



Whole Community Hazard Mitigation Part 4: The Appendices



July 2020



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PART 4 - THE APPENDICES

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Appendix A: List of LMS Changes

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Appendix B: LMS Working Group and Subcommittee Agencies 2020¹

Coordinator/Chair: Steve Detwiler, Miami-Dade County Office of Emergency Management **Co- Chair:** Robin Yang, Miami-Dade County Office of Emergency Management

Colleges and Universities

Agency	Position Title	Name
Florida International University	Assistant Director of Emergency	Marc Jean
	Management	
Miami-Dade College	Director of Resource Development	Teresa Grandal-Cusse
St. Thomas University	Assistant Director of Public Safety	Braulia Dingle
University of Miami	HazMat Manager	Vaughan Munro

Miami-Dade County Agencies and Departments

Agency	Position Title	Name
Aviation Department	Assistant Aviation Director	Ralph Cutie
Corrections and Rehabilitation	Captain	Rose Green
Department		
Information Technology	Systems Support Manager	Peter Oelkers
Department		
Regulatory and Economic	Senior Planner	Cindy Dwyer
Resources Department		
Cultural Affairs Department	Capital Projects Chief	Marie Denis
Solid Waste Department	Intergovernmental Affairs Coordinator	Stacy Santos
Transportation and Public	Engineer 3	Daryl Hildoer
Works Department		
Internal Services Department	Manager	Terrence Thompson
Libraries	Administrative Officer 3	Jeff Rosenberg
Public Housing and	Construction Manager	Francisco Trujillo
Community Development		
Department		
Police Department	Grants Administrator	Dorcas Perez
Seaport	Grants Administrator	Kelli Gay
Extension Service	Director	Teresa Olczyk
Water & Sewer Department	Special Projects Administrator	Lonnika Bender
Animal Services Department	Assistant Director	Annette Jose
Fire Rescue Department	Grants Section Manager	Lisset Elliott
Resilience Office	Resilience Communications	Karina Castillo
	Coordinator 2	
Parks, Recreation and Open	Assistant Director, Planning, Design	Joe Cornely
Spaces Department	and Construction Excellence Division	



Hospitals and Health Care

Agency	Position Title	Name
Baptist Health South Florida	Director, Construction Management	Susan Magner
Citrus Health Network Inc.	Chief Financial Officer	Silvia Suarez
Jackson Health System	Grant Writer/Developer	Gail E. Wright
Jessie Trice Community Health System, Inc	Safety Officer	Luckner Denord
Miami Beach Community Health Center, Inc.	Director of Environment of Care & Safety	Aniruddha Upadhyay
Mount Sinai Medical Center	Administrative Director, Engineering	Samantha Nagy

Municipalities

Agency	Position Title	Name
Aventura	Capital Projects Manager	Antonio F. Tomei
Bal Harbour	Chief of Police	Raleigh Flowers, Jr
Bay Harbor Islands	Acting Chief of Police	Pablo Lima
Biscayne Park	Public Works Manager	David Hernandez
Coral Gables	Deputy Director / City Engineer	Jorge Gomez, P.E.
Cutler Bay	Town Manager	Rafael Casals
Doral	Media & Emergency Management	Natalie French
	Specialist	
El Portal	Police Chief	David Magnusson
Florida City	Executive Director	Jon Ward
Golden Beach	Administrative Lieutenant	Yovany Diaz
Hialeah	Zoning Inspector	Lilibet Muniz
Hialeah Gardens	Accreditation Manager	Liza Usan
Homestead	Emergency Manager	Stephen Taylor
Indian Creek Village	Captain	Christopher McDonald
Key Biscayne	Special Projects Coordinator	Javier Pena, CFM
Medley	Chief	Jeanette Said Jinete
Miami	Asst. Fire Chief/Emergency Mgr.	Robert Hevia
Miami Beach	Grants and Intergovernmental Affairs Director	Judy Hoanshelt
Miami Gardens	Public Works City Engineer	Leslie Pettit
Miami Lakes	Grants and Governmental Affairs	Renee Wilson
	Manager	
Miami Shores	Chief of Police	Kevin Lystad
Miami Springs	Police Chief	Armando Guzman
North Bay Village	Chief of Police	Carlos Noriega
North Miami	Public Works Director	Wisler Pierre-Louis
North Miami Beach	Assistant Director	Marlon Lobban
Opa Locka	Acting City Manager	Newall J. Daughtrey
Palmetto Bay	Interim Village Manager	Gregory Truitt
Pinecrest	Administrative Services Manager	Eduardo Pozas
South Miami	City Manager	Shari Kamali
Sunny Isles Beach	City Manager	Chris Russo
Surfside	Interim Town Manager	Jason Greene
Sweetwater	Assistant City Manager	Robert Herrada
Virginia Gardens	Mayor	Fred Deno
West Miami	City Manager	Yolanda Aguilar



Other Government Agencies

Agency	Title	Name
Miami-Dade Public Schools	Director, Property Loss Control	William B. Wever Jr.

Non-Profit Organizations

Agency	Title	Name
Camillus House, Inc.	Director, Grants	Shelley-Anne Glasgow-
		Wilson
Casa Familia, Inc.	Senior IDD Housing Consultant	Deborah Lawrence
MACtown, Inc.	Consultant	Robert Ruano
Vizcaya Museum and Gardens	Director of Corporate, Foundation &	Talmage Thornhill
	Government Relations	

Appendix C: LMS Committees

Local Mitigation Strategy Steering Committee: 2020

Agency	Title	Name
Florida International University	Research Associate	Tiffany G. Troxler
National Weather Service,	Warning Meteorologist	Robert Molleda
Miami Field Office		
City of Doral	Emergency Management Specialist	Natalie French
City of Miami	Chief Resilience Officer	Jane Gilbert
University of Miami	HazMat Nanager	Vaughan Munro
Mount Sinai Medical Center	Administrative Director, Engineering	Samantha Nagy
FIU International Hurricane	Associate Director and Meteorologist	Erik Salna
Research Center		
Florida International University	Consultant	Ricardo Alvarez
Town of El Portal	Volunteer	Hugh Gladwin
Miami-Dade College	Director of Resource Development	Teresa Grandal Cusse
City of Miami Gardens	Flood Plain Administrator	Mike Gambino
Miami-Dade Office of	Deputy Resilience Officer	Nichole Hefty
Resilience		
Town of Miami Lakes	Permit Clerk Supervisor	Loudres Rodriquez
South Florida Water	Intergovernmental Coordinator	Armando Vilaboy
Management District		
Jackson Health System	Grant Writer/Developer	Gail E. Wright
T.Y. Lin International	Associate Vice President	Francisco J. Alonso

LMS Sub- Committees

- Agriculture and Landscaping
- Education and Outreach
- Extreme Weather Events
- Financial and Grants
- Flooding and CRS
- Marine Interests
- Structural

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Appendix D: 2020 Miami-Dade Resolution Adopting the LMS



Appendix E: 2020 State of Florida Approval Letter



Appendix F: 2020 FEMA Approval Letter

Appendix G: Metropolitan Form of Government

Miami-Dade County has a unique metropolitan form of government, which varies greatly from typical county powers, in that it provides for resolutions, laws, rules, regulations passed by the county to be fully and automatically inclusive of all municipalities within the County.

Specific lines in the Charter that would apply to a document such as the LMS (which is adopted by resolution) being automatically applicable to all municipalities are:

Section 1.01. Board of County Commissioners: Powers Section 1.01, A, 5: Prepared and enforce comprehensive plans for the development of the county. *(LMS is a part of the Comprehensive Emergency Management Plan)*

Section 1.01, A, 21: Exercise all powers and privileges granted to municipalities, counties, and county officers by the Constitution and laws of the state, and all powers no prohibited by the Constitution or by this Charter

Section 1.01, A, 22:

Adopt such ordinances and resolutions as may be required in the exercise of its powers, and prescribe fines and penalties for the violation of ordinances

Section 6.02. Municipalities: Municipal Powers

Each municipality shall have the authority to exercise all powers relating to its local affairs not inconsistent with this Charter. Each municipality may provide for higher standards of zoning, service, and regulation than those provided by the Board of County Commissioners in order that its individual character and standards may be preserved for its citizens.

Section 9.04 General Provisions: Supremacy Clause This Charter and the ordinances adopted hereunder shall in cases of conflict supersede all municipal charters and ordinances, except as herein provided, and where authorized by the Constitution, shall in cases of conflict supersede all special and general laws of the state.

Specific lines in the Florida Constitution of 1968 that would further apply to a document such as the LMS (which is adopted by resolution) being automatically applicable to all municipalities within Miami-Dade County are:

Section 6. Schedule to Article VIII. –

(f) DADE COUNTY; POWERS CONFERRED UPON MUNICIPALITIES. To the extent not inconsistent with the powers of existing municipalities or general law, the Metropolitan Government of Dade County may exercise all the powers conferred now or hereafter by general law upon municipalities.

Specific lines in the Miami-Dade County Ordinance 8b that would further solidify something like the LMS (which is adopted by resolution) being automatically applicable to all municipalities within Miami-Dade County are:

Sec. 8B-8. Duties of the Director of the Office of Emergency Management

1) The Director or designee shall prepare a Comprehensive Emergency Management Plan and program for the emergency management of Miami-Dade County pursuant to F.S. 252, including, but not limited to <u>elements addressing mitigation activities</u>, preparedness, responses to disasters and emergencies, and recovery operations and submit the Plan and program to the Director of the Division of Emergency Management. State of Florida for review and certification for consistency with the State Comprehensive Emergency Management Plan and compliance with Federal emergency management mandates.

Additionally, the most recent resolution (R-452-10) adopting the LMS further reiterates the fact the municipalities are included in the line:

Whereas, the State of Florida Department of Community Affairs and/or Florida Division of Emergency Management enters into agreements with Miami-Dade County to provide the funding for the <u>County and municipalities to jointly develop a Local Mitigation Strategy</u> to become a component of the Statewide Mitigation Strategy ...

Whereas, the Local Mitigation strategy meets the State agreement requirements and was accomplished with the participation of local governments, the Schools Board of Miami-Dade County.

Effective comprehensive planning has also been a central focus of the Miami-Dade government from the onset. The power to "prepare and enforce comprehensive plans for the development of the county" was one of twenty-four specified in the County Home Rule Charter in 1957 and a Department of Planning is one of the four departments required by the County Home Rule Charter. The County adopted its first land use plan in 1965 and has since enacted a series of increasingly more refined growth management plans and procedures as required by the Local Government Comprehensive Planning Act of 1975 as amended from time to time.

In summary, Miami-Dade has a fifty-two year history of intergovernmental coordination for effective comprehensive planning and plan implementation. This element provides a review of this coordination and identifies selected aspects in need of change.



Miami-Dade County Municipalities and Public Schools

Aventura **Bal Harbour Bay Harbor Islands Biscayne Park** Coral Gables **Cutler Bay** Doral El Portal Florida City Golden Beach Hialeah Hialeah Gardens Homestead Indian Creek Village Key Biscayne Medley Miami Miami Beach

Adjacent Counties

Broward Collier Monroe

Miami Lakes Miami Gardens Miami Shores Miami Springs North Bay Village North Miami North Miami Beach Opa-locka Palmetto Bay Pinecrest South Miami Sunny Isles Surfside Sweetwater Virginia Gardens West Miami Public Schools

Adjacent Municipalities

Hallandale Beach Pembroke Park Miramar This page left intentionally blank.

Appendix H: Integration Document²

Integration of Policies and Guidance

A myriad of agencies and departments are integral to future land use and development, building codes and enforcement. The LMS Working Group works to review and integrate policies and guidance to enhance our collaboration to build a more sustainable and disaster resistant community.

A review of a number of these plans was done to identify elements where mitigation measures are incorporated and identify items for consideration for future incorporation of mitigation.

The plans reviewed included:

- Resilient 305 Strategy
- Southeast Florida Regional Climate Action Plan
- Miami-Dade Comprehensive Development Master Plan (CDMP)
- Miami-Dade Emergency Management Recovery Plan
- Miami-Dade 2040 Long Range Transportation Plan
- Florida Administrative Code 73C-40.0256



Resilient 305 Strategy

This Resilient305 Strategy is a living document created to address resilience challenges prioritized through intergovernmental and community collaboration. Throughout the process – in public meetings, surveys and focus groups. This strategy is a collaborative effort between Miami-Dade County, the City of Miami and the City of Miami Beach.

The strategy identifies stresses and shocks that can impact the County's overall resiliency. The stresses include:

- Growing traffic congestion
- Sea level rise and coastal erosion
- Aging infrastructure
- Decreasing housing quality and affordability
- Income inequality

The shocks include the following:

- Erosion
- Storms (Tropical storms & Hurricanes)
- Infrastructure disruptions
- Economic recessions
- Flooding
- Pandemics

Some of these shocks are analyzed in detail in the LMS Part 1 and Part 7. A breakdown of the impact of these shocks include:

- Southeast Florida has \$21 Billion in assets at risks from the different shocks and has suffered \$2.9 Billion in damages since 2005.
- A total of 53,000 homes are located less than three feet above high tide.
- Sea level rise: Since 1992 the sea level has risen by four inches and between three and seven inches of additional rise is expected in Southeast Florida by 2030.
- Storms: Hurricane Irma in 2017 caused \$467,371,000 in damages.

The City of Miami's Chief Resilience Officer is a member of the LMS Steering Committee. The Miami-Dade County Office of Resilience is also an active partner of the LMS and is currently managing the Rebuild Florida Voluntary Buyout Program under Hurricane Irma Community Development Block Grant-Disaster Recovery funds.



Southeast Florida Regional Climate Action Plan (CAP)

In January 2010, Miami-Dade, Broward, Palm Beach and Monroe counties entered into a Regional Climate Change Compact ("Compact") - a collaborative effort to unite, organize and assess the region in relation to climate change. The Compact set out to develop regionally consistent methodologies for mapping sea-level rise, assessing vulnerability and understanding the regional greenhouse gas emissions. The CAP was developed to identify recommendations to accomplish the goals of the Compact and in October 2012 the CAP was published. The CAP organized the recommendations into seven categories:

- Sustainable Communities and Transportation Planning.
- Water Supply, Management and Infrastructure.
- Natural Systems.
- Agriculture.
- Energy and Fuel.
- Risk Reduction and Emergency Management.
- Outreach and Public Policy.

The goals identified in the CAP are highlighted below with a brief overview of the supportive elements that dovetail into the LMS well. The Regional Climate Action Framework Implementation Guide can be found at: <u>http://southeastfloridaclimatecompact.org/compact-documents/</u> and includes potential partners and funding sources, policy/legislation needed and progress as of October 2012.

In January 2013, Nichole Hefty, Chief, Office of Sustainability, Planning Division was invited to participate as an LMS Steering Committee member to help ensure the integration of the work being done by the Compact. Several LMS Working Group members and the LMS Chair are active in attending meetings and workshops held by the Compact.

The following is a brief synopsis of the areas being incorporated into the LMS and Miami-Dade Emergency Management plans.

Sustainable Communities

A I	D. I				• • • • • • • • • •		1	
Goal:	Reduce financial	and phy	/sical losse:	s in our build	ing stock by	/ resnaping	where and how	v we build.

Policy		Notation
SP-3	Incorporate "Adaptation Action Area" definition (as provided for in Florida law) into municipal and/or county Comprehensive Plans, to provide a means to identify those areas deemed most vulnerable to sea level rise and other climate change impacts including but not limited to extreme high tides, heavy local rain events, and storm surge for the purpose of prioritized funding and adaptation planning.	OEM will incorporate language into the LMS in relation to Adaptation Action Areas and will consider this future designation in relation to the Benefit Cost Review for LMS Projects.
SP-7	Develop sea level rise scenario maps to be considered for inclusion in appropriate Comprehensive Plans and/or regional planning documents as determined by the appropriate local government to guide municipal and county government climate adaptation planning efforts and continue to update regional and local planning efforts as more data becomes available and scientific projections are refined.	OEM is currently working with WASD to roll out the ground and surface model with variable inputs to start to develop more refined maps on the potential impacts of sea level rise.
SP-10	Work with appropriate local, regional and state authorities to revise building codes and land development regulations to discourage new development or post-disaster redevelopment in vulnerable areas to reduce future risk and economic losses associated with sea level rise and flooding. In these areas, require vulnerability reduction measures for all new construction, redevelopment and infrastructure such as additional hardening, higher floor elevations or incorporation of natural infrastructure for increased resilience.	OEM is updating the Recovery Plan and the Mitigation Recovery Support Function and the Post Disaster Redevelopment plan and the Technical Advisory Committee that will be involved in post disaster recovery and redevelopment guidance/decisions.

