerating ice melt on projections. • The Work Group published the first sea level rise projection in 2011 which was based on the U.S. Army Corps of Engineers July 2009 Guidance Document. The projection used Key West tidal data from 1913-1999 as the foundation of the calculation and references the year 2010 as the starting date of the projection. Two key planning horizons are highlighted: 2030 when sea level rise was projected to be 3-7 inches and 2060 when sea level rise was projected to be 9-24 inches. Sea level was projected to rise one foot from the 2010 level between 2040 and 2070, but a two foot rise was determined to be possible by 2060. • This Work Group was reconvened in 2014 and 2015 to review the most recent and best available science. Through a series of meetings over several months, the scientists revised the original projection. Due to the accelerated rates of ice melting and other climate variables, the projections were revised slightly, to reflect changing global projections and to incorporate scientific literature released since the original projections. The updated projection was extended to 2100 in recognition of the need for longer range guidance for major infrastructure. As updated, the anticipated range of sea level rise for the region from 1992 is 6 to 10 inches by 2030, 14 to 34 inches by 2060 and 31 to 81 inches by 2100. • This group will reconvene as needed to continue to ensure the most recent science and critical local/regional considerations are incorporated into the projections.			
A2. The County should commission detailed maps for all of Miami-Dade County created from calibrated LIDAR surveys (or other elevation survey technology that employs best known practices). The maps will allow identification of which areas will become flooding in association with different sea levels.	Yes	Yes	Yes
• Over the past several years a number of parallel efforts have been completed and a number of published maps now identify areas that may be flooded during different sea level scenarios. The National Oceanographic and Atmospheric Association has published a user-friendly and freely accessible online viewer allowing users to adjust the "slider" to view how different sea level rise scenarios will affect their area (http://coast.noaa.gov/digitalcoast/tools/slr). The agency has also published an online viewer that reviews coastal flooding exposure (http://coast.noaa.gov/digitalcoast/tools/flood-exposure) which illuminates areas of societal exposure (for example socially vulnerable populations), infrastructure exposure, and ecosystem exposure. This map includes sea level rise as one of the types of flooding it reviews. • The Nature Conservancy has also published another freely accessible, user friendly viewer to help visualize the potential impacts of sea level rise. This tool also contains a wealth of other relevant information such as critical erosion areas, areas with concentrations of repetitive loss properties, on-going and completed Miami-Dade County Shoreline projects, and existing land use and flood zones. • Climate Central has also published a similar tool known as *Surging Seas* (http://sealevel.climatecentral.org/ssrf/florida). This tool offers a similar viewer of impacts at different sea levels; however, the tool also offers an analysis page giving users insight into the population (broken down by race and level of social vulnerability) that will be impacted at different water levels. The tool also provides similar data about the buildings (broken down by type), infrastructure, land, and potentially contaminated sites (i.e. landfills or hazardous waste sites) that are likely to be inundated. All of the tools above offer invaluable insights into the areas of the county that are low-lying and vulnerable to flooding currently and moving forward as sea			

levels rise. These tools offer sufficient detail for a scoping analysis to identify “hot spots” that are likely to be problematic in the future. All of these tools use up to date LiDAR data and a “bathtub” inundation model.

- Similar analysis was used to complete the Southeast Florida Climate Compact vulnerability analysis (http://www.southeastfloridaclimatecompact.org//wp-content/uploads/2014/09/vulnerability-assessment.pdf) which provided an initial high-level look at certain critical infrastructure (i.e. roads, schools, hospitals, etc.) in the four-county Compact region that would be vulnerable to inundation and flooding, and included maps detailing the areas that would be affected by 1, 2 and 3 feet of sea level rise. Because these tools do not explicitly include changes in ground water levels and existing stormwater infrastructure, the County has partnered with the United States Geological Survey to develop a novel surfacewater-groundwater integration model which will more accurately model how changing sea levels will affect our County and our hydrology. The results of this analysis are being processed and are being used to refine the maps that will be used for County planning efforts. As soon as this analytical work is completed these maps will also be made available.

Greenhouse Gas Recommendations

Recommendations	GreenPrint	Regional Climate Action Plan	Implemented
B1. Ordinances related to the award/allocation of taxicab medallions include a requirement for all new medallions issued after January 1, 2008 to be allocated to hybrid or other vehicles having a combined average fuel efficiency of 28 MPG or higher.	No	No	Partially
• Despite extensive efforts by County staff in 2008 to facilitate incorporation of more fuel efficient vehicles into the taxicab fleet, an initial ordinance sponsored by Commissioner Bruno Barreiro, requiring phase-in of more fuel efficient hybrid vehicles, was opposed by the taxicab industry and deferred indefinitely. • After 2008, the Board approved the following taxicab medallion lotteries/auctions: a lottery of 25 taxicab medallions in 2009, a lottery of 10 taxicab medallions in 2012, a public auction of 6 taxicab medallions in 2012. None of the taxicab medallions awarded were required to be operated with a hybrid vehicle or vehicles with fuel efficiency of 28 mpg or higher. • On January 29, 2014, the Board approved Ordinance No. 14-09, creating the Ambassador Cabs Program with the purpose of improving the level of taxicab service provided at Miami International Airport and the Port of Miami. Among other things, the ordinance mandated technological improvements in all cabs serving the ports, including credit card machines, GPS, security cameras and warning lights, and reduced the vehicle age from the existing maximum 8 years to 6 years maximum. Due to the fact that newer taxicabs generally are more fuel efficient, this measure will lead to an increase in fleet efficiency. The Ambassador Cabs ordinance also provides an incentive to taxicab operators using alternative fuel vehicles (as defined in section 403.42(2)(b), Florida Statutes) by granting them priority access to the airport and seaport terminal for passenger pickup. • On the same date, the Board also approved Ordinance No. 14-08 which requires that effective April 1, 2016 all taxicab vehicles (not only those serving the ports) comply with the new technological and vehicle age requirements. Thus, we expect to see newer, more fuel-efficient taxicabs operating in Miami-Dade County in the near future.			
B2. Require that taxicabs being retired be replaced with new hybrid or other vehicles having a combined average fuel efficiency of 28 MPG or higher. Implementation of this recommendation is expected to affect 300 owners each year. The County should develop a financing mechanism to either subsidize the initial purchases or provide a revolving loan fund to assist owners to purchase new hybrids on reasonable terms and at reasonable interest rates	No	No	Partially
• As per the description in B1 above, County staff were unable to implement this recommendation as specifically written, however due to more recent mandates in Ordinance No.'s 14-08 and14-09, passed in 2014, the fuel efficiency of the taxicab fleet will improve due to other changes.			
B3. It is recommended that Miami-Dade County regularly evaluate greenhouse gas emission reductions and the net environmental benefit of each fuel and vehicle under consideration for purchase and use in internal operations in order to ensure the use of the most efficient vehicles and sustainably-sourced alternative fuels, including those that are locally produced, and adjust investment accordingly. Net environmental benefit shall be determined.	Yes	No	Partially
Fuels: • Decisions about fuel purchases do not currently require a review of the net environmental benefit of each fuel type. • County staff does not currently have the expertise or facility to technically evaluate greenhouse gas emissions reductions and net environmental benefit of each fuel type at the County level. • The County has already been successfully using hybrid heavy and light fleet vehicles, in particular, many that use electricity as a fuel source. Miami Dade Transit, now the Department of Transportation and Public Works (DTPW), conducted bio-diesel B20 testing in the bus fleet in 2008 and implemented a pilot project using biodiesel in the County bus fleet in 2009. • The County is in the middle of a procurement process that will enable it to fuel a portion of its bus fleet and solid waste vehicles that currently run on diesel, with Compressed Natural Gas (CNG). Use of compressed natural gas will diversify the County fuel sources and increase fuel flexibility, but it is a fossil fuel, not a renewable fuel. Using compressed natural gas results in a decrease in emissions for some pollutants at the tailpipe, but an increase in others, compared to a current model year diesel vehicle. Overall life-cycle greenhouse gas emissions for			

compressed natural gas are higher when considering current fugitive emissions estimates and the near-term impacts on global warming - due to methane's short lifespan and its efficiency at trapping heat. Depending on the vehicle technology, selected Mobile source air toxics emissions may be higher in a CNG-fueled vehicle. In addition, when operating in typical stop and go operating conditions, compressed natural gas -fueled buses have higher emissions compared to hybrid buses.

- It is recommended that the County conduct a comprehensive evaluation of the right fuel for each potential vehicle application, and develop a comprehensive energy plan for fuels and fueling infrastructure, modeled after the Miami-Dade County Electricity Master Plan. This plan should create a strategy that works toward using renewable fuels and establishes policy on which, if any, bridge fuels the County will use in the meantime.
- As a first step to the comprehensive energy plan, the County should perform an economic analysis that compares electricity versus compressed natural gas as a fuel source. The study should assess life-cycle greenhouse gas emissions, the cost of building infrastructure and procuring vehicles, and ongoing vehicle maintenance and operational costs for the two fuel types.

Vehicles:

- The County's Internal Services Department (ISD) continues to recommend that departments purchase hybrid or electric light vehicles but individual departments are not required to utilize these suggestions and can require other specifications and vehicles when going through the procurement process. At this time, each department is allowed to make these types of decisions themselves with oversight by ISD Fleet Management. The ISD does not currently have the authority to require departments to purchase vehicles that are more economically and environmentally beneficial. For example, several departments recently purchased Ford Focus sedans (a non-hybrid vehicle) due to lower up-front capital costs without doing a life cycle costs analysis as required by AO 11-3.
- The County is no longer purchasing vehicles in bulk.
- The County continues to purchase hybrid sedans for "pool" vehicles and for other departments. There are currently 534 hybrid sedans in the County's fleet.
- According to ISD, it is not difficult to determine the practical life-cycle cost of vehicles (cost to purchase vehicle plus fuel consumption over 100,000 miles using the federal government fuel economy website with 65% city and 35% highway utilization) before making purchasing decisions; however, this is not currently a required standard practice.
- The County has purchased 64 hybrid hydraulic garbage trucks in the past couple of years; future purchases of this equipment type, however, are on hold pending resolution of reliability issues.
- ISD Procurement Management has processed vehicle procurements for the Department of Transportation and Public Works using Practical Life Cycle Costs for hybrid vehicles. Hybrids were specified by the Grant MDT (DTPW) received.
- The County has purchased two sets of hybrid buses for transit (FTA – buy America requirements) using Environmental Protection Agency's fuel efficiency information for all vehicles. This criteria was incorporated into the procurement RFP and used to determine the contract award DTPW has purchased five sets of diesel/electric hybrid transit buses. DTPW reviewed and considered fuel efficiency information provided by the manufacturer and fuel mileage information reported in the Surface Transportation and Uniform Relocation Assistance Act Bus Testing report for the bus model purchased. Fuel efficiency was used to calculate greenhouse gas emissions which was considered by Environmental Protection Agency (EPA) when making grant awards. (Note that EPA fuel efficiency information was not used to determine the contract award.)
- The County should require that departments maximize MPG fuel efficiency for all non-specialty vehicle procurement and use sources such as EPA's Green Vehicle Guide as a procurement guide. Another procurement tools to use for alternative fuel vehicles: http://www.afdc.energy.gov/calc/

B4. Procurement Management Department should take necessary steps to improve pricing and access to sustainably-sourced alternative fuels and high efficiency vehicles for County operations. This would include forming a joint committee or committees to pursue collective purchasing opportunities and to evaluate the costs and benefits of collective bids.	Yes	No	Partially

Vehicles

- The Internal Services Department (ISD), Procurement Management Division handles solicitations; however, the ISD Fleet Management Division or other user departments provide their desired specifications for vehicles. Currently Procurement does not frequently suggest those vehicle specifications be modified to favor vehicles with a lower life cycle cost (i.e. more fuel-efficient vehicles).

• Departments that own or maintain their fleet put out bids to match their own requirements and they do not necessarily require evaluating the fuel efficiency of vehicles. • It is more common to evaluate potential vehicles primarily on the basis of capital cost rather than on their life-cycle cost (efficiency). • The ISD Fleet Management Division purchases most vehicles, but some departments also purchase some of their vehicles (Department of Transportation and Public Works, the Water and Sewer Department, Miami-Dade Fire Department, Miami-Dade Aviation Department, and the Miami-Dade Parks, Recreation and Open Space Department). To implement this initiative more effectively, it is recommended that the ISD Fleet Management Division be granted full authority to make purchase decisions for all County departments, regardless of financial impact. Fuels: • On April 5, 2010, the County awarded a new contract for unleaded and diesel fuel which includes options to procure various biodiesel and ethanol blends. • For bio-diesel purchases B5 is now the standard (put into state specifications for the fuel) • E10 is now standard for unleaded fuel. • Reviews in the past raised concerns about the impact of biodiesel on the fleet; The Office of Resilience had strong concerns about purchasing biodiesel that was not sustainably sourced and verifiable due to environmental and social impacts of non-sustainably sourced biodiesel. • A local manufacturer makes biodiesel from food-waste feedstock (a sustainable source) but is not currently a supplier for the County and it is unknown whether their product would meet County fleet specifications. • The Transit Department tested bio-diesel at higher levels (B-20) and commissioned a study. • Explore purchasing sustainably sourced alternative fuels through the state bulk fuel contract. • In August 2011 a bid was rejected for Biodiesel due to the high price per gallon.			
B5. The Climate Change Advisory Task Force recommends that Miami-Dade County fueling facilities are built, modified, or upgraded, they be designed and constructed to accommodate alternative fuels, including, but not limited to E85 and B100. In addition, the County should consider dispensing E85 at two Miami-Dade County fueling stations within 6 months of it becoming locally available as determined by the process described in Recommendation B3. It is recommended that Miami-Dade re-evaluate the use of E85 six months after dispensing is initiated to assess local availability, overall net costs and environmental impacts. Furthermore, new vehicles being purchased now and in the future by Miami-Dade County should have the capability of using ethanol and biodiesel, without the need for retrofit.	No	No	Yes
• The ISD Fleet Management Division has converted all of its single wall tanks to double wall tanks to comply with the Environmental Protection Agency's requirements for all fuel storage tanks. These retrofits allow for alternative fuels storage. • Regarding a County Manager memorandum indicating that by April 2009, the County should be using B20 diesel fuel, the County is currently buying E10 and B5 fuels. ISD has determined that using E85 and B100 is not economically feasible. • Most of the tanks will accommodate E85 and B100 but holding those fuels would first require cleaning and more filter changes. • Switching to certain biofuels may raise concerns with vehicle warranties and incompatibility with older engines. • Alcohol fuels (ethanol based) are more challenging in our humid environment which can result in mechanical failures and add cost. • Two electric vehicle charging stations have been installed at the County fueling facility on N.W. 1st Street for County vehicle use only and also at the Overtown Transit Village Parking Garage. There are five charging stations at Overtown and two are accessible to the public.			
B6. Require the use of sustainably-sourced biodiesel in all County diesel fleet vehicles and equipment (except standby equipment) as determined by the process described in Recommendation B.3, starting with B5 and increasing to B20 in 6 months. The Climate Change Advisory Task Force recommends that a portion of the local option gasoline tax (LOGT) be used to offset the cost difference for biodiesel.	Partially	No	No

