



≈  **DESTINO 191**

Rural Placemaking Plan for Destino 191

Cubuy, Río Blanco, Naguabo



Foundation for Puerto Rico | USDA Rural Development | Comité Desarrollo Barrio Cubuy, Inc.
Rural Placemaking Innovation Challenge – Destino 191: El Yunque del Caribe



Acknowledgments

This Placemaking Plan was prepared with the support of a grant provided by the United States Department of Agriculture (USDA) through its Rural Placemaking Innovation Challenge (RPIC) program. It was spearheaded by Foundation for Puerto Rico (FPR) in partnership with the Comité Desarrollo Barrio Cubuy, Inc., A Friends' Foundation, and the Triple S Foundation.



Foundation for Puerto Rico Team:

Alexandra N. Mihailovic-Court, Program Manager
Valeria Díaz, Jr. Program Coordinator
Celinés Otero, Program Coordinator
Francis Pérez, Research Manager
Yenesis Vélez, Research Analyst
Gabriela Soto Rodríguez, Research Intern
Oscar Cruz Urrutia, Research Intern
Carmen Villanueva, Outreach & Stakeholder Engagement Coordinator
Sally Everson, Grant Designer & Writer
Luis Laguna, Marketing & Production Manager
Carla Martorell, Communications Manager
John Bryan Vélez, Communications Specialist
John Castro, Graphic Designer
Marisa Rivera, Data Analyst
Luis Quintana, Facilities & Operations Coordinator

Foundation for Puerto Rico Team:

Jon Borschow, Chairman & CEO
Alma Frontera, Vice President of Programs & Operations
Damaris Ocasio, CFO
Soledad Gaztambide, Sr. Program Officer (WCRP) 
Santos, Human Resources Director
Alan Taveras, Development & Marketing Director

Partner Collaborators:

Comité Desarrollo Barrio Cubuy, Inc. (The Development Committee of Barrio Cubuy, Inc.)
USDA Rural Development
Naguabo Municipality
USDA Forest Service

University of Puerto Rico, Río Piedras Campus
Graduate School of Planning (UPRRP)
University of Puerto Rico School of Architecture, Río Piedras Campus (UPRRP)
USDA Rural Partners Network

Collaborators:

Asociación de Artistas Plásticos de Puerto Rico (AAPPR)
Asesores Financieros Comunitarios (AFC)
Casa Parcha
Corazón Latino
CROMÁPOLIS
El Concilio de la Iglesia Adventista, ADRA (Adventist Development and

Relief Agency)
Empowered by Light
Grupo Comunitario Río Blanco, Inc.
Hispanic Federation
Los 5k de Río Blanco
Loopland
Mar Sin Barreras de Luquillo
Michelle Torres
Montaña Explora

Movimiento Naguabo Somos Todos P.E.C.E.S.
Para la Naturaleza
PR Science, Technology and Research Trust
Producir, Inc – Cubuy Canóvanas
Puerto Rico Tourism Company
Sueños Dorados

Table of Contents



Acknowledgments	2			
Destino 191: Project Origins	4			
• The Development Committee of Cubuy, Inc., Foundation for Puerto Rico, and the U.S. Department of Agriculture Rural Development	5			
• What is Placemaking?	8			
• What are the benefits of Placemaking?	9			
• What methodology and objectives were considered?	10			
• Additional concepts implemented in the project methodology	12			
History, geography, and current context	14			
• El Yunque National Forest	15			
• History and Ecology of South El Yunque	18			
• Naguabo Municipality – History of the town	20			
• Route 191 History	21			
Barrio Río Blanco	23			
• Historic Río Blanco Bridge (entrance to 191)	25			
• Río Blanco Reservoir	27			
Florida Community	28			
• Casa de Piedra at the entrance of the community of Florida	29			
• Florida Historic Bridge (Cubuy Entrance)	31			
Focus area: Cubuy community in Río Blanco	32			
• Community History	33			
• La Mina Community Center (historically known as La Mina School)	36			
• La piedra del indio	37			
• Archaeological Findings	38			
• Río Sabana Recreational Area	41			
Cubuy, Naguabo Community Mapping Results	42			
• How does the community mapping and survey work align with the needs of the collaborating partner?	45			
		• Community diagnosis goals and objectives	46	
		• Conceptual Framework	46	
		• Topography, Geology, and Climatology	48	
		• Health and Socioeconomic Characteristics	49	
		• Existing Infrastructure	50	
		• Natural Resources and Land Coverage	52	
		• Land Use Patterns	53	
		• Risks and Susceptibility	54	
		• Risk maps found in Cubuy, Naguabo	67	
		• Cubuy Community Tourist Assets	57	
		• Built Environment and Settlement	59	
		Community development – Community surveys in Cubuy	74	
		• The community questionnaire of Cubuy Community, Naguabo	75	
		• Data collection methodology	75	
		Suggested projects based on project findings	77	
		• Population	78	
		• Housing	84	
		• Public Health and Safety	89	
		• Education	93	
		• Employment and Entrepreneurship	94	
		• Community infrastructure	96	
		• Environmental Justice	103	
		• Strengthening local capacity	105	
		• Community engagement promotion.	112	
		• La Mina Community Center – Access to essential services	115	
		Cultural Route – Destino 191	119	
		SWOT analysis of the Cubuy and Río Blanco community	123	
		• Strengths	124	
		• Weaknesses	125	
		• Opportunities	126	
		• Threats	127	
		Collective strategic vision	128	
		Projects Identified for Asset Development in Route 191	131	
		• Tourism Experiences	133	
		• Community Mapping	134	
		• Signage project	135	
		• Road PR–191 Lighting	139	
		• Río Blanco Bridge	142	
		• Río Blanco Reservoir PRASA	144	
		• La Casa de Piedra (Stone House)	145	
		• Florida Bridge / Historic Bridge	147	
		• Entrance to Cubuy	152	
		• Charco Hippie	153	
		• Station and parking/ Sculpture	155	
		• La Mina Community and Visitors Center – Facilities	157	
		• Mirador de Syckin (Syckin Lookout)	163	
		• Piedra de Salomé or Piedra del Indio (Lookout)	164	
		• Entrance to the Río Sabana Recreation Area/ Murals	165	
		• Río Sabana Recreation Area	167	
		• La Vereda Sabana (Sabana Trail)	168	
		• 191 Vereda Inclusiva (Inclusive Trail 191)	169	
		Brand Management – Destino 191: " El Yunque del Caribe"	172	
		• "Destino 191" brand objectives	174	
		• Trademark Usage Recommendations	175	
		• Destino 191 Marketing Plan	176	
		Conclusion	182	
		• Implementation strategies and governance	183	
		References	184	

Destino 191: Project Origins



The Comité Desarrollo de Cubuy, Inc., Foundation for Puerto Rico, and the U.S. Department of Agriculture Rural Development

The community of Cubuy, located in Barrio Río Blanco, Naguabo, has as part of its main assets the southern entrance to El Yunque, also known as "El Yunque del Caribe", and the Río Sabana Recreational Area. Route 191 runs from the entrance of Barrio Río Blanco and crosses the Florida and Cubuy sectors from this neighborhood, giving access to the national forest. Intending to foster the economic development of the community, which still faces obstacles from hurricanes Irma and María, the earthquakes, and the pandemic, the community leaders from Cubuy, belonging to the Comité Desarrollo Barrio Cubuy, Inc., ideated the potential of the neighborhood based on its assets and decided to call the project "Destino 191: El Yunque del Caribe", using the number of the road as a reference for the distinctive branding of the community project.

The Comité Desarrollo Barrio Cubuy, Inc. (the Committee), is a local community-based non-profit organization active since 2011 whose purpose is to promote the economic, social and community development of Cubuy in the Municipality of Naguabo in all phases. The organization is composed of community members who serve as support to the community when any need arises. The organization's mission is to advocate for the safety, welfare, and basic needs of the community of Cubuy, and to promote the maintenance and beautification of its areas. As part of its vision, the Committee aims to make the community of Cubuy the first rural community in Puerto Rico to become a leader and model for the sustainable co-management of the southern entrance to El Yunque for the purpose of developing tourism, economic and community development. As part of this mission, in 2021, Cubuy became the first community to sign a co-management agreement for the Río Sabana Recreation Area with representatives of the U.S. Forest Service.



Description: Drone photo of the Río Sabana Recreation Area

(Río Sabana en la entrada sur del Bosque Nacional El Yunque)





Photo description: January 25, 2023. The Development Committee of Cubuy, Inc. integrates new members in a meeting with the community.



Description: April 26, 2023. The Committee, the Municipality of Naguabo, and the USDA Forest Service (USDA) gathered at the La Mina community center to collaborate.



After Hurricanes Irma and Maria, the Foundation for Puerto Rico (FPR) expanded its community efforts through programs like the Bottom Up Destination Recovery Initiative. The collaboration between FPR and the Committee began in 2020 when the program team resided in the eastern region for a period of six (6) months to identify areas of opportunity in the region as part of the development of the first community Destination Plans for Ceiba/Naguabo and Fajardo/Luquillo.

FPR is a 501(c)(3) nonprofit organization with a mission to create a prosperous Puerto Rico that unleashes the passion, talent, and creativity of its people, making the archipelago a destination for the world to visit, live, work, and invest. Since its inception, the organization has worked tirelessly to fulfill the mission of transforming Puerto Rico's future, turning knowledge into action to build a prosperous and sustainable economy for all through the visitor economy.

Direct contribution

The visitor pays directly at:

- Theater
- Travel agency
- Shopping
- Entertainment
- Gasoline
- Hotel
- Bank
- Taxi
- Car rental
- Cruise
- Flight
- Bus

Induced Contribution

What later pays for:

- Banks
- Real State
- Communications
- Hospitals
- Infrastructure
- Other

Indirect Contribution

That pays wages, salaries, taxes, profits:

- Chef
- Driver
- Host
- Services
- Builder
- Waiter
- Tour guide
- Pilot
- Merchant
- Other



Raw materials

General services

Services and consumption (by employees)

Tourism employees and supply chain



The visitor economy and its contributions to the local economy. Source: Foundation for Puerto Rico.

This type of economy offers an opportunity for economic growth for the residents of Cubuy by developing their natural, historical, and cultural assets with the goal of creating experiences for destination visitors. In addition to tourism, the visitor economy benefits other economic sectors on which tourism depends, such as banks, hospitals, suppliers, restaurants, and more.

To continue community efforts, one of the opportunities identified by FPR was the "Rural Placemaking Innovation Challenge" (RPIC) from the Rural Development Division of the United States Department of Agriculture (USDA). At this point, with the endorsement of the community and creators of Destination 191: "El Yunque del Caribe" or "The southern entrance to El Yunque," FPR applied for the grant, which was approved. To complete the necessary amount for the execution of this first phase, A Friends' Foundation and the Triple S

Foundation joined the effort, in addition to private funds from FPR allocated for the project.

RPIC intends to provide funding through cooperative agreements to eligible applicants working to promote public-private and philanthropic partnerships in rural and tribal communities that foster economic and social development. These projects, especially Placemaking projects, aim to increase economic growth in rural areas and improve their quality of life by enhancing essential services such as housing, economic and community development, and required infrastructure. RPIC operates under the following concepts:

- Creating livable places is important for developers and community professionals who implement these strategies in communities and rural areas.
- Placemaking practices include both established technical



Photo description: FPR Bottom Up team with community leader Mariny Vazquez at Piedra del Indio, also known as Piedra de Salomé by residents.



- processes and innovative and adaptive solutions.
- Partnerships are a key element in RPIC and should be developed with public, private, and philanthropic organizations, creating new collaborative approaches, learning together, and applying those strategies learned in rural and tribal communities.
- Placemaking contributes to long-term investment and thus supports community resilience, social stability, and collective wisdom.
- Broadband access is an essential component to support Placemaking initiatives.



What is Placemaking?

Placemaking is a collaborative engagement process that helps rural and tribal community leaders create quality places where people want to live, work, play, and learn. By bringing together partners from public, private, tribal, and philanthropic communities, as well as the technology sector, placemaking is a comprehensive approach to community and economic development that incorporates creativity, infrastructure initiatives, and vibrant public spaces. Key elements of quality places can include a mix of uses, effective public spaces, broadband accessibility, preservation of historic sites, transportation options, diverse housing choices, and respect for community heritage, arts, culture, creativity, recreation, and green spaces. In short, it means a process in which public, private, philanthropic, and community partners collaborate to strategically improve the social, cultural, and economic fabric of a community.

This work is based on a sense of belonging with qualitative and quantitative results. Creating spaces is a collaborative engagement process among diverse sectors and especially with rural community leaders to develop or strengthen vibrant and active quality places where people want to live, work, learn, and play.

Creating a strategic plan through collaborations between community leaders and the various sectors is necessary to achieve these goals. A "Placemaking plan" is a written document that describes the strategic plan for the community to implement the goals identified. After a series of technical assistance to the community and participatory processes, the goal is to create a comprehensive framework that serves as a guide to continue facilitating and promoting the economic, social, and physical

development.²

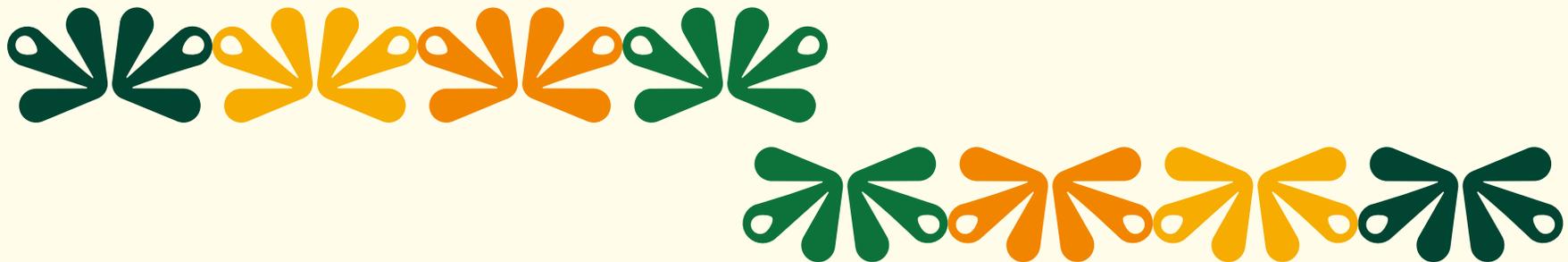
What are the benefits of Placemaking?

One of the main benefits and objectives for communities in this type of project is to improve the quality of life of its residents. In the context of a Placemaking project, quality of life means a measure of human well-being that can be identified through economic and social indicators. Modern utilities, affordable housing, efficient transportation, and reliable employment are economic indicators that must be integrated with social indicators such as access to medical services, public safety, education, and community resilience to strengthen the development of rural areas.

Such a planning process should be worked in a collaborative and participatory manner, through multi-sectoral and multi-jurisdictional approaches. For project purposes, a multi-sectoral approach means an intentional collaboration between two or more sectors (e.g., utilities, health, housing, community services, etc.) to achieve goals and outcomes in

communities and regions. On the other hand, a multijurisdictional approach means more than one jurisdiction, where jurisdiction refers to a unit of government or other entity with similar powers, such as a city, county, district, special purpose district, municipality, town, ward, parish, village, state, Indian tribe, etc. Through these approaches, it is possible to gather ideas, opinions, and available resources to further the strategic plan and support community leaders in the short, medium, and long term.

Finally, Placemaking projects also aim to train leaders in various topics related to Placemaking and community development. For the project, technical assistance means providing specific support for delivering Placemaking planning and implementation in partnership with identified rural communities. Placemaking training means building capacity in the community on the components related to the Placemaking planning process and implementation around the community and economic development processes. Training can be in the form of information, workshops, and/or mentoring.¹



¹ US Department of Agriculture, "Notice of Funds Availability for the Rural Placemaking Challenge (RPIC) for Fiscal Year 2022", <https://www.govinfo.gov/content/pkg/FR-2022-06-30/pdf/2022-14028.pdf>

What methodology and objectives were considered?

FPR began its efforts with the Comité Desarrollo Barrio Cubuy, Inc., and other collaborators by participating in community meetings, multi-sector events, field visits, ideation, and visualization exercises, as well as identifying residents' desires and needs through community surveys. FPR also provided a series of technical assistance and training to the Committee to formalize and strengthen the operations of the local organization so that it could acquire the capacity to raise funds from different sources and promote this strategic plan. The following fundamental steps were taken to complete the project:

Understanding the context:

To begin to understand the current context of Cubuy in Río Blanco, as this sector is the focus area due to its proximity to El Yunque, FPR initiated a series of investigations to comprehend the current state of public spaces. The research involved looking at the environment, the local community, the characteristics of the public spaces, and the infrastructure conditions. FPR also identified the community's desires in terms of both community and economic development, as well as tangible and intangible assets available in the area. Furthermore, in a series of multisectoral meetings and events with local leaders, the community, and stakeholders, FPR was able to identify the changes the community wants to see based on their desires. Historical research was also conducted to understand the community's background and the importance of the key spaces that would be part of the Destino 191 Cultural Route.

Community Involvement:

From the beginning of the project, FPR and the Committee involved the local community in the planning process. Meetings, field visits, multi-sector meetings, an open house, workshops, health fairs, and surveys were organized to gather residents' ideas, opinions, and needs. Furthermore, visualization exercises

were completed to determine the vision for shared public spaces to improve the collective quality of life. This is how the ideas to be presented in this plan were developed.

Site Analysis:

A detailed site analysis was conducted through the University of Puerto Rico (UPR) School of Planning, considering topography, spatial risks, existing infrastructure, and environmental conditions. It also included an analysis of the electric power and aqueduct infrastructure, demographic information, green spaces, lighting, and an inventory of assets along Route 191. In addition, to understand the community's needs, and as part of the UPR's collaborations, a tool was created to carry out the survey process in Cubuy according to the School of Planning recommendations. FPR organized several volunteer efforts to complete the community survey process. In addition, a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis was developed to understand the priorities for implementing the plan. From the results of these analyses, seven (7) categories were identified for the main objectives of the project:

- 👉 **Economic Development**
- 👉 **Tourism development and promotion**
- 👉 **Infrastructure rehabilitation**
- 👉 **Community visibility**
- 👉 **Fundraising**
- 👉 **Environmental Conservation**
- 👉 **Community ties strengthening**

Technical assistance and training:

To implement the plan, it was necessary to work hand in hand with the local non-profit organization and provide training in various topics related to Placemaking. Thus, the Committee was the primary recipient of the program's technical assistance (TA)

on various topics. Among the topics of the TAs were:

- a. placemaking fundamentals
- b. design and visualization exercises
- c. formalization of the local non-profit organization (the Committee)
- d. brand development and marketing
- e. stakeholder management
- f. multisectoral and multi-jurisdictional approaches
- g. data collection and analysis
- h. fundraising
- i. planning
- j. project management
- k. asset co-management
- l. environmental conservation
- m. community tourism.

In this way, the Committee becomes the organization capable of seeking the necessary resources and carrying out the projects for this plan's implementation.

Space design:

Considering the information gathered and the site analysis, we began to devise the design and visualize the future of the spaces in Cubuy. With the students' help, the identified spaces' first design sketches were developed. For each exercise, consideration was given to spatial distribution, vegetation, urban design elements, furniture, lighting, and design feasibility, among other characteristics.

Planning and resource identification:

Implementation strategies are also included in the planning process. Projects were identified through exercises on the strategic vision creation, activity design to be carried out in the community, survey results, data analysis, funding sources identification, and feedback from the various organizations

collaborating in the creation of the plan, key resources, and entities that can support the implementation of various smaller scale projects. As part of the plan's implementation, it is necessary to coordinate between local and federal authorities, key organizations, and specialists to allocate and carry out the work and improvements to the spaces. It is also intended to establish a realistic timetable for the execution of the different projects identified.



(December 14, 2021. The Cubuy Development Committee, Foundation for Puerto Rico, and the US Forest Service at the first community meeting at La Mina Center)



Additional concepts implemented in the Project Methodology

Asset-based community development:

As part of the project methodology, Asset-Based Community Development (ABCD) was also implemented to understand the available resources and strengths. This methodology considers local assets as the fundamental building blocks for sustainable development. ABCD helps to identify the skills, capacities and assets already present in the community to leverage them for the benefit of the residents.²

Conservation of natural resources:

Environmental conservation elements were also considered part of the project methodology. Communities play a vital role in protecting and maintaining the environment in Puerto Rico. In the local context, the availability of resources and community participation are crucial factors in developing effective conservation strategies. Residents can work with local authorities and environmental organizations to establish, manage, or control areas of high ecological value. These areas are considered significant from a biodiversity and conservation point of view. They are often home to a great diversity of plant and animal species and include unique and fragile ecosystems. Through land-use planning, communities can identify and protect sensitive areas such as wetlands, drainage basins, aquifer recharge zones, and fertile soils, among others. These areas may require use restrictions or special conservation measures to maintain their integrity and functionality.³

Ecotourism:

Promotes responsible and environmentally friendly tourism that values and conserves natural areas and local biodiversity and can help generate awareness and support for their conservation. It is imperative to develop adequate planning for sustainable tourism. This involves defining capacity limits, establishing rules and regulations, and ensuring proper management of natural and cultural resources. In addition, encouraging local community participation in decision-making can help ensure that tourism benefits everyone involved.⁴

Community-based regenerative tourism:

This approach of the tourism industry actively involves local communities in the planning, developing, and managing tourism experiences in their areas. In contrast to conventional tourism where external businesses dominate, regenerative tourism seeks to empower residents to benefit equitably and directly from tourism activity. This involves local participation in all stages of the tourism process, the preservation of culture and the environment, as well as the equitable distribution of economic benefits. In addition to enriching the tourist experience by allowing cultural exchange with residents and their ecological environment, this approach also encourages visitors to contribute to improving the destination for the benefit of residents and environmental conservation. In conclusion, community-based regenerative tourism aims to primarily benefit residents, helping them preserve the identity, culture, history, nature, and well-being of host communities.⁵

⁴ Asset-Based Community Development Institute <https://resources-depaul.edu/abcd-institute/Pages/default.aspx>

⁵ International Institute of Tropical Forestry and United States Department of Agriculture. Detailed Inventory of Protected Areas and Other Mechanisms for Land Conservation in Puerto Rico. Río Piedras, PR: U.S. Forest Service, 2019. https://data-fs.usda.gov/research/pubs/ii/ii_gtr_50_spa_lowres.pdf.

⁶ Keep Safe. "Chapter 5 Water Management and Storage: Strategy 20 Collect and Use Rainwater." In Keep Safe: A Guide to Resilient Housing Design in Island Communities. Retrieved from: <https://keepsafeguide-enterprisecommunity.org/es/recolecte-y-utilice-el-agua-de-lluvia>

⁵ National Geographic. "Qué es el turismo regenerativo y cuáles son sus beneficios" 2022. Obtenido de <https://www.nationalgeographicla.com/viajes/2022/09/que-es-el-turismo-regenerativo-y-cuales-son-sus-beneficios>

Co-management of assets:

Refers to participatory management in which multiple actors, such as local communities, non-governmental organizations, governments, and other stakeholders, collaborate in the decision-making and implementation of actions for asset conservation and management. It consists of a collaborative approach of shared responsibilities, encouraged dialogue, and joint solutions to address asset conservation and sustainable development challenges. It involves of integrating different knowledge and perspectives and building mutual agreements and commitments. It recognizes that local communities have traditional knowledge and a close relationship with the assets.

Equitable Local Development:

Refers to a development approach that seeks to promote economic, social, and cultural growth within a community or region equitably and sustainably. Instead of solely focusing on economic expansion without considering social disparities, equitable local development strives to create opportunities and improve living conditions for all residents, regardless of their gender, ethnic origin, socioeconomic status, or other characteristics. This approach involves implementing policies and programs that address inequalities and promote inclusion, encouraging the participation of the local population in decision-making and initiative planning. In addition to promoting equity, equitable local development aims to preserve cultural identity, protect the natural environment, and strengthen social bonds within the community. Ultimately, its goal is to create sustainable and harmonious development that enhances the quality of life for all residents, contributing to the building of fairer and more cohesive societies.



History, Geography, and Current Context



El Yunque National Forest

The history of El Yunque National Forest in Puerto Rico has several key moments. Before European colonization, pre-Columbian inhabitants, such as the Taínos, depended on forest resources for survival. However, not many settlements were established in the primary forests of the Luquillo Sierra due to factors such as humidity, poor soils, and a preference for coastal forests (USDA and IIFT 2014). Beginning with the Spanish settlement led by Juan Ponce de León in 1508, Puerto Rico experienced modest colonization and economic development. European settlers carried out early deforestation in search of riches such as gold, but cattle ranching and sugarcane cultivation proved more viable. Puerto Rico's strategic geographic importance as a port of entry to the New World led to a military approach and fortification of the island. However, trade and economic development remained limited for centuries (16th–17th centuries), while the forests served as a refuge for ethnic groups and were exploited for various needs. In the late 18th century, reforms were introduced and concessions were implemented to promote agricultural development, bringing Puerto Rico out of its commercial lethargy (USDA and IIFT 2014).

In 1898, Spain ceded Puerto Rico to the United States at the end of the Spanish–American War. Although most of the island's forests had been cleared, the Luquillo Sierra preserved 16,000 hectares of forest, including virgin areas. In 1903, President Theodore Roosevelt designated the reserve as the Luquillo National Forest, which later became the Caribbean National Forest. During the following decades, activities such as gold mining and timber extraction were carried out in the sierras. In the 1930s, the Federal Emergency Conservation Program and the Civilian Conservation Corps undertook construction, reforestation, and recreational facility development projects. During World War II, timber considered suitable, such as guamá, guaba, or mocá, was sold to local charcoal makers (USDA and IIFT 2014).



Tree nursery with *Swietenia macrophylla* seedlings, maintained by CCC labor for reforestation, 1936 (U.S. Forest Service 1936).

In 1946, the Caribbean National Forest was designated as an Insular Wildlife Refuge, and in 1956 it became the Luquillo Experimental Forest. Research efforts to save the endangered Puerto Rican Parrot began in 1968. Later, El Yunque became part of the UNESCO Biosphere Reserve Network in 1976. Unfortunately, Hurricane Hugo (1989) caused significant damage, including the reduction of the Puerto Rican Parrot population, which affected its preservation efforts. Years after Hurricane Hugo, in 1997, a management plan and resources for the forest were approved, and in 2000 captive-bred parrots were released. In 2003, El Yunque National Forest celebrated its 100th anniversary (U.S. Forest Service n.d. b). Today, El Yunque National Forest is a resource of great importance due to its biodiversity.

Despite being one of the smallest forests within the National Forest System, it is one of the most biodiverse. It has 250 types of trees, a variety of aquatic life, 50 varieties of orchids, 150 species of ferns, 8 endangered plants, 30 types of sensitive plants, and 97 species of birds. Most of the animals are non-mammals (U.S. Forest Service n.d. c).

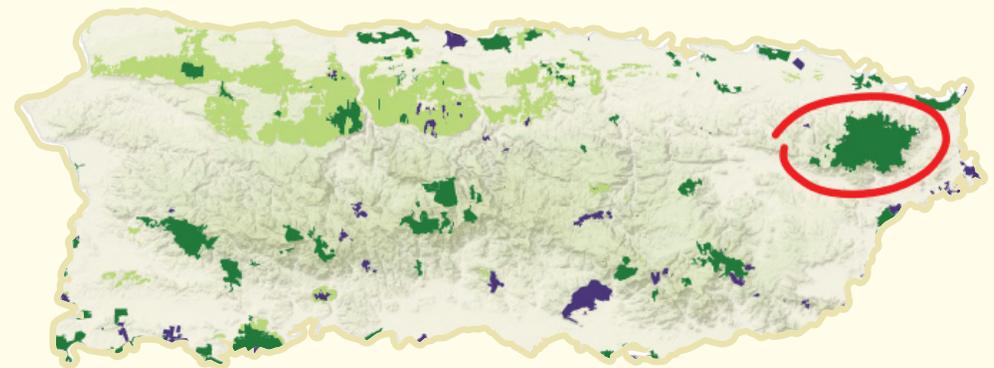
El Yunque National Forest can be divided into four ecological zones. The Tabonuco Forest is the lowest part and has 225 species of trees. The Palo Colorado Forest zone is at an elevation

of 2,000 feet, known for its Palo Colorado Forest where the Puerto Rican parrot lives. At 2,500 feet elevation is the Bosque de Palma de Sierra, whose lands are covered with palms growing on mossy soil. Above 3,500 feet elevation is the Bosque de Nubes, where trees do not grow more than 12 feet due to strong winds, and often grow deformed or bent (Pitzer and Stevens 2009). This area represents less than 2% of El Yunque National Forest, and 83% of its land remains undisturbed (El Yunque National Forest n.d. a).

Brief facts about El Yunque

Fauna ³ (Vertebrates)	<p>164 species (24 endemic)</p> <p>Birds = 107 species Reptiles = 19 species Mammals = 16 species Amphibians = 15 species Fish = 7 species</p>
Flora ³ (Vertebrates)	<p>More than 1,000 different species of plants</p> <p>225 native species of trees</p> <p>60 endemic to Puerto Rico 8 endemic to the Luquillo Mountains 636 native species of flora</p>
Tallest tree ³	<p><i>Dacryodes Excelsa</i> and <i>Manilkara Bidentata</i></p> <p>> 30 meters</p>
Oldest tree ³	<p><i>Cyrtia Racemiflora Excelsa</i> and <i>Magnolia Splendens</i></p> <p>' 1,000 y ears</p>
Hidrology ³	<p>10 rivers and 7 hydrographic basins within the forest</p> <p>11 migratory species of shrimp live in its rivers 35 water intakes within the forest supply ' 750,000 people</p>
Tipography ³	<p>Elevations from 120 to 1074 meters above sea level</p> <p>5 peaks with elevations exceeding 1,000 m</p>
Geology ³	<p>Elevated marine volcanoclastic rocks from the Cretaceous Period and rocks.</p>

Protected areas of Puerto Rico



■ Managed by the government
 ■ Managed by non-governmental organizations
 ■ Karst Conservation Zone (Public and private lands)

Areas and other measures€

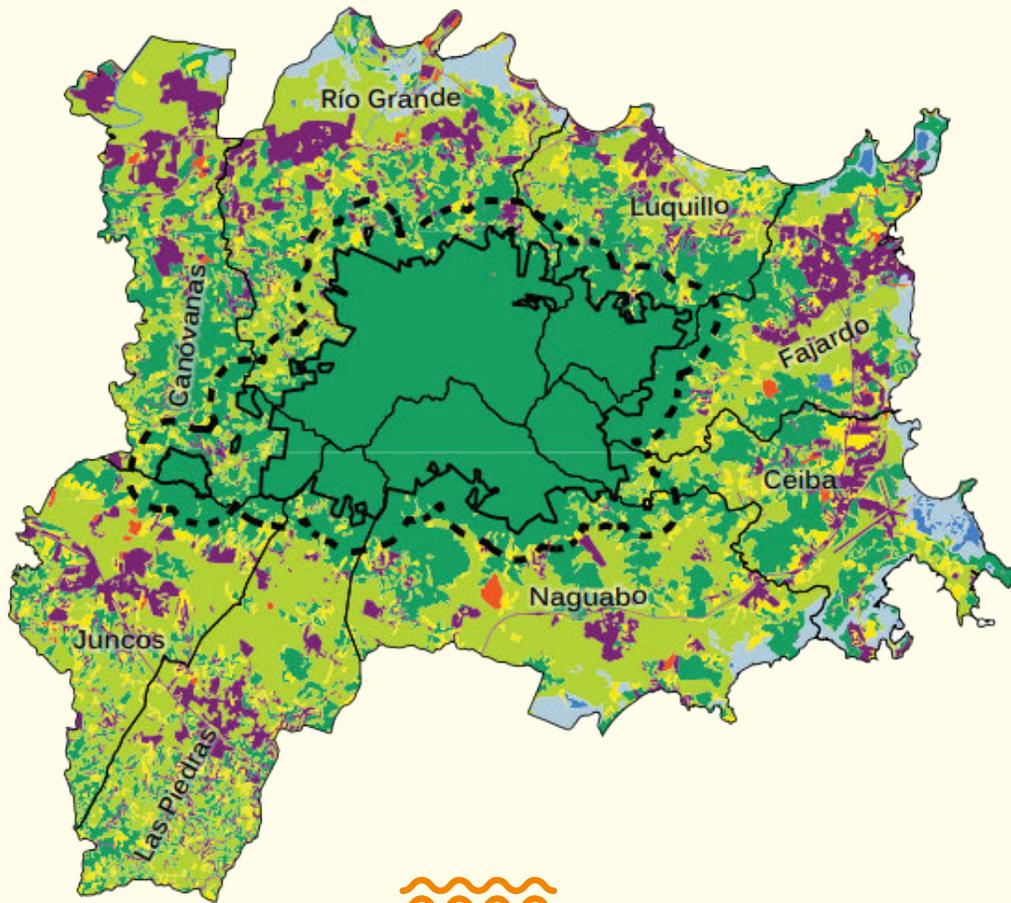
- 11,540 hectares (28,516 acres) – total area
- 122 kilometers (76 miles) – perimeter
- 53 kilometers (33 miles) – roads
- 30 kilometers (19 miles) – trails
- 1.1 million visits per year

Official Name...—

- Yukiyú (by the Taínos)
- Sierra de Luquillo
- Luquillo Forest Reserve
- Luquillo National Forest
- Caribbean National Forest
- El Yunque National Forest

Year

- 1,500
- 1885 – 1898
- 1903 – 1907
- 1907 – 1935
- 1935 – 2007
- 2007 – present



(Quiñones et al. 2018, 26)

- Forest
- Urban
- Shrub
- Bare Soil
- Wetlands
- Water
- Grasslands

Distribution of land cover by Municipality





History and Ecology of South El Yunque

Between 1926 and 1929, the first part of Route 191 was built entirely by hand between the Palmer and Catalina sectors of the Mameyes neighborhood in Río Grande to provide convenient access to El Yunque. By 1942, the construction of the Mameyes-Río Blanco Road (route 191) was completed. This divided the forest into two and provided access to El Yunque recreation areas (USDA and IIFT 2014, 88, 97). In the 1970s, a landslide caused by rains disconnected part of Road 191 (U.S. Forest Service n.d. a). Efforts to reconstruct this road met with resistance from the environmental community, such as the Tropical Forestry Institute, who recommended against rebuilding because of its environmental impact on the Río Blanco riverbed, Puerto Rico's only original forest stand, and plant growth. However, the municipality of Naguabo was in favor of its reconstruction. Likewise, the Forest Service and the Department of Federal Highways were very interested in reopening the road. However, the San Francisco Environmental Defense Fund intervened, and they filed a lawsuit and were able to stop the reconstruction (USDA and IIFT 2014, 99). By 1992, after 22 years of effort, the USDA Forest Service concluded that the land was too unstable for reconstruction and withdrew its support from the project (USDA and IIFT 2014, 156). The road remains closed, having been closed longer than it was open. Most trails, visitor centers, scenic overlooks, and observation points are along Route 191. The southern portion of Route 191 features the Río Sabana trail and a picnic area (Quiñones et al. 2018, 53). Therefore, the status of the southern entrance is of significant loss. Because it is closed, a visitor must travel the road around the forest to get south of El Yunque.

Constant rainfall from El Yunque forms the Espíritu Santo, Río Grande de Loíza, Blanco, Mameyes, Fajardo, and Sabana rivers. In the south, the Blanco and Gurabo rivers drain the Sierra de Luquillo (Weaver 2012); the Blanco, together with the Mameyes,

Espíritu Santo, and Río Grande de Loíza rivers discharge 80% of the forest's water. The water of El Yunque's rivers is considered one of the cleanest and highest quality in Puerto Rico. Over half of the forest water is extracted for municipal use and consumption. By calculating this water use, it can be estimated that forest water is worth \$25 million annually (Quiñones et al. 2018).

River	Classification	Length ⁵⁴
Río Mameyes	Wild	1.6 miles (2.6 km)
	Scenic	1.4 miles (2.3km)
	Recreation	1.0 miles (1.6km)
Río La Mina	Scenic	1.2 miles (1.9km)
	Recreation	0.9 miles (1.4km)
Río Icacos	Scenic	2.3 miles (3.7km)

(Quiñones et al 2018, 47)



In 2002, the Mameyes, La Mina, and Icacos rivers were designated "National Wild and Scenic Rivers" for their "scenic, recreational, geological, flora and fauna, historical, and cultural value." They are the only tropical rivers in the National Wild and Scenic Rivers System (Quiñones et al. 2018, 47).

Pre-Columbian Period:

There are five petroglyph sites on record within El Yunque. This is evidence of the sporadic use of the forest by the Taínos. However, obtaining evidence of settlement within the forest has not been possible. They preferred to settle in the coastal plains, where they had access to maritime and forest resources within a short distance. They obtained logs for canoes, dwelling materials, and forest tools. In addition, they obtained fruits and edible and medicinal plants. Depending on the forest for so many resources, it can be assumed that they had an extensive relationship with the

forest and a deep knowledge of it (International Institute of Tropical Forestry 2014, 18–22).

Spanish Colonial Era:

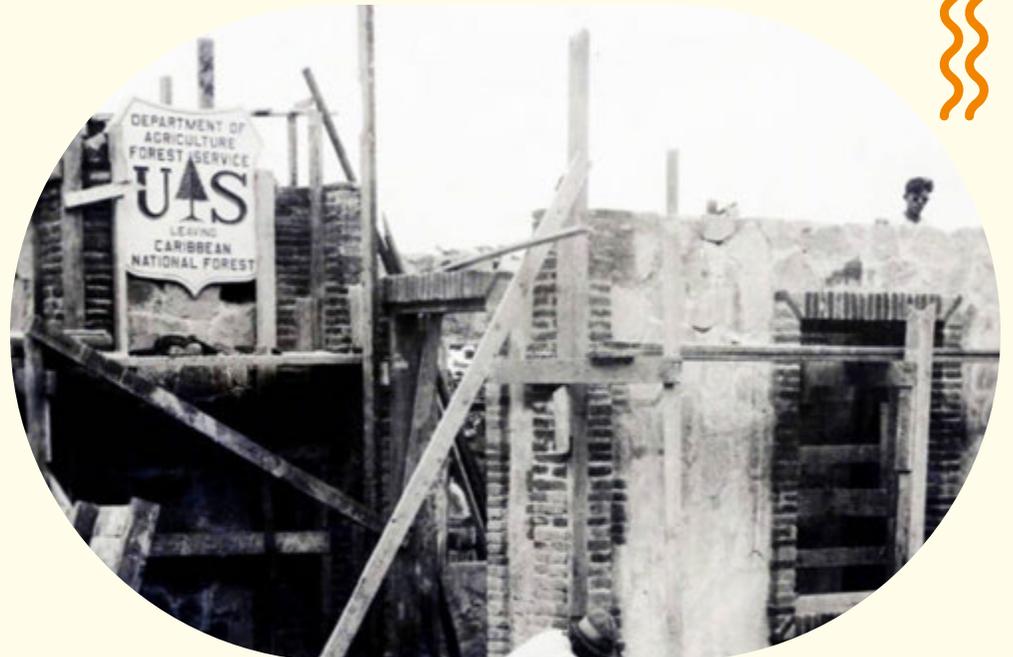
During the Spanish colonial era, there was extensive deforestation around the island due to urban expansion, material extraction, and agricultural industry expansion. The great impact on the forests led to conservation initiatives and laws over the years to stop indiscriminate deforestation. It was not until 1876 that the Sierra de Luquillo became a forest reserve. Despite the laws, they were not adequately followed (USDA & IIFT 2014, 52–58).

From the U.S. Invasion to the Present:

One of the first actions taken by the U.S. Americans was to collect detailed observations of the island. Within their observations, due to extensive deforestation, they found that only 18% of the land in Puerto Rico was covered by forest (more than half of that percentage was scrub or undergrowth). This worsened in 1899 with the passage of Hurricane San Ciriaco, which destroyed them. To recover these forests, a reforestation plan began in 1934. From 1934–1946, more than 29 million trees were planted in the forests (USDA & IIFT 2014, 91). In 1946, El Yunque was designated as a wildlife refuge in Puerto Rico. By 1948, 22 tons of seeds had been planted in El Yunque, and another part had been naturally reforested, thanks to the protection by the Forest Service of 8,000 acres. Public opinion about El Yunque was also changed; it was no longer seen as a resource to be exploited but as a resource to be protected. To this day, El Yunque is of great importance to the island and scientific/archeological research (U.S. Forest Service n.d. b).



(USDA & IIFT 2014, 99). Construction of forest entrance gate on the Río Blanco–Mameyes Road (PR–191) (U.S. Forest Service 1938).





Naguabo Municipality – History of the town

Naguabo, known as the City of “Los Enchumbaos,” has suffered many changes in its geographic space throughout its history, reflected in its literature. Originally called Daguao (a Taíno Cacique who ruled from Fajardo to today's Naguabo) until the end of the 18th century, it is in the Del Río neighborhood, known as Pueblo Viejo. In 1794, its registration and recognition as a town was authorized. Naguabo's location on the slopes of El Yunque implied a great amount of rain, which generated problems for the town. The ravines turned the wastes into swamps, and the location between mountain ranges prevented its urban expansion. Thus, the town was established in rugged terrain. In 1810, work began to move, and in 1821, Naguabo was founded again in the Santiago neighborhood after its relocation. This period of foundings and relocations was characterized by poverty, suffering, problems of all kinds, and frustrated plans (Rosario 1979, 38).

Naguabo has three main rivers: Río Blanco, Río Santiago, and Río Daguao. In addition to these rivers, there are more than five creeks and several streams in the area. In the 20th century, during the prohibition era, Naguabo was known (and to this day) as the town of “Los Enchumbaos” (Rosario 1979) because contraband was smuggled through its port. Smugglers had to get wet in the waters to get the merchandise off the ships, hence the nickname “Los Enchumbaos” (The Drenched). In addition to smuggling, Naguabo's economy was centered on sugar production (beginning in the 19th century), mining (active until the end of the 19th century) (Grupo Editorial EPRL 2015), and tobacco and cigar production (until 1948) (Rivera 2011, 27, 44).

The true origin of the name Naguabo is unknown, although several historians offer multiple possible versions. In 1776, the Spanish Crown granted Luis Balboa Bertone, a French privateer, four



(Map of the town of Naguabo, Puerto Rico General Archive Map Library. 1901). // (Map of the town of Naguabo today. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 12)

leagues of land in the Luquillo mountain range, approximately 76 km². Balboa had helped Spain capture the Balearic Islands, which earned him the title of Duke of Mahon and Crillon. Balboa retained the name until 1829, but part of Naguabo retained the name “El Duque” until modern times (USDA and IITF 2014). According to Rivera (2011), Naguabo comes from the Taíno language, where “N” represents the root of “water” that joins “ABO” meaning “place” and “BO” meaning “mountain”. As a whole, Naguabo would mean “place of many waters that descend from the mountain”. On the other hand, Rosario (1984) offers another explanation saying that Naguabo derives from the “cacicazgo” (chiefdom) of Daguao and that, due to peculiarities of the language and the influence of the Maroons, who used to abbreviate words, it became Naguabo.

From 1840 to 1881, Spain maintained only three colonies: Cuba,

the Philippines, and Puerto Rico. In this context, three of Puerto Rico's most important road projects emerged in 1822, 1860, and 1868. Every project that affected the daily lives of the residents, especially in Naguabo, had to be approved by Madrid (Santiago Jr. 2019). According to reports from the British consulate, Naguabo was an important port for international trade during the 19th century, especially between 1849 and 1880. For this reason, it was crucial to have highways and roads connecting to the port of Naguabo. During much of the 19th century, Puerto Rico had 12 ports of entry, with Naguabo being considered one of the most populated and important in the region (Santiago Jr. 2019). Today, Naguabo has an economy driven by agriculture (minor fruit and coffee), livestock (milk and meat) and has factories of electronics, pipes, women's clothing. It has small deposits of copper, iron, and gold. It also attracts tourists for its rivers, beaches, and El Yunque (Grupo Editorial EPRL 2015).

Naguabo is a coastal municipality located in eastern Puerto Rico. It is bordered by the municipalities of Río Grande and Fajardo to the north, Humacao to the south, Las Piedras to the west, and Ceiba to the east. According to recent data, the Naguabo Municipality was characterized in 2020 as having a population of 23,386 people, of which 44.1% were below the poverty level (U.S. Census Bureau, 2020a). In 2019, the median per capita income of the Naguabo Municipality was \$9,283 (U.S. Census Bureau, 2020), which was below the per capita median for Puerto Rico as a whole, which was \$12,914 for the same year (Urbina et al., 2022). Moreover, only 37.6% of Naguabo's residents are employed in the labor force. Finally, there are approximately 8,160 households in the jurisdiction; among them, 81% have access to a computer, and 77% have access to the Internet (Masses Ferrer, Cuadrado Camacho & Fontáñez, 2023).

