

**SOUTHEAST FLORIDA  
REGIONAL COMPACT  
CLIMATE  
CHANGE**



# RCAP IMPLEMENTATION GUIDANCE SERIES



## **Integrating the Unified Sea Level Rise Projection into Local Plans**

Implementation support to  
the Compact is provided by:



INSTITUTE FOR  
Sustainable  
Communities

With funding  
support from: THE KRESGE FOUNDATION

## Table of Contents

<b>I.</b>	<b>Acknowledgments</b> .....	<b>3</b>
<b>II.</b>	<b>Introduction: Sea Level Rise in Planning</b> .....	<b>4</b>
	The Unified Sea Level Rise Projections.....	5
	Figure 1: Unified Sea Level Rise Projections graph.....	6
	Applying the Unified Sea Level Rise Projections .....	6
<b>III.</b>	<b>References to the Unified Projections in Local Plans</b> .....	<b>7</b>
	Comprehensive Plans .....	7
	Narrative .....	8
	Policy Language.....	8
	Embedded Unified Projections Graph .....	9
	Sector Plans .....	9
	Local Hazard Mitigation Strategies .....	10
	Water Supply Plans.....	10
	Stormwater Plans .....	11
<b>IV.</b>	<b>References to the Unified Projections Beyond Planning Documents</b> .....	<b>12</b>
	Formal Resolutions or Statements.....	12
	Application in Implementation.....	12
<b>V.</b>	<b>Conclusions</b> .....	<b>16</b>
<b>VI.</b>	<b>VII. Appendix</b> .....	<b>17</b>
	Local Plans that Reference the Unified Sea Level Rise Projections .....	17
	Local Plans that Consider Sea Level Rise .....	18
	Municipalities with Resolutions Adopting the Unified Projections .....	20

## Acknowledgments

---

This publication of the **Southeast Florida Regional Climate Change Compact (The Compact)** is an addendum to the [Regional Climate Action Plan \(RCAP\) Workshop #10: “Essential Tools: Integrating the Southeast Florida Sea Level Rise Projections into Community Planning”](#) held on July 14, 2016. This workshop featured presentations and discussions on the utility of the [Southeast Florida Sea Level Rise Projections](#), and how to integrate them into short- and long-term planning. We thank the numerous workshop speakers and attendees for their perspectives.

This document was written by the Institute for Sustainable Communities, which provides implementation support to the Southeast Florida Regional Climate Change Compact.

## Introduction: Sea Level Rise in Planning

---

The Southeast Florida region is uniquely vulnerable to sea level rise due to its low elevation, bounded geography and high population density. Communities in Southeast Florida have already experienced the effects of rapid sea level rise, primarily caused by climate change. As air and sea temperatures continue to rise, thermal expansion of the sea and the increasing rate of polar ice melt will cause the rate of sea level rise to increase over time. Therefore, integrating future sea level rise projections into municipal and county planning in Southeast Florida is critical to long-term livability and success of the region.

It is a priority to integrate sea level rise into planning in Southeast Florida, as well as a number of other communities statewide. Building on the experience of local efforts around Florida, state law increasingly reflects best practices. In May of 2015, Florida Governor Rick Scott signed into law [Senate Bill 1094](#), amending provisions of the state comprehensive planning laws ([Florida Statute 163.3178\(2\)\(f\)](#)) to include the mandatory integration of sea level rise into local government comprehensive planning. For those local governments required to have a coastal management element in their comprehensive plan, the redevelopment component now requires them to “eliminate inappropriate and unsafe development in coastal areas” by:

*“Includ[ing] development and redevelopment principles, strategies, and engineering solutions that reduce the flood risk in coastal areas which results from high-tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea-level rise.”*

- SB 1094 (emphasis added)

Many local government bodies have already started planning for sea level rise impacts. Increasingly, county and municipal governments in Southeast Florida are adding language about climate change impacts into comprehensive and sector plans. They are also including the directive to “consider” sea level rise in decision making. Some local governments in Florida have developed specific actions or explicit policies to prepare for projected sea level rise. For a summary of sea level rise adaptation language included in local government plans statewide, refer to Florida Sea Grant’s [Summary and Commentary on Sea-Level Rise Adaptation Language in Florida Local Government Comprehensive Plans and Ordinances](#) and Appendix B. This draft report, while not an exhaustive list of all policy references, captures the most significant inclusions of sea level rise into local plans since the passing of SB 1094.

As an increasing number of local governments begin to independently plan for sea level rise in compliance with state law, it is critical that planners have access to and use the best available information.

