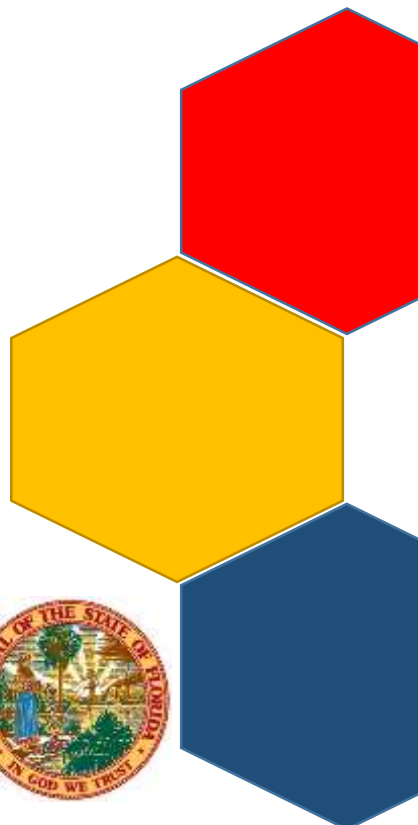




Local Mitigation Strategy Update Manual



Florida Division of Emergency Management
Mitigation Bureau Planning Unit
2018



This manual was created by the Florida Division of Emergency Management's Mitigation Bureau Planning Unit. The idea came from the need to have an easy to use document that would walk planners through the update process and each requirement while providing recently approved examples from Florida county plans. It is not the intent of this manual to replace FEMA's Local Mitigation Planning Handbook (March 2013) or Local Mitigation Plan Review Guide (October 2011), rather it is a supplemental resource.

This manual, along with a long list of other resources, is available in electronic form on FDEM's SharePoint website.

This manual was developed over two and a half years, beginning September 2015 and published May 2018. Once the opportunity was identified, the Planning Unit discussed multiple ways to get the information across. The idea of an update manual came from understanding the difficulties county and state planners faced during the 2014-2016 update cycle. Since all of Florida's counties have a Local Mitigation Strategy, each cycle was purely an update. Many of the existing resources focused on creating a new plan from scratch. Further, an in depth explanation of the requirements would facilitate more consistent training at both the local and state level.

This manual would not have been possible without the hard work of the 2016 Planning Unit staff including Unit Managers, Jamie Leigh Price and Melissa (Schrader) Schloss; Lead Mitigation Planners, Alexander Falcone and Laura Waterman; Mitigation Planner, David Block; and Interns, Paige Dabney, Connie Patterson, Jon Coulter, Sterlin Baychoo, Ana Oviedo, Tyler Dacey, and Eric Green. Other contributors included Jeffery Bielling, Alachua County Emergency Management Assistant Director, and Lee Mayfield, Lee County Emergency Management Planning Chief.

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Overview

Benefits of Having an Updated and Approved Local Mitigation Strategy (LMS) Plan

“The local mitigation plan is the representation of the jurisdiction’s commitment to reduce risks from natural hazards, serving as a guide for decision makers as they commit resources to reducing the effects of natural hazards. Local plans will also serve as the basis for the State to provide technical assistance and to prioritize project funding.” -44 CFR 201.6

Your county LMS plan is a vital document to assist your community in identifying, evaluating and planning for natural hazards. This living document analyzes a wide range of community plans, capabilities, stakeholders and community characteristics to develop effective mitigation initiatives for your community. Furthermore, the Robert T. Stafford Act requires communities to have an approved LMS plan before they are eligible for federal mitigation grants. These grants include: The Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation Program (PDM) and Flood Mitigation Assistance Program (FMA). Your county LMS plan may also be a vital piece to your Community Rating System (CRS) class as well as your Emergency Management Accreditation Program (EMAP) status.

Finally, while Federal regulations require the plan to be updated every five years per Florida Administrative Code 27P-22.004 requires that the plan be reviewed and updates be submitted to the state by the last business day in January of every year in order to be eligible for HMGP. These regulations are designed to inspire regular review of the LMS so that it truly does exist as a living document within each community.

In order for your community to remain eligible and in good standing, both with the State of Florida and with FEMA, it is imperative that you update your plan regularly. This manual will provide guidance for these necessary updates.

The Florida Crosswalk vs FEMA Review Tool: What’s the Difference?

In 2011, FEMA introduced the “Plan Review Tool” as the new preferred method to review and approve LMS plans. The purpose of FEMA’s new Plan Review Tool was to shorten the length of final plan review documents and to more closely align the requirements of the review tool with the Code of Federal Regulations. An unintended consequence of FEMA’s Plan Review Tool is that information vital to plan approval can be easily overlooked. The Plan Review Tool also eliminates the space and requirement for plan reviewers to justify how each of the requirements is met.

In an effort to mitigate the possibility of skipping the various components of each requirement, FDEM’s Mitigation Planning Unit created its own plan review tool that is referred to as the “FL Review Tool”. The Microsoft Excel Workbook contains a number of Worksheets that are linked together; each serves a very important purpose. The Excel Workbook will be used as the primary tool to review new and updated LMS plans in the State of Florida.

The FL Review Tool is based on the 2011 updated FEMA Plan Review Tool and serves to simplify requirements to assist local planners with the planning process and to clarify the various elements necessary to meet the outlined requirements in FEMA's Plan Review Tool. The FL Review Tool assists during the plan review process as it breaks FEMA's requirements down into manageable, straight forward elements which can be better understood and analyzed for compliance.

The FL Review Tool: CRS Credit, EMAP, and CEMP

In addition to identifying the elements in the LMS that will be reviewed by FEMA, The FL Review Tool recognizes the 10-step Planning Process outlined under Section 510 of the Community Rating System (CRS) program. Completing these elements is optional. The primary purpose for including these 10 steps is to help communities see how closely the CRS and LMS requirements align. By completing these steps and documenting the process, communities can come closer to obtaining the maximum number of CRS points for Floodplain Management Planning activities. Values entered into the CRS section of the FL Review Tool auto-populate a CRS worksheet which can then be printed and used during your community's annual evaluation. Keep in mind that the CRS process can be time consuming, it is recommended that this process begin at least 18 months prior to plan expiration.

The FL Review tool also incorporates the Emergency Management Accreditation Program (EMAP) standards. EMAP was created to foster continuous improvement in emergency management capabilities and allows those accredited to be recognized for compliance with industry standards. Accreditation is a voluntary process that gives organizations the ability to demonstrate excellence and accountability within emergency management. The EMAP elements on the FL Review Tool are optional.

The FL Review Tool also incorporates the mitigation elements necessary to an approved Comprehensive Emergency Management Plan (CEMP). The CEMP is the "master" operations document for jurisdictions and includes processes for preparedness, response, recovery, and mitigation. There are three mitigation elements required for an approved CEMP:

1. The County/Jurisdiction must have a FEMA approved Local Mitigation Strategy.
2. The County/Jurisdiction must identify the emergency management person responsible for coordinating mitigation activities with the LMS Working Group.
3. The County/Jurisdiction must describe how they will work with Floodplain Managers to identify damaged structures within Special Flood Hazard Areas. As with the CRS and EMAP criteria, completing the CEMP elements is optional. However, this helps to create a more unified planning process.

The LMS Update Manual Mission and Objectives

The FDEM Mitigation Planning Unit realized a need to develop a manual which would assist in making the LMS update process more efficient and less burdensome for Local and State planners alike. The purpose of this guide is to take the detailed information from various sources and condense the information to provide a usable job aide for the LMS update process statewide. Specific objectives are to:

Simplify the FEMA Local Mitigation Planning Handbook

This manual will condense the information provided in the most recent version of the FEMA Handbook (released in March 2013) and will be consistently updated to reflect any changes made in FEMA and/or state statute requirements. When these updates are made, the State Planning Unit will notify local officials by email of any significant changes. It should be noted though that whether local planners choose to follow the FL LMS Update Manual or the FEMA Local Mitigation Planning Handbook, they are still subject to all FEMA requirements and are expected to stay informed of all changes made to these requirements.

Focus on Updating of LMS plans

As of April 2018, all Florida counties have created an LMS plan. Therefore, this manual will primarily serve as a guide to plan updates. Should the jurisdictions within a plan shift or a jurisdiction decide to develop a new LMS plan, the FEMA Local Mitigation Planning Handbook should be consulted to provide a more detailed view of the LMS process as a whole.

Create a Manual that is Florida-Specific

Hazard mitigation issues that are most relevant to Florida's communities will be addressed and the descriptions will be based on the knowledge that all current LMS plans in Florida are multi-jurisdictional. Additionally, all Florida counties were contacted to gain permission to use portions of their LMS plans to be used as support / exemplary samples for each FEMA element.

Encourage Sustainable Planning

This manual will establish a common understanding of FEMA requirements within the State of Florida, which can be referenced by both local and state planners during the LMS update process. This will allow for clear communication during the turnover of state and local positions and encourage continuity of efforts for future planning committees and units.

Ensure Consistent Plan Reviews

This manual will be used by the mitigation planning unit to develop a common operating picture for all future plan development and plan reviews. The intent is that all future efforts will be marked with consistent expectations and application of requirements across all jurisdictions and all plan reviewers.

Reading the LMS Update Manual

The subheadings of this manual will be labeled according to the element names of the FL Review Tool. The FEMA element names for requirements will be provided in parentheses. As multiple requirements detailed by the FL Review Tool can be attributed to a single FEMA element, the parentheses in subheadings will be the FEMA element names covering that particular FL Review Tool requirement. For example, FEMA [A1] is met through FL P1, P2 and P3. So the guide will show P1 [A1], P2[A1], P3[A1].

The layout of this manual is intentionally structured to facilitate the update process. Requirements will be outlined in a chronological planning order, as following the order of the FL Review Tool from start to finish may not be the most logical order.

Under each section, there will be a thorough explanation of the requirement that emphasizes the concerns expressed by local planners in the past. Following a citation of favorable examples from other plans approved by the State, there will be a paragraph describing in detail what officials should do while updating that particular requirement. These will refer you to specific files in the update manual appendices. The examples' file names will specify the requirement name, the LMS plan's county name, and the year of its approval (P1.CountyName.2018). In these appendices, you will find at least one favorable sample for each requirement. You may choose to follow the formatting of these examples, or you may choose to meet the requirement through another satisfactory form.

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Planning Process

Code of Federal Regulations (CFR)

§201.6 (b) Planning process. An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:

- (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;*
- (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and*
- (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.*

§201.6 (c) Plan content. The plan shall include the following:

- (1) Documentation of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.*

P1 (A1) - Documenting the Planning Process

Does the LMS document the planning process, including how it was prepared (with a narrative description, meeting minutes, sign-in sheets, or another method)?

To meet FEMA requirements, the LMS must show physical documentation of how the plan was prepared, including specified dates, a description of all activities that contributed to the plan's development, and who was involved. Most planning committees choose to include a narrative description of the process and accompany this with meeting minutes, sign-in sheets, and/or public notices.

See Appendix A for a sample narrative description of the meeting process, meeting minutes, and attendance roster.



When updating, be sure to include the above information for ALL steps taken during the past five years. Include proof of meetings during the most recent five years via narrative descriptions, sign-in sheets, and/or meeting minutes. We specifically look for proof of at least one meeting each year and proof that all jurisdictions were participating throughout the process.

P2 (A1) – Identifying the Jurisdictions and their Roles

Does the LMS list the jurisdiction(s) participating in the plan that are seeking approval?

List the participating jurisdictions (e.g. cities, counties, school boards, hospitals, airport authorities) seeking approval and clarify what is required of the participating jurisdictions. At a

minimum, each is expected to take part in the planning process and to have a mitigation action concerning hazards that could affect its jurisdiction. Be sure that the jurisdictions listed remain consistent in all parts of the plans.

Common delays to the LMS approval process are when:

- 1) a jurisdiction is listed but does not appear throughout the majority of LMS documentation OR
- 2) a jurisdiction is not initially listed but appears in other parts of the LMS.

See Appendix A for an example of outlining jurisdiction responsibilities.



Update your plan by reviewing the list of participating jurisdictions to ensure accuracy and change the roles within jurisdictions as needed. You may have new members who wish to become participating jurisdictions. These could include: newly incorporated areas, school boards, utility providers, or healthcare networks. If any incorporated areas in your planning area are not participating in the LMS, provide an explanation of why. Also, be sure to mention any jurisdictions which no longer participate in the LMS. Keep in mind that any jurisdictions that cease participation in the LMS process will no longer be eligible for federal hazard mitigation assistance.

P3 (A1) - Jurisdictional Representation

Does the plan identify who represented each jurisdiction? (At a minimum, it must identify the jurisdiction represented and the person's position or title and agency within the jurisdiction.)

Document who represented each jurisdiction. The plan must identify each person's position or title (e.g. Director), their agency represented (e.g. Sheriff's Office), and the corresponding jurisdiction (e.g. Charlotte County). Be sure that all jurisdictions have some form of representation. It is also recommended to include the name and contact information of each individual. This will provide a starting point for future planning committees and avoid confusion should anyone from the local level or state attempt to contact them.

See Appendix A for an example of listing representatives.



Be sure to update your entire list of contacts and their corresponding information, while ensuring that all jurisdictions are represented.

P4 (A2) - Including Stakeholders in the Process

Does the LMS document an opportunity for neighboring communities, local, and regional agencies involved in hazard mitigation activities, agencies that have authority to regulate development, as well as other interested parties to be involved in the planning process?

Stakeholders that were either given an opportunity to be involved or who took part in the process must be identified by their title/position and agency/organization represented. One possible way of documenting this is to include a general email list, showing the various stakeholders that are invited to participate in the process. Additionally, some committees choose to provide a "task force" list that includes the primary contacts from various stakeholders. This list will likely be composed of

those who are most involved and need to be updated more regularly. As with requirement P2 (A1), you may find it helpful to include the names and contact information. This information can also be provided in a narrative format.

See Appendix A for an example of how stakeholders were invited into the LMS process.



When sending out invitations during a plan update, begin with the list of stakeholders from the previous planning process and decide if any changes are needed. The stakeholders will likely include nearby communities and agencies involved in local hazard mitigation and/or development activities. Including more local agencies, state agencies, and other interested parties such as power companies is a way to continuously improve your plan. In the update, describe any changes to the way stakeholders were invited to be involved in the process. Remember that this is to prove stakeholders were invited, not that they participated in the process.

P5 (A2) - Stakeholder Invitations

Does the plan identify how the stakeholders were invited to participate in the process?

It must be noted in the plan how invitations were sent to stakeholders. Possible forms of invitations include emails, postings on social media or the county website, ads in the local newspaper, and fliers at the town hall or library. Documentation of these invitations is encouraged.

Another method to show that stakeholders were invited is by providing a template of a flier or email that announces the planning meetings. This will reduce the amount of documentation in your LMS plan and provide an outline for future planning committees.

See Appendix A for a sample of an email invitation sent out to stakeholders.



As you update your plan, evaluate past methods used and determine the most efficient and effective method for inviting new stakeholders to participate in the present process. Be sure to specify in the plan how you contacted them and if desired, show documentation (e.g. screenshot of the county website, scanned image of a newspaper or flier, copy of an email). Again, this requirement focuses on proving how jurisdictions were invited to be a part of the LMS process.

P6 (A3) - Public Involvement

Does the LMS document how the public was involved in the planning process during the drafting stage?

There must be an opportunity for the public to participate in the planning process and an effort to incorporate their feedback into the update. To verify this, documentation must be provided that verifies public was invited to be involved in the planning process. Please note that although it is encouraged to include public commentary on the LMS after completion, this alone will not satisfy the FEMA requirement. It needs to be shown that citizens were invited to be involved during the development of the plan. To verify this, you may include documentation of invitations, sign-in sheets from open meetings, a website that allows user reviews/ comments on the plan, surveys that were

completed by the public, and/or a booth hosted at a popular community event.

See Appendix A for a sample of surveys, public notices, and a public feedback statement.



As you update your plan, show how the public was invited to participate in the most recent planning process, and provide documentation of these invitations. When possible, incorporate public feedback into the plan, and make sure it is apparent to the reviewer. Please note that even if no community feedback is received, it is required to state how it could be incorporated into the LMS.

P7 (A4) – Review and Incorporation of Existing Plans and Reports

Does the LMS describe the review and incorporation of existing plans, studies, reports, and technical information?

Examine existing plans, studies, and reports that have been incorporated into the LMS plan. A common method to accomplish this proof of incorporation is to provide citations or reference under tables, diagrams, and maps that are incorporated into your plan from other sources. It is always a benefit to include the source of these images so that the State of Florida's Planning Unit, FEMA, and future planning committees will know where you obtained the information. Please note that it is not required to have a bibliography. A short citation under each image is sufficient.

See Appendix A for a sample of reviewed existing plans and an example of how existing plans were incorporated into LMS Plans.



As you update your plan, review the most recent list of plans and reports that were incorporated into the LMS to ensure that none are outdated or irrelevant. Evaluate new plans, studies, and reports as well, especially concerning recent development in the jurisdictions. Update the list of reviewed sources as necessary and show how any additional material was utilized within the LMS since the last update.

FL Review Tool: Hazard Risk and Vulnerability Assessment

FEMA: Hazard Identification and Risk Assessment (HIRA)

Code of Federal Regulations (CFR)

§201.6 (c) Plan content. The plan shall include the following:

(1) Documentation of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

(2) A risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment shall include:

(i) A description of the type, location, and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

(ii) A description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. All plans approved after October 1, 2008 must also address NFIP insured structures that have been repetitively damaged by floods. The plan should describe vulnerability in terms of:

(A) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;

(B) An estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii) (A) of this section and a description of the methodology used to prepare the estimate;

(C) Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

(iii) For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

R1 (B1) - Description of Hazards

Does the Plan include a general description of all natural hazards that can affect each jurisdiction?

Include a description of all natural hazards for which you plan to mitigate. Man-made and technological hazards may be listed as well, but only natural hazards will be evaluated. Please note that if there are no plans to mitigate a particular hazard, it is recommended to omit it with an explanation (see the next section, R2 (B2)).

Providing a clear description, or definition for each hazard gives clear guidelines to state and federal planners as they review this portion of your plan. For example, should you identify “hail” in your definition of a thunder storm, reviewers will evaluate how this aspect of thunder storms is addressed throughout the entire risk assessment. This is usually accomplished with a scientifically reliable definition of the hazard such as from NOAA.

See Appendix B for a sample of a “Severe Thunderstorms and Tornadoes” description.



While updating, be sure to review your listed hazards and determine if they are still an appropriate list for your LMS; add and omit as needed. Additionally, change the descriptions as desired to reflect what this hazard looks like in your jurisdictions, as well as to reflect updated definitions by NOAA.

R2 (B1) - Omissions of Hazards

Does the Plan provide rationale for the omission of any natural hazards that are commonly recognized to affect the jurisdiction(s) in the planning area?

Should a natural hazard that is commonly recognized to affect the jurisdiction(s) not be listed, an explanation will need to be provided. “Commonly recognized” is usually defined in terms of Florida's Enhanced State Hazard Mitigation Plan. Not including a hazard that the state recognizes as a common hazard will elicit a need to explain its omission. If using your HIRA from your CEMP please keep in mind that any hazards identified must be fully profiled in the LMS. Sometimes it's not practical to mitigate every hazard identified in your CEMP. A common way to meet FEMA requirements, while utilizing a single HIRA, is to add a statement which identifies specifically which hazards are being profiled in the LMS. This is important because every identified hazard must have a full profile and potential project attached to it. Omission of “commonly recognized” hazards will be sufficient if a rational reason is included with the omission. It is not recommended, nor expected for your community to mitigate every hazard. Rather, the goal of the HIRA is to evaluate which hazards have the biggest impacts and pose the greatest threat to your community. From this evaluation the most significant hazards will warrant the attention of the LMS committee.

See Appendix B for an example of omitted hazards.



As you update your LMS, review and revise this section to reflect any changes to your omitted hazard list. Be sure to identify hazards which may be impossible or impractical to mitigate. This can include removing duplicate mitigation efforts such as mitigating the effects of storm surge and Tsunami, when the magnitude of these may be similar.

R3 (B1) - Location of Hazards

Does the Plan include a description of the location for all natural hazards that can affect each jurisdiction?

A description or depiction of the entire location that could be affected by a hazard is a required component of the LMS plan. For wide-ranging hazards, such as severe thunderstorms and

hurricanes, the location of occurrence can be the entire planning area and should be stated as such. For a less expansive hazard, such as flooding, the specific locations that can be affected need to be highlighted on a map or described in narrative format. Should you decide to provide a narrative, it should be detailed enough that someone reading it could examine their own map and delineate the areas to which you are referring.

See Appendix B for a map of flood zones and a description of flood zones.



Update your LMS plan by examining the location descriptions and/or maps. Update them to reflect new developments in the area that will have an effect on the location of the hazard. For example, if there has been a new dam placed in your jurisdiction, this may change the area that can be potentially flooded by a river. As new relevant data and maps appear in other county plans, it is recommended to incorporate these into the LMS plan and note from where you acquired them. This will also help you meet requirement P7 (A4).

R4 (B1) - Extent of Hazards

Does the Plan include a description of the extent for all natural hazards that can affect each jurisdiction?

The potential strength or magnitude of the hazard should be evaluated in the form of a scientifically recognized scale. It is not necessary to provide predictions for the greatest possible disaster. Rather, it is recommended to show the extent of the greatest disaster for which will be mitigated. Here are examples of scales commonly used for extent:

Hazard	Unit of Measurement
Tropical Storms/Hurricanes	Saffir-Simpson scale
Tornadoes	EF-scale
Wildfire	Acres burned
Drought	Palmer Drought Severity Index OR U.S. Drought Monitor Scale
Extreme Heat	Minimum number of days at expected temperature
Winter Storms/ Freezes	Minimum number of days at expected temperature
Erosion	Cubic feet or tons of missing sand
Sinkhole	Depth and Width
Flooding	Depth of Water
Lightning	Density (strikes/second/cubic kilometer)
Hail	Diameter/Size
Wind	Mph
Dams	Acre-Feet Inundation

If the extent is described using a past event in the jurisdiction (ex. “The Fire of 2005”), this past event’s extent must be identified. For the example of fire, it could be described in terms of acres damaged and possibly how many homes, business, critical facilities, etc. were at risk. You may wish to include both the worst possible case, as well as the most common case. For example, your community may be capable of being hit by a category 5 hurricane but most likely it will be a category 2.

See Appendix B for an example of extent.



While updating your LMS plan, evaluate the severity of hazard events in the past five years. If any recent occurrences had a magnitude greater than the upper bound previously planned for, you may wish to consider raising the extent of the hazard for which you will mitigate. If a natural hazard has consistently been significantly below the extent planned for, and there are no plans to mitigate against a hazard of the extent listed, it may be beneficial to lower the listed extent.

R5 (B2) - Previous Occurrences

Does the Plan include information on previous occurrences of hazard events for each jurisdiction?

Previous occurrences must be included from the last 5 years to ensure the LMS is up to date. All occurrences must be listed. However, if there have been too many occurrences to feasibly list (e.g. wildfires or lightning) it is acceptable to state the total number of occurrences and list the largest or most significant cases (specifying date and details). If there have been no previous occurrences in the past five years, it must be explicitly stated for any profiled hazard.

This requirement may also be addressed in the plan's risk assessment introduction by stating that all profiled threats have included all past occurrences for the last five years or state which years the table covers. It is also beneficial to include significant occurrences outside the 5-year limit.

See Appendix B for an example of listing previous occurrences.



For an LMS update, include previous occurrences within the last five years. For hazards with extensive occurrences such as thunderstorms, provide a holistic number of occurrences and spotlight significant occurrences. Be sure to include dates of the events. Additional narratives of the occurrences will often assist in meeting requirement R7. You may wish to keep only the significant events from previous updates.

R7 (B3) – Impacts

Is there a description of each hazard's impact on each jurisdiction (what happens to structures, infrastructure, people, environment, etc.)?

A description of potential impacts for all profiled hazards, in each participating jurisdiction, must be included in the plan. At minimum, the plan should discuss what assets were or could be disrupted/damaged during the hazard event. This may include monetary damage, road closures, infrastructure disruptions etc. Assets include: people, structures, facilities, systems, capabilities, and/or activities that have value to the community. These impacts should not be generic; we are looking for how your community could be or has been impacted.

It is beneficial to cite past occurrences and how they affected the community. This adds jurisdictional specificity to the plan. Detailing how and where previous impacts occurred better prepares jurisdictions involved to mitigate impacts in the future. If there have not been past occurrences, including estimates of potential future losses (e.g. percent damage of total exposure) can be valuable as well, in addition to the narrative.

See Appendix B for an example of potential impacts.



For an LMS update, while impacts may not change significantly since the plan was last revised, it is important to consider how your community assets were impacted during the past five-year period. It is recommended to discuss in narrative form what occurred during previous hazard occurrences, this will often expand your discussion of impacts and meet this requirement. Further, any changes in development or implemented mitigation measures may change expected future impacts.

R6 (B2) – Probability

Does the Plan include information on the probability of future hazard events for each jurisdiction?

The probability of future occurrences for each identified hazard must be included in the plan. The probability of (re)occurrence can be defined in several ways, including: terms of general descriptors (e.g. low, medium, high), historical frequencies, statistical probabilities (e.g. 1% chance of occurrence in any given year), and/or hazard probability maps. A single definition may be used to fulfill this requirement. If general descriptors are used, they must be quantified (e.g. reoccurrence frequency rate per year, percentage rate of reoccurrence per year).

See Appendix B for an example of terms describing probability.



For a LMS update, double check your probability figures to reflect any changes in frequency within the past five years or updates in scientific data. It is possible that you may not have any changes as many hazards rely upon statistical models or historical frequencies.

R8 (B3): Vulnerability

Is there a description of each identified hazard’s overall vulnerability (structures, systems, populations or other community assets defined by the community that are identified as being susceptible to damage and loss from hazard events) for each jurisdiction?

FEMA defines vulnerability as “a measure of the degree in which a jurisdiction, structure, service, or geological area is susceptible to physical injury, harm, damage, or economic loss by the impacts of a particular hazard event or disaster.” In order to meet FEMA requirements, the LMS must explain why the hazards cause problems and why they impact an area of the jurisdiction. It cannot simply be stated that there could be a problem, where that problem could occur, or who will be affected. Asking “why this hazard is a problem for our planning area?” or “Why will this effect X amount/ demographic of people?” will help you stay on track by creating problem statements which can lead to possible mitigation actions. All hazards previously listed in the HIRA should be examined for vulnerability.

Essentially, the vulnerability assessment should summarize why the planning area should mitigate the identified hazards. Vulnerability should go beyond a simple explanation of what could

happen but discuss items specific to the planning area which could be adversely affected.

See Appendix B for example of Vulnerability Analysis of Wildfires.



To update this section in your LMS consider new or previously overlooked problem areas and investigate what is causing these problems. Update previous hazards vulnerability to reflect any changes that have already been completed or are in progress. You can use this analysis to determine future mitigation projects. These assessments should be based on any changes since the last plan as well as expected future changes.

R9 (B4): Repetitive Loss Properties

Does the Plan describe the type (residential, commercial, institutional, etc.) and number of FEMA repetitive loss properties within each jurisdiction?

To meet this requirement, the LMS must state how many of each type of repetitive loss properties are located within each jurisdiction. Physical addresses/ coordinates of repetitive loss properties are NOT allowed in this plan. The LMS can write out how many of each property there are in a few sentences or by making a chart with the information. The number of categories for properties is at the discretion of the plan’s author, but each jurisdiction must be included. An example of a chart is as follows:

Jurisdiction	Residential	Commercial	Institutional	Other
A	25	15	21	10
B	11	29	51	24
C	45	30	26	36
D	60	61	53	47

See Appendix B for example of Repetitive Loss Properties Data and an example of a chart for repetitive food loss properties.



Numbers should reflect current information to be considered updated. When updating this section, contact your local floodplain administrator or the state floodplain office to ensure the most recent data is being used.

Mitigation Strategy

Code of Federal Regulations (CFR)

§201.6 (c) *Plan content. The plan shall include the following:*

(3) *A mitigation strategy that provides the jurisdiction’s blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs, and resources, and its ability to expand on and improve these existing tools. This section shall include:*

(i) *A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.*

(ii) *A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction’s participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.*

(iii) *An action plan describing how the action identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.*

(iv) *For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.*

(4) *A plan maintenance process that includes:*

(i) *A process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvements, when appropriate.*

S1 (C3) – Goals

Does the plan include goals to reduce/ avoid long-term vulnerabilities to the identified hazards?

General hazard mitigation goals must be included in the plan. As defined by FEMA, goals are broad policy statements that explain what is to be achieved through the LMS.

See Appendix C for an example of LMS Goals.



For an LMS update, goals do not necessarily have to change, but they must be consistent with the hazards identified in the plan, other plans, and the State Hazard Mitigation Plan. While not required, additional objectives outlining how goals are to be met can be beneficial to include. The update should also reflect that the goals have been recently reviewed.

S2 (C1) – Existing Policies, Programs and Resources

Does the plan document each jurisdiction’s existing authorities, policies, programs and resources, and its ability to expand on and improve these existing policies and programs?

A summary of all existing authorities, policies, programs and resources available to accomplish hazard mitigation must be included in the plan. This includes all jurisdictions within the LMS. This requirement calls for the listing of all resources that can be used to accomplish hazard mitigation, it does not ask for how these resources achieve this. The plan must also include a description of how these policies can be expanded upon to include mitigation information in the future.

See Appendix C for an example of detailing capability.



For an LMS update, there may or may not be significant changes required to ensure compliance. That depends more on the landscape of the participating jurisdictions. It is crucial to remember that this is a living document and must therefore be receptive to changes within all jurisdictions over this period of time. This includes changes to additional plans, funding sources, budget changes, building codes, and local ordinances. Be sure the most recent version of the document is being cited and delete older versions. If all plans are more than 5 years old, the plan should state that these are the most recent versions. Ensure the process for improving these plans is accurate.

S3 (C2) – National Flood Insurance Program (NFIP)

Does the plan address whether or not each jurisdiction participates in the National Flood Insurance Program (NFIP) and how they will continue to comply?

Each jurisdiction must detail their participation in the NFIP and describe their floodplain management program for continued compliance. FEMA explicitly states that a simple statement of “The community will continue to comply with NFIP”, or various similar statements, will not meet this requirement. Any jurisdiction that is not participating in the NFIP must state why they do not.

See Appendix C for an example of proper NFIP documentation and inclusion.



For an LMS update, the most important portion to focus on is that the previously listed actions taken by the participating jurisdictions are still current and that any new actions are included in the plan. While it is not required, it can also be beneficial to include specific details of how the participating jurisdictions are meeting NFIP requirements.

S4 (C4) –Comprehensive Range of Projects for Each Hazard

Does the plan identify and analyze a comprehensive range (different alternatives) of specific mitigation actions and projects to reduce the impacts from hazards?

The key focus of this requirement is the range of mitigation actions and projects being undertaken, or proposed, in the plan. Each hazard must have at least one project to mitigate the effects of that hazard. Ideally, each hazard will have multiple different actions analyzed before any specific action (or actions) is identified and placed in the final project list. Alternative actions are required in grant applications therefore including them in the plan will make that step easier. One project can mitigate multiple hazards. If a single project is used for multiple hazards, ensure this is

stated.

Including actions and projects that do not necessarily fall under the category of mitigation will not invalidate the plan itself, but will not be considered to fulfill this requirement. Outreach and public education projects are encouraged. Further, projects that are routinely implemented or are being locally funded should be listed as opposed to this list being a “grant wish list”.

See Appendix C for an example of a comprehensive range of mitigation actions/projects.



For an LMS update, analyze different mitigation actions for each hazard that is profiled in your plan. From that list, identify which actions and/or projects are feasible for your area and include those in your final project list. Remember that project lists should be constantly updated throughout the five-year process.

S5 (C4) – Mitigation Projects in Each Jurisdiction

Does the plan identify mitigation actions for every hazard posing a threat to each participating jurisdiction?

For this requirement, the plan must provide specific mitigation projects or actions for each distinct jurisdiction. One project can mitigate multiple jurisdictions. If a single project is used for multiple jurisdictions, ensure this is stated.

See Appendix C for an example of mitigation projects/actions that are specific to each jurisdiction.

For an LMS update, ensure that listed mitigation projects or actions are up to date with the participating jurisdictions included in the plan. Updates should ensure that actions or projects used to meet this requirement are still in effect within (or across) specific jurisdictions and edit or remove initiatives that are no longer accurate or relevant. Remember that project lists should be constantly updated throughout the five-year process.

S6 (C4) – New & Existing Buildings

Do the identified mitigation actions and projects have an emphasis on new and existing buildings and infrastructure?

Mitigation projects and actions should focus on retrofitting existing structures to lessen their impact during a future event as well as constructing new structures that will lessen the communities’ impact. This should be a dual approach as opposed to focusing on just new infrastructure or only existing buildings.

See Appendix C for examples of projects with a focus on new and existing structures.



For an LMS update, confirming that proposed or enacted projects are up to date is a significant consideration for this requirement. Take the time to inventory the types of projects being proposed to ensure both new infrastructure and existing structure retrofits are being proposed.

S7 (C5) – Project Prioritization

Does the plan explain how the mitigation actions and projects will be prioritized (including cost benefit review)?

Selected mitigation actions/projects need to be prioritized according to one or more criteria. The only required criteria is a cost-to-benefit review. This does not need to be a full cost-to-benefit analysis as is standard with a grant application. It could be as simple as providing an estimated cost of the project (e.g. \$10,000-\$15,000) and stating the estimated number of people it would benefit (e.g. 8,000-10,000).

See Appendix C to see an example of incorporating a local rating system into an LMS plan to prioritize actions and an example priority ranking matrix.



When updating your plan, be sure that the list of prioritized projects is up-to-date (to account for deleted, completed, and new projects) and re-analyze the criteria for prioritization as needed.

S8 (C5) - Responsible Parties, Funding Sources, and Timeframes

Does the plan identify the position, office, department, or agency responsible for implementing and administering the action/ project, estimated cost, potential funding sources and expected timeframes for completion?

The plan must list who is responsible for each project. This can be a single person or an entire agency, but it must be specified. Remember that the jurisdiction benefited is not the same as the agency responsible.

Providing estimated costs is required per F.A.C. 27P-22.005(7). Remember, a simple estimation will suffice as long as it is realistic as possible. Neither an exact cost nor supporting price documentation is required here.

Potential funding sources need to be identified. This can be done by listing sources for individual projects or by providing a general list that encompasses all projects. Try to make your list of funding sources as realistic and achievable as possible to give an accurate image of the financial circumstances. Furthermore, it is beneficial to show all sources of local funding in your LMS to show that there is support coming from the communities for these projects as well as the state/national grant funding to which you may be applying. Try to remember that this is not just a “grant wish list.” You should include projects completed at the local level as well as those which may require federal grant assistance.

Estimated timeframes for completion must be provided for each project. This does not mean that there needs to be a date by when the project will be completed. Rather, it should be an estimate of how long the project will take from when it begins (e.g. 2 weeks, 2 years). If you would like to include information on the status of project (e.g. began May 2015, will begin upon receiving funding), please include this as a separate bullet or column in addition to the timeframe.

See Appendix C for an example of a project list.



When updating the plan, ensure that the responsible parties, funding sources, and timeframes are still relevant. This information should reflect all deleted, completed, and new projects. Review how this information is presented and consider using a concise table.

S9 (C6) - Identifying Local Planning Mechanisms

Does the LMS identify the local planning mechanisms where hazard mitigation information and/or actions may be incorporated?

Identify other plans in the community into which the information or objectives of the LMS can be incorporated. Please note that this is a different requirement than P7 (A4), which requires a review of currently existing documents and plans that can be incorporated into the LMS plan. If information and knowledge was obtained from these other planning mechanisms within the LMS and information from the LMS could also be incorporated back into these plans, you may find that they fit both requirements. However, it should be clearly stated in the LMS plan which ones were utilized for requirement P7 (A4) and which ones were utilized for S9-11 (C6). This list may be the same as listed in S2 (C1).

Local planning mechanisms that have been listed in LMS plans in the past include:

- County or Municipal Comprehensive Plans
- Local Emergency Management Plans
- Floodplain Ordinances
- Land Development Codes and/or Regulations
- Building Codes
- Transportation Plans

See Appendix C for a list of local planning mechanisms.



When updating the LMS plan, re-examine the list of these local planning mechanisms to make sure that none have become outdated and adjust as needed. Continue adding to the list with any new ideas, especially considering if there have been any new plans created for the community. This should be an outline of where you could integrate the LMS in other planning mechanisms.

S10 (C6) – Plan Integration

Does the plan describe each community's process to integrate the data, information, and hazard mitigation goals and actions into other planning mechanisms?

In addition to listing local planning mechanisms in which information from the LMS plan can be used, the procedure for how the information will be incorporated needs to be outlined. Rather than describing the process for each local planning mechanism individually, it is sufficient for this requirement to provide an overview of the local planning committee's process of analyzing potential outlets for the information and objectives of the LMS plan.

See Appendix C for a description of implementation into other planning mechanisms.



In order to update the plan, evaluate the description of the implementation process to ensure it is still accurate. If you have provided a master list of local planning mechanisms into your LMS to meet requirement S9 (C6) and if you have made any changes to it, be sure to update any individual descriptions of how information can be incorporated into these plans.

S11 (C6) – History of Integration

The updated plan must explain how the jurisdiction(s) incorporated the mitigation plan, when appropriate, into other planning mechanisms as a demonstration of progress in local hazard mitigation efforts.

The LMS plan should show progress in how information and/or objectives have been successfully integrated into local planning mechanisms in the past. If information provided by the LMS plan has been used in other documents, it is recommended to state in which objectives, policies, codes, etc. this information can specifically be found. If the local planning mechanisms support the goals and objectives of the LMS, describe how exactly they do so.

See Appendix C for an example of local planning mechanisms that have incorporated information and supported the objectives of the LMS plan.



As you update, continue to provide examples of how information from the LMS plan has been utilized in other community plans and how the objectives have been supported by other planning mechanisms since the last update. You may find it helpful to refer to your plans listed for requirements S9 (Part 1 of C6) and S10 (Part 2 of C6) to see if any progress has been made toward these projections.

Plan Evaluation and Maintenance

Code of Federal Regulations (CFR)

§201.6 (d) Plan Review.

(3) A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within 5 years in order to continue to be eligible for mitigation project grant funding.

M1 (D1): Development Changes

Was the plan revised to reflect changes in development?

This section is only for a LMS update rather than for a brand new plan. This needs to be a descriptive paragraph explaining any changes or new development within each jurisdiction. In each paragraph explain how your vulnerability is affected with these developments- whether positive or negative. The LMS can discuss population changes, landscape changes, new developments, etc.

See Appendix D for an example of documenting changes in development.



During an update, take the time to review how your community has changed since the last update. This can include changes in population, demographics, land use, policies, etc. Describe these changes and how they have affected your vulnerability to your profiled hazards overall. You may also discuss how specific development or implemented mitigation actions have increased or decreased your vulnerability to those hazards.

M2 (D2): Progress in Local Mitigation Efforts

Was the plan revised to reflect progress in local mitigation efforts (Were projects completed, deleted, or deferred and why if they were deleted or deferred?)

At this point the LMS lists any projects that have been completed, deleted, deferred, or new since the last update. If a project has been deleted since the last LMS this section must address why the jurisdiction has done this. Also, if a project has been deferred the LMS must explain why this happened. Projects that have been completed since the last LMS should also be listed in this section.

See Appendix D for example of a project list that includes current status.



To update this section, make sure that projects are current. If a project from the last LMS was deleted or deferred there must be an explanation as to why in order to be approved. A “status” column on the project list is a simple way to document this; alternatively, separately labeled listed may be created.

M3 (D3): Changes in Priorities

Was the plan revised to reflect changes in priorities?

The plan must describe if and how any priorities have changed since the plan was previously approved. This is focusing on ensuring the goals and objectives of the plan have been updated. The best way to document this requirement is to state when goals and objectives were reviewed during the planning process. This can be done either in the planning process narrative or through meeting minutes and summaries.

