

Local Mitigation Strategy



Whole Community Hazard Mitigation Part I: The Strategy



November 2014

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INTRODUCTION

The Local Mitigation Strategy (LMS) is a whole community initiative designed to reduce or eliminate the long-term risk to human life and property from hazards. The LMS plan is a multi-volume plan that documents the planning process and addresses mitigation measures in relation to the hazard risk and vulnerability assessment of Miami-Dade County. This is a living document that is updated to integrate and reflect current and projected issues as identified and track mitigation measures and actions that have occurred, are occurring, are planned for or are desired. This plan is a compendium of efforts of the whole community, integrating governmental and non-governmental agencies such as non-profit, private sector, educational and faith-based organizations as well as communities, families and individuals. A study conducted by the Multi-hazard Mitigation Council shows that there is a four dollar savings for every dollar invested into mitigation measures.

This version of the plan is the five year update with inclusion of new initiatives including the integration of climate change, sea level rise and additional measures to address flooding and the Community Rating System. This plan was open for public review and comments received were integrated and then the plan was submitted to the Florida Division of Emergency Management (FDEM) and the Federal Emergency Management Agency (FEMA) for review and approval. Once this plan is approved at the federal level it will be submitted to the Miami-Dade Board of County Commissioners (BCC) for adoption. A review of the changes that have been made to the LMS since its last adoption in 2010 is provided in *Part 1* under Section “LMS Revisions Since Last Adoption” and *Part 4: Appendix A*.

Purpose

The purpose of the LMS is to develop a comprehensive approach to effectively reduce the impact of current and future hazards and risk faced by local communities within Miami-Dade County.

The LMS accomplishes this through the following measures:

- A planning process that encourages whole community participation and input
- Review and incorporation of community plans, local, state and federal regulations and guidance, studies, reports and technical information
- Overview of past and present occurrences and projected future hazard events
- Linkage of mitigation measures and actions to the Threat and Hazard Identification and Risk Assessment (THIRA)
- Identification of measures and actions as LMS Projects that have been accomplished, are planned for implementation or identified as potential or future initiatives
- Identification of potential or actual funding sources

- Integration of GIS to provide maps to illustrate hazard and risk areas, consequence analysis and mitigation measures
- Semi-annual reviews and updates of all strategy components
- Regular meetings, informational bulletins, trainings and workshops to engage the mitigation participants
- An identified process for monitoring the overall progress of mitigation strategies and documentation of completed initiatives

This strategy will continuously evolve to address current and future risk and vulnerability.

How to use this Plan

The LMS is divided into seven parts:

Part 1 – The Strategy – Provides an overview of the LMS and identifies how the program is implemented, the integration and update of plans, identifies authorities and references that guide the program, and sets forth the goals and objectives for specific measures and actions to address the threats and hazards faced by our communities.

Part 2 – The Projects - Contains the list of projects identified by Working Group members for mitigation measures/actions they have completed, are pursuing or one day hope to implement, and the methodology for how projects are initially prioritized.

Part 3 – Funding – Identifies potential funding sources for mitigation projects.

Part 4 – Appendices – This section contains a number of supportive documents including

- List of Updates made to the plan since the last adoption
- List of LMS members including Steering Committee, Working Group and Sub-Committees
- Miami-Dade Resolution Adopting the LMS
- State Letter approving the LMS
- FEMA Letter approving the LMS
- Local Charter information for Metropolitan form of Government
- Integration Document
- THIRA
- Economic Assessment
- Maps
- Community Survey

Part 5 – Meeting Notes – Contains meeting notes and attendance since the beginning of the program

Part 6 – Completed Projects – Contains a description of some of the completed projects

Part 7 – Flooding: The NFIP (National Flood Insurance Program) and CRS (Community Rating System) – Contains information specific to flood management plans and identifies activities in support of the CRS program

All parts of the LMS are published separately to allow for intermittent updates.

All of these sections are published on the LMS website and are open for public comment at any time, the plan is at <http://www.miamidade.gov/fire/mitigation.asp> and comments can be sent to mdlms@miamidade.gov.

LMS ORGANIZATIONAL STRUCTURE

The LMS is a reflection of initiatives that are identified and supported by the LMS Coordinator, LMS Co-Chair, the LMS Steering Committee, the LMS Working Group (LMSWG) and LMS Sub-Committees (LMSS-C) and ultimately adopted by local elected officials. A complete listing of the participants of the LMS are listed in *Part 4 Appendices B and C*.

LMS Coordinator/Chair

The Whole Community Infrastructure Planner of the Miami-Dade Office of Emergency Management (OEM), serves as the LMS Coordinator/Chair. The LMS Coordinator is responsible for the review, monitoring, update and maintenance of the LMS plan, coordination of meetings, trainings, review and archiving of LMS Projects and dissemination of information pertinent to the mitigation goals and objectives set forth in the LMS. The LMS Coordinator participates in workshops, trainings and conferences throughout the year to benefit the LMS. The LMS Coordinator maintains a distribution list of persons interested in mitigation and is responsible for the website updates.

LMS Co-Chair

The LMS Co-Chair is an appointed position by the LMS Steering Committee and assists the Chair with review and development of documents, provides consultation to the Chair and is responsible to stand in for the Chair in case of any unforeseen absences.

Steering Committee

The Steering Committee acts as a “board-of-directors” and is responsible for the development of policy guidance. Members of the Steering Committee are representative of the organizations found within the larger Working Group (i.e. municipal, county, educational, not-for-profit, private sectors and individuals). The Steering Committee acts as a review committee for the establishment of this LMS and the prioritization of the projects therein when a limited funding source is available. Membership on any committee shall be voluntary and subject to the review and approval of the LMSWG. A committee member who fails to attend a reasonable number of committee meetings may be dropped from participation in the committee by a majority vote of the other members of that committee.

Currently, any planning and program development issues are addressed through as-needed Steering Committee meetings and in an open forum through the quarterly meetings.

LMS Working Group (LMSWG)

The LMSWG is composed of representatives from eight main groups:

- Municipalities
- County Departments
- Colleges and Universities
- Hospitals and Health Care
- Private Non-Profit
- Private Sector/Businesses
- Regional, State and Federal Partners
- Other Stakeholders, including private citizens

The makeup of the LMSWG is not limited to any particular organization or jurisdiction. Numerous others have expressed the desire to participate in the LMS and are welcome to do so. Each organization is encouraged to solicit participation and commentary from its citizens, employees and members.

To be considered a participant of the LMS and receive the benefits thereof, a municipality, county department or any other organization must attend at least two of the four quarterly meetings held each year. The LMSWG endorsed this policy unanimously on September 20, 2001. However, any organization may substitute regular participation and attendance on an active LMS committee or subcommittee in lieu of attendance at the quarterly meetings. The agencies that are participating in the LMSWG are identified in *Part 4 Appendix B*.

LMS Sub-Committees (LMSS-C)

In order to streamline the Working Group's activities, various sub-committees may be formed, each addressing an area of concern as needed. Initially, committees were formed to deal with flooding, evacuations, funding, community education, external policy, agriculture and wildfires. The formation and disbandment of sub-committees is done in correlation with the trending issues that need addressing and participation from the working group members. The current listing of sub-committees may be found in *Part 4 Appendix C*.

Meetings

The Steering Committee and Sub-Committees meet as needed and the full Working Group meets once each calendar quarter. A listing of meeting notes and attendance records are kept in *Part 5*. Working Group meetings announcements are posted on the LMS webpage and emails are sent to a distribution group of representatives maintained in the LMS Contact list, maintained by the LMS Coordinator. The representatives are encouraged to post meeting notifications prominently, on community bulletin boards or in some other way, to notify the public or other interested parties at least thirty days prior to each meeting. Meeting times, dates and locations will also be posted on the LMS website: <http://www.miamidade.gov/fire/mitigation.asp>.

PLANNING PROCESS

In the spring of 1998, the state of Florida contracted with and provided funding to each of the counties within the state to develop an LMS. Community members embraced the LMS as the devastation of Hurricane Andrew, was still fresh in their memories. The first meetings were set and development of the original strategy was begun. The plan has evolved over the years to encompass the changes in our communities and evolution of hazards and risks.

The LMS Coordinator with the assistance of the LMS Steering Committee, and input from the LMSWG, LMSS-C and the general public, undertakes to incorporate updates and monitors the plan to keep it relevant and forward looking. Updates will be based on factors such as recent disaster events, changes in local, state, and federal policies and legislation, changes in development and comments and input provided on the plan. The LMS takes into consideration emerging issues such as aging infrastructure and housing stock and how new development and redevelopment projects impact our communities. The elements listed within the "Review and Revision Criteria" section of the document will be used as monitoring criteria for this document.

The LMS Coordinator includes a listing of the revisions made to the plan in relation to these factors, as documented in the section entitled “LMS Revisions Since Last Adoption”.

Annual Updates

The LMS is updated on an annual basis and as part of a regular update and monitoring process. Any proposed changes will be reviewed and compared against LMS and CEMP Crosswalks provided by FDEM, the Emergency Management Accreditation Program (EMAP) Standards and the CRS Coordinator’s Manual. An annual update to the LMS is provided to the State by January 31st every year and the documents are subsequently posted on the local website.

Semi-Annual Updates

To keep the project list updated, agencies with listed projects are requested to review and update them on a semi-annual basis by June 30 and December 31 respectively. *Part 2* of the LMS will be updated in July and January, following a review of the updates by the LMS Coordinator.

Monthly Updates (as needed)

Part 7 of the LMS may be utilized by CRS communities to post their Annual Activity 510 Progress Reports. CRS communities are responsible for sending this information to the LMS Coordinator for inclusion. An update to *Part 7* will be posted on line by the last calendar day of any month during which time a 510 report was received. It is the responsibility of the CRS community to provide their reports to the LMS Coordinator at least 10 working days in advance of the end of the month to allow for incorporation and posting on the website.

Public Review and Comment

At all times, the latest published version of the LMS will be posted on the Miami-Dade County Internet website – <http://www.miamidade.gov/fire/mitigation.asp> – for public review and commentary. Any comments received through this medium will be incorporated through the revision process identified above. An email address, mdlms@miamidade.gov, has been established for such commentary, which is strongly encouraged.

The LMS Quarterly meetings are posted on our website and for the five-year review process, additional municipalities also advertised the meeting, review process and website.



In October 2014, OEM posted a message on our Facebook page and sent out tweets via Twitter to encourage community members to review and comment on the draft of the plan.

Five-Year Update

A complete state and federal review and approval of this plan and is conducted on a five-year cycle. The plan has undergone review and approval from FDEM and FEMA in 2000, 2005 and 2010. The five-year review process incorporates the annual updates and a review of the Local Mitigation Strategy Crosswalk as provided by FDEM. FDEM notifies the LMS Coordinator twelve months in advance of the plan expiration. The plan is updated and prepared for the third quarterly meeting of the fourth year for public review and comments on the plan. Once all comments are reviewed and incorporated as deemed appropriate, the updated plan will be submitted to the FDEM, by the LMS Coordinator, for review approximately six months prior to its expiration.

FDEM will review the plan and provide comments, and if needed the LMS Coordinator will make revisions to satisfy any crosswalk deficiencies. Once the plan has been approved by the state it is then sent to FEMA for review and a similar process occurs until it is approved by FEMA.

Plan Adoption

Once the plan has been approved by FEMA, the plan will be submitted to the Miami-Dade Board of County Commissioners (BCC) for adoption. Miami-Dade County has a metropolitan form of government with its own Home Rule Charter (see *Part 4 – Appendix G* for additional information). 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.

Local communities that wish to utilize the LMS as their floodplain management plan for credit under the CRS program must also do a local adoption of the LMS. Copies of the local adoption should be sent to the LMS Coordinator to be incorporated into *Part 4*.