## The Unified Sea Level Rise Projections

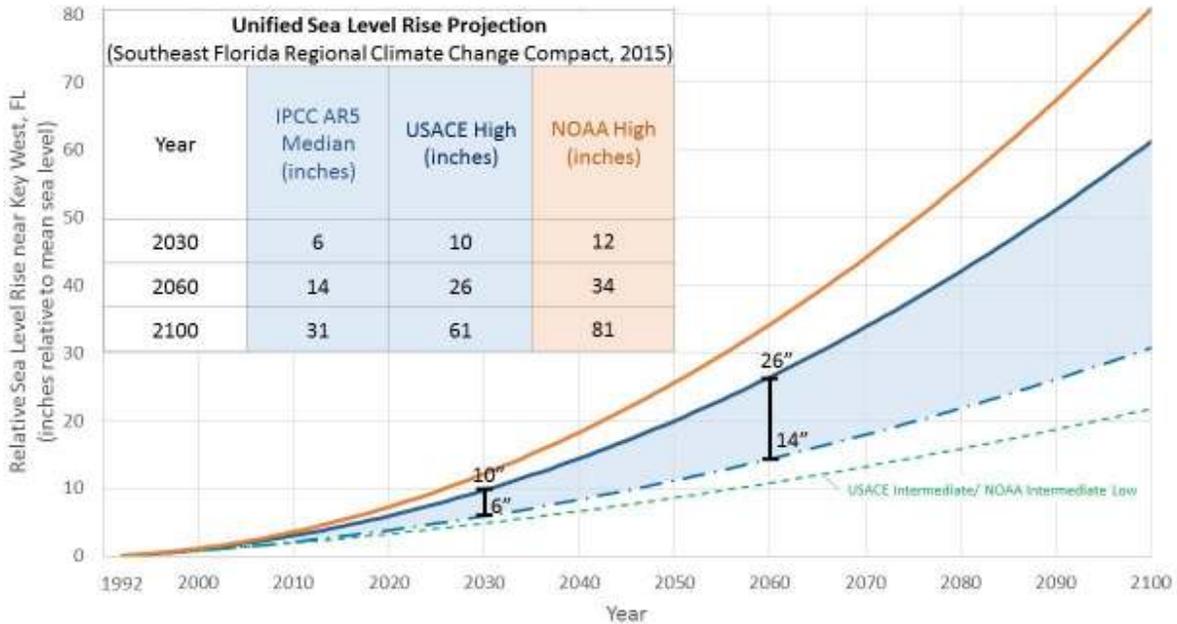
In order to better coordinate local planning, the [Southeast Florida Regional Climate Change Compact](#) (the Compact) developed unified regional sea level rise projections for Southeast Florida. The [Unified Sea Level Rise Projection](#) (unified projections) were originally prepared in 2011 by the Compact's Sea Level Rise Technical Advisory Group, comprised of representatives from county governments, United States Army Corps of Engineers (USACE), National Oceanic and Atmospheric Association (NOAA), United States Geological Survey (USGS), the South Florida Water Management District, and climate scientists from Florida Atlantic University and University of Miami.

The unified projections are updated periodically to reflect new global projections and the peer-reviewed scientific literature. The current version of the *Unified Sea Level Rise Projection*, updated in 2015, changes the previous baseline sea level 2010 to the 1992 level, syncing the projection data with local tide station data and making it easier to calculate local water surface elevations. It also extends the projection time scale from 2060 to 2100.

The unified projections include three potential sea level rise curves: the NOAA High Curve, the USACE High Curve, and the Intergovernmental Panel on Climate Change (IPCC) AR5 RCP8.5 median curve. These global mean sea level rise curves have been adapted to reflect the regional acceleration of sea level rise observed specifically in Southeast Florida. The Sea Level Rise Technical Advisory Group recommends using different curves depending the level of risk and lifespan of the projects or development. To use one general range of projections for most projects, the Technical Advisory Group recommends the span between the the lowest projection (IPCC AR5 RCP8.5) and the middle projection (USACE High Curve):

- 1) short-term, by 2030, sea level is projected to rise 6 to 10 inches above 1992 mean sea level
- 2) medium-term, by 2060, sea level is projected to rise 14 to 34 inches above 1992 mean sea level
- 3) long-term, by 2100, sea level is projected to rise 31 to 81 inches above 1992 mean sea level

**Figure 1: Unified Sea Level Rise Projections graph**



### Applying the Unified Sea Level Rise Projections

The Southeast Florida Regional Climate Change Compact views the Unified Sea Level Projection as the most relevant and best available data on sea level rise timelines for the four-county region, and encourages municipalities and counties to integrate these projections directly into their plans.

