

PLANES DE MITIGACIÓN CONTRA PELIGROS NATURALES
Resiliencia Planificada



JUNTA DE PLANIFICACIÓN

2021 Municipality of Hormigueros

Executive Summary

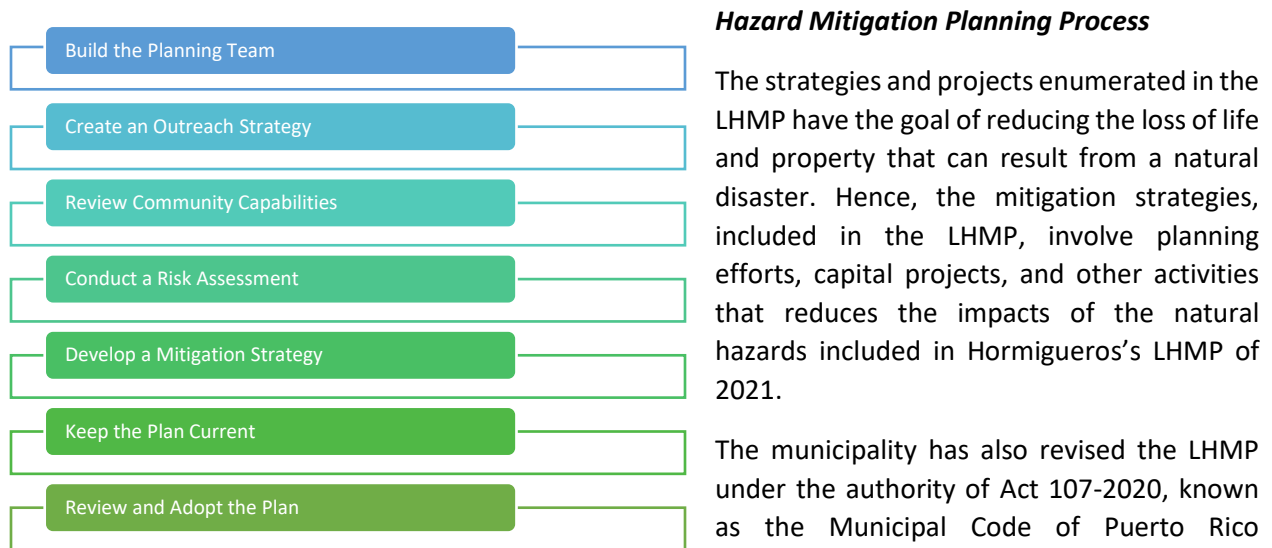


1 Introduction

The Municipality of Hormigueros 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, *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.

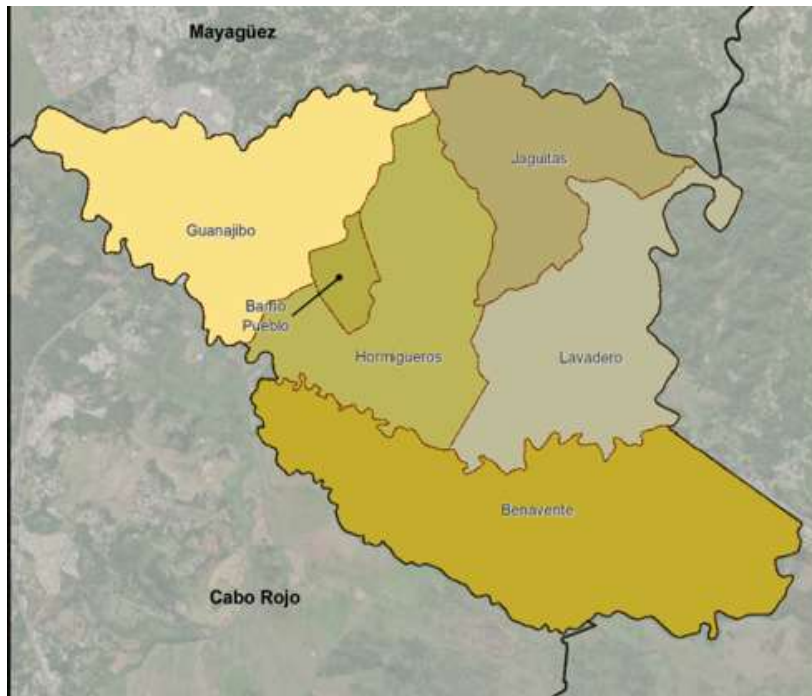
¹ Please note that the 2021 Revised HMP was written in Spanish as per agreement between the municipality, the Planning Board, the Governor’s Authorized Representative (GAR) and FEMA.
² 42 U.S.C 5165; 44 C.F.R. § 201.6.

