

PLANES DE MITIGACIÓN CONTRA PELIGROS NATURALES

Resiliencia Planificada



JUNTA DE PLANIFICACIÓN

2020

Municipality of Rincón

Local Hazard Mitigation Plan

Executive Summary

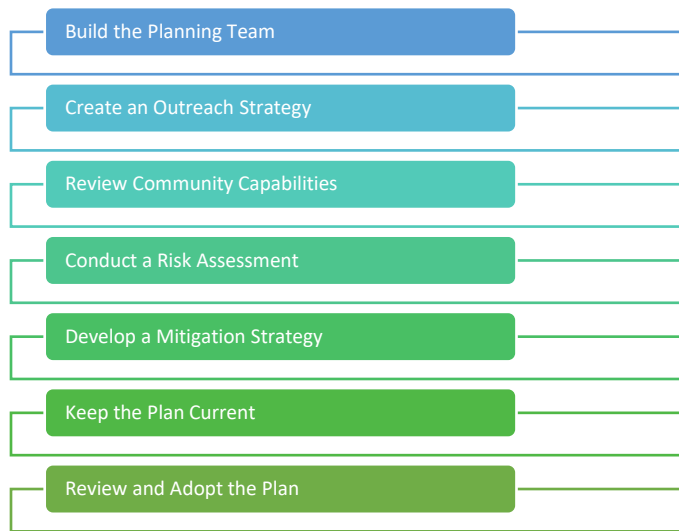


1 Introduction

The Municipality of Rincón 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 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. Updating requirements offer 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 and updates need to be incorporated to the Plan. This Plan complies with said regulations.

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 this LHMP involve planning efforts, capital projects, and other activities that reduce the impact of natural hazards included in Rincón’s 2020 LHMP.

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 establishes programs or can adopt convenient and useful measures to

prevent and fight fires, aid the community in cases of emergency or natural disasters, catastrophic fire accidents and for civil protection in general.³

¹ Please note that the 2020 Revised LHMP was written in Spanish as per agreement between the Municipality of Rincón, 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:

- Rincón's social characteristics,
- Public engagement, participation and outreach efforts with the community during the LHMP planning process,
- Rincón'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 Rincón: Main Characteristics and Profile



Figure 1 Rincón and its wards

The Municipality of Rincón is located at the end and west coast of the island and is currently organized in ten (10) neighborhoods: Rincón Pueblo, Atalaya, Barrero, Calvache, Cruces, Ensenada, Jagüey, Pueblo, Puntas and Rio Grande. Its territory extends across fourteen square miles.

Rincón has a hydrographic system which is composed of the following bodies of water: Río Grande de Aguada, Río Corsica and the Rincón lagoon. It has several creeks including: Quebrada del Llano y Quebrada de la Altura, Los Ramos, Punta Ensenada, Piletas, Caño García and the Quebrada Grande de Calvache, which is the largest with 7 kilometers (4.5 miles). Río Grande, bordered by the municipality of Aguada, has its source in the neighborhood of Jagüey and has a length of about 9.7 kilometers (6 miles); Rincón's water resources are limited. Thus, are composed of some creek that flow into the sea: Quebrada Los Ramos, Quebrada Río Grande de Calvache, Quebrada Caño Carrero, Caño García and

rivers. The most important river is the Río Grande (springs from the mountains of Cruces, Río Grande de Rincón and Cruces de Aguada). Rincón borders to the north, south and west (Mona Passage) with the Atlantic Ocean, and to the east with Añasco and Aguada.

The municipality, located on the coast of Puerto Rico, has a wide variety of beaches with clear, clean and refreshing waters. It also has a wide variety of corals and marine life. It is located in the region of the coastal valleys, and therefore, has very fertile alluvial soils, as most of the land is of mountainous type. The coasts are important areas for ecology, recreation and tourism. These include marine reserves, which are designated areas at sea, either by the DRNA or by law, to be protected from human activity, including, but not limited to, sport and commercial fishing, so that biodiversity is protected in the Marina de Tres Palmas Reserve (RMTP) and "Steps" on the west coast of Puerto Rico.