Water Supply, Management and Infrastructure

Goal: Advance water management strategies and infrastructure improvements needed to mitigate for adverse impacts of climate change and sea level rise on water supplies, water and wastewater infrastructure, and water management systems.

Policy		Notation
WS-3	Utilize existing and refined inundation maps and stormwater management models to identify areas and infrastructure at increased risk of flooding and tidal inundation with increases in sea level, to be used as a basis for identifying and prioritizing adaptation needs and strategies.	OEM is currently working with WASD to roll out the ground and surface model with variable inputs to start to gather more refined maps on the potential impacts of sea level rise.
WS-9	Incorporate and prioritize preferred climate adaptation improvement projects in capital improvement plans and pursue funding.	Stakeholders are beginning to identify projects in the LMS Project list whereby the mitigation measures may also address the potential impacts of climate change.



Natural Systems

Goal: Implement monitoring, management and conservation programs designed to protect natural systems and improve their capacity for climate adaptation.

Policy		Notation
NS-7	Coordinate "living shorelines" objectives at regional scale to foster use of natural	Promotes coastal protection and aligns the CDMP CM
	infrastructure (e.g. coral reefs, native vegetation and mangrove wetlands) instead of	objectives.
	or in addition to grey infrastructure (e.g. bulkheads).	
NS-14	Maintain/restore urban tree canopy.	Aligns with CDMP CON-8M
		Area for consideration: Education on proper placement and maintenance of trees should be provided in conjunction with this program to avoid underground and overhead infrastructure being damaged during severe weather events with trees being uprooted or toppled.

<u>Agriculture</u>

Goal: Ensure the continued viability of agriculture in Southeast Florida through polices which remove barriers to production, promote economic incentives, improve water reliability, and provide research on best management practices thereby encouraging sustainable production in the face of a changing climate.

The LMS has an Agriculture/Landscape Sub-Committee that will be engaged in the updated modeling that will be run to better determine the impacts on the agricultural community.

Risk Reduction and Emergency Management

Goal: Provide a more resilient natural and built physical environment in light of climate change.

Policy		Notation
RR-1	Perform vulnerability analysis to identify and quantify the economic value of regional	Area for consideration: Incorporate analysis of future hazards
	infrastructure at risk under various sea level rise scenarios and other climate change	with new WASD ground/surface water interactive model and
	scenarios utilizing inundation mapping, modeling, and other appropriate tools. While	mapping from PWWM on design storms including current and
	the initial regional vulnerability assessment completed by the Compact Counties for	future development.
	use in this Regional Climate Action Plan has yielded important new insights on	



Policy		Notation
	regional risk, additional and ongoing analysis is required to further refine our current understanding and to monitor changes in Southeast Florida's risk profile over time.	
RR-2	 Evaluate and improve adaptation responses for communities at risk, to include: Development and implementation of methodologies for the assessment and evaluation of evacuation and relocation options. 	Area for consideration: New and updated mapping will provide OEM with local impacts so that a local response can be implemented. Currently SLOSH and the FEMA Flood Zones do NOT incorporate any future sea level rise considerations nor will the new Coastal Study that is being conducted. The new Coastal Study Maps will go into effect in 2019. Local governments need assistance from the federal government to incorporate sea level rise into hazard planning.
RR-3	Incorporate climate change adaptation into the relevant Local Mitigation Strategy (LMS) to reduce or eliminate long-term risk to human life and property from disasters. Within the LMS, update local risk assessments to include climate change in the hazard analysis and vulnerability assessment section. Develop strategies for hazard mitigation and post-disaster redevelopment planning.	The 2014 five year update of the LMS will include climate change considerations. OEM is currently working with WASD to roll out new modeling capabilities to help better define local potential impacts. Climate Change impacts are being integrated into the Threat and Hazard Identification Risk Analysis (THIRA) document that both the CEMP and the LMS reference for the hazard and vulnerability analysis. The Whole Community Infrastructure Planner/LMS Chair is coordinating with the Whole Community Recovery Planner for incorporation and integration of adaptation action areas and climate change impacts in the Recovery and Post-Disaster Redevelopment Plans.
RR-4	Identify transportation infrastructure at risk from climate change in the region; determine whether, when, where, and to whom projected impacts from climate change might be significant. Employ inundation mapping, modeling and other appropriate tools to assess the vulnerability of transportation infrastructure to the projected impacts of climate change under various sea level rise and other climate change scenarios.	OEM is currently working with WASD to roll out the ground and surface model with variable inputs to start to gather more refined maps on the potential impacts of sea level rise. Once we have these more detailed maps we can overlay the Critical Facility/Infrastructure data layers to identify structures/facilities.
RR-5	Enforce Coastal Construction Line and build upon goals, objectives and policies related to Coastal High Hazard Area designations in Comprehensive Plans.	OEM will work with RER in relation to the CHHA and HVZs as the evacuation zones have shifted based on new SLOSH data and new zones set in 2013.
RR-6	Adopt consistent plans at all levels of regional government that adequately address and integrate mitigation, sea level rise and climate change adaptation. The following plans must all be consistent: Disaster recovery and redevelopment plans; Comprehensive plans; Long range transportation plans; Comprehensive emergency	OEM is currently updating and working on the CEMP, LMS, Recovery Plan, Post-Disaster Redevelopment Plan and the THIRA. The Whole Community Infrastructure Planner/LMS Chair has engaged in a review of other relevant community

Policy		Notation
	management plans; Capital improvement plans; Economic development plans, Local Mitigation Strategy, Climate Change Action Plan; Future Land Use Plan.	planning documents to identify areas of integration and areas for consideration. This review will also be circulated to the LMS Working Group to encourage review and incorporation of other community planning documents including but not limited to municipalities and other regional and state planners.
RR-7	Continue to implement and enforce strong building codes that require new construction and substantial improvements to existing structures to mitigate against the impacts of flooding, severe winds, and sea level rise, and which are consistent with Climate Change Adaptation policy	Area for consideration: Develop mitigation measures for existing structures facing future impacts is needed to help determine feasible measures that can be implemented. RER: Does this include considering new codes for storm surge damage which may be more significant with SLR?

Public Outreach

Goal: Communicate the risks related to climate change and the value of adapting policies and practices to achieve resilience throughout the region.

Policy		Notation
PO-1	Provide outreach to residents, stakeholders and elected officials on the importance of addressing climate change adaptation and preparedness and develop a program to educate specific interest groups about the Compact, Regional Climate Action Plan, and the benefits of Adaptation Action Area. Consider utilizing the Leadership Academy concept to educate elected leaders, academic interests and other decision makers.	Area for consideration: Develop a PPI for Activity 330 for the CRS. Currently being looked at the CRS Sub-Committee of the LMS.
PO-2	Counties, municipalities and appropriate agencies will collaborate to develop and carry out outreach/educational programs to increase public awareness about hazards exacerbated by climate change, mitigation efforts, and adaptation strategies to minimize damage and risk associated with climate change.	Area for consideration: Inclusion in the PPI being developed for Activity 330 for the CRS.
PO-6	Develop early warning systems and social media applications to both inform residents and visitors of extreme high-tide events and to raise overall awareness on sea level rise and climate change issues. Also consider roadway signage for tidal flooding zones.	Area for consideration: develop and install posts that show potential storm surge, historic flooding levels and future projected sea level rise heights in vulnerable areas. RER: Also consider developing an app or public notice that warns of expected high tides so residents can take appropriate action in advance.

Public Policy

Goal: Guide and influence local, regional, state and federal climate change related policies and programs through collaboration and joint advocacy.

Policy		Notation
PP-4	Counties, municipalities, regional agencies and other appropriate government and private sector partners should integrate consideration of climate change impacts and adaptation strategies into existing and future system wide planning, operations, policies, and programs. The guiding principles developed by the Interagency Task Force on Climate Change Adaptation for federal agencies should be incorporated by entities when designing and implementing adaptation strategies: Adopt integrated approaches. Prioritize the most vulnerable. Use best-available science. Build strong partnerships. Apply risk-management methods and tools. Apply ecosystem-based approaches. Maximize mutual benefits. Continuously evaluate performance.	Review of other planning documents to look for areas for consideration in integrating and improving mitigation practices.
PP-11	Urge Congress to provide recognition of an "Adaptation Action Area" designation in federal law for the purpose of prioritizing funding for infrastructure needs and adaptation planning, with special attention to modifications in law that enhance funding opportunities through USACE and EPA appropriations processes, as requested by members of Congress.	Area for consideration: Identify projects in the LMS Project list that are in the future designation of Adaptation Action Areas for review and prioritization of funding opportunities.



Comprehensive Development Master Plan (CDMP) expresses Miami-Dade County's general objectives and policies addressing where and how it intends development and the conservation of land and natural resources to occur during the next 10-20 years. This review includes updates that were added as of June 2013.

Every seven years, the CDMP is reviewed and updated as required per Chapter 163 of the Florida Statutes, a process known as an Evaluation and Appraisal Report (EAR). The EAR includes an evaluation of the progress the County has made in implementing the goals, objectives, policies, maps and text of the CDMP and also recommends changes.

The following applications have been filed as part of the Evaluation and Appraisal Report:

- SMART Plan Corridors
- Agriculture
- Urban Development Boundary/Urban Expansion Areas
- Climate Change Adaptation
- Climate Change Mitigation

The following is a brief synopsis of the elements that support and promote mitigation. The complete CDMP may be found at: <u>http://www.miamidade.gov/planning/cdmp-adopted.asp</u>

Land Use Element

Objective LU-1

The location and configuration of Miami-Dade County's urban growth through the year 2030 shall emphasize concentration and intensification of development around centers of activity, development of well- designed communities containing a variety of uses, housing types and public services, renewal and rehabilitation of blighted areas, and contiguous urban expansion when warranted, rather than sprawl.

Policy		Notation
LU-1H	The County should identify sites having good potential to serve as greenbelts, and should recommend retention and enhancement strategies, where warranted. Such greenbelts should be suggested on the basis of their ability to provide aesthetically pleasing urban spaces recreational opportunities or wildlife benefits. Considered	This will provide for additional drainage areas and may help alleviate flooding issues.
	sites should include canal, road or powerline rights-of-way, or portions thereof, particularly where they could link other parklands, wildlife habitats, or other open spaces.	it with RL and SRL loss properties and areas of reported flooding so that we can see if they may help those areas.
LU-1R	Miami-Dade County shall take steps to reserve the amount of land necessary to maintain an economically viable agricultural industry. Miami-Dade County shall adopt and develop a transfer of developments rights (TDR) program to preserve agricultural land that will be supplemented by a purchase of development rights program to	This will help maintain "open spaces" and any future development would be limited in density to reduce potential drainage concerns.
	preserve agricultural land and environmentally sensitive property. The density cap of the land use category in the receiving area established by the TDR program may be exceeded. Land development regulations shall be developed to determine the extent that the density cap may be exceeded based on parcel size but in no case shall it exceed 20 percent.	Area for consideration: The density cap may need to be re- evaluated as we continue with the modeling process for potential sea level rise and with consideration that some of the areas may become adaptation action areas.
LU-1S	The Miami-Dade County Strategic Plan shall be consistent with the Comprehensive Development Master Plan (CDMP). The Miami-Dade County Strategic Plan includes Countywide community goals, strategies and key outcomes for Miami-Dade County government. Key outcomes of the Strategic Plan that are relevant to the Land Use element of the CDMP include increased urban infill development and urban center development, protection of viable agriculture and environmentally-sensitive land, reduced flooding, improved infrastructure and redevelopment to attract businesses, availability of high quality green space throughout the County, and development of mixed-use, multi-modal, well designed, and sustainable communities.	This measure promotes consistency amongst plans. One item for consideration would be to track which policies apply to all jurisdictions and ones that may be for only the UMSA. For areas where policies do not apply to municipal entities a review should be conducted to see if there is a comparable initiative at the municipal level exists.





Objective LU-3

The location, design and management practices of development and redevelopment in Miami-Dade County shall ensure the protection of natural resources and systems by recognizing, and sensitively responding to constraints posed by soil conditions, topography, water table level, vegetation type, wildlife habitat, and hurricane and other flood hazards, and by reflecting the management policies contained in resource planning and management plans prepared pursuant to Chapter 380, Florida Statutes, and approved by the Governor and Cabinet, or included in the Comprehensive Everglades Restoration Plan approved by Congress through the Water Resources Development Act of 2000.

Policies	olicies		
Policy		Notation	
LU-3D Miami-Dade County shall not sponsor any growth-subsidizing programs which promote future population growth and residential development on the barrier islands of Miami-Dade County or within the coastal high hazard areas (CHHA). Miami-Dade County shall coordinate with municipalities in Coastal High Hazard Areas, and areas with repetitive losses due to flooding or storm damage, to minimize demand for facilities and services that result from redevelopment and increases in residential densities. The provision of facilities and services to accomplish the timely evacuation of already-developed barrier islands in advance of approaching hurricanes shall be a priority of Miami-Dade County's transportation planning and hurricane preparedness programs.	Restriction on development in Coastal High Hazard Area addresses RL, SRL and storm surge flooding and impact on evacuation clearance times. Area for consideration: Evacuation is a protective measure that is accomplished when there is time and adequate resources to support the need. There could be situations whereby there is not enough notice or people may not heed the warnings and may have to shelter in place. Is there any provision that the developers/building owners are responsible for developing a plan or designating a "safe area"? This should not be seen as an alternative to evacuation but rather a last ditch option when evacuation is not a safe possibility. See also discussion in FAC 73C-40.0256. RER comment: CDMP policies CM-8C and CM-8D pertain to this and encourage residents to be better prepared, plan ahead		
		and enroll in the County's public safety alert system. It does not seem likely that a safe room requirement would become a part of the Florida Building Code for residents; as there already are specific requirements for the County's emergency public shelters and capacity requirements.	
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	Forward looking action item to identify potential impacts and identifying considerations.	



	 information, analysis and recommendations of the Regional Climate Change Action Plan for the Southeast Florida Regional Climate Change 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 	 OEM is currently working with WASD for the roll out of the ground and surface water interaction model that will provide for additional information/maps for how sea level rise may impact different areas of our community. Area for consideration: Identify measures for retro-fitting and future building standards in relation to the impacts of sea level rise. Consider evaluating projects in the LMS Project list for areas where sea level rise impacts cannot be mitigated to determine the benefit cost of investing limited funding sources.
	designations and zoning of impacted properties, and development standards, among other relevant considerations	
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.	Area for consideration: Climate impacts may also have increased wind speeds associated with tropical cyclones, reduced coastal barriers and higher sea levels that can push storm surge further inland. Will the Development Impact Tool include such considerations? RER: Not sure, will need to determine what it includes as it is developed. RER: This issue would first be discussed as part of the Adaptation Action Areas to determine how these additional assumptions should be incorporated into the model to identify vulnerable areas.
LU-3G	Miami-Dade County shall, by 2017, analyze and identify public infrastructure vulnerable to sea level rise and other climate change-related impacts. This analysis shall include public buildings, water and waste water treatment plants, transmission lines and pump stations, stormwater systems, roads, rail, bridges, transit facilities and infrastructure, airport and seaport infrastructure, libraries, fire and police stations and facilities.	RER working with WASD and PWWM to create an internal workgroup to determine how to use the surface/groundwater model to help identify vulnerable areas and infrastructure. This will help develop methodology for implementing R-451-14 and Ord. 14-79 RER: BCC Resolution R-451-14 partially implements this policy.
LU-3H	In order to address and adapt to the impacts of climate change, Miami-Dade County shall continue to improve analysis and mapping capabilities for identifying areas of the County vulnerable to sea level rise, tidal flooding and other impacts of climate change.	OEM is currently working with WASD to introduce and provide the new surface/ground water interactive model to our local stakeholders. (September 2014)
LU-3I	Miami-Dade County shall make the practice of adapting the built environment to the impacts of climate change an integral component of all planning processes, including but not limited to comprehensive planning, infrastructure planning, building and life	Area for consideration – identify how municipal entities are addressing this as well.



	safety codes, emergency management and development regulations, stormwater management, and water resources management.	RER comment: This is under the jurisdiction of the affected municipality(ites), in which some such as Miami Beach have begun addressing this in their Stormwater Master Plan. Also See Comment in LU-3G RER: BCC Resolution R-451-14 and Ordinance 14-79 partially implement this policy.
LU-3J	Miami-Dade County shall continue to actively participate in the Southeast Florida Regional Climate Change Compact and collaborate to increase regional climate change resiliency by sharing technical expertise, assessing regional vulnerabilities, advancing agreed upon mitigation and adaptation strategies and developing joint state and federal legislation policies and programs.	This measure promotes collaboration and integration into additional planning processes.
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. Miami-Dade County shall work with its local municipalities to identify and designate	This language is being integrated into the LMS as well. Area for consideration: AAAs should also be looked at for post- disaster redevelopment as well. RER: new surface/ground water interactive model will also be important for this. OEM will add this designation for projects in the LMS Project
	Adaptation Action Areas as provided by Section 163.3164(1), Florida Statute, in order to develop policies for adaptation and enhance the funding potential for infrastructure projects.	list to help identify this criteria. Area for consideration: AAA designation should also be incorporated into the Benefit Cost Review for the LMS projects.
LU-3M	Miami-Dade County shall support the implementation of climate-change related policies, through education, advocacy and incentive programs. Public outreach, such as workshops or a website with relevant information, shall seek to shift residents' everyday transportation decisions and housing choices to support transit oriented communities and travel patterns. The County shall provide opportunities for the public, including students, building industry and environmental groups, to participate in the development of any new climate-change related land development regulations and initiatives.	Community outreach and education are also addressed in Policy CM-8C and Policy ICE-8E. Realtor disclosure of hazards for real estate transactions. RER comment: Chapter 11-C of the Miami-Dade County Code requires real estate disclosure if the property is located in a Special Flood Hazard or Coastal High Hazard Area (FEMA definition), see <u>http://www.miamidade.gov/publicworks/flooding- disclosure.asp</u>

Objective LU-6

Miami-Dade County shall protect, preserve, ensure the proper management, and promote public awareness of historical, architectural and archaeologically significant sites and districts in Miami-Dade County, and shall continue to seek the addition of new listings to the National Register, and increase the number of locally designated historical and archeological sites, districts and zones.

