

**Broward County**  
**Under 2 MOU Appendix**

**Introduction and Background**

Broward County proposes to meet the goals of the Under2 MOU through joint activities of the Southeast Florida Regional Climate Change Compact<sup>1</sup> (“Compact”), the regional partnership led by Broward, Monroe, Miami-Dade, and Palm Beach counties to advance climate mitigation and adaptation strategies, and actions specific to Broward County consistent with the Compact.

The Compact was formed under a written agreement adopted by the four county commissions in late 2009/early 2010. In agreeing to work together under the Compact, the four counties jointly recognized the vulnerability of the Southeast Florida region to climate change and saw the benefits of coordination and collaboration to reduce emissions and adapt to climate impacts.

The original Compact agreement called for the four counties to:

- **Meet annually in Regional Climate Leadership Summits to mark progress and identify emerging issues.** The Compact has held a Summit with hundreds of attendees every year since 2009 (except for 2016, due to Hurricane Matthew).
- **Develop annual climate/energy legislative programs and jointly advocate for state and federal policies and funding.** The Compact has developed state and federal legislative programs each year since 2010 and engaged in joint advocacy to promote issues of importance to the region. The Compact’s most notable success was a state law allowing local governments to create “Adaptation Action Areas” under their comprehensive plans in order to identify areas at risk of flooding or other impacts and focus attention and resources on improvements to make those areas resilient.
- **Develop regional technical tools to support planning efforts.** With the support of a variety of local, regional, state and federal agencies (including NOAA, USACE, USGS, and EPA), the Compact developed a technical foundation for regional climate action between 2010 and 2012, including a unified sea level rise projection,<sup>2</sup> regional greenhouse gas inventory,<sup>3</sup> and analysis of regional vulnerability under one-, two-, and three-foot sea level rise scenarios.<sup>4</sup> The Unified Sea Level Rise Projection was updated in 2015 and will be updated periodically (approximately every three to five years) based upon current science.
- **Create a Regional Climate Action Plan (RCAP).** The RCAP serves as the strategic framework for reducing greenhouse gas (GHG) emissions and adapting to the effects of climate change in the region. The initial RCAP, published in 2012, features 110 recommendations for implementation during an initial five-year period (2012-2017). A revision of the RCAP (colloquially known as “RCAP 2.0”), to coordinate the work of the Compact during the 2017-2022 period, is currently underway. This Appendix may be revised accordingly following the release of the updated RCAP.

Compact activities are coordinated and led by a Staff Steering Committee (SSC) consisting of one to two representatives from each county, one municipal representative from each county, and non-voting

<sup>1</sup> <http://www.southeastfloridacimatecompact.org/>

<sup>2</sup> <http://www.southeastfloridacimatecompact.org/wp-content/uploads/2014/09/sea-level-rise.pdf>

<sup>3</sup> <http://www.southeastfloridacimatecompact.org/wp-content/uploads/2014/09/ghg-inventory.pdf>

<sup>4</sup> <http://www.southeastfloridacimatecompact.org/wp-content/uploads/2014/09/vulnerability-assessment.pdf>

representatives of the South Florida Water Management District, South Florida Regional Planning Council, and Nature Conservancy. The Institute for Sustainable Communities coordinates and facilitates the SSC process and provides central staffing for the Compact.

In addition, in October 2014, the Compact signed a Partnership Agreement with the Florida Climate Institute and local universities including Florida Atlantic University, Florida International University, and the University of Miami, to collaborate on climate research relevant to the Compact region.

### 2030 Interim Goal

The Compact Counties have established an interim 2030 GHG reduction goal of 30 percent below 1990 levels.