Review and Revision Criteria

This document will be updated by the LMS Coordinator with the assistance of the Steering Committee and input from the LMSWG. The majority of revisions made to each section of this document are based upon LMSWG meetings where comments are sought from participants. The public is also given an opportunity to review this document and provide comments through the Miami-Dade County website. Revisions may also be made based upon experience from any significant events such as a hurricane, destructive tornado, severe hazardous materials spill or any other occurrence where mitigation could benefit the community. Changes in federal, state, and local laws will also be reflected in the updated version of this document. The revisions will then be documented and posted on line and/or sent out via LMS Information Bulletins by the LMS Coordinator to all affected parties.

The evaluation criteria which are used include:

1. Have there been any new mandates from federal, state or local agencies that require changes to the Local Mitigation Strategy? Any new or changing laws, policies or regulations?
2. Are there any societal developments or significant changes in the community that must be added to the current LMS? Does the LMS still reflect the concerns of the community? Are the demographics the same? Has there been any growth or development in hazard areas?
3. Have there been any changes in funding sources or requirements?
4. Are there any recent technological developments that should be reviewed for inclusion in the LMS document?
5. Should the LMS be updated to include any new forms of hazards or areas of vulnerability within our community?
6. Have there been any changes in the Comprehensive Plan or any other form of standard operating procedure?
7. Have any of the mitigation opportunities been implemented? Are the priorities for implementation the same?
8. What are the recommendations or lessons learned from any major incidents that have occurred during the past year?

During the revision process, each criterion is addressed to determine if they are still valid and adjustments are made as necessary. When satisfied that the criteria are appropriate, each of the outstanding mitigation opportunities is then compared against the cri-

teria. All existing mitigation opportunities that are determined to still be viable projects will remain on the project list. All those that are determined to be no longer workable will be set aside for further review and revision or, dropped as no longer feasible.

PROGRAM BENCHMARKS

This section provides an overview of the highlights of the plan as well as recent updates to the plan in relation to risk analysis and changes in development. A complete listing of all of the meeting minutes since the beginning of the LMS program may be found in *Part 5*.

1998 – Miami-Dade County began developing a LMS program through funding from the State of Florida.

September 1999 - The Miami-Dade County LMSWG voted to continue the LMS program with or without state funding.

March 2000 - The LMSWG determined that the LMS master document should be updated two to three times each year and the updates, including the project list for new, updated, completed and deferred projects would be updated twice a year.

June 6, 2000 - The Miami-Dade BCC passed Resolution R-572-00 formally adopting the Local Mitigation Strategy as official county policy thus further promoting program continuity.

September 13, 2000 - Miami-Dade County, along with its municipalities and other organizations was designated by FEMA and the Florida Department of Community Affairs to be a “Project Impact Community.”

December 6, 2000 - The LMSWG agreed that they would become the Project Impact Working Group and that the LMS would continue under the auspices of Project Impact. Henceforth, Project Impact and the LMS became synonymous.

December 2000 - The LMSWG determined that the LMS Project List would be updated by June 30th and December 31st of each year.

May 30, 2001 - A formal “signing ceremony” took place at Vizcaya Museum and Gardens for members of the LMSWG to sign a proclamation for becoming a “Project Impact Partner.” (Although FEMA no longer endorses Project Impact the LMSWG agreed that the Project Impact concept will continue in Miami-Dade County regardless of what it is called.)

June 7, 2005 - The Miami-Dade BCC passed Resolution R-710-05, which states that grant applications filed under the auspices of the Miami-Dade Local Mitigation Strategy

no longer have to go to the Commission for approval, but instead authorizes the county manager to “*Apply for, receive, expend and amend applications for grant funds for projects listed in the Miami-Dade County Local Mitigation Strategy.*”

June 2008 – The LMSWG celebrated its 10th anniversary with over 300 completed mitigation projects at a value exceeding 250 million dollars. A listing of completed mitigation projects that have been tracked may be found in *Part 6*.

November 2009 - The County Mayor delegated signature authority to the Director of Emergency Management for contract and grant-related documents under the purview of the LMS Program. This was renewed in 2012.

April 10, 2010 – Adoption of the five-year update of the LMS by the BCC

May 5, 2010 - FEMA approved the five-year update of the LMS

LMS Revisions Since Last Adoption

This section provides an overview of the achievements of the LMSWG to continue to promote and incorporate mitigation measures across the whole community concept and address changes to our risk profile and development and re-development.

September 2010

- September 15 Quarterly Meeting open to the public
- Climate Change considerations were presented at the Quarterly meeting and the County’s publication Green Print is referenced regarding planning measures. It is recommended that the LMS incorporate Climate Change into the hazards and mitigation measures.

December 2010

- December 15 Quarterly Meeting open to the public
- The International Hurricane Research Center has started a competition for high school students to design a mitigation project that is to be tested in front of the large fans of the Wall of Wind. This outreach project promotes the next generation to consider mitigation measures during design and development.

January 2011

- Annual update to the FDEM submitted by the LMS Coordinator.

February 2011

- OEM received the updated Florida Statewide Regional Evacuation Study Program results that included expanded storm surge areas that were modeled using

the Sea Lake Overland Surge from Hurricanes (SLOSH), new Lidar data and slightly larger storms. From this an analysis of the potential areas for evacuation will be determined.

March 2011

- March 16 Quarterly Meeting open to the public
- SFWMD presented on their work in the C-4 (Tamiami Canal) Basin and the major mitigation work that was implemented there after heavy rain events in 1999 and 2000. This project continues to mitigate flooding in those areas. SFWMD continues to plan and work with local jurisdictions on flooding concerns.

June 2011

- June 15 Quarterly Meeting open to the public
- Funding opportunities were discussed, focusing on Pre-Disaster Mitigation monies and how to maximize the chances of getting funded.

September 2011

- September 21 Quarterly Meeting open to the public
- Presentation on the International Hurricane Research Center and the work being done in relation to wind research, social sciences, insurance finances, economic and coastal issues. The Wall of Wind is utilized locally to test new mitigation products for compliance with wind impacts.

December 2011

- December 14 Quarterly Meeting open to the public
- The Community Rating System Coordinators Manual will be undergoing significant changes and the LMSWG was encouraged to review the documents and if they had any questions or concerns submit them to Mike Gambino, the LMS Co-Chair and Floodplain Manager for Miami Gardens.

January 2012

- Annual update to the FDEM submitted by the LMS Coordinator.

March 2012

- March 2012 Quarterly Meeting open to the public
- Planning process for the Miami-Dade Post Disaster Redevelopment Plan begins and the LMSWG members are encouraged to participate in the development and have the LMS tie into the long-term recovery and redevelopment of the community after a disaster.

May 2012

- State Department of Economic Opportunity distributes guidance on Adaptation Planning Considerations.

June 2012

- June 2012 Quarterly Meeting open to the public
- Public Works and Waste Management present on the County's Stormwater Management Plan and the ability of their department to monitor real time rain events through over 100 rain gauges.

September 2012

- September 2012 Quarterly Meeting open to the public
- Special presentation on the 20th Anniversary of Hurricane Andrew and how that event helped create many of the mitigation initiatives in Miami-Dade including the LMS, the Wall of Wind, the International Hurricane Research Center and tougher building codes.

December 2012

- December 2012 Quarterly Meeting open to the public
- Discussion and tour of the new Camillus House Norwegian Cruise Line Campus that is a 31,000 square foot building with a 48-bed homeless shelter that is Gold LEED certified and can be used for emergency housing.

January 2013

- The THIRA plan was integrated into the LMS to replace having different hazards identified within the LMS and Comprehensive Emergency Management Plan (CEMP). This will ensure continuity in addressing hazard preparedness, response, recovery and mitigation.
- The Whole Community approach, as described by FEMA, was integrated into the LMS Program to illustrate how the work that is being done is representative of the entire community.
- Annual update to the FDEM submitted by the LMS Coordinator.
- The LMS Coordinator developed a monthly LMS Information Bulletin in order to convey information to LMS stakeholders on a regular basis. Topics include information on upcoming meetings, project requirements, funding and training opportunities and notes from meetings and/or webinars and general items of interest for the group. The LMS Information Bulletins are posted on the LMS website and also sent out via the distribution list.
- Notified LMSWG of the five year update and LMS Coordinator proposed ideas for updates to the plan for input by the LMSWG
- Two new Steering Committee Members were identified: Nichole Hefty, Chief, Office of Sustainability and Paul Vitro, Whole Community Recovery Coordinator and liaison with Emergency Support Function (ESF) 18 – Business Recovery.

February 2013

- The LMS Coordinator met with the Steering Committee to discuss the vision of the program moving forward and identifying actions to be addressed in the 2015 update of the LMS. Items identified for action included:
 - Review and update of the project prioritization system and inclusion with projects
 - Potential Sub-Committees that could work on identified initiatives
 - Incorporation of elements from the Community Rating System to obtain uniform credits for CRS communities and provide more information on flooding
 - Incorporation of Sea Level Rise into the THIRA and into the LMS, including mapping of future risk areas
 - Expanding the public outreach opportunities
 - Engaging elected officials
 - Identification of additional grant opportunities
- LMS Information Bulletin highlights Sandy Recovery Improvement Act of 2013

March 2013

- March 20 Quarterly Meeting open to the public
Ideas discussed for the 2015 Update of the plan are presented
The following Sub-Committees were formed to work on identified areas
 - CRS User Group was adopted as an LMS Sub-Committee to address NFIP/CRS and flooding issues
 - Extreme Weather Events to look at the current active cycle of tropical activity, sea level rise, climate change and other weather events that can increase the impact of hazards and vulnerabilities.
 - Education and Outreach to identify opportunities for training, seminars, workshops and public outreach for our participants and the community at large.
 - Structural Committee – to look at best practices and new and upcoming products, codes and rules that can improve mitigation measures.
 - Agricultural to look at hazards and mitigation measures for the agricultural and landscaping stakeholders.
 - Marine Interests to look at hazards and mitigation measures for the marine industry and work on updating a brochure to educate the boating community.
 - Financial/Grants to look at opportunities for funding and grants and help identify best practices to assist stakeholders.
- New Storm Surge Planning Zones were announced based upon the State Hurricane Evacuation Study done in 2010 based on new LIDAR data and increased hurricane size. (See new map in *Part 7*)
- Training sessions offered on new zones and public outreach campaign implemented
- Alliance for Response, a cultural community initiative, works with OEM and LMS Coordinator for outreach to agencies

April 2013

- New Storm Surge Planning Zones available on line
- Agriculture/Landscaping Sub-Committee Meeting

May 2013

- Extreme Weather Events Sub- Committee Meeting
- CRS/Flooding Sub-Committee Meeting
- May 22, IHRC hosts Wall of Wind competition for local high schools

June 2013

- Marine Interests Sub-Committee Meeting
- The LMS Project list was converted from a word document to an Excel spreadsheet in order to standardize information submitted for projects and in anticipation of moving the entire system to an internet based tracking system.
- June 19 Quarterly Meeting open to the public
- Steering Committee Meeting
- Storm surge layer added to FLIPPER (online mapping system offered by OEM)
- Alliance for Response conference

July 2013

- LMS Information Bulletin with focus on insurance and webinar on surge impacts from Superstorm Sandy and mitigation measures

August 2013

- Structural Sub-Committee Meeting
- Grants/Finance Sub-Committee Meeting
- Marine Interests Sub-Committee Meeting
- The Enhanced State of Florida Mitigation Plan approved by FEMA which increases the ceiling for the Public Assistance monies available through the Hazard Mitigation Grant Program

September 2013

- September 18 Quarterly Meeting open to the public
- OEM provided access to the Public Works and Waste Management (PWWM) rain gauges that provide real time rain data from over 100 locations throughout the county. The Local NWS office requests this as well to help with local forecasting capabilities.
- LMS Coordinator begins design and development of LMS Project Board for WebEOC.

October 2013

- The LMS Coordinator and the Steering Committee worked on updating the project prioritization tool for the project list. A proposed update was sent to the Steering Committee members and collectively they worked to modify the tool un-

til it was agreed upon and adopted as the new Benefit Cost Review (BCR) process. The BCR was integrated into the WebEOC LMS Project Board and stakeholders were requested that all projects have a BCR score completed by June 30, 2014. The updated BCR tool may be found in *Part 2 – The Projects*.