Policy		Notation
LU-6I	Miami-Dade County shall pursue efforts with other local, State and federal agencies to develop policies that recognize the importance of designated historic resources and that comply with the provisions of the County's Historic Preservation Ordinance.	This objective presents an opportunity as a number of the LMS stakeholders have structures that are or are becoming historic designations. Area for consideration: Identify mitigation measures for historic structures. Develop database of local, state and national historic structures. (PROS and Office of Historic and Archaeological Resources may already have this.) <u>Consider how impacts of sea level rise/flooding will be</u> <u>considered for designated historic resources.</u>

Objective LU-9

Miami-Dade County shall continue to maintain, update and enhance the Code of Miami-Dade County, administrative regulations and procedures, and special area planning program to ensure that future land use and development in Miami-Dade County is consistent with the CDMP, and to promote better planned neighborhoods and communities and well-designed buildings.

Policies

Policy		Notation
LU-9B	Miami-Dade County shall continue to maintain, and enhance as necessary,	Area for consideration: Determine if this is also being done in the
	regulations consistent with the CDMP which govern the use and development	incorporated areas of the county.
	of land and which, as a minimum, regulate:	
	iv) areas subject to seasonal or periodic flooding	
LU-9K	By 2016, Miami-Dade County shall initiate the review and revision of its	Provides for improved drainage.
	Subdivision Regulations to facilitate the development of better planned	
	communities. The Public Works Department shall specifically review and	Area for consideration: Determine if this is also being done in the
	update the Subdivision Regulations for urban design purposes. Changes to	incorporated areas of the county.
	be considered shall include provisions for:	
	i) Open space in the form of squares, plazas, or green areas in residential	
	and commercial zoning categories;	



Policy		Notation
LU-9M	Building, zoning and housing codes will be vigorously enforced in all areas of Miami-Dade County	Promotes consistency of measures. Area for consideration: Determine if this is also being done in the
		incorporated areas of the county.

Objective LU-11

Miami-Dade County shall take specific measures to promote redevelopment of dilapidated or abandoned buildings and the renovation, rehabilitation or adaptive reuse of existing structures.

Policy		Notation
LU-11B	Miami-Dade County shall continue to utilize its Community Redevelopment Area (CRA) Program and federal programs such as the Community Development Block Grant and the HOME program to facilitate redevelopment of dilapidated or	Area for consideration: Integration of mitigation such as hardening buildings, elevation to minimize impacts of disasters.
	structures in eligible areas.	Post disaster redevelopment should be incorporated here as well.

Transportation Element

GOAL

DEVELOP AND MAINTAIN AN INTEGRATED MULTIMODAL TRANSPORTATION SYSTEM IN MIAMI-DADE COUNTY TO MOVE PEOPLE AND GOODS IN A MANNER CONSISTENT WITH OVERALL COUNTYWIDE LAND USE AND ENVIRONMENTAL PROTECTION GOALS AND INTEGRATION OF CLIMATE CHANGE CONSIDERATIONS IN THE FISCAL DECISION-MAKING PROCESS.

Objective TE-1

Miami-Dade County will provide an integrated multimodal transportation system for the circulation of motorized and non-motorized traffic by enhancing the Comprehensive Development Master Plan and its transportation plans and implementing programs to provide competitive surface transportation mode choice, local surface mode connections at strategic locations, and modal linkages between the airport, seaport, rail and other inter-city and local and intrastate transportation facilities. These plans and programs shall seek to ensure that, among other objectives, all transportation agencies shall consider climate change adaptation into their public investment processes and decisions.

Policy		Notation
TE-1G	Miami-Dade County shall develop and adopt climate change adaptation and	Promotes consistency.
	mitigation strategies for incorporation into all public investment processes and	FHWA Pilot project being implemented by MDC, Broward and
	decisions, including those concerning transportation improvements.	PB Counties MPO's is exploring vulnerabilities of transportation



Policy		Notation
		infrastructure to climate change and SLR impacts. This should be complete sometime in 2015. New surface/ground water interactive model will also be important for this.
TE-1H	Transportation agencies developing their transportation plans for Miami-Dade County shall take into consideration climate change adaptation and mitigation strategies through project review, design, and funding for all transportation projects. Transportation agencies should consider extending their planning horizons appropriately to address climate change impacts.	Area for consideration: Impacts on evacuation needs to be incorporated as well. RER comment: Evacuation routes are part of the FDPT, MDX and PWWM roadway systems and RER reviews development for concurrency to ensure there is enough capacity for all services, including roadways. New LRTP incorporates climate change mitigation, adaptation and SLR considerations

Traffic Circulation Sub-element

Miami-Dade County, since 1957, has been a home rule charter county. The Department of Regulatory and Economic Resources Planning Division therefore serves as a metropolitan agency, and the traffic circulation needs and the goal in this Sub element are presented for the entire County, including the 34 municipalities.

GOAL

DEVELOP, OPERATE AND MAINTAIN A SAFE, EFFICIENT AND ECONOMICAL TRAFFIC CIRCULATION SYSTEM IN MIAMI-DADE COUNTY THAT PROVIDES EASE OF MOBILITY TO ALL PEOPLE AND FOR ALL GOODS, IS CONSISTENT WITH DESIRED LAND USE PATTERNS, CONSERVES ENERGY, PROTECTS THE NATURAL ENVIRONMENT, ENHANCES NON-MOTORIZED TRANSPORTATION FACILITIES, SUPPORTS THE USAGE OF TRANSIT, AND STIMULATES ECONOMIC GROWTH.

Objective TC-6

Plan and develop a transportation system that preserves environmentally sensitive areas, conserves energy and natural resources, addresses climate change impacts, and promotes community aesthetic values.

Policy		Notation
TC-6A	The County shall avoid transportation improvements which encourage or subsidize increased development in coastal high hazard areas, environmentally sensitive areas II-17 identified in the Coastal Management and Conservation, Aquifer Recharge and Drainage Elements, and areas of high risk of significant inland flooding.	Promotes reduction of building in hazard areas. Area for consideration: How is "significant flooding" being defined? Is this being correlated to the RL, SRL and flooding complaints? New surface/ground water interactive model will also be important for this.
		N



TC-6D	New roadways shall be designed to prevent and control soil erosion, minimize	Promotes flood mitigation measures.
	clearing and grubbing operations, minimize storm runoff, minimize exposure and risk	
	of climate change impacts such as increased flood conditions, and avoid	New surface/ground water interactive model will also be
	unnecessary changes in drainage patterns.	important for this.

Objective TC-7

Miami-Dade County's Traffic Circulation Sub-element, and the plans and programs of the State, region and local jurisdictions, will continue to be coordinated.

Policy		Notation
TC-7A	Miami-Dade County shall annually review subsequent Florida Department of Transportation (FDOT) Five-Year work programs to ensure that they remain consistent with and further the Traffic Circulation Sub-element and other Elements of Miami-Dade County's CDMP.	Area for consideration: Impacts on evacuation needs to be incorporated as well. RER comment: See previous comment on TE-1H.
TC-7E	The County shall promote coordination with all relevant transportation agencies to address climate change impacts.	Promotes collaboration and integration. See Comments in TE-1G

The Metropolitan Planning Organization (MPO), which coordinates all transportation planning for Miami-Dade County, is responsible for periodically updating the MPO's Long Range Transportation Plan. It is anticipated that the future traffic circulation network included in the Transportation Element will be adjusted during future plan amendment cycles to reflect the findings of that planning activity, in keeping with the goals, objectives and policies of the CDMP.

Housing Element

GOAL II

THROUGHOUT MIAMI-DADE COUNTY IDENTIFY AND PROVIDE AFFORDABLE HOUSING OPPORTUNITIES FROM WITHIN THE EXISTING HOUSING STOCK AND ENSURE ITS EFFICIENT USE THROUGH REHABILITATION AND RENOVATION, AND FACILITATE ADAPTIVE CONVERSION OF NON-RESIDENTIAL STRUCTURES TO HOUSING USE FOR EXTREMELY LOW, VERY LOW, LOW, AND MODERATE-INCOME HOUSEHOLDS, INCLUDING WORKFORCE HOUSING.

Objective		Notation
HO-7	Miami-Dade County shall support the preservation and enhancement of existing mobile home communities as an additional source of affordable housing options for extremely low through moderate income households and encourage residents and	Area for consideration: On site protection for residents, such as a community building/center.



	builders to incorporate energy and natural resource conservation strategies into housing design, site plan design, and improvements for existing mobile homes.	Assess for impacts of sea level rise and other hazards as the low to moderate income households may have less resources to buy insurance or recovery quickly after a disaster.
HO-5	Reduce the number of substandard housing units in the County by encouraging the rehabilitation or conservation of the existing housing stock, including historic structures, and provide that an increased number of extremely low, very low, low and moderate-income, and workforce units comes from housing rehabilitation and adaptive re-use of non-residential structures.	Area for consideration Add language for mitigation measures built into housing rehabilitation. Assess for impacts of sea level rise and other hazards as the low to moderate income households may have less resources to buy insurance or recovery quickly after a disaster.


GOAL III

ALL VARIATIONS OF AFFORDABLE HOUSING PRODUCTS IN MIAMI-DADE COUNTY SHOULD BE PROVIDED THROUGH THE MOST ECONOMICALLY FEASIBLE ALTERNATIVES, WHILE ENSURING THAT SITE LOCATIONS, SITE AND HOUSING DESIGNS, AND BUILDING PRACTICES FOSTER ENERGY AND LAND CONSERVATION.

Objective		Notation
HO-8	Bring about housing design and development alternatives that are aesthetically pleasing, encourage energy efficiency and enhance the overall health, safety and general welfare of County residents.	Area for consideration: Building outside of high hazard areas and with mitigation measures to lessen the impact to residents from hazards.
H-11	Continue governmental assistance to persons and families displaced and relocated by public projects and encourage private-sector assistance in relocating people displaced by private projects.	Area for consideration: Enter into public private partnerships to provide for safe and affordable housing. Consider involving Emergency Support Function #18 and input from the County's Public Housing and Community Development Department.
HO-11C	Assure the availability of suitable emergency shelters, transitional housing, and relocation programs for very low, low- and moderate-income populations who have lost their housing, especially when displacement occurs due to redevelopment or natural disaster.	Promotes temporary and transitional housing. Area for consideration: Assess housing stock and identify areas where construction under previous codes or Pre-FIRM regulations exist and identify mitigation measures that could minimize the need for relocation and reduce potential damages due to hazards, including consideration for impacts of climate change and sea level rise. RER: A GIS analysis of housing stock by year might also aid in identifying older homes that may be at risk in the event of hurricanes or other natural disasters.



Conservation, Aquifer Recharge and Drainage Element

GOAL

PROVIDE FOR THE CONSERVATION, ENVIRONMENTALLY SOUND USE, AND PROTECTION OF ALL AQUATIC AND UPLAND ECOSYSTEMS AND NATURAL RESOURCES, AND PROTECT THE FUNCTIONS OF AQUIFER RECHARGE AREAS AND NATURAL DRAINAGE FEATURES IN MIAMI-DADE COUNTY.

Objective CON-5

Miami-Dade County shall continue to develop and implement the Stormwater Master Plans comprised of basin plans for each of the sixteen primary hydrologic basins being addressed by the County, and cut and fill criteria as necessary to: provide adequate flood protection; correct system deficiencies in County maintained drainage facilities; coordinate the extension of facilities to meet future demands throughout the unincorporated area; and maintain and improve water quality. Each of the basins' Master Plans is to be updated every five years, with the next update to be completed by 2017. The implementing actions recommended in each basin plan shall continue to commence immediately after the applicable plan is approved. Outside of the Urban Development Boundary the County shall not provide, or approve, additional drainage facilities that would impair flood protection to easterly developed areas of the County, exacerbate urban sprawl or reduce water storage. RER: New surface/ground water interactive model will be important for all or most of these policies.

Policies		
Policy		Notation
CON- 5A	The Stormwater Management (Drainage) Level of Service (LOS) Standards for Miami-Dade County contain both a Flood Protection (FPLOS) and Water Quality (WQLOS) component. The minimum acceptable Flood Protection Level of Service (FPLOS) standards for Miami-Dade County shall be protection from the degree of flooding that would result for a duration of one day from a ten-year storm, with exceptions in previously developed canal basins as provided below, where additional development to this base standard would pose a risk to existing development. All structures shall be constructed at, or above, the minimum floor elevation specified in the federal Flood Insurance Rate Maps for Miami-Dade County, or as specified in Chapter 11-C of the Miami-Dade County Code, whichever is higher.	Promotes consistency between CDMP and Building Code. Area for consideration: Integration of Climate Change and Sea Level Rise.
CON- 5B	Applicants seeking development orders approving any new use or site alteration outside the Urban Development Boundary where the elevation of any portion of the site will remain below County Flood Criteria shall be advised by the permitting agency that those portions of the land that are not filled to Miami-Dade County Flood Criteria may be subject to periodic flooding.	Promotes education of flooding risk. Area for consideration: Integration of future risk with Climate Change and Sea Level Rise impacts.
Con-5C	Miami-Dade County shall work with the South Florida Water Management District to better identify the developed urban areas within the County that do not have	Promotes risk assessment across jurisdictional boundaries



Policy		Notation
	protection from a one in ten year storm. The County shall develop stormwater management criteria and plans for all unincorporated areas identified. Where such areas fall within municipal boundaries, the County will coordinate the stormwater management planning with the appropriate municipality(ies).	Area for consideration: Currently the CRS program only allows for individual jurisdictions to participate. Due to our dependent relationship with SFWMD and the risk that all of our communities face with flooding, a strategy to try to get our entire County to be seen as one community in relation to floodplain management challenges should be investigated. SFWMD to add their projects to the LMS Project list.
CON- 5D	Miami-Dade County shall seek funding for a comprehensive basin-by-basin drainage engineering study which will include: identification of public drainage facilities and private drainage facilities that impact the public facilities, and the entities having operational responsibility for them; establishment of geographic service areas for the drainage facilities; and, a facility capacity analysis by geographic service area for the planning periods 2015 and 2025.	The LMS has started tracking mitigation projects by drainage basin so we can also map where mitigation projects are planned. The plan is to be able to show over time where drainage projects have occurred and to track the progress in the reduction of flood complaints, and RL and SRL properties.
CON- 5E	 Miami-Dade County shall establish a priority listing of stormwater drainage including: Drainage/stormwater sewer system improvements in developed urban areas with persistent drainage problems Canal and/or stormwater drainage improvements for developed urban areas that have less than one in ten year storm protection and where no roadway drainage improvements are planned or proposed, which would remedy problems. 	PWWM lists drainage projects in the LMS Project list and they are required to be prioritized. Area for consideration: Identify if this also applies to municipal areas
CON- 5H	Miami-Dade County shall periodically evaluate stormwater drainage criteria as outlined in the County Code to ensure proper flood protection is being provided to County residents.	Promotes effectiveness evaluation. Area for consideration: Identify if this also applies to municipal areas. Can this tie into 73C-40.0256.
CON-5I	When building, expanding or planning for new facilities such as water treatment plants, Miami-Dade County shall consider areas that will be impacted by sea level rise.	Promotes consideration of future hazard impacts.

Objective CON-8

Upland forests included on Miami-Dade County's Natural Forest Inventory shall be maintained and protected.

Policy		Notation
CON- 8M	Miami-Dade County shall seek to increase the percentage of tree canopy from the present level of 10% to the national average of 30% by 2020 through the implementation and/or enforcement of: Adopt-A-Tree and other programs; landscape and tree protection ordinance changes to further increase canopy; and, other mechanisms as feasible and appropriate.	 Area for consideration: Education on proper placement and maintenance of trees should be provided in conjunction with this program to avoid underground and overhead infrastructure being damaged during severe weather events with trees being uprooted or toppled. RER comment: Consult with DERM as they periodically host an "Adopt a Tree" event which they may provide a pamphlet or guidance to residents in the proper care and placement of the tree. RER: This issue is also addressed in the County's Landscape Ordinance – specifically Chapter 18B.

Water and Sewer Sub element

GOAL

PROVIDE FOR POTABLE WATER, AND SANITARY SEWER FACILITIES WHICH MEET THE COUNTY'S NEEDS IN A MANNER THAT PROMOTES THE PUBLIC HEALTH, ENVIRONMENTAL PROTECTION, OPERATIONAL EFFICIENCY, CDMP-PLANNED LAND USE, AND ECONOMIC OPPORTUNITY.

Objective WS-4

Miami-Dade County shall protect the health of its residents and preserve its environmental integrity by reducing the proportion of residences and commercial establishments within the County using private wastewater treatment facilities. Miami-Dade County shall discourage the new or continued use of such facilities through the strict application of the CDMP and land development regulations.

Policy		Notation
WS-4H	Miami-Dade County shall coordinate with municipalities and the State of Florida to monitor existing septic tanks that are currently at risk of malfunctioning due to high groundwater levels or flooding and shall develop and implement programs to abandon these systems and/or connect users to the public sewer system. The County shall	Promotes mitigation and future hazard impacts. New surface/ground water interactive model will also be important for this.



also coordinate to identify which systems will be adversely impacted by projected sea	Currently in the LMS Project list El Portal, Florida City,
level rise and additional storm surge associated with climate change and shall plan to	Miami Gardens, North Miami Beach, Homestead and South
target those systems to protect public health, natural resources, and the region's	Miami have identified projects to support this policy. (July
tourism industry.	2014)

Recreation and Open Space Element

Miami-Dade County Parks, Recreation and Open Spaces Department strives to provide equitable access to all residents of the County in order to VI-2 provide the opportunity to participate in at-will₁ and/or programmed physical activities. The criteria established in the Equity Access Criteria Chart₂ is developed to make Miami-Dade County a more livable and sustainable community where residents should have access to parks within their neighborhood and be able to walk or bike to a park within ½ mile from their home. In addition, residents should have access to regional parks and the recreation opportunities there-in within 2-3 miles biking or driving distance from their home.

Area for consideration: Currently under the CRS program municipal entities are not getting credit for open spaces owned and operated by the County. This can impact their ability to get credit for this and negatively impact their overall CRS score which translates into higher flood insurance rates for their residents. The map and chart of sites referenced in this element of the CDMP has been included in Part 7: NFIP/CRS of the LMS.

GOAL

DEVELOP, PROGRAM, AND MAINTAIN A COMPREHENSIVE SYSTEM OF PARKS AND RECREATIONAL OPEN SPACES OFFERING QUALITY AND DIVERSITY IN RECREATIONAL EXPERIENCES WHILE PRESERVING AND PROTECTING VALUABLE NATURAL, HISTORICAL AND CULTURAL RESOURCES, UNIMPAIRED, FOR PRESENT AND FUTURE GENERATIONS.

Objective ROS-1

Provide a comprehensive system of public and private sites for recreation, including but limited to public spaces, natural preserve and cultural areas, greenways, trails, playgrounds, parkways, beaches and public access to beaches, open space, waterways, and other recreational facilities and programs serving the entire County; and local parks and recreation programs adequately meeting the needs of Miami-Dade County's unincorporated population., through 2017.

Policy		Notation
ROS- 1D	In cases of annexation or incorporation efforts, the County shall employ the following guidelines on a case-by-case basis: i.) The County shall not transfer either the operation and maintenance or title of any district park, metropolitan park, natural area preserve, special activity area, or greenway to a municipality;	Area for consideration: Currently under the CRS program municipal entities are not getting credit for open spaces owned and operated by the County. This can impact their ability to get credit for this and negatively impact their overall



 ii.) The County shall not allow proposed municipal boundaries to create multiple jurisdictions within any one area wide park; iii.) The County shall retain ownership of County-owned local parks encompassed by municipal annexation or incorporation areas if the majority of park program participants are residents of unincorporated areas; 	CRS score which translated into higher flood insurance rates for their residents. RER comment: This issue needs to be addressed with the County's Parks, Recreation and Open Spaces Department, as it involves County parks.

Require the availability of adequate local recreation open space as a condition for the approval of residential development orders, and maintain an adequate inventory of recreational areas and facilities through 2017.

Policy		Notation
ROS- 2B	Local recreation open space counted when measuring level of service shall include: 1) public local parks which exist or are committed by covenant; 2) public school and college playfields; 3) portions of private recreation open space; and, 4) County-owned or operated parks that have been incorporated or annexed into municipalities but in which a majority of park program participants are unincorporated area residents.	Area for consideration: Currently under the CRS program municipal entities are not getting credit for open spaces owned and operated by the County. This can impact their ability to get credit for this and negatively impact their overall CRS score which translated into higher flood insurance rates for their residents. RER comment: see previous comment under ROS-1D.
ROS- 2E	The County shall maintain an updated inventory of County and municipal recreation open spaces serving public recreational demand. The Parks, Recreation and Open Spaces Department shall maintain information on designated public and private recreation open space and facilities necessary for accurate and regular measurements of levels of service and administration of concurrency requirements.	Area for consideration: Currently under the CRS program municipal entities are not getting credit for open spaces owned and operated by the County. This can impact their ability to get credit for this and negatively impact their overall CRS score which translated into higher flood insurance rates for their residents. RER comment: see previous comment under ROS-1D.



Access to parks and recreational facilities will be improved in Miami-Dade County.by 2017.

Policy		Notation
ROS- 3D	Through its park and recreation programs and all other available means, Miami-Dade County shall preserve and protect beaches and shores, water views and maximize public ownership of these coastal resources. The County shall improve the maintenance of existing public park and recreation entrances and shall, where feasible, provide additional access points at waterfront and coastal locations.	Beach re-nourishment programs, dune restoration all have benefits for mitigating sea level rise and storm surge.

Objective ROS-4

The County shall maintain a capital financing plan to enable provision of park and recreation open spaces and facilities through a variety of public and private sources and partnerships.

Policy		Notation
ROS- 4D	The County shall continue to explore the use of special taxing districts and other dedicated funding mechanisms for the long-term provision and management of park and recreation open space and facilities, especially where they offer economic advantages to the County and residents.	Area for consideration: Currently under the CRS program municipal entities are not getting credit for open spaces owned and operated by the County. This can impact their ability to get credit for this and negatively impact their overall CRS score which translated into higher flood insurance rates for their residents. RER comment: see previous comment under ROS-1D.
ROS- 4F	The County shall continue implementation of capital projects funded by 2004 Building Better Communities General Obligation Bond and 2000-2008 Quality Neighborhood Improvement Bond proceeds available for the acquisition, renovation, restoration, and development of recreation open spaces and facilities, and that these activities can be accomplished in a timely fashion. The Parks, Recreation and Open Spaces Department will continue to explore both fee-simple and less-than-fee-simple mechanisms for the establishment of open space <i>conservation</i> areas and will seek additional funds in any future bond issue that the County may propose.	Area for consideration: Currently under the CRS program municipal entities are not getting credit for open spaces owned and operated by the County. This can impact their ability to get credit for this and negatively impact their overall CRS score which translated into higher flood insurance rates for their residents. RER comment: see previous comment under ROS-1D.
ROS- 4G	The Parks, Recreation and Open spaces Department will collaborate with County agencies that oversee funding programs and accounts related to horticulture, arboriculture, environmental mitigation, hazard mitigation, transportation, crime prevention, tourist development, and community and economic development, which can potentially benefit local residents through the enhancement of parks and recreation programs, should assist with the implementation of the policies in this	Restoration of dunes and beaches and natural areas to protect the coastal areas from current and future risks such as sea level rise, coastal flooding and storm surge.



Element by participating in inter-agency partnerships to address, for example, the following: i.) Acquisition of parkland through leases and management agreements, forfeitures of land, and developer dedications or conveyances;	
 ii.) Landscaping maintenance and continued resource management of parkland and natural areas such as through the use of regulatory fines collected by the Public Works and Waste Management Department or the Division of Environmental Resources Management of the Department of Regulatory and Economic Resources; iii.) Designation of park sites as off-site mitigation areas for environmental restoration; 	

Maintain a formal capital improvements planning program that improves and expands the park and recreation system through the acquisition of land, the renovation and restoration of facilities and natural areas, the development of new park and recreation open space and facilities, and the linking of parks and other public spaces.

Policy		Notation
ROS- 5C	The Parks, Recreation and Open Spaces Department shall, as funds are available, renovate, restore, and upgrade County facilities following the guidelines of the Miami-Dade County Park Structure and Landscape Pattern Book "Pattern Book" to enhance park aesthetics and ensure that the public can safely and securely enjoy recreational opportunities, and that the County can cost-effectively extend the useful life of existing facilities. Expenditures for the renovation, restoration and upgrade of existing parks and recreation facilities are prioritized as follows: 1) repairs and projects increasing visitor safety; 2) hazard reduction; 3) facility upgrade and resource management; 4) accessibility improvements in compliance with ADA; and, 5) energy efficiency improvements. The County shall implement projects and activities including but not limited to the following in order to address these priorities:	PROS actively tracks projects in the LMS Project list.



Objective		Notation
ROS-8	The Miami-Dade County Parks and Open Space System Master Plan (OSMP), through a 50-year planning horizon, shall guide the creation of an interconnected framework of parks, public spaces, natural and cultural areas, greenways, trails, and streets that promote sustainable communities, the health and wellness of County residents, and that serve the diverse local, national, and international communities.	Area for consideration: Integration of consideration for impacts of future hazards, including climate change.

Coastal Management Element

The Coastal Management Element reflects the uniqueness of the coastal area of Miami-Dade County and the realities of planning for a highly developed barrier island chain and low-lying mainland, a complex metropolitan area of over 2.7 million residents and 16.5 million annual tourists that heavily use the urban park system, especially coastal parks and waterways. The County continues its stewardship of these coastal resources, with activities including water quality monitoring, coastal wetland restoration, and increasing public awareness of and access to these coastal areas. Furthermore, Miami-Dade County is the only county in the nation to possess within its boundaries two national parks, Biscayne National Park and Everglades National Park, as well as the heavily used Biscayne Bay Aquatic Preserve, which is urban Miami-Dade's signature amenity.

Miami-Dade County continues its tradition of strong pre- and post-hurricane planning, utilizing lessons learned from Hurricane Andrew and other natural disasters. The County's storm surge planning zones, labeled A, B, C, D and E are not storm category dependent. Each storm's dynamics are modeled to predict potential impacts based on the Sea, Lake and Overland Surge from Hurricanes (SLOSH) II computer model, developed by the National Hurricane Center, U.S. Army Corps of Engineers, the U.S. Geological Survey and the Federal Emergency Management Agency, in cooperation with state and local offices of emergency management. Orders for evacuations are based on the storm's track, projected storm surge potential impacts and consultation with knowledgeable agencies. These planning zones as delineated by the Miami-Dade County Office of Emergency Management (OEM) are presented for information purposes on Figure 1. In accordance with Chapter 163, Florida Statutes, coastal high hazard areas (CHHA) are areas that are seaward of the elevation of a category one storm surge line and is depicted in Figure 13 in the Land Use Element.

Area for consideration:

- In 2013 with the new SLOSH data OEM updated the previous evacuation zones with Storm Surge Planning Zones. A closer look at utilizing the Category one storm surge information needs to be done. OEM uses 18" as the delineation for evacuation but lesser amounts of storm surge may impact areas that are not reflected in the storm surge planning zones. When the new SLOSH data was analyzed and the new planning zones were set by OEM there was a shift geographically where the A zone was designated. This may have a direct impact on the CHHA. See the section on the review of Florida Administrative Code 73C-40.0256
- FEMA is currently conducting the Southeast Florida Coastal Study that includes Miami-Dade, Broward, Palm Beach and Monroe Counties. Data is being collected and PWWM and OEM worked collectively to get all municipalities to participate in the Discovery Meeting held on June 24, 2014. The proposed maps would go into effect in 2019 after the data collection, analysis, review and community input process.



RER comment: An update of the Storm Surge Planning Zones map and text reference is warranted, but needs to be with a comprehensive discussion and evaluation with OEM, Office of Sustainability, PWWM and other County agencies regarding the change in terminology from "evacuation zones" to "storm surge zones", and also address OEM's concerns with the SLOSH model. This update may be done in coordination with the Adaptation Action Areas and the Development Impact Tool referenced in the LU Element, or can be updated separately if needed.

GOAL

PROVIDE FOR THE CONSERVATION, ENVIRONMENTALLY SOUND USE AND PROTECTION OF ALL NATURAL AND HISTORIC RESOURCES; LIMIT PUBLIC EXPENDITURES IN AREAS SUBJECT TO DESTRUCTION BY NATURAL DISASTERS; AND PROTECT HUMAN LIFE AND PROPERTY IN THE COASTAL AREA OF MIAMI-DADE COUNTY, FLORIDA.

Objective CM-1

Protect, conserve and enhance coastal wetlands and living marine resources in Miami- Dade County.

Policy		Notation
CM-1A	Mangrove wetlands in the following locations and mangrove wetlands within the "Environmental Protection" designation on the Adopted Land Use Plan (LUP) Map for Miami-Dade County shall be designated as "Mangrove Protection Areas"	Natural systems (including mangrove wetlands) provides natural storm surge attenuation.
	□□Publically owned mangrove wetlands within and adjacent to the Oleta River State Recreation Area	
	Haulover Park	
	Bird Key (privately owned)	
	 Near-shore islands and northwestern shoreline of Virginia Key 	
	The western shore of Key Biscayne	
	Bear Cut Preserve	
	The Cocoplum Mangrove Preserve	
	Matheson Hammock Park	
	R. Hardy Matheson Preserve	
	Chapman Field Park	
	The Deering Estate and Chicken Key	
	Royal Harbor Yacht Club and Paradise Point south shoreline (privately owned)	
	Mangrove and scrub mangroves within and adjacent to Biscayne National Park	
	and Everglades National Park to the landward extent of the mangroves	



Mangrove and scrub mangroves within and adjacent to Card Sound, Manatee
Bay, Florida Bay and Barnes Sound to the landward extent of the mangroves
In these areas no cutting, trimming, pruning or other alteration including dredging or
filling of mangroves shall be permitted except for purposes of surveying or for projects
that are: (1) necessary to prevent or eliminate a threat to public health, safety or welfare;
(2) water dependent; (3) required for natural system restoration and enhancement; or (4)
clearly in the public interest; and where no reasonable upland alternative exists. In such
cases, the trimming or alteration shall be kept to the minimum, and done in a manner,
which preserves the functions of the mangrove system, and does not reduce or
adversely affect habitat used by endangered or threatened species.

Objective CM-2 Protect, conserve or enhance beaches and dunes and offshore reef communities.

Policy		Notation
CM-2B	Beaches shall be stabilized by planting, maintaining and monitoring appropriate dune vegetation, and by providing elevated footpaths or other means of traversing the dune without contributing to erosion. All subsequent activities or development actions on, or bordering the restored beach, shall be compatible with and contribute to beach maintenance.	Promotes coastal protection.



Miami-Dade County shall continue to work in cooperation with other appropriate agencies to increase the acreage, restoration and enhancement of publically owned benthic, coastal wetland and coastal hammock habitat. Endangered and threatened animal species and coastal wildlife shall be protected and coastal habitats restored and managed to improve wildlife values.

An added benefit of restoration and enhancement of these areas is that it serves as a natural buffer for storm surge and sea level rise. Studies to determine the projected impacted of sea level rise and climate change on these natural areas would be beneficial to determine if additional measures can be taken.

Objective CM-5

Miami-Dade County shall increase the amount of shoreline devoted to water-dependent, water-related, and publicly accessible uses.

Policy		Notation
CM-5C	Miami-Dade County shall continue to place a high priority on the acquisition of coastal lands for use as parks and preserves.	Promotes coastal protection.
CM-5F	The siting of public or private water dependent facilities shall be based on upland, shoreline and in-water characteristics, as well as submerged land ownership. At a minimum, the following general criteria shall be used to determine the appropriateness of sites within the Coastal Area for marina/water-dependent projects: (d) Provide a hurricane contingency plan.	Area for consideration: Where are the hurricane contingency plans submitted and who reviews them? Is this a one- time hurricane plan or a requirement that plans are updated? RER comment: Certain marine facilities are required to obtain a yearly Marine Operation Permit (MOP) from DERM. The thought was coordinate this with the MOP to have the facilities provide us guidance on their plans in the event of a hurricane. A sample form is shown in UF- IFAS/Seagrant's publication "Hurricane Manual for Marine Interests" (available on pg. 14 at <u>http://miami- dade.ifas.ufl.edu/pdfs/disaster/HurricaneManual1.pdf</u>) to foster awareness of the importance of preparing for hurricanes. In addition, these marine facilities could also be mapped, which would aid in post-hurricane recovery in locating boating and marine damage.

Miami-Dade County shall preserve traditional shoreline uses and minimize user conflicts and impacts of man-made structures and activities on coastal resources.

Policy		Notation
CM-6A	By 2017, Miami-Dade County shall seek funding to study protection of traditional public uses of the shoreline and water, user conflicts, and impacts of construction and activities on coastal resources, including potential solutions.	Promotes mitigation and future hazard impacts.

Objective CM-7

Improve the public's awareness and appreciation of Miami-Dade County's coastal resources and water-dependent and water-related uses.

Policy		Notation
CM-7D	Miami-Dade County shall continue its public involvement in natural areas restoration including removing invasive exotic plant species, reseeding or replanting native vegetation, enhancing habitat, monitoring wildlife, and re-nourishing dunes in coastal County parks.	Promotes mitigation.

Objective CM-8

The existing time period required to complete the evacuation of people from flood vulnerable Coastal Areas and mobile homes prior to the arrival of sustained tropical storm force winds shall be maintained or lowered. Shelter capacity within Miami-Dade County shall be increased as necessary to provide a safe haven for storm evacuees.

Policy		Notation
CM-8A	Miami-Dade County shall annually review and update, if necessary, the hurricane evacuation procedure section of its Comprehensive Emergency Management Plan (CEMP) and maintain or enhance, as necessary, the resources and capabilities of the Miami-Dade Office of Emergency Management to provide effective implementation of the CEMP.	Area for consideration: when new construction of multi- family dwellings or business parks occurs, notify emergency management so outreach on hazards and protective measures can occur. RER comment: OEM is notified of all public hearings for CDMP amendments, which can change the land use and possibly also the usage and expected population. For permits for construction and certificates of occupancy, coordination with the County's Building department is needed. However, this only covers the County's jurisdiction over property located in unincorporated Miami- Dade County, as municipalities have their own jurisdiction



Policy		Notation
		over land use and zoning, should also coordinate with the municipalities' building departments.
		Monitor the evolution of population density to better plan for supportive resources.
CM-8B	Miami-Dade County shall request that State government better assist Miami-Dade County with funding emergency planning and operations, including future State funding for the preparation of hazard mitigation and post-disaster redevelopment plans. To reflect the larger scale and complexity of planning, preparation, response, and recovery within large counties, Miami-Dade County shall request the State to revise its current funding distribution formula for natural disaster planning and emergency operations from the present equal distribution of monies between the 67 Florida Counties to a proportionate distribution formula reflecting population.	
CM-8C	Miami-Dade County shall develop a public education program prior to the hurricane season to notify households and operators of hotels, motels or time-share condominiums in flood vulnerable Coastal Areas of their need to evacuate and seek safe shelter in the event of a hurricane. The public education program should also be utilized to disseminate emergency preparedness information. Emergency information shall be printed in the community interest section of the telephone book.	 Area for consideration: Consistency in language utilized for other planning purposes such as the Coastal High Hazard and Hurricane Vulnerable Zones. Engage CRS community planners to assist with outreach for flood issues and education on insurance and mitigation measures. Update the reference to the telephone book or include other more modern forms of media. RER Comment: The last update of the comprehensive plan kept the language intact as to keep in mind vulnerable populations who may not have immediate internet access. The next comprehensive plan update can add in terms pertaining to the internet or to social media.
CM-8D	Miami-Dade County shall encourage its residents to be better prepared and more self- reliant in the event of a hurricane, including planning ahead for early evacuation, sheltering with family or friends living outside evacuation areas, or enrolling in County programs such as the Emergency and Evacuation Assistance Program, residential shuttering program, or public safety alert programs.	
CM-8E	Miami-Dade County shall establish and maintain mutual aid agreements and contracts that would facilitate and expedite post-disaster emergency response and recovery.	

Policy		Notation
CM-8F	If any update of the hurricane evacuation study shows an increase or projected expansion in the time required to safely clear the roadways in and from areas subject to coastal flooding, measures shall be undertaken to maintain the existing evacuation period. These measures may include programming transportation improvements to increase the capacity of evacuation routes, eliminate congestion at critical links and intersections, adjust traffic signalization or use directional signage, public information programs, or amendments to the Comprehensive Development Master Plan to reduce permitted densities in the areas subject to coastal flooding.	Area for consideration: Ensure the new updates made in 2013 have been incorporated into the CDMP.
CM-8G	The existing network of designated major evacuation routes shall be kept up-to-date utilizing the regional hurricane evacuation study or the best information available to Miami-Dade County.	Area for consideration: Evaluation of these routes in relation to current and future hazards and identification of potential mitigation measures.
CM-8H	The Transportation Improvement Program shall include improvements to roadways that would eliminate severe congestion on major evacuation routes and critical links and intersections. All future improvements to evacuation routes shall include remedies for flooding. All local bridges shall be rated by the Florida Department of Transportation for structural and operational sufficiency. All State and local bridges with unsatisfactory sufficiency ratings shall be programmed for improvements, or where necessary, replacement.	Area for consideration: also link this to TE-1H the consideration of climate change adaptation OEM developed a bridge board in WebEOC to track the status of bridges in the county, primarily the drawbridges and bridges that are evacuation routes. This should be updated to reflect any concerns with the safety or weight restrictions for bridges and bridges under construction should be notated in this system to ensure that during activations agencies in the EOC are aware of any evacuation concerns/challenges.
CM-8I	The Miami-Dade County Transit Agency shall allocate sufficient buses to safely evacuate areas with large concentrations of households without autos such as south Miami Beach. The Office of Emergency Management and Miami-Dade County Transit shall study options for securing drivers.	
CM-8J	The Office of Emergency Management (OEM) shall maintain and annually update a listing of people with special needs to plan for the mobilization required to safely evacuate and shelter those who may need assistance due to physical or medical limitations. All public shelters should be in compliance with the Americans With Disabilities Act of 1990. Special shelters within south, central, and north Miami-Dade County should be medically staffed and equipped for those persons in need.	
CM-8K	Miami-Dade County shall annually evaluate the need for expansion of its shelter capacity and provide for the projected number of hurricane evacuees as determined by the best information available. Existing and proposed future public facilities, such as schools, shall be inventoried to identify and designate additional structures suitable for shelters. Public facilities that are used permanently for public shelters shall be listed, mapped, and publicized.	Sites that are identified in need of mitigation measures should be put into the LMS Project List. Currently there are a number of projects listed for Arnold Hall.



Policy		Notation
CM-8L	Miami-Dade County shall examine incentives for using privately owned buildings for public shelters and incorporate into its emergency plans a strategy for providing post-disaster shelter and temporary housing to large numbers of disaster victims. Miami-Dade County shall examine the feasibility of requiring, or adding as an option for new residential construction, a structurally reinforced "safe room" for use as a private storm shelter. For existing residences, Miami-Dade County shall encourage retrofitting a safe room on a voluntary basis. Miami-Dade County shall also explore incentives and other measures to encourage the wind and/or flood hardening of structures.	Area for consideration: provide guidance on how a safe room could be retrofitted. FEMA has some publications that can be used to promote this. RER comment: Should coordinate this with the County's Building Department.
CM-8N	No new mobile home parks shall be allowed in areas subject to coastal flooding and any new mobile home parks outside the areas subject to coastal flooding shall include one or more permanent structures in accordance with current and applicable building and construction codes for use as shelter during a hurricane. All mobile home park residents, regardless of their location, shall be advised to evacuate in the event of a hurricane.	
CM-8O	Trees susceptible to damage by sustained tropical storm force winds (39 knots) shall be removed from the rights-of-way of evacuation routes and replaced with suitable, preferably native, species. To strengthen trees planted along roadways and reduce future breakage and blowdowns, the County shall implement an ongoing tree maintenance program of regular trimming and fertilizing and encourage other governments responsible for landscaped roadways to adopt similar tree maintenance programs	Area for consideration: Ensure other county programs that encourage tree planting include information regarding best locations to plant trees to minimize damages to underground and overhead infrastructure. RER comment: See previous comment under CON-8L.



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 FEMA "V" Zone. Infrastructure shall be available to serve the existing development and redevelopment proposed in the Land Use Element and population in the CHHA, but shall not be built, expanded, or oversized to promote increased population in the coastal high-risk area.



Policy	Notation	
		Utilize modeling done by PWWM for design storms with future development to identify future concerns, integrating new modeling to be done for sea level rise.
CM-9B	Land use amendments to the Comprehensive Development Master Plan shall not be approved in Coastal High Hazard Areas if they would decrease Levels of Service on roadways below the LOS standards established in the Transportation Element.	
CM-9C	Miami-Dade County shall consider undeveloped land in areas most vulnerable to destructive storm surges for public or private recreational uses and open space, including restoration of coastal natural areas.	Promotes mitigation. Area for consideration: incorporate also areas identified as Adaptation Action Areas and those identified as at potential risk for climate change impacts
CM-9D	New facilities which must function during a hurricane, such as hospitals, nursing homes, blood banks, police and fire stations, electrical power generating plants, communication facilities and emergency command centers shall not be permitted in the Coastal High Hazard Area and when practical, shall not be located in the Hurricane Vulnerability Zone.	Promotes mitigation of future risk. Area for consideration: Also consider analysis as discussed in LU-3G and adaptation of the built environment in LU-3I for these facility types.
CM-9E	The construction or operation of new non-water dependent industrial or business facilities that would generate, use or handle more than 50 gallons of hazardous wastes or materials per year shall be prohibited in the Coastal High Hazard Area. Miami-Dade County shall seek funding to wind- and flood-harden existing public facilities of this type.	Promotes mitigation
CM-9F	Public expenditures that subsidize new or expanded infrastructure that would encourage additional population growth in the Coastal High Hazard Areas shall be prohibited. New public facilities shall not be built in the Coastal High Hazard Area, unless they are necessary to protect the health and safety of the existing population or for the following exceptions: public parks, beach or shoreline access; resource protection or restoration; marinas or Ports; or roadways, causeways and bridges necessary to maintain or improve hurricane evacuation times. Potable water and sanitary sewer facilities shall not be oversized to subsidize additional development in the Coastal High Hazard Area.	Area for consideration: Links to LU-3! And practice of adapting the built environment with consideration of climate change
CM-9G	Miami-Dade County shall utilize its Geographic Information System and other forms of mapping of public buildings and infrastructure within the Coastal High Hazard Area and Hurricane Vulnerability Zone to facilitate and expedite pre- and post-disaster decision-making.	
CM-9H	Rise in sea level projected by the federal government, and refined by the Southeast Florida Regional Climate Change Compact, shall be taken into consideration in all future decisions regarding the design, location, and development of infrastructure and public facilities in the County.	OEM is currently working with WASD for the roll out of the ground and surface water interaction model that will provide for additional information/maps for how sea level rise may impact different areas of our community. OEM is incorporating climate change and sea level rise into the Threat Hazard Identification and Risk Assessment (THIRA).



Policy	Notation
	The LMS has added climate change and sea level rise i
	the Benefit Cost Review of projects.
	Unified SLR Projection of Compact being revisited and
	should be confirmed as is or refined by end of
	2014/beginning of 2015.

Reduce the exposure of life and property in Miami-Dade County to hurricanes through the planning and implementation of pre-disaster hazard mitigation measures. Pre-disaster planning for post-disaster redevelopment shall direct population concentrations away from the undeveloped designated Coastal High Hazard Areas and away from identified high-risk areas during post-disaster redevelopment.

Policy		Notation
CM- 10A	Miami-Dade County shall update its Comprehensive Emergency Management Plan every two years to provide comprehensive pre-disaster planning for pre- and post-disaster activities, development, and redevelopment.	
CM- 10B	During pre-disaster planning, hazard mitigation proposals shall be developed by Miami- Dade County in conjunction with other agencies and, where appropriate, included in the Comprehensive Emergency Management Plan or the Comprehensive Development Master Plan.	The LMS Project List is actively updated and tracked. A review of the CDMP and other community planning documents is being conducted to better integrate our efforts and work collaboratively.
CM- 10C	Prior to post-disaster redevelopment, sources of funds to reconstruct, relocate, or construct new public buildings and infrastructure, consistent with Policy CM-9F, shall be identified to support and expedite the demands generated by post-disaster reconstruction.	Area for consideration: incorporation and consideration for post disaster redevelopment in areas designated as Adaptation Action Areas.
CM-	Applications for comprehensive plan amendments, rezoning, zoning variances or	
10D	subdivision approvals for all new development in areas subject to coastal flooding shall be reviewed for emergency evacuation, sheltering, hazard mitigation, and post-disaster recovery and redevelopment.	
CM-	During pre-disaster planning, Miami-Dade County shall determine the feasibility of	Promotes mitigation
10E	relocating public buildings and infrastructure away from the Coastal High Hazard Area and Hurricane Vulnerability Zone, particularly the FEMA "V" Zone, except as provided in	
	Policy CM-9F. The County shall develop a formal process and guidelines for evaluating	
	alternatives to the replacement or repair of public facilities damaged by hurricanes such	
	as abandonment, relocation, or repair and reconstruction with structural modifications.	
	development issues; employment effects; legal issues; consistency with state, regional	

Policy		Notation
	and local plans; time period for implementation; and availability of funds should be	
	evaluated for each alternative.	
CM-10- F	The Coastal High Hazard Area (CHHA) and Hurricane Vulnerability Zone (HVZ) boundaries shall be delineated on maps for the unincorporated areas as public information maintained by Miami-Dade County. The CHHA shall be identified using the Sea, Lake, Overland Surges from Hurricanes (SLOSH) model and shall be depicted as one of the maps in the Future Land Use Map series. Geographic Information Systems (GIS) and other forms of mapping will be used for the purpose of public information and government planning, administration, emergency management, zoning, and location of public facilities and services in the unincorporated areas of Miami-Dade County. This mapping shall be maintained by the Department of Regulatory and Economic Resources, the Office of Emergency Management, and other appropriate departments and updated as needed. The SLOSH model shall be used to identify the Coastal High Hazard Areas. The Office of Emergency Management shall manage and update the SLOSH model and hurricane evacuation studies for Miami-Dade County and shall work with the South Florida Regional Planning Council to ensure that such maps and studies are done in a consistent manner, and that the methodology used for modeling storm surge is that used by the National Hurricane Center.	Area for consideration: As per other notations regarding the evacuation study and designation of evacuation zones by OEM this needs to be looked at.
CM- 10G	In advance of major storms, Miami-Dade County shall identify and map areas in coordination with the Florida Department of Environmental Protection suitable and unsuitable for post-disaster relief staging areas, debris storage, and disposal or burning. Debris shall not be located in well field protection areas, wetlands, parklands with adjacent natural areas, Natural Forest Communities, historic sites, and designated or known archaeological sites as determined by the County archaeologist, or other areas identified as unsuitable for such activities. Debris shall not be burned in the air sheds of Biscayne National Park and Everglades National Park.	Pre-planning in areas of lower risk and suitable for disaster response and recovery operations.
CM- 10H	Miami-Dade County shall request the South Florida Water Management District (SFWMD), the U.S. Army Corps of Engineers, and the Federal Emergency Management Agency (FEMA) to develop interactive computer modeling capabilities between the Sea and Lake Overland Surge from Hurricanes (SLOSH) and inland flood models.	Area for consideration: As the SFWMD plays such major role in local drainage control it is paramount that they assist with the provision of maintenance plans for credit in the CRS.
CM-10I	 Miami-Dade County shall seek funds to conduct a comprehensive marine hurricane contingency study to: i.) Describe what owners in all the major public and private marinas in Miami-Dade County expect to do with their boats in the event of a hurricane; ii.) Identify areas of potential conflicts and needs; iii.) Recommend appropriate solutions, such as emergency mooring systems; iv.) Seek coordinated and multi-jurisdictional adoption and enforcement of the recommended solutions, and if applicable; v.) Seek funding to implement capital improvement projects. 	This is mainly to support any studies or grants sought by PROS, DERM, UF-IFAS or SeaGrant in support of these activities.



Policy		Notation
CM-10J	All facilities subject to DERM's annual marine facilities operating permit shall provide as a part of their renewal a hurricane contingency plan.	Area for consideration: Whom does this get submitted to and who reviews it? RER comment: See RER remarks under CM-5F.



During post-disaster recovery and redevelopment, Miami-Dade County shall implement its Comprehensive Emergency Management Plan (CEMP) and applicable CDMP policies and assist hurricane damaged areas with recovery and hazard mitigation measures that reduce the potential for future loss of life and property.

Policy		Notation
CM- 11A	To facilitate post-disaster recovery and redevelopment following a major hurricane and consistent with available personnel and funding, Miami-Dade County shall implement the County's Comprehensive Emergency Management Plan as updated pursuant to Policy CM-10A.	A new damage assessment system to identify the effects of a disaster on the local community to include the physical, economic, human needs, the environmental impacts is being implemented in 2014.
CM- 11B	During post-disaster recovery periods, the Miami-Dade County Public Works and Waste Management Department, the Office of Emergency Management, the Department of Regulatory and Economic Resources and other appropriate agencies shall identify damaged areas requiring rehabilitation or redevelopment; implement the redevelopment plan along with public input to reduce or eliminate future exposure of life and property to future disasters; analyze and recommend to the County Commission hazard mitigation options for damaged areas and public facilities; and recommend amendments, if needed, to the Miami-Dade County Comprehensive Development Master Plan.	Areas to be identified using the new Impact Assessment system. In the event the Recovery Plan is activated RSF Land Use will work with and through the appropriate partners to implement the redevelopment plan to reduce or eliminate future exposure of life and property to future disasters; analyze and recommend to the County Commission hazard mitigation options for damaged areas and public facilities; and recommend amendments, if needed, to the Miami-Dade County Comprehensive Development Master Plan.
CM- 11C	If rebuilt, structures with damage exceeding 50 percent of pre-storm market value shall be reconstructed to ensure compliance with the High Velocity Hurricane Zone portion of the Florida Building Code and the requirements of Chapter 11-C of the Miami-Dade County Code for structures located in the "V" Zone and the 100-year floodplain. Miami- Dade County shall implement uniform spatial and engineering standards for determining if substantial reconstruction is required.	Promotes mitigation
CM- 11D	If an area in need of major post-disaster redevelopment is determined to be a high-risk area for development, permitted post-disaster densities and intensities shall not exceed the permitted pre-storm densities and intensities.	Area for consideration: incorporation of Adaptation Action Areas to limit or restrict reconstruction in those areas. Tie into LU-3E.
CM- 11E	Miami-Dade County shall give priority to the public acquisition of properties in the HVZ and, in particular, in the CHHA that have been destroyed as a result of a hurricane. Miami-Dade County shall identify and encourage potential federal and state acquisition programs to assist with the purchase of these properties and for possible relocation of facilities on these properties to outside of the CHHA.	Area for consideration: incorporation of Adaptation Action Areas



Policy		Notation
CM-	During post-disaster redevelopment, structures which suffer repeated damage to pilings,	Area for consideration: Consider future risk. Tie into LU-
11F	foundations, or load bearing walls shall be required to rebuild landward of their present	3E
	location and/or be structurally modified to meet current building codes.	
CM-	During post-disaster redevelopment the capacities of evacuation routes shall be	Area for consideration: Consider future risk and climate
11G	improved through redesign and reconstruction of the street network, signage, and	change impacts.
	expansion of public transportation systems and services.	

Protect, preserve, and sensitively reuse historic resources and increase the number of locally designated historic sites and districts and archaeological sites and zones in the coastal area.

Policies

Policy		Notation
CM- 12A	In addition to the policies contained in the Land Use Element, the County shall establish performance standards for the development and sensitive reuse of historic resources in the Coastal Area.	Helps preserve tourism and economic value of historic resources.
CM- 12B	The County shall work with the appropriate municipalities to ensure that historic structures included within designated historic districts are not destroyed unless they are damaged by a hurricane or otherwise rendered beyond reasonable use and repair.	Area for consideration: work with LMS group to identify mitigation measures and guides for historic structures
CM- 12C	The County shall improve the protection of historic resources from the damage caused by natural disasters and recovery operations by implementing pre- and post-storm hazard mitigation measures and code enforcement.	A number of stakeholders have mitigation projects identified for historic structures.



Intergovernmental Coordination Element

GOAL

USE INTERGOVERNMENTAL COORDINATION AS A MAJOR MEANS OF ENSURING CONSISTENCY AMONG LOCAL, COUNTY, REGIONAL AND STATE GOVERNMENT PLANS AND POLICIES AND OF IMPLEMENTING MIAMI-DADE COUNTY'S COMPREHENSIVE DEVELOPMENT MASTER PLAN.

Objective ICE-1

Maintain and improve coordination of planning, development and impact assessment among governmental entities with applicable responsibilities within Miami-Dade County's area of concern

Policy		Notation
ICE-	In subsequent comprehensive plans, amendments and/or updates, seek to consider	Review of various plans for LMS five year update(July
1D	local, County agencies and regional comprehensive plans as necessary to better reflect	2014)
	Regional/County/City division of local and area wide comprehensive planning,	
	development regulation and services provision, for consistency with the County's CDMP.	
ICE-1T	During pre-development program planning and site selection activities, Miami-Dade	Area for consideration: Identification of potential shelter
	County Internal Services Department and other facility and service providers shall	locations, if not for hurricanes, for other local disasters that
	coordinate with the Miami-Dade County Public School System to consider all reasonable	may require temporary sheltering.
	opportunities to collocate new libraries, parks, and other public facilities with public	
	schools, where compatible and the potential exists to create logical focal points for	
	community activity. Early review and coordination activities will be modified as necessary	
	to timely consider these potentials.	



Objective ICE-3

Encourage the use of inter-local agreements and municipal boundary changes to improve coordination of local development and the effective and efficient delivery of local services.

Policy		Notation
ICE-3G	Maintain and utilize the authority provided in the Miami-Dade County Home Rule Charter for the County to maintain, site, construct and/or operate public facilities in incorporated and unincorporated areas of the County. Furthermore, in order to protect and promote the health, safety, order, convenience, and welfare of the residents, the County shall retain regulatory control over land use, development and service delivery for all facilities of countywide significance as listed in Table 3. While the County reserves all rights provided by the Miami-Dade County Home Rule Charter, when siting facilities of countywide significance within the boundaries of an incorporated municipality, the County will consider the municipal comprehensive plan and development regulations, as well as the need for the public facility and suitable alternative locations. The County shall at a minimum retain the authority to enforce covenants accepted in connection with Comprehensive Development Master Plan (CDMP) or Zoning approvals to provide facilities of countywide significance in areas subsequently incorporated, or annexed into existing municipalities.	Area for consideration: Currently the CRS program only allows for individual jurisdictions to participate. Due to our dependent relationship with SFWMD and the risk that all of our communities face with flooding, a strategy to try to get our entire County to be seen as one community in relation to floodplain management challenges should be investigated. Parks notate in Table 3 (abridged) below are not currently counted towards open spaces for CRS communities as they are county parks.



Table 3Facilities of Countywide Significance

Department/Facility	Address	Municipality If Applicable
Parks, Recreation and Open Spaces Department (PROS)		
Metropolitan Parks – As located by PROS Natural Area Preserves – As located by Greenways – As located by PROS Special Activity Areas – As located by PROS District Parks – As located by PROS	Various Various	Various Various Various
Vizcaya Museum and Gardens Deering Estate Miami-Dade Zoological Park and Gardens (aka Zoo Miami) Zoo Miami Entertainment Area I Zoo Miami Entertainment Area II	3251 South Miami Ave 16701 SW 72 Avenue 12400 SW 152 Street 12400 SW 152 Street	Miami Palmetto Bay Miami-Dade Miami-Dade
	12300 SW 152 Street	Miami-Dade

Policy		Notation
ICE-5F	The County shall continue participation in the Southeast Florida Regional Climate Change Compact and shall coordinate with other agencies, local municipalities, and the private sector to develop initiatives and goals to address climate change mitigation and adaptation. Climate change related goals that support regional climate change objectives shall be integrated into the CDMP as appropriate.	Promotes integration and collaboration.
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. a) Each County department shall consider extending planning horizons (i.e. 30, 50, 75-year plans) as appropriate to adequately address the projected long-term climate change impacts into resource allocation recommendations. b) All new departmental climate change policies and programs shall be monitored for effectiveness. 	OEM adding climate change to the THIRA, which is the threat and risk assessment that is referenced by the CEMP and the LMS.



Objective ICE-8

Ensure adequate and timely shelter within the region for those residing in hurricane evacuation areas by encouraging all levels of government to work together.

Policies

Policy		Notation
ICE- 8A	Encourage local governments and federal, State and regional agencies to protect the population by developing a system of emergency communication on roadways including electronically-controlled message signs and a radio station to broadcast highway conditions.	Supports evacuation and emergency messaging.
ICE- 8B	Promote the establishment and maintenance of mutual aid agreements among local governments to protect the population.	Promotes integration and coordinated response, maximizing resources and minimizes duplication.
ICE- 8C	The Miami-Dade County Department of Regulatory and Economic Resources and the Office of Emergency Management shall facilitate the coordination of emergency planning issues by increasing interaction	The Whole Community Infrastructure Planner/LMS Chair is working more closely with RER in relation to integration of the CDMP into the LMS and the Adaptation Action Areas.
ICE- 8D	Encourage local, regional, State and federal agencies and organizations to work together in evaluating the existing criteria for designating places for shelter and reaching consensus. Such criteria should include but not be limited to: locations of shelter; structural integrity of shelter; space provided per person; and availability of essential provisions.	Area for consideration: Identification of potential shelter locations, if not for hurricanes, for other local disasters that may require temporary sheltering. This has been announced in a municipal quarterly meeting by the Human Services EM Coordinator
ICE- 8E	Promote the coordination by federal, State, regional and local agencies of a public information and awareness program concerning various types of hazards and appropriate response.	Area for consideration: Development of a PPI (Activity 330) for the CRS program and integration of annual events that OEM participates in.



Capital Improvement Element

GOAL

MIAMI-DADE COUNTY SHALL PLAN FOR AND MANAGE IN A FISCALLY PRUDENT MANNER, ITS FACILITIES AND INFRASTRUCTURE IN ORDER TO ADEQUATELY SERVE CURRENT AND NEW RESIDENTS WHILE EFFICIENTLY USING AND MAINTAINING EXISTING PUBLIC INVESTMENTS, AND MAKING TIMELY PROVISION OF REQUIRED NEW CAPITAL INVESTMENT.

Objective CIE-2

Development in coastal high hazard areas will be retained at permitted levels, as of July 1, 1989.

Policies		
Policy		Notation
CIE- 2A.	Public funds will not be used to subsidize increased overall density or intensity of urban development in coastal high hazard areas. However, public beach, shoreline access, resource restoration, port facilities or similar projects may be constructed.	Mitigation through density control.
CIE- 2B.	Replacement of infrastructure in coastal high hazard areas will be at or below existing service capacity except where such replacement will improve hurricane evacuation time, mitigate storm damage, or meet regulatory requirements.	Area for consideration: review the CHHA in relation to the new storm surge planning zones. Incorporate future risk of climate change impacts
		RER: Will be addressed in future update and other related policies.
CIE- 2C.	The Coastal High Hazard Area (CHHA) is defined as areas seaward of the elevation of the category 1 storm surge line, as established by a Sea, Lake and Overland Surges from Hurricanes (SLOSH) computerized storm surge model.	Area for consideration: review the CHHA in relation to the new storm surge planning zones.



Objective CIE-3

CDMP land use decisions will be made in the context of available fiscal resources such that scheduling and providing capital facilities for new development will not degrade adopted service levels.

Policies

Policy		Notation
CIE- 3A.	The capital facilities and infrastructure implications of land use and development plans and implementation will be analyzed and set forth with attention to the following: 1. Safety improvements and elimination of hazard.	Promotes mitigation opportunities.

Objective CIE-5

Development approvals will strictly adhere to all adopted growth management and land development regulations and will include specific reference to the means by which public facilities and infrastructure will be provided.

Policy		Notation
CIE- 5A.	It is intended that previously approved development be properly served prior to new development approvals under the provisions of this Plan. First priority will be to serve the area within the Urban Infill Area and Transportation Concurrency Exception Areas. Second priority shall be given to serve the area between the Urban Infill Area and the Urban Development Boundary. And third priority for investments for services and facilities shall support the staged development of the Urban Expansion Area (UEA). Urban services and facilities which support or encourage urban development in Agriculture and Open Land areas shall be avoided, except for those improvements necessary to protect public health and safety and which service highly localized needs. Areas designated Environmental Protection shall be particularly avoided	Area for consideration: Analyze future risk with climate change impacts and design storm maps that show potential flooding implications in relation to future development plans.



Community Health and Design

GOAL

TO DEVELOP SUSTAINABLE COMMUNITIES THROUGH DESIGN AND FOOD ACCESS POLICIES THAT IMPROVE THE HEALTH OF RESIDENTS BY INCREASING PHYSICAL ACTIVITY, ASSURING SAFETY, PROVIDING A NUTRITIONAL FOOD ENVIRONMENT AND PROTECTING NATURAL SYSTEMS.

Policy		Notation
CHD- 5A	The County shall investigate onsite stormwater management alternatives, such as bio- swales and green roofs, which reuse stormwater and reduce the rate of runoff from impervious surfaces.	Area for consideration: Development of onsite stormwater management for residents. Can residents in areas with no stormwater drains proactively do something to help reduce their flood risk and their flood insurance costs. RER: May need coordination with PWWM, DERM on this.
CHD- 5B	Enhance street cross section design standards to incorporate planting strips for both stormwater percolation and tree planting to provide shade.	Promotes flood mitigation.



Miami – Dade Emergency Management Recovery Plan

The Miami-Dade County Office of Emergency Management in 2016 revised the Recovery Plan. The new plan mirrors the National Disaster Recovery Framework. This plan provides an operational overview and organizational framework that will be implemented during all phases of the disaster recovery process. It details a coordinated roadmap for recovery operations, identifies the operational concepts, and provides an overview of organizational structures, which will bridge the gap between the Comprehensive Emergency Management Plan (CEMP) and the Post-Disaster Redevelopment Plan (PDRP) if necessary. The Recovery Plan addresses policies that promote an expedited, all-hazards disaster recovery process among all stakeholders including public sector agencies and organizations; non-profit and faith-based organizations; municipal jurisdiction and independent districts including water control districts, fire districts, and school districts.

As part of this plan 12 Recovery Support Function (RSF) annexes have been created. These annexes include:

- RSF Economic
- RSF Environment
- RSF Finance
- RSF Health
- RSF Housing
- RSF Infrastructure
- RSF Intergovernmental
- RSF Land Use
- RSF Mitigation/LMS
- RSF Public Information/Outreach
- RSF Social Services
- RSF Transportation

The RSFs are groups of agencies and organizations that share similar responsibilities into an RSF. During the recovery phase these agencies and organizations will work together to accomplish the missions assigned to their RSF. The RSF Mitigation Annex will initiate and encourage meaningful actions to reduce or eliminate the long-term risk to human life and property from natural hazards throughout the post-disaster recovery and reconstruction process.

During the recovery phase this RSF will serve as the bridge between the Local Mitigation Strategy Working Group and the other RSFs. They will be responsible for working in partnership with the RSFs to incorporate mitigation into any recovery efforts, this can include:

- Redevelopment of coastal areas that experienced flooding
- Seeking and procuring alternate funding streams for rebuilding efforts
- Incorporating mitigation best-practices in new housing developments
- Educating the public on mitigation steps they should take at their homes and businesses



Miami-Dade 2045 Long Range Transportation Plan (LRTP)

The Miami-Dade 2045 Long Range Transportation Plan (LRTP), is adopted to guide transportation investment in the County for the next 25 years. The Metropolitan Planning Organization Governing Board just adopted the 2045 LRTP in October 2019. The LRTP is a strategic and comprehensive plan that identifies highway, transit, freight, and non-motorized transportation improvements. The Plan addresses mobility, safety, security, resiliency, and sustainability in its twenty-year horizon while also considering the impact of emerging technologies and innovation on the County's existing and future transportation infrastructure

This plan may be found at: <u>http://eresources.gfnet.com/docs/md2045/Miami-Dade2045LRTP.pdf</u>

The plan addresses mitigation in several sections, which include:

Goal 3 Plan Process-Update: Security Improvements

This section addresses the benefits of a secure transportation system. This involves the protection of travelers, commerce and the transportation infrastructure itself from injury, loss of life, damage and/or destruction from acts of terrorism and natural disaster. The LRTP addresses how the U.S. Department of Homeland Security's National Infrastructure Protection Plan governs how the County classifies and addresses threats to the transportation system through the goals of this plan, which are:

- Goal 1: Manage the security risks to the physical, human and cyber elements of critical transportation infrastructure.
- Goal 2: Employ the sector's response, recovery and coordination capabilities to support whole community resilience.
- Goal 3: Implement processes for effective collaboration to share mission-essential information across sectors.
- Goal 4: Enhance the all-hazards preparedness and resilience of the global transportation system.

Also discussed is the U.S. Department of Transportation's Transportation Systems Sector-Specific Plan (TSSSP) which guides and integrates efforts to secure and strengthen the resilience of transportation infrastructure and to describe how this sector contributes to the overall security and resilience of the nation's critical infrastructure. The TSSSP is aligned with the National Preparedness Systems mission areas, which are:

- Protection: Aimed at reducing or managing the risk to critical transportation infrastructure.
- Prevention: Activities taken in response to an imminent terrorist attack.



- Mitigation: Actions aimed at reducing the consequences of an incident and identifying best practices to strengthen the transportation infrastructure.
- Response: Involves the coordination of actions to save lives and property.
- Recovery: Guides long-term restoration of the transportation infrastructure.

Goal 8: Sustainability

This section of the LRTP addresses sustainability as it relates to the transportation infrastructure. The definition used for sustainability as a commitment that encompasses economic, environmental and social considerations. The LRTP references the Resilient 305 Strategy which is also references in this section of the LMS. It also addresses Miami-Dade Greenprint and the U.S. Federal Highway Administration Climate Resilience Pilot Program in South Florida.

The Climate Resilience Pilot Program's purpose was to conduct a detailed vulnerability assessment of transportation infrastructure that is vulnerable to the effects of sea level rise, storm surge and rain driven flooding. This project utilized Geographic Information Systems to determine vulnerability scores for individual segments of the transportation system. This project finally made recommendations on adaptation strategies based on the vulnerability scores.



Appendix I: Community Profile

The Community Profile is the first component of the THIRA and provides valuable intelligence and situational awareness. In many jurisdictions, a detailed and in-depth community profile is developed as a key element of a Hazard Mitigation Plan; however, its utility goes far beyond that plan alone. The Community Profile is an overview of the political governance, economy, geography, climate, population, community assets, future development and trends, and commercial and industrial make-up of Miami-Dade County.

The Community Profile provides Miami-Dade County with a solid foundation for developing a common operational picture for the THIRA, and can also be referenced for other activities, such as emergency training, exercises and actual incidents.

A. Climate

The climate of a region is determined by the monthly or longer weather pattern conditions that exist within a specified area. Miami-Dade County, in Southern Florida, has a tropical climate with high humidity and precipitation. The seasons are determined by the amount of and changes in precipitation. The rainy season usually begins in late May and ends in mid-October, subjecting Miami-Dade County to thunderstorms, tropical storms, and hurricanes. The average annual precipitation in the county is 61.9 inches compared to Florida's annual average of 54.6 inches. The average temperature during the rainy season is 80°F in Miami-Dade County.

Total precipitation in Miami-Dade County varies greatly between the rainy and dry seasons, peaking at 10 inches in June and dipping to less than 2.5 inches in December and January. The dry season lasts from mid-October to late May, and has an average temperature of 77 °F in Miami-Dade County. The Gulf Stream regulates the climate variants throughout the state with rare extremes of over 100 °F or below 32 °F. The average annual temperature of Miami-Dade County is 77.1°F.

B. Geology, Hydrology, and Ecology

Geology

Miami-Dade County is located in the southern portion of Florida, whose geological conditions are considered young and formed around 120,000 years ago during the Pleistocene Period. Just below the ground surface there is Miami Limestone, the Fort Thompson Formations, and Anastasia Formations. Miami Limestone consists of oolitic and bryozoans facies. The oolitic facies are a combination of oolitic, small round grains, limestone and fossils. The bryozoans facies are a sandy fossil limestone. The fossils found include mollusks, bryozoanz, and corals. In some regions, the Miami Limestone reaches a thickness of 40 feet. Fort Thompson Formations underlies the Miami Limestone limestones. The Fort Thompson Formations can reach thicknesses up to 150 feet. The Anastasia Formations also underlies the Miami Limestone and consists of shelly limestone and coquina limestone. The Miami Limestone is highly porous and permeable


and forms much of the Biscayne Aquifer system. The natural marl soils found above the Miami Limestone have been affected by drainage and erosion due to development and agriculture. The Biscayne Aquifer lies just below the surface, and due to the permeability of the soil, makes the aquifer vulnerable to contamination.

Hydrology

The hydrology of Florida is a system of low-gradient drainage, high ground water table, and an extensive drainage canal network. There are two major aquifers in Florida that comprise the water table. Aquifers are areas of rock below the ground surface that can produce sufficient amounts of water to efficiently supply the communities within the region. There are three different types of aquifers: unconfined, where the water table is able to move freely without interference due to the lack of aquitard (a non-permeable formation); semi-confined, where the water table is partially confined due to semi-permeable formations; and confined, where the water table is completely confined by non-permeable formations above and below the body of water. The aquifers found within Florida are varying degrees of combinations of all three types.

The Florida Aquifer encompasses the entire state while the Biscayne Aquifer only supports the southern portion of the state. The Florida Aquifer produces much of northern and central Florida's water supply, however the southern region of the Aquifer has been polluted by brackish water from deep wells. The Biscayne Aquifer supplies the southern region of the state; mainly Miami-Dade, Broward, and Monroe counties. This aquifer is one of the most productive aquifers in the world, but it is very susceptible to pollution from agricultural and industrial practices because of the permeability of the soil and rock formations.

The extensive system of levees and canals in Miami-Dade County and South Florida, managed by the South Florida Water Management District (SFWMD), transports surface and ground water and protects against flooding and salt water intrusion. Precipitation during the rainy season is the main source of surface water, which travels from the northern and central regions of Florida to the southern region, flowing from Lake Okeechobee. The levees direct and store surface water to prevent flooding and to maintain reserves for use during the dry season. Ground water also flows from the northern regions to the coast and is drawn from field wells from the Biscayne Aquifer.

Ecology

The ecology of Florida is a relationship between organisms and their environments. Due to the unique combinations of Florida's geology, hydrology, and climate, over 20 different ecosystems have been identified by scientists. The various classifications differ depending on the organization and scale of the system being evaluated, but the basic ecosystems include the following:

• **Coral Reefs**: Colonies of polyps that form complex calcium carbonate shells to protect themselves against predators and pollutants. As the colonies compete for space or die, new coral grows on top to form a coral reef. There are over 30

different coral reefs identified around Florida that are home to thousands of plant and animal species.

- **Dunes**: Mounds of sand that are created by coastal winds and are held together by grass vegetation. Over 60% of Florida's coast is comprised of sand and the dunes serve as a protective barrier for inland areas from coastal winds and waves.
- Freshwater Marshes: An inland standing body of water, generally year round, with little to no tree or scrub life. Grasses, sedges, and rushes act as a filter to remove particles and pollutants from the waters that flow through. There are four different types of freshwater marshes in Florida: wet prairies, sawgrass marshes, ponds, and aquatic sloughs.
- **Salt Marshes**: Areas where freshwater and saltwater meet along the coastal regions. Salt marshes also contain little to no tree or scrub life. The vegetation that inhabits the areas is brackish in nature.
- **Freshwater Swamps**: Areas inland where there is considerable standing water during the rainy season and the soils typically dry out during the dry season. There is a variety of vegetation that inhabits the swamps including softwood trees, hardwood trees, vines, and ferns.
- **Upland Hardwoods**: Areas of forest with nutrient clay soil that are typically bordered by sand hills and flatwoods in northern and central regions of the state. There is a vast variety of tree and plant life with no dominating species within the forests. Most of Florida's state parks consist of upland hardwood ecosystem.
- **Bottom Hardwoods**: Areas of forest with wet nutrient soil that typically border lakes, rivers, and sinkholes found throughout Florida. Bottom hardwood forest provides a transition area between the upland hardwoods, swamps, marches, and other wetlands and is dominated by Live Oaks, Red Maples, and Water Oaks. This region typically floods and is constantly changing because of the different climates and regions in which the forest is found.
- **Sand hills**: Areas of forest with permeable, dry, sandy soils that typically do not flood. The forest is dominated by Longleaf Pine and Turkey Oak trees with different grass species blanketing the forest floor. The forest is vulnerable to fire due to the dry, sandy conditions.
- **Scrubs**: Areas with permeable, nutrient poor, sandy soils found on higher elevations where the water table is low. Scrubs are communities of pinelands with an undergrowth of oaks, shrubs, and palmettos, and are fire dependent to regenerate because of the soil conditions and lack of water supply.
- Flatwoods: Areas of forest of semi-permeable soil and limestone of level land that makes up 50% of the covered land mass of the state. The forest is dominated by Longleaf Pines and Slash Pines with undergrowth of palmetto, wildflowers, and ferns. Flatwood forests are fire dependent to regenerate not only due to the soil conditions but the competition between the hardwood forest for space and sunlight.
- **Tropical Hammocks**: Areas of hardwood forest with thick mounds of permeable soil and peat bordered by marshes, mangrove swamps, and flatwoods, but typically does not flood due to soil elevation. Hammock forests are dominated by Gumbo-Limbo and Pigeon Plum trees that are only found in southern Florida and contain plant and animal life found nowhere else in the United States.



• **Mangroves**: Areas of mangrove tree habitat. There are three species of mangroves in Florida: the White Mangrove, the Black Mangrove, and the Red Mangrove. Each species of mangrove grows in different regions. All three species typically inhabit areas near saltwater or areas that are regularly flooded by saltwater. The Red Mangrove inhabits areas along the coast. The Black Mangrove inhabits inland areas below the water table. The White Mangrove inhabits higher evaluations where there is a lower water table.

C. Environment

Florida is a peninsula surrounded by two main bodies of water, the Gulf of Mexico and the Atlantic Ocean, resulting in an environment mostly composed of marshes, swamps, lakes, rivers, and springs. There are 1,711 rivers, streams, and creeks in the state, with notable rivers including St. John's River, St. Mary's River, and Suwannee River. There are 111 lakes in the state; Central Florida has the highest concentration of lakes, including Lake Okeechobee, the largest freshwater lake in Florida. The Miami Canal connects Lake Okeechobee to Biscayne Bay, crossing through Miami-Dade County.

Miami-Dade County is the third largest county in the state, with an area of 2,431 square miles; 1,946 square miles of land and 485 square miles of water. The Everglades National Park encompasses one-third of the entire county. Most of the land is close to sea level with an average elevation of 6 feet above sea level. The eastern side of Miami-Dade County is composed mainly of Oolite Limestone while the western side is composed mainly of Bryozoa. Most of the county's water mass is located in the Biscayne Bay area and the Atlantic Ocean. The Biscayne Bay is divided by South Beach and Miami Beach and is approximately 40 miles long and ranges from 2-10 miles wide.

The agricultural and industrial development of South Florida since the early 1920's has caused damage, erosion, and pollution to some of the ecosystems within the region. The establishment of the Biscayne National Park in 1968 served to protect marine, plant, and animal life along the coastal region. Since the 1980s, over 20% of the Bay has been degraded due to tourism and development. Efforts are in place to preserve aquatic life, rebuild reefs, remove air and water pollutants, protect endangered lands, initiate restoration projects, and ultimately reduce the human impact on the environment.

The County protects the environment through a number of ordinances, including Chapter 24, the Miami-Dade County Environmental Protection Ordinance, through which "the Board [found] and [determined] that the reasonable control and regulation of activities which are causing or may cause pollution or contamination of air, water, soil and property is required for the protection and preservation of the public health, safety and welfare" (Part 3, Chapter 24, Article I, Division 1, Section 24-2 of County Code of Ordinances). Other notable chapters that concern environmental stewardship include:

- Chapter 7: Boats, Docks, and Waterways
- Chapter 11B: Dumps and Landfill Sites



- Chapter 11C: Development within Flood Hazard Districts
- Chapter 15: Solid Waste Management
- Chapter 24: Environmental Protection
- Chapter 24A: Environmentally Endangered Lands Program
- Chapter 32: Water and Sewer Regulations
- Chapter 33: Zoning
- Chapter 33B: Areas of Critical Environmental Concern
- Chapter 33D: Biscayne Bay Management
- Chapter 33F: Key Biscayne Beach Preservation

D. Population & Demographics

Miami-Dade County has experienced steady and rapid population growth, particularly in the 1960s and 1970s. Population doubled between 1960 and 1990. Projected growth through 2025 is expected to follow a similar trend, albeit at a somewhat slower rate. The principal driver of population growth has been and will continue to be immigration. Net immigration is projected to reach over 240,000 persons between 2020 and 2025. Clearly the effects of immigration over the past half century have dramatically shaped the ethnic composition of Miami-Dade County. It is expected that there will be a more moderate augmentation of Hispanics as the dominant ethnic group.

The U.S. Census 2019 population estimate for Miami-Dade County is 2,716,940 residents.³ The most populated city in Miami-Dade County is Miami, with an estimated 470,914 residents as of 2018.⁴ An estimated 52% of the countywide population lives in the unincorporated portion of the County. Between 2010 and 2018, Miami-Dade County as a whole had a growth rate of 13.0%. Based on the 2018 Population Estimates, the most rapidly growing municipality in Miami-Dade County by average annual change is the City of Sweetwater, which has increased its population by an average of 7.9% each year between 2010 and 2018. The largest growth by sheer numbers was the City of Miami, increasing by 71,457between 2010 and 2018. Additional information about Miami-Dade County's population and demographics is available in the Social Vulnerabilities section of the THIRA.

E. Culture

Florida has a rich cultural history dating back 10,000 years through archeological discoveries of Native American nomads that lived off the land and local game. The Tequesta people inhabited the region unaffected by outside influence until the arrival of Spanish explorer Juan Ponce de Leon in 1513. After the first attempt to build a mission in 1567, the Spanish eventually gained and continued to control Florida for 250 years. The United States purchased Florida for 5 million dollars in 1821. At the time of purchase, the main industry was "wrecking," and residents survived by retrieving goods from ships that crashed on the nearby coral reefs.

³ U.S. Census 2019 Population Estimate

⁴ U.S. Census 2018 Population Estimate



Florida's population and industry began to boom with the arrival of the railroad in 1896 by Henry Flagler and again with the development of subdivisions and tourist resorts in the 1920s. During World War II, nearly half a million men (one-fourth of all Army Air Force officers and one-fifth of the military's enlisted) were trained at Miami Beach by the Army Air Forces Technical Training Command. After the war, many troops returned with their families to take-up a permanent residence, resulting in another population boom. Furthermore, Florida has become home to thousands of refugees with a significant influx following the Cuban Revolution during the 1960s and from Haiti in the 1990s.

Miami-Dade County is a multi-cultural population center. As of 2018 53% of the resident population was born in a foreign country. The largest segment of the population is Hispanic which accounts for 69% of the population, the next largest ethnic groups are African-Americans (17%) and Caucasians (13%).

F. Political Governance

Miami-Dade County was named after a soldier, Major Francis Dade, killed in the Second Seminole War. The county was formally created in 1836 under the Territorial Act as Dade County. In 1956, a constitutional amendment was approved by the people of Florida to enact a home rule charter. Up until then the county was governed and ruled by the state. Since 1957 the county has operated under a two-tier federation metropolitan system, which separates the local and county government.

The local governments may be responsible for zoning and code enforcement, police and fire protection, and other city services required within each jurisdiction. The Unincorporated Municipal Services Area (UMSA) covers the residents of all the unincorporated areas within the County.

The structure of the county government has an elected official, Executive Mayor, and the Board of County Commissioners with 13 elected members, each serving a four-year term. The Mayor is not a part of the Board of County Commissioners but has the veto power over the board. The Mayor directly oversees the majority of the operations of the County. The Board of County Commissioners is the legislative branch that oversees the legislation, creates departments, and business operations. Miami-Dade County is the only county in Florida where the Sheriff is appointed by the Mayor and is not elected by the residents.



Miami-Dade County Departments:

- Animal Services
- Audit and Management Services
- Aviation
- Communications
- Community Action and Human Services
- Corrections and Rehabilitation
- Cultural Affairs
- Elections
- Finance
- Fire Rescue
- Human Resources
- Information Technology
- Internal Services
- Juvenile Services
- Libraries
- Management and Budget
- Medical Examiner
- Parks, Recreation and Open Spaces
- Police
- Public Housing and Community
 Development
- Regulatory and Economic Resources
- Seaport
- Solid Waste Management
- Transportation and Public Works
- Transportation Planning
 Organization
- Water and Sewer



G. Built Environment

The term built environment refers to the human-made surroundings that provide the setting for human activity, ranging in scale from personal shelter and buildings to neighborhoods and cities that can often include their supporting critical infrastructure (bridges, water treatment, highways, etc.) and key resource (schools, museums, etc.) assets. The built environment is a material, spatial and cultural product of human labor that combines physical elements and energy in forms necessary for living, working and playing. In urban planning, the phrase connotes the idea that a large percentage of the human environment is man-made, and these artificial surroundings are so extensive and cohesive that they function as organisms in the consumption of resources, disposal of wastes, and facilitation of productive enterprise within its bounds.

The built environment can be organized into three broad categories (critical infrastructure, key resources, and housing stock), which are detailed more thoroughly in the Vulnerability Assessment.

Critical Infrastructure

- Airport
- Chemical Sector
- Communications
- Energy Sector
- Freight
- Information Technology
- Monuments and Icons
- Pipelines
- Solid Waste Facilities
- Transit
- Transportation
- Water Control Structures
- Water/Wastewater Treatment
- Waterways & Ports

Key Resources

- Banking & Finance
- Commercial Sector
- Critical Manufacturing Sector
- Defense Industrial Base
- Emergency Services
- Food and Agriculture Sector
- Healthcare
- Schools
- Universities
- Other Key Resources

Building Stock

- Commercial & Industrial
- Governmental
- Housing Stock



H. Economy

In terms of average annual employment there are five sectors of the economy that are the top employers. The first is the trade, transportation and utilities which employs 25% of the county workforce ad 20% of the statewide workforce. The education and health services sector is the next highest employer that accounts for 15.9% of the workforce. The professional and business services sector employs 14.2% of the county's workforce. The final two top employment sectors is leisure and hospitality (12.4%) and government which employs 12% of the workforce.⁵

The two significant external generators of economic activity in Miami-Dade County are international trade and tourism. While there is no rigorous way to determine the weight of international trade and tourism in Miami-Dade County's economy, without doubt, both of these external sectors are vital components for a healthy and growing local economy.

The top drivers of international trade in Miami-Dade County is the Miami International Airport (MIA) and Port Miami. The Miami International Airport in 2018 was ranked 13th in the nation for total passengers.⁶ The total passengers received by MIA was 45 Million. In terms of international passengers MIA was ranked number three in the nation receiving 21.9 million international passengers. In terms of total cargo, MIA was ranked number four in the nation receiving 2.35 million tons of cargo. In 2018 MIA contributed \$32 Billion in direct business revenue and employed directly and indirectly 425,000 people. Port Miami is the largest cruise port in the world. In 2019 the port handled 6.8 million passengers and handled 9.61 million tons of cargo in 2018⁷. The port's expansion will likely generate an increased economic impact to South Florida of about \$7.8 billion, which will support an additional 27,500 jobs annually.

Tourism in the Greater Miami area continues to be an important component of the overall Miami-Dade County economy. Since 1980 tourism, as measured by overnight visitors, has grown steadily from just over 6.7 million in 1980 to 24.3 million total visitors in 2019. However, this growth had been marred by several significant downturns in tourist activity. From 1980 through 1986, there was a continuous decline in total visitors. In fact, it was not until 1988 that the total visitor count reached the 1980 level. In addition, from 2000 until 2003, total visitor count fell continuously, decreasing by 927,700. Currently, tourism continues to grow. For 2019, Miami-Dade

⁵ State of Florida Office of Economic and Demographic Research, Miami-Dade County Profile ⁶ MIA US and Worldwide Airport Rankings <u>http://www.miami-</u> <u>airport.com/library/pdfdoc/Rankings/2018%20Rankings%20-</u>

%20US%20and%20Worldwide%20(Final).pdf

⁷ Miami-Dade County, State of the County Economic Development <u>https://www.miamidade.gov/global/government/mayor/state-of-the-county/economic-development.page</u>



County had record overnight visitors of more than 15.9 million.⁸. In addition, there was near record spending by visitors of more than \$18 billion by visitors to the Greater Miami area in 2018. The county also experienced record travel and tourism employment of 146,700 jobs. (Source: State of the County 2019).

⁸ Miami-Dade County, State of the County Economic Development <u>https://www.miamidade.gov/global/government/mayor/state-of-the-county/economic-development.page</u>



I. Future Development & Commercial Trends

Miami-Dade County faces many of the same growth issues that challenge communities around the country. With highly urbanized areas, suburban strip development, and farmland, the county contains many resources and assets, but must also deal with a variety of development issues and pressures as it balances continued growth with utilizing and maintaining existing infrastructure and investments. According to a recent Urban Development report for the county, Miami-Dade County wants to keep its agricultural identity, protect its unique natural environment, and encourage development to locate in areas with existing infrastructure, transit and other amenities. For example, one goal is to keep development from spilling toward highly sensitive lands, including the Everglades National Park.

According to a 2013 Demographic Overview & Population Trends report issued by the Florida Legislature's Office of Economic and Demographic research, by 2030 all of Florida's population growth will be from net migration, boosting Miami-Dade County's population to an estimated 3.2 million people. Where these people will live is a critical consideration that drives decisions about growth management, provision of affordable housing, and transportation investments. Furthermore, these decisions will have a profound impact on how the County works to address issues related to disaster management and mitigation.

Notable projects include the following:

Urban Development Boundary:

The Urban Development Boundary is a line that separates the agricultural and environmental lands from the urban areas. The boundary will be expanded to add 9.9 acres of land for commercial development of the current 16,140 acres of undeveloped land within the boundary. Please see the Environmental Protection Agency's growing for a Sustainable Future: Miami-Dade County Urban Development Boundary Assessment for more information on the UDB.



Appendix J: Economic Summary

This summary provides an overview of the County's unemployment, employment, and wages earned.

Unemployment Rates

As of December 2019 the unemployment rate in the United States was 3.7%.⁹ The unemployment rate in Miami-Dade County is below the national average and in December 2019 it was 2.8%. The unemployment rate increased since December 2018 when the rate was 1.6%.

Average Weekly Wages

In the third quarter of 2019 the average weekly wage for employees in Miami-Dade County was \$1,039. This was slightly higher than the other large Southeast counties. The average weekly wage for Broward County is \$1,000 and Palm Beach County is \$1,009.¹⁰ The Miami-Dade County median household income in 2018 was \$48,982 and 16.6% of the population lived in poverty.¹¹

Economic Sectors

There are eight sectors of the economy in Miami-Dade County that employs more than 100,000 people. The sector that employs the most number of people was rgw trade, transportation and utilities sector that employs 633,000 employees. The second largest sectors are the professional and business services that employs 461,300 people and the education and health services that employs 426,500 people. The third largest employers are the leisure and hospitality sector which employs 342,400 people and the government sector who employs 322,000 people. The other major employment sectors is the construction sector (143,000 people), financial services (189,700 people) and other services (125,800 people).¹²

⁹ U.S. Bureau of Labor Statistics, Miami Economy Summary

¹⁰ U.S. Bureau of Labor Statistics, Miami Economy Summary

¹¹ U.S. Census Bureau

¹² U.S. Bureau of Labor Statistics, Miami Economy Summary



Industry	November	November	Percent
	2018	2019	Change:
			18-19
Mining and Logging	500	500	0.0
Construction	54,000	55,700	3.1
Manufacturing	42,400	39,900	-5.9
Trade, Transportation and Utilities	306,800	310,800	1.3
Information	20,300	20,100	-1.0
Financial Activities	81,200	80,800	-0.5
Professional and Business Services	182,400	185,000	1.4
Education and Health Services	190,500	203,500	6.8
Leisure and Hospitality	145,200	148,600	2.3
Other Services	52,300	53,100	1.5
Government	145,300	147,600	1.6

Data Source: US Bureau of Labor Statistics.

Largest Employers

The top employers in Miami-Dade County are a combination of the private and the public sector. The top private sector employer is the University of Miami which employs 12,818 employees.¹⁴ The other top private sector employers are:

- Publix Supermarkets with 12,451 employees
- Baptist Health South Florida with 11,353 employees
- American Airlines with 11,031 employees

Additional top private employers are listed in Figure 2.

The top public-sector employer in the county is the Miami-Dade County Public Schools which employees 33,477 employees.¹⁵ The other top employees include:

- Miami-Dade County government employs 25,002 employees
- The Federal government employs 19,200 employees
- The State of Florida employs 17,100 employees
- The Jackson Health System employs 9,797 employees •

¹⁵ Beacon Council website: https://www.beaconcouncil.com/data/economic-overview/top-employers/

¹³ U.S. Bureau of Labor Statistics, Miami Area Employment, November 2019

¹⁴ Beacon Council website: https://www.beaconcouncil.com/data/economic-overview/top-employers/



2015 TOP PUBLIC EMPLOYERS ¹⁶				
Company	No. of Employees			
Miami-Dade County Public Schools	33,477			
Miami-Dade County	25,502			
Federal Government	19,200			
Florida State Government	17,100			
Jackson Health System	9,797			
City of Miami	3,997			
Florida International University	3,534			
Homestead Air Force Base	3,250			
Miami VA Healthcare System	2,500			
Miami Dade College	2,390			
City of Miami Beach	1,971			
U.S. Southern Command	1,600			
City of Hialeah	1,578			
City of Coral Gables	730			
City of North Miami Beach	420			

¹⁶ Beacon Council website: https://www.beaconcouncil.com/data/economic-overview/top-employers/



	COMMERCIAL		INDUSTRIAL	
JURISDICTION	R	BLDG VALUE	Count	BLDG VALUE
AVENTURA	234	\$285,980,200	6	\$13,857,021
BAL HARBOUR	4	\$2,093,721		
BAY HARBOR ISLANDS	96	\$18,740,096		
BISCAYNE PARK				
CORAL GABLES	1,285	\$1,107,930,132	1	\$73,244
CUTLER BAY	104	\$101,894,369	854	\$947,336,883
DORAL	371	\$686,722,762	1	\$1,295,212
EL PORTAL	6	\$1,190,843	39	\$17,525,002
FLORIDA CITY	105	\$83,185,403		
GOLDEN BEACH				
HIALEAH	1,523	\$ 632,094,967	1,648	\$532,423,721
HIALEAH GARDENS	138	\$71,043,365	202	\$56,490,291
HOMESTEAD	496	\$200,732,181	124	\$39,222,406
INDIAN CREEK VILLAGE				
KEY BISCAYNE	105	\$33,405,802		
MEDLEY	51	\$15,213,276	455	\$608,452,267
MIAMI	6,631	\$3,263,786,483	1,383	\$325,959,732
MIAMI BEACH	1,071	\$970,746,572	11	\$1,756,701
MIAMI GARDENS	400	\$460,628,947	255	\$308,073,693
MIAMI LAKES	150	\$191,668,579	234	\$97,165,268
MIAMI SHORES	74	\$31,482,577	1	\$84,384
MIAMI SPRINGS	136	\$35,818,047	8	\$2,711,847
NORTH BAY VILLAGE	15	\$9,606,542	2	\$4,402,072
NORTH MIAMI	594	\$226,549,678	105	\$42,136,211
NORTH MIAMI BEACH	497	\$276,625,328	56	\$15,192,672
OPA-LOCKA	169	\$29,847,763	341	\$139,268,372
PALMETTO BAY	246	\$147,116,876	1	\$1,540,548
PINECREST	145	\$117,256,833	1	\$185,510
SOUTH MIAMI	549	\$93,321,471	33	\$2,517,742
SUNNY ISLES BEACH	33	\$31,771,205		
SURFSIDE	46	\$11,062,703		
SWEETWATER	136	\$365,640,700	56	\$60,361,364
UNINCORPORATED MIAMI- DADE	5,130	\$3,618,674,874	2,751	\$2,075,401,210
VIRGINIA GARDENS	23	\$25,527,254	3	\$5,937,275
WEST MIAMI	95	\$18,580,328	29	\$362,563
Totals	20,658	13,165,939,877	8,608	\$ 5,302,144,749

Figure 4: Commercial and Industrial Facilities by Municipality



	RESIDENTIAL		OTHER	
JURISDICTION	COUNT	BLDG VALUE	Count	BLDG VALUE
AVENTURA	24,433	\$40,077,779	604	\$16,111,300
BAL HARBOUR	3,530	\$7,817,227	400	\$2,713,839
BAY HARBOR ISLANDS	2,641	\$4,632,700	108	\$930,567
BISCAYNE PARK	1,207	\$2,216,422	7	\$27,556
CORAL GABLES	16,919	\$4,277,349,220	474	\$464,893,182
CUTLER BAY	13,532	\$1,417,756,760	782	\$111,172,820
DORAL	17,366	\$1,627,776,013	514	\$629,799,128
EL PORTAL	755	\$81,625,819	6	\$5,363,491
FLORIDA CITY	2,030	\$96,121,151	98	\$81,485,679
GOLDEN BEACH	349	\$230,372,538	6	\$836,173
HIALEAH	49,622	\$3,205,866,586	2,451	\$717,381,935
HIALEAH GARDENS	5,647	\$375,181,636	54	\$215,935,394
HOMESTEAD	17,031	\$989,626,448	857	\$368,912,797
INDIAN CREEK VILLAGE	32	\$135,218,524	6	\$5,148,996
KEY BISCAYNE	6,532	\$780,754,604	419	\$32,380,038
MEDLEY	74	\$3,832,240	50	\$23,856,290
MIAMI	98,407	\$6,764,052,101	8,344	\$3,664,217,872
MIAMI BEACH	46,120	\$2,979,606,039	7,748	\$1,147,149,903
MIAMI GARDENS	28,674	\$2,138,130,155	307	\$328,810,224
MIAMI LAKES	8,838	\$1,255,028,443	172	\$214,547,633
MIAMI SHORES	3,768	\$531,019,167	44	\$94,778,292
MIAMI SPRINGS	3,953	\$526,199,792	81	\$159,940,660
NORTH BAY VILLAGE	3,435	\$78,001,468	413	\$6,562,912
NORTH MIAMI	14,793	\$1,092,360,712	529	\$246,477,793
NORTH MIAMI BEACH	12,044	\$745,290,290	679	\$113,048,594
OPA-LOCKA	2,898	\$188,308,792	146	\$104,312,231
PALMETTO BAY	7,916	\$1,553,502,217	248	\$90,024,289
PINECREST	6,063	\$1,833,813,872	42	\$84,894,313
SOUTH MIAMI	3,660	\$526,044,958	82	\$121,909,220
SUNNY ISLES BEACH	15,698	\$137,520,139	2,379	\$20,127,377
SURFSIDE	3,122	\$215,784,636	270	\$10,227,544
SWEETWATER	3,478	\$243,832,215	318	\$82,690,698
UNINCORPORATED MIAMI- DADE	311,682	\$28,338,300,470	14,862	\$5,325,890,876
VIRGINIA GARDENS	621	\$63,387,736	6	\$6,796,096
WEST MIAMI	1,585	\$180,806,673	19	\$9,595,918
Totals	735,173	\$63,493,468,471	45,361	\$14,866,211,711

Figure 5: Residential and Other Structures by Municipality



Appendix K: Maps



Map 1: Miami-Dade Comprehensive Development Master Plan 2020-2030 Land Use¹⁷





Map 2: Land Use within Turkey Point Nuclear Power Plant 50-Ingestion Pathway¹⁸







Map 3: Map of Miami-Dade Flammable Natural Areas





Map 4: Miami-Dade 2010 Census Block Data