Naguabo is divided into 10 communities or barrios: Río Blanco, Peña Pobre, Maizales, Duque, Río, Húcares, Santiago y Lima, Mairana, and Daguao. Additionally, nine communities in the municipality have been identified as "Special Communities:"

Daguao, Santiago y Lima, Barriada Relámpago, Barrio La Florida, Casco Urbano, Playa Húcares, Río Blanco, Maizales and Barrio Ríos (Masses Ferrer, Cuadrado Camacho & Fontáñez, 2023). A Puerto Rico Special Community is defined as an area that has been recognized as marginalized and in urgent need of attention. These communities were established to identify and address the high levels of poverty, scarcity of resources, and limited opportunities that affect these areas on the island of Puerto Rico (Rivera et al., 2014).



Route 191 History

Construction of what is now known as "Route 191" began in 1926, using only manual labor, and was completed in 1942. In the 1970s, heavy rains caused by tropical storms and hurricanes triggered a major landslide, the largest ever recorded on the island, which damaged Route 191. Since then, the road has remained closed in the landslide area for longer than it was open (USDA & IITF, 2014, 99).

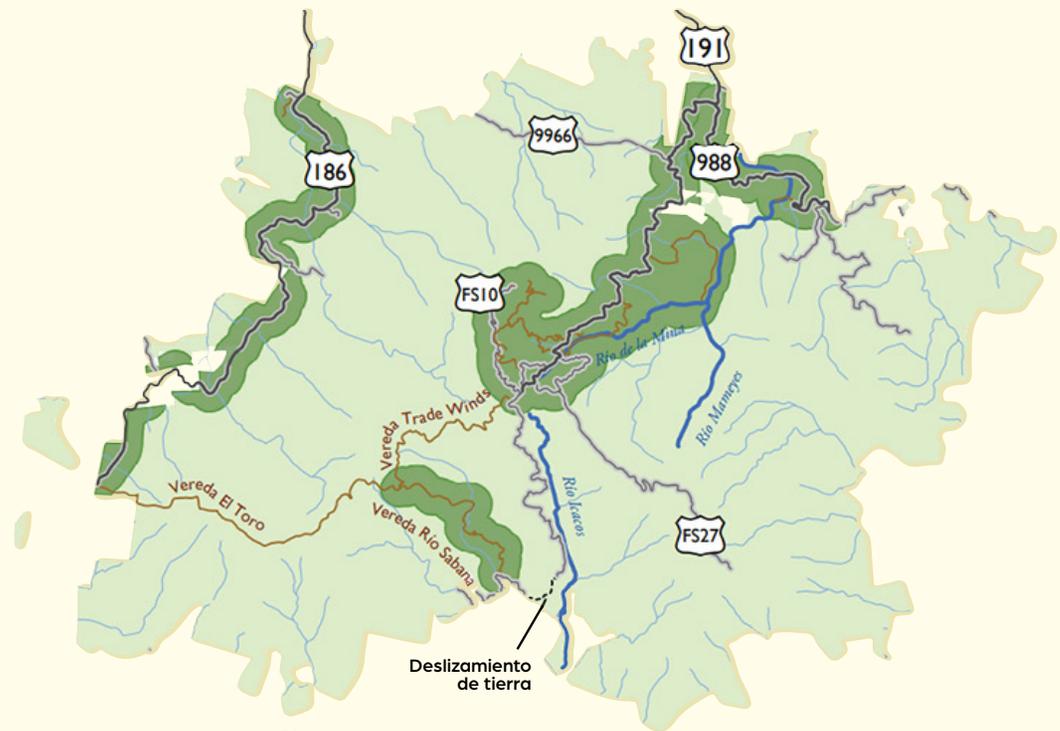
Following the landslide, the Forest Service and the Department of Federal Highways have been working to reopen the road. A contract was awarded, but the company in charge went bankrupt during construction and could not complete the project. On the other hand, the Tropical Forestry Institute opposed the road's reopening for several reasons, including that the geological formation of the Río Blanco basin, typical in the region, was highly prone to landslides. In addition, most of the landslides in the forest were road-related, which were more extensive and delayed vegetation growth for more extended periods compared to non-road-related landslides. The construction of a new road would result in significant environmental impacts, including the destruction of portions of the only remaining original forest in

Puerto Rico, i.e., those that existed before the arrival of Columbus. It also would exacerbate the possibility of future landslides, given that the entire mountainside is in the Río Blanco formation (USDA and IITF 2014, 99).

Despite the opposition, pressure to reopen the road remained strong, especially from the Department of Federal Highways and the Forest Service. However, a non-governmental organization, the San Francisco office of the Environmental Defense Fund, intervened and filed a successful lawsuit. The federal court stopped construction to reopen the road. Currently, the Forest Service staff believes it is best not to reopen the road. The forest's new Land Use Plan proposes a new approach called "the quiet side of El Yunque" to provide recreational activities on the southern slopes of the Sierra (USDA and IITF 2014, 99).

With a long history of complications and despite years of efforts

to reopen it, the southern part of Route 191 has remained closed since its collapse in the 1970s. However, the rest of Route 191 continues to operate. The northern part of the route is the main entrance to El Yunque. The Visitor Center -- "El Portal de El Yunque"-- parking, picnic areas, trails, and an information desk are near the northern entrance, accessed through the municipality of Río Grande. In the southern part, the Río Sabana, trail, and recreation area is located (Quiñones 2018, 53). This route through El Yunque and other road networks in the forest provides access to resources and communication posts essential for research, recreation, and administrative purposes (Quiñones et al. 2018, 48).



Barrio Río Blanco





Historic Río Blanco Bridge (entrance to 191)

Although the historic bridge of Río Blanco, or Bridge No. 194, is not precisely on Route 191, its value in the historical context for the residents of Río Blanco is undeniable. Therefore, it is integrated as the beginning of the Cultural Route of Destino 191. It is worth noting the recent struggles carried out for its preservation by leaders of the neighborhood.

Bridge No. 194 was completed in 1928 with a length of 41.8 meters. It has a polygonal "Ws" steel truss. Virginia Bridge & Iron Co. of Roanoke, Virginia, fabricated the truss and top chord. This bridge left 18 feet of clearance between itself and the normal river level (Pumarada 1991, 104). Thanks to the community's efforts, this bridge was preserved when it was decided to be replaced due to the determination that it was no longer safe for travel. The bridge is an important symbol of progress for the place because its construction allowed access to better opportunities at a time when the only option was to cross the river on foot (López 2021).

In 2018, construction began on the new permanent bridge at Río Blanco, promoted by the Highways and Transportation Authority (Puerto Rico Highways and Transportation Authority - ACT), and consequently, the planned removal and destruction of the original bridge. The community of Río Blanco was outraged and would not allow a historical monument so representative of its people's identity to be lost to modernity under any circumstances. Maribel Bonilla, a leader in Río Blanco, petitioned to have the bridge officially considered a historic monument so that it could be maintained, but the Planning Board refused. It was alleged that the denial was because the bridge was in such a deteriorated state

that it needed to be demolished imminently. Still, this reason was erroneous since other cases could be referred to concerning conservation, such as the emblematic Mata de Plátano bridges in Ciales and Trujillo Alto or even others in Naguabo. The founder of Naguabo Somos Todos, Mariny Vázquez, said, "In other towns, no matter what state the bridge was in, it was preserved for cultural reasons. So, they can't say it's a matter of how it (the bridge) is" (López 2021).

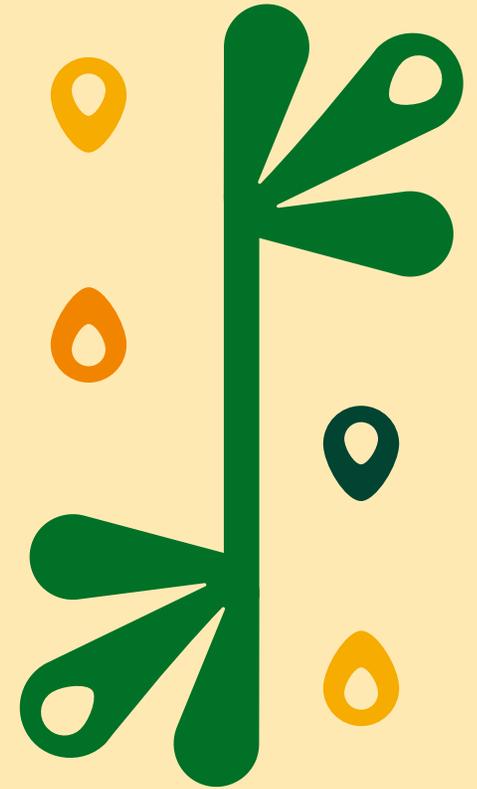
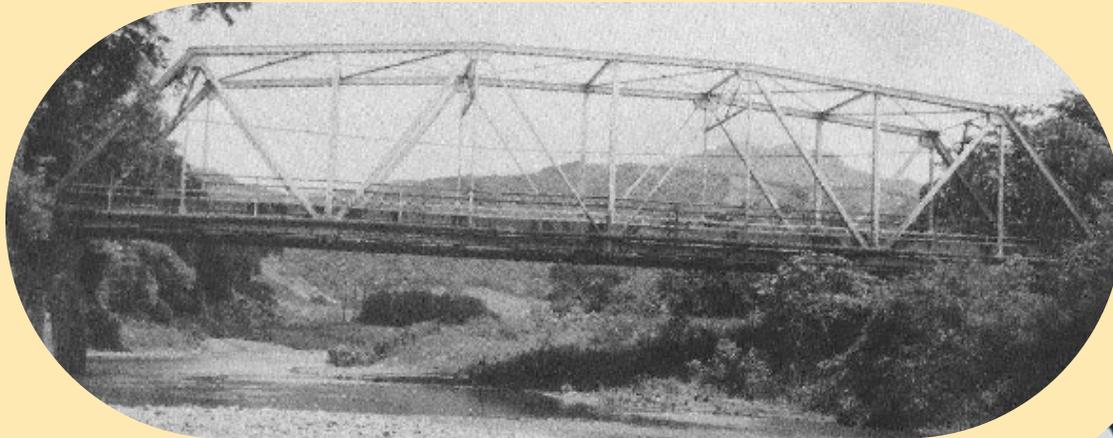
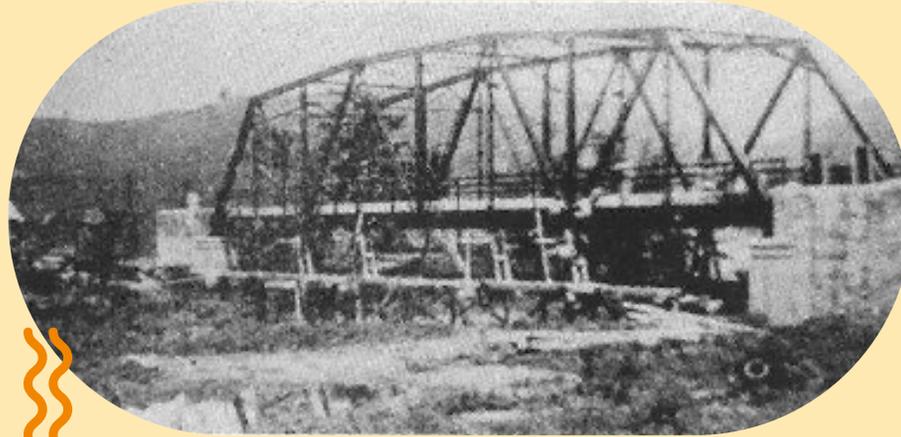
The community understood that the bridge should not only be maintained for historical and cultural reasons, but with some improvements, it could become a tourist attraction that would promote economic activity for it. However, the main reason for saving the bridge is to conserve the identity of Río Blanco and Puerto Rico, as Iván Pérez, community leader of the La Playa sector in Naguabo, said: "This is not only the history of Naguabo, but also the history of the construction of the country. In 2018, the current mayor of Naguabo, Miraidaliz Rosario, also supported the movement to preserve the bridge since it is "her neighborhood," where she was born and raised, more specifically, in Cubuy, which is our focal point of the project. The current mayor said at the time that conversations would be held with the Institute of Puerto Rican Culture so that this process would be done in the way that best preserves "the art and culture of our people", in her words (López 2021).

In the end, the old bridge was relocated, and the new bridge was built in its place after an investment of \$11.5 million. It was inaugurated on June 10, 2019, by DTOP with no limitation on the number of vehicles that can cross it (Inter News Service 2019), and the Institute of Puerto Rican Culture currently protects the historic bridge.

White River, Naguabo

Right: 1928 view of the bridge under construction. R.O.P.
Below: View from the riverbed.

(Pumarada 1991, 104).



The Río Blanco community leaders in Naguabo, united in defense of Bridge 194 (López Maldonado 2021).





Photo of Río Blanco Reservoir by PRASA (AAA, 2015) Additional information about the Reservoir (AAA, n.d.).



Río Blanco Reservoir

The reservoir is located 3.4 miles west of Naguabo. Its construction by the Puerto Rico Aqueduct and Sewer Authority (PRASA; known as AAA in Spanish) was completed in 2010. It was built outside the Río Blanco riverbed and has a capacity of 4,455 acre-feet (AAA n.d.). With a capacity of 1,450 million gallons of water, it provides drinking water for Naguabo, Humacao, Yabucoa, Las Piedras, Vieques, and Culebra (Pérez 2022).

Its construction is a consequence of the fact that, before the Río Blanco Reservoir, the reservoirs in PR were built in riverbeds. This had a high cost of cleaning and dredging. This led to the idea of building reservoirs outside the riverbed, with the benefit of reducing or eliminating sedimentation during river floods while maintaining the capacity of the water collected (Piña-Martínez 2023).

Florida Community



As part of the Río Blanco barrio, there is also the Florida sector. This sector was primarily owned by the Preston Company, who had named all their land for what is known as Hacienda La Fe. The land in this neighborhood was unsuitable for planting sugar cane because of the rocks. However, it had a plain suitable for citrus

production for export to the United States (Piña-Martínez 2023). Hence, the name "Florida" comes from the neighborhood's name after the Florida oranges (Suárez 2023).



Casa de Piedra at the entrance of the community of Florida



(La Casa de Piedra in the Florida sector on Route 191, formerly part of Hacienda La Fe)

The Casa de Piedra is located on Route 191, at the entrance to the Florida community in Río Blanco. This sector is known for housing this outstanding construction. The history of the Florida sector of Naguabo is intertwined with the founding of Hacienda La Fe, owned by Mr. Gustavo Preston Lapelleux. The community's land was part of this hacienda, dedicated to cultivating sugar cane, oranges, grapefruit, and honey production. Mr. Preston Lapelleux, born in Arroyo in 1856, was the son of Mr. Francis W. Preston, Canadian Consul in Puerto Rico for Spain, and Mrs. Emma R. Lapelleux, originally from the United States. In 1910, Mr. Preston Lapelleux assumed management of

the extensive Hacienda La Fe, encompassing approximately 900 acres of land. The Prestons built a stone structure within the community known as La Casa de Piedra. This construction consisted of two separate walls flanking the neighborhood entrance. Inside were the ovens used to preserve the fruits they harvested and exported to the United States. In addition, one of the walls served as lodging for workers arriving from other towns, known as "bullicos" or "aguadillanos." These workers rested in hammocks or on the ground. The Preston family also maintained apiaries for the production and export of honey. The Hacienda La Casa de Piedra became one of the entrances to the Preston Lapelleux residence, and a small chapel was erected there where masses were celebrated. Next to the main building, a building called El Empaquetado was built, used to store the crops (Suárez 2017).

Today, the ruins of La Casa de Piedra are located at the entrance to the community, on the right-hand side. Since businesses were built where there was water, a spring can be found under the Casa de Piedra that still has 30 years of water supply (Vázquez 2023). Subterranean water just below the house gives it a particular historical and architectural value. Its architecture is interesting because it was built into the ground and not on top of it (Vázquez 2023). Among its multiple uses, it was used as a jail (Suárez 2023). In addition to its function as part of the estate for growing oranges and grapefruit for Preston Company, the Casa de Piedra also played the role of an office. When road 191 was built, it was also used as an office for the engineers (Piña-Martínez 2023) and was also a pay office; Jimmy Piña (2023), a resident of Naguabo, relates that his grandparents went to the office at the Casa de Piedra to collect \$0.35 per month. The Casa de Piedra is one of the oldest structures in Naguabo and one of the few still standing (Suárez 2017).

The Railway and the Hydroelectric Plant

Part of the purposes of the old railway in Naguabo, built between 1929 and 1930, was to create the hydroelectric plant in Río Blanco, specifically located in the Florida sector. Both the railway and the plant were constructed by the Porto Rico Railway, Light and Power Company. The system included a funicular railway that operated through a winch mechanism. This railway was used for the construction and maintenance of a water conduit and dams in the Cubuy, Sabana, Icacos, and Prieto rivers, located in El Yunque. These rivers combine to form the Río Blanco in Naguabo (Aponte, 2011). At present, despite several attempts to reactivate the plant, it is not in use. The reactivation of this plant could bring many benefits to the community.



(Aponte, 2011)





Florida Historic Bridge (Cubuy Entrance)

Unlike the Historic Río Blanco Bridge, this bridge remains where it was originally built. It was built over the Río Blanco under U.S. colonial rule. Therefore, this bridge was important to the Hacienda to transport its merchandise. Despite its cultural, touristic, and historical value to the Florida community, it is not officially recognized as a historic bridge.



(Historic bridge in Florida. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 46)



Photo description: Florida sector historic bridge at the entrance to Cubuy.

Focus Area: Cubuy Community in Río Blanco



Community History

There is no reference to where the name Cubuy comes from, but it is understood that it has a Taíno origin. The oldest record of Cubuy appears in the demographic report titled "Isla de Puerto Rico: Estudio Histórico, Geográfico y Estadístico" by Manuel Ubeda y Delgado, Lieutenant of Infantry of Puerto Rico, Spain, in 1878, where Cubuy is mentioned, although written as Cubui. Cubuy is part of the Río Blanco barrio, which had been established in 1878. Cubuy has an old gold mine dating from the late 19th century. It has extensive areas of fertile land that reveal its agricultural past.

According to oral history, Cubuy was a single entity that extended through the towns known today as Naguabo and Canóvanas. Due to the weakening of adjoining connections and changes in the geographic delineation of these towns throughout history, Cubuy became two entities, one in Naguabo and the other in Canóvanas. Nevertheless, both communities still connect through El Yunque, at the top of the Sabana trail, which joins with the Vientos Alisios trail leading to Cubuy in Canóvanas. According to other historical and linguistic theories, it is possible that the name "Cubuy" was initially given by the Tainos who frequented these mountains as a refuge from various enemies, among them the Caribes coming from the Lesser Antilles and later, the Spaniards during colonization. Afterwards, the Spaniards named this area Río Blanco. However, the residents of this sector have maintained the name Cubuy as an essential part of their identity, possibly sustained by the passage of time through oral history. Likewise, the scenic views of Cubuy in Naguabo provide excel-



1987.
Puerto Rico
General
Archive - Mary
Anne Hopgood

lent visibility to the Caribbean Sea and were strategic military points for the Spanish, who had a military route through the Río Blanco neighborhood (Suarez, 2023). It is in Cubuy where the Río Blanco originates, which currently has five dammed tributaries that provide hydraulic energy. The Río Cubuy has a Taíno petroglyph with three figures (see section on archaeological encounters) that could be a hunter, a fisherman, and another unknown occupation (Rivera 2015).

In geographic terms, Cubuy begins at the bridge located at the intersection with Camino La Planta (18°14'20.4 "N 65°47'05.2 "W) and ends at one of the entrances to El Yunque National Forest (18°16'03.1 "N 65°47'41.5 "W). This entrance to El Yunque provides access to the Río Sabana Recreation Area, for which the Cubuy community has a co-management agreement with the U.S. Forest Service since 2021 to promote tourism development in the area (El Oriental, 2021). According to the School of Planning observations, Cubuy has a wealth of archaeological and



Caribbean Sea view from the heights of Cubuy

cultural history. The entrance to Destino 191, as well as its infrastructure, begins with an old steel bridge with a long history and the potential to be a tourist attraction. The rivers entwine through Cubuy's drainage basins, making its lands fertile, prosperous, and exceptional natural resources. Likewise, the Charco El Hippié represents a tourist and scenic value for anyone who comes to know it. Charco El Hippié, part of Río Blanco in Naguabo, is one of the most popular ponds in Puerto Rico. It is visited by countless locals and tourists who enjoy its cold waters and beautiful scenery. It has a giant rock over 50 feet high that adorns its natural pool.

Regarding the built environment and settlements, the School of Planning observed a high percentage of unoccupied housing. Based on data collected on road infrastructure, the most impacted and poorly maintained areas are in the Camino Viejo section. Potential public nuisances mostly comprise abandoned struc-

tures in disrepair and intrusive vegetation. However, it is worth mentioning that, given the economic context of the community, there may be people living under these deteriorated conditions. The existing infrastructure and public security services are relatively far away from the community. In some cases, services are in other municipalities. The bridges were generally found to be in good condition, although there is a high presence of clandestine dumps on them. The electrical wiring is in good condition; most of the damage is minimal concerning the inclination of the pole. The natural resources include rich forests and valleys, many recreational areas, and potential tourist or scenic attractions.



(Cubuy's boundary with Río Blanco. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 13)



Legend:

- Cubuy's boundary
- Río Blanco neighborhood



Students visit Cubuy for the community diagnosis. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 46)





La Mina Community Center (historically known as La Mina School)

La Mina Community Center, originally designed as an elementary school to prevent students from traveling to school in the Florida sector, has undergone significant changes over the years. Originally, it lacked a cafeteria, so the need was addressed in Florida. Later, the storage room of the first building was used as a kitchen where the children were served through a hole in the wall. However, in 1974, the school was closed due to the decrease in students, and the remaining students had to be transferred to Florida (Piña-Martínez 2023).

Most of its structure is original; only the windows have been replaced. Today, this place has evolved into a multifunctional community center. On the one hand, it is used as an operations office; on the other hand, it is also used as a shelter. Both buildings are used as shelter for those in need. In addition, there is interest in transforming the community center into a space designed to receive visitors.



La Mina community center at the beginning of the project



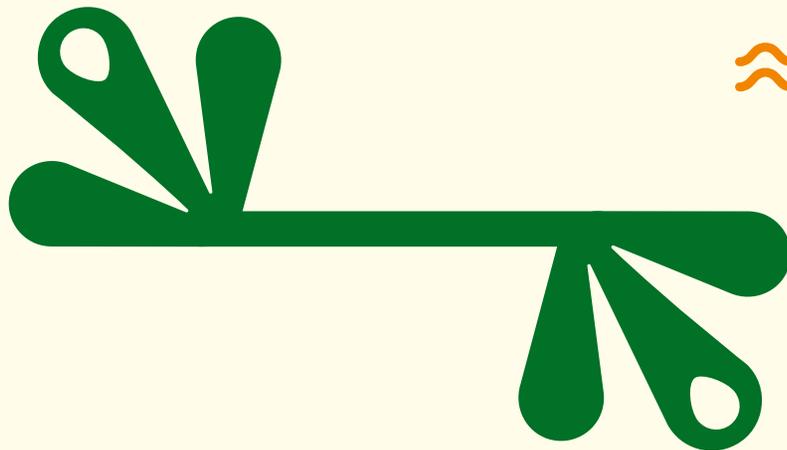


La piedra del indio

The stone located along route 191 (see project for this space for specific coordinates) is known as "La Piedra del Indio", so called by the residents, who also call it "La Piedra de Salomé," in reference to Salomé Figueroa, a local farmer who used to sell fruit on the flat rock. Before the construction of Road 191, this stone was an important point of reference in the area. According to oral history, it is believed that the Taínos utilized this stone to carry out sacrifices or make offerings (Piña-Martínez 2023). Also, they may have used it to observe other enemies, such as the Caribes, or even during the Spanish colonization (Suarez 2023). However, although the presence of the Taínos can be seen in the area, this point of Piedra del Indio was more developed and used by the Spanish. A resident mentions that it has strategic importance since it is a perfect vantage point where one can observe the entire entrance of Río Blanco and above. Therefore, it was a place that served as an observation center (Piña-Martínez 2023).



Foundation for Puerto Rico, the UPR School of Architecture, and community leaders from Cubuy at the Stone of the Indian viewpoint.



Currently, it is an important tourist point because of the panoramic view it offers. According to Cubuy residents, standing on top of the stone (with caution) gives the impression that you are levitating, which creates spectacular scenic photos. Over the centuries, this point of great historical and ecological value has been utilized in various ways.

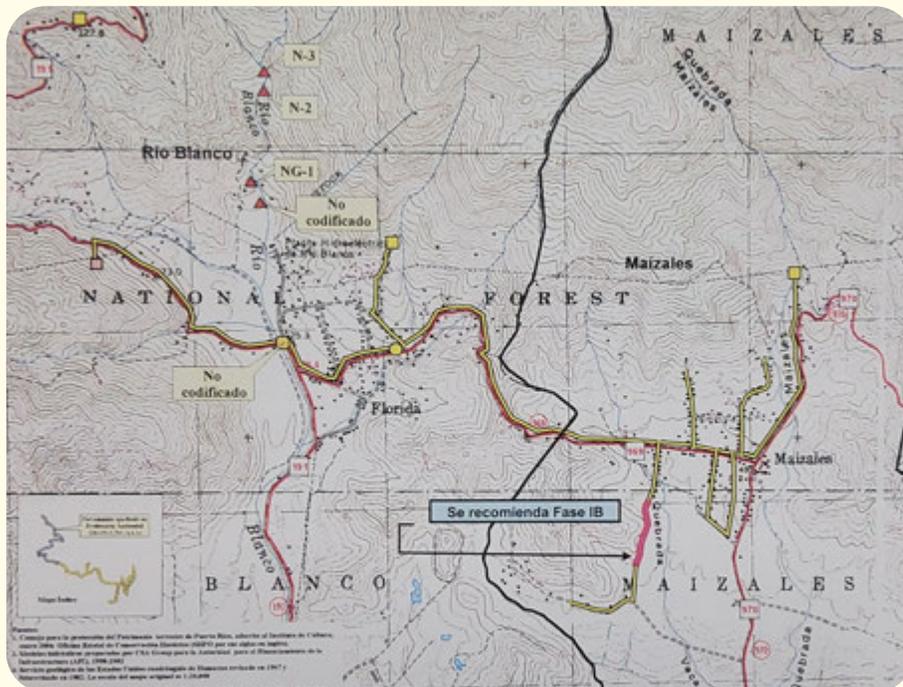
Archaeological Findings

Archaeological reports indicate that the sites in Naguabo span different periods and cultures. Since the work of Jessie Walter Fewkes in the 20th century, petroglyphs have been identified in Río Blanco. Samuel Lothrop and others also reported the presence of petroglyphs in the area. Irving Rouse, in 1938, was the first to document the Icacos-Cubuy archaeological site, which includes four sites called Naguabo #2, Naguabo #3, Naguabo #4, and Naguabo #5.

In 1960, Monica Flaherty Frasseto published her research in the area, identifying an area without petroglyphs, but with ceramics



Map of reported and documented archaeological sites, provided by the State Historic Preservation Office.



Legend:

Archaeological Site: (1)

- ▲ Prehistoric
- Historic

Proposals

- Tank
- Project
- Pumping Station

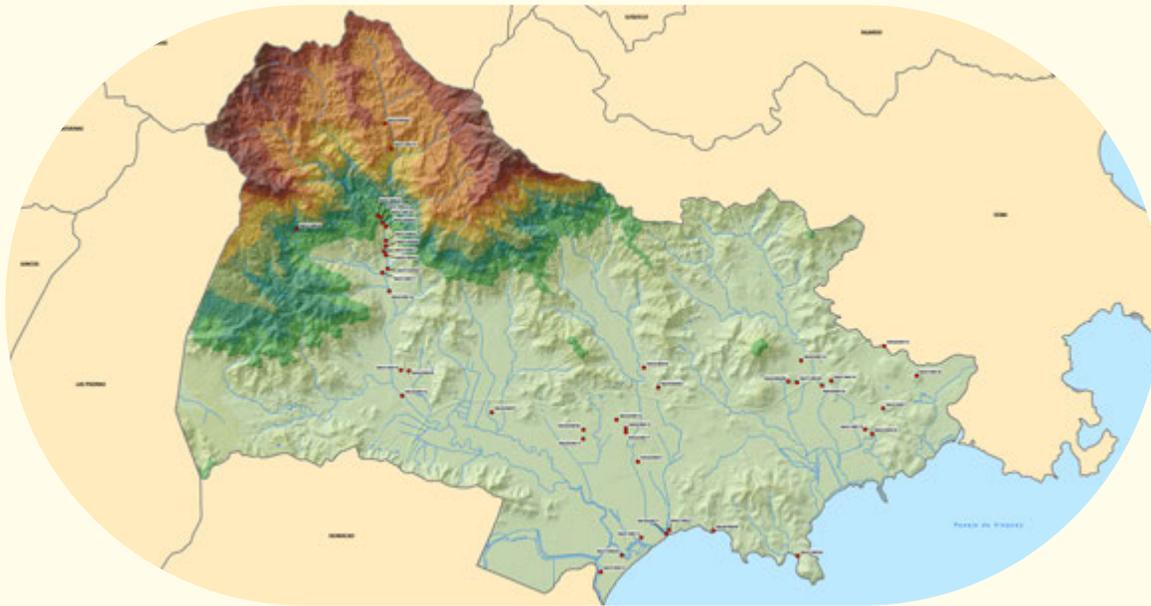
Existing Facilities:

- Tank
- Municipal neighborhood boundary of Naguabo
- Roads

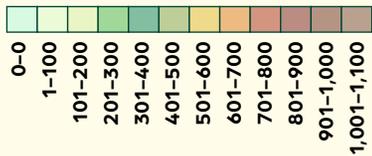
Improvements to the Potable Water Distribution System
 Río Blanco and Maizales Neighborhoods
 Municipality of Naguabo, Puerto Rico
 Archaeological Study, Phase 1B



Map for improvements to the potable water distribution system. This map shows some (not all are represented) prehistoric archaeological sites represented by the red triangle and one historic site represented by the square with yellow rounded corners (CSA Group 2006, 10).

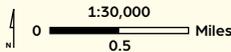


Elevation (meters)



● Archaeological Sites

NA0000000 is the Resource Code (TAG) field in the provided Archaeological Sites listing.



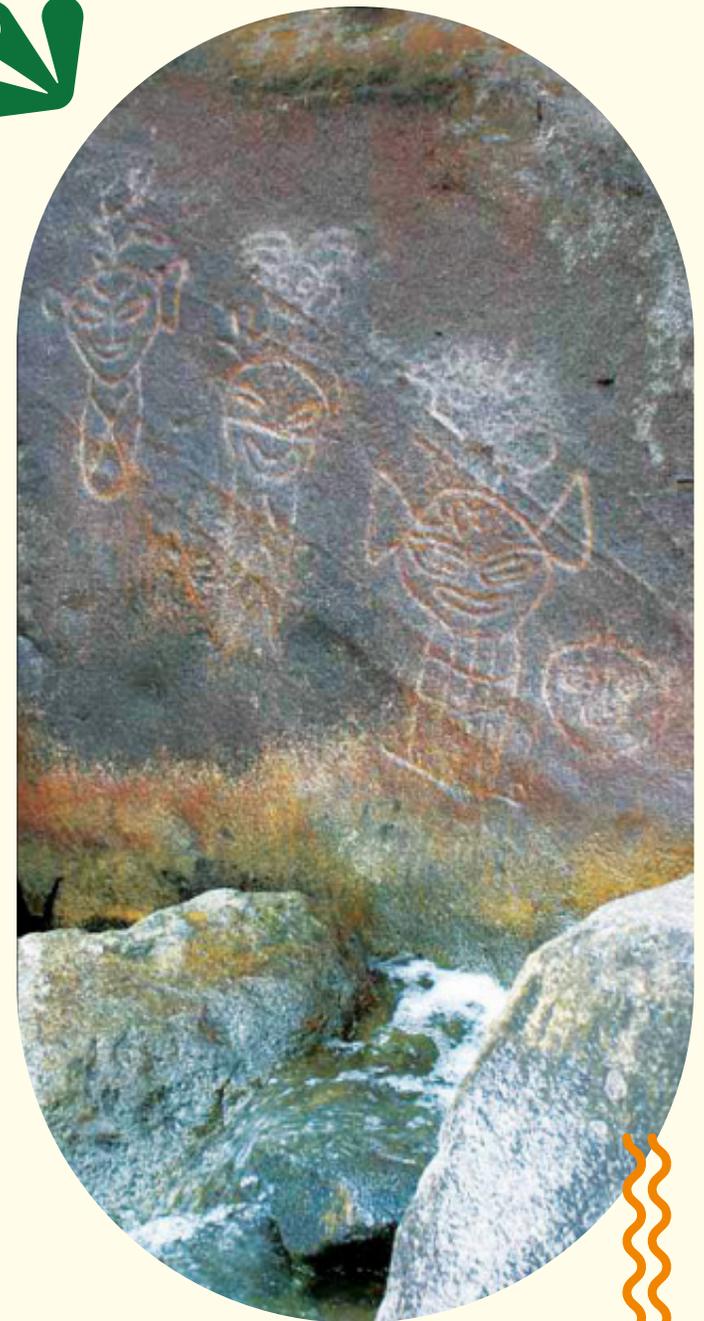
Projection: NAD 1983, State Plane P.R. & VI.
Date: July 7, 2016
State Office of Historical Conservation

(USDA and IIFT 2014, 27) |
Archaeological Sites (red dots),
Naguabo Municipality (State
Historic Preservation Office n.d.)



from the Ostionoid period. José Oliver reported the petroglyphs La Mina I and La Mina II in 1973, which present different styles, suggesting different periods or cultures. In 1981, Antonio Daubón reported seven petroglyph sites in the Río Blanco riverbed, complementing the previous findings (Ramos, 1996).

Within El Yunque National Forest the only identified Taíno sites are petroglyphs, all associated with sacred contexts. Groupings of petroglyphs have been found along the Río Blanco, in the lower part of the mountainous area, exhibiting a remarkable variety of styles, possibly due to different uses and the presence of other cultural groups over time. These petroglyphs were used in sacred ceremonies and rituals, mainly by the behiques, Taíno shamans, who interacted with the spirits and performed ritual practices in these sites. Some sites were public and could hold hundreds of people, while others were smaller and possibly



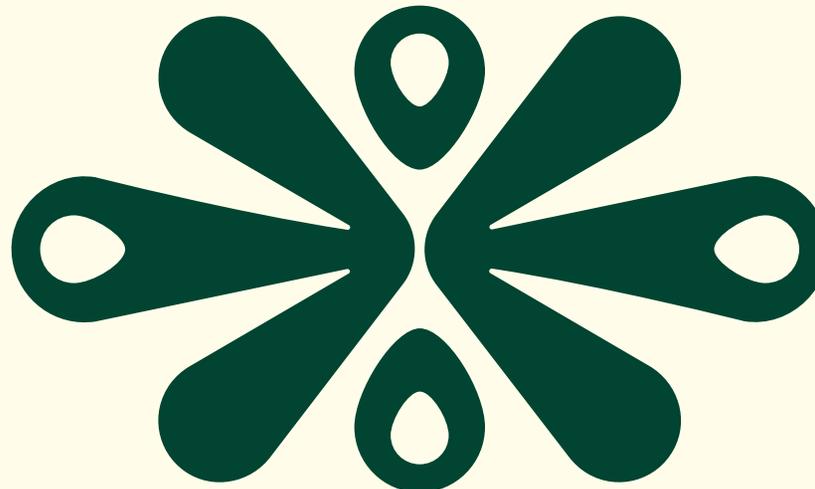
Taino petroglyph in the Río Blanco, near Naguabo in the Sierra de Luquillo, in eastern Puerto Rico (2005)



used for funerary or storage purposes. Restricted societies may have utilized larger private sites for exclusive ceremonies (USDA, 2018).

In addition to archaeological sites, evidence of pre-Hispanic and historic occupation has also been found in the area. For example, a site on the Río Icacos and Road 191 has been reported where lithic instruments, ceramic artifacts, and the remains of a brick oven were discovered. Also mentioned is the Civilian Conservation Corps Camp on Road 191, where the remains of a latrine base and a concrete footing were found. These findings demonstrate the richness of the pre-Hispanic heritage in the Río Blanco neighborhood (Ramos, 1996).

In summary, Naguabo has several archaeological sites along Río Blanco, including ceramics and petroglyphs. These sites are evidence of the town's indigenous heritage, although there has been damage due to poor archeological management and human intervention in the past. The petroglyphs in the Río Blanco area are considered sacred sites, used mainly by the Taíno behiques in ceremonies and rituals. In addition, evidence of pre-Hispanic activities has been found in the region, highlighting its archaeological importance and indigenous legacy in the Río Blanco community of Naguabo.



Río Sabana Recreational Area

The Río Sabana Recreation Area is in the southern side of El Yunque National Forest on Road 191 from Naguabo. From here, you can appreciate the view of the Río Blanco riverbed, and offers access to the rivers. The facility was inaugurated in 2011 and represents the first time the U.S. Forest Service, the Municipality of Naguabo, PRASA, and PREPA (Puerto Rico Electric Power Authority) worked together to manage a public project. It has 10 lodging cabins, parking for 25 vehicles, and pedestrian paths (El Yunque National Forest n.d. b). The Recreation Area is temporarily closed to vehicles due to landslides (U.S. Forest Service n.d. d). However, it can be accessed by walking along the road.

Additionally, it is possible that the recreational area also has a lot of pre-colonial historical value. In an oral history interview, the historian of Naguabo, Carlos Osvaldo Suarez (2023), narrates the possibility that the Taínos rested and hid in this area. Later, when the Spaniards discovered the mountains in this area of El Yunque, they decided to name it the king's crown because when you look at the mountainous surface, it simulates the appearance of a crown (Suarez 2023).



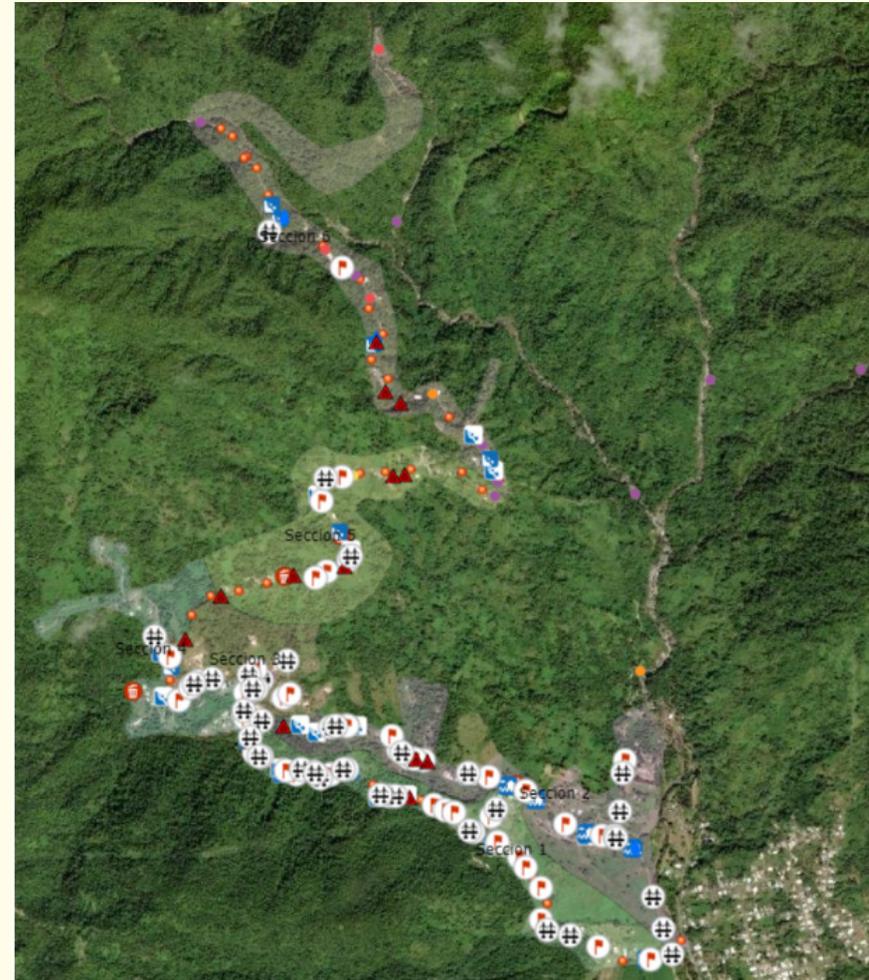
Río Sabana Recreation Area photos
(U.S. Forest Service n.d. d).



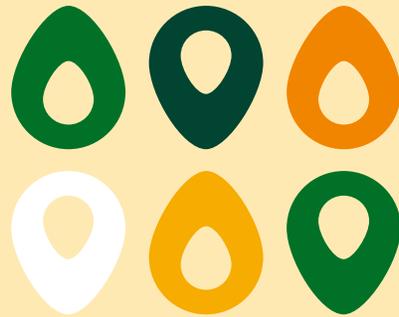
Cubuy, Naguabo Community Mapping Results



During the data collection process in Cubuy, the University of Puerto Rico–Rio Piedras (UPRRP) Graduate School of Planning, in collaboration with the Committee and FPR, conducted community mapping for Cubuy. Community mapping is a way of recording, in a graphic and participatory manner, the different components of a place to locate and describe them in each geographic area. It allows identifying the main stakeholders, knowing the available services, identifying structures, pointing out service deficiencies, and facilitating collaboration.



(Point representation data collected during the mapping process. Graduate School of Planning, UPRRP. Cubuy Community: Community Mapping and Diagnosis Report. 2022, 14)



(Collection of data during community visits. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 15)



Through this effort, the first phase of a community profile of Cubuy was carried out to initiate the route that generates a contextual panorama and the main socioeconomic, environmental, and welfare characteristics of the place's inhabitants. After designing the methodology and receiving input from its residents and FPR, the Graduate School of Planning created three working subgroups to carry out the community mapping data collection, the generation of a survey accompanied by an interview guide, and the search for secondary information.

As a result of this work, the content of the document Cubuy Community: Diagnosis and Community Mapping Report was generated. During the process, field trips to Cubuy, meetings, and work sessions in the Geographic Information Systems (GIS) laboratory of the School of Planning were coordinated and carried out. Among the findings, information was generated and compiled on various topics, including history and culture, topography, and climatology, built environment, existing infrastructure, natural resources and land cover, and risks. As a result of the findings, an enormous potential for community development is recognized due to the historical and archaeological richness, natural resources, landscapes, and tourist attractions.

As for the product the School of Planning generated, there is the report of the first phase of diagnosis and mapping. This report includes the survey, the interview guide, and the presentation of data collected in the community mapping with their respective maps and graphs. The report also included recommendations for short, medium, and long-term efforts and implementation strategies.

How does the community mapping and survey work align with the needs of the collaborating partner?

Community mapping and surveys can facilitate the representation and visibility of rural areas of Puerto Rico, such as Cubuy. Through these tools, specific areas can be identified for capital projects (improvement of recreational areas, the community center, tourism, etc.). With the data collected, vulnerable areas and the risks associated with extreme events can be identified so that they can be made known, and exposure can be reduced. This work can also impact the development of incentive proposals to revitalize neighborhoods and provide input on various issues.