• This recommendation will require County Commission action, since this would require a policy shift. LOGT dollars are currently committed to other efforts for the most part. (See comment above under B3). • The use of the gas tax revenues would require Board approval and therefore has not proceeded. • The County is currently unable to determine whether the biodiesel it is procuring is sustainably-sourced. • The County is currently using B5 biodiesel and E10 ethanol in most County operations. • The source of Biodiesel higher than B5 is uncertain. • County departments met on July 19, 2010 to discuss increasing its biodiesel blend to B10; however, there would be additional costs involved with the use of B10 or any increase higher than the standard diesel type B5. • The County was monitoring the cost differential while using B5; however, this was discontinued because it was superseded by changes at the state level which required fuels to contain at least 5% biodiesel. • There would be an increase in cost to increasing the purchase of bio-diesel due to the current economies of scale for purchasing large quantities of regular diesel (B5). • The County never moved to higher content biodiesel blends because of the concerns about the impact on vehicles and the increased cost. • The current bid for transit service vehicles requires the potential to be able to run on biodiesel fuels.			
B7. Require that Miami-Dade County develop a vehicle procurement process, which ensures that vehicles owned by MDC increase their mpg by 5% annually per vehicle class (whenever higher MPG vehicles are available) and that the cost of carbon emissions is included in the life cycle cost analysis process.	Partially	No	Partially
• The County has not been buying vehicles in bulk over the past eight years and therefore the fuel efficiency of the County's aged fleet is not necessarily tracking with national trends of increasing fuel efficiency. • While ISD does have the current MPG statistics available for the fleet vehicles that they monitor, and this information is accessible by other County Departments, the fuel efficiency of the County's fleet as a whole is not currently being monitored comprehensively enough to determine if a 5% annual increase in fuel efficiency has been realized. • Fully implementing this recommendation would require a policy change (perhaps at the Board level or from the Mayor) and would be easier to implement if the County was working to achieve a specified level of fuel efficiency (as measured by vehicle MPG) rather than working to achieve an annual percent increase in fleet efficiency because the comprehensive data needed to measure and monitor that may not be easy to attain. • To fully implement this recommendation would require a policy change to procurement procedure.			
B8. The purchase of a hybrid SUV shall be an allowable alternative for Miami-Dade County fleet procurement if that vehicle is determined to be more fuel-efficient than a light truck or comparable vehicle.	No	No	Yes
• The County's current policy is to allow for replacement of an SUV with another SUV; however, additional SUV requests and upgrades to SUVs are being approved and purchased on a case-by-case basis. • Hybrid SUVs are not typically purchased because they are currently at the high end of the market and are significantly more expensive than non-hybrid SUVs. • Currently purchasing decisions do not require comparison with other vehicles in terms of fuel-efficiency.			
B9. Direct the Office of Resilience to initiate an energy and fuel conservation incentive and awareness campaign for employees in conjunction with the Miami-Dade County's Resource Conservation Committee, DERM's Pollution Prevention and Environmental Education work groups, and the GSA Department. This campaign should use information from the Chicago Climate Exchange membership, the Climate Change Advisory Task Force (CCATF) Science Committee, and other pertinent sources to highlight the environmental, health, and economic benefits of energy conservation and communicate the importance of energy conservation and communicate the importance of conserving energy and fuel. The	Yes	No	Partially

information about energy efficiency and fuel conservation currently provided as part of the Miami-Dade County New Employee Orientation Program should be expanded to include the campaign components listed above. Funding needs and options shall be identified for the implementation of this recommendation.			
• There have been several awareness campaigns that have raised the visibility of energy and fuel conservation, and in many cases, the energy usage in County buildings and vehicles has been reduced. For example County staff implemented the Green Deeds program as part of GreenPrint (Initiative #23. Develop incentives for County employees to save energy through the Idea Machine). The Green Deeds program incentivized employees to implement energy, fuel, and resource conservation initiatives at work and at home. Another example is the Power it down campaign which was a competition between two County buildings, the Stephen P. Clark Center and the Gerstein Court House, to reduce energy consumption. The County has implemented numerous employee education program through the years and continues to explore new opportunities. More information about other educational programs implemented can be found in items B.13.1 and B.14.9 below. • Over the years, Miami-Dade County's Fleet Management Division has successfully reduced overall pool vehicle usage, resulting in fewer miles driven. In 2005 the County had over 600 pool vehicles versus approximately 200 pool vehicles in 2016. Some of the measures implemented to achieve these results were policies that encouraged staff to schedule meetings accessible to mass transit and increasing the usage of teleconferencing. • GreenPrint initiatives #26 (continue fuel reduction and monitoring programs) supports implementation of this recommendation.			
B10. The Climate Change Advisory Task Force supports any recommendations put forth as a result of the most recent Miami-Dade County fleet analysis that lead to an increase in fleet fuel efficiency and a reduction in vehicle miles traveled (VMT). The Task Force recommends that the County further strengthen these recommendations by creating incentives to reduce VMT and by not excluding any departments or vehicle types in reduction initiatives. As an example, it is recommended that hybrid sedans be purchased for non-pursuit police vehicles at the time of replacement.	Partially	No	Partially
• There have been a number of initiatives to reduce vehicle miles traveled (VMTs) and fuel usage for County vehicles. • One such initiative was a Five Year Fuel Reduction Resolution wherein the County reduced fuel consumption by 13%. This reduction was amongst the target population of County light vehicles excluding police vehicles. • All County hybrid vehicles (534) are used in non-pursuit applications and the Miami-Dade Police Department is currently operating 15 hybrid sedans.			
B11. The Task Force recommends that Miami-Dade County implement the following steps to ensure their ability to meet the Cool Counties greenhouse gas reduction commitments: i. Commit to a 20% reduction in GHG emissions by 2020 through an annual 2% reduction from the base year of 2005 for both County government and County-wide GHG emissions. Provide annual reporting on greenhouse gas emissions for the County government and Countywide GHG emissions. This annual report should include steps taken to reduce GHG emissions internally and geographically, results, and steps needed to meet the next year's target. Ii. Recognize this commitment takes dedicated resources to develop, implement and report on these plans. The County Manager intends to adequately resource this initiative to achieve targets established in the Cool Counties resolution and in paragraph (i) of this resolution. Iii. The County establish a countywide alliance of municipalities and large corporations, public and nonprofit institutions that will need to collaborate in order to meet previously established targets. This consortium will be used to: a. Enlist partners to explicitly adopt all primary goals of the Cool Counties GHG reduction targets and to report on their own GHG reductions. B. Identify and implement strategies for the financing and performance of energy efficiency and	Partially	No	Partially

renewable energy upgrades in Miami-Dade County/South Florida, c. Increase purchasing power of energy efficiency related financing, services and products, & d. Enlist partners to assist with the dissemination of information and incentives designed to assist individuals and small businesses in meeting these reduction goals. (This alliance could also be used to coordinate Countywide adaptation efforts)			
• In 2008 Miami-Dade County committed to the U.S. Cool Counties goals and objectives, to reduce greenhouse gas (GHG) emissions from 2008 levels by 80% by 2050. • As part of the 2016 update of Miami-Dade County's community-wide sustainability plan, GreenPrint, the County is setting an interim greenhouse gas emissions reduction goal of 20% relative to 2008 levels by 2020. • Two comprehensive inventories of both direct emissions (County government) and community-wide emissions have been conducted since 2008 (2008 and 2010) and an update is being conducted (2013) to inventory emissions in 2015. • Currently, a comprehensive inventory takes 6-12 months to complete and resources in the Office of Resilience and the Division of Environmental Resources Management (DERM) do not allow for annual reporting on emissions. However, it is the opinion of the Office of Resilience staff that annual reporting would not provide a meaningful improvement and additional resources should instead be dedicated to implementing projects that reduce greenhouse gas emissions, such as energy efficiency retrofits or improving the efficiency of the transit fleet. • Meeting the targeted reductions (20%) will require dedication of additional time and effort. Since 2008 greenhouse gas emissions have continued to increase and the 2015 inventory is expected to show a similar upward trend in emissions. • The County is currently working with several municipalities through the Southeast Florida Regional Climate Change Compact. Many of these municipalities have greenhouse gas reduction goals. • The following 7 municipalities have signed on to the Mayor's Climate Action Pledge and are working to implement the Regional Climate Action Plan: Miami Beach, South Miami, Surfside, Pinecrest, Coral Gables, Key Biscayne, and Hialeah. • To monitor the implementation of the Regional Climate Action Plan by municipalities, a survey was distributed by the Compact in 2014. The survey was conducted over eight weeks in November and December of 2014. Within this time, 27 of the 34 municipalities in Miami-Dade successfully responded to the survey. Several municipalities in Miami-Dade County were among the top ten municipalities in terms of having the highest implementation rate. Miami Beach, for example, is implementing 61 and Sweetwater is implementing 55 of the Regional Climate Action Plan recommendations. • Municipal partners are helping to disseminate information and incentivize individuals and small businesses to meet these reduction goals. • There have been steps to increase the purchasing power of energy efficiency related financing, services and products. The County has been using Energy Performance Contracts for several decades to purchase energy efficient equipment and technologies. The County partnered with the Miami-Dade County Credit Union to offer low interest loans to employees who want to purchase a limited number of energy efficient appliances. Unfortunately, this loan program was discontinued due to lack of interest. • Strategies have been implemented for the financing and performance of energy efficiency and renewable energy upgrades. The County has worked diligently to implement a PACE program for Unincorporated Miami-Dade. However, due to a lawsuit filed with the Florida Supreme Court in 2015, this program has been delayed.			
B12. The CCATF recommends that Miami-Dade County implement the following in order to promote energy conservation and efficiency in buildings owned by Miami-Dade County and support Resolution R-228-09 (Resolution to Reduce Miami-Dade County's Electrical Energy Consumption). 1. Conduct a feasibility study and develop a plan for retrofitting all County-owned outdoor lighting to high efficiency lighting technologies. The study should include a review and summary of current standards and case studies of implementation in other communities. High efficiency light options to be considered may include: Light emitting diodes (LED), induction lighting, with a preference given to solar powered lights. Additionally, an evaluation should be made to improve the efficiency of outdoor lighting with the goal to reduce non-essential outdoor lighting during daytime hours.	Yes	No	Partially

- The Electricity Master Plan includes plans to increase outdoor lighting retrofits and install LED lights.
- Several Departments, such as Miami-Dade Parks, Recreation and Open Spaces, have started retrofiring their outdoor lighting.
- Even though there is significant potential to reduce the County's energy consumption if new technologies were installed, it is currently difficult to justify retrofitting outdoor lighting. The Energy Efficiency and Conservation Block Grant supported a technology demonstration and enabled retrofits for a few outdoor lights around the downtown area. The demonstration project was successful; however, due to the current pricing structure offered by Florida Power & Light (FPL), efficient lighting is not economically conducive for non-metered poles. Other local governments have been able to successfully negotiate other pricing structures with their utilities (FPL, Duke, etc.); however, Miami-Dade County has not pursued a similar negotiations. This issue was included within Miami-Dade's 2016 legislative package for the Office of Resilience and the Southeast Florida Regional Climate Change Compact. The package included a provision to support and advocate for utilities to develop competitive rates for efficient outdoor lighting.

B12 2. Require that all county buildings that annually consume more than 500,000 kilowatt hours (kwh) and have not received a comprehensive energy audit in the last 5 years, receive a comprehensive energy audit and/or retro commissioning, with the intent of identifying energy saving and carbon footprint reducing opportunities.	Yes	No	Partially

- The Young Green Professionals program audited several fire rescue facilities.
- The Energy Performance Contracting Program, which started in 1998, continues to audit several facilities including the Miami International Airport, Port of Miami, and some park facilities. As new Energy Performance Contracts are initiated additional buildings will be audited, for example the Miami International Airport was audited in 2014/2015 as part of a successful Performance Contract.
- The County has decide to use Energy Star Portfolio Manager to manage energy use at its facilities. With the new utility billing management software (EnergyCAP), data for buildings (such as electricity bills and size data, etc.) can be automatically submitted to Energy Star Portfolio Manager.
- At present there is no particular requirement to audit buildings consuming over 500,000 kilowatt hours.
- It is important to recognize that energy audits alone are not sufficient. Resources are needed to implement the retrofits and reduce energy demand. Energy Performance Contracting is a successful financing mechanism, but other options need to be found. There is also a disincentive for building managers to reduce their utility bills due to the fact that utility budgets are typically fixed. When a building manager is proactive and takes steps to save money on their utility bills, they are not able to keep those savings, but instead will have their future budgets reduced. It is important for the County to find ways to either change this funding structure or work to educate facility managers about the other benefits of improving efficiency.
- Save Energy and Money (SEAM) program was implemented in 2010 to help fund and facilitate small energy and water retrofits in County facilities. Several projects were successfully completed via SEAM at the Parks, Recreation and Open Spaces Department, the Corrections Department, and Internal Services Department.