This Executive Summary will provide an overview on:

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

Figure 1 Hormigueros and its wards



The Municipality of Hormigueros is located in the western region of Puerto Rico. The Municipality comprises a territorial area of approximately 28.90 square kilometers or 11.16 square miles. To the North, it borders the Municipality of Mayagüez, to the East with the Municipality of Cabo Rojo. It is composed of six (6) wards or *barrios* as follows: (1) Guanajibo; (2) Jagüitas; (3) Lavadero; (4) Hormigueros; (5) Benavente; and (6) Hormigueros-Pueblo.

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 Hormigueros belongs to the Functional Area of Mayagüez, which is composed of the municipalities of: Añasco, Cabo Rojo, Guánica, Hormigueros, Lajas, Las Marías, Maricao, Mayagüez, Rincón, Sabana Grande y San Germán.

Table 1: Population by age group: 2010 and 2018

| Population | 2010 Census | 2018 ACS Estimate | % Rate of Change |
|---------------------------|---------------|-------------------|------------------|
| Younger than 5 years age | 845 | 598 | -29.23% |
| 5 to 19 years of age | 3,233 | 2,707 | -16.27% |
| 20 to 64 years of age | 9,650 | 8,657 | -10.29% |
| 65 years of age and older | 3,522 | 4,218 | 19.76% |
| Total | 17,250 | 16,180 | -6.20% |

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

According to the 2010 Census, Hormigueros has a population of 17,250. The American Community Survey (ACS) of 2018 estimated that the population of Hormigueros had decreased to 16,180.

Accordingly, the only demographic group that increased in the period between the 2010 Census and the 2018 ACS was that of those 65 years of age and older, which increased by 19.76%. The rest of the groups studied show decreases as follows: those under 5 years of age decreased by 29.23%, those between 5 and 19 by 16.27%, and those between 20 and 64 years by 10.297%. Together, these numbers point to a population that is declining and aging, which requires mitigation strategies that consider the increase in this population with special needs.

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, Luis Maldonado Rodríguez, former Mayor of Hormigueros, appointed the following officials to constitute the Mitigation Planning Committee (henceforth, the Planning Committee). The Planning Committee is comprised by representatives from several dependencies 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/Sector | E-mail |
|-----------------------|--------------------------|---------------------------------------|--------------------------|
| Sandra E. Rosas Vélez | Director | Federal Programs Office | srosas@hormiguerospr.com |
| José Muñiz Souffront | Director | Municipal Emergency Management Office | jmuniz@hormiguerospr.com |
| Ricardo Maurosa | President | Municipal Legislature | 787-519-5630 |
| Ing. Wesley Rivera | Director | Public Works Office | 787-237-5957 |
| Irving Epstein | Supervisor | Municipal Public Works Office | 787-543-9120 |
| Jaime Morales | Community Representative | Carretera Nueva, Jagüitas | 787-504-5324 |
| Eulogio Rodríguez | Community Representative | Hormigueros-Pueblo | 787-449-0493 |
| Reynaldo Alonso | Community Representative | Valle Hermoso, Guanajibo | 787-668-7673 |
| Dra. María Medina | Community Representative | Lavadero | 787-318-3405 |

| | | | |
|--------------------------|--------------------------|--------------------|--------------|
| Prof. Edwin Albino | Community Representative | Lavadero | 787-536-3188 |
| Ing. Monserrate González | Community Representative | Hormigueros-Pueblo | 787-384-7973 |
| Rafael Montalvo | Community Representative | Hormigueros-Barrio | 787-216-3995 |
| Edward Cancel | Community Representative | Guanajibo | 787-207-3543 |

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

An initial notice was published on a local newspaper (Primera Hora) on September 2, 2020. Said notice informed the public about the first Public Participation meeting to be held virtually via YouTube on September 17, 2020. A second notice was published on January 27, 2021 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 on February 11, 2021 held virtually via YouTube. A draft version of the 2021 LHMP was made available on the Puerto Rico Planning Board’s (PRPB) website (jp.pr.gov).