See Appendix D for example of a record of changes.



To update this section, make sure the goals and objectives have been reviewed at the beginning of the update process. Ensure any goals with dates are updated or removed. Document the review of your goals and objectives in the plan.

M4 (A6) – Monitoring

Does the plan identify how, when, and by whom the plan will be monitored (how will implementation be tracked) over time?

Monitoring the plan means tracking the implementation of the plan over time. The plan must include a statement or section detailing how/when/by whom it will be monitored during the 5-year cycle. It is required to state how the plan will be monitored. Simply stating that ‘The plan will be monitored during the 5-year cycle’ is not sufficient. It must state when monitoring will occur; including who is responsible for monitoring the plan. This requirement’s purpose is to make sure the plan is functioning as it was written.

See Appendix D for an example outlining the monitoring process.



For an LMS update, ensure that all the detailed information is up-to-date. This primarily relates to the listing of by whom the plan is monitored but should also apply to the description of how the plan is monitored. It may need to be reconsidered as the 5-year cycle progresses. At minimum, monitoring can occur during the annual update as stipulated in F.A.C. 27P-22.004. Review the monitoring process as stated in the plan and revise as necessary to match current procedures.

M5 (A6) – Evaluation

Does the plan identify how, when, and by whom the plan will be evaluated (assessing the effectiveness of the plan at achieving state purpose and goals) over time?

Evaluating the plan means assessing the effectiveness of the plan at achieving its stated purpose and goals. The plan must include a statement or section detailing how/when/by whom it will be evaluated during the 5-year cycle. It is required to state how the plan is reaching the goals and objectives it aims to achieve. Simply stating that ‘The plan will be evaluated during the 5-year cycle’ is not sufficient. It also must state when evaluation will occur, meaning scheduled times or stating a certain frequency with which the plan will be evaluated. Including who is responsible for evaluating

the plan is also required. This requirement's purpose is to determine whether the plan is beneficial to the public or not.

See Appendix D for an example of evaluation being detailed.



For an LMS update, ensuring that all the detailed information is up to date should be the initial point of consideration. This primarily relates to the listing of who evaluates the plan but should also apply to the description of how the plan is evaluated, it may need to be reconsidered as the 5-year cycle progresses. At minimum, evaluating can occur during the annual update as stipulated in F.A.C. 27P-22.004. Review the evaluation process as stated in the plan and revise as necessary to match current procedures.

M6 (A6) – Update Schedule

Does the plan identify how, when, and by whom the plan will be updated during the 5-year cycle?

The plan must include a statement or section detailing how/when/by whom it will be updated during the 5-year cycle. A description of how the plan will be updated is required. There must also be a schedule, or set frequency, when update sessions will occur. It is also required to include the board/committee responsible, or the name and title of any individual, who is responsible for updating the plan. This section can refer to the 5-year update only, or it may include intermittent updates if applicable.

See Appendix D for an example of updating being detailed.



For an LMS update, ensuring that all the detailed information is up to date should be the initial point of consideration. This primarily relates to the listing of who will update the plan but should also apply to the description of how the plan is updated, it may need to be reconsidered as the 5-year cycle progresses. At minimum, updating can occur during the annual update as stipulated in F.A.C. 27P-22.004. Review the update process as stated in the plan and revise as necessary to match current procedures.

M7 (A5) – Community Involvement

Is there discussion of how the community(ies) will continue public participation in the plan maintenance process?

The plan must detail how community participation will be continued. Public outreach and opportunities for the public to provide feedback on the plan are necessary steps and must be described. Examples to encourage participation can include; presentations on the plan and its progress to community groups (schools, clubs, churches, etc.), questionnaires or surveys to measure understanding of the plan, public meetings, and use of web-based outreach (social media posts or websites available to the public).

See Appendix D for an example of community participation.



For an LMS update, stating how the community is involved in and will be incorporated in the process of writing and updating the plan is the key focus. Stating that past examples were sufficient is an option, but only so long as those past examples ensured actual community participation. If past measures have failed to garner any response from the public this must be addressed and include a discourse on what new measures may be taken.

Plan Adoption

Code of Federal Regulations

§201.6 (c) *Plan content. The plan shall include the following:*

(5) *Documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.*

A1 (E1) – Proof of Formal Adoption

Does the plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval?

In order to meet this requirement, the LMS plan must provide documentation that proves official adoption of the plan. After obtaining APA (Approved Pending Adoption) status from FDEM, at least one jurisdiction must adopt the plan prior to the plan expiration date. All other jurisdictions will have one year to adopt the plan to remain eligible for HMA guidance. Proof of this usually comes in the form of a Resolution. If you are unable to provide this, possible alternatives are:

- A clerk or city attorney providing a written confirmation that “the action” meets the community’s legal requirements for adoption.
- The highest elected official or their designee providing written confirmation of the adoption by providing an explanation and their signature.
- Certified meeting minutes included that highlight the adoption of the LMS plan by the jurisdiction.

See Appendix E for an example of certified meeting minutes.



When you submit an updated plan to FDEM and receive an APA status, then you must have the plan re-adopted by the community. Even if the LMS plan has been adopted by the community in the past, the most recent plan needs to be accepted through the standard adoption process for the local jurisdictions. Please note that although the State of Florida’s Planning Unit sends out consistent notifications to the local jurisdictions of their deadlines to renew the LMS plan, jurisdictions with longer adoption processes will find it beneficial to start the process earlier.

A2 (E2) – Multi-jurisdictional Verification of Adoption

For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented plan adoption?

Proof of adoption must be provided for each jurisdiction that is adopting the LMS plan. This includes every jurisdiction (e.g. counties, cities, school boards, hospitals) that has been listed under requirement P2 (A1). After receiving an APA status from FDEM, at least one of the jurisdictions must

adopt prior to plan expiration. After this, all other participating jurisdictions must adopt the plan within the first year in order to remain eligible for HMA funding. It is recommended that all participating jurisdictions adopt the plan prior to the initial expiration, although this is not always practical.

See Appendix E for examples of adoption resolutions.



When updating the LMS plan, all jurisdictions listed in P2 (A1) must re-adopt the plan as part of their standard adoption processes. Be sure to provide documentation of this most recent adoption for each jurisdiction. The plan is not considered complete until all jurisdictions have adopted, documentation is included in the plan, and a final plan and review tool have been submitted to FEMA.

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Appendix A - Planning Process

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P1 - Narrative Description of Meeting Process

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D. THE PLANNING PROCESS

The Hamilton County Local Mitigation Strategy is a multi-jurisdictional plan that encompasses four jurisdictions, the City of Jasper, Town of Jennings, Town of White Springs and the unincorporated areas of Hamilton County. However, the success of the planning processes for all-hazards and floodplain management planning for the respective communities within the county and with the National Flood Insurance Program Community Rating System does rely on the close involvement of public and private sector organizations and state and federal agencies. Neighboring jurisdictions were invited to attend planning meetings. Although not a comprehensive list of participants invited but some included: the Community Emergency Response Team (CERT), private industries including representatives from the power utilities; Suwannee Valley Electric Company and Duke Energy. Relief organizations that were invited to be represented is the American Red Cross, United Way and Catholic Charities. Since its adoption in 2006 and the approved update in 2011, the updating of the LMS is an ongoing process and is revised on an annual basis pursuant to Florida Administrative Code (FAC) 27P-22.004(4)(e).

The 2016 five-year update started in June with a major revision of this plan. A contractor was not used for this process so that the plan will be as realistic as possible using the limited resources that are available in our rural community. The Local Mitigation Strategy Working Group coordinated many resources for the update.

The LMS Working Group utilized FEMA’s “Local Plan Review Crosswalk Comparison Tool” to conduct a review of the current LMS against the FEMA crosswalk and produce a suggested work plan identifying what needed to be updated/revised in each section and providing recommendations on how to proceed. It was decided that a more realistic approach would need to be taken and that most sections would be revised with more realistic approaches and with the most updated information possible.

A committee comprised of the LMS Chair and Vice-Chair for Hamilton County; and the staff from the Hamilton County Emergency Management held several meetings to review the recommendations and work plan to formulate a strategy on how to best proceed with the update. The LMS Vice-Chair created a task list from these discussions and developed a Task List. Organizations and personnel were identified to complete the revision.

Initial revisions were performed or coordinated by the committee. The revised sections were sent to the LMS Working Group for comment, suggested revisions, deletions or additions. Each jurisdiction was represented and participated in the planning process and participated in the process. All suggestions, revisions and corrections were considered in the final document.

Section I: Introduction

Section I was initially revised by a core group of participants of the Local Mitigation Strategy (LMS) Vice Chair.

When discussing prior plan maintenance, the update plan was not adequate and/or realistic and was amended in 2016 as the current plan.

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P1 - Meeting Minutes

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**TALLAHASSEE-LEON COUNTY
LOCAL HAZARD MITIGATION
STEERING COMMITTEE**

Minutes

Monday, March 15, 2010
9:00 a.m.

Planning Department Conference Room,
3rd Floor Renaissance Center

Members Present

Patrick Dooley (COT-EU)
Ryan Guffey (LC GEM)
David Henry (COT SW)

Steve Hodges (TLCPD)
Jonathan Kilpatrick (COT UU)
Gabe Menendez (COT PW)
Tony Park (LC Public Works)
Robby Powers (COT-EM)
Richard Smith (LCEM/SO)

Others

Kris Barrios (NFWWMD)
Brad Trotman (CONA)

The meeting began at 9:10 a.m. with a quorum and introductions.

The Local Mitigation Strategy (LMS) Steering Committee met to review and consider the endorsement of a proposed Northwest Florida Water Management District (NFWWMD) Grant Application for the federal Severe Weather & Floods Post-Disaster Hazard Mitigation Grant Program (FEMA-1831-DR-FL). The NFWWMD proposed submitting a hazard mitigation grant program application under this program to expand and provide real-time telemetry for the rainfall and stream level gaging network in the region. The overall project cost was estimated at \$463,800 and the District would provide the 25% local match of \$115,950.

Richard Smith moved that the Steering Committee find this proposed project consistent with the goals and objectives within the Tallahassee – Leon County LMS and with the State's mitigation goals and objectives, and to endorse this project for HMGP funding from this disaster declaration. Robbie Powers seconded the motion, and the Committee voted unanimously for the motion.

Following this action, Richard motioned staff to write a requested letter of support for this proposed grant application to be signed by the Committee Chair. Robbie seconded the motion, and the Committee voted unanimously for the motion.

The Committee adjourned at 9:33 a.m.

Approved:

Attest:

Chairman

Stephen M. Hodges, Committee Staff

Minutes approved on: _____

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P1 - Attendance Roster

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P2 - Outline Jurisdiction Responsibilities

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A public meeting will be held in conjunction with each annual Hazard Mitigation Planning Committee meeting. This meeting will provide the public a forum for expressing concerns, opinions and/or ideas about the LMS. The County Emergency Management Director will publicize and host this meeting.

Multi-Jurisdictional Participation

In addition to Emergency Management, acting as the representative for Pasco County, the cities of New Port Richey, Port Richey, Zephyrhills, Dade City, San Antonio, St. Leo and existing members of the Local Mitigation Strategy (LMS) Working Group formed the core of the planning effort. No jurisdictions opted out of the planning process during this revision cycle. Each of these groups was charged with maintaining and increasing community participation in the LMS Working Group through contact with community and business organizations throughout the year. In addition, each of the participating members was charged with:

1. Assisting with the development of the plan.
2. Reviewing the initial drafts for accuracy relative to their jurisdictions.
3. Identifying potential mitigation projects for their areas of responsibility.
4. Providing assistance with project prioritization.
5. Reviewing and providing concurrence with the proposed risk analysis.
6. Adoption of the plan for their jurisdiction.

Planning Process

In January 2014 members of the Hazard Mitigation Working Group were informed by Emergency Management of the need to update the plan to meet new mitigation criteria as outlined in the 2013 Florida State Hazard Mitigation Plan. Members of the group were asked to review and update the LMS plan and project list for additions, changes, and determination of progress for projects underway and any completed projects. Simultaneously, Emergency Management Staff were tasked with updating the risk analysis section of the plan. Upon completion of all tasks, Emergency Management conducted a final review of the LMS Plan using the new criteria and verified the components against the required Mitigation Plan Review Checklist. Emergency Management believes that the Pasco County LMS was compliant with the new Federal criteria and submitted the plan to the Florida Division of Emergency Management for review.

Beginning with the first group meeting, Emergency Management initiated the process of the plan update by providing the entire group information related to the purpose of the Local Mitigation Strategy and background on the process of the plan review and update and the requirements for completing the update. In attendance at this meeting were representatives from the six municipalities in Pasco County, the Hazard Mitigation Working Group, local government and many other participants. The importance of the participation from the local jurisdictions, workgroup, and all citizens in the community in the plan review and update was emphasized and all attendees were encouraged to participate in the plan update and also to increase community participation through their contacts.

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P3 - Listing Representatives

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PALM BEACH COUNTY
LMS REPRESENTATIVES
 Updated September 18, 2014



CITY OF BOYNTON BEACH

NAME	TITLE	PRIMARY	SECONDARY	ADDRESS	PHONE#	EMAIL ADDRESS
Lejeune, Carisse	Assistant City Manager	X		100 E Boynton Beach Blvd Boynton Beach FL	(561) 742-6012	lejeunec@bbfl.us
Eric Johnson	Planner		X	100 E Boynton Beach Blvd Boynton Beach FL	(561) 742-6012	johnsone@bbfl.us
Debbie Majors	Grants Coordinator		X	100 E Boynton Beach Blvd Boynton Beach FL	(561) 742-6241	majorsd@bbfl.us

TOWN OF BRINY BREEZES

NAME	TITLE	PRIMARY	SECONDARY	ADDRESS	PHONE#	EMAIL ADDRESS
John Skrandel	Town Attorney		X	4802 N. Ocean Blvd, Briny Breezes, FL 33435	(561) 863-1605, (561) 797-8963 cell	jfsa@msn.com
Michael Hill	Mayor		X	4802 N. Ocean Blvd, Briny Breezes, FL 33435	(561) 251-3229, (561) 347-6757 cell	mhill1221@comcast.net
Susan Thaler	Council President	X		4802 N. Ocean Blvd, Briny Breezes, FL 33435	703 201 8087	brinybreezes.thaler@yahoo.com
Barbara Molina	Town Clerk Pro Tem		X	4802 N. Ocean Blvd, Briny Breezes, FL 33435	561 703 5116	brinybreezes.molina@yahoo.com
Carol Lang	Deputy Town Clerk		X	4802 N. Ocean Blvd, Briny Breezes, FL 33435	(561) 272-5495	brinytownclerk@yahoo.com

TOWN OF CLOUD LAKE

NAME	TITLE	PRIMARY	SECONDARY	ADDRESS	PHONE#	EMAIL ADDRESS
Gravellin, Dorothy	Town Clerk	X		100 Lang Road, West Palm Beach, FL 33406-3222	(561) 686-2815	townofcloudlake@msn.com
Donna Erisey	Mayor		X	100 Lang Road, West Palm Beach, FL 33406-3222	(561) 686-2815	townofcloudlake@msn.com
Marion Chateau-Flagg	Vice Mayor		X	100 Lang Road, West Palm Beach, FL 33406-3222	(561) 686-2815	townofcloudlake@msn.com
Slatery, Patrick	Council Member		X	100 Lang Road, West Palm Beach, FL 33406-3222	(561) 686-2815	townofcloudlake@msn.com

CITY OF DELRAY BEACH

NAME	TITLE	PRIMARY	SECONDARY	ADDRESS	PHONE#	EMAIL ADDRESS
Terry Stewart	City Manager Interim	X		100 NW First Avenue, Delray Beach, FL 33444	(561) 243-7010	stewart@mydelray.com
Mark McDonnell	Assistant P2&B Director		X	100 NW First Avenue, Delray Beach, FL 33444	(561) 243-7043	Mcdowell@mydelray.com
Scott Pape	Senior Planner		X	100 NW First Avenue, Delray Beach, FL 33444	(561) 243-7321	pape@mydelraybeach.com

TOWN OF GLEN RIDGE

NAME	TITLE	PRIMARY	SECONDARY	ADDRESS	PHONE#	EMAIL ADDRESS
Michelle Suiter	Town Manager	X		1501 Glen Road, West Palm Beach, FL 33406	(561) 697-8868	glenridgetownof@bellsouth.net



PALM BEACH COUNTY
LMS REPRESENTATIVES
 Updated September 18, 2014



CITY OF GREEN ACRES

NAME	TITLE	PRIMARY	SECONDARY	ADDRESS	PHONE#	EMAIL ADDRESS
Carlos Cedeno	Public Works Director	X		5750 Melaleuca Lane Greenacres FL 33463	(561) 642-2074	ccedeno@ci.greenacres.fl.us

VILLAGE OF GOLF

NAME	TITLE	PRIMARY	SECONDARY	ADDRESS	PHONE#	EMAIL ADDRESS
Laura Hannah	Village Manager	X		21 Country Road, Village of Golf, FL 33436	(561) 732-0236	lhannah@villageofgolf.org

TOWN OF GULF STREAM

NAME	TITLE	PRIMARY	SECONDARY	ADDRESS	PHONE#	EMAIL ADDRESS
William Thrasher	Town Manager	X		100 Sea Road, Gulf Stream, FL 33483	(561) 276-5116	wthrasher@gulf-stream.org
Rebecca Tew	Town Accountant		X	100 Sea Road, Gulf Stream, FL 33483	(561) 276-5116	rtew@gulf-stream.org

TOWN OF HAVERHILL

NAME	TITLE	PRIMARY	SECONDARY	ADDRESS	PHONE#	EMAIL ADDRESS
Janice Rutan	Town Administrator		X	4585 Charlotte St, Haverhill, FL 33417	(561) 689-0370	jrutan@townofhaverhill-fl.gov
Jeff Renault	Town Engineer	X		4585 Charlotte St, Haverhill, FL 33417	(561) 689-0370	renault4953@att.net
Joseph Roche	Public Safety Director		X	4585 Charlotte St, Haverhill, FL 33417	(561) 689-0370	jroche@townofhaverhill-fl.gov

TOWN OF HIGHLAND BEACH

NAME	TITLE	PRIMARY	SECONDARY	ADDRESS	PHONE#	EMAIL ADDRESS
Kathleen Weiser	Town Manager	X		3614 South Ocean Blvd, Highland Beach, FL 33487	(561) 278-4548	kweiser@ci.highland-beach.fl.us
Beverly Brown	Town Clerk		X	3614 South Ocean Blvd, Highland Beach, FL 33487	(561) 278-4548	bbrown@ci.highland-beach.fl.us
Zoie Burgess	Assistant to Town Manager		X	3614 South Ocean Blvd, Highland Beach, FL 33487	(561) 278-4548	zburgess@ci.highland-beach.fl.us

TOWN OF HYPOLUXO

NAME	TITLE	PRIMARY	SECONDARY	ADDRESS	PHONE#	EMAIL ADDRESS
Barbara Searls	Town Clerk	X		7580 South Federal Highway, Hypoluxo, FL 33462	(561) 582-0155	bsearls@hypoluxo.org
Ken Schultz	Mayor		X	7580 South Federal Highway, Hypoluxo, FL 33462	(561) 582-0155	mayor@hypoluxo.org

P4 - How Stakeholders Were Invited

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3.1.3 Community groups/Homeowner associations, Businesses, the Red Cross and Other Private and Nonprofit Interests

These groups were invited and encouraged to attend meetings and provide input to this plan. The cities of Brooksville and Weeki Wachee, County departments, and other past Working Group members were also invited to participate. At the meeting, and every meeting thereafter, everyone in attendance was asked to invite anyone who might be interested in this process. The LMS Working Group membership roster is updated after every meeting and maintained by Emergency Management.

3.1.4 Neighboring Communities, Local and Regional Agencies

The neighboring counties of Citrus, Pasco and Sumter along with our Regional Planning Council and the Southwest Water Management District were invited by E-mail to attend all meetings or provide input electronically.

The following individuals participated in the LMS update process:

Table 3-1: Local Mitigation Strategy (LMS) Working Group 2015 Active Members

Member	Title	Organization
Adam Brook	Manager of Library Services	Hernando County
Al Gray	Environmental Manager DOH	Dept. of Health
Angela Allen	FDOT Emergency Operations Coordinator	Dept of Transportation
Angel Turner	Library Services Supervisor	
Ann Kirkendall	American Red Cross Nature Coast	American Red Cross Nature Coast
Annette Doying	Director, Pasco County EM	Pasco County
Bill Geiger (*)	City of Brooksville Community Development Director	City of Brooksville Community Development Director
Brian Malmberg	Director, Department of Public Works	Hernando County
Catherine Edminsten	Director, Oak Hill Hospital ER	Oak Hill Hospital ER
Christy Charlow	Hernando County Risk Manager	Hernando County
Cecilia Patella (*)	Director, Emergency Management	Hernando County Emergency Management
Chuck Morton (*)	LMS Chairman, resident of Weeki Wachee, Hernando County	Private Citizen representing Weeki Wachee
Chris Linsbeck	Hernando County Zoning Manager	Hernando County
Craig Becker	Hernando County Facilities Manager	Hernando County
David Casto	Director, Sumter County	Sumter County Emergency Management
David Miles	Hernando County Senior Planner	Hernando County
Donnie Singer	Director, Housing Authority	Hernando County
Frankie Beville	American Red Cross	American Red Cross
Fred Lapiana	DPW, Manager	Hernando County
Gene Altman	Southwest Water Management District	Southwest Florida Water Management District
George Zoettlein	Director Office of Management & Budget	Hernando County
Greg Myers (*)	LMS Secretary, resident of Hernando County	gkm59@aol.com
Greg Read	Duke Energy, Account Manager	Duke Energy
Harry Johnson	Manager, Parks and Recreation	Hernando County

James Johnson	Property Appraiser GIS	Hernando County
Jan Martine	COAD, Hernnado & Pasco	janlmartini@yahoo.com
Jennene Norman Vacha	City of Brooksville, Administrator	City of Brooksville
Jodi Singer	Manager, Development Dept.	Hernando County
Joe Eckstein	Director, Citrus County	Citrus County Emergency Management
John Burnett	DPW Stormwater Technician	Hernando County
Joh Edminston	Volunteer Hernando Emergency Animal Rescue	Hernando Emergency Animal Rescue
Judith Tear	Florida Forestry Service, PIO	Forest Service
Karolyn Anthony	Hernando County IT Manager	Hernando County
Kevin Carroll	Asst. Chief, Hernando County Fire	Hernando County
Kevin Hohn	Mayor, Brooksville	City of Brooksville
Len Sossamon	Hernando County Administrator	Hernando County
Madelein Austin	Brooksville Police Dept, Admin	Hernando County
Manuel Padron	Property Appraiser GIS Manager	Hernando County
Mario Littman	School Board, Manager Safety & Security	Hernando School District
Mark Barry (*)	LMS Vice-Chair, Executive Director ARC Nature Coast	ARC Nature Coast
Mark Guttman	Hernando County Engineer	Hernando County
Mike Nickerson	Asst. Chief Hernando County Fire	Hernando County
Nina Mattei	DOH, Emergency Planner	Department of Health
Pamela Harris	Mitigation Specialist III	Hernando County Emergency Management
Paul Siddall	FDEM, Region 4 Coordinator	FDEM
Paul Wiczorek	Hernando County, Senior Planner	Hernando County
Ronald Lawson	Withlacoochee Electric, Account Manager	Withlacoochee River Electric Cooperative
Rebecca Garrett	Zoning Administrator	Hernando County
Richard Radacky	Brooksville, Public Works Director	City of Brooksville
Robyn Anderson	Mayor, Weeki Wachee	Weeki Wachee Mayor
Ronald Pianta	Director, Planning Dept.	Hernando County
Russ Wetherington	Director, Purchasing	Hernando County
Scott Jaeger	Director, Christian Contractors	Christian Contractors
Susan Goebel Canning	Director, Utilities	Hernando County
Tim Mossgrove (*)	Brooksville Fire Chief/EM	City of Brooksville
Valerie Pianta	Economic Development Coordinator	Hernando County

(* indicates voting Executive Committee member)

3.2 Planning Process

3.2.1 Summary

In August 2014 members of the Local Mitigation Strategy Working Group were informed by Emergency Management of the need to update the plan to meet new mitigation planning criteria mandated by the Disaster Mitigation Act of 2000. Members of the Working Group were requested to review and update the LMS plan and project list for additions, changes, and determination of progress for projects underway and any completed projects. Simultaneously, a consultant on staff with Emergency Management was tasked with updating the Risk Analysis section of the Plan. Upon completion of all tasks, Emergency Management conducted a final

P5 - Email Invitation to Stakeholders

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Collier County Government



Communication & Customer Relations
3299 Tamiami Trail East, Suite 102
Naples, Florida 34112-5746

colliergov.net
twitter.com/CollierPIO

facebook.com/CollierGov
youtube.com/CollierGov

October 1, 2014

FOR IMMEDIATE RELEASE

**NOTICE OF PUBLIC MEETING
COLLIER COUNTY LOCAL MITIGATION STRATEGY WORKING GROUP
COLLIER COUNTY, FLORIDA**

FRIDAY, October 17, 2014

9:30 A.M.

Notice is hereby given that the *Collier County Local Mitigation Strategy Working Group* will hold its regular public meeting on **Friday, October 17th**, at **9:30 a.m.** at the South Regional Library, Community Room, 8065 Lely Cultural Parkway, Naples, Florida 34113.

The purpose of the Collier County Local Mitigation Strategy is to develop a unified approach among county and municipal governments, along with inputs and participation from the private sector, for dealing with identified hazard and hazard management problems in the Collier County area.

About the public meeting:

Two or more members of the Board of County Commissioners may be present and may participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless permission for additional time is granted by the chairman.

Collier County Ordinance No. 2004-05 requires that all lobbyists shall, before engaging in any lobbying activities (including, but not limited to, addressing the Board of County Commissioners, an advisory board or quasi-judicial board), register with the Clerk to the Board at the Board Minutes and Records Department.


Anyone who requires an auxiliary aid or service for effective communication, or other reasonable accommodations in order to participate in this proceeding, should contact the Collier County Facilities Management Department located at 3335 Tamiami Trail East, Naples, Florida 34112, or 239-252-8380 as soon as possible, but no later than 48 hours before the scheduled event. Such reasonable accommodations will be provided at no cost to the individual.

For more information, call Rick Zyvolski at (239) 252-3603.

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




















Attachment 2 Sample Email Invitation

Below is a copy of an invitation/meeting announcement that goes out prior to each LMS Working Group Meeting and other LMS announcements such as notification of grant opportunities.



From:  zyvoloski_r

To:

Cc:

Bcc:  '(jfrazier@hodges.edu)';  'Anthony Veyn';  AtkinsonDayne;  BealsNathan;  'Bobbie Dusek';  CampSkip;  'Carter, Je';  'Halman,Robert D';  HendricksonLisa;  'Hendry-Lupe Taylor (ltaylor@hendryfla.net)';  JourdanJean;  'LMS_Participatin';  'LMS-William Jones (billtbi@embarqmail.com)';  'Marco-Don Blalock (E-mail)';  McKuenElly;  'MI_YMCA-Cindy Love';  'RodriguezDan';  RussoAnthony;  SchmidtCorby;  'SO-Dodi';  'SO-Mike Jones (specialservices@colliersheriff.net)';  S

Subject: Local Mitigation Strategy Working Group Meeting Agenda for this Friday's meeting @ the S. Regional Library

 Message  Agenda_10_17_2014.pdf (132 KB)

Attached is the agenda for Friday, 17 October's meeting at 9:30 AM at the South Regional Library.

Richard A. Zyvoloski Jr., FPEM, CFM
Chair, Collier County Local Mitigation Strategy Working Group
8075 Lely Cultural Pkwy., Suite 445
Naples, FL 34113
PH: 239-252-3603
FAX: 239-252-6735

RichardZyvoloski@CollierGov.net
www.CollierEM.org

P6 - Public Survey

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When it comes to mitigation in my community, what matters most to me?

1. Most important hazard?

- Earthquake
- Tsunami
- Coastal & Riverine Erosion
- Landslides
- Hurricanes & Coastal Storms
- Severe Thunderstorms & Tornadoes
- Floods
- Wildfires
- Dam / Levee Failure
- Drought / Heat Wave
- Winter Storms / Freezes
- Hazardous Materials
- Terrorism
- Power Failure

Notes:

2. Most important project type?

- Property Acquisition and Structure Demolition or Relocation
- Structure Elevation
- Mitigation Reconstruction
- Dry Floodproofing of Historic Residential Structures
- Dry Floodproofing of Non-residential Structures
- Minor Localized Flood Reduction Projects (drainage projects)
- Structural Retrofitting of Existing Buildings
- Non-structural Retrofitting of Existing Buildings and Facilities
- Safe Room Construction
- Wind Retrofit for One- and Two-Family Residences
- Infrastructure Retrofit
- Soil Stabilization
- Wildfire Mitigation
- Generators
- Hazard Mitigation Planning

Notes:

3. Most important local application?

- Particular neighborhood?
- Particular problem spot?
- Vulnerable population?
- Community-wide benefit?
- Special zoning consideration?

Notes:

4. What else is important to me as far as making my community stronger against disaster?

Notes:

When it comes to mitigation in my community, what matters most to me?

1. Most important hazard?

- Earthquake
- Tsunami
- Coastal & Riverine Erosion
- Landslides
- Hurricanes & Coastal Storms
- Severe Thunderstorms & Tornadoes
- Floods
- Wildfires
- Dam / Levee Failure
- Drought / Heat Wave
- Winter Storms / Freezes
- Hazardous Materials
- Terrorism
- Power Failure

Notes:

2. Most important project type?

- Property Acquisition and Structure Demolition or Relocation
- Structure Elevation
- Mitigation Reconstruction
- Dry Floodproofing of Historic Residential Structures
- Dry Floodproofing of Non-residential Structures
- Minor Localized Flood Reduction Projects (drainage projects)
- Structural Retrofitting of Existing Buildings
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- Safe Room Construction
- Wind Retrofit for One- and Two-Family Residences
- Infrastructure Retrofit
- Soil Stabilization
- Wildfire Mitigation
- Generators
- Hazard Mitigation Planning

Notes:

3. Most important local application?
- Particular neighborhood?
 - Particular problem spot?
 - Vulnerable population?
 - Community-wide benefit?
 - Special zoning consideration?

Notes:

4. What else is important to me as far as making my community stronger against disaster?

Notes:

P6 - Public Notice

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OPEN PUBLIC MEETING

FLAGLER COUNTY UNIFIED LOCAL MITIGATION STRATEGY (LMS) MEETING

Date: Monday, March 23, 2015

Time: 10:00 a.m. to 12:00 p.m.

Location: Emergency Operations Center
1769 E. Moody Blvd., Bldg 3, Training Room
Bunnell, Florida 32110

Purpose: The Emergency Management staff is holding a Local Mitigation Strategy (LMS) meeting to discuss the plan revision and update process. Anybody interested in attending the meeting or wishing to learn more about mitigation is encouraged to attend or contact the county's mitigation planner.

Contact: County Mitigation Planner / 386-313-4243.

PLEASE TAKE NOTICE THAT INDIVIDUAL COMMISSIONERS OF THE FLAGLER COUNTY BOARD OF COUNTY COMMISSIONERS MAY ATTEND THIS MEETING. THE COMMISSIONERS WHO ATTEND WILL NOT TAKE ANY ACTION OR TAKE ANY VOTE AT THIS MEETING. THIS IS NOT AN OFFICIAL MEETING OF THE BOARD OF COUNTY COMMISSIONERS OF FLAGLER COUNTY. THIS NOTICE IS BEING PROVIDED TO MEET THE SPIRIT OF THE SUNSHINE LAW TO INFORM THE PUBLIC THAT COMMISSIONERS MAY BE PRESENT AT THESE DISCUSSIONS.

PURSUANT TO SECTION 286.0105 OF FLORIDA STATUTES, IF A PERSON DECIDES TO APPEAL ANY DECISION MADE BY THE BOARD, AGENCY OR COMMISSION WITH RESPECT TO ANY MATTER CONSIDERED AT SUCH MEETING OR HEARING, HE OR SHE WILL NEED A RECORD OF THE PROCEEDINGS, AND THAT A VERBATIM RECORD OF THE PROCEEDINGS IS MADE, WHICH RECORD INCLUDES THE TESTIMONY AND EVIDENCE UPON WHICH THE APPEAL IS TO BE BASED.

IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT, PERSONS NEEDING ASSISTANCE TO PARTICIPATE IN THIS MEETING SHOULD CONTACT THE NUMBER LISTED ABOVE AT LEAST 48 HOURS PRIOR TO THE MEETING.

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P6 - Public Feedback Statement

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3. Public/Private Participants

The Local Mitigation Planning requirements in 44 CFR Part 201.6 encourage agencies at all levels, local residents, business, and the non-profit sector to participate in the mitigation planning and implementation process. It is recognized that this participation is crucial to the economic recovery of a community following a disaster. Government entities use the input of the private sector to gain the perspective and insight necessary to adequately address the needs of business and industry. In turn, businesses and industries gain an increased awareness of the importance of preparedness and mitigation and receive technical assistance for business continuity planning, valuable support, and contact information for additional information. The LMS Working Group encourages participation from the chamber of commerce, economic development agencies, private utilities and large employers. These companies then provide service, technical assistance and outreach to their commercial accounts.

4. Public Outreach and Participation

Hamilton County is required to solicit public participation in the LMS planning process. In addition to noticing the LMS meetings, the LMS Working Group and its partners actively seek public input. They also provide the public with opportunities to learn about mitigation strategies for their families, businesses and communities.

Although a notice of the meeting inviting the general public was posted in the Jasper News (local newspaper), no general public attended any of the LMS meetings held this year.

Following is a list of events and successful outreach activities during 2011-2015

Utilized the Hamilton County Emergency Management website to provide hazard and mitigation educational information and links to additional information on FEMA's (www.fema.gov) and the State of Florida's (www.floridadisaster.org) websites.
Participated in the annual Emergency Preparedness Expo held at the Emergency Operations Center.
Held public meetings to solicit input for the update to the Local Mitigation Strategy.
Developed a brochure for the Local Mitigation Strategy update.
Issued a press release and placed an advertisement soliciting input on the update of the Local Mitigation Strategy.
Held LMS meetings to update the 2016 LMS Plan.

The Local Mitigation Strategy (LMS) for Hamilton County will be available for the public to review and comment:

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P7 - Reviewed Existing Plans

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email invitation, available on request, and provided in each public meeting for participation, review and comment. A Participation in the Planning Process table identifies individual members of the LMS Working Group's level of participation in the planning and development of the 2015 LMS update. Each guest/public of the LMS Working Group Public Meetings who participated in this plan update is identified in this same table, located in Appendix E. Copies of the LMS Meeting Minutes pertaining to the update process are provided in Appendix F.

Review of Existing Plans, Data Sources, and Information

During the initial phases of the update process, the program staff for the LMS Working Group preformed a preliminary review of existing plans and reports. The program staff reviewed the following plans specific to identifying their overall effectiveness at: (1) regulating or restricting development in hazard-prone areas; (2) protecting environmental features that naturally protect or mitigate impacts of disaster; (3) requiring actions to reduce future vulnerability; (4) facilitating orderly redevelopment and recovery; and/or (5) utilizing local and regional resources for hazard mitigation.

- Highlands County Comprehensive Plan
- Highlands County Land Development Regulations
- Highlands County Comprehensive Emergency Management Plan
- City of Sebring Comprehensive Plan
- City of Sebring 2009 Evaluation & Appraisal Report
- City of Avon Park Comprehensive Plan
- City of Avon Park Unified Land Development Code
- City of Avon Park 2009 Evaluation & Appraisal Report
- Town of Lake Placid Comprehensive Plan
- Town of Lake Placid Land Development Regulations
- Town of Lake Placid 2009 Evaluation & Appraisal Report
- Highlands County Communitywide Wildfire Protection Plan

Additionally, the program staff conducted a comprehensive review of pertinent information and reports to better understand the county's vulnerability to natural disasters. This involved utilizing the following sources, which provided information on previous disaster occurrences, hazard analyses, agriculture and economic information, demographic statistics, housing data, as well as other data relevant to Highlands County:

- FEMA - National Flood Insurance Program and Community Rating System
- Highlands County Natural Resources Lakes Management Guide to Area Lakes
- Highlandswildfire.com
- Highlands County Comprehensive Emergency Management Plan 2012
- National Weather Service
- Division of Emergency Management, Floridadisaster.org
- Florida Department of Agriculture Florida Forest Service
- U.S. National Climatic Data Center storm reports; National Oceanic and Atmospheric Administration
- South Florida Water Management District
- United States Geological Survey

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P7 - How Existing Plans Were Incorporated

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3.5 Plan Adoption

Other opportunities for the public to comment on the plan will be provided when it is presented to City of Crystal River and the City of Inverness for approval and adoption. Both communities will be asked to make the plan available for public review to solicit comments in a local municipal building and to advertise this fact. In addition, both incorporated communities will hold an open meeting to approve and adopt the plan.

An additional opportunity for public comments will occur at the Citrus County Board of County Commissioners meeting when the LMS is presented for adoption. The Commissioners have final approval power of the local mitigation strategy as related to the unincorporated areas of Citrus County.

3.6 Integration with Existing Plans

The County Planning staff reviewed all of the elements of the 2015 LMS that were drafted by the WRPC which conducted research to determine the most current information and identify any new and updated materials to present to the LMS Working Group for consideration during the update process. They collected and analyzed a variety of existing plans, studies, reports, and technical documents. These were reviewed to compare the existing documents available in each jurisdiction and to formulate possible mitigation strategies to overcome any perceived gaps in capabilities. Based on their findings, much of the information used to update the four major steps has either not changed or presented only minor changes.

All information that has changed was presented to the LMS Working Group for their review, discussion and consideration in the form of a draft document showing those items recommended to be changed as being crossed out and the new information underlined. This enabled the Working Group and other interested persons to easily interpret the revised information. All comments and recommended changes were submitted to the Planning Staff for amendments to the Final Draft document for submittal.

The documents reviewed are listed below along with discussion of how they were incorporated into various parts of the Citrus County LMS. Each jurisdiction is responsible to review the LMS with their local plans and to provide updated information for use with the LMS re-writes as needed.

- **Existing Citrus County Local Mitigation Strategy (2010).** This was used as the basis for the updated 2015 LMS. As part of the planning process, the two incorporated communities of the City of Crystal River and the City of Inverness had been asked to review their section of the original plan, identify incorrect or outdated information, identify any hazard events that had occurred since the adoption of the previous LMS, and identify any new mitigation measures that should be included in the updated LMS.

- **Citrus County Comprehensive Plan (2005-2030).** The Comprehensive Plan was used to garner the future direction of the County such as land development, proposed infrastructure, future land use, economic development, and conservation. The Comprehensive Plan was used to ensure that the goals and objectives in the LMS were consistent with other goals and objectives in the County.
- **Citrus County Municipal Code of Ordinances.** The ordinances were used to assess the capabilities of the County, City of Inverness and City of Crystal River. In addition, the codes were used to help determine some potential mitigation measures.
- **Citrus County Land Development Code (LDC).** The LDC includes information on stormwater management, wetland protection, and floodplain protection. The LDC was used to identify natural hazards and vulnerable areas. It was also used to assess the current capabilities of the County in regard to hazard mitigation and code enforcement and helped to identify potential mitigation measures to strengthen the County's capabilities to mitigate future hazard events.
- **Comprehensive Emergency Management Plan (CEMP) (2011).** The CEMP was used to help identify the pertinent hazards for the LMS risk assessment. In addition, the CEMP was used to assess the County's capabilities and available resources. Annex II of the CEMP on Hazard Mitigation describes how Citrus County and its municipalities work within the community on a normal day-to-day operation and what mitigation activities would be required during and after a disaster. The provisions of the revised LMS should be incorporated into this annex of the CEMP.
- **Inglis Dam Emergency Action Plan (EAP) (January 2012).** The EAP identifies emergency conditions at the Lake Rousseau Main Dam and Bypass Canal, and provides emergency actions to be taken to reduce the risk of property damage and loss of life in the event of a dam breach or failure. The EAP was used to identify and profile the risk and vulnerability of dam failure in Citrus County. In addition, the EAP identified vulnerable structures within Citrus County that were used in the mitigation strategy.
- **Statewide Mutual Aid Agreement (MOU) (August 20, 2007).** Citrus County and its municipalities are signatories to the Statewide Mutual Aid Agreement for catastrophic disaster response and recovery activities. Mutual Aid will be coordinated through the Citrus County Emergency Management Office. The Deputy Director of Emergency Management is responsible for overseeing the mutual aid process. The MOU's were used to help assess the capabilities within the County, City of Inverness, and City of Crystal River.