- CRS/Flooding Sub-Committee Meeting
- Fifth Annual Southeast Florida Regional Climate Leadership Summit

November 2013

- Education and Outreach Sub-Committee Meeting
- Miami-Dade Water and Sewer Department (WASD) provides a preview of a modeling tool developed in conjunction with the US Geological Service (USGS) that will assist local stakeholders in determining the potential risks of sea level rise based upon various inputs for levels of sea level rise and precipitation and evaluate how land use and water management inputs affect scenarios.

December 2013

- All projects were migrated into WebEOC under the LMS Project Board. Active members of the Working Group were provided training, assistance and accounts to be able to input and update projects on the list. Additional information requested on projects included address specific information and flood basin information so that projects can be tracked geographically. *Part 2 - The Projects* provides more details on this component.
- OEM sponsored the FEMA L-278 class on the NFIP CRS to assist local flood plain managers in learning about the new changes to the CRS Coordinator Manual. This class provided a foundation for the expansion of *Part 7* of the LMS to support our local communities and help provide uniform credits to all of the CRS communities. The LMS Coordinator, 30 local and regional communities and a newly appointed State CRS Coordinator attended the weeklong session.
- December 11 Quarterly Meeting open to the public
- OEM sponsored FEMA Benefit Cost Analysis (BCA) training.

January 2014

- Regional LMS Coordinators (Miami-Dade, Broward, Monroe and Palm Beach Counties) met in relation to the integration of sea level rise into their respective LMS plans and discuss measures moving forward.
- Annual update of LMS submitted to FDEM

February 2014

- Community Preparedness Study implemented to learn more about preparedness, response and mitigation behaviors of the community.

March 2014

- March 19 Quarterly Meeting open to the public

- LMSWG is requested to assist with continued plan updates for the five year update
- Hydrology/Topology layers including canals, basins, contour lines, ground elevation and FEMA flood maps put on FLIPPER
- New Impact Assessment tool introduced, that can be utilized to track event damages and flood impacts

April 2014

- OEM sponsors a Whole Community Planning Workshop to cover topics such as Community Awareness, Emergency Sheltering, Climate Change, Private/Public Sector Planning, Post-Disaster Redevelopment Planning and Storm Surge.
- LMS Information Bulletin announces homeowner readiness workshops that LMSWG members can sponsor in their jurisdictions.

May 2014

- May 21, IHRC hosts Wall of Wind Competition for local high schools
- Feel the Force Event with displays and personnel to address hurricanes, storm surge and flooding.

June 2014

- June 18 Quarterly Meeting open to the public
- The LMS Coordinator began integrating the list of completed projects into the LMS Project Board so as to track the projects all in one place. In 2015 the task of geocoding locations to be able to track on a map where projects have been completed and are proposed to take place will begin.
- The LMS Coordinator set up a meeting with MDWASD to continue working on presenting and rolling out the new model to forecast potential areas impacted by sea level rise
- On June 24, 2014, FEMA (through a contractor, Baker AECOM) held the discovery meeting for the Southeast Florida Coastal Study for an updated RISKMap project. Ninety-three people attended the meeting including representatives from municipalities, county departments, regional partners, and a state representative. The coastal maps identified 28 communities locally that could be impacted by this new study. The collection of data will occur over the next two years with an anticipated date of 2019 for the new maps to take effect.

July 2014

- OEM, WASD, PWWM, Miami-Dade Regulatory and Economic Resources (RER) Office of Sustainability and Office of Metropolitan Planning – Long Range Planning met to discuss the integration of the Adaptation Action Areas into the 2017 Comprehensive Development Management Plan (CDMP).
- *Part 2* of the LMS updated on line

August 2014

- CRS/Flooding Sub-Committee Meeting
- Drafts of Part 1 and 2 of the updated LMS Plan sent to Steering Committee Members for review.

September 2014

- OEM cohosts meeting with WASD to demonstrate the new sea level rise model to a limited group of stakeholders. The presentation was developed to help explain the complex hydrogeology of Miami-Dade County and provide an understanding of the base information utilized in the modeling scenarios. OEM, WASD, PWWM and RER will continue to work together to identify the potential impacts and educate the community.
- Additional draft portions of the five-year update are sent out to LMS Steering Committee members for initial review and comment.
- September 17 Quarterly meeting open to the public
- LMS five-year update open for public comment and posted on LMS website

October 2014

- Sixth Annual Southeast Florida Regional Leadership Climate Summit
- LMS named a Weather Ready Nation Ambassador by the National Weather Service
- October 31 closing date for public comment for five-year update of LMS
- OEM begins update of THIRA, LMS Coordinator actively engaged

November 2014

- Project list updated for plan submittal
- November 24 submittal of five year update to FDEM

December 2014

- December 10 Quarterly LMS Meeting open to the public
Meeting to include presentation from RER adaptation action areas

Recent Development/Redevelopment

Miami-Dade County Regulatory and Environmental Resources (RER) maintains a Comprehensive Development Master Plan (CDMP) to guide future development looking out to the year 2030. A copy of the elements of the CDMP may be found in *Part 4, Appendix H* with a review of how these elements support mitigation measures and areas for consideration. As identified in Land Use (LU) Element, Miami-Dade is looking to emphasize development around centers of activities, development of well-designed communities containing variety of uses, renewal and rehabilitation of blighted areas and contiguous urban expansion when warranted, rather than sprawl. LU-3D identified that

the County shall coordinate with municipalities in Coastal High Hazard Areas and areas with repetitive losses to minimize demand for facilities and services in areas that result in redevelopment and increases in residential densities. LU-3E addresses an analysis on climate change and the impacts on the built environment addressing development standards and regulations related to investments of infrastructure, development/redevelopment and public facilities in hazard prone areas. LU-3K identifies an initiative to determine the feasibility of designating Adaptation Action Areas, areas that may be vulnerable to storm surge and sea level rise impacts and LU-3L identifies that the County will work with the local municipalities to do the same. There are currently nine projects identified in *Part 2* of the LMS that specifically address sea level rise.

Recent years have also shown increased vulnerabilities as the modeling and mapping capabilities improve and as more information is gathered on the potential impacts of climate change and sea level rise. This version of the plan integrates updated information on storm surge and sea level rise and climate change into our hazards, mitigation measures, mapping and project list. LMSWG members continue to identify LMS projects to address aging infrastructure to deal with current and emerging threats. There are currently over 600 projects identified for infrastructure improvements identified in *Part 2*. As an example, Miami Beach has been very proactive in installing new drainage infrastructure and pump systems to mitigate seasonal king tides, which are perhaps a preview of what sea level rise may bring to some of our coastal communities. In October 2014, the elements of the mitigation projects that had been installed were tested by the seasonal high tide and were very successful in limiting sea water from coming up through the storm drains. Our communities continue to include mitigation in their development and redevelopment projects through inclusion in their Master Plans and Capital Improvement plans. Agencies are proactively including mitigation projects into their internal funding and capital improvement budgets, over 150 projects have been identified with these funding sources identified.

A 2014 analysis of our housing stock shows that 48% of our housing stock was built before the first FIRM maps were developed and 22% of our housing stock was built before there were any special elevation requirements implemented by Miami-Dade County. The continued efforts to identify flood mitigation projects is reflected by the 237 identified flood and storm surge projects in *Part 2* of the LMS. The LMS Project Board allows us to track mitigation measures by flood basins with the intent that we can coordinate efforts in areas of RL and SRL. As the FEMA FIRM maps were updated in September 2009 and new Coastal Flood maps are currently being studied and developed, and with the proposals of changes to flood policy rates, the LMS has embraced additional measures to help integrate CRS initiatives to assist communities with maintaining or improving their rating. Hurricane Andrew brought about improved building code requirements and currently about 26% of our housing stock has been built to higher wind mitigation standards since they have been adopted. In the Community Survey conducted by OEM, 57% of the respondents said they do have adequate materials to protect their home from storms and hurricanes. When we compared those that had experienced previous damages to those who did not we saw that 67% of those that had experienced

previous major or catastrophic damage had materials to protect their home as compared to 41% who had never experienced any damages.

As many of the areas of our county are already developed, new development and re-development provide opportunities for structures to be built to or retrofitted to higher building code standards that include wind and flood mitigation considerations. The Beacon Council reported that in fiscal year 2012-13 that companies interested in doing business in Miami-Dade invested \$535 million in new capital investment projects. According to the first quarter Analysis of Current Economic Trends, prepared by the Regulatory and Economic Resources Department, the construction sector has grown 11% since last year but still remains lower than the 2007 peak. Foreclosure rates have declined significantly since 2014, 55% less. More than 1 million square feet of new industrial space has been constructed over the year and 1.7 million additional square feet are under construction.

Representatives from RER and other local and regional planning entities are involved in the Miami-Dade LMS and continue to provide input and guidance to our plan.

Measuring the Overall Effectiveness of the LMS Program

The Miami-Dade LMS strives to continue to evolve and address the issues, concerns and challenges identified and encountered by our participants. Changes in personnel, shifting and diminishing funding sources, emerging and increasing threats and risk, aging infrastructure and housing stock and an increasing, diverse and transient population base necessitate the LMS to continuously take stock, re-evaluate and update the strategy.

Table 1 shows an overview of how we have increased our effectiveness.

Table 1: LMS Program Effectiveness

<p><i>Hazard Assessment</i></p>	<ul style="list-style-type: none"> • Incorporation of the Miami-Dade Threat Hazard Identification and Risk Assessment (THIRA) provides one source for hazard assessment for the Miami-Dade CEMP, LMS and stakeholder agencies to utilize in planning and coordination efforts. • Research and incorporation of climate change and sea level rise identifies potential future risk into THIRA • Incorporation of new and updated maps • Added an Economic Analysis (<i>Part 4 Appendix J</i>) to better understand the employment sectors and potential impacts • Analysis of housing stock to look at structures built before flood plain mapping and regulations • Identification of tools and software to help stakeholders assess and understand risk. Precipitation Frequency estimates from NOAA (<i>Part 7</i>) • New impact assessment tool, ARM360, provided through OEM to local stakeholders to assist with damage assessment after an event to better track and document at risk hazard areas and impacts (<i>Part 7</i>)
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Collaboration	<ul style="list-style-type: none"> • Collaboration with PWWM to access rain gauges and linkage with local National Weather Service to be able to better tie forecasting with real time monitoring for flooding. • Collaboration with the Office of Sustainability and participation in the Southeast Florida Regional Climate Change Compact has increased the number of planning agencies we are working with. • Collaboration with WASD to utilize the ground and surface water model, developed with USGS. Stakeholders were offered training on the software so they can run analyses to better identify the potential impacts of sea level rise at a local level. • Engaging agencies for the update of the NFIP Coastal Study for FIRM maps for Discovery Meeting held June 24, 2014 • Engagement of Alliance for Response (cultural community) including workshops and exercise
Integration	<ul style="list-style-type: none"> • Identification of the LMS as a Whole Community initiative • Review of community planning documents and identifying areas to better integrate mitigation into comprehensive planning and capital improvement (<i>Part 4 Appendix H</i>) • The State of Florida hired a contractor who provided suggested language for the incorporation of climate change and sea level rise into the State Enhanced Mitigation Plan. Miami-Dade used this as a guide in updating the THIRA. (<i>Part 4 Appendix I</i>) • A review of the action items in the Regional Climate Action Plan Implementation Guide was performed and supported. (<i>Part 4 Appendix H</i>) • Hosted L-278 class to assist local communities with the changes in the CRS manual and to identify opportunities to include elements into the LMS, included ISO personnel and newly appointed state CRS Coordinator. • LMS Coordinator active in 2014 update of THIRA including new maps and identification of vulnerable areas in alignment with Comprehensive Preparedness Guide 201.
Project Identification and Tracking	<ul style="list-style-type: none"> • Improved project tracking system through creation of internet based board and encouraged participants to also track any projects that they are doing mitigation on to illustrate all of the mitigation work being done locally (<i>Part 2</i>) • Updated the project prioritization process, Benefit Cost Review, and built it into the project submittal process to help identify benefit of projects based on Suitability, Risk Reduction and Cost and Time. (<i>Part 2</i>) • Began adding previously completed projects to the archive list to build history of mitigation measures. (<i>Part 5</i>)
Public Awareness	<ul style="list-style-type: none"> • Annual Feel the Force event at Museum of Science discussing the hazards, risks and how to prepare for hurricanes and storm surge. • 2014 Feel the Force Event, added flood hazard information to the event • 2013 public information campaign for the new Storm Surge Planning Zones • 2014 Community Survey to gauge the public's awareness of hazards and risks and provide information to the community on storm surge planning zones, evacuation assistance programs, how to sign up for pet-friendly shelters and how to receive alerts. (<i>Part 4, Appendix L</i>)

