

Local Mitigation Strategy



Whole Community Hazard Mitigation Part 7: Flooding - The NFIP and CRS



January 2017

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INTRODUCTION

In 2013 a number of events occurred that led to the decision to expand Part 7 of the LMS to help capture and compile information in support of the Community Rating System (CRS) communities and more thoroughly address our current and future flood risks and mitigation measures. Key events included:

- The rollout of new Storm Surge Planning Zones based upon updated Sea Lake Overland Surge from Hurricanes (SLOSH) data
- The 2013 update to the CRS Coordinators Manual
- The desire to integrate climate change and sea level rise considerations into the LMS
- The Biggert-Waters Act and reforms to the National Flood Insurance Program (NFIP)
- The desire to integrate the planning consideration of the Comprehensive Development Master Plan (CDMP) and Stormwater Management Master Plan into the LMS, since the LMS is the Floodplain Management Plan for the County

Actions taken to further incorporate flooding considerations into the LMS and community mitigation included:

- Designation of the local CRS User Group as a Sub-Committee of the LMS
- Nichole Hefty, the Chief of the Miami-Dade Office of Sustainability was nominated to become a member of the LMS Steering Committee
- The Office of Emergency Management (OEM) hosted the L-278 class CRS training to assist our local communities in preparing for the changes
- Additional maps were developed to determine flood risk
- OEM and Miami-Dade Water and Sewer Department (WASD) partnered to work on an educational component to introduce stakeholders to a new interactive model to help determine potential impacts from Sea Level Rise
- Identification of activities that Miami-Dade County Departments conduct that may assist all of our communities with uniform credit
- Collaboration with the newly appointed State CRS Coordinator
- Integration of Sea Level Rise considerations into the Miami-Dade Threat and Hazard Identification and Risk Assessment (THIRA)

Scope

Part 7, as with other portions of the LMS, will identify what CRS activities the sections align with, as applicable. The CRS/Flood Sub-Committee will be responsible for supporting the development and review of this section of the LMS. This section is meant to be supplementary to and not replace the responsibilities of the community CRS Coordinator.

Planning Process

As identified in *Part 1*, the LMS is a reflection of the initiatives that are identified and supported by the LMS Chair, LMS Co-Chair, the LMS Steering Committee, the LMS Working Group (WG) and the LMS Sub-Committees(S-C). As illustrated in *Part 4 Appendix B*, there is a diverse representation of agencies from the whole community engaged in the LMS.¹

The LMS Working Group meets on a quarterly basis and the Steering Committee and Sub-Committees meet on an as needed basis. All meetings are open to the public and are advertised on the LMS webpage.

<http://www.miamidade.gov/fire/mitigation.asp>.

Meeting Notes and Attendance Sheets are maintained in *Part 5 – Meeting Notes*. The LMS Chair develops and sends out a monthly LMS Information Bulletin to the LMSWG and posts this on the website.² The LMS Information Bulletin provides information on updates and changes to the LMS program, training and outreach activities, information on new mitigation products, and information pertinent to the stakeholders.

The LMS undergoes a five year cycle for submittal to the State and FEMA for review and approval. Upon FEMA approval, the plan is adopted locally by the Board of County Commissioners (BCC). Miami-Dade has a metropolitan form of government, (as discussed in *Part 1* with supporting documentation in Part 4 Appendix G). When the BCC passes a resolution or ordinance, that action automatically includes all the municipalities within the county. In the event a municipality does not wish to participate in the action, that municipality must, through their own resolution, opt out. For example, when the BCC adopted this LMS, the municipalities were automatically included and none opted out. The latest adoption documents are provided in Part 4 Appendix D.³

¹ CRS – 510(Step 1) (b) and 501(Step 2)(a)

² CRS – 510 (Step 2) (a)

³ CRS - 510(Step 1) (c)

Local communities that wish to utilize the LMS as their floodplain management plan for credit under the CRS program will have to do a local adoption of the plan. Local communities are welcome to have their Annual Report (Activity 510) report included in *Appendix B* of this document.

Assessing the Hazard

South Florida is vulnerable to flooding from rainfall events and rainfall and storm surge from tropical cyclones. As illustrated and discussed in the THIRA, in *Part 4 Appendix I*, flooding, hurricanes and tropical storms have a moderately high risk to our communities. Miami-Dade has a relatively flat topography and is interlaced with extensive canal systems operated by South Florida Water Management District, PWWM and local municipalities. Miami-Dade is surrounded by water with the Atlantic Ocean, Intracoastal Waterway, Biscayne Bay, Florida Bay and the Florida Everglades. The County is close to sea level with an underground water supply just below the ground surface. The future threat of sea level rise and the potential impacts are being considered and additional modeling and mapping are being conducted to help us understand how communities may be impacted differently depending upon their geographic location and specific considerations. Some of our coastal communities are already experiencing “sunny day flooding” during king tides, typically occurring between September and November.

The LMS will continue to incorporate and provide speakers and reference material to promote mitigation measures throughout our community.

- Canal and groundwater elevations, when combined with seasonal rainfall variations and the volume of the potential storm, result in a definite flood hazard to inland areas.
- All tropical weather systems have to be carefully monitored, several days before they make landfall. Because of the time needed to move water through canals to increase capacity, more advanced monitoring is needed.
- Coastal flooding has potential to impact residential and commercial development along the east coast of South Florida and Biscayne Bay, primarily through storm surge and inundation.

Rainy Season

South Florida’s rainy season typically lasts an average of 155 days starting in mid-May to mid-October. According to the National Weather Service (NWS) – Miami Office, the 2016 rainy season began on May 15th and concluded on October 16th. The average rainfall for southern Florida was 36.16 inches and the normal for the rainy season is 38.94 inches. Miami-Dade has three sites in the top ten sites for rainfall in the 2016 rainy season, compiled by the NWS – Miami Office. Two of the sites had less than an inch above normal. The third site, Miami International Airport, recorded a total of 42.14 inches, 0.34 inches below normal.

Table 1: Top 10 Rainfall Sites in South Florida in 2016 Rainy Season

Top 10 Rainfall Sites for 2016 Rainy Season	May 15 – Oct. 16	Departure from Normal
1. Naples/Golden Gate (NWS COOP)	50.09	+9.59
2. La Belle (NWS COOP)	47.60	+11.11
3. Ortona (NWS COOP)	46.36	+7.78
4. NWS Miami – Sweetwater (NWS COOP)	45.62	+0.51
5. Homestead General Airport (NWS COOP)	42.53	+0.38
6. Miami International Airport (NWS ASOS)	42.14	-0.34
7. Muse (NWS COOP)	42.00	
8. Fort Lauderdale Beach (NWS COOP)	41.98	+1.61
9. Immokalee (FAWN)	41.91	+7.49
10. South Bay/Okeelanta (NWS COOP)	40.91	

During the first half of the rainy season, below normal rainfall was recorded in many areas of South Florida, especially the eastern metro area. Halfway through the rainy season, most of southeast Florida metro area was 3 to 5 inches below normal with some locations with as much as 8 to 10 inches below normal. The latter part of the season had near normal rainfall, but coming off a drier than normal first half resulted in a rainfall deficit.

The South Florida dry season typically lasts from October into May with an average rainfall of 12-19 inches, lowest in the interior and western portions of south Florida.

Background and History

During the early stages of development in Miami-Dade County, the land was frequently inundated for long periods due to the flat topography, low land elevations and the high groundwater table in the Biscayne aquifer. To remedy this situation, and to make the land suitable for habitation, various local governments and private entities initiated the construction of the canal system that exists today. This system was designed to move water to the east and ultimately to Biscayne Bay using gravity flow. The excavation of the canal system exposed the Biscayne aquifer, the county's primary source of drinking water, to saltwater intrusion. In order to stem the flow of salt water into the Biscayne aquifer, salinity control structures were constructed at the mouths of both primary and secondary canals throughout Miami-Dade County.

The early design of the canal system did not consider the extensive development that has occurred in the western parts of the county. These western areas are lower in elevation, and thus more flood-prone. The system relies on gravity to discharge, and is inadequate to remove storm water volume caused by major rain events, particularly considering large tidal surge that may accompany tropical storm events.

Today, the canal system in Miami-Dade County consists of over 616 miles laid out in approximate one to two-mile grids. The canal system is divided into 360 miles of primary canals, 260 miles of secondary canals, 350 miles of smaller ditches under private jurisdiction, and 75 miles of coastal waterways. The primary system, including most of the salinity control structures, is operated by the South Florida Water Management District. The secondary system is the responsibility of Miami-Dade County. In general, the secondary canal system connects into the primary system, which empties into Biscayne Bay. The private ditches discharge into the secondary and primary canals and the coastal ditches discharge directly into Biscayne Bay. The ability to move water in the secondary system is dependent on the available capacity of the primary system, which, in turn, is dependent in part on the proper operation of the salinity control structures. The canal systems are depicted in Map 1.

The principal functions of the canal system are:

- To maintain adequate groundwater levels in the Biscayne aquifer, to provide for both water supply and to prevent salt-water intrusion. In general, the water levels in the canal system are lower than the groundwater levels. The canal system can be used to recharge the Biscayne aquifer during the dry season when flow is conveyed from Lake Okeechobee and the water conservation areas into the urbanized areas. Conversely, during the wet season, groundwater flows from the aquifer into the canals and is discharged to the ocean, as needed, to prevent flooding.

Flood Events

Two flood events of note in 1999 and 2000 changed the way water managers, emergency managers and residents approached disasters in south Florida.

October 1999 – Hurricane Irene (DR-1306) developed and started a path towards South Florida. Initial projections were correct in stating the hurricane would impact the west coast of Florida, and Irene traveled through the state and, on October 15, passed just to the west of Miami-Dade County⁴.

Although the hurricane did not pass directly through the county and no exceptionally high winds were experienced, the heavy rainfall associated with this storm did hit Miami-Dade County, and the impacts were severe. Some roads were impassible for weeks, electricity was out in certain areas, and residents and businesses suffered heavy losses. As a result of Hurricane Irene, the Miami-Dade County Board of County Commissioners created a Flood Management Task Force, to analyze why certain areas were so heavily impacted by floodwaters. After eight months of meetings with affected residents and industry, the Task Force offered eighteen recommendations. These recommendations are being implemented where possible, and progress is being tracked.

October 2000 - A tropical disturbance, later to become Tropical Storm Leslie, developed off the west coast of Cuba on October 2nd, and headed toward South Florida (DR-1345). Water managers and weather officials closely tracked the system, and preemptive measures were taken to start moving water out of the canals. Weather forecasts called for 4-8 inches of rainfall from this system, but once the disturbance moved toward the west coast of Florida, it interacted with a stalled frontal boundary located over south Florida. This resulted in 14 to 18 inches of rainfall over a linear area in the center of the county⁵. Equally as unfortunate were residents and businesses that experienced a similar result as in Irene.

Immediately after this so-called "no-name" storm hit, the county commission reconvened the Task Force, to re-examine the problem.

⁴ Tropical Cyclone Report: Hurricane Irene, October 13-19, 1999
(http://www.nhc.noaa.gov/data/tcr/AL131999_Irene.pdf)

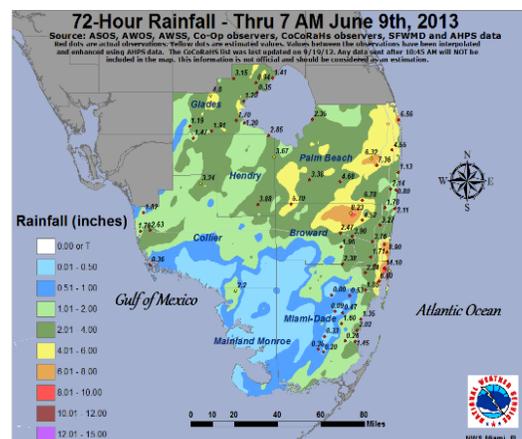
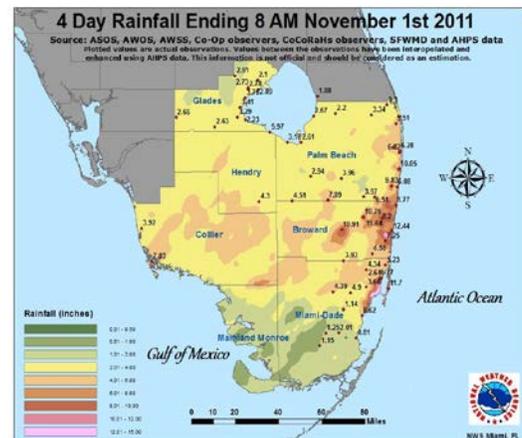
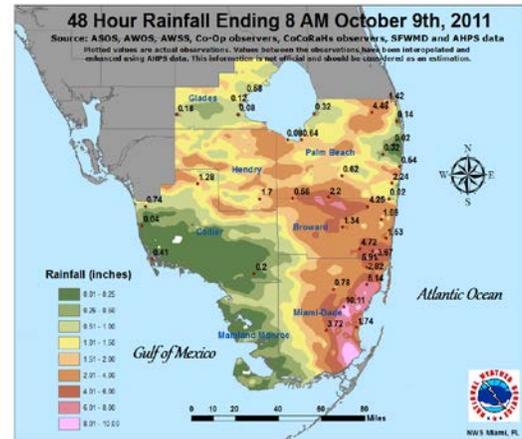
⁵ Tropical Cylone Report: Tropical Storm Leslie (Subtropical Depression One), October 4-7, 2000
(http://www.nhc.noaa.gov/data/tcr/AL162000_Leslie.pdf)

August 2005 – Hurricane Katrina was every bit as much a flood event as it was a windstorm. Large areas in south Miami-Dade County were impacted by flooding, especially in the agricultural community.

October 2011 – On October 9, 2011 we experienced a heavy rain event in Miami-Dade with over 10 inches of rain falling at the West Kendall/Tamiami Airport. The top graphic illustrates the rainfall amounts for a 48-hour period.

From October 28-31, 2011 another heavy rain event occurred with the greatest impacts being felt in Miami Beach. The areas of heaviest showers and thunderstorms were over Pinecrest, Coral Gables and Coconut Grove and remained over that area for another few hours. This area of rainfall produced anywhere from 6 to 10 inches of rain in only a few hours from Cutler Bay to Coconut Grove, leading to severe street flooding and intrusion of water into dozens of homes across this area. Estimates from the South Florida Water Management District indicate that isolated areas in Coconut Grove may have received in excess of 12 inches during this time span. Portions of Miami-Dade County experienced 3-7 inches of rain in a few hours causing significant street flooding. The middle graphic illustrates the rainfall amounts.

June 2013 – Tropical Storm Andrea passed across north Florida, while south Florida was on the receiving end of torrential rains over northeastern Dade as the tail of the storm moved across the area. Up to 14 inches of rain was recorded in North Miami Beach in only a few hours and 8-12 inches from North Miami to the southern portion of Broward County. The event caused severe street flooding and flooding of buildings. The graphic to the right illustrates the rainfall amounts for this event.





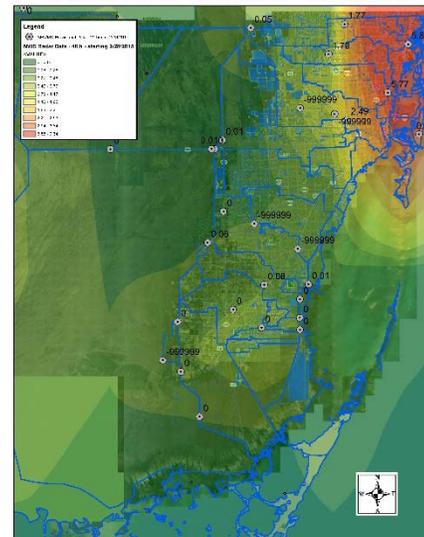
October 2013 – On October 3rd, significant flooding occurred in Kendall, the Falls and Pinecrest with measured rainfall of amounts up to 10 inches in 8 hours causing street flooding and damages to homes and several apartment buildings.

February 2015 – In February 28th, a stalled frontal system produced rainfall amounts between 2-6 inches throughout the county in a 24 hour period. The most rain fell in El Portal and Miami Beach. No significant damage was reported from this event.

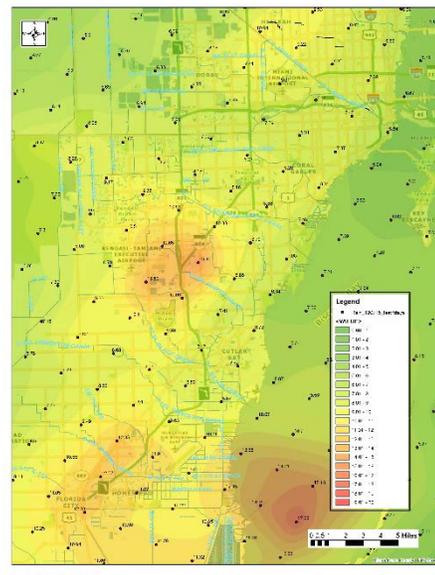
No significant rain events were reported during South Florida’s rainy season as the season was significantly drier than normal.

December 2015 In December 5th and 6th, a series of fronts stalled over southern Florida resulting in significant rainfall throughout the county. Recorded rainfall amounts during the 24-hour period were similar from past tropical systems. The Miami Executive Airport recorded 9 inches of rain and West Kendall reported over 10 inches. The Homestead/Redland area recorded 6 to 8 inches of rain which lead to severe flooding in agricultural land resulting in a significant loss of crops. Other reports of this events included road closures and many stalled vehicles. December is typically the driest month in South Florida, but Miami International Airport recorded, its second wettest December on record, with 9.75 inches. Miami Executive Airport in West Kendall and Redland recorded 18.43 and 15 inches, respectively.

RAINFALL EVENT OF 2/28/2015 - 48H RAINFALL



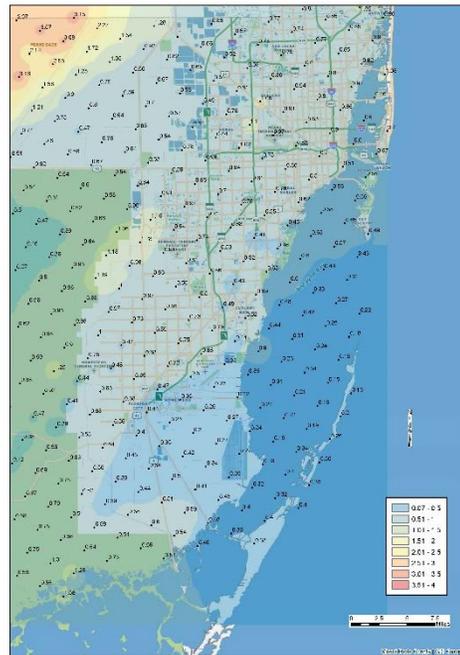
7-DAY RAINFALL - 12/07/2015



January 2016 – In January 27th, 2016 an area of low pressure developed in the southeastern Gulf of Mexico. As a result, a weak warm front moved through South Florida and then stalled over Central Florida until the afternoon of the 28th. A stronger upper level system lifted the area of low pressure across Florida bringing a cold front through South Florida.

Rainfall of up to 3.18 inches fell throughout the County on January 27th with the highest amounts in northwest Miami-Dade. Heavier localized rainfall was recorded throughout the County. On the 28th, up to 4 inches of rainfall was recorded throughout the County. Heavier amounts in the north-northwestern portion of the County. The image on the right shows the rainfall amounts in the 24-hour period between January 27th and 28th.

24-H RAINFALL, Inches - 1/27/2016
1/27/2016 at 7 AM EST to 1/28/2016 at 7 AM EST



The 2016 Atlantic Hurricane Season had two “near-misses” for Miami-Dade County, but no significant flood damage was reported.

August 2016 – At the beginning of its trajectory, Tropical Depression 9 appeared as a potential threat to Miami-Dade County with a possible landfall as a stronger tropical cyclone. As the system continued its west northwest track, a hostile atmospheric environment hindered its development. The disturbance ultimately evaded the County and moved through the Straits of Florida. Thunderstorms stayed over the coastal waters.

October 2016 – Hurricane Matthew became the biggest threat to South Florida since Hurricane Wilma in 2005. The center of Matthew remained offshore and no hurricane impacts were felt in the County. Matthew’s outside bands, as it continued its paralleled track along the east coast of Florida, produced some squally weather between October 5th and 7th producing up to 1.5 inches rainfall throughout the County.

Local flood events have been documented by the National Weather Service Miami Office and can be found at http://www.weather.gov/mfl/events_index.

Flood Impacts

The impact of floods could range anywhere from wet carpets or floors to damaged interiors leading to destruction of property. In addition, floods can potentially cause damage to infrastructure, such as washing out roads and bridges, or standing water inhibiting movement of vehicular or train traffic. Furthermore, floods also impact the agricultural community due to crops being inundated over an extended time or being washed away. Flooding, whether in rural or urban areas, can last up to several weeks as was the case during Hurricane Irene.

Flood Regulations in Miami-Dade County

Pre-FIRM structures represent a potential flood hazard, in that, due to the relatively flat terrain, older structures built lower will experience more of a hazard than structures built to FIRM elevations. In fact, because newer structures may be sited close to the pre-FIRM buildings, their potential risk for flood damage may be even greater.

The CRS Sub-Committee identified major milestones for flood regulation in Miami-Dade County as depicted in Table 2.

Table 2: Major Flood Regulation Dates for Miami-Dade County (Nov. 2014)

Color	Year	Description	% of housing stock
	Pre-1957	No special elevation requirements in effect.	22.25%
	1957-1973	General Countywide requirement of the highest of the County Flood Criteria maps (10-year event) (CFC), back of sidewalk (BOS), or highest adjacent crown of road (COR) + 8 inches for residential or 4 inches for commercial construction	23.92%
	1973-1992	First FIRM maps developed identifying flood areas. CFC still enforced.	27.73%
	1993-2008	Incorporated areas begin enforcing flood codes.	24.12%
	2009-2011	Updated FEMA Flood Maps	1.33%
	2012 - present	New Florida Building Code requiring free board for properties within Special Flood Hazard areas, following ASCE24 Table, to be elevated depending on the building category	0.65%

Map 2, provides an overview of the residential construction in relation to these major milestones. Individual jurisdictional maps were made available to all of the municipalities. This information was gathered from the Miami-Dade Property Appraiser database looking at the year of construction. This is meant to provide an overview of year of construction but does not tell us much about the elevation to which the structures were actually built but at least the standard in place at time of the original

construction. There is not currently a comprehensive database of elevation certificates for all structures, though information is being gathered.