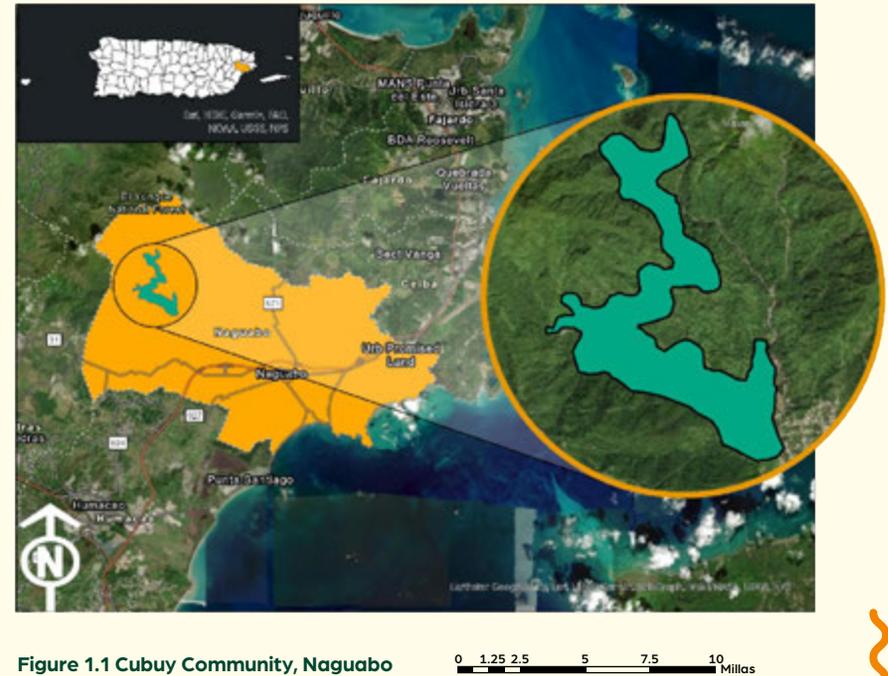


(Key concepts guiding the work, based on the community's needs. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 10)



Community diagnosis goals and objectives

- The main objective of the Community Mapping and Diagnosis Report document is to work with collaborating partners to complete and deliver the first phase of a profile of Cubuy, which will serve as a diagnostic, inventory, and reference for future projects and needs assessments.
- The community diagnosis is a study and analysis of its members' reality. It serves as a basis for the formulation of projects and the initiation of their actions. This allows leaders to know the problems and their causes, to identify the needs of the different members, and to define the lines of action in the future.
- The area selected for the detailed effort is the Cubuy Community, located in the Río Blanco Barrio of the Naguabo Municipality.



Legend:

● Cubuy Limit

● Municipality of Naguabo

(Cubuy Community, Naguabo. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 8)



Conceptual Framework

The important theoretical factors that contributed to the understanding of the project and contributed effectively to its implementation are the following:

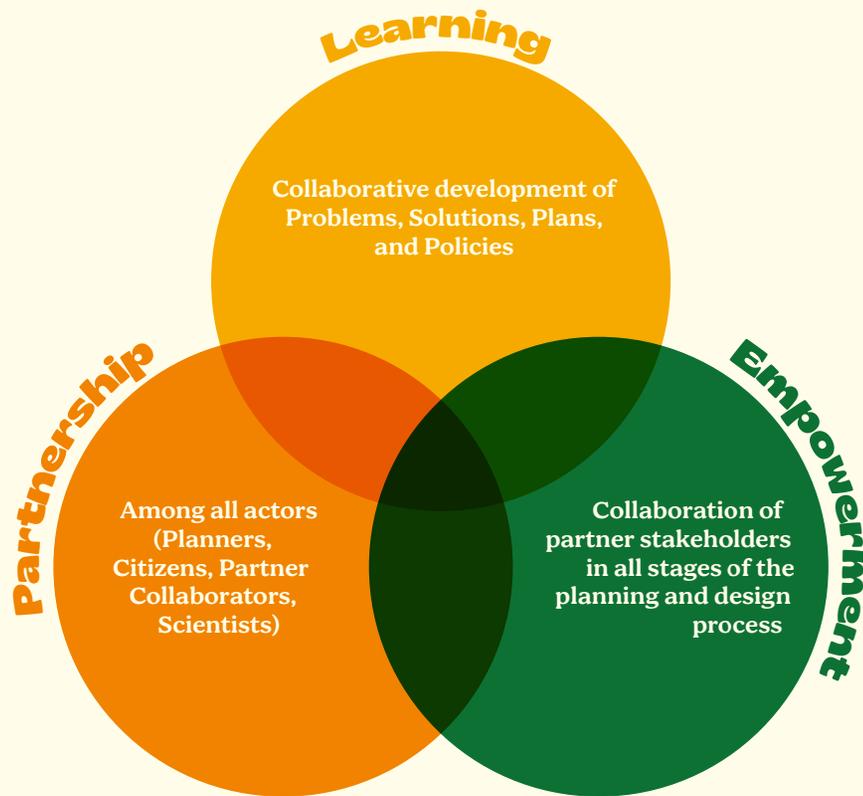
Participatory Planning:

The concept of participatory planning (Figure 1.3) is rooted in the principles of communicative planning, which provides a concep-

tual framework when using the local knowledge of residents focused on policy issues that are considered controversial. Participatory planning theory recognizes that multiple and diverse types of knowledge produce more robust planning solutions and that residents' local or "ordinary" knowledge (Lieberknecht 2022) is a key contribution to the planning process.

Rural Placemaking:

Placemaking is carried out through the ability to self-define and represent a place, acquiring control over natural or other resources. This concept is defined as creating "quality places," or places where people want to be to work, play, live, learn, shop, and visit (Wyckoff et al. 2015) and where a sense of belonging prevails.



Placemaking Rural

Strategic Placemaking

- Physical Space
- Cultural
- Governance

Community Capital

- Natural Capital
- Human and Social Capital
- Infrastructure and Supplies Capital

(Key elements of participatory planning. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 9-10)

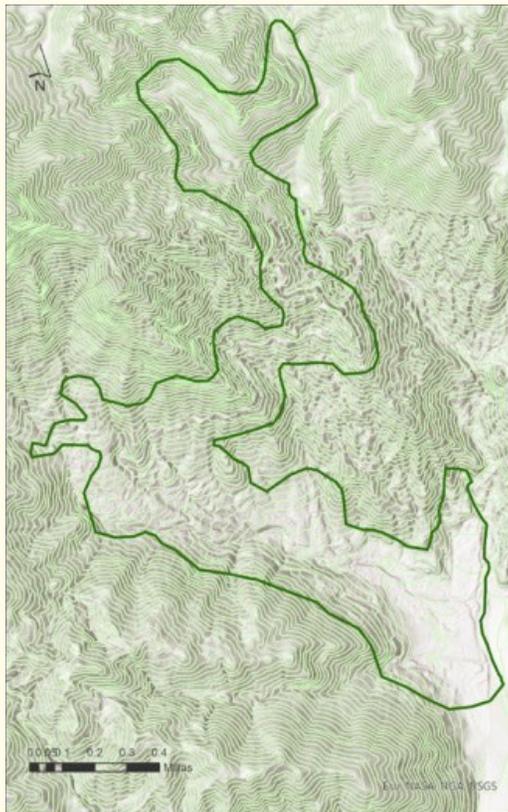




Topography, Geology, and Climatology

Topography:

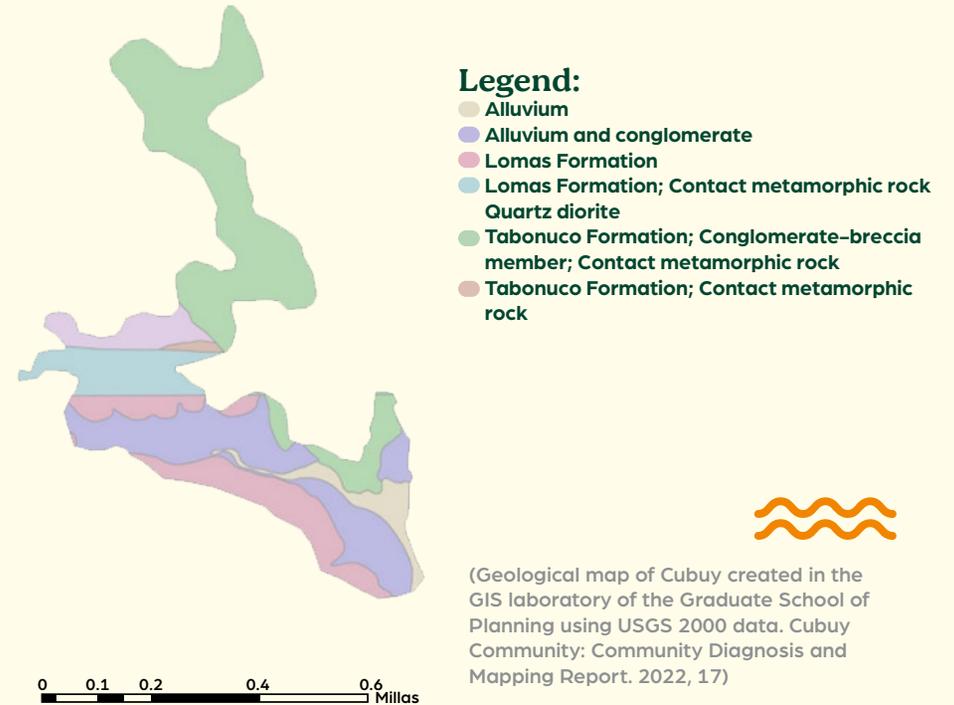
The Naguabo Municipality and the Cubuy Community are in the Southeast Regional area. The northern part is located within the Luquillo Mountain Range. Among the hills that make up the Sierra de Luquillo, Río Blanco is bordered by the East and West peaks, which are 1,051 and 1,020 meters (3,448 and 3,346 feet) above sea level. The rest of Río Blanco is flat.



(Topography of the Cubuy Community and its surroundings. Map created in the GIS Laboratory of the Graduate School of Planning using CRIM data. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 16)

Geology:

The geological components of the Cubuy neighborhood in Naguabo are predominantly of volcanic origin and include alluvium, fanglomerate, quartz diorite, and rock belonging to the Tabonuco formation.



Legend:

- Alluvium
- Alluvium and conglomerate
- Lomas Formation
- Lomas Formation; Contact metamorphic rock Quartz diorite
- Tabonuco Formation; Conglomerate-breccia member; Contact metamorphic rock
- Tabonuco Formation; Contact metamorphic rock

(Geological map of Cubuy created in the GIS laboratory of the Graduate School of Planning using USGS 2000 data. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 17)

Climatology:

Río Blanco's climate is humid subtropical in the south, very humid subtropical in the center, and very humid lower montane in the northern strip (DRNA 2015). Abundant rainfall is recorded most of the year due to drainage from part of El Yunque and the orographic effect of the Sierra. Data recorded for the Río Blanco Basin indicates an average annual rainfall of 99 inches.

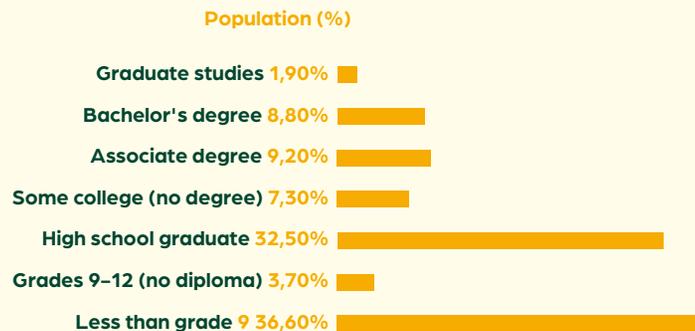


Health and Socioeconomic Characteristics

Río Blanco Census Data (2020 Census): Below is 2020 census data for the Río Blanco barrio of Naguabo, compiled from the U.S. Census Bureau:

- Total population: 2,813
- Median age: 43.6
- People over 65 years of age: 31%.
- Median income: \$9,283
- People living below the poverty level: 38.6%.
- Schooling level (Figure 4.1)

Educational Level of Río Blanco, Naguabo



(Educational level of Río Blanco. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 17)



Health:

The direct health services available in the Cubuy Community are in the urban area of the Naguabo Municipality at an approximate distance of 5.778 miles (9.3 km):

- Three (3) Vaccination Centers
- Naguabo Medical Mall (former public health clinic or Center for Diagnosis and Treatment) offers various medical services, including a 24-hour emergency room, mental health crisis stabilization room, clinical laboratory, x-rays, vaccination clinics, and health and dental certification. WIC, Medicaid, and Demographic Registry offices are also located in the facility.
- The Municipality of Naguabo does not have the following services:
 - Center for the Prevention and Treatment of Communicable Diseases (CPTET)
 - Division of Mothers, Children and Adolescents
 - Rape Victims Assistance Center
- In the last Community Survey administered by the U.S. Census Bureau in 2020, general data was collected regarding the health status of the population of Barrio Río Blanco in Naguabo, Puerto Rico. It was estimated that 21.8% of the population lives with functional diversity, which is a high rate compared to the total for the Municipality, which was 9.1%. Among the conditions are:
 - Hearing impairment- 11.2%.
 - Sight-related difficulties- 5.3%.
 - Cognitive difficulties- 10.1%.
 - Ambulatory difficulties- 10.9%.
 - Self-care difficulties- 10.9%.
 - Difficulty living independently- 24%



Existing Infrastructure

The following public safety and government services agencies are in the urban area of the Naguabo municipality, at an approximate distance of 6 miles (9.6 km) from the community of Cubuy:

- Two (2) Police Stations (State and Municipal)
- Fire Station
- Governmental Center
- Emergency Management Office

Aqueduct and electric power infrastructure:

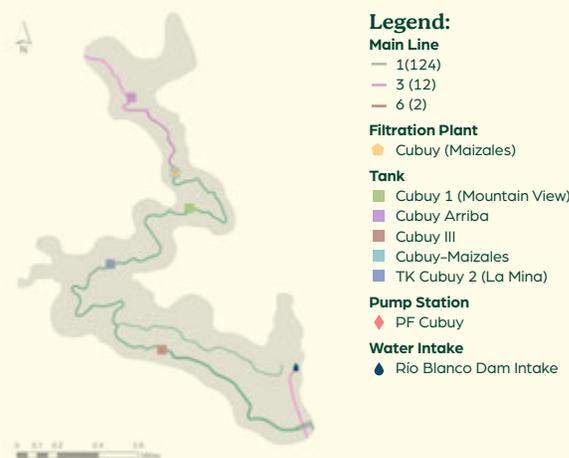
The municipality of Naguabo is part of the Eastern Operational Region of the Puerto Rico Aqueduct and Sewer Authority (PRASA). The closest commercial offices are in the municipalities of Humacao and Fajardo. As for electric transmission service, Energy's operational and commercial offices are in the Southern Division, Caguas District. The closest commercial office to Cubuy is in the Municipality of Humacao. Below are three maps of the aqueduct and electric power infrastructure delimited to the Cubuy Community:

Electric Power Infrastructure



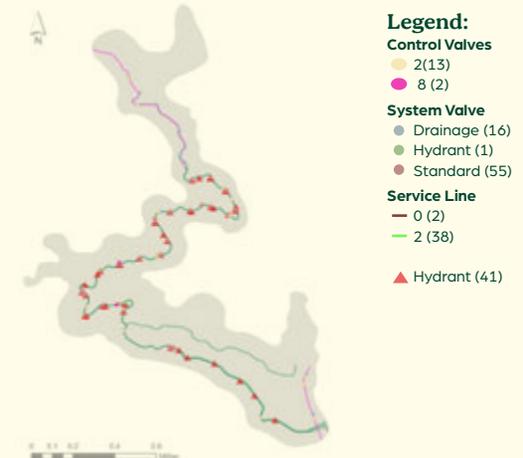
Electric Power Infrastructure: Represents prominent points of transmission outlets, the existing substation, and electricity transmission lines.

Water Infrastructure (1 of 2)



Water Infrastructure Part 1: Represents prominent points of the mainline, filtration plant, tanks, pump station, and one water intake.

Water Infrastructure (2 of 2)



Water Infrastructure Part 2: Represents prominent points of control and system valves, two service lines, and hydrants.

(Map of Cubuy's electric power and water infrastructure created in the GIS laboratory of the Graduate School of Planning using data from AEE and AAA. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 19)



Transportation infrastructure:

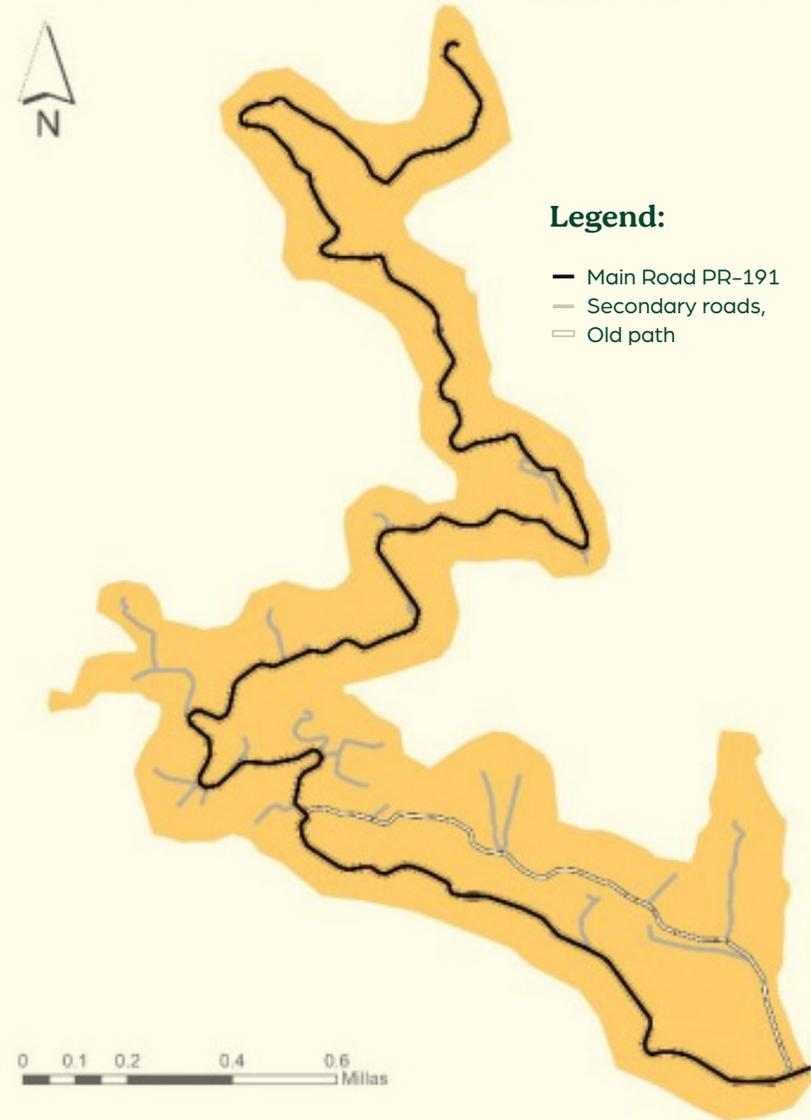
The following transportation infrastructure map shows the features associated with the roadways that cross and connect the Cubuy community. Prominent features related to this map include PR-191 and Camino Viejo, which serve as an alternate route. The Camino Viejo serves a historical and practical purpose for its residents.



(Transportation infrastructure map developed in the GIS laboratory of the EGP based on the 2020 Census data. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 20)



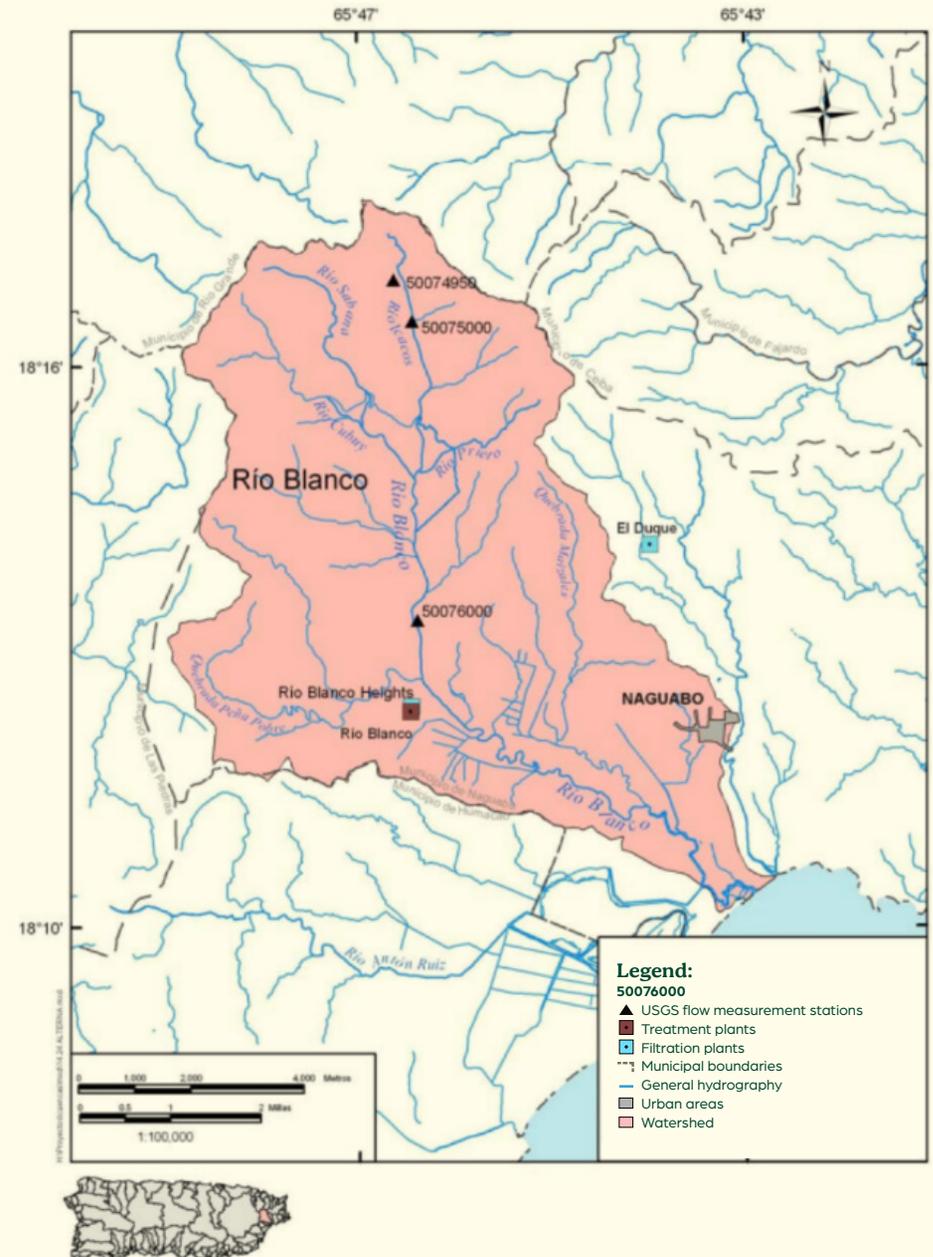
Transportation Infrastructure





Natural Resources and Land Coverage

The Río Blanco River basin includes 27.7 mi² on the Sierra de Luquillo southern slopes in the Naguabo Municipality. This river basin drains the southeastern area of the El Yunque National Forest and includes the Sabana, Icacos, Cubuy, and Prieto Rivers. The Río Sabana originates at elevations up to 3,024 feet and flows down the southeastern slopes of El Yunque, joining the Río Icacos from where it flows as the Río Blanco. The Cubuy and Prieto Rivers flow into the Río Icacos upstream of the confluence with the Río Sabana. In the upper reaches of the river basin, the river flows south to the former Río Blanco hydroelectric plant, where part of the flow is diverted to the former Roosevelt Roads Naval Station in Ceiba. The river continues its course to the coastal valley of Naguabo and the PRASA water intake that feeds the Naguabo Filtration Plant, then flows to its mouth at the Vieques Passage. Most of the land in the riverbed is rural, covered primarily by forests in the upper reaches and pastures in the valley.



(Río Blanco Basin. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 27)





Land Use Patterns

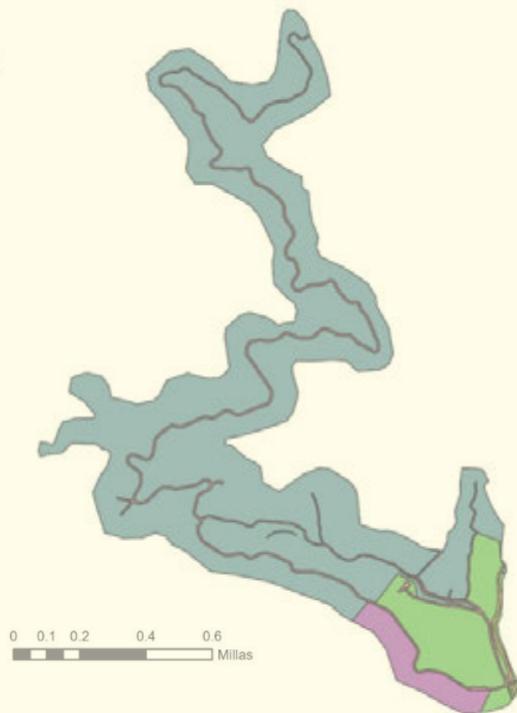
To identify the land use patterns in the Cubuy Community, data from the Puerto Rico Planning Board, extracted at the Geographic Information Systems Laboratory of the University of Puerto Rico Graduate School of Planning, Río Piedras Campus, were consulted. To illustrate the land use pattern, two maps were generated: land classification and land qualification, with their respective legends.

- Cubuy's land classification: The land qualification is predominantly B-1 Interior Forest, shaded blue on the map. Red lines represent the road system. In the southern end of the community, there is soil with general agricultural and productive agricultural qualifications.
- Cubuy's land classification: The land classification is predominantly Specially Protected Rustic Land – Ecological, and in the extreme south it is Specially Protected Rustic Land – Agricultural. Green lines represent the road system. Most of the land in the Cubuy community is classified as Interior Forest and Specially Protected Rustic Land – Ecological due to its location in the Luquillo Mountain Range.

Cubuy Soil Rating

Legend:

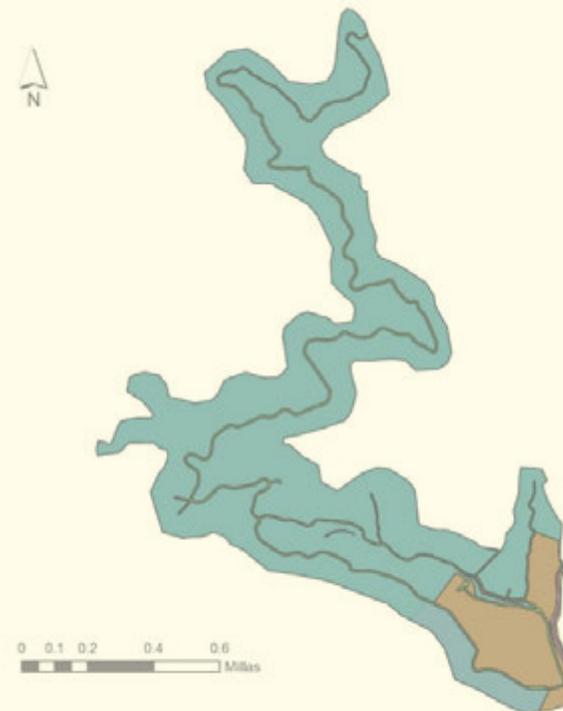
- General Agricultural
- Productive Agricultural
- Forest
- Body of water
- Road system



Cubuy Soil Classification

Legend:

- Body of water
- Road system
- Especially Protected Rustic Soil – Agricultural
- Especially Protected Rustic Soil – Ecological



(Maps produced in the GIS laboratory of the EGP using data from the Puerto Rico Planning Board. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 14)





Risks and Susceptibility

This section contains a series of maps related to existing risks and vulnerability factors in Cubuy. Existing information was consulted to create the risk maps. In addition, data was collected in the community after consultation with its leaders, and an additional map was developed with the risks identified during the visits.



(Landslides and high-risk areas in Cubuy. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 29)



Landslide risk map after Hurricane María (USGS) and susceptibility (USDA):

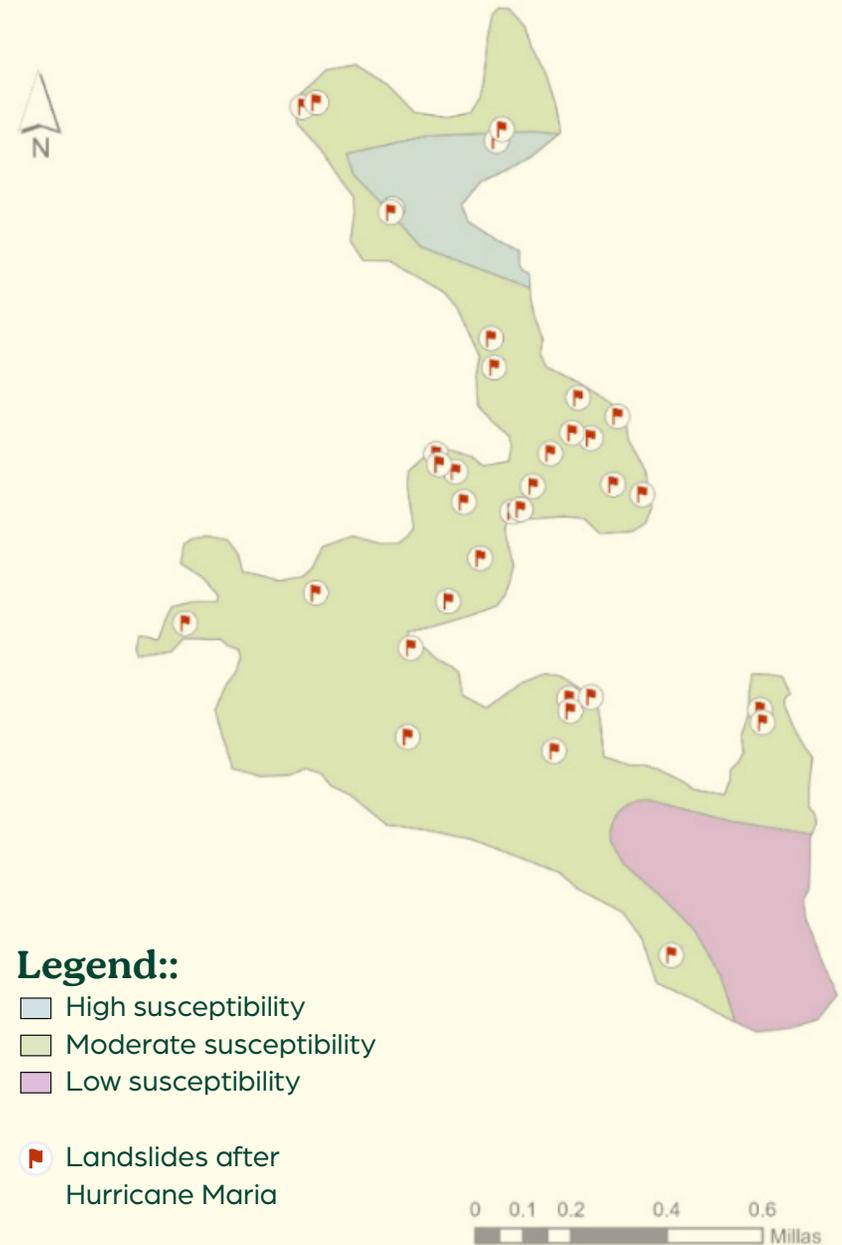
The potential risk of landslides in specific areas that are susceptible within Cubuy is depicted. Also identified are 33 landslides caused by the 2017 Hurricane María extreme weather event. The pastel blue shaded area marks high landslide susceptibility. The pastel green shaded areas mark moderate susceptibility, and the lilac shaded area marks low landslide susceptibility. Among the various landslide hazards are ground rupture or cracking, intense erosion, burial of infrastructure, and loss of life. In the case of Hurricane María, the social vulnerability was exacerbated due to the total lack of communication between people in the community, the obstruction of roads, the rupture of drinking water pipes, and damage to the power lines.



Cubuy landslide risk map developed in the GIS laboratory of the EGP based on data from the United States Geological Service (2019) and Natural Resources Conservation Service (1979). Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 29)



Landslide Risk



Flood Risk Map (USDA):

The potential risk of flooding in specific areas that are susceptible in Cubuy is represented. Four risk zones were identified and categorized according to their periodicity, whether it is frequent, occasional, no occurrence, and without sufficient information to evaluate. This map shows that most of the area is shaded blue with no risk of flooding. The pink-shaded area to the south of the community represents a higher potential frequency of flooding than any other area. There is occasional flood risk in the extreme southern part of the Cubuy and along Camino Viejo. As for the structures extending around Cubuy, a majority are observed in use in shaded areas with no potential flood risk. A few unused structures are concentrated in the extreme western part of the community. Water currents can cause repeated flooding, and broken electrical wires and culverts can cause injury or illness. The risk of flooding in Cubuy is greater due to its climate and location, given the drainage of part of El Yunque and the surrounding drainage basins.

Erosion map (USDA):

This map shows the potential risk of susceptible soil erosion in the Cubuy community. There are several threats caused by natural conditions in the soils with moderate evolution and fertility, high climatic variability, and cloudiness, in addition to anthropic pressure on the soil and water resources, manifested by moderate erosion processes in some properties. The areas shaded in red represent very high susceptibility to erosion processes and degrees of erosion. In this case, they represent sites with moderate or light susceptibility and are scattered in small plots. The erosion risk was not rated in several places and was represented in pink.

Flood Risk

Legend:

Risk

- Frequent
- Occasional
- None
- No information

Structures

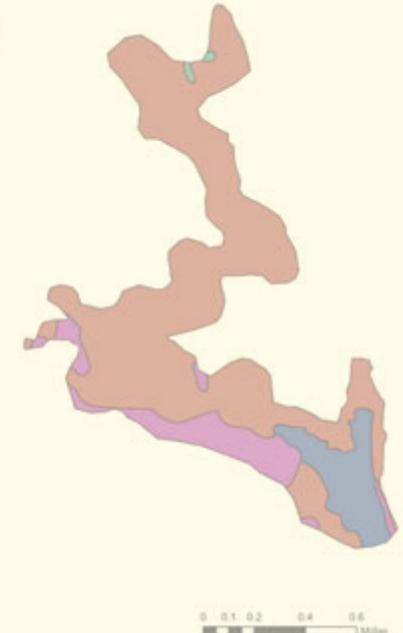
- In use
- Not in use



Erosion Risk

Legend:

- Severe
- Moderate
- Light
- Not rated



(Flood and erosion risk maps of Cubuy developed in the GIS laboratory of the EGP based on data from the Natural Resource Conservation Service, USDA (1979). Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 29)





Cubuy Community Tourist Assets

During the community mapping process and visits for data collection, tourist points of interest were collected. From these points, the following map of tourist attractions was developed, which includes:

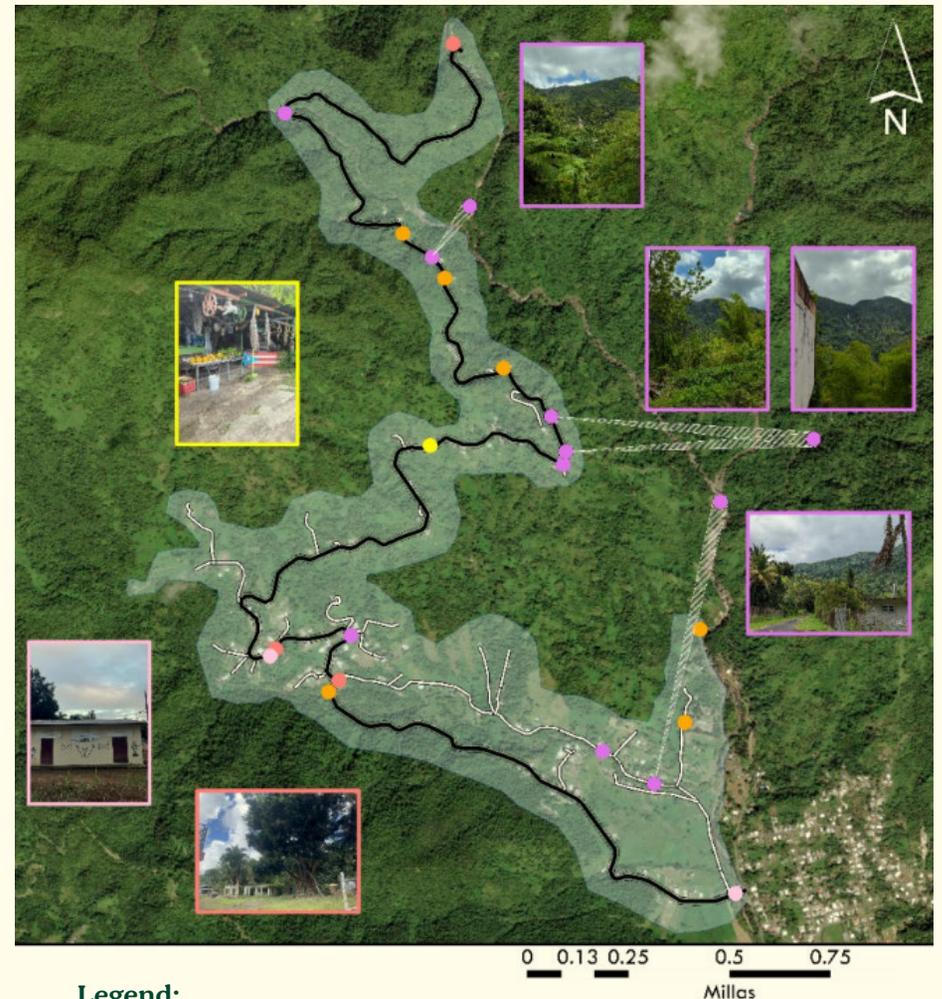
- **11 points of scenic tourism value:** refers to the natural attractions and landscapes that a destination has to offer to visitors.
- **6 points of leisure and enjoyment tourism value:** relates to leisure and entertainment activities that a destination provides to visitors.
- **3 points of recreational tourism value:** focuses on opportunities for outdoor and recreational activities.
- **3 points of historical tourism value:** pertains to the historical and cultural heritage of a destination. In the case of Cubuy, many Taíno archaeological sites can be found.
 - **Route 191 in Río Blanco, includes six (6) historical points:** the historic Río Blanco Bridge, the Stone House, the Río Blanco Reservoir, the Florida Bridge, the La Mina Community Center, and the Piedra del Indio.

Most of these attractions are located along the main road PR-191. The tourist and recreational potential of these points is recognized, representing an opportunity for development and enjoyment for visitors and community members.

Tourist attractions: The following types of attractions were identified:

- Natural / Landscape: Charco El Hippié
- Recreational Viewpoint (mirador): Río Sabana Recreational Area
- Lodging: Casa Cubuy Ecolodge, Casa Parcha Area

Mapa de activos turísticos de la comunidad de Cubuy, Naguabo, Puerto Rico



Legend:

- ▭ Cubuy Community Boundary
- ▬ Main Road PR-191
- ▭ Secondary roads

Tourist assets Type of tourist value

- Scenic (11)
- Leisure / enjoyment (6)
- Recreational (3)
- Historic (2)
- Other (1)



(Map of tourist assets of the Cubuy community. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 39)


**Casa
Parcha**




**Área
Recreativa
Río Sabana**



**Casa
Cubuy
Ecologde**



(Photos of assets on Route 191. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 40)



**Charco
El Hippiie**





Built Environment and Settlement

ArcGIS Survey 123 was used to identify public structures and obstructions as part of the community mapping. This Geographic Information Systems (GIS) application was used to create a list in which each structure was located and classified according to its use and/or condition.

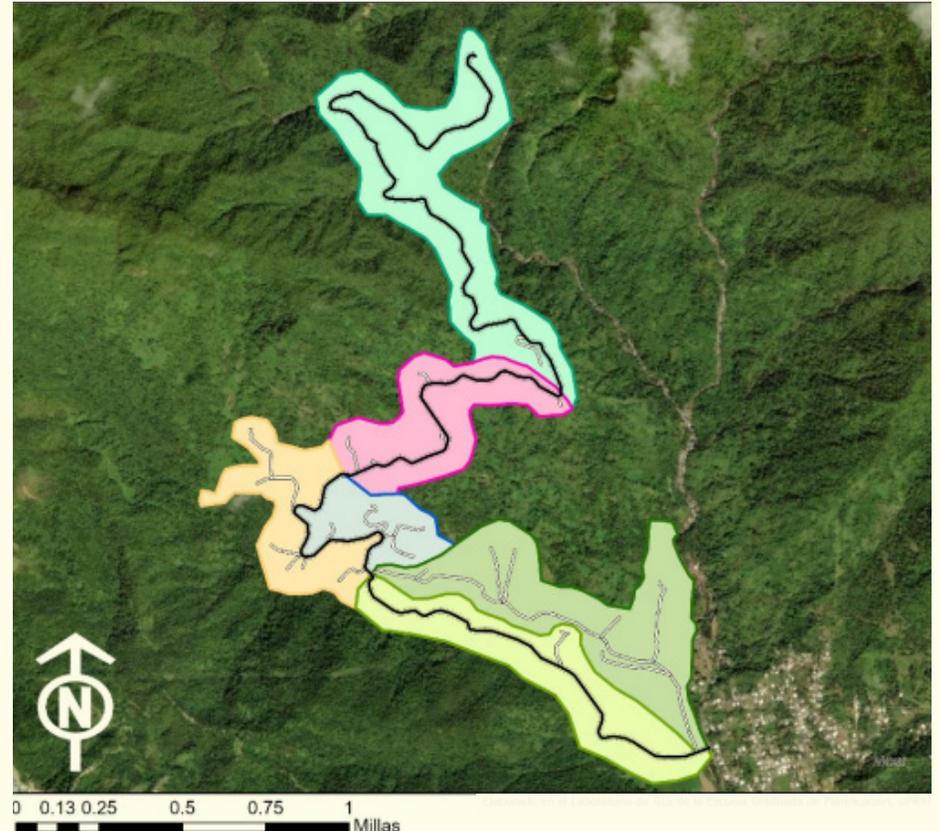
This section includes data collected during visits to Cubuy in 6 maps comprising the 6 sections (A through F) into which the community was divided to facilitate data collection. Each map contains the following information:

- Structures inventory
- Dwelling
- Vacant
- Warehouse
- Commerce
- Hostelry
- Community
- Church
- Other
- Not determined
- Potential public nuisance

In addition, each section starts from a reference point specified in it. This reference point was used to facilitate the understanding of the data and location of each section.

After consultation with collaborating partners, the Cubuy community was divided into 6 working sections, A to F, to facilitate data collection and presentation.

Division of Cubuy Community into work sections A-F



Legend:

- Main Road PR-191
- ▬ Secondary roads

- Section A
- Section B
- Section C
- Section D
- Section E
- Section F



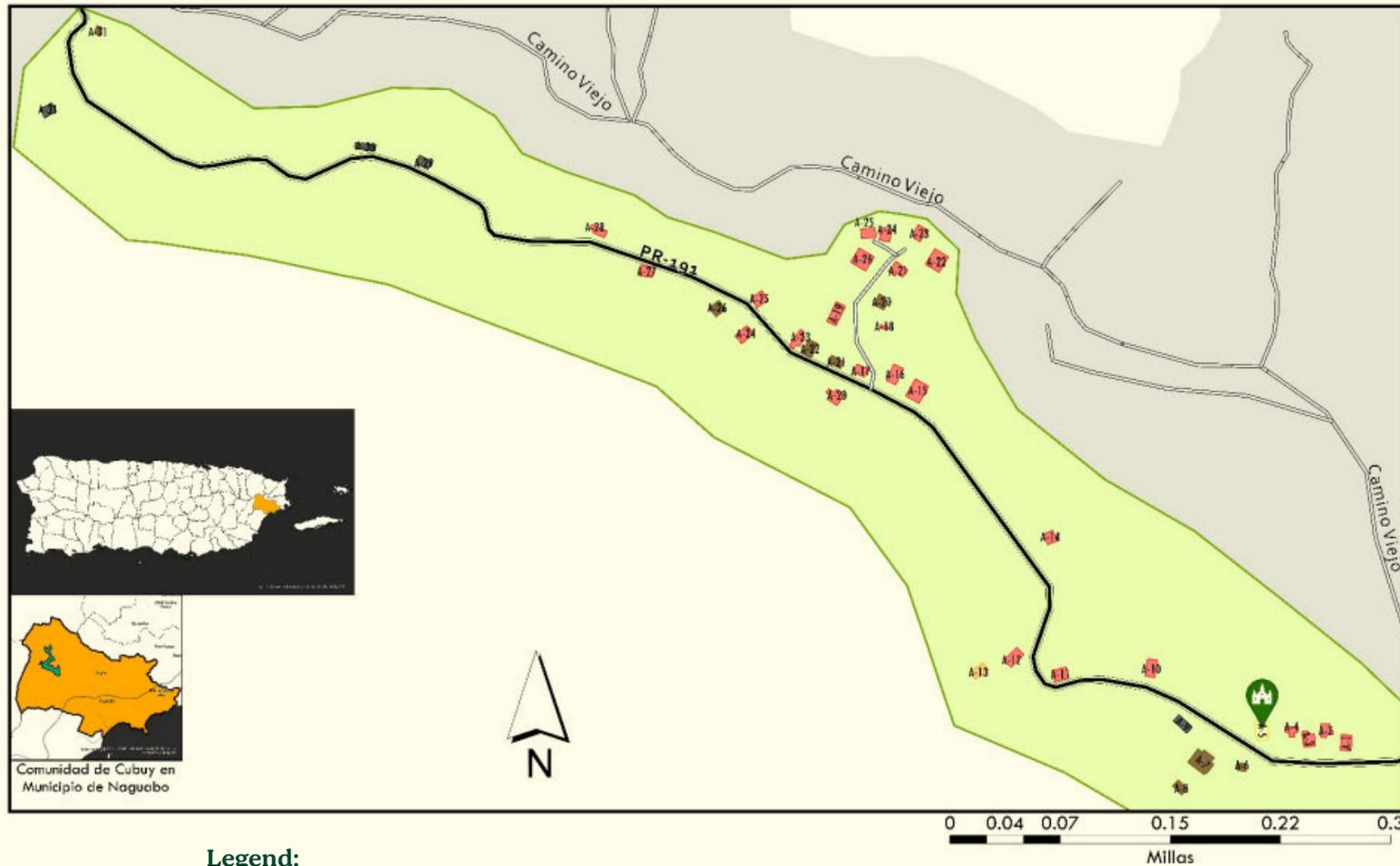
(Division of Cubuy Community into work sections A-F. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 39)



Section A is located at the edge of Camino Viejo, on the main road PR-191. This section identifies 25 housing structures, 8 vacant structures, 4 potential public nuisances, and 1 undetermined structure. The reference point for this section is the Iglesia de Dios Primitiva, Inc.