POLICIES, ORDINANCES AND PROGRAMS AFFECTING MITIGATION

There are many federal, state and county laws and policies that affect hazard mitigation and all the members of the LMSWG. Some of those are:

Federal

1. The Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288 as amended (The Stafford Act) is interpreted by Title 44 of the Code of Federal Regulation (44 CFR) and governs FEMA and emergency management and sets forth the federal concepts for hazard mitigation. It also defines the Coastal Barriers Resources Act (44 CFR 206 subpart J) and describes floodplain and environmental management (Parts 9 and 10).
2. The Disaster Mitigation Act of 2000 (DMA-2K) has also redefined parts of The Stafford Act and those changes have been incorporated into this document. Much of FEMA has been further redefined by the “Post-Katrina Emergency Management Reform Act of 2006,” which was enacted by Congress and signed into law by the President in the fall of 2006.
3. The National Flood Insurance Program (NFIP) and the Community Rating System (CRS) FLA-15, July 1996, sets up a community rating system for flood insurance offering incentives for communities and credits for identified floodplain management activities.
4. National Fire Code, 1993 and NFPA 101 Life Safety Code define uniform fire safety standards adopted by rule by the State Fire Marshal.
5. Title 15 of the Code of Federal Regulations, which defines the Coastal Zone Management Act (15 CFR Parts 923 and 930).
6. Title 40 of the Code of Federal Regulation which defines the National Environmental Policy Act including such mitigation measures as included in the National Emission Standards for Hazardous Air Pollutants (Part 61), Toxic Substances Control Act (Part 763), the Resource Conservation and Recovery Act and CERCLA (the Superfund).
7. Title 29 of the Code of Federal Regulations that defines the Occupational Safety and Health Act containing many hazard mitigation measures.
8. Presidential Decision Directives 39 and 62 are the authorities directing the development of terrorism response.

9. Presidential Policy Directive (PPD) 8: National Preparedness was released in March 2011. The goal of PPD 8 is to strengthen the security and resilience of the US through five preparedness mission areas – Prevention, Protection, Mitigation, Response and Recovery.
 - a. National Protection Framework follows the guiding principles of resilience and scalability, a risk informed culture and shared responsibility.
 - b. National Mitigation Framework establishes a common platform for coordinating and addressing how the Nation manages risk through mitigation capabilities.
 - c. National Response Framework includes establishing a safe and secure environment moving towards recovery.
 - d. National Disaster Recovery Framework focuses on how to best restore, redevelop and revitalize the community and build a more resilient Nation.
10. National Infrastructure Protection Plan (NIPP): provides a framework for programs and initiatives for the protection of critical infrastructure and key resources (CI/KR) and ensures that resources are applied where they offer the most benefit for mitigating risk.
11. PPD – 21 Critical Infrastructure and Resilience establishes a national policy on critical infrastructure security and resilience

State

1. State of Florida Statutes which are pertinent to hazard mitigation include:
 - a. Chapter 161 – Beach and Shore Preservation
 - b. Chapter 163 – Conservation, Aquifer Recharge and Drainage Element
 - c. Chapter 255 – Public Property and Public Buildings
 - d. Chapter 373 – Water Resources
 - e. Chapter 403 – Environment Controls
2. The South Florida Water Management District is a regional government agency that oversees the water resources in the southern half of the state through managing and protecting water resources including balancing and improving water quality, flood control, natural systems and water supply.
3. South Florida Fire Prevention Code 1992-93 (adopted by the County Commission) defines standards for fire prevention and allows controlled burns as mitigation.

Federal, State and Regional Governmental Entities

The federal, state and local entities that perform hazard mitigation functions are almost too numerous to name. However, some of the more prominent ones are: FEMA, the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), U. S. Army Corps of Engineers (USACE), Natural Resources Conservation Service (NRCS), FDEM, Florida Department Economic Opportunities, Florida Department of Transportation (FDOT), South Florida Water Management District (SFWMD) and many more.

The government entities that are located in and affect Miami-Dade County and its municipalities that perform hazard mitigation functions are varied and represent all levels of government: federal, state, county and local. The Federal Emergency Management Agency has funded hundreds of hazard mitigation projects following Hurricane Andrew and to a lesser extent following the 1993 March windstorm or “Storm of the Century,” the February, 1998 “Groundhog Day” storms and more projects have been implemented following Hurricane Irene in 1999 and the October 3, 2000 floods (pre-Tropical Storm Leslie), the tornados of March 27, 2003, the hurricanes of 2004 (Charley, Frances, Ivan and Jeanne) and most recently: Katrina, Rita and Wilma in 2005 and Tropical Storm Fay in 2008. FEMA also delves deeply into mitigation as administrator of the National Flood Insurance Program to which all municipalities in Miami-Dade County are part.

The USACE is responsible for restoration and renourishment of most of the county’s beaches, maintenance of the Intracoastal Waterway, maintenance of Government Cut and the Miami Harbor entrance, and some shared responsibility with the South Florida Water Management District for the canal and levee systems throughout the county. Mitigation functions in these areas by the Corps are multiple and varied.

The South Florida Water Management District is responsible for the operations and maintenance of the primary canals system, on behalf of the USACE, performing flood control operations, throughout the county, based on a schedule of operations, which determined when control structures are opened and closed. Flood control mitigation opportunities exist to benefit all of South Florida through the placement of new and maintenance of existing structures. These structures, located throughout the county, also mitigate against saltwater intrusion into the Biscayne Aquifer from which Miami-Dade County’s drinking water is supplied.

The United States National Park Service controls Everglades National Park that covers one third of the land area of Miami-Dade County and Biscayne National Park that covers over half of Biscayne Bay.

The United States Department of Agriculture’s Farm Service Agency provides assistance to the farming community similar to that which FEMA provides to counties and

municipalities. Also, the Natural Resources Conservation Service (formerly Soil Conservation Service) helps with mitigation such as canal bank restoration and stabilization.

The United States Forestry Service and the Florida Division of Forestry both keep fire trails and fire breaks open, conduct controlled or prescribed burns and assist with debris clearance, all of which mitigate and facilitate fire control by keeping fuel levels low.

The Florida Department of Transportation must be a major participant in any mitigation endeavors undertaken throughout the county. They, along with the Miami-Dade Expressway Authority, maintain and control our major thoroughfares including the expressway system. They also control, along with Miami-Dade County PWWM, Florida East Coast and CSX railroads and the Town of Bay Harbor Islands, the twenty-three movable bridges that cross the Miami River and the Intracoastal Waterway.

County

1. Board of County Commission Resolutions
 - a. R-572-00, which establishes the Miami-Dade Local Mitigation Strategy as official county policy
 - b. R-710-05, which authorizes the county manager to apply for, receive, expend and amend applications for projects listed in the Miami-Dade Local Mitigation Strategy.
 - c. R-451-14, which requires all County infrastructure projects to consider potential impacts of sea level rise during all project phases.
2. Pertinent Miami-Dade County laws include codes and ordinances that govern the unincorporated and municipal activities, as follows:
 - a. Chapter 8(b) of the county code, which deals with emergency management;
 - b. Chapter 11(c) , covering Development within Flood Hazard Districts;
 - c. Chapter 17, i.e. the Housing Code, focused on maintaining the housing stock in decent safe and sanitary conditions;
 - d. Chapter 18b covering right-of-way landscaping
 - e. Chapter 24 covering the activities of the Miami-Dade Division Environmental Resources Management (DERM) for permitting hazardous materials;
 - f. Chapter 28 of the county code which deals with subdivision regulations;

- g. Chapter 33, covering zoning activities for approval of a development of regional impact
 - h. Floodplain Management Program sets the criteria for elevations and assesses the risks for flooding for different areas of the County;
 - i. Miami-Dade County Comprehensive Emergency Management Plan (CEMP) mandates that municipalities have emergency management plans, as well as recommends the performance of hazard mitigation activities;
 - j. Miami-Dade County Comprehensive Land Use Plan dictates current land use and controls future land use and growth throughout the county;
 - k. The Public Works Manual, especially Section D5, concerning coastal construction;
 - l. Dade County Environmental Protection Ordinance, Coastal and Freshwater Wetlands Regulations, Sections 24-58 and 24-59.
- 3. Miami-Dade County Landscape Maintenance Special Taxing Districts provide tree-trimming programs that prevent more severe damage during windstorms.
 - 4. On March 1st 2002 the Florida Building Code (FBC), was adopted by Miami-Dade County and all the Municipalities, consequently replacing the South Florida Building Code. The High Velocity Hurricane Zone (HVHZ) portions of the code are applicable to Miami Dade and Broward Counties only, the HVHZ sections of the FBC in addition to the most current ASCE- 7 standard contains a stricter design and construction measures, especially to protect windows, walls and roof from wind-born debris. In 2012, the FBC was amended to include flood protection measures and use of ASCE-24.
 - 5. The Local Law Enforcement Mutual Aid Agreement with Miami-Dade County designed to coordinate and supplement local resources.
 - 6. The Statewide Mutual Aid Agreement for Catastrophic Disaster Response and Recovery establishes a local resource for all Working Group members that are presently signatories.
 - 7. The Southeast Florida Regional Climate Change Compact set forth an agreement between Miami-Dade, Broward, Palm Beach and Monroe Counties to work in collaboration to address the impacts of climate change on Southeast Florida. The Climate Change Action Plan was subsequently developed to identify and pursue reduction and resiliency measures in the region.

County Programs

Stormwater Management Masterplan

This program has the responsibility of the evaluation of flood protection levels of service. The Stormwater Management (Drainage) Level of Service (LOS) Standards for Miami-Dade County contains 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, 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 following the latest version of the Florida Building Code or as specified in Chapter 11-C of the Miami-Dade County Code, whichever is higher. The incorporated areas of the county (municipalities) may have adopted stricter elevation standards.

Subdivision and Other Regulations.

Miami-Dade County Code imposes certain developmental requirements before land is platted. These relate to the provision of water and sewer facilities, local streets, sidewalks, drainage, and open space. Before use permits or certificates of occupancy can be issued Section 33-275 of the Miami-Dade County Code requires that adequate water, sewage and waste disposal facilities be provided.

Shoreline Review.

The Shoreline Development Review Ordinance was adopted in 1985 and prescribes minimum standards for setbacks, visual corridors and, with its' accompanying resolutions, sets out a flexible review process through which architectural interest, building orientation, landscaping, shoreline use compatibility, access, and other design related elements can be negotiated with the developers and enforced by the local governing jurisdiction.

Area Plan Report

Since 1998, Area Plan Reports have emerged as a preferred planning technique for community visioning and helping to find answers to fundamental planning questions. An Area Plan Report is a practical planning technique, which blends public participation, detailed planning, and the development of implementation tools. Its principal focus is the creation of planning products (instead of processes). Public participation is indispensable for a successful Area Plan Report. The overriding objective is the creation of a detailed plan, which resolves areas of concern identified in the Area Plan Report study area; often these concerns involve capital improvements such as roads, sewers, sidewalks, parks and other community improvements. The Planning and Zoning Divisions of the Department of Regulatory and Economic Resources (RER) implements the Area Plan

Report process as a collective planning effort that develops a small area plan which incorporates the priorities of a community.