Florida State law requires that comprehensive plans use “relevant and appropriate data,” according to Statute 163.3177(1)(f):

*“All mandatory and optional elements of the comprehensive plan and plan amendments must be based upon relevant and appropriate data and an analysis by the local government that may include, but not be limited to, surveys, studies, community goals and vision, and other data available at the time of adoption of the comprehensive plan or plan amendment.”*

Relevant data that may have been used to write the plan is not considered formally adopted and embedded in the plan unless it is included directly in the planning document:

*“Surveys, studies, and data utilized in the preparation of the comprehensive plan may not be deemed a part of the comprehensive plan unless adopted as a part of it.”*

- Florida Statute (163.3177(1)(f)1

Additionally, coordination and alignment between local comprehensive planning efforts is an explicit goal of Florida state law:

*“Coordination of the local comprehensive plan with the comprehensive plans of adjacent municipalities, the county, adjacent counties, or the region; with the appropriate water management district’s regional water supply plans approved pursuant to s. 373.709; and with adopted rules pertaining to designated areas of critical state concern must be a major objective of the local comprehensive planning process. “*

- Florida Statute (163.3177(4)(a))

The *Unified Sea Level Rise Projection* are the only regionally-coordinated and locally-specific sea level rise projections for the Southeast Florida region. The projections are updated regularly by a qualified group of scientists and experts, so planners should consider the projections to be both scientifically sound and timely.

The *Unified Sea Level Rise Projection [guidance document](#)* includes specific guidance for applying the projections to planning efforts. The following sections include examples of local application of the projections since the publication of the first unified projections and template comprehensive plan language.

## References to the Unified Projections in Local Plans

---

### Comprehensive Plans

Counties and cities in Southeast Florida have integrated sea level rise into their comprehensive plans by both embedding the sea level rise considerations into existing elements and creating new elements on climate change impacts to amend the traditional comprehensive plan structure.

- ◆ The Miami-Dade County Comprehensive Development Master Plan (CDMP) includes goals, objectives and policies relating to climate change and sea level rise in the intergovernmental, land use, transportation, coastal Management, conservation, and water sewer & solid waste document elements.
- ◆ The Broward County Comprehensive Plan Climate Change Element was published as a separate supporting document to its comprehensive plan, identifying policies that address sea level rise impacts to integrate into existing programs.
- ◆ The Monroe County Comprehensive Plan also includes sea level rise considerations in policies embedded in the land use, conservation and coastal management, and capital improvements elements, as well as a separate energy and climate element specifically addressing impacts from climate change.

- ◆ The Palm Beach County Comprehensive Plan embeds climate change considerations, specifically about sea level rise as a sub-objective of strategic planning.

Among the counties and cities considering sea level rise, direct reference to the *Unified Sea Level Rise Projection* in the text varies. Comprehensive plans have integrated the unified projections in the narratives of document elements, directly in policy language, and by embedding the unified projections graph into the document or appendix.

### **Narrative**

References to the unified projections in the narrative provides the data context for all goals, objectives and policies in that section. Narrative sections of plan elements also provide space to include the details of the projections used, including which timeframes should be applied to specific city and county development.

*Example: “The CCE [Climate Change Element] uses multiple planning horizons to achieve the goal of a sustainable and climate-resilient community. Actions which were identified in the CCAP [Climate Change Action Plan] as being critical to achieving this mission, and able to be taken in the immediate or short-term (0-5 years) with current county resources, are given the target date of 2015. A few mid-term (0-25 year) goals have been set in the 2020-2030 timeframe. In the CCE, long-term is defined as approximately fifty years, or 2060. The 2060 planning horizon is also consistent with the Southeast Florida Climate Change Compact’s regional Unified Sea Level Rise Projection. Most of the policies in the CCE focus on steps that need to be taken in the short-term, with the county’s long-term trends and needs in mind.”*

- [Broward County Comprehensive Plan Climate Change Element, Section I, C: Planning Horizon](#)

### **Policy Language**

Direct references to the unified projections in the goals, objectives and policy language of plans allow cities and counties to specify exactly what decisions or programs should be defined by the projections (such as the application of “[Adaptation Action Areas](#),” as created in [HB 7207](#)).

*Example: “As the basis for the designation of Adaptation Action Areas, the village will continue to utilize the best available data and resources such as the Unified Sea Level Rise Projection for Southeast Florida in order to identify the risks and vulnerabilities associated with climate change and sea level rise, and opportunities to formulate timely and effective adaptation strategies.”*

- [Village of Pinecrest Comprehensive Plan, Policy 10-1.7.2](#)

Policy language also provides the opportunity to frame the application of the unified projections as an active task for the county or city, including a timetable of execution and continual updates of the data.