Several Compact Counties had previously established individual GHG reduction goals, which are broadly consistent with the 2030 and 2050 goals established for Under2 Coalition participation:

- Broward County has committed itself through several different instruments to GHG emissions reduction goals. Most recently, the Broward County Climate Change Action Plan,<sup>5</sup> adopted in 2015, reaffirmed county-wide goals of a 10 percent reduction in GHG emissions below 1997 levels by 2020 and an 80 percent reduction below 2010 levels by 2050.
- Miami-Dade County, in its 2010 Greenprint sustainability plan,<sup>6</sup> set a goal of reducing community-wide GHG emissions by 10 percent by 2015, working towards an 80 percent reduction by 2050.
- Monroe County established a 20 percent GHG emissions reduction from 2005 levels by 2020 through a Commission resolution in 2010, which was reaffirmed in the 2013 Monroe County Community Climate Change Action Plan.<sup>7</sup>

Although Palm Beach County has not yet set a county GHG emission-reduction goal, 74 percent of regional emissions (as of 2009) originate in Broward and Miami-Dade counties. The expressed commitments by three of the four counties, representing 76 percent of regional emissions, are in place for emission reduction targets on par with the roughly two percent per annum reduction required to meet the 2030 interim goal.

### Compact Efforts Addressing Greenhouse Gas Emissions from Energy

- Many property owners in the Compact region are served by Property Assessed Clean Energy programs. As authorized by local governments, PACE programs provide third-party financing for energy efficiency, renewable energy, and storm resistance improvements. Most property owners in Southeast Florida who opt into PACE programs use the financing for storm resistance improvements (such as stronger roofs and impact windows), but these can produce some energy-efficiency gains.
  - Broward County has launched a county-wide program featuring four PACE providers, while certain cities have their own independently-established programs.

<sup>5</sup> <http://www.broward.org/NaturalResources/ClimateChange/Documents/BrowardCAPReport2015.pdf>

<sup>6</sup> <http://www.miamidade.gov/GreenPrint/pdf/plan.pdf>

<sup>7</sup> <http://www.monroecounty-fl.gov/DocumentCenter/View/5971>

- Miami-Dade County has established a PACE program for its unincorporated area (where half the county population lives) with two authorized providers and two more in negotiations. There are also PACE programs in many Miami-Dade municipalities.
- Palm Beach County recently launched its PACE program with four providers, for unincorporated areas and cities which do not have their own PACE programs.
- Monroe County is exploring its options.
- In addition, as noted above, a number of municipalities within the Compact region have created their own PACE programs.
- The region received a significant allocation of Qualified Energy Conservation Bonds, over \$56 million, following authorization of the program by the Florida Legislature in 2014. Shortly thereafter, the Compact received a US Department of Energy technical assistance award for consulting services from the Energy Programs Consortium in support of QECB program development. Miami-Dade County has elected to use its QECB allocation for the purchase of electric buses, and Broward County is exploring a commercial energy-efficiency and renewable-energy loan program for its allocation.
- The Compact conducted RCAP implementation workshops on commercial solar energy projects and on energy efficient public buildings.

#### Compact Efforts Addressing Greenhouse Gas Emissions from Transportation

- Federal Highway Administration Climate Resilience Pilot: The Broward Metropolitan Planning Organization received a \$300,000 award from the FHWA in March 2013 for a pilot project<sup>8</sup> in the four-county Compact region to develop tools for integrating climate change adaptation goals into the transportation decision-making process and provide a model of climate change adaptation for transportation agencies.
- Clean Cities Community Readiness and Planning for Electric Vehicles and Charging Infrastructure Grant: The Southeast Florida Electric Vehicle and Infrastructure Alliance, involving the four Compact counties and many other regional stakeholders, completed the *Getting Southeast Florida Plug-In Ready*<sup>9</sup> report in 2011 thanks to a DOE grant. The plan included detailed study of a proposed EV car-sharing plan along the US 1 corridor in Miami-Dade County.
- In conjunction with the Southeast Florida Clean Cities Coalition, the Compact Counties convened a working group in 2017 to explore possible coordination of project applications for funding under Florida's portion of the Volkswagen diesel emissions settlement. Representatives of the Compact Counties are also coordinating with Electrify America, the electric vehicle charging infrastructure corporation capitalized through the VW settlement, on its efforts to expand the EV charging network in southeast Florida.
- The Compact conducted two RCAP implementation workshops which covered transportation planning: one was part of a broader look at a variety of climate adaptation needs, and the other focused on transportation system vulnerability, electric vehicles, Complete Streets/Vision Zero, and other initiatives.