Coastal Management

The Beach Restoration and Preservation Program is Miami-Dade County's mechanism for initiating and coordinating federal and/or State projects essential to the protection and recreational viability of Miami-Dade's ocean shoreline. Local participation in the determination of activities pertaining to beach restoration and preservation is included in the program. The County has benefited from large federal and State funding contributions and the expertise obtained as a result of the program. Most notably, the Miami-Dade County Beach Restoration Project now provides hurricane and erosion control protection for upland property and a vast recreational resource for public use. This project replaced a seriously eroded shoreline sustained only by bulkheads and seawalls, which offered little protective or recreational value. Implementation of erosion control projects is based on the following criteria:

1. Need for protection of public safety and property in areas threatened by coastal erosion.
2. To provide enhanced beach-related recreational opportunities for both visitors and Miami-Dade County residents.
3. To provide more effective and efficient long-term management of our natural and restored beach systems.

The Biscayne Bay Restoration and Enhancement Program objectives are to maintain or improve ecological, recreational, and aesthetic values of Biscayne Bay, its shoreline, and coastal wetlands. Projects include shoreline stabilization, mangrove and wetland habitat restoration, and bay bottom community enhancement at parks and other public lands. These contribute to erosion control, water quality, and fisheries and wildlife resources.

Future capital expenditures will be directed primarily towards maintaining and enhancing durability of restored beaches and to environmental improvement of the Biscayne Bay ecosystem. All of these projects are developed and carried out based on the best scientific and technical information available to the agencies involved.

Municipalities

1. The Basic Emergency Management Plan sets forth the procedure for all activities of the municipality before, during and after emergencies.
2. A Stormwater Management Plan, which is focused on flood-related hazards and defines the relevant mitigation goals, evaluates appropriate and feasible mitigation measures and prioritizes such measures into an Action Plan for systematic implementation.

3. A Floodplain Management Plan manages development in the floodplain. All cities within the county are striving to establish a floodplain management plan and participate in the Community Rating System. NFIP has stated that the LMS may serve as a floodplain management plan for its participants.
4. A Comprehensive Land Use Plan controlling growth and development within the municipality.

Municipal Agencies and Their Mitigation Functions

The municipalities of Miami-Dade County each have within their structure certain departments and agencies which affect and promote mitigation. While these agencies may have slightly different names from city to city, the role they perform in the mitigation function remains the same (e.g. public works or public services or community services, etc.).

Miami-Dade Public Works operates and maintains and operates drainage systems and the secondary canals throughout the County, working with the SFWMD to implement flood control operations, when required.

Police and fire rescue departments: Each of the municipalities except Miami Lakes, Palmetto Bay and Cutler Bay maintains its own Police Department while the cities of Coral Gables, Hialeah, Key Biscayne, Miami and Miami Beach maintain their own fire departments, with the balance of the cities using Miami-Dade Fire Rescue for this service. Emergency responders are essential for alert and notification, lifesaving response, prevention and protection activities that all contribute to lessening the impact of disasters. The police and fire departments also conduct educational seminars to residents to spread awareness on emergency preparedness.

The building department (or building & zoning): The functions of this department relate extensively to a wide range of mitigation projects and on-going mitigation activities. In most of our cities, the Building Official is responsible for interpreting and enforcing all laws, codes, ordinances, regulations and municipal policies related to the construction, improvement, expansion, repair or rehabilitation of buildings within the city. This department ensures that all new construction complies with the Florida Building Code which in itself is a major contribution to hazard mitigation. The department usually is responsible for the management of development in Special Hazard Areas; preservation of open space; general control of land use intensities; and coordination between the capacity of public infrastructure in relation to proposals of private development. This department also ensures all proposed development in the city conforms to the city's comprehensive plan as it relates to urban design of public areas and buildings, infrastructure planning and maintenance of flood data and other statistical information.

Planning and Development Department: Often is a part of the building department and even, at times, a part of public works. However, a number of our municipalities maintain planning and development as a separate entity which interacts within the mitigation strategy in many ways and must be part of the overall strategy especially in the area of urban land use.

Public Works Department: In most of our cities this department is responsible for construction and maintenance of roads, bridges and waterways and storm water management including drainage system development, inspection and maintenance, all functions that relate in various ways to hazard mitigation. Public works activities are a major component of any mitigation strategy.

Analysis of Existing Policies, Ordinances and Programs

In 2014 the LMS Coordinator performed a review of a number of local policies and plans to create an Integration Document (*Part 4 Appendix H*). Additional LMSWG members were invited to participate and assist by reviewing the Integration Document and identifying and reviewing other local policies, ordinance and programs so we may better identify areas where we are in alignment or areas for consideration where mitigation may be better aligned.

As can be imagined, in a county as large and diverse as Miami-Dade, there are numerous planning agencies and documents that are developed. Each many times addresses the needs of their focus (e.g. transportation, emergency management) and each seems to have a different threshold for how often the plan is to be updated and the planning horizon to which it assesses the consideration of hazards and risks.

The Integration Document included in this version should be viewed as a starting point for the LMSWG to discuss, review and identify areas where we as a whole community can be more effective in our approach to mitigation and resiliency.

The Integration Document includes reviews of the following:

- Southeast Florida Regional Climate Action Plan
- Miami-Dade Comprehensive Development Master Plan (CDMP)
- Miami-Dade Emergency Management Recovery Plan
- Miami-Dade 2035 Long Range Transportation Plan
- Florida Administrative Code 9J-2.0256

As the population grows in Miami-Dade County, hazard mitigation laws must address new structures being built in areas susceptible to unusual occurrences either through prohibition, limitation or tougher code to reduce potential losses. For example, new building construction in low lying flood areas must be limited or built in such a manner to minimize impacts from flooding. Similarly, future construction sites of natural gas, elec-

trical and nuclear power plants must have mechanisms in place that will self-contain, or significantly limit, effects of potential catastrophic incidents. As identified in the Integration Document the Miami Dade CDMP Plan addresses a number of planning and zoning issues and the prevention or limitation of development in risk areas. Adaptation Action Areas are being incorporated into the CDMP and they should also be considered in relation to recovery and post-disaster redevelopment.

Local government and the private sector must provide ongoing training and information sessions for the public. Clear, unbiased knowledge is a key ingredient for safety enhancement for the public. Ongoing training could include public information notices and continuous training sessions at local libraries, hospitals and schools. Part of the cost for this training should be borne by those private parties who ask or have businesses that may contribute to an unusual occurrence. For example, construction of a new electrical substation, a natural gas company building a new facility, a professional dry cleaner establishment, a new gas station, etc. would have impact fees assessed to offset the mitigation training costs.

Training and equipment to prepare for and subsequently resolve hazard situations are necessary and vital. Alternative financial resources must be assessed and located in addition to including these costs in all respective governmental budgets.

Periodic review and revision of the local government ordinances, policies and programs must occur no less than once every other year.

Each municipality that has not yet done so should adopt a floodplain management ordinance and participate in the community rating system program. At the present time, the Miami-Dade Local Mitigation Strategy will serve as a floodplain management plan if adopted by a municipality.

MITIGATION GOALS AND OBJECTIVES

Mitigation goals and objectives must be consistent with the goals and objectives of the county and the individual municipalities' master plans, their codes and ordinances, as well as other endeavors that reflect the aspirations for the welfare, safety and quality of life of their citizens.

Goals

1. Reduce Miami-Dade's vulnerability to natural and man-made hazards

Objectives:

- 1.1. Incorporate new and more accurate data, studies and maps that demonstrate the evolution of risk in the county

- 1.2. Identify new and emerging mitigation methods and products for new and retrofitting construction
- 1.3. Identify projects that mitigate expected impacts from hazards identified in the THIRA
- 1.4. Promote mitigation measures to the Whole Community through outreach and education
- 1.5. Harden building envelope protection – including all openings – and inclusion of a continuous load path from roof to foundation on all structures within the county
- 1.6. Reduce flooding from rainfall events
- 1.7. Reduce storm surge hazards and effects by encouraging greater setbacks from shorelines for new developments of waterfront properties, encouraging retrofitting and elevation of structures with high priority consideration for those built on waterfront properties, seeking opportunities to acquire, exchange or otherwise secure limited control of waterfront real estate

2. Minimize future losses from all hazard impacts by reducing the risk to people and property

Objectives:

- 2.1. Adopt land use policies that limit, prohibit or mandate development and construction standards to promote resiliency and reduce risk
- 2.2. Adopt building codes leading to building design criteria based on site-specific evolving and future risk
- 2.3. Identify mitigation projects that reduce risk to vulnerable populations that are at greater risk from hazards
- 2.4. Integrate mitigation into existing structures during regular maintenance and replacement cycles

3. Implement mitigation projects that meet or exceed current codes

Objectives

- 3.1. Design and develop projects that address both current and future risk
- 3.2. Identify projects to address potential threats from climate change such as sea level rise and the impacts of storm surge and breaking waves exacerbated by sea level rise

4. Prevent flood related repetitive losses from natural disaster through education and regulation

Objectives

- 4.1. Map repetitive and severe repetitive loss (RL) areas
- 4.2. Identify projects that will mitigate flood risk in these the RL areas
- 4.3. Track mitigation projects by flood basin to see past, current and future projects and compare to flooding data

5. Promote and support the Community Rating System (CRS) for all communities in Miami-Dade.

Objectives

- 5.1. Incorporate measures into the LMS to help obtain uniform credit for all CRS communities
- 5.2. Identify and track projects in the LMS to demonstrate the role of mitigation measures in reducing flood risk
- 5.3. Provide outreach and educational opportunities
- 5.4. Develop and implement a Program for Public Information (PPI)

6. Promote mitigation measures for critical facilities

Objectives

- 6.1. Continue to invite and work with critical facility stakeholders
- 6.2. Identify and track mitigation measures for existing critical facilities
- 6.3. Assess alternate facilities as identified in continuity of operations plans to determine if the sites are appropriately mitigated
- 6.4. Identify additional sites for emergency sheltering
- 6.5. Integrate sea level rise modeling to project and characterize expected impacts during the expected service-life of critical facilities Protect expressways, major highways and other thoroughfares and, bridges and causeways to provide for continuous, free flowing traffic and circulation as needed for the effective and unencumbered provision of emergency services and evacuation operations