***Example:** “Within five years after the adoption of the 2030 Comprehensive Plan, Monroe County shall consider incorporating a planning, design and permitting standard for infrastructure and public facilities that may include a sea level rise assumption of 3”-7” by 2030 as developed by the Southeast Florida Regional Climate Change Compact. The county shall review and update sea level rise projections when new and pertinent data is available. (The 3”-7” by 2030 is based on a 2010 baseline -- if adjusted to a 1992 baseline it would result in 6” to 10” by 2030 above the 1992 mean sea level).”*

- [Monroe County Comprehensive Plan, Policy 1502.1.6](#)

### **Embedded Unified Projections Graph**

By including the unified projections graph showing the three potential timeframes of regional sea level rise into planning documents, cities and counties can easily show the possible risk considered and where their planning decisions fall in the range of possibilities. For plans that currently include directives to consider sea level rise in decisions without specifically referencing data, embedding the graph of projections into the plan or including it as a supporting addendum can quickly ground the application of those directives in the same projections.

***Example:** “Incorporate sea level rise and resiliency projections into the Stormwater Management Plan and the Flood Hazard Mitigation Program.”  
Page 29*

- *Unified Sea Level Rise Projection Graph (2011) Page 31*

[Fort Lauderdale Strategic Plan “Press Play,” Objective 2, Strategic Initiative 1](#)

### **Sector Plans**

*While comprehensive plans provide an overall direction for local planning efforts, the specific parameters of the city and county policies are often \*expressed in the relevant sector-based plan, including data specific to implementation. In some cases, the comprehensive plan denotes integrating sea level rise into a specific sector plan as a way of ensuring implementation - such as in the Miami Dade County Comprehensive Plan:*

*“The Miami-Dade County Water, Wastewater, and Reuse Integrated Master Plan, the primary vehicle for planning for water, sewer, and reuse facilities, shall continue to be updated on a regular basis. The integrated Master Plan*

*shall include initiatives to address climate change and sea level rise that would impact the water and sewer infrastructure and drinking water supplies.”*

- [Miami-Dade Master Plan, WS-3F](#)

Some cities and counties have already used the unified sea level rise projections directly in sector plans, notably in *local hazard mitigation strategies, water supply plans, and stormwater plans*. Sea level projections are applied differently in each sector to determine planning decision parameters.

### **Local Hazard Mitigation Strategies**

Local Hazard Mitigation Strategies that include sea level rise concerns often define sea level rise as a local hazard to assess and prepare for. The unified projections appear in the standard hazard mitigation strategy format as a reference for the location and extent of the sea level rise hazard. The projections, paired with the “[Analysis of the Vulnerability of Southeast Florida to Sea Level Rise](#)” conducted by the Compact in 2012, capture the potential effect of the hazard at a local scale.

***Example:** “Location and Spatial Extent: As a coastal county, the impact of sea level rise on Broward County has the potential to be high to severe in the long-term. The Southeast Florida Regional Climate Change Compact, works closely with the Broward County Climate Change Task Force and the [Southeast Florida Water Management District] SFWMD, has outlined 3 potential scenarios in its April 2011 “A Unified Sea Level Rise Projection for Southeast Florida”: a 1 foot rise in sea level (estimated time occurrence between 2040-2070); a 2 foot rise (estimated between 2060-2115); and a 3 foot rise (estimated between 2078-2115; see Maps 4.14-4.16). The overlaps in time periods between the 3 scenarios are due to the uncertainty in making these types of projections.”*

- [Broward County Enhanced Local Mitigation Strategy, Sea Level Rise/Climate Change Hazard](#)

### **Water Supply Plans**

The Southeast Florida Water Management District (SFWMD), as a participatory member of the Compact’s Sea Level Rise Work Group which developed the unified projections, includes the projections in their regional perspective. Local water supply plans often refer to SFWMD’s data, but some local plans use the unified projections directly. In water supply plans, sea level projections are applied to determine the infrastructure in the water supply system that is vulnerable, and how to protect it in the future.

**Example:** “Development of cost-effective sea level rise adaptation strategies to ensure the sustainability of the city’s water supply is critical to all ongoing planning efforts. A unified projection by the Southeast Florida Regional Climate Change Compact is illustrated in Figure 3. It shows a three to seven inch increase in sea level in our region in the near term, and up to a 24-inch rise by mid-century. This sea level rise projection is now being used as the basis for planning throughout the region.”

“In terms of infrastructure, every aspect that is underground or touches the ground will need to be assessed for its vulnerability and, if necessary, protected. This includes basic services, such as provision of drinking water, sewage treatment, electricity and waste disposal.”