Map 2: Residential Construction by Flood Regulation Milestones

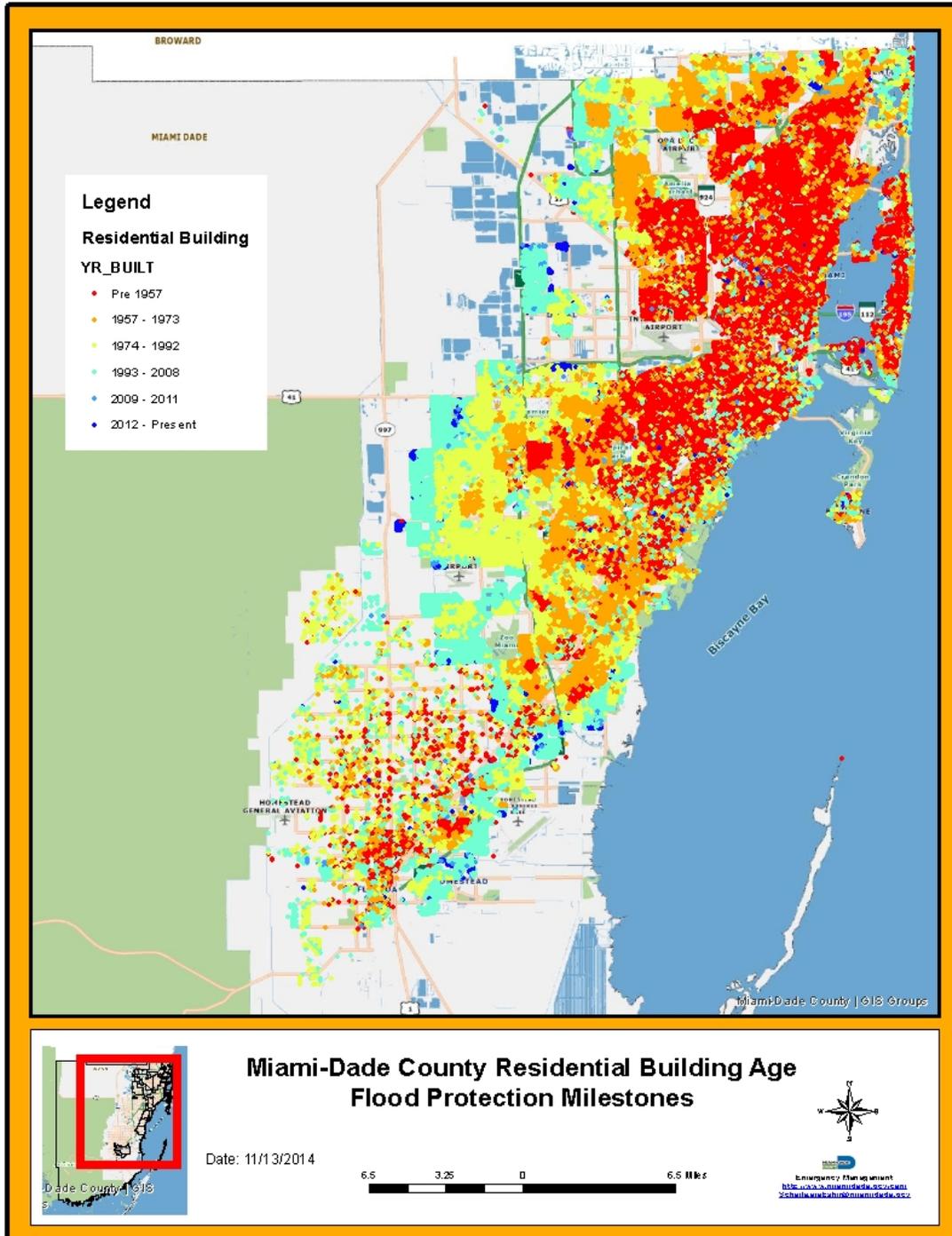
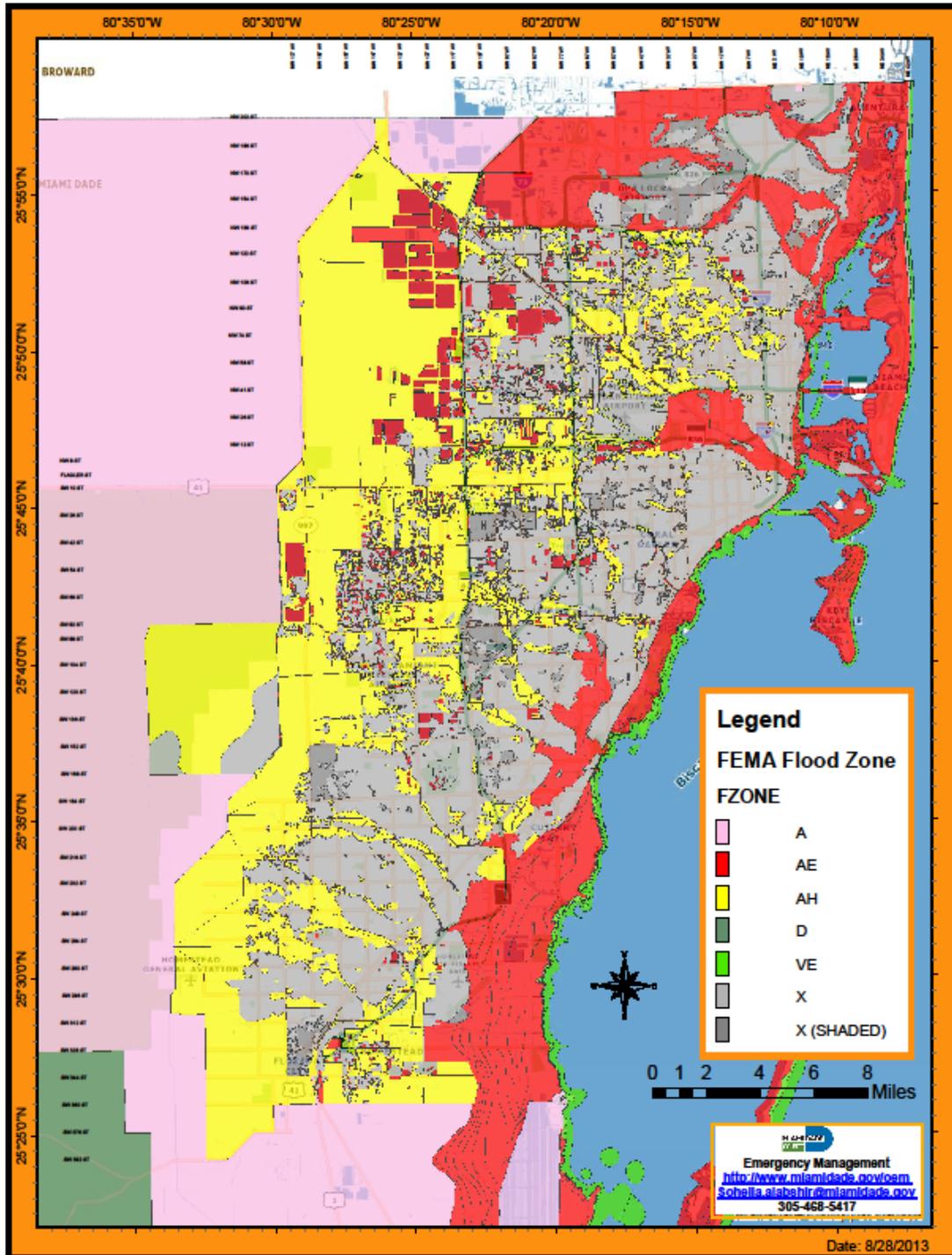


Table 3 show the number of structures by the flood regulation milestones for each municipality.

Table 3: Jurisdictional Residential Structures by Flood Milestones

Jurisdiction	Pre 1957	1957-1973	1974-1992	1993-2008	2009-2011	2012-Present
Aventura	35	3740	10574	7533	66	70
Bal Harbour	457	810	1135	598	8	5
Bay Harbor	708	1380	167	139	5	28
Biscayne Park	943	89	36	2	1	0
Coral Gables	7,943	4,252	1,987	3,650	217	84
Cutler Bay	1,307	4,132	2,853	4,647	286	357
Doral	20	843	4,112	10,926	749	717
El Portal	682	47	4	14	1	2
Florida City	316	484	265	1,018	26	3
Golden Beach	141	29	77	86	10	6
Hialeah Gardens	4	273	2,148	3,210	5	37
Hialeah	14,882	12,762	16,910	5,606	58	55
Homestead	1,399	989	2,969	11,261	280	376
Indian Creek Village	7	4	6	13	2	0
Key Biscayne	570	2,352	2,317	1,192	41	60
Medley	19	20	21	14	1	31
Miami Beach	12,384	17,229	6,305	9,847	435	218
Miami Gardens	9,125	12,970	4,389	2,295	187	35
Miami Lakes	12	2,866	2,717	3,240	8	6
Miami Shores	3,120	538	177	80	3	2
Miami Springs	2,808	818	248	71	7	8
Miami	457	810	1,135	598	8	5
North Bay Village	709	1,392	581	713	39	1
North Miami Beach	6,161	5023	1,270	159	12	8
North Miami	8,305	5,271	1,217	644	15	9
Opa-locka	1,873	589	151	274	9	2
Palmetto Bay	348	4,452	2,152	965	12	13
Pinecrest	1,464	2,891	831	800	47	34
South Miami	1,929	743	541	565	16	17
Sunny Isles Beach	196	5,009	4,107	5,531	854	2
Surfside	1,144	714	644	616	3	1
Sweetwater	60	817	1,826	767	7	1
Virginia Gardens	435	128	50	8	0	0
West Miami	1,405	85	23	70	2	0
Unincorporated	41,310	75,601	120,150	70,366	1,689	2,574
Total:	114,755	166,743	196,220	154,794	5,641	5,400

Map 3 shows the FEMA Flood Insurance Rate Maps that went into effect in 2009. Miami-Dade County is currently undergoing a new coastal study with maps projected to take effect in 2019. Map 3: FEMA Flood Zones Miami-Dade County 2009



Map 4 illustrates the number of buildings that are in FEMA Flood Zones for Miami-Dade County based upon the 2014 Miami-Dade Property Appraiser data and Table 4 provides a breakdown of buildings by jurisdiction.

Map 4: Buildings By FEMA Flood Zones

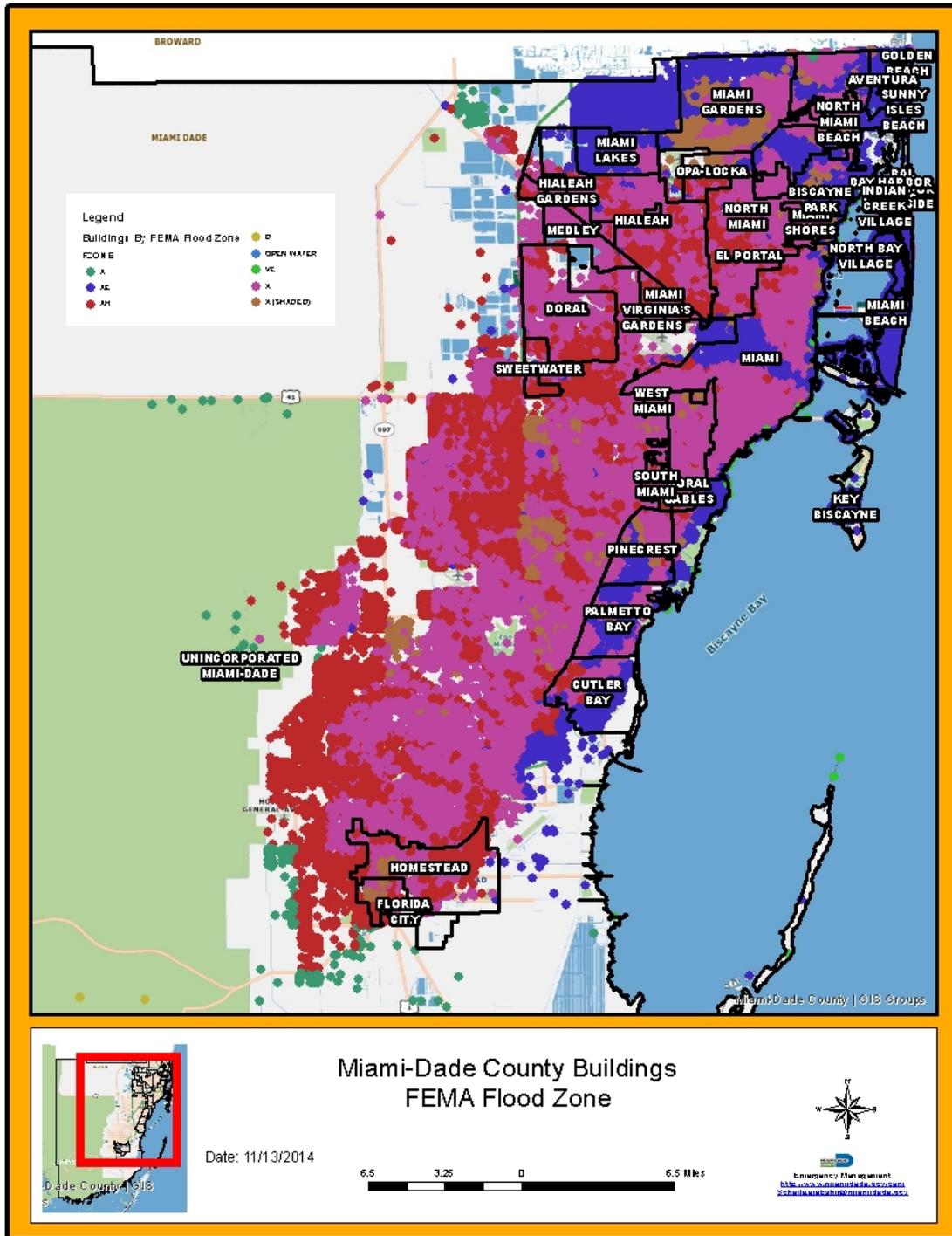


Table 4: Buildings by Jurisdiction in Flood Zones (Nov. 2014)

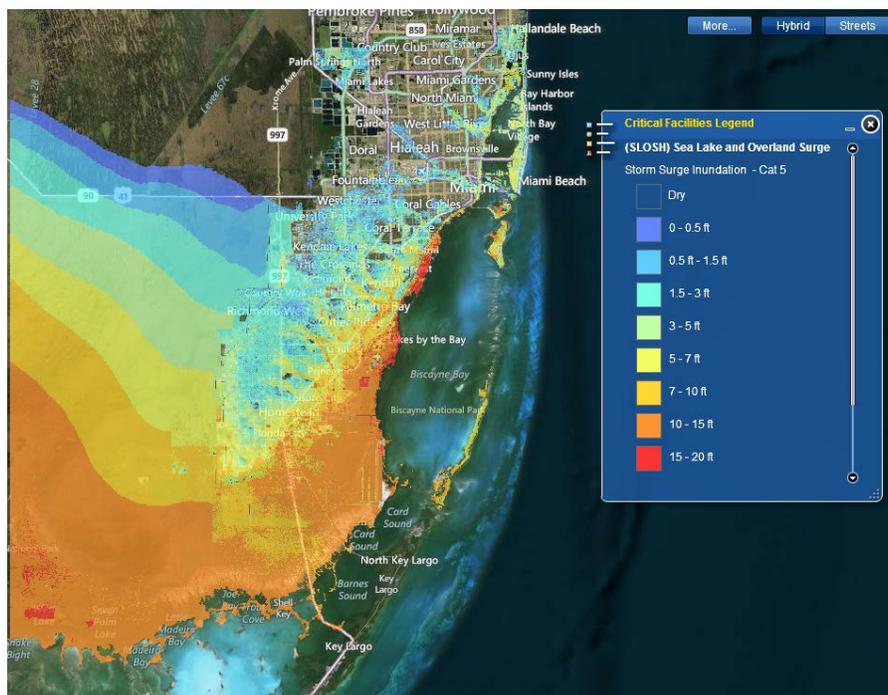
Jurisdiction	A	AE	AH	D	VE	X	XE
Aventura		24,149				52	31
Bal Harbour		738				955	2250
Bay Harbor		2576					
Biscayne Park		991				42	42
Coral Gables		2770	1209		58	13209	1466
Cutler Bay		8840	1871			3886	
Doral		93	3768			16746	
El Portal		6	97			566	92
Florida City	3	2	1097			396	817
Golden Beach		262				98	
Hialeah Gardens		133	271			5802	
Hialeah		1304	18513			36496	
Homestead		222	8824			9098	746
Indian Creek Village		33				4	1
Key Biscayne		7056					
Medley		19	251			578	
Miami Beach		51049				4381	123
Miami Gardens		12103				9083	8638
Miami Lakes	0	8317				1263	
Miami Shores		843	3		19	2470	552
Miami Springs		11	2029			2125	21
Miami		43094	6441		3897	68535	2215
North Bay Village		3872					
North Miami Beach		5650				7212	653
North Miami		8190			261	5637	1995
Opa-locka		714	543			1319	1275
Palmetto Bay		4701			41	3590	80
Pinecrest		2168	268			3563	260
South Miami		2	784			3660	
Sunny Isles Beach		11351			1	7647	0
Surfside		1560				1878	
Sweetwater		1	582			367	
Virginia Gardens			122			445	86
West Miami						960	768
Unincorporated	582	44750	105976	2	28	169059	20053
Total:	585	247,570	152649	2	4305	381122	42164

Storm Surge

One of the other areas of concern for flooding in Miami-Dade County is associated with storm surge inundation from tropical cyclones. Storms traveling from the east, south and west put Miami-Dade at risk from storm surge. To model storm surge, the Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model is utilized. In 2010 the State of Florida conducted regional evacuation studies that included collecting updated topography information utilizing Light Imaging Detection and Ranging (LIDAR) data. The Miami-Dade Office of Emergency Management (OEM) was presented with the data to then go about setting areas for potential evacuation from storm surge.

Map 5 is a depiction of the Maximum of Maximums (MOM) for a Category 5 Hurricane, on the Saffir-Simpson Scale. It should be noted that ranges of storm surge are no longer strictly tied to categories of hurricanes and with updated technology, OEM and the National Hurricane Center utilize directional information to better predict where storm surge will occur for each individual storm. Map 5 illustrates areas of the county that could potentially get surge from at least one direction of an impacting storm with winds of 157 mph and greater.

Map 5: Maximum of Maximums (MOM) Storm Surge for Category 5⁶



⁶ Miami-Dade FLIPPER

Map 6 depicts the areas OEM selected as Storm Surge Planning Zones, which indicate areas that are potentially at risk for storm surge and may be designated as evacuation areas. Table 5 lists the population in each zone and the estimated clearance times for evacuations.

Map 66: Storm Surge Planning Zones

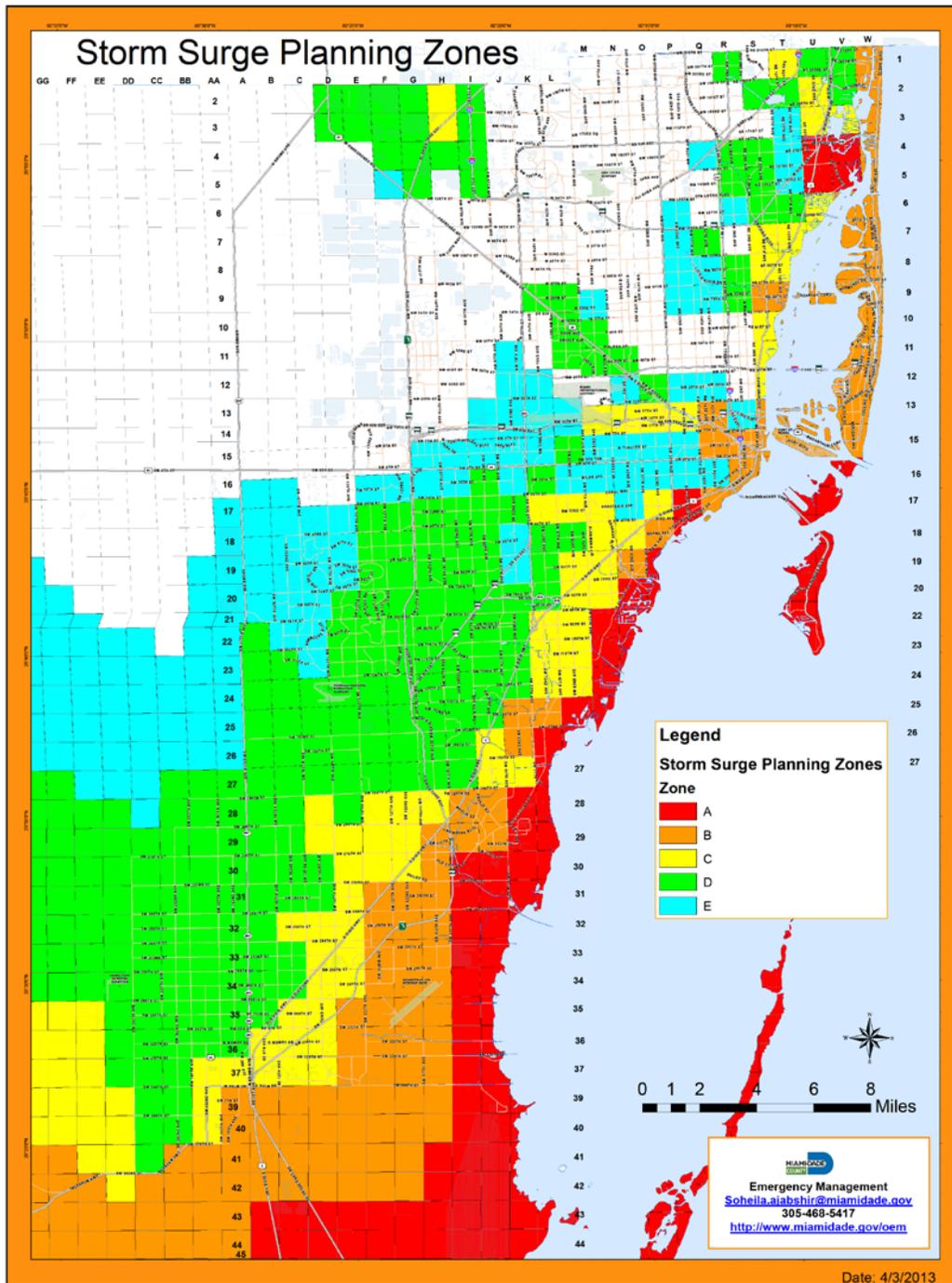


Table 5: Population Estimates and Evacuation Clearance Times for Storm Surge Planning Zones

	Risk Area	Cumulative	Mobile Homes Tourists	In County Clearance Times ⁷ (hours)	Out of County Clearance Times (hours)
A	68,317		103,238	26	26
B	354,068	422,385		28	28
C	302,039	724,424		37	37
D	631,399	1,355,823		56	56
E	495,629	1,851,452		73	73
Total	1,851,452		1,954,690		

*Clearance times from Base Scenario provided by SFRPC and FDEM on 5/12/2016.

⁷ In-county clearance time includes out-of county trips from other counties that was through evacuation zones in the evacuating county. Therefore, clearance time from Miami-Dade County in all level B and higher will reflect the out-of-county clearance time for Monroe County. Source: Regional Evacuation Transportation Analysis, South Florida Regional Planning Council

Map 7 provides an illustration of the buildings by type within the storm surge planning zones and Tables 6 and 7 provide a listing of building types by jurisdiction within the storm surge planning zones.

Map 7: Buildings within Storm Surge Planning Zones

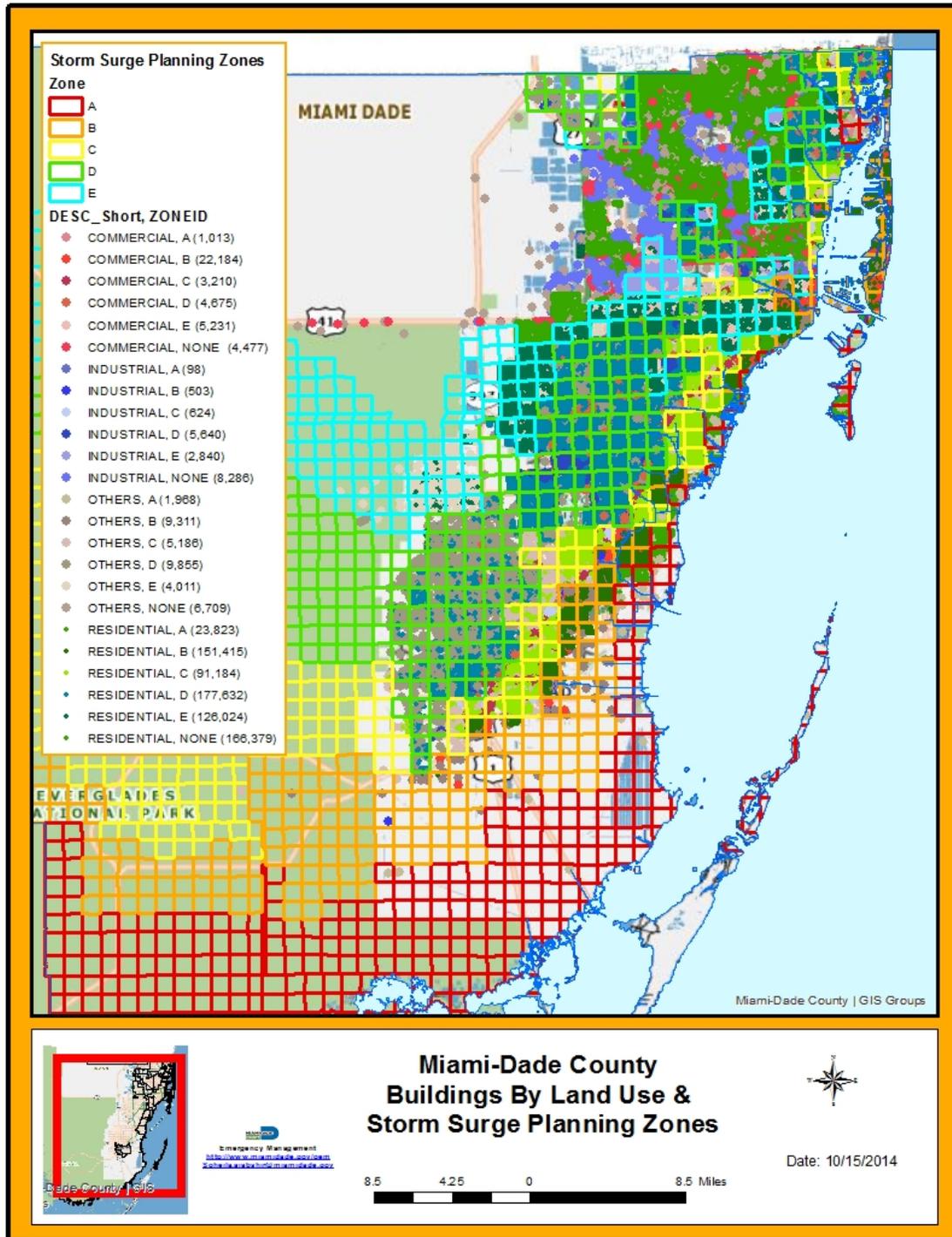


Table 6: Commercial and Industrial Facilities by Municipality in Storm Surge Planning Zones

JURISDICTION	COMMERCIAL		INDUSTRIAL	
	Count	Bldg Value	Count	Bldg Value
AVENTURA	237	412,642,130	25	20,710,431
BAL HARBOUR	682	1,652,267,919		
BAY HARBOR ISLANDS	97	45,250,603		
BISCAYNE PARK				
CORAL GABLES	1,304	1,530,909,828	17	7,604,059
CUTLER BAY	107	110,484,222	2	4,010,204
DORAL	635	895,123,737	2,356	1,599,282,733
EL PORTAL	7	1,447,630	1	1,295,212
FLORIDA CITY	125	110,424,581	40	20,540,233
GOLDEN BEACH				
HIALEAH	1,591	732,427,700	2,627	671,506,281
HIALEAH GARDENS	169	\$ 94,480,379	308	80,697,399
HOMESTEAD	521	244,987,653	180	43,318,083
INDIAN CREEK VILLAGE			673	689,693,968
KEY BISCAYNE	295	188,279,601	1,413	334,011,832
MEDLEY	52	19,590,981	11	1,756,701
MIAMI	16,223	7,741,130,240	374	341,494,663
MIAMI BEACH	7,995	4,532,548,698	409	169,096,549
MIAMI GARDENS	404	487,906,023	1	84,384
MIAMI LAKES	157	249,934,462	8	2,711,847
MIAMI SHORES	76	34,542,122	2	4,402,072
MIAMI SPRINGS	171	139,483,910	2,627	671,506,281
NORTH BAY VILLAGE	137	51,551,085	308	80,697,399
NORTH MIAMI	609	259,531,912	133	46,813,127
NORTH MIAMI BEACH	498	302,658,179	56	15,192,672
OPA-LOCKA	175	\$30,374,557	631	165,797,265
PALMETTO BAY	247	154,986,293	1	1,540,548
PINECREST	143	122,847,307	1	185,510
SOUTH MIAMI	548	199,298,249	33	3,756,442
SUNNY ISLES BEACH	1,322	317,161,218		
SURFSIDE	48	11,408,102		
SWEETWATER	138	396,044,015	351	179,049,169
UNINCORP. MIAMI-DADE	5,957	3,388,837,629	8,306	2,953,844,452
VIRGINIA GARDENS	23	25,527,254	3	5,937,275
WEST MIAMI	97	20,717,177	29	3,467,223
TOTAL	40,790	24,504,805,396	17,991	7,367,800,334