#### Compact Efforts Addressing Climate Adaptation, Preparedness, and Resilience

- Resilient Redesign. In 2014, with the assistance of the Miami Consulate of the Kingdom of the Netherlands, the Compact convened Southeast Florida Resilient Redesign, an intensive four-day

<sup>8</sup> <http://www.browardmpo.org/userfiles/files/ClimateChange.pdf>

<sup>9</sup> [http://www.floridagoldcoastcleancities.com/Grant\\_Opportunities.html](http://www.floridagoldcoastcleancities.com/Grant_Opportunities.html)

workshop to develop innovative design strategies for three archetypal southeast Florida land use scenarios which could serve as models of resilience throughout the region. Following the success of the 2014 exercise, a second Resilient Redesign workshop was held in 2015—this time organized with the assistance of four Florida universities—for three new communities. In 2016, an expert charrette leader, Sonia Chao of the University of Miami, led the third Resilient Redesign workshop, which brought the exercise and outcome to an even higher level. (For example, select students from graduate programs at the partner universities were chosen to be designers and renderers, among other roles.). Compact partners intend to follow up on many of the ideas developed in these workshops and to hold additional Resilient Redesign events on a roughly annual basis.

- In 2013, Compact partners established a Shoreline Resilience Working Group<sup>10</sup> to catalogue existing nature-based coastal resiliency projects in southeast Florida and to identify areas for future projects.
- The four Compact counties were key participants in the Seven50 Initiative<sup>11</sup> (“seven counties, 50 years”) funded by the Partnership for Sustainable Communities. Due to the success of the four-county Climate Compact, a Climate Resilience element was included in the Seven50 Plan along with the six other required livability principles.
- One notable success of the Compact’s public policy advocacy was legislation adopted by the Florida Legislature in 2011 creating an optional “Adaptation Action Area” (AAA) comprehensive plan designation for areas vulnerable to climate impacts, including sea level rise, to serve as a planning tool and encourage technical assistance and funding opportunities. In 2013-2014 a NOAA grant enabled the Florida Department of Economic Opportunity to fund a pilot program<sup>12</sup> by the South Florida Regional Planning Council, Broward County, and Fort Lauderdale to plan and implement AAAs in Fort Lauderdale. Other jurisdictions, including Broward County, have also designated Adaptation Action Areas.
- The Compact engaged the Florida Institute for Health Innovations (FIHI) to conduct a health impact assessment<sup>13</sup> of the RCAP in 2013-2014, providing six recommendations on how the Compact partners could incorporate health impacts related to sea level rise and heat waves into the RCAP more fully by prioritizing 53 of the 110 recommendations. The Kresge Foundation is now supporting a related effort by FIHI, the creation of a health vulnerability assessment for the Compact region to identify the populations most at risk in a changing climate, especially areas with low socioeconomic, low educational attainment, and high health risk factors.

#### County-Level Projects in Support of the Compact

In addition to their joint work, the Compact Counties undertake individual projects and programs which advance recommendations of the Regional Climate Action Plan and their own individual climate and sustainability plans. Often, the idea generated in one county then spreads to one or more of the other Compact Counties.

For example, during 2013 and 2014, all four Compact counties amended their comprehensive plans to include climate considerations, through the creation of a separate climate elements and/or the insertion

<sup>10</sup> <http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/florida/explore/nature-based-coastal-defenses-in-southeast-florida.xml>

<sup>11</sup> <http://www.seven50.org/>

<sup>12</sup> <http://www.southeastfloridacimatecompact.org/wp-content/uploads/2014/09/final-report-aaa.pdf>

<sup>13</sup> <http://www.southeastfloridacimatecompact.org/wp-content/uploads/2014/09/rcap-hia-3-18-14-1-small.pdf>

of climate issues into relevant sections. In addition, all four counties have incorporated climate impacts into their Local Hazard Mitigation Plans.