- [Ft. Lauderdale 10-Year Water Supply Facilities Work Plan, Section 2.2](#)

In addition to infrastructure, local water supply plans consider groundwater models and saltwater intrusion in the context of sea level rise. Miami-Dade County relied on the unified projections to determine the extent of risk and changing water availability.

**Example:** “MDWASD [Miami-Dade Water and Sewer Department] and the USGS [United States Geological Survey] used the modified guidance developed by the U.S. Army Corps of Engineers (USACE, 2011) and a planning scenario of 9 to 24 inches additional rise by 2060, consistent with projections presented in the 2014 NCA, and formally adopted by the partner counties in the Southeast Florida Regional Climate Change Compact (Figure 3) for the modeling effort.”

- [Miami-Dade 20-Year Water Supply Facilities Work Plan, Section 6.4](#)

## **Stormwater Plans**

Stormwater plans can include the projected impact and mitigation strategies for flooding risks from increased sea level rise and storm events. The unified projections provide a basic timeline of future risks and can be used to create inundation maps. The City of Pompano Beach, for instance, used the unified projections to create detailed inundation maps of local areas that reflect the impact of storm events on the extent of sea level rise at every level of projection. Those maps defined the vulnerable facilities the stormwater plan focused on.

**Example:** “Based on the regional sea level rise projections, sea level rise scenarios of 1 foot rise and 2 feet rise could occur within the 50-year planning horizon. The City of Pompano Beach should focus on the inundation maps under these scenarios to identify vulnerable facilities within the city in order to plan for any potential infrastructure modifications.”

- [City of Pompano Beach Stormwater Master Plan, Section 4.11.1](#)

## References to the Unified Projections beyond Planning Documents

---

City and county planning documents are tangible opportunities to explicitly integrate sea level rise into the planning framework. However, much work at the local level happens outside of the formal planning process through other political means and program implementation. While it is difficult to capture the application of the unified projections without documentation or a standard format, there are some examples indicative of how the projections are used:

### Formal Resolutions or Statements

Many local government agencies across Southeast Florida have passed resolutions generally adopting the *Unified Sea Level Rise Projections*. While a cross-agency does not commit specific city plans to the projections outlined, it sets the expectation that the projection data should be used when sea level rise is considered.

Miami-Dade County passed resolution [R-451-14](#), directing Mayor to require all County infrastructure to consider sea level rise using the *Unified Sea Level Rise Projection* and using a minimum timeframe of 50 years, or the life of project. The City of Hollywood Commission passed resolution [R-2016-053](#) - *A Resolution of the City Commission of the City of Hollywood, Florida, Accepting the Updated Unified Sea Level Rise Projection of the Southeast Florida Regional Climate Change Compact* in March 2016, following the 2015 update of the projections, generally accepting the projections for sea level rise adaptation purposes and not mandating specific applications. In 2016, the City of West Palm Beach also passed policy 10-1, titled *Climate and Resiliency Policy*. This policy directs internal operations and decision-making to use the most current climate science and consider sea level rise among other climate concerns. In Section B of policy 10-1, the city is mandated to use the most current climate science available, and the Compact's projections are included as the most relevant local data source.

A full list of municipalities that passed resolutions adopting the *Unified Sea Level Rise Projection* can be found in Appendix C.

### Application in Implementation

The Committee Substitute for Senate Bill 444 ([CS/SB 444](#)), passed in 2008, amended Chapter 403, Florida Statutes, requires wastewater utilities to progressively reduce the impact of ocean outfalls of treated wastewater. In order to implement the legislation, the Miami-Dade Water and Sewer Department used the unified projections to determine the lifespan of new coastal facilities, and to determine the year when current coastal treatment sites will be vulnerable to sea level rise. At that date, the coastal facilities must offer economic benefits that outweigh the likely cost of sea level rise and storm surge risks in order to remain at that site. This application of the projections outside of the county planning process is captured in Miami-Dade's [Ocean Outfall Legislation Compliance Report](#).

## Template Language for Plans

Text in grey indicates specific references to the data in the most recently updated 2015 Unified Sea Level Rise Projections which can be omitted to keep the language applicable to all projection updates.

## Comprehensive Plans

### Narrative Language

- ◆ In all planning elements when sea level rise is taken into consideration, {county/city} will use the most recently updated Southeast Florida Regional Climate Change Compact's Unified Sea Level Rise Projection. The Compact's Regional Projections is the most detailed, localized data available for the Southeast Florida region, and are consistent with the national and globally accepted projections from international, federal, state and regional agencies.
- ◆ {County/City}'s current planning horizons are consistent with the Southeast Florida Regional Climate Change Compact's Unified Sea Level Rise Projection in effect at the time that this document was produced. The 2015 Unified Sea Level Rise Projection show that in the short term, sea level rise is projected to be 6 to 10 inches by 2030 and 14 to 26 inches by 2060 (above the 1992 mean sea level). In the long term, sea level rise is projected to be 31 to 61 inches by 2100. The Compact recommends that critical infrastructure projects across all sectors of planning that have design lives beyond 50 years be planned using the highest projection, assuming 34 inches in 2060 and 81 inches in 2100.