Map of structure use in Cubuy, Naguabo, Puerto Rico Section A

(Map of structure use in Cubuy. Section A. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 21)



Legend:

- Section A Boundary
- Main Road PR-191
- Secondary roads

Apparent use of the structure

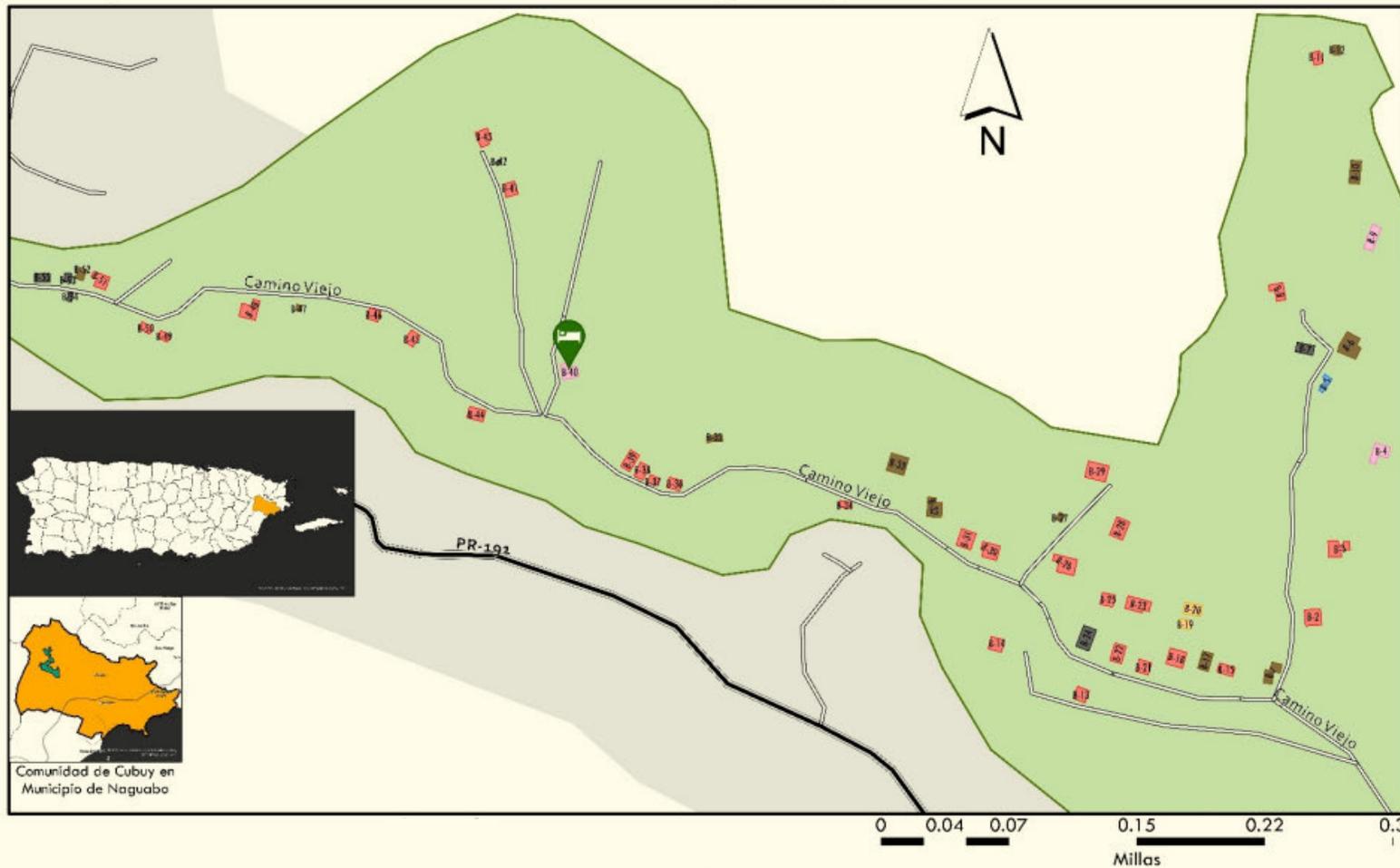
- Residence (25)
- Unoccupied (8)
- Cannot be determined (1)
- Possible public nuisance (4)
- Church (1)

- b+ Primitive Church of God Inc.

Section B is located north of Section A, predominantly on the Camino Viejo secondary road. In this section 31 dwellings, 11 vacant structures, and 3 lodges were collected. This section marked six potential nuisances, 1 warehouse, and 2 undetermined structures. The reference point for this section is the Pica-flores House.

Map of structure use in Cubuy, Naguabo, Puerto Rico Section B

(Map of structure use in Cubuy, Section B. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 22)



Legend:

- Section B Boundary
- Main Road PR-191
- Secondary roads

Apparent use of the structure

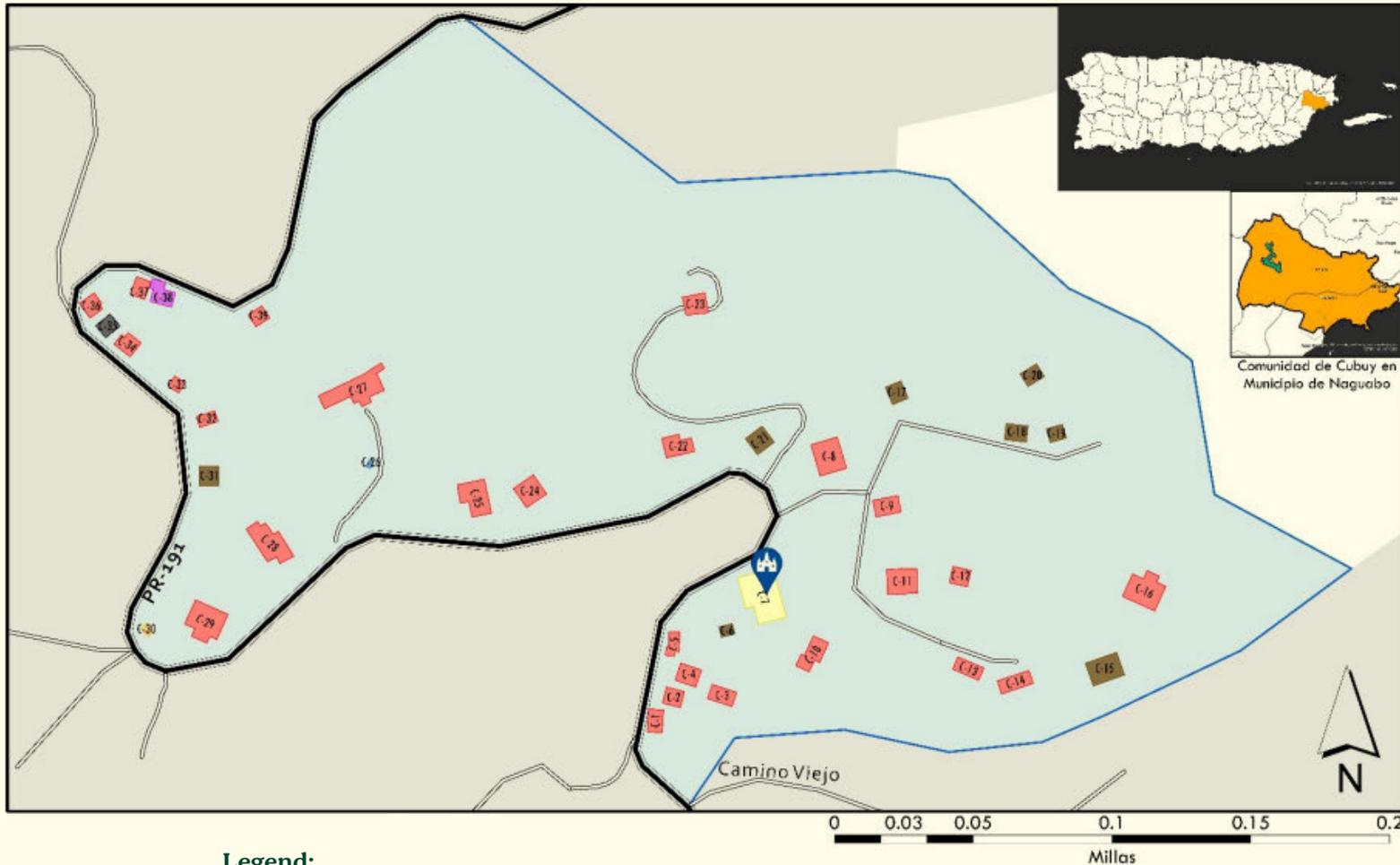
- Residence (31)
- Unoccupied (11)
- Guesthouse (3)
- Warehouse (1)
- Cannot be determined (2)
- Possible public nuisance (6)

Casa Pica-flores

Section C is located northwest of Section B of the Cubuy community and includes structures and nuisances along the secondary road to PR-191. Twenty-six dwellings, 8 vacant structures, 1 warehouse, 1 commercial, 1 potential nuisance, and 1 undetermined structure were identified. The reference point for this section C is the Iglesia Evangélica Unida, Congregación La Mina (Evangelic Church United, La Mina Congregation).

Map of structure use in Cubuy, Naguabo, Puerto Rico Section C

(Map of structure use in Cubuy, Section C. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 23)



Legend:

- Section C Boundary
- Main Road PR-191
- Secondary roads

Apparent use of the structure

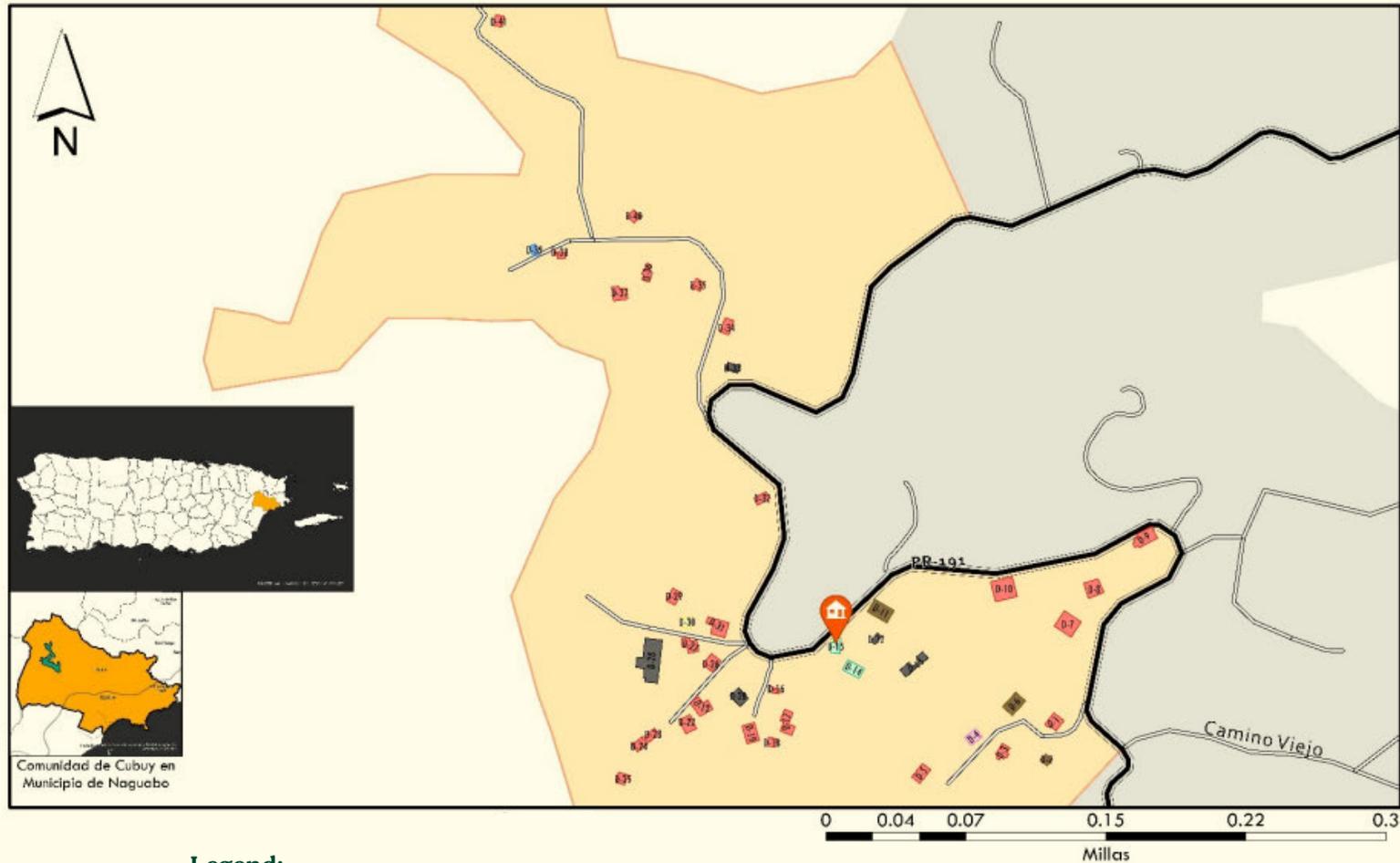
- Residence (26)
- Unoccupied (8)
- Warehouse (1)
- Commercial (1)
- Church (1)
- Cannot be determined (1)
- Possible public nuisance (1)

United Evangelical Church Congregation La Mina

Section D located at the eastern end of Cubuy. The structures are subdivided along Highway PR-191 and secondary roads. Regarding the apparent use of the structures, 28 dwellings, 3 vacant structures, 1 warehouse, and 1 church were identified. Five potential public nuisances were identified in this section. The Cubuy Community Center (also called La Mina community center, formerly La Mina School) serves as the reference point.

Map of structure use in Cubuy, Naguabo, Puerto Rico Section D

(Map of structure use in Cubuy, Section D. Cubuy Community: Community Diagnosis and Mapping Report, 2022, 24)



Legend:

- Section D Boundary
- Main Road PR-191
- Secondary roads

Uso aparente de la estructura

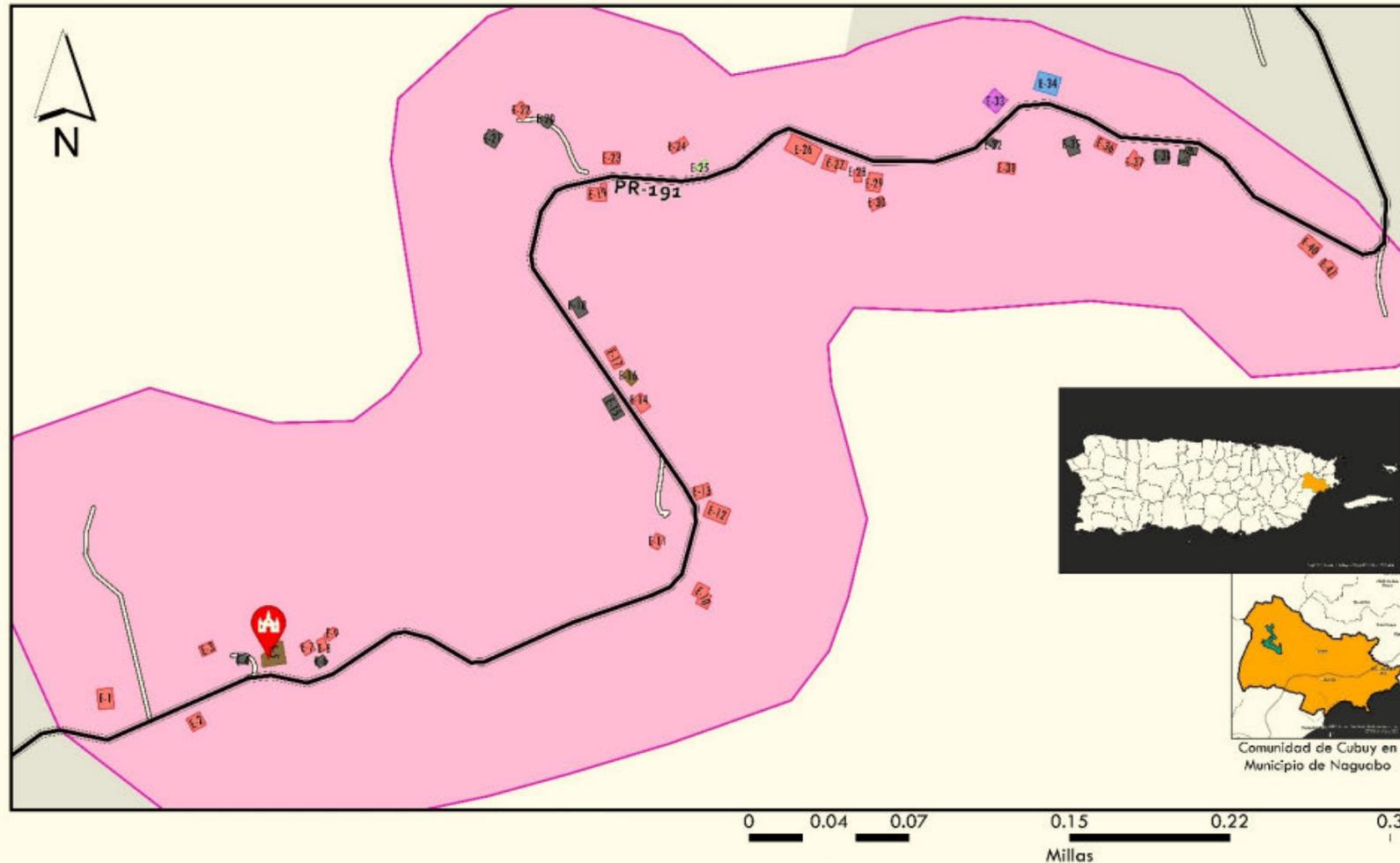
- Residence (28)
- Unoccupied (3)
- Community (2)
- Warehouse (1)
- Church (1)
- Other (1)
- Possible public nuisance (5)

Cubuy Community Center

Section E is in the northern part of the community of Cubuy and predominantly along PR-191. It identified 26 housing structures, 2 unoccupied structures, 1 warehouse, and 1 commercial. There are 10 possible public nuisances in this section. The reference point is the Old Church (Antigua Iglesia).

Map of structure use in Cubuy, Naguabo, Puerto Rico Section E

(Map of structure use in Cubuy, Section E. Cubuy Community: Community Diagnosis and Mapping Report, 2022, 25)



Legend:

- Section E Boundary
- Main Road PR-191
- Secondary roads

Apparent use of the structure

- Residence (26)
- Unoccupied (2)
- Warehouse (1)
- Commercial (1)
- Commercial, Residence (1)
- Possible public nuisance (10)
- ⛪ Old Church

Section F was delimited along PR-191 at the northern end of the community. In this section, 4 hostels, 4 unoccupied structures, 3 dwellings, 4 undetermined, and 2 possible public nuisances were identified. The Río Sabana Recreational Area is the established reference point.

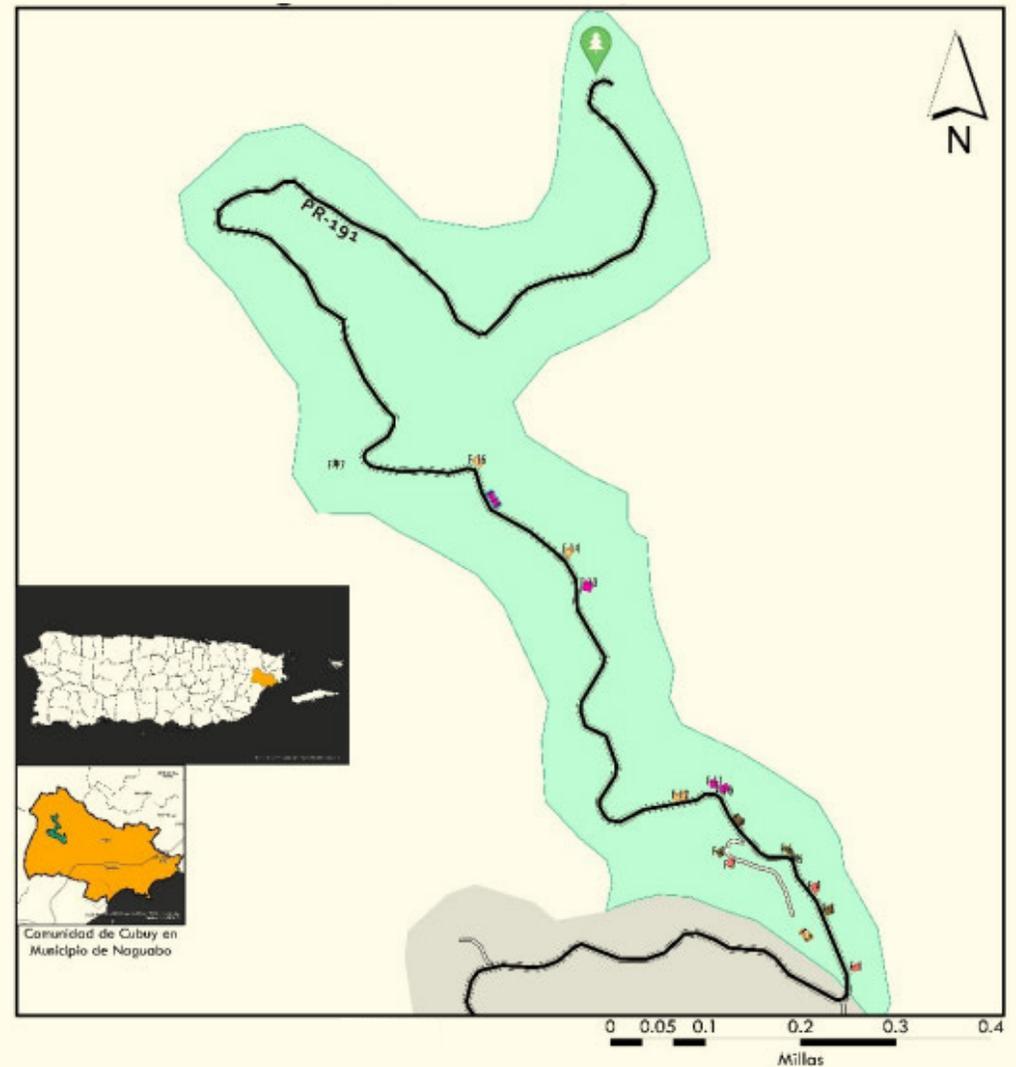
Map of structure use in Cubuy, Naguabo, Puerto Rico Section F

Legend:

- Section F Boundary
- Main Road PR-191
- Secondary roads
- Apparent use of the structure**
- Guesthouse (4)
- Unoccupied (4)
- Residence (3)
- Cannot be determined (4)
- Possible public nuisance (2)
- Sabana River recreational area



(Map of structure use in Cubuy. Section F. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 26)





(EGP students creating the risk maps. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 29)



Risk maps identified during community visits:

During the visits, data was collected on areas susceptible to flooding, erosion, and landslides based on the experience of local leaders. Before data collection, areas historically impacted by these risks were previously identified on a map together with the leaders. Next, photos of the community mapping process and identification of risks are shared. Then, the risk maps are presented in sections developed from the information collected.

The School of Planning recommends focusing on sections representing landslides, flooding, and especially soil erosion risks. Being surrounded by many creeks and streams, attention must be given to water channels, pipes, and any infrastructure essential for water distribution. Because of Cubuy's climate, the frequency of rainfall affects the soil, and consequently, erosion occurs in sections A, B, and D. The areas with the highest landslide risk were those located along Road 191 in sections B, D, E, and F. Sections A and B is the lowest and closest to creeks and rivers, which leads to more water accumulation in extreme rainfall events, and therefore more risk of flooding.





Risk maps found in Cubuy, Naguabo

Description:

The map shows the following potential risks found in sections A (neon green) and B (turquoise) of the Cubuy community:

- **Landslides** – 2 points of impact risk to people and 3 points of risk of impact to structures or infrastructure located on the PR-191 road are identified.

- **Potential water erosion** – 6 potential risk points to structures or infrastructure are identified predominantly on Camino Viejo.
- **Potential Flooding**– 2 points of potential risk to people and 5 points of impact risk to structures or infrastructure are identified on both roads.



Risk Map found in Cubuy, Naguabo, Puerto Rico | Sections A and B

Legend:

- Section A Boundary
- Section B Boundary
- ▬ Main Road PR-191
- ▬ Secondary roads

Potential landslide risk

- Includes risk of impact to people
- Includes risk of impact to structures and infrastructure

Potential water erosion risk

- Includes risk of impact to structures and infrastructure

Potential flooding risk

- ▲ Includes risk of impact to people
- ▲ Includes risk of impact to structures and infrastructure



(Risk map for sections A and B. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 32)

Description:

The map shows the following potential risks found in sections A (neon green) and B (turquoise) of the Cubuy community:

- **Damaged power lines** – 29 power line poles damaged
- **Clandestine landfills** – 6 points with regular garbage, 2 points with all types of waste.
- **Potential obstruction** – 6 points with potential obstruction.



Risk Map found in Cubuy, Naguabo, Puerto Rico | Sections A and B

Legend:

Section A Boundary	Illegal dumpsite
Section B Boundary	Type of trash
Main Road PR-191	Regular trash
Secondary roads	All types of trash
Damaged electrical lineo	Potential obstruction
Type of damage	
Corroded	
Hanging	
Contains tree branches	
Tilted	

(Risk map for sections A and B. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 33)



Description:

The map shows the border of Section C (blue), Section D (orange), and Section E (pink). There are several points:

- **Landslide**– 2 risk points of impact to people and 4 risk points of impact to structures or infrastructure located on the PR-191 road are identified.
- **Potential water erosion** – 1 potential risk point of impact to people and 2 risk points to structures or on PR-191 are identified.



Risk Map found in Cubuy, Naguabo, Puerto Rico | Sections C, D, and E

Legend:

- Section C Boundary
- Section D Boundary
- Section E Boundary
- ▬ Main Road PR-191
- ▬ Secondary roads

Potential landslide risk

- Includes risk of impact to people
- Includes risk of impact to structures and infrastructure

Potential water erosion risk

- Includes risk of impact to people
- Includes risk of impact to structures and infrastructure

(Risk map for sections C, D, and E. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 34)

Description:

The map shows the border of Section C (blue), Section D (orange), and Section E (pink). There are several points:

- **Power lines according to the type of damage due to inclination** – 1 due to overhanging lines, 1 due to tree branches, and 2 due to other types of damage.
- **Clandestine landfills** – 1 point is identified for regular garbage, 2 points for all types of waste.
- **Potential obstruction** – 6 points identified as potential obstructions.



Risk Map found in Cubuy, Naguabo, Puerto Rico | Sections C, D, and E

Legend:

- | | |
|--|--------------------|
| Section 3 Boundary | Illegal dumpsite |
| Section D Boundary | Type of trash |
| Section E Boundary | Regular trash |
| Main Road PR-191 | All types of trash |
| Secondary roads | |
| Damaged electrical line or Type of damage | |
| Hanging | |
| Contains tree branches | |
| Tilted | |
| Other | |

(Risk map for sections C, D, and E. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 35)



Description:

The map shows the following potential risks found in Section F of the Cubuy community:

- **Landslides** - 8 impact points to structures or infrastructure on the PR-191 Road were identified.
- **Potential water erosion** - 2 potential risk points to structures or infrastructure are identified predominantly in Camino Viejo.

Risk Map found in Cubuy, Naguabo, Puerto Rico / Section F

Legend:

- Section F Boundary
- ▬ Main Road PR-191
- ▬ Secondary roads

Potential landslide risk

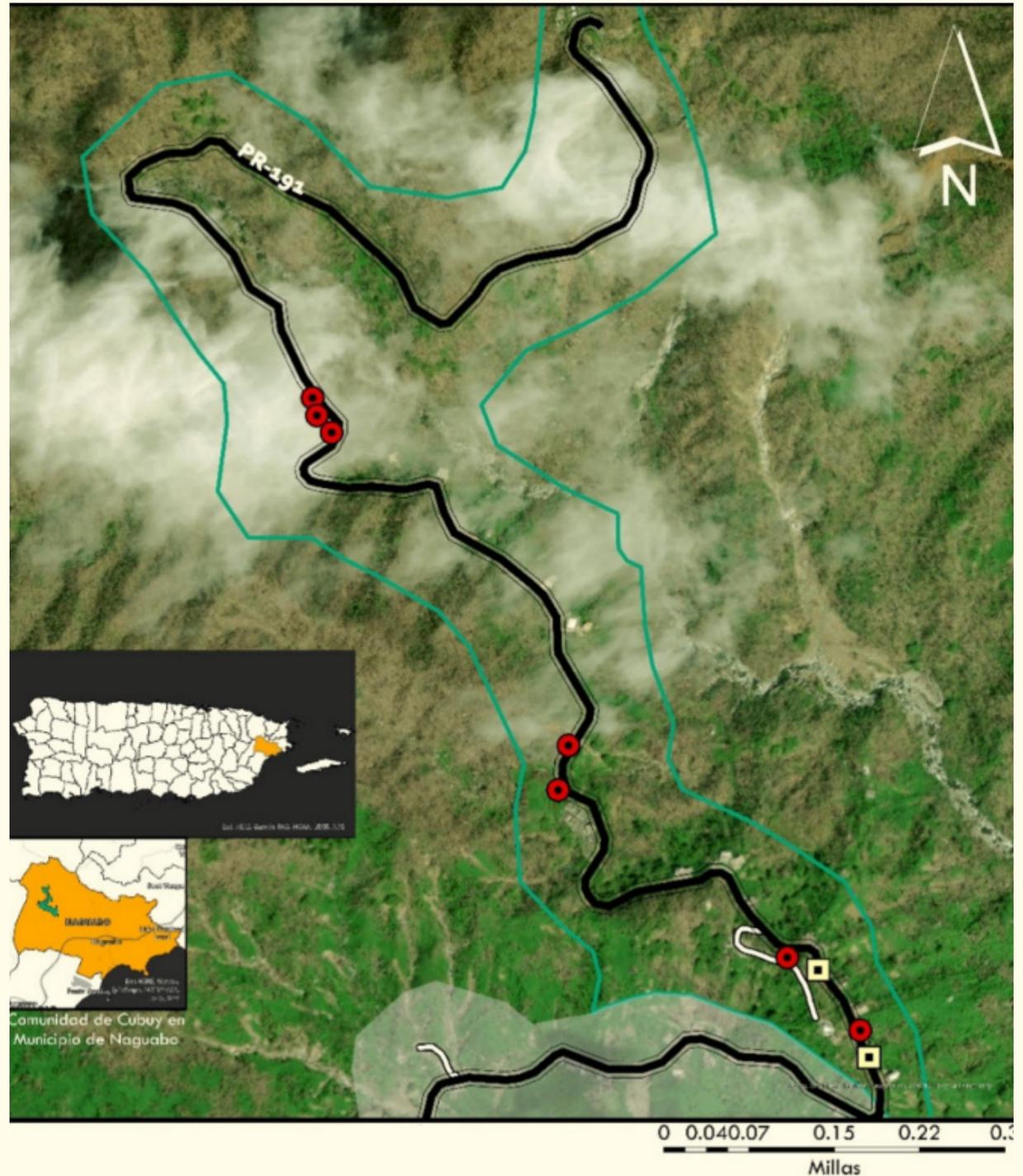
- Includes risk of impact to structures or infrastructure

Potential water erosion risk

- Includes risk of impact to structures and infrastructure



(Risk map for section F. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 36)



Description:

The map shows the following potential risks found in section F of the Cubuy community:

- **Damaged power line** - 1 point of a damaged (decayed) power line.
- **Potential obstruction** - 3 points were identified as potential obstructions.

Risk Map found in Cubuy, Naguabo, Puerto Rico / Section F

Legend:

- ▭ Section F Boundary
- ▬ Main Road PR-191
- ▭ Secondary roads

Damaged electrical line

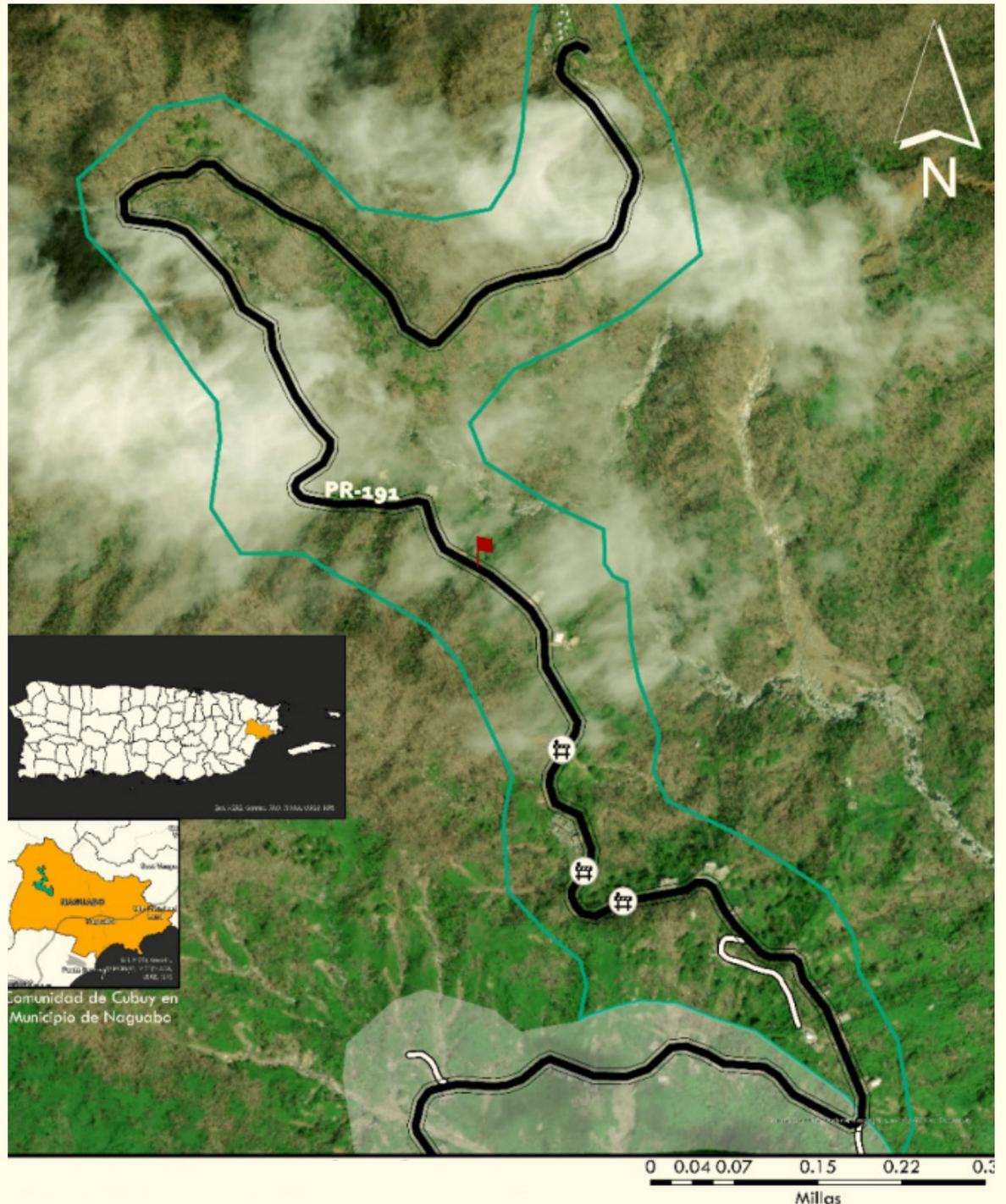
Type of damage

- ▭ Corroded

- ⊗ Potential obstruction



(Risk map for section F, Graduate School of Planning, UPRRP, Cubuy Community: Community Diagnosis and Mapping Report, 2022, 37)



Cubuy roads condition:

Using ArcGIS Quick Capture application, the Cubuy roads were traveled to identify their condition. Three road characteristics were identified:

- **Road in good condition (green)**
- **Road in poor condition (red)**
- **Risk on the road (red dot with photos)**

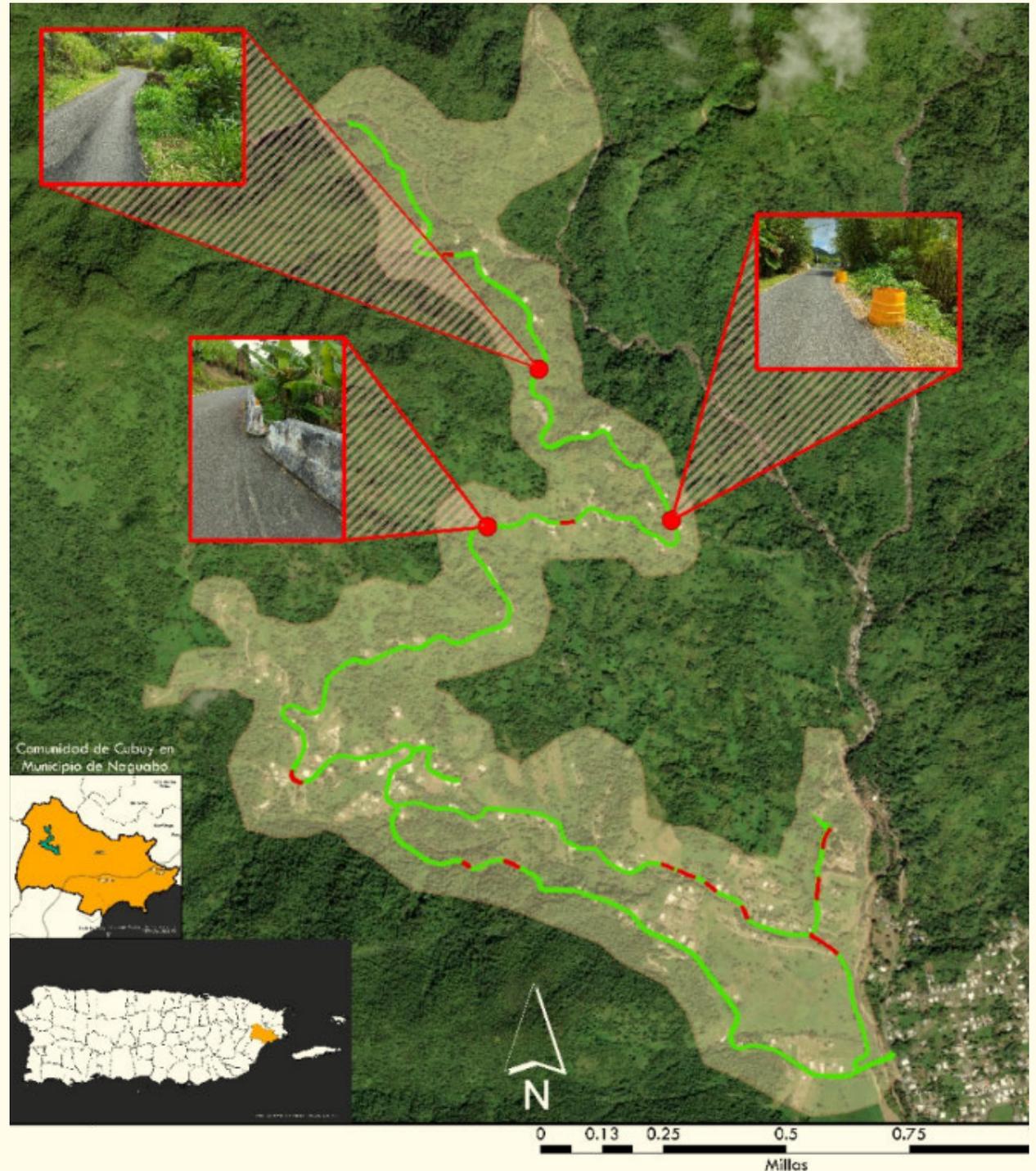
Along Road 191, several stretches in poor condition and 3 risk areas were identified. More stretches in poor condition were identified on Camino Viejo and secondary roads compared to Road 191, including the road leading to the Charco El Hippié.

Map of the road conditions in Cubuy, Naguabo, Puerto Rico

Legend:

- Cubuy Community Boundary
- Good condition
- Poor condition
- Road hazard

(Road condition map. Graduate School of Planning, UPRRP. Cubuy Community: Community Diagnosis and Mapping Report. 2022, 38)



Community Development: Surveys in Cubuy



The community questionnaire of Cubuy Community, Naguabo

The following steps were taken to prepare the questionnaire:

- **An initial community discussion document was prepared.** It was taken as a base questionnaire previously used in another community. Based on this document, each thematic area was described according to the general issues it addressed. Similarly, for each question, a variable was developed that summarized the intention of the question in the questionnaire. With the description of each area, the variables, and the answers for each variable, 48 x 36 sheets were developed for each thematic area.
- **Presentation of thematic areas with the community.** On March 23, 2022, the questionnaire's thematic areas were presented to the project's collaborating partners. From the input of the meeting, new approaches and questions were developed; everything irrelevant to the context was eliminated.
- **Redesign of the questionnaire and new presentation to collaborating partners.** With input from the first meeting, the questionnaire was redesigned for final review with collaborating partners. At this meeting, each question and its options were read to ensure that both questions and answers were aligned with the experiences and expectations of the community. The current version of the questionnaire is based on this input.



Data collection methodology

FPR chose to select a representative sample of a representative percentage of the structures identified as dwellings in the community to complete the questionnaire. The proposed sample size is 103 housing units for a population of 140 identified dwellings. A balanced sample was chosen randomly through the Excel platform for each section to ensure all units could participate. Back-up structures were also selected in case the main unit was unavailable. If it turned out that neither the selected nor the backup structures were available, then the unselected houses were chosen.

The volunteer interview method was used as the primary method of collection. Being a survey of more than 100 questions and several sections, FPR considered it more appropriate to make house-to-house visits and not make the process so tedious for the person by using a paper survey. Moreover, at this point in the project, the literacy levels in the community were unknown, so it was important to facilitate the surveys with people trained in the process. Several trainings were conducted with guidelines, rules, and recommendations as part of the volunteer process. Two leaders were assigned to drive a car to supervise the visits and to transport the volunteers in Cubuy, whose houses are distant from each other and have difficult pedestrian access. This way, the supervisors could take notes of the visits, understand the maps accurately, and get a macro idea of the process. In the end, the volunteers and leaders of the effort met at the La Mina community center to review the visits and take appropriate notes on the remaining houses to be visited and any observations made by the volunteers.

However, given some challenges relevant to the project timeline, the FPR team saw the need for a mixed methodology, where survey data would be collected through prepared packets with printed survey forms and written instructions for survey delivery. FPR assigned the community liaison to carry out this process due

to his continuous presence and membership in Cubuy. After the efforts, a total of seventy (70) surveys out of one hundred and three (103) were obtained. The samples completed by section are as follows:

Section	Structures classified as residences according to the map	Samples by section	Surveys conducted
Section A	25	18	12
Section B	31	23	12
Section C	26	19	13
Section D	28	21	16
Section E	27	20	15
Section F	3	2	2
Total	140	103	70



Data collected by section (see maps in part of "Built Environment and Settlement").