B12 3. Require that all County departments include their goals and plans for greenhouse gas reduction and climate change adaptation in their strategic plans and that each Department Director's performance evaluation include a reporting on outcomes. Present sustainability award to Departments and Directors that achieve most impressive results. One department (e.g., Office of Resilience, DERM and/or GSA) could be responsible for providing strategies, tools and resources to each department to assist departments in achieving their reduction goals.	Partially	No	Partially

- Departments were asked to include sustainability-oriented goals in their ASE scorecards. This included metrics such as energy consumption and water consumption, which are significant contributors to greenhouse gas (GHG) emissions.
- During the countywide greenhouse gas inventories, all GHG emissions from departments are included; however, they are not currently broken down by department. It is the opinion of the Office of Resilience staff that tracking energy usage by department is an effective proxy for tracking greenhouse gas emissions and that additional resources should be concentrated on providing assistance to departments to reduce their energy usage. Additional resources in the form of staff time would be needed to scale up this outreach and engagement effort.
- The EnergyCap utility billing management software tracks energy consumption at the department and facility level. The Office of Resilience is proposing to expand the use of the EnergyCap to include water utilities as a new initiative in the next GreenPrint cycle.

- Previously, the County implemented a sustainability acknowledgment program called GreenDeeds for employees, but that program was discontinued due to a reduction in resources and low participation. Currently, there is no program to present awards specifically focused on sustainability.
- The Idea Machine is an on-going program that recognizes and rewards employees who implement any cost savings measures including but not limited to energy or water savings measures.

B13. The CCATF recommends that Miami-Dade County continue to support funding opportunities available through the American Recovery and Reinvestment Act (ARRA) and other federal programs to retrofit homes, commercial, and housing facilities for energy and water efficiency, and educate residents and homeowners about conservation. The following should be included in order to optimize, leverage, and facilitate energy conservation federal programs and funding. Including but not limited to Neighborhood Stabilization Program, Weatherization programs, Public Housing Capital improvements, Community Development Block Grants, Community Services Block Grants, and homelessness prevention	Yes	No	Yes

- Through the Energy Efficiency and Conservation Block Grant (EECBG), the County created a comprehensive community-wide three-year energy and sustainability education program that leveraged and expanded existing community communication, marketing, and programs to provide information, educational programming and incentives for the public related to energy conservation.

- Through the Energy Efficiency and Conservation Block Grant program, a stand-alone green portal (http://www.miamidade.gov/green/) was created to serve as the one-stop shop of county green programs and to provide content in a user-friendly format for the portal.
  - Through the 750 Challenge Program, the County provided educational outreach to the community.
  - When the Energy Efficiency and Conservation Block Grant ended, it was calculated that the marketing strategies implemented resulted in the following estimated reductions:
    - Light Bulb Exchange: 20,000 Light Bulbs, 1,230.25 CO_2e reduction;
    - Home Workshops: 700 attendees, 272.7 CO_2e reduction;
    - Home Rebates (refrigerators): 500 rebates, 239.5 CO_2e reduction;
    - $750 Savings Challenge: 3,000 pledges, 9,107.3 CO_2e reduction;
    - Green Business Certification/workshops: 350 businesses, 1,117 CO_2e reduction;
    - Commercial Rebates: 140 rebates, 90 mt CO_2e reduction;
    - Website: 25,000 households, 9,739.5 CO_2e reduction;
    - Employee Green Pledge: 25,000 employees, 11.62 CO_2e reduction.
    - Grant to Non-profits (G2GN)
  - Some of these programs continued after the Energy Efficiency and Conservation Block Grant funding ended such as: the Green Portal website, 750 Challenge, light bulb exchange, and the Green Business Certification program.
  - Florida Power and Light (FPL) has installed smart meters in County facilities and countywide for all residential customers except for (a) customers who do not want a smart meter and have agreed to pay an additional fee for on-site meter reading and (b) a small number of inaccessible residential properties.
  - Miami-Dade County provided a version of EnergyCAP to homeowners; however, it is not widely used due to the lack of an automated link with FPL or other utilities.
  - Community Action and Human Services' (CASHD) low-income weatherization program helps reduce energy bills of low-income families. Therefore, saving money through weatherization usually liberates funds for spending on more pressing family issues. On average, weatherization reduces overall energy bills by $358 per year at 2015 prices. The program serves an average of 90 homes each year depending on the size of the project and the services needed. Specific energy conservation measures include: installing or adding attic insulation; installing solar films; repairing or replacing deteriorated exterior doors and windows; installing thresholds and weather-stripping; installing low flow showerheads and pipe insulation on

water heater lines; installing water heater jackets; installing exhaust fans to improve quality air ventilation; replacing inefficient air conditioners, A/C filters and repairing A/C ducts; installing energy efficient light bulbs; replacing refrigerators and replacing water heaters. In addition, the Weatherization Assistance Program (WAP) requires that Energy Star equipment replacements, educational materials, and tips are provided during the initial and final inspections of all weatherized projects. • An Energy Performance Contract project specifically for public housing was approved by the Board of County Commissioners on September 2015. This project is expected to be completed in 24 months. In total the project identified 14 energy conservation measures across 37 elderly and 52 family public housing sites in Miami-Dade County. The main energy conservation measures included the installation of high efficiency toilets, low-flow shower heads and faucets, and upgrading of common area, apartment, and exterior area lighting.			
B13 1. Incorporate educational, behavioral, and operational training programs with all retrofit and renovation options.	Yes	No	Partially
• Most energy efficiency projects implemented by Miami-Dade County such as the Energy Performance Contracts include educational, behavioral, and operational training programs. A comprehensive list of all programs implemented so far cannot be included in this report due to space limitation. However, a few examples are highlighted below. • As part of the projects funded by the Energy Conservation Block Grant behavioral campaigns were completed for selected facilities and the TV monitors were installed with energy displays and fliers were distributed. The behavioral campaign, "Power it Down Challenge," was launched for employees at the Stephen P. Clark Government Center and the Richard E. Gerstein Courthouse. The campaign was meant to drive behavior changes among County employees by promoting healthy competition among the various floors and departments in order to reduce energy consumption. • The campaign was launched on August 1st, 2012, and ran for six consecutive weeks. Savings over the six weeks totaled 7,561.34 kWh or $756 and a reduction of 4 metric tons of CO_2e greenhouse gases. The campaign was designed to be re-launched a couple of times a year however due to reduction of staffing of the Office of Resilience this has not been possible. • The Office of Resilience continues to monitor and display electricity use at both facilities and plans to engage staff and visitors in a second Power It Down campaign in the future. • While this has not been widespread it has been successful at selected facilities. • An educational campaign was launched as part of the 2014/2015 Energy Performance Contract at Miami International Airport. The campaign is displayed in selected TV monitors in the airport for employees and passengers.			
B13 2. Monitor and analyze results of retrofits to include but not be limited to obtaining an energy rating of all renovated homes and public housing facilities.	Yes	No	Partially
• The Current public housing model doesn't support implementation of the Sustainable Buildings Program due to the fact that most public housing projects are developed and operated by private developers. However, The President's Climate Action Plan calls for a target of 100 megawatts of installed capacity of renewable energy on-site at federally subsidized housing by 2020. On July 2015 this goal was increased to 300 megawatts of installed capacity. • In addition, The Department of Housing and Urban Development recommends the use of Energy Star for public housing projects, therefore many of the public housing projects achieve this standard. • An Energy Performance Contract project for public housing was approved on September 2015. This project is expected to be completed in 24 months. The project identified 14 energy conservation measures across 37 elderly and 52 family public housing sites in Miami-Dade County. The main energy conservation measures include installation of high efficiency toilets, low-flow shower heads and faucets, and upgrading lighting in common areas, apartments, and exterior areas.			
B13 3. Use some or all of the funds created from the resale of foreclosed and renovated homes for further development and promotion of energy and water efficiency outreach programs.	No	No	No
• No steps have been taken on this initiative at this time.			
B13 4. Maximize the use of Smart Meters to monitor results and complimentary behavioral programs.	Yes	No	Yes
• The County has implemented EnergyCap for its facilities. EnergyCAP provides a single utility billing management platform for use county-wide and improves utility bill auditing and accountability while increasing overall energy management efficiency. Through the implementation of EnergyCAP, paper billing from Florida Power & Light (FPL) has been replaced by electronic billing.			

• In addition, EnergyCAP automatically uploads electricity consumption data to the Environmental Protection Agency's ENERGY STAR Portfolio Manager. The Environmental Protection Agency's website calculates an energy performance score and sends it back to EnergyCAP. This allows the County to benchmark its buildings, enabling departments to prioritize energy performance improvement projects, use actual data to measure savings stemming from performance improvement projects, and seek ENERGY STAR building certification.			
B 14. The CCATF recommends that Miami-Dade County develop incentives for energy and water efficiency, conservation, and distributed low- and no-carbon energy generation for existing residential, industrial, and commercial buildings. The CCATF recommends that the County:			
B14 1. 1. Explore development of a public/private partnership that would provide financing and technical assistance to smaller scale commercial, multifamily and residential facilities to retrofit homes for improved energy and water efficiency. This should support current and future technologies (e.g., metered charging stations in parking garages for electric vehicles and roof hook ups for PV, and, where feasible, the installation of renewable energy technologies such as solar water heaters).	Yes	Yes	Yes
• Funded by Energy Efficiency and Conservation Block Grant, a revolving loan fund program (Renovation for Energy Efficiency Loan – REEL) was created for local businesses to implement energy efficiency retrofits in their facilities; however, it was closed in July 2011, primarily due to the lack of interest. • The County is still developing a PACE program, which could be a potential mechanism to accelerate the financing of energy efficiency retrofits and solar photovoltaic expansion. • Funded by Energy Efficiency and Conservation Block Grant, Miami-Dade County created the Grants to Green Nonprofits (G2GN) program in April 2011 which is now complete. Through this program Miami-Dade County funded $1 million in energy-savings retrofits for 55 nonprofit facilities. Florida Power & Light Company was a partner on this program. • The Miami-Dade County Credit Union E2 loan program was implemented to offer county employees low interest loans to do energy efficiency in their homes. The program was discontinued in 2015 due to lack of interest.			
B14 2. In the short term, identify potential partners to develop and implement a financing solution for solar water heaters similar to Lakeland Electric.	No	No	No
• FPL announced in 2015 that they will eliminate solar rebates including the water heater rebates. This decision was made in accordance with an earlier decision of the Public Service Commission in November 2014 to cut demand-side management programs. • As part of a new pilot program authorized by the Florida Public Service Commission, FPL is partnering with not-for-profit low-income-housing builders under the Solar Water Heating Low-Income New Construction Program to install 1,000 solar water heaters in low-income housing units over the next five years.			
B14 3. Analyze and maximize GHG reduction opportunities through all county services to residents and businesses.	Yes	No	Partially
• Miami-Dade County has conducted several comprehensive greenhouse gas inventories and has identified the largest sources of community-wide greenhouse gas emissions as vehicles. • The County's sustainability plan, GreenPrint, includes a detailed greenhouse gas mitigation strategy to reduce emissions to 28.9 million metric tons. • GreenPrint outlines a number of emissions reduction opportunities that were estimated to reduce emissions by 1.47 million metric tons of CO_2 equivalents and avoid emissions of more than 3.05 million metric tons. • The Division of Environmental Resources Management and the Office of Resilience are currently completing an updated greenhouse gas inventory and will develop an updated mitigation strategy to help Miami-Dade County achieve its commitment to reduce emissions by 20% by 2020.			
B14 4. Work with FPL on the installation of a real-time, web-based smart meter program in County government and other large public institutions.	No	No	Yes
• FPL installed smart meters in all County facilities that meet the requirements to have a smart meter. • Furthermore, the County implemented the EnergyCap program with the goal establishing a centralized method for quantifying County electricity consumption and its associated costs to enable the County to measure, manage and monitor the performance of its facilities.			