7. Provide whole community planning

Objectives

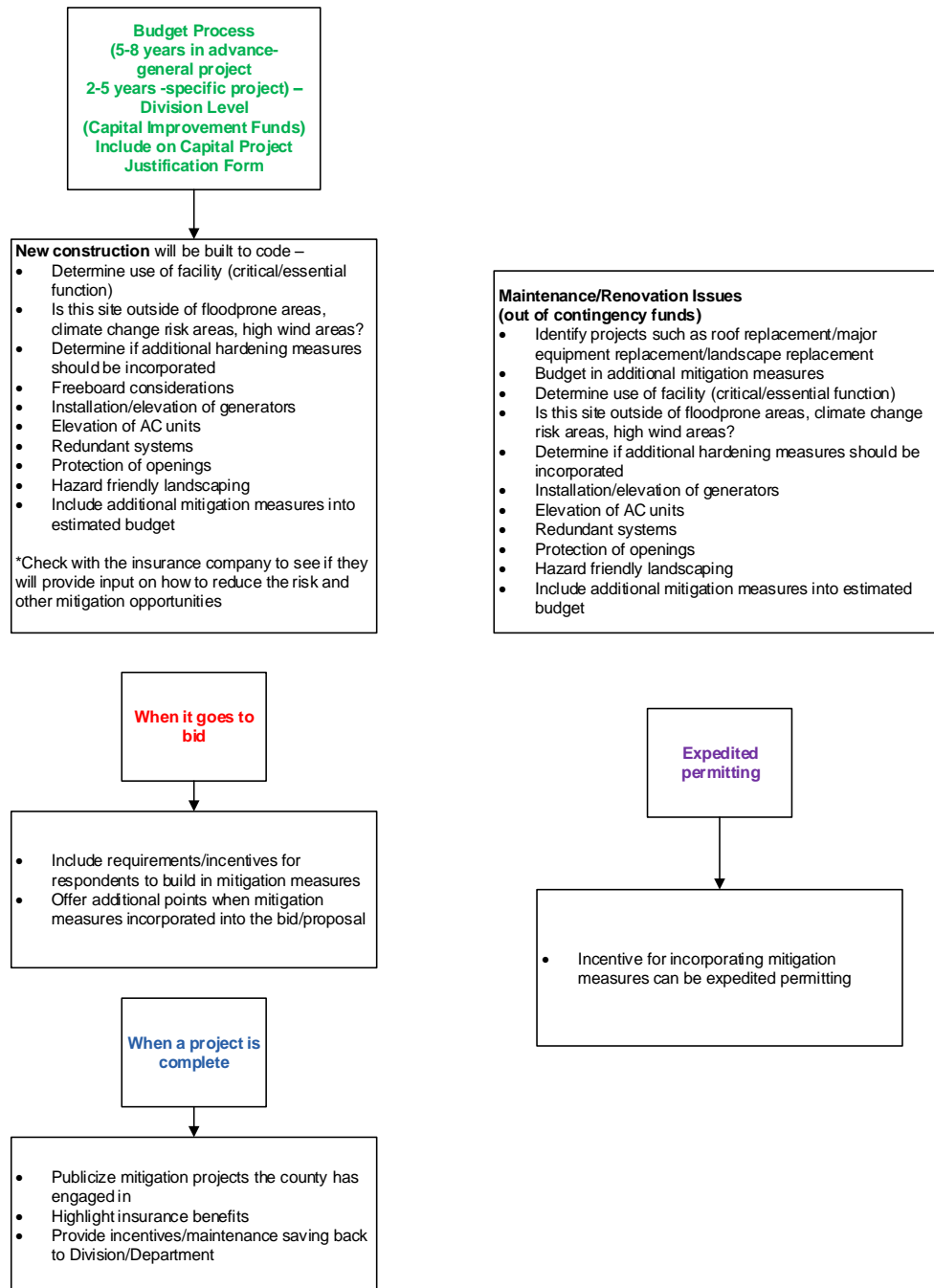
- 7.1. Continue to engage additional local community stakeholders to participate in the LMSWG meetings
- 7.2. Host mitigation workshops to educate stakeholders and community members
- 7.3. Initiate organizational, managerial and administrative goals to make mitigation a mainstream function of government affairs; spread the responsibilities throughout many departments and agencies to ensure continuity and a full integration of mitigation management functions in the operations of government
- 7.4. Enhance public information and engagement to increase awareness of hazards and problems and to educate through a widespread program of general information, media coverage and participatory involvement

Mitigation Opportunities

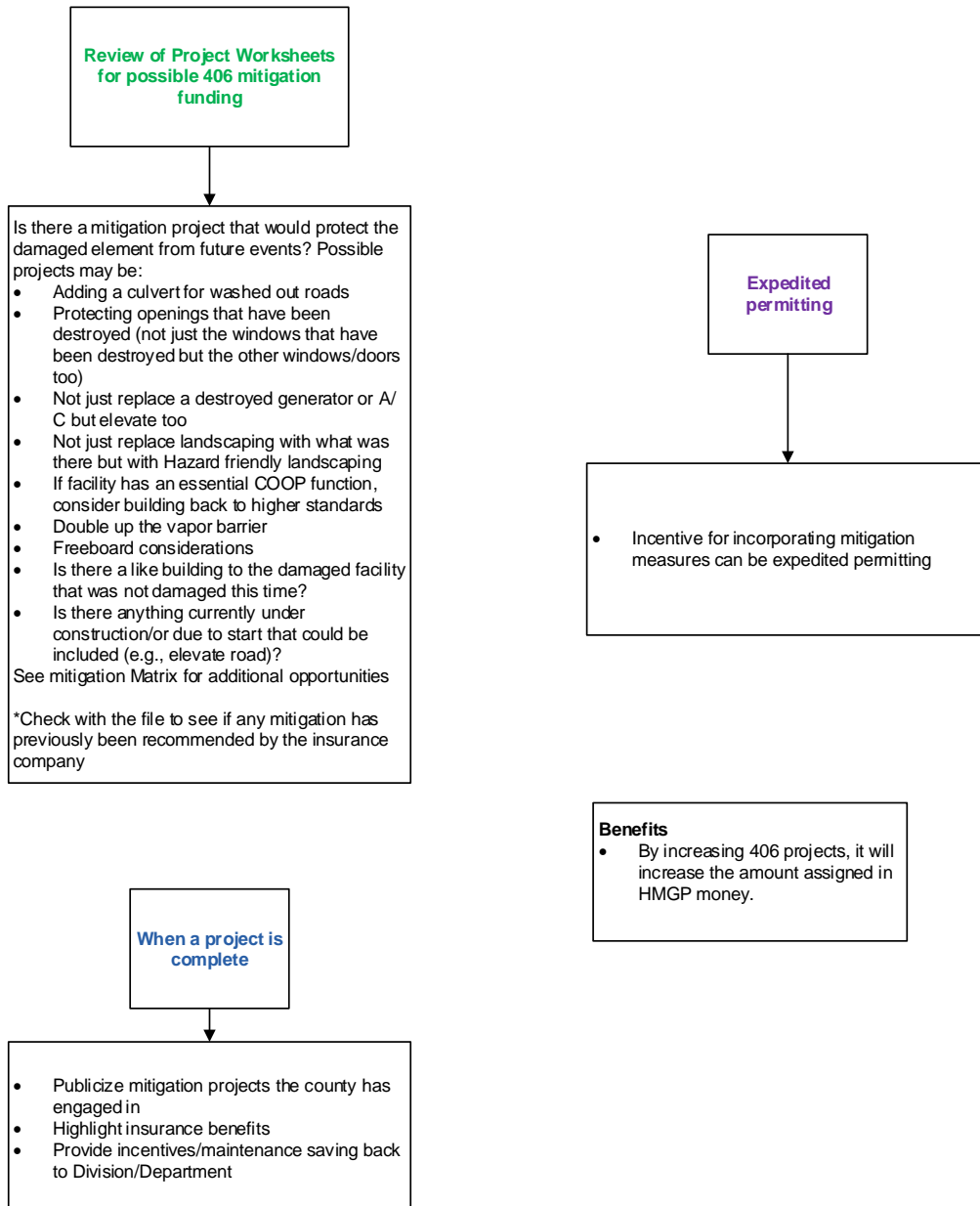
Though some may link mitigation with post-disaster initiatives, opportunities to integrate and promote mitigation are available before, during and after development and con-

struction occurs. The following tables list some opportunities both for pre and post disaster.

Pre-Disaster Mitigation Opportunities/Promoting Mitigation



Post-Disaster Mitigation Opportunities



HAZARD IDENTIFICATION & VULNERABILITY ASSESSMENT

As was touched upon in the introduction to the LMS, metropolitan Miami-Dade County is a large and diverse place and therefore vulnerable to many hazards. These hazards include natural, technological, and societal. Each of these types of hazards is unique and produces distinct impacts to a community. Miami-Dade County developed a **Threat and Hazard Identification and Risk Assessment** (THIRA) in 2011 to provide an overview of all hazards within Miami-Dade County. To minimize replication of information the LMS plan will defer to the THIRA (see *Part 4 Appendix I*) for Sections VI (Hazard Assessment and Consequence Analysis) and Section VI (Risk Assessment Summary). In 2014, The LMS Steering Committee will begin linking potential mitigation actions for the identified hazards as appropriate and applicable.

The following section is the synopsis from *Section VII, Risk Assessment Summary of the 2011 THIRA* that illustrates the probability, consequence and overall risk score of natural, technological, criminal/terrorism and public health hazards.

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NATURAL HAZARDS

Probability		Consequence							OVER-ALL RISK SCORE
Hazards	Frequency & Proba- bility	Potential Magnitude & Scale	Impact Analysis			Capabilities & Capacity	Mitigation	Hazard Con- sequence & Impact Score	
			Social Vul- nerabilities Hazard Imp- act Rating	Physical Vul- nerabilities Hazard Imp- act Rating	Community Conditions Impact Rating				
Natural Hazards									
Droughts	38%	38%	29%	15%	39%	82%	70%	40%	39%
Extreme Cold	17%	11%	29%	15%	34%	82%	67%	32%	23%
Extreme Heat	75%	16%	41%	15%	34%	82%	58%	36%	52%
Flooding	50%	27%	53%	38%	52%	68%	96%	53%	51%
Hailstorms	69%	18%	29%	24%	51%	82%	50%	41%	53%
Heavy Rain	50%	9%	29%	32%	32%	68%	96%	36%	42%
Hurricanes & Tropical Storms	69%	64%	66%	58%	64%	63%	58%	75%	72%
Lightning	75%	18%	29%	15%	29%	82%	96%	32%	49%
Winter Weather / Ice	5%	16%	37%	15%	35%	82%	75%	35%	13%
Sinkholes / Erosion	50%	13%	29%	38%	41%	82%	50%	41%	45%

Probability		Consequence							OVER-ALL RISK SCORE
Hazards	Frequency & Probability	Potential Magnitude & Scale	Impact Analysis			Capabilities & Capacity	Mitigation	Hazard Consequence & Impact Score	
			Social Vulnerabilities Hazard Impact Rating	Physical Vulnerabilities Hazard Impact Rating	Community Conditions Impact Rating				
Natural Hazards									
Space	1%	7%	29%	23%	29%	68%	N/A	29%	5%
Tornadoes	44%	20%	53%	42%	53%	68%	75%	53%	48%
Tsunami	13%	24%	37%	24%	36%	68%	25%	45%	24%
Volcano (Ash)	1%	4%	37%	15%	32%	85%	N/A	28%	5%
Windstorm	50%	18%	37%	42%	45%	82%	75%	45%	47%
Wildfires	38%	13%	57%	42%	51%	68%	63%	53%	44%
Earthquakes	5%	4%	29%	24%	29%	68%	N/A	29%	12%

KEY:

Frequency	Consequence	Capability/Mitigation	Overall Risk
Not Probable/Frequent	Minimal Impact	Very Capable/Adequate	Low Risk
Somewhat Probable/Frequent	Moderately Low Impact	Capable/Adequate	Moderately Low Risk
Probable/Frequent	Moderately High Impact	Somewhat Capable/ Adequate	Moderately High Risk
Very Probable/Frequent	High Impact	Not Capable or Adequate	High Risk

TECHNOLOGICAL HAZARDS

Probability		Consequence							OVERALL RISK SCORE
Hazards	Frequency & Proba- bility	Potential Magnitude & Scale	Impact Analysis			Capabilities & Capacity	Mitigation	Hazard Con- sequence & Impact Score	
			Social Vulnerabilities Hazard Im- pact Rating	Vul- nerabilities Im- pact Rating	Physical Vul- nerabilities Hazard Im- pact Rating				
Technological Hazards									
Dam/Levee Fail- ure	6%	16%	29%	15%	40%	63%	46%	38%	15%
Electric Utility Failure	75%	13%	29%	23%	35%	65%	67%	37%	53%
Hazardous Mate- rials Release	50%	13%	53%	24%	40%	55%	50%	47%	48%
Mass Migration	25%	0%	37%	15%	35%	55%	38%	37%	30%
Nuclear Power Plant Incident	19%	17%	53%	38%	58%	54%	81%	55%	32%
Structural Fires	50%	17%	45%	30%	35%	82%	83%	41%	45%
Transportation Incident	75%	28%	29%	23%	31%	86%	83%	37%	52%
Water/Wastewater Incident	19%	6%	37%	23%	34%	68%	81%	36%	26%