#### Additional Examples of County-Level Projects

##### *Broward County*

- In May 2017, the County Commission unanimously approved the creation of a future conditions map series in the Broward County Code of Ordinances to address anticipated changes in environmental conditions brought on by climate change through infrastructure design and project permitting, and adopted a future conditions wet-season average groundwater elevation map. The map strengthens the requirements for drainage and surface water management systems to ensure they will function even with the additional sea level rise expected by 2060. Broward County's 100-Year Flood Elevation Map, one of the key regional tools used to establish flood elevations for buildings and structures in Broward County, will be updated next.
- Broward County, with funding from NOAA and the Florida Coastal Zone Management Grant, conducted localized vulnerability analyses<sup>14</sup> for each of its coastal and tidally-influenced municipalities—thirteen in all.
- Broward County led a consortium of local governments (including Miami-Dade) and other stakeholders which received a \$2.3 million DOE Rooftop Solar Challenge SunShot grant for Go SOLAR Florida,<sup>15</sup> an initiative to reduce the soft costs of rooftop solar photovoltaic systems and spark wider adoption of solar energy in Florida by streamlining solar permitting and installation processes and expanding financing opportunities.

##### *Monroe County*

- Monroe County, considered to be the canary in the coal mine due to its low-lying geography and 120 miles of islands, conducted an inundation analysis for several of its neighborhoods, using the Compact's sea level rise projections. Town-hall public meetings were held where the Results of the analysis were presented at town-hall meetings to residents and business owners, who provided input on various adaptation measures. A cost-benefit analysis was performed for each option, with residents and County staff discussing the various pros and cons of each alternative.
- Monroe County assessed the vulnerability of two neighborhood tidal flooding sites in Key Largo and Big Pine Key. The County addressed the flooding impacts in these two communities, focused on road and stormwater improvements, and developed alternatives for consideration (complete with cost estimates). A standard method was developed to evaluate the impacts for road elevation projects. Finally, the County created an interim policy for road improvement projects countywide, considering future flood impacts. This standard specifies that, on average, roads will not be allowed to flood more than seven days per year.
- However, before Monroe County moves forward with a county-wide road elevation project, the County must collect more accurate elevation and engineering data. Monroe has begun a project to obtain mobile elevation data for all County roads and also first-floor elevations of all County facilities. Mobile elevation data is more accurate than elevation data obtained by aerial methods.

<sup>14</sup> <http://www.broward.org/NaturalResources/ClimateChange/Pages/ClimateResilience.aspx>

<sup>15</sup> <http://www.gosolarflorida.org/>

*Miami-Dade County*

- In 2013, the Miami-Dade County Commission established a Sea Level Rise Task Force,<sup>16</sup> which issued a series of recommendations in July 2014. Concurrently, the County Commission ordered that sea level rise be addressed in all plans, designs, and construction projects it considers.
- Miami-Dade County became a member of the City Energy Project in late 2016. The City Energy Project, a joint venture of the Natural Resources Defense Council and the Institute for Market Transformation, funded by a partnership with Bloomberg Philanthropies, the Doris Duke Charitable Foundation, and the Kresge Foundation, works with member jurisdictions to develop customized plans to reduce energy consumption in the building sector.
- 100 Resilient Cities. In collaboration with the City of Miami and City of Miami Beach, Miami-Dade County, joined the Rockefeller Foundation's 100 Resilient Cities (100RC) program in 2016. The three jurisdictions are working with each other, Miami-Dade municipalities, regional partners, other 100RC communities, and 100RC private, nonprofit, and academic partners to develop a robust joint resilience strategy.

*Palm Beach County*

- Palm Beach County engaged in extensive outreach with its municipalities around the Regional Climate Action Plan, presenting to and meeting with officials from many cities, prior to the County Commission's approval of the RCAP in early 2014. This extensive municipal outreach effort later informed the development of municipal engagement by the Compact Staff Steering Committee, including the establishment of a Compact Municipal Working Group.
- In keeping with Palm Beach County's commitment to increasing its climate resilience and reducing its GHG emissions, the County, along with the City of Delray Beach, City of Lake Worth, Town of Lantana, and the City of West Palm Beach, was successful in a joint application to host a SolSmart Advisor who will work with the County and municipalities to address solar soft costs (e.g. planning and zoning, permitting financing, etc.), foster local solar market growth, and individually obtain SolSmart Community designations.

<sup>16</sup> <http://www.miamidade.gov/planning/boards-sea-level-rise.asp>