With these results, FPR began data analysis to understand the community's needs in terms of population, housing, health, education, employment, entrepreneurship, infrastructure, and environmental justice. These efforts would lead to the next section of suggested projects for community development in this Place-making project. It should be noted that one of the objectives of the project is to improve the quality of life of the residents, so it is necessary to develop a broad picture of the current conditions of the residents of Cubuy and to identify the steps to follow adding to it the resources available for implementation and management.



Suggested Projects for Community Development



Community Development Projects

The timeframes are structured based on the specific details of each project and the level of complexity. However, the time frame may change depending on access to the necessary resources to execute the projects and the level of priority the community wants to give it as these resources become available.

Population

- Addressing the needs of the aging populations
- Low birth rate
- Promoting equitable community development
- Conservation of community history and memory

Short Term (1-3 years)
Short term (1-3 years)
Short term (1-3 years)
In progress

Housing

- Increasing options for decent housing
- Quality of structures/Creating a community safety plan
- Property titles
- Creating accommodation options

Long term (7-10 years)
Short term (1-3 years)
Medium term (3-6 years)
Short term (1-3 years)

Health and Public Safety

- Human health and accessibility to services
- Food security
- Protecting mental health and safety

Short term (1-3 years)
Medium term (3-6 years)
Short term (1-3 years)

Education

- Increasing educational opportunities in Cubuy
- Employment and entrepreneurship

Short term (1-3 years)
Short term (1-3 years)

Community Infrastructure

- Addressing risk zones
- Increasing public transportation options in Cubuy
- Access and management of the internet and technology
- Water and waste services
- Electric and solar power/Reactivation of the Hydroelectric plant

Medium term (3-6 years)
Long term (7-10 years)
Short term (1-3 years)
Medium term (3-6 years)
Long term (7-10 years)

Environmental Justice

- Domestic waste collection and recycling
- Composting

Short term (1-3 years)
Short term (1-3 years)

Local Capacity Strengthening

- Strengthening the local NGO
- Co-management of the Sabana River Recreational Area
- Prevention and emergency plan for the Recreational Area
- Community Emergency Response Team (CERT) – Community Emergency Plan

In progress
In progress
In progress
In progress

Promotion of Community Linkage for Destination 191

- Strengthening the organizational structure to implement the Destination 191 Plan – Ongoing
- Strengthening the organizational structure to serve the community
- Establishing a volunteer program to implement the Destination 191 Plan
- La Mina Community Center

In progress
Short term (1-3 years)
In progress
Access to essential services

La Mina Community Center – Access to essential services

- Ownership/Co-management
- Electric and solar power
- Broadband access

In progress
In progress
Short term (1-3 years)

In this section, we will be addressing both quantitative and qualitative findings gathered throughout the project to paint a picture of the state of Cubuy, our point of focus in the project. It is important to emphasize that it would be necessary to replicate and conduct a broader study of the different communities in Río Blanco to understand the needs of the entire barrio.

Population

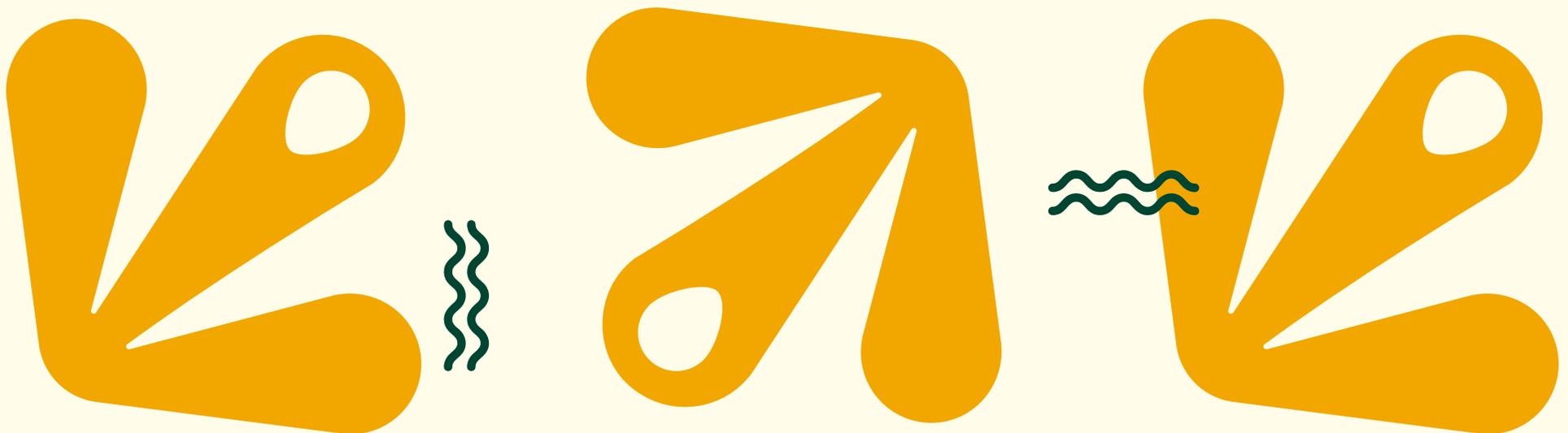
Categories	Project Details
Project Name	Addressing the needs of aging populations
Geographical location	Cubuy Community
Description	<p>The community of Cubuy faces a demographic reality characterized by an aging population, where most people are over 40 years old, with an average age of 63 years. Of those surveyed, only 18% are under the age of 40, highlighting the preponderance of older residents in the area. In addition, 34% of residents live alone, suggesting that there is a significant number of older people who may be facing life alone, increasing the need for care and support for this aging community. Most households in Cubuy are single-family (93%), indicating that older people may be living without close family support. The presence of only two residents with children under the age of 5 raises questions about a possible birth rate crisis in recent years in Cubuy. These data highlight the importance of prioritizing the needs of the aging population in Cubuy, with special attention to those who live alone and require adequate support and services to improve their quality of life and well-being.</p>
Activities and execution processes	<p>Implement support programs for the elderly, create community support networks, establish care centers, assisted living facilities, promote wellness programs, encourage active aging, and facilitate intergenerational programs.</p>
Estimated time	Medium-term (3–6 years)
Estimated cost	It will depend on the programs and activities to be implemented in the community.
Potential risks	<p>Lack of support for lonely seniors can impair their quality of life and vulnerability. Also, the low birth rate and aging demographics could unbalance the community, impacting the workforce and health services. This could reduce cultural activities, recreation, and participation. In addition, it could affect economic growth and deplete medical resources. The loss of local knowledge and traditions is also a risk, its identity.</p>

Indicators

Increase the availability of health services, well-being services, mental health services, citizen services, nutrition, and low-impact exercises (mobility exercises) for the elderly in the community. Provide recurring services to address the various areas of health outlined in this plan in the area of Human Health.

Collaborators and resources

Municipality of Naguabo; Comité Desarrollo Barrio Cubuy, Inc.; COSSMA Naguabo; Office of the Ombudsman for the Elderly of Puerto Rico; U.S. Department of Health and Human Services (U.S. HHS) - Administration on Aging; U.S. HHS - Administration for Children and Families, Community Economic Development (CED); Iglesia de Dios Primitiva, Inc.; Take the generational example from the Toro Negro Community in Ciales.



Categories

Project Details

Project Name

Low birth rate

Geographical location

Cubuy Community

Description

The Cubuy community faces a low birth rate. Most people in Cubuy are over 40, with an average age of 63. Only 18% of respondents are under 40, indicating a lack of young population in the area. In addition, 93% of the households consist of a single family, and only two residents claimed to have children under the age of 5 living in their households. These data suggest the existence of a possible birth rate crisis in recent years in Cubuy.

Activities and execution processes

Consult resources for creating healthy multi-age communities such as from AARP, NALCAB and Center for Rural Innovation. Enhance housing options, employment, and entrepreneurial opportunities for young families in the community, implement support programs for motherhood and fatherhood, and create family spaces and activities. It is expected to generate new economic activity through the visitor economy.

Estimated time

Short-term (1–3 years)

Estimated cost

It will depend on the programs and activities to be implemented in the community.

Potential risks

A demographic imbalance with a growing aging population and a decrease in the number of young people, affecting social and economic dynamics. The lack of new births could reduce the labor force and increase reliance on medical services for the elderly. Fewer young people would also mean fewer cultural and recreational activities, weakening community vitality. Loss of intergenerational transmission of knowledge would affect cultural identity and cohesion. This could affect sustainable development by limiting growth and available resources.

Indicators

Increase number of young volunteers and youth-led entrepreneurial initiatives in the community.

Collaborators and resources

Naguabo Municipality; Comité Desarrollo de Cubuy, Inc.; El Concilio de la Iglesia Adventista; AARP Network of Age Friendly States and Communities.

Categories

Project Details

Project Name

Promote equality in community development

Geographical location

The entire Cubuy community

Description

Given the population crisis in Cubuy, it is important to monitor changes in the population to avoid further abandonment of the areas currently being used.

Activities and execution processes

Measure and monitor population changes in Cubuy. Use the Equitable Development toolkit from the National Association for Latino Community Asset Builders (NALCAB) to support the identification of changes in Cubuy's composition and birth rate, and to develop concrete plans to address demographic challenges, improve quality of life, and promote equitable development. Its focus on participation and additional resources also make it relevant for the local context.

Estimated time

Short-term (1–3 years)

Potential risks

Failure to conduct specialized studies on population changes and their lack of analysis could expose Cubuy to risks such as gentrification and drastic transformation. The omission of the community's historical compilation could result in the irreplaceable loss of generationally transmitted knowledge. Since Puerto Rico's historical archives do not provide detailed information about Cubuy, this omission would leave a gap in the preservation of cultural identity and heritage. It is essential to address these risks and allocate resources for population monitoring to protect the unique essence of the community.

Indicators

Average age of the population, median family income, cost of living, educational level of the population aged 18 and older, and ethnicity.

Collaborators and resources

Comité Desarrollo Barrio Cubuy, Inc.; National Association for Latino Community Asset Builders (NALCAB); Rural LISC

Funding sources

EPA–Environmental Justice Grants; EPA_Thriving Communities Technical Assistance Center (PR&USVI)

Categories

Project Details

Project Name

Preservation of community history and memory

Geographical location

Cubuy Community

Description

To counteract the effects of population changes that could occur in the coming decades, the Committee can collaborate with students and professors involved in historic preservation projects, such as the Caribbean Digital Scholarship Collective – UPR Digital program. This program is dedicated to the preservation of the history and memory of Caribbean communities using advanced digital technology and methods.

Activities and execution processes

Begin collecting data in a digital cloud and digitizing historical content. Contact the Caribbean Digital program to establish collaborations.

Estimated time

In progress

Potential risks

The main risk is the gradual loss of collective memory and the devaluation of traditions and cultural legacy. The lack of adequate documentation could leave the historical heritage vulnerable to time and events, which could result in the irreversible destruction of the community's history.

Indicators

The creation of a digital historical archive that preserves the history of Cubuy.

Collaborators and resources

Archivo digital comunitario de Culebra (Community digital archive of Culebra); Fundación Puertorriqueña de las Humanidades (Puerto Rican Foundation for the Humanities – FPH); UPR Digital–Collectivo para el estudio del Caribe Digital (Collective for the Study of the Digital Caribbean); UPR–Rio Piedras – Master's Program in Management and Administration; Cultural and Historical Resources Recovery Planning in Puerto Rico

Funding sources

FPH – Mini-grants or Major Grants; Angel Ramos Foundation – Grants; UPR Digital – Collective for the Study of the Digital Caribbean

Categories

Project Details

Project Name

Increase the options for adequate housing

Geographical location

Cubuy Community

Description

Cubuy has 231 structures, of which only 9% are businesses. Of the non-business structures, 66% are dwellings, 13% are possible public nuisances, 5% are undeterminable and 16% are vacant dwellings. In addition, 33% of the structures that are not businesses are underutilized. The data shows a clear lack of entrepreneurship and commercial activity in the Cubuy community, which contributes greatly to its difficulties with economic growth. Moreover, it should be noted that in the community mapping process with the Graduate School of Planning (GSP) some homes that were classified as "potential public nuisances" turned out to be the home of a person living in inadequate conditions. For the purposes of this study, and to protect the residents of Cubuy, we will be using the term "housing in inadequate conditions" to highlight the reality of people living within these types of residences. The status of the dwellings originally identified as "potential public nuisance", and which were found to be a person's dwelling in an inadequate condition, was updated to "dwelling" for the purposes of this analysis. Although this initial study has been completed, it is important to emphasize that the results of this study were the product of a representative sample, using the GSP methodology.

Activities and execution processes

Develop a comprehensive analysis that identifies whether housing initially classified as "potential public nuisances" is substandard or vacant. Establish a land bank in and with the Center for Habitat Reconstruction, to develop affordable housing for the aging population and attract more and youth. Encourage entrepreneurship and commercial activity in these spaces.

Estimated time

Long-term (7 to 10 years)

Potential risks

Poor housing conditions affect the health and safety of residents, and lack of action can lead to a disadvantaged and neglected community. In addition, the lack of commercial activity can limit economic development and local income, while vacant dwellings and potential crime hotspots can lead to insecurity and deterioration in the area.

Indicators

Improve housing conditions in cases identified as inadequate. It is important to gather information on the status of ownership of vacant spaces and public nuisances. Then, present proposals for the use of these spaces that demonstrate feasibility based on their ownership status.

Collaborators and resources

USDA Rural Development – Rural Housing Services; Environmental Protection Agency (EPA); Centro para la Reconstrucción del Hábitat (Center for Habitat Reconstruction and its Municipal Guide for the Recovery of Unused Spaces); Municipality of Naguabo; Puerto Rico Department of Housing; Housing & Urban Development (HUD).

Funding sources:

FEMA Hazard Mitigation Grant Program (Hurricane Maria); Rural Housing Services (USDA); Rural Development Community Facilities Grants for Disaster Recovery (Fiona); HUD-CDBG-DR (Maria, Irma), CDBG-MIT; EPA Green and Resilient Retrofit Program; EPA Technical Assistance Center for Prosperous Communities (PR and US Virgin Islands); EPA Brownfields Grants.



Categories

Project Details

Project Name

Structural quality of housing

Geographical location

Cubuy Community

Description

63% of Cubuy residents surveyed consider their current homes to be in "good" condition and only 73% feel their home is safe.

Activities and execution processes

Establish a community safety plan that includes measures to respond to emergencies and ensure the well-being of all residents, especially those with functional diversity, physical impairments, and the elderly. The plan would be based on the Graduate School of Planning (GSP) risk map and would include the creation of safety protocols, education and training for residents and responders, equipping the community center as a shelter and medical care. Effective communication with the resident, and collaboration with governmental entities and health organizations is also necessary.

Estimated time

Short-term (1-3 years)

Estimated cost

A detailed analysis of the resources required would be necessary.

Potential risks

Residents' negative perceptions of their homes and the lack of safety protocols and emergency planning could jeopardize the safety and well-being of all. Community center conditions and limited access to medical care would increase vulnerability in crises. Lack of risk identification and risk migration would expose people to accidents, and limited collaboration with government and health agencies would make it difficult to access additional resources.

Indicators

Creation of a security plan considering the risk points and strategies to migrate them to create a greater sense of security on the part of the residents.

Collaborators and resources

Reactivate the Community Emergency Response Team (CERT); Comité Barrio Desarrollo Cubuy, inc.; USDA Rural Development; Municipality of Naguabo; Puerto Rico Emergency Management and Disaster Administration (NMEAD); Emergency Management Office (state/municipal); Office of the Ombudsman for the Elderly, Office of the Ombudsman for Persons with Disabilities.

Funding sources

US Forest Service; Local Housing Department – Community Development Block Grant programs from the U.S. Department of Housing and Urban Development (HUD); FEMA-Hazard Mitigation Grant Program (Hurricane Maria).

Categories

Project Details

Project Name

Title deeds

Geographical location

Cubuy Community

Description

Only 4% of residents rent. The vast majority own their homes or a family member does. 93% no longer must pay mortgages. Between 20% and 30% of the properties do not have title deeds. The owners built 46% of the homes.

Activities and execution processes

Conduct in-depth research on property ownership, establish consultations and partnerships with banks and land cooperatives, present the initiative to the community, provide legal and financial advice, facilitate property foreclosure registration, explore housing programs, and train property owners on these issues.

Estimated time

Medium-term (3–6 years)

Estimated cost

Investment of money for bureaucratic documentation on behalf of community members and time in efforts to raise awareness and facilitate legal resources available in the community.

Potential risks

Bureaucratic processes and high costs for acquiring ownership limit low-income residents from obtaining the same. Failure to resolve lack of title deed to property or ownership disputes and the collective protection of the homes could result in legal uncertainty and risk of loss of homes for the residents.

Indicators

Greater number, or totality of residents, with their home title deeds.

Collaborators and resources

The University of Puerto Rico Legal Aid Clinic; Legal Aid Hurricane María; The Inter-American Legal Aid Clinic; Access to Justice Fund; Caño Martín Peña Community

Funding sources

Department of Housing – Title Authorization Program (CDBG-DR).

Categories

Project Details

Project Name

Create short and long-term lodging options

Geographical location

The whole Community

Description

7% of households are interested in renting part of their residence and receiving additional income

Activities and execution processes

Provide property management training to residents, promote, and publicize the rental offerings, and encourage regenerative community-based tourism to attract responsible visitors.

Estimated time

Short-term (1–3 years)

Estimated cost

>\$5,000

Potential risks

Failure to address rental interest in residences could lead to the loss of additional income for families, limit economic diversification and reduce the potential for sustainable community-based tourism.

Indicators

Increase accommodations in Cubuy by 10%, focusing on guesthouses and sustainable lodging.

Collaborators and resources

Discover Puerto Rico; resources of short-term rental platforms (such as Airbnb, VRBO, Join a Join, etc.). Rural LISC; Puerto Rico Tourism Company – to provide guidance on different types of accommodations and to the Sustainable Tourism Division of the Company; it has a Community Tourism Program, under which the Cubuy Committee operates.

Funding sources

Fannie Mae, Freddie Mac; Cooperative Banks (mortgage loans).



Categories

Project Details

Project Name	Human health services accessibility
Geographical location	The whole Community
Description	Many Cubuy residents face chronic illnesses, but most do not see medical providers on a regular basis. Perceptions of health status are mixed, with 60% considering it fair, while 31% rate it as excellent and 9% as poor. Although most have medical coverage (93%), about 11% have difficulty paying for it, mainly benefiting from the government reform plan. However, the community lacks local medical services, forcing residents to seek care outside, which can often be hindered by the lack of public transportation. Services such as nursing and care for people with disabilities are limited and largely inaccessible due to distance. The general trend shows that residents tend to believe that they do not need help, even when they may need it. The most common illnesses in Cubuy include vision problems, arthritis, diabetes, heart disease, and thyroid disease.
Activities and execution processes	Conduct a comprehensive assessment of medical and care needs for people with functional diversity, involving surveys and consultations with residents. Promote health fairs at the La Mina community center to offer medical and educational services. Establish mobile clinics and home-based services in collaboration with medical providers. Advocate for the creation of transportation for the elderly to reach health centers.
Estimated time	Short-term (1–3 years)
Estimated cost	May vary according to the scale and duration of the project.
Potential risks	The problem of the lack of health and transportation facilities in the community could have a direct impact on the health of the inhabitants, particularly the elderly, as they would be prevented from accessing adequate medical care. This negative and detrimental situation is completely avoidable through the implementation of measures that facilitate access to medical services and promote the wellbeing of Cubuy's residents.
Indicators	Increased community services and transportation services tailored to the aging community.

Collaborators and resources

Comité Desarrollo Barrio Cubuy, Inc., Inc.; AARP- Puerto Rico; PR Science Trust; Puerto Rico Office of the Ombudsman for the Elderly; AMERICARES- PR; U.S. HHS -Administration on Aging - Elder-care Resources; National Council on Aging; Triple S Foundation; Government Health Services, Naguabo Municipality; Rural Development; RD Community Facilities Grants (for the municipality to increase health services, for example, by purchasing and operating a mobile health unit); Department of Health; Puerto Rican Diabetes Association; American Cancer Society of Puerto Rico; Américas; Puerto Rican Society for Eye Care

Funding sources

Rural Development-Community Facilities Grants (for the municipality to expand healthcare services, for example, by purchasing and operating a mobile health unit).



Categories

Project Details

Project Name

Food safety

Geographical location

The whole Community

Description

50% of respondents mentioned that not having access to supermarkets, restaurants or basic services has negatively affected their food security. 64% of the people regularly consume grains, cereals, fruits, vegetables, meats, dairy products, and eggs. Most take vitamins and supplements.

Activities and execution processes

Improve access to transportation by connecting Cubuy to a public transportation network. Establish community markets in collaboration with local producers, as well as home delivery programs for those with transportation difficulties. Carry out nutrition education, promotion of community gardens and collaboration with food assistance organizations.

Estimated time

Medium-term (3–6 years)

Estimated cost

They may vary according to the nature and scope of the proposed activities.

Potential risks

If steps are not taken to improve the availability of nutritious food and essential services, there is a risk of worsening food security for residents, which could result in nutritional deficiencies and long-term health problems. In addition, limited food options could contribute to a cycle of malnutrition and chronic disease and increase the inequality gap in the community.

Indicators

Creation of a business that sells staples and fresh food, or farmers' markets at the community center. Increased access to food through local food delivery businesses, or the creation of a soup kitchen at the center. In the long term, improvements to the transportation system to provide access for people without transportation and/or the elderly.

Collaborators and resources

Triple S Foundation; Department of the Family- (PAN program); PR Science, Technology, and Research Trust; Local food vendors; Food delivery vendors; Soup kitchen

Categories

Project Details

Project Name

Protect the mental health and security of residents in Cubuy

Geographical location

The whole Community

Description

The three things Cubuy residents are most concerned about are emergencies and weather events, followed by economic problems and safety. In fact, 30% of the surveyed residents stated that their biggest concern was safety. 15% expressed concerns about vandalism in the community and issues related to controlled substance abuse. Most families (64%) perceive that their lifestyle will improve or stay the same in the next year, 41% say better, 19% worse, and 24% say the same. 13% say they do not know. When asked how they perceived their quality of life, 86% said it was good or very good. 1% said they did not know, 9% were neutral, and 3% said it was bad. These indicators show us a possible lack of security and mental health of the inhabitants who expressed that they visualize their life worse than at present or that they do not know.

Activities and execution processes

Facilitate access to mental health professionals to address challenges, provide educational talks and workshops, establish community support groups, organize recreational and therapeutic events, offer personal development programs, conduct ongoing needs assessments, and encourage mutual support.

Estimated time

Short-term (1–3 years)

Potential risks

Lack of resources and support may reduce resilience to crises, undermining the ability to cope with difficulties. Untreated problems can impact relationships, work, and community participation. Lack of focus on mental health would hinder the holistic development and emotional, social, and psychological well-being of the community.

Indicators

Increased provision of services related to community safety and mental health.

Collaborators and resources

Triple S Foundation; Administration of Mental Health and Addiction Services (ASSMCA); COSSMA; Department of Public Safety; Municipality – Municipal Police; Department of Health; Alianza Para Un Puerto Rico Sin Drogas (Alliance for a Drug-Free Puerto Rico); Bureau for Emergency Manage-

Funding sources

Fundación Triple S; Fundación MCS; AARP–Community Challenge Grant; National Endowment for the Arts–Our Town Grant; T-Mobile– Hometown Grant

Education → → → → →

Categories

Project Details

Project Name

Education

Geographical location

The whole community

Description

91% of the residents are literate. Of those surveyed, none are attending school, university, or other educational centers. It is important to note that, of those surveyed, only 18% were under 40. 39% of the respondents had higher education.

Activities and execution processes

If there is interest from the community, provide literacy workshops and continuous education for adults in collaboration with educational institutions and volunteers. Promote online learning through educational platforms and create educational experiences that attract visitors from diverse populations to the area. Furthermore, encourage digital literacy aimed at accessing information, handling government and medical procedures, and creating experiences that can foster economic development. The La Mina community center is the ideal place to offer these activities, including providing technical assistance to elderly individuals in digital access and services, among other things.

Estimated time

Short-term (1–3 years)

Potential risks

The lack of implementation of educational and development programs in Cubuy carries significant risks. Lack of access to educational opportunities could limit personal and professional growth, affecting social mobility and perpetuating inequalities. In addition, the community may face difficulties adapting to changes in the environment and technology, which could negatively impact its ability to thrive and innovate. Investment in continuous education is essential for Cubuy's success and full participation in the evolving society.

Indicators

Increased provision of services related to continuing education and literacy in the community. Expand the range of educational experiences for the school and academic population.

Collaborators and resources

University of Puerto Rico – Continuous Education and Professional Studies Division (UPR- DECEP); Department of Education; InterAmerican Universidad-Fajardo; Corazón Latino; Amigos del Yunque; Para la Naturaleza

Employment and Entrepreneurship ➔ ➔ ➔ ➔ ➔

Categories

Project Details

Project Name

Employment and Entrepreneurship

Geographical location

Cubuy Community

Description

Retirement funds are the main source of income for many families. 17% percent of Cubuy residents expressed that unemployment was one of their concerns. Most of the population is not active in the labor force, and of those who are not active, 49% are retired. 50% of the unemployed have been out of work for more than 5 years. 21% of respondents are interested in pursuing entrepreneurial opportunities. Only 13% of respondents reported that they work, either full time or part time.

Activities and execution processes

Conducting a more in-depth study to understand the reasons behind these individuals' unemployment, whether it's due to a lack of opportunities in the rural area, health issues, transportation challenges, or other specific needs. Providing training programs for the development of local businesses that cater to the visitor economy. Additionally, strengthening the Cubuy Committee and developing various programs managed from the community center or in collaboration with the recreational area could create employment and entrepreneurial opportunities in the field of community tourism. Furthermore, developing the Destino 191 brand as a community enterprise that not only represents the community's identity and values but also has the potential to become a sustainable source of income for funding local projects. By establishing Destino 191 as a community enterprise, a broader audience can be attracted, generating a steady stream of revenue. This will not only benefit the community economically but also strengthen the bonds between local members and the brand by involving the community in decisions and activities related to Destino 191. Ultimately, this initiative can help finance projects that improve the quality of life in the community, from conserving the natural environment to developing educational and social programs, and provide an inspiring example of how a brand can be a driver of positive change.

Estimated time

Short-term (1-3 years)

Estimated cost

The cost of this project will depend on existing programs to help people in need of employment or with entrepreneurial desires.

Potential risks

Failure to implement projects to improve employment and entrepreneurship in Cubuy could lead to risks such as continued unemployment, ignorance of the underlying causes, and missed opportunities to tap into local economic sources and entrepreneurship.

Indicators

To offer services that have a direct impact on the search for and acquisition of employment for unemployed people in the community, as well as the increase of income for those who are working, and the implementation of business training programs or workshops to encourage the opening of new businesses in the community.

Collaborators and resources

Department of Labor; Man Power; One Stop; Caribbean Temporary Services (CTS); Department of Economic Development; PR Science, Technology and Research Trust; Technological Institute of Puerto Rico; Adecco; APRODEC; American Job Center in Fajardo: [Website Link](<https://www.aldl-noreste.com/>); Colmena 66; La Fundación Comunitaria de Puerto Rico (Community Foundation of Puerto Rico - FCPR); Centro Para Puerto Rico; Vitrina Solidaria; Comité Desarrollo Barrio Cubuy; Forest Service; Puerto Rico Tourism Company (Sustainable Tourism Division and Planning and Development Area); INSEC; Pathstone; Consortia; Hispanic Federation; Bravo Foundation.



Community infrastructure

Categories

Project Details

Project Name

Attending risk areas

Geographical location

The whole community

Description

The Risks and Vulnerability section of the plan highlights key risks in Cubuy (see section for more detail). The maps indicate high susceptibility to landslides following hurricanes, flood risks in certain areas due to climate and topography, and soil erosion hazards. Electrical infrastructure and the presence of large garbage dumps also create hazards. In addition, the quality of roads is poor in several areas.

Activities and execution processes

A multifaceted approach is proposed that involves comprehensive risk assessment, land use regulations to prevent construction in high-risk areas, improvement of electrical and road infrastructure, education on risks and preparedness measures, establishment of early warning systems, proper waste management, constant monitoring of critical areas, training of leaders to inform the community about risks, collaboration with governmental entities, and continuous adaptation of strategies.

Estimated time

Medium-term (3–6 years)

Potential risks

The community faces threats of landslides after hurricanes, possible flooding in specific areas due to climatic factors and topography, as well as soil erosion risks. The presence of clandestine garbage dumps and inadequate electrical infrastructure also create hazards, as does the poor quality of some roads. These, and the other risks identified, threaten the safety, quality of life and sustainable development of the community, underscoring the importance of effectively addressing them.

Indicators

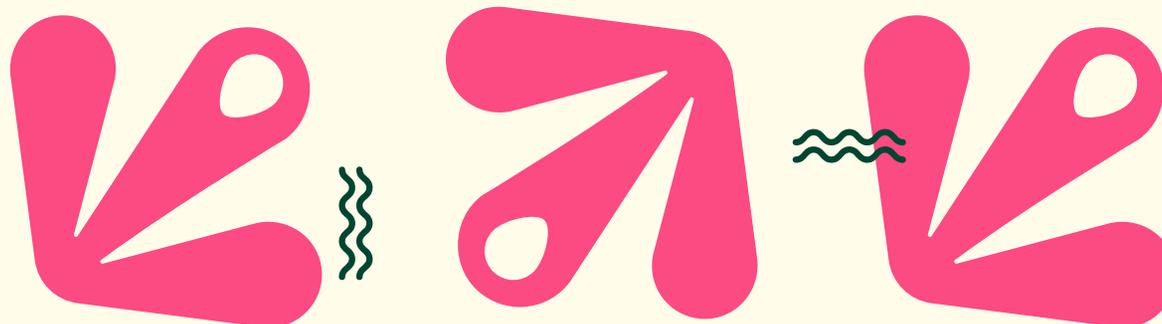
Number of impacted clandestine landfills. Number of waste disposal awareness campaigns. Landslide risk mitigation measures (in consultation with SLIDES and NRCS).

Collaborators and resources

USDA Rural Development; USDA Forest Service; Municipality of Naguabo; Department of Public Works (DTOP); U.S. Army Corps of Engineers (USACE); U.S. Department of Transportation (DOT); Environmental Protection Agency (EPA); Natural Resources Conservation Service (USDA); Department of Natural and Environmental Resources; Basura Cero (Zero Waste), Generación Circular PR.

Funding sources

FEMA Hazard Mitigation Grant Program (Hurricane Maria); USDA Rural Development – Community Facilities Grants – Disaster Recovery Grants (Fiona); HUD–CDBG–DR (Maria, Irma), CDBG–MIT; EPA Green and Resilient Retrofit Program; EPA Technical Assistance Center for Prosperous Communities (PR and US Virgin Islands); EPA Brownfields Grants; EPA Environmental Justice – Government-to-Government; EDA Public Works and Economic Adjustment Assistance; FEMA Building Resilient Infrastructure and Communities (BRIC); U.S. Army Corps of Engineers (USACE) Continuing Authorities Programs (CAP); New York Community Trust – National and International Environmental Grants Fund.



Categorías

Project Details

Project Name

Increase the public transport offer in Cubuy

Geographical location

The whole community

Description

Of the people who are active in the labor force, the majority reported that they travel by car. Only one person reported walking or four-tracking to work. The lack of public transportation along Route 191 in Cubuy presents difficulties in mobility to work, accessing health and emergency services, as well as acquiring basic supplies for those without a car. This situation becomes even more pressing as some community members, including the elderly, rely heavily on walking as their only mobility option. The feasibility of improving access for residents requires a thorough study, considering options such as integrating a light public transportation system that avoids weakening at-risk areas, or evaluating the possibility of creating a sidewalk, considering the inherent challenges due to spatial constraints and erosion threats.

Activities and execution processes

Conduct a feasibility and planning study to carefully analyze public transportation options that suit the geographic peculiarities and risks present in the community. Subsequently, design public transportation routes that connect to a regional transportation network in the east, including access to El Yunque National Forest. Additionally, to the extent possible, consider the construction of safe sidewalks in areas of greatest need, minimizing associated risks.

Estimated time

Long-term (7-10 years)

Estimated cost

Determining the exact costs of this project would require a detailed financial analysis, as it involves several components and activities.

Potential risks

The lack of public transportation and mobility improvements could increase isolation, making access to jobs, health services, and basic supplies more difficult, especially for those without vehicles. This could exacerbate vulnerability in extreme weather, limiting evacuation and jeopardizing the safety of residents. In addition, the local economy could be affected by restricting job opportunities and tourism. The lack of road improvements would also increase the risk of accidents and injuries.

Indicators

Insumo del municipio y estudio de viabilidad para un sistema intermodal de transportación.

Collaborators and funding resources

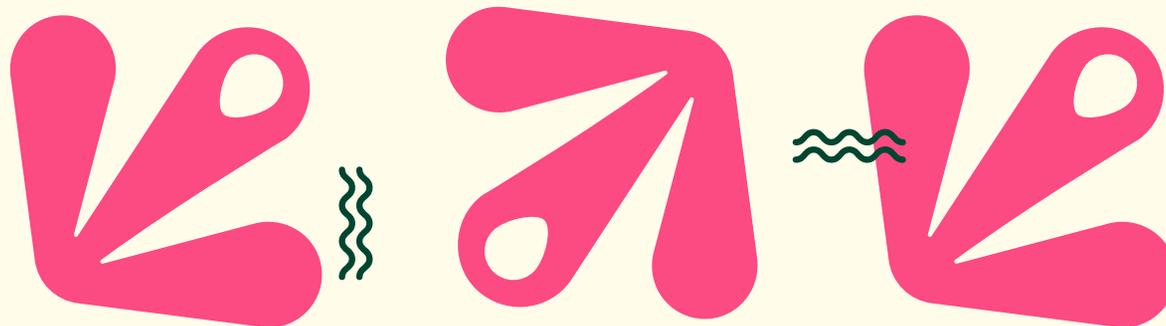
USDA Rural Development; USDA Forest Service; VOLPE; DTOP; Autoridad de Transporte Integrado (ATI); Fuentes de fondos U.S. Department of Transportation (DOT) - Thriving Communities Technical Assistance & Support for Communities; Neighborhood Access and Equity Grant Pro-

Categories

Collaborators and funding resources

Project Details

gram (DOT); Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT- DOT); Rural Development-Community Facilities program; Municipio de Naguabo



Categories

Project Details

Project Name	Internet and technology access and management
Geographical location	The whole community
Description	Only 46% of Cubuy residents have access to the Internet, with the main provider being Cable (29%). Of the few who have Internet access, 21% consider its speed to be unsatisfactory. Less than half do not have access to Tablets and Computers (46%), Streaming (41%), Cable TV (49%), and Landline Telephones (34%), while 83% do have telephones, 94% have televisions and 79% have radios.
Activities and execution processes	Expand Internet infrastructure in areas with low coverage, digital literacy programs, facilitate the acquisition of devices, and improve the speed and quality of service. Develop a center of digital access and digital literacy at La Mina community center for those who do not have service at home, or do not know how to effectively use the technology.
Estimated time	Short-term (1–3 years)
Estimated cost	(For the Center) Approximately ≈\$2,500 for satellite internet via Hugh Net for 2 years. Submit proposal to Para La Naturaleza.
Potential risks	Limitations in economic and educational growth due to lack of access to the Internet and technology. This would hinder online job opportunities, distance education, digital health services and online government procedures, exacerbating socioeconomic inequalities. Digital exclusion would also affect communication and community participation, perpetuating inequalities and restricting the use of technological advantages today.
Indicators	Achieve satellite internet at La Mina Center. Increase coverage in the community and provide access for both families and the services offered at the community center.
Collaborators and funding resources	Aeronet; Rural Development – Telecomms; Internet for All; Broadband USA (National Telecommunications & Information Agency (NTIA); Programa de Descuentos para Internet (“Smart Island”; ACP, Affordable Connectivity Program); instalación de Wifi; Resilience Centers, Para la Naturaleza; CRA–Private Banking

Categories

Project Details

Project Name

Water and sewage services

Geographical location

The whole community

Description

56% of residents receive their water from PRASA, while 44% receive it from the community aqueduct. Of the 70 surveyed residents, 65 (93%) rely on a septic tank to manage their sanitation needs, while only 9 of them (7%) have access to public sewage services. The community aqueduct does not have a filtration system, and when it rains, the system continues to operate but becomes cloudy. On the other hand, during heavy rainfall, the PRASA tends to stop its gravity-fed filtration plant. If it rains for extended periods, the community is left without access to potable water, and the AAA's tanks run dry. When the plant is restarted, it first reaches the Florida sector by gravity and then retroactively ascends to Cubuy, causing pipe ruptures due to overpressure, negatively impacting those who depend on the PRASA.

Activities and execution processes

Conduct a thorough evaluation of the quality of water supplied by PRASA and the community aqueduct, followed by improvements in the infrastructure of the water systems, educational campaigns to promote proper septic tank management, as well as exploring the feasibility of sewer connections.

Estimated time

Medium-term (3–6 years)

Potential risks

The ongoing reliance on septic tanks and the potential contamination of the community aqueduct can reduce the quality of life for the residents.

Indicators

Installation of a filtration system for the community aqueduct. Improvements in PRASA services. Maintain an inventory of septic tanks and information on septic tank emptying. Have information on the frequency of monitoring the quality of drinking water from the community aqueduct and proceed from there.

Collaborators and resources

Rural Development; EPA; Naguabo Municipality; Department of Housing with CDBG-DR funds; Puerto Rico Aqueduct and Sewer Authority (PRASA)

Funding sources

Grants for Emergency Community Water Assistance / Emergency Watershed Protection Program (EWP) / Community Facilities Grants (USDA); Risk Mitigation Grants Program (Hurricane Maria) / Building Resilient Infrastructure and Communities (BRIC) (FEMA); Technical Assistance Center for Prosperous Communities (PR and US Virgin Islands) / Environmental Justice / Municipal Sewer Overflow and Stormwater Reuse Grants Program (EPA); Public Works and Economic Adjustment Assistance (EDA).

Categories

Project Details

Project Name

Electrical and solar energy / Reactivation of the Rio Blanco Hydroelectric Plant

Geographical location

The whole community

Description

93% of the residents surveyed had access to electricity from LUMA, 6% marked "No" and 1% did not know where their electricity comes from. 10% had access to solar energy. Of those receiving power from LUMA, 50% of residents said they would install solar panels in the future, 29% said they would not, 13% said that is not applicable, and 4% said they are not sure. The overwhelming majority of them stated that their biggest concern when considering installing solar panels on their homes is the cost and initial investment (approximately 71%).

Activities and execution processes

Conduct a feasibility study on the use of renewable energy and perform a financial analysis to estimate the project costs. The project's objective would be to create a community solar energy network.

Estimated time

Long-term (7–10 years)

Estimated cost

Costs can vary considerably depending on factors such as project scope and possible collaborations, required infrastructure, labor, materials, required studies and analyses, among others.

Potential risks

Given Puerto Rico's energy instability, the community is exposed to threats that affect its life style and security. The lack of a reliable energy source can result in dangers to health, private property, and other vital aspects. Continued dependence on conventional energy sources leaves the community vulnerable to prolonged outages and rising costs.

Indicators

Community solar energy grid implementation; Reactivate the hydroelectric plant.

Collaborators and resources

Empowered by Light; Casa Pueblo; Castañer Community Solar Microgrid Project; Puerto Rico Solar Business Accelerator (PRsBA); Cooperativa Hidroeléctrica de la Montaña; University of Puerto Rico Mayagüez Campus; Interstate Renewable Energy Council (IREC); Pathstone Corp; U.S. Economic Development Administration; HUB; Barrio Eléctrico

Funding sources

Fondo de Resiliencia Energética de Puerto Rico (Ronda 1: Viviendas individuales o cooperativas de energías renovables; Ronda 2: Energía solar para comunidades); Programas de Energía Estatales y Comunitarios (SCEP) del Departamento de Energía (DOE) de los Estados Unidos

Categories

Project Details

Project Name

Household solid waste collection and recycling

Geographical location

The whole community

Description

Only 60% of residents state that their trash is collected 3 or more times a month, while 37% state that it is only collected once a month. As for debris, 43% state that it is collected two or more times a month, and on recycling, 50% do not receive these services. For those who do receive them, 23% state that they are collected two or more times a month. Regarding maintenance of green areas in the street in front of the property, 36% do not receive these services and 27% say only sometimes. 67% do not recycle and 46% would recycle. There is an opportunity for change in this area.

Activities and execution processes

Evaluate current services to understand if improvements are needed in garbage, debris, and recycling collection. Promote recycling and green area maintenance and beautification.

Estimated time

Medium-term (3–6 years)

Potential risks

Environmental degradation, resource depletion, contamination, and affecting the quality of life of residents, compromising the sustainability and conservation of resources for future generations.

Indicators

Community recycling percentage and garbage collection frequency increase.

Collaborators and resources

Municipality of Naguabo; Basura Cero de PR (Zero Waste Puerto Rico); Circular Generation PR; Department of Natural and Environmental Resources (ADS).

Categories

Project Details

Project Name

Composting

Geographical location

The whole community

Description

Only 17% compost at home. Of those who do not, 30% are willing to compost in the future.

Activities and execution processes

Establish a composting center at center aimed at supporting community gardening projects and strengthening composting practices in the area. Forge collaborations with local organizations and relevant entities to conduct educational workshops for its members and visitors on composting.

Estimated time

Short-term (1-3 years)

Estimated cost

Investment costs for the creation of the composting center and business permits.

Potential risks

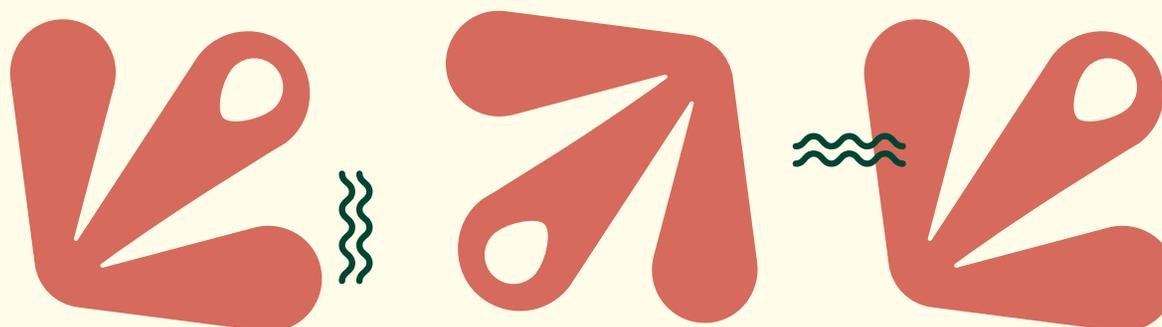
Waste management problems, increased contamination, and dependence on chemical fertilizers, affecting environmental health and soil quality in the community.

Indicators

Conducting and participating in composting workshops, increasing the percentage of households practicing composting, and the successful establishment of a community composting center at the La Mina Center.

Collaborators and resources

Puerto Rico Composta Inc. (Naguabo); Basura Cero de Puerto Rico; UPR – Servicio de Extensión Agrícola – offers free classes and has composting expert (Dr. Chong); Department of Natural and Environmental Resources (ADS – has composting expert resources and can establish business requirements).



Strengthening local capacity ➔ ➔ ➔ ➔ ➔

Categories

Project Details

Project Name

Strengthening local NGO capacity

Geographical location

The whole community

Description

In the first stage of the "Destino 191: El Yunque del Caribe" project, FPR contracted Community Financial Advisors to provide direct support to the Comité Desarrollo Barrio Cubuy, Inc. through activities that included the initial assessment of the entity to define its needs and goals, as well as individualized training hours to complete the objectives established in the Precheck. In the second stage, the Committee completed 16 hours of training to strengthen their organization and were trained to create their strategic plan, work plan, and fiscal plan. They were also trained in acquiring state tax exemptions. Furthermore, with the Foundation for Puerto Rico (FPR) team and Rural Development funds, a new Destino 191 community brand was designed to create visibility and attract more people to the destination, and a series of training was provided on digital presence and marketing, data collection and analysis, fundraising, stakeholder management, multi-sectoral approaches, among other efforts relevant to Placemaking. As part of the data collection training, a survey was conducted through the FPR team, the Committee, and other volunteers, which allowed the discovery of the most specific needs of the community, thus facilitating the development of the strategic plan. In this way, the Committee was offered technical assistance in the different areas to have all the necessary information for the development of this plan and to strengthen the local NGO. In this way, it is expected that the Committee will be able to carry out projects with greater agility in the community.