CRIMINAL/TERRORISM HAZARDS

Probability		Consequence							OVERALL RISK SCORE
Hazards	Frequency & Probability	Potential Magnitude & Scale	Impact Analysis			Capabilities & Capacity	Mitigation	Hazard Consequence & Impact Score	
			Social Vulnerabilities Hazard Impact Rating	Physical Vulnerabilities Hazard Impact Rating	Community Conditions Impact Rating				
Criminal/Terrorism Hazards									
Civil Unrest	25%	6%	37%	21%	43%	65%	75%	38%	31%
Cyber Security Incident	38%	2%	29%	30%	39%	68%	75%	36%	37%
Terrorism	19%	46%	53%	47%	58%	55%	54%	65%	35%
Bomb Threat	56%	0%	29%	30%	32%	78%	63%	33%	43%

PUBLIC HEALTH HAZARDS

Probability		Consequence							OVERALL RISK SCORE
Hazards	Frequency & Proba- bility	Potential Magnitude & Scale	Impact Analysis			Capabilities & Capacity	Mitigation	Hazard Con- sequence & Impact Score	
			Social Vul- nerabilities Hazard Im- pact Rating	Physical Vul- nerabilities Hazard Im- pact Rating	Community Conditions Impact Rating				
Public Health Hazards									
Anthrax	19%	13%	29%	21%	42%	61%	50%	39%	27%
Animal / Plant Disease Out- break	13%	3%	29%	21%	35%	71%	N/A	29%	19%
Food Borne Illness	38%	6%	37%	15%	29%	72%	63%	33%	35%
Meningitis	44%	0%	37%	21%	35%	77%	63%	34%	38%
Pandemic / Epidemic	6%	36%	68%	30%	43%	55%	75%	57%	19%
Plague	6%	13%	68%	23%	41%	65%	75%	48%	17%
Water Con- tamination	25%	10%	45%	23%	34%	73%	67%	39%	31%

Hazard Mitigation

This section identifies examples of mitigation measures that address hazards identified in the THIRA. FEMA also maintains a website entitled Mitigation Best Practices that can be utilized to search for mitigation projects that other communities have embarked upon by hazard type, state and FEMA Regions. These projects also identify the funding source that may assist local communities in finding funding for like projects. <https://www.llis.dhs.gov/bestpracticeslist>

Hazard	Discussion	Mitigation Measures
Natural		
Droughts	Moderately Low Risk	<ul style="list-style-type: none"> Water conservation Public education and outreach Regulatory fines National Drought Mitigation Center http://drought.unl.edu/ Drought Resources for Miami-Dade http://miami-dade.ifas.ufl.edu/weather_issues/DroughtPreparedness.shtml
Extreme Cold/Freeze	<p>Low Risk.</p> <p>Threat of carbon monoxide poisoning and house fires from use of some heating elements. The Homeless Trust has a procedure in place to protect homeless populations from such events.</p> <p>Homes with external water pipes could risk freeze but not likely.</p> <p>Agricultural impacts can occur.</p>	<ul style="list-style-type: none"> Identification, designation, construction of cold weather shelters for homeless and other vulnerable populations, and opening of the same during cold weather events. Public education and outreach Agriculture Extension works with local growers for educational material for mitigation of crop losses. http://miami-dade.ifas.ufl.edu/weather_issues/cold%20preparedness.shtml
Extreme Heat	Moderately High Risk	<ul style="list-style-type: none"> Public Education and Outreach Identification, designation and opening of cooling centers for vulnerable populations
Flooding	<p>Moderately High Risk for both inland and coastal flooding.</p> <p>The LMS has an active CRS/Flood Sub-Committee.</p>	<ul style="list-style-type: none"> Public education and outreach on FEMA Flood Zones, storm surge planning zones and general flood risks. Education on Flood Insurance Participation in NFIP and CRS Drainage projects to address RL and SRL areas Freeboard requirements for elevation of structures above BFE Monitoring and coordination for maintenance and mitigation projects along canal areas Monitoring and maintenance of stormdrains Design for larger stormdrains Swale and open space protection Participation in the development of FEMA FIRM maps to help identify at risk areas and areas that have been mitigated

Hazard	Discussion	Mitigation Measures
Natural		
Hailstorms	Moderately High Risk. Though there have been 162 occurrences since 150 they have yielded a low amount of damages.	<ul style="list-style-type: none"> Alert and notification of public to seek safety inside No other current recommendations
Heavy Rain	Moderately high risk of occurrence.	<ul style="list-style-type: none"> See recommendations under floods Review Model Storm analyses and identify mitigation initiatives for the hardest impacted areas
Hurricane/ Tropical Storm	Moderately high risk.	<ul style="list-style-type: none"> Public education and outreach Designation of storm surge risk areas Supportive services (evacuation and sheltering) for at risk populations Hardened facilities for use as evacuation centers See also recommendations under winds and floods.
Lightning	Moderately Low Risk	<ul style="list-style-type: none"> Surge protection for electrical, computer and phone systems Lightning detection and warning devices Public education and outreach
Severe Winter Weather	Low Risk	<ul style="list-style-type: none"> See Extreme Cold/Freeze
Sinkholes	South Florida has a very rare occurrence of sinkholes and when they do occur are most often in relation to a water main break that washes away soil under roadways or structures.	<ul style="list-style-type: none"> Assessment, hardening and replacement of aging infrastructure.
Erosion	Miami-Dade County experiences coastal erosion on a regular basis. The beaches serve as a natural buffer to protect coastal communities from storm surge.	<ul style="list-style-type: none"> Beach renourishment, dune development and hardening. Designation of a Coastal Construction Line to prohibit/limit future development. Preservation/Growth of mangroves and coral reefs
Space	Miami-Dade has not been subject to solar radiation to cause interference with technological components of communication and electrical systems.	<ul style="list-style-type: none"> Identifying redundant or alternate systems in case of outages. Hardening of CI/KR
Tornado	Miami Dade has experienced some tornadoes the highest being an F-3 on the Fujita scale, in 1959.	<ul style="list-style-type: none"> Hardening of structures. Identification of safe rooms and structures. Follow FEMA Safe Room Guidance Increased public awareness Signing up for existing alert and notification systems.
Tsunami	Very low risk to Miami-Dade	<ul style="list-style-type: none"> Education for risk can be also tied to coastal communities currently at risk for Storm Surge.
Volcano (Ash/Dust)	Very low risk to South Florida.	<ul style="list-style-type: none"> Implementation of Sheltering in Place as identified in the Miami-Dade All Hazards Protective Measures Plan.
Windstorms	Low risk, typically associated with severe thunderstorms, hurricanes, tropical storms and tornadoes.	<ul style="list-style-type: none"> Building opening and glazing protection. Hardening of roof structures. Securing roof top equipment.
Wildfires	Moderately low risk typically in the southern, western portions of the county.	<ul style="list-style-type: none"> Prescribed burning programs. Cutting brush or other fuel away from structures. Follow National Fire Protection Association (NFPA) Firewise Communities Program

Hazard	Discussion	Mitigation Measures
Natural		
		<ul style="list-style-type: none"> Roles in Fire-Adapted Communities http://www.usfa.fema.gov/downloads/pdf/publications/fire_adapted_communities.pdf
Earthquakes	Very Low Risk	<ul style="list-style-type: none"> No Current Recommendations.

Hazard	Discussion	Mitigation Measures
Technological		
Dam/Levee Failure	Low Risk	<ul style="list-style-type: none"> Coordination with the State Dam Safety Program, Florida Department of Environmental Protection and South Florida Water Management District for any identified risk
Electric Utility Failure	Moderately High Risk	<ul style="list-style-type: none"> Emergency Generators Hardened utility lines and structures Emergency Evacuation and Assistance Program run by the OEM to assist vulnerable populations Public Outreach and Education
Hazardous Materials Release	Moderately Low Risk	<ul style="list-style-type: none"> Regular onsite inspections of hazardous materials facilities Hardening of facilities with hazardous materials Emergency shut off valves Public Outreach and Education Implementation of All Hazards Protective Measures Plan
Nuclear Power Plant	Moderately Low Risk overall	<ul style="list-style-type: none"> Hardened facilities Public Education, Outreach and Alert and Notification process Protective Actions to shut down facility Turkey Point Response Plan and annual exercises
Structural Fires	Moderately Low Risk	<ul style="list-style-type: none"> Fire suppression safety systems Alert and notification systems Regular Fire Drills and Inspections Development of evacuation plans
Transportation Incident	Moderately High Risk	<ul style="list-style-type: none"> Inspection and maintenance of transportation corridors Building infrastructure to future risk and capacity needs Inspection and maintenance of trains, planes, automobiles and vessels
Water/Wastewater Incident	Moderately Low Risk overall	<ul style="list-style-type: none"> Inspection and maintenance of infrastructure Building infrastructure to future risk and capacity needs

Hazard	Discussion	Mitigation Measures
Crime/ Terrorism		
Civil Unrest	Moderately Low Risk Overall	<ul style="list-style-type: none"> • Intel gathering and sharing • Community gathering points to allow for peaceful demonstrations • Public Outreach and Education • Increased law enforcement presence as a deterrence
Cyber Security Incident	Moderately Low Risk Overall	<ul style="list-style-type: none"> • Intel gathering and sharing • Security procedures and passwords • Firewalls • Tamper proof infrastructure • Surveillance/monitoring of CI/KR sites
Terrorism	Moderately Low Risk Overall	<ul style="list-style-type: none"> • Intel gathering and sharing • See Something, Say Something campaign • Surveillance/monitoring of CI/KR sites • Protective barriers (bollards, cement barriers, bullet proof glass, metal/chemical detection) • Security screening procedures • FEMA 426 - Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings, 2nd Edition (2011) • FEMA 427 - Primer for Design of Commercial Buildings to Mitigate Terrorist Attacks (2004) • FEMA 428 - Primer to Design Safe School Projects in Case of Terrorist Attacks and School Shootings, 2nd Edition (2012)
Bomb Threat	Moderately Low Risk Overall	<ul style="list-style-type: none"> • Security screening procedures • See Something, Say Something campaign • Hardened structures and protective barriers

Hazard	Discussion	Mitigation Measures
Public Health Hazards		
Anthrax	Moderately Low Risk Overall	<ul style="list-style-type: none"> • Security screening of suspect packages • Intelligence Gathering and Sharing • Follow Public Health guidance • Personal Protective Equipment • All Hazards Protective Measures Plan – implementation of Isolation/Quarantine
Animal/ Plant Disease Outbreak	Low Risk Overall	<ul style="list-style-type: none"> • All of the above • Prophylaxis/Fumigation/Pesticides • Follow Public Health or Food and Drug Administration Guidelines • Abandoned Grove Initiative Abandoned Grove Initiative • Agricultural pests http://miami-

		dade.ifas.ufl.edu/Pests_HT.shtml
Food Borne Illness	Moderately Low Risk Overall	<ul style="list-style-type: none"> Follow Public Health guidelines
Meningitis	Moderately Low Risk Overall	<ul style="list-style-type: none"> Surveillance and reporting Follow Public Health guidance Personal Protective Equipment All Hazards Protective Measures Plan – implementation of Isolation/Quarantine Public Education and Outreach
Pandemic/ Epidemic	Moderately Low Risk Overall	
Plague	Moderately Low Risk Overall	
Water Contamination	Moderately Low Risk Overall	<ul style="list-style-type: none"> Follow Public Health guidance Surveillance Security measures around CI/KR Monitoring and Testing Public Education and Outreach

Climate Change

Climate Change considerations were added to the THIRA in September 2014 and as it may impact many of the natural hazards listed, additional considerations to address how we can begin to adapt and mitigate climate change, specifically sea level rise, is through:

- Protection
- Accommodation
- Retreat

Protection refers to shoreline armoring or beach renourishment, which can decrease vulnerability, yet allows structures and infrastructure in the area to remain unchanged. Accommodation does change design through measures like elevation and storm water improvements. Accommodation could be suitable for location dependent structures to accommodate water without compromising use like bridge elevation and downtown storm water improvements. Retreat is a type of a “get out of the way” strategy.