- **Emergency Services Evaluation and Master Plan (December 2007).** This report evaluates Citrus County's Fire Rescue Department and the current delivery of fire, rescue, and emergency medical services. This information was used in determining the County's capabilities and to identify possible limitations, such as training programs and public education that could be integrated into the mitigation strategy.
- **Generalized Future Land Use Map (GFLUM and Land Development Code Atlas)** The basic purpose of the GFLUM is to provide direction for managing anticipated growth and change. Both maps indicate conservation, recreation, and agricultural areas. In addition, the maps prescribe areas designed for low, medium, and high density development. The maps were used to determine proposed development trends as well as to determine if there were any areas slated for high density development within the various hazard zones.
- **Utility Territorial Agreement Maps.** These maps were used to determine the general areas in which each of the three electric utility companies operate and the populations they serve. This information was used to assess the populations vulnerable to power outages as secondary hazards to the various natural hazards assessed in the LMS.

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Appendix B - Hazard Risk and Vulnerability Assessment

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R1 - Severe Thunderstorm and Tornado Description

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Florida and left many buildings extensively water damaged. Rainwater may seep into gaps in roof sheathing and saturate insulation and ceiling drywall, in some cases causing ceilings to collapse. Aside from direct property damage, the potential for crop damage and economic disruption from hurricanes and tropical storms is significant. (http://en.wikipedia.org/wiki/Hurricane_Andrew)

Hurricanes can also cause health hazards. By means of either surge or flooding, communicable diseases can occur when sanitation and hygiene are compromised because of a disaster. When flooding occurs, the waters may be contaminated by fecal material from overflowing sewage systems, agriculture waste, and industrial waste.

(<http://emergency.cdc.gov/disasters/hurricanes/keyfactsinfectionsdisease.asp>)

3.1.2 Severe Thunderstorms & Tornadoes

A severe thunderstorm is defined as a thunderstorm containing one or more of the following phenomena: hail 3/4" or greater, winds gusting in excess of 57.5 mph, and/or a tornado. Severe weather can include lightning, tornadoes, damaging straight-line winds, and large hail. Most individual thunderstorms only last several minutes, however some can last several hours.



Long-lived thunderstorms are called super-cell thunderstorms. A super-cell is a thunderstorm that has a persistent rotating updraft. This rotation maintains the energy release of the thunderstorm over a much longer time than typical, pulse-type thunderstorms that occur in the summer months. Super-cell thunderstorms are responsible for producing the majority of severe weather, such as large hail and tornadoes (National Oceanic and Atmospheric Administration). Downbursts are also

occasionally associated with severe thunderstorms. A downburst is a strong downdraft resulting in an outward burst of damaging winds on or near the ground. Downburst winds can produce damage similar to a strong tornado. Although usually associated with thunderstorms, downbursts can even occur with showers too weak to produce thunder (National Oceanic and Atmospheric Administration). Strong squall lines can also produce widespread severe weather, primarily from very strong winds and/or microbursts.

When a severe thunderstorm approaches, the National Weather Service will issue alerts. Two possible alerts are:

- Severe Thunderstorm Watch - Conditions are favorable for the development of severe thunderstorms.
- Severe Thunderstorm Warning - Severe weather is imminent or occurring in the area.

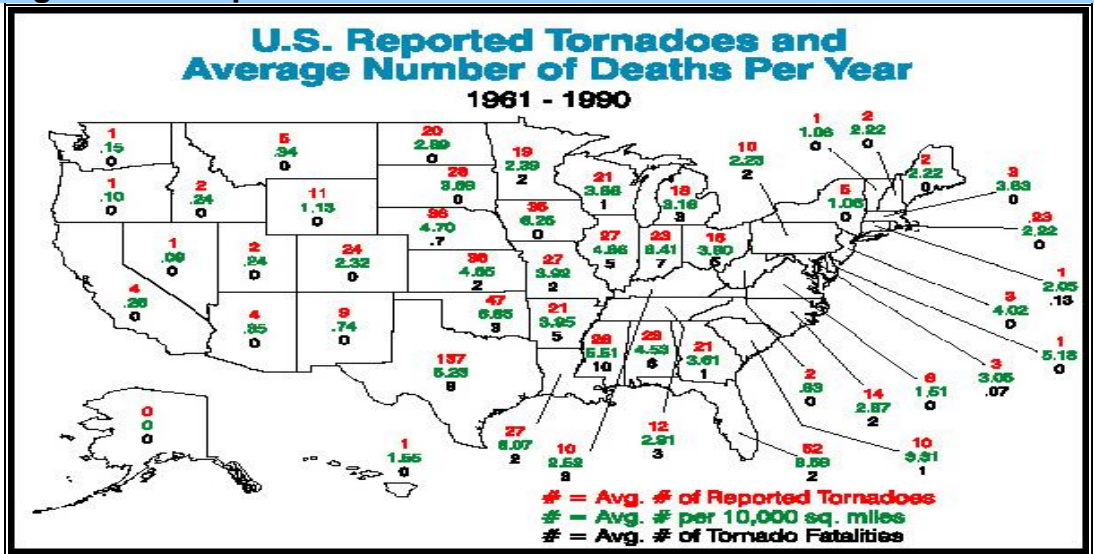
Perhaps the most dangerous and costly effect of thunderstorms is lightning. As a thunderstorm grows, electrical charges build up within the cloud. Oppositely charged particles gather at the ground below. The attraction between positive and negative charges quickly grows strong enough to overcome the air's resistance to electrical flow. Racing toward each other, they connect and complete the electrical circuit. Charge from the ground then surges upward at nearly one-third the speed of light and produces a bright flash of lightning.

On average, more people are killed by lightning than any other weather event. Florida leads in the nation in lightning related deaths and injuries (National Lightning Safety Institute). Florida also has the most strikes, about 12 strikes per square kilometer per year in some places (National Lightning Safety Institute). Nationwide, lightning related economic losses amount to over \$5 billion dollars per year, and the airline industry alone loses approximately \$2 billion a year in operating costs and passenger delays from lightning. The peak months for lightning strikes are June, July, and August, but no month is safe from lightning danger. (http://en.wikipedia.org/wiki/Severe_thunderstorm_warning)

Florida has the highest number of tornadoes per unit area, although most of the tornadoes in Florida are weak tornadoes of EF0 or EF1 intensity. A number of Florida's tornadoes occur along the edge of hurricanes that strike the state. (http://en.wikipedia.org/wiki/Tornadoes_in_the_United_States)

Tornadoes are another potential hazard facing Walton County because Florida has the third highest rate of tornado occurrences in the U.S and has the seventh highest death rate.

Figure 3.1.2 Reported Tornadoes in the US



(<http://www.nssl.noaa.gov/edu/safety/guideimg/pic14.jpg>)

R2 - Omitted Hazards

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occurrences in the county, Towns of Cross City and Horseshoe Beach, and by reviewing the geography, climatology and other natural features that increase human and economic risks.

Table IV.1: Vulnerability and Risk Assessment

Hazard	Impact Ranking			Probability			Vulnerability		
	Uninc	Cross City	H'shoe Beach	Uninc	Cross City	H'shoe Beach	Uninc	Cross City	H'shoe Beach
Hurricanes	H	H	H	H	H	H	H	H	H
Severe Storms / Tornadoes	M	H	H	M	H	H	H	M	M
Wildfires	H	H	H	M	L	L	M	M	M
Floods	H	H	H	H	H	H	H	H	H
Drought / Heat Wave	M	M	M	M	M	M	L	L	L
Freezes / Winter Storms	M	M	M	M	M	M	L	L	L
Sinkholes	M	L	L	M	M	L	M	L	L
Coastal and Riverine Erosion	L	L	L	L	L	L	L	L	L
Biological Events	M	M	M	L	L	L	L	L	L
Terrorism	L	M	M	L	L	L	L	L	L
Technological/Haz Mat	M	M	M	L	L	L	L	L	L
Mass Migration/Civil Disturbance	L	L	L	L	L	L	L	L	L

Impact Ranking was defined as follows:

- High** – Extremely important. High impact to the municipality
- Medium** – Moderately important. Moderate impact to the municipality
- Low** – Low importance. Low impact to the municipality
- X** – No impact. Of no importance to the municipality

Probability was defined as follows:

- High** – More than 1 occurrence in 1 year
- Medium** – Approximately 1 or more occurrences in 5 years
- Low** – Approximately 1 occurrence every 10 years

Magnitude was defined as follows:

- Catastrophic** – the entire county is potentially affected by an event
- Major** – Most of the county is potentially affected by an event
- Minor** – Only a specific area of the county is potentially affected
- Negligible** – Damages and impacts are very localized and minor

1. Hazards Not Included In the LMS

For purposes of hazard identification, the following hazards were not included based on the recommendation of the LMS Committee that these events have never occurred or would have little to no impact if they did. These include:

- **Dam failure:** Dixie County has no dams of any consequence; ergo this hazard is not applicable.
- **Earthquakes:** Dixie County is not in a seismic zone. It has never experienced an earthquake. If one were to occur, it would be of such a small magnitude, that it would not cause any damages. Therefore, earthquakes are of no concern to Dixie County.
- **Tsunamis:** If Dixie County were to ever experience a tsunami, it would have the same effect as a hurricane storm surge. Therefore, having tsunamis as an individual hazard is not needed for Dixie County.

B. Vulnerability Analysis

Dixie County has approximately 6,454 residential structures. Over 35% are vulnerable to a 100 year flood event, and over 40% to a 500 year flood event. Other hazards pose similar threats. A Category 3 hurricane storm surge, under the right conditions, can virtually cover the entire County up to the city limits of Cross City. Most of the county is covered by forests, making wildfire in the Wildfire Urban Interface where many of Dixie County residents live, a serious threat. Dixie County also receives a fair number of thunderstorms that produce hail and lightening on a consistent basis. In all, Dixie County is highly vulnerable to a host of natural and manmade hazards, as will be explained in the remaining sections of this chapter.

The following general vulnerability data for Dixie County comes from the 2013 State of Florida Hazard Mitigation Plan. This provides a summary of the total value of structures in the County, which is used as a base for determining the vulnerability of certain hazards to the residents, and to the infrastructure in the County.

Table IV.2: Value of Structures in Dixie County - Summary

Value of Structures in Dixie County								
County	Residential (x000)	Commercial (x000)	Industrial (x000)	Agriculture (x000)	Religious (x000)	Government (x000)	Education (x000)	Total (x000)
Dixie	\$701,426	\$80,879	\$19,937	\$3,162	\$9,287	\$17,504	\$34,920	\$867,115

Source: 2013 State of Florida Hazard Mitigation Plan, Pg C.4

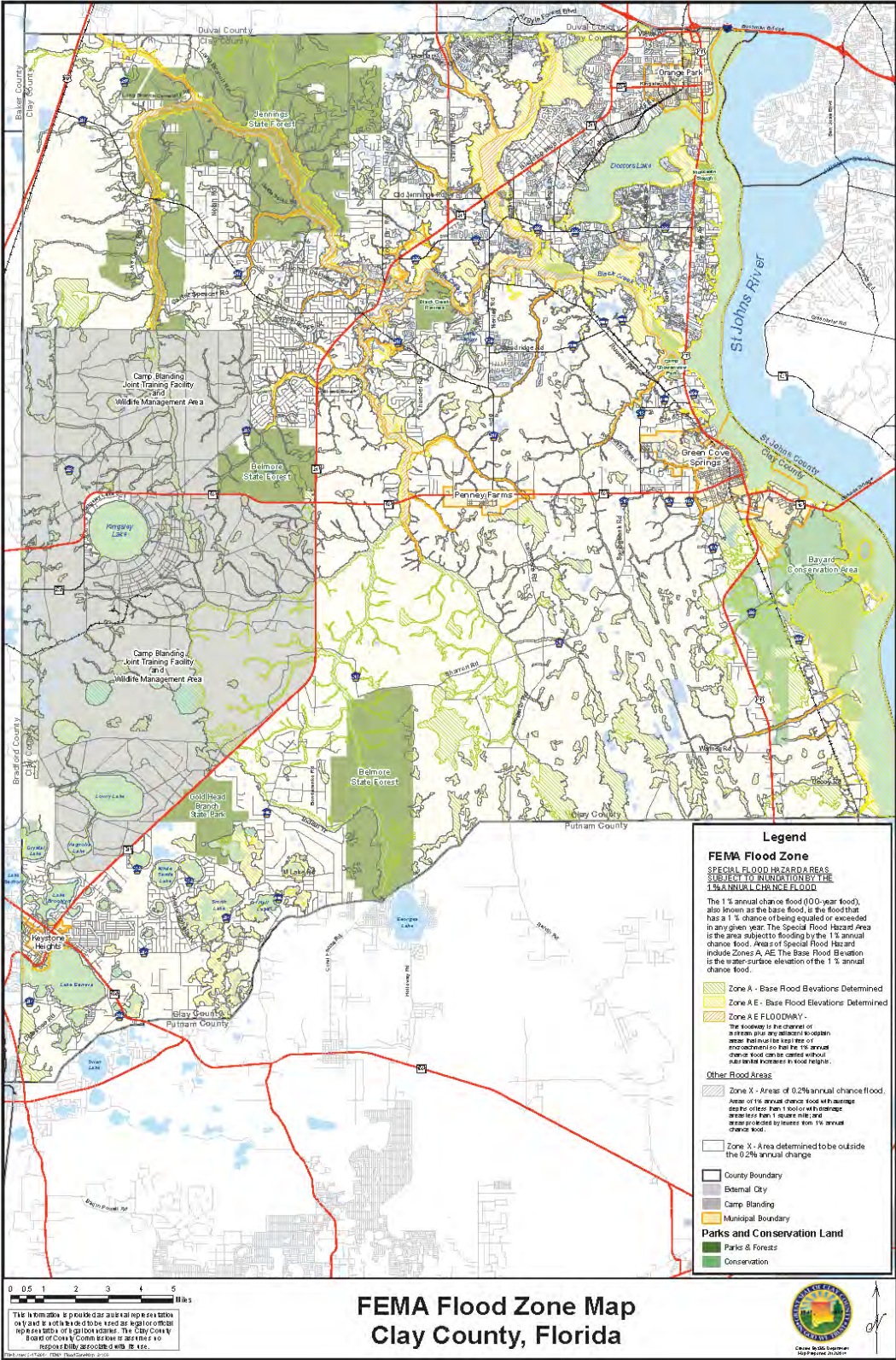
C. Vulnerability to Future Building, Infrastructure, and Critical Facilities

According to the Florida Department of Revenue, Dixie County is a rural county that has experienced a significant drop in property values between 2010 -2011, by approximately 7%. [Source: <http://dor.myflorida.com/dor/property/resources/data.html>] Since that time, each year since 2011, the county property values have risen slightly, but the overall loss between 2010 (last LMS update) and 2015 is -4.60%. This is due to the nationwide economic downturn, and our slow recovery. This represents a slight reduction in the county’s overall damage potential from a just value perspective, yet the potential for physical damages remain the same. Just because property values slightly decrease, the potential for damages does not.

R3 - Map of Flood Zones

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Figure 6: Clay County Flood Zones



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R3 - Description of Flood Zones

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*Buildings include storage buildings for maintenance and swimming gear for pools, canoe storage, classrooms and feed barns for the Environmental Learning Lab.

DeSoto County and the City of Arcadia have 1,147 structures identified as repetitive flood property losses. Based on assessed value from the County Property Appraisers Office, the estimated loss for the incorporated area (City) is 95 structures with assess value of \$11,342,004 (100% loss). The unincorporated area (County) has 1047 structures with assessed value of \$105,520,399 (100% loss).

Flood Analysis:

Impacted by Peace River:

River Acres: The subdivision is located on the eastside of the Peace River approximately 4.5 miles north of the City of Arcadia off U.S. 17 at Masters Road.

Hodent Subdivision: Located off of Girl Scout Road on County Road 661, approximately 4.5 miles north of State Road 70. The subdivision is situated on the west side of the Peace River.
Girl Scout Camp: The camp is located off of Girl Scout Road on County Road 661, 4.5 miles north of State Road 70. The camp is situated on the west bank of the Peace River.

Peace River Campgrounds: The campground is located at the intersection of County Road 661 and State Road 70. The campground is situated on the west side of the Peace River.

Lettuce Lake Campground: The campground is located approximately 10 miles south of the City of Arcadia, about 2.5 miles off U.S. 17 on County Road 761. The campground is situated on the east side of the Peace River.

Liverpool Subdivision: This subdivision is located approximately 11 miles south of the City of Arcadia off of Liverpool Street on U.S.17. The homes are situated on the east side of the Peace River.

Up River Campground: This is a small business and campground with 7 permanent structures. It is located approximately 4 miles south of the City of Arcadia, on County Road 760. The campground is situated on the west bank of the Peace River.

Impacted by Horse Creek:

Hidden Acres and Royal Park Subdivisions: These subdivisions are located south of State Road 72 approximately 8 miles west of the City of Arcadia at the Horse Creek Bridge.

Horse Creek Subdivision: This facility is located approximately 2.5 miles south of State Road 72 off County Road 769 off Environmental Lab Road on Wildcat Run.

Spring Lake Youth Academy: The facility is located approximately 7 miles south of State Road 72 off County Road 769 on Start Street.

Environmental Learning Lab: This facility is located approximately 2.5 miles south of State Road 72 off County Road 769 on Environmental Lab Road.

Subdivisions Impacted by Localized Flooding:

Floricaia Subdivision: This subdivision is located approximately 4.5 miles south of the City of Arcadia on County Road 760-A.

Forest Pines Subdivision: This subdivision is located south of the City of Arcadia to the west of Airport Road.

Springlake Subdivision: This subdivision is located south of the City of Arcadia off County Road 769 near the DeSoto County/Charlotte County Line.

Roadways Subject to Flooding:

U.S 17	Inside City limits
State Rd 31	Near Charlotte County line
State Rd 70	Inside City limits
State Rd 72	At Horse Creek Bridge
County Road 660	Mare Branch Crossing, off the Peace River
County Road 661	Near the Peace River
County Road 760-A	Near Hwy 31 Intersection
County Road 761	Near Horse Creek
County Road 769	Near DeSoto / Charlotte County line and at the Horse Creek Bridge

Looking back at historical records, the worst that could happen would be to areas along the Peace River, Horse Creek and non-elevated structures in the low lying areas. Using a scale of 1-3' of water as being LOW, 3-5' being MEDIUM and 5-16' being HIGH. The severity of houses in the in land area would be low, along Peace River would be high and the Horse Creek area would be medium/high.

Wildfires Analysis:

The State of Florida including DeSoto County has experienced Wildfires during Florida's Dry season, which runs February through June or until the rainy season starts. Over the years, Florida fires have received national media attention like other states. Federal, State, and Local governments have increased spending in the four phases of Emergency Management (Mitigation, Preparedness, Response, and Recovery) due to the problem of "wild land urban interface". In 1998, the State of Florida was affected by a number of large wildfires with the Palm Coast subdivision fire requiring the largest aerial suppression operation ever conducted in the United States. Some 45,000 persons were evacuated and fire suppression units responded from 44 states.

Due to the rural nature of DeSoto County, wildfires largely affect agricultural property and other large tracts, but not the City of Arcadia. These wildfires on agricultural property are

R4 - Extent

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Table II – 7: Hazards Vulnerability Matrix				
Hazard	Probability	Impact	Frequency	Distribution
Earthquake	None	None	N/A	N/A
Tsunami	None	None	N/A	N/A
Coastal Erosion	None	None	N/A	N/A
Landslides Sinkholes	Low	Minimal	1 in 50-100 Years	County-Wide
Coastal Storm	High	Major	1 in 7 years	County-Wide
Tornado	Moderate	Major	1 or 2 a year	County-Wide
Flood	Moderate	Moderate	0 – 1 a year	County Wide
Wildfire	High	Moderate	1 or 2 a year	County-Wide
Dam/Levee Failure	Low-Moderate	Major	1 in 50-100 years	Clewiston
Thunderstorm/High Wind Event	High	Minor-Moderate	Daily during the summer	County-Wide
Drought/Heat Wave	High	Major	Annually	County-Wide
Winter Storms/Freezes	Moderate	Minor	1 in 5 Years	County-Wide
Exotic Pests/Diseases	Moderate	Moderate	1 or 2 a year	County-Wide
Civil Disturbance	Low	Minimal	Unknown	County-Wide
Terrorism	Low	Minimal	Unknown	County-Wide

Table II – 8: HENDRY COUNTY EXTENT OF NATURAL HAZARDS (all information applies to all jurisdictions in Hendry County, unless noted otherwise.)		
Hazard	Effects	Answers (Extent)
Coastal Erosion	-	Not Applicable
DAM/Levee Failure	How deep could the flooding be?	7-16 feet in Clewiston
Disease Outbreak	What is the rate of disease caused deaths?	536.3/100,000 residents
Drought/Temperature Extreme	Highest reading on Keech-Byram Drought index? Highest rainfall deficit? Lowest Okeechobee lake level? What is the average high temperature?	708 in April 2007 20 inches 8.82 feet (July 2, 2007) 92.5°
Earthquake	How high on the Richter Scale?	Not Applicable
Epidemic	What is the rate of epidemic (all infectious diseases) caused deaths?	21.7/100,000 residents
Exotic Pests & Diseases	How many acres of citrus groves at risk? How many acres of sugar cane are at risk? How much cattle is at risk?	63,792 acres or 9,553,400 trees 52,000 acres 63,000 head
Flood	How deep could the flooding be on the ground (ft)?	2 – 36 inches
Hurricane	Highest measure on the Saffir-Simpson scale?	Category 3-4
Sea Level Rise	-	Not Applicable
Severe Thunderstorms	High Winds Lightning (Flash Density) Hail diameter(largest)	30 – 130 mph 8 – 12 flashes/sq km/year .75 to 2.75 inches
Sink Holes	How deep (ft)?	Not Applicable
Space Weather	-	Not Applicable
Tornado	Highest measure on the Enhanced Fujita Scale?	EF 0 through EF 2
Tsunami	-	Not Applicable
Wildfire	How many acres would be available to burn?	756,282 acres
Winter Storm	Lowest temperature?	18°- 20° range

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R5 - Listing Previous Occurrences

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Hazard Vulnerability Analysis by Jurisdiction:

Madison County: The majority of Madison County is identified by the MEMPHIS system to be in a “Medium” risk area to Tornadoes, with the exception of one “Low” risk area consisting of about 24 square miles on the southern border to Taylor County. Using the Memphis data and analysis, it was found that all three incorporated jurisdictions, Madison, Greenville, and Lee are all located in a “Medium” risk area to Tornadoes. Because of these two factors, the vulnerability to a Tornado event affects Madison County, and the jurisdictions of Madison, Greenville, and Lee in the same respect. Since each of the incorporated cities contains a denser population of people, homes, and businesses, the vulnerability of their jurisdictions is viewed to be higher. It is estimated that a tornado striking any one of the cities would create more damage and deaths than if it were to occur in an unincorporated area of Madison County

Table 18: Madison County Historical Tornadoes

County	Location	Date	Time	Extent	Deaths	Injuries	Property Damage
Madison Co.		7/1/1959	1600	F1	0	0	250
Madison Co.		12/3/1968	1400	F1	0	0	2500
Madison Co.		12/25/1969	1830	F2	0	1	2500
Madison Co.		9/9/1971	1445	F0	0	0	0
Madison Co.		10/20/1976	1200	F1	0	0	25000
Madison Co.		12/29/1983	0045	F1	0	0	25000
Madison Co.		4/3/1987	1015	F0	0	0	2500
Madison Co.		4/19/1988	0230	F3	4	18	25000000
Madison Co.		11/5/1988	0015	F2	1	3	25000
Madison Co.		7/3/1990	1700	F0	0	0	0
Madison Co.	Hopewell	9/29/1998	1900	F0	0	0	25000
Madison Co.	Greenville	9/22/2000	1355	F0	0	0	1000
Madison Co.	Greenville	6/12/2001	0050	F1	0	1	200000
Madison Co.	Lovett	11/12/2004	1240	F1	0	0	5000
Madison Co.	Cherry Lake	3/2/2007	0236	EF1	0	0	5000
Madison Co.	Lee	3/31/2009	1940	EF1	0	0	0

Source: National Climatic Data Center www.ncdc.noaa.gov

City of Madison: The City of Madison is affected by tornadoes in the same respect to Madison County. The vulnerability of Madison is higher than the county due to the larger concentration of people and structures found within the city. The risks of a Tornado affecting the City of Madison are equally high for all areas of the city. A tornado event in the City of Madison would probably cause severe damage to homes and structures. There would be a short term economic impact due to businesses having to recover from any damage sustained and employee absenteeism at work. The loss of life is estimated to be below 10 persons based on past historical events.

Town of Greenville: The Town of Greenville is affected by Tornadoes in the same respect to Madison County. The vulnerability of Greenville is higher than the county due to the larger concentration of people and structures found within the city. The risks of a Tornado affecting the Town of Greenville are equally high for all areas of the town. A tornado event in the Town of Greenville would probably cause severe damage to homes and structures. The loss of life is estimated to be below 10 persons based on past historical events. There would be a short term economic impact due to businesses recovering from any damage sustained and employee absenteeism at work.

Town of Lee: The Town of Lee is affected by Tornadoes in the same respect to Madison County. The vulnerability of Lee is higher than the county due to the concentration of people and structures found within the city. The risks of a Tornado affecting the Town of Lee are equally high for all areas of the town. A tornado event in the Town of Lee would probably cause severe damage to homes and structures. The loss of life is estimated to be below 10 persons based on past historical events. There would be a short term economic impact due to businesses having to recover from any damage sustained and employee absenteeism at work.

Hazard History:

April 19, 1988 – A tornado hit the City of Madison, FL. Four deaths and twenty injuries reported. An estimated twenty-five to thirty homes suffered major damage or were destroyed. The storm caused four million dollars in damages to North Florida Community College (NFCC).

November, 1988 – A tornado destroyed a mobile home occupied by a mother and her baby. The mother was sucked out of the home and died from her injuries. The baby survived.

July 12, 1992 – Thunderstorm moved in quickly on Madison County. The storm resulted in over 1000 homes being damaged, as well as 500 vehicles. No deaths or injuries reported. The storm brought massive amounts of hail, some as large as softballs. Over six inches of rain fell in a 15 minute timeframe during the storm.

1994 – A tornado hit Madison High School and caused over \$ 500,000 in damage. It then jumped over a nursing care facility and hit the Florida Highway Patrol Station. It then destroyed the Driver's License Office.

February 14, 2000 – Madison County suffered a sever storm event on this date. There were power outages and debris caused by high winds. No injuries were reported.

September 22, 2000 – Tropical Storm Helene brought several tornadoes to the area. One tornado touched down northeast of Greenville and we went under a tornado warning for 30 minutes. We suffered minimal damage and no injuries were reported.

June 11, 2001 – The remnants of Tropical Storm Allison brought five tornadoes and six inches of rain to Madison County during the evening hours. There were three mobile

homes totally destroyed, and several other homes, cars and barns had moderate damage. No deaths or injuries reported.

April 23, 2002 – Madison County experienced a possible tornado touchdown on this date. It was reported to be near Greenville. There were several uprooted trees and one injury due to a tree falling on an occupied car. One witness claims to have seen the funnel cloud, but it was not confirmed by the National Weather Service.

July 29th, 2003 – On this date, Madison County went under a severe storm warning. The county experienced high winds, lots of rain, and lightning. No major damages or injuries were reported. Some fallen trees and debris blocked some roads.

November 12, 2004 – A F1 tornado touched down briefly in the afternoon and downed numerous trees just east of Hamburg. This event was reported by the Madison County Emergency Management Agency and property damages were estimated at approximately \$5,000.

March 2, 2007 - On this morning, an EF-1 tornado developed quickly and touched down near Cherry Lake. The tornado snapped and uprooted trees along County Road 471. It also damaged the porch and roof of a home. A vehicle was damaged by fallen trees. About 130 acres of planted pine trees were also destroyed. A squall line of severe thunderstorms produced numerous reports of wind damage and isolated tornadoes across the Florida Panhandle and Big Bend from the late evening hours of March 1 into the predawn hours of March 2. An estimated \$5,000 in property damages occurred.

March 31, 2009 – Numerous large pine trees were down in a narrow convergent path. A series of thunderstorms on this day brought flooding, wind damage and spawned a tornado across portions of the Big Bend.

No tornadoes have been reporting in Madison County since the 2010 LMS.

Hazard in Relation to Critical Facilities:

Based on the GIS data as provided by the MEMPHIS system and cross referencing a GIS list of critical facilities in Madison County, there are:

52 Critical Facilities Located in the “1 in 500” Tornado Risk Area.

0 Critical Facilities Located in the “Over 1 in 500” Tornado Risk Area.

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R6 - Terms Describing Probability

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E. Hazards Analysis

Taylor County and the City of Perry are vulnerable to numerous natural and man-made hazards. Hazards were identified by analyzing the historical occurrences in Taylor County and the City of Perry and by reviewing the geography, climatology and other natural features that increase human and economic risks.

Probability was defined as follows:

High – Occurs at least once every two years

Medium – Occurs at least once every five years

Low – Occurrences less frequently than five years

Magnitude was defined as follows:

Catastrophic – the entire county is potentially affected by an event

Major – Most of the county is potentially affected by the event

Minor – Only a specific area of the county is potentially affected

Negligible – Damages and impacts are very localized and minor

Hazard	Priority Ranking	Probability	Extent
Hurricanes and Tropical Storms	Very High	High	Cat 2 every 5 years
Tornadoes	High	High	EF2 Every 3 years
Severe Storms	High	High	58 mph winds
Forest Fires	High	High	10 Acres Average
Floods Areal	High	Medium	2 Feet Average
Floods Riverine	High	High	2 Feet Average
Floods Coastal	High	Low	3 Feet Average
Drought	Medium	Medium	KBDI<400 Average
Heat Wave			2 days above 100° per yr
Freezes / Winter Storms	Medium	Low	23 days below 32° per yr
Sinkholes	Low	Medium	2*2*2' per occur
Coastal and Riverine Erosion	Low	Medium	20 roads per year
Hazardous Materials Incident	Low	Low	Localized
Civil Unrest	Low	Low	Localized
Transportation Incident	Low	Low	Localized
Earthquakes	Low	Low	None
Tsunami	Low	Low	None
Dam / Levee Failure	Not Applicable	Low	None

Since the recent earthquake in Haiti (2010), which had the potential to produce a significant tsunami, a new emphasis has been placed on this type of natural hazard. Taylor County has never been impacted by a tsunami. The effects of a tsunami would be almost identical to the impact of the storm surge from a major hurricane although the warning time would be much shorter. Therefore, any potential hurricane mitigation initiatives would automatically protect against a seismically originated

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R7 - Potential Impacts

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Drought and Water Shortages

Relative Risk: **High**

Extent: D4- Exceptional Drought (Drought Severity Classification)

A drought is noted as a period of unusual dry weather that persists long enough to cause serious problems such as crop damage and/or water supply shortages. There are four basic approaches to measuring drought (Wilhite, 1985):

Meteorological- defined usually on the basis of the degree of dryness (in comparison to some “normal” or average amount) and the duration of the dry period.

Agricultural-drought to agricultural impacts, focusing on precipitation shortages, differences between actual and potential evapotranspiration, soil water deficits, reduced groundwater or reservoir levels.

Hydrological- associated with the effects of periods of precipitation (including snowfall) shortfalls on surface or subsurface water supply (i.e., streamflow, reservoir and lake levels, groundwater).

Socioeconomic-associated with the supply and demand of some economic good with elements of meteorological, hydrological, and agricultural drought.

The severity of the drought depends upon the degree of moisture deficiency, the duration, and the size of the affected area. In the past, most of Central Florida has suffered from droughts to the extent that unnecessary water use has been curtailed by legislation. This curtailment, imposed by local governments and the St. Johns Water Management District, was accomplished by water restriction use during designated hours and alternate days. Many natural hazards can arise from the effects of drought. Historically, drought in Florida has been known to contribute to wildfires, sinkholes, and major water shortages between the months of November-April. Drought is measured on a scale of 0-4 displayed in the table below:

Scale	Severity
D0	Abnormally Dry
D1	Drought- Moderate
D2	Drought- Severe
D3	Drought- Extreme
D4	Drought- Exceptional

One of the most severe cases of long term drought in Florida occurred from October, 2010 and lasted until June of 2012 in which a major portion of the state displayed D3- Drought Extreme conditions. During this extensive period, the two month period of April and May of 2012, showed the highest level of drought

Seminole County Local Mitigation Strategy (LMS)

concern with portions of the state under a D-4 Drought Exceptional condition (The National Drought Mitigation Center, 2014).

One of the major bodies of water providing a water source for much of our crops and agriculture territory in Seminole County is the St. Johns River. During long periods of drought, a disruption in the watering cycle can have potentially damaging effects including substantial crop loss in the northwestern portion of the County. In addition to the crop loss and live stock reductions, drought in Seminole County is associated with increase in wildfire threat which in turn, places both human and wildlife populations at a higher risk.

In partnership with County and municipal staff and the St. Johns Water Management District, a contingency plan is in place to restrict water use across the county in an effort assist with water conservation efforts during periods of drought.

Some direct impacts related to drought include reduced crop production, increased fire hazard, reduced water levels at major lakes and rivers, damage to fish habitat, and income loss for the agriculture industry. These impacts have been recorded as a result of historic events including the extreme drought conditions of 2010-2012.

The Office of Emergency Management regularly monitors the National Oceanographic and Atmospheric Administration, National Weather Service, United States Geological Survey, and the Southeast River Forecast Center for water, river, and lake levels. Activation of public information messages may be necessary if water levels become dangerously low. Seminole County and all of its municipalities may be affected by drought conditions. Structures are not vulnerable to the consequences of drought; therefore do not have a potential dollar loss.

Consequences associated with drought can be public health, agricultural loss, economic recovery assistance programs, mass care, and notification and warning.

The Local Mitigation Strategy recognizes that with a changing climate, there is the potential for an increasing risk of environmental impacts from drought and water shortages and that future mitigation and adaptation strategies related to this hazard should be considered.

R8 - Vulnerability Analysis of Wildfires

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Environmental Learning Lab: This facility is located approximately 2.5 miles south of State Road 72 off County Road 769 on Environmental Lab Road.

Subdivisions Impacted by Localized Flooding:

Floricaia Subdivision: This subdivision is located approximately 4.5 miles south of the City of Arcadia on County Road 760-A.

Forest Pines Subdivision: This subdivision is located south of the City of Arcadia to the west of Airport Road.

Springlake Subdivision: This subdivision is located south of the City of Arcadia off County Road 769 near the DeSoto County/Charlotte County Line.

Roadways Subject to Flooding:

U.S 17	Inside City limits
State Rd 31	Near Charlotte County line
State Rd 70	Inside City limits
State Rd 72	At Horse Creek Bridge
County Road 660	Mare Branch Crossing, off the Peace River
County Road 661	Near the Peace River
County Road 760-A	Near Hwy 31 Intersection
County Road 761	Near Horse Creek
County Road 769	Near DeSoto / Charlotte County line and at the Horse Creek Bridge

Looking back at historical records, the worst that could happen would be to areas along the Peace River, Horse Creek and non-elevated structures in the low lying areas. Using a scale of 1-3' of water as being LOW, 3-5' being MEDIUM and 5-16' being HIGH. The severity of houses in the in land area would be low, along Peace River would be high and the Horse Creek area would be medium/high.

Wildfires Analysis:

The State of Florida including DeSoto County has experienced Wildfires during Florida's Dry season, which runs February through June or until the rainy season starts. Over the years, Florida fires have received national media attention like other states. Federal, State, and Local governments have increased spending in the four phases of Emergency Management (Mitigation, Preparedness, Response, and Recovery) due to the problem of "wild land urban interface". In 1998, the State of Florida was affected by a number of large wildfires with the Palm Coast subdivision fire requiring the largest aerial suppression operation ever conducted in the United States. Some 45,000 persons were evacuated and fire suppression units responded from 44 states.

Due to the rural nature of DeSoto County, wildfires largely affect agricultural property and other large tracts, but not the City of Arcadia. These wildfires on agricultural property are

not generally a concern for structures, but due to the size of the area impacted, fires tend to burn for longer periods. Emergency response is limited due to the scale of the fires and focus is generally on containing these wildfires. The overall vulnerability to the rural areas of DeSoto County are: destruction of forest areas, closing of highways due to smoke, loss of wages if crops destroyed, disruption of utilities, risk to homes in the urban/rural county interface. There are no urban/rural interfaces inside the City of Arcadia. There are numerous homes scattered throughout the countryside with various degrees of risk depending on fuel source and how well maintained a buffer zone is around each structure.

In DeSoto County during 1998/1999 brush fire seasons, Division of Forestry units responded to 49 wildfires totaling 278.8 acres. The average acreage was 5.69 acres. The highest fuel areas that are found within DeSoto County are located in following Area/Sector (s):

- Sector # 5 (DeSoto Ranchettes)
- Sector # 6 (State Road 31- G. Pierce Woods Hospital)
- Sector # 8 (Nocatee)
- Sector # 9 (Ft. Ogden)
- Sector # 10 (Kings Highway)
- Sector # 11 (Hidden Acres)

Mitigation projects for DeSoto County include cutting fire lanes, prescribed burns to reduce fuel, land clearing around existing structures to remove fire risk. The City of Arcadia is not prone to have wildfire events, but could use the above mentioned actions to further reduce fire risk.

The following is a breakdown of number of wildfires that have occurred in DeSoto County since 2008 as reported by DeSoto County Public Safety.

2008	20
2009	27
2010	23
2011	23
2012	25

Division of Forestry’s five year history (2009-2014) indicates that a total of 3,379.5 acres have been impacted by wildfires. Using these figures, DeSoto County can expect 24 wildfires each year with an average size of 22 acres per event. The following is a breakdown by “cause” as determined by the Division of Forestry for the above six years.

Cause	#Fires	Percent	Acres
Lightening	18	16.36	335.5
Campfire	10	32.3	32.2
Smoking	0	0	0.0

Debris Burning	33	24.57	1338.8
Incendiary	0	0	0.0
Equipment	14	12.73	460.4
Children	3	2.73	1.8
Railroad	1	0.91	3.5
Unknown	18	10.91	689.4
Miscellaneous	12	6.48	467.8

In 1999 wildfires occurred along the right away of the railroad tracks, which belong to the CSX railroad. These tracks run north and south through DeSoto County including the City of Arcadia. Florida Statutes require that the railroad maintain the right away free of high grass and brush. The Florida Division of Forestry will be monitoring these tracks as required.

Hazardous Material Analysis:

Relative to other industrial and manufacturing centers around the State of Florida, the threat is not as great to DeSoto County or City of Arcadia. Few major users of chemicals or other hazardous substances exist in the county. While many substances of varying degrees are transported on DeSoto County roadways, Public Safety agencies must be prepared to identify these hazards should they become involved in a transportation accident. Threats to both the City of Arcadia and DeSoto County from hazardous materials include: evacuations, mass casualty/fatality, law enforcement/traffic control, mass decontamination, overcrowded hospitals, contaminated land and/or water, animal issues (relocation, medical) and environmental damage/loss.

Mitigation projects for both Desoto County and the City of Arcadia for hazardous materials are: adequate security at storage sites, hazardous material facilities in locations away from neighborhoods, proper monitoring by regulating agencies, on-going training of facility operators and emergency responders.

