

# 2.

## INTRODUCTION & Background



This Monroe County **GreenKeys! Sustainability Action Plan** (“GreenKeys!”) is the culmination of a nearly 18-month planning process and includes strategies, policies, and tools the County can use to create and implement sustainable initiatives, reduce greenhouse gas (“GHG”) emissions, increase energy and water conservation practices, and strengthen the overall resilience of Monroe County (“County”) to climate change and sea level rise. GreenKeys! is intended to serve as a blueprint for the County’s sustainability initiatives and provide a way for the County to measure performance and progress on these initiatives over time.

### Geography

The County occupies the southernmost tip of the state of Florida and is the southernmost county in the continental United States (“U.S.”). The County is comprised of a mainland region as well as



Map of the Florida Keys

PHOTO SOURCE: blackopsfishing.com

the Florida Keys archipelago ("Keys"). The mainland portion of the County primarily consists of Everglades National Park ("Park") and Big Cypress National Preserve ("Big Cypress"). The mainland and the Keys are separated by Biscayne Bay, Barnes Sound, Blackwater Sound, and Florida Bay. The Keys are a collection of 1,700 islands that lie north of the Straits of Florida and south of the Park and Big Cypress, stretching approximately 220 miles. The Keys actually divide the Gulf of Mexico from Atlantic Ocean. Most people who travel from the mainland portion of the County to the southern-most island in the Keys (Key West) travel by way of the Overseas Highway (also known as U.S. Highway 1), the only roadway in and out of the Keys.

Today, more than 99 percent of the County's population lives in the Keys, although the islands make up only 13 percent of the County's land mass. The island chain is a special place, like none other in the U.S., with the world's third largest living coral reef off its shoreline. The County is so environmentally diverse and historically important that it's worthy of seventeen (17) national and state parks, including the famed John Pennekamp State Park and Looe Key National Marine Sanctuary. Both places are world renowned snorkeling and scuba diving destinations.

### The Early Years

The Florida Keys were discovered in 1513 by Spanish Explorer Juan Ponce de Leon in his search for the "Fountain of Youth." Over the next three (3) centuries, Spain and Great Britain claimed Florida as a territory. In 1821, Spain ceded Florida to the U.S. in accordance with the Adams-Onis Treaty. The following year, a small naval depot was created in



**Overseas Highway, Key Largo (pre-1996)**

PHOTO SOURCE: <https://www.floridamemory.com/items/show/244348>

Key West to help rid the area of pirates that were terrorizing the sea trade route.

In 1823, Monroe County was established as the sixth county in the Florida territory, named for fifth President of the U.S., James Monroe, who served from 1817 to 1825. Key West became the County seat in 1828, when the population was less than 600 people and the main industries were salvaging shipwrecks on the coral reef and fishing. In 1845, Florida was granted statehood. The Florida Keys were forever changed with Henry Flagler's project to build a railroad from Miami to Key West at the turn of the 20th century. The first train rolled into Key West in 1912. The railway was subsequently destroyed in the Category 5 Labor Day Hurricane of 1935, but rebuilt by the federal government as an automobile highway which ultimately helped the County's tourism industry evolve into the major industry it is currently.

### Geographic Vulnerability

The Florida Keys are on the front lines of climate change and sea level rise impacts and especially vulnerable to extreme weather events and rising

seas because of their low-lying elevations. In fact, the highest elevation in the Keys rises only eighteen (18) feet above sea level at a single location in Windley Key [Solaris Hill in Key West is also 18']. Below is a list of average elevations for the three (3) sections of the Florida Keys and the City of Key West:

- Upper Keys – Ocean Reef to Tavernier Creek: Average elevation 4.8';
- Middle Keys – Plantation Key to Knights Key (City of Marathon): Average elevation 4.29';
- Lower Keys – Ohio Key to Stock Island: Average elevation 3.17'; and
- City of Key West: Average elevation 4.7'.

Monroe County, because of its unique low-lying areas, resulting vulnerabilities to sea level rise and its international presence as a premier tourist destination, has an opportunity to demonstrate leadership on this issue by implementing the critical policies, practices and investments that will eventually help mitigate the impacts of climate change. While GHG emissions produced within the Monroe County region constitute only a small percentage of national and global quantities, if sea level rise is not curtailed by immediate reductions in GHGs on a global scale, the Keys may eventually become dramatically different. However, the County can do more than prepare itself for a sustainable future, it can also do its part to help reduce the causes of climate change and sea level rise.

### The Science Behind the Rising Seas

It is recognized that the burning of fossil fuels and deforestation are primary causes of increase in GHGs in the Earth's atmosphere. There is consensus among climatology scientists that this is driving increases in climate change. Post-industrial

human activity has occurred at the same time as accelerated changes in climate change patterns. The consequences are dramatic and are illustrated by increases in the melting of Arctic sea ice which during some months almost entirely covers the Arctic, an expansion of the tropical zone climate and the rate of sea level rise caused by melting glaciers, the heating (thermal expansion) of the oceans and melting ice sheets in Greenland and Antarctica. In the last 100 years, there has been an average 9-inch sea level rise here in South Florida, as evidenced by data collected by the National Oceanic and Atmospheric Administration (“NOAA”) at the Key West Tide Gauge.

