



**Community Rating System (CRS)  
ACTIVITY 510  
Floodplain Management Plan (FMP)  
FY 2018-2019 Annual Progress Report  
Village of Key Biscayne, FL  
Community #120648**

**Background and Purpose:**

The Village has adopted the Miami-Dade County Local Mitigation Strategy (LMS), in lieu of the FMP and has participated in the County's LMS Working Group since 1998. Participation in the LMS enables access to available funding sources for the purpose of reducing and minimizing the impact of flooding, particularly in repetitive loss areas and to obtain assistance with mitigation of flood damage through federal and state funded grants. The Village is required to and continues to attend quarterly meetings and maintain updates to the list of projects proposed to mitigate localized flooding in addition to the stormwater projects included in the CIP and funded through the Stormwater Utility revenue. This list is published and maintained on the County website at <http://www.miamidade.gov/fire/mitigation.asp>. The status of the current list is summarized in this report as required under Activity 510 of the CRS Annual Recertification process.

**1. Name of CRS Floodplain Management Plan (LMS or other):**

Miami-Dade County Local Mitigation Strategy (LMS)

**2. Date Adopted:**

August 25<sup>th</sup> 2015

**3. Location where copies are available for review:**

Village of Key Biscayne Village Hall  
Building, Zoning and Planning Department Suite 250  
88 West McIntyre Street, Key Biscayne, FL 33149

Online at Village website document center:

[http://keybiscayne.fl.gov/index.php?src=gendocs&ref=DocCenter\\_NFIP-CRS&category=DocumentCenter](http://keybiscayne.fl.gov/index.php?src=gendocs&ref=DocCenter_NFIP-CRS&category=DocumentCenter)

**4. Summary of any floods that occurred during the year (if any):**

The Village experienced a main flooding event on September 10, 2017 caused by Hurricane Irma, with a storm surge reaching almost 6 feet and precipitation of 20 inches. All roads in the Village were under water since the Village's street elevations range from 3 feet to 5.7 feet. Various non-elevated houses in the lowest areas experienced water intrusion in garages and in the first floor.

Hurricane Irma damaged approximately 24 buildings with water intrusion, resulting in approximately \$250,000 in property damage. The event did not cause any fatalities.

Additionally, 17 storm events occurred in the period of April 27, 2018 to November 12, 2018 causing temporary flooding. The amounts of precipitation of these storms varied between 0.5 inch and 3.59 inches throughout the Village, with a total accumulated precipitation of 24 inches in this period. The run time of the two pumps was between 43 and 189 minutes per rain event, with a total of 865 minutes. The flooding generally subsided within 2 to 3 hours after the event. Four (4) of the major events were inspected and digitally recorded.

**5. What impact did the floods have on the repetitive loss area(s):**

The repetitive loss areas, or critical flooding areas, Areas 1, 2 and 3, as defined in the 2015 Stormwater Master Plan Update, were impacted the most in September 10, 2017 by Hurricane Irma. These areas include: K-8 School Central Basin, K-8 School South Basin, West Heather Drive, West of the Village Green Park Area, Holiday Colony, The Gardens District, Ocean Lane Drive, Harbor Drive, Westwood Drive, Allendale Road, Warren Lane and Hampton Lane, West Enid Drive, Palmwood Drive, Sabal Drive and Curtiswood Corridors.

**6. List each element of the original plan and note how much was accomplished during the previous year:**

<b>Project #</b>	<b>Description</b>	<b>Status</b>	<b>Timeline</b>
1	Additional Training – Fire Department	Funding Secure – Fire Department Training Budget	Completed FY2018 2019 On-going
2	CERT Readiness	Funding Applied for	FY2019
3	Coastal Dune Vegetation	Funding Secured - CIP	FY2019
4	Comprehensive Review of Local Laws and Regulations	Identified Funding Source – Stormwater Utility Fund Annual	On-going
5	CRS Outreach Program	Funding secured	Completed FY 2018 2019 Ongoing
6	Drainage Improvements on East Heather Drive	Identified Funding source – Stormwater Utility Fund	Design Phase completed FY2018-Project in Planning Stage
7	Drainage Improvements on Fernwood Road & Hampton Lane	Future Unfunded Project	FY2020
8	Emergency Operation Center	Future Unfunded Project	FY2020 or upon Grant approval
9	Feasibility Study for Additional Open Space Preservation	Pursuing through Land Acquisition Committee – FY2016 Purchased 401 Hampton Lane as a pocket park	On-going
10	Flap Gates at Outfalls	Funding Secured – SW Utility	Completed FY 2017-2018
11	Hardening of Village Hall Generator	Future Unfunded Project	FY2020 or upon Grant approval
12	Hazard Mitigation involvement	Funding Secured	On-going
13	Holiday Colony Low Lying Area #1	Partial Funding Secured – SW Utility	Design Phase completed FY2018-Project in Planning Stage

14	New Stormwater Outfall Construction	Funding Secured 24 Crandon Blvd	FY2019-2020
15	Purchase of Emergency Vehicles	Identified Funding Source - CIP	Completed FY2018
16	Reverse 911 Community Notification System	Funding Secured	TBD
17	Traffic Signage & Pavement Marking Improvements Master plan		Completed FY2016
18	Village K-8 Center Stormwater Pump Station	Scope changed – Divided in two (2) Phases: Phase I two (2) drainage wells were installed along with inline check valve to prevent backflow – Completed July 2016	Phase II installation of a Pump Station at Wells– 75% complete-Final completion FY2019

In addition to the LMS projects listed above, the following stormwater improvement projects and emergency repairs were done in FY2017 and FY2018. These projects enhanced the Village's storm water system and provide significant safety and quality of life improvements for residents by reducing flooding potential.

1. Deepened two wells from 60 feet to 100 feet in a repetitive loss area.
2. Repaired two drainage pipes severed at two (2) locations in the repetitive loss areas.
3. Installation and implementation of SCADA to monitor sea level and rain gauge at Mashta Bridge.
4. Installation of remote drainage water level monitoring devices at seven (7) locations Village wide.
5. In the aftermath of Irma, over 90% of the Village's catch basins, manholes and pipes were inspected and cleaned accordingly.

The FMP includes a number of on-going tasks that are significant in the mitigation of flood hazards. These tasks extend beyond continued management of "normal" on-going CRS-mandated activities such as Drainage System Maintenance, Flood Warning, Map Information, Outreach Projects and Library.

The Village's Beach Renourishment Project and Dune are particularly significant in that the beach dune system represents a barrier island's first line of defense against storm surges. The Village maintains a capital outlay expenditure item for these efforts as part of Activity 420.

In July 2012, a Beach Renourishment Project was completed placing 46,500 tons of beach compatible fill material along 5,425 linear feet of the Village's shoreline. In May 2017, an additional 37,500 cubic yards of beach compatible fill material was placed in specific problem areas along the Village's shoreline.

On a yearly basis, an inspection of the coastal dune system is performed to provide an annual report identifying any exotic vegetation, areas in need of re-planting and the overall health of the Village's Dune System. On April 9, 2013 the Village's dune maintenance consultant identified

1,510 square yards in need of exotic removal. The area was cleared of invasive vegetation and replanted with 2,000 Sea Oats to promote sand built up and to preserve the dunes. No additional action was deemed necessary by the Village's coastal engineering consultant from 2014 to 2017.

In September 2017, during Hurricane Irma, the Village's Dune System proved beneficial in absorbing wave energy and protecting upland infrastructure. A series of inspections were performed in March, May and June 2018 to assess the impacts of the vegetation and its growth recovery. The final report identified an area of 6,041 square yards in need of replanting with 18,123 fifty cell Sea Oats. The report also identified areas in need of sand replacement due to erosion caused by Irma.

**7. Were any objectives not reached or is implementation behind schedule? If so, state why:**

No. The majority of the objectives summarized in the table under Item 6 have funding sources identified and are on schedule for implementation.

**8. Should new projects be started or should any of the recommendations or objectives be revised:**

Since the majority of the objectives have either been completed or commenced with funding, several new projects related to drainage improvements were recommended for implementation summarized as listed in Attachment 1 and were included in the 2018 Miami Dade County's LMS update.

**9. Progress Report discussed and/or made available publicly.**

The FMP Update report was prepared by the Procurement and Sustainability Director, Village Representative for Stormwater Projects, Village Floodplain Manager and CRS Coordinator.

A copy of this report can be obtained in the Village's website [www.keybiscayne.fl.gov](http://www.keybiscayne.fl.gov)

For more information please contact Mariana Dominguez-Hardie, CRS Coordinator at [mdominguez@keybiscayne.fl.gov](mailto:mdominguez@keybiscayne.fl.gov)