Table 7: Residential and Other Structures by Municipality within Storm Surge Zones

JURISDICTION	RESIDENTIAL		OTHER	
	Count	Bldg Value	Count	Bldg Value
AVENTURA	22,067	\$7,353,362,771	1,903	\$589,998,701
BAL HARBOUR	3,013	\$2,065,111,108	248	\$143,291,649
BAY HARBOR ISLANDS	2,432	\$544,847,704	47	\$40,082,298
BISCAYNE PARK	1,070	\$131,726,494	5	\$816,927
CORAL GABLES	16,935	\$6,065,921,180	456	\$493,996,179
CUTLER BAY	13,596	\$1,500,319,689	892	\$153,280,837
DORAL	17,372	\$2,976,510,794	244	\$510,299,633
EL PORTAL	749	\$80,758,362	4	\$2,429,256
FLORIDA CITY	2,070	\$104,940,748	80	\$53,801,677
GOLDEN BEACH	354	\$229,696,574	6	\$836,173
HIALEAH	49,669	\$4,671,419,681	2,426	\$786,394,680
HIALEAH GARDENS	5,650	\$640,297,886	79	\$207,677,998
HOMESTEAD	17,068	\$1,293,836,792	1,121	\$385,041,980
INDIAN CREEK VILLAGE	32	\$135,218,524	6	\$5,148,996
KEY BISCAYNE	6,533	\$4,884,340,942	228	\$493,353,379
MEDLEY	74	\$3,832,240	49	\$20,362,160
MIAMI	98,703	\$19,249,522,305	7,843	\$3,738,123,952
MIAMI BEACH	46,212	\$17,507,335,275	1,335	\$1,102,579,306
MIAMI GARDENS	28,738	\$2,264,882,565	308	\$322,407,043
MIAMI LAKES	8,839	\$1,439,202,664	175	\$196,979,129
MIAMI SHORES	3,768	\$583,932,844	42	\$93,159,747
MIAMI SPRINGS	3,954	\$545,454,373	53	\$65,356,328
NORTH BAY VILLAGE	3,442	\$589,832,119	291	\$80,300,567
NORTH MIAMI	14,801	\$1,504,945,907	540	\$260,808,569
NORTH MIAMI BEACH	12,046	\$1,185,919,717	915	\$163,507,298
OPA-LOCKA	2,904	\$203,527,749	141	\$103,738,423
PALMETTO BAY	7,917	\$1,598,412,469	247	\$103,338,624
PINECREST	6,074	\$1,949,510,915	41	\$79,305,464
SOUTH MIAMI	3,781	\$646,507,410	84	\$119,948,075
SUNNY ISLES BEACH	15,699	\$8,023,905,384	1,978	\$585,459,453
SURFSIDE	3,122	\$843,630,141	268	\$198,206,935
SWEETWATER	3,481	\$430,623,942	321	\$104,650,928
UNINCORP. MIAMI-DADE	312,085	\$36,683,366,293	14,112	\$6,651,747,383
VIRGINIA GARDENS	621	\$69,027,146	6	\$6,796,096
WEST MIAMI	1,585	\$186,718,443	17	\$8,495,008
TOTAL	736,456	\$128,188,399,150	36,511	\$17,871,720,851

Sea Level Rise

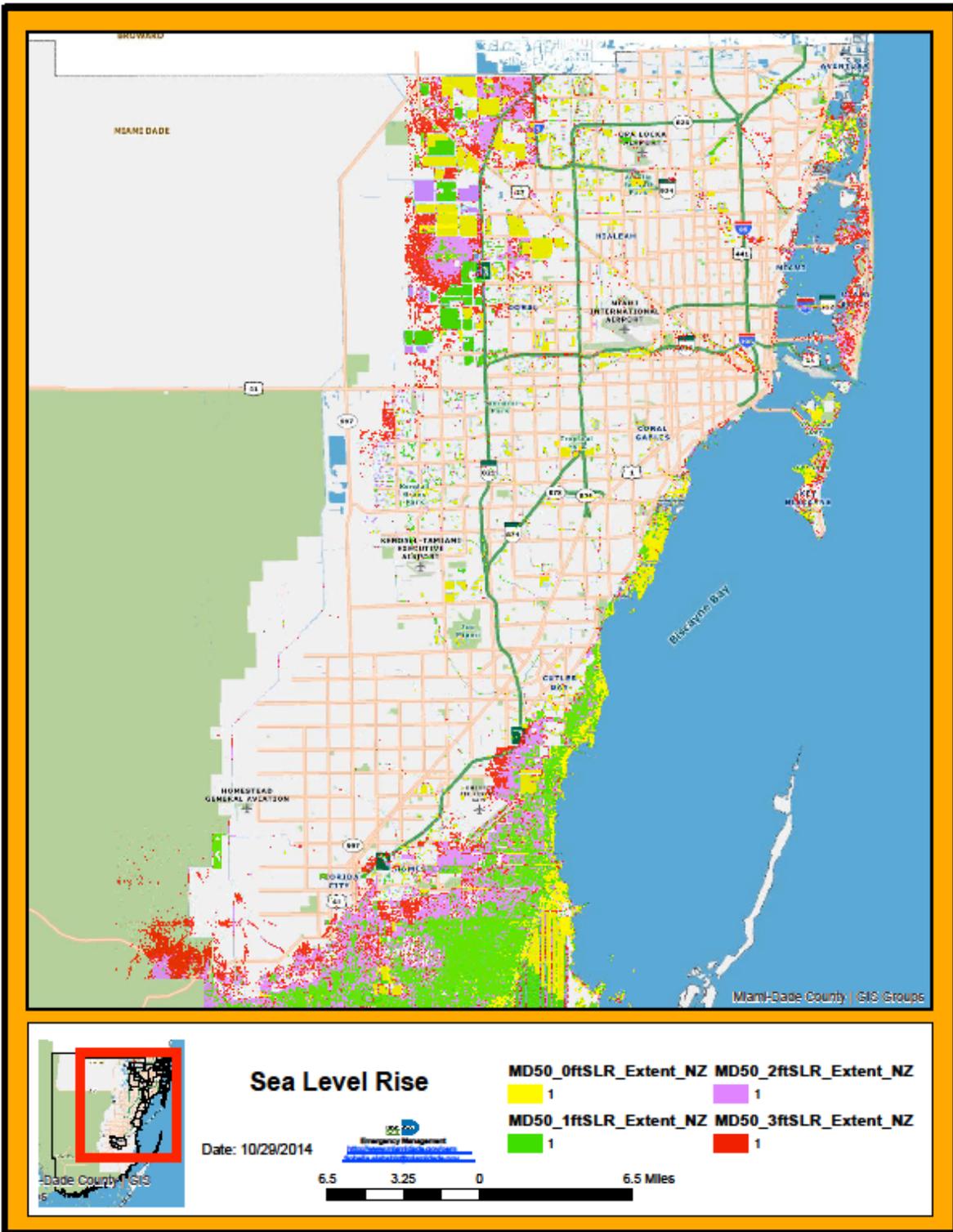
Incorporation of the future threat of sea level rise presents challenges in that the consideration and determination of what the potential impacts will be vary depending upon the modeling variables that are considered.

The Office of Resilience will continue to lead the charge in working with agencies to implement the Climate Action Plan. A review of the Climate Action Plan can be found in Part 4 Appendix I, Integration Document. The LMS will continue to identify areas where climate change and sea level rise can be integrated into mitigation planning. The Vulnerability Assessment performed for Miami-Dade County was added to the THIRA, see Part 4 Appendix J.

During the Evaluation and Appraisal Report adopted in 2011, climate change was identified as one of the priorities to address in the County's Comprehensive Development Master Plan (CDMP). Miami-Dade has incorporated climate change considerations and language in several of the Elements of the CDMP update which was approved by the Board of County Commissioners in October, 2013. These policies now form a sound foundation for Miami-Dade County to begin actively incorporating these considerations into existing capital investment and infrastructure planning processes.

Map 8 provides a demonstration of the possible impacts of sea level rise in Miami-Dade County and was developed from data collected for the Climate Change Compact. Additional information is provided in Part 4, Appendix I.

Map 8: Potential Sea Level Rise Impacts Miami-Dade



Mapping Integration

To provide greater access to County data layers to the LMSWG, OEM has integrated a number of data layers to our geographic information mapping based system known as the Florida Interoperable Picture Processing for Emergency Responders (FLIPPER). The LMS Chair worked with the Information Technology Department representative assigned to OEM to identify data layers and information to assist with drawing linkages and integrating mapping into the LMS Projects.

The following actions have occurred since 2013:

- Upgraded the way LMS Projects are tracked to build in additional information including flood basins and address locations
- Additional layers added to FLIPPER for stakeholders to access including:
 - Hydrology and Topology
 - Canal Structures
 - Canal By Type
 - Canal Maintained By
 - Primary Canal Basin
 - Contour Lines – Ground Elevation
 - FEMA Panels
 - FEMA Flood Zone - to the parcel level
 - SLOSH data, by directional Maximum Envelopes of Water (MEOW) and Maximum of Maximums (MOM)

In 2015, the new Mapper feature in WebEOC was launched to map LMS Projects. This will help us identify areas where multiple projects may be occurring or areas where mitigation projects may need to be considered

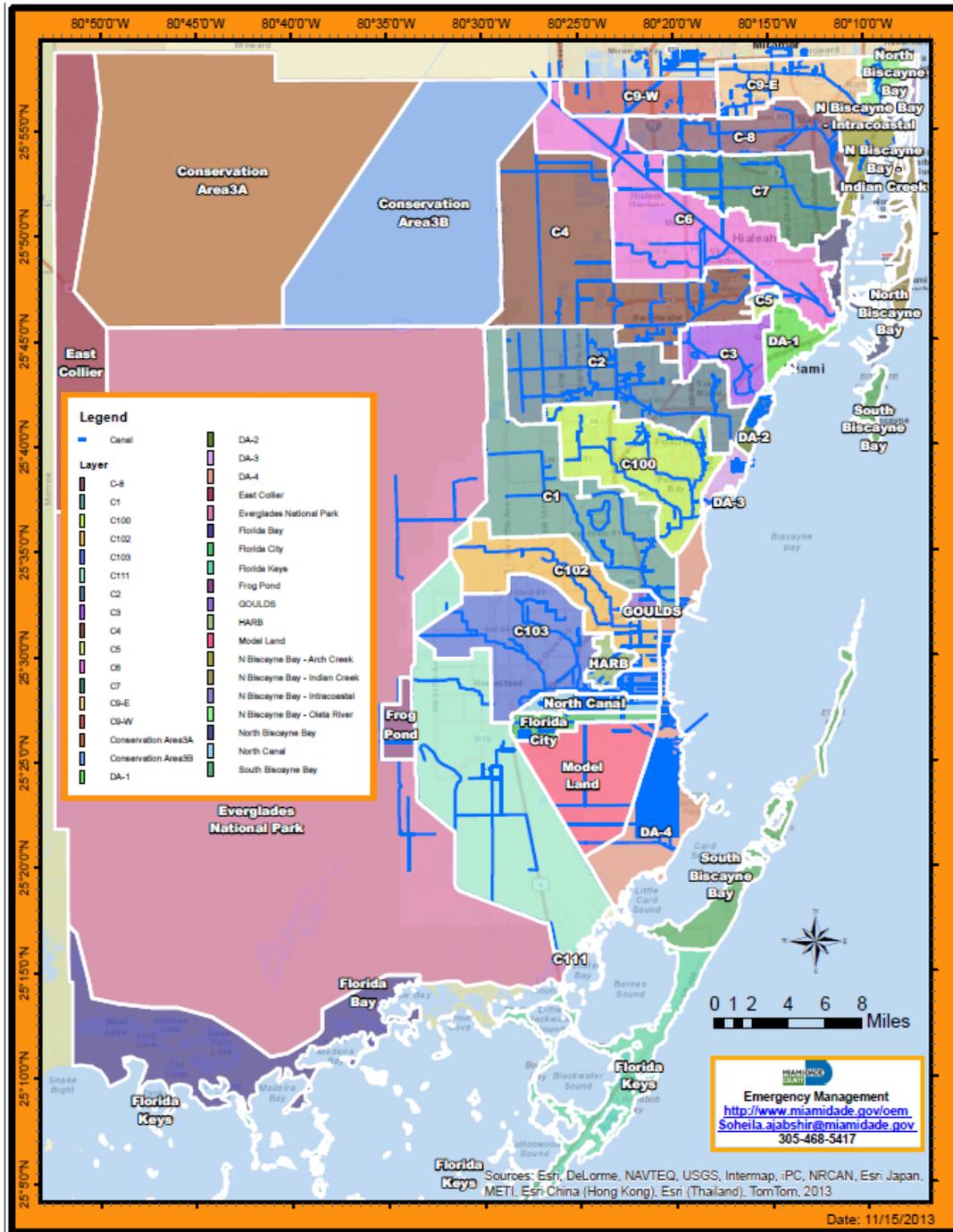
Through FLIPPER agencies can assess the risk of their facilities from potential storm surge, determine overall elevation of the land surrounding their facilities and determine proximity to canal structures and which drainage basin they are in. Presentations have been provided to community agencies and through the LMSWG meetings and the LMS Information Bulletin on how to utilize the system.

Primary Drainage Basins

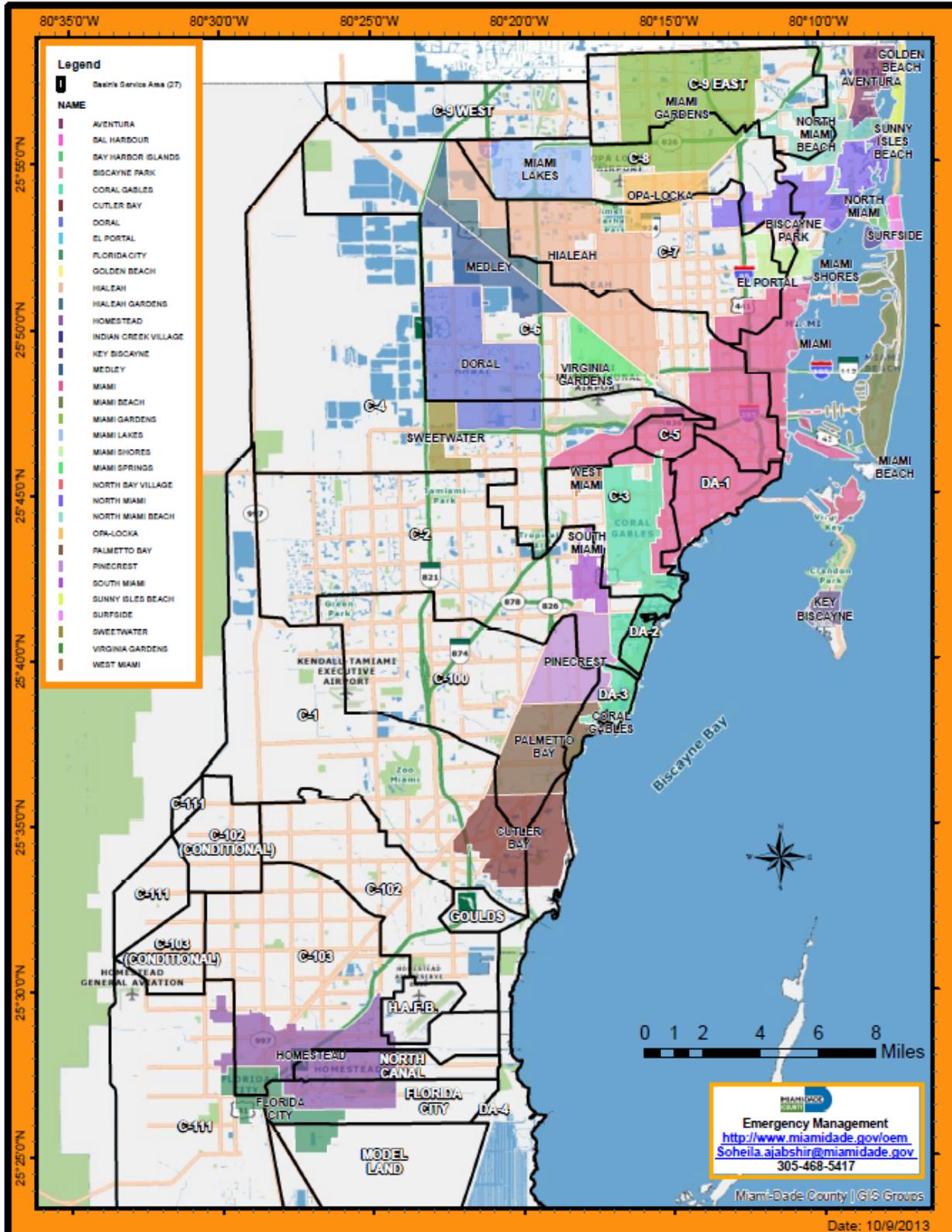
Maps 9 and 10 provides illustration of the location of the canal systems in Miami-Dade to the drainage basins. The LMS will continue to work with the South Florida Water Management District (SFWMD), DTPW and other responsible parties for canal mitigation measures. Our communities are very reliant upon the ability of the canals to provide drainage.

Map 9 shows how canal basis cross jurisdictional lines and how it is paramount for us to help track where drainage projects are planned so we can best collaborate with one another to continue to mitigate flood hazards.

Map 9: Drainage Basins with Canals Identified



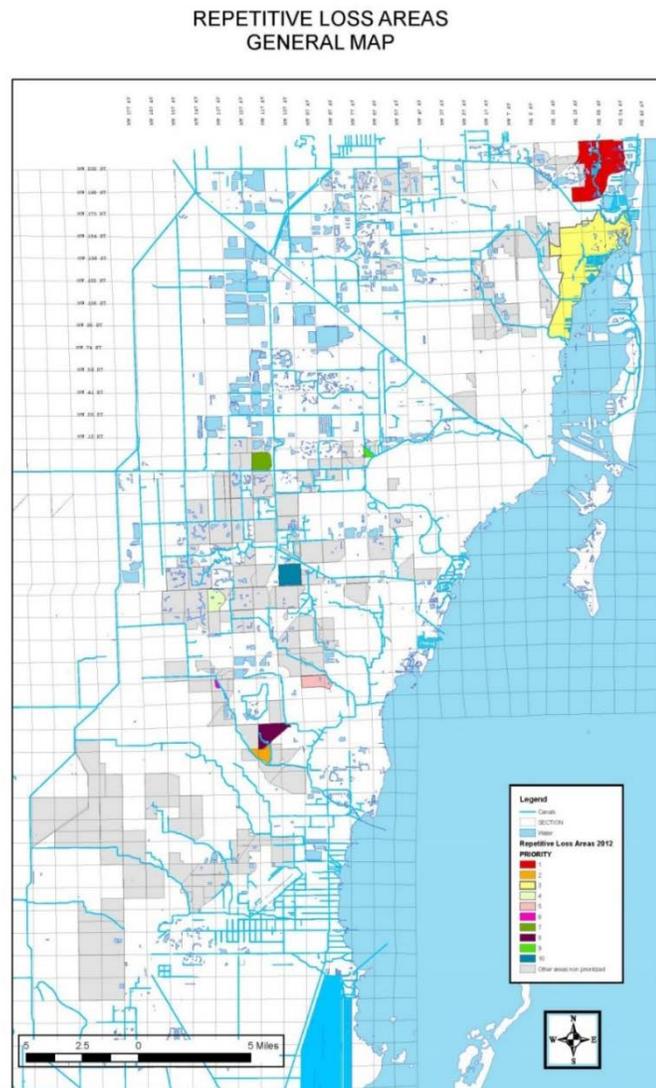
Map 10: Municipal Boundaries in Relation to Drainage Basins



Repetitive Loss Properties

Repetitive loss data has been gathered from FEMA and NFIP to help guide local mitigation measures. Most of the repetitive losses sites are identified, funded and mitigated through several Miami-Dade County programs, such as the Stormwater Management Master Plan, Flood Inspections, Quality Neighborhoods Improvement Program, Public Works Capital Budget, General Obligation Bond, Stormwater Utility and Secondary Canal Dredging Programs. The objective of this program is the mitigation of localized flooding problems not identified or addressed in any other programs, including flooding of residential units above their finished floor elevations, through the construction of minor drainage improvements at various locations throughout Miami-Dade County. These sites (residential/commercial or industrial facilities) are reported by FEMA on a yearly basis as having experienced flooding above their finished floor elevations, two (2) times or more with a damage claim of \$1,000.00 or more each time. Map 11 shows the repetitive loss areas within the county.

Miami Dade was unable to obtain data on all municipalities on repetitive loss and severe repetitive losses in 2016.



Repetitive loss areas are prioritized based on the number of losses in the basin and frequency of the rainfall event, which caused the flooding.

Map 11: Repetitive Loss Areas, General Map

Map 12 shows all repetitive loss properties throughout the county as reported through NFIP. This maps does not show us uninsured or privately insured losses.

Map 12: Un-Mitigated Repetitive Loss Properties Address Count

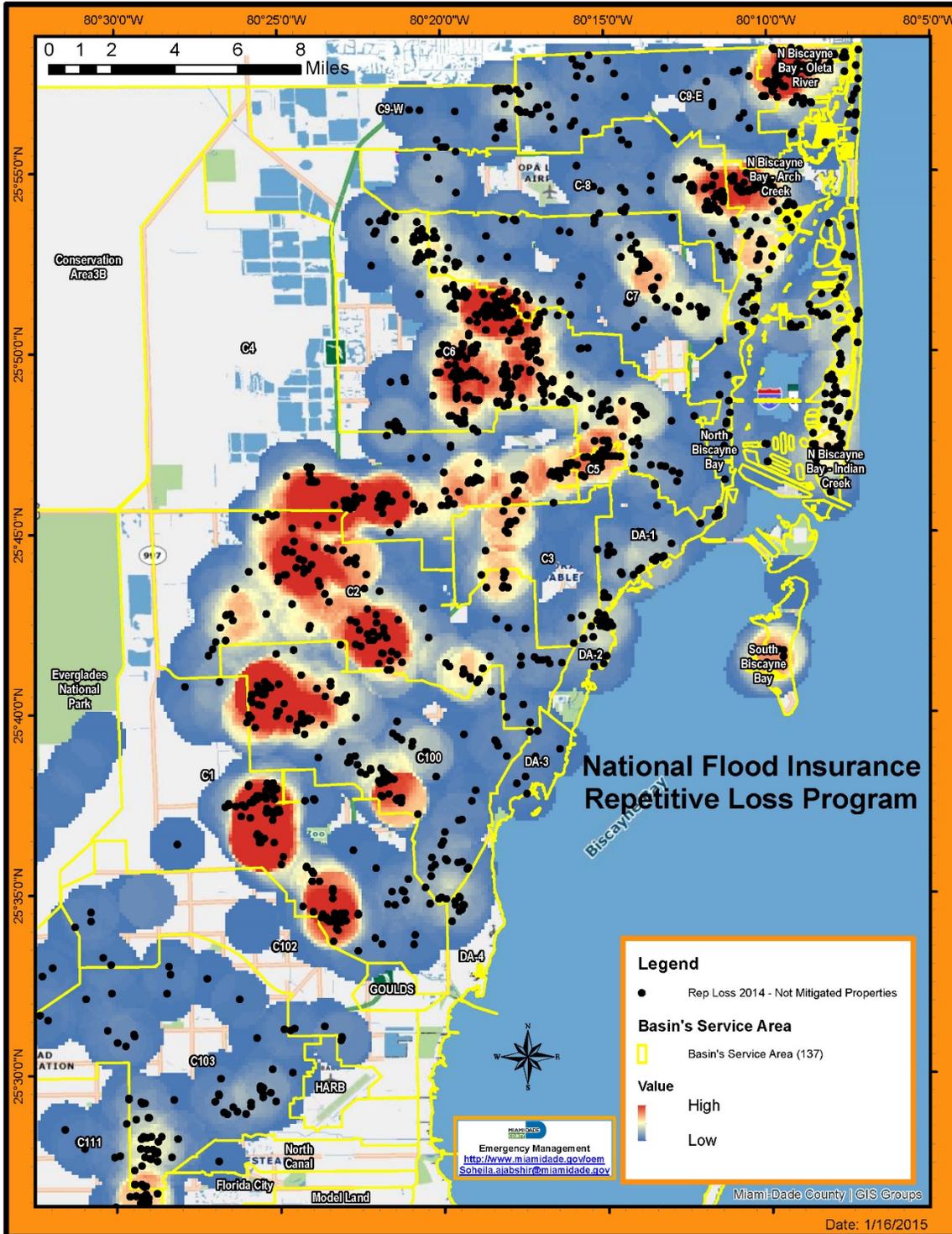


Table 8 shows the number and type of structures that have been reported and having repetitive losses that have not been mitigated.