## Policy Language

### Land Use:

- ◆ Objective: {County/City} will update the supporting data on sea level rise impacts on infrastructure with future updates of the Comprehensive Plan to reflect the latest predicted and observed impacts. {County/City} will consider the latest sea level rise projections available from the Southeast Florida Regional Climate Change Compact in evaluating public infrastructure decisions.
- ◆ Policy: {County/City} shall incorporate a planning, design and permitting standard for infrastructure and public facilities based on the most relevant and latest Unified Sea Level Rise Projection for Southeast Florida, developed by the Southeast Florida Regional Climate Change Compact. The 2015, Unified Sea Level Rise Projection show that in the short term, sea level rise is projected to be 6 to 10 inches by 2030 and 14 to 26 inches by 2060 (above the 1992 mean sea level). In the long term, sea level rise is projected to be 31 to 61 inches by 2100. The Compact recommends that critical infrastructure projects across all sectors of planning that have design lives beyond 50 years be planned using the highest projection, assuming 34 inches in 2060 and 81 inches in 2100.
- ◆ Policy: {County/City} shall integrate adaptation of the built environment to sea level rise in all planning processes, including, but not limited to, infrastructure planning, building

and safety codes, emergency management, stormwater management, and water supply. Planning decisions and project designs should use the Unified Sea Level Rise Projection for Southeast Florida as the most relevant available data.

- ◆ Policy: {County/City} shall define the boundaries and extent of “Adaptation Action Areas” based on current projections of sea level rise and storm surge to drive future regulatory functions, defined by the most recent Unified Sea Level Rise Projection for Southeast Florida.

#### **Intergovernmental Coordination:**

- ◆ Objective: {County/City} will continue to coordinate efforts to assess existing and projected regional conditions related to climate change and sea level rise with other government agencies and non-governmental entities in the Southeast Florida region, and collaborate to develop strategies appropriate to the region.
- ◆ Policy: {County/City} will continue to coordinate planning efforts with the ongoing regional analysis of sea level rise reflected in the latest Southeast Florida Regional Climate Change Compact’s Unified Sea Level Rise Projection.
- ◆ Policy: All {County/City} departmental strategic and business plans that include sea level rise and climate change considerations shall coordinate with the regional standard of data used to assess existing and projected regional conditions, reflected in the latest Southeast Florida Regional Climate Change Compact’s Unified Sea Level Rise Projection.

#### **Coastal Management:**

- ◆ Objective: {County/City} shall organize its planning efforts, regulations and programs to reduce expansion of future population concentrations in high hazard coastal areas.
- ◆ Policy: Rise in sea level projections, as defined by the Southeast Florida Regional Climate Change Compact in the Unified Sea Level Rise Projection, shall be considered in all future decisions about the siting, design and building of public infrastructure in high hazard coastal areas.
- ◆ Policy: {County/City} shall assess the impact of storm surge on coastal areas based on the current Unified Sea Level Rise Projection, and include the vulnerability of increased flooding during storm events in coastal development decisions.

#### **Capital Improvements**

- ◆ Objective: {County/City} shall provide adequate public infrastructure that accommodates projected growth and future environmental changes, consistent with other elements of the Comprehensive Plan.
- ◆ Policy: {County/City} will annually update the schedule of capital improvements, specifically considering:
- ◆ Sea level rise projections for public infrastructure in vulnerable areas, updated to reflect the most relevant regional data of the Unified Sea Level Rise Projection.

## Transportation

- ◆ Objective: {County/City} shall plan and develop a transportation system that takes into account future environmental risks, including climate change impacts such as increased floods, sea level rise and storm surge.
- ◆ Policy: New transportation infrastructure should be sited and designed to minimize exposure to sea level rise within the infrastructure life span, based on the regional Unified Sea Level Rise Projection for public infrastructure.
- ◆ Policy: {County/City}'s transit plans should integrate adaptation to climate change impacts into future siting and investment decisions. Transit plans should refer to the Unified Sea Level Rise Projection for the projection lifespan relevant to specific infrastructure.