4 Hormigueros’ Risk Assessment

After reviewing the natural hazards identified as priorities on the previous Hormiguero’s 2017 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, (4) Flooding, (5) Landslides, (6) Strong Winds (Tropical Cyclones), and (7) Wildfires. Discussion of these natural hazards are 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 Hormigueros 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 Hormigueros.

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 | Low | Low | Low | Low |
| Drought | Moderate | Low | Moderate | Moderate |
| Earthquake/Liquefaction | High | High | High | High |
| Flooding | High | High | High | High |
| Landslide | Moderate | Low | Low | Low |
| Strong Winds/Tropical Cyclones | High | High | High | High |
| Wildfire | Low | Low | Low | Low |

Source: Planning Committee 2020-2021

Currently, the potential risks with the highest classification or greater impact identified for the municipality are: (1) Earthquake/Liquefaction, (2) Flooding, and (3) Strong Winds.

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 “Prevention” with a total of 17 mitigation projects, followed by “Education and Public Awareness” with a total of 8 mitigation 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 number 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 Hormigueros 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 Hormigueros.

Mitigation strategies are activities, projects, measures, or processes that Hormigueros will adopt in order to reduce or eliminate risk to people and property from hazards. Consequently, Hormigueros reviewed and revised the criteria adopted in the 2017 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 Hormigueros 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):

- Continue with the implementation of the Hazard Mitigation Plan
- Incorporate findings of the HMP on the Territorial Plan and Operational Emergency Plan and Emergency Preparedness Plans, etc.
- Acquire GIS system and ArcView license.
- Prepare a Digital Inventory (GIS) of all vulnerable structures to strong winds and earthquakes.
- Implement the Compliance of the Reglamento Nú. 13 of the Puerto Rico Planning Board.
- Promoting the acquisition of NFIP.
- Implement structural mitigation measures.
- Community training for emergency response and natural hazard awareness.
- Providing educational campaigns to educate communities against natural hazard awareness, response and preparedness.
- Develop an educational program to promote water preservation.

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 and 7.7 of the LHMP) in accordance with the 2021-2026 Calendar:

- Making sure to coordinate meetings between those involved in the Plan maintenance process, which will take place at the beginning of the third quarter of each fiscal year and after each natural disaster occurring in the jurisdiction of Hormigueros.
- Prepare the Work Plan and assign responsibilities for the Evaluation and Plan Update to take place within 60 days of that first meeting.
- Prepare the Reports of the Plan Progress Analysis, which will be presented and discussed in meetings with the people involved in the Plan maintenance process.
- In coordination with the Mayor's Office, review whether there were changes in the Act, regulatory agency regulations, which affect the Plan in one way or another, as well as budget allocations that may affect the development of projects programmed for communities.
- Ensure that applications for funds for the development of the activities described in the Plan to be made by the municipality are included in the budget of the relevant fiscal year.
- Identify opportunities to access funds.
- In coordination with the Municipal Department of Public Works to achieve the implementation of the projects set out in the Plan.
- Establish the program-specific Work Plan, based on the schedule and goals set out in the Plan.

7 Plan Approval and Adoption

The Federal Emergency Management Agency (FEMA) completed review of the Municipality of Hormigueros'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 October 8, 2021. Accordingly, the Municipality of Hormigueros, adopted said Plan on October 28, 2021 via Resolution No. 17, Series 2021-2022.

Upon receiving the record of adoption from the municipality, FEMA approved Plan by November 2, 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 October 31, 2026.