The DeSoto County Board of County Commissioners contracts with the Central Florida Regional Planning Council to maintain files on those facilities that use and store hazardous materials. In 2013, there are 11-302 facilities in DeSoto County. The following is a list of the extremely hazardous and the most commonly used hazardous materials used in DeSoto County:

Extremely Hazardous

- Endosulfan
- Paraquat Dichloride
- Pendimethalis
- Anhydrous Ammonia
- Sulfuric Acid

Other

- Chlorine
- Ammonia
- Ethion
- Aluminum Chloride
- Azinphos Methyl
- Chlorphyrifos
- Demelon-S-Methyl
- Diuron

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R9 - Repetitive Loss Properties Data

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Section IV – Vulnerability and Loss Estimates

St. Johns County is a diverse county with areas ranging from urban to rural, and coastal to inland. While all St. Johns County residents are exposed to the hazards identified in this mitigation strategy to some degree, geographic location and other factors greatly affect individual vulnerabilities and probabilities relating to specific hazards. Factors influencing vulnerability include community location, type of construction, demographics, and cultural characteristics. The following section will discuss each hazard's overall vulnerability for St. Johns County and the jurisdictions within.

A. Repetitive Loss Data

Some areas of the County experience repetitive flooding from heavy rainfall, damage includes flooded roadways and homes.

The most well known area with repetitive flooding is the waterfront area of downtown St. Augustine which is very low and which sometimes can flood from the combination of a full moon, a high tide and a northeasterly wind. Flooding also occurs throughout the County within low-lying areas and within the 100-year floodplain.

According to information provided by the Florida Division of Emergency Management the City of St. Augustine Beach has had 2 losses on 1 Single Family Unit; The City of St. Augustine has had 44 losses on 14 properties – 12 Single Family Units, 1 Multi-Family Unit, 1 Non-Residential Unit; The Town of Hastings has had 2 losses on 1 Single Family Unit; and Unincorporated St. Johns County has had 120 losses on 45 properties - 39 Single Family Units, 4 Multi-Family Units and 2 Non-Residential Units. This information included properties with reported losses up to December 31, 2013. The types of properties that are included on this repetitive loss list include: Fifty-three (53) Single Family Units (SFU), Five (5) Multi-Family Units (MFU), and Three (3) Non-residential Units (NRU).

A detailed description of these repetitive losses is provided on the following table. Exact addresses are considered confidential and are thus not included.

Repetitive Loss Summary for St. Johns County

Data as of 12/31/2013

County Name	Community Name	Building Payments	Contents Payments	Total Payments	Average Payment	Losses	Properties
St. Johns County**	St. Augustine Beach, City Of	8471.67	0.00	8471.67	4235.84	2	1
	St. Augustine, City Of	304994.45	133191.54	438185.99	9958.77	44	14
	Town of Hastings	9,547.23	0.00	9,547.23	4,773.62	2	1
	St. Johns County	1725373.29	418613.70	2143986.99	17866.56	120	45

* NOTE: ALL PAYMENTS ARE IN US DOLARS (\$)

**NOTE: THE DATA CONTAINED ON THIS REPORT CONTAINS REPETITIVE LOSS PROPERTIES THAT HAVE NOT BEEN MITIGATED.

R9 - Repetitive Flood Loss Chart

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Figure 4.4 Surge predictions are based on a Category 5 event. Overall, Category 5 worst case storm surge inundation in Indian River County could result in inundation depths of 3 feet above ground to greater than 9 feet above ground.

Portions of the City of Vero Beach located on the barrier island and adjacent to the Intercoastal Waterway can expect surge from a Category 5 storm to range from 3 feet above ground to greater than 9 feet above ground. Lands located along the western banks of the Intercoastal Waterway will received the largest impact from storm surge. Western portions of the City west of U.S. Highway 1 may be inundated with 3 to 6 feet of surge.

The entire Town of Indian River Shores will be inundated with surge during a Category 5 event. Surge is expected to range from 3 feet above ground to greater than 9 feet above ground.

The entire Town of Orchid will be inundated with surge during a Category 5 event. Surge is expected to range from 3 feet above ground to greater than 9 feet above ground. The central portions of the Town are slightly less at risk.

The City of Sebastian’s location on portions of the coastal ridge makes it less likely to experience surge in the western portions of the City. However, those lands adjacent to the Intercoastal Waterway and Sebastian Creek may be impacted by between 1 and greater than 9 feet of surge.

The Town of Fellsmere’s location to the west of I-95 makes it less likely to experience the high surge levels found on the coastal areas in the County. Despite its location away from the coastline, the Town may experience between 1 and 8 feet of surge during a Category 5 event. The extent of surge is fairly uniform throughout the Town.

Documented Repetitive Losses. For this analysis, documented repetitive losses are restricted to the narrow FEMA definition and represent only those properties whose owners have made more than one claim on their flood insurance policies as recorded by the NFIP. As of December 2014, Indian River County (including municipalities) had a total of 211 repetitive flood loss properties with a total of 461 claims. Total payments for building damage on these claims was \$18,289,603, while total payments for content damage was \$4,486,293 (Table 4.3).

Table 4.3 National Flood Insurance Program repetitive flood loss properties by jurisdiction, through December 2014

Community	Number of Properties	Number Mitigated	Occupancy Type					Number of Claims	Total Building Payments	Total Content Payments
			Single Family	Multi Family	Non-Resident	Condo	Other			
Indian River Co	107	19	88	0	8	3	8	243	\$7,913,685	\$1,582,570
Vero Beach	97	12	69	1	20	4	3	204	\$10,023,140	\$2,751,303
Sebastian	2	0	1	0	1	0	0	4	\$212,681	\$75,223
Fellsmere	2	0	2	0	0	0	0	4	\$83,541	\$473
I.R. Shores	3	0	3	0	1	0	0	6	\$56,556	\$76,724
TOTAL									\$18,289,603	\$4,486,293

Note: The Town of Orchid is not a participant in the Community Rating System Program.

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Appendix C - Mitigation Strategy

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S1 - Goals

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1.9 Mitigation Goals, Objectives, and Actions

This section of the Brevard County Local Mitigation Plan describes the goals and objectives established by Brevard Prepares, and the completed and anticipated actions for implementation and maintenance of this plan in an ongoing effort to achieve these goals.

1.9.1 Develop Goals and Objectives for the Mitigation Plan

Brevard Prepares has established a number of goals and objectives to guide its work in the development of this plan. The goals and objectives help to focus the efforts of the group in the mitigation planning effort to achieve an end result that matches the unique needs, capabilities and desires of the participating jurisdictions. For purposes of this update, the mitigation goals and objectives established by Brevard Prepares have not been changed. The following are a list of all goals and objectives.

1. The disaster-resistant economy will be strengthened
 - a. Local government will establish programs, facilities and resources to support business resumption activities by impacted local businesses and industry
 - b. Local government emergency response and disaster recovery plans will appropriately consider the needs of key employers in the community
 - c. Local government will encourage community businesses and industries to make their facilities and operations disaster resistant
 - d. Components of the infrastructure needed by the community's businesses and industries will be protected from the impacts of disaster
 2. Local government in partnership with the community will continue to develop, implement and maintain effective mitigation programs
 - a. The capability to effectively utilize data and information related to mitigation planning and program development including "lessons learned"
 - b. The effectiveness of mitigation initiatives implemented in the community will be measured
 - c. Outreach programs to gain participation in mitigation programs by business, industry, institutions and community groups will be developed and implemented
 - d. The community's public and private sector organizations will partner to promote hazard mitigation programming throughout the community
 - e. Local elected governing bodies will promulgate the local mitigation plan and support community mitigation
 3. The health, safety and welfare of our disaster-resistant community will be maintained
 - a. Local governments will establish and enforce building and land development codes that are effective in addressing the hazards
 - b. Land use policies, plans and regulations will discourage or prohibit inappropriate location of structures or infrastructure
-

- c. Local government will ensure that hazard mitigation needs and programs are given appropriate emphasis
 - d. Regulations will be established and enforced to ensure that public and private property maintenance is consistent with minimizing vulnerabilities to disaster
 - e. Designated evacuation routes will be relocated, retrofitted or modified to remain open before, during and after disaster events, and vehicle access routes to key areas will remain open.
 - f. The potential for infrastructure system failure because of or during a disaster will be minimized through routine maintenance
 - g. Local government will support key employers in the community in the implementation of mitigation measures for their facilities and systems
 - h. Facilities in the community posing an extra health or safety risk when damaged or disrupted will be made less vulnerable to the impacts of a disaster
 - i. Programs for removal, relocation or retrofitting of vulnerable structures and utilities in hazard areas will be established and implemented
 - j. There will be adequate resources, equipment and supplies to meet victims' health and safety needs after a disaster
 - k. Adequate systems for notifying the public at risk and providing emergency instruction during a disaster will be available
 - l. Local governments will protect high hazard natural areas from new or continuing development
 - m. Local jurisdictions will participate fully in the National Flood Insurance Program and the associated Community Rating System
 - n. Reconstruction and rehabilitation of structures and utilities in the community will incorporate appropriate hazard mitigation techniques
4. Public education will be enhanced to increase the level of disaster awareness
- a. The community will be periodically updated regarding local efforts in mitigation planning and programming
 - b. The owners and operators of businesses and industries in the community will be knowledgeable in appropriate techniques
 - c. Managers of public facilities will be knowledgeable in hazard mitigation techniques and the components of the community's mitigation plan
 - d. All interested individuals will be encouraged to participate in hazard mitigation planning and training
 - e. The public living or working in defined hazard areas will be aware of that fact, understand their vulnerability and know appropriate techniques
 - f. Education programs in risk communication and hazard mitigation will continue to be established and implemented

The goals were established by the Brevard Prepares Steering Committee in 2004 and then formally adopted. These goals continue to guide the work of Brevard Prepares. The goals selected are related to the broad mitigation needs and capabilities of the communities involved, rather than addressing a specific hazard type or category.

Therefore, the Brevard County mitigation goals and objectives, by definition, are “multi-hazard” in scope and can be described as statements of the desired “mitigation-related capabilities” that will be present in each participating jurisdiction in the future as the goals are achieved.

1.9.2 Using a “Goal-Based” Planning Process

The goals established by Brevard Prepares are considered to be broad, general guidance that define the long-term direction of the planning. As indicated in the list of goals and objectives attached to this section, each goal statement has one or more objectives that provide a more specific framework for actions to be taken by Brevard Prepares and its participants. The objectives define actions or results that can be placed into measurable terms by Brevard Prepares, and translated into specific assignments by the Steering Committee for implementation by the participating jurisdictions and associated agencies and organizations.

The objectives selected by Brevard Prepares are intended to create a specific framework for guiding the development of proposed mitigation initiatives for incorporation into the plan. Whenever feasible, the planning participants have attempted to associate each proposed mitigation initiative with the objective statement the initiative is intended to achieve. By associating a mitigation initiative with a specific objective, the proposed initiative is also, of course, intended to help achieve the broader goal statement to which the objective corresponds. Proposing mitigation initiatives that are consistent with the selected objectives is a principal mechanism for the participants to achieve the stated goals of the mitigation-planning program.

As the Brevard County Local Hazard Mitigation Strategy is reviewed and updated by Brevard Prepares participants, the goals and supporting objective statements are also reviewed to ensure they are still applicable to meeting the unique needs, interests and desires of the community. The following goals and objectives were reviewed for this update, and it was determined to continue to plan towards these mitigation goals:

1.9.3 Addressing Known Risks and Vulnerabilities

A logical consequence of having determined the hazards and amount of risk from each to the participating jurisdictions, and having assessed facilities and neighborhoods for their vulnerabilities to those hazards the involved agencies and organizations have the information at hand with which to propose initiatives addressing both known vulnerabilities and established goals. Appendix I is a list of initiatives proposed for the assessed facilities, neighborhoods or repetitive loss properties in the reports given by each jurisdiction.

In addition, there are many initiatives included in the plan that are of general benefit to the whole county and all of its citizens through, for example, protecting facilities and

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S2 - Detailing Capability

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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, electrical 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.

Municipal Integration of Mitigation Measures

The following section identifies how the participating municipalities have incorporated mitigation into their planning processes, policies and/or ordinances. The municipalities continuously strive to expand and improve upon their mitigation measures as is illustrated below and with the extensive listing of mitigation projects identified in Part 2.

Aventura

City of Aventura Comprehensive Plan	April 2006
Transportation Element	
Policy 1.9: The City of Aventura, in consultation with the Florida Department of Transportation, shall evaluate the impacts of proposed development and redevelopment on its transportation system, Strategic Intermodal System facilities, and the adopted level of service standards of transportation facilities, and identify strategies to alleviate or mitigate such impacts in coordination with the developer and other agencies as appropriate. The City shall coordinate with FDOT, Miami- Dade County, and 28 other jurisdictions in the county in the development of common methodologies for measuring such impacts.	
Infrastructure Element	
Objective 4: Aventura shall protect and preserve the biological and hydrological functions of the wetlands identified in the Land Use Element. Future impacts to the biological functions of publicly and privately owned wetlands shall be mitigated. Publicly acquired wetlands shall be restored and managed for their natural resource, habitat and hydrologic values.	
Capital Improvements Element	
Objective 3: Future development will be permitted only when the adopted level of service standards for those services listed in the CIE will be upgraded or maintained at adopted levels of service, or when demonstrated negative impacts on hurricane evacuation clearance times will be mitigated, by ensuring that adequate fiscal resources are made available including, the proportionate cost of improvements necessitated by the development. [9J-5.016(3)(b)3]	
Conservation & Coastal Management Element	
Policy 10.2: Structures which suffer recurring damage to pilings, foundations or load-bearing walls shall be required to rebuild landward of their current location to modify the structure to structurally enhance the structure, institute or mitigation measures or delete the areas most prone to damage.	

City of Aventura Comprehensive Plan	April 2006
<p>Policy 10.14: The City shall implement its local mitigation strategy in accordance with the guidelines provided in the Local Mitigation Strategy: A Guidebook for Florida Cities and Counties in order to fulfill the requirements of Rule 9J-5.012, F.A.C. relating to post-disaster planning, repair, and reconstruction.</p>	

Bal Harbour

Comprehensive Plan for Village of Bal Harbour	June 1988
Future Land Use Element	
<p>Objective 9J-5.006(3)(b)4: Protect natural and historical resources Policy: Developments and construction that adversely impact on the quality of the natural environment shall not be allowed.</p>	
Coastal Management Element	
<p>Objective 2.2 Hazard Mitigation and Coastal High-Hazard Areas: the Village of Bal Harbour shall ensure that building, development and redevelopment activities are carried out in a manner which minimizes the danger to life and property from hurricanes. Development within coastal high-hazard areas shall be restricted and public funding for facilities with coast high-hazard areas shall be curtailed.</p> <ul style="list-style-type: none"> • Policy 2.2.01: The hazard mitigation section of the Dade County Hurricane Procedure Plan shall be reviewed and updated on a 5-year basis. In the rewrites, the Emergency Management Director shall identify specific actions that could be implemented to reduce exposure to natural hazards. • Policy 2.3.06: The Recovery Task Force shall propose comprehensive plan amendments which reflect the recommendations in any interagency hazard mitigation reports or other reports prepared pursuant to Section 406 of the Disaster Relief Act of 1974 (PL 93-288). • Policy 2.3.07: If rebuilt, structures which suffer damage in excess of fifty (50) percent of their appraised value shall be rebuilt to meet all current requirements, including those enacted since construction of the structure. • Policy 2.3.08: Structures which suffer recurring damage to pilings, foundations, or loadbearing walls shall be required to rebuild landward of their current location, to modify the structure to structurally enhance the structure, institute other mitigation measures or delete the areas most prone to damage. 	

Bay Harbor Islands

Town of Bay Harbor Islands Code of Ordinances	Enacted December 2013
Article 1 General Provisions	
<p>Sec. 11-5. - Seasonal and periodic flooding; protection of lives.</p> <p>(a)The regulation of areas subject to seasonal and periodic flooding as provided in the comprehensive plan, policies 1.1(4) (page 35), 3.2 (page 36), 5.2 (page 37), and objectives 3 (page 36) and 5 (page 37) shall be implemented by the Code of Ordinances, including sections 5-17, 5-23.1(A)(3), (4) and sections 23-11(A)(5) and 23-12(12).</p> <p>(b)While it is hereby declared that Dade County has retained the primary responsibility for seasonal and periodic flooding throughout the county as provided in county Ordinance Nos. 57-22 and 57-30, as amended, the town's Code of Ordinances shall further implement the goals and objectives of the county ordinances by requiring compliance with all minimum federal flood insurance elevations for all new construction and for which land use densities and intensities have been adopted in further support thereof.</p> <p>(c)The protection of lives as provided in the comprehensive plan, policy 5.2 (page 37), shall be implemented by the Code of Ordinances, including section 5-1, and by virtue of the Miami-Dade County retention of primary</p>	

S3 - NFIP Documentation and Inclusion

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Pinellas County Local Mitigation Strategy

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APPENDIX 13: FLOOD MANAGEMENT PROGRAMS AND REPETITIVE LOSS PROPERTY INVENTORY

Overview

In addition to the potential for injury or loss of life from coastal or inland flooding is potential property loss. The National Flood Insurance Program (NFIP) was created to provide home and business owners with property insurance against the flood hazard. In order to participate in the NFIP and provide property owners with the ability to obtain flood insurance, local governments must adopt key Land Development Regulations (LDRs) within the floodplain as well as manage a program designed to minimize the community's vulnerability.



FEMA has reported the following statistics with regard to the flood policies within the State of Florida as compared to other states (<http://bsa.nfipstat.fema.gov/reports/1011.htm>). These facts show the overall importance of the NFIP to the state and the level of flooding concern.

**Table 13- 1: Flood Policies in Force
(as of 6/30/2014)**

Top 5 states	Total Policies	Total Value of Insured Properties	Total Premiums of Policies in Force
Florida	2,007,265	\$ 475,532,376,500	\$ 1,065,801,733
Texas	613,505	\$ 158,435,243,100	\$ 380,842,793
Louisiana	473,537	\$ 112,783,427,000	\$ 366,421,758
California	240,503	\$ 64,159,270,500	\$ 211,132,333
New Jersey	239,478	\$ 57,172,538,700	\$ 241,577,140
Total US Policies	5,388,158	\$ 1,277,920,367,400	\$ 3,795,555,026

As of June 2014, Florida residents purchased 37% of all NFIP policies in the United States. The NFIP Insurance Report (8/28/2014) is presented in Table 13-2 which provides flood insurance information for each jurisdiction.

Mitigation programs are working as new buildings are constructed to current codes. The county and its jurisdictions strive to reduce their vulnerability to flooding through LDRs, code enforcement, and they actively seek to assist homeowners and businesses elevate or flood proof their structures. Those communities who choose to do so may include their Floodplain Action Plan and Annual Reports in the (optional) Appendix 15 of the Local Mitigation Strategy.

Pinellas County Local Mitigation Strategy

National Flood Insurance Plan Participation

The municipalities participating in the LMS also participate in the NFIP. The specifics vary from jurisdiction to jurisdiction. Typical plans for NFIP participation are presented below:

- **Maintenance of the Flood Insurance Rate Maps (FIRM).** The jurisdictions maintain the most recent set of FIRM maps so as to be able to provide guidance for construction within the floodplain. These maps were updated during FEMA's Map Modernization process. Many communities link to the FEMA website for digital FIRMs.
- **Flood Elevation Certificates** are filed both electronically and in hard copy.
- Continue to provide the **Map Determination Service**, including the publicizing of the service.
- If needed, each community has a **designated floodplain manager**.
- Most communities participate in the **Community Rating System (CRS)**, remain in compliance through annual CRS recertification and are engaged in no activities designed to lower our CRS score. Activities include drainage system maintenance, distribution of information on floodproofing, prohibiting stream dumping, and maintaining a *Disaster Response and Recovery Plan*.
- **Enforcement of adopted Land Development Regulations** which sets down the standards for construction or substantial improvement of structures within the floodplain. Also, the jurisdictions have updated their LDRs to conform to recent state changes, CRS Program Best Practices, and NPDES requirements.
 - All construction within the V and A zones must meet NFIP requirements. All development is regulated with regard to surface water runoff.
 - Detention and retention are required to be designed for the 100-year storm unless connected to a conveyance facility.
 - Enforces the elevation of all new and substantially improved structures.
 - All CRS communities send flood proofing information and insurance information annually to the residents of each repetitive loss area.
 - Maintenance of stormwater systems, including the inspection of privately-owned drainage systems and remove, or cause to be removed, obstructions in channels or waterways. This includes routine inspection, removal of debris, repairs, top and slope mowing, and aquatic maintenance.
 - Prohibits stream dumping
 - Encourage the elevation/retrofitting of structures to FBC requirements through the enforcement of the 50% rule, through the distribution of information to repetitive loss areas and SFHA.
- **Conservation/ Recreational Opportunities** - Open areas are retained for wetland and floodplain purposes through the use of Land Use designations such as Open Space / Recreation, Conservation and Preservation land uses. They may be further protected by some communities by dedicating land in perpetuity to that use for protection of the wetland, floodplain or uplands.
- **Community assistance and outreach.** The jurisdictions provide community assistance in many forms, including providing information on the FIRM and flood zones, maintaining a Flood Library of relevant documents at the local libraries, and making disaster preparedness documents available online. Websites link to the county emergency management site for a mitigation / preparedness video library and additional information. It also includes the annual mail-out of flood proofing information to the residents of each repetitive loss area as well as providing flood information to banks, lending institutions, etc.

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Table 13- 2: NFIP Policy Report

8/28/2014

CID	Community Name	Total Premium	V-Zone	A-Zone	Total No. of Policies	Total Coverage	Total Claims Since 1978	Total Paid Since 1978
125089	BELLEAIR BEACH, CITY OF	\$ 1,514,391	87	988	1,083	\$ 265,167,800	671	\$ 11,343,094
120239	BELLEAIR BLUFFS, CITY OF	\$ 73,584	0	35	174	\$ 43,302,200	9	\$ 303,302
125090	BELLEAIR SHORE, TOWN OF	\$ 81,049	10	30	40	\$ 11,888,500	49	\$ 607,039
125088	BELLEAIR, TOWN OF	\$ 575,077	22	425	801	\$ 221,235,800	120	\$ 1,795,671
125096	CLEARWATER, CITY OF	\$ 8,394,896	709	9,080	11,948	\$ 2,835,961,000	1,348	\$ 11,678,193
125103	DUNEDIN, CITY OF	\$ 3,836,522	792	2,596	4,370	\$ 839,028,300	693	\$ 9,059,258
125108	GULFPORT, CITY OF	\$ 1,584,787	203	2,171	2,759	\$ 504,958,800	254	\$ 1,069,527
125117	INDIAN ROCKS BEACH, CITY OF	\$ 2,511,022	118	2,780	2,898	\$ 625,755,900	904	\$ 6,333,713
125118	INDIAN SHORES, TOWN OF	\$ 1,310,492	163	2,581	2,744	\$ 531,008,400	270	\$ 2,019,024
120245	KENNETH CITY, TOWN OF	\$ 186,084	0	202	334	\$ 61,376,900	16	\$ 15,187
125122	LARGO, CITY OF	\$ 1,756,309	1	1,253	2,866	\$ 589,527,900	231	\$ 1,329,284
125127	MADEIRA BEACH, CITY OF	\$ 3,049,863	330	2,976	3,306	\$ 701,373,000	1,934	\$ 15,464,387
125133	NORTH REDINGTON BEACH, TOWN OF	\$ 1,085,842	63	1,378	1,441	\$ 274,541,800	193	\$ 1,256,240
120250	OLDSMAR, CITY OF	\$ 2,012,116	19	1,756	2,516	\$ 652,108,700	287	\$ 2,283,003
125139	PINELLAS COUNTY *	\$ 23,471,396	370	24,874	36,389	\$ 8,190,674,700	2,881	\$ 21,696,379
120251	PINELLAS PARK, CITY OF	\$ 2,165,346	0	1,326	3,662	\$ 834,044,400	613	\$ 2,698,292
125140	REDINGTON BEACH, TOWN OF	\$ 1,223,287	45	701	746	\$ 175,425,600	1,041	\$ 8,666,426
125141	REDINGTON SHORES, TOWN OF	\$ 1,143,265	41	1,623	1,664	\$ 379,158,000	426	\$ 2,026,566
125143	SAFETY HARBOR, CITY OF	\$ 700,519	1	378	1,205	\$ 325,297,100	64	\$ 592,980
120257	SEMINOLE, CITY OF	\$ 356,711	0	792	992	\$ 175,727,800	37	\$ 68,367
125151	SOUTH PASADENA, CITY OF	\$ 1,387,527	39	2,808	2,847	\$ 543,828,300	72	\$ 254,523
125149	ST. PETE BEACH, CITY OF	\$ 6,969,505	385	6,697	7,082	\$ 1,439,666,900	1,358	\$ 8,865,347
125148	ST. PETERSBURG, CITY OF	\$ 34,208,874	582	31,268	36,970	\$ 7,858,585,700	5,741	\$ 55,583,708
120259	TARPON SPRINGS, CITY OF	\$ 3,351,806	163	2,918	3,684	\$ 842,860,600	546	\$ 6,293,609
125153	TREASURE ISLAND, CITY OF	\$ 4,685,088	431	5,120	5,551	\$ 1,091,493,400	1,413	\$ 8,018,053
	COUNTY TOTAL :	\$ 107,635,358	4,574	106,756	138,072	\$ 30,013,997,500	21,171	\$ 179,321,172

Pinellas County Local Mitigation Strategy

Community Rating System (CRS) Programs

Because flooding – both coastal and inland flooding – is considered the most critical hazard facing the county, all jurisdictions participate in the NFIP and have a floodplain management program. Many of the communities also participate in the Community Rating System (CRS) and strive to reduce the risk in their communities.

CRS provides flood insurance premium discounts to NFIP-participating communities that take extra measures to manage floodplains above the minimum requirements. A point system is used to determine a CRS rating from 10 to 1, with lower scores indicating better ratings. A community that does not participate in CRS or that does not maintain the minimum number of credit points would be considered a Class 10 community. The more measures a community takes to minimize or eliminate exposure to floods, the more CRS points are awarded, the lower their CRS Class Rating and the higher the discount on flood insurance premiums. A list of CRS communities is available on FEMA’s Web site at <http://www.fema.gov/library/viewRecord.do?id=3629> (FEMA, 2012b). The unincorporated areas of Pinellas County and most of the incorporated communities participate in the CRS program. CRS class ratings for each of these communities are shown in Table 13-3.

Table 13- 3: Pinellas County CRS Program Ratings

Community	Community Identification Number	CRS Class Rating
Pinellas County (unincorporated areas)	125139	7
Belleair, Town of	125088	Not participating
Belleair Beach, City of	125089	7
Belleair Bluffs, City of	120239	Not participating
Belleair Shore, Town of	125090	Not participating
Clearwater, City of	125096	7
Dunedin, City of	125103	6
Gulfport, City of	125108	6
Indian Rocks Beach, City of	125117	7
Indian Shores, Town of	125118	6
Kenneth City, Town of	120245	8
Largo, City of	125122	7
Madeira Beach, City of	125127	6
North Redington Beach, Town of	125133	7
Oldsmar, City of	120250	6
Pinellas Park, City of	120251	6
Redington Beach, Town of	125140	7
Redington Shores, Town of	125141	7
Safety Harbor, City of	125143	7
Seminole, City of	120257	Not participating
South Pasadena, City of	125151	7
St. Pete Beach, City of	125149	7
St. Petersburg, City of	125148	6
Tarpon Springs, City of	120259	7
Treasure Island, City of	125153	6

Source: FEMA, May 2014

Pinellas County Local Mitigation Strategy

Managing Repetitive Loss Properties

One of the key elements in a floodplain management plan is the mitigation of repetitive loss properties. A repetitive loss property is defined as property for which two or more losses of at least \$1,000 each have been paid by the National Flood Insurance Program (NFIP) over a rolling 10- year period.

Pinellas County has 7% of all the NFIP policies in the state with 15% of the total number of repetitive loss structures in the state. This illustrates that Pinellas County is very vulnerable to coastal and inland flooding and that most residents and businesses in the floodplain purchase flood insurance.

The distribution of the structures by jurisdiction is presented in Table 13-3. The list of the repetitive loss properties is not available in documents for public review because of security and privacy regulations. The Repetitive Loss Inventory is for official use only (FOUO) and was provided on CD to the official local jurisdiction representative on the LMS.

The areas with the highest number of repetitive loss locations are the geographic areas with the highest historic flooding. These include the barrier island communities and along the Intra Coastal Waterway, the historic area in Tarpon Springs, the Gandy and Shore Acres communities in the City of St. Petersburg. (See Map 13-1).

The location of specific areas in the community where flooding continues to be a problem allow planners to identify where mitigation efforts should be concentrated. For many of these areas, mitigation will involve significant property owner investment and will probably be delayed until redevelopment/ reconstruction occurs. New construction or significant remodeling will require adherence to current floodplain management regulations will be enforced.

Table 13- 4: Repetitive Loss Properties

Community Name	Rep Loss	SF	2-4	Condo	Other	Non-Res	Properties Mitigated
Belleair	7	7	0	0	0	0	0
Belleair Beach	59	22	8	8	17	4	4
Belleair Shore	6	6	0	0	0	0	1
Clearwater	88	63	2	5	9	9	3
Dunedin	100	99	0	0	1	0	18
Gulfport	13	5	3	2	1	2	0
Indian Rocks Beach	40	30	9	0	0	1	7
Indian Shores	18	5	4	1	7	1	8
Kenneth City	0	0	0	0	0	0	0
Largo	17	13	1	0	1	2	7
Madeira Beach	172	120	36	2	4	10	31
North Redington Beach	6	3	0	1	1	1	1
Oldsmar	7	6	1	0	0	0	2
Pinellas County	131	110	7	3	0	11	39

Pinellas County Local Mitigation Strategy

Community Name	Rep Loss	SF	2-4	Condo	Other	Non-Res	Properties Mitigated
Pinellas Park	24	21	0	0	1	2	21
Redington Beach	92	89	0	2	1	0	4
Redington Shores	22	14	6	0	1	1	8
Safety Harbor	5	1	1	0	0	3	3
South Pasadena	4	3	1	0	0	0	2
St. Pete Beach	75	42	7	3	6	17	7
St. Petersburg	405	379	6	3	3	14	37
Tarpon Springs	71	56	8	0	0	7	2
Treasure Island	140	78	35	4	10	13	21
	1502	1172	135	34	63	98	226

Source: FEMA, Repetitive Loss Listing 2014

Table 13- 5: Repetitive Loss Properties by Occupancy

Single Family	2-4 Family	Condo	Non-Residential	Other
1172	135	34	98	63

Source: FEMA, Repetitive Loss Listing 2014

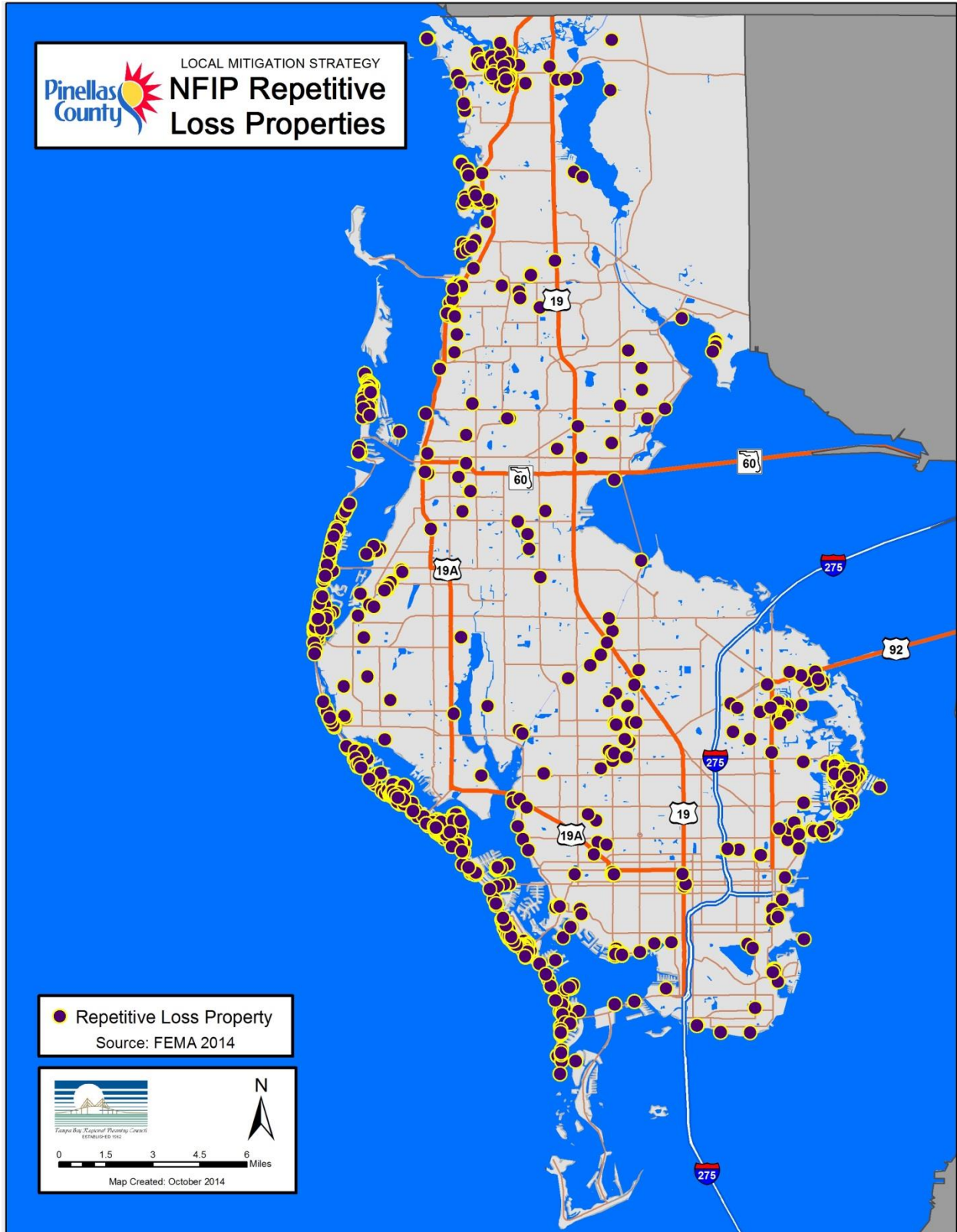
Table 13- 6: Repetitive Loss Properties by Flood Zone

A-Zone 100-year	B-Zone 500 year	Velocity Zone	C/D	X
1,262	11	132	51	46

Source: FEMA, Repetitive Loss Listing 2014

Pinellas County Local Mitigation Strategy

Map 13- 1: Pinellas County Repetitive Loss Property Areas and Areas of Historic Flooding



S4 - Comprehensive Range of Mitigation Projects (a)

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Table 5.1 – Mitigation Options by Category and Hazard

Category	Mitigation Alternatives	Natural Hazard					
		Flooding	Hurricanes/Tropical Storms	Tornadoes	Severe Thunderstorms	Wildland Fire	Erosion
Prevention	building codes	X	X	X	X		X
	coastal zone management regulation	X	X				X
	density controls	X	X	X	X	X	
	design review standards	X	X	X	X	X	X
	easements	X	X	X	X	X	X
	environmental review standards	X	X	X	X	X	X
	floodplain development regulations	X	X	X	X		
	floodplain zoning	X	X	X	X		
	forest fire fuel reduction					X	
	hillside development regulation					X	X
	open space preservation	X	X	X	X	X	X
	performance standards	X	X	X	X	X	X
	shoreline setback regulation	X	X				X
	special use permits	X	X	X	X	X	X
	stormwater management regulations	X		X	X		X
	subdivision and development regulations	X	X	X	X	X	X
	transfer of development rights	X	X	X	X	X	X
Property Protection	acquisition of hazard-prone structures	X	X			X	
	construction of barriers around structures	X	X	X	X		X
	elevation of structures	X	X	X	X		
	relocation out of hazard areas	X	X	X	X	X	
	structural retrofits	X	X	X	X		X
Public Education and Awareness	hazard information center	X	X	X	X	X	X
	public educational and outreach programs	X	X	X	X	X	X
	real estate disclosure	X	X	X	X	X	X

Table 5.1 (cont.) – Mitigation Options by Category and Hazard

Category	Mitigation Alternatives	Natural Hazard					
		Flooding	Hurricanes/Tropical Storms	Tornadoes	Severe Thunderstorms	Wildland Fire	Erosion
Natural Resource Protection	best management practices	X	X	X	X	X	X
	dune and beach restoration		X				X
	forest and vegetation management	X		X	X	X	X
	sediment and erosion control regulations	X	X	X	X		X
	stream corridor restoration	X		X	X		X
	stream dumping regulations	X					X
	urban forestry and landscape management	X		X	X	X	X
	wetlands development regulations	X	X	X	X	X	X
Emergency Services	critical family protection	X	X	X	X	X	X
	emergency response services	X	X	X	X	X	X
	hazard threat recognition	X	X	X	X	X	X
	health and safety maintenance	X	X	X	X	X	X
	post-disaster mitigation	X	X	X	X	X	X
Structural Projects	channel maintenance	X	X	X	X		X
	dams/reservoirs	X		X	X		X
	levees and floodwalls	X	X	X	X		X
	safe rooms/shelters		X	X	X		
	seawalls/bulkheads		X	X	X		X

5.4 MITIGATION OPTIONS BY HAZARD

A variety of mitigation options may be found in the FEMA's Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (FEMA, 2013). The document serves, as a starting point, for gathering ideas and should not be used as the only source for identifying actions. Communities should seek innovative and different ideas for reducing risk that meet their unique needs.

The purpose is to provide a resource that communities can use to identify and evaluate a range of potential mitigation actions for reducing risk to natural hazards and disasters. The focus is mitigation, which is action taken to reduce or eliminate long-term risk to hazards. Mitigation is different from preparedness, which is action taken to improve emergency response or operational preparedness.

- Historical structures;
- Adverse impacts to natural resources (e.g., beaches, water quality);
- Economic disruption;
- Fiscal impact;
- Recurring damage;
- Damage to repair to public infrastructure (e.g., roads, water systems, sewer systems, stormwater systems, electrical power);
- Debris removal;
- Redevelopment/reconstruction;
- Development practices;
- Environmental damage;
- Intergovernmental coordination; and
- Mental health counseling.

Along with these general hazard impacts, specific issues related to preparing for, mitigating against, responding to, and recovering from disasters were identified by the Steering Committee. The issues identified are summarized below.

Flooding

- Localized flooding coming from the western portion of the County in addition to coastal surge will create flooding that greatly exceeds what has been modeled for coastal surge alone. Need for model/study to determine expected impacts from freshwater flooding;
- Large number of smaller contiguous events stacked on top of each other can aggravate local flooding;
- Maintain coordination with Army Corps of Engineers on St. Lucie Canal and Lake Okeechobee water levels;
- Flood events impact fisheries and tourism industries;
- Development along State Road 76 will increase the number of homes experiencing flooding;
- Elevating homes alone will not solve the problem; must elevate all features, roads, fire hydrants, etc;
- Need to accurately model the predicted impact of increased impervious land in County due to development;
- South Fork Estates: homes have 3 to 4 feet of fill, and the streets have had 2 to 3 feet of water;
- Need to better coordinate the impact of drainage between neighboring subdivision;
- Need to better maintain canals;
- Approval to clear canals near Manatee Pocket is difficult because of environmental impacts;
- Need to determine what an acceptable impact is (e.g., Flooded homes? Flooded roads?);
- Residents need to be made aware of the potential for flooding;
- Sedimentation is an issue because many businesses in Martin County are water dependent;

- New development on North Beach and Bridge Road in Hobe Sound/Jupiter Island will create excess standing water on the roads. Need for flood structures and other site improvements to remove standing water; and
- The City of Stuart is not currently a participant in the CRS.

Hurricanes/Tropical Storms

- Strengthening building at Jupiter Island Public Works to ensure that the building can stand up to a Category 2 or greater hurricane;
- Jupiter Island is in need of property acquisition near Bridge Road for the debris staging of material for grinding and disposal purposes; and
- Assess Martin County facilities for strength and identify hardening needs.