## Water & Sewer

- ◆ Objective: {County/City} shall provide public water and sewer facilities to meet the future water and sewage demands of the community.
- ◆ Policy: {County/City} shall consider future climate change impacts and sea level rise on the water supply infrastructure in the replacement or expansion of current water and sewer infrastructure, based on future projections defined in the Unified Sea Level Rise Projection.
- ◆ Policy: {County/City} will assess potential vulnerabilities to water supply from climate change impacts, such as saltwater intrusion and reduction of available groundwater and surface water. {City/County} should consider these vulnerabilities and timeframes defined by the regional Unified Sea Level Rise Projection in water supply plans.

## Local Mitigation Strategies

Hazard: Sea level rise

Location & Spatial Extent:

As a coastal {County/City}, the impact of sea level rise on {County/City} has the potential to be high to severe in the long-term. The Southeast Florida Regional Climate Change Compact has outlined three scenarios in its [Unified Sea Level Rise Projection for Southeast Florida](#). The most recent update of the projections in 2015 includes three timelines of sea level rise above the 1992 mean sea level: short term (by 2030) rise of 6 to 10 inches, medium term (by 2060) rise of 14 to 34 inches, and long term (by 2100) rise of 31 to 81 inches.

These projections can be used to assess current vulnerability faced over different timelines. The Southeast Florida Regional Climate Change Compact, the Southeast Florida Water Management District, and County officials have also developed a regional [Analysis of the Vulnerability of Southeast Florida to Sea Level Rise](#), including county-level inundation maps. The most recently updated sea level rise regional vulnerability assessment, paired with the most recently updated *Unified Sea Level Rise Projection*, provides the extent and spatial impact of sea level rise in {County/City}.

## Conclusions

---

Cities and counties in Florida are increasingly integrating sea level rise into their planning. In order to assess the appropriate planning timeframe for specific infrastructure, cities and counties must rely on accurate projections of the rate of sea level rise. In the Southeast Florida Regional Climate Change Compact region, the *Unified Sea Level Rise Projection* offers the best regionally-coordinated and locally-applied sea level rise data. Codifying the use of the projections into local planning processes through basic policy language helps to align regional climate change adaptation efforts and ensures the best possible data is being used in local decision-making.

## VII. Appendix

### Local Plans that Reference the Unified Sea Level Rise Projections

Government Entity	Title	Type of Plan	Year Updated	Narrative Reference	Policy Language	Graph or Map
Boynton Beach	<a href="#">City of Boynton Beach Climate Action Plan 2.0</a>	Climate Action Plan	2015	x		x
Miami-Dade County	<a href="#">Miami-Dade Comprehensive Development Master Plan (CDMP)</a>	Comprehensive Plan	2015	x		
Monroe County	<a href="#">Monroe County Year 2030 Comprehensive Plan</a>	Comprehensive Plan	2016	x	x	
Pinecrest	<a href="#">Village of Pinecrest Comprehensive Development Master Plan</a>	Comprehensive Plan	2015		x	
Broward County	<a href="#">Broward County Comprehensive Plan Climate Change Element</a>	Comprehensive Plan	2015	x		x
Miami-Dade County	<a href="#">Local Mitigation Strategy Miami-Dade</a>	Local Hazard Mitigation Strategy	2016	x		
Broward County	<a href="#">Enhanced Local Mitigation Strategy for Broward County</a>	Local Hazard Mitigation Strategy	2012	x		x
Monroe County	<a href="#">Monroe County Local Mitigation Strategy 2015 Update</a>	Local Hazard Mitigation Strategy	2015	x	x	x

Pompano Beach	<a href="#">Stormwater Master Plan</a>	Stormwater Master Plan	2013	x		x
Ft. Lauderdale	<a href="#">Press Play Ft. Lauderdale</a>	Strategic Plan	2014			x
Ft. Lauderdale	<a href="#">City of Fort Lauderdale 10-Year Water Supply Facilities Work Plan</a>	Water Supply Facilities Work Plan	2014	x		x
Broward County	<a href="#">Broward County Water Supply Facilities Work Plan</a>	Water Supply Facilities Work Plan	2014	x		x
Miami-Dade County	<a href="#">20-Year Water Supply Facilities Work Plan</a>	Water Supply Facilities Work Plan	2014	x		x

#### Local Plans that Consider Sea Level Rise

Government Entity	Title	Type of Plan	Year Updated
Boynton Beach	<a href="#">City of Boynton Beach Climate Action Plan 2.0</a>	Climate Action Plan	2015
Broward County	<a href="#">Broward County Comprehensive Plan Climate Change Element</a>	Comprehensive Plan	2015
Broward County	<a href="#">Enhanced Local Mitigation Strategy for Broward County</a>	Local Hazard Mitigation Strategy	2012
Broward County	<a href="#">Broward County Water Supply Facilities Work Plan</a>	Water Supply Plan	2014
Ft. Lauderdale	<a href="#">Press Play Ft. Lauderdale</a>	Strategic Plan	2014
Ft. Lauderdale	<a href="#">City of Fort Lauderdale 10-Year Water Supply Facilities Work Plan</a>	Water Supply Plan	2014
Islamorada	<a href="#">Islamorada: The Village That Reclaimed the Keys - Comprehensive Plan</a>	Comprehensive Plan	2014

Jupiter	<a href="#">Town of Jupiter, Florida Comprehensive Plan</a>	Comprehensive Plan	2015
Key Biscayne	<a href="#">Key Biscayne Sustainability Plan</a>	Sustainability Plan	2014
Key West	<a href="#">City of Key West Comprehensive Plan</a>	Comprehensive Plan	2013
Miami	<a href="#">Miami Comprehensive Neighborhood Plan</a>	Comprehensive Plan	2015
Miami Beach	<a href="#">Stormwater Management Master Plan</a>	Stormwater Master Plan	2012
Miami Shores Village	<a href="#">Miami Shores Village 2025 Comprehensive Plan</a>	Comprehensive Plan	2013
Miami-Dade County	<a href="#">Miami-Dade Comprehensive Development Master Plan (CDMP)</a>	Comprehensive Plan	2015
Miami-Dade County	<a href="#">Local Mitigation Strategy Miami-Dade</a>	Local Hazard Mitigation Strategy	2016
Miami-Dade County	<a href="#">Miami-Dade 2040 Long Range Transportation Plan</a>	Transportation	2014
Miami-Dade County	<a href="#">20-Year Water Supply Facilities Work Plan</a>	Water Supply Plan	2014
Monroe County	<a href="#">Monroe County Year 2030 Comprehensive Plan</a>	Comprehensive Plan	2016
Monroe County	<a href="#">Monroe County Local Mitigation Strategy 2015 Update</a>	Local Hazard Mitigation Strategy	2015
Oakland Park	<a href="#">City of Oakland Park Water Supply Facilities Work Plan</a>	Water Supply Plan	2014
Palm Beach County	<a href="#">Palm Beach County Comprehensive Plan</a>	Comprehensive Plan	2015
Palm Beach County	<a href="#">Palm Beach County Local Mitigation Strategy 2015</a>	Local Hazard Mitigation Strategy	2015

Palm Beach County	<a href="#">Palm Beach MPO 2040 Long Range Transportation Plan</a>	Transportation	2016
Pinecrest	<a href="#">Village of Pinecrest Comprehensive Development Master Plan</a>	Comprehensive Plan	2015
Pompano Beach	<a href="#">Stormwater Master Plan</a>	Stormwater Master Plan	2013
Regional	<a href="#">South Florida Climate Change Vulnerability Assessment and Adaptation Pilot Project</a>	Transportation Pilot Project	2016
Regional	<a href="#">SFWMD Lower East Coast Water Supply Plan Update</a>	Water Supply Plan	2013
Regional	<a href="#">Central Florida Water Initiative Regional Water Supply Plan 2015</a>	Water Supply Plan	2015
Surfside	<a href="#">Town of Surfside Comprehensive Plan</a>	Comprehensive Plan	2010

### Municipalities with Resolutions Adopting the Unified Projections

County	Municipality	Resolution Date
Broward	Broward	11/10/2015
Broward	Fort Lauderdale	12/15/2015
Broward	Hallandale Beach	1/30/2016
Broward	Wilton Manors	2/23/2016
Broward	Deerfield Beach	2/29/2016
Broward	Lauderhill	2/29/2016
Broward	Hillsboro Beach	3/1/2016
Broward	Hollywood	3/2/2016
Broward	Weston	3/7/2016
Broward	Pompano Beach	3/8/2016

Broward	Cooper City	3/8/2016
Broward	Coral Springs	3/16/2016
Broward	Pembroke Pines	3/16/2016
Broward	Coconut Creek	3/24/2016
Broward	Dania Beach	4/12/2016
Broward	Lauderdale Lakes	4/12/2016
Broward	Miramar	4/21/2016
Broward	Lauderdale-by-the-Sea	5/10/2016
Miami-Dade	Miami Beach	3/25/2015
Palm Beach	West Palm Beach	2016



For more information visit:

[www.southeastfloridaclimatecompact.org](http://www.southeastfloridaclimatecompact.org)

## ***Integrating the Unified Sea Level Rise Projection into Local Plans***

For more on the Institute for Sustainable Communities: [www.iscvt.org](http://www.iscvt.org)

Implementation support to  
the Compact is provided by:



INSTITUTE FOR  
Sustainable  
Communities

With funding  
support from:

THE KRESGE FOUNDATION