Numerous estimates of future sea levels have been made on both global and regional scales with input from a white paper on sea level rise projections developed by the Sea Level Rise Technical Ad Hoc Working Group of the Southeast Florida Regional Climate Change Compact (“Compact”) entitled



**Thompson Road, Key Largo**

PHOTO SOURCE: GreenKeys! Project Team

***A Unified Sea Level Rise Projection for Southeast Florida.***<sup>2</sup> The projection was an integration of similar analyses recently conducted by the U.S. Army Corps of Engineers (“Corps”), the South Florida Water Management District (“SFWMD”), Miami-Dade Climate Change Task Force Science and Technology Committee, Broward County Climate Change Task Force Science and Technical Subcommittee and numerous other universities. The projection was updated in 2015 to adjust the projection baseline from year 2010 to 1992 (consistent with guidance provided by the Corps and NOAA), extend the projection timeline from 2060 to 2100, and include the processes that affect the local rate of sea level rise.<sup>3</sup>

### **Moving Forward**

Planning decisions for future public and private projects and adaptation efforts must recognize

the need to address sea level rise. The current local and regional sea level rise projections do not account for future increases in ice-sheet melting. Therefore, we should consider current estimates to be conservative and optimistic. Planning decisions should take into consideration medium to high sea level rise predictions.

The long-term costs of having to implement adaptation measures intended to help cope with climate change impacts due to inaction and the subsequent negative consequences to the economy, social structure and environment make it necessary to implement mitigation actions now to avoid or minimize long-term adaptation costs. We have a chance now to prevent the worst impacts of climate change. If we act effectively, we should be able to limit both the magnitude of climate change and the severity of its impacts. The two (2) major approaches to addressing the potential negative aspects

of climate change are mitigation and adaptation. Mitigation involves actions that will slow GHG emissions to reduce the amount and speed of climate change. Adaptation involves actions to reduce the impacts of climate change on existing society and the environment. Both mitigation and adaptation strategies are discussed within this document.

The County is joining an increasing number of local governments committed to addressing climate change at the local level. The County recognizes the risk that climate change poses to its constituents, and is acting now to reduce the GHG emissions, or “carbon footprint,” of both its government operations and the community at-large through the innovative recommendations in its previous Monroe County Climate Action Plan (“MCAP”)<sup>4</sup> and this new GreenKeys!. Ultimately, local action is needed to reduce Monroe County’s contribution toward the problem of climate change and adapt to its current and future effects. Both the MCAP and GreenKeys! take advantage of common sense approaches and policies that the local government is uniquely positioned to implement – actions that can reduce energy use and waste, create local jobs, improve air quality, preserve the local landscape and history, and in many other ways benefit Monroe County for years to come.

### Longstanding Public Involvement

Public involvement and intergovernmental coordination efforts play a significant role in forming policy and long-range visioning within the County. The County has numerous committees and boards, whose volunteer efforts and actions help shape and influence the County’s policies, infrastructure and design decisions and social programs. The County’s Advisory Boards, Councils

and Committees are provided to the right; see also Appendix A for a table showing the date of creation and stated purpose of each of the County’s Advisory Boards, Councils and Committees.

GreenKeys! furthers efforts already conducted by the County with regard to sustainability and environmental stewardship. It provides steps to move Monroe County towards resiliency and reduced emissions by exploring alternative policies and practices. It creates a platform for public outreach and public policy development to effectively communicate the steps from risk to resiliency with the general public, voters, elected officials and decision makers in the County.

The specific recommendations in GreenKeys! were developed through a collaborative process involving subject matter experts and stakeholders from public and private sectors, universities and not-for-profit organizations. These stakeholders brought specific subject area knowledge as well as information on successful initiatives already underway locally or in other communities. Many of the recommendations build upon best practices throughout our region. Others delve into new areas which call for the integration of climate change and sustainability into planning and decision making processes in ways that few local governments have yet implemented.



## ADVISORY BOARDS, COUNCILS, AND COMMITTEES

- Affordable Housing Advisory Committee
- Art in Public Places Committee
- Climate Change Advisory Committee
- Community Development Block Grant Citizens Advisory Task Force
- Construction Board of Adjustments & Appeals
- Contractor Examination Board
- Criminal Justice Mental Health & Substance Abuse Policy Council
- Development Review Committee
- Duck Key Security District Advisory Board
- Environmental Impact Community Oversight Committee
- Florida Keys Council for People with Disabilities
- Historic Preservation Commission
- Human Services Advisory Board
- KWIA Ad Hoc Committee on Noise
- Land Authority Advisory Committee
- Library Advisory Board
- Marine & Port Advisory Committee
- Older Americans Advisory Board
- Parks & Recreation Advisory Board
- Planning Commission
- RESTORE Act Advisory Committee
- Shared Asset Forfeiture Fund Advisory Board
- Substance Abuse Policy Advisory Board
- Tourist Development Council
- Upper Keys Health Care Taxing District Advisory Board