Wildland Fire

- Wildland fire mitigation needed on Lots 5 or 6 on Suzanne Drive, owned by the Town of Jupiter Island Public Works.

Erosion

- Seawalls should be constructed where they do not exist to protect the built environment on oceanfront and river portions of Jupiter Island; and
- Continued beach re-nourishment to the Town of Jupiter Island.
- Continued beach re-nourishment to Hutchinson Island, particularly in area of Bathtub Beach and Sailfish Point.

Emergency Shelters

- Many churches serve as kitchens to serve meals following disasters. These facilities need wind protection;
- Impact of evacuees from other counties;
- Education on when to evacuate to a shelter and when to stay at home;
- Pet friendly shelters needed; and
- Some shelters are in need of generator hook-ups and generators.

Technological Hazards

- A train derailment in downtown Stuart would impact the City government building and functions;
- Train derailments cause traffic impediments because main east-west corridors become blocked; and
- These concerns, along with information generated from the inventory of local planning documents and ordinances, resulted in the following goals and objectives for all hazard mitigation planning in Martin County.

The Martin County LMS Steering Committee identified the following goals and objectives. The goals and objectives were selected because of their ability to address community issues that were identified earlier in the mitigation planning process. Goals as defined by FEMA are general guidelines that explain what you want to achieve. They are usually broad policy statements and are long-term in nature.

S4 - Comprehensive Range of Mitigation Projects (b)

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SECTION 7: Mitigation Initiatives

A. Introduction

In Putnam County there are numerous areas and locations that are vulnerable to hazardous events such as floods, wildfires, and other natural and man-made disasters. The mitigation initiatives that Putnam County developed began with evaluating the guiding principles that were completed during the initial phases of the LMS process. The initiatives revolved around these principles regarding the reduction of the county's vulnerability to natural and man-made hazards. The LMS Task Force, comprised of a variety of people in the public and private sector, created the initiatives, which reflected the needs of the community. The Task Force reviewed a number of documents including: Future Land Use Policies, Land Development Code Regulations, and data collected from the Department of Public Safety.

Over the process of several meetings, the LMS Task Force discussed and listed potential projects in Putnam County, which are discussed in detail in the following subsections. The projects were both structural and non-structural mitigation initiatives. These projects were then discussed in the context of cost, responsible entity, implementation time, funding, and areas affected. After all the data was compiled, the Task Force ranked the projects. Information on this process is located in Section 7C.

- 2015 Update

The LMS Task Force thought this to be one of the most important sections to update and reorganize; therefore it was expanded vastly for the 2009 update. One of the main reasons for this was because it is seen as a great way to give new LMS Task Force members a solid stance on where each project is currently at along the implementation process. For more information on this update see Section 1I.

B. Comprehensive Range of Actions

Putnam County has developed a comprehensive range of different types of projects. Each of Putnam County's LMS projects can be divided into six broad categories:

- Public Education & Awareness- Actions to educate and inform citizens, officials, business owners, and property owners about the potential risk from hazards and ways to mitigate against them (e.g. providing mitigation education reading materials, outreach programs, etc.).

- Structural Retrofits & Additions- Actions to modify and/or add to existing structures as a way to mitigate against potential risks from hazards (e.g. storm shutters, back-up generators, etc.).
- Governmental Prevention- Governmental actions that influence the way existing/future property and structures are built and developed to help bring forth mitigation goals (e.g. adopting a fire prevention ordinance, building codes that promote hazard mitigation, etc.).
- Technology- Actions that require technological advancements to move mitigation goals forward (e.g. special GIS hazard layers, improved communication devices, etc.).
- Study- Actions that develop new information on risks, vulnerability, etc. to help with mitigation goals (e.g. stormwater drainage efficiency study, survey on how much citizens know about hurricane evacuations, etc.).
- Infrastructure Improvements- Actions that improve infrastructure before and after hazardous events (e.g. new stormwater drainage systems, fixing road wash-out areas, etc.).

At least three mitigation action items (projects) fit into each of these categories, thus making a well-rounded list of mitigation projects. To see which project(s) belongs to each category, see Section 7C.

Putnam County currently has 24 main mitigation action items (projects) on the Project Priority List, with many of them having multiple sub-projects. Of all of these, at least 5 projects, which mitigation efforts encompass the entirety of the county and its jurisdictions, address all 15 identified hazards for the county. To see what projects incorporate the various hazards, please see Section 7F “Project Priority List”, and to see what jurisdictions each project takes into account, see Section 7E.

The five all-hazard-inclusive mitigation projects have all had developments in the last five years and are continuous efforts that will be implemented years down the LMS road. One of these projects (#07-03) deals with reinforcing community shelters to be able to handle all identified hazard events that could occur in the county. Currently with this project’s development over the past five years, four of its sub-projects have acquired HMGP contracts. Another one of these five all-hazard projects (#07-01) deals with the creation /distribution of mitigation materials for all hazards. In the past few years, materials have been created regarding the highly vulnerable wildfire and flooding hazards in Putnam County. All hazards will eventually be addressed with the implementation order starting with the hazards with the highest vulnerabilities down to the lowest. The last three of these projects (#07-05, #08-01, #08-02) deal with improving/protecting communications within the county and region during a hazardous event. These projects are continuous efforts for the county.

S5 - Mitigation Projects for Each Jurisdiction

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Table 13-3. 2015 High Priority Mitigation Initiatives: Working Group

	<p>properties that have received multiple claims. These properties and similarly situated buildings present likely opportunities for mitigation. Verifying the data serves two purposes: it helps the NFIP improve its records, and it helps identify Repetitive Loss Areas.</p> <p>Prepare Repetitive Loss Area Maps Monroe County and municipalities that prepare Repetitive Loss Area Analyses will identify repetitive loss areas within their jurisdiction using the methods described in FEMA/CRS guidance. The County Growth Management Department will use the identifications, along with the address list of repetitive loss properties provided by the municipalities, to prepare Repetitive Loss Area Maps. Key Colony Beach is preparing its Repetitive Loss Area map in 2015 and a county-sponsored workshop was held on 03/05/15 to help other communities. Identification of Repetitive Loss Areas helps identify property owners who may be interested in reducing their exposure and working with the communities to seek mitigation funds.</p>
Hazards	Flooding, Hurricane/Tropical Storm, Sea Level Rise
Potential Funding Sources	Staff time
Estimated Time Frame	Data verification (annually for CRS communities) Repetitive Loss Area Maps (upon request)
Initiative 2015-003	Support efforts in Monroe County to address the potential negative impacts related to climate change including sea level rise
Jurisdiction/Entity	Monroe County and municipalities
Description	Monroe County is the most vulnerable partner that participates in the SE FL Compact with respect to climate change induced sea level increases. Critical resources like the primary source of drinking water as well as homes, businesses and infrastructure are directly at risk. The LMS should actively support its own Climate Change actions plans (Monroe County and Key West) and support the implementation of a Regional Collaborative Climate Action Plan with the neighboring counties through the Southeast Florida Regional Climate Compact to address the impacts of sea level rise and other related climate change impacts.
Hazards	Flooding, Hurricane/Tropical Storm, Sea Level Rise
Potential Funding Sources	Staff time
Estimated Time Frame	Ongoing
Initiative 2015-004	Promote hurricane and flood awareness to residents and businesses.
Jurisdiction/Entity	Monroe County and municipalities
Description	Once residents and businesses become more aware of their risk, they are more likely to take steps to mitigate their property and support community efforts to mitigate. Risk awareness can be challenging in most parts of Florida with long intervals between events and with new residents moving from other parts of the country. The LMS Working Group should actively seek effective risk communication information and opportunities to promote steps businesses and residents can take to reduce their flood and hurricane risk.

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S6 - Focus on New and Existing Structures

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Polk County LMP Plan Update on Deferred, Completed, or Deleted Mitigation Project Initiatives

Jurisdiction Benefitted	Project Type	Description	Mitigation Goal(s) Addressed	Hazard Mitigated*	Address New or Existing	Responsible Agency	Estimated Cost	Possible Funding Source(s)	Time to Complete	Deferred, Completed, or Deleted	If Deleted or Deferred, Why?
All	Education, Public Awareness	Hurricane Expos, educational hands-on opportunities for citizens to learn and understand hurricanes as well as other natural hazards and how to prepare for them.	1,2	All	Both	County Public Safety	\$5,000	Public Safety Admin	Bi-annual	Deferred	Ongoing -- Combined in 2015 Plan
All	Education, Public Awareness	County wide fire prevention month. Effort to educate about fire safety. Includes public events and school visitations	1,2	Wildfire	Existing	Fire Department	\$3,000	Fire Service	Annual	Deferred	Ongoing -- Combined in 2015 Plan
All	Education, Public Awareness	Emergency? 9-1-1:- designed to teach children of all ages how and when to call 9-1-1. What to expect when calling 9-1-1. Encourages callers to know their full name, address and telephone number	1,2	All	N/A	E-911	\$1,000	E-911	Annual	Deferred	Ongoing -- Combined in 2015 Plan
All	Education, Public Awareness	State tornado drill day. Fire fighters participate with schools and students to prepare for tornado strikes.	1,2	Storms	N/A	Emergency Management, Fire Department	\$0	N/A	Annual	Deferred	Ongoing -- Combined in 2015 Plan
All	Education, Public Awareness	Hurricane preparation materials, including shelter maps, emergency kit shopping guides, and newsletters	1,2	Storms	N/A	Emergency Management	\$2,500	E-911	Annual	Deferred	Ongoing -- Combined in 2015 Plan
All	Education, Public Awareness	Fire & Fall Prevention for Older Adults program. Awareness and preparation for fires, 911.	1,2	Wildfire	N/A	Fire Department	\$2,000	Polk Fire	Annual	Deferred	Ongoing -- Combined in 2015 Plan
All	Education, Public Awareness	Public safety education/awareness materials (handouts, safety house, publications, educational items)	1,2	Wildfire, Storms	N/A	Public Safety	\$9,000	Polk Fire	Annual	Deferred	Ongoing -- Combined in 2015 Plan
All	Education, Public Awareness	Firewise Program. Partner with DoF, have community meetings to educate people on how to harden their homes against fires.	1,2,3	Wildfire	Both	Division of Forestry, Fire Department	\$0	N/a	Annual	Deferred	Ongoing -- Combined in 2015 Plan
All	Education, Public Awareness	"Hurry Let's Talk About Hurricanes and Tornadoes" kids program. Summer program camp visits to educate about hurricane and tornado preparation and safety.	1,2	Storms	N/A	Emergency Management, Leisure Services	\$700	Polk EM	Annual	Deferred	Ongoing -- Combined in 2015 Plan
All	Education, Public Awareness	Press release and warnings regarding natural disasters updates.	1,2	All	N/A	Public Safety	\$0	N/A	Recurring	Deferred	Ongoing -- Combined in 2015 Plan
All	Building Retrofit	Retrofit Adult Day Care Centers to serve as Special Needs Shelters.	1,2	All	Existing	Public Safety	\$62,000	HMGP	12-18 Months	Complete	
All	Critical Facilities	Increase current ground storage water reservoir from 150K gallons to 500K gallon	5,6,9	Flood	Existing	Utilities	\$300,000	HMGP	12-18 Months	Deferred	Financial Constraints
Auburndale	Drainage	Relieves flooding and drainage problem at major intersection oh Alberta St	5,6,9	Flood	Both	Auburndale	\$500,000	HMGP, FMA	12-18 Months	Deferred	Financial Constraints

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S7 - Local Project Rating System

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previous LMS were not completed. In some instances, the incomplete projects were simply removed from list either because they are no longer a community priority or because applications for those projects were denied under various hazard mitigation assistance programs. Other projects were deferred due to lack of funding and limited staffing for project administration and management. Those deferred projects continue to be a community priority and will be completed during the next planning period as funding and staff become available.

The task of hazard mitigation is ongoing and mitigation projects and programs will continue to be added and prioritized as necessary. The process for prioritizing projects and programs will be done using the SAFE-T method. The SAFE-T method is a rating system developed by county staff that uses five variables to evaluate the overall feasibility and appropriateness of mitigation programs and projects. The five variables are Societal, Admistrative, Financial, Environmental, and Technical. When necessary, a more detailed cost-benefit analysis will be conducted.

Table 3.1 SAFE-T Method			
Variable		Value	Description
S	Societal: The public must support the overall implementation strategy and specified mitigation actions. The projects will be evaluated in terms of community acceptance and societal benefits.	1	Low community priority, few societal benefits
		2	Moderate community acceptance/priority
		3	High community acceptance/priority
A	Administrative: The projects will be evaluated for anticipated staffing and maintenance requirements to determine if the jurisdiction has the personnel and administrative capabilities necessary to implement the project or whether outside help will be needed.	1	High staffing, outside help needed
		2	Some staffing, help may be needed
		3	Low staffing, no outside help needed
F	Financial: The projects will be evaluated on their general cost-effectiveness and whether additional outside funding will be required.	1	Somewhat cost-effective
		2	Moderately cost-effective
		3	Very cost-effective
E	Environmental: The projects will be evaluated for any immediate or long-term environmental impacts caused by their construction or operation.	1	Many environ. impacts, possibly long-term
		2	Some environ. impacts, some possibly long-term
		3	Few, if any, environ. impacts
T	Technical: The projects will be evaluated on their ability to reduce losses in the long-term, whether there are secondary impacts, and whether the proposed project solves the associated problem or if additional components are necessary.	1	Other actions are needed or short-term fix
		2	Other actions may be needed for long-term fix
		3	Other actions not needed, long-term fix

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S7 - Priority Ranking Matrix

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TABLE 35: CLAY COUNTY PROJECT PRIORITY RANKING MATRIX

Criteria Category	4	3	2	1	0
The Percentage of the Population Benefited	76-100% of the population benefited	51-75% of the population benefited	26-50% of the population benefited	11-25% of the population benefited	0-10% of the population benefited
The Percentage of the Affected Area Benefited	76-100% of the jurisdiction's population	51-75% of the jurisdiction's population	26-50% of the jurisdiction's population	11-25% of the jurisdiction's population	0-10% of the jurisdiction's population
Health and Safety Considerations (Countywide)	Benefits the health & safety of between 76-100% of the population	Benefits the health & safety of between 51-75% of the population	Benefits the health & safety of between 26-50% of the population	Benefits the health & safety of between 11-25% of the population	Benefits the health & safety of between 0-10% of the population
The Cost of Implementing The Initiative	No quantifiable cost to implement	Cost is estimated at less than \$250,000	Cost is estimated at between \$250,000 and \$1,000,000	Cost is estimated at between \$1,000,000 and \$5,000,000	Cost is estimated at over \$5,000,000
The Benefit to Cost Ratio (FEMA Formula)	More than 5.0	Between 4.0 and 4.9	Between 3.0 and 3.9	Between 2.0 and 2.9	Between 1.0 and 1.9
The Probability of Community Acceptance (Countywide)	Likely to be endorsed by the entire community	Of benefit only to those directly affected and would not adversely affect others	Would be somewhat controversial with special interest groups or a small percentage of the community	Would be strongly opposed by special interest groups or a significant percentage of the community	Would be strongly opposed by nearly all of the general population
The Probability of Funding	Funding can probably be obtained through local short term budgeting	Funding can probably be obtained through local long term budgeting	Funding could be obtained through matching local	The most likely funding source is post disaster mitigation funds	No potential funding sources readily apparent
The Feasibility of Implementation and Environmental Acceptability	Relatively easy to put in place within 1 year and environmentally sound	Not anticipated to be difficult to put in place an environmentally acceptable	Somewhat difficult to put in place because of complex requirements and environmental concerns	Difficult to put in place because of significantly complex requirements and environmental permitting	Very difficult to put in place due to extremely complex requirements and environmental permitting problems
Consistency With Other Plans and Programs	Initiative is included in several other plans and programs	Initiative is included in two other plans and programs	Initiative is included in one other plans and program	Initiative is not listed in another plan and program	Initiative may be inconsistent with other plans and programs
Timeframe For Accomplishing	1 year	2 years	3 years	4 years	>4 years
Ranking Priority	Necessary	Very Important	Important	Somewhat Important	Not very important

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S8 - Project List

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St. Lucie County Local Mitigation Strategy Project Prioritized List

Potential Funding Source Key: HMGP - Hazard Mitigation Grant Program; FMA - Flood Mitigation Assistance; PDM - Pre-Disaster Mitigation

Rank	Local Score	PROJECT #	Municipality/Applicant	Project Description	Potential Funding Source	Cost (\$)
1	113.8	SLCSB2016-1	School Board	School District Office Bldg, Flood Proofing	HMGP; PDM; FMA; State mitigation grants	\$2,600,000.00
2	99.3	SLCUT2016-1	St. Lucie County	Lakewood Park Lift Station Generator	HMGP; PDM; FMA; State mitigation grants	\$50,000.00
3	83.6	SLCUT2016-2	St. Lucie County	Backup Generator at Main Lift Station #1	HMGP; PDM; FMA; State mitigation grants	\$50,000.00
4	82.7	SLCUT2016-9	St. Lucie County	Backup Generator and Well at HEW WTP	HMGP; PDM; FMA; State mitigation grants	\$50,000.00
5	80.9	SLCUT2016-8	St. Lucie County	Bryn Mawr Master Lift Station Upgrade	HMGP; PDM; FMA; State mitigation grants	\$220,000.00
6	80.4	SLCUT2016-3	St. Lucie County	Emergency Generator at Master Pump Station #	HMGP; PDM; FMA; State mitigation grants	\$148,564.00
6	80.4	SLCUT2016-5	St. Lucie County	Emergency Generator at Master Pump Station #	HMGP; PDM; FMA; State mitigation grants	\$130,734.00
8	80.0	SLCUT2016-4	St. Lucie County	Emergency Generator at Master Pump Station #	HMGP; PDM; FMA; State mitigation grants	\$137,416.00
9	79.1	SLCUT2016-6	St. Lucie County	Emergency Generator at Master Pump Station #	HMGP; PDM; FMA; State mitigation grants	\$95,376.00
9	79.1	SLCUT2016-7	St. Lucie County	Emergency Generator at Master Pump Station #	HMGP; PDM; FMA; State mitigation grants	\$109,934.00
11	78.0	PSL2016-23	City of Port St. Lucie	Prima Vista Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$1,894,000.00
12	77.6	COFP2016-2	City of Ft. Pierce	17th Street Reconstruction	HMGP; PDM; FMA; State mitigation grants	\$1,500,000.00
13	76.9	SLCFD2016-1	Fire District	Rebuild Fire Station 5	HMGP; PDM; FMA; State mitigation grants	\$2,400,000.00
14	76.8	PSL2016-17	City of Port St. Lucie	Lansdowne Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$250,000.00
15	76.7	NSLRWCD2016-6	North St. Lucie Water Control District	Gordy Structure Shaft & Telemetry	HMGP; PDM; FMA; State mitigation grants	\$250,000.00
16	76.3	PSL2016-5	City of Port St. Lucie	Calmoso Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$265,000.00
17	76.0	PSL2016-8	City of Port St. Lucie	Elkcam Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$1,503,000.00
17	76.0	PSL2016-9	City of Port St. Lucie	Elkcam-Kingsway Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$276,000.00
17	76.0	PSL2016-13	City of Port St. Lucie	Kingsway Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$1,020,000.00
20	75.8	PSL2016-16	City of Port St. Lucie	Lansdowne Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$826,000.00
20	75.8	PSL2016-18	City of Port St. Lucie	Manth-Walters Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$600,000.00
20	75.8	PSL2016-25	City of Port St. Lucie	Streamlet Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$523,000.00
20	75.8	PSL2016-26	City of Port St. Lucie	Thanksgiving/Academy Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$1,570,487.00

St. Lucie County Local Mitigation Strategy Project Prioritized List

Potential Funding Source Key: HMGP - Hazard Mitigation Grant Program; FMA - Flood Mitigation Assistance; PDM - Pre-Disaster Mitigation

Rank	Local Score	PROJECT #	Municipality/Applicant	Project Description	Potential Funding Source	Cost (\$)
24	75.3	NSLRWCD2016-5	North St. Lucie Water Control District	Ten Mile Creek Fitting Structure	HMGP; PDM; FMA; State mitigation grants	\$187,500.00
25	75.0	PSL2016-1	City of Port St. Lucie	A04/A07 Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$9,596,592.00
26	74.8	PSL2016-4	City of Port St. Lucie	Atlantis-Walters Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$937,000.00
27	74.5	PSL2016-6	City of Port St. Lucie	Crosspoint Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$2,204,000.00
28	74.3	PSL2016-15	City of Port St. Lucie	Lakehurst -Prima Vista Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$5,049,000.00
28	74.3	PSL2016-19	City of Port St. Lucie	Monterrey/Cameo Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$12,035,164.00
28	74.3	PSL2016-20	City of Port St. Lucie	Oakridge/Kingsway Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$7,373,000.00
31	74.0	PSL2016-7	City of Port St. Lucie	Elkcam Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$5,880,000.00
31	74.0	PSL2016-11	City of Port St. Lucie	Harborview Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$507,000.00
31	74.0	PSL2016-24	City of Port St. Lucie	Sagamore Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$1,540,000.00
34	73.8	NSLRWCD2016-2	North St. Lucie Water Control District	C-71/Ten Mile Creek General Clearing & Gradi	HMGP; PDM; FMA; State mitigation grants	\$70,000.00
34	73.8	PSL2016-12	City of Port St. Lucie	Harborview Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$472,000.00
34	73.8	PSL2016-14	City of Port St. Lucie	Lakehurst Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$2,132,000.00
34	73.8	PSL2016-21	City of Port St. Lucie	Ocean Breeze 1 Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$3,655,000.00
34	73.8	PSL2016-22	City of Port St. Lucie	Ocean Breeze 2 Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$2,124,000.00
39	73.5	PSL2016-2	City of Port St. Lucie	A15/A21 Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$20,639,772.00
40	73.3	PSL2016-3	City of Port St. Lucie	A1617 Basin Improvements	HMGP; PDM; FMA; State mitigation grants	\$8,760,816.00
41	73.1	FPUA2016-4	Ft. Pierce Utility Authority	Water Plant Electrical Feed	HMGP; PDM; FMA; State mitigation grants	\$69,000.00
42	71.5	PSL2016-10	City of Port St. Lucie	Evergreen-Atlantis-Walters Basin Improvement	HMGP; PDM; FMA; State mitigation grants	\$703,000.00
43	71.0	PSL2016-27	City of Port St. Lucie	Wildfire Mitigation	HMGP; PDM; FMA; State mitigation grants	\$300,000.00
44	70.9	SLCPW2016-7	St. Lucie County Public Works	San Lucie Plaza Project	HMGP; PDM; FMA; State mitigation grants	\$12,500,000.00
45	70.4	SLCPW2016-9	St. Lucie County Public Works	Sunland Gardens Stormwater Scope	HMGP; PDM; FMA; State mitigation grants	\$25,000.00
46	70.2	FPUA2016-1	Ft. Pierce Utility Authority	Force Main Protection- Indian River Lagoon	HMGP; PDM; FMA; State mitigation grants	\$250,000.00

ORANGE COUNTY LOCAL MITIGATION STRATEGY

PROJECT PRIORITY LIST - 2017

Last Updated: October 11, 2017

Rank	Project Name & Description	Total Population Benefited Countywide	Percentage of Jurisdictional Population Benefited	Cost of Initiative	Estimated Benefit of Initiative	Consistency with other Plans and Programs	Feasibility of Implementation	Probability of Community Acceptance	Time to Complete Project	Environmentally Acceptable	Total Priority Score (Out of 41 possible points (tiebreaker))	Location / Responsible Agency	Hazard(s) Mitigated	Related Mitigation Goal(s) / Objective(s)	Potential Funding Source(s)	Match (if applicable)	Estimated Cost(s)	New, Deferred, Completed or Deleted	If Deleted or Deferred, Why?	Timeframe for Completion			
1	Improve Stormwater Drainage Measures	3	3	2	4	3	4	2	4	3	2	1	31	All Jurisdictions	Floods	4.5, 4.7	FMAP, HMGP, PDM	Yes	\$87,466,440	Current	N/A	1 Year	
1.1	Perform Engineering Studies	2	2	3	2	2	3	4	3	3	3	1	28	Orange County, Orlando, Eatonville	Floods	1.2, 4.4	FMAP, HMGP, PDM	Yes	\$935,000	Current	N/A	6 Months	
1.2	Retrofit and Upgrade Flood Control Devices for New and Existing Structures	3	3	2	3	2	3	2	3	3	2	1	27	Orange County, Orlando, Windermere, Ranger Drainage,	Floods, Sinkholes/Land-subsidence	4.5, 4.7	FMAP, HMGP, PDM	Yes	\$71,947,053	Current	N/A	1 Year	
1.3	Clear Waterways of Debris	3	3	2	3	2	3	2	3	3	2	1	27	Orange County, Orlando	Floods	4.3	FMAP, HMGP, PDM	Yes	\$13,734,387	Current	N/A	1 Year	
1.4	Elevate Structures in Floodplains	2	1	3	3	3	3	2	3	3	2	1	26	Orange County	Floods	4.7	FMAP, HMGP, PDM	Yes	\$850,000	Current	N/A	1 Year	
2	Provide Public Outreach and Responder Training	3	2	3	3	3	4	4	4	3	3	3	0	31	Orange County, Ocoee	All-Hazards, Diseases and Pandemic, Wildfire	1.1, 4.1	PDM, EMPG, SHSGP, CCP	Yes	\$60,000	Current	N/A	6 Months
3	Harden and Retrofit New and Existing Structures	4	3	1	4	2	3	2	3	3	2	1	28	All Jurisdictions	All-Hazards	4.4, 4.5	HMGP, PDM, CDBG	Yes	\$22,187,392	Current	N/A	1 Year	
3.1	Emergency Shelter Retrofits	3	3	1	4	2	4	2	4	3	2	1	29	Orange County, Orlando, Eatonville, UCF	All-Hazards, Tropical Systems	4.5	HMGP, PDM, CDBG	Yes	\$6,300,000	Current	N/A	1 Year	
3.2	Perform Engineering Studies	2	2	3	2	2	4	4	3	3	3	1	29	Orange County, Orlando	All-Hazards, Floods	1.2, 4.4	HMGP, PDM, CDBG	Yes	\$740,000	Current	N/A	6 Months	
3.3	Critical Facilities and Infrastructure for New and Existing Structures	3	2	1	4	2	4	2	4	3	1	1	27	Orange County, Orlando, Belle Isle, Eatonville, UCF, Ranger Drainage, Convention Center	All-Hazards, Extreme Temperatures, Floods, Tropical Systems,	4.4	HMGP, PDM, CDBG	Yes	\$11,538,102	Current	N/A	2 Years	

ORANGE COUNTY LOCAL MITIGATION STRATEGY

PROJECT PRIORITY LIST - 2017

Last Updated: October 11, 2017

Rank	Project Name & Description	Total Population Benefited Countywide	Percentage of Jurisdictional Population Benefited	Cost of Initiative	Cost Benefit of Initiative	Consistency with other Plans and Programs	Feasibility of Implementation	Probability of Community Acceptance	Time to Complete Project	Environmentally Acceptable (Out of 41 possible points)	Location / Responsible Agency	Hazard(s) Mitigated	Related Mitigation Goal(s) / Objective(s)	Potential Funding Source(s)	Match (if applicable)	Estimated Cost(s)	New, Deferred, Completed or Deleted	If Deleted or Deferred, Why?	Timeframe for Completion			
3.4	Back-Up Power Systems and Generators	2	2	3	2	2	3	3	2	3	1	25	Orange County, Orlando, Windermere, UCF	All-Hazards, Floods	4.4	HMGP, PDM, CDBG	Yes	\$2,979,849	Current	N/A	6 Months	
3.5	Historic Preservation	1	2	2	3	2	3	2	3	2	1	22	Orange County, Orlando	Floods, Tropical Systems	4.4	HMGP, PDM, CDBG	Yes	\$629,441	Current	N/A	2 Years	
4	Identify and Detect Hazards	4	3	2	2	2	3	3	3	3	0	27	Orange County, Winter Park	All-Hazards, Sinkholes/Land-Subsidence, Severe Thunderstorms	2.1, 4.4, 4.1	PDM, EMPG	Yes	\$370,000	Current	N/A	6 Months	
5	Purchase and Install Emergency Notification Systems	4	3	2	2	1	1	3	3	4	3	0	26	UCF	All-Hazards, Severe Thunderstorms	3.1, 3.4	EMPG, UASI, SHSGP	Yes	\$3,016,000	Current	N/A	6 Months
6	Acquire Property and Equipment	2	2	1	3	2	3	2	2	3	3	1	24	Orange County, Orlando, Belle Isle, UCF	All-Hazards, Floods	4.2	HMGP, PDM, FMAP	Yes	\$16,288,000	Current	N/A	6 Months
7	Enhance Public Safety and Prevention Efforts	3	2	2	3	2	2	3	3	2	2	0	24	Orlando	All-Hazards	2.2	EMPG, UASI, SHSGP	Yes	\$1,500,000	Current	N/A	1 Year
8	Preserve and Restore Environmentally Sensitive Areas	3	2	2	3	2	3	2	2	2	1	1	23	Orlando	Floods, Severe Thunderstorms, Tropical Systems	4.3	HMGP, CDBG, PDM, FMAP	Yes	\$2,650,000	Current	N/A	2 Years

S9 - Local Planning Mechanisms

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7.2 Incorporation into Existing Planning Mechanisms

Walton County and its municipalities have other plans that will be reviewed and integrated into the Hazard Mitigation Plan as they undergo their regular updates. As previously mentioned, the Walton County Comprehensive Plan has been amended per the approved EAR. According to the planners of the City of Freeport and City of DeFuniak Springs, they have updated their comprehensive plans as well. The following is a list of plans and codes that have and will continue to be integrated into the Walton County Hazard Mitigation Plan.

- Walton County Comprehensive Plan
- Walton County Land Development Code
- City of DeFuniak Springs Comprehensive Plan
- City of Freeport Comprehensive Plan
- City of Paxton Land Development Code

The Hazard Mitigation Plan will take into account any changes in these plans and incorporate the information accordingly in its next update.

The LMS Working Group contacted the Planners for City of DeFuniak Springs, City of Freeport, Town of Paxton and Unincorporated Walton County as to if whether any changes had taken place within their planning mechanisms that would relate to the Local Mitigation Strategy. The municipalities provided the updates to their Land Development Codes as found in ([Appendix H1](#)).

Walton County has adopted many ordinances during the previous 5-year update cycle, which has incorporated the LMS Strategy into their planning mechanisms. The list is as follows:

1. Ordinance 2005-24, June 28, 2005, Amending the Walton County Land Development Code, White Sand Protection Zone;
2. Ordinance 2005-27, October 11, 2005, Amending the Walton County Land Development Code, Protection of Flood-Prone Areas;
3. Ordinance 2005-32, November 25, 2005, Amending the Walton County Land Development, Protection of Flood-Prone Areas;
4. Ordinance 2006-06, June 13, 2006, Code of Ordinances, Open Burning Without a Permit;
5. Ordinance 2006-09, June 27, 2006, Code of Ordinances, Prohibiting Fireworks;
6. Ordinance 2006-16, August 8, 2006, Code of Ordinances, Repeal Open Burning Permit;
7. Ordinance 2007-05, May 22, 2007, Code of Ordinances, Prohibiting Open Burning Without a Permit;
8. Ordinance 2007-06, July 10, 2007, Land Development Code, Restriction on Development (Wetlands);
9. Ordinance 2007-18, Code of Ordinances, Repealing Open Burning Without a Permit;

10. Ordinance 2007-22, August 28, 2007, Amending the Walton County Land Development, Protection of Flood-Prone Areas;
11. Ordinance 2007-43, October 23, 2007 Code of Ordinances, Adopt by reference, Wind Borne Debris Regions and Basic Wind Speeds Map.
12. Ordinance 2007-44, October 23, 2007, Code of Ordinances, Create a Category of Specialty Contractor for Hurricane Shutter Installation;
13. Ordinance 2007-53, December 11, 2007, Modifying the Walton County Land Development Code Providing a Provision for Engineering Interpolation Between the Basic Wind Speed Lines of the Walton County Wind-Borne Regions and Basic Wind Speeds Map; Re-defining the Walton County Coastal Building Zone and Requiring Engineer Design and Certification for Structural Construction in That Zone;
14. Ordinance 2008-02, January 8, 2008, Walton County Comprehensive Plan, Updated Table of Capital Improvements to Include Preliminary Engineering Design of Construction of the Mossy Head Wastewater Treatment Facility;
15. Ordinance 2008-06, January 22, 2008, Walton County Land Development Code, Detection and Elimination of Inappropriate Discharge into the Stormwater System;
16. Ordinance 2008-07, March 11, 2008, Walton County Comprehensive Plan, Flood Prone Areas, Special Flood Hazard Areas;
17. Ordinance 2008-09, March 25, 2008, Walton County Land Development Code, Xeriscaping;
18. Ordinance 2009-01, January 13, 2009, Requiring the Certification or Registration of Persons Engaged in or Desiring to Engage in the Business of Construction Contracting.

Since 2010, Walton County has adopted the following ordinances which incorporate the Local Mitigation Strategy into our planning mechanisms:

1. Ordinance 2010-08, Protection of Flood Prone Areas (Flood Plain) May 10, 2010.
2. Ordinance 2010-12, Local Mitigation Strategy Working Group, June 22, 2010.
3. Ordinance 2010-13, Water Supply Facilities Work Plan, July 13, 2010.
4. Ordinance 2010-14, New Mining Ordinance July 27, 2010.
5. Ordinance 2010-15, Walton County Updated Flood Map Ordinance November 9, 2010.
6. Ordinance 2011-03, Comprehensive Plan Elements, March 1, 2011
7. Ordinance 2011-04, Amending the Walton County Comp. Plan for the Unincorporated Areas - Map Series March 1, 2011
8. Ordinance 2014-05, Floodplain Management, January 28, 2014.
9. Ordinance 2014-11, Land Clearing Activities within Coastal Dune Lake Protection Zone, May 13, 2014.

S10 - Integration Into Other Planning Mechanisms

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Seminole County Local Mitigation Strategy (LMS)

All notes and mitigation efforts will be put together to develop a draft LMS for update. Once the document is ready for review, LMS committee members will conduct public meetings to solicit additional input before the LMS plan, any supporting documentation, and the criteria checklist will be first submitted to the Florida Division of Emergency Management for review, and then forwarded to FEMA for review and approval.

It will be anticipated the review process could take several months. The Seminole County LMS Working Group will establish a more aggressive meeting schedule in preparation for the updated/revised LMS to be resubmitted for approval for each 5-year FEMA formal review.

Following adoption or approval of the plan by all parties involved, the respective agencies and organizations will continue to implement the plan, to expand its scope, continue its analyses, and take other such continuing action to maintain the planning process. This includes action by the LMS Working Group to routinely incorporate proposed mitigation initiatives into the plan, without the necessity to also continuously solicit the formal approval of the plan by the jurisdictions' governing bodies. This process is administered by Department of Public Safety, Office of Emergency Management.

Implementation through Existing Plans and Programs

One of the methods to most effectively implement the LMS is to propose and implement initiatives that will further the goals and objectives in the LMS. Initiatives listed, when implemented will serve to mitigate existing issues. Other current plans, when reviewed and updated will be compared to the initiatives and objectives of the LMS to ensure that all planning activities work toward the common goal. Some identified planning mechanisms that have been utilized in the past include (but have not been limited to) floodplain ordinances, county and municipal comprehensive plans, land development codes, comprehensive emergency management plan.

Seminole County's Office of Emergency Management has oversight of the process for incorporating the LMS into other local government planning mechanisms. Some plans, such as the Comprehensive Emergency Management Plan (CEMP) and Continuity of Operations Plan (COOP), have prescribed processes that provide the opportunity for integration of LMS goals and objectives at scheduled intervals. During these planning cycles, Emergency Management reviews the LMS for consistency and identifies opportunities to link the LMS to the revised plans. As an example, information collected for the LMS risk assessment has been used to update the CEMP.

As part of the planning integration process, Emergency Management staff also continuously seeks plan-development opportunities that are not part of existing planning cycles, but are relevant to the goals and objectives of the LMS. The process for linking the LMS to planning projects includes identifying mitigation-related elements in the plans under development, and assuring that policies and initiatives in the LMS are considered and addressed. Strategic planning is an example of this, as the process includes looking at both short- and long-term needs and addressing gaps and initiatives through policy and budget.

Public education and outreach is a large portion of the Local Mitigation Strategy. The LMS is incorporated in the Prepare Seminole! Campaign which is a community action program to help all citizens, businesses, and other organizations prepare and mitigate damages. This campaign was

Seminole County Local Mitigation Strategy (LMS)

launched in 2005 after tornadoes affected the Central Florida area. The public outreach initiative uses LMS goals and objectives to encourage mitigation efforts.

The LMS goals are used to help strengthen vulnerable critical facilities by using other grants, funding opportunities, and policy. The State Homeland Security Grant has been used to strengthen interoperable communication systems that are used during disasters. In addition, these grants have strengthened capabilities of the Emergency Operations Center to provide redundant communications with other EOCs in the region and the State of Florida EOC in Tallahassee, Florida.

The Development Services Department uses strict building codes to prevent loss from fires, natural disasters, as well as man-made events. In the City of Altamonte Springs, fire sprinkler codes were adopted to prevent the loss of homes and buildings from fires. Strict planning and building codes are used to minimize the vulnerability of newly constructed buildings throughout Seminole County.

Particular highlights of the LMS Working Group efforts to implement the mitigation plan through other plans and programs include updates to the Comprehensive Emergency Management Plan (using the hazards/risk assessment), comprehensive future land use plans of Seminole County and municipalities. During the updating process, both of these documents will be revised to limit development in hazard areas, etc. These examples demonstrate that each participating jurisdiction is committed to incorporating mitigation principles and concepts into their normal operations and activities via their existing planning and programming processes.

Authorities and References

FEMA. (2011, October 1). *Local Mitigation Plan Review Guidance*. Retrieved March 1, 2014, from www.fema.gov: http://www.fema.gov/media-library-data/20130726-1809-25045-7498/plan_review_guide_final_9_30_11.pdf

National Oceanic and Atmospheric Administration. (n.d.). *Converting Traditional hail Size Descriptions*. Retrieved 2015, from Storm Prediction Center: <http://www.spc.noaa.gov/misc/tables/hailsiz.htm>

Natural Resources Defense Council. (n.d.). *Climate Change Health Threats in Florida (Extreme Heat Vulnerability)*. Retrieved from Natural Resources Defense Council: http://www.nrdc.org/health/climate/fl.asp#ap_heat

Ponemon Institute. (2013). *2013 Cost of Data Breach Study: Global Analysis*. Ponemon Institute.

The National Drought Mitigation Center. (2014). Percent Area in U.S. Drought Monitor Categories (Florida). Lincoln, Nebraska, USA. Retrieved from <http://droughtmonitor.unl.edu/MapsAndData/DataTables.aspx>

VAISALA. (2013). *Southeast U.S. Lightning Data from National Lightning Detection Network*. VAISALA.

Wilhite, D. a. (1985). *National Drought Mitigation Center*. Retrieved 2014, from Types of Drought: <http://drought.unl.edu/DroughtBasics/TypesofDrought.aspx>

S11 - Previously Integrated Planning Mechanisms

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Review of local plans for hazard mitigation supporting policies and goals

In addition to the review of FEMA flood hazard maps, the location of repetitive loss properties, CRS activity worksheets, past disaster damages, regional plans (Northwest Florida Water Management District Risk MAP products and water conservation plans), available studies and technical reports, the communities in this plan have reviewed other local planning documents such as comprehensive plans, stormwater master plans (where available), and capital improvement plans. Below is a listing of policies and actions that support hazard mitigation efforts in the greater Bay County area.

Bay County unincorporated

Bay County Comprehensive Plan

The Bay County Comprehensive Plan strongly supports Local Mitigation Strategy policies. Broad examples include:

- The Capital Improvements Element supports the avoidance of public expenditures within the Coastal High Hazard Area.
- The Coastal Management Element includes requirements for the Land Development Regulations to include regulations to prohibit development from compounding hazards and their risks.
- The Conservation Element addresses wetland protection, and suggests enforcement for the conservation of these wetlands to be included in the Land Development Regulations.

Further specific examples of Comprehensive Plan objectives and policies are grouped into 3 hazard mitigation areas below: storm surge, flood hazard and combined hazards.

Storm Surge

Objective 4.11: Assist and support efforts by Florida's Department of Transportation and the Metropolitan Planning Organization toward improving major state highway access into Bay County to provide more effective and efficient transportation movement and hurricane evacuation.
(Transportation Element)

Policy 4.11.1: Hurricane evacuation routes are identified and shown on the Future Transportation Map Series

Objective 6.15: Restrict development that will damage or destroy significant dunes (as defined at 62B-33.002(13), F.A.C.) (Conservation Element)

Policy 6.15.1: Developers of beachfront projects shall make every effort to avoid damaging significant dunes. Where such damage is unavoidable, the significant dune must be restored and re-vegetated to at least pre-development conditions. Mitigation required as a result of a Florida Department of Environmental Protection Coastal Construction Permit shall be presumed to satisfy dune restoration requirements.

Objective 7.4: Restrict development that will damage or destroy significant dunes (as defined at 62B-33.002(13), F.A.C.) unless appropriate mitigation measures are undertaken. (Coastal Management Element)

Objective 7.5: Institute beachfront construction standards that will protect coastal resources and minimize the potential for damage caused by coastal storms.

Policy 7.5.1: All development undertaken seaward of the Coastal Construction Control Line (CCCL) shall be in strict compliance with Ch. 62B-33, F.A.C. Other development undertaken within 1500 feet of the CCCL must be undertaken in compliance with the Coastal Zone Protection Act. (§161.55 F.S.).

Objective 7.7: Restrict development in the "Coastal High-Hazard Area" (CHHA) and limit public expenditures that subsidize development within the CHHA. (Coastal Management Element)

Policy 7.7.2.: Public subsidy of infrastructure for development in the CHHA shall be limited to the demand that will result from build-out at 15 dwelling units/ acre. This policy shall not preclude private investment for infrastructure in the CHHA.

Policy 7.7.3: High risk developments such as nursing homes, convalescent centers, hospitals, mobile home parks, subdivisions, or RN parks shall not be located in the CHHA.

Policy 7.7.4: Use local, state, and federal funds as may be available to purchase or lease large tracts of undeveloped land in the CHHA so as to reduce the development potential of these areas.

Policy 7.7.5: The County shall not accept dedications of roads, water and sewer facilities, or other public facilities in the CHHA unless specifically provided for in an enforceable development agreement.

Objective 7.8: Restore eroded or damaged beach and dune systems when financially feasible. (Coastal Management Element)

Policy 7.8.1: Require restoration of damage beach and dune systems as part of new beachfront development projects, and participate in joint federal, state and local beach nourishment projects when financially feasible.

Policy 7.13.2: Capacity of public infrastructure shall not be increased on Coastal Barrier Resources consistent with the Coastal Barrier Resources Act (U.S. Code, Title 16, Chapter 55).

Policy 7.16.2: Improve coordination between the County and State agencies relative to maintaining or improving hurricane evacuation.

Objective 11.3: Restrict development in the "Coastal High Hazard Area" (CHHA) and limit public expenditures that subsidize development within the CHHA. (CIP Element)

Policy 11.3.1: Residential density in the CHHA will be restricted to a maximum of 15 dwelling units per acres in areas where adequate infrastructure exists to accommodate that level of development.

Flood Hazard

Objective 5E.10: Establish specific provisions for the regulation of stormwater runoff. (Stormwater Management Sub-Element)

Policy 5D.10.6L: Require evaluation of flooding that may be caused by the development of vacant land adjacent to existing developed areas, including adjacent building lots in subdivisions. Policy 5E.10.1.1: Prohibit the unauthorized obstruction of natural or man-made drainage ways. Policy 5E.10.1.7.b: For purposes of flood attenuation, all development projects shall be designed and constructed so as to accommodate the 25-year critical duration storm event as outlined in the FDOT Drainage Manual. This requirement shall not apply to the construction of single-family, duplex, triplex, or quadraplex dwellings and customary accessory uses. (Stormwater Management Sub-Element)

Objective 5E.11: Continue eligibility for and participation in the National Flood Insurance Program (NFIP). (Stormwater Management Sub-Element)

Policy 5E.11.1: The County will continue participation in the NF1P and will use its Flood Damage Prevention Ordinance to reduce the potential for flooding.

Objective 6.7: Conserve and manage natural resources on a system wide basis rather than piecemeal.

Policy 6.7.4: No building or structure can be located closer than thirty feet from a DEP wetland jurisdiction line, mean high water line, or ordinary high water line except for piers, docks or similar structures and an attendant ten foot wide cleared path through the wetland for purposes of providing access to such structure, or wetland crossings required to connect dry, upland parcels. All naïve vegetation, if any exists, will be preserved within the 30-foot setback area. This requirement, including possible alternatives, may be addressed in the Land Use Code.

Objective 6.12: Policy 6.12.1: The County will use its GIS to institute a wetlands identification and monitoring program.

Objective 6.1.3: Reduce the potential risk to lives and property from flooding by using hazard mitigation strategies and special building construction practices. (Conservation Element)

Objective 6.11: Protect and conserve wetlands and the natural functions of wetlands. (Conservation Element)

Policy 6.11.3.2. Developers will design and construct development projects so as to avoid activities that would destroy wetlands or the natural functions of wetlands.

Policy 6.13.2: The County will use its Local Hazard Mitigation Strategy to reduce the potential for flood damage.

Policy 6.13.3: The County will use its Flood Damage Prevention Ordinance to ensure that structures built in flood zones are properly elevated and constructed so as to reduce the risk of flood damage.

Policy 6.13.4: The County will adopt regulations to ensure that new development does not create a flood hazard to existing or downstream development.

Additional regulations for flood mitigation within the unincorporated areas of the County is the requirement of a 1-foot freeboard, meaning that the top of the lowest floor must be one foot higher than the base flood elevation, in all flood zone areas. Those areas not designated by FEMA as a flood zone must construct the lowest floor at least one foot above the crown of the road.

General Other/Combined Hazards

Objective 6.18: Provide landowners with beneficial use of their property when environmental restrictions cause the loss of full development potential through use of innovative and flexible development strategies. (Conservation Element)

Policy 7.13.2: Capacity of public infrastructure shall not be increased on Coastal Barrier Resources consistent with the Coastal Barrier Resources Act (U.S. Code. Title 16. Chapter 55).

Objective 7.14: Establish a comprehensive pre- and post-disaster development strategy. (Coastal Management Element)

Policy 7.14.1: The County will establish a comprehensive pre and post disaster redevelopment strategy that will include land purchase, hazard mitigation, building practices and other related considerations.

Bay County Stormwater Management Plan

The Engineering Department's Stormwater Management Planning Group works closely with the public and with the Roads & Bridges Department to monitor stormwater problems that may cause flooding from drainage ditches, roads and other sources, then designs and implements solutions to such problems. The Engineering Department maintains a website providing information to the public on how to report drainage and stormwater problems. The Stormwater Engineer assists the Vice-Chair of the LMS team by researching grant opportunities for mitigation projects, maintaining the Master Stormwater and Strategic Stormwater Plans, and by engineering basin studies to improve the FEMA D-FIRMS. To see projects completed, underway or listed as future actions, please see section 4 of this document.

Callaway, City of

Callaway Comprehensive Plan

To further the goals of minimizing damage from the hazard events that threaten Callaway, the Comprehensive Plan has adopted the following objectives and policies which are grouped into 3 hazard areas: storm surge, flood hazards and general other/ combined hazards.

Storm Surge

Policy 1.1.2: The City shall not utilize public funds for infrastructure expansion or improvements in the coastal high-hazard area unless such funds are necessary to:

- To protect public health, safety and welfare;

- The service provided by the facility cannot be located at another location outside the coastal high hazard area;
- To restore and/or enhance natural resources;
- Provide for needs of water-dependent uses.

Objective 2.2: Identify the coastal high hazard area.

Policy 2.2.2: Modify the coastal high hazard area periodically based on scientific analyses of storm events where flooding from storm surge, waves or storm-driven water has occurred causing damage to structures and infrastructure.

Policy 2.2.3: Make available to the public a map depicting the coastal high hazard area.

Policy 2.2.4: Notify owners of property in the coastal high hazard area of property designation to increase public awareness of hurricane hazard.

Objective 2.4: Limit public fund expenditures for public facilities and infrastructure in the coastal high hazard area.

Objective 2.10: Incorporate the recommendations of the hazard mitigation plan into the Comprehensive Plan.

Objective 7: Scrutinize proposed developments within the coastal high hazard areas to ensure that development of the high-hazard densities do not exceed the capacity for hurricane evacuation or shelter.

Policy 7.1: The City shall limit the density of dwelling units in the coastal area so as not to exceed hurricane evacuation capabilities.

Policy 7.2: The City shall prohibit the location of hospitals, nursing homes, convalescent homes or other similar high density institutions in the Coastal High Hazard Area.

Policy 7.14: There shall be a 50 foot building setback from the shore line of East Bay and its tributaries, as measured from the Mean High Water Line (MHWL). The building setback shall not apply to uses and activities allowed in Conservation Policy 7.5.

Flood Hazard

Goal: Provide adequate stormwater management including reasonable protection from flooding, protection of the quality of receiving waters, and protection of investments in existing facilities.

Policy 1.1: Callaway shall prioritize the identified drainage needs and maintain a five year schedule for their construction, to be updated annually and in conformance with the review process of the Capital Improvements Element of this plan.

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Appendix D - Plan Evaluation and Maintenance

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M1 - Documenting Changes in Development

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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>Hazard Assessment</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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M2 - Project List with Current Status (a)

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Completed Initiatives

File #	Project Name	Project Description	Hazard/ Jurisdiction	Agency Representative	Funding Source(s)	New or Existing Buildings/ Infrastructure	2011 Goal/ Objective	2016 Goal/ Objective	Status	Last Updated	Notes
	Pier Hardening	Reinforcement improvemetns to existing pier including the installation of pressure grouted fiberglass reinforced plastic jackets on 192 timber piles, modification of existing bracing as needed, replacement of a limited number of timber piles									
	Palma Vista Subdivision and South Flagler Avenue, 9th-13th streets	Improve roadside conveyance systems including constuction of swales, catch basins, and pipe connections to improve outfalls. Storm pipe: 140 LF of 18" RCP; 350 LF of 18" HDPE; Swales: 7,--- LF; Storm Structures: 6 C-type inlets; 3 D-type inlets; 4 concrete seawall tie-ins; Driveways: 4,600 SY of Type A repair; 1,600 LF of Type B trench drain culvert; 100 LF of Type C 8" PVC culvert; 200 SY brick paver repair ; Utility Relocation: 3", 6", and 8" water main relocates.									
	Northeast Corrdior Greenway Acquisition Area	Acquisition of approximately 298 acres contiguous with conservation lands. The intent is to utilize the subject property for advanced mitigation for capital improvement projects that have unavoidable wetland impacts. The site contains special flood hazard area which will remain open space.	Floods	City of Palm Coast		Acquisition	Natural Resource Protection		Completed	7/13/2015	
	GIS Development	Address emergency management capabilities, maintian core municipal infrastructure assets in GIS, increase internal and external public access to GIS via web applications	All Hazards/ All Jurisdictions	City of Palm Coast	Palm Coast Ad Valorem Tax	Existing Infrastructure	2.3 Improve communications between agencies		Completed	7/13/2015	
BNL-1	City of Bunnell Safety Complex	Bunnell to outfit a Safety Complex for Public Safety, Emergency Operations, Government Operation	All Hazards/ Bunnell	City of Bunnell	CDBG-R, HMGP, Bunnell Taxes	New Building	Goal 1 Minimize Impacts	In progress	9/1/2013	2/17/2016	The alternate site has been put in place if ever needed.

Deleted Initiatives

File #	Score	Project Name	Project Description	Hazard/ Jurisdiction	Agency Representative	Possible Funding Source(s)	New or Existing Buildings/ Infrastructure	Status	Last Updated	Notes
	17	Gravity Sewer Smoke Testing	Perform smoke testing in areas of gravity sewer that has a history of hydraulic overloading during wet weather	Floods/ Palm Coast	City of Palm Coast	Ad Valorem Tax	Existing Infrastructure	Deleted?	11/4/2014	Waiting from PC to figure out why this project should be removed from list. Unsure if it is complete or just no longer a project
	25	Sand Bag Machine	Purchase sand bag machine for protection of property from effects of flooding	Floods/ All Jurisdictions	City of Palm Coast	Palm Coast Ad Valorem Tax	New Infrastructure	Deleted	12/2/2014	Not mitigation - Removed by LH on 12/2/14. Verify this is ok with PC.
	17	Storm Shutters for Palm Coast Public Works	Retrofit existing facility to withstand hurricane force winds	Hurricanes/ Palm Coast	City of Palm Coast	HMGP, CDBG, Palm Coast Ad Valorem Tax	Existing Infrastructure	Deleted	11/4/2014	PC said to delete this project.
	44	Backup Generator @ Government Services Complex Bldgs 5, 9, 11 & Fuel Farm	Purchase 100KW stationary generator	Wind & Flood/ Flagler County	Flagler County BOCC	HMGP- DR-4177	Existing Buildings	deleted	9/18/2014	After further review this project was not feasible. A 50KW generator already exists to power some buildings, the remainder are on a different power grid and would be too expensive to rewire to all be on one
	24	Herbicide Equipment to Control Weeds in Canal	Purchase weed harvester, airboat or other equipment to control aquatic weeds in the canal to maintain stormwater system	Floods/ Palm Coast	City of Palm Coast	Palm Coast Ad Valorem Tax	Existing Infrastructure	Deleted	11/4/2014	Delete- not mitigation
	25	Stormwater System Maintenance/Repair Equipment	Long reach hydraulic excavator to perform maintenance and repair stormwater system pre-storm to prevent flooding	Floods/ Palm Coast	City of Palm Coast	HMGP, CDBG, Ad Valorem Tax	Existing Infrastructure	Deleted	11/4/2014	Maintenance/repair; Not eligible for Federal Mitigation funds
	n/a	Enhance Storage Capabilities	Harden a City facility for an emergency pet shelter/holding facility that dually serves to store critical equipment	Wind & Flood/ Palm Coast	City of Palm Coast	TBD	Existing Buildings	New	11/4/2014	New City hall opened in October 2015
	n/a	Enhance Evacuation Route Corridors	Extend and widen Old Kings Road North, Matanzas Woods Pkwy 4-Laning (US-1 to southbound ramps: Phase 2, southbound ramps to Old Kings Road: Phase 3). Old Kings Road South Widening (Town Center to Palm Coast Pkwy)	Wind, Flood, Wildfire/ All Jurisdictions	City of Palm Coast	TBD	Existing Infrastructure	Deleted	11/4/2014	Deleted, left up to planning dept. and public works dept.
	n/a	Enhance FCSO Storage Capabilities	Harden facility which exceeds standard building codes for the storage of emergency equipment and materials. *Alternate use as a pet-friendly shelter	All Hazards/ All Jurisdictions	Flagler County Sheriff's Office	HMGP, Ad Valorem Tax	New Building	9/14/2013	2/15/2016	Deleted. New Sheriff's Operations Center was completed in 2015 and has much more space
		Portable Generator	Purchase a 3 phase 240v generator with trailer to help power lift stations and assist with power to treatment facility emergency power	Wind & Flood / City of Bunnell	City of Bunnell	HMGP, PDM, capital funds	Existing Infrastructure	10/27/2014	2/16/2016	Outdated project. City no longer needs a portable generator of this size.

M2 - Project List with Current Status (b)

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Martin County LMS - Projects no longer in PPL

Jurisdiction	Project Description	Cost	Project Status (Pending, Completed, Denied, Withdrawn, etc.)	Notes
Ocean Breeze Park	Inspect, repair and replace mobile homes - reduce vulnerability to high winds and moving waters	\$ 150,000	Removed	Ocean Breeze is under complete change in organization, including replacement of mobile homes with manufactured homes
Town of Jupiter Island	Community wide retention/detention/filtration of storm and flood waters.	\$ 850,000	Completed	
Town of Jupiter Island	Eliminate storm water hazard to traffic during storm events.	\$ 450,000	Completed	
Town of Jupiter Island	Install security fencing around Lots 5 and 6.		Removed	Lowered priority
Town of Jupiter Island	Run fiber optic under the river to the Public Works installation on Suzanne Drive and provide security cameras.		Removed	Provided service via alternate technology
Town of Jupiter Island	Harden Jupiter Island Public Works Building	N/A	Removed	Lowered priority
Town of Jupiter Island	Gomez Road Drianage (140 Gomez, 60 Gomez, and between 30 and 40 Gomez, 104 Gomez, Bunker Hill and Gomez	N/A	Completed	Completed
Town of Jupiter Island	North Beach and Bridge Drainage (22 North Beach and North Beach and Bridae)	N/A	Removed	Pending redesign
Town of Jupiter Island	Debris Storage property acquisition near Bridge Road	N/A	Removed	Property unavailable at this time
Town of Jupiter Island	Austrailian pine removal along evacuation routes	N/A	Removed	Lowered priority
Town of Jupiter Island	Wildland Fire Mitigation at Lots 5 and 6 on Suzanne Drive	N/A	Removed	Lowered priority
Town of Jupiter Island	Aquire hazardous chemical and flammable liquids cabinet	N/A	Removed	Completed
Town of Jupiter Island	Aquire VHF radios	N/A	Removed	Changing technology, moving away from equipment
Town of Jupiter Island	Terrorism Monitoring	N/A	Removed	Ongoing
Town of Jupiter Island	Underground Electric Lines	N/A	Removed	Completed
Town of Jupiter Island	Replace Portable Fuel Station with permentaley mounted fueling station at new Public Safety Building	N/A	Removed	Completed
Town of Jupiter Island	Enhance signage and access control for hurricane evacuations	N/A	Removed	Lowered priority
Town of Jupiter Island	Enhance reverse 911 system and provide training	N/A	Removed	Completed

Martin County LMS - Projects no longer in PPL

Jurisdiction	Project Description	Cost	Project Status (Pending, Completed, Denied, Withdrawn, etc.)	Notes
Town of Sewall's Point	Sediment control program 10 year - remove sediment from catch basins, street roadways and cutback vegetation in Town right-of-way to alleviate stoppages in Town Storm water Management System.	\$ 160,000	Removed	Clean out of basins is happening yearly by the Town-this is done in a 3 year cycle. All outfall areas per year plus 1/3 of remaining basins per year for total cleanout cycle of 3 years.
Town of Sewall's Point	Periwinkle subdivision improvements - Storage of water upstream of the intersection within the subdivision exfiltration used.	\$ 50,000	Removed	Pipes are functioning properly and are monitored with yearly clean out of basins.
Town of Sewall's Point	Knowles subdivision improvements - Storage of water upstream of the intersection within the subdivision, exfiltration will be used	\$ 50,000	Removed	Pipes are functioning properly and are monitored with yearly clean out of basins.
Town of Sewall's Point	Quail Run retention Area - provide stormwater storage along North Sewall's Point Road which is a major thoroughfare (arterial) in Martin County	\$60,000 - Land \$75,000 - Const	Completed	Construction completed May 2015

M3 - Record of Changes

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SUMMARY OF CHANGES

THIS PAGE WILL INDICATE WHERE CHANGES HAVE BEEN MADE BEFORE THE COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS ADOPTS THE LOCAL MITIGATION STRATEGY ON MARCH 10, 2015. SOME ANNEXES, WHERE INDICATED, CHANGE FREQUENTLY SINCE THEY ARE A REPOSITORY OF INFORMATION BASED ON ACTIONS OF THE LOCAL MITIGATION STRATEGY WORKING GROUP AT PROPERLY NOTICED PUBLIC MEETINGS AND THEREFORE THE READER MUST GO TO THE ANNEX TO SEE THE MOST RECENT INFORMATION.

SECTION 1	CHANGE	COMMENTS/PURPOSE	DATE
PARA 1.3.1	ADDED "NOTE"	DIRECTED READER TO ANNEX J FOR FLOODPLAIN MANAGEMENT INFO.	1/26/2010
PARA 1.2.1 & PARA 1.3.1	SEE YELLOW HIGHLIGHTS	NECESSARY CHANGE FOR SCHOOL DISTRICT ADOPTION	7/19/2013

SECTION 2	CHANGE	COMMENTS/PURPOSE	DATE
PARA 2.5, 2.7, & 2.8.4	SEE YELLOW HIGHLIGHTS	NECESSARY CHANGE FOR SCHOOL DISTRICT ADOPTION	7/19/2013

SECTION 3	CHANGE	COMMENTS/PURPOSE	DATE

IN 2007, THE LMS **WORKING GROUP VOTED** TO ADD TWO PARAGRAPHS (4.1.4 & 4.1.5) IN ORDER TO ACCOUNT FOR GOOD MITIGATION INITIATIVES WHICH COULD NOT BE QUANTIFIED ON THE SCORE SHEET BUT SHOULD BE ACCEPTED AS A PROJECTS THAT ACHIEVES OUR MITIGATION GOALS (PARA 4.1.1). PARA 4.1.5 WAS ADDED BECAUSE WE DID NOT HAVE, AT THE TIME , A MECHANISM TO JUMP THE INITIATIVE PRIORITY LISTING SHOULD THE WORKING GROUP FEEL THAT AN INITIATIVE NEEDED TO BE GIVEN HIGHER PRIORITY BASED ON THE DISASTER EVENT FOR WHICH HMGP MONIES WERE ALLOCATED,E.G., FOR A WIND-EVENT DISASTER, THE LMSWG MIGHT FEEL THAT WIND-INITIATIVES WOULD BE A BETTER FOCUS FOR A VULNERABLE COMMUNITY THAN A HIGHER PRIORITY PROJECT ON THE LISTING WHICH ADDRESSES FLOODING OR WILDFIRE.

SECTION 4	CHANGE	COMMENTS/PURPOSE	DATE
PARA 4.1.2.1	REPLACED A SENTENCE	FORMALIZED THE PROCESS AND DATE TO HAVE A SPECIFIC TIME TO KNOW WHEN AGENCIES WILL NOTIFY THE LMSWG THAT THEY WILL APPLY FOR A SPECIFIC HMGP OPPORTUNITY	11/30/2012

SECTION 5	CHANGE	COMMENTS/PURPOSE	DATE
PARA 5.2.2	ELIMINATED A SENTENCE.	ELIMINATED AN INCONSISTENCY WITH ANNEX I	11/30/2012

SECTION 6	CHANGE	COMMENTS/PURPOSE	DATE

PAGE 3, PARA. 6.1.5	ADDED NOTE EXPLAINING THE CURRENT LMS APPROVAL PROCESS & ADDED DATE FOR ANNEX A'S APPROVAL	CLARIFIED THE APPROVAL PROCESS AND ADDED THE OMITTED DATE WHERE INDICATED.	1/20/2010
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ANNEX A	CHANGE	COMMENTS/PURPOSE	DATE
ATTACHMENT 1 ADDED	ADDED ATTACHMENT 1	PER FEMA REQUEST, ADDED INFORMATION REGARDING THE "EXTENT" OF THE HAZARDS ADDRESSED.	4/9/10
RISK SUMMARY TABLE	SEE YELLOW HIGHLIGHTS	NECESSARY CHANGE FOR SCHOOL DISTRICT ADOPTION	7/19/2013

ANNEX B	CHANGE	COMMENTS/PURPOSE	DATE
RENUMBERED MAPS AND INSERTED MAPS 4 AND 4A	ADDED EVERGLADES CITY CURRENT AND FUTURE LAND USE MAPS	WEREN'T AVAILABLE AT THE TIME THE BCC ADOPTED THE LMS	11 FEB 2010

ANNEX C	CHANGE	COMMENTS/PURPOSE	DATE
ADDED CITY RESOLUTION	ADDED MARCO ISLAND'S RESOLUTION TO ADOPT THE LMS		7/13/2010
ADDED FIRE DEPT. RESOLUTION	ADDED NN FIRE CONTROL & RESCUE DISTRICT RESOLUTION		7/19/2013
ADDED JURISDICTION RESOLUTION	ADDED SCHOOL DISTRICT RESOLUTION		10/22/2013

ANNEX D	CHANGE	COMMENTS/PURPOSE	DATE

ANNEX E	CHANGE	COMMENTS/PURPOSE	DATE
UPDATED SPREADSHEET	ADDED FEMA ONE-STOP GRANT SEARCH SITE.	MAKE SEARCHING FOR A GRANT EASIER.	7/18/2014

ANNEX F	THIS ANNEX CHANGES FREQUENTLY BASED ON ACTIONS/INITIATIVES OF THE LMSWG		
NOTE SINCE THE BCC JAN. 2010 ADOPTION	ADDED PREAMBLE COMMENTS HIGHLIGHTING THE FACT THAT SOME PROJECTS ADOPTED FOR CERTAIN HAZARDS ALSO MITIGATE THE EFFECTS OF OTHER THREATS.		
7/16/2010 - ADDED APPROVED PROJECTS AND RENUMBERED	ADDED PROJ #22 (WIND RETROFIT NN FIRE STATION) & #23 (CC LEACHATE STORAGE TANK AND LIFT STA. UPGRADE). RENUMBERED PROJECT ORDER TO ACCOMMODATE ADDITIONS.		

PRIORITIES	
8/12/2010 – ADDED/REMOVED APPROVED PROJECTS AND RENUMBERED PRIORITIES	ADDED PROJ #10 (THE WIND PROTECTION FOR THE N. COLLIER WTP.) ADDITIONALLY REMOVED COMPLETED PROJECT FOR THE SHADOWLAWN DR. ETC. DRAINING IMPROVEMENTS AND MOVED IT TO THE “COMPLETED” SECTION.
4/4/2011 TRANSFERRED APPROVED PROJECT TO THE COMPLETED SECTION & RENUMBERED PRIORITIES	COLLIER COUNTY’S WIND RETROFIT OF ITS SCALE-HOUSE AT THE LANDFILL WAS COMPLETED AND MOVED TO THE COMPLETED SECTION.
4/15/2011 TRANSFERRED APPROVED PROJECT TO THE COMPLETED SECTION & RENUMBERED PRIORITIES	THE FOLLOWING PROJECTS WERE MOVED TO THE COMPLETED LISTING: <ul style="list-style-type: none"> • MARCO ISLAND’S WASTE WATER TREATMENT PLANT WIND PROTECTION • CAT FACILITY WIND RETROFIT • IMMOKALEE SPORTS COMPLEX & GOLDEN GATE CMTY CENTER WIND RETROFIT.
1/20/2012 TRANSFERRED APPROVED PROJECT TO THE COMPLETED SECTION & RENUMBERED PRIORITIES	THE FOLLOWING PROJECTS WERE MOVED TO COMPLETED: <ul style="list-style-type: none"> • INSTALL GENERATOR AT IMMOKALEE HIGH SCHOOL • E. NAPLES COMMUNITY CENTER WIND RETROFIT
10/19/2012	THE FOLLOWING PROJECTS WERE MOVED TO COMPLETED: <ul style="list-style-type: none"> • PURCHASE REPETITIVE LOSS PROPERTY
11/30/2012	- UPDATED PROJECT DATES AND ORGANIZATIONAL ASSIGNMENTS DUE TO RESTRUCTURING - ADDED/UPDATED THE FOLLOWING PROJECTS TO THE PROJECT PRIORITY LISTING AND ADJUSTED THE PRIORITIES ACCORDINGLY. <ul style="list-style-type: none"> • PUBLIC UTILITIES OPS CTR HURRICANE DOOR HARDENING • SCHOOLS- PORTABLE GENERATOR CABLE PASS-THRU AND ANCHORING PAD • NAPLES – WIND RETROFIT CITY HALL • N. NAPLES FIRE DEPT STA 43- WIND RETROFIT • LCEC – MARCO SUBSTATION VAULT REPLACEMENT AND ELEVATION • LCEC – WOOD POLE REPLACEMENT • SCHOOLS – GENERATOR FOR CORKSCREW MS/ES • SCHOOLS – GENERATOR FOR CYPRESS PALM MS/SABAL PALM ES
7/19/2013	NECESSARY CHANGE FOR SCHOOL DISTRICT ADOPTION. SEE YELLOW HIGHLIGHTS
7/19/2013	-MOVED TWO PROJECTS TO “COMPLETED” SECTION -ADDED YMCA WIND RETROFIT PROJECT TO BOTTOM OF PROJECT LISTING - MOVED RETROFIT SW FLA.S PROJECT UP THE PROJECT LISTING.
8/30/13	- UPDATED COST ESTIMATES FOR PROJECT #'S 22 AND 23.
1/17/14	- LCEC’S TWO PROJECTS (CONCRETE POLES AND RELAY STATION) WERE PULLED AND MOVED TO THE “DELETE SECTION”

18 Oct 2014	<ul style="list-style-type: none"> - COLLIER SCHOOL DISTRICT WITHDRAWS PROJECT #16 FROM THE PROJECT LISTING AND WILL COMPLETE THE PROJECT WITH ITS RESOURCES. - CITY OF NAPLES (NEW PROJECT #16) WILL DEFER THIS WIND PROTECTION PROJECT TO A LATER DATE.
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ANNEX G	THIS ANNEX CHANGES FREQUENTLY AS IT CONTAINS BOTH THE PRIOR YEAR’S AND CURRENT YEAR’S MEETING MINUTES AND WILL DIRECT YOU TO THE LOCATION OF THE PAST MEETING MINUTES. MINUTES ARE PURGED YEARLY.
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ANNEX H	THIS ANNEX CHANGES FREQUENTLY BASED ON ACTIONS/INITIATIVES OF THE LMSWG
NOTE SINCE THE BCC JAN. 2010 ADOPTION	A STATEMENT WAS ADDED IN THE PREAMBLE CLARIFYING THE FACT THAT THIS ANNEX REPRESENTS CURRENT VOTING MEMBERSHIP AND NOT JUST THE MEMBERSHIP OF THOSE INVITED TO PARTICIPATE IN 2003.
21 Oct 2011	UPDATED THIS SECTION TO UPDATE THE LISTING TO ADD/REMOVE VOTING MEMBERS & CHANGED BILL JONES’S AFFILIATION TO “INTERESTED RESIDENT”.
27 Jul 2012	UPDATED MEMBERSHIP INFORMATION
4 Dec 2013	UPDATED MEMBERSHIP INFO, REFORMATTED ANNEX BASE ON LMSWG MEETING IN OCT 13.
17 Jan 2014	UPDATED MEMBER STATUS AND ADDED MEMBERS.
18 OCTOBER 2014	ROBERT WILEY AND J. VON RINTELN RESIGNED. CHRIS SPARACINO ELECTED VICE CHAIR. ALTERNATES TO PRIMARY MEMBERS LISTED (LIZ GOSSELIN, WILLIAM LANG & CAROLINE CELIK)

IN LATE 2009, THE LMSWG VOTED TO AMEND THE MITIGATION STRATEGY (PARA. B) TO ADDRESS HOW THE INITIATIVES CAN GET ON THE PRIORITY LISTING BETWEEN THE QUARTERLY WORKING GROUP MEETING DATES IN ORDER TO BE ABLE TO SUBMIT AN APPLICATION FOR A “SHORT-NOTICED” GRANT OPPORTUNITY.

ANNEX I	CHANGE	COMMENTS/PURPOSE	DATE
CLARIFICATION	IN THE COST SECTION #5, CLARIFIED/DEFINED REPETITIVE LOSS	THERE WAS CONFUSION FROM THE APPLICANTS AS TO WHAT WAS MEANT BY REP. LOSS. THIS CHANGE FIXED IT.	7/16/2010
ON THE SCORE SHEET, SECTION “COST” #5	ADD “NA” TO THE BOTTOM OF THE SCORE SECTION.	THIS WILL GIVE “NO SCORE” OPTION TO A PROJECT THAT DOESN’T HAVE FLOOD INSURANCE.	11/30/2012

ANNEX J	THIS ANNEX CONTAINS JURISDICTIONAL FLOODPLAIN PLANS AND WILL EITHER CONTAIN OR DIRECT YOU TO THE MOST CURRENT PLAN. NFIP PARTICIPATION REQUIREMENTS ADDED FOR THE CONVENIENCE OF THE READER.
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Collier County
Local Mitigation Strategy
EXECUTIVE SUMMARY

Collier County is threatened by a number of different types of natural, technological and societal or man-made hazards. These hazards endanger the health and safety of the people of the county, jeopardize its economic vitality, and imperil the quality of the natural environment. Because of the importance of avoiding or minimizing the County's vulnerability to these hazards, the public and private sector interests of Collier County have joined together to undertake a comprehensive planning process that has culminated in the publication of this document: "The Collier County Local Mitigation Strategy."

This private sector/public sector partnership, named the Collier County Local Mitigation Strategy Working Group, has conducted detailed studies to identify the hazards threatening Collier County and to estimate the relative risks posed to the community by those hazards. This information has been used by the Working group to assess the vulnerability of the public facilities and neighborhoods of Collier County to the impacts of future disasters involving those hazards. With these identified, the Working Group has worked to identify proposed projects and programs that will avoid or minimize these vulnerabilities to make the communities of Collier County much more resistant to the impacts of future disasters.

These projects and programs to reduce the impacts of future disasters are also called "mitigation initiatives" in this document. Mitigation initiatives have been developed and will continue to be developed by the Working Group for implementation whenever the resources to do so become available. As the mitigation initiatives identified in this plan are implemented, Collier County will become a more "disaster resistant" community.

This document details the work of the Collier County Local Mitigation Strategy Working Group (LMSWG) over the past several years to develop the planning organization, to undertake the needed technical analyses, and to coordinate the mitigation initiatives that have been proposed by the participating jurisdictions and organizations. Additionally, this strategy contains the jurisdictional Floodplain Management Plans when required or developed. Through publication of this Local Mitigation Strategy, the Working Group continues to solicit the involvement of the entire community to make the people, neighborhoods, businesses and institutions of Collier County safer from the impacts of future disasters.

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M4-M6 - Outlining Monitoring, Evaluating, and Updating Process

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Section V: Plan Evaluation and Maintenance

A. Monitoring, Evaluating, and Updating the Plan

Monitoring

The Sarasota County Emergency Management Department has the primary responsibility of monitoring and supporting the LMS Plan. This effort shall include technical and clerical support for the benefit of the LMS Work Group. The Department will monitor the status of LMS-supported projects throughout the year; and on a semi-annual basis (i.e., January and June) will assess the Plan against the LMS Work Group and the Florida Division of Emergency Management established evaluation criteria to determine if any changes to the Plan are necessary. If, based on this cursory review, the Plan requires a further, formal evaluation and update; the LMS Work Group Chair will call a LMS Plan Committee meeting. Additionally, if a significant event occurs in Sarasota County, for which a LMS-supported project may be eligible for grant funding, a special meeting of the LMS Plan Committee will be called by the Chair.

Evaluating

If no potential changes have been identified in the aforementioned Monitoring phase, the LMS Plan Committee will meet at least once annually to review and evaluate the LMS Plan against FDEM and LMS Work Group established evaluation criteria. The annual review will take place during the first quarter of each calendar year and no later than the second quarter of each calendar year to complete the review process prior to the onset of hurricane season.

The LMS Work Group evaluation criteria utilized by the Sarasota County Emergency Management Department and the LMS Work Group and/or the LMS Plan Committee are not limited to, but shall include:

1. Are there any new or changing laws, regulations or policies that require changes to the Local Mitigation Strategy?

2. Have there been any mandates from Federal, State or local agencies that require changes to the Local Mitigation Strategy?
3. Do the goals and objectives of the LMS Work Group address current and expected conditions for Sarasota County?
4. Have the nature, magnitude, and/or type of risks changed for Sarasota County?
5. Are current resources appropriate for implementing the plan?
6. Are there implementation challenges, such as technical, political, legal financial, or coordination issues with other agencies?
7. Have the outcomes occurred as expected?
8. Are the jurisdictions and other partners participating as originally planned?
9. Are there recommendations or lessons-learned from any incident or event during this review cycle?

Updating

In the event that the LMS Plan Committee determines an update or change to the LMS Plan is required, the committee will prepare the update or change, along with supporting documentation, for this information to be presented to the LMS Work Group. The presentation for changes may be made at a regularly-scheduled meeting or a special meeting called by the Chair. The significance of the update or change will determine the LMS Work Group course of actions. If the actions are minor (determined by County administrator, City/Town manager or Work Group Chair) the LMS Work Group voting members can approve the update or change, and it will be adopted accordingly. If the actions are major (determined by County administrator, City/Town manager or Work Group Chair) the LMS Work Group voting members may approve the update or change, and each jurisdiction will complete their respective Resolution process.

As part of the annual review and update process for the five-year cycle, Table 17 identifies the tentative meeting date, attendees, and the minimum agenda items to be discussed.

Table 17 LMS Work Group Schedule

DATE	ATTENDEE	AGENDA ITEM
December 2010	Work Group	Review Projects & Action Items Review 27-P annual requirements
March 2011	Work Group	Review Jurisdiction Planning Mechanisms
June 2011	Work Group	Review Public Outreach Strategy
September 2011	Work Group	Review Risk Assessment

December 2011	Work Group	Review Projects & Action Items Review 27-P annual requirements
March 2012	Work Group	Review Jurisdiction Planning Mechanisms
June 2012	Work Group	Review Public Outreach Strategy
September 2012	Work Group	Review Risk Assessment
December 2012	Work Group	Review Projects & Action Items Review 27-P annual requirements
March 2013	Work Group	Review Jurisdiction Planning Mechanisms
June 2013	Work Group	Review Public Outreach Strategy
September 2013	Work Group	Review Risk Assessment
December 2013	Work Group	Review Projects & Action Items Review 27-P annual requirements Establish Planning Committee for Plan Update
January 2014	Planning Committee	Review Previous Planning Process
February 2014	Planning Committee	Draft Update Planning Process
March 2014	Work Group	Review Jurisdiction Planning Mechanisms
March 2014	Planning Committee	Review Identification of Hazards
April 2014	Planning Committee	Review Profile Hazards
May 2014	Planning Committee	Review Profile Hazards
June 2014	Work Group	Review Public Outreach Strategy
June 2014	Planning Committee	Review Profile Hazards
July 2014	Planning Committee	Review Vulnerability Assessment
August 2014	Planning Committee	Review Vulnerability Assessment
September 2014	Work Group	Review Risk Assessment
September 2014	Planning Committee	Review Repetitive Loss Program
October 2014	Planning Committee	Review Structures/Economic Loss
November 2014	Planning Committee	Review Development Trends
December 2014	Work Group	Review Projects & Action Items Review 27-P annual requirements
December 2014	Planning Committee	Review Goals and Objectives
January 2015	Planning Committee	Review Mitigation Actions
February 2015	Planning Committee	Review National Flood Insurance Program
March 2015	Work Group	Review Jurisdiction Planning Mechanisms
March 2015	Planning Committee	Review Plan Maintenance Process
April 2015	Planning Committee	Complete Draft for Review by Work Group
May 2015	Planning Committee	Review Draft Changes and Amendments
June 2015	Work Group	Review Public Outreach Strategy
June 2015	Planning Committee	Submit Draft Plan for Review
September 2015	Work Group	Review Risk Assessment
September 2015	Jurisdictions	Board Resolutions

Incorporation into Existing Planning Mechanisms

As part of the annual series of quarterly meetings of the Sarasota County Local Mitigation Strategy Work Group, members will dedicate at least one quarterly meeting to ensuring that the goals, objectives, priorities, projects, and actions established in this plan

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M7 - Continued Community Participation

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For the 2015 update, the East Central Florida Regional Planning Council (ECFRPC) reviewed both the existing and updated data available for each section of the plan, and the text of each section contained in the 2010 edition of the plan. The sections were re-drafted to update both the text and the data reports contained therein. The updating process, by section, included the following:

Section	Changes/Updates
Executive Summary	Textual revisions
Introduction	Textual revisions
Purpose	Textual revisions
The LMS Task Force: Brevard Prepares	Textual revisions
Plan Maintenance	Textual revisions; updated section summaries
Hazard and Vulnerability Analysis	Completely re-drafted according to new analysis
Mitigation Goals, Objectives and Actions	Textual revisions
Plan Integration	Textual revisions
Appendix I-IV	Re-drafted project listings; textual revisions

1.7.3 Continued Public Involvement

Brevard Prepares, via the Steering Committee, will continue efforts to develop and implement a year-round program to engage the community in the mitigation planning process and to provide them with mitigation-related information and education. These efforts will be to invite public comments and recommendations regarding the mitigation goals for the community, the priorities for planning, and the unique needs of each community for mitigation-related public information.

Public Comment Period

Date	Activity Type	Purpose of Activity	Audience Type	Outreach Method	Comments
12/15/14 through 1/5/15	Public comment period	Solicit public comments and involvement in the final draft of the 2015 update of the mitigation plan.	General public	Upon incorporation of required and recommended revisions received from the State of Florida and FEMA on the 2015 update, a final plan was prepared and posted for public review on the Internet at http://www.embrevard.com . A press and social media releases were also done. A hard copy of the plan was also made available. Other opportunities for public comment will occur at the various adoption hearings.	During the comment period one inquiry was received asking if there was a connection to the NFIP CRS rating system. They had not read the plan. The plan purpose was described to the person inquiring and they had no suggested changes or further comments.

The public is also invited to participate during the adoption hearing process. These and other informational activities will continue to educate the community about the planning process through the presentation of specific topics or programs related to hazard mitigation.


Upon completion of this plan update, it will be made available to the Brevard Prepares Steering Committee for comment. Following the incorporation of relevant input, the participating jurisdictions would take comments from the public during a publicly noticed meeting. Once adopted by all municipalities, the Brevard Board of County Commissioners would consider adoption at their meeting, thus providing another opportunity for public engagement.

Brevard County / Emergency Management / Home

Brevard County Emergency Management

In The Spotlight at Brevard County Emergency Management

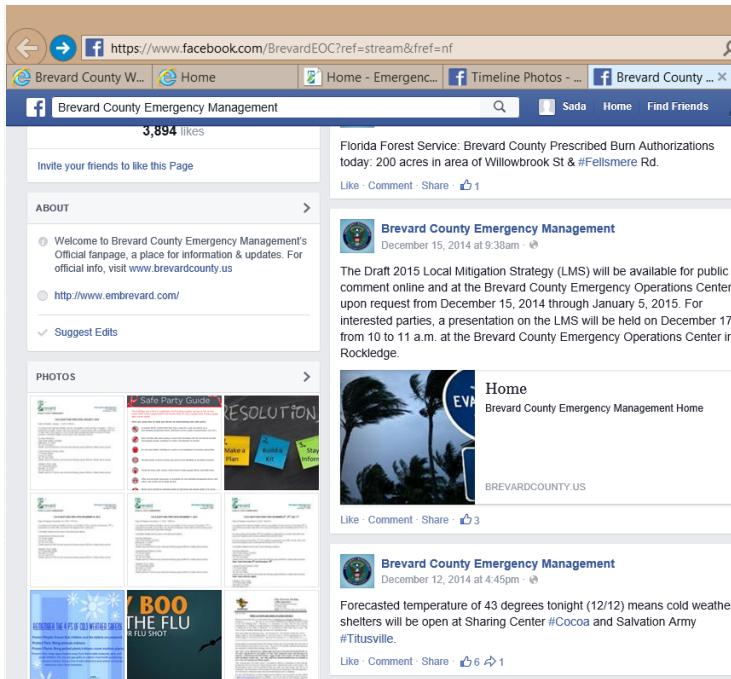
Brevard Prepares - Local Mitigation Strategy 2015 Draft



The **Draft 2015 Local Mitigation Strategy (LMS)** will be available for **public comment** online and at the Brevard County Emergency Operations Center upon request from **December 15, 2014 through January 5, 2015**. For interested parties, a presentation on the LMS will be held on December 17 from 10 to 11 a.m. at the Brevard County Emergency Operations Center located at 1746 Cedar Street in Rockledge, Florida. To download the Draft LMS please click "[here](#)."

- In 1998, public and private sector interests of Brevard County joined together as Brevard Prepares to pre-identify critical facilities, and projects and programs that could be done to help reduce the impacts of future disasters. The projects and programs are called "mitigation initiatives".
- Every 5 years the State reviews and approves the LMS using state and federal guidance documents.
- This spotlight is part of the plan, inviting the public to participate and comment in the review process.
- Currently the Brevard Prepares Steering Committee hears new initiative applications and guides the local mitigation process on an annual basis.
- Please click "[here](#)" to send your comments on the Draft LMS to this Office. Together we can build a disaster resistant community.

Stay informed by following @BrevardEOC on Twitter, liking "Brevard County Emergency Management" on Facebook or signing up for text messages (Text **Follow BrevardEOC** to 40404).



3,894 likes

Invite your friends to like this Page

ABOUT

- Welcome to Brevard County Emergency Management's Official fanpage, a place for information & updates. For official info, visit www.brevardcounty.us
- <http://www.embrevard.com/>

Suggest Edits

PHOTOS

Safe Party Guide

RESOLUTION

Home
Brevard County Emergency Management Home
BREVARDCOUNTY.US

Like · Comment · Share · 1

Brevard County Emergency Management
December 15, 2014 at 9:38am

The Draft 2015 Local Mitigation Strategy (LMS) will be available for public comment online and at the Brevard County Emergency Operations Center upon request from December 15, 2014 through January 5, 2015. For interested parties, a presentation on the LMS will be held on December 17 from 10 to 11 a.m. at the Brevard County Emergency Operations Center in Rockledge.

Like · Comment · Share · 3

Brevard County Emergency Management
December 12, 2014 at 4:45pm

Forecasted temperature of 43 degrees tonight (12/12) means cold weather shelters will be open at Sharing Center #Cocoa and Salvation Army #Titusville.

Like · Comment · Share · 6

1.7.4 The Next Planning Cycles

Brevard Prepares has established a schedule and procedure for both plan implementation and plan maintenance. Initially, the planning efforts by the jurisdictions will seek to build on the analyses and proposals included in this edition of the mitigation plan, primarily by completing more vulnerability assessments, evaluations of plans and programs, and proposing additional mitigation initiatives.

Eventually, after a number of planning cycles with ongoing new analyses, all important facilities and vulnerable neighborhoods within all of the participating jurisdictions will have been evaluated and the mitigation planning effort can enter a more normal maintenance and implementation routine. During these continuing efforts, Brevard Prepares will prioritize its efforts towards focusing on facilities and neighborhoods in known hazard areas, completing assessment of all critical facilities, and identifying and documenting policies and plans that impact hazard mitigation.

The Brevard County Local Mitigation Strategy is a dynamic document, reflecting a continuing and expanding planning process. The efforts of Brevard Prepares will continue into the future, striving to make all of the jurisdictions of Brevard County truly disaster-resistant communities.

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Appendix E - Plan Adoption

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A1 - Certified Meeting Minutes

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SANTA ROSA ISLAND AUTHORITY
PENSACOLA BEACH, FLORIDA
REGULAR BOARD MEETING
OCTOBER 13, 2010
5:00 P.M.

1. CALL TO ORDER
2. PLEDGE OF ALLEGIANCE
3. MOMENT OF MEDITATION
4. APPROVAL OF MINUTES (Regular Board Meeting – 09/08/2010)
5. CHANGES OR ADDITIONS TO AGENDA
6. ADOPTION OF AGENDA
7. CHAIRWOMAN'S COMMENTS
8. PENSACOLA BEACH VISITOR'S INFORMATION CENTER

CONSENT AGENDA

9. COMMITTEE REPORTS

A. DEVELOPMENT & LEASING COMMITTEE,(9-22-2010) ELWYN GUERNSEY,
CHAIRMAN, VERNON PRATHER AND TAMMY BOHANNON, MEMBERS

Item # 1 – Report regarding the possibility of allowing the use of four wheeled vehicles by Beach Rental Services. (Referred from September 8, 2010 Regular Board meeting) (Staff report by Bob West)

The Committee unanimously approves holding this item in Committee.

Item # 2 – Mr. Tom Almon, President of Lafitte Cove Homeowners Association (H.O.A.) – Request for Lease modification to transfer responsibility for maintenance of the channel and canal from the H.O.A. to the SRIA. (Staff report by Paolo Ghio)

The Committee unanimously approves holding this item in Committee.

B. ARCHITECTURAL & ENVIRONMENTAL COMMITTEE, (9-22-2010) MR. FRED GANT, CHAIRMAN, MR. DAVE PAVLOCK AND DR. THOMAS CAMPANELLA, MEMBERS.

Item # 1 - Warren L. Holmes – 237 Sabine Drive, Lot 72, Block "B", Villa Sabine – Construct a 4' x 150' pier, with an 8' x 12' terminal platform, 3' x 33.6' catwalk and uncovered boatlift. (Staff report by Paolo Ghio)

The Committee unanimously approves staff's recommendation.

→ Item # 2 – Resolution adopting the 2010 Revised Multi-Jurisdictional Local Mitigation Strategy (Staff report by Sue Smith) ←

The Committee unanimously approves staff's recommendation.

Item # 3 – Mr. Jim Wiseman – Land Shark Landing on behalf of Little Sabine, Inc., d/b/a Margaritaville Beach Hotel – 165 Fort Pickens Road - (Gulf side) – Request to add bathrooms and decking on the existing Land Shark Landing Bar/Pavilion (Staff report by Paolo Ghio)

The Committee unanimously approves staff's recommendation.

C. ADMINISTRATIVE COMMITTEE, (9-22-2010) MR. DAVE PAVLOCK, CHAIRMAN, MR. ELWYN GUERNSEY, MR. VERNON PRATHER, MEMBERS

Item # 1 – Report on Financial Statements and Expenditures. (Staff report by Dottie Ford)

The Committee unanimously recommends acceptance of the Financial Statements and Expenditures as presented.

REGULAR AGENDA

10. COMMITTEE REPORTS

A. ADMINISTRATIVE COMMITTEE, (9-22-2010) MR. DAVE PAVLOCK, CHAIRMAN

Item # 1 – Item # 2 - Report regarding violation's of the Large Gathering/Wedding Events Application/ Permit guidelines for 902 Ariola Drive. (Referred from the September 22, 2010 Committee meeting) (Staff report by Jayne Bell)

B. NEW BUSINESS

Item # 1 – Ms. Amy Martin – Crabs We got 'em - #6 Casino Beach Boardwalk – Request that the allotted 250 parking spaces for "Crabs We got' em" will not be taken by the De Luna Fest event.

11. REPORTS

- A. EXECUTIVE DIRECTOR'S REPORT
- B. ATTORNEY'S REPORT
- C. ENGINEER'S REPORT

12. VISITOR'S FORUM

13. BOARD MEMBERS FORUM

14. ADJOURN

TAMMY BOHANNON, CHAIRWOMAN
ELWYN GUERNSEY, VICE - CHAIRMAN
DAVE PAVLOCK, SECRETARY - TREASURER
VERNON PRATHER, MEMBER
THOMAS CAMPANELLA, MEMBER
FRED GANT, MEMBER
W.A. "BUCK" LEE, EXECUTIVE DIRECTOR

(Please note that the Santa Rosa Island Authority does not make verbatim transcripts of its meetings, although the meetings are tape-recorded. Any person desiring a verbatim transcript of a meeting of the Santa Rosa Island Authority will need to independently secure such verbatim transcript .

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A2 - Adoption Resolutions

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PROPOSED RESOLUTIONS

The final step in the planning process will be the adoption of the plan by the legislative bodies of Pasco County and its municipalities. The next six pages include draft proposals acceptance of the LMS plan for use by the Pasco County Board of County Commissioners; the City of Dade City Board of City Commissioners; the City Council of the City of New Port Richey; the City Council of the City of Port Richey; the City of San Antonio City Commissioners; the Town of St. Leo Board of Town Commissioners; and the City Council of the City of Zephyrhills.

Each of these legislative bodies represents their communities by the authority of their corporate charter. As the popularly-elected officials of their community, they have the authority to support and carry out the recommendations put forth in the 2014 Pasco County Local Mitigating Strategy.

RESOLUTION NO. 2014-11

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF DADE CITY, FLORIDA SUPPORTING AND ADOPTING THE PASCO COUNTY AUGUST 2014 REVISION OF THE LOCAL MITIGATION STRATEGY.

WHEREAS, the City of Dade City is located in an area that is vulnerable to natural and man-made disasters; and

WHEREAS, the City supports reasonable efforts to make the community better prepared for future disasters and better able to recover after disaster strikes, and

WHEREAS, the State of Florida has stipulated that a Local Mitigation Strategy is the first step in the process of making a community better prepared to manage disasters; and

WHEREAS, by adopting the Pasco County August 2014 Revision of the Local Mitigation Strategy, the framework for future mitigation efforts and post-disaster recovery may be made easier and faster; and

WHEREAS, the Pasco County August 2014 Revision of the Local Mitigation Strategy is in compliance with the local hazard mitigation requirements of Section 322 of the Disaster Mitigation Act of 2000 as implemented in 44 C.F.R., Part 201.

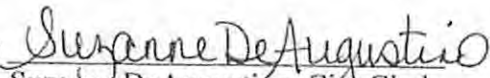
NOW, THEREFORE, be it resolved by the City Commission of the City of Dade City, Florida, in regular session duly assembled that:

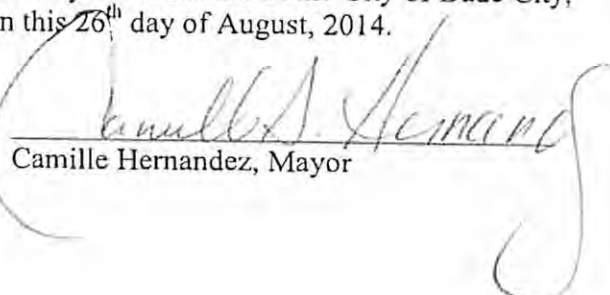
Section 1. The City Commission of the City of Dade City does hereby approve and adopt the Pasco County August 2014 Revision of the Local Mitigation Strategy and recommends it be adopted by the Pasco County Board of County Commissioners.

Section 2. That this resolution shall take effect as provided by the City Charter.

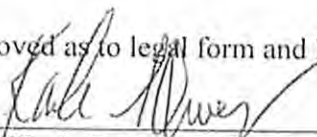
NOW, THEREFORE BE IT PASSED by the City Commission of the City of Dade City, Florida in an open meeting, sitting in regular session this 26th day of August, 2014.

Attest:


Suzanne DeAugustino, City Clerk


Camille Hernandez, Mayor

Approved as to legal form and legal content


Karla S. Owens, City Attorney

RESOLUTION 14-11

A RESOLUTION BY THE CITY COUNCIL OF THE CITY OF
PORT RICHEY, FLORIDA, SUPPORTING AND ADOPTING
THE PASCO COUNTY 2014 REVISION OF THE LOCAL
MITIGATION STRATEGY; PROVIDING AN EFFECTIVE DATE.

WHEREAS, Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5165, as amended by the Disaster Mitigation Act of 2000 (DMA2K) (P.L. 106-390) requires local governments to undertake a risk-based approach to reducing threats to natural hazards through the development of a Local Mitigation Strategy (LMS), and;

WHEREAS, 44 CFR Part 201.6 requires local governments to have a Federal Emergency Management Agency (FEMA) approved LMS, and requires the review and revision of the LMS to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for FEMA approval every five (5) years in order to apply for and/or receive project grants, and;

WHEREAS, the Pasco County Local Mitigation Strategy was most recently updated, submitted to and approved by FEMA in August 2014, and;

WHEREAS, The National Flood Insurance Act of 1968, as amended, 42 U.S. C. 4001 *et seq.*, reinforced the need and requirement for mitigation plans, linking flood mitigation assistance grant programs to the LMS document, and;

WHEREAS, FEMA's direction for local appointment of a Mitigation Planning Committee, per regulations published in the National Flood Insurance Program Coordinator's Manual 2014, Section 510, provides updated guidance no longer consistent with the current committee structure established by the Pasco County Board of County Commissioners through Resolution 98-211, and;

WHEREAS, The Pasco County Office of Emergency Management has consolidated the three subcommittees formed in 1998 into one group called the Mitigation Planning Committee to ensure that at least one-half of the members are representatives of the public stakeholders, and;

WHEREAS, FEMA requires re-adoption of the approved LMS by local governing bodies in order to continue eligibility for federal disaster and pre-disaster grant assistance, and;

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Port Richey, Florida in regular session duly assembled this date, that:

1. The Pasco County Local Mitigation Strategy, 2014 Revision is hereby adopted and authorized for implementation.
2. The Pasco County Mitigation Planning Committee is hereby reconstituted according to current FEMA guidelines, to include an increased representation by public stakeholders.
3. This resolution shall be in effect immediately upon its adoption.

DONE AND RESOLVED WITH A QUORUM PRESENT AND VOTING THIS _____
DAY OF SEPTEMBER 23, 2014.

(SEAL)



ELOISE TAYLOR
MAYOR
CITY OF PORT RICHEY

ATTEST:

Tammy Schuck

TAMMY SCHUCK
CITY CLERK

RESOLUTION #2015-01

A RESOLUTION OF THE CITY COUNCIL OF THE CITY
OF NEW PORT RICHEY, FLORIDA SUPPORTING AND
ADOPTING THE PASCO COUNTY AUGUST 2014
REVISION OF THE LOCAL MITIGATION STRATEGY.

WHEREAS, the City of New Port Richey is located in an area the is vulncrable to natural and man-made disasters; and

WHEREAS, the City supports reasonable efforts to make the community better prepared for future disasters and better able to recover after disaster strikes; and

WHEREAS, the State of Florida has stipulated that a Local Mitigation Strategy is the first step in the process of making a community better prepared to manage disaster; and

WHEREAS, by adopting the Pasco County August 2014 Revision of the Local Mitigation Strategy, the framework for future mitigation efforts and post-disaster recovery may be made easier and faster; and

WHEREAS, the Pasco County August 2014 Revision of the Local Mitigation Strategy is in compliance with the local hazard mitigation requirements of Section 322 of the Disaster Mitigation Action of 2000 as implemented in 44 C.F.R., Part 201.

NOW, THEREFORE, be it resolved by the City Council of New Port Richey, Pasco County, Florida, in regular session duly assembled that:

Section 1. The City Council of New Port Richey does hereby approve and adopt the Pasco County August 2014 Revision of the Local Mitigation Strategy and recommends it be adopted by the Pasco County Board of County Commissioners.

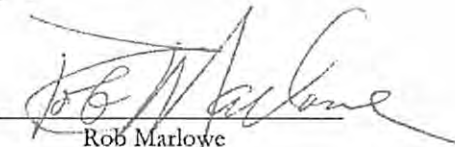
Section 2. That this resolution shall take effect as provided by City Charter.

Done and Resolved in open and regular meeting on the 7th day of October, 2014

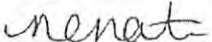
ATTEST:

Doreen Summers
City Clerk




Rob Marlowe
Mayor

Approved As To Form:


Nicole Nate
City Attorney

RESOLUTION No. 01-2014

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF
SAN ANTONIO, FLORIDA, SUPPORTING AND ADOPTING THE
PASCO COUNTY 2014 REVISION OF THE LOCAL MITIGATION
STRATEGY; PROVIDING AN EFFECTIVE DATE.

WHEREAS, Section 322 of the Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5165, as amended by the Disaster Mitigation Act of 2000 (DMA2K) (P.L. 106-390) provides for local governments to undertake a risk-based approach to reducing risks to natural hazards through mitigation planning, and the National Flood Insurance Act of 1968, as amended, reinforced the need and requirement for mitigation plans, linking flood mitigation assistance programs to Local Mitigation Strategy (LMS), and

WHEREAS, The Federal Emergency Management Agency (FEMA) has implemented various hazard mitigation planning provisions requiring local governments to have a FEMA approved LMS in order to apply for and/or receive project grants, and

WHEREAS, local jurisdictions are required to review and revise their LMS and resubmit it for approval within five (5) years in order to continue to be eligible for mitigation project grant funding, and

WHEREAS, the Pasco County Local Mitigation Strategy which was updated and submitted to the Federal Emergency Management Agency, in 2009, will expire on August 27, 2014, and

WHEREAS, the 2014 Revision of the LMS was transmitted to FEMA through the Florida Division of Emergency Management (FDEM) and found in compliance with the local mitigation requirements of the DMA2K as implemented in 44 C.F. R., Part 201.

NOW, THEREFORE, BE IT RESOLVED by the City Commission of the City of San Antonio, Florida, in regular session duly assembled this date, that:

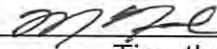
Section 1. The City Commission of the City of San Antonio does hereby approve and adopt the Pasco County 2014 Revision of the Local Mitigation Strategy.

Section 2. This resolution shall take effect immediately upon its adoption.

DONE AND RESOLVED in open and regular meeting on the 19 day of

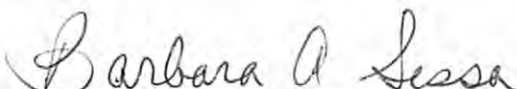
August, 2014.


CITY OF SAN ANTONIO, FLORIDA



Timothy Newlon, Mayor

ATTEST:


Barbara A. Sessa, City Clerk


Gerald T. Buhr, City Attorney

RESOLUTION¹⁴ -08

A RESOLUTION OF THE TOWN OF ST. LEO, FLORIDA, TOWN COMMISSION SUPPORTING AND ADOPTING THE PASCO COUNTY 2014 REVISION OF THE LOCAL MITIGATION STRATEGY; PROVIDING AN EFFECTIVE DATE.

WHEREAS, the Town of St. Leo is located in an area that is vulnerable to natural and man-made disasters; and

WHEREAS, The Town of St. Leo supports reasonable efforts to make the community better prepared for future disasters and better able to recover after disaster strikes; and

WHEREAS, by adopting the Pasco County 2014 Revision of the Local Mitigation Strategy, the framework for future mitigation efforts and post-disaster recovery may be made easier and faster; and,

WHEREAS, the Pasco County 2014 Revision of the Local Mitigation Strategy was transmitted to FEMA through the Florida Division of Emergency Management (FDEM) and found in compliance with the local mitigation requirements of Section 322 of the Disaster Mitigation Act of 2000 as implemented in the Interim Final Rule of Chapter 44 Code of Federal Regulation, Part 201.

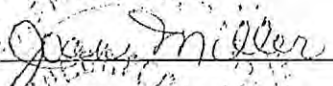
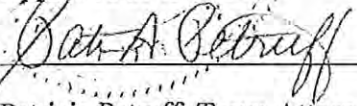
NOW, THEREFORE, be it resolved by the Town of St. Leo, Florida, Town Commission, Pasco County, Florida, in regular session duly assembled that;


Section 1. The Town of St. Leo does hereby approve and adopt the Pasco County 2014 Revision of the Local Mitigation Strategy and recommends it be adopted by the Pasco County Board of County Commissioners.

Section 2. That this resolution shall take effect as provided by the Town Charter.

DONE AND RESOLVED in open and regular meeting this 11th day of August 2014.

Attest:


Joan Miller, MMC
Approved as to form:

Patricia Petruff, Town Attorney


Richard H. Christmas, Mayor

RESOLUTION NO. 680-14

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ZEPHYRHILLS, FLORIDA SUPPORTING AND ADOPTING THE PASCO COUNTY AUGUST 2014 REVISION OF THE LOCAL MITIGATION STRATEGY.

WHEREAS, the City Of Zephyrhills is located in an area that is vulnerable to natural and man-made disasters; and

WHEREAS, the City supports reasonable efforts to make the community better prepared for future disasters and better able to recover after disaster strikes, and

WHEREAS, the State of Florida has stipulated that a Local Mitigation Strategy is the first step in the process of making a community better prepared to manage disasters; and

WHEREAS, by adopting the Pasco County August 2014 Revision of the Local Mitigation Strategy, the framework for future mitigation efforts and post-disaster recovery may be made easier and faster; and

WHEREAS, the Pasco County August 2014 Revision of the Local Mitigation Strategy is in compliance with the local hazard mitigation requirements of Section 322 of the Disaster Mitigation Act of 2000 as implemented in 44 C.F.R., Part 201.

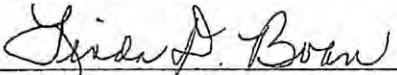
NOW, THEREFORE, be it resolved by the City Council of the City of Zephyrhills, Florida, in regular session duly assembled that:

Section 1. The City Council of the City Of Zephyrhills does hereby approved and adopt the Pasco County August 2014 Revision of the Local Mitigation Strategy and recommends it be adopted by the Pasco County Board of County Commissioners.

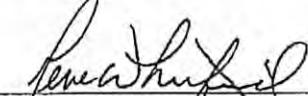
Section 2. That this resolution shall take effect as provided by the City Charter.

NOW, THEREFORE BE IT PASSED by the City Council of the City of Zephyrhills, Florida in an open meeting, sitting in regular session this 25th day of August, 2014.

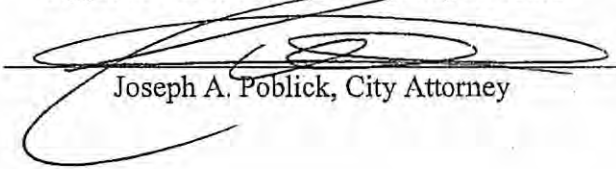
Attest:


Linda D. Boan, City Clerk


Charles E. Proctor, Council President


Gene Whitfield, Mayor

Approved as to legal form and legal content


Joseph A. Pobllick, City Attorney

A RESOLUTION BY THE BOARD OF COUNTY COMMISSIONERS
OF PASCO COUNTY, FLORIDA, SUPPORTING AND ADOPTING
THE PASCO COUNTY 2014 REVISION OF THE LOCAL
MITIGATION STRATEGY; PROVIDING AN EFFECTIVE DATE.

WHEREAS, Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5165, as amended by the Disaster Mitigation Act of 2000 (DMA2K) (P.L. 106-390) requires local governments to undertake a risk-based approach to reducing threats to natural hazards through the development of a Local Mitigation Strategy (LMS), and;

WHEREAS, 44 CFR Part 201.6 requires local governments to have a Federal Emergency Management Agency (FEMA) approved LMS, and requires the review and revision of the LMS to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for FEMA approval every five (5) years in order to apply for and/or receive project grants, and;

WHEREAS, the Pasco County Local Mitigation Strategy was most recently updated, submitted to and approved by FEMA in August 2014, and;

WHEREAS, The National Flood Insurance Act of 1968, as amended, 42 U.S. C. 4001 *et seq.*, reinforced the need and requirement for mitigation plans, linking flood mitigation assistance grant programs to the LMS document, and;

WHEREAS, FEMA's direction for local appointment of a Mitigation Planning Committee, per regulations published in the National Flood Insurance Program Coordinator's Manual 2014, Section 510, provides updated guidance no longer consistent with the current committee structure established by the Pasco County Board of County Commissioners through Resolution 98-211, and;

WHEREAS, The Pasco County Office of Emergency Management has consolidated the three subcommittees formed in 1998 into one group called the Mitigation Planning Committee to ensure that at least one-half of the members are representatives of the public stakeholders, and;

WHEREAS, FEMA requires re-adoption of the approved LMS by local governing bodies in order to continue eligibility for federal disaster and pre-disaster grant assistance, and;

NOW, THEREFORE, BE IT RESOLVED by the Board of County Commissioners of Pasco County, Florida in regular session duly assembled this date, that:

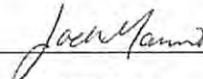
1. The Pasco County Local Mitigation Strategy, 2014 Revision is hereby adopted and authorized for implementation.

2. The Pasco County Mitigation Planning Committee is hereby reconstituted according to current FEMA guidelines, to include an increased representation by public stakeholders.

3. This resolution shall be in effect immediately upon its adoption.

DONE AND RESOLVED WITH A QUORUM PRESENT AND VOTING THIS 23rd
DAY OF September, 2014.

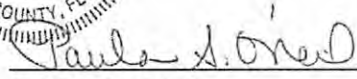
(SEAL)



JACK MARIANO
CHAIRMAN, BOARD OF COUNTY
COMMISSIONERS OF
PASCO COUNTY, FLORIDA

APPROVED
IN SESSION
SEP 23 2014
PASCO COUNTY
BCC





PAULA S. O'NEIL
CLERK AND COMPTROLLER

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Appendix F - Tips, Hints, and Tricks

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Public and Stakeholder Involvement

Public and stakeholder involvement is a major component of the LMS. So much so that it is required in 4 different elements on the review tool.

Counties must document:

- how stakeholders and neighboring communities were invited and given the opportunity to participate (P4-5)
- how the public was invited and given the opportunity to participate (P6)
- how their feedback was incorporated into the plan
- how public participation will be continued (M7)

It is worth noting that proof of invitation (example emails, newspaper advertisements, website postings, etc.) is required. Further, when discussing how feedback was incorporated, it is important to state how it would be incorporated regardless of whether or not any feedback was received.

For more detail on what is needed to meet each of these requirements, please see the information sheet on the next page.

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Public/Stakeholder Involvement in the LMS

Purpose:

P4, P5, and P6 aim to describe how the public and stakeholders were invited to be part of the planning process and how their comments or input is incorporated into the LMS. Community participation in the planning process is an ongoing effort. Therefore, M7 requires continued participation during implementation, monitoring, and evaluation of the plan.

- P4 & P5: Requires counties to document **how stakeholders and neighboring communities were invited and given the opportunity to participate** in the planning process. Simply stating that stakeholders have been invited will not be sufficient as documentation must be provided.
 - The plan must provide the agency or organization represented and the person's position or title within the agency.
 - Stakeholders must include local and regional agencies involved in mitigation, agencies that have the authority to regulate development, and neighboring communities.
 - Examples of formal stakeholder invitations may include: E-mails and distribution lists, phone calls, advertisements in local newspapers and websites, etc.
- P6: Requires counties to document **how the public was invited and given the opportunity to participate** in the planning process (prior to the final draft for public comment) and **how their feedback was incorporated into the plan**.
 - In addition to demonstrating public/stakeholder involvement, the plan should document how they would incorporate feedback even if no suggestions were received.
 - Once again, invitations must be documented. These may be the same as stakeholder invitations.
- M7: Requires counties to document **how public participation will be continued** after approval during implementation, monitoring, and evaluation.
 - Examples of efforts to continue active public participation include: periodic presentations to community groups or schools, annual questionnaires, surveys, active meetings, posting on social media, and utilizing websites for the public to review, comment, or suggestions.

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Consistency Check

We have noticed that we comment on minor inconsistencies in almost every plan we review. We suggest going through your plan, cover to cover, with the specific intention of looking for inconsistencies. In other words, conduct a consistency check. Often times, a consistency check is best conducted by someone who hasn't been working with the plan on a daily basis. This is why we catch them so easily. We recommend designating a committee member to conduct this check prior to submitting the plan. Some of the more common inconsistencies we run into are: referring to the 27P-22 annual update as the 9G-22 update, hazard lists, jurisdiction lists, and lists of previous occurrences.

During a plan update, it is very easy to miss a table or paragraph with information that was changed elsewhere in the plan. By conducting a consistency check on your plan prior to submitting it for review, you may catch some of these inconsistencies before we do. This can speed up the review and revisions process.

Planning Process (P7)

To meet this requirement, examine existing plans, studies, and reports that can potentially be incorporated into the LMS plan and then show how they are incorporated. A common method to accomplish this second part is to provide citations or reference under tables, diagrams, and maps that are incorporated into your plan from other sources. It is always a benefit to include the source of these images so that the State of Florida's Planning Unit, FEMA, and future planning committees will know where you obtained the information. Please note that it is not required to have a bibliography. A short citation under each image is sufficient.

As you update your plan, review the most recent list of plans and reports that were incorporated into the LMS to ensure that none are outdated or irrelevant. Evaluate new plans, studies, and reports as well, especially concerning recent development in the jurisdictions. Update the list of reviewed sources as necessary and show how any further material was utilized within the LMS since the last update.

Hazard Risk and Vulnerability Assessment (R1, 3-8)

We have found the most difficult part of the LMS as a whole has been the Hazard Risk and Vulnerability Assessment section. Most of the time this comes down to a misunderstanding of the definitions we are looking for. We have noticed that once we lay out the definition and provide examples, this portion has been easy to revise. For this reason, we have created a Hazard Risk and Vulnerability Assessment Quick Reference Guide. This one page (double sided) guide provides definitions, explanations, and examples of the 7 parts to a complete hazard profile.

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<p>Impacts (R7)</p>	<p><i>Impact means the consequence or effect of the hazard on the community and its assets.</i></p> <p>Impacts come from previous occurrences unless this hazard has never happened or hasn't happened recently. In which case, general impacts and/or an estimate of future impacts is sufficient.</p>	<ul style="list-style-type: none"> • June 15, 2014 Hurricane Frank was a category 3 storm that arrived onshore 12 miles north of our county. There was over 40 tons of debris generated, 4 shelters were opened which housed more than 2,000 citizens for up to seven days. Zebra Highway was blocked for two days by the downed trees. Over 50,000 citizens were out of power for the first three days. The county courthouse suffered broken windows and a partial roof collapse resulting in more than \$200,000 in damages. Storm surge was estimated at 4 feet along the coast. Four injuries were reported, mostly from debris removal, no deaths occurred. • April 1, 2014 a 273 acre wildfire was caused by lightning. One nonresidential structure was destroyed resulting in \$2,000 damage, no injuries were reported. • While our county has never been affected by a tsunami, the possible impacts include up to 5 feet of flood waters as far as 2 miles inland.
<p>Probability (R6)</p>	<p><i>Probability means the likelihood of the hazard occurring and may be defined in terms of general descriptors, historical frequencies, statistical probabilities, and/or hazard probability maps. If general descriptors are used, then they must be defined in the plan.</i></p> <p>The probability needs to have a distinct timeframe and definition.</p>	<ul style="list-style-type: none"> • In the last 50 years we have been affected by 10 hurricanes therefore there is a 20% chance of a hurricane affecting our county in any given year. • We could see a flood once every 1-5 years. • We could have 20 severe thunderstorms per year. • The probability of a sinkhole is low. <ul style="list-style-type: none"> ○ very low = greater than 0% but less than 15% annually ○ low = greater than 15% but less than 35% annually ○ medium = greater than 35% but less than 66% annually ○ high = greater than 66% but less than 85% annually ○ very high = greater than 86% annually
<p>Extent (R4)</p>	<p><i>Extent means the strength or magnitude of the hazard. For example, extent could be described in terms of the specific measurement of an occurrence on a scientific scale and/or other hazard factors, such as duration and speed of onset.</i></p> <p>This is the worst case you could expect or what you could expect in any given year.</p>	<ul style="list-style-type: none"> • We could see up to an EF3 in our county. • We could get up to 4 feet of flood waters west of Zebra Highway and up to 2 feet of flood waters east of Zebra Highway. • Our area has a lightning density of 4 to 8 flashes per square kilometer per year. • A sinkhole in our area could be up to 10 feet in diameter and 20 feet deep. • A worst case scenario wildfire would burn up to 1200 acres. • A winter freeze in our area could consist of temperature as low as 12 degrees for up to 3 days.
<p>Vulnerability Summary (R8)</p>	<p><i>The plan must provide an overall summary of each jurisdiction's vulnerability to the identified hazards. Vulnerable assets and potential losses is more than a list of the total exposure of population, structures, and critical facilities in the planning area.</i></p> <p>These summaries should answer the question "why is your jurisdiction, specifically, vulnerable to this hazard?" and lead to problem statements that identify gaps where projects should be focused on resolving.</p>	<ul style="list-style-type: none"> • While temperatures do not generally have an impact on structures, our county is particularly vulnerable to extreme temperatures due to our population consisting of 42% elderly citizens as well as a relatively high homeless population estimated at around 1100 people. Similarly, our more than 5500 acres of citrus and vegetable crops could be adversely affected by extremely high or low temperatures having an impact on our economy. • 47% of our residential building stock consists of untied down manufactured homes or structures that were built before the most recent building code and unable to withstand tropical storm force winds. That in combination with our numerous canopy roads and above ground power lines makes our county particularly vulnerable to high winds. • While there is a dam within our county, the dam only holds enough water to cover 100 acres of land with 1 foot of water. If the dam were to fail the area the water would inundate is part of a state park and would therefore have no impact on people or structures. For this reason we are not vulnerable to dam failure in our county. (please note that is could also be an omission justification)

Hazard Omissions (R2)

If a hazard has a low probability of occurrence or would cause minimal impacts to your jurisdictions, it is OK to omit it from the plan by providing a simple justification. There is an easy way to successfully accomplish omitting a hazard. All you have to do is include this statement in your plan: "Due to low probability of occurrence, this hazard will not be fully protected."

OR you could use this one:

"Due to limited/low impacts from this hazard, it will not be fully protected."

Other counties have successfully accomplished this by including similar information in a chart/table. Please see the example from DeSoto County on the next page.

PLEASE NOTE- If you do not specifically state that a hazard "will not be fully protected", it will have to meet each and every hazard requirement (location, history, extent, impacts, vulnerability, probability, etc.), be covered by a goal & objective, AND have mitigation projects included on the priority list.

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DESOTO COUNTY HAZARD VULNERABILITY/ IMPACT MATRIX

Hazard	Vulnerability	Impact	Frequency	Distribution Area
HURRICANE	High	Moderate - High	1-7 Yrs	County Wide/City of Arcadia
FLOODS	High	Low - High	1-2 Yrs	Peace River and Horse Creek Low-lying areas/SW corner of City of Arcadia
HAZARDOUS MATERIAL SPILL	Low - Moderate	Low - Moderate	10-20 Per Year	SR31, SR70, SR72, SR17(35), CR769, CR661
TORNADOES	Moderate	Moderate	1-10 Per Year	County Wide/City of Arcadia
FREEZES	Moderate	Moderate - High	2-5 Yrs	County Wide/City of Arcadia ,Agricultural Pasture and Groves
WILDFIRES	High	Moderate-High	1-5 Yrs	County Wide/Agricultural Pasture
THUNDERSTORMS	Moderate	Moderate	1-10 Per Year	County Wide/City of Arcadia
DROUGHTS	Low	High	5-10 Yrs	County Wide/City of Arcadia, , Agricultural
TROPICAL STORMS	Moderate	Moderate	1-7 Yrs	County Wide/City of Arcadia
THE BELOW HAZARDS ARE NOT RELEVANT TO OUR AREA AND WILL NOT BE MENTIONED FURTHER IN THE PLAN				
SINKHOLES	Low	Low	N/A	County Wide/City of Arcadia
COASTAL OIL SPILL	Low	Low	N/A	N/A
CIVIL DISTURBANCES	Low	Low	Unknown	N/A
TERRORISM	Low	Moderate	N/A	City of Arcadia; Public/Government Buildings
EXOTIC PESTS AND DISEASES	Moderate	High	5-10 Yrs	Agricultural:Pasture, Groves, Farmland
DISEASE AND PANDEMIC OUTBREAKS	Low - Moderate	Low - Moderate	N/A	Countywide
CRITICAL INFRASTRUCTURE DISRUPTION	Low - Moderate	Low - Moderate	N/A	Natural Gas Line running down SR17 & SR31
SPECIAL EVENTS	Low	Low	N/A	Turner Agri-Civic Center; Public Buildings
MAJOR TRANSPORTATION INCIDENTS	Low	Low	N/A	Evacuation Routes
636 Square Miles				None of the hazards above in yellow have impacted our jurisdiction in the past five years. All other common hazards that occur in our area are covered.
31 Square mile in water area				
Average elevation: 70' at County EOC				
Population: 34,864				

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Extent (R4)

Hazard profiles have many components. One of the toughest components to meet is Extent. FEMA defines extent as “the strength or magnitude of the hazard. For example, extent could be described in terms of the specific measurement of an occurrence on a scientific scale (for example, Enhanced Fujita Scale, Saffir-Simpson Hurricane Scale, Richter Scale, flood depth grids) and/or other hazard factors, such as duration and speed of onset. Extent is not the same as impacts.” Further, “describing extent of a hazard is not the same as describing its potential impacts on a community. Extent defines the characteristics of the hazard regardless of the people and property it affects, while impact refers to the effect of a hazard on the people and property in the community...”

Vulnerability Assessment (R8)

We have noticed that vulnerability summaries are a commonly missed element in LMS plans. Vulnerability summaries should include why your jurisdictions are particularly vulnerable to a hazard, the easiest way to do this is through problem statements. Review the Fact Sheet on the next page which will clear up the confusion surrounding vulnerability summary requirements.

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Vulnerability Summaries Fact Sheet

Requirement: Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction?

44 CFR 201.6(c)(2)(ii)

Intent: For each jurisdiction to consider their community as a whole and analyze the potential impacts of future hazard events and the vulnerabilities that could be reduced through hazard mitigation actions.

The plan **must**:

- Provide an overall summary of each jurisdiction's vulnerability to the identified hazards.
 - The overall summary of vulnerability identifies structures, systems, populations or other community assets as defined by the community that are susceptible to damage and loss from hazard events.

The plan **should** describe vulnerability in terms of:

- A. The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;
- B. An estimate of the potential dollar losses to vulnerable structures identified in ... this section and a description of the methodology used to prepare the estimate.
- C. Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

Overall vulnerability summaries can be used to create problem statements and identify mitigation actions to reduce risk.

Definitions

- Vulnerability - characteristics of community assets that make them susceptible to damage from a given hazard
- Vulnerable assets and potential losses - more than a list of the total exposure of population, structures, and critical facilities in the planning area

An example of an overall summary is a list of key issues or problem statements that clearly describes the community's greatest vulnerabilities and that will be addressed in the mitigation strategy.

Although all assets may be affected by hazards, some assets are more vulnerable because of their physical characteristics or socioeconomic uses. Consider certain buildings or concentrations of buildings may be more vulnerable because of their location, age, construction type, condition, or use. These characteristics should be described in the vulnerability summaries. Also include populations that may have unique vulnerabilities or be less able to respond and recover during a disaster.

The risk assessment process generates large amounts of information regarding hazards, vulnerable assets, and potential impacts and losses. This information needs to be summarized so that the community can understand the most significant risks and vulnerabilities. The plan must provide an overall summary of each jurisdiction's vulnerability to the identified hazards.

Suggestions

One recommended approach is to develop problem statements. For instance, your analysis of impacts and losses helps you to identify which critical facilities are located in identified hazard areas, the neighborhood that has experienced the most flood damage in the past, or which hazard-prone areas are zoned for future development. This information on the issues of greatest concern can be summarized into problem statements, such as in the following examples. The planning team may evaluate the impacts and develop problem statements for each hazard, as well as identify the problems or issues that apply to all hazards. Plan updates will need to revise the problems statements to reflect the current risk assessment. This may include developing new statements and removing or revising ones that are no longer valid because mitigation projects have addressed the risk or other conditions have changed.

Example Problem Statements

- The North Creek Sewage Treatment Plant is located in the 100-year floodplain and has been damaged by past flood events. It serves 10,000 residential and commercial properties.
- Newberg City recently annexed the South Woods area located in the wildland-urban interface. The City's land use and building codes do not address wildfire hazard areas. Future development in South Woods will increase vulnerability to wildfires.
- The City of Greenville is located in a seismic hazard area subject to severe ground shaking and soil liquefaction. Hazus predicts a 6.0 magnitude event would result in \$10.5 million in structural losses and \$40 million in non-structural losses. Damage will be greatest to the 100 unreinforced masonry buildings (pre- building code) located in the downtown business district.
- The schools are a central focus of the community and offer opportunities to educate the public about hazards, risk, and mitigation. In addition, many school facilities are vulnerable to one or more hazards, including flooding, earthquake, tornado, and severe winter storms.

NFIP Repetitive Loss Properties (R9)

The plan must describe the types (residential, commercial, institutional, etc.) and estimate the numbers of repetitive loss properties located in identified flood hazard areas. This can be done in a number of ways including a sentence describing the type and number of properties in each jurisdiction as well as a chart such as the one below. Remember that we need the type and the number in each jurisdiction, even if the number is zero.

Jurisdiction	Residential	Commercial	Institutional	Other
City of USA	5	1	2	3
Town of America	2	0	0	4
State Village	0	0	1	2

Further, the use of flood insurance claim and disaster assistance information is subject to The Privacy Act of 1974, as amended, which prohibits public release of the names of policy holders or recipients of financial assistance and the amount of the claim payment or assistance. If a plan includes the names of policy holders or recipients of financial assistance and the amount of the claim payment or assistance, the plan cannot be approved until this Privacy Act covered information is removed from the plan.

Continued NFIP Compliance (R9)

Per requirement §201.6(c)(3)(ii), the plan must discuss the jurisdiction's participation within the NFIP as well as their continued compliance with the NFIP's requirements. This can be addressed in your plan by providing a list of the jurisdictions participating in the CRS (Community Rating System) as well as a list of municipalities that participate in NFIP but not CRS (as applicable). This section also addresses, analyzes and prioritizes actions taken (or to be taken) in order to ensure continued NFIP compliance. For example, simple bullet points or a paragraph addressing how new construction and/or improvements through Special Flood Hazard Areas (SFHAs) will be regulated, if any flood insurance studies or mapping updates are to occur, continued provision of information to the public, preparation of and/or continuous update(s) of floodplain mapping, etc. (as applicable). As a reminder, simply stating "the communities will continue to comply with NFIP requirements" is not sufficient.

Jurisdictional Specificity

Many of the plans under our review provide state-wide and national hazard information and can sometimes lack the jurisdictional specificity necessary for profiling hazards. Jurisdictional specificity involves the profiling of hazards with information catered towards your specific County. Whether you are giving a general description of a hazard, describing impacts, or listing previous occurrences, we like you to document how that information relates to your County and local jurisdictions.

Jurisdictional specificity allows for a more useful plan, getting to the real meat and potatoes of how your particular County can be affected by and is susceptible to different hazards. Jurisdictional specificity within the hazard analysis section of your LMS will assist your County in developing a more complete vulnerability, impact and probability assessment. This accuracy will serve to the benefit of your County as your planning will become more applicable to local conditions. This can allow for greater identification of local mitigation projects and other measures.

Local Hazard Data

It can be difficult to find the necessary local information for hazard profiles, especially when it comes to discussing your community's vulnerability, finding previous occurrences, or assessing impacts. We have compiled a short list of different data sources in the attached Local Hazard Data Toolbox that can be used to find the most recent hazard information. Gathering current, local information on the different hazards that impact your county can help build more thorough vulnerability assessments by identifying critical assets that have been or could be affected by these hazards.

The data sources mentioned here only scratch the surface of information that can be accessed to gather local hazard information. We encourage each county to get creative and continuously find new data sources to keep their plan current and comprehensive. A more complete risk and vulnerability assessment will allow you to identify gaps in the vulnerabilities of your assets to the hazards that your county faces. This allows for the identification of more robust mitigation actions and initiatives to enhance the resiliency of your citizens and communities.

Local Hazard Data Toolbox



A list of data resources can be found on our SharePoint website:
<https://portal.floridadisaster.org/mitigation/LMS/SitePages/Resources.aspx>.

The National Climatic Data Center (NCDC) of the National Oceanic and Atmospheric Administration (NOAA) is one of the most up-to date and useful information sources. This database provides a list of different hazard events, as well as any associated impacts:
<http://www.ncdc.noaa.gov/stormevents/choosedates.jsp?statefips=12%2CFLORIDA>.

NOAA also maintains a list of websites to access information regarding hurricanes, tornadoes, and earthquakes: <http://gcmd.gsfc.nasa.gov/learn/pointers/hazards.html>.

Further hazard information from NOAA can be found through their Severe Storms Laboratory:
<http://www.nssl.noaa.gov/>.

Universities are a good place to find hazard information. The Natural Hazards Research Center at the University of Colorado provides data on all types of hazards and maintains a thorough list of resources to gather more information: <http://www.colorado.edu/hazards/resources/>. (Specific hazard information can also be obtained from local Florida universities such as the emergency management departments at Florida State University and Florida Atlantic University.)

Local Sources

- Agricultural Extension Offices (as well as the Florida Citrus Commission): impacts to agricultural assets from recent hazard events, including what agriculture may be vulnerable to future events
- American Red Cross: population impacts from different hazard events, including the opening of cold weather shelters
- Water Management Districts: impacts to rivers and canals, including the effects that fluctuations in water levels can have on fisheries and aquatic wildlife habitats, as well changes that may impact your county's drinking water supply
- Utility companies: impacts to critical infrastructure from hazard events such as high winds and heat waves

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Plan Integration (S2 & S9-11)

This new document “Plan Integration: Linking Local Planning Efforts” outlines a number of ways to ensure the Local Mitigation Strategy doesn’t sit on a shelf by itself. We continue to stress how important plan integration is throughout the update process, and we would like to stress that it isn’t too late to improve your integration practices.

Outside of the fact that it is a good way to ensure mitigation is happening across your jurisdiction, plan integration is required in multiple elements of the LMS update requirements. Specifically see Florida Review Tool Elements S2, and S9-11 or FEMA Review Tool Elements C1 and C6. The PDF is large and is therefore not attached, but it can be easily found on our website here: http://www.floridadisaster.org/Mitigation/Local/tips/documents/R3_Plan_Integration_0812_508.pdf

Jurisdiction Authorities (S2)

A common issue we see during the plan review is the identification of various policies and programs but very little discussion of resources and ability to expand on these items. Another common mistake planners make is simply listing plans where the LMS can be incorporated and thinking that it will cover this requirement (S9). Keep in mind that this does not have to be monetary resources but could be the ability to regulate future development, or the ability to incorporate stricter NFIP standards into new housing projects. We also have the ability to expand upon our existing outreach programs to provide tips to homeowners to mitigate their individual properties. This requirement should encourage the LMS working group to think creatively to identify the local resources available and discuss ways in which their capabilities can be maximized and expanded upon.

Project Lists (S4-5)

The wording for project list regulations has always been a bit confusing and open for interpretation. After speaking with our FEMA counterparts and reviewing all available guidances, we came to the conclusion that there is a difference between “analyzing” and “identifying” projects. Essentially, counties must “analyze” a comprehensive list of projects for each hazard but only “identify” (include on your list) the projects which are most feasible and beneficial. This Fact Sheet which will help clear up the confusion surrounding project list requirements.

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Project Lists Fact Sheet

Requirement: Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? 44 CFR 201.6(c)(3)(ii) and 44 CFR 201.6(c)(3)(iv)

Intent: To ensure the hazard mitigation actions are based on the identified hazard vulnerabilities, are within the capability of each jurisdiction, and reduce or avoid future losses. This is the heart of the mitigation plan, and is essential to leading communities to reduce their risk.

The plan **must**:

- 1) Analyze actions and/or projects that the jurisdiction considered to reduce the impacts of hazards identified in the risk assessment
- 2) Identify the actions and/or projects that the jurisdiction intends to implement.
- 3) Include mitigation actions specific to **each** jurisdiction participating in the plan.
- 4) Reduce risk to existing buildings and infrastructure (including a consideration of actions that address the built environment) as well as limit any risk to new development and redevelopment.

This can be met with either actions or projects, or a combination of actions and projects.

Definitions:

- Mitigation actions - a hazard mitigation action, activity or process (for example, adopting a building code, or educating the public) designed to reduce or eliminate the long term risks from hazards.
- Mitigation projects - a physical project (for example, elevating structures or retrofitting critical infrastructure) designed to reduce or eliminate the long term risks from hazards.
- Comprehensive range - consists of different hazard mitigation alternatives that address the vulnerabilities to the hazards that the jurisdiction(s) determine are most important.

Analyze vs Identify

- The emphasis is on the impacts or vulnerabilities identified in the risk assessment, not on the hazards themselves. Some hazards may not have many impacts, or the impacts may already be mitigated. In this case, fewer mitigation actions may be identified than for a hazard causing more frequent or severe impacts.
- For certain problems, you may not have enough information about a particular situation to recommend a specific mitigation action. In these cases, the mitigation action can be to recommend further study. (For example, if your community has 20 critical facilities that are threatened, further technical study may be needed to determine which facilities should be addressed first. Your recommendation could be “Conduct an assessment of the 20 critical facilities over the next 3 years to determine the most appropriate mitigation actions.”)
- Not all of the identified actions may be included in the final action plan because of technical feasibility, political acceptance, lack of funding, and other constraints. The planning team will evaluate and prioritize the most suitable mitigation actions for the community to implement.

Planning teams may list possible actions within hazard profiles or in a separate section to represent the analysis of options while listing only the most suitable options within their project list. Further, projects in this list are not limited to projects requesting FEMA grant funding; county funded and/or recurring actions can be included. Projects may benefit more than one jurisdiction. Lastly, while an analysis is required for each hazard, an identified project is not. (Although, each jurisdiction is required to identify at least 1 project and include it on the final list.)

Minimum project requirements:

Priority rank/score, name of project, description, jurisdiction, agency responsible for implementation, potential funding sources, status (new, completed, deleted {and why}, or deferred {and why}), estimated timeframe for completion, and estimated costs.

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Mitigation Ideas (S4-5)

Mitigation actions are not always construction projects. Codes, ordinances, future land use, outreach, and education are all non-construction mitigation actions. We would also like to remind everyone that while every hazard must have a project analyzed, that does not necessarily mean every hazard must have a project identified. (Please see the Project List Fact Sheet for the distinction between the two.)

FEMA's Mitigation Ideas gives a number of different mitigation actions for 16 hazards. Hopefully this document will help not only analyze projects for your LMS, but to identify possible new actions for your community. This PDF is large and is therefore not attached, however it is available on our website here: <http://www.floridadisaster.org/Mitigation/Local/tips/documents/FEMA%20Mitigation%20Ideas.pdf>

Funding Sources (S8)

Identifying funding sources is a very real component of a successful mitigation strategy and is a required component of FDEM's and FEMA's approval regulations. Communities may not always have the necessary resources to implement important projects; but there are a number of resources that can allow communities to successfully accomplish these goals. Please see the list of federal mitigation funding sources on the next few pages.

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Federal Mitigation Funding Sources

Federal Emergency Management Agency

Program	Details	Notes
Flood Mitigation Assistance Program (FMA)	Provides funding to implement measures to reduce or eliminate the long-term risk of flood damage http://www.fema.gov/government/grant/fma/index.shtm	States and localities
Hazard Mitigation Grant Program (HMGP)	Provides grants to implement long-term hazard mitigation measures after a major disaster declaration http://www.fema.gov/government/grant/hmgp/index.shtm	Open
National Flood Insurance Program (NFIP)	Enables property owners to purchase insurance as a protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages http://www.fema.gov/business/nfip/	States, localities, and individuals
Pre-Disaster Mitigation Program (PDM)	Provides funds for hazard mitigation planning and the implementation of mitigation projects prior to a disaster event http://www.fema.gov/government/grant/pdm/index.shtm	States, localities and tribal governments

Environmental Protection Agency

The EPA makes available funds for water management and wetlands protection programs that help mitigate against future costs associated with hazard damage.

Mitigation Funding Sources Program	Details	Notes
Clean Water Act Section 319 Grants	Grants for water source management programs including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and regulation. http://www.epa.gov/OWOW/NPS/cwact.html	Funds are provided only to designated state and tribal agencies
Clean Water State Revolving Funds	State grants to capitalize loan funds. States make loans to communities, individuals, and others for high-priority water-quality activities. http://www.epa.gov/owow/wetlands/initiative/srf.html	States and Puerto Rico
Wetland Program Development Grants	Funds for projects that promote research, investigations, experiments, training, demonstrations, surveys, and studies relating to the causes, effects, extent, prevention, reduction, and elimination of water pollution. http://www.epa.gov/owow/wetlands/initiative/#financial	See website

Federal Mitigation Funding Sources

National Oceanic and Atmosphere Administration (NOAA)

NOAA is the major source for mitigation funding related to coastal zone management and other coastal protection projects.

Mitigation Funding Sources Program	Details	Notes
Coastal Services Center Cooperative Agreements	Funds for coastal wetlands management and protection, natural hazards management, public access improvement, reduction of marine debris, special area management planning, and ocean resource planning. http://www.csc.noaa.gov/funding/	May only be used to implement and enhance the states' approved Coastal Zone Management programs
Coastal Services Center Grant Opportunities	Formula and program enhancement grants for implementing and enhancing Coastal Zone Management programs that have been approved by the Secretary of Commerce. http://www.csc.noaa.gov/funding/	Formula grants require non-federal match
Coastal Zone Management Program	The Office of Ocean and Coastal Resource Management (OCRM) provides federal funding and technical assistance to better manage our coastal resources. http://coastalmanagement.noaa.gov/funding/welcome.html	Funding is reserved for the nation's 34 state and territory Coastal Zone Management Programs
Marine and Coastal Habitat Restoration	Funding for habitat restoration, including wetland restoration and dam removal. http://www.nmfs.noaa.gov/habitat/recovery/	Funding available for state, local and tribal governments and for- and non-profit organizations.

Federal Mitigation Funding Sources

Floodplain, Wetland and Watershed Protection Programs

USACE and the U.S. Fish and Wildlife Service offer funding and technical support for programs designed to protect floodplains, wetlands, and watersheds.

Funding and Technical Assistance for Wetlands and Floodplains Program	Details	Notes
USACE Planning Assistance to States (PAS)	Fund plans for the development and conservation of water resources, dam safety, flood damage reduction and floodplain management. http://www.lre.usace.army.mil/planning/assist.html	50 percent non-federal match
USACE Flood Plain Management Services (FPMS)	Technical support for effective floodplain management. http://www.lrl.usace.army.mil/p3md-o/article.asp?id=9&MyCategory=126	See website
USACE Environmental Laboratory	Guidance for implementing environmental programs such as ecosystem restoration and reuse of dredged materials. http://el.erdc.usace.army.mil/index.cfm	See website
U.S. Fish & Wildlife Service Coastal Wetlands Conservation Grant Program	Matching grants to states for acquisition, restoration, management or enhancement of coastal wetlands. http://ecos.fws.gov/coastal_grants/viewContent.do?viewPage=home	States only. 50 percent federal share
U.S. Fish & Wildlife Service Partners for Fish and Wildlife Program	Program that provides financial and technical assistance to private landowners interested in restoring degraded wildlife habitat. http://ecos.fws.gov/partners/viewContent.do?viewPage=home	Funding for volunteer-based programs

Federal Mitigation Funding Sources

Housing and Urban Development

The Community Development Block Grants (CDBG) administered by HUD can be used to fund hazard mitigation projects.

Mitigation Funding Sources Program	Details	Notes
Community Development Block Grants (CDBG)	Grants to develop viable communities, principally for low and moderate income persons. CDBG funds available through Disaster Recovery Initiative. http://www.hud.gov/offices/cpd/communitydevelopment/programs/	Disaster funds contingent upon Presidential disaster declaration
Disaster Recovery Assistance	Disaster relief and recovery assistance in the form of special mortgage financing for rehabilitation of impacted homes. http://www.hud.gov/offices/cpd/communitydevelopment/programs/dri/assistance.cfm	Individuals
Neighborhood Stabilization Program	Funding for the purchase and rehabilitation of foreclosed and vacant property in order to renew neighborhoods devastated by the economic crisis. http://www.hud.gov/offices/cpd/communitydevelopment/programs/neighborhoodspg/	State and local governments and non-profits

Bureau of Land Management

The Bureau of Land Management (BLM) has two technical assistance programs focused on fire mitigation strategies at the community level.

Mitigation Funding Sources Program	Details	Notes
Community Assistance and Protection Program	Focuses on mitigation/prevention, education, and outreach. National Fire Prevention and Education teams are sent to areas across the country at-risk for wildland fire to work with local residents. http://www.blm.gov/nifc/st/en/prog/fire/community_assistance.html	See website
Firewise Communities Program	Effort to involve homeowners, community leaders, planners, developers, and others in the effort to protect people, property, and natural resources from the risk of wildland fire before a fire starts. http://www.firewise.org/	See website

Federal Mitigation Funding Sources

U.S. Department of Agriculture

There are multiple mitigation funding and technical assistance opportunities available from the USDA and its various sub-agencies: the Farm Service Agency, Forest Service, and Natural Resources Conservation Service.

Mitigation Funding Sources Agency Program	Details	Notes
USDA Smith-Lever Special Needs Funding	Grants to State Extension Services at 1862 Land-Grant Institutions to support education-based approaches to addressing emergency preparedness and disasters. http://www.csrees.usda.gov/funding/rfas/smith_lever.html	Population under 20,000
USDA Community Facilities Guaranteed Loan Program	This program provides an incentive for commercial lending that will develop essential community facilities, such as fire stations, police stations, and other public buildings. http://www.rurdev.usda.gov/rhs/cf/cp.htm	Population under 20,000
USDA Community Facilities Direct Loans	Loans for essential community facilities. http://www.rurdev.usda.gov/rhs/cf/cp.htm	Population of less than 20,000
USDA Community Facilities Direct Grants	Grants to develop essential community facilities. http://www.rurdev.usda.gov/rhs/cf/cp.htm	Population of less than 20,000
USDA Farm Service Agency Disaster Assistance Programs	Emergency funding and technical assistance for farmers and ranchers to rehabilitate farmland and livestock damaged by natural disasters. http://www.fsa.usda.gov/	Farmers and ranchers
USDA Forest Service National Fire Plan	Funding for organizing, training, and equipping fire districts through Volunteer, State and Rural Fire Assistance programs. Technical assistance for fire related mitigation. http://www.forestsandrangelands.gov/	See website
USDA Forest Service Economic Action Program	Funds for preparation of Fire Safe plans to reduce fire hazards and utilize byproducts of fuels management activities in a value-added fashion. http://www.fs.fed.us/spf/coop/programs/eap/	80% of total cost of project may be covered

Federal Mitigation Funding Sources

USDA Natural Resources Conservation Service Emergency Watershed Protection Support Services	Funds for implementing emergency measures in watersheds in order to relieve imminent hazards to life and property created by a natural disaster. http://www.nrcs.usda.gov/programs/ewp/	See website
USDA Natural Resources Conservation Service Watershed Protection and Flood Prevention	Funds for soil conservation; flood prevention; conservation, development, utilization and disposal of water; and conservation and proper utilization of land. http://www.nrcs.usda.gov/programs/watershed/index.html	See website

Health and Economic Agencies

Alternative mitigation programs can be found through health and economic agencies that provide loans and grants aimed primarily at disaster relief.

Federal Loans and Grants for Disaster Relief Agency Program	Details	Notes
Department of Health & Human Services Disaster Assistance for State Units on Aging (SUAs)	Provide disaster relief funds to those SUAs and tribal organizations who are currently receiving a grant under Title VI of the Older Americans Act. http://www.aoa.gov/doingbus/fundopp/fundopp.asp	Areas designated in a Disaster Declaration issued by the President
Economic Development Administration (EDA) Economic Development Administration Investment Programs	Grants that support public works, economic adjustment assistance, and planning. Certain funds allocated for locations recently hit by major disasters. http://www.eda.gov/AboutEDA/Programs.xml	The maximum investment rate shall not exceed 50 percent of the project cost
U.S. Small Business Administration Small Business Administration Loan Program	Low-interest, fixed rate loans to small businesses for the purpose of implementing mitigation measures. Also available for disaster damaged property. http://www.sba.gov/services/financialassistance/index.html	Must meet SBA approved credit rating

Federal Mitigation Funding Sources

Research Grants

The United States Geological Survey (USGS) and the National Science Foundation (NSF) provide grant money for hazard mitigation-related research efforts.

Hazard Mitigation Research Grants Agency Program	Details	Notes
National Science Foundation (NSF) Decision, Risk, and Management Sciences Program (DRMS)	Grants for small-scale, exploratory, high-risk research having a severe urgency with regard to natural or anthropogenic disasters and similar unanticipated events. http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5423&org=SES	See website
U.S. Geological Survey (USGS) National Earthquake Hazards Reduction Program	The purpose of NEHRP is to provide products for earthquake loss reduction to the public and private sectors by carrying out research on earthquake occurrence and effects. http://www.usgs.gov/contracts/nehpr/	Community with a population under 20,000

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LMS Integration Process (S9-11)

The goal of integrating the LMS into other planning mechanisms is to document the use of mitigation strategies throughout all possible areas within jurisdictions participating in the plan. This can be as simple as drafting a narrative describing how the plan was reviewed and how the strategies and goals have been incorporated. The narrative must document the actual process used and which areas the plan has been incorporated into for all jurisdictions covered under the LMS. The narrative should also include the specific planning mechanisms that integrate the goals and strategies of the LMS.

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Planning Mechanisms Fact Sheet

Requirement: Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? 44 CFR 201.6(c)(4)(ii) [Florida Review Tool Elements S9-11]

Intent: To assist communities in capitalizing on all available mechanisms that they have at their disposal to accomplish hazard mitigation and reduce risk.

The plan **must**:

- Describe the community's process to integrate the data, information, and hazard mitigation goals and actions into other planning mechanisms.
- Identify the local planning mechanisms where hazard mitigation information and/or actions may be incorporated.
- A **multi-jurisdictional plan** must:
 - Describe each participating jurisdiction's individual process for integrating hazard mitigation actions applicable to their community into other planning mechanisms.
- The **updated plan** must:
 - Explain how the jurisdiction(s) incorporated the mitigation plan, when appropriate, into other planning mechanisms as a demonstration of progress in local hazard mitigation efforts.
 - Continue to describe how the mitigation strategy, including the goals and hazard mitigation actions will be incorporated into other planning mechanisms.

Definitions:

- Planning mechanisms – governance structures that are used to manage local land use development and community decision-making, such as comprehensive plans, capital improvement plans, or other long-range plans.

An example of incorporating mitigation actions into other planning mechanisms would be to identify the goals and strategies of the LMS and document how they have been used to further mitigation efforts in other areas.

Planning mechanisms can include the Comprehensive Emergency Management Plan (CEMP), local legislation, local comprehensive plans, building codes, Community Rating System (CRS), and Floodplain Management plans.

Examples:

- To ensure the full and complete implementation of the County LMS, all participating local governments shall incorporate references to the LMS into their respective comprehensive plan following the procedures outlined in 163.3191, FS. The County has many plans, other than the Comprehensive Plan, that implement hazard mitigation activities including pre-disaster mitigation, event coordination and post disaster redevelopment.
- Pinellas County and its municipalities currently have several existing programs and plans related to hazard mitigation and post-disaster redevelopment. This involves identifying strengths and weaknesses, and where weaknesses are identified, remedial actions will be identified in the form of recommended actions and assignments made to follow up. The next section is an analysis of local and regional programs and policies that have either a direct or indirect impact on mitigation. The table references the goals and objectives implemented by the program or policy, the relation to local planning and any specific analysis undertaken, a discussion of the strengths, weaknesses and any remedial actions recommended or implemented.

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Changes in Development (M1)

It is necessary to discuss changes in development that have increased or decreased the vulnerability of the county and its jurisdictions to their identified hazards.

Assessing these changes in risk helps to identify areas where initiatives and actions may be considered to mitigate those vulnerable community assets from the impact of a disaster. To meet this requirement, for example, a plan may document how development has encroached further into the wildland urban interface and increased the vulnerability of populations to wildfire, or how development along coastlines has increased the vulnerability of residences and businesses to the impacts of storm surge, erosion, and hurricanes.

An important aspect in meeting this requirement is discussing the changes since the last plan update. This section should discuss the changes which have occurred in the past five years that influence the jurisdictions' vulnerability to hazards. This does not have to be limited to traditional "development" and may include mitigation projects, environmental initiatives, population changes, and any other items that can influence risk. An example would be discussing the development of environmental green space or parks which can handle storm water better than impervious surfaces. Ideally this discussion assists in the development of vulnerability statements for each hazard; this will allow the planning team to focus on the areas that are still susceptible to certain hazards and help mitigate them even further.

New, Completed, Deleted, and Deferred Projects (M2)

It is required for your plan update that your project list indicates the status of projects, whether completed, deleted or deferred. This shows mitigation progress within your community over the past five years and maintains a record of initiatives over the years. To assist in the update, maintain an accurate record throughout the five-year period. Also consider keeping notes as to why a project was deleted or deferred. Not only will this assist with your update it will also provide the LMS working group with additional information when scoring future projects or when developing future plan goals.

Monitoring, Evaluating, and Updating (M4-6)

The LMS update process does not end after the LMS is approved and pick back up six months before its next expiration date; it is a continuous cycle that is always ongoing.

The LMS is a living document that guides action over time. As conditions change and new information becomes available, or as actions progress over the life of the plan, plan adjustments may be necessary to maintain its relevance. Approval of the LMS marks the time to establish a schedule and method for keeping the plan current over the next five years. One of the most important steps in updating your plan is to refine the community's mitigation strategy, particularly in light of experiences gained from the implementation of the previous plan.

To continue to be an effective representation of the county's overall strategy for reducing risk to natural hazards, the updated local mitigation plan must reflect current conditions and progress in mitigation efforts. This involves establishing a meeting plan with your LMS Working Group and continuously engaging with local jurisdictions in revising the plan with any major changes (including to the local hazard assessment as well as with changes in personnel), tracking the status of projects and mitigation actions (as well as adding new ones and deleting old ones), and evaluating the effectiveness of the plan at achieving its intended goals and objectives (and making any changes

as necessary). The annual 27P-22 update (due to us in January) is a great way to conduct these activities on a predetermined annual basis.

Be sure there is a clear responsible party, timeline, and procedure listed for how the plan will be monitored, evaluated, and updated throughout the life of the plan. These efforts serve as the basis of the next plan update.

Plan Adoption (A1-2)

We ask for plans to be submitted at least 6 months prior to expiration. This is because each of our reviews may take up to 45 days. This 6-month period accounts for the time it takes for required revisions to be made and subsequent reviews to take place.

However, this 6-month window does not account for adoption. In some cases, the adoption process can take multiple weeks to complete. If this is the case in your jurisdiction, please be sure to account for that by submitting your plan prior to the 6-month deadline.

Any plan that is not adopted prior to the expiration date will expire and all jurisdictions covered by that plan will be ineligible for all mitigation funds (HMGP, FMA, and PDM) until the new plan is adopted. Please note that a plan that is Approved Pending Adoption will still expire without an adoption resolution.

Appendix G - LMS Update Checklist

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Planning Process

- Be sure to include the above information for ALL steps taken during the past five years. Include proof of meetings during the most recent five years via narrative descriptions, sign in sheets, and/or meeting minutes. We specifically look for proof of at least one meeting each year and proof that all jurisdictions were participating throughout the process.
- Review the list of participating jurisdictions to ensure accuracy and change the roles within jurisdictions as needed. You may have new members who wish to become participating jurisdictions. These could include: newly incorporated areas, school boards, utility providers, or healthcare networks. If any incorporated areas in your planning area are not participating in the LMS, provide an explanation of why. Also, be sure to mention any jurisdictions which no longer participate in the LMS. Keep in mind that any jurisdictions that cease participation in the LMS process will no longer be eligible for federal hazard mitigation assistance.
- Be sure to update your entire list of contacts and their corresponding information, while ensuring that all jurisdictions are represented.
- When sending out invitations during a plan update, begin with the list of stakeholders from the previous planning process and decide if any changes are needed. The stakeholders will likely include nearby communities and agencies involved in local hazard mitigation and/or development activities. Including more local agencies, state agencies, and other interested parties such as power companies is a way to continuously improve your plan. In the update, describe any changes to the way stakeholders were invited to be involved in the process. Remember that this is to prove stakeholders were invited, not that they participated in the process.
- Evaluate past methods used and determine the most efficient and effective method for inviting new stakeholders to participate in the present process. Be sure to specify in the plan how you contacted them and if desired, show documentation (e.g. screenshot of the county website, scanned image of a newspaper or flier, copy of an email). Again, this requirement focuses on proving how jurisdictions were invited to be a part of the LMS process.
- Show how the public was invited to participate in the most recent planning process, and provide documentation of these invitations. When possible, incorporate public feedback into the plan, and make sure it is apparent to the reviewer. **Please note that even if no community feedback is received, it is required to state how it could be incorporated into the LMS.
- Review the most recent list of plans and reports that were incorporated into the LMS to ensure that none are outdated or irrelevant. Evaluate new plans, studies, and reports as well, especially concerning recent development in the jurisdictions. Update the list of reviewed sources as necessary and show how any additional material was utilized within the LMS since the last update.

Hazard Risk and Vulnerability Assessment

- Be sure to review your listed hazards and determine if they are still an appropriate list for your LMS; add and omit as needed. Additionally, change the descriptions as desired to reflect what this hazard looks like in your jurisdictions, as well as to reflect updated definitions by NOAA.

- Review and revise this section to reflect any changes to your omitted hazard list. Be sure to identify hazards which may be impossible or impractical to mitigate. This can include removing duplicate mitigation efforts such as mitigating the effects of storm surge and Tsunami, when the magnitude of these may be quite similar.
- Examine the location descriptions and/or maps. Update them to reflect new developments in the area that will have an effect on the location of the hazard. For example, if there has been a new dam placed in your jurisdiction, this may change the area that can be potentially flooded by a river. As new relevant data and maps appear in other county plans, it is recommended to incorporate these into the LMS plan and note from where you acquired them. This will also help you meet requirement P7 (A4).
- Evaluate the severity of hazard events in the past five years. If any recent occurrences had a magnitude greater than the upper bound previously planned for, you may wish to consider raising the extent of the hazard for which you will mitigate. If a natural hazard has consistently been significantly below the extent planned for, and there are no plans to mitigate against a hazard of the extent listed, it may be beneficial to lower the listed extent.
- Include previous occurrences within the last 5 years. For hazards with extensive occurrences such as thunderstorms, provide a holistic number of occurrences and spotlight significant occurrences. Be sure to include dates of the events. Additional narratives of the occurrences will often assist in meeting requirement R7. You may wish to keep only the significant events from previous updates.
- While impacts may not change significantly since the plan was last revised, it is important to consider how your community assets were impacted during the past five-year period. It is recommended to discuss in narrative form what occurred during previous hazard occurrences, this will often expand your discussion of impacts and meet this requirement. Further, any changes in development or implemented mitigation measures may change expected future impacts.
- Double check your probability figures to reflect any changes in frequency within the past five years or updates in scientific data. It is possible that you may not have any changes as many hazards rely upon statistical models or historical frequencies.
- Consider new or previously overlooked problem areas and investigate what is causing these problems. Update previous hazards vulnerability to reflect any changes that have already been completed or are in progress. You can use this analysis to determine future mitigation projects. These assessments should be based on any changes since the last plan as well as expected future changes.
- NFIP Repetitive Loss numbers should reflect current information to be considered updated. Contact your local floodplain administrator or the state floodplain office to ensure the most recent data is being used.

Mitigation Strategy

- Goals do not necessarily have to change, but they must be consistent with the hazards identified in the plan, the county's other plans, and the State Hazard Mitigation Plan. While not required, additional objectives outlining how goals are to be met can be beneficial to include. The update should also reflect that the goals have been recently reviewed.
- There may or may not be significant changes required to ensure compliance. That depends more on the landscape of the participating jurisdictions. It is crucial to remember that this is a living document and must therefore be receptive to changes within all jurisdictions over this period of time. This includes changes to additional plans, funding sources, budget changes, building codes, and local ordinances. Be sure the most recent version of the document is being cited and delete older versions. If all plans are more than 5 years old, the plan should state that these are the most recent versions. Ensure the process for improving these plans is accurate.
- The most important portion to focus on is that the previously listed actions taken by the participating jurisdictions are still current and that any new actions are included in the plan. While it is not required, it can also be beneficial to include specific details of how the participating jurisdictions are meeting NFIP requirements.
- Analyze different mitigation actions for each hazard that is profiled in your plan. From that list, identify which actions and/or projects are feasible for your area and include those in your final project list. Remember that project lists should be constantly updated throughout the five-year process.
- Ensure that listed mitigation projects or actions are up to date with the participating jurisdictions included in the plan. Updates should ensure that actions or projects used to meet this requirement are still in effect within (or across) specific jurisdictions and edit or remove initiatives that are no longer accurate or relevant. Remember that project lists should be constantly updated throughout the five-year process.
- Confirm that proposed or enacted projects or actions are up to date is a significant consideration for this requirement. Take the time to inventory the types of projects being proposed to ensure both new infrastructure and existing structure retrofits are being proposed.
- Be sure that the list of prioritized projects is up-to-date (to account for deleted, completed, and new projects) and re-analyze the criteria for prioritization as needed.
- Ensure that the responsible parties, funding sources, and timeframes are still relevant. This information should reflect all deleted, completed, and new projects. Review how this information is presented and consider using a concise table.
- Re-examine the list of these local planning mechanisms to make sure that none have become outdated; adjust as needed. Continue adding to the list with any new ideas, especially considering if there have been any new plans created for the community. This should be an outline of where you could integrate the LMS in other planning mechanisms.

- Evaluate the description of the implementation process to ensure it is still accurate. If you have provided a master list of local planning mechanisms into your LMS to meet requirement S9 (C6) and if you have made any changes to it, be sure to update any individual descriptions of how information can be incorporated into these plans.
- Continue to provide examples of how information from the LMS plan has been utilized in other community plans and how the objectives have been supported by other planning mechanisms since the last update. You may find it helpful to refer to your plans listed for requirements S9 (Part 1 of C6) and S10 (Part 2 of C6) to see if any progress has been made toward these projections.

Plan Evaluation and Maintenance

- Take the time to review how your community has changed since the last update. This can include changes in population, demographics, land use, policies, etc. Describe these changes and how they have affected your vulnerability to hazards overall. You may also discuss how specific development or implemented mitigation actions have increased or decreased your vulnerability to specific hazards.
- Make sure that projects are current. If a project from the last LMS was deleted or deferred there must be an explanation as to why in order to be approved. A “status” column on the project list is a simple way to document this; alternatively, separately labeled listed may be created.
- Make sure the goals and objectives have been reviewed at the beginning of the update process. Ensure any goals with dates are updated or removed. Document the review of your goals and objectives in the plan.
- Ensure that all the detailed information is up-to-date. This primarily relates to the listing of by whom the plan is monitored but should also apply to the description of how the plan is monitored. It may need to be reconsidered as the 5-year cycle progresses. At minimum, monitoring can occur during the annual update as stipulated in F.A.C. 27P-22.004. Review the monitoring process as stated in the plan and revise as necessary to match current procedures.
- Ensuring that all the detailed information is up-to-date should be the initial point of consideration. This primarily relates to the listing of who evaluates the plan but should also apply to the description of how the plan is evaluated, it may need to be reconsidered as the 5-year cycle progresses. At minimum, evaluating can occur during the annual update as stipulated in F.A.C. 27P-22.004. Review the evaluation process as stated in the plan and revise as necessary to match current procedures.
- Ensuring that all the detailed information is up-to-date should be the initial point of consideration. This primarily relates to the listing of who will update the plan but should also apply to the description of how the plan is updated, it may need to be reconsidered as the 5-year cycle progresses. At minimum, updating can occur during the annual update as stipulated in F.A.C 27P-22.004. Review the update process as stated in the plan and revise as necessary to match current procedures.

- Stating how the community is involved in and will be incorporated in the process of writing and updating the plan is the key focus. Stating that past examples were sufficient is an option, but only so long as those past examples ensured actual community participation. If past measures have failed to garner any response from the public this must be addressed and include a discourse on what new measures may be taken to improve it.

Plan Adoption

- When you submit an updated plan to FDEM and receive an APA status, then you must have the plan re-adopted by the community. Even if the LMS plan has been adopted by the community in the past, the most recent plan needs to be accepted through the standard adoption process for the local jurisdictions. Please note that although the State of Florida's Planning Unit sends out consistent notifications to the local jurisdictions of their deadlines to renew the LMS plan, jurisdictions with longer adoption processes will find it beneficial to start the process earlier.
- All jurisdictions listed in P2 (A1) must re-adopt the plan as part of their standard adoption processes. Be sure to provide documentation of this most recent adoption for each jurisdiction. The plan is not considered complete until all jurisdictions have adopted, documentation is included in the plan, and a final plan and review tool have been submitted to FEMA.