

PLANES DE MITIGACIÓN CONTRA PELIGROS NATURALES

Resiliencia Planificada



JUNTA DE PLANIFICACIÓN

2020

Municipality of Vega Alta

Local Hazard Mitigation Plan

Executive Summary

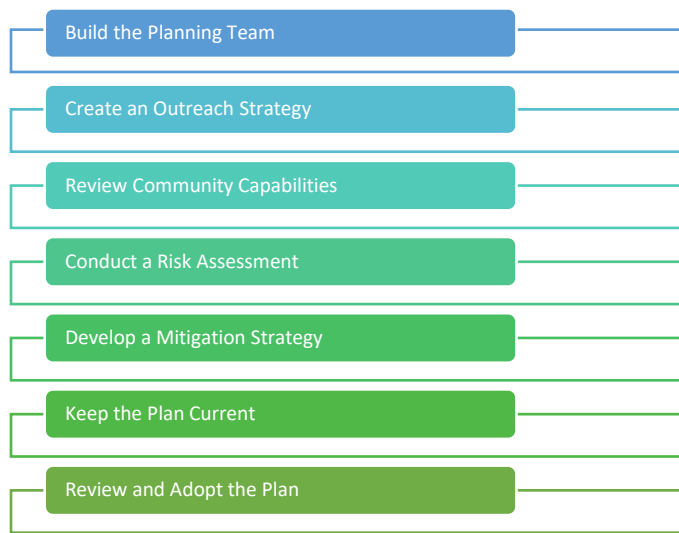


1 Introduction

The municipality of Vega Alta has revised its Local Hazard Mitigation Plan (LHMP).¹ This complies with the federal Disaster Mitigation Act of 2000 (DMA2K), which was signed into law to amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988. One of the requirements that this legislation establishes is that in order for the municipality to receive federal mitigation funds, it must elaborate and adopt a Federal Emergency Management Administration (FEMA) approved LHMP.² Also, the DMA2K promotes that the local government, together with the State, work on pre disaster planning and encourages the development of sustainable hazard mitigation activities.

These LHMPs must be revised and updated every five (5) years to remain in compliance with regulations and Federal mitigation grant conditions. This updating requirement offers the municipality an opportunity to reevaluate recommendations, monitor the implementation of mitigation strategies included in the previous Plan, monitor the impact of mitigation actions that have been implemented, and determine if any changes to the plan need to be incorporated. This plan complies with said regulations.

Figure 1 Hazard Mitigation Planning Process



Hazard Mitigation Planning Process

The strategies and projects enumerated in the LHMP have the ultimate goal of reducing the loss of life and property that can result from a natural disaster. Hence, the mitigation strategies, included in the LHMP, involve planning efforts, capital projects, and other activities that reduces the impacts of the natural hazards included in Vega Alta’s LHMP of 2020.

The municipality has also revised the LHMP under the authority of Act 81-1991, known as the Autonomous Municipalities Act of 1991, as amended. Section 2.004 of said Act 81-

1991, states that the municipality can carry out any activity that establish programs or adopt convenient and useful measures to prevent and fight fires, aid the community in cases of emergency or natural disasters, catastrophic accidents of fires and for the civil protection in general.³

¹ Please note that the 2020 Revised HMP was written in Spanish as per agreement between the Municipality of Vega Alta, the Planning Board, the Governor’s Authorized Representative (GAR) and FEMA.

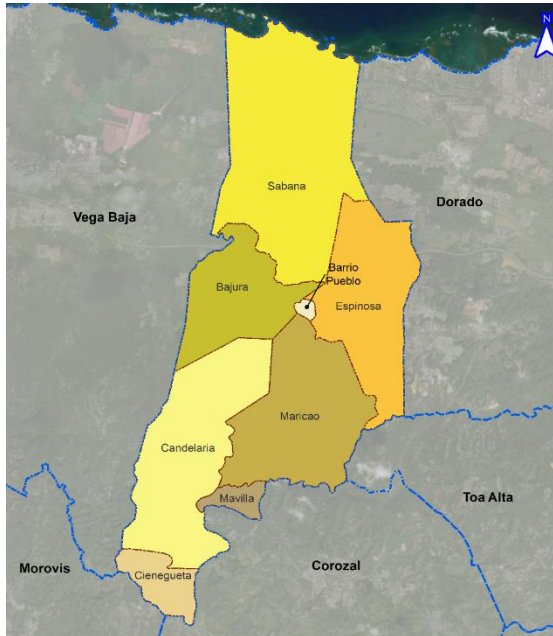
² 42 U.S.C 5165; 44 C.F.R. § 201.6.

³ 21 L.P.R.A § 4054

This Executive Summary will provide an overview on:

- Vega Alta’s population characteristics;
- The public participation and outreach effort with the community during the LHMP planning process;
- Vega Alta’s risk assessment;
- A review of the mitigation strategies, goals and LHMPs action plan; and
- Plan maintenance, and how to keep the Plan current.

2 Vega Alta: Main Characteristics & Profile



Municipality located at Puerto Rico’s Northern Coastal Valley and the Northern Karst Province⁴. The municipality has 27.80 square miles which is roughly the equivalent of 17,790 *cuerdas* or 71.99 square kilometers. The municipality borders the Municipality of Vega Baja to the West, the municipalities of Corozal and Morovis to the South and the municipality of Dorado to the East. To the North lays the Atlantic Ocean. Vega Baja is administratively divided in eight *barrios* or wards; Sabana, Bajura, Espinosa, Pueblo, Candelaria, Mavilla, Maricao and Cienegueta.

The main water features in Vega Alta are: 1) The Cibuco River. This river has its headwaters in the Municipality of Corozal and it is 35.13 kilometers (22 miles) long. Among the tributaries of the Cibuco River are the Mavilla and Indio Rivers and the Honda Creek. 2) The Lajas River is part of the La Plata River watershed.

Figure 2: Vega Alta and its wards

According to the 2010 Census, Vega Alta had 39,951 inhabitants. The 2017 American Community Survey estimates the population of Vega Alta decreased to 38,589 inhabitants, an 3.41 % decrease regarding 2010 Census. Of the eight (8) barrios of Vega Alta, four (4) have shown a decrease in population. Four wards show increase in population with particularly the Cienegatas showing an 86.50% increase. Further details, regarding the profile of the municipality, can be found in Chapter 3 of the updated 2020 LHMP.

Table 1: Population by age group: 2010 and 2017

Population	2010 Census	2017 ACS estimate	% Rate of Change
Younger than 5 years age	2,685	2,035	-24.21
5 to 19 years of age	8,313	7,879	-11.60
20 to 64 years of age	23,149	22,387	-3.29
65 years of age and older	5,204	6,288	20.83
Total	39,951	38,589	-3.41

⁴ Rafael Picó- La Geografía de Puerto Rico P.389-394 & 404-407

This profile highlights the population that could be potentially vulnerable to natural hazards in the municipality, particularly persons with 65 years of age and older which had an increase of 20.83% in the municipality during this seven-year period (2010 to 2017). Hazard mitigation strategies and actions consider these population characteristics and its vulnerability toward natural hazards analyzed in this update.

3 Outreach and Public Participation

To serve as the engine behind the review of the LHMP, the Mayor of Vega Alta appointed the following officials to constitute the Mitigation Planning Committee (henceforth, the Planning Committee). The Planning Committee is comprised by representatives from four (4) departments with key roles and experience in community planning, public works, and emergency management. Hence, the Planning Committee members included those with responsibility for, and expertise in, implementing mitigation projects in the Municipality of Vega Alta.

Table 2 Hazard Mitigation Planning Committee

Name	Position	Agency	email
Carlos Maysonet	Director Planning, Development and Land Ordinance Office	Autonomous Municipality of Vega Alta – Mayor’s Office	cmaysonet@vegaalta.pr.gov
Samuel H. Negrón Pérez	GIS Technician Planning, Development and Land Ordinance Office	Autonomous Municipality of Vega Alta – Mayor’s Office	snegron@vegaalta.pr.gov
Herminia Dávila González	Secretary Planning, Development and Land Ordinance Office	Autonomous Municipality of Vega Alta – Mayor’s Office	hdavila@vegaalta.pr.gov
Yolanda Rodríguez	Director (a) de Federal Funds Office	Autonomous Municipality of Vega Alta – Mayor’s Office	yrodriguez@vegaalta.pr.gov
Jesús A. Ortiz McCormick	Municipal Office for Emergency Management and Disaster Administration Office	Autonomous Municipality of Vega Alta – Mayor’s Office	jaortiz@vegaalta.pr.gov
Alvin I. Rodríguez Hernández	Municipal Police Commissioner	Autonomous Municipality of Vega Alta – Mayor’s Office	arodriguez@vegaalta.pr.gov
Javier Vélez Arocho	Consultant	EcoStahlia, Consultores Ambientales	jvarocho@ecostahlia.com

The Planning Committee activities included: (1) updating the list of the municipality assets and local critical facilities; (2) updating the status of the previous LHMP mitigation strategies; (3) determine possible new mitigation strategies for the 2020 LHMP; (4) development and implementation of public participation and outreach activities and stakeholders at large such as neighboring municipalities, governmental agencies;

(5) announce the municipality’s LHMP efforts to agencies, stakeholders and public feedback for Vega Alta LHMP 2020 draft version.

On April 26, 2019, a notice was published on a local newspaper (Primera Hora). The said notice informed the public about the first Public Participation meeting to be held in Vega Alta. On June 6, 2019, a second notice was published regarding the publication of the 2020 LHMP draft version for review providing 20 days period for review, submit comments, and the opportunity to participate in a second community meeting. A draft version of the 2020 LHMP was made available on the Puerto Rico Planning Board (PRPB) website. Also, a hard copy of Vega Alta’s 2020 LHMP was placed in the Municipal office for Emergency Management and Disaster Administration for public review. The hard copy was available for public review from 8:00 am to 4:00 pm on weekdays.

4 Vega Alta’s Risk Assessment

After reviewing the natural hazards identified as priorities on the previous Vega Alta’s 2012 LHMP, the Municipal Emergency Response Plan, the Vega Alta Land Use Plan of 2010, the municipality’s disaster history, and other literature related to potential future hazards, the Planning Committee identified the following hazards in the 2020 LHMP; (1) Climate Change (Sea Level Rise); (2) Drought (3) Earthquakes; (4) Flooding; (5) Droughts; (6) Landslides; (7) Strong winds (Tropical cyclones); (8) Tsunami; (9) Coastal erosion, (10) Storm surge and (11) Wildfire. Discussion of these natural hazards are included in the 2020 LHMP’s Chapter 4. In addition, the 2020 LHMP includes a quantitative vulnerability analysis based on the best available data for Vega Alta and Puerto Rico accounting for future development to assess mitigation strategies to prevent repetitive and severe property loss.

This assessment served as a key tool for the Planning Committee and the public to identify and prioritize potential mitigation strategies by focusing attention on areas that present the greatest risk of damages to people, critical facilities, and normal municipality operations. The analysis for earthquake, flood, landslides, and high winds was performed by assessing the potential impacts from each hazard using geographic information system data (GIS).

By ranking each section, the municipality was in position to determine an overall risk classification. It is important to mention that this classification exercise resulted from the municipality’s 2020 LHMP technical risk assessment along with a capability gap analysis and the local community input, which is based on previous natural events experienced by the Planning Committee and the residents and business owners of Vega Alta.

The following table outlines the result of the risk assessment.

Table 3 Natural Hazard Ranking

Natural Hazard	Risk to people	Risk to facilities	Risk to Operations	Classification
Sea Level Rise	Low	Low	Low	Low
Drought	Low	Low	Low	Low

Natural Hazard	Risk to people	Risk to facilities	Risk to Operations	Classification
Earthquake/Liquefaction	Alto	Low	High	High
Flooding	High	High	High	High
Landslide	Moderate	Low	Moderate	Moderate
Strong Winds/Tropical Cyclones	High	Low	High	High
Tsunami	Low	Low	Low	Low
Coastal Erosion	Low	Low	Low	Low
Storm Surge	Low	Low	Low	Low
Wildfire	High	High	High	High

Based on the Natural Hazard Ranking table, the following hazards are considered as significant at Vega Alta: (1) flooding; (2) earthquake/liquefaction; (3) strong winds; and (4) wildfires, contemplating (5) landslides as a moderate threat to the municipality.

A ranking methodology was adopted to develop the mitigation strategies based on these risks as discussed on Chapter 6 and are divided into the following categories: (1) Prevention, (2) Property Protection, (3) Natural Resources Protection, (4) Structural Projects, (5) Emergency Services, and (6) Education and Public Awareness. The strategy category with most mitigation actions is Natural Resources Protection with a total of 13 mitigation projects. Landslide and flooding are the natural hazards that are most addressed by the projects.