According to the official 2010 Census, the Municipality of Rincón had 15,200 inhabitants. The 2017 American Community Survey (ACS) estimates the population of Rincón decreasing to 14,526 inhabitants. Based on the results of the Census Bureau from 2010 and 2017, the municipality shows a decrease in its total population of approximately four percent (-4.43%). It should be noted that, in 2017, the island of

Puerto Rico suffered the devastating effects of two (2) Hurricanes Irma and Maria, which drastically affected all PR municipalities, and many residents of Puerto Rico chose to emigrate to other states of the United States United States of America (USA). Because of the devastating effects of these hurricanes, affecting the economy, infrastructure, coasts, mountains and housing in Rincón, although this trend of population decline began to be observed in the 2017 Census for the whole island. When we observe the change between 2010 and the trend reflecting 2017 data by age, it reflects that although the total population decreased by 4.43%, the population over 65 increased by 21.08%. Further details, regarding the profile of the municipality, can be found in Chapter 3, Section 3.2 of the updated 2020 LHMP.

Table 1 Rincón’s Population Change

Population	2010 Census	2017 ACS Estimates	% Percentage change
5 years of age or <	866	635	-26.67%
5 to 19 years of age	2,937	2,472	-15.83%
20 to 64 years of age	8,722	8,180	-6.21%
65 years of age or >	2,675	3,239	21.08%
Total	15,200	14,526	-4.43%

This profile highlights the population that could be potentially vulnerable to natural hazards in the municipality, particularly individuals whose age ranges from 65 or more reflecting an increase of 21.08% during the seven-year period (2010 to 2017).

Source: US Census Bureau, Census 2010; American Community Survey 2013-2017 Estimates

3 Outreach and Public Participation

In order to guide the development of this Plan, the honorable Carlos D. López Bonilla, Mayor of Rincón, appointed the following officials to constitute the Mitigation Planning Committee. This Committee represents various instrumentalities of the government, municipal leaders and other stakeholders identified to serve as key members in the planning process.

Table 2 Hazard Mitigation Planning Committee

Name	Position	Agency	E-mail
Francisco Mercado	Administrator	Municipality of Rincón	fjmercado@rincon.gov.pr
José Miguel Valle	Secretary	Operations, Municipality of Rincón	jmvalle@rincon.gov.pr
Kayshla Orsini	Director	External Resources, Municipality of Rincón	korsini@rincon.gov.pr
Manuel Godoy	Director	Finance Department, Municipality of Rincón	mgodoy@rincon.gov.pr
Héctor Martínez	Director	Municipal Emergency Management	ommerincon@gmail.com
Carlos G. Colón Mora	Engineer	Planning Department	ccolon@rincon.gov.pr

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 engagement, participation and outreach efforts for stakeholders at large such as the community, neighboring municipalities, governmental agencies; (5) announce the municipality’s LHMP efforts to agencies, stakeholders, receive public feedback on Rincón’s 2020 LHMP draft version and incorporate such comments on the Plan. Accordingly, from January 3, 2019 to December 27, 2019, the Planning Committee reviewed and provided comments on the 2020 LHMP preliminary and draft versions.

On April 10, 2019, a public notice was published at the local newspaper Primera Hora informing the public about the first Community Planning Meeting to be held at Rincón. On July 18, 2019, a second notice was published, on this same newspaper, informing about a second Community Planning Meeting to be held on July 29, 202, besides informing all readers about the publication of the 2020 LHMP draft version available for review while providing a 20-day term to submit comments. A digital copy of the draft version of the 2020 LHMP was made available through the Puerto Rico Planning Board’s (PRPB) website (jp.pr.gov) while a hard copy was made available for review at the Casa Alcaldía (1st level) from Monday through Friday from 8:00 a.m. to 4:00 p.m.

4 Rincón’s Risk Assessment

After reviewing the natural hazards identified as priorities on the previous Rincón’s 2011 LHMP, Land Use Plan of 2016, 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) Earthquakes, (2) Tsunamis, (3) Drought (4) Flooding (5) Landslides (6) Sea level rise (7) High winds (tropical storm); (8) Coastal erosion, and (9) Storm surge. 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 Rincón and Puerto Rico accounting for future development to assess mitigation strategies in order to prevent repetitive and severe repetitive 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, tsunamis, flood, landslides, storm surge, high winds, sea level rise, and coastal erosion was performed by assessing the potential impacts from each hazard using geographic information system data (GIS).