Activities and execution processes

Implement the lessons learned, develop its strategic and fiscal plan, establish accounting and legal support, seek state and federal tax exemptions, design and execute community development projects, strengthen collaborative relationships, and raise funds to scale up the project.

Estimated time

In progress

Estimated cost

Costs vary depending on the priorities the Committee chooses to pursue in its strategic plan.

Collaborators and resources

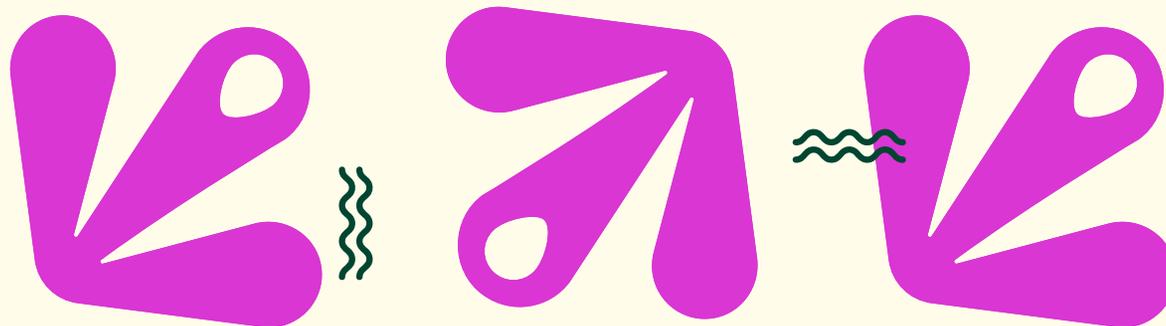
The Comité Desarrollo de Cubuy, Inc.; Community Interface Resource Management Area (CIRMA); US Forest Service; Rural Partners Network; Rural Development; Governance Consultant for CIRMA (FS); PR Tourism Company; Clínica de Asesoramiento Legal de la UPR-RP; Volunteers;

Categories

Funding sources

Project Details

Philanthropy in Puerto Rico; UnidosUS (membership required); LISC Rural (membership required); NALCAB (membership required); Hispanic Federation (membership required); Justice40 Accelerator; Rural Community Development Initiative (USDA).



Categories

Project Details

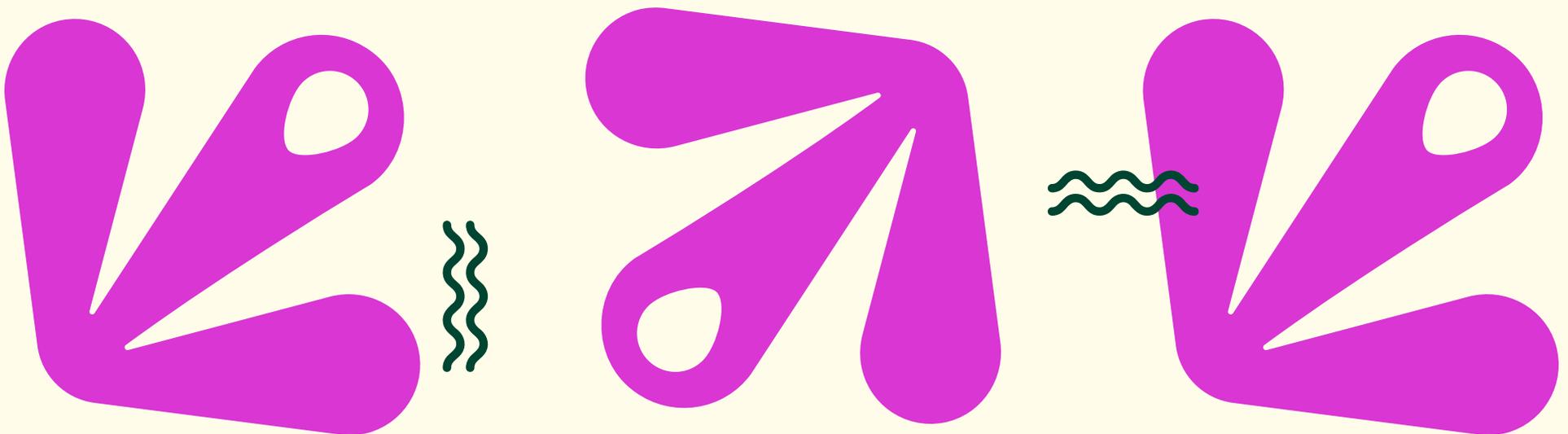
Project Name	Río Sabana Recreation Area Co-management
Geographical location	The whole community
Description	The Cubuy Committee has signed a co-management agreement with the Forest Service to administer the Río Sabana Recreation Area in the El Yunque National Forest. Developing a work plan and governance structure with local organizations is necessary to ensure successful management and revitalize the areas for an increase in visitors and activities.
Activities and execution processes	Collaborate with the US Forest Service, the Municipality of Naguabo, and other CIRMA entities to establish a governance structure and a management plan to revitalize and maintain the Sabana area and trail for coordinating activities for community members and visitors. Foster and develop the inclusive Route 191 as it would be a unique offering in the forest. Create a calendar of recurring activities for the enjoyment of the community and visitors. Develop interpretive trails with community interpreters. Additionally, the parties responsible for co-management should obtain public liability insurance to cover any mishaps given the larger-scale promotion planned for the area.
Estimated time	In progress
Estimated cost	The costs will depend on the action plans established, the cost of necessary personnel, and other details to be defined. The Route 191, or the inclusive trail, will involve expenses for facilities and creating the experience.
Potential risks	Failure to establish a governance system with the necessary entities and resources to increase the safety and maintenance of the area will present risks to visitors, diminish the possibility of its development, and mean a loss of investment in the planning of the destination as the main attraction.
Indicators	A strong governance structure will be implemented for collaborative joint management of the forest areas, supported by a detailed work plan for the area and public liability insurance. Dedicated staff will be assigned to supervise and open the area, including maintenance, organization of community activities, and efficient coordination of the use of the facilities by both visitors and the local community.

Collaborators and resources

Cubuy Committee; CIRMA; US Forest Service; Rural Partners Network; Rural Development; Governance Consultant for CIRMA (FS); Volunteers; Read the Ceiba and Naguabo Destination Plan, Recreation Area section for more recommendations.

Indicators

National Forest Foundation- Community Capacity and Land Stewardship Program; RD-National Resource Conservation Service (NRCS)-Conservation Stewardship Program (CSP); FS-Collaborative Forest Landscape Restoration Program; FS-Urban and Community Forestry Program; Department of the Interior, Bureau of Reclamation-WaterSMART Cooperative Watershed Management Program; LISC-Sports & Recreation, Creative Placemaking; EPA-Smart Growth-Recreation Economy for Rural Communities



Categories

Project Details

Project Name

Recreation Area Emergency and Prevention Plan

Geographical location

The whole community

Description

The Río Sabana Recreation Area carries significant risks for visitors, including potential extreme conditions such as flash flooding and landslides. In addition, the trails, particularly the access to the Infinity Pool, present potential hazards. Although we discourage visits to this area, it is likely that people will continue to visit without heeding the recommendations. For this reason, it is crucial to develop a comprehensive emergency prevention and management plan. This plan would entail a variety of aspects, from managing stray visitors on the trails to defining roles and collaborating with key organizations to design an integrated approach to emergency response.

Activities and execution processes

A solid emergency prevention and response plan must be formulated in collaboration with the entities responsible for management. It is also vital to install preventive signage to orient visitors, and to have properly trained personnel at the La Mina Visitor Center and Recreation Area to provide instruction on the inherent risks and share past experiences of accidents or fatalities. The plan should also include management of atmospheric emergencies for the community.

Estimated time

In progress

Estimated cost

The costs will depend on the management necessary for implementation, the cost of personnel, the design and installation of preventive signs, among others.

Potential risks

Accidents or loss of people on the trails, particularly on rainy days. Furthermore, the lack of a cohesive plan on the part of the co-management parties could generate lawsuits for lack of prevention methods and adequate management of emergencies in this zone.

Indicators

The co-managers will design an emergency prevention and management plan that includes the installation of preventive signs, evacuation plans, rescue management, educational campaigns for visitors, among other important points that should be included in the plan.

Collaborators and resources

Naguabo Municipality; Puerto Rico Department of Emergency Management; US Forest Service; Comité Desarrollo de Cubuy, Inc.; Bureau of Emergency Management and Disaster Administration (NMEAD).

Categories

Project Details

Project Name

Community Emergency Response Team (CERT) – Community Emergency Plan

Geographical location

The whole community

Description

It will be necessary to give continuity to the Community Safety Committee (CERT) to integrate strategies to manage extreme environmental conditions for community residents into the prevention and emergency plan. Fully equip the La Mina center to be a functional center in case of isolation due to flooding and atmospheric events. This would entail the installation of solar panels on the center, and in the long term, the community solar energy grid. This would shorten extended periods of lack of electricity services by LUMA.

Activities and execution processes

Convene interested community members and form a team of at least 30 volunteers to coordinate the delivery of CERT trainings at NMEAD (24 hours in at least 3 sessions). Share CERT and other emergency management materials to prepare a community plan for the hurricane season while awaiting completion of the formal training program. Once completed, maintain CERT operations at the Center and conduct practice sessions and public information sessions on the emergency plan and protocols.

Estimated time

In progress

Estimated cost

Time investment in convening community members. Certification is free of charge.

Potential risks

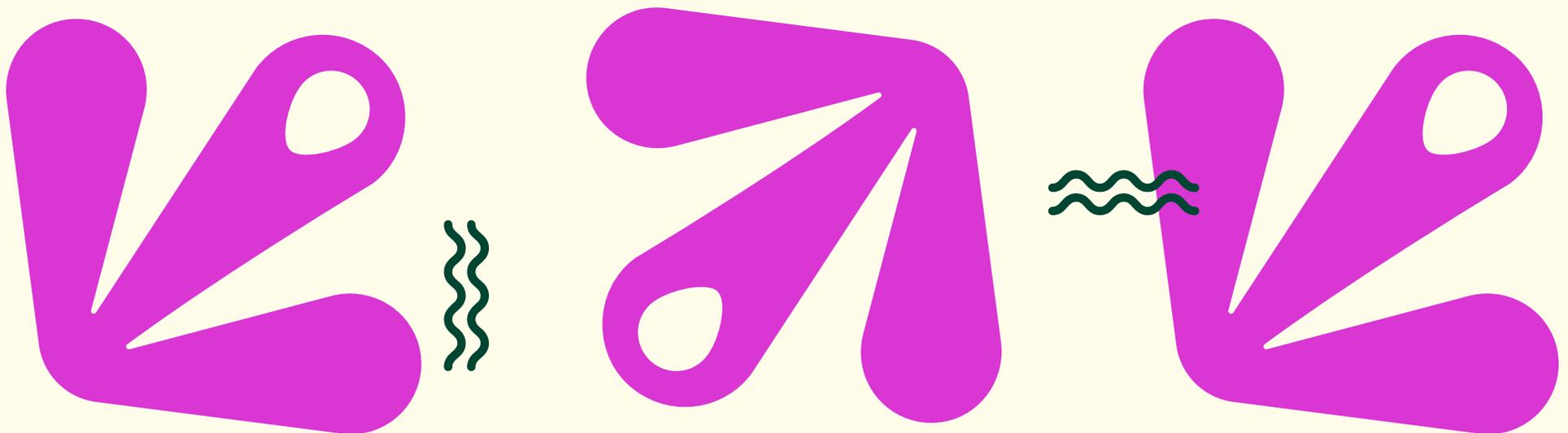
The lack of a community emergency plan and a team in place may delay the response time in case of an emergency or disaster, as the community is at high risk of flooding which tends to isolate Cubuy due to the rising rivers, particularly the Río Blanco which crosses under the Florida Bridge, the only access to the community. This can lead to injury and even death, and more extensive damage to property and assets.

Indicators

The implementation of the Community Emergency Plan is completed, with the successful creation and training of the CERT team. Residents have been duly informed and are aware of the established emergency protocols.

Collaborators and resources

Naguabo Municipality; Emergency Management Department; US Forest Service; Comité Desarrollo de Cubuy, Inc.; Bureau of Emergency Management and Disaster Administration (NMEAD).



Destino 191 Community Engagement Promotion



Categories

Project Details

Project Name

Strengthen the organizational structure to implement the Destino 191 Plan

Geographical location

The Cubuy, Florida, and Río Blanco communities, plus other interested organizations at the national and international levels

Description

Maintain a Destino 191 subcommittee, under the direction of the Comité Desarrollo Barrio Cubuy, Inc., with multi-sectoral and multi-jurisdictional representation.

Activities and execution processes

The Committee should create a subcommittee for Destino 191 that integrates stakeholders from the Puerto Rico and the U.S. to collaborate on community and economic development issues. Also, the Destino 191 Subcommittee can serve as an agent for Placemaking by using both this plan and the Rural Placemaking Toolkit for Puerto Rico to raise awareness among other communities interested in revitalization, community, and economic development projects on how they can do so. Medium-term (3–6 years)

Estimated time

In progress

Potential risks

The lack of integration of other communities and organizations could delay the implementation of the Rural Placemaking Plan for Destino 191.

Indicators

The Cubuy Committee, once its operations have been strengthened, will create a Destino 191 Subcommittee to prioritize the projects in this plan according to the timelines and funds available for their execution.

Collaborators and resources

CIRMA entities, Forest Service; Rural Development (USDA); Rural Partners Network (RPN) Naguabo Municipality; Department of Natural Resources – DRNA

Funding sources

USDA–Rural Development–Rural Community Development Initiative; USDA–Rural Development–Community Facilities Technical Assistance and Training Program; Filantropía de Puerto Rico; UnidosUS (membresía requerida); LISC Rural (membresía requerida); NALCAB (membresía requerida); Justice40 Accelerator; UPR–RP Clínica de Aseoramiento Legal

Categories

Project Details

Project Name

Strengthening the organizational structure to serve the community

Geographical location

La Mina Community Center

Description

Strengthening the local organization would help attract additional community members and engage younger generations in community and economic development programs.

Activities and execution processes

Revise the Committee's regulations of duties to continue defining roles for the execution of community projects. These regulations must be approved by the community. The activities and services to be designed should be based on their needs and interests and that can be executed with the available resources so that the operations are sustained in the long term. It should also incorporate new participants and encourage leadership among the younger generations.

Estimated time

Short-term (1-3 years)

Estimated cost

It will depend on the programs to be implemented.

Potential risks

The lack of involvement of more community members and younger generations may lead to a decline in the organization's relevance within the community and jeopardize its continuity.

Indicators

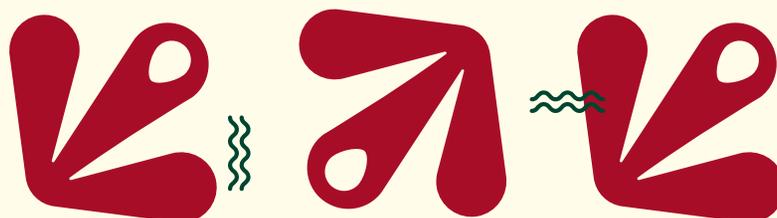
Increased capacity of the Committee to lead the development of services or programs to serve the community. Increased number of participants and more active participation of community members; the new generation of leaders is active and engaged in leadership roles.

Collaborators and resources

Cubuy Committee; F.U.R.I.A. de PR; Para Servirle de PR; Ayuda Legal de PR (Puerto Rico Legal Aid);

Funding sources

Fundación Banco Popular; Fundación Titin; Sinfinespr.org; Ben & Jerry's Foundation- National Grassroots Organizing Program



Categories

Project Details

Project Name

Establish a volunteer program to Implement the Destino 191 Plan

Geographical location

The whole community

Description

Establish the internal structures and process for recruiting and engaging community members and others as volunteers for specific projects or tasks needed to implement the Placemaking Plan. Documentation of volunteer work can be used as an in-kind match percentage for grants, so it is important to have procedures in place to provide evidence to funders.

Activities and execution processes

Prepare procedures and materials to document volunteer recruitment and participation that can meet funding requirements. This should include clearly defined volunteer roles and responsibilities, and an onboarding and training process for specific project or task roles. Have an insurance policy in place for volunteer liability coverage and prepare the necessary liability releases for volunteers to sign. Identify and recruit local and other volunteers for the projects in this plan. Incorporate universities and volunteer groups interested in contributing to the development of Cubuy. During the informational sessions, a form could be provided to register those volunteers who wish to collaborate with the Destino 191 project. Maintain a list of volunteer contacts and communicate regularly with them about projects or help needed. Create a calendar of events in which volunteers can participate in the Destino 191 Plan and other community projects. Seek and solicit funding sources for paid community volunteers and volunteer management support.

Estimated time

In progress

Indicators

Standard operating procedures are prepared to manage the volunteer program, and documents and materials are prepared to recruit, communicate, and document volunteer participation. A calendar of volunteer events is established and shared with the public. A list (or database) of all volunteers, and their contact hours, skills, or interests, etc. is maintained.

Collaborators and resources

CIRMA entities; AmeriCorps programs; AARP; United Way of Puerto Rico; local churches and schools; Ben & Jerry's Grassroots Organizing Grant; United Way of Puerto Rico; Justice40 Accelerator; Triple S Foundation; MCS Foundation; UPS Foundation; and other corporations and entities in the region.

La Mina Community Center – Access to essential services

Categories

Project Details

Project Name	Ownership / Co-management
Geographical location	La Mina Community Center
Description	As part of FPR's activities in Cubuy, it was discovered that the owner of the center is the Puerto Rico Department of Public Works (DTOP) and that the community leaders would need to reincorporate as an organization to apply for official co-management of the center through the municipality. Currently, the Committee is already reincorporated under the name "Comité Desarrollo Barrio Cubuy" (Comité Desarrollo de Cubuy, Inc.), and they can continue the lease arrangements for the center. The La Mina community center is intended to continue to be used for activities, events, and community emergencies, as well as to become the La Mina visitor center. Likewise, the second building will be primarily rehabilitated as a community center and shelter, where it can also be converted into a workshop and activity room.
Activities and execution processes	Understand who owns the center. Make a co-management or agreement with the appropriate authorities. A lease agreement is needed to apply for funding from government agencies for essential center services.
Estimated time	In progress
Estimated cost	Lease costs, if any.
Potential risks	Loss of project investment and inability to receive services through government funds (local and federal). Authorities and bureaucratic processes may be the biggest challenges.
Indicators	Agreement or lease agreement entered by the municipality or other authority for the long-term use and management of the facilities by the Cubuy Committee.
Collaborators and resources	Naguabo Municipality; Asesores Financieros Comunitarios (AFC); Ayuda Legal de PR (Puerto Rico Legal Aid); USDA Forest Service; Centro para la Reconstrucción del Hábitat, Inc. (Center for Habitat Reconstruction)

Categories

Project Details

Project Name

Solar and electric power

Geographical location

La Mina Community Center

Description

The community center is currently not connected to LUMA Energy and has temporary equipment donated by Amigos del Yunque to light the first building (upstairs) and the bathroom building. Eight (8) months after Hurricane María, when power finally returned to the center, the downstairs building suffered a short circuit. One of the residents of the community, frightened, called LUMA and as a result, they cut the power to both buildings. According to the Committee, this action by LUMA Energy was unnecessary since the first building had not suffered any damage. The Committee's president, Jimmy Piña, followed up for several years, but with the earthquakes, the pandemic, and the bureaucracy, LUMA did not respond to the community's requests. The community prefers to move toward relying solely on solar energy so that neither the community nor the center's operations are affected. However, the maintenance of solar equipment is rigorous and costly, so FPR recommends that efforts be made to restore power through LUMA so that they can have the latter as a "back up". The center has several functions, including emergency management and shelter, so it is a priority to ensure that the center has both solar and electrical grid power.

Activities and execution processes

Continue efforts to reconnect the community center to LUMA Energy and find sponsors to donate the solar equipment.

Estimated time

Short-term (1-3 years)

Estimated cost

It will depend on the costs of re-installation to LUMA, opportunities for community solar, or the necessary parings to complete solar equipment, if any, and maintenance management.

Potential risks

Governmental actions could continue to prevent the center from being reconnected to electric power. Therefore, it is also necessary for the community center to have solar equipment and be able to continue its operations despite obstacles from LUMA energy. Ownership of the building could create obstacles for the Cubuy community to move forward.

Indicators

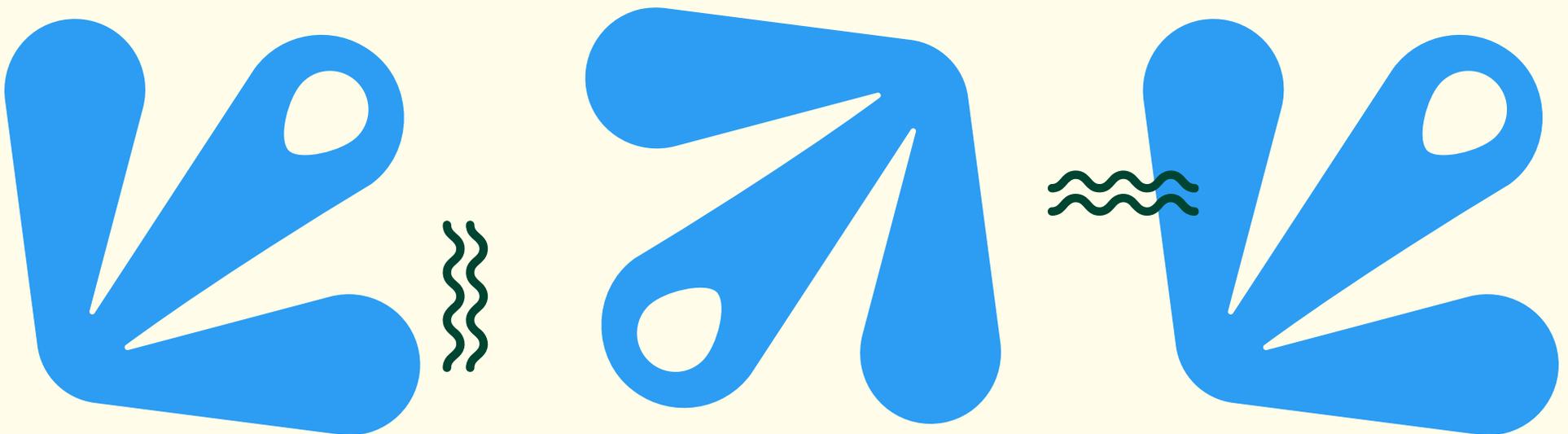
Obtain donations of solar equipment to become the primary source of power but stay connected to LUMA in the event of a failure of the solar power equipment which can be quite costly.

Collaborators and resources

Empowered by Light; Casa Pueblo; Castañer community solar microgrid project; Puerto Rico Solar Business Accelerator (PRSBA); Cooperava Hidroeléctrica de la Montaña; University of Puerto Rico Mayagüez campus; Interstate Renewable Energy Council (IREC); Pathstone Corp; U.S. Economic Development Administration; HUD; Amigos del Yunque (El Yunque Friends); LUMA energy; Naguabo Municipality;

Funding sources

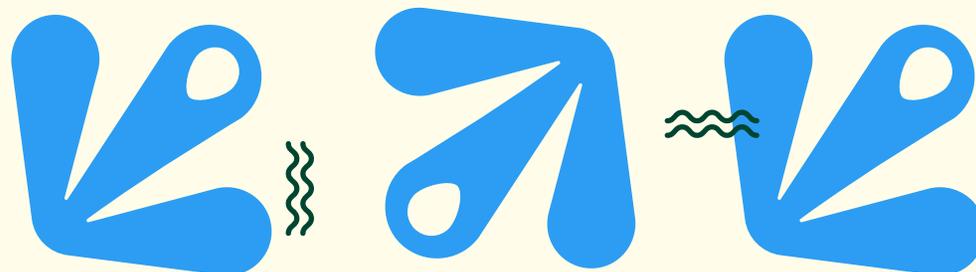
Puerto Rico–Energy Resilience Fund (Round 1 – Individual or Cooperative Renewable Energy Housing; Round 2 – Solar for Communities – TBA); DOE – Renew America's Nonprofits; CRA funds can be obtained to provide solar energy. Have a quote to make it viable.



Categories

Project Details

Project Name	Broadband access
Geographical location	La Mina Community Center
Description	The center does not have internet services, which hinders the development of possible internet-dependent projects. Furthermore, internet service at the center could help enable digital literacy programs, technical assistance services, among others.
Activities and execution processes	Identify public and private resources, including potential sponsors or donations for the installation of broadband at the Center. Develop a plan for fundraising or revenue-generating activities that can pay for broadband service that will expand the program and services at the Center.
Estimated time	Short-term (1-3 years)
Estimated cost	Approximately \$2,500 for satellite internet via Hugh Net for 2 years. Submit proposal to Para La Naturaleza.
Potential risks	Not having broadband access would significantly delay the plan's community and economic development efforts.
Indicators	The center has broadband service to expand its operations and offer services to the community.
Collaborators and resources	Donations, Puerto Rico Office of Management and Budget (OGP) – government grants (Smart Island); Para la Naturaleza

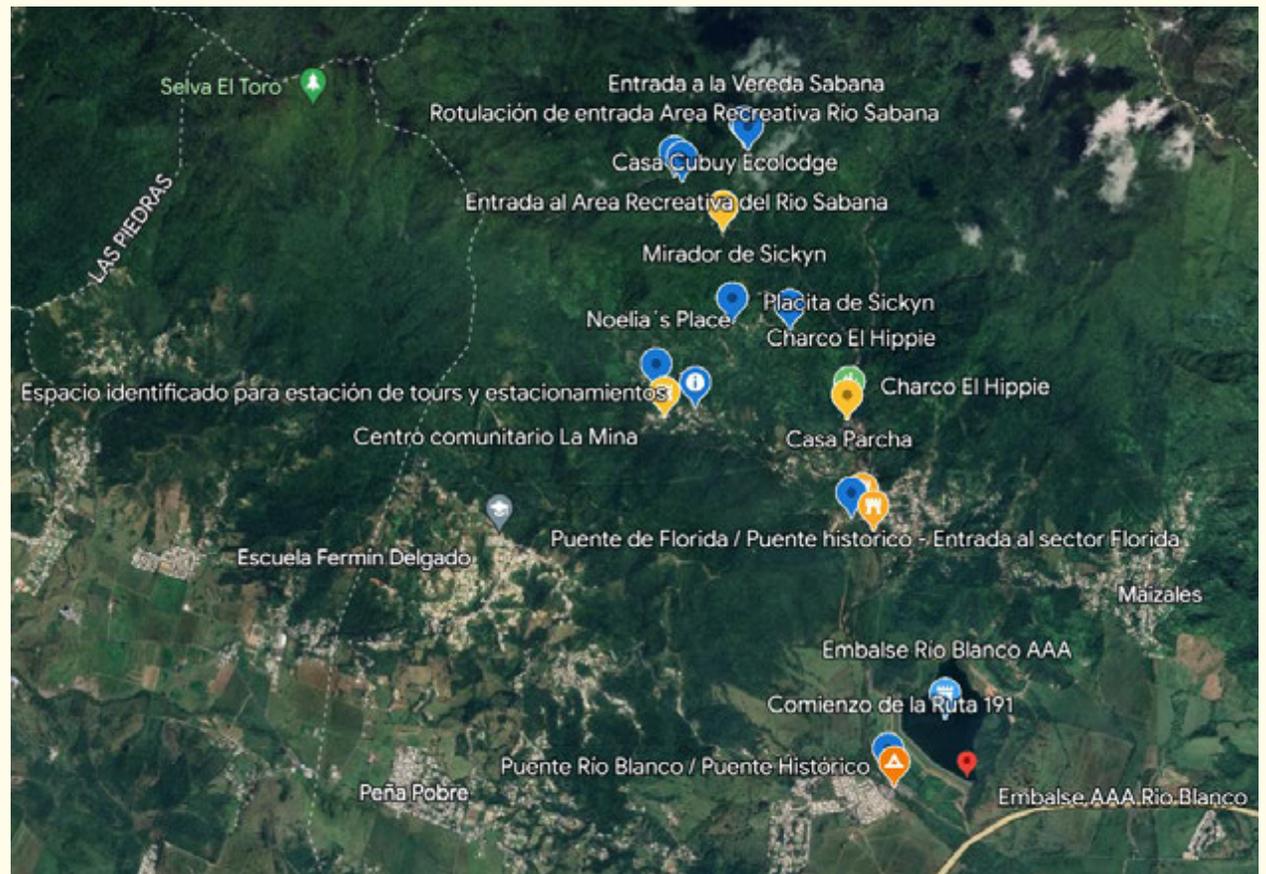


Cultural Route: Destino 191



During the past years, the community has faced a series of obstacles that have resulted in a decline in the economic activity of Route 191. Among the major challenges identified are: the lack of visibility about the area and its offerings, isolation in the case of weather events, and the limited development of new businesses. According to its members, what was once a vibrant place has turned into one much less frequented by visitors, with some of the reasons being the fear of frequent landslides, the effects of natural disasters, the economic crises, and the permanent closure of Route 191 south through El Yunque. This has restricted access to the region and, consequently, has led to a decrease in the economy resulting in the closure of businesses and the abandonment of public spaces; thereby, affecting certain aspects related to the quality of life of the residents. However, the community maintains a rural spirit where mutual support, sharing of food and resources, and a connection with the natural environment exist. This is why, as part of the FPR process along with the Committee, the goal was to identify the community's assets in order to develop a Cultural Route that would serve as an attraction for visitors. Furthermore, the Committee supports the implementation of projects for community and economic development through Visitor Economy and is actively seeking opportunities for growth in these areas.

During the course of the project, and through multisectoral and multijurisdictional approaches, a mapping of community assets was conducted within Route 191, which traverses Río Blanco through its Florida and Cubuy sectors. This mapping aimed to outline and define tangible development projects that would lead to an increase in visitors, allowing residents to benefit from community tourism, among other possibilities. This, in turn, would have a domino effect on the development of micro-businesses, more rental options, transportation improvements, among other aspects. In the following sections, the results for the participatory exercises regarding the community mapping, the desires and needs, and the vision of the Cubuy, Florida and Río Blanco community will be presented.



Route 191 assets in the Río Blanco, Florida and Cubuy neighborhoods. To take the virtual tour, visit the Google Earth project for the Cultural Route:
<https://earth.google.com/earth/d/1yr4KAu8FK0S8OWJIRjVwOqQBDkHC7Xur?usp=sharing>



The Route's Assets

One of the project's goals was to design a Cultural Route. A cultural route, also known as a "cultural itinerary" or "heritage route," refers to a planned journey that connects various places, sites, buildings, monuments, events, or activities related to the culture, history, heritage, and legacy of a specific region or geographic area. These routes are designed to allow visitors to explore and learn about the cultural richness and historical legacy of a particular place.

Cultural routes often highlight aspects such as historical architecture, local cuisine, artistic and artisanal traditions, music, festivals, museums, archaeological sites, historic buildings, and other cultural elements. These routes can encompass a town, a region, a country, or even cross international borders, showcasing cultural diversity and shared heritage among different geographic areas.

Cultural routes not only promote tourism and cultural exchange but can also contribute to the economic development of local communities by fostering sustainable and regenerative tourism and the preservation of cultural and ecological heritage. Furthermore, they provide visitors with an enriching experience by immersing them in the history and culture of a place, which can lead to a greater appreciation and understanding of the world's cultural diversity.

Due to this, FPR, together with the Barrio Cubuy Development Committee, held several multisectoral meetings to identify the areas of the highest prehistoric, historical, cultural, and ecological value in the area. Barrio Río Blanco is home to invaluable structures and archaeological sites. Furthermore, the southern entrance to El Yunque contains flora and fauna characteristic of the area and is abundant in species such as Helicorneas, Yaboa, a nocturnal bird frequenting Route 191, Pitirre, the Puerto Rican Woodpecker, among others.

Although the destination represents a significant opportunity for economic development, it is important to remember that uncontrolled tourism could negatively impact the quality of life for residents and pose greater risks to those who are vulnerable due to their circumstances. To minimize this risk, it is important to continue community development projects in parallel with the development of the route.

There are six (6) types of visitors who come to the Sabana River Recreational Area: social groups, hikers and extreme hikers, those seeking tranquility, and those with special interests such as Taíno archaeological sites (Byrne, Chilamkurthi, Flanagan, & Rehm. Worcester Polytechnic Institute 2021). In other words, there is already a diversity of visitors that provide opportunities for development through visitor-related economic activities.



Leyenda

- Lugares de Interés Turístico
- PR-191
- Área de Estudio
- Barrios Naguabo
- Municipio de Naguabo
- Municipios



Leyenda

- Sectores de Estudio
- Negocios Locales
- Turismo
- PR-191
- Área de Estudio
- Barrios Naguabo
- Municipio de Naguabo
- Municipios
- Base de Fe
- Cultural-Histórico
- Dotaciones

Stakeholder Involvement in Destino 191

The Destino 191 project in Naguabo has gained tremendous momentum by garnering support from stakeholders. It not only has strong community leaders in the Cubuy sector but also the municipality of Naguabo is known for having organized communities that often come together to make a difference, such as the fight to preserve the historic Bridge No. 194 (also known as the Río Blanco Bridge). Organizations like the Grupo Comunitario de Río Blanco, Naguabo Somos Todos, the Instituto de Cultura Puertorriqueña (ICP), and the current mayor of Naguabo, Miraidaliz Rosario, have come together to advocate for its preservation.

Governmental Institutions	Non-Governmental Institutions	Community Organizations
<p>Federal Agencies</p> <ul style="list-style-type: none"> • US Forest Service • USDA Rural Development • Rural Partners Network <p>State Agencies</p> <ul style="list-style-type: none"> • Compañía de Turismo de Puerto Rico • Departamento de Transportación y Obras Públicas • Instituto de Cultura Puertorriqueña <p>Municipal Agencies</p> <ul style="list-style-type: none"> • Municipio de Naguabo 	<ul style="list-style-type: none"> • Para La Naturaleza • Amigos del Yunque • Corazón Latino • Vitrina Solidaria • Love in Motion • Discover Puerto Rico • P.E.C.E.S • Asesores Financieros Comunitarios • A Friend's Foundation • Triples S Foundation • Puerto Rico Science, Technology & Research Trust • Empowered by Light • Ruta Borinquen • Pathstone • Hispanic Federation • Asociación de Artistas Plásticos de Puerto Rico (AAPPR) 	<ul style="list-style-type: none"> • Comité Desarrollo de Cubuy Inc. • Movimiento Naguabo Somos Todos • Residentes de Cubuy • Yo Soy Florida • Grupo Comunitario, Río Blanco, Inc. • Sueños Dorados • Peña Pobre • Daguao • Hucares • Los 5k de Río Blanco • Other communities in Naguabo • Casa Pueblo • Barrio Eléctrico

Recently, the Destino 191 project has provided a space to bring stakeholders together and understand the community's desires in areas of development for the southern entrance to El Yunque, as well as the challenges of this development. To this end, members of various community groups have joined forces to provide their input on these processes, as have various governmental and non-governmental organizations, local businesses, faith-based organizations, and educational institutions. This reflects the strength of the community in coming together to forge a better future for their region.

Faith-based Organizations	Local Businesses	Educational Institutions
<ul style="list-style-type: none"> • El Concilio de la Iglesia Adventista, ADRA (Adventist Development and Relief Agency) • Iglesia Evangélica Unida (Evangelic Church United) 	<ul style="list-style-type: none"> • Río Blanco business owners • Montaña Explora, Inc. • Casa Parcha • Noelia's Place • Casa Cubuy Ecolodge • Placita de Syckin • Loopland • Asociación de Comerciantes Malecón de Naguabo • Cromápolis 	<ul style="list-style-type: none"> • Escuela Graduada de Planificación UPRRP • Escuela de Arquitectura UPRRP • Other educational institutions interested in volunteering

The stakeholders mentioned above continue to participate in the Project. It is important that they be informed and engaged in Destino 191 development.



SWOT Analysis of the Cubuy and Río Blanco Community



As part of the analysis of the space, a multi-sectoral event was held in the Cubuy and Río Blanco communities. After compiling the data provided by community members and organizations interested in the project, the following conclusions were reached regarding strengths, opportunities, weaknesses, and threats (SWOT):

Strengths



- **Nature and natural resources:** Cubuy, Florida, and Río Blanco stand out for their impressive nature, landscapes, and natural resources diversity. Río Blanco is the largest barrio in Naguabo and is in part of the only tropical forest in the U.S. National Forest Service. The area has many rivers and a wide territorial extension, being the largest in square miles in the municipality of Naguabo.
- **Accessibility to El Yunque National Forest:** The Cubuy, Florida, and Río Blanco area offers a unique advantage by having direct access to El Yunque National Forest. It has access routes that allow visitors to enjoy the beauty and natural resources of the forest.
- **United and committed community:** : The Cubuy, Florida, and Río Blanco communities stand out for being family-oriented, supportive, and committed. The leaders are aware of and work together with the organization. People are willing to work and show a passion and commitment to recreation areas and tourism. Their focus is on attracting visitors and promoting the wonders of this part of eastern Naguabo. It is an active and collaborative community.
- **Historical and cultural richness:** The Cubuy, Florida, and Río Blanco area has a rich history, with key individuals possessing historical knowledge of the community. The indigenous heritage is highlighted, and several areas have historical and cultural value, including historic bridges and a beautiful historic route.

- **Businesses** In the Cubuy, Florida, and Río Blanco areas there are already lodging and tourism businesses in operation, which contributes to economic development and the provision of services to visitors.
- **Meeting spaces and tourism potential:** The Río Blanco bridge offers a detour that can serve as a meeting point with food trucks and space for motor homes, which adds to the attraction and opportunities for tourism in the area.
- **Sustainable and regenerative community-based tourism potential:** Cubuy, Florida, and Río Blanco have significant potential to generate tourism without violating community rights. There is an opportunity to develop sustainable and regenerative tourism that highlights the natural beauty and local culture while respecting and valuing traditions and the environment. This can create socio-economic opportunities for residents and improve their quality of life.
- **Alliances and relationships with organizations:** The community has established alliances with other organizations and a close relationship with El Yunque Forest officials. This facilitates the joint development of projects and the sharing of knowledge and resources.
- **Action plan:** "If you fail to plan, you plan to fail". Having a plan is a step in the right direction.
- **Visitor population study:** There is a study that describes the population of tourists visiting the region that could be used for the marketing strategy.



Weaknesses



- **Lack of knowledge about the region:** There is a low level of knowledge among the people in general about the attractions and resources available in this region of Cubuy, Florida, and Río Blanco. Lack of knowledge and lack of information about the location and services available in the area hinders visitor interest.
- **Limited space and potential risks:** The area has limited space, which can generate risks if a high volume of tourism is carried out without adequate planning.
- **Poor identification and marketing of the area:** There is a lack of adequate identification and promotion of the area, which hinders its visibility and attractiveness to visitors.
- **Lack of basic necessities stores:** The lack of nearby stores to purchase basic necessities hinders the comfort and satisfaction of visitors.
- **Challenges in municipal support:** There are challenges in terms of support and resource allocation by the Naguabo municipality, which can be an obstacle to the development and promotion of the area.
- **Limited signage and access:** The lack of adequate signage and limited access make it difficult to find one's way around and access points of interest in the area.
- **Economic constraints:** Lack of financial resources limits the development of infrastructure and services needed for tourism and the community.
- **Roads in poor condition and risk of landslides:** The road infrastructure presents risky conditions, such as roads in disrepair and landslides, affecting safety and access to the area.
- **Lack of communication and orientation:** Lack of effective communication with visitors causes disorientation and disinterest in the area.
- **Effects caused by natural disasters:** Damage caused by hurricanes has hurt the infrastructure and recovery of the area.
- **Aging population and need for services:** The high proportion of elderly limits the availability of services and activities tailored to different age groups.
- **Lack of security and surveillance:** Lack of security and surveillance can generate concerns for visitors and affect their experience.
- **Lack of lighting:** Limits business development at night and discourages visitors from staying in the area for several days.
- **Lack of data on the number of people:** There is no accurate count of the number of people visiting the area, which makes it challenging to plan and develop adequate infrastructure and services.
- **Protection of the cultural and historical legacy:** The lack of a code to protect the cultural and historical legacy and the absence of an entity in charge of its implementation limits the preservation and adequate promotion of these resources.
- **Lack of food and sale of local handicrafts:** The scarcity of food and the lack of local handicrafts made from local materials affect the tourist experience and offer in the area.
- **Concern about past incidents:** Fear of past accidents or fatalities



Opportunities

- **Community-centered tourism development:** There is an opportunity to promote tourism where the community is the primary beneficiary, highlighting its attractions and positively impacting the local economy. The participation of non-profit organizations can boost community-based tourism, involving residents in offering authentic and enriching experiences.
- **Community connection:** It is important to foster connection and collaboration among residents to develop a shared vision and make democratic decisions that benefit the community's well-being.
- **Local business development:** There is an opportunity to stimulate the local economy by developing new businesses and supporting existing artisans and merchants.
- **Infrastructure improvements to boost local development and the visitor economy:** Significant opportunities exist to improve infrastructure in the area, from the entrance to Route 191 via the Río Blanco Bridge #194 to the surrounding buildings and the entrance to El Yunque in Cubuy. These improvements can transform public spaces, providing a more pleasant and attractive experience for residents and visitors alike, which in turn can spur economic development and strengthen community connection.
- **Lodging tourism:** There is the possibility of developing lodging options for tourists who wish to spend the night in the community, providing an authentic and unique experience.
- **Eco-friendly sanitation facilities:** Environmentally conscious sanitation facilities can be developed, promoting sustainable and environmentally friendly practices.
- **Proper waste management:** There is an opportunity to implement recycling programs and campaigns to promote appropriate waste management in general.
- **Media promotion:** Local, national, U.S., and international press can be used to promote the area's attractions and activities.
- **Improved communication and support for residents and merchants:** Informing and training individuals and merchants about the project can provide greater support and involvement in community development.
- **Asset restoration and development:** Work can be done to improve and restore local assets to attract visitors and promote tourism.
- **Ecotourism and sustainable tourism:** The local and foreign markets are showing a growing interest in ecotourism, which can be used to promote environmental protection and generate income.
- **Employment development and training:** Job creation can be promoted in areas such as administration and support for artisans, providing economic and personal development opportunities.
- **Land use planning:** It is important to have an updated land use plan to guide the development of the community and to avoid outside interests that could damage the local vision.
- **Promotion of the local identity and brand:** It is essential to promote the brand and design of the community, highlighting its unique identity and attractions.
- **Historical and natural resource valorization:** The hydroelectric plant can be considered as a tourist attraction and its feasibility of use can be evaluated.



Threats

- **Negative environmental impact and lack of maintenance:** The increase in visitors and the flow of vehicles can harm the natural environment, causing pollution, deterioration of recreational areas, and the need for adequate maintenance to preserve the environment.
- **Development that may displace residents and increase the cost of ownership:** Growth and development in the area may lead to an increase in the cost of housing, which may make it difficult for current residents to remain in the community, displacing low-income people and affecting social cohesion.
- **Lack of reliable infrastructure and essential services:** Lack of solid infrastructure, such as reliable water and electricity supply, can make it difficult for businesses to function appropriately and limit residents' quality of life.
- **Environmental impact of a high flow of visitors without adequate infrastructure:** Many visitors without the necessary tourism infrastructure can put additional pressure on natural resources, increase pollution, and alter the area's ecological balance.
- **Natural disasters such as hurricanes, floods, and their consequences:** The geographic location of the Cubuy neighborhood exposes it to threats from natural disasters such as hurricanes and floods, which can cause damage to infrastructure, disruptions in services, and jeopardize the safety of residents and visitors.
- **Gentrification and displacement of residents:** Tourist development can lead to gentrification, where housing prices become unaffordable for existing residents, resulting in the displacement of local communities and the loss of their identity and social cohesion.
- **Negative visitor behavior and lack of surveillance:** Lack of
 - adequate supervision and surveillance can lead to inappropriate behavior by some visitors, such as vandalism, pollution, and lack of respect for the environment and the local community.
 - **Lack of commerce and services to meet visitor needs:** The lack of basic retail establishments and services, such as supermarkets and gas stations, can hinder the visitor experience and limit local economic development opportunities.
 - **The threat of vehicular congestion and increased traffic:** An increase in the flow of tourist vehicles can generate road congestion and affect the mobility of both residents and visitors, causing traffic problems and deterioration of air quality.
 - **Natural and recreational areas contamination:** The influx of visitors without proper waste management can contaminate natural and recreational areas, affecting the scenic beauty and health of the local ecosystem.
 - **Noise and deterioration of residents' quality of life:** Increased tourism can generate undesirable noise levels.