For instance a moratorium could be put on development along coastal areas, meaning to stop new development or rebuilding in coastal areas. Another way to help mitigate the issue of sea level rising would also be to compel residents whose homes are threatened to move. Sometime this involves acquisition of vulnerable land for public ownership, transferring development rights, purchase of development rights, and conservation easements.

In 2011 the Florida Department of Economic Opportunity embarked on a five-year initiative entitle “Community Resiliency Planning for Sea Level Rise.” Miami-Dade is an active member in the effort to develop a statewide planning framework and determine how to best integrate adaptation in to the initiative.

Miami-Dade County Critical Facilities Inventory

The LMSWG recognizes the importance of mitigation to critical facilities and as such uses data supplied by the municipalities and the various county departments to develop a database which includes the critical facilities inventory, NFIP repetitive loss data, historic flood data and the locations of hazardous materials that fall under the jurisdiction of Section 302 of the Federal Emergency Planning and Community Right-to-Know Act. This data has been supplied by the Miami-Dade County Division of Environmental Resources Management (DERM) and the State Emergency Response Commission.

Similarly, Miami-Dade and the municipalities control a huge inventory of properties. Therefore, due to its voluminous size, the listing of non-critical municipal public building and facilities will be maintained separately by the county and each municipality.

A critical facilities inventory is maintained by Miami-Dade Office of Emergency Management (OEM) and the Miami-Dade Information Technology Department (ITD) that includes those facilities that have been deemed critical by the state and federal governments. A copy has been supplied to FDEM as well. The inventory includes GIS coverage for the following: the Miami-Dade County street network, day care centers, medical facilities (MMF, hospitals, nursing homes, adult living facilities), Miami-Dade fire stations, municipal fire stations, Miami-Dade police stations, municipal police stations, solid waste management sites, sewage treatment plants, sewer pump stations, water treatment plants, Miami-Dade County schools, hazardous materials sites, municipal critical facilities inventory, the Miami-Dade evacuation network, and hurricane evacuation centers. In 2014 OEM and ITD updated the *Debris Management Plan* to update debris clearance measures including critical facilities.

While the state and federal government defines critical facilities as those listed above, the Miami-Dade LMSWG has defined critical facilities in three types or levels, which are:

- Level 1 – A facility that must remain available in all circumstances and at all times. The community cannot do without this facility at all. Protective measures are an absolute must.
- Level 2 – A facility that must be restored within twenty-four hours or risk dire consequences to the community.
- Level 3 – A facility that must be restored within seventy-two hours or the community may suffer major problems.

The LMSWG concludes that any facility that the community can do without for more than seventy-two hours is not truly critical; important perhaps, but not critical.

Data Sources Identified

We have identified the following data sources as being important and comprehensive to the accomplishment of our mitigation goals. However, additional data sources will surely be discovered as we proceed with the task of mitigation.

Federal Emergency Management Agency (FEMA)

- National Flood Insurance Program repetitive loss inventory.
- Flood Insurance Rate Maps, hurricane storm surge maps, and previous natural hazard computer modeling results. New FIRM maps were implemented in 2009 and Miami-Dade is currently undergoing a Coastal Study that is slated to be complete in 2019.
- The FEMA website www.fema.gov has a wealth of accumulated data that can be extremely valuable in developing mitigation measures.

Other U. S. Government Databases and Information Sources

- National Hurricane Center and the National Oceanographic Atmospheric Administration (NOAA) historical storm related data (including, National Climatic Data Center).
- The National Weather Service Miami Forecast Office data files.
- National Hurricane Center “SLOSH” models.
- National Priorities List (NPL)
- Comprehensive Environmental Response, Compensation and Liability Information System List (CERCLIS – the “Superfund”)
- No Further Remedial Action Planned List (NFRAP)
- Emergency Response Notification System List (ERNS)
- RCRA Corrective Action Tracking System List (CORRACTS)
- Resource Conservation and Recovery Information System List (RCRIS)
- Hazardous Waste Data Management System List (HWDMS)
- Facility Index Data System List (FINDS)
- Toxic Release Inventory System List (TRIS)
- U. S. Immigration and Naturalization Service databases.

State of Florida

- Florida State University Department of Meteorology hurricane historical database.
- State-Funded Action Sites List (SFAS).
- State Sites List (SITES).
- Solid Waste Facilities List (SLDWST).
- Petroleum Contamination Tracking System Report (PCTS).
- Stationary Tank Inventory System List (TANKS).
- Hazardous Waste Compliance & Enforcement Tracking System List (COMHAZ).
- South Florida Water Management District (SFWMD).

Miami-Dade County

- Municipal and County Emergency Management Plans and Comprehensive Plans.
- Municipal and County Floodplain Management Plans.
- Miami-Dade Stormwater Management Master Plan and Capital Improvements Projects.
- Miami-Dade County, Division of Environmental Resources Management (DERM) GIS database.
- Miami-Dade County, Information Technology Department, Critical Facilities Inventory and other GIS databases.
- Enforcement Case Tracking System Report (ECTS).
- Fuel Spill Report (FSPILL).
- Hazardous Waste Report (HW).
- Industrial Waste Reports.
- Underground Storage Tanks Report (UST).
- Agriculture extension services and databases.

Municipal Agencies

Staff resources, records and data files.

Additional Resources

- The American Red Cross will provide information regarding shelters, as well as staff resources and records
- Internet web sites provided by the Florida Division of Emergency Management as part of the Local Mitigation Strategy Guidebook

CONFLICT RESOLUTION PROCEDURES

The Miami-Dade County Local Mitigation Strategy Working Group has established procedures to resolve conflicts between member entities that may arise from the development of the LMS. It has borrowed extensively from the *Regional Dispute Resolution Process of the South Florida Regional Planning Council*.

These procedures are designed to clearly identify and resolve problems as early as possible, to utilize procedures in a low-cost to high-cost sequence, to allow flexibility in which procedures are used, to provide for the appropriate involvement of affected and responsible parties, and to provide as much process certainty as possible.

There are two basic components: process initiation and settlement meetings. Additionally, there are five optional components: pre-initiation meeting, situation assessments, mediation, advisory decision-making, and referral to other dispute resolution processes.

The Working Group consists of representatives from Miami-Dade County, its incorporated municipalities, county departments and other participating organizations.

In the event of a dispute, parties named in the Initiation Letter (see below) are automatically allowed to participate. Other jurisdictions, public or private organizations, groups, or individuals must be suggested by a named party and agreed to by a majority of the named parties before inclusion; or recommended for inclusion by a mediator mutually selected by the named parties.

Other jurisdictions, public and private organizations, groups, or individuals seeking to become named parties can submit a written petition to the Working Group. Such groups will become named parties if agreed to by a majority of the named parties or by a mutually selected mediator. Named parties have twenty-one days to respond to the Initiation Letter.

Each named party must appoint a representative who should have authority to act. Jurisdictions are encouraged to designate a representative before one is needed. This person will be responsible for the party's interests and maintain communication throughout the process. The representative must be named in writing.

- **Pre-Initiation Meeting:** Any jurisdiction, organization, group or individual may request an informal pre-initiation meeting with the Working Group coordinator.
- **Initiation Letter:** The conflict resolution process begins with an Initiation Letter from a jurisdiction's governing body, which is sent to all named parties and the Working Group coordinator. This must be accompanied by either a resolution or written authorization from the same governing body.

The Initiation Letter must identify the issues to be discussed; named parties to be involved; name of the initiating party's representative; others who will attend; and a brief history of the dispute that indicates why this dispute is appropriate for this process.

- **Response Letter:** The named parties must send a response letter to the Working Group coordinator and all other named parties. The response letter must indicate the respondent's willingness to participate in a settlement meeting and include any additional issues for discussion as well as a brief description and history of the dispute from the respondent's point of view.
- **Situation Assessment:** At the request of a jurisdiction, organization, group, or individual, the Working Group coordinator or other neutral party can perform a situation assessment at any time, before or after initiation of the process. The situation assessment can involve examination of documents, interviews and assessment meetings, and can result in a recommendation concerning the issues to be addressed, parties that may participate, appropriate dispute resolution procedures, and a proposed schedule.

Private interests may ask any member of the Working Group to initiate the process. Any public or private organization, group, or individual may request that the Working Group recommend use of the process. The Working Group can recommend that a potential dispute is suitable for the process and transmit its recommendation to the potential parties.

All requests must be in writing and provide all required information. A Working Group representative must respond after reviewing the petitioner's request; meeting with the requesting organization, group, or individual; and performing a situation assessment. If the Working Group representative agrees with this process, a recommendation will be sent to the potential parties.

- **Settlement Meetings:** At a minimum, the representatives of the named parties must attend the first settlement meeting. This meeting may be facilitated by a member of the Working Group or a mutually agreed upon neutral facilitator. At the initial settlement meeting the named parties must consider adding named parties; consider guidelines for participation; identify the issues to be addressed; explore options for a solution; and seek agreement.

If the settlement meeting is not held or it produces no agreement to proceed with mediation or advisory decision making, then the participating parties may formally withdraw from the process or proceed to a joint meeting of the governing bodies (as in Florida Statute 164); litigation; administrative hearing; or arbitration.

- **Mediation:** If two or more named parties submit a request for mediation to the Working Group, then a representative of the Working Group will assist them in selecting and retaining a mediator. Alternatively, the named parties may request that the Working Group coordinator make the selection or request similar assistance from the South Florida Regional Planning Council.

A mediator who understands hazard mitigation issues and is acceptable to the named parties shall mediate all disputes. Mediators shall be guided by the Standards of Professional Conduct, Florida Rules for Certified and Court Appointed Mediators, Rules 10.020-10.150 F.A.C.

- **Advisory Decision Making:** If two or more named parties submit a request for advisory decision making to the Working Group, then a representative of the Working Group will assist in selecting and retaining an appropriate neutral. Alternatively, the named parties may request that the Working Group coordinator make the selection. A neutral party that understands hazard mitigation issues and is acceptable to the named parties shall handle all disputes.

Initial settlement meetings are scheduled and held within thirty days of receipt of the initiation letter. Additional settlement meetings, mediation, or advisory decision-making

must be completed within forty-five days of the date of the conclusion of the initial settlement meeting.

Timeframes may be altered by mutual agreement of the named parties. The optional components of this process may be used in any order.

In the early stages of the process, the parties should address deferring or seeking stays of judicial or administrative proceedings while using this process.

The form of all agreements shall be determined by the named parties and may include: inter-local agreements; concurrent resolutions; memoranda of understanding; contracts; plan amendments; deed restrictions; or other forms as appropriate.

Agreements signed by the party's representative may be in the form of a recommendation to a formal body and subject to its formal approval.

Two or more parties may reach agreements even if all of the named parties don't agree or don't sign a formal agreement.

After settlement meetings, mediation, or advisory decision-making, the named parties must submit a joint report to the Working Group. The report must contain any statements that any of the named parties wants included as well as:

- An identification of the issues discussed;
- A list of potentially affected or involved jurisdictions, public or private organizations, groups, or individuals (even those who are not named parties);
- A timeframe for starting and ending informal negotiations, additional settlement meetings, mediation, advisory decision making, joint meetings of elected bodies, administrative hearings or litigation;
- Any additional assistance required;
- A cost allocation agreement; and
- A description of responsibilities and schedules for implementing and enforcing agreements reached.

Appropriate opportunities for public input should be considered during the process. Applicable public notices and public records requirements must be observed (Chapters 119 and 120, F.S.).

The participants agree to make every effort to keep costs at a minimum. All costs are to be shared equally among the parties unless otherwise agreed upon or as recommended by a mediator mutually selected by the parties.

To the extent possible, the confidentiality provisions of Chapter 44, F.S. will govern mediation under this process. By participating in this process, participants agree not to offer any comments, meeting records, or written or verbal settlement offers as evidence in subsequent judicial or administrative action.

For further information please contact:

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