By ranking each section, the municipality was in the 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 Committee and the residents and business owners of Rincón.

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 individuals	Risk to facilities	Risk to operations	Classification per priority
Earthquakes/Liquefaction	Moderate	Moderate	High	Moderate
Tsunamis	High	Moderate	High	High
Drought	Low	Low	Low	Low

Natural hazard	Risk to individuals	Risk to facilities	Risk to operations	Classification per priority
Flooding	High	High	High	High
Landslides	Moderate	Moderate	Moderate	Moderate
Climate change/Sea level rise	High	High	High	High
High winds/Tropical storms	Moderate	Low	Moderate	Moderate
Coastal erosion	High	High	High	High
Storm surge	High	High	High	High

The risks with the highest classification for the municipality are sea level rise due to climate change, erosion, flooding, storm surge and tsunamis. They all have in common the presence of water, either through precipitation or municipality coasts. Coastal hazards are of importance as the development in recent years has occurred largely near the sea. Thus, although flooding is not necessarily a risk that occurs at the coast, the biggest impact would occur in coastal areas given the municipality’s topography.

Hazards with a moderate risk classification are liquefaction from earthquakes, landslides, and strong winds. This does not mean that these hazards possess less risk than those mentioned above, but the impact they may have on the municipality represents a lower degree of severity. Earthquakes also affect areas on the coast of the municipality and can trigger a tsunami event.

Finally, drought is considered the lowest risk or hazard to the municipality. Given mitigation actions taken by both state and local governments in the past, the potential risk to this event has been reduced. A future risk benchmark can provide a basis for understanding how future development can increase vulnerability to every hazard.

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, and (4) Emergency Services.

5 Mitigation Strategies, Goals, and Action Plan

The municipal capabilities, together 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 2011 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 Rincón wants to achieve in terms of hazards and loss 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 Rincón.

Mitigation strategies are the activities, projects, measures, or processes that Rincón will adopt in order to reduce or eliminate the risk to loss of life and property. Consequently, the municipality reviewed and revised the criteria adopted in the 2011 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 municipality's capacity 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 actions to increase its resiliency. 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 mostly flooding, but also include actions targeting coastal erosion and storm surge. The following summarize some of the strategies intended to mitigate these hazards:

- Flood control projects including: Breakwater systems and beach nourishment, storm drainage and flood control systems.
- Bridge repair and reconstruction and flood control projects for communities such as Cambija, Calvache and Fiordo; repair flooding issues at the Municipal Cemetery, amongst others.
- Improvement to flood control canals and stormwater system on individual communities; Stormwater system and street improvement throughout the Stella community to mitigate the impacts of shallow flooding.

6 Maintenance to Keep the Plan Current⁴

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 of Federal Programs 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;

- Advising local communities about their strengths and weaknesses to deal with natural hazards and how to mitigate the associated risks,
- Advising local communities about what resources are available before, during and after a natural disaster,

⁴ The Municipality of Rincón's 2020 Local Hazard Mitigation Plan is pending APA approval from FEMA.

- Creating and maintaining a database of individuals that are interested in hazard mitigation in order to keep them up to date on any information that may increase their capabilities in the subject matter,
- The Local Hazard Mitigation Planning Committee shall represent the community, and
- Holding public meetings to discuss HMP monitoring and supervision at the beginning of the last quarter of each fiscal year and/or after the occurrence of any natural disaster in the municipality.

7 Plan Approval and Adoption

The Federal Emergency Management Agency (FEMA) completed review of the Hazard Mitigation Plan for the Municipality of Rincón, 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 July 23, 2020. Accordingly, the Municipality of Rincón, adopted said Plan on August 3, 2020 via Resolution No. 8, Series 2020-2021.

Upon receiving the record of adoption from the municipality, FEMA issued an Official Approval Letter stating the jurisdiction has adopted said Plan, thus approved and eligible for FEMA Hazard Mitigation Assistance programs, having approved the Plan formally on August 5, 2020. This approval letter establishes the expiration date five (5) years from the date of approval, or until August 4, 2025.