Collective Strategic Vision



As part of the Placemaking efforts, a multi-sectoral meeting was held where the shared vision of the parties present, including Cubuy and Río Blanco community leaders, governmental and non-profit organizations, and local businesses, among others, was compiled through a collaborative exercise. The results of this collective strategic vision are as follows:

The **short-term (0 to 3 years)** strategic vision of the Placemaking plan includes the following elements:

- Continue to develop school excursions so that students can learn about and appreciate the natural and cultural attractions of the area, thus fostering a connection with their surroundings.
- Establish the strategy of branding the area as part of the rural plan of Placemaking, using social networks to promote Destino 191.
- To have satellite internet to offer educational services, billing systems, and other services.
- Develop a calendar of events and activities open to the public to generate dynamism and attractiveness in the area.
- Engage and establish partnerships with recreational organizations to use the community center facilities for activities, events, meetings, etc.
- Establish alliances with schools so that children and young people can learn about the opportunities the Destination offers.
- Develop community tourism and offer interpretative tours guided by Naguabo residents who want to be interpreters.
- Use the road for night interpretation, including accessibility for people with functional diversity. Promote guided night tours to protect the Yaboa bird that frequents the area. Ensure accessibility for people with diverse functional abilities.
- Develop an inclusive tour that promotes the participation of

- all people.
- Encourage the collaboration of more local companies in the tourism area, especially for visits to rivers and subterranean sites.
- Give greater prominence and promotion to local merchants, such as Airbnb and other businesses, and encourage the purchase of properties in the area.
- Publicize Naguabo meetings and events through social networks, newsletters, and other media.
- Establish directional, informative, and preventive signage and alliances with other communities and tourist attractions to create signs.
- Establish communication with the agencies responsible for rescuing stray dogs on Route 191.
- Provide community training in business, trail interpretation, community tourism, solidarity economy, organization, and regulations.
- Identify sources of funding for the development of space rehabilitation and construction projects, educational, health, entrepreneurship, and business development programs, as well as for managing human resources, entrepreneurs, and volunteers.

These short-term actions are intended to boost tourism and community development in the area, promoting the participation of residents and generating opportunities for economic and social growth.

The **medium-term strategic vision (3–6 years)** includes the following aspects:

- To formally develop the PR 191 Route, integrating the different points of interest with interpretation to offer an enriching experience to visitors.

- Expand the scope of the route to receive visitors from all over the island and propose to the Department of Education the inclusion of a regional educational plan.
- Develop accessible and inclusive parking, transportation systems, and areas, considering environmental conservation.
- Maintain alliances with organizations, businesses, and volunteers to ensure the continuity and success of the project.
- Consolidate the creation of community centers and spaces to generate programming by leveraging existing infrastructure, such as closed schools and community facilities.
- Establish an inclusive sidewalk on Route 191 that benefits people with functional diversity.
- Integrate Route 191 into the Northeast Trail system to expand travel options and connection to other Destinations.
- Establish contact with institutions to develop projects that address risk issues, generate employment, and promote economic development in the area.
- Continue business establishment and development to complement the tourism offer and promote the local economy.
- Continue training human resources in Cubuy, Florida, and Río Blanco and share information with employees and external tour guides about the history and tourism in the area, so that they can contribute to enhancing and promoting experiences in Naguabo.
- Move forward in placing signs with QR codes to help visitors identify their location and minimize the possibility of getting lost.
- Continue to seek and obtain funds to finance the execution of projects in rehabilitation and construction, as well as educational, health, entrepreneurial development, and business development programs.

Through these strategic approaches, we seek to strengthen tourism, the community, and the local economy, creating an attractive and sustainable experience for visitors and improving the quality of life of the area's residents.

The **long-term strategic vision (7 to 10 years)** focuses on the following aspects:

- Continue to seek funds to encourage local merchants and artisans, promoting sustainable economic development and preserving local traditions and skills.
- Establish tour guides on each trail to offer visitors a more enriching and safer experience. In addition, develop virtual experiences that allow accessibility from homes and schools, thus expanding the scope of the tourism offer.
- Establish links and collaborations at a regional or even island-wide level, creating inclusive and educational routes that integrate different projects and attractions, enriching the visitor experience and promoting the interconnection between tourist Destinations.
- Promote citizen science projects involving the community, especially youth, in managing and sustainable development of the forest and its natural resources. This will provide learning and development opportunities for young people while promoting the conservation of the natural environment.

Through this long-term strategic vision, we seek to establish a solid and sustainable Placemaking plan that promotes economic development, and cultural and environmental preservation and provides authentic and enriching experiences for visitors and the local community.

Projects Identified for the Visitor Economy in Route 191



Projects for the development of the Visitor Economy

Creation of Tourist

- Increased number of available experiences and tourist interpreters

In progress

Community Mapping

- Continuing mapping efforts to keep the asset inventory up to date

In progress

Development of Route 191

- Signage on Route 191
- Signage on main roads from PR51 and PR30, 31
- Installation of lighting along Route 191

In progress
Short term (1-3 years)
Short term (1-3 years)

Asset Development

- Río Blanco Bridge/Historic Bridge
- Río Blanco AAA Reservoir
- Casa de Piedra (Stone House)
- Florida Bridge/Historic Bridge: Entrance to the Florida sector
- Entrance to Cubuy
- Charco Hippie
- Identified space for station and parking/ Sculpture
- Community Center Facilities: Exterior and interior of the first building
- Community Center Facilities: Exterior and interior of the second building/Court/Yard
- Syckin Viewpoint
- Salomé Stone or Indian Stone Viewpoint
- Entrance to the Río Sabana Recreational Area
- Río Sabana Recreational Area
- La Vereda Sabana
- Vereda 191: Inclusive Path

In progress
Short term (1-3 years)
Short term (1-3 years)
Medium term (3-6 years)
In progress
In progress
In progress
In progress
Short term (1-3 years)
Short term (1-3 years)
Short term (1-3 years)
In progress
In progress
In progress



Based on the previous findings and the community's input throughout the entire project, we propose the following projects to promote community development through the visitor economy.

Tourism Experiences



Categories	Project Details
Project Name	Increasing the Number of Available Tourism Experiences and Tour Guides
Geographical location	Route 191 Naguabo
Description	Route 191 contains a wealth of ecological, archaeological, and historical assets, as well as recreational spaces that can serve as a magnet for visitors with diverse interests such as sports, nature exploration, and cultural experiences. Therefore, it is necessary to promote the development of tourism experiences and tour guides in the area. Some of the accommodation options in Cubuy are businesses such as Casa Cubuy and Casa Parcha. On the other hand, the local options in the community for food or some limited supplies are Noelia's Place and what the community knows as Placita de Syckin. However, optimizing and expanding the culinary offerings is necessary to keep visitors for longer periods.
Activities and execution processes	Train members in community and regenerative tourism topics. Promote the marketing of the route and its offerings. Increase culinary experiences on the route to extend the stays of visitors.
Estimated time	In progress
Estimated cost	≈10,000
Potential risks and challenges	<ul style="list-style-type: none"> Marketing the route without the necessary capacity to accommodate visitors could result in unsustainable growth for the community. It could also lead to shorter visits that do not benefit the economic development of the area.
Indicators	Increased availability of ecological, cultural, and culinary experiences along the route and in the national forest; training of new tour guides to promote these experiences.
Collaborators and funding sources	PR Tourism Company; Discover Puerto Rico; CIRMA entities; Montaña Explora; USFS; USDA Rural Development–Rural Business Development Grants; EDA–Economic Adjustment Assistance Grants and Disaster Supplemental (2023); Hispanic Federation–Amenecer Puerto Rico

Community Mapping → → → → →

Categories

Project Details

Project Name	Community mapping – Participatory Mapping
Geographical location	Cubuy and Río Blanco communities
Description	Through FPR's efforts, three types of maps were produced: a risk map, an asset map, and a structure map. This initiative made it possible to identify and locate assets and places of interest in the residents, providing a valuable tool for them to know and understand their territory. By valuing their heritage, wealth, and resources, it seeks to facilitate the well-being of the community in general. Community maps are very useful because they not only contextualize and point out assets for the benefit of the community, but also generate networks and synergies between the different social agents present in the area. This collaborative and connected approach results in more egalitarian and cohesive communities, allowing them to be more successful in achieving their shared goals and objectives.
Activities and execution processes	Convene groups to review current community maps, compare versions and update as needed; form a lead group to maintain and publish community maps for the various projects; use and update appropriate maps for planning and public awareness.
Estimated time	In progress
Estimated cost	<ul style="list-style-type: none">• There are many free tools such as "Google Maps" and "Google Earth". Another way to reduce costs is through collaborations with the School of Planning or volunteering.
Potential risks and challenges	<ul style="list-style-type: none">• Potential risks in community mapping include lack of resources or interest in keeping maps up to date, privacy and security issues, bias and representativeness, data appropriation, conflicts, technology dependency, and lack of follow-up. Failure to keep asset and risk mapping up to date can have an impact on economic development and safety.
Indicators	Updating community maps; utilization and distribution of appropriate maps for project planning and public awareness.
Collaborators and resources	USFS; CIRMA entities; local business; Naguabo Municipality; Ángel Ramos Foundation

Development of Route 191

Categories

Project Details

Project Name

Signage on Road 191

Geographical location

Route 191

Description

The signs are a way of directing visitors to the Community Center, the entrance to the national forest, and other local attractions. These informative signs have the potential to provide visitors with details of the various places of interest where they can stop and explore, allowing them to enjoy a more enriching experience in the region. In addition, by providing detailed information about the options available, the signs would help to extend visitors' stay and increase the likelihood that they would return for future visits. As part of FPR's efforts, a first welcome sign would be installed at the entrance to Cubuy.

Activities and execution processes

Obtain the necessary permits from the corresponding authorities to carry out the installation in the planned locations. Integrate inclusivity elements to signage installations. Request quotations from different suppliers for the creation of the signs, considering aspects such as design, materials, and associated costs. It is important not to forget to include in the co-management plan the maintenance of the signs over time.

Estimated time

In progress

Estimated cost

≈\$35,000

Potential risks and challenges

The lack of adequate signage in the community can lead to orientation and directional problems for visitors. In addition, the absence of effective signage would deprive visitors of information about other nearby attractions that could enrich their experience and motivate them to extend their stay or plan additional visits. The challenges of signage include potential delays in installation, difficulties in obtaining adequate funding, and ongoing maintenance of updated signage content.

Indicators

Cantidad de rotulaciones diseñadas, compradas, instaladas y mantenidas. Incremento de visitas a puntos de interés, el impacto en el turismo y economía local, durabilidad, la efectividad en casos de emergencia, la inclusión y accesibilidad.

Collaborators and resources

ACT; DTOP, Municipio de Naguabo;

Funding sources

Funds for the design, signage, and installation can be obtained as part of a grant for a community development project, for example: AARP Community Challenge Grants Program; Fundación Banco Popular; Comisión Especial Conjunta de Fondos Legislativos para Impacto Comunitario; T-Mobile Hometown Grants; NEA - Our Town Grants; Brown-Forman Community Grants; Community donations from the Citi Foundation; Community Support Grants from the Coca-Cola Foundation; Walmart Foundation Community Grants, and other funders that support community development.



Map description: Lettering suggested by School of Architecture students, plus other elements to be



Map Description: Proposed Community Branded Signage Project at Road 191 would cover the assets marked on this map.



NOTE: This categorization is a suggestion. It can be categorized in several ways. The categories are suggested to facilitate communication and visualization of the information.

Categories

Project Details

Project Name

Signage on main roadways from PR-51, PR-30, and PR-31

Geographical location

Several locations described on the map

Description

The signage project from routes PR-51, PR-30, and PR-31 aims to guide travelers to the southern entrance of El Yunque National Forest and other local attractions in Cubuy and Río Blanco. The purpose is to install strategic signage to alert and guide visitors coming from the north and south to these destinations, improving the tourist experience and promoting sustainable development in the region.

Activities and execution processes

Obtain the necessary permits from the appropriate authorities to carry out such installation in the planned locations. Understand the organization in charge of installing the signs directing to the forest, either Puerto Rico Department of Public Works (DTOP) or the US Forest Service to study the feasibility of the suggestions and complete this project.

Estimated time

Short-term (1-3 years)

Estimated cost

≈\$25,000

Potential risks and challenges

The challenges of road signs that coincide in different towns in the eastern region of Puerto Rico include coordination between the Department of Transportation and Public Works and the municipalities to achieve uniformity and consistency in the installation. Regulations must also be complied with and the necessary permits must be obtained.

Indicators

Number of signs designed, purchased, installed, and maintained. Other factors to consider include increased visitation to points of interest, impact on tourism and regional economy, durability, emergency effectiveness, inclusiveness, and accessibility.

Collaborators and resources

Puerto Rico Highways and Transportation Authority; DTOP;

Funding sources

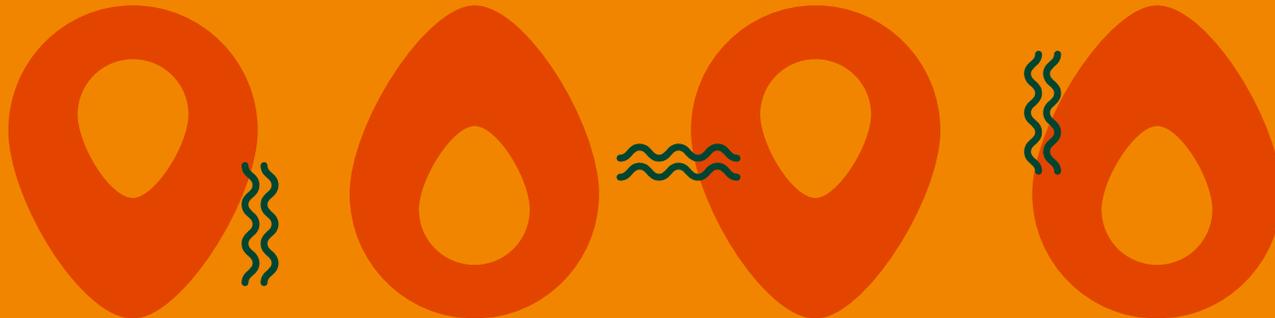
The installation can be obtained as part of a grant for a community development project, for example, from AARP; Community Challenge Grants Program; Banco Popular Foundation; Joint Task Force on Legislative Funding for Community Impact; T-Mobile Hometown Grants; NEA – Our Town Grants; Brown-Forman Community Grants; Citi Foundation Community Grants; Coca-Cola Foundation Community Support Grants; Walmart Foundation Community Grants and other funders that support community development.



Preliminarily, the suggested locations for the signs were marked. Note that the orange tags correspond to PR-31, while the red ones show those on PR-53:



Recommendations for map editions: Highlight and label roads PR-30, PR-31, and PR-53, so that it is clear that signs are to be placed on these roads.



Road PR-191 Lighting



Categories

Project Details

Project Name

Lighting installation through Road PR-191

Geographical location

Route 191 to Cubuy- 18°13'05 "N65°46'58 "W

Description

The main objective of the lighting installation project through PR-191 is to improve lighting and safety in specific areas of the community. The installation of lighting seeks to provide better visibility during nighttime hours, which helps prevent accidents, deter criminal activity, and create a safer and more welcoming environment for residents and visitors. Now, there is very little lighting on Route 191.

Activities and execution processes

The process of executing the lighting installation project includes budgeting and financing, obtaining permits, contracting suppliers, site preparation, streetlight installation, electrical connection, if necessary (preferably solar), testing and adjustments, as well as establishing a maintenance and monitoring plan to ensure its effectiveness and improvement in the safety and quality of life of the community.

Estimated time

Short-term (1-3 years)

Estimated cost

\$540 each

Potential risks and challenges

Potential risks include regulatory non-compliance, maintenance challenges, wildlife impact and light pollution, resilience, streetlight design and selection issues, financing challenges, inadequate road safety, and dissatisfaction. Potential challenges include obtaining adequate financing, the complexity of obtaining the necessary permits, appropriate streetlight selection and design, environmental impact, and community resistance, as well as sustainable maintenance, selection of reliable suppliers and contractors, impact on wildlife, road safety and regulatory compliance.

Indicators

Lighting installations that are based on regulatory compliance, environmental impact, community satisfaction level, energy efficiency, number of complaints and resistance, road safety incident reduction rate, maintenance cost per streetlight, and return on investment.

Collaborators and funding sources

Naguabo Municipality; DTOP, Puerto Rico Highways and Transportation Authority- ACT; LUMA Energy; DOT-Safe Streets for All Grant Program; FEMA-HGMP; CDBG-MIT

Sección de calle

Estos son dibujos y secciones propuestas para la ubicación de postes en la ruta del Destino 191.



This drawing is a proposal by students from the School of Architecture for the location of streetlights along the Destino 191 route.



With an innovative design, environmental lighting is very suitable for urban residential environments. Narrow profile, column fixing employing a ball joint, adaptable in different environments, from residential roads to squares and landscaped areas. Power is available from 20W to 100W. Thanks to its outstanding thermal dissipation capacity, it offers excellent robustness and reliability. Prepared for any remote management system.



PR Observations: Viability must be determined based on its resistance and strengths in the face of environmental events.



Río Blanco Bridge



Categories

Project Details

Project Name

Río Blanco Bridge/Historic Bridge

Geographical location

Río Blanco Bridge before the entrance to Route 191 - 18°13'01 "N65°46'56".

Description

The community of Río Blanco envisions a project at Bridge #194 to transform it into a recognized place, through the creation of a "Food Truck Park" and artisan merchandise stores around the historic bridge, creating business opportunities, and allowing visitors to arrive, take pictures and discover its history. Also, this is intended to be the first stop for light transportation to Cubuy's attractions, where school buses and "motor coach" buses can stop and drop off visitors. The importance of creating a light transportation system is to prevent damage to the roads especially those points at risk for erosion or landslides.

Activities and execution processes

Identify the appropriate locations where the directional and informative signage will be installed to direct to the "Destino 191", as well as the transport station. Proceed with the construction and installation of the elements, ensuring their quality and compliance with regulations. A promotion and communication strategy must be developed to inform the community and tourists about Bridge #194 and its historical value. Priority will be given to the preservation and maintenance of the existing bridge, and work will be done with the community to encourage the creation of businesses that complement the tourist offerings. Subsequently, work on the incorporation of a light transportation station to transport tourists arriving in "motor coach" or school buses, facilitating their mobility and promoting a more comfortable, sustainable and accessible tourist experience.

Estimated time

Medium-term (3-6 years)

Estimated cost

Estimated cost may vary depending on the actual condition of the bridge, necessary facilities, business set-up and implementation of light transportation.

Potential risks and challenges

Potential risks include compromised public health and safety if the bridge is not properly maintained and managed, structural damage, inadequate maintenance, high restoration costs, non-compliance with regulations, restricted access, vulnerability to vandalism, potential legal liabilities, resource scarcity, use-related conflicts, and limited impact on tourism.

The potential challenges involve the need to ensure its preservation and maintenance over time, the challenges of ensuring its access and connectivity, regulatory compliance, effective promotion of its historical and cultural value, potential conflicts of interest within the community, obtaining funding for its maintenance and construction of a transportation station, vulnerability to damage from climatic factors, risk of structural deterioration and urban changes.

Indicators

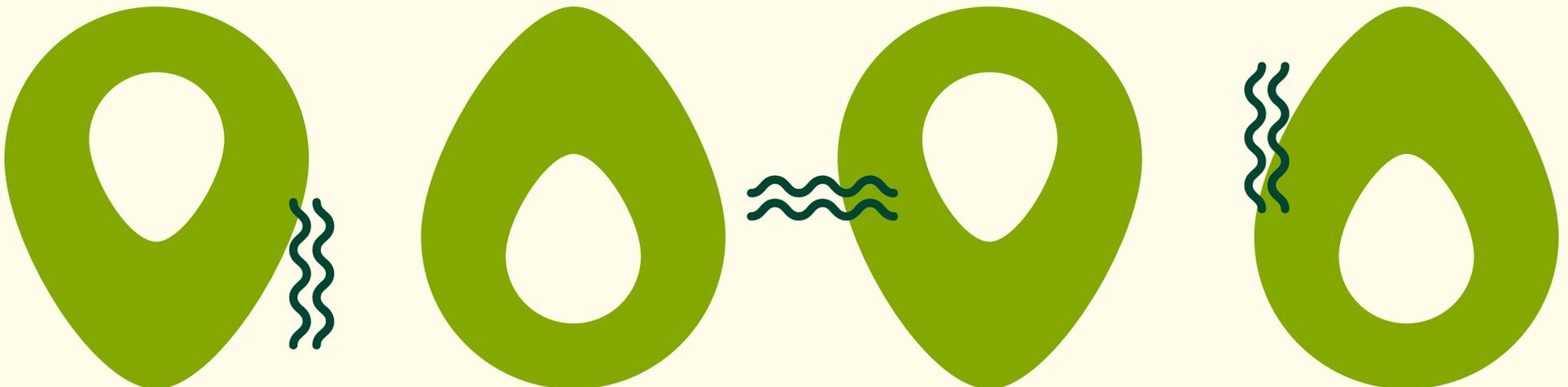
The signage installation, and parking area delimitation so it can be used as additional income for the maintenance of the bridge and the business area. Trolleybuses in operation. Increase in the total number of visitors in a specific period, installation of signs, establishment of businesses, and operation of light transportation.

Collaborators and resources

PECES; PRODEV; Hispanic Federation; Naguabo Historic and Cultural Preservation Commission; Amigos del Puente 194, Architect Diana Luna (Puerto Rico College of Architects)

Funding sources

Naguabo Municipality; DTOP; Puerto Rico Highways and Transportation Authority; State Historic Preservation Office; RD Community Facilities Program; CDBG Disaster Recovery Mitigation



Río Blanco Reservoir PRASA

Categories

Project Details

Project Name

Río Blanco Reservoir PRASA

Geographical location

Route 191 - 18°13'21 "N65°46'40 "W

Description

The Río Blanco reservoir in Naguabo is one of the recently created reservoirs. It was completed in 2010 and was built outside the course of the Blanco River that feeds it, which helps prevent sedimentation. It has an estimated capacity of 1.45 billion gallons of water. Its waters are used for consumption by people in the Naguabo, Humacao, Yabucoa, Las Piedras, Vieques, and Culebra municipalities (see more information in historical sections).

Activities and execution processes

Convene PRASA, the Department of Natural Resources - DRNA, and other governmental entities to identify appropriate tourism and educational activities and legal uses of the reservoir and area; establish guidelines for use and any required secure agreements or MOUs; convene small business leaders and educational providers to generate interest in offering appropriate tours and educational experiences in the area; establish a governance structure and secure resources to manage access and secure and maintain the areas.

Estimated time

Short-term (1-3 years)

Potential risks and challenges

The risks of developing tourism in the reservoir are increased water pollution and contamination if not properly regulated and managed. Existing laws regulating the use of public reservoirs; lack of resources to manage and maintain the facilities with an increase in visitors.

Indicators

Installation of informational and directional signage about the reservoir; establishment of a governance structure and securing of resources to manage access and secure and maintain the areas; creation of appropriate activities and experiences; creation of appropriate tourism and educational experiences for the area.

Collaborators and resources

Colaboradores y recursos; Comité Desarrollo Barrio Cubuy; Para La Naturaleza, Vitrina Solidaria; negocios locales; AAA; DRNA; municipio de Naguabo.

La Casa de Piedra (Stone House)



Categories

Project Details

Project Name

Casa de Piedra (Historical Stone House)

Geographical location

Route 191 – Florida Community – 18°14'15 "N65°47'02 "W

Description

Historic Structure – Former Hacienda. The Casa de Piedra is intended to be preserved through the Instituto de Cultura – ICP (see more information in the historical sections). Furthermore, the community and the municipality have discussed the possibility of creating a community garden around the structure to highlight the fauna that abounds in the southern zone. The fauna used in the new community branding could be used to create cohesion along the route.

Activities and execution processes

Convene public agencies and the municipality to determine ownership and agree on management of the facilities. Create a governance structure for the project and site management based on agreements with the authorities. Finalize implementation plan; identify and begin to obtain funding, volunteers and donations for site restoration and rehabilitation; create community garden. Have signage installed. Coordinate with ICP for planning and building restoration; hire contractors. Convene businesses to operate the facility; establish usage fees to allow for sustainable management and maintenance of the site.

Estimated time

Short-term (1–3 years)

Estimated cost

Cost of cleaning the area, house restoration materials, tools for garden creation, and/or garden creation costs.

Potential risks and challenges

Potential risks include structural deterioration, insufficient funding, permitting, shortage of expertise, legislative changes, vulnerability to natural events, theft or vandalism, urban sprawl, and lack of awareness and support. Potential challenges to preserving the Casa de Piedra include obtaining ownership or rights to the building in a timely manner, adequate funding, efficient project planning and execution, sustainable maintenance over time, community support, bureaucracy and permitting, risk of progressive deterioration, protection from natural disasters, adequate conservation, expert involvement, and ongoing evaluation of project progress.

Indicators

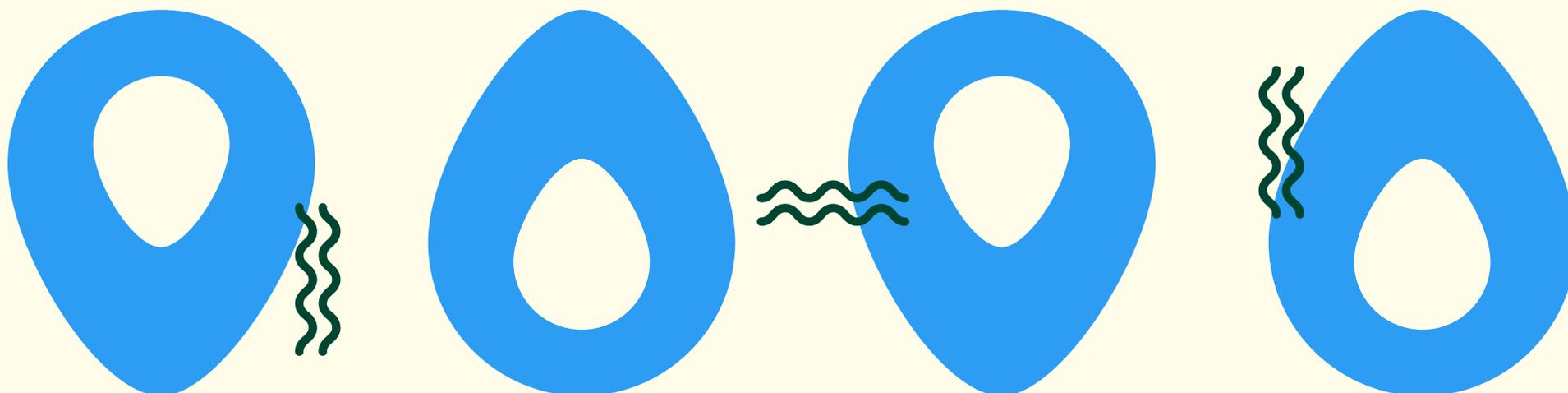
Achieve the installation of the Destino 191 informational and directional sign; obtain authority and establish a governance and sustainability plan to operate and maintain the space, the level of visitor satisfaction with the repaired and restored building as measured by satisfaction surveys, the number of community businesses or tour operators using the building as a visitor center, and the number of visitors coming to the site through the directional sign, to measure its effectiveness in promoting the destination.

Collaborators and resources

PECES; Instituto de Cultura Puertorriqueña (ICP); Puerto Rico Highways and Transportation Authority or Puerto Rico Public Building Authority; Municipality; Centro para la Reconstrucción del Habitat (Center for Habitat Reconstruction); Ayuda Legal de Puerto Rico;

Funding sources

AARP Community Challenge Grant Program (to repair or upgrade facilities to comply with ADA); Banco Popular Foundation; Special Joint Legislative Funding Committee for Community Impact; T-Mobile Hometown Challenge Grant; NEA - Our Town Grant; Brown-Forman Community Grant; Citi Foundation Community Giving; Coca-Cola Community Support Grants; Walmart Foundation Community Grants; Walmart Foundation Community Grants.



Florida Bridge / Historic Bridge

Categories

Project Details

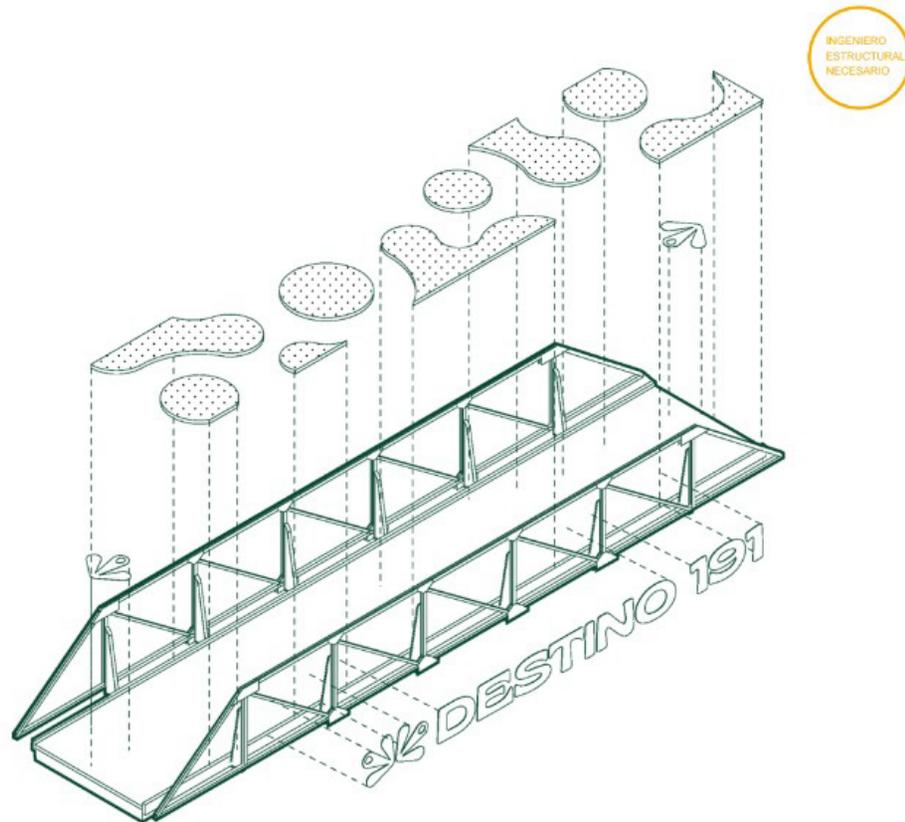
Project Name	Florida Bridge / Historic Bridge – Entrance to the Florida Sector
Geographical location	Route 191 – Florida Community– 18°14'19 "N65°47'05 "W
Description	The new bridge is in good condition. The municipality is actively maintaining it. There is an opportunity to improve its aesthetic appearance, but during emergencies, it may be subject to flooding. The historic bridge (see more information in the historical section) is in disuse and in poor condition, but there is an opportunity to develop it in a manner similar to the plan that Río Blanco leaders have for Bridge 194. Students from the UPR School of Architecture designed a sketch for the revitalization design of the historic bridge. However, this will entail a series of feasibility evaluations, including an engineer's assessment to confirm the bridge's ability to sustain a high flow of visitors, and to understand whether historic preservation considerations make it possible to implement this design.
Activities and execution processes	ehabilitate the bridges to make them more attractive, install directional signs to the south entrance of El Yunque; light transportation station for visitors who come in "motor coach" buses or school buses.
Estimated time	Medium-term (3–6 years)
Estimated cost	≈\$20,000
Potential risks and challenges	Change of leadership or municipal interest; transportation and access problems to El Yunque are not addressed; lack of support or interest in developing the area. Delays in government agencies; electoral cycle (2024) changing municipal priorities.
Indicators	The bridge is rehabilitated for the visitor center; signage is installed; the trolley system is operational to transport visitors to the south entrance of El Yunque.
Collaborators and resources	UPRRP School of Architecture; Naguabo Municipality; DTOP; Instituto de Cultura Puertorriqueña (ICP); State Historic Preservation Officers (SHPO); Puerto Rico Highways and Transportation Authority (ACT)

Funding sources

RD Community Facilities Program; CDBG Disaster Recovery, Mitigation; AARP Community Challenge Grant Program – to repair or upgrade facilities to be ADA compliant; Special Joint Legislative Task Force on Community Impact Funding; Banco Popular Foundation; T-Mobile Hometown Challenge Grant; NEA – Our Town Grant; Brown-Forman Community Grant; Citi Foundation Community Giving; Coca-Cola Community Support Resources Grants; Walmart Foundation Community Grants; Walmart Foundation Community Grants



VISTA INTERIOR



AXONOMETRICO

PUENTE 



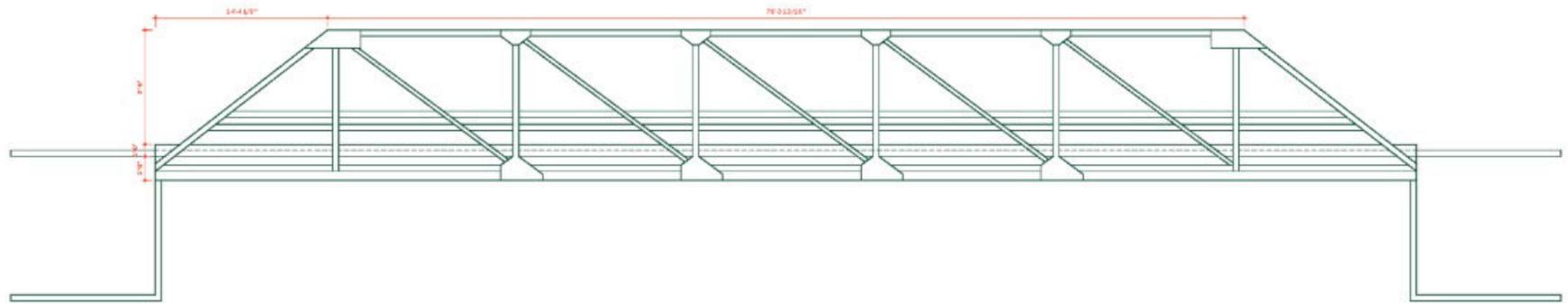
Elements of the new Destino 191 brand as implemented in the design.



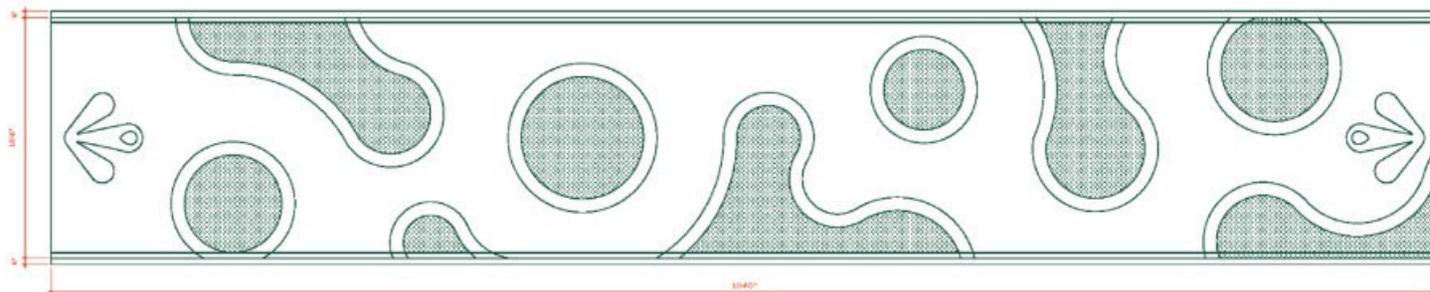
Municipal and community comments: To avoid overloading the bridge, the garden should be done on the outskirts of the bridge.

Comments from Prof. Alexandra Betancourt, School of Architecture: A feasibility study should be done by engineers.

FPR Observations: It should be understood whether this type of design may be detrimental to historic preservation.



ELEVACION



PLANTA PROPUESTA

INGENIERO
ESTRUCTURAL
NECESARIO



VISTA INTERIOR



VEGETACION RECOMENTADA

VISTA INTERIOR

Se recomienda que se utilicen plantas de raíces cortas para poder ser utilizadas en el camino como lo son : monstera, helechos, sansevieria, nolina, heliconia entre otras plantas tropicales.

INGENIERO ESTRUCTURAL NECESARIO





INGENIERO
ESTRUCTURAL
NECESARIO



SIDE VIEW



TOPVIEW

PUENTE 

Entrance to Cubuy



Categories

Project Details

Project Name

Entrance to Cubuy

Geographical location

Route 191 - 18°14'18 "N65°47'09 "W

Description

The main objective of the project is to facilitate the entrance of tourists and hikers to the Cubuy area, allowing them to safely and comfortably access its natural and cultural attractions. The entrance to Cubuy includes the installation of a welcome sign that was installed by FPR during this project, and directional signs to guide visitors to the southern entrance of El Yunque and other destinations of interest in the region. In addition, the implementation of a transportation station for visitors arriving in "motor coach" or school buses is proposed, reducing the environmental impact, and promoting more sustainable tourism.

Activities and execution processes

Installation of necessary signs and station creation.

Estimated time

In progress

Estimated cost

Signage installations: ≈\$10,000

Potential risks and challenges

Change of leadership or municipal interest, failure to effectively address the problem of transportation and access to El Yunque, which could limit the number of visitors and affect the promotion of the destination. Another risk could be the lack of support or interest in developing the area by key stakeholders.

Indicators

Sign installation; station creation; increased number of visitors to Cubuy and southern entrance to El Yunque.

Collaborators and resources

US Forest Service; Comité Desarrollo Barrio Cubuy, Inc. of the Municipality of Naguabo; DTOP; ACT; CDBG Disaster Recovery, Mitigation;

Financial resources

AARP Community Challenge Grant Program - to repair or upgrade facilities to be ADA compliant; Special Joint Legislative Community Impact Funding Committee; Banco Popular Foundation; T-Mobile Hometown Challenge Grant; NEA - Our Town Grant; Brown-Forman Community Grant; Citi Foundation Community Giving; Coca-Cola Community Support Grants; Walmart Foundation Community Grants.



Categories

Project Details

Project Name

Charco Hippié

Geographical location

Camino Viejo – 18°14'50"N65°47'09"W

Description

El Charco el Hippié is famously visited by locals and contains many of Cubuy's Taíno archaeological findings. Additionally, its entrance is through a municipal road that has a commercial residence known as Casa Parcha. Although there is pedestrian access to the natural pool, parking access has been limited in recent years due to neighbor complaints about visitors bringing noise and litter pollution to the area. It's necessary to maintain controlled visitor flow to avoid affecting the quality of life of the neighbors, Casa Parcha's customers, and the environmental quality of the space. Currently, there's a small commercial space used for parking and selling snacks to visitors. As part of the long-term project, other parking spaces further away from the area should be created, and their visit should be encouraged through light transportation in case there is no parking capacity at the pool's entrance. A suggestion is that the flow of visitors should be kept under control through excursions with Montaña Explora and other tour operators instead of promoting the pool too openly.

Activities and execution processes

Inviting public and municipal agencies, as well as adjacent property owners, to collaborate on an access management plan for the public areas around the river and pools. Increasing the number of interpreters to offer tours of these sites and ecological experiences. Identifying additional parking spaces and connecting them to the regional transportation network and El Yunque National Forest. Securing resources to manage access and transportation to the area, as well as maintenance and security to protect life, property, and the environment. Coordinating the plan with other regional efforts for access and transportation to El Yunque and its surroundings, including a parking and transit plan (see next project).

Estimated time

In progress

Potential risks and challenges

Demand for public access to the river and puddles increases before access and transportation strategies are implemented, increasing tension between public and private owners of adjacent properties.

Coordination between the public and private sectors; securing adequate funding in time to resolve conflicts of public access and adjacent private landowners; election cycle (2024) changing municipal priorities.

Indicators

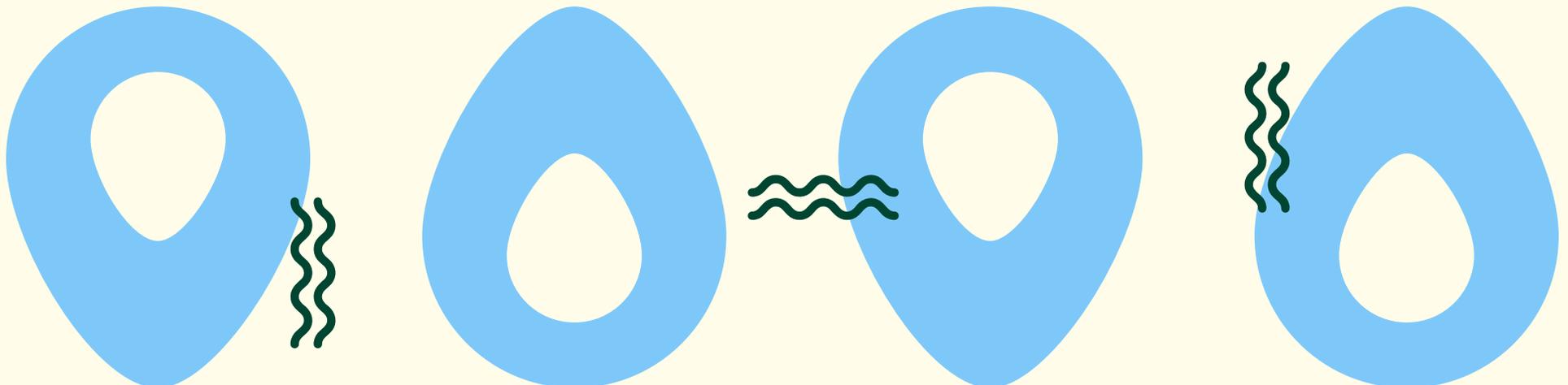
Adequate public access to the river and pool will be provided without overcrowding, including the creation of parking lots that connect with the light transportation route and adequate maintenance and security of the area.

Collaborators and resources

US Forest Service; Casa Parcha; Montaña Explora; Vitrina Solidaria; Puerto Rico Tourism Company (Sustainable Tourism Division); VISTA member assigned by the Puerto Rico Tourism Company to support the development of sustainable ecotourism and community-based tourism; CRA - Private banking

Financial resources

USDA-NRCS- Voluntary Public Access and Habitat Incentive Program (gobierno estatal); New York Trust- Thriving Communities: National and International Environmental Grantmaking; EDA- Public Works and Economic Adjustment; Assistance and Disaster Supplemental 2023



Identified space for station and parking/ Sculpture → → → → →

Categories

Project Details

Project Name

Identified space for transportation station and parking/ Sculpture

Geographical location

Route 191 - 18°14'50 "N65°47'56 "W

Description

Creation of parking spaces authorized by the church for visitors to the Recreation Area and the center in case of larger events; light transportation station to transport excess people. It is also planned to install a sculpture to serve as a photo attraction while waiting for transportation. Moreover, it is proposed to install a sculpture in this area so it serves as an attraction while people wait for transportation. Additionally, the space could encourage the sale of refreshments and other items for visitors. The stops along the route will lead to the different cultural points and attractions along Route 191.

Activities and execution processes

Convene the Forest Service, organizations related to the access and transportation project, municipal and community stakeholders to form a working group to design solutions to access, transit, and parking challenges for El Yunque and other attractions and offerings in the community. Identify and gather resources to execute the plan for more parking, better access, transit, and beautification in the area; establish guidelines and protocols for the management and maintenance of new areas to strengthen sustainability.

Estimated time

In progress

Estimated cost

Sculpture: \$10,000

Potential risks and challenges

Conflicts or changes in priorities or needs that prevent coordination and cooperation among stakeholders for the time needed to meet demand, where massification diminishes experiences and damages reputation, reducing long-term demand. Maintain coordination and cooperation between entities; ensure adequate funding in time to resolve access and transit conflicts in the area; electoral cycle (2024) changing municipal priorities.