Table 8: Repetitive Losses by Jurisdiction*

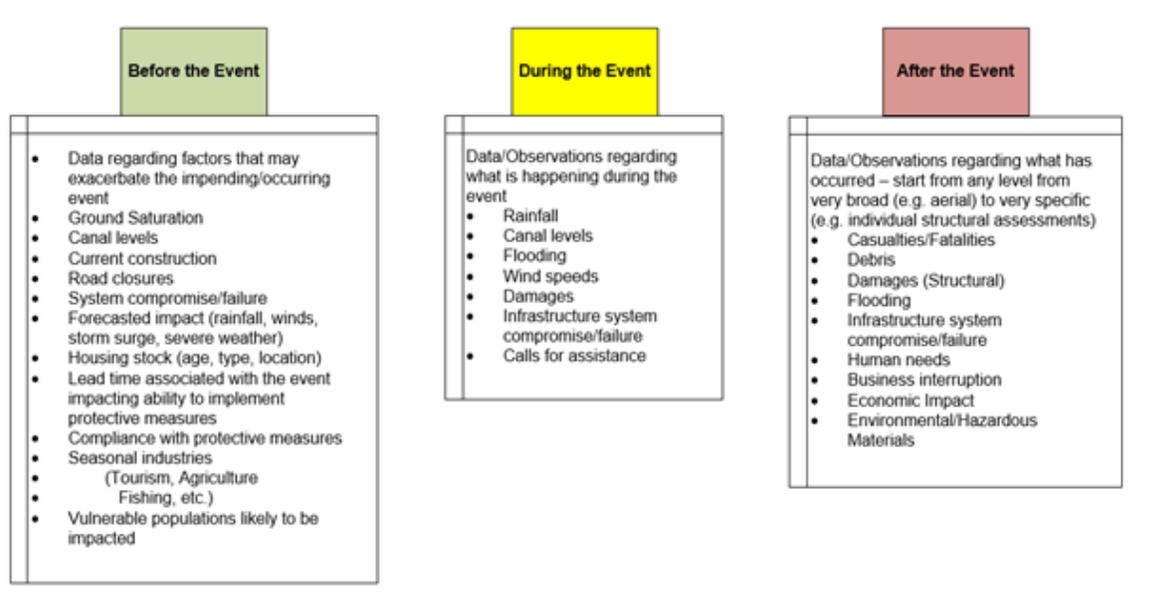
Jurisdiction	Years	2-4 Family	Assmd- Condo	Non Resident	Other Res.	Single Fam.	Total
Aventura	1981-2013	0	1	2	8	5	16
Bal Harbour	1992-2000	0	1	0	0	0	1
Bay Harbor Islands	1994-2000	0	0	0	0	1	1
Biscayne Park	1984-2013	0	0	0	0	3	3
Coral Gables	1981-2011	0	0	2	2	20	24
Cutler Bay	1981-2011	0	0	0	0	32	32
Doral	1991-2012	0	5	36	17	11	69
El Portal	1999-2007	0	0	1	0	4	5
Florida City	1981-2011	1	0	0	0	44	45
Golden Beach	1999-2013	0	0	0	0	3	0
Hialeah	1979-2014	14	4	19	4	165	206
Hialeah Gardens	1998-2014	1	0	15	0	24	40
Homestead	2000-2011	0	1	7	5	23	36
Indian Creek Village	-		0	0	0	0	0
Key Biscayne	1981-2011	0	0	1	1	3	5
Medley	1979-2011	0	2	12	0	0	14
Miami	1979-2014	28	9	23	23	154	240
Miami Beach	1981-2013	3	4	11	21	44	83
Miami Gardens	1994-2011	0	0	1	0	24	25
Miami Lakes	1995-2005	0	0	1	0	12	13
Miami Shores	1980-2005	0	0	0	0	7	7
Miami Springs	1991-2006	3	2	4	0	60	69
North Bay Village	1991-2005	0	0	0	0	7	7
North Miami	1980-2013	2	0	3	1	37	43
North Miami Beach	1994-2013	1	0	4	0	11	16
Opa-locka	1979-2007	0	3	2	2	8	15
Palmetto Bay	1992-2011	0	0	1	0	10	11
Pinecrest	1981-2013	0	0	3	0	11	14
South Miami	1999-2005	0	0	1	0	6	7
Sunny Isles Beach	1995-2013	0	0	0	3	2	5
Surfside	1991-2000	0	0	1	0	2	3
Sweetwater	1981-2005	16	0	0	0	67	83
Virginia Gardens	1991-2010	0	0	0	1	7	8
West Miami	1981-2000	0	0	0	0	29	29
Unincorporated Area	1979-2014	58	17	104	62	2072	2313
						Total	3569

*December 12, 2014 National Flood Database Non-Mitigated Properties Data from 1979-2014

Impact Assessment

As part of the Hazard Impact and Assessment Plan (HIAP), OEM is currently working on how to better assess the potential and actual impacts of event. This involves gathering data before, during and after an event. Figure 1 is extracted from the HIAP to provide an overview of how this will be accomplished. The HIAP can be found in Volume III of the Comprehensive Emergency Management Plan (CEMP).

Figure 1: Impact Assessments: Before, During and After an Event



Determination of a Significant Rain Event

To help local communities determine if a rain event is considered significant the following site and chart from the National Oceanic and Atmospheric Administration (NOAA) Hydrometeorological Design Studies Center maintains the Precipitation Frequency Data Server (PFDS) which is a point-and-click interface developed to deliver NOAA Atlas 14 precipitation frequency estimates and associated information. To determine the amounts and rates of rain that could create a various internal rain event (e.g 100 year or 500 year) this website provides local information: http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=fl.

Using a location in Miami-Dade County with a 7 foot elevation, the following chart depicts the rainfall amounts per an interval of time that could determine if a significant rain event has occurred.

Figure 2: Significant Rain Event Chart



NOAA Atlas 14, Volume 9, Version 2
Location name: Miami, Florida, US*
Latitude: 25.8204°, Longitude: -80.2930°
Elevation: 7 ft*
* source: Google Maps



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffrey Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aeriels](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.578 (0.471-0.713)	0.664 (0.538-0.816)	0.797 (0.647-0.988)	0.911 (0.735-1.13)	1.07 (0.833-1.38)	1.19 (0.907-1.56)	1.32 (0.967-1.77)	1.44 (1.02-1.99)	1.61 (1.09-2.29)	1.74 (1.15-2.52)
10-min	0.846 (0.690-1.04)	0.967 (0.788-1.20)	1.17 (0.948-1.45)	1.33 (1.08-1.66)	1.57 (1.22-2.01)	1.75 (1.33-2.28)	1.93 (1.42-2.58)	2.11 (1.49-2.92)	2.36 (1.60-3.36)	2.54 (1.68-3.69)
15-min	1.03 (0.841-1.27)	1.18 (0.961-1.46)	1.42 (1.16-1.78)	1.63 (1.31-2.03)	1.91 (1.49-2.46)	2.13 (1.62-2.78)	2.35 (1.73-3.15)	2.57 (1.81-3.56)	2.87 (1.95-4.09)	3.10 (2.05-4.50)
30-min	1.58 (1.29-1.95)	1.81 (1.48-2.24)	2.20 (1.79-2.73)	2.52 (2.04-3.14)	2.97 (2.32-3.82)	3.32 (2.53-4.33)	3.67 (2.70-4.92)	4.02 (2.83-5.56)	4.49 (3.04-6.40)	4.85 (3.20-7.04)
60-min	2.09 (1.71-2.58)	2.39 (1.95-2.96)	2.92 (2.37-3.62)	3.39 (2.73-4.22)	4.07 (3.20-5.30)	4.64 (3.55-6.11)	5.24 (3.87-7.08)	5.87 (4.15-8.18)	6.76 (4.60-9.69)	7.47 (4.93-10.8)
2-hr	2.60 (2.13-3.19)	2.97 (2.43-3.65)	3.64 (2.97-4.48)	4.25 (3.45-5.26)	5.18 (4.10-6.73)	5.96 (4.60-7.84)	6.81 (5.06-9.18)	7.72 (5.51-10.7)	9.03 (6.19-12.9)	10.1 (6.70-14.5)
3-hr	2.89 (2.37-3.53)	3.29 (2.70-4.03)	4.05 (3.32-4.97)	4.78 (3.89-5.89)	5.92 (4.73-7.72)	6.91 (5.36-9.10)	8.00 (5.98-10.8)	9.20 (6.60-12.8)	10.9 (7.53-15.6)	12.4 (8.24-17.8)
6-hr	3.39 (2.80-4.12)	3.90 (3.22-4.74)	4.88 (4.01-5.95)	5.84 (4.77-7.15)	7.36 (5.93-9.59)	8.71 (6.80-11.4)	10.2 (7.69-13.7)	11.9 (8.57-16.4)	14.3 (9.91-20.3)	16.3 (10.9-23.2)
12-hr	3.96 (3.29-4.77)	4.63 (3.84-5.59)	5.91 (4.88-7.15)	7.13 (5.86-8.67)	9.04 (7.30-11.7)	10.7 (8.40-13.9)	12.5 (9.49-16.7)	14.6 (10.6-20.0)	17.5 (12.2-24.6)	19.9 (13.4-28.2)
24-hr	4.62 (3.85-5.53)	5.47 (4.56-6.56)	7.04 (5.85-8.47)	8.51 (7.03-10.3)	10.8 (8.73-13.8)	12.7 (10.0-16.4)	14.8 (11.3-19.6)	17.1 (12.5-23.3)	20.4 (14.4-28.6)	23.2 (15.8-32.6)
2-day	5.42 (4.54-6.45)	6.40 (5.36-7.63)	8.19 (6.84-9.79)	9.85 (8.17-11.8)	12.4 (10.1-15.7)	14.5 (11.5-18.6)	16.8 (12.9-22.1)	19.4 (14.2-26.2)	23.0 (16.2-31.9)	25.9 (17.8-36.3)
3-day	6.03 (5.07-7.15)	7.06 (5.93-8.37)	8.91 (7.46-10.6)	10.6 (8.83-12.7)	13.2 (10.8-16.6)	15.4 (12.2-19.6)	17.8 (13.6-23.2)	20.3 (15.0-27.3)	24.0 (17.0-33.2)	27.0 (18.5-37.6)
4-day	6.59 (5.55-7.79)	7.60 (6.40-8.99)	9.43 (7.91-11.2)	11.1 (9.28-13.3)	13.7 (11.2-17.2)	15.9 (12.6-20.2)	18.2 (14.0-23.8)	20.8 (15.4-27.9)	24.5 (17.4-33.7)	27.5 (18.9-38.2)
7-day	8.08 (6.83-9.50)	8.97 (7.58-10.6)	10.6 (8.96-12.8)	12.2 (10.2-14.5)	14.7 (12.1-18.3)	16.8 (13.4-21.2)	19.1 (14.8-24.8)	21.7 (16.1-28.9)	25.4 (18.2-34.8)	28.4 (19.7-39.3)
10-day	9.34 (7.92-10.9)	10.2 (8.67-12.0)	11.9 (10.1-14.0)	13.5 (11.3-15.9)	16.0 (13.1-19.8)	18.1 (14.5-22.7)	20.4 (15.8-26.3)	23.0 (17.1-30.5)	26.7 (19.1-36.4)	29.7 (20.7-40.9)
20-day	12.7 (10.8-14.7)	14.1 (12.0-16.4)	16.4 (13.9-19.2)	18.5 (15.6-21.7)	21.4 (17.6-26.0)	23.7 (19.1-29.3)	26.2 (20.3-33.2)	28.7 (21.4-37.5)	32.2 (23.2-43.4)	35.0 (24.5-47.8)
30-day	15.4 (13.2-17.9)	17.3 (14.8-20.1)	20.4 (17.3-23.7)	22.9 (19.4-26.7)	26.2 (21.5-31.6)	28.8 (23.1-35.3)	31.4 (24.4-39.4)	33.9 (25.3-43.9)	37.2 (26.8-49.7)	39.7 (27.9-54.1)
45-day	19.1 (16.4-22.0)	21.5 (18.4-24.8)	25.3 (21.6-29.3)	28.3 (24.0-32.9)	32.2 (26.3-38.3)	35.0 (28.1-42.4)	37.6 (29.3-46.9)	40.2 (30.1-51.6)	43.3 (31.3-57.4)	45.5 (32.2-61.8)
60-day	22.3 (19.2-25.7)	25.1 (21.5-28.9)	29.3 (25.1-33.9)	32.7 (27.8-37.9)	36.9 (30.2-43.8)	39.9 (32.1-48.2)	42.6 (33.2-52.9)	45.2 (33.9-57.8)	48.2 (34.8-63.6)	50.2 (35.6-68.0)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

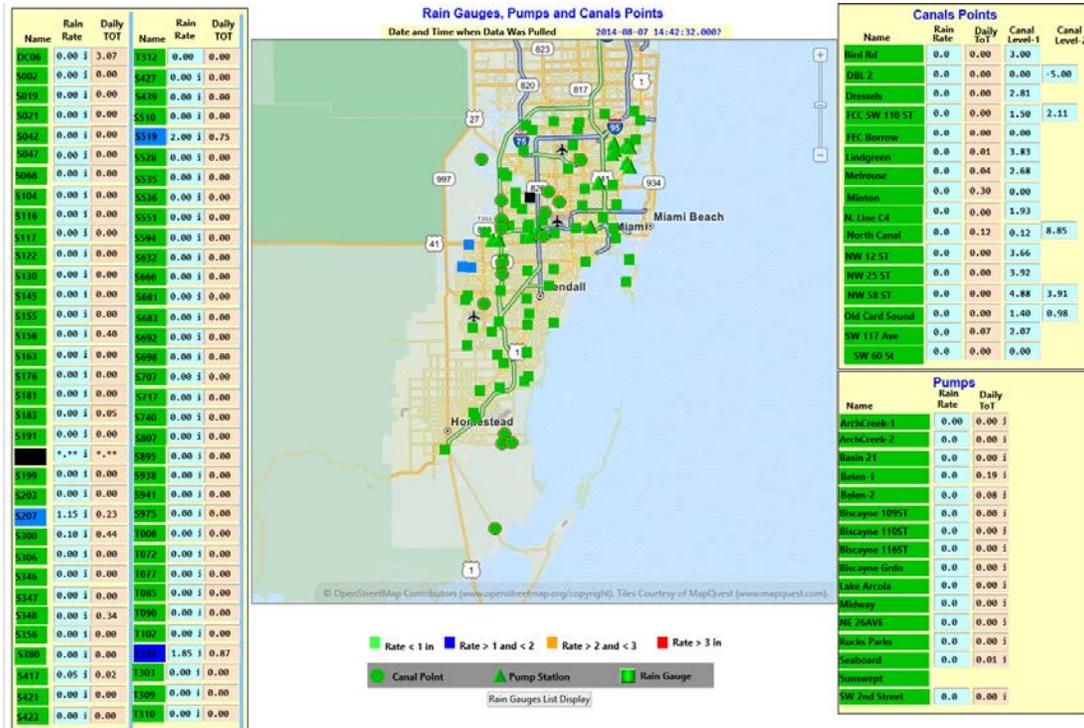
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Miami-Dade Communities will be able to utilize this source to help identify significant rain events in their areas based on rain fall amounts.

Tracking Local Rainfall Amounts

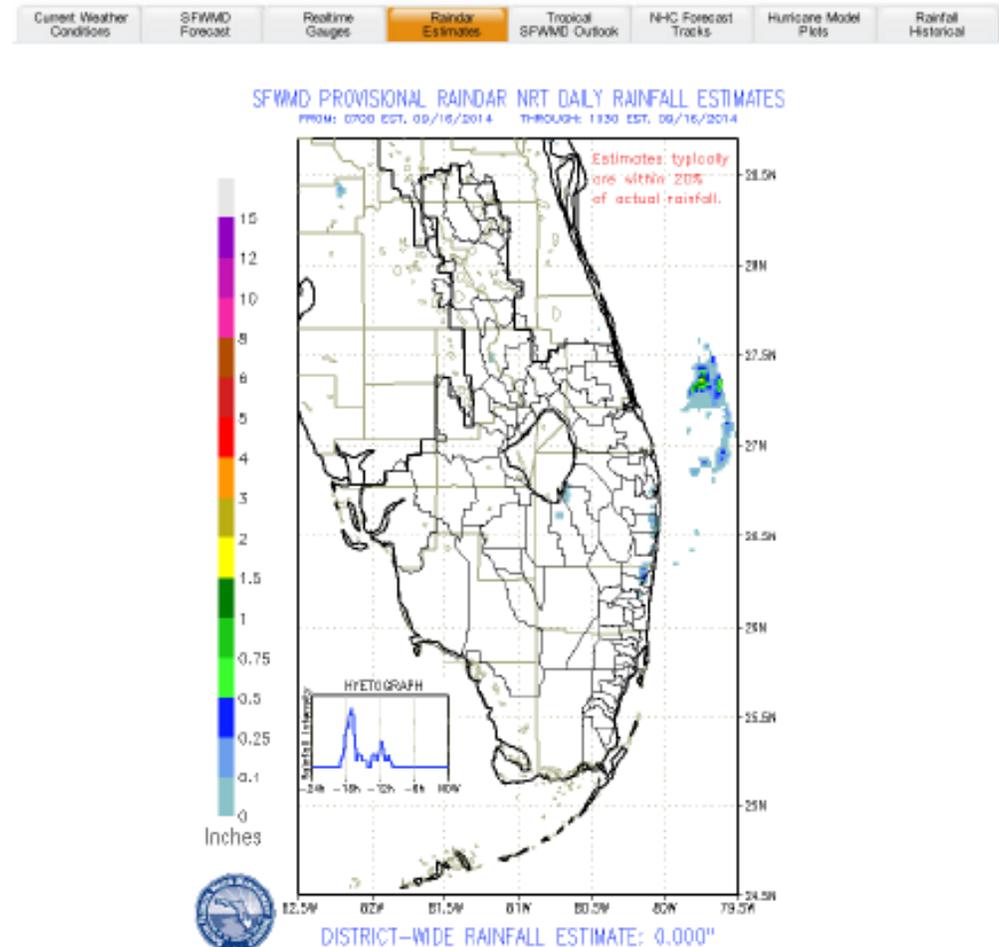
The Miami-Dade DTPW maintains a number of rain gauges that collect breakpoint and rain total information over a 24-hour period of time. A review of this data may help identify when significant rain events have occurred and also allow us to better document and track rain events.

Figure 3: DTPW Rain Gauge and Canal Monitoring

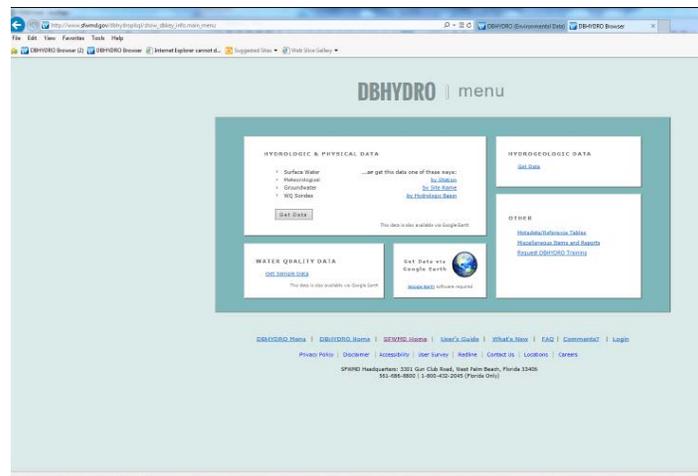


In addition to the DTPW rain gauges and NOAA information, rainfall and canal stage data are tracked through SFWMD real-time gauge website, where provisional data is posted: <http://www.sfwmd.gov/portal/page/portal/levelthree/live%20data>.

Figure 4: SFWMD DBHYDRO Map



Evaluations of past events are also analyzed using data from the SFWMD Database (DBHYDRO), where breakpoint data for rainfall, stages and flows are available:



Impact Assessment System

OEM utilizes a damage assessment tool to help standardize how everyone reports damages called ARM360. It provides a progressive system where information can be collected starting from impact areas, through detailed structural assessments. In order to help provide information to command centers on where the damages have occurred, ARM360 has been designed for field assessment data to be gathered on a local device (tablet or laptop), and via the internet, synchronize through a companion viewer. This system is being made available to stakeholders and can be used to track any type of event, including localized flooding events. A guide and training on reporting flood and structural damages for mobile\manufactured homes, single and multi-family homes, and mid and high rise structures was developed in conjunction with local building officials. It is hoped that this system will help us better track localized impacts and damages that may not be captured in the NFIP RL data.

Higher Regulatory Standards

Since the establishment of the former Miami-Dade County Department of Environmental Resource Management (DERM) in 1974 (now the Division of Environmental Resources Management in the Department of Regulatory and Economic Resources), Miami-Dade County has developed several comprehensive and innovative programs such as the Northwest Wellfield Protection Plan to protect the Biscayne Aquifer, the County's primary source of drinking water. Moreover, since the adoption of the CDMP in 1975, Miami-Dade County has been sensitive to the multiple challenges of water resource management. The present County programs also implement stormwater management plans to eliminate pollution to water bodies: freshwater, estuarine, and coastal, and natural areas management, to eliminate the invasion of exotic pest plants that threaten native ecosystems. Through local and regional partnerships, the County will continue to work towards sustainable development patterns, while protecting unique natural resources critical to the County's and the South Florida economy.

The environmental sensitivity of Miami-Dade County is underscored by the fact that the urban portion lies between two national parks, Everglades and Biscayne National Parks, and the Florida Keys National Marine Sanctuary. The close proximity of an expanding urbanized area to national and State resource-based parks, and over 6,000 acres of natural areas within County parks, presents a unique challenge to Miami-Dade County to provide sound management. The County has addressed this challenge in several ways including working closely with other public and private sector agencies and groups to obtain a goal of sustainability. The close relationship of tourism to the preservation of Miami-Dade County's unique native plants, wildlife, beaches, and near shore water quality is recognized as both an economic and an environmental issue. The Conservation Element builds upon past and present initiatives such as the East

Everglades Resource Management Plan, and planning for the Bird Drive-Everglades, Arch Creek, and C-111 Basins, the Governor's Commission on a Sustainable Everglades Restoration Plan, the GreenPrint, the County's plan for sustainability, and over four decades of local planning, monitoring, and evaluating proposed activities in wetlands and uplands.

Chapter 11C of the Code of Miami-Dade County

This is the County-wide flood protection ordinance, establishing rules for development within or outside the Special Flood Hazard Areas, including minimum fill criteria (CFC) for lots and roadways, minimum elevation criteria for the lowest floor, which is the elevation of the back of sidewalk (BOS), or highest adjacent crown of road (COR) + 8 inches for residential or 4 inches for commercial construction

Chapter 24 of the Code of Miami-Dade County

This is the County-Wide Miami-Dade County Environmental Protection Ordinance, focused on the protection of water resources, particularly the Biscayne Bay and wellfield protection. Requires compliance with water quality standards for surface waters, water and wastewater treatment plants; requires drainage for all new construction; preserves native trees; protects against dumping to ground or surface waters; prohibits cutting or altering mangroves without a permit; regulates development in wellfield protection areas. Regarding flood protection, this ordinance include provisions for preservation of the storage capacity, making reference to Chapter 40E-40 of FAC and Cut and Fill Criteria, for special basins.

2010 Florida Building Code

Effective March 15, 2012 the Florida Building Code incorporates flood resistant provisions that apply to buildings and structures in flood hazard areas, establishes a one-foot freeboard requirement for non-residential structures, and extra freeboard for structures in V zones, depending on the type of construction.

Building Code Efficiency Grading System (BCEGS)

Communities that apply for BCEGS get credit in their Building or other departments for how they regulate new construction activities. Activities such as requiring multiple inspections during construction; increasing levels of education and experience of the Inspectors; mentoring junior building staff; using the International Building Codes for compliance with standards; and other activities gain credit in CRS.

Chapter 40-E.40 F.A.C.

Effective March 15, 2012 the Florida Building Code incorporates flood resistant provisions that apply to buildings and structures in flood hazard areas.

Miami-Dade County Flood Criteria

Implemented in 1970, this is a general Countywide requirement for minimum elevation of roadways and lots. This criteria is equivalent to the 10-year groundwater table plus a 3.5-foot freeboard. It was initially implemented to guarantee minimum ground elevations to prevent frequent flooding, and to allow the installation of septic tanks drains at adequate elevations.

Environmental Resource Permit (ERP)

Permit required for any development that includes two or more acres of impervious areas, up to 100 acres. This permit requires establishing minimum elevations for structures, roads, and requires drainage systems that capture runoff within the property. This permit improves stormwater quality and reduces flooding through its standards.

Environmental Resource Management Plans:

Biscayne Bay Management Plan

Approved in 1981 addressed canal discharge and storm water runoff, water clarity, recreational and developmental user impacts and habitat management.

Cut and Fill Criteria

Cut and Fill Criteria was created to ensure that development occurring in the western reaches of Miami-Dade County did not worsen flooding conditions for those areas or areas to the east. This is done by establishing criteria that requires setting aside lands for stormwater management whenever projects are proposed in those areas.

- East Everglades Resource Management Plan
- Bird Drive-Everglades
- Arch Creek
- C-111 Basin
- Environmentally Endangered Lands Program (EEL)

The State of Florida and Miami-Dade County are implementing higher regulatory standards to address the future threat of sea level rise through the designation of Adaptation Action Areas.

Chapter 163.3177, Florida Statutes

163.3177(6)(g). ...The coastal management element shall set forth the principles, guidelines, standards, and strategies that shall guide the local government's decisions and program implementation with respect to the following objectives:

- (10) At the option of the local government, develop an adaptation action area designation for those low-lying coastal zones that are experiencing coastal flooding due to extreme high tides and storm surge and are vulnerable to the impacts of rising sea level. Local governments that adopt an adaptation action

area may consider policies within the coastal management element to improve resilience to coastal flooding resulting from high-tide events, storm surge, flash floods, stormwater runoff, and related impacts of sea-level rise. Criteria for the adaptation action area may include, but need not be limited to, areas for which the land elevations are below, at, or near mean higher high water, which have a hydrologic connection to coastal waters, or which are designated as evacuation zones for storm surge.

Miami-Dade County CDMP⁸**Conservation, Aquifer and Recharge Element**

It is the intent of this Element to identify, conserve, appropriately use, protect and restore as necessary the biological, geological and hydrological resources of Miami-Dade County. Since the adoption of the Comprehensive Development Master Plan (CDMP) in 1975, Miami-Dade County has been committed to protection of environmentally sensitive wetlands and aquifer recharge and water storage areas. Protecting and restoring environmentally sensitive uplands has been recognized as important to the County's present and future, thus, Miami-Dade County has sought to channel growth toward those areas that are most intrinsically suited for development. This Element and the proposed natural resources objectives, policies and maps in the Land Use Element and Coastal Management Element continue that established trend. In addition, many experts suggest that South Florida will be significantly affected by rising sea levels, intensifying droughts, floods, and hurricanes as a result of climate change. As a partner in the four county Southeast Florida Regional Climate Change Compact, Miami-Dade has committed to study the potential negative impacts to the County given climate change projections, and is working to analyze strategies to adapt to these impacts and protect the built environment and natural resources.

Policy CON-2A: The basin stormwater master plans produced by Miami-Dade County pursuant to Objective CON-5 will continue to prioritize the listing of stormwater/drainage improvements to correct existing system deficiencies and problems and to provide for future development. At a minimum, these lists shall include:

- Drainage/stormwater sewer systems within wellfield protection areas;
- Drainage/stormwater sewer systems in industrial and heavy business areas and areas with large concentrations of small hazardous waste generators;

⁸ The CDMP is undergoing an update in 2017 and this section will be updated with any changes or additions once it has been adopted by the Board of County Commissioners.

- Basins and sub-basins that fail to meet the target criteria for the twelve NPDES priority pollutants listed in Policy CON-5A and additional parameters, referenced in CON-5A.

Policy CON-2B. Miami-Dade County's Stormwater Utility Program shall fund the identification and retrofitting of deteriorated storm sewer systems and positive outfalls and the proper maintenance of stormwater systems.

Policy CON-2F. Miami-Dade County shall continue to utilize Best Management Practices established for potential sources of water pollution, that discharge wastewater to the ground, to reduce environmental risk and, where possible, to begin effective water reuse and recycling. Established management practices may be reviewed and modified as new science becomes available. New management practices shall be developed for new potential sources of water pollution as they are identified.

Policy CON-2G. Best Management Practices for potential sources of water pollution shall include reduction in the use of hazardous materials and, wherever possible, the reuse and recycling of materials on site. Best Management Practices shall also be established to address those wastes that must be removed from site, including reusing and recycling of the waste in other operations. All practical recycling and reuse alternatives shall be investigated before seeking permanent disposal of hazardous wastes.

Policy CON-2J. Miami-Dade County shall continue to enforce a 500-foot protection zone for non-community, non-transient water supplies that serve uses such as public or private schools and trailer parks.

Policy CON-2K. Miami-Dade County shall use the data generated in its ambient ground and surface water monitoring programs to determine levels of concentrations for the twelve National Pollution Discharge Elimination Systems (NPDES) priority pollutants, as well as for the additional recommended NPDES parameters referenced in Policy CON-5A and any other pollutants of interest.

Policy CON-3A. No new facilities that use, handle, generate, transport or dispose of hazardous wastes shall be permitted within wellfield protection areas, and all existing facilities that use, handle, generate, transport or dispose of more than the maximum allowable quantity of hazardous wastes (as specified in Chapter 24-43 of the Code of Miami-Dade County, as may be amended from time to time) within wellfield protection areas shall be required to take substantial measures such as secondary containment and improved operating procedures to ensure environmentally safe operations.

Policy CON-3B. The water management systems that recharge regional wellfields shall be protected and enhanced.

Policy CON-3F. The ambient groundwater monitoring program, which includes all wellfield protection areas, shall be continued to serve as an "early warning system" for monitoring high- risk land uses and point sources.

Policy CON-4B. All future development and redevelopment shall use retention, infiltration and detention systems to retain to the maximum extent feasible, the full runoff from a one in five year storm and minimize the use of impermeable surfaces. In the event that an emergency overflow is provided, a minimum of the first inch of runoff shall be retained on-site.

Policy CON-4C. The approved fill encroachment criteria for the Western C-9 Basin as established by the South Florida Water Management District and for all other basins as established by the Miami-Dade County Division of Environmental Resource Management (Basin B, North Trail and Bird Drive) shall continue to govern the extent to which land can be filled, and additional fill encroachment criteria shall be developed for all the undeveloped, poorly drained areas in western and southern Miami-Dade County which are determined to have urban development potential. These criteria shall retain the predevelopment net recharge and runoff values for basin areas.

Policy CON-4D. Water conserving irrigation and other landscape practices such as Florida Friendly landscaping shall be used wherever feasible. Through its site and landscape reviews, Miami-Dade County shall ensure that appropriate native and Florida Friendly landscaping plant materials are used, particularly in the salt-intruded areas of the County where public water is used to water lawns, golf courses and landscaped green spaces.

Policy CON-4E. Miami-Dade County shall continue to investigate the feasibility of large-scale water reuse through water reuse demonstration projects and other appropriate means. Investigate the suitability of reused water in wetland hydration.

CON-4F. The Miami-Dade County Division of Environmental Resources Management (DERM) shall work with the County's Cooperative Extension Department to develop guidelines for improving the efficiency and/or uniformity of irrigation systems for appropriate crops grown in Miami-Dade County.

Policy CON-4G. In accordance with the goals of the South Florida Water Management District's Lower East Coast Regional Water Supply Plan and Objective WS-7, and its related policies, Miami-Dade County shall develop alternative water supply sources to supplement withdrawals from the Biscayne Aquifer. Such sources may include

withdrawals from the Floridan Aquifer, implementation of water conservation methods and projects, and development of reclaimed and wastewater reuse strategies and projects.

Policy 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.

1. Basin-specific FPLOS standards shall be established through the adoption of a Stormwater Master Plan to be approved by the Miami-Dade County Board of County Commissioners and the South Florida Water Management District. Until the approval of basin-specific FPLOS standards through this coordinated process, the following additional exceptions shall apply:

a) Wherever Miami-Dade County has adopted cut and fill criteria pursuant to Chapter 24-48.3(6) of the County Code (November 30, 2004) including fill encroachment limitations necessary to prevent unsafe flood stages in special drainage basins, the minimum applicable FPLOS standard shall be the degree of protection provided by the applicable cut and fill criteria;

b) Where cut and fill criteria have not been established north of S.W. 152 Street inside the Urban Development Boundary (UDB), the minimum acceptable FPLOS standard shall be protection from the degree of flooding that would result for a duration of one day from a ten-year storm;

c) West of Levee-31 N, there shall be no off-site drainage, all septic tank drainfields shall be elevated above the hundred-year flood elevation, and the extent of land filling shall be minimized as provided in applicable provisions of the Miami-Dade County East Everglades Zoning Overlay Ordinance. The County shall review these criteria when the water management facilities programmed in the N.E. Shark River Slough General Design Memorandum and the C-111 General Reconnaissance Review are fully operational.

2. The Stormwater Management Water Quality Level of Service (WQLOS) component of the standard shall be met when the annual geometric mean for each of the following twelve priority NPDES pollutants does not exceed the following target criteria for each of those pollutants within a canal basin, or sub-basin, as determined in accordance with procedures established by Miami-Dade County DERM:

Pollutant

Target Criterion

- Biological Oxygen Demand (BOD): 9 mg/l
- Chemical Oxygen Demand (COD): 65 mg/l
- Total Suspended Solids (TSS): 40 mg/l
- Total Dissolved Solids (TDS): 1,000 mg/l
- Total Kjeldahl Nitrogen (Ammonia-Nitrogen and Organic Nitrogen): 1.5 mg/l
- Total Nitrate (NO₃-N): 0.68 mg/l
- Total Phosphate (TPO₄): 0.33 mg/l
- Dissolved Phosphate (DPO₄): Not Available
- Cadmium (Cd): 0.0023 mg/l
- Copper (Cu): 0.0258 mg/l
- Lead (Pb): 0.0102 mg/l
- Zinc (Zn): 0.231 mg/l

Additionally, recommended NPDES parameters may not exceed established Federal, State or Local Criteria for the water body, as listed in Table 2, "Guidance for Preparing Monitoring Plan as recommended for Phase I Municipal Separate Storm Sewer System (MS4) Permits," FDEP August 1, 2009.

3. Applicants seeking development orders in canal basins, or sub-basins that do not meet either the FPLOS or the WQLOS shall be required to conform to Best Management Practices (BMPs) as provided by Miami-Dade County Code. Owners of commercial or industrial properties where BMPs are required, shall, at a minimum, demonstrate that their on-site stormwater system is inspected two times per year and maintained and cleaned as required. Private residential developments in areas where BMPs are required shall demonstrate that their on-site stormwater systems are inspected two times per year and maintained and cleaned as required.

Policy 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.

Policy 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 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).

Policy 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.

Policy CON-5E. Miami-Dade County shall establish a priority listing of stormwater drainage and aquifer recharge improvements needed to correct existing system deficiencies and problems, and to provide for future drinking water needs. This shall include:

- Drainage/stormwater sewer system improvements in developed urban areas with persistent drainage problems;
- Canal and/or stormwater drainage improvements in 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 the problems;
- Hydrologic modifications that are needed to deliver water to public waterwells or to protect those waterwells from prospective contamination.

This shall be based on such factors as:

- Miles of canals with out-of-bank flow;
- Miles of collector and local streets impassable during a 5 year storm;
- Miles of minor arterial streets impassable during a 10 year storm;
- Miles of principal arterials, including major evacuation routes, that are impassable during a 100 year storm; and
- Number or structures flooded by a 100-year storm.

Policy CON-5F. Miami-Dade County shall implement cut and fill criteria for land in the North Trail, Bird Drive, Basin B, and Western C-9 basins, as defined in Chapter 24 of

the County Code, and other areas west of the easterly boundary of Area B identified in the Corps of Engineers Design Memorandum V Supplement 12 dated March 23, 1954, as necessary to protect natural hydrological characteristics of the basins, protect against flooding of developed land in the basins and downstream, and ensure continued proper recharge of groundwater supplies.

Policy CON-5G. Miami-Dade County shall encourage, based on analysis of water impoundment areas, the need for buffers between water impoundment areas and development in order to increase the level of flood protection provided to developed areas.

Policy 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.

Policy 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.

Policy CON-7A. The degradation or destruction of wetlands shall be limited to activities that 1) are necessary to prevent or eliminate a threat to public health, safety or welfare; or 2) are water dependent, clearly in the public interest and no other reasonable alternative exists; or 3) are carried out in accordance with an approved basin management plan; or 4) are in areas that have been highly disturbed or degraded and where restoration of a wetland with an equal or greater value in accordance with federal, State and local regulations is feasible. Habitats critical to endangered or threatened species shall not be degraded or destroyed.

Policy CON-7C. Miami-Dade County shall continue to promote the restoration and maintenance of the natural, surface water flow regimes into, and through wetland systems such as the Shark River Slough, Everglades National Park and the saline wetlands of southeastern Miami-Dade County.

Policy CON-7D. Management plans shall be developed to govern all development activity within all natural communities on County-owned lands to protect natural and historic resources. The Division of Environmental Resources Management (DERM) and the Office of Historic and Archeological Resources shall assist the appropriate County agencies in the development of these plans, which shall be subject to public review and comment as they are prepared and implemented.

Policy CON-7E. All wetlands on the State Save Our Rivers, Florida Forever or Miami-Dade County Environmentally Endangered Lands acquisition lists shall be given very

high priority for public acquisition as are all lands within the Environmental Protection category on the Land Use Plan (LUP) map.

Policy CON-7F. Wetland mitigation areas shall be preferentially located in biologically degraded wetlands and serve as corridors between Resources of Regional Significance.

Policy CON-7G. Miami-Dade County shall continue to work with the appropriate federal, State, regional and local agencies to develop wetland basin management plans for all the planned future wetlands areas in Miami-Dade County. Miami-Dade County shall continue to coordinate with all levels of government in their respective permitting functions in order to retain the long term, net wetland values of these areas. Priority for plan development shall be given to the wetlands in South Miami-Dade County that are slated for purchase under the Save Our Rivers, Florida Forever and Miami-Dade County Environmentally Endangered Lands programs.

Policy CON-7H. Miami-Dade County shall provide new dedicated funding sources that are in addition to current sources and expiring revenue streams for the long-term management and maintenance of Environmentally Endangered Lands and publicly owned Natural Forest Communities by 2020. This shall be funded from ad valorem tax revenues unless other revenue streams sufficient for this purpose are identified and implemented prior to 2020.

Policy CON-7I. Miami-Dade County shall coordinate with the South Florida Water Management District in order to implement strategies to streamline the wetland permitting process, which may include but not be limited to the delegation of additional permitting functions to the County.

Policy CON-7J. In evaluating applications that will result in alterations or adverse impacts to wetlands Miami-Dade County shall consider the applications' consistency with Comprehensive Everglades Restoration Program (CERP) objectives. Applications that are found to be inconsistent with CERP objectives, projects or features shall be denied.

Policy CON-8A. Specimen trees and Natural Forest Communities in Miami-Dade County shall be protected through the maintenance and enforcement of the County's Tree and Forest Protection and Landscape Code, as may be amended from time to time. The County's Natural Forest Inventory shall be revised periodically to reflect current Natural Forest Community conditions. A Natural Forest Community shall not be removed from the inventory unless its quality and resource values have been degraded to the point where it cannot be restored.

Policy CON-8B. The environmentally sensitive hardwood hammocks and the pinelands on the Florida Forever and Miami-Dade County Environmentally Endangered Lands Acquisition lists shall be given very high priority for public acquisition as are lands within the Environmental Protection category on the Land Use Plan (LUP) map.

Policy CON-8C. Development in the forested portions of publicly owned Natural Forest Communities designated by the Board of County Commissioners pursuant to Resolution No. R-1764-84, as may be amended from time to time, shall be permitted only if it is clearly in the public interest, there is no feasible alternative, and such development does not adversely impact other remaining natural forest resources on-site.

Policy CON-8D. Where hammocks or pinelands are contained within prospective development sites, they shall be given priority for designation as landscape and open space areas and left intact. The extent of hammock and pineland area destroyed shall be minimized by the use of native plant buffers, clustering, large lot zoning, and/or reduced roadway widths. Care shall be exercised when developing adjacent land to minimize root damage and filling. Disturbance to the forest canopy and understory shall be minimized and confined to the least viable areas. Preservation areas shall be located and configured to protect rare, threatened and endangered species and to allow for prescribed burning, where applicable. In the protected forest areas, understory vegetation and associated geologic features shall be protected and maintained in perpetuity.

Policy CON-8E. The destruction of environmentally sensitive Natural Forest Communities shall be kept to a minimum; a long-term mitigation and management plan shall be developed to assure the continued maintenance of the remaining forest lands and the restoration or creation of at least an equal amount of forest lands to those destroyed.

Policy CON-8F. Miami-Dade County shall continue to seek natural areas land management funds to conduct prescribed burns, and other appropriate techniques to establish the appropriate fire regime for natural areas, while minimizing deleterious off-target effects to native plant and animal species and negative impacts to the public health, safety and welfare. The County shall also seek funds to control and remove exotic plant species from public rights-of-way and other County-owned land outside of parks and natural areas.

Policy CON-8G. The Natural Forest Communities that are owned by the Miami-Dade County School District shall be preserved and maintained and used as natural outdoor laboratories. Tracts of land that are to be developed as future school sites should be landscaped with appropriate xeriscape and/or native plant material. Wherever feasible,

upland or wetland revegetation projects should be incorporated into the school's landscape design, and teaching curriculum.

Policy CON-8H. Miami-Dade County's tree preservation and landscape requirements shall be coordinated. Tree preservation programs should focus primarily on Natural Forest Communities and specimen tree protection, maintenance, and restoration. The County shall adopt and enforce a comprehensive landscape code and promote xeriscape principles and the planting and protection of trees with an emphasis upon the provision and preservation of canopy and understory for aesthetics, physical comfort, energy savings, economic benefits, and wildlife habitat.

Policy CON-8I. The exotic pest plant and nuisance species listed in Chapter 24-49.4 of the County Code, shall not be sold, propagated, or planted within Miami-Dade County. If existing on a development site, they shall be removed prior to development or redevelopment and developed parcels shall be maintained to prevent the growth or accumulation of prohibited species. The County shall update the list from time to time as new scientific information becomes available and the updates shall include category 1 and category 2 species listed by the Florida Exotic Pest Plant Council if the species have been documented to invade natural areas in south Florida. In addition, any category 1 or category 2 species that are added to the prohibited list shall also be made exempt from requirements to obtain a tree removal permit provided that the removal of such trees in upland areas within the UDB shall require the same amount of canopy mitigation as is currently required. Therefore the exemption shall be conditioned on meeting this requirement including through a donation to the tree trust fund if applicable.

The exotic plant species listed in the County's adopted Landscape Manual as amended may not be planted within 500 feet of native plant communities. These plant species have been documented by the Florida Exotic Pest Plant Council, the Miami-Dade County Parks, Recreation and Open Spaces Department's Natural Area's Management Program, and the Miami-Dade County Division of Environmental Resources Management to be invasive pests in natural areas of Miami-Dade County.

Policy CON-8J. Efforts should be made to propagate and reestablish where practical, endangered, threatened, and potentially endangered native plants and animals in Miami-Dade County. (See Appendix A). The current list of state and federally listed plants in Miami-Dade County should be reevaluated and additional species should be proposed for listing and listed animal species should be included, if appropriate. Through its land acquisition and regulatory processes, Miami-Dade County shall continue to protect federally and State-listed plant and animal species to the maximum extent possible.

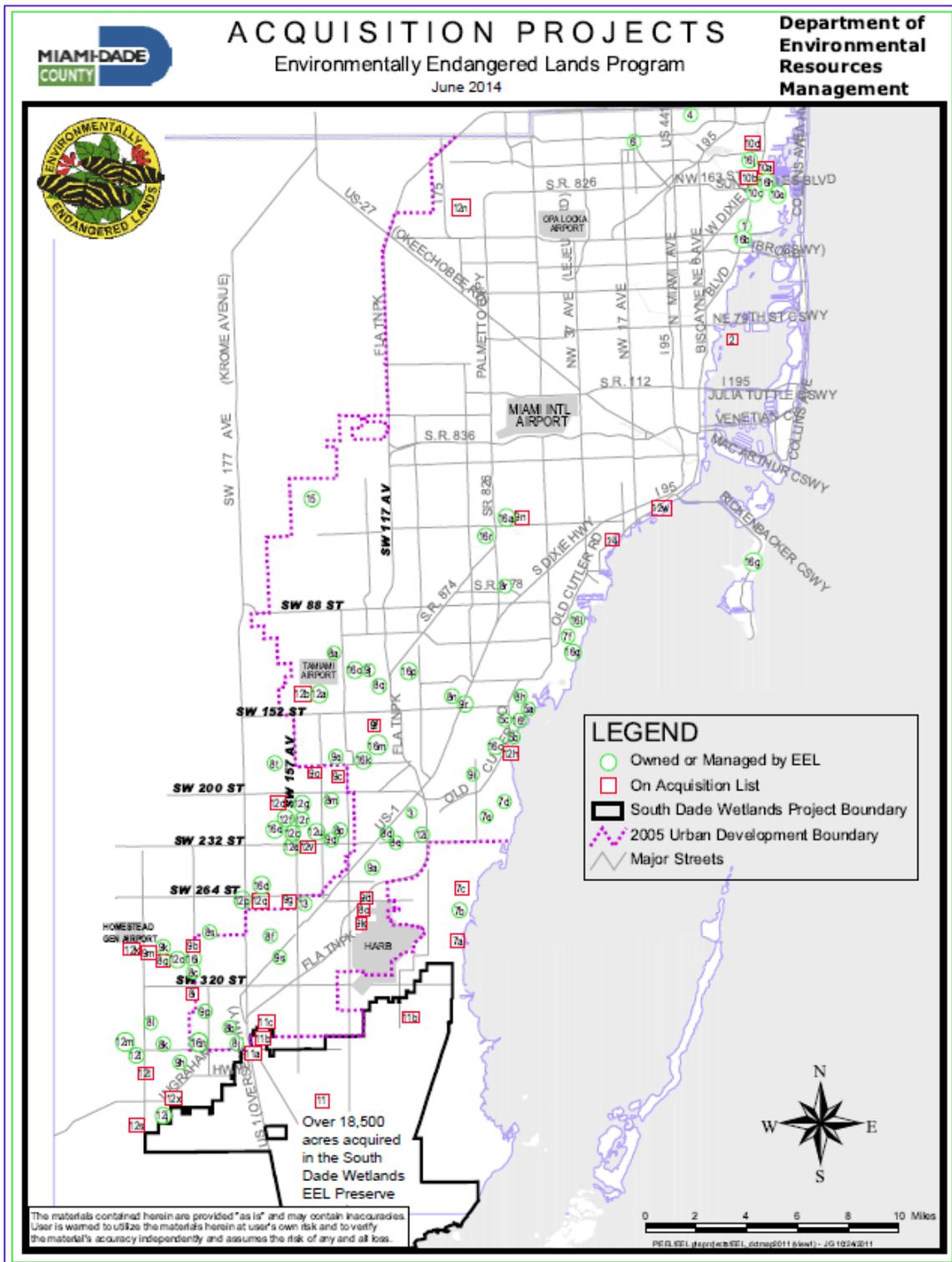
Policy CON-8K. All new plantings on lands owned and managed by Miami-Dade County shall include federally or State listed plants, if appropriate, and other native plant and/or xeriscape plant material, wherever feasible.

Policy CON-8L. The 24,560 acres of native habitat at the Training and Transition Airport outside of the security fence shall be managed by the same standards applied to the Big Cypress National Preserve.

Policy 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.

Policy CON-8N. Miami-Dade County shall evaluate the feasibility of creating new or enhanced programs to provide technical assistance to private Environmentally Endangered Lands and Natural Forest Communities covenant holders.

Map 14: Acquisition Projects - Environmentally Endangered Lands Program



ACQUISITION PROJECTS: Environmentally Endangered Lands Program					
February 2013					
MAP #	PRESERVE	EEL ACQUISITION, LIST STATUS OR MANAGEMENT	ACRES		LOCATION
			Acquired	Unacquired	
1	Arch Creek Addition	Acquired	1.5	0	NE 135 St. & US-1
2	Bird Key	A List	0	38	NW 79 St. & Biscayne Bay
3	Black Creek Forest	A List	7	45	SW 214 St. & 112 Ave.
4	County Line Scrub Site (FCT, ATT)	Acquired	15	0	NE 215 St. & 4 Ave.
5	Deering Estate Additions				
5a	Deering Coastal (North) Addition (FCT)	Acquired	41	0	SW 152 St. & 87 Ct.
5b	Deering South Addition (CARL)	Acquired	32	0	SW 168 St. & Old Cutler Rd.
5c	Deering Glade Parcel (P&R, SNP, SAMP)	Acquired	10	0	15850 Old Cutler Rd.
6	Dolphin Center Addition	Acquired	4	0	NW 196 St. & 17 Ave.
7	Coastal Wetlands: A List-unless otherwise noted				
7a	Biscayne Wetland (FCT)		0	445	SW 280 St. & 107 Ave.
7b	Biscayne Wetlands North Addition (GSA)	Acquired	300	0	SW 270 St. & 107 Ave.
7c	Black Point Wetlands (FCT)		79	192	SW 248 St. & 97 Ave.
7d	Cutler Wetlands (FCT)		448	793	SW 216 St. & 85 Ave.
7e	Cutler Wetlands Addition (P&R)	Acquired	19	0	SW 210 St. & 85 Ave.
7f	R. Hardy Matheson Preserve Add'n		20	21	Old Cutler Rd. & SW 108 St.
8	Miami Rockridge Pinelands: (CARL) A List-unless otherwise noted				
8a	Camp Matecumbe (CARL)	Acquired	77	0	SW 120 St. & 142 Ave.
8b	Florida City (CARL 15)	Acquired	24	0	SW 344 St. & 185 Ave.
8c	Fuchs Hammock Addition (CARL)	Acquired	14.8	0	SW 304 St. & 198 Ave.
8d	Goulds (CARL 6)	Acquired	33	0	SW 224 St. & 120 Ave.
8e	Goulds Addition (CARL)		7	28.8	SW 232 St. & 120 Ave.
8f	Ingram (CARL 12)	Acquired	10	0	SW 288 St. & 167 Ave.
8g	Kings Highway (CARL 14)		0	31.1	SW 304 St. & 202 Ave.
8h	Ludlam Pineland (CARL)	Acquired	10	0	SW 146 St. & 67 Ave.
8i	Navy Wells 2 (CARL)		0	20	SW 324 St. & 197 Ave.
8j	Navy Wells 23 (CARL)		20	9	SW 352 St. & 182 Ave.
8k	Navy Wells 39 (CARL)		16	4	SW 354 St. & 210 Ave.
8l	Palm Drive (CARL 18)	Acquired	20	0	SW 344 St. & 212 Ave.
8m	Quail Roost (CARL 7)	Acquired	48	0	SW 204 St. & 147 Ave.
8n	Rockdale (CARL 2)	Acquired	26	0	SW 144 St. & US-1
8o	School Board (CARL 10)		0	19	SW 268 St. & 129 Ave.
8p	Silver Palm Groves (CARL 8)	Acquired	20	0	SW 232 St. & 142 Ave.
8q	Tamiami Complex Addition (CARL)	Acquired	26	0	SW 136 St. & 122 Ave.
8r	Trinity (CARL 1)	Acquired	10	0	SW 76 St. & 73 Ave.
8s	West Biscayne (CARL 13)		17	2	SW 288 St. & 190 Ave.
8t	Wilkins-Pierson (CARL)		10	10	SW 184 St. & 164 Ave.
9	Other Rockridge Pinelands: A List-unless otherwise noted				
9a	Andrew Dodge New Pines Preserve		4	1	SW 248 St. & 127 Ave.
9b	Bowers Pineland		0	10	SW 296 St. & 197 Ave.
9c	Calderon Pineland		0	17.5	SW 192 St. & 140 Ave.
9d	Dixie Heights Pineland	B List	0	27	SW 268 St. & 130 Ave.
9e	Eachus Pineland	Acquired	17	0	SW 184 St. & 142 Ave.
9f	Federal Richmond Pinelands (Martinez)		142	212	SW 152 St. & 130 Ave.
9g	Hattie Bauer Pineland		0	5	SW 266 St. & 157 Ave.
9h	Navy Wells 42 (Sunny Palms)	Acquired	40	0	SW 364 St. & 202 Ave.
9i	Ned Glenn Nature Preserve	Acquired	11	0	SW 188 St. & 87 Ave.
9j	Nixon Smiley Addition (Tamiami 8)	Acquired	63	0	SW 124 St. & 127 Ave.
9k	Northrop Pineland	Acquired	12	0	SW 296 St. & 205 Ave.
9l	Notre Dame Pineland	B List	0	32	SW 280 St. & 132 Ave.
9m	Pine Ridge Sanctuary		0	14	SW 300 St. & 211 Ave.
9n	Pino Pineland	B List	0	2	SW 39 St. & 69 Ave.
9o	Railroad Pineland	B List	0	18	SW 184 St. & 147 Ave.
9p	Rock Pit 39	Acquired	9	0	SW 336 St. & 192 Ave.
9q	Rock Pit 46	Acquired	5	0	SW 232 St. & 142 Ave.
9r	Rockdale Addition	Acquired	11	0	SW 144 St. & US-1
9s	Seminole Wayside Park Addition	Acquired	5.5	0	SW 300 St. & US-1.