• Through the use of EnergyCAP and smart meters the County has been able to correct issues that otherwise would have not been noticed until the end of the billing cycle. For example, setting changes in Building Management Systems after regular maintenance that could have gone unnoticed for several months and could have cost an unnecessary increase in energy usage.			
B14 5. Promote the use of green roofs, e.g. vegetative roofing, high reflectivity roofing materials, etc.	No	No	Partially
• The Miami-Dade Building Code Compliance Office (BCCO) has developed information about green roofs which was presented to Building Officials in 2014. Green roofs are approved individually since they do not meet the current Building Code (Code). Roof systems must have a product approval or engineering system approval. Since green roofs do not have product approval, all green roofs built in Miami-Dade County are approved using the engineering system approval method. BCCO is planning to do another presentation about green roofs and reflective roofs to Building Officials in 2016. Currently, there are some concerns with the installation of green roofs in existing buildings, primarily due to weight issues. • Reflective roofs are widely used and there are many with product approval that are compliant with the Code. Furthermore, the current Code requires reflective roofs through prescriptive methods for code compliance. However, most people use energy models as the path of compliance with the Energy Code and therefore reflective roofs are not always included. • There is also an existing ordinance that requires cool roofs for all Housing Department projects in excess of $1 million. • Also, through the Miami-Dade Sustainable Building Program, County facilities are being built to LEED standards which include cool roofs and green roofs. • A portion of the Children's Courthouse has been constructed with a green roof.			
B14 6. Include solar reflectance, emissivity and Solar Reflectance Index (SRI) values into the roof system product approval process.	No	No	No
• This is currently not mandatory by code; however, it is a best management practice that is encouraged by the MDC building officials.			
B14 7. Develop incentives for retrofitting buildings to accommodate energy-saving additions such as PV panels on rooftops and metered charging outlets/stations in parking garages for electric vehicles.	Partially	Yes	Partially
• There are no additional incentives specifically for retrofitting buildings at this time; however, there is an expedited permitting approval process for green buildings. • There are other efforts to include electric vehicles and renewable energy. For example, there are currently five electric vehicle charging units installed at the OTV parking garage and two charging units at OTV are available for the public to use. Please see item B14.8 below for additional information pertaining to electric vehicle charging stations.			
B14 8. Develop incentives for the addition of customer-paid electric vehicle (EV) charging stations in portions of public and county-run parking lots.	No	Yes	Partially
• The number of electric vehicle charging stations in Miami-Dade County has increased in recent years. • Miami-Dade County has five EV charging stations at Overtown Transit Village. Three of these are used to charge County/RER Toyota Prius' that were modified by the Division of Environmental Resources Management to have plug in capability and the other two charging units are available for public use. • There are also charging stations at the County's downtown motor pool for the two County Leaf vehicles. • Miami-Dade Transit is planning to roll out EV charging stations in its park and ride facilities as well as its parking garages. • New charging stations are frequently being installed by businesses and several websites provide maps of available stations (for example http://www.carcharging.com/ev-drivers/locations/#map_top or http://www.plugshare.com/) • With the support of a $500,000 grant from the US Department of Energy, regional partners including Miami-Dade County and the South Florida Regional Council, were able to develop an EV infrastructure regional plan. Drive Electric Florida completed its EV Community Readiness Plan which is located at: http://www.floridagoldcoastcleancities.com/Grant_Opportunities2.html. The report is titled "Getting Southeast Florida Plug-In Ready", Volume I of the Plan includes guidance on infrastructure, policies and permitting, fleet adoption, and education/outreach as well as snapshots of the state, region, and the seven counties that participated in the Plan. Volume II is the master plan for a U.S. 1 Corridor car-share pilot project proposed to be adjacent to Metro Rail.			

- Miami-Dade County Zoning Division has been working on an ordinance to require EV charging stations in off-street parking lots. This ordinance has not been approved as of this report date.
- The County passed a resolution (File Number 160424) that directs County staff to craft a plan to install electric vehicle charging stations to serve the general public. This report and plan is due to be released in summer 2016.
- The Office of Management and Budget has been asked to look at potential funding sources for installing EV charging stations.

B14 9 Consider a demonstration retrofit of a County-owned building that could be used as a public outreach and education vehicle for promoting energy-saving retrofits.	Yes	No	Yes

- The County has completed 10 LEED-certified buildings which are used for public outreach and education.
- All of these LEED facilities include a public education component focused on the benefits of green best management practices implemented in the project, for example benefits of Florida friendly yards, etc. For example, the Verde Gardens Project in Homestead is the first LEED Gold certified homeless sheltering project in Florida. The project received LEED Gold certification for the townhome models and the Fresh Market, while the Community Center received LEED Silver certification. The Children's Courthouse, which was completed in late 2014, earned LEED Gold certification in September 2015.
- The Sustainability Project at the Miami International Airport is educating customers about energy and water efficient retrofits through monitors installed at the airport. This project is one of the largest energy savings programs in the state of Florida and it is estimated to reduce the airport's energy consumption by 35 million kWh per year and save approximately 28 million gallons of water per year.

B15. The CCATF recommends that Miami-Dade County educate the business sector and the public on energy and water efficiency and conservation. The CCATF recommends that this would best be accomplished if Miami-Dade County collaborates with corporate, nonprofit, and educational organizations to develop a broad scale and culturally competent media and community based educational campaign dedicated to promote the adoption of conservation, efficiency and renewable behaviors, systems and technologies in residences and businesses. CCATF suggests that this educational campaign should:

B15 1 1. Inform residents and the business sector of the economic benefits of, and resources available for, energy efficiency and appropriate renewable technologies (e.g., green roofs, solar water heaters, smart meters, etc.).	Yes	No	Yes

- The County initiated a special loan program for energy efficient home improvements for County employees, Home Energy Efficiency Assistance Loan Program (E^2 Loan), through the Miami-Dade County credit union. Unfortunately, after a flurry of initial interest the program did not attract many customers.
- FPL also received a grant to install smart meters in Miami-Dade County. Those installations are expected to be completed soon for residential and small business customers.
- Energy efficiency efforts have slowed following the decision of the Public Service Commission to eliminate and/or reduce the utilities' "demand side" programs, which focus on energy efficiency and consumption.
- Miami-Dade County created the green.miamidade.gov website. The webpage creates a sustainability umbrella/brand for residents and all portal visitors, consolidates existing common information into one place, and provides an entrance feature to organization's departmental pages. For example, the page includes green tips and links to rebates and incentives.
- However, as part of Energy Efficiency and Conservation Block Grant, the County did do outreach and offered rebates to the residential and business sector for energy-efficient appliances.
- The County also reached out to the community via a marketing campaign (known as the 750 Challenge) which focused on energy and water efficiency.
- Also, as part of the same grant, the County created a grant program targeted at nonprofits. The program helped the non-profit recipients do energy efficiency retrofits to their buildings.
- The County is currently involved in a grant project called WE-Lab with the nonprofit "Dream in Green." The project involves outreach to residents and businesses to discuss water and energy efficiency.
- Kilowatt meters have been made available for loan to the public at every public library branch. These meters are small devices that allow residents to assess the energy consumption (and cost) of plug-in appliances and help identify where replacement with more efficient units would be most effective.

B15 2 2. Develop two separately designed and targeted campaigns and approaches: one for residents and one for business. For consumer/resident examples, refer to the Home Energy Saver (attached) and Green Homes Challenge (attached) descriptions. For a business example see www.e4s.org , the Entrepreneurs for Sustainability website.	Yes	No	Yes
• Several campaigns have been developed to promote energy-efficiency and conservation. Funded by Energy Efficiency and Conservation Block Grant, Miami-Dade County partnered with Dream in Green and hosted several Home Energy Savings Workshops, which educated residents about energy efficiency and conservation and provided homeowners with the information, resources, and incentives to reduce their utility costs. • The County launched a free online energy and utility tracking tool powered by GreenQuest, which serves as a personal energy dashboard for homes and/or businesses. This tool helps educate the community, promote energy and water conservation, and helps residents save money. • As part of the $750 Challenge, an easy to use on-line checklist was developed to show residents how they can save $750 through basic efficiency measures. • The Energy Efficiency and Conservation Block Grant program also included a campaign targeted at home owners and small businesses. • WELAB continues that effort but on a smaller scale. • The examples highlighted by the CCATF (such as the Green Homes Challenge) were drawn upon to inform the outreach campaign but were modified for the County. • The Miami-Dade Green Business Certification Program was launched to provide guidance to businesses seeking to green their operations. For those applying to become a certified green business, Miami-Dade County offered $10,000 in commercial rebates for the purchase of new ENERGY STAR appliances or select equipment. By encouraging the replacement of older and inefficient appliances, these rebates helped decrease energy consumption and increase savings on energy bills. This incentive was discontinued after Energy Efficiency and Conservation Block Grant funds ended.			
B15 3 3. As part of this education campaign, include information about the Energy Gauge performance rating system for new and existing commercial and residential buildings and encourage property buyers to ask for the rating.	No	No	Partially
• Energy Gauge is a computer tool for Florida Energy Code compliance for residential new building construction and Florida Home Energy Rating System (HERS) calculations. Disclosure of Energy gauge performance is not required by code. For example, for County facilities it was decided to use Energy Star as the tool to measure energy performance of existing buildings and as recommend that Department of Housing and Urban Development. However all county facilities have met or exceed the Florida Energy Code. • The County as a permitting agency cannot recommend a specific tool for compliance with the code. • HERS rating is not currently required to be published as part of code compliance. • The County is interested in using the HERS index for rating and has recommended it be included as an initiative in the next iteration of the County's sustainability plan, GreenPrint. • The Building Code Compliance Office (BCCO) offers three free workshops per trade per year. These workshops, which cover Energy Gauge, are aimed at certain aspects which have a significant impact on the energy-efficiency of building trades, such as mechanical plumbing and electrical professionals. These workshops, which are led by the building inspectors, are also open to designers, contractors, architects, and engineers.			
B16 WASD is the County's highest consumer of electricity and one of the highest consumers in the State of Florida. The CCATF recommends that Miami-Dade County undertake an assessment of the County's water and sewer rates and conservation/efficiency programs. The County should:			
B16 1. Conduct a long term comparative cost/benefit analyses on the combination of increasing electricity and water generation vs. ramping up conservation and efficiency programs. The CCATF recognizes that both options may be necessary but a preference should be given to increasing conservation and efficiency.	No	No	Partially
• Several incentive programs have been implemented to encourage the efficient use of water and help residents save money. They include: plumbing retrofits, landscape irrigation evaluations and residential and commercial water use evaluations and rebates. • As a result consumption has dropped significantly. The current demand for finished water is 44 million gallons per day lower than what was projected in November 2007.			

• In 2009 the Miami-Dade County Board of County Commissioners amended Chapters 8 and 32 of the Code of Miami-Dade County establishing new standards for water saving fixtures for new construction. The new requirements include the development and publication of a Water-Use Efficiency Standards Manual under Section 32-84 of the Code of Miami-Dade County. The manual provides specific code changes per Ordinances 08-14 and 08-100 regarding high efficiency flow rate requirements for bathroom and kitchen fixtures. The manual also provides additional guidance and recommendations for new development in Miami-Dade County with the intent of achieving the maximum water savings in new residential and commercial developments in both unincorporated and incorporated areas of Miami-Dade County. • The lower demand is the result of lower-than-projected population growth, permanent landscape irrigation restrictions, water loss reduction and the success of the water conservation initiatives and best management practices that have been implemented. • As a result of the lower-than-projected demand, the Miami-Dade Water and Sewer Department re-evaluated the County's water use projections and has adjusted the schedule of capital water supply projects. This collective awareness has allowed for the per capita use to drop from 158 to 134 gallons per person per day during the same period of time.			
B16 2. Provide consumer education on the current comparatively low rates they have enjoyed and the need for increasing rates to pay for efficiency and conservation efforts. The goal of this education is to build voter acceptance that increased rates are essential to maintaining and improving the quality of life here.	No	No	Partially
• Through their website (http://www.miamidade.gov/water/rates.asp) the Water and Sewer Department has provided information about the comparatively low water rates in Miami Dade County. This website compares our water rates to other municipalities around the country and explains how water rates can encourage wise use of our water resources. • Water rates have increased slightly, but remain some of the lowest in the country. • the Water and Sewer Department published the Water-Use Efficiency Standards Manual at http://www.miamidade.gov/waterconservation/library/instructions/water-use-efficiency-standards-manual.pdf and has revamped its conservation section of its website http://www.miamidade.gov/waterconservation/			
B16 3. Determine the feasibility of using Miami-Dade County's Water and Sewer Department (WASD) facilities for installation of renewable energy technologies, including for water and sewer operations.	No	No	No
• There was an effort to assess the potential for renewable energy technologies in the Executive office. This study looked at the Water and Sewer Department's and other large county properties to see if they were feasible for installation of renewable technologies and at that time they were deemed to be unsuitable. Lack for incentives for renewable energy generation and the low cost of energy in Florida are many of the reasons why renewable energy projects continue to not be as economically favorable in Miami-Dade County. • The Water and Sewer Department is using recaptured methane from a landfill and digesters at the South Dade facility and capture the digester gas at the North Dade facility.			
B 17 Recognizing that support at the state and federal level are important in facilitating action at the local level, the Climate Change Advisory Task Force recommends that Miami-Dade County advocate that:			
B17 1. The Florida Public Service Commission require FPL to achieve at least a 20% reduction in GHG generation from the 2005 baseline by 2020. This would include incorporating the costs of the proposed nuclear power plants by Florida Power and Light at Turkey Point in the comparative costs and benefits of energy efficiency and renewable energy systems and improve and expand incentive structures for energy efficiency, energy conservation and renewable generation. These incentive structures need to promote both customer owned and utility owned energy efficiency and demand side renewable energy systems. Additionally, the cost benefit analysis needs to place a greater emphasis on reducing overall energy consumption, not just capacity reduction, to achieve greater reduction in greenhouse gas emissions.	No	No	Partially
• This has not been implemented; however, the County sends legislative urgings in its annual legislative package in support of energy efficiency and renewable energy systems. • While there has never been a request for comparative cost benefit analysis examining adding new generation as opposed to exploring energy efficiency, many other related components have been included in the legislative package. The relevant section from the 2016 State Legislative request is below:			

Energy Efficiency and Buildings

- *ADVOCATE for the preservation and enforcement of the Florida Energy Code. This includes, but is not limited to: Increase compliance by assigning responsible parties to enforce each element of the code or create an Energy Inspector with overall responsibility for the Energy Code compliance; ADVOCATE for the Florida Building Commission, the Energy Technical Advisory Committee, and Energy Code Work Groups to ensure that new construction, major renovation and retrofitting, and replacement of equipment increase energy efficiency and promote the use of renewable energy; ADVOCATE to remove exemption from energy code of renovated buildings that estimated costs of renovation is less than 30 percent of the assessed value of the structure; and ADVOCATE that the Florida Energy Code adopt the national Home Energy Rating System (HERS) and require a HERS Index less than 88 for Florida Energy Code compliance.*
- *ADVOCATE for revenue decoupling in the energy markets. Under such a compensation scheme, revenues are "decoupled" from sales and are instead allowed to adjust so that utilities receive fair compensation regardless of fluctuation in sales.*
- *ADVOCATE the adoption of the International Green Construction Code (IGCC) as the standard, state-wide. Until this becomes possible, pursue all of the following pathways such as:*
    - *SUPPORT a change in state law that prevents local jurisdictions from enacting more stringent energy performance standards that would better meet local community needs and goals.*
    - *SUPPORT use of the IGCC as a statewide alternate compliance code on a strictly voluntary basis for those individuals or projects that wish to surpass current state energy code minimums, and offer incentives for such voluntary compliance.*
- *ADVOCATE for the use of green building rating systems for new construction and existing buildings as one of several model options for achieving verifiable greenhouse gases (GHG) emissions reductions and improving energy efficiency including but not limited to the National Association of Homebuilders' (NAHB) Green Building Standards, the Florida Green Building Coalition's Green Building Standards, Green Globes' Standards and the U.S. Green Building Council's LEED rating systems.*
- *ADVOCATE with the Florida Building Code Commission to ensure that new construction and major renovations include smart meters, pre-wiring of buildings to accommodate future GHG-reducing retrofits such as solar hot water heaters, photovoltaic (PV) panels or other distributed renewable power sources on rooftops, and metered charging outlets in parking garages for electric vehicles.*
- *ADVOCATE that Florida pass an energy efficiency resource standard (EERS), a target that will help utility companies reduce electricity usage by 15%.*

- *ADVOCATE legislation that furthers local Property Assessed Clean Energy (PACE) energy efficiency and renewable energy improvements. For example, ADVOCATE for legislation that guarantees local government the right to establish clean energy programs, and URGE the Department of Energy and Housing Finance Authority to agree to program elements that remove barriers to PACE and PACE-like programs in order to ensure broad applicability and access for residential and commercial interests and to provide sufficient Congressional guidance for the protection of property owners, lenders and investors.*

B17 2. The Florida Building Commission, the Energy Technical Advisory Committee, and the 2010 Energy Code Work Group work to ensure that new construction and significant renovations and replacement equipment requirements increase energy efficiency and promote renewables by requiring a combination of methods and elements to include: solar water heaters, photovoltaic panels, shading devices, vegetative roofing, controllers and monitoring equipment, best practices and quality installation procedures such as HVAC sizing and duct testing, pre-wiring of buildings to accommodate future GHG reducing technologies such as monitoring devices, HVAC zoning, centralized data centers and distributed renewable power sources on rooftops and metered charging outlets in parking garages for electric vehicles. Advocate for the use of green building standards including the National Association of Homebuilders' (NAHB) Green Building Standards and the Florida Green Building Coalition as one of several model options that can be used to reduce GHG emissions and promote energy efficiency.	Yes	No	Yes

• This is included in GreenPrint intitaive #9 which is to work with local Board of Rules and Appeals and other stakeholders to maintain the Florida Energy Code and to better define and set forth responsibilities of each trade in order to improve compliance with and enforcement of the Code (Within the Florida Energy Code and 2010 Florida Statutes, Chapter 468, Part XII). As a result of the implementation of this GreenPrint initiative, a report which provides recommendations to increase compliance with Energy Code was completed. The Board of Rules and Appeals issued recommendations which are not mandatory and allow building officials discretion in complying with the recommendations. The recommendations were distributed to Building Officials in 2014. • Florida has a good energy code, promoting "beyond code standards" has been included in the County's legislative requests since 2009. • The Miami-Dade County Building Code Compliance Office provided four hours of training about the International Green Construction Code in 2014. Training is offered in a yearly basis and beyond compliance codes are always a topic included in these trainings.			
B17 3. Florida and/or the United States pass an energy efficiency resource standard (EERS), a target that will help utility companies reduce electricity usage by 15%.	No	No	No
• To date, no progress has been made at the state or federal level; however, this issue has been included in the legislative requests of the Office of Resilience for several years.			
B17 4. State and Federal Renewable Portfolio Standards of at least 20% by 2020 be implemented.	No	No	No
• While Florida does not have a Renewable Portfolio Standard as of January 2016, this issue is included in the annual legislative requests of the Office of Resilience. • Through an Executive Order the Federal Government has committed to ensuring that 25 percent of all federal agencies total energy (electric and thermal) consumption is from clean energy sources by 2025.			
B17 5. The Federal Clean Energy bill includes a goal of reducing GHG reduction by 20% from 2005 by 2020. (This would parallel the County's current target.)	No	No	Partially
• Through an Executive Order the Federal government has committed to cut the Federal Government's greenhouse gas (GHG) emissions 40 percent over the next decade from 2008 levels and increase the share of electricity the Federal Government consumes from renewable sources to 30 percent. It is estimated that this reduction will save taxpayers up to $18 billion in avoided energy costs. • Together, the combined results of the Federal Government actions and new supplier commitments will reduce greenhouse gas emissions by 26 million metric tons by 2025 from 2008 levels, the equivalent of taking nearly 5.5 million cars off the road for a year. Specifically, the Executive Order directs Federal agencies to: Ensure 25 percent of their total energy (electric and thermal) consumption is from clean energy sources by 2025. Reduce energy use in Federal buildings by 2.5 percent per year between 2015 and 2025. Reduce per-mile greenhouse gas emissions from Federal fleets by 30 percent from 2014 levels by 2025, and increase the percentage of zero emission and plug in hybrid vehicles in Federal fleets. Reduce water intensity in Federal buildings by 2 percent per year through 2025.			
B17 6. Federal appropriations for the Energy Efficiency Conservation Block Grant (EECBG) program are continued, at least at current levels.	No	No	Partially
• The Energy Efficiency Conservation Block Grant program has ended; however, the County has included requests that the program be extended in its annual legislative package.			

Building Environment Adaptation

Recommendations	GreenPrint	Regional Climate Action Plan	Implemented
C1. Require all County agencies (and entities that receive County funding for significant infrastructure or built investments) to assess climate change impacts on the agency's/entity's responsibilities. This assessment should be incorporated into their master planning agenda or such a planning process should be initiated if it does not exist. The assessment should include the impact of sea level rise on all public investments and identification of vulnerabilities in order to produce strategies for mitigation and adaptation. These assessments should utilize a 50-year planning horizon.	Yes	No	Partially
• The Water and Sewer Department has already completed a very comprehensive assessment of how sea level rise will impact their investments. This assessment relied on the best available science and most recent analytical techniques. Through this comprehensive assessment it was determined that it is more appropriate to use several planning horizons depending on the life of the project and its sensitivity to flooding. • The County is addressing this recommendation on public investments, which is a GreenPrint initiative. The recommendations on how the County should proceed with implementation are based on precedents established by other metropolitan areas such as San Francisco and Seattle and by individual departments such as the Water and Sewer Department. • County staff are exploring ways to incorporate climate change adaptation planning into departments' master planning process by incorporating into department scorecards. • Following Resolution R-451-14 all County Departments are required to consider sea level rise in their capital planning process. • The CDMP has been amended to include a policy achieving the recommendations: ICE-5G. All County departmental master plans and strategic business plans shall include and prioritize climate change mitigation and adaptation strategies. Climate change related amendments shall be recommended through the next feasible, regularly scheduled amendment process or departmental master plan update for each respective planning document.			
C2. Use County charter authority to establish minimum criteria and standards related to climate change (including sea level rise), for public investment for all municipalities in Miami-Dade County.	No	No	No
• A similar recommendation was also a recommendation of the Sea Level Rise Task Force and has been adopted in R-46-15 which passed in January of 2015. This resolution requires the Mayor or his designee to "prepare an action plan and report to accelerate the climate change adaptation planning process by evaluating the engineering and other relevant expertise needed to develop an enhanced capital plan that includes, but is not limited to, flood protection, salinity structures, pump stations, and road and bridge designs, and to determine the costs of retaining the experts needed." • The implementation of this resolution will lead to the incorporation of sea level rise (an important impact of climate change) into the County's capital planning process. Additional work and coordination would be required to urge the municipalities to pursue similar measures; however, many municipalities such as Miami Beach, the City of Miami and Pinecrest are taking proactive steps to address climate change. County staff have been seeking input from municipalities on GreenPrint, coordinating through the League of Cities and through the Southeast Florida Regional Climate Change Compact. See item B 11 above regarding the seven municipalities have adopted the Mayor's Climate Action Pledge in support of and committing to collaboration on implementation of the Regional Climate Action Plan and GreenPrint. The Miami-Dade County League of Cities adopted a resolution (Resolution Number 2013-2) on June 6, 2013 encouraging all municipalities adopt the Pledge. • A Municipal Green Initiatives Survey has been completed, which will serve as a tool for benchmarking climate change efforts and facilitate future collaboration. • The Shoreline Review Committee provides another opportunity to work more directly with the municipalities and should be an area of future exploration.			
C3. Expand the mission of the County's Office of Resilience (OOS), and thus its resources and staffing, to provide a centralized agency for climate change information, monitoring, analysis, and benchmarking. a.) Establish a base case of information at an identified current or recent past date, to which all ensuing data might be compared;	Yes	No	Yes

b.) Assist in integrating the activities of the various entities including the coordination of data collection so that it can be used across departments/disciplines for analysis and comparison; and determine the appropriate metrics for critical issues; c.) Monitor the effects of climate change on Miami-Dade County using the evolving data base, and publish the results for use by elected leaders, public agencies, and the general public.			
• The Office of Resilience was created in 2008 to facilitate the sustainable transformation of the County with respect to organizational culture, operations, infrastructure, and service delivery. It assists departments and leads initiatives that enable the County to target and realize improved performance that simultaneously values economic, social and environmental impacts and opportunities. • The Office, now known as the Office of Resilience, provides knowledge on energy, renewable energy, infrastructure, water resources, resource conservation and transportation, and includes outreach and educational programs. • The Office of Resilience in cooperation with the Division of Environmental Resources Management and many other agencies has completed a greenhouse gas inventory in 2008, 2010, 2013, and is completing the inventory for 2015. The inventory for 2008 is being used as the baseline for future greenhouse gas reduction targets. The Office of Resilience also contributed to the development of the Southeast Florida Regional Greenhouse Gas Inventory and is in the process of updating that inventory again with the help of ICLEI and the Institute for Sustainable Communities. • In addition to the greenhouse gas emissions reduction targets there are a myriad of other environmental performance metrics that are included in Green Print, the county's sustainability plan. Miami-Dade County was chose in February 2009 by ICLEI (International Council on Local Environmental Initiatives) and New York City, as one of three local governments nationwide to receive technical assistance in developing a sustainability plan. The progress towards the greenhouse gas emissions reduction goals and the GreenPrint goals are monitored and tracked on two online platforms that are easily shared with other departments. • In partnership the Southeast Florida Regional Climate Change Compact, the South Florida Water Management District, the Water and Sewer Department, Public Works and Waste Management, and the Office of Emergency Management, the Office of Resilience is contributing to the on-going monitoring, refinement, and publication of climate change indicators. These indicators include sea level rise, salt water intrusion, precipitation and a myriad of others. • A recent budget change memo passed in October 2015 directed the Office of Resilience staff to be shifted to the Office of Resilience and the staff have been expanded to include a new Chief Resilience Officer. Discussions are underway to determine additional staff resources needed to accomplish the Mayor's priorities outlined in the October budget memo.			
C4. The CCATF recommends that Miami-Dade County use the on-going cycle of the Evaluation and Appraisal Report to include amendments to the Comprehensive Development Master Plan that will further the principles of Smart Growth.	Yes	No	Yes
• The Comprehensive Development Master Plan includes multiple policies which further the principles of smart growth, such as promoting transit-oriented development, promoting the use and accessibility of public transportation, and expanding and enhancing complete streets in key neighborhoods. • Furthermore, the urban development boundary and other policies are helping to promote infill development and maximize the existing resources and infrastructure within the growth boundary. • The principles of smart growth are also encapsulated in a number of other county plans including the Open Space Master Plan, GreenPrint and the Long Range Transportation Plan. • The Comprehensive Development Master Plan policies that promote smart growth are reviewed and updated during the Evaluation and Appraisal Report of the plan.			
C5. The County should begin a process of planning and public education, coordinated with the South Florida Regional Council and the Metropolitan Planning Organization that integrates the mapping of projected sea level rise and storm surge impacts with the locations of infrastructure and other public investment, and with the locations of projected growth and development. The goal is to ensure the safety and resilience of public investment, and to consolidate private investment on transit-served high ground.	Yes	Yes	Partially
• Several sea level rise viewer tools are already publicly available including The National Oceanographic and Atmospheric Administration's sea level rise viewer and flooding exposure mapping tool, The Nature Conservancy's Coastal Resilience Tool, and Climate Central's Surging Seas tool. All of these interactive web-based viewers allow users to overlay changing sea levels with			

a number of other variables such as population density, social vulnerability, location of critical facilities such as schools and hospitals, properties with repetitive flood losses, Federal Emergency Management Agency's designated flood zones and many others. While these tools offer only a first approximation and should not be used for official planning and zoning they do help illuminate areas that will be most immediately impacted and those that will be more naturally resilient to flooding due to their higher elevations. • Work is on-going to integrate the recent results of the U.S. Geological Survey's newly-developed surface/groundwater model into existing stormwater modeling efforts and to develop vulnerability assessments based on that information. Because the cascading impacts of flooding are not limited to the areas that will be inundated and because there is already an existing highly interdependent drainage network across the county and the region it will require an iterative and careful process to develop maps that can serve as official guidance for areas that are most desirable for increasing investment. • The Federal Highway Administration provided grant funding for a regional (including Miami-Dade County) climate change study, "South Florida Climate Change Vulnerability Assessment and Adaptation Pilot Project (February 2015) to map and rank vulnerability of local transportation infrastructure. As an outcome of this first study, there is currently a new project building on the results of the first one that will be modeling for potential sea level rise and storm surge impacts on mobility in the region. One of the goals of the new project is to help foster greater understanding of the role of critical evacuation and other broader network routes to assist with future emergency management and other types of planning. • To date there has been no formal collaboration between the South Florida Regional Council, the MPO and the County on these issues; however, the County does actively collaborates informally with both the Regional Council and the MPO on climate change efforts and will continue to do so.			
C6. The CCATF recommends that Miami-Dade County (by its departments of Planning and Zoning, DERM, MPO, and Public Works) develop a memorandum of understanding for integrated planning efforts with the Florida Department of Transportation and the South Florida Regional Council.	Partially	No	Partially
• The Miami-Dade Metropolitan Planning Organization did the 2040 long range transportation plan in which Department of Transportation District 6 and the South Florida Regional Council were both significant collaborators. • The expansion of Tri-Rail was another collaborative effort and integrated planning effort. • The South Florida Regional Council, Department of Transportation, City of Miami, Miami-Dade County, and the Downtown Development Authority of the City of Miami are currently involved in integrated planning in support of the Downtown Miami Development of Regional Impact Increment III project. • The Responsible Land Use and Smart Transportation goal area of GreenPrint contains initiative 55 to coordinate among County departments and other agencies to implement the CDMP and County code.			
C7. The CCATF recommends that Miami-Dade County develop mandates and incentives for building designs that meet green building standards such as those established by Energy Star, the Florida Green Building Coalition, the U.S. Green Building Coalition (USGBC) Leadership in Energy and Environmental Design (LEED) or the National Association of Home Builders (NAHB) Green Building Standards. These standards must comply with the Florida Building Code and not conflict with the Comprehensive Development Master Plan. If the County does develop such mandates and incentives, the CCATF further recommends that:			
C7 1. Buildings eligible to receive an EPA rating using Energy Star's Portfolio Manager, should achieve an energy performance rating of at least 70.	No	No	No
• Through EnergyCap the County is implementing this recommendation for county facilities, but there are not currently plans to require a certain performance rating for county facilities. The ratings are being used to help prioritize retrofits and help prioritize retirement of inefficient facilities. • For community buildings the County has implemented an expedited review and permitting process for green buildings with a third party certification such as LEED. • Furthermore the next GreenPrint cycle may include an initiative to mandate benchmarking and disclosure of community buildings above certain size.			
C7 2. Buildings not eligible to receive an EPA rating using Portfolio Manager, demonstrate energy efficiently in at least the 20th percentile for typical buildings of similar type using benchmarking against national median energy source data provided in the Portfolio Manager tool.	No	No	No

• Portfolio Manager Energy Star continues to add new facilities types regularly. In addition there are many beyond the code standards that can be applied to many building types not included in Energy Star such as parking garages standards. • Miami-Dade County doesn't have staff with expertise to develop such a program. • The Energy Star program and other benchmarking programs are constantly expanding and improving and therefore it is likely that holes in these programs will be filled in the next decade.			
C8. The CCATF recommends that Miami-Dade County advocate for amendments to the Florida Building Code that will reduce the impact of greenhouse gas emission and improve climate change resiliency.	Yes	Yes	Partially
• The Compact advocated to amend the Florida Energy Act to allow commercial buildings to qualify for energy efficiency program funding through the Local Option Sales Tax. • MDC has included in their state policy package an urging for preservation and enforcement of the Florida Energy Code. Increase compliance by assigning responsible parties to enforce each element of the code. • The 2014 Compact State Policy Package includes: a. SUPPORT - greater incorporation of adaptation strategies in state climate/energy policies, legislation, and appropriations priorities. b. SUPPORT - integrated resource planning/least cost planning for electric utilities to ensure that energy efficiency and renewable energy sources are fully considered as strategies for meeting future needs. (c) SUPPORT - energy efficiency and renewable energy finance options to advance greenhouse gas emissions goals, alternative and renewable energy technologies, and green sector economic development. (d) SUPPORT - stringent energy efficiency and conservation targets set by the Florida Public Service Commission pursuant to the Florida Energy Efficiency & Conservation Act, as amended. (e) SUPPORT – rebate programs, tax credits, and other financial incentives that encourage property owners to invest in energy efficiency and renewable energy systems. (f) SUPPORT – renewable portfolio standards (RPS) for utilities that would require a set percentage of electricity to be generated from renewable energy sources by a given date. • In 2010 and again in 2013, the Office of Resiliency facilitated sponsorship travel so that Miami-Dade County code officials could to attend International Code Council (ICC) meetings where voting delegates from local governments can influence national building and other code policy, which in turn influences state and local codes. At these meetings there are often several proposals to make electricity codes less stringent in terms of efficiency; and the votes of the Miami-Dade County officials were critical to ensuring that these initiatives were not passed and the strong code was maintained.			

Natural Systems Adaptation

Recommendations	GreenPrint	Regional Climate Action Plan	Implemented
D.1 Fully support the Comprehensive Everglades Restoration Plan (CERP), and increase funding and resources for other regional and local habitat restoration and preservation efforts and initiatives.	Yes	Yes	Partially
• Miami-Dade County continues to participate in interagency technical planning teams and provide technical support. • Miami-Dade County continues to be a vocal supporter of dedicating additional resources to restoration and management of the Everglade system, including Resolution number R-520-15 passed in June of 2015 urging the Florida State Legislature to pass additional legislation in support of Everglades restoration. • The restoration of the Everglades continues to be a priority outlined in GreenPrint, a priority of the South Florida Water Management District, the Division of Environmental Resources Management and several other entities; however, due to funding constraints and changing priorities, some CERP restoration projects intended to occur in this county have been put on hold, pushed into the future, or broken into phases with no certainty for completion of phase two. • The progress of the restoration of this large and complex network is tied directly to the availability of funding which may be helped by the recent passage of Amendment 1, which was designed to bring additional funding to conservation and restoration of natural areas statewide. • In October 2015 the BCC passed Resolution Number R-913-15 urging the expediting of the Biscayne Bay Coastal Wetlands and C111 Spreader Canal project (part of the Comprehensive Everglades Restoration Plan (CERP)).			
D2. Increase funding and resources for land acquisition and management programs of Miami-Dade County. Investigate new and creative mechanisms to boost funding, such as the creation of a County-administered "carbon credit purchasing" program, as a potential alternative to current development, industry, and government mitigation requirements.	Yes	Yes	Partially
• The Division of Environmental Resources Management is actively studying mechanisms to increase funding and resources for land acquisition for the Environmentally Endangered Lands (EEL) program. Funding for acquiring properties on the acquisition lists includes the EEL Acquisition Trust Fund and the Building Better Communities General Obligation Bond funds. These funding sources have been specifically designated for EEL land purchases by referendum and Board approval. The program's land management activities are currently funded through the EEL Program's Management Fund. The program has been increasingly successful in the last few years at securing other funds and engaging community partners and volunteers to help meet unmet management needs in EEL Preserves. However, these do not provide long-term assurance that program activity levels can be sustained. Therefore, it is important that long-term and sustainable funding options be identified. One potential option includes allocation of funds made available under Florida Constitutional Amendment 1. • Carbon credit purchasing was explored as a potential funding mechanism. It was determined that available carbon credit purchasing programs were not a good match for the EEL program. EEL staff are actively engaged in exploring new alternatives as they arise. • In January 2015 the Board of County Commissioners passed R-63-15 urging the United States Congress and the Florida Legislature to fund restoration of the Everglades.			
D3. Acquire all undeveloped lands needed for restoration purposes and for mitigation and adaptation to climate change effects. Secure strategic open lands to provide transition zones to accommodate retreat or spatial shifts in natural areas, such as coastal wetlands and freshwater marshes.	Partially	Yes	Partially
• Please refer to comments under recommendation D2 regarding the County's Environmentally Endangered Lands (EEL) program • The Southeast Florida Regional Climate Change Compact (Compact) has established the Shoreline Resilience Working Group in partnership with The Nature Conservancy and other stakeholders to specifically focus on this issue. The Shoreline Resilience Working Group is working closely with scientist and other experts to develop a comprehensive catalog of potential projects which will facilitate ecological transitions and enhance coastal resilience in key ecosystems such as mangroves, dunes, and beaches. • On-going efforts to protect, enhance and restore other lands are actively incorporating climate change considerations into programmatic planning.			

• This has been an area of focus for the Compact, the Division of Environmental Resources Management, the Office of Resilience and the Parks, Recreation and Open Spaces Department and will continue to be a priority moving forward. This will be one of the key initiatives of the next iteration of GreenPrint.			
D4. Create a plan to locate infrastructure and development outside coastal or flood hazard prone areas using projections of sea level rise to identify those areas. Describe a transitional zone between the hazard area and the built area to be protected and prohibit incompatible land uses that would convert open lands in the transitional zone. Establish a comprehensive planning and zoning policy, such as development setbacks and limits on density and infrastructure in coastal and transitional zones to consider vulnerability to sea level rise and saltwater intrusion.	Yes	Yes	Partially
• While preliminary maps already exist, efforts are currently underway to improve the County's ability to accurately map areas that are projected to be impacted by sea level rise. These new maps will be based upon new surface/groundwater modeling efforts developed by the Water and Sewer Department and the U.S. Geological Survey. • The Federal Emergency Management Agency's National Flood Insurance Program is currently engaged in a multi-year project to update local flood hazard maps and more accurately demarcate inundation boundaries using the most recent data and analytical methods. • Establishing appropriate land uses and planning and zoning policies for vulnerable and transition areas remains a top priority for the Office of Resilience and the Planning Department. This will continue to be an area of strategic focus moving forward.			
D5. Encourage the continued funding of the County Agriculture Purchase of Development Rights Program beyond the current funding levels to maintain open lands for aquifer recharge, habitat, and buffers.	No	Yes	Partially
• The County funded the Purchase of Development Rights program with $30 million by the General Obligation Bond. • In 2008, the County's Agricultural Manager acquired federal grants that matched local dollars fifty percent. • The County continues to purchase conservation easements on properties to ensure agricultural uses that achieve the benefits targeted by this CCATF recommendation. Approximately $27 million remains in GOB funding and there are approximately $6.5 million additional matching funds acquired from U.S. Department of Agriculture Farm and Ranch Protection Program. • Development rights have been acquired on 165 acres (2 farms) and a contract is pending on 145 acres and 395 acres expected to close in 2016. • The Program is actively pursuing eligible and appropriate properties from the 3,000 acres received in applications.			
D6. Provide incentives to study and develop best practices for agricultural management that contribute to carbon sequestration and reduce greenhouse gas emissions.	Yes	Yes	Partially
• The USDA has created a climate smart agriculture program (http://www.usda.gov/wps/portal/usda/usdahome?contentidonly=true&contentid=climate-smart.html) that is promoting best practices for agricultural management in the face of climate variability and also promote approaches to reduce greenhouse gas emissions. • The County also secured a grant from the Environmental Protection Agency (EPA), funded with American Recovery and Reinvestment Act dollars, which the County used to provide money to farmers to replace old irrigation pump engines with more energy efficient engines.			
D7. Increase funding for County-administered management activities like those programs within Natural Areas Management and Environmentally Endangered Lands. Establish a multi-agency task force to expand County capacity and coordinate conservation activities. Develop a collaborative and integrated approach to conservation involving universities, government agencies, landowners, botanic gardens, zoos, and non-governmental organizations.	Yes	No	Partially
• The EEL Program has succeeded in leveraging this original investment made by County taxpayers and has accrued $198 million in revenue since its inception. Through the EEL program, the County has been able to protect more than 23,000 acres of natural areas that are critical to our region's ecological health and our ability to adapt to climate change. • The EEL Program has been strategically complementing other regional restoration efforts to maximize their value as conservation lands and reduce fragmentation. By acquiring larger, contiguous areas and completing the acquisition of partially acquired preserves the program can provide ecological and managerial benefits.			

• Miami-Dade County benefits from several long-range plans that inform how we preserve open space including the Parks and Open Space Master Plan and the Comprehensive Everglades Restoration Plan. The EEL Program is a key component of this comprehensive effort to ensure the health and protective value of our natural resources. • With the recent passage of HB 968, the Legacy Florida bill, it is likely that the County will be able to better coordinate land acquisition with the South Florida Water Management District and support restoration efforts, particularly in South Dade.			
D8. Review current stormwater management operations, including the operation of canals and structures, in order to eliminate unnecessary over-drainage and limit the extent of saltwater intrusion into ground and surface water resources. Additionally, require water conservation measures for all users of the Biscayne Aquifer.	Yes	Yes	Partially
• Water conservation measures implemented by the Water and Sewer Department have seen significant results in reducing demand. • Current stormwater management operations are the focus of a number of in-depth studies through the Water and Sewer Department, Division of Environmental Resources Management, U.S. Geological Survey and the South Florida Water Management District. • The potential impact of rising sea levels on the extent of salt water intrusion into drinking water wells is the focus of extensive study and investment in monitoring equipment and infrastructure to minimize the potential impacts.			
D9. Develop a "Vital Signs" monitoring program, following the model of the National Park Service, to serve as a multi-parameter ecosystem monitoring program that will help track climate change effects. Expand current ongoing monitoring efforts, such as those within the Comprehensive Everglades Restoration Plan (CERP), to include specific areas of Miami-Dade County, to provide a better view of how natural areas are changing over time and what forces are responsible. Dedicate a source of funds to collect information and establish and maintain a long-term data management system.	Yes	Yes	Partially
• Through the Southeast Florida Regional Climate Change Compact climate indicators have been developed which provide a monitoring program that will help track climate change effects. These indicators have been developed with the help of local scientists and academics. • Several of these indicators are related to the response of natural ecosystems to changing environmental conditions.			
D10. Miami-Dade County should establish partnerships, both formal and informal, with other governmental entities, including local, State, and Federal governments; the private sector; non-governmental organizations; and other stakeholders in the County. Partnerships should focus on cooperative efforts to restore existing natural ecosystems; protect natural and open lands; mitigate impacts; and monitor natural systems and indicators of climate change. Partnerships should also be undertaken to effectively practice adaptive management as we increase our understanding over time of the effects of climate change on natural systems in the County and implement management actions to restore and protect natural systems in the County.	Yes	No	Partially
• The County has established fruitful partnerships to strengthen the adaptive capacity of our natural ecosystems such as the Shoreline Resilience Workgroup through the Southeast Florida Regional Climate Change Compact. The Shoreline Resilience work is led by scientists with The Nature Conservancy and members are drawn from academia, the non-profit community and all levels of government. The Shoreline Resilience work has focused on identifying and cataloging the critical areas where the protective value of our existing natural infrastructure can be bolstered and the ecological value of restoration efforts can be enhanced. • There are also a number of private collaborations built around the protection of natural resource systems, which complement the on-going efforts of existing County-led programs such as the Environmentally Endangered Lands (EEL) program and our Open Space Master Plan.			

Economic, Social, & Health Adaptation

Recommendations	GreenPrint	Regional Climate Action Plan	Implemented
E1. The Task Force recommends that the Miami-Dade County Comprehensive Development Master Plan (CDMP) be revised to include a new policy to restrict land uses in areas that would be at risk from sea level rise and associated impacts within the next 50 years as per the CCATF Science Committee's Statement on Sea Level in the Coming Century report and projections. A continuous 50-year planning horizon should be used.	Yes	Yes	Partially
• The Comprehensive Development Master Plan currently contains objectives and policies aimed at directing growth away from vulnerable areas. For example, Objective CM-9 of the CDMP states that "Miami-Dade County shall continue to orient its planning, regulatory, and service programs to direct future population concentrations away from the Coastal High Hazard Area (CHHA) and the FEMA V Zone." • In addition, Climate Change/Sea Level Rise was addressed as a "Major Issue" in the 2010 Evaluation and Appraisal Report (EAR) of the CDMP. This process allowed for a comprehensive analysis of climate change impacts over all County policies and processes. To respond to the breadth of impacts identified, the Board of County Commissioners approved amendments to multiple Elements of the CDMP in 2013 to integrate climate change considerations. Incorporating climate change language throughout the CDMP allowed for more targeted implementation across the various County policies and processes. • The following CDMP policies, added as part of the 2013 EAR-based amendments, are aimed at adapting the built environment to the anticipated impacts of sea level rise: • Policy LU-3E: By 2017, Miami-Dade County shall initiate an analysis on climate change and its impacts on the built environment addressing development standards and regulations related to investments in infrastructure, development/redevelopment and public facilities in hazard prone areas. The analysis shall consider and build on pertinent information, analysis and recommendations of the Regional Climate Change Action Plan for the Southeast Florida Regional Climate Change Compact (Compact) Counties, and will include the following elements: a) An evaluation of property rights issues and municipal jurisdiction associated with the avoidance of areas at risk for climate hazards including sea level rise; b) An evaluation of the current land supply-demand methodology to consider and address, as appropriate, the risk associated with infrastructure investments in flood prone areas; and c) An evaluation of the CDMP long-term time horizon in relation to addressing projected long-range climate change impacts. Recommendations from the analysis shall address appropriate changes to land use designations and zoning of impacted properties, and development standards, among other relevant considerations. • Policy LU-3F: By 2017, Miami-Dade County shall develop a Development Impact Tool or criteria to assess how proposed development and redevelopment project features including location, site design, land use types, density and intensity of uses, landscaping, and building design, will help mitigate climate impacts or may exacerbate climate related hazards. The tool would also assess each development's projected level of risk of exposure to climate change impacts, such as inland flooding. • Policy LU-3K: By 2017, Miami-Dade County shall determine the feasibility of designating areas in the unincorporated area of the County as Adaptation Action Areas as provided by Section 163.3177(6)(g)(10), Florida Statute, in order to determine those areas vulnerable to coastal storm surge and sea level rise impacts for the purpose of developing policies for adaptation and enhance the funding potential of infrastructure adaptation projects. • The Unified Sea Level Rise Projection for Southeast Florida was updated in 2015 by the Compact's Sea Level Rise Work Group, comprised of regional technical experts. It provides excellent, locally-tailored guidance about sea level rise that can be expected over the next 100 years.			
E2. Initiate an additional long-term CCATF advisory board committee composed of representatives from federal, state, and local environmental agencies (including Miami-Dade County DERM, WASD, Cooperative Extension), the Miami-Dade County Department of Health, local colleges and universities, and community leaders to address potential human infectious disease changes and increases that may accompany climate change and to make technical and funding recommendations to the Miami-Dade County Board of County Commissioners.	No	No	Partially

- The County has worked with staff in the Epidemiology, Disease Control, and Immunization Services Program of the Miami-Dade Health Department (MDCHD), to begin analyzing potential climate change-related public health impacts such as infectious disease changes and heat-related illnesses.
- The Florida Public Health Institute conducted a Health Impact Assessment (HIA) to comprehensively assess, through a health lens, the 110 recommendations put forth by the Southeast Florida Regional Climate Change Compact's Regional Climate Action Plan (RCAP). The Health Impact Assessment explores the effects that climate change, sea level rise and heat waves may have on the health of this region and the distribution of those effects throughout the population to inform a holistic approach while minimizing negative health outcomes. The HIA described the health impacts to the 5.6 million residents from Broward, Miami-Dade, Palm Beach and Monroe Counties. This assessment will help decision-makers better understand the local health impacts climate change may have on the residents of four Southeast Florida counties so that decisions can be better informed.
- The Health Impact Assessment, published in March 2014, is titled "Minimizing the Health Effects of Climate Change in the South Florida Region" and is available online at http://www.southeastfloridaclimatecompact.org/wp-content/uploads/2014/09/REVISED-HIA-Final-Report-101514-1.pdf.
- The public health implications of climate change will continue to be a key initiative of the next iteration of GreenPrint. For example, the potential implications of sea level rise on septic tanks will be a key area of focus.

E3. The County shall form an interdisciplinary, community-wide working group, including the media and institutions of higher education, which (a) focuses on public education and information regarding climate change and adaptation and (b) assesses public opinion regarding these subjects.	No	Yes	Partially

- The Office of Resilience is working through the Southeast Florida Regional Climate Change Compact (Compact) and institutions of higher education affiliated with the Florida Climate Institute to continually expand and enhance public education around climate change, its local impacts, and opportunities to lessen local vulnerabilities.
- The Office of Resilience, in partnership with the Compact partners, has worked with Yale University to assess public opinion regarding climate change.
- The Cultural Cognition Project at Yale Law School, led by Dr. Kahan has published two reports on public opinion and the communication of climate change in SE Florida.
- Their first report, released in 2013, measured climate-change risk perceptions and attitudes toward government action to protect Florida from sea level rise and extreme weather impacts. The study also explored how different forms of information were likely to affect support for the Compact. This study found residents of the Compact counties were strongly supportive of governmental efforts to protect SE Florida from sea level risk and adverse weather. This report provided valuable insights as to how to engage (rather than polarize) a diversity of community groups who were still unfamiliar with the Compact.
- The second report, published in November 2014, focused on characterizing the two distinct science communication environments. The Yale researchers found there was one environment that was widely supportive of collective use of best available science to protect the region from adverse impacts and was less influenced by the political identification of the respondent. This report provided recommendations in terms of how the Compact and its members communicate to the public and how to best use ambassadors to communicate the relevant information in a way that does not polarize listeners based on their personal cultural affiliations. One important conclusion of this research was that there was widespread divergence between local residents' professed belief in global climate change and their attitudes toward local climate impacts. Despite diversity in respondents' attitudes toward climate change, there was overwhelming consensus that local government officials should address the area's vulnerabilities to climate impacts through appropriate land use regulations and infrastructure improvements.

E4. The Task Force recommends that the County bring together all agencies and entities involved in economic development and planning in order to develop a unified and comprehensive response to the challenges of climate change, housing, economic development, and quality of life.	No	No	Partially

- Just as climate and the weather affect nearly all of our infrastructure and many aspects of our daily life, climate change will similarly touch upon our quality of life, economic development, housing and other systems in both predictable and unforeseen ways. It will likely be difficult to develop a fully unified and comprehensive response to all of these changes; however, several parallel initiatives have already begun to address these challenges.
- Through the Southeast Florida Regional Climate Change Compact the County and municipal agencies have been involved in developing and implementing the Regional Climate Action Plan.

• Several agencies within the County government have been involved and continue to be involved with implementing the County's sustainability plan, GreenPrint, which includes the County's Climate Action Plan.			
E5. The CCATF recommends the following in reference to green jobs and the economy:			
E5 1. The County should sign the Local Government Green Jobs Pledge (attached).	No	No	Yes
• BCC approved in 2009 the Mayor to sign the pledge via Resolution R-747-09 and the pledge was signed by Mayor Alvarez on September 2009. http://www.miamidade.gov/govaction/matter.asp?matter=091372&file=true&yearFolder=Y2009 • Creating green jobs is an initiative within the Vibrant Economy section of GreenPrint and the Office of Resilience is continuing to work closely with the Beacon Council to determine the most effective methods to promote sustainable business practices and job growth here locally. • The County is actively participating in the "One Community One Goal Program" target industry strategic plan (2012-2017). Part of this plan addresses creating of jobs, training and diversification of the local economy.			
E5 2. The County should establish a full Green-collar Jobs Task Force. This committee should promote green jobs and building a local green economy as follows: establish a local action plan for Miami-Dade County, identify goals and opportunities, and identify key partners, both governmental and NGO's, for sharing best practices and resources.	Partially	No	Partially
• Creating green jobs included in Initiative 100 within GreenPrint's Vibrant Economy goal area. • The Office of Resilience has proposed to the Economic Development Council to develop a white paper defining green jobs, how they will be tracked, exploring opportunities and progress made to date. • The Mayor has been an active proponent on the One Community One Goal program which promotes the development of jobs, including green jobs in our community. • Miami-Dade County is working closely with the Beacon Council which also promotes the development of green jobs, among many programs. • In addition, the County established the Chairman's Council for Prosperity Initiatives (CCPI) in 2015 to work on increasing employment opportunities, reducing barriers to homeownership, and reducing transportation costs.			
E6. The CCATF recommends that Miami-Dade County initiate efforts for a county-wide assessment of local public knowledge and opinion on climate change. The effort should: review and assess existing data on local public knowledge and opinion related to climate change (both mitigation and adaptation), and supplement available data through additional polling, attitude research, and other appropriate information gathering methods.	No	No	Yes
• Through the Southeast Florida Regional Climate Change Compact the County has been working with Yale University's Cultural Cognition Project to track and assess local public knowledge and opinions related to climate change. • As described previously in E.3 above, the two studies conducted by Yale specifically addressed residents' divergent opinions in relation to climate change mitigation (divided along cultural identity lines) and adaptation (widely supported regardless of personal political or cultural associations). • These efforts should be periodically updated and refined and the staff within the Office of Resilience has continued a dialogue with Yale University to identify priorities for future studies.			
E7. The CCATF recommends that Miami-Dade County take the following steps to facilitate a county-wide education outreach program on climate change to educate the general public: Step I - review and assess existing entities (such as internal County departments, Miami-Dade County Environmental Education Providers consortium, local colleges and universities, etc.) that could provide education on climate change; Step II - coordinate relevant entities identified through Step # I in order to share information gathered as a result of County-wide Assessment of Local Public Knowledge and Opinion on Climate Change (as outlined in #1); Step III - direct funding and resources to relevant entities identified through Step # I	No	No	Partially

- Several educational efforts on climate change have been implemented since the CCATF recommendations were drafted. Many organizations such as CLEO, Catalyst, 350.org, and the Southeast Florida Regional Climate Change Compact focus almost entirely on climate change education in the community and have been very effective at improving public awareness. The County works closely with these organizations and is dedicated to enhancing public outreach efforts around climate change as an initiative in the next version of GreenPrint.
- The Office of Resilience is very actively presenting to a variety of audiences about the impacts of climate change across the community.

Intergovernmental Affairs

Recommendations	GreenPrint	Regional Climate Action Plan	Implemented
F1. Conduct a survey of Miami-Dade County municipalities to gauge their level of knowledge and engagement in climate change issues, learn about their activities, and begin the creation of an intergovernmental, learning network that allows members to work with each other and the County on adaptation / mitigation issues. Once the survey has been completed, engage the cities in a dialogue about the survey findings and work of the Climate Change Advisory Task Force. This dialogue could happen in a number of ways including a meeting with the Miami-Dade League of Cities and/or a convening of Miami-Dade municipal and county leaders in a shared discussion of the issues and information exchange	No	Yes	Partially
• The County is working very closely with several municipalities on climate change, principally through the Municipal Workgroup of the Southeast Florida Regional Climate Change Compact. • An initial survey of municipalities was completed by the South Florida Regional Council and the League of Cities and the final report was published in December 2009. • The Miami-Dade League of Cities and the City/County Managers Association are also engaged in climate change efforts and are coordinating with the city. • A Municipal Green Initiatives Survey was also developed and administered by the Office of Resilience in partnership with the Miami-Dade League of Cities and was completed in 2015. This serves as a tool for benchmarking and promoting climate change and sustainability efforts and for facilitating future collaboration.			
F2. Convene local and state agencies and water and sewer utilities around a discussion of climate change and impacts on water quantity, quality, and availability and implications for infrastructure planning and investment.	Yes	Yes	Yes
• The impact of climate change on water quantity, quality, and availability is a primary focus area of the Southeast Florida Regional Climate Change Compact (Compact) and the Regional Climate Action Plan. • The science surrounding future changes in precipitation, evapotranspiration rates, salt water intrusion, and management of our regional water system are an area of intense research and discussion and strong working relationships exist between the relevant agencies and private entities interested in these resources. • Several substantial research efforts and infrastructure planning and investment programs have been completed by the South Florida Water Management District (District), the Water and Sewer Department (WASD), the U.S. Geological Survey (USGS), and the Storm Utility Design Division within the Regulatory and Economic Resources Department. Together these projects represent a collective investment in order of tens of millions of dollars. • These efforts are on-going and investments are increasing. Monitoring, preparing for, and predicting the impact changing climatic conditions will have on our water resources will continue to be a central focus of the District, RER, and the District's planning. • The County is collaborating with the Compact on a regional project led by the RAND Corporation, known as "Water Management and Adaptation Planning to Address Sea Level Rise and Climate Change in Southeast Florida". This project also includes the USGS, the District, WASD, the South Florida Regional Council, The Nature Conservancy (TNC), and other academic partners which cooperatively developed the scope of work, schedule, and action plan for the study. The project reviewed the region's most pressing water management issues, completed a gap analysis identifying which key decisions currently lack sufficient analytical support, and worked through a prioritization exercise to address those gaps. RAND has previous experience helping policy makers work though complex problems and decision-making processes and has provided research and facilitation support to stakeholders in the Mississippi Delta region. RAND will be able to provide support by helping to analyze and connect several existing models. The exact scope of the project is still being determined as of March 2016. It is anticipated that within the next 12-16 months this project will provide a decision support tool to help the region evaluate the economic implications of various water management regimes and infrastructure investments, as well as different land use patterns. A focus of this research will be integrating economic models to identify ways that the economic exposure of regional assets to storms and flooding risks can be minimized. • These efforts are complimented by a host of other studies conducted by academics through the Florida Climate Institute and other federal, state, and local government entities.			

F3. Convene a broader group of local and state agencies around a discussion of their activities related to climate change. Agencies / groups would include, but not be limited to, DOT 4 & 6, DEP, SFWMD, DCA, Health Planning Agencies, Ecosystem Restoration Task Force, etc. In this conversation we will gain a better understanding if there are issues or concerns that we need to be aware of and identify opportunities for collaboration moving forward.	No	Yes	Partially
• The Southeast Florida Regional Climate Change Compact (Compact) has become a very effective forum for discussing climate change activities with municipalities and other stakeholders in the region. • Through the Compact the County is able to work closely with agencies such as the South Florida Water Management District, The Nature Conservancy, The South Florida Regional Council, and public health organizations. • The Institute for Sustainable Communities is currently providing the facilitation and financial support for the Compact which allows the Compact to convene stakeholder groups and facilitate discussions around different climate topics as needed. • For example, the Compact's Shoreline Resilience Work Group is convening representatives from several counties, municipalities, local non-profits, academic institutions, and other regional stakeholders and effectively directing this collaboration to identify potential climate adaptation/ecosystem restoration projects and prioritizing their implementation across the region. This regional collaboration enhances leveraging of limited resources, facilitating advancement of projects.			
F4. Develop a County internet website with up-to-date information about the work of the Miami-Dade Board of County Commissioners, the CCATF, and municipalities with links to information and best practices related to climate change, adaptation and mitigation efforts by individuals and organizations.	No	No	Partially
• The County created a new, user-friendly website (http://www.miamidade.gov/green) highlighting the County's work on sustainability and climate change issues from an enterprise-wide perspective. This page contains information on climate change, energy, recycling, water resources, green government, green buildings and development, transportation, and tips for living green. • The Southeast Florida Regional Climate Change Compact website (http://www.southeastfloridaclimatecompact.org) contains an extensive library of best practices, case studies of adaptation and mitigation efforts underway, links to other national and international efforts as well as a calendar and links to up-coming events related to climate change. This website provides a valuable resource for municipal officials and the region overall.			
F5. Work with the region's children's museums and foundations to create and fund educational exhibits on climate change, green technologies, clean cities, etc.	No	No	Partially
• The County's Office of Resilience is working with local universities, foundations, and community groups to develop and promote climate change related educational materials and events. • In 2014, the Coral Gables Museum and the Florida International School of Architecture prepared an exhibit called "Miami 2100 Envisioning a Resilient Second Century" about planning for climate change and sea level rise in Greater Miami.			
F6. Identify and develop educational materials that can be incorporated into a Miami-Dade Public Schools curriculum on climate change, the environment, and sustainability. The materials should be shared with other educational institutions to facilitate the dissemination of information to Miami-Dade residents.	No	No	Yes
• Miami-Dade County Public Schools (MDCPS) has created a sustainability office. • Sustainability and climate change has been incorporated into Dream in Green's (DIG) Green Schools Challenge program. As part of the Green Schools Challenge specifically, primary and secondary participating schools receive a DIG Guidebook tailored to their level that includes a number of activities for classroom implementation. This provides the opportunity for students to learn about energy and climate change, waste reduction and recycling, water conservation, green transportation, green buildings and green careers. Each activity is closely aligned with the MDCPS Math and Science Pacing Guide and provides students with opportunities to conduct research, analyze and solve problems, and think of solutions to environmental challenges.			

• The first large-scale 'green' program launched by MDCPS was the energy conservation rebate program which was announced in 2009. The primary goals of the initiative were: to reduce energy consumption by an average of 10 to 15 percent from year to year; to achieve significant cost efficiencies for the District annually and positively impact the carbon footprint; and to reward school sites that beat their energy target for their efficiency and stewardship by returning to them a significant percent of any 'over and above' savings. • The Miami-Dade School District has been able to achieve an energy consumption reduction (2009-2012) of approximately 50 million KWH and conservation related cost savings of over $10 million for that period. • The program has greatly elevated the importance and immediate benefits of environmental consciousness and stewardship at the individual school level. The program has been suspended the 2015-2016 academic year due to the extensive amount of renovation work going on at schools in Miami-Dade County as part of the bond program. The energy usage database and targets are being recalibrated to obtain new baselines.			
F7. The CCATF recommends that Miami-Dade County develop as quickly as possible an Action Plan identifying the "who, what, when, where, and how" that will further the objectives identified in the Board of County Commissioners' December 1, 2009 resolution in support of the Southeast Florida Regional Climate Change Compact (Compact) and related activities. Taking immediate action to further the activities highlighted in the Compact and BOCC Resolution will help elevate the importance of mitigating greenhouse gas emissions and adapting to the potential impacts of climate change in Miami-Dade County and the Region. The CCATF recommends that these actions be taken well in advance of the 2010 Climate Summit to allow for stakeholder participation and regional discussion.			
F7 1. 1. Common measures of success and benchmarks;	Yes	Yes	Partially
• The Compact has not formally adopted common measures of success; however, by a number of measures the Compact is exceeding the initial expectations. For example the Compact was recognized as a Climate Action Champion by the Federal Government. • In the spring of 2015 President Obama recognized the work of the Compact saying, "Five years ago, local leaders…Republicans and Democrats, formed the bipartisan Compact – an agreement to work together to fight climate change. And it's become a model not just for the country, but for the world." • The Compact has also won awards from ICLEI and the National Association of Counties.			
F7 2. Acknowledgement of the need to create uniform standards and regulations to minimize confusion and business costs associated with conducting business in different parts of the region and to encourage business activity and competition; and	No	Yes	Partially
• Through the Compact the county and municipal governments are able to coordinate and harmonize policy responses to climate change and therefore increase the uniformity of standards and regulations and create a more predictable regulatory environment. • One example of this type of coordination is the development of the Unified Sea Level Rise Projection for Southeast Florida, which increases the predictability of the regulatory environment and future standards. • Another example of this is the Go Solar Florida Initiative funded by a grant from the U.S. Department of Energy. Go Solar is a consortium that received grant funding from the U.S. Department of Energy and is comprised of Alachua, Broward, Miami-Dade, Monroe, Orange, and St. Lucie Counties as well as the City of Venice, Florida Atlantic University, and the Florida Solar Energy Center. The goals of this consortium are to standardize permitting procedures for solar photovoltaic rooftop systems in order to reduce typical permitting times and lower costs, standardization of design, enhancing the availability of financing options, and expanding uniform net metering and interconnection standards.			
F7 3. A comprehensive outreach strategy that will engage the wide range of stakeholders, acknowledge differing views, and work to reach consensus on a shared course of action moving into the future.	No	Yes	Partially
• As described above (recommendation E3) the Compact has been extensively involved in engaging a wide range of stakeholders and has worked to broadly educate regional leaders on climate change issues. • The development of the Regional Climate Action Plan was completed with the sustained input of many diverse groups. The Plan was written with the help of representatives from numerous federal, state, and county agency partners as well as representatives from academia, non-profits, and the private sector. This process drew on the deep diversity of expertise with representatives from design consultants, hydrologists, planners, environmental scientists, transportation planners, engineers, architects, and community based organizations. These stakeholders brainstormed issues including the scope of the Regional Climate Action Plan, criteria to select priority issues, defining regional versus local efforts, areas of expertise needed in			

issue-specific work groups, and how best to separate issue areas into groupings. This Plan has effectively created a shared course of action for the Compact county and municipal governments.			
F8. The CCATF recommends that the County collaborate with and encourage its regional partners in the development of uniform message on climate change as part of a regional outreach and education campaign. Such a campaign should include the use of high profile media and other appropriate outlets to raise general awareness of climate change in Southeast Florida. This regional message on climate change can be supplemented with county-specific information as needed to educate Miami-Dade County residents on the potential impacts of climate change and make the connection between mitigation, adaptation, and policy changes in the County's climate change and sustainability initiatives.	No	Yes	Partially
• The Compact and its County and municipal partners have worked extensively to develop a uniform message on climate change and engage decision makers, the business community and the general public around climate change. • Recognizing that significantly more can be done in this regard to raise the visibility of the issue and improve the communication surrounding the solutions, the Compact has applied for grant funding to support a new full-time position to work on education and outreach.			
F9. The Office of Resilience, in partnership with the Miami-Dade County League of Cities, should develop a local government outreach program to raise awareness about climate change science and potential climate change impacts on Miami-Dade County and possible mitigation and adaptation strategies. Local governments should be encouraged to identify a point of contact who will serve as an agency liaison to the County in issues of climate change and sustainability.	No	Yes	Partially
• The Office of Resilience coordinates with and participates in activities of the Municipal Workgroup which was created in 2015 by the Southeast Florida Regional Climate Change Compact. • While one aim of the Municipal Workgroup is to raise awareness about climate change science and its impacts, the primary purpose of the group is to facilitate the implementation of the Regional Climate Action Plan. • The Municipal Workgroup has created a peer-to-peer network where best practices, common challenges, and information can be shared between colleagues to accelerate the implementation of solutions. • The municipal workgroup meets regionally 3-4 times a year and hosts periodic workshops on climate change and other related topics pertinent to implementation of the Regional Climate Action Plan.			
F10. To enhance coordination between the County and its municipalities and make it easier to incorporate "green technologies" in both residential and commercial settings, the CCATF recommends the following:			
F10 1. To enhance understanding among code officials and design professionals of what green technologies and innovative approaches are currently allowed in the code, request that the Florida Building Code Commission consider a statewide augmentation of continuing education requirements for Engineers and Architects.	Partially	No	Partially
• Through the award of the Energy Efficiency and Conservation Block Grant (EECBG) the County was able to review building and zoning codes and permitting process in order to draft recommendations for changes that will foster green building design and remodeling, including renewable installations. This report is published on the County's website http://www.miamidade.gov/green/library/diagnosis-and-recommendations-2011-21-07.pdf. • The County also has monthly meetings with the building officials and Office of Resilience staff have presented at some of these meetings. Other speakers have also presented on innovative technologies, best practices, and other sustainability topics. • As part of GreenPrint, the County adopted a goal to work with local Board of Rules and Appeals and other stakeholders to maintain the Florida Energy Code and to better define and set forth responsibilities of each trade in order to improve compliance with and enforcement of the Code.			

• Every three years, the County's Office of Resilience and Code Administrative Division work together to obtain scholarship funding from ICLEI - Local Governments for Sustainability to allow building officials to attend U.S. International Code Council Final Action Hearings that decide the energy code for a majority of the United States. At the Final Action Hearings, County staff serve as voting delegates to influence national building and other code policy, which in turn influences state and local codes. The conference takes place only every three years.			
F10 2. Request that the Office of Code Compliance develop checklists that can be used as guidelines for Building Officials and Design Professionals to further the uniform application of codes.	No	No	Partially
• The Office of Building Code Compliance developed a "Renewable Energy Uniform Permit Submittal Guidelines" and checklist in May of 2009. The guidelines can be found at https://www.miamidade.gov/building/library/memos/interpretations/2009-05-28-renewable-energy.pdf. • With the GoSolar program the County is working on e-permitting system for solar PV installations. • A form was created by BORA committee for improving compliance with The Energy Code. • GreenPrint includes an initiative to develop a report which provides recommendations on ways to increase compliance with Energy Code. The report was completed and made available to all Building Officials, please see above B17.2. • The Board of Rules and Appeals (BORA) issued recommendations which are mandatory but allow building officials discretion when complying with the recommendations. The recommendations were distributed to Building Officials in 2014.			
F11 The CCATF recommends that the Board of County Commissioners encourage the convening of a regional discussion around the opportunities and challenges posed to the Region's businesses and economy by potential climate change related impacts. Key partners in a regional discussion include, but are not limited to, the region's economic development organizations, county economic development officials, Chambers of Commerce, key business organizations representing existing and emerging industries in Southeast Florida, Enterprise Florida, and the South Florida and Treasure Coast Regional Planning Councils.	No	No	Yes
• The Office of Resilience is working closely with the Beacon Council, the Building Owners and Managers Association, the South Florida Regional Council, and the Miami Chamber of Commerce to begin discussions with the region's business leaders about increasing the region's economic resilience and preparedness for climate change and sea level rise. • These conversations have begun through a series of targeted discussions with industry leaders, including hosting a series of roundtable discussions related to the insurance implications of climate change and sea level rise and the long-term risk management strategies that could be implemented in Miami-Dade County. • The Office of Resilience is also helping design educational tracks at large conferences and speaking regularly at meetings about climate change. • The County is fully engaged in the Beacon Council's "One Community One Goal" initiative which aligns well with many of the County's priorities and initiatives. • The County is formally participating in the Southeast Florida Regional Climate Change Compact.			