Indicators

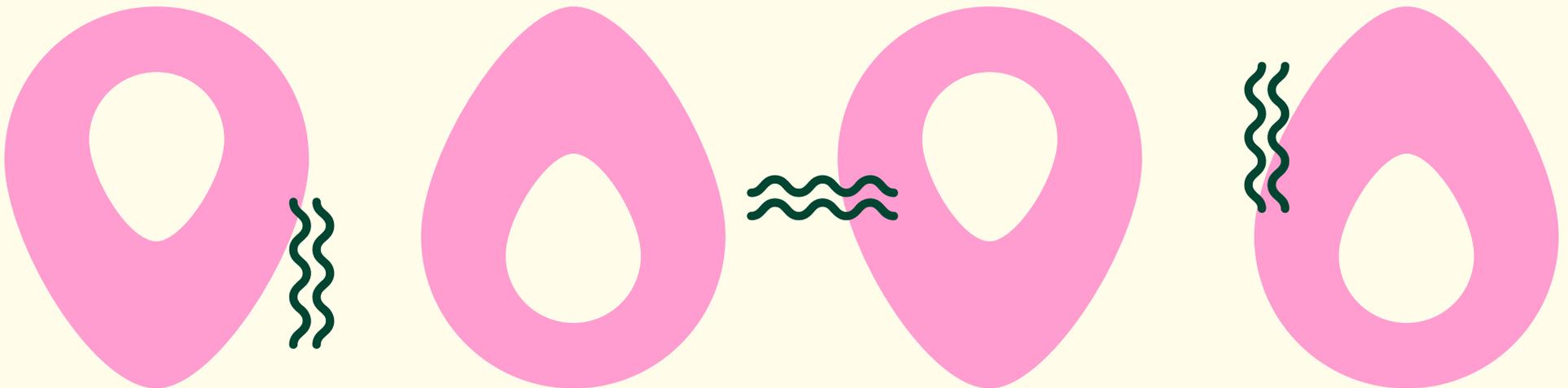
Improve access, parking, transit; revenue source to support management and maintenance of new parking areas and transportation system. Sculpture and beautification in the green area; additional parking for visitors to the La Mina community center, the Río Sabana Recreation Area, and other attractions in the area; creation of a "light" transportation system to avoid vehicular congestion and curtail the passage of large buses.

Collaborators and resources

Iglesia Evangélica Unida (Evangelic Church United); US Forest Service; Comité Desarrollo Barrio Cubuy, Inc.; Puerto Rico Tourism Collaborators and resources Company.

Financial resources

Fundación Ángel Ramos; TMobile Hometown Grant; AARP Community Challenge; NEA-Our Town



La Mina Community and Visitors Center – Facilities



Categories

Project Details

Project Name

Facilities – exterior and interior of the first building

Geographical location

La Mina Community Center

Description

The La Mina community center is a former public school being maintained by residents to convert it into a visitor center or "Portalito" at the southern entrance to El Yunque. During the project period, several repairs were identified as necessary to improve the structure of the building. Prior to painting the first building of the center, with materials and volunteers provided by FPR through this project, it was necessary to carry out a series of repairs that included sealing the roof, repairing the eaves, and removing a broken window after Hurricane María, and replacing it with concrete. These jobs were completed by members of the community, as many have construction skills. Additionally, leaders painted the court with the help of the Puerto Rico Department of Recreation and Sports. Also, with the help of the Asociación de Artistas Plásticos de Puerto Rico (Association of Plastic Artists in Puerto Rico–AAPPR), a collaborative internal mural has been completed, inspired by the example of the architecture students. This building is intended to continue to be used for emergency activities and events for the community, as well as to become the La Mina Visitor Center.

Activities and execution processes

Raise funds for window improvements, furniture purchases, light fixtures, and fans, or even air conditioner installation. These improvements can be based on the interior design sketch of the School of Architecture students, as well as the community could visualize improvements to their liking and continue to collaborate with the students to work towards the preferred design as already implemented.

Estimated time

In progress

Estimated cost

≈\$25,000

Potential risks and challenges

Without adequate furniture, equipment, supplies or staff, the Center will have difficulty consistently welcoming visitors, and supporting community activities, including serving as a shelter in case of emergencies.

Indicators

The Center's first building has adequate furnishings and equipment to serve as a visitor center; there are adequate supplies, materials, and equipment for the center to serve as an emergency

shelter for the community; there is adequate staffing to keep the center open regularly and to keep the facilities clean, safe, and secure during and outside of operations.

Collaborators and resources

Comité Desarrollo Barrio Cubuy; University of Puerto Rico School of Architecture (UPRRP); Housing- CDBG-Disaster Recovery, Mitigation programs; EPA - Environmental Justice Thriving Communities Technical Assistance Center (for PR & USVI - operated by InterAmerican University to provide TA for community organizations to access EPA funding).

Financial resources

RD Community Facilities Grants & Loans Program; Housing- CDBG-Disaster Recovery or Mitigation programs; Sponsors or donors of furniture, supplies and equipment for the visitor center (local businesses or corporations).

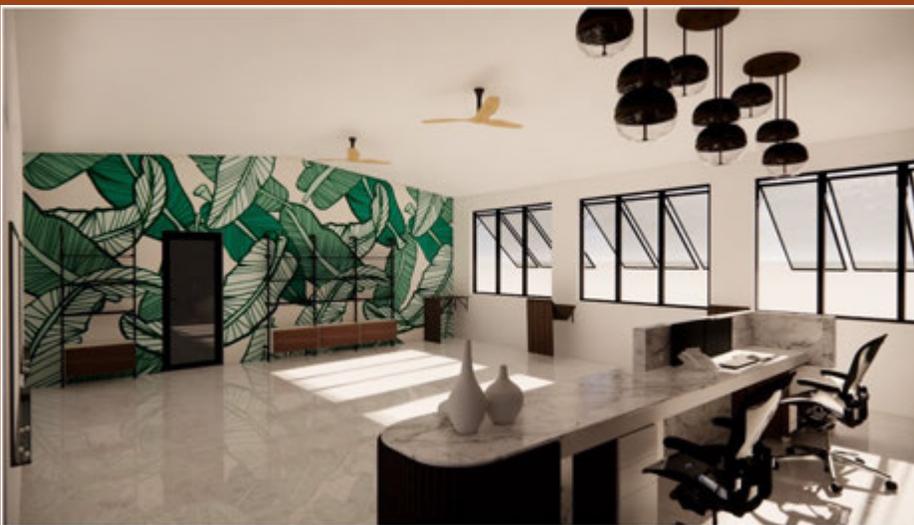


Sketch of the community center restrooms. The community center must have access to showers when serving as a shelter. On the other hand, visitors could use them to clean their feet or for other purposes after hiking.





Sketch of the center's interior by architecture students.



Categories

Project Details

Project Name

Facilities – exterior and interior of second building / Court / Gardens

Geographical location

La Mina Community Center

Description

The second community center building is intended to be used for center activities, programming (classes or services) and emergency events for the community. Most of the damage caused by Hurricane María in 2017 has not yet been repaired and still requires: roof repair and sealing, new electrical wiring and plumbing, exterior and interior painting. The same is being repaired by the ABX Fraternity, who are taking care of the steps related to the rehabilitation of this building.

Activities and execution processes

Collect donations for furniture, equipment and materials for classrooms based on planned programs or services.

Estimated time

In progress

Estimated cost

≈\$25,000

Potential risks and challenges

The closed building is vulnerable to vandalism and a threat to the security of the operating facility (first building) and the area.

Indicators

Roof, electrical, plumbing, hallways, floors, ceilings, and stairs are repaired. The interior and exterior of the building are painted and made attractive. The interior of the building has furnishings, equipment, and materials appropriate for the intended program or services.

Collaborators and resources

ABX Fraternity; EPA – Environmental Justice Thriving Communities Technical Assistance Center (the Inter Americana University provides technical assistance for communities organizing access to funds of EPA)

Financial resources

RD Community Facilities Grants & Loans Program; Puerto Rico Department of Housing and HUD Community Development Block Grants (Regular, Disaster Recovery or Mitigation programs); AARP Community Challenge Grant Program (to repair or update the facilities so they are ADA compliant); Fundación Banco Popular; Joint Special Commission Especial for Legislative Funds for Communitarian Impact; T-Mobile Hometown Challenge Grant; NEA – Our Town Grant; Brown-Forman Community Grant; Citi Foundation Community Giving; Coca-Cola Community Support Grants; Walmart Foundation Community Grants.



The second building transforms from a shelter to a living room depending on the needs.



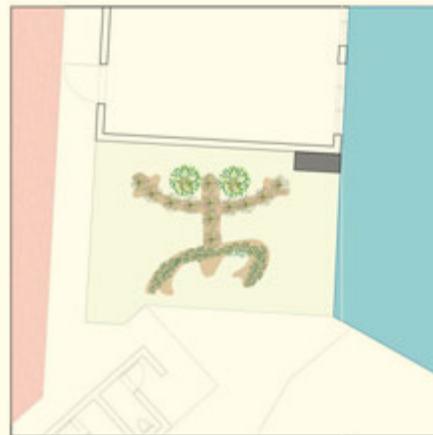


Legend

- Mound
- Front yard
- Community garden
- Side yard
- Existing trees



Benches, patchouli plants, and a mesh are applied as a solution to prevent soil erosion. The benches create spaces for planting, the patchouli roots anchor the soil, and the mesh prevents the displacement of surface sediment.



Leyenda

- Three Sisters system
 - Corn
 - Beans
 - Pumpkins
- Herbs
 - Coriander
 - Cilantro
 - Mint
 - "Orégano Brujo"
 - Etc.
- Pigeon Peas
- Shelf for Garden Tools



Gardens designs created by the students from the Architecture Department at the University of Puerto Rico, Río Piedras Campus



Leyenda

- Medium vegetation
 - Lemongrass or poppy is recommended (Native)
- Native tree
 - Chosen by the community



Leyenda

- Medium vegetation
 - Lemongrass or poppy is recommended (Native)
- Native tree
 - Chosen by the community
- Shade sails to protect from the sun

Mirador de Syckin (Syckin Viewpoint)



Categories

Project Details

Project Name

Mirador de Syckin (Syckin Viewpoint)

Geographical location

Route 191 - 18°15'14 "N65°47'45 "W

Description

Across the road from the placita is the first viewing area where there is space for one or two cars and could be a stopping point for visitors to look around and buy refreshments or snacks. The EGP suggested the possible installation of a swing or observation binoculars; the community has suggested installing a seat as an attraction for people to take pictures.

Activities and execution processes

Study feasibility in terms of parking and grounds. Determine if it is possible to create any additional space. Installation of attraction chosen by the community.

Estimated time

Short-term (1-3 years)

Estimated cost

≈\$5,000

Potential risks and challenges

Erosion and soil overloading

Indicators

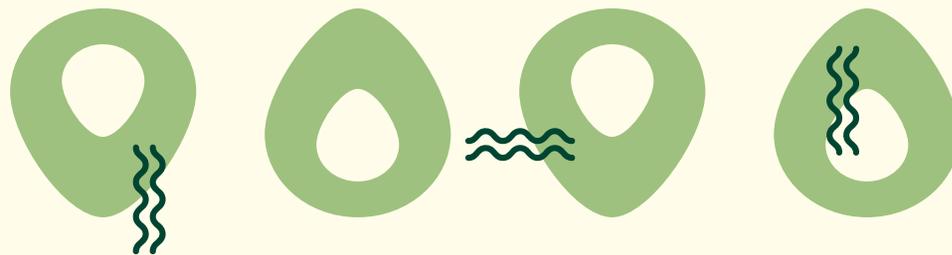
If feasible, creation of parking spaces and installation of an attraction.

Collaborators and resources

US Forest Service; Volpe; DTOP; Environmental Protection Agency (EPA)

Financial resources

Departamento de Recreación y Deportes; Departamento de Recursos Naturales (DRNA); Departamento de Transportación y Obras Públicas (DTOP); The Funders Network - Partners for Places TMobile Hometown Grants; EPA Environmental Justice - Small Grants & EJ Technical Assistance Center in Puerto Rico



Piedra de Salomé or Piedra del Indio Viewpoint



Categories

Project Details

Project Name

Piedra de Salomé or Piedra del Indio Viewpoint

Geographical location

Route 191 – 18°15'11 "N65°47'28 "W

Description

A little further up from the Syckin viewpoint, we find the Mirador de la Piedra del Indio or Piedra de Salomé. The viewpoint is suitable for use but lacks all the elements of an official tourist attraction in terms of safety and attractiveness. It also requires constant maintenance to keep the view clear without interruption from undergrowth. According to the oral history of community members, Piedra del Indio has a history dating back to indigenous times and was later part of the Spanish military route for the Spanish conquest (see historical section). In addition, the Taíno petroglyphs can be found in the river near this area. This viewpoint also has room for one or two cars.

Activities and execution processes

Study the feasibility of promoting this space. Implement elements of tourist attraction.

Estimated time

Short-term (1–3 years)

Estimated cost

≈\$5,000

Potential risks and challenges

Erosion risks due to overloading of transport vehicles.

Indicators

If feasible, the space becomes an official tourist attraction and a stop on Route 191.

Collaborators and resources

PECES; US Forest Service; FPR; Volpe; DTOP; Instituto de Cultura Puertorriqueña (ICP); Asociación de Museos; Museo de Arte Contemporáneo; Asociación de Historiadores; Environmental Protection Agency (EPA); USDA – State Historic Preservation Officer (SHPO)

Financial resources

El MAC en el Barrio; Instituto de Cultura Puertorriqueña (ICP); Departamento de Recreación y Deportes; Departamento de Recursos Naturales (DRNA); Departamento Transportación y Obras Públicas (DTOP); The Funders Network – Partners for Places; TMobile Hometown Grants; EPA Environmental Justice – Small Grants & EJ Technical Assistance Center in Puerto Rico; USDA – State Historic Preservation Officer (SHPO); Fundación Ángel Ramos

Entrance to the Río Sabana Recreation Area

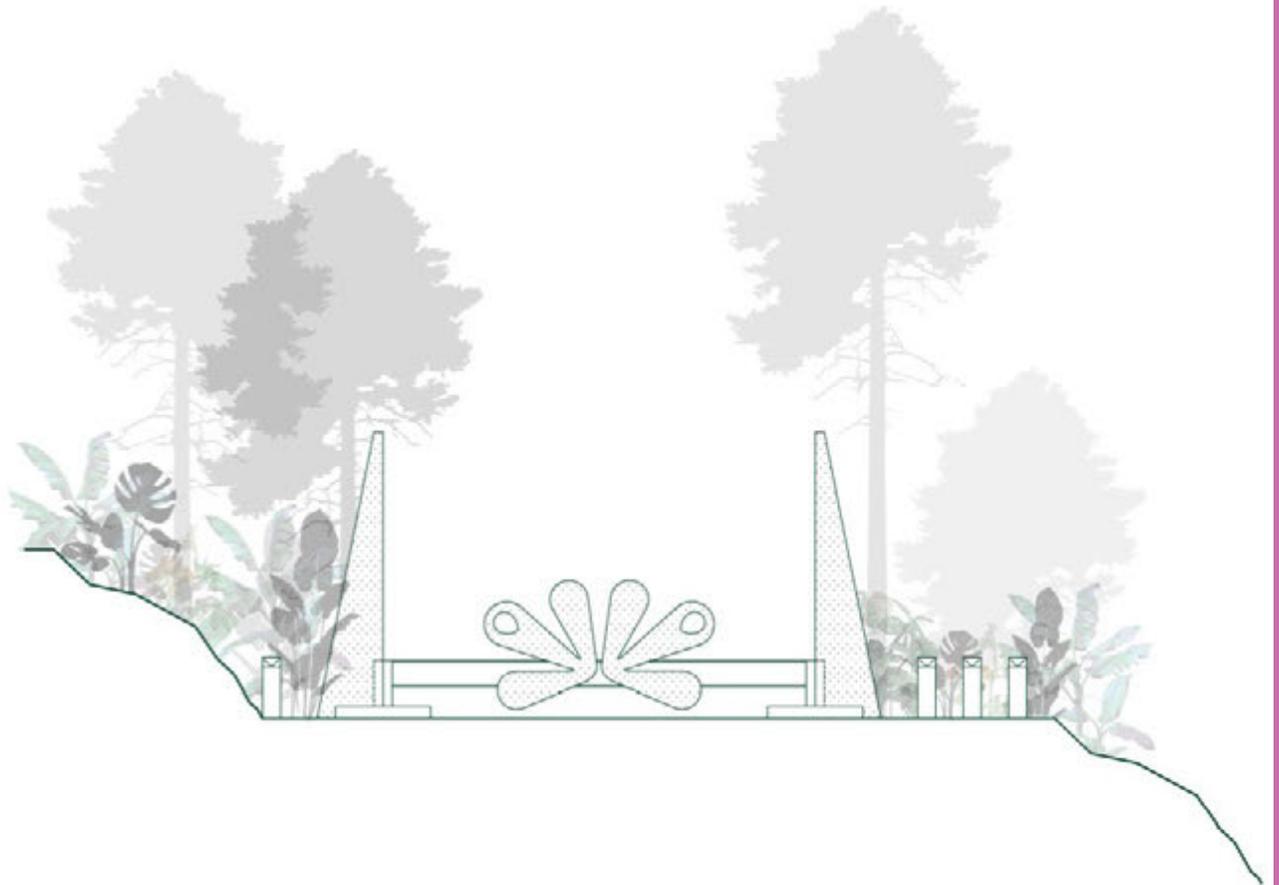
Categories

Project Details

Project Name	Entrance to the Río Sabana Recreation Area
Geographical location	Route 191 – 18°15'54"N65°48'02"W
Description	The architecture students designed the sketch of what the entrance would look like with the new Destino 191 branding integrated. Furthermore, the entrance has mural-creation potential as it has three extensive retaining walls that are currently in disuse. Wall #1 El Yunque – Collaborative mural with welcome to the recreational area; Wall #2 El Yunque – Southern flora and fauna; Wall #3 El Yunque – Mural on the three (3) races that form Puerto Rican identity (Taíno, African and Spanish).
Activities and execution processes	Feasibility study to redo the entrance according to the design of the students at the School of Architecture. Optimize entrance in terms of safety for vehicular passage and design.
Estimated time	Short-term (1–3 years)
Estimated cost	Implement Architecture Student Design: ≈\$30,000; Murals: \$30,000; Garden: ≈\$2,000
Potential risks and challenges	Vandalism at the entrance; Lack of mural maintenance
Indicators	The feasibility study for this project is implemented. Work continues with the school of architecture for revisions until the project is implemented.
Collaborators and resources	US Forest Service; Compañía de Turismo de PR; Para la Naturaleza, Amigos del Yunque y el CIRMA en general; Playa Fortuna; Escuela de Arquitectura de la UPR
Financial resources	US Forest Service; Para la Naturaleza; Compañía de Turismo de PR; Universidad de Puerto Rico – Jardines Botánicos; Colegio de Arquitectura; Colegio de Ingenieros; Organizaciones filantrópicas; National Endowment of the Arts – Grants for Arts Projects; Auspiciadores locales; La Asociación de Industriales; TMobile Hometown Grants; The Funders Network – Partners for Places; Fundación Angel Ramos



ENTRADA AL YUNQUE



ELEVACION

ENTRADA 



Río Sabana Recreation Area

Categories

Project Details

Project Name

Río Sabana Recreation Area

Geographical location

Route 191 - 18°16'02"N65°47'41"W

Description

The recreational area is generally in good condition, although it requires a lot of maintenance in the green areas and repainting due to vandalism by visitors. It also needs the installation of some signs that are no longer there due to hurricanes. It would be ideal to improve the preventive and directional signs to adapt them to the experience of Destino 191. It is important to develop an emergency prevention and management plan for this area. Similarly, the goal for this entire area is to integrate inclusive elements to welcome a diverse population. Additionally, based on the suggestions provided by Para La Naturaleza, it is proposed to promote the exploration of the Sabada River Recreational Area, organizing tours that depart from the community center, giving visitors the opportunity to immerse themselves in the natural beauty of the area. Furthermore, the possibility of a unique nighttime experience is suggested, allowing interested parties to take advantage of the forest's resources at night and discover its mysterious nightlife.

Activities and execution processes

Installation of preventive signs (particularly for the "infinity pool", which is not recommended to visit because it is dangerous and passes through private property); optimization of informative and directional signs; creation of an inclusive sidewalk.

Estimated time

In progress

Estimated cost

Volunteer brigades for maintenance; Signage: ≈\$20,000; Inclusivity installations ≈\$15,000

Potential risks and challenges

Visitors' safety.

Indicators

Increased preventive and informative signage implementing the new Destino 191 branding.

Collaborators and resources

US Forest Service; CIRMA; Puerto Rico Tourism Company; Oficina del Procurador de las Personas con Impedimentos (OPPI); Playa Fortuna; La Administración Federal de Transportación Colectiva (FTA, por sus siglas en inglés); Filantropía Puerto Rico; See more information for the area on the Ceiba y Naguabo Destination Plan in Foundation for Puerto Rico's landing page.

Financial resources

AARP Community Challenge; Departamento de Recreación y Deportes Estatal; TMobile Home-town Grants; The Funders Network – Partners for Places

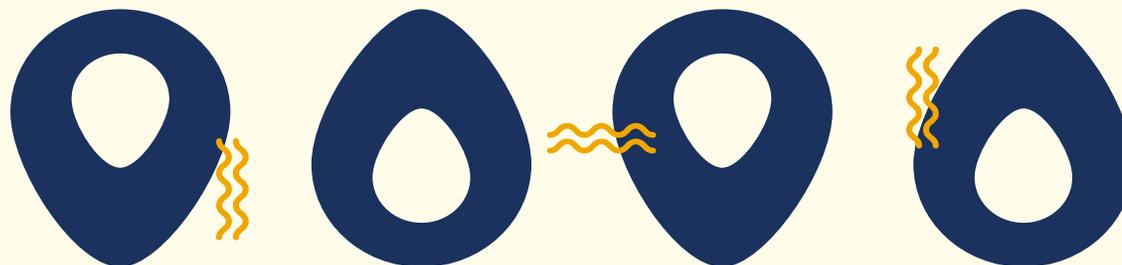
La Vereda Sabana (Sabana Trail)



Categories

Project Details

Project Name	La Vereda Sabana (Sabana Trail)
Geographical location	Route 191 - 18°16'02"N65°47'41"W
Description	It requires a lot of maintenance but is suitable for visitors.
Activities and execution processes	Installation of hiking trail -friendly signs that are preventative and directional. Recruit volunteers for maintenance.
Estimated time	In progress
Estimated cost	Volunteerism for trail maintenance; Signage: ≈\$10,000
Potential risks and challenges	Adverse weather conditions, budget constraints and lack of support. Coordination, regulatory compliance, as well as in the management and personnel needed to carry out the necessary maintenance and actions.
Indicators	Installation of signs, number of signs, maintenance brigades with volunteers.
Collaborators and resources	US Forest Service; Fortuna Playa; PECES; National Forest Foundation (NFF); CIRMA; Love in Motion
Funding resources	NFF-Community Engagement and Stewardship Activities that Connect People to Forests; On-the-Ground Conservation and Restoration Projects that Improve Forest Health and Outdoor Experiences; AARP Community Challenge; TMobile Hometown Grants; The Funders Network – Partners for Places



191 Vereda Inclusiva (Inclusive Trail 191)



Categories

Project Details

Project Name

191 Trail – Inclusiva Trail

Geographical location

Route 191 - 18°15'14"N65°47'45"W

Description

This is the old road 191 that is currently closed due to a landslide (see historical section). It requires weed maintenance, but the ground is paved so it can be used in innovative ways such as creating an inclusive trail for people with functional diversity, allowing for wheelchair hiking.

Activities and execution processes

The main idea for this space is to create an inclusive trail for people with functional diversity. A detailed study of the area should be carried out and a multidisciplinary team should be formed. Understanding the regulations of the forest is important to understand the type of facility to be implemented. Students from the School of Architecture designed a sketch for what the inclusive forest would look like.

Estimated time

In progress

Estimated cost

Volunteerism for trail maintenance; Installations for inclusive trail: ≈\$30,000

Potential risks and challenges

The project implementation may face challenges in terms of logistics, coordination, monitoring, and communication that do not promote the proper progress of the project toward its goal of achieving an inclusive and accessible trails and walkways for all people. One of the challenges will be to conduct a detailed study of the area to identify specific accessibility needs and define the actions required to achieve an inclusive sidewalk.

Indicators

Rehabilitation of Vereda 191. Measure the level of accessibility of the space for people with functional diversity, through the installation of elements such as ramps, handrails, and adequate signage. Number of additional elements implemented, such as benches, lighting, and rehabilitation of the site, to evaluate progress in improving the space.

Collaborators and resources

US Forest Service; Fideicomiso de Salud Pública de Puerto Rico (Puerto Rico Public Health Trust – PRPHT por sus siglas en inglés); National Forest Foundation; Oficina del Procurador de las Perso-

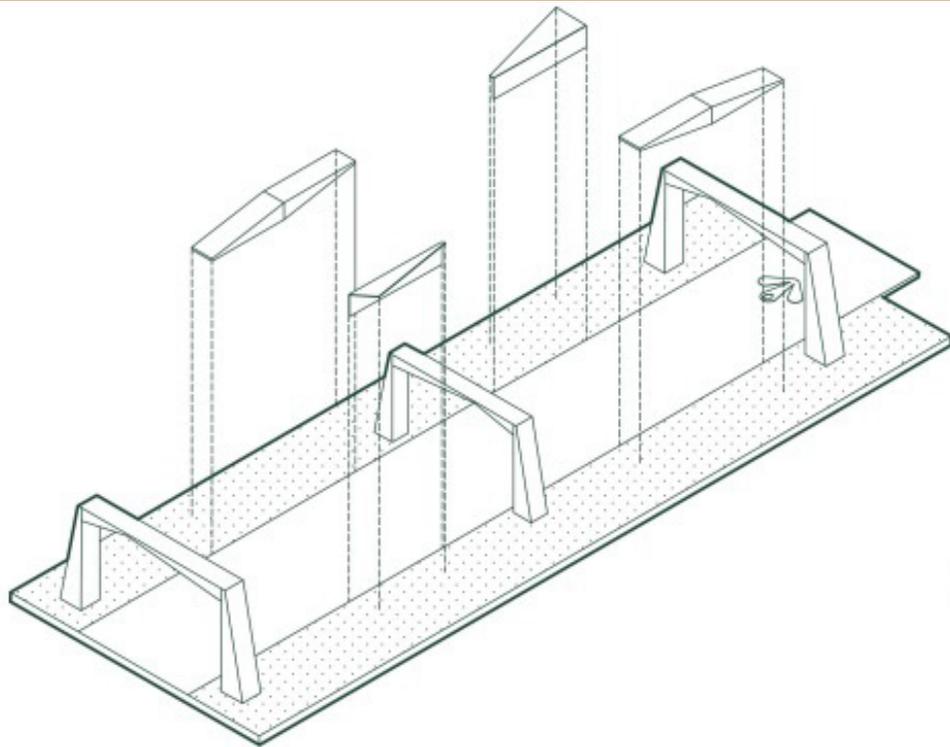
Financial resources

National Wilderness Stewardship Alliance–The National Forest System Trail Stewardship Partner Funding Program; America Trails–Trail Fund Grant; Keep America Beautiful: America Walks Community Challenge; Every Kids Outdoors Challenge Grants; Walmart Local Community Grants



Inclusive Trail Designs





AXONOMETRICO VEREDA



Community observations: The facilities are useful for the integration of speakers that guide visitors in a general way, but also for the benefit of visitors with functional diversity. On the other hand, the undergrowth should not be completely eliminated since part of the inclusive experience is for visitors to feel as if they are on another forest path.

FPR observations: We will need to determine the feasibility for this type of installation, and if not, seek lightweight alternatives for creating this experience.

USFS observations: The design must be in tune with the natural environment and they do not recommend this design.



Brand Management - Destino 191: "El Yunque del Caribe"



As part of a collaborative agreement between Foundation for Puerto Rico (FPR) and the U.S. Department of Agriculture (USDA) Rural Placemaking Challenge (RPIC), FPR agreed to provide technical assistance in the development of branding and marketing strategies for the Destino 191 project. As a result of these efforts, FPR hired branding expert Mampostea'o, who would be responsible for the design and research required to develop a brand that would be attractive and appealing to the community and visitors to the destination. After a series of validation meetings with the residents and other stakeholders in the project, the brand was defined to highlight the flora and fauna characteristic of the southern entrance.

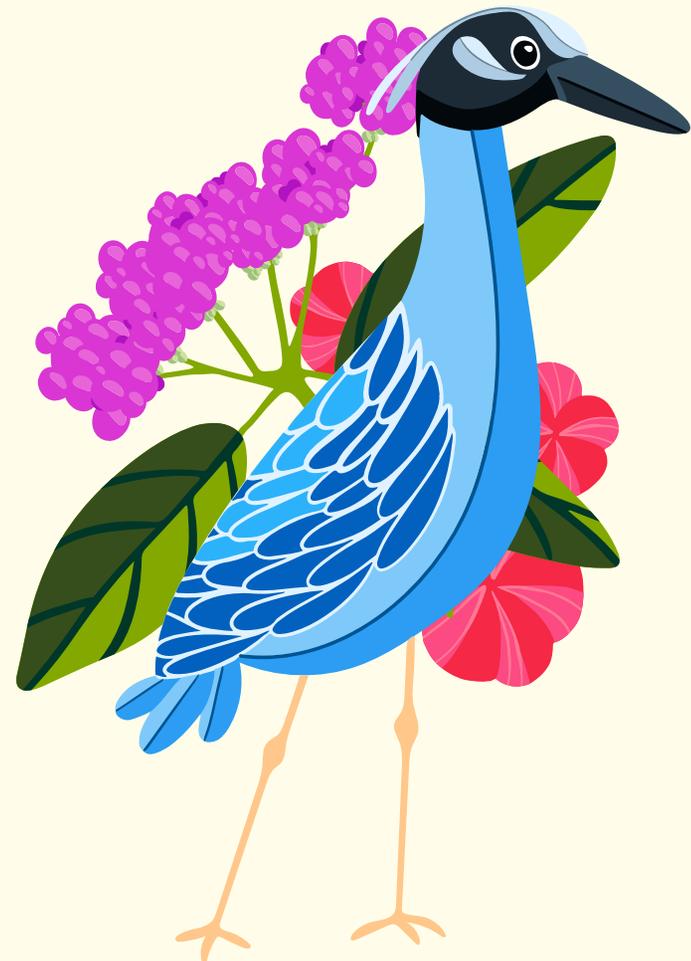
In addition, through the Digital Presence and Marketing for Nonprofits workshop held on March 16, 2023, FPR trained the Committee on the benefits, importance, and management of a brand and offered marketing strategies for community and economic development in the sector. Finally, FPR provided recommendations on the brand's objectives and its uses to inform best practices in brand management. Following the delivery of the branding toolkit to the Comité Desarrollo Barrio Cubuy Inc., FPR explained its contents, including guidelines to help understand its graphic uses, and will assist in developing additional strategies to disseminate the brand.



"Destino 191" brand objectives

- **To promote community development through a brand distinctive and representative of the community living at the south entrance of El Yunque.** During its design, the main objective was to create a brand that was representative of the community and that its members could identify with it. For this reason, elements characteristic of the flora and fauna prominent in this forest area were integrated. In this way, the community becomes an integral part of the vision of the Destino 191 project. Asynchronously, with the development of the brand, the community will achieve greater visibility, both in their desires and the everyday needs that affect their daily lives.
- **Encourage collaboration among the communities in Naguabo.** During the project, the involvement of different community sectors has been encouraged to participate in the project. For this reason, the brand seeks to continue fostering this collaboration with the communities of Florida and Río Blanco, which are directly linked to Route 191, and with other communities in Naguabo that could contribute to and benefit from the economic development generated by the project. FPR suggests, as a strategy to promote the brand and its projects, that the Committee creates a Destino 191 subcommittee with representation from the communities belonging to Route 191 Naguabo to continue managing the smaller-scale projects of the Rural Placemaking Plan and open the space for participation to other Naguabo communities to collaborate in their efforts.
- **Encourage the collaboration of other stakeholders from various sectors and jurisdictions.** The integration of different sectors and jurisdictions is essential in placemaking projects. With the help of other stakeholders, the project can continue to develop in the short, medium, and long term. The branding created by the community will move other stakeholders to support the project.

- **Promote economic development through the visitor economy.** Another of the brand's objectives is to promote the flow of local and foreign visitors by developing the assets identified during the project. As part of the rural placemaking plan, it is intended to integrate the brand through Route 191 by implementing smaller-scale projects in different areas selected for development to transform the spaces to appeal to more visitors.



Brand Usage Recommendations

- To promote activities, events, or services that foster community and economic development in Cubuy, Florida, Río Blanco, and Naguabo..
- To promote activities, events, or services that promote the visitor's economy in the region.
- To keep stakeholders and the public informed of project progress through newsletters, announcements, network postings, press releases, etc.
- To raise funds for community and economic development projects in the region.
- For fundraising for non-profit organizations actively working on the development of Route 191
- For the implementation of Destino 191 placemaking projects.
- To be used in any management, activity, initiative, or project in Naguabo, El Yunque, and its neighboring municipalities, and in initiatives that include the economic-community development issues for which the brand was created.



The following are recommendations for uses that should be avoided:

- It should not be used for political matters, to avoid conflicts of interest within the community it represents.
- It should not be used for personal purposes (e.g., soliciting money for an individual using the trademark).
- It should not be used without the approval of the Comité Desarrollo Barrio Cubuy, Inc. and the community to ensure that its uses align with the brand's objectives.
- It should not be used outside the parameters of the Brand Manual to ensure the brand maintains consistency in all areas of use.
- Other organizations should not use it without a written agreement with the purpose and reason for using the brand and that it is aligned with the project objectives.

Additional recommendations: Registering the brand with the Department of State to protect it and prevent it from being copied by others is recommended.



Destino 191 Marketing Plan

In the Destino 191 program of Cubuy, we find one of the entrances to the most important natural asset of the island: El Yunque. This asset provides a unique experience to all visitors to this sector in Naguabo. It is important to highlight that El Yunque is only one piece of all that this community has in store. In this plan, we want to highlight the strategies that will help the Destino 191 program present all this community offers to the public.

Product differentiation:

An important step is to recognize everything that makes the Cubuy and Río Blanco communities different from other communities. Promoting all the community's unique offerings is an important step in highlighting all Destino 191 has to offer its visitors.

Branding:

To have an effective marketing strategy, the message and tactics must be concentrated under an identity (brand). It is good to remember that identity refers to the essence and values of an entity, while the brand is the visual and emotional representation of that identity. This provides us with the creation of products such as Tote bags, Keyrings, Stickers, Flyers, Business cards, Shirts, etc.

Using pieces with our branding in social networks, billboards, press, television, banners, facades, murals, and other media will help boost our brand recognition and distinguish our efforts from others in the region. These are the benefits of a brand: Reach, Recognition, Differentiation, Loyalty, Credibility, Added Value, Expansion, Influence, Effective Communication, and Legal Protection.

These benefits help to have more organization in the communication of the effort. This element gives us all the necessary tools to provide a solid foundation for our strategy.



Market segmentation

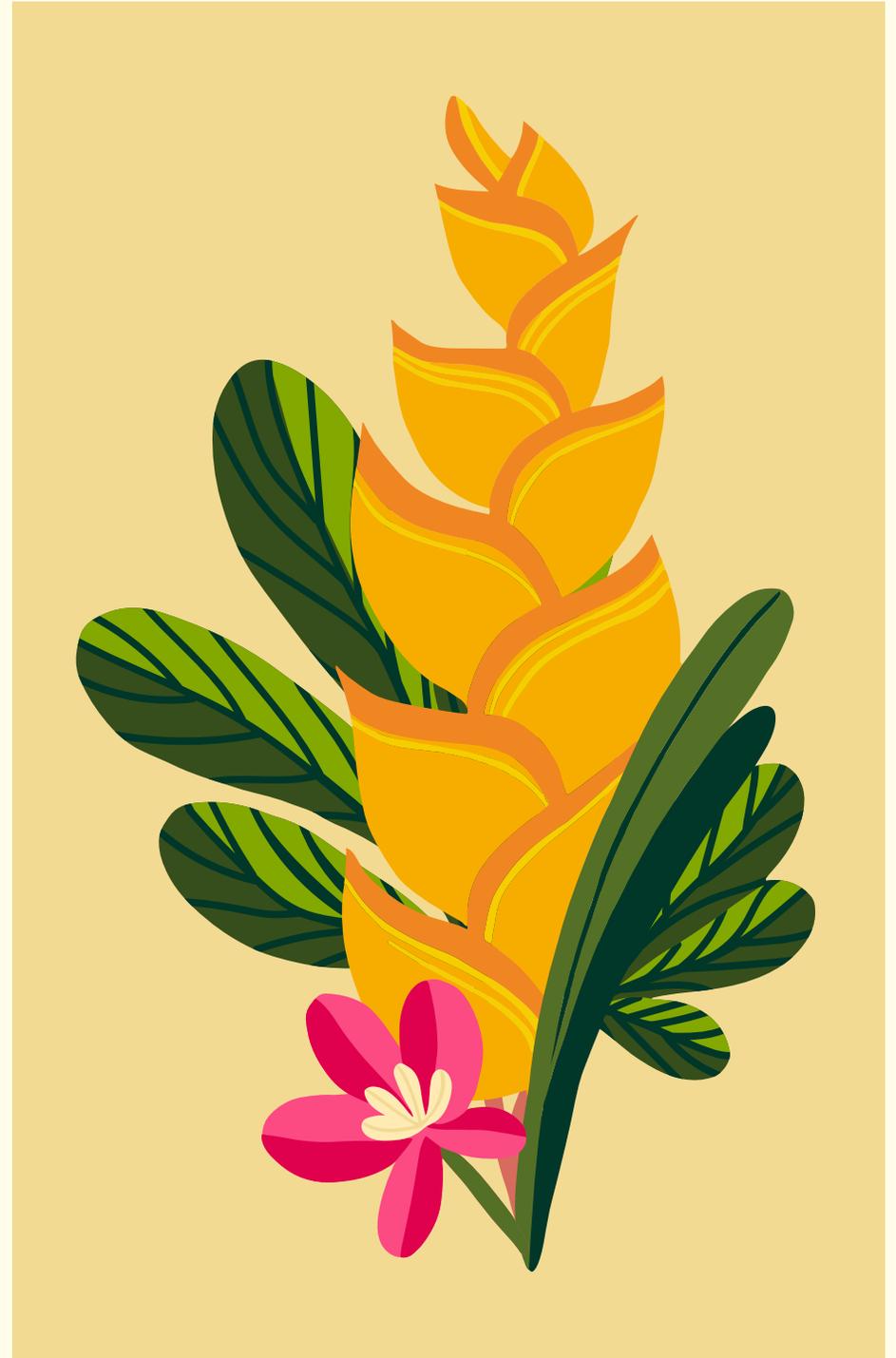
Market segmentation is dividing consumers into smaller, homogeneous groups with similar characteristics to target specific marketing strategies to each group.

Recommendations for market segmentation in the Destino 191 campaign:

- Analyze and understand the target audience of the campaign.
- Use demographic, geographic, psychographic, and behavioral data to segment.
- Personalize messages and offers according to the characteristics of each segment.
- Use technological tools to collect and analyze consumer data.
- Perform continuous testing and adjustments to improve segmentation effectiveness.

Here we share the recommendations of the 3 focus groups for Destino 191 efforts:

- General (18 to 55 years of age)
 - Descriptive interests: Adventure activities and outdoor sports (hiking, rappel, mountain biking).
- Tourists (25 to 65 years of age)
 - Descriptive interests: Natural beauty of the area, activities such as walks, bird, and nature watching, and visits to rivers.
- Professionals (25 to 65 years of age)
 - Descriptive interests: Art, nature, and culture. Cultural and artistic events, local art exhibitions, handicraft workshops, and thematic tours on the history and traditions of the place.



Social Media Marketing

Creating a single communication channel under the Destino 191 brand is recommended as part of our strategy. Developing a website as an information hub and using social networks to expand recognition will be the means and channels for executing our efforts. Once the official Destino 191 channels are established, the following digital branding tactics are proposed.

Expansion of recognition through social networks: Use platforms such as Facebook, Instagram, TikTok, Twitter, and YouTube to generate relevant content, interact with the audience, and increase the visibility of Destino 191.

Performance marketing: Implement performance-oriented marketing strategies, such as paid search advertising, remarketing, and email campaigns, to drive traffic, conversions, and return on investment.

Here we share a list of common and widely used social networks for social media marketing:

- **Facebook:** The largest and most popular social media platform, offers a wide range of advertising tools and audience targeting options.
- **Instagram:** Especially popular among younger users, it focuses on publishing attractive images and videos.
- **Twitter:** A microblogging platform, ideal for sharing brief content and real-time updates.
- **LinkedIn:** Focused on the professional sphere, it is ideal for establishing business connections, searching for jobs, and sharing relevant content for companies and professionals.
- **YouTube:** An online video platform where you can create and share visually engaging content.
- **Pinterest:** It focuses on creating and sharing inspiring images

- and ideas, especially useful for companies related to fashion, design, or decoration.
- **TikTok:** A short video platform popular among younger users, ideal for creative and viral content.

It is important to remember to adapt the social media marketing strategy to the specific characteristics and objectives of Destino 191.



Email Marketing

Email marketing is a marketing strategy that consists of sending emails to a list of subscribers to promote products, and services or generate engagement with the audience.

Here are some email marketing recommendations that can help increase interest in the Destino 191 effort:

- Create an email list of people interested in ecotourism and nature in Puerto Rico.
- Personalize emails to make them more relevant to the Cubuy community and its history.
- Use attractive and catchy subject lines, such as "Discover Puerto Rico's most exciting ecotourism destination".
- Design the e-mails in an attractive and easy-to-read manner, using images of the El Yunque National Forest and the natural beauty of the Río Sabana recreational area.
- Include clear and visible calls to action, such as "Book your trip now" or "Explore Cubuy today".
- Offer discounts or special promotions for the first visitors who book their trip via e-mail.
- Share stories and testimonials from other visitors who have enjoyed the Río Sabana Recreation Area and El Yunque National Forest.
- Use an exciting and moving tone in emails to encourage them to explore Destino 191.
- Be sure to include detailed information on how to get to the Río Sabana Recreation Area and the southern entrance to El Yunque National Forest.
- Follow up with those who opened the emails to get feedback on their Destino 191 experience.



Affiliation / Collaboration / Paid Marketing

Affiliate Marketing is a business model in which a person or company promotes another company's products or services and receives a commission for each sale generated through their affiliate link.

Partnership or paid marketing is a strategy in which you collaborate with other brands or influencers to promote your product or service in exchange for financial compensation.

Here we share a list of recommendations:

- Research and choose partners or influencers relevant to the audience.
- Establish clear and measurable objectives for collaboration.
- Clearly define the terms and conditions of the agreement.
- Create engaging and personalized content for collaboration.
- Follow up and evaluate the results of the collaboration.

Here are some recommended partnership or paid marketing strategies for Destino 191 efforts:

- Contact the DMO to create an article on their website about the top 5 things to see or do in Cubuy. Discover Puerto Rico platform:
<https://www.discoverpuertorico.com/arcle/popular-hiking-trails-puerto-rico>
- Take advantage of the hiking boom by generating conversations within the Trekkers' community through different applications such as All Trails.
- Several routes must be created to be visible in this app. Trekking apps:
<https://www.alltrails.com/trail/puerto-rico/east-region/el-yunque-riocubuy?search=true>
- Reviews on TripAdvisor and Yelp

Here are some recommended strategies for referral marketing efforts for Destino 191:

Cubuy Meetups: Quarterly meetings with tourist guides

- It is recommended that quarterly meetings be held with tour guides as a strategy to build their loyalty. These meetings offer a series of benefits that contribute to strengthening their commitment and satisfaction with the company or tourist community. These meetings can also serve as a space for the creation of content for the tour guides.



Cubuy Festival

An eco-friendly festival is an excellent marketing strategy because it opens the space for a predetermined and recurring date to generate movement of visitors with an awareness of the environment concentrated in the Cubuy region. Integrating the eco-friendly concept with the Cubuy brand takes advantage of the space's geography and the eco-friendly community's loyalty as a niche group of visitors.



- **Brand positioning as an environmentally conscious community:** The community's commitment to protecting and conserving the environment is highlighted by organizing an eco-friendly festival. This initiative reflects a genuine concern for the area's natural environment and demonstrates environmental responsibility towards nature.
- **Leverage existing and growing visitor flow:** El Yunque is one of Puerto Rico's most iconic attractions, and its proximity to Cubuy provides a unique opportunity to attract nature and ecotourism tourists. The US Forest Service team is working on strategies to increase the number of tourists visiting the forest annually. An eco-friendly festival can be an anchor event to attract tourists already visiting El Yunque.
- **Community involvement and participation:** A festival of this nature involves the entire community, from organizers to volunteers and attendees. This fosters a sense of belonging and pride in the community and increases cooperation to achieve a common goal: to protect the natural environment and promote sustainable practices.

Festival Components:

- **Environmental education:** Through the festival, educational activities and workshops can be offered on relevant environmental topics, such as biodiversity conservation, recycling, waste reduction, and renewable energy. This provides an invaluable opportunity to sensitize the local community and visitors to the importance of caring for the environment.
- **Culture, Art, and Music:** The festival can serve as a platform for emerging and established artