

PLANES DE MITIGACIÓN CONTRA PELIGROS NATURALES

Resiliencia Planificada



JUNTA DE PLANIFICACIÓN

2021

Municipality of Aibonito

Natural Hazard Mitigation Plan

Executive Summary

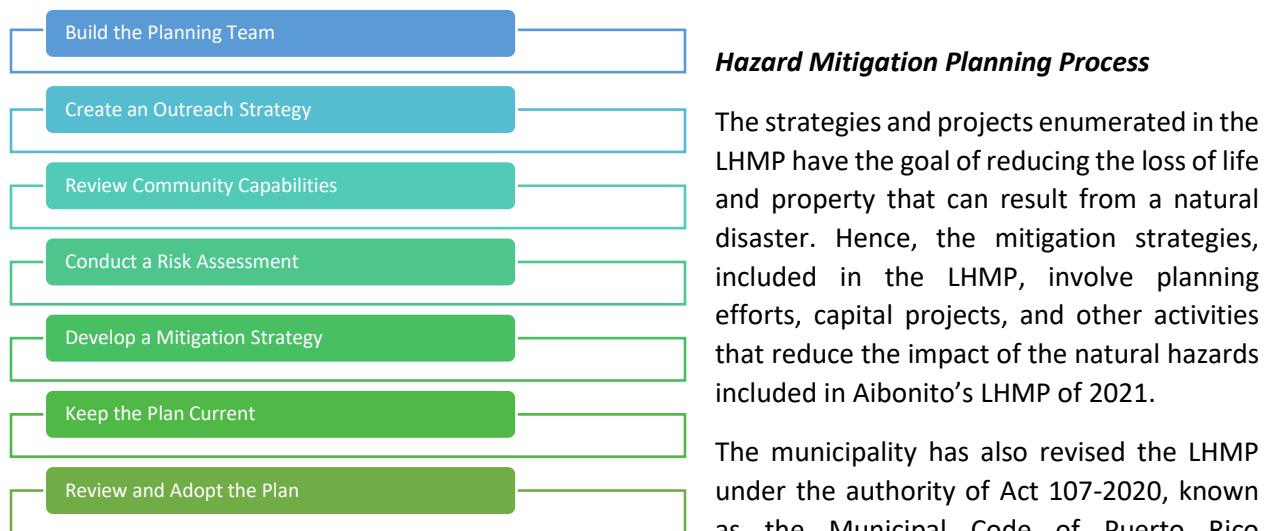


1 Introduction

The Municipality of Aibonito has revised its Local Hazard Mitigation Plan (LHMP)¹ in accordance 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



Municipalities Act of 1991. Section 1.010 of said Act,³ *supra* (former section 2.004 of 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.

¹ Please note that the 2021 Revised HMP was written in Spanish as per agreement between the Municipality, 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 § 7015

This Executive Summary will provide an overview on:

- Aibonito’s population characteristics;
- The public participation and outreach efforts with the community during the LHMP planning process;
- Aibonito’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 Aibonito’s Profile: Main Population Characteristics



The Municipality of Aibonito is located in the central area of Puerto Rico. To the north it is adjacent to the Municipalities of Barranquitas and Cidra, to the east with the municipality of Cayey, to the southwest and west with the Municipality of Salinas. The Puerto Rico Planning Board, according to the most recent area delimitation, divides the island into eleven areas, grouping the different municipalities by their demographic trends and human settlements, infrastructure endowment, socioeconomic variables, sociodemographic characteristics, internal cohesion, and the resources and development potential of each. The Municipality of Aibonito belongs to the Functional Area of Cayey comprised by three municipalities: Aibonito, Barranquitas and Cayey.

Figure 2. Aibonito’s Municipality by Wards

The municipality has nine (9) official *barrios* or wards: Algarrobo, Asomante, Caonillas, Cuyón, Llanos, Pasto, Plata, Pueblo y Robles.

Table 1: Population by age group: 2010 and 2018

Population	2010 Census	2018 ACS Estimate	% Rate of Change
Younger than 5 years age	1,537	1,137	-26%
5 to 19 years of age	5,520	3,996	-28%
20 to 64 years of age	15,185	13,885	-9%
65 years of age and older	3,658	4,439	21%
Total	25,900	23,457	-9%

Source: US Census Bureau, Census 2010; American Community Survey 2014-2018 Estimates

According to the 2010 Census, Aibonito had a population of 25,900. The American Community Survey (ACS) of 2018 estimated that the population of Aibonito had decreased by 2,443 habitants. This represents a reduction of 9.4%. Nevertheless, from this overall reduction, two of nine wards were estimated to have an increase in their

population in 2018: Pueblo (4.04%) and Robles (6.29%). Municipalities that had a negative growth greater than 25% are; Algarrobo (-35.25%), Asomante (27.24%), Caonillas (-39.47%) and Pasto (-25.38%). Further details, regarding the profile of the municipality, can be found in Chapter 3, Section 3.2 of the updated 2021 LHMP.

3 Outreach and Public Participation

In order to guide the development of this Plan, the Hon. William Alicea Pérez, Mayor of Aibonito, appointed the following officials to constitute the Mitigation Planning Committee (henceforth, the Planning Committee). The Planning Committee is comprised by representatives from several departments and citizen involvement with key roles and experience in community planning, public works, and emergency management to serve as key components in the planning process. Please refer to Section 2.5 on the LHMP.

Table 2 Hazard Mitigation Planning Committee

Name	Position	Dependency	E-mail
Hon. William Alicea Pérez	Mayor	Mayor’s Office	aibonitoalcalde@gmail.com
Plan. Angélica M. Camacho González	Director	Planning and Territorial Ordinance	aibonitoplanificacion@gmail.com
Ing. Carlos Hernández Rosario	Director	Municipal Public Works Department	chernandez@aibonitopr.net
Sr. Jorge Colón Colón	Director	Federal Program Office	jcolon@aibonitopr.net
Tomás Colón Vázquez	Director	Office of Finance and Budget	tcolon@aibonitopr.net
Sandra Rivera	Secretary	Municipality	srivera@aibonitopr.net

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 2021 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 Aibonito’2021 LHMP draft version and incorporate such comments on the Plan.

An initial notice was published on local newspapers (Primera Hora and Metro). Said notice informed the public about the first Public Participation meeting to be held in Aibonito on December 11, 2019. A second notice was published regarding the publication of the 2021 LHMP draft version for review providing a 25-day period for review, submit comments, and the opportunity to participate in a second community meeting held on March 4, 2021. A draft version of the 2021 LHMP was made available on the Puerto Rico Planning Board’s (PRPB) website (jp.pr.gov). Due to the extraordinary circumstances brought by the COVID-

19 pandemic the second public meeting was held online. For further details please refer to section 2.7 and Appendix B.4 in the 2021 LHMP

4 Aibonito’s Risk Assessment

After reviewing the natural hazards identified as priorities on the previous Aibonito 2014 LHMP, the Municipal Emergency Response Plan, the municipality’s disaster history, and other literature related to potential future hazards, the Planning Committee identified the following hazards in the 2021 LHMP; (1) Climate Change/Extreme Heat, (2) Drought, (3) Earthquakes/Liquefaction, (4) Flooding, (5) Landslides, (6) Strong Winds (Tropical Cyclones), (7) Wildfires. A discussion of these natural hazards is included in the 2021 LHMP’s Chapter 4. In addition, the 2021 LHMP includes a quantitative vulnerability analysis based on the best available data for Aibonito 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 2021 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 Aibonito.

The following table provides a summary of the risk classification for each identified hazard. Part of the process of completing the next appraisal required input from the community as well as from the Committee. Beyond the risk analysis, this table presents the municipality’s prioritization analysis.

Table 3: Natural Hazard Ranking

Natural Hazard	Risk to people	Risk to facilities	Risk to operations	Classification
Extreme Heat	2	1	1	Moderate
Drought	2	1	1	Moderate
Earthquake/Liquefaction	2	2	1	Moderate
Flooding	3	2	2	Moderate
Landslide	3	2	2	Moderate
Strong winds	3	3	3	High
Wildfire	2	2	3	Low

Source: Planning Committee 2019-2020

High=3, Moderate=2, Low=1

Currently, the potential risks with the highest classification or greater impact identified for the municipality are strong winds event.

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 are “Property Protection” and “Structural Projects” with a total of eight mitigation projects each. Flooding is the natural hazards that is mostly addressed within the mitigation actions.

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 number of local goals and strategies. The local mitigation actions were gathered from the 2014 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 Aibonito wants to achieve in terms of hazards and mitigation. Thus, the goals included in the 2021 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 Aibonito.

Mitigation strategies are activities, projects, measures, or processes that Aibonito will adopt in order to reduce or eliminate risk to people and property from hazards. Consequently, Aibonito reviewed and revised the criteria adopted in the 2014 LHMP to analyze and prioritize potential mitigation strategies for the municipality. In order to develop 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 Aibonito 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 (Refer to Section 6.5 of the LHMP):

- Reconstruction of a Bridge in the Rabanal sector of barrio Robles
- Construction of two roadways connections in the municipality to prevent prevent interruptions in the flow of people and goods.
- Development of new storm water systems in communities throughout the municipality.
- Flood control project for Aguas Largas Creek, Serrallés Creek and other creeks throughout the municipality. Priority will be given to Green Infrastructures techniques as long as they are cost-effective.

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 Municipal Administrator 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, including, but not limited to (Refer to Section 7.4.2 and 7.7 of the LHMP):

- Holding a yearly plan supervision meeting, open to the public.
- Promote community response training and workshop.
- Making presentations of Plan implementation report to various stakeholder groups.

7 Plan Approval and Adoption

The Federal Emergency Management Agency (FEMA) completed review of the Municipality of Aibonito's Hazard Mitigation Plan, 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 April 26, 2021. Accordingly, the Municipality of Aibonito, adopted said Plan on June 4, 2021 via Executive Order No. 6, Series 2020-2021.

Upon receiving the record of adoption from the municipality, FEMA approved Plan on August 20, 2021 and issued an official approval letter to municipality stating the jurisdiction has adopted said Plan thus approved and eligible for FEMA Hazard Mitigation Assistance programs. The approval letter establishes the expiration date 5 years from the date of approval, or until August 19, 2026.