5 Mitigation Strategies, Goals, and Action Plan

The municipal capabilities, along with the risk assessment, serve as a foundation for the design, development and implementation of mitigation strategies. Mitigation strategies, found in Chapter 6, consist of a broad amount of local goals and strategies. The local mitigation actions were gathered from the 2012 LHMP and were incorporated into the current LHMP. This chapter provides information about the assigned implementation mechanisms and target completion dates. The sections in this chapter are designed to make the Plan strategic by identifying long-term goals, and functional, by identifying short term and immediate actions that will guide the daily local decision-making process and project implementation.

Mitigation goals consist of general guidelines that explain what the Municipality of Vega Alta wants to achieve in terms of hazards and mitigation. Thus, the goals included in the 2020 LHMP, offer the Planning Committee and the communities a framework for identifying, prioritizing and implementing actions to reduce the risks associated to natural hazards at Vega Alta.

Mitigation strategies are activities, projects, measures, or processes that Vega Alta will adopt in order to reduce or eliminate risk to people and property from hazards. Consequently, Vega Alta reviewed and revised the criteria adopted in the 2012 LHMP to analyze and prioritize potential mitigation strategies for

the municipality. In order to developed the actions, the Planning Committee used the following criteria: (1) the potential of the strategy to reduce expected future damages and/or losses; (2) the capacity of the municipality to implement the action within the 5-year cycle of the Plan; (3) support from the public, agencies, municipal departments, amongst others; and (4) the potential of the action to increase resiliency of Vega Alta and its residents. Accordingly, the Planning Committee adopted these criteria, the results from the risk assessment, and the feedback from local and neighboring communities to prioritize each mitigation strategy that was contained in this LHMP.

Most of the strategies and projects in the action plan target the continuity of municipality services after a hazard event. The following summarizes some of the strategies intended to mitigate these hazards:

- Installation of storm shutters and electrical generator to key service buildings such as the Government Center and the Emergency Management Office.
- Develop a Management Plan for the floodway with the Honda Creek from its headwaters in the Fortuna Sector of the Espinosa Ward up to the joining with the Cibuco river in the Bajura Ward.
- Construction of a retaining wall and reparations to a local water tank in the Moran Sector
- Raise the level of state route PR-647 for two kilometers in the Ojo de Agua sector.
- Construction of storm water management infrastructure in El Corozo/Carmelita to send the storm waters to a nearby wetland.

6 Maintenance to Keep the Plan Current

Chapter 7 details the revision and monitoring process in great extent. The formal maintenance process, identified by the Planning Committee, aims to keep the document viable and current, as it is a living document that shall reflect the hazards and realities affecting its community, and how to plan and prepare ahead in the event of a natural disaster. The plan maintenance process provides the procedures for evaluation and review every third quarter of each fiscal year during its 5-year life cycle. Evaluation will include a review of the mitigation action plan implementation, continued public involvement through the Plan's life cycle, as required by federal legislation. As part of the review process, the members of the Planning Committee. In the event of a major natural disaster affecting the island and/or municipality, an emergency meeting must be scheduled, and the Plan should be updated or amended, as necessary, bypassing the 5-year term. The Office for Planning, Economic Development and Land Ordinance Office will coordinate with other municipal dependencies, as needed, to achieve the goals and objectives stated in this LHMP.

Finally, the municipality will promote continued public participation during the plan maintenance by;

- Regularly surveying the public on perceived hazards, dangers and mitigation action in the municipality.
- Placing a copy of any progress report for inspection and comment and duly notifying the public of the availability of said report. Any report will also be distributed by means of social media or digital means.
- Having a robust education program regarding the NFIP program and NFIP recommendations.
- The municipality will develop a robust public education program regarding mitigation actions that can be done at the individual or community level through mutual help.

7 Plan Approval and Adoption

The Federal Emergency Management Agency (FEMA) completed review of the Hazard Mitigation Plan for the Municipality of Vega Alta, based on the standards pursuant to title 44 C.F.R. Section 201, as authorized by the Disaster Mitigation Act of 2000 (DMA2k). The Plan received a satisfactory rating for all required criteria and was approved as Approvable Pending Adoption (APA) on March 25, 2020. Accordingly, the Municipality of Vega Alta, adopted said Plan on March 31, 2020 via Executive Order No. 12, Series 2019-2020.

Upon receiving the record of adoption from the municipality, FEMA issued an Official Approval Letter that dates from May 1, 2020, stating the jurisdiction has adopted said Plan, thus approved and eligible for FEMA Hazard Mitigation Assistance programs, having approved the Plan formally on April 24, 2020. This approval letter establishes the expiration date five (5) years from the date of approval, or until April 23, 2025.