ACQUISITION PROJECTS: Environmentally Endangered Lands Program					
10	Oleta River Corridor:	A List			
10a.	Tract A		0	3	NE 171 St. & US-1
10b.	Tract B (FCT)		0	8	NE 165 St. & US-1
10c.	Tract C (FCT)	Acquired	2.5	0	NE 163 St. & US-1
10d.	Tract D		0	8	NE 191 St. & 24 Ave.
10e.	Terama Tract (DEP)	Acquired	30	0	IN OLETA PRESERVE
11	South Dade Wetlands (SAMP, SOR)	A List	18,447	12,370	SOUTH DADE COUNTY
11a	Keyhole Wetlands		31.5	167	US 1 & Cardsound Rd.
11b	South Dade Wetlands Addition		199	2,135	SW 344 St. & 137 Ave.
11c	Wink Eye Slough Addition		0	57	SW 344 St. & 167 Ave.
12	Tropical Hammocks:	A List-unless otherwise noted			
12a	Big & Little George (CARL 6)	Acquired	20	0	SW 141 St. & 149 Ave.
12b	Big George Addition		0	3	SW 141 St. & 149 Ave.
12c	Castellow 28 (CARL)	Acquired	18.7	0	SW 226 St. & 157 Ave.
12d	Castellow 31 (CARL)		0	10	SW 218 St. & 157 Ave.
12e	Castellow 33 (CARL)	Acquired	10	0	SW 226 St. & 157 Ave.
12f	Castellow Addition (CARL 7)	Acquired	7.8	0	SW 223 St. & 157 Ave.
12g	Chernoff Hammock	Acquired	4.5	0	SW 216 St. & 154 Ave.
12h	Cutler Wetlands North Addition Hammock	B List	0	37	SW 184 St. & Old Cutler Rd.
12i	Harden Hammock (CARL)	Acquired	12.4	0	SW 226 St. & 107 Ave.
12j	Holiday Hammock (CARL 5)		30	27	SW 400 St. & 209 Ave.
12k	Homestead General Aviation Hammock	B List	0	4	SW 296 St. & 217 Ave.
12l	Loveland Hammock (CARL 3)	Acquired	16	0	SW 360 St. & 222 Ave.
12m	Lucille Hammock (CARL 2)	Acquired	20	0	SW 352 St. & 222 Ave.
12n	Maddens (CARL 10)	B List	0	60	NW 154 St. & 87 Ave.
12o	Meissner Hammock (CARL 1)	Acquired	10	0	SW 302 St. & 200 Ave.
12p	Owaissa Bauer Addition #1 (CARL)	Acquired	9	0	SW 264 St. & 177 Ave.
12q	Owaissa Bauer Addition #2		0	10	SW 264 St. & 176 Ave.
12r	Ross (CARL 8)	Acquired	20	0	SW 223 St. & 157 Ave.
12s	Round Hammock (CARL)		0	32.6	SW 408 St. & 220 Ave.
12t	SW Island Hammock (CARL 4)		0	12.5	SW 392 St. & 207 Ave.
12u	Silver Palm Hammock (CARL)	Acquired	10	0	SW 228 St. & 149 Ave.
12v	Silver Palm Hammock Addition		0	19	SW 228 St. & 149 Ave.
12w	Vizcaya Hammock Addition	B List	0	2	3300 South Miami Ave.
12x	Hammock Island	B List	0	100	SW 360 St. & L-31 W.
13	Hattie Bauer Hammock (FCT, P&R)	Acquired	15	0	SW 267 St. & 157 Ave.
14	Barnacle Addition (CARL, City of Miami)	B List	0	6	Main Highway
15	Tree Island Park (FCT, P&R, SAMP, SNP)	Acquired	120	0	SW 10 St. & 147 Ave.
TOTAL EEL Acres			20,718	17,068	
16	Park Natural Areas				
16a	A. D. Barnes Park	Managed by EEL	24	0	3775 SW 74 Ave
16b	Arch Creek Park	Managed by EEL	8.5	0	NE 135 St. & US-1
16c	Bill Sadowski Park	Managed by EEL	23	0	17555 SW 79 Ave.
16d	Camp Owaissa Bauer	Managed by EEL	80	0	17001 SW 264 St.
16e	Castellow Hammock Park	Managed by EEL	55	0	22301 SW 162 Ave.
16f	Charles Deering Estate	Managed by EEL	332	0	16701 SW 72 Ave.
16g	Crandon Park	Managed by EEL	444	0	7200 Crandon Blvd.
16h	East, East East Greynolds Park	Managed by EEL	33	0	17530 W Dixie Hwy
16i	Fuchs Hammock	Managed by EEL	24	0	SW 304 St. & SW 198 Ave
16j	Greynolds Park	Managed by EEL	53	0	17530 W Dixie Hwy
16k	Larry & Penny Thompson	Managed by EEL	193	0	12451 SW 184 St.
16l	Matheson Hammock Park	Managed by EEL	381	0	9610 Old Cutler Rd.
16m	Metrozoo Pinelands	Managed by EEL	142.4	0	12400 SW 152nd Street
16n	Navy Wells Preserve	Managed by EEL	239	0	SW 360 St. & SW 192 Ave.
16o	Nixon Smiley Preserve	Managed by EEL	63	0	SW 124 St. & SW 135 Ave.
16p	Pineshore Park	Managed by EEL	7.8	0	SW 128 St. & SW 112 Ave.
16q	R. Hardy Matheson Preserve	Managed by EEL	692	0	SW 112 St. & Old Cutler Rd.
16r	Tropical Park	Managed by EEL	5	0	7900 Bird Rd.
TOTAL Park/EEL Acres			2,800		
NOTE: Acronyms in parentheses following the project name indicate the source of funds or matching funds for which the project has been approved. Funding sources are: CARL=Conservation And Recreation Lands; ATT = AT&T Corp.; DEP=Dept. of Environmental Protection; FCT =Florida Communities Trust; GSA = General Services Administration; P&R = Miami-Dade Park & Recreation; SAMP = Bird Drive Special Area Management Plan; SNP = Miami-Dade Safe Neighborhood Parks Bond Program; SOR = Save Our Rivers.					
TOTAL A List Acres			16,555		
TOTAL B List Acres			288		
TOTAL Acquired/Managed Acres			23,556		

Land Use Element:

Policy LU-3K. By 2017, Miami-Dade County shall determine the feasibility of designating areas in the unincorporated area of the County as Adaptation Action Areas as provided by Section 163.3177(6)(g)(10), Florida Statute, in order to determine those areas vulnerable to coastal storm surge and sea level rise impacts for the purpose of developing policies for adaptation and enhance the funding potential of infrastructure adaptation projects.

Policy LU-3L. Miami-Dade County shall work with its local municipalities to identify and designate 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.

NFIP Communities

This chart shows the status of our communities participating in the NFIP as of 10/06/2014 per the FEMA Community Status Book Report. The current effective FIRM maps for all communities in our county are dated 09/11/2009.

Jurisdiction	Initial FIRM	Entry Date	Additional Comments
AVENTURA	7/30/1972	10/22/1997	Adopted the Miami-Dade County (CID 120635) FIRM dated 03/02/1994 Panels 82 and 84.
BAL HARBOUR	09/29/1972	09/29/1972	
BAY HARBOR ISLANDS	09/29/1972	09/29/1972	
BISCAYNE PARK	09/29/1972	09/29/1972	
CORAL GABLES	09/29/1972	09/29/1972	
CUTLER BAY	03/02/1994	08/31/2006	
DORAL	09/30/1972	05/12/2004	Use Miami-Dade County (CID 120635) Panels 75,160 and 170.
EL PORTAL	09/29/1972	09/29/1972	
FLORIDA CITY	09/29/1972	09/29/1972	
GOLDEN BEACH	09/29/1972	09/29/1972	
HIALEAH	09/29/1972	09/29/1972	
HIALEAH GARDENS	09/29/1972	09/29/1972	
HOMESTEAD	09/29/1972	09/29/1972	
INDIAN CREEK VILLAGE	09/29/1972	09/29/1972	
KEY BISCAYNE	09/29/1972	09/29/1972	
MEDLEY	09/29/1972	09/29/1972	
MIAMI	09/29/1972	09/29/1972	
MIAMI BEACH	09/29/1972	09/29/1972	
MIAMI GARDENS	09/30/1972	06/21/2004	Use Miami-Dade County (CID 120635) FIRM panels 80, 82, 83 & 90.

MIAMI LAKES	03/02/1994	07/17/2003	Use Miami-Dade County (CID 120635) FIRM panels 75, 80 & 90.
MIAMI SHORES	09/29/1972	09/29/1972	
MIAMI SPRINGS	09/29/1972	09/29/1972	
NORTH BAY VILLAGE	09/29/1972	09/29/1972	
NORTH MIAMI	09/29/1972	09/29/1972	
NORTH MIAMI BEACH	09/29/1972	09/29/1972	
OPA-LOCKA	09/29/1972	09/29/1972	
PALMETTO BAY	03/02/1994	02/02/2005	
PINECREST	09/30/1972	10/13/1998	Adopted Miami Dade County (CID 120635) FIRM panels 260, 276 and 278. The initial FIRM date is 10/29/1972 for floodplain management purposes.
SOUTH MIAMI	09/29/1972	09/29/1972	
SUNNY ISLES BEACH	03/02/1994	09/29/1972	Use Miami Dade County (CID 120635) FIRM panels 82 & 84. The initial FIRM date is 10/29/1972 for floodplain management purposes.
SURFSIDE	09/29/1972	09/29/1972	
SWEETWATER	07/17/1995	09/29/1972	
UNINCORPORATED MIAMI-DADE	07/17/1995	09/29/1972	
VIRGINIA GARDENS	07/17/1995	09/29/1972	
WEST MIAMI	07/17/1995	09/29/1972	

Local communities continue to participate in the NFIP by adopting and enforcing floodplain management ordinances to reduce future flood damage which in turn allows homeowners, renters and business owners in our communities to purchase the federally back flood insurance.

To maintain compliance with the NFIP, the municipalities of the Miami-Dade County will do the following:

- Accept, review and maintain elevation records for all new construction and substantial improvements in Special Flood Hazard Areas.
- Require permits and review all new construction, including substantial improvements, for compliance with the minimum standards under the NFIP and local floodplain management code.
- Require that all development proposals greater than 50 lots or 5 acres, whichever is less, include in such proposals base flood elevation data.
- Provide that all new construction and substantial improvements in V and VE zones are elevated on pilings and columns so that the bottom of the lowest horizontal structural member of the lowest floor is elevated to at or above the Base Flood Elevation.

- Require that all manufactured homes placed in Special Flood Hazard Areas be installed using methods and practices that minimize flood damage, including proper elevation and anchoring to resist flotation, collapse or lateral movement.

Below is a listing of some additional activities that local jurisdictions engage in to continue to promote flood education, preparedness and mitigation.

Key Biscayne

The Village of Key Biscayne has been a CRS Community since 1998 and is currently a Class 7. The Village has designated the Senior Executive Assistant to the Director of the Building, Zoning and Planning Department as the CRS Coordinator. CRS activities undertaken in the past 5 years include:

- Conduct and document drainage system maintenance throughout the community
- Conduct drainage system maintenance by inspecting/repair/maintain drainage system
- Continue to preserve and maintain our open space and parks system in floodplain
- Enforce Floodplain Development Permits
- Enforce Floodplain Management Regulations
- Enforce stormwater management ordinances
- Inform lenders, insurance agents, and real estate offices of our services
- Maintain and keep old and current FIRMs
- Maintain Elevation Certificates for all new/substantially improved buildings
- Continue to track building improvements and repairs through permits
- On-going training for staff relative to floodplain management
- Prepare/distribute Floodplain Management Plan (LMS) Annual Progress Report
- Produce and maintain a log and history of drainage system maintenance provided to residents
- Produce/distribute outreach projects to all residents/businesses within the floodplain and all of the Village
- Produce/distribute property protection information to Repetitive Loss Areas
- Produce/distribute property protection information to Repetitive Loss Properties
- Provide copies of Elevation Certificates to residents and/or businesses
- Provide flood protection assistance
- Provide information on “no dumping” signage throughout the Village.
- Provide letters of Flood Insurance Rate Map Determination
- Provide property protection assistance to homeowners and/or businesses
- Maintain and test flood threat recognition system

- Update and maintain the Flood Information on the Village's website

Village's Public Works, Code Enforcement and Building, Zoning and Planning staff members have attended several certification courses with success including the FDEP's Stormwater Management Inspectors, FSA's Level 1 and Level 2 Stormwater Certified Operators courses in compliance with annual training requirements. In total the Village has 2 certified SEC inspectors; 3 Level 1 SW Operators and 2 Level 2 SW Operators.

The Village's current Floodplain Management Ordinance reflects the latest FIRM maps. As of December 2011, the Village had 1,710 flood policies (in 2010, this count was 1,713). Initially the NFIP identified 28 RLPs in 2008 within the Village. A Repetitive Loss Area Analysis was conducted through 2009 to assess and mitigate the losses. The NFIP identified 5 repetitive loss properties (RLPs) within the Village as of December 2012. The last CAV visit was on September 26, 2011, at which time the State identified additional definitions were necessary in the Village's floodplain management ordinance. The Village Council revised the ordinance to reflect these new definitions in May 2012 and amended again in January 2014. The most recent 5-year Cycle Verification Visit by the FEMA ISO/CRS Specialist was on May 26, 2011 at which time deficiencies were found in the elevation certificates reviewed. This deficiency has since been remediated with assistance from ISO involving Quarterly submittals.

Miami Gardens, City of – (CRS Community)

Miami Gardens has been a participant in the National Flood Insurance Program since 2006, and joined the Community Rating System in 2008. The city is currently a six in the CRS. The City performs the following activities, but this list is not inclusive of all the NFIP/CRS activities the city conducts.

- Maintain Elevation Certificates for New/Substantially Improved Buildings
- Provide Flood Zone Information
- Inform Lenders, Insurance Agents, and Real Estate Offices of Our Services
- Keep Old and Current FIRMs
- Maintain Flood Protection Materials at Library
- Provide Flood Protection Assistance
- Preserve Open Space in Floodplain
- Enforce Floodplain Management Regulations
- Use/Update Flood Data GIS Information
- Produce/Distribute Property Protection Information to Repetitive Loss Areas and the entire community
- Prepare a Floodplain Management Plan (LMS) Annual Progress Report
- Inspect/Repair/Maintain Drainage Systems
- Conduct Drainage System Construction as part of the city CIP
- Enforces Dumping Regulations

Miami Shores – (CRS Community)

Miami Shores entered the NFIP September 29, 1972 and has been a CRS community since October 1, 2000 and is currently a class 8. The village has designated the Planning Director and Building Official as the CRS Coordinator and Floodplain Manager. CRS activities undertaken in the past 5 years include:

- Maintain Elevation Certificates for New/Substantially Improved Buildings
- Provide Flood Zone Information
- Inform Lenders, Insurance Agents, and Real Estate Offices of Our Services
- Keep Old and Current FIRMs
- Produce/Distribute Flood News Newsletter
- Maintain Flood Protection Materials at Library
- Provide Flood Protection Assistance
- Preserve Open Space in Floodplain
- Enforce Floodplain Management Regulations
- Use/Update Flood Data GIS Information
- Produce/Distribute Property Protection Information to Repetitive Loss Areas
- Prepare Floodplain Management Plan (LMS) Annual Progress Report
- Inspect/Repair/Maintain Drainage Systems
- Install and Improve Drainage System Portions of CIP
- Provide Information on Stream Dumping Regulations

North Miami – (CRS Community)

North Miami has been a CRS community since October 1, 1994 and is currently maintains a class 5 rating (October 2001). The City has designated the Capital Project Manager as the CRS Coordinator and Floodplain Manager. The City performs the following activities, but this list is not inclusive of all the NFIP/CRS activities the city conducts.

- Maintain Elevation Certificates for New/Substantially Improved Buildings
- Provide Flood Zone Information
- Inform Lenders, Insurance Agents, and Real Estate Offices of Our Services
- Keep Old and Current FIRMs
- Produce/Distribute an annual Flood Hazard Information Brochure
- Maintain Flood Protection Materials at Library
- Provide Flood Protection Assistance
- Preserve Open Space in Floodplain
- Enforce Floodplain Management Regulations
- Produce/Distribute Property Protection Information to Repetitive Loss Areas and the entire community
- Prepare Floodplain Management Plan (LMS) Annual Progress Report
- Inspect/Repair/Maintain Drainage Systems
- Perform Drainage System Construction as part of the city's CIP

Provide Information on and enforce Stream Dumping Regulations

Community Rating System (CRS) Communities

The CRS is a voluntary program for communities that participate in the NFIP. Participation in the CRS provides residents of those communities with flood insurance discounts. The discounts are based upon the CRS rating of the community from a Class 9 to a Class 1 with a 5% discount for each class obtained. In Miami-Dade we have 19 communities that participate ranging from ratings of Class 5, a 25% discount, to Class 8, a 10% discount, as depicted in Table 5. The LMS support the CRS communities and others who wish to become CRS communities and strives to help identify areas where uniform credit can be obtained as per compliance with the CRS Coordinators Manual.

Table 9: Community Rating System Members*

Community	Rating	Community	Rating
Unincorporated Miami-Dade	5	City of Miami Beach	6
City of Aventura	7	Miami Shores Village	8
City of Coral Gables	7	City of North Miami Beach	7
City of Doral	8	City of South Miami	7
City of Hialeah	7	City of Sunny Isles	7
City of Homestead	8	Town of Surfside	8
City of Opa Locka	8	City of North Miami	5
Cutler Bay	6	City of Miami Lakes	5
Town of Bay Harbor Islands	7	City of Miami Gardens	6
Village of Bal Harbour	7	Village of Pinecrest	8
Village of Key Biscayne	7	Village of Palmetto Bay	8**
City of Miami	7		

*As of October 1, 2016

** Will be entering the CRS program on May 1, 2017

The Town of Sweetwater has submitted their letter of interest to join the CRS.

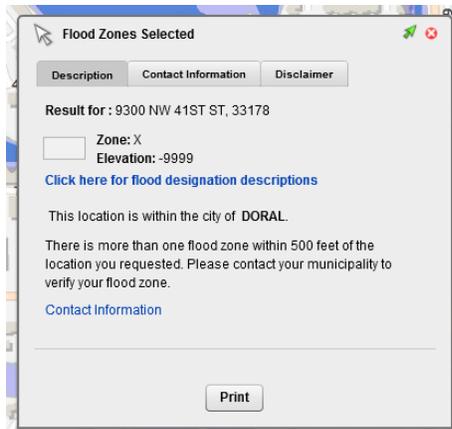
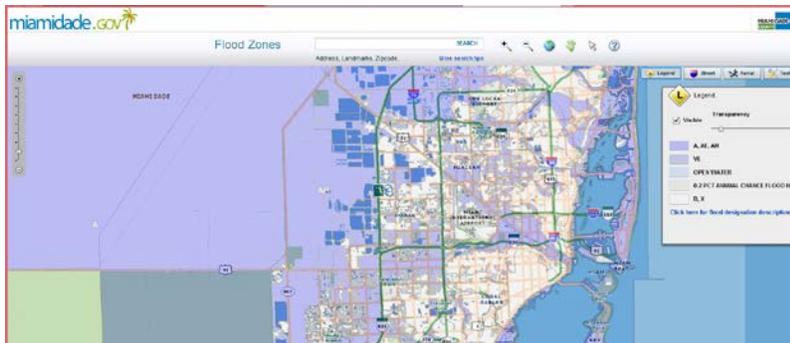
Public Information Activities

Miami-Dade County maintains information for county residents to help them understand flooding risks: www.miamidade.gov/environment/flood-protection.asp.

The site also provides information on elevation certificates, flood insurance, flood zone maps, property sale disclosure, how to protect your property and stormwater utility information.

Information on the current flood zone a property is in can be obtained online through the county website at gisweb.miamidade.gov/floodzone/.

- [Flood Protection](#) ▶
- [Natural Floodplain Functions](#)
- [Flood & Drainage Complaints](#)
- [Elevation Certificates](#)
- [Repetitive Losses](#)
- [Flood Insurance](#)
- [Flood Zone Maps/Flood Risk Maps](#)
- [Coastal Flooding](#)
- [Real Estate Agents](#)
- [Protect Your Property](#)
- [Building Responsibly](#)
- [Stormwater Utility](#)
- [Insurance Agents](#)



Once an address is entered, it will zoom to the location on the map and display an information panel.

Contact information for the municipalities is also provided.

Flood Zones Selected	
Description	Contact Information
City	Phone
AVENTURA	(305)466-8941
BAL HARBOUR	(305)865-7525
BAY HARBOR ISLANDS	(305)866-6241
BISCAYNE PARK	(305)899-8000
CORAL GABLES	(305)460-5242
CUTLER BAY	(305)234-4262
DORAL	(305)406-6737
EL PORTAL	(305)795-7880

Flood Zone	What does it mean?*
0.2 PCT ANNUAL CHANCE FLOOD HAZARD	An area inundated by 0.2% annual chance flooding. No Base Flood Elevations or depths are shown within this zone. Insurance purchase is not required in these zones.
A	Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no Base Flood Elevations (BFEs) or depths are shown within this zone. Mandatory flood insurance purchase requirements apply.

A description of the applicable zone can also be found in the legend.

Emergency Planning Information

Residents can access the Miami-Dade County Community Services website at: gisweb.miamidade.gov/CommunityServices/. By searching an address and clicking on the Emergency Management tab, they will be able determine if their residence is in a storm surge planning zone, and information on the closest evacuation center and evacuation bus pick up point to their location.



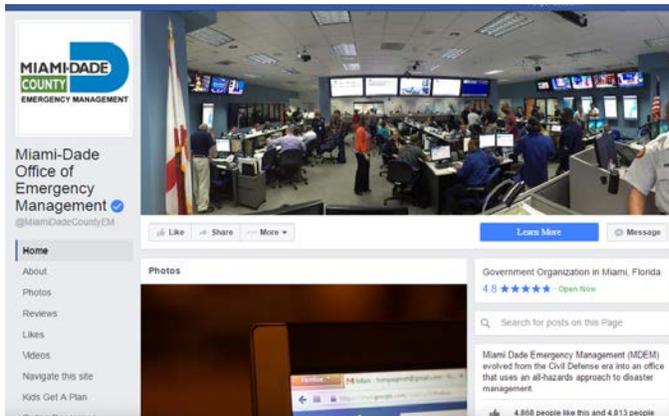
OEM also maintain a website called Ready South Florida: <http://readysouthflorida.org/>. Ready South Florida consists of partnership between Miami-Dade, Palm Beach, Broward and Monroe counties to promote a common preparedness message and encourage South Florida community to always be “Ready”. The website contains information and promotional materials.



Social Media

Miami-Dade OEM maintains a Facebook and Twitter page where preparedness messages, information on events being monitored, emerging or occurring incidents and insight into the operation of OEM is posted, on a daily basis.

Facebook page: www.facebook.com/MiamiDadeCountyEM/



Twitter page: twitter.com/MiamiDadeEM/



Outreach Activities

This section outlines the activities that are performed on an annual basis by the communities within Miami-Dade County. More detailed information and samples may be found in Appendix A of Part 7.

Activity	Frequency	Topics	Audience	Materials
Mailout by RER	Annual	Flood protection, flood insurance, permit requirement and water resources protection	380,000 households	Do You Know your Flood Zone (English and Spanish)
Website RER Flood Protection (www.miamidade.gov/environment/flood-protection.asp)	Continuous	Elevation Certificates, Flood & Drainage Complaints Form, Elevation Certificates, Repetitive Losses, Flood Insurance, Flood Zone and Flood Risk Maps, Coastal Flooding, Real Estate Agents, Protect Your Property, Building Responsibly, Stormwater Utility, Insurance Agents		Do You Know Your Flood Zone (English, Spanish and Haitian Creole)
Mailout PWWM	Annual (May)	Hurricane Preparedness	380,000 households	Miami-Dade Hurricane Preparedness Guide
Mailout by RER		Notification to residents of their home being in area that floods		Letter to inform resident of meeting and resources
Bring Your Kids to Work	Annual	Fire Prevention Hurricane Preparedness	MDFR Employee Children	Ready South Florida brochures
Child Preparedness Day OEM, Miami-Dade Public Schools	Annual (September)	Hurricane Preparedness Storm Surge Evacuation Shelter-In-Place	60 MDPS Children	Ready South Florida brochures
Mayor's Hurricane Preparedness Press Conference	Annual (May)	Hurricane Preparedness	Community 2.5 million	Press Release Live media broadcast
Youth Fair	Annual	Hurricane Preparedness for children, seniors, marine manuals	820	Ready South Florida brochures / Miami-Dade Hurricane Brochure/ Save Our Swales

Activity	Frequency	Topics	Audience	Materials
Emergency Evacuation Assistance Call Down	Semi-Annually	Notification to people who have registered for the Emergency Evacuation & Assistance Program to update records and provide information on hurricane preparedness.	2200	Speak to each registrant/family member to verify their participation in program. Follow-up letter informing registrant of the procedure if they have to evacuate and the supplies they need.
MDCPS Turkey Point Information	Annual	Nuclear Power Plant	109,500 households	Turkey Point Brochure
Hotel Hurricane Preparedness	Annual (May)	Hurricane Preparedness	250	Miami-Dade Hurricane Brochure
Hurricane Preparedness Events	8 Annually	Hurricane Preparedness Storm Surge Supply Kit	400 total	Miami-Dade Hurricane Brochure Shelter-In-Place Brochure Ready South Florida Brochures Storm Surge Planning Zone map Severe Weather Awareness Brochure MDFR Venomous Snakes brochure
Citizen Corps Public Safety Day	Annual	Disaster/Emergency Preparedness Storm Surge	180	Miami-Dade Hurricane Brochure Ready South Florida brochures
Healthcare Facility Emergency Plan Training	Bi-monthly	Hurricane Preparedness Nuclear Power Plan Storm Surge Planning Zones	12 people per month	Miami-Dade Hurricane Brochure

Activity	Frequency	Topics	Audience	Materials
Healthcare Facility Plan Review	Annual	Hazard Zones (FEMA Flood Zone, Storm Surge Planning Zone, Nuclear Power Plant)	1500 Residential Health Care Facilities	Letter and guidance for plan development, including personalized information on the hazard zones the facility is in.

2016 Child Preparedness Day



Miami-Dade Mayor's Annual Press Conference



Property Sale Disclosure

It is a requirement of the Miami-Dade County Code that any purchase of improved real estate in a Special Flood Hazard or Coastal High Hazard Area (also known as Flood Zones) include a full disclosure to the buyer that the property lies in either of those zones. If the structure is substantially damaged or improved, it may, among other things, be required to be raised to the current required flood elevation.

In any contract for the sale of improved real estate located in unincorporated Miami-Dade County, which is in a Special Flood Hazard Area, the seller shall include in the contract or a rider to the contract the following disclosure in not less than ten-point bold face type:

"THIS HOME OR STRUCTURE IS LOCATED IN A SPECIAL FLOOD HAZARD AREA. IF THIS HOME OR STRUCTURE IS BELOW THE APPLICABLE FLOOD ELEVATION LEVEL AND IS SUBSTANTIALLY DAMAGED OR SUBSTANTIALLY IMPROVED, AS DEFINED IN CHAPTER 11C OF THE METROPOLITAN MIAMI-DADE COUNTY CODE, IT MAY, AMONG OTHER THINGS, BE REQUIRED TO BE RAISED TO THE APPLICABLE FLOOD ELEVATION LEVEL."

(Ref: Chapter 11-C of the Code of Miami-Dade County)

Flood Protection Information

The Miami-Dade Public Library System maintains numerous FEMA documents on hazards at its various branch locations. Residents can do an online search for document, find a local branch that has the documents.

http://catalog.mdpls.org/search/searchresults.aspx?ctx=1.1033.0.0.7&type=Default&term=FEMA&by=KW&sort=RELEVANCE&limit=TOM=* &query=&page=0&searchid=2

Materials are identified by subject, the assigned branch and type of material. A number of resources are linked on line and could be accessible to residents through a computer search and some materials may be available for check out or may be able to be requested to be delivered to their local library branch. Map 16 shows all of the locations of Miami-Dade Library branches.

▼ **Subjects**

- United States. Federal Emergency Management Agency (121)
- Emergency management (105)
- Disaster relief (100)
- Emergency housing (32)
- Natural disasters (18)
- Grants-in-aid (17)
- National Flood Insurance Program (U.S.) (16)
- Flood damage prevention (14)
- Flood insurance (14)
- Individuals & Households Program (U.S.) (13)
- Dwellings (12)
- Buildings (11)
- Fire prevention (11)
- Hazard mitigation (11)
- Hurricane Katrina, 2005 (9)
- House construction (8)
- Interagency coordination (7)
- Earthquake resistant design (6)
- Hurricanes (6)
- Incident command systems (6)
- Insurance, Flood (6)
- First responders (5)
- Terrorism (5)
- United States (5)
- Orlando Utilities Commission (4)

▼ **Assigned Branch**

- Main Library (106)
- Coral Gables (11)
- North Dade Reg (10)
- Kendall (7)
- West Dade Reg (7)
- South Dade Reg (5)
- West Kendall Reg (5)
- North Central (4)
- Doral (3)
- Miami Beach Reg (3)
- South Miami (3)
- South Shore (3)
- Edison (2)
- Allapattah (1)
- Arcola Lakes (1)
- Civic Center (1)
- Coral Reef (1)
- Hispanic (1)
- Kendale Lakes (1)
- Key Biscayne (1)
- Lemon City (1)
- Miami Springs (1)
- North Shore (1)
- Sunny Isles Beach (1)
- West Flagler (1)

Less<<

▼ **Type of Material**

- Book (266)
- Electronic Resources (179)
- Ebook (99)
- Microform (14)
- Serial (14)
- Cartographic Material (1)
- DVD (1)
- Printed Cartographic Material (1)
- Projected Medium (1)
- Videorecording (1)
- Visual Materials (1)

Less<<

Storm Ready Community

Miami-Dade County has been a Storm Ready Community since 2008 and was re-designated again in 2014.



Weather Ready Nation

In October 2014, the LMS was named a Weather Ready Nation Ambassador and pledged to continue to build community resilience in the face of increasing vulnerability to extreme weather and water events. The LMSWG members help unify our efforts to improve our readiness, responsiveness and resilience.

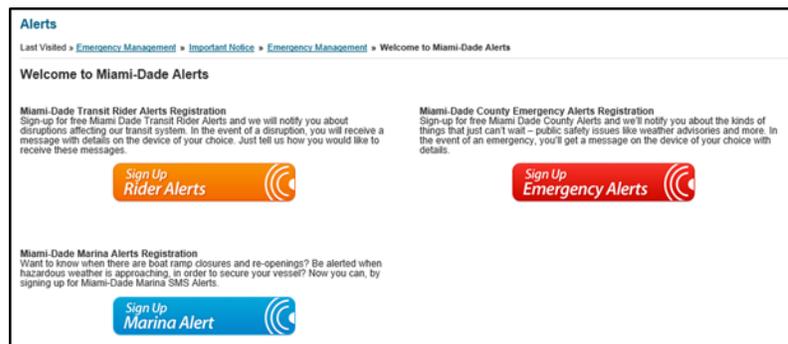


Alert and Notification

As documented in the Comprehensive Emergency Management Plan (CEMP) OEM provides notifications of an event as early as is practical in an effort to provide as much advance warning as possible. For tropical storms or hurricanes notification begins three to five days prior to the anticipated arrival of the storm. Activation of the Emergency Operations Center is done to centralize response and recovery decisions, plans and operational activities. Emergency Support Function (ESF) 14 is responsible for public information and is activated with the EOC to assist with the dissemination to the all media outlets and the public.

A copy of the CEMP may be found on line at <http://www.miamidade.gov/fire/about-comprehensive-plan.asp>. Additional support plans may be available upon request by calling 305-468-5400 or emailing eoc@miamidade.gov.

OEM maintains the Emergency Evacuation & Assistance Program which is designed to provide evacuation assistance to persons who may need transportation or a higher level of assistance due to functional or medical needs. As of 2014, there are over 2,200 people on the registry. OEM performs a semi-annual call down to keep database current and determine levels of need for the registrants. OEM also notifies the registrants of an event where evacuation may be needed to coordinate assistance.



Residents of Miami-Dade can sign up for emergency alerts at:

www.miamidade.gov/alerts

Alerts include notifications for transit riders in the event of changes to transit operations, alerts for boaters for hazardous weather and emergency alerts for public safety notifications including weather advisories and evacuation decisions.

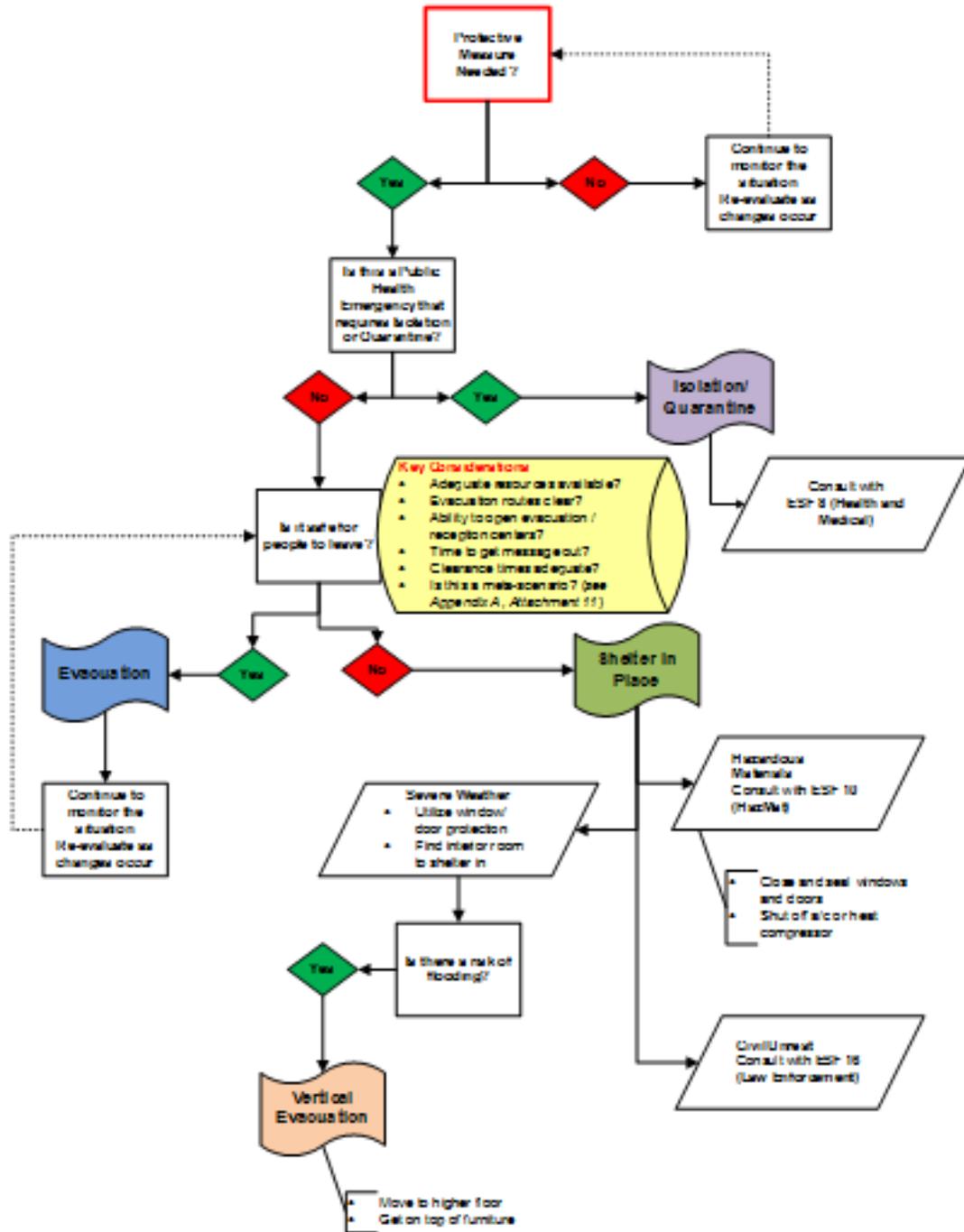
Response Operations

When an incident threatens or has occurred the OEM may notify stakeholders via an email notification system. OEM staff members update and maintain emergency contact information for over 100 local, state and regional agencies through a notification system called Itrezzo. Additional contact lists are maintained by the Section Chiefs and Bureau Directors of the EOC that are utilized to convey planning, response and recovery information to provide for a coordinated response. When the EOC activates over 70 agencies are present and many more work offsite for coordinated efforts.

OEM created an All-Hazards Protective Measures Plan to address potential actions that could be implemented upon determination of time and resources. This plan can be found in Volume III of the CEMP. Below are two decision matrices utilized in the plan for protective measures and restricted entry/repopulation considerations. This plan also include information on the evacuation routes, bus pick up points, host schools for Turkey Point evacuations and mobile home parks.

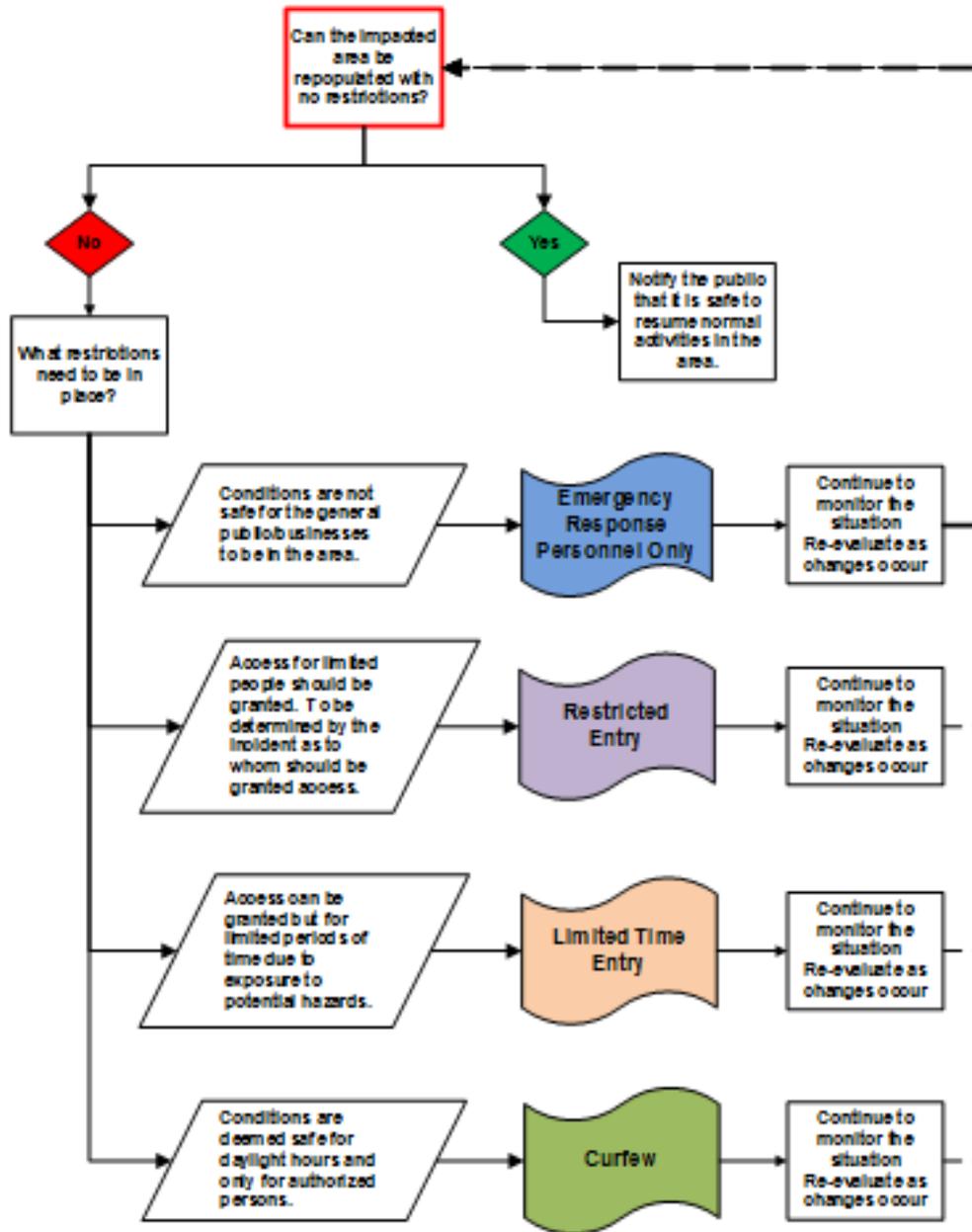
OEM is responsible for planning for storm surge related flooding and designating areas for evacuation as a tropical cyclone is approaching. In 2013, OEM utilized the updated Storm Lake Overland Surge from Hurricanes (SLOSH) data to map out the areas of the county at greatest risk from storm surge, as illustrated in Map 7. OEM also has pre-designated planning zones for the nuclear power plant (Turkey Point). Population estimates and clearance times are designated for the storm surge and Turkey Point planning zones in the All-Hazards Protective Measures Plan.

Figure 1: Protective Measure Decision Making Matrix (Evacuation, Shelter in Place and Isolation/Quarantine)



07/06/2015

Figure 2: Protective Measure Decision Making Matrix (Repopulation/Restricted Entry)



07/06/2015

Community Information and Reporting

Miami-Dade County operates a County 3-1-1 information system that can be used to provide information to residents and a conduit for reporting community problems such as flooding <http://miamidade.gov/wps/portal/Main/reportproblems>.

County residents can report concerns with flooding, clogged drains and canal issues and request information on any hazard event that may be impending or occurring.

311 DIRECT Home Report Complaint/Fraud Feedback

Submit a Service Request

- Bulky Waste Pickup
- Roadways
- Animals
- Property
- Waste and Recycling
- Traffic Signs and Signals
- Trees
- Parks and Recreation
- All

Brochure 2: Save Our Swales

Online: <http://www.miamidade.gov/publicworks/library/brochures/save-our-swales-english.pdf>

Available in English, Spanish and Haitian Creole

What is a Swale?

Chances are if you've lived in Miami-Dade County long enough, you've heard at least one person refer to a "swale." A swale is the grassy area of land that stretches from the edge of the sidewalk in front of homes (or the property line if there is no sidewalk) to the edge of the street.

Swales are a commonly used stormwater management tool. They slow down the flow of stormwater and allow runoff to pond temporarily. In doing so, this helps filter pollutants from stormwater as it percolates into the ground, and it helps protect lives and property by minimizing flooding.

Swales perform an important stormwater management function, but they differ from berms/baniers and ditches in that a swale slopes gently away from property and swales tend to be wider than they are deep.

Save Our Swales

Learn why a well-kept swale is more important than you may realize

A properly maintained swale, with a curb. Note the car is parked on the street, not the swale.

A poorly maintained swale. Note the entire swale area is paved and a car is parked on it.

Save Our Swales

For more information on swales and stormwater management, call (305) 375-4772 or visit <http://www.miamidade.gov/publicworks/roads-bridges-canal.asp>.

To request this material in an alternate format please call 305-514-6653

Miami-Dade County PUBLIC WORKS AND WASTE MANAGEMENT

Why Should I Help Save Our Swales?

Although swales are public property—they are typically owned by the County or perhaps the municipality you live in—by law, property owners are supposed to maintain the swales in front of their properties.

But you should help Save Our Swales not only because it's the law, but because:

- A well-kept swale looks good and helps maintain property values.
- A swale that does its job properly protects your home and your neighbors' homes by helping to minimize flooding when it rains.
- Swales also help protect the environment—and our drinking water supply—by acting as filters to remove or reduce pollutants that get washed up by stormwater.

A properly maintained swale. Note that only the driveway approach is paved.

Examples of Poorly Maintained Swales

Note the paved areas and evidence of cars parking on the swale.

Note evidence of cars parking on the swale and the compacted soil.

Note evidence of cars parking on the swale and the compacted soil.

How Can I Help Save Our Swales?

Properly maintaining your swale area is easy and will help you to reduce street flooding in your neighborhood:

- Mow the swale area regularly to keep grass healthy and under control.
- Use as little fertilizer, pesticides and herbicides as possible on both your lawn and the swale area.
- Aerate the soil in the swale area from time to time to improve the rate of stormwater percolating into the ground.
- Don't let trash, tree limbs or garden waste accumulate in your swale; call 3-1-1 for a bulky waste pick-up if needed to remove these materials.
- Report any illegal dumping on your swale: call 9-1-1 if you see the illegal dumpers in the act, otherwise call 3-1-1 to report it.
- Do not pave your swale area unless it is for a permitted driveway approach.
- Do not park cars in the swale area; this compacts the soil and makes it more difficult for stormwater to soak in.
- Do not be alarmed if water ponds temporarily (24 to 48 hours in your swale area, but if water ponds for longer (72 hours or more) call 3-1-1 to report it.

Para obtener una copia de este folleto en español, visita <http://www.miamidade.gov/publicworks/publications.asp>.

Si ou vle jòn kopy ti livè sa a an kreòl, ale nan <http://www.miamidade.gov/publicworks/publications.asp>.

Miami-Dade County PUBLIC WORKS AND WASTE MANAGEMENT

Brochure 3: 2016 Hurricane Guide

Online: www.miamidade.gov/hurricane/library/guide-to-hurricane-readiness.pdf

ARE YOU READY?
Hurricane Season
June 1 – November 30
Your 2016 Guide to Hurricane Readiness
Para información en español, vea adentro
Pou enfòmasyon an Kreyòl, gade andedan

Contents

- Mayor's Message 2
- County Commissioners' Contact Information 2
- About Evacuation 4
- Hurricane Evacuation Center Accessibility 4
- Cleanup Before a Storm 5
- Before a Hurricane Approaches 6
- During a Hurricane 6
- About Storm Surge Planning Zones 7
- 3-1-1 Answers to You 8
- Storm Surge Planning Zone Map 10
- Frequently Asked Questions 12
- After a Hurricane 14
- Enfòmasyon en Kreyòl 15
- Información en Español 16
- Phone Numbers & Websites 18

Watches + Warnings
Terms You Need to Know...

- Tropical Storm Watch**
Tropical storm conditions are possible, usually within 48 hours.
- Tropical Storm Warning**
Tropical storm conditions are expected, usually within 36 hours.
- Hurricane Watch**
Hurricane conditions are possible, usually within 48 hours.
- Hurricane Warning**
Hurricane conditions are expected, usually within 36 hours.
- Evacuation Order***
A mandatory order directing the evacuation of appropriate areas of Miami-Dade County deemed to be in danger.

*Evacuation orders depend on a hurricane's track and projected storm surge.

About Evacuation

If a hurricane evacuation is ordered, residents are encouraged to stay with family members or friends in an inland, non-evacuation area. Hurricane Evacuation Centers will also be opened, but the Centers should only be considered as a last resort. Additionally, Emergency Bus Pick-Up Sites will be activated to provide public transportation to and from designated Hurricane Evacuation Centers.

Tourists

The Greater Miami Convention & Visitors Bureau coordinates with local emergency management officials to provide crucial information to ensure the safety and well-being of our visitors. Please be sure to follow any orders issued by local officials in an emergency, such as evacuation and sheltering.

You should also be aware that during an evacuation, visitors may be evacuated prior to residents. It is imperative that you, as a visitor, evacuate immediately upon issuance of an evacuation order.

If you need to evacuate, it's important to bring:

- Bedding
- Infant & child care items, such as formula, diapers, toys, etc.
- Cash
- Personal hygiene items
- Comfort materials, such as books, magazines, etc.
- Prescription and over-the-counter medications
- Drinking water
- Snacks
- Extra clothing
- Special items for family members who are elderly or disabled

Hurricane Evacuation Center Accessibility

All Miami-Dade County Hurricane Evacuation Centers meet **Americans with Disabilities Act (ADA)** criteria for emergency shelters, and include accessible entryways, service/activities areas and bathrooms. Service animals are permitted.

The **Emergency & Evacuation Assistance Program (EEAP)** provides evacuation support to those residents that may require specialized transportation assistance or witness medical needs prevent them from evacuating on their own. Residents who will require evacuation assistance should register for the Emergency & Evacuation Assistance Program prior to an emergency to ensure help will be given when needed. It may also be utilized post-disaster to provide other assistance. Pre-registered residents will receive priority during an emergency. This program is specifically for individuals who live

in their own homes or with their families. Residents in nursing homes or assisted living facilities are not eligible for this program as these facilities are required by law to develop an emergency plan and make arrangements for their residents to evacuate to a similar facility.

Call 3-1-1, apply online or download the application at www.miamidade.gov/fire/eeap-program-page.asp. Applications are available in English, Spanish and Creole.

Miami-Dade County also offers **Pet Friendly Evacuation Centers** for residents living in evacuation or safe, unsealed structures or mobile homes. A family member must stay with the pet. For more information, call 3-1-1 or go online at www.miamidade.gov/animals/disaster-preparedness.asp.



To learn more about designated shelter locations and bus pick-up points, go to www.miamidade.gov/fire/evacuations.asp.
Emergency supplies are critical should a disaster strike. For a complete disaster checklist, go to www.miamidade.gov/eeap or www.readyouthflorida.org or <http://youthreadyfla.org>.

BEFORE
A Hurricane Approaches

Disaster kits and emergency supplies should be ready prior to hurricane season. Once a hurricane warning is declared, preparations should focus on securing your home and property.

- If you own a boat, use double lines at a marina or consider dry dock storage.
- Protect your electronics with surge protectors and waterproof covers.
- Fill prescriptions of emergency medications (consult pharmacist as needed).
- Monitor the storm's progress.
- Visit www.miamidade.gov or call 3-1-1 for updates on County services. Depending on conditions, bus, rail, garbage collection and recycling service, as well as airport and seaport operations, could be affected.
- Preparedness is not expensive. Many disaster kit items such as flashlights & batteries, garbage bags, etc., may be found around your home. Find out more at www.miamidade.gov/fire/consumer-survival-kit.asp.

DURING
A Hurricane

If a hurricane is likely in your area, you should:

- Monitor your radio or television for weather updates and instructions from public safety officials.
- Stay indoors, preferably in a room with low or no windows.
- Take your emergency kit and disaster supplies with you if you move from room to room.
- If flooding threatens your home, turn off electricity at the main breaker.
- Use flashlights, not candles or kerosene lamps, as your light source.

- If you lose power, turn off all major appliances.
- Avoid using the phone and do not take a bath or shower during the storm.
- Fight the temptation to go outside during the "eye" of the storm. There's only a brief period of calm before hurricanes' tops winds return.
- Keep children informed about what's happening and watch for signs of stress.
- Keep animals in their carriers.

Neighborhood Disaster Training

Miami-Dade County offers free training in basic disaster response skills. Learn fire safety, light search and rescue, team organization and disaster medical operations. For more information on Community Emergency Response Team (CERT) programs, email cert@miamidade.gov.

Brochure 4: Turkey Point Mailout (Excerpt)

Online: www.fpl.com/clean-energy/pdf/turkey-point-safety-planning.pdf

@TurkeyPointNPP
TurkeyPointNuclear.com

2016
Important Safety Information for Neighbors

Important Safety Information for Neighbors
Turkey Point Nuclear Power Plant

This guide contains important emergency planning information for people located within 10-miles of the Turkey Point Nuclear Plant. It was developed by emergency management officials and provides basic information about what to do in the event of a nuclear emergency.



ABOUT TURKEY POINT NUCLEAR PLANT

Facts about Turkey Point:
The Turkey Point Nuclear Power Plant is a two-unit nuclear power plant operated by the Florida Power & Light Company, a subsidiary of NextEra Energy, Inc. It is located on an 11,000 acre site 2-miles east of Homestead, Fla., in southeast Miami-Dade County, next to the Biscayne Bay. The site also includes a natural gas-fired generating unit, making it one of the largest generating stations in Florida.

The plant contains two pressurized light water reactors capable of producing a combined capacity of nearly 1,400 megawatts of electricity – enough to supply the power needs of more than one million homes.

Benefits of the Turkey Point Nuclear Plant:

- » Nuclear power plants produce no greenhouse gases, or emissions associated with acid rain or urban smog;
- » Nuclear energy is clean, safe, reliable, and affordable;
- » The plant provides hundreds of high quality jobs for local residents;
- » It is a leader in environmental stewardship in the region; and
- » It is an economic engine for the entire state.

Exhibit 1: News Releases

www.miamidade.gov/releases/2016-05-23-mayor-hurricane-preparedness.asp



Media Contact:

Michael Hernandez, Miami-Dade County
Michael.Hernandez@miamidade.gov
305-375-1545

**Mayor Gimenez to host press conference on Miami-Dade County
Hurricane preparedness efforts**

MIAMI (May 24, 2016) — Miami-Dade County Mayor Carlos A. Gimenez will be joined by Chairman Jean Monestime, members of the Board of County Commissioners, Miami-Dade Fire Rescue and Emergency Management, along with the American Red Cross, for a hurricane preparedness press conference today, May 24, at 11:00 a.m. at the Miami-Dade County Emergency Operations Center, 9300 NW 41 Street, in Doral.

The Mayor will explain the County's efforts to prepare for the upcoming Hurricane Season that runs June 1 through November 30.

The Press Conference will be webcast live on www.miamidade.gov and Periscoped on Twitter. Follow [@MayorGimenez](https://twitter.com/MayorGimenez) to tune in. Miami-Dade Television will also broadcast the press conference on cable channel 76 for Atlantic Broadband, Comcast and Xfinity and channel 99 for AT&T U-Verse.

Residents are encouraged to sign up for Miami-Dade Alerts for public safety issues, weather advisories and other information via text at <http://miamidade.gov/vps/portal/Main/alerts>.

Who: Miami-Dade County Mayor Carlos A. Gimenez
Miami-Dade County Commission Chairman Jean Monestime
Members, Board of County Commissioners
David Downey, Miami-Dade Fire Rescue, Fire Chief
Juan J. Perez, Miami-Dade Police, Director
Curtis Sommerhoff, Office of Emergency Management, Director
Carlos Castillo, American Red Cross South Florida, Regional Disaster Program Officer
Bill Talbert, Greater Miami Convention & Visitor's Bureau, President and CEO
Florida Power and Light representative

What: Press conference on Miami-Dade County hurricane preparedness

When: May 24, 2016 — 11:00 a.m.

Where: Miami-Dade Emergency Operations Center
9300 NW 41 Street
Doral, FL 33178

###

To request materials in accessible format, sign language interpreters, and/or any accommodation to participate in any County-sponsored program or meeting, please call Office of Communications, 305-375-1545 or email, comminfo@miamidade.gov, five days in advance to initiate your request. TTY users may also call 711 (Florida Relay Service).

Office of the Mayor

<http://www.miamidade.gov/fire/releases/2016-08-25-preparedness-is-key.asp>



For Immediate Release:
August 25, 2016

Media Contact:
Erika Benitez
786-331-5000

Preparedness is Key

(MIAMI, Aug. 25, 2016) – Although uncertainty still remains in the forecast track for the system out in the Atlantic, there is still a possibility that a tropical system may impact South Florida. The Office of Emergency Management (OEM) would like to remind residents that making a hurricane plan ahead of time, including arrangements for your pets, and stocking up on vital supplies and medications will go a long way toward helping you and your loved ones stay safe in the event of a storm.

As a reminder that this time of the year is a concern due to high activity, yesterday marked the 24 anniversary of Hurricane Andrew, a storm that made landfall as a Category 5 and destroyed over 25,000 homes damaging nearly 100,000 more.

Please remember that disaster kits and emergency supplies should be ready before the threat of a hurricane. Once a hurricane warning is declared, preparations should focus on securing your home and property. Preparedness does not have to break your budget, for a list of disaster kit items, check out our [survival kit list](#).

Receive free [emergency alerts](#) via emails and/or texts with details on public safety issues such as: weather warnings like tornado, tropical storm or hurricane warnings; recommended public protective actions; or other emergency information.

Residents requiring evacuation assistance due to their medical conditions or need for specialized transportation, or other evacuation assistance requirement can register for assistance in an event that requires evacuation.

For comprehensive information regarding hurricane readiness check out our [Hurricane Guide](#) available in English, Spanish and Creole.

[Watch video](#)

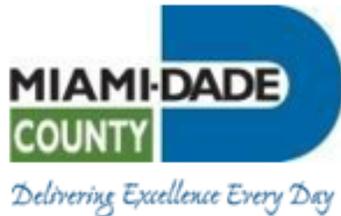
###

FIRE RESCUE

9300 N.W. 41st Street Miami, Florida 33178
(786) 331-5000

Exhibit 2: Emergency and Evacuation Assistance Program

Online: <http://www.miamidade.gov/fire/eeap.asp>



Miami-Dade County
Office of Emergency Management
9300 NW 41 St
Miami, FL 33178
Email: eoc@miamidade.gov
Phone: 305-468-5400
Fax: 305-468-5401

We Need Your Assistance!

VOLUNTEERS WANTED

Miami-Dade Office of Emergency Management (OEM) works year-round to prepare for any type of disaster or emergency. As we prepare for Hurricane Season 2016 (June 1st –November 30th), we would like to invite you to participate in an important upcoming event:

On **Saturday, April 23, 2016** OEM will be conducting a *call-down* of the Emergency and Evacuation Assistance Program (E&EAP) Registry. The *call-down* consists of calling all registrants within our database to update or verify their information within the E&EAP registry.

In the past, many of you have graciously volunteered your time and assisted us in making calls to the Registry clients. We are once again asking for your support in being part of the solution and helping the community!

Date: April 23, 2016
Time: 8:00 a.m. to 5:00 p.m. (time in-between these hours)
Location: Miami-Dade Office of Emergency Management
9300 NW 41 Street Miami, Florida 33178

Instructions: Park in the rear of the building. Lunch will be provided.

We need **English, Spanish and Haitian Creole speaking volunteers** to help us place phone calls to the Emergency and Evacuation Assistance Program (EEAP) Registrants.

Please contact Roberto Cepeda at (305) 468-5419 or send an email to Roberto.Cepeda@miamidade.gov to RSVP your arrival.

Your participation is greatly appreciated!



Thank you for your support!

Exhibit 3: Southeast Florida Climate Leadership Summit

<http://www.miamidade.gov/mayor/climate-change-and-sea-level-rise.asp>

Due to Hurricane Matthew the 2016 Climate Leadership Summit was cancelled.



**SEVENTH ANNUAL SOUTHEAST FLORIDA
REGIONAL CLIMATE LEADERSHIP SUMMIT**
December 1-3, 2015
Casa Marina Resort, Key West, Florida

"Charting the Course"

PROGRAM

DAY 1: WORKSHOP SESSIONS AND OPENING KEYNOTE

Tuesday, December 1, 2015

9:00 am - Noon **Snorkeling Field Trip with The Nature Conservancy**
"Coral Reefs and Climate Change" - Reservation Required

Noon **Registration Begins – Grand Ballroom Patio**
Sponsor Booths Open – Grand Ballroom

1:00 pm - 1:15 pm **Welcome to the Florida Keys – Keys Ballroom**

- Roman Gastesi, County Administrator, Monroe County

1:15 pm - 2:30 pm **Workshop: A Deep Dive into Modeling the Future – Flagler Ballroom**
Overcoming sea level rise data challenges, navigating evaluation tools, and presenting modeling results.

Moderator: Michael Sukop, Professor, Department of Earth and Environment, Florida International University

- Jayantha Obeyesekere, Director, Hydrologic and Environmental Systems Modeling Department, South Florida Water Management District
- Jason Evans, Assistant Professor of Environmental Science and Studies, Stetson University
- Mark Trewartha, Water Resources Manager, Environmental Planning and Community Resilience Division, Broward County
- Dorothy F. Sifuentes, Supervisory Hydrologist, Caribbean-Florida Water Science Center, United States Geological Survey

1:15 pm - 2:30 pm **Innovation Showcase – Keys Ballroom**
Summit sponsors highlight their greenhouse gas reduction, climate adaptation, and sustainability projects.

Moderator: Jason Liechty, Environmental Projects Coordinator, Environmental Planning and Community Resilience Division, Broward County

2:30 pm - 2:45 pm **Break – Refreshments**

2:45 pm - 4:15 pm **Workshop: "Shipsshape and Sustainable" – Flagler Ballroom**
Learn how communities and individuals use the Sustainability Tools for Assessing and Rating Communities (STAR) and Sustainable Floridians frameworks.

Moderator: Natalie Schneider, Climate Change and Sustainability Coordinator, Palm Beach County

- Alicia Belancourt, Monroe County Extension Director, University of Florida - Institute of Food and Agricultural Sciences - Sustainable Floridians
- Hilari Varnadore, Executive Director, STAR Community Rating System - The STAR Communities Rating System
- Jill Horwitz, Natural Resource Specialist, Environmental Planning and Community Resilience Division, Broward County - Implementing STAR in a 4-STAR Community

2:45 pm - 4:45 pm **Innovation Showcase – Keys Ballroom**
Summit sponsors highlight their greenhouse gas reduction, climate adaptation, and sustainability projects.

Moderator: Nichole Hetty, Chief, Office of Sustainability, Miami-Dade County

4:45 pm - 5:45 pm **Keynote Speaker – Keys Ballroom**

A Living Time Machine: Cuba's Natural Environment and the Hope It Offers Florida and the World

- David E. Guggenheim, President and Founder, Ocean Doctor, and Director, Cuba Conservancy Program

5:45 pm - 7:30 pm **Opening Cocktail Reception / Poster Session – Grand Ballroom and Grand Ballroom Patio**

- Networking opportunity
- Visit sponsor booths
- Meet the poster creators
- Cocktails and appetizers

Dinner on your own in Key West

2

DAY 2: REGIONAL CLIMATE SUMMIT

Wednesday, December 2, 2015

Keys Ballroom (Simulcast in Flagler Ballroom), unless otherwise noted

7:30 am - 8:15 am **Registration – Grand Ballroom Patio**
Continental Breakfast – Keys Ballroom Patio

8:00 am - 5:30 pm **Sponsor Booths – Grand Ballroom**

8:15 am - 8:30 am **Welcome**

- The Honorable Heather Caruthers, Mayor Pro Tem, Monroe County
- The Honorable Craig Cates, Mayor, City of Key West, Florida

8:30 am - 9:15 am **Keynote Speaker – Keys Ballroom**

Rough Seas Ahead: National Security in a Century of Change

- Rear Admiral Jonathan W. White, USN, Retired, Former Oceanographer and Navigator of the United States Navy

Local Response

- Captain Steven P. McAleamey, Commanding Officer, Naval Air Station Key West

Introductions by Jim Scholl, City Manager, City of Key West, Florida

9:15 am - 9:30 am **The Compact: Year in Review**

- Steve Adams, Director of Strategic Initiatives, Institute for Sustainable Communities

9:30 am - 9:45 am **Break - Refreshments**

9:45 am - 9:50 am **Video Remarks by the Honorable Carlos Curbelo, United States House of Representatives**

9:50 am - 11:00 am **Preparing for Rough Seas: Lessons from Adaptation in Coastal Communities**
Coastal communities share their experiences in early efforts to adapt to sea level rise and climate challenges.

Moderator: Katherine Hagemann, Sustainability Initiatives Coordinator, Office of Sustainability, Miami-Dade County

- The Honorable Paul Wolff, Council Member, City of Tybee Island, Georgia

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11:00 am - Noon **Is Florida Adrift? State Leaders Sound Off**
Are state and local officials taking climate change seriously, or are we adrift without a plan and resources? State legislators and a local leader share their opinions.

Moderator: Steve Adams, Director of Strategic Initiatives, Institute for Sustainable Communities

- The Honorable Kristin Jacobs, State Representative (District 96)
- The Honorable Bobby Powell, Jr., State Representative (District 88)
- The Honorable Jose Rodriguez, State Representative (District 112)
- The Honorable Matt Surrency, Mayor, City of Hawthorne, Florida, and President, Florida League of Cities

Noon - 1:15 pm **Lunch**

Keynote Speaker – Keys Ballroom

Rain: A History for Stormy Times

- Cynthia Barnett, Author and Award-Winning Environmental Journalist

1:15 pm - 2:15 pm **Assemble the Fleet: Coordinating Federal Action in a Complex Environment**
Southeast Florida enjoys natural systems of unparalleled value and complexity. How are federal agencies working together and with regional actors to preserve and improve these one-of-a-kind resources in the face of sea level rise and other threats?

Moderator: James F. Murley, Chief Resilience Officer, Miami-Dade County

- Clarke Harlow, Governing Board Member, South Florida Water Management District
- Colonel Jason A. Kirk, Commander and District Engineer, Jacksonville District, US Army Corps of Engineers
- Billy D. Causey, Regional Director, Office of National Marine Sanctuaries, National Oceanic and Atmospheric Administration
- Pedro Ramos, Superintendent, Everglades and Tortugas National Parks, National Park Service

2:15 pm - 3:15 pm **Batten Down the Hatches: Preparing Local Communities and the Nation for Climate Change and Extreme Events**
In recent years, the federal government has devoted significant resources to helping state and local governments prepare for extreme weather and climate impacts. Local practitioners and a White House official discuss how communities can reduce risk and what the federal government is doing to assist.

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10:15 am - 11:15 am **Riding the Waves: Working with Nature to Reduce Risk and Adapt to Climate Change**
Coastlines and ecosystems have adapted to changes in environmental conditions for eons. Instead of battling Mother Nature with massive infrastructure projects, coastal experts are now working with her to project shorelines, properties, lives, and natural areas.

Moderator: Chrs Bergh, South Florida Conservation Director, The Nature Conservancy

- Greg Guannel, Florida Urban Conservation Director, The Nature Conservancy
- Samantha Danchuk, Assistant Director, Environmental Planning and Community Resilience Division, Broward County
- Diana Mitsova, Associate Professor, School of Urban & Regional Planning, Florida Atlantic University
- Josh Mahoney, Environmental Resources Project Supervisor, Department of Regulatory and Economic Resources, Miami-Dade County

11:15 am - 1:00 pm **Resilient Redesign: Remaking a Region for Rising Waters**
For the second year in a row, experts from the worlds of local government, academia, design, and engineering have come together to develop innovative approaches for dealing with the serious climate and sea level rise challenges facing southeast Florida. Representatives of the project teams for the three communities selected for this year's Resilient Redesign will present their out-of-the-box ideas to prepare southeast Florida for the future.

Moderator and Presenter: Josh Sawistak, Global Director of Resilience, AECOM

City of Delray Beach, Florida:

- Anthony Abbate, Associate Provost for Broward Campuses and Professor, School of Architecture, Florida Atlantic University
- John Morgan, Sustainability Officer, City of Delray Beach, Florida

City of Hollywood, Florida:

- Jennifer Jurado, Director, Environmental Planning and Community Resilience Division, Broward County
- Leslie Del Monte, Planning Manager, City of Hollywood, Florida

City of Key West, Florida:

- Alison Higgins, Sustainability Coordinator, City of Key West, Florida
- Andy Hayes, Principal, Hayes | Cumming Architects, PA

1:00 pm **Special Drawing and Announcement of 2016 Summit**

- Rhonda Haag, Sustainability Program Manager, Monroe County
- Jon Van Arnam, Deputy County Administrator, Palm Beach County

1:15pm - 2:45 pm **City of Key West Climate Adaptation Field Trip** – Reservation Required

Moderator: The Honorable Heather Carruthers, Mayor Pro Tem, Monroe County

- Samantha Medlock, Deputy Associate Director for Climate Preparedness, White House Council on Environmental Quality
- Lannie Smith, Chief Building Official, Floodplain Administrator, and Emergency Management Director, City of Orange Beach, Alabama
- Lourdes Rodriguez, Building Department Manager, Floodplain Manager, and Community Rating System Coordinator, Town of Miami Lakes, Florida

3:15 pm - 3:30 pm **Break**

3:30 pm - 4:30 pm **Full Steam Ahead: Unleashing Clean Energy and Transportation**
Renewable energy and electric vehicles have taken much of the world by storm and progress in these fields continues to accelerate. A panel of experts discusses the outlook for these technologies in Florida and the United States.

Moderator: Colin Polsky, Ph.D., Director, Center for Environmental Studies, and Professor of Geosciences, Florida Atlantic University

- Cisco DeVries, Chief Executive Officer, Renew Financial
- Keith Kroff, Director of Engineering, Florida Keys Electric Cooperative Association, Inc.
- Susan Glickman, Florida Director, Southern Alliance for Clean Energy
- Buck Martinez, Senior Director, Office of Clean Energy, Florida Power and Light Co.

4:30 pm - 5:30 pm **Compact County Leaders Chart the Course Ahead**
After six years of highly successful collaboration under the Compact, the four counties of southeast Florida and many other stakeholders are moving forward climate mitigation and adaptation efforts faster than ever. But the challenges remain great. What's next for the Compact and its partners?

Moderator: Roman Gastesi, County Administrator, Monroe County

- The Honorable Heathers Camulthers, Mayor Pro Tem, Monroe County
- The Honorable Carlos A. Gimenez, Mayor, Miami-Dade County (invited)
- The Honorable Beam Furr, Commissioner, Broward County
- The Honorable Steven Abrams, Commissioner, Palm Beach County

5:30 pm - 6:30 pm **Cocktail Reception – Flagler Beach**

6:30 pm - 8:30 pm **Oceanside Luau, Pig Roast, and Silent Auction – Flagler Beach**

Welcome

- Roman Gastesi, County Administrator, Monroe County

6:30 pm - 10:30 pm **Reel 'Ting Band and Dancing – Flagler Beach**

DAY 3: REGIONAL CLIMATE SUMMIT
Thursday, December 3, 2015
Keys Ballroom (Simulcast in Flagler Ballroom), unless otherwise noted

7:30 am - 8:00 am **Registration – Grand Ballroom Patio**
Continental Breakfast – Keys Ballroom Patio

8:00 am - Noon **Sponsor Booths – Grand Ballroom**

8:00 am - 8:15 am **Welcome**

- The Honorable Mike Forster, Mayor, Islamorada, Village of Islands, Florida
- The Honorable Mark Senmartin, Vice Mayor, City of Marathon, Florida

8:15 am - 9:25 am **Home Ports: Success Stories from Southeast Florida**
Compact counties and municipal partners highlight projects, share lessons learned, and offer guidance to help other communities to move forward.

Moderator: Suzanne Torriente, Assistant City Manager/Chief Resilience Officer, City of Miami Beach, Florida

- Rhonda Haag, Sustainability Program Manager, Monroe County
- Cheryl Cioffari, Planning Director, Islamorada, Village of Islands, Florida
- Nancy Gassman, Assistant Public Works Director, Sustainability Division, City of Fort Lauderdale, Florida
- Bertha Goldenberg, Assistant Director, Regulatory Compliance & Planning, Water and Sewer Department, Miami-Dade County
- Elizabeth Wheaton, Assistant Building Director, Environment and Sustainability Division, City of Miami Beach, Florida
- Robert Robbins, Director, Department of Environmental Resource Management, Palm Beach County

9:25 am - 9:55 am **Avoiding the Rocks: Sea Level Rise and Legal Issues for Local Governments**
Local governments face legal risks in adapting to rising seas and risks in failing to take action. Two attorneys discuss this rapidly evolving legal landscape.

Moderator: Jennifer Jurado, Director, Environmental Planning and Community Resilience Division, Broward County

- Thomas Ruppert, Coastal Planning Specialist, Florida Sea Grant
- Erin Deady, Erin L. Deady, PA

9:55 am - 10:15 am **Break - Refreshments**

Exhibit 4: Residential Healthcare Facility Requirements

Online: <http://www.miamidade.gov/fire/healthcare-facility-requirements.asp>

Residential Healthcare Facility Requirements

The Residential Health Care Facility (RHCF) Comprehensive Emergency Management Plan Review Program was introduced as a result of state legislation requiring certain health care facilities to prepare and annually update a comprehensive emergency management plan (CEMP). The CEMP serves facilities to be adequately prepared to handle internal/external emergencies within their facilities and ensure the safety and well-being of their residents.

State law requires that the CEMPs be reviewed and approved by the local Office of Emergency Management (OEM). For specific information on state requirements, review the Florida statutes online.

Facility administrators for residential health care facilities located in Miami-Dade County must submit their Comprehensive Emergency Management Plan (CEMP) to the Office of Emergency Management (OEM) for review and approval on an annual basis. Guidance and/or training on plan development can be provided to new administrators requesting information on plan development.

Services provided

- In-service training for facility administrators of assisted living facilities (ALFs) or other residential health care facilities on CEMP requirements
- Review of residential health care facilities (RHCF) plans
- Guidance regarding plan development or requirements

Training Location

Miami-Dade Emergency Management
9300 N.W. 41st Street
Doral, Florida 33178
305-468-5419

Training Registration

Individuals who call and request training on plan preparation will be advised of the next training date and placed on a registration list. The trainings are usually conducted on a bi-monthly basis and will focus on preparing a comprehensive emergency management plan, a fire safety plan, and conducting appropriate exercises. The courses will only be offered in English and are free of charge to the participant. Only two individuals per facility will be permitted, unless additional space available.

For additional information, contact the program coordinator, Roberto Cepeda, at 305-468-5419 or roberto.cepeda@miamidade.gov

Exhibit 5: Residential Healthcare Facility Annual Mailout

MDEM-Residential Health Care Facility Management-Miami-Dade County

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Plan Detail

Facility Information

Facility ID: 18021
Type: ADC
Name: Long Life Adult Day Care
No. Of Beds: 30

NAICS: 64120
Address: 5995 SW 8TH St 33114
Phone:
Fax:

Contacts

Admin

First Name:
Last Name:
Address:
Phone:

Owner

First Name:
Last Name:
Address:
Phone:

Alternate

First Name:
Last Name:
Address:
Phone:

Hazards

Turkey Pt Distance: 0
Water Agreement: Y

Hurricane Evacuation Zone: Y
Distance From Nearest Railroad: 0
Distance From Nearest Major Road: 0 - Miles NA
Other Major Roads Within 1 Mile: 0 - Miles NA
0 - Miles NA
0 - Miles NA

Has Generator: N
Fema Flood Zone: NA

Mutual Aid Agreement

Facility One

Facility ID: 0
Name: Long Life Adult Day Care II
Phone:
Address:
Admin Name:

Facility Two

Facility ID: 0
Name: MI Segunda Casa Adult Day Care Inc.
Address:
Phone:
Admin Name:

Documents

Admin: NA
Fire Plan: NA
Org Chart: NA
SOP: NA
Vendor: NA

Items: NA
Mutual Aid: NA
Roster: NA
Trans: NA
Water Agrmt: NA

Approval

Active: Y
Initial Submit Date: 06/17/2014
Group No: 1

Date Paid: 6/17/2014 6:49:57 PM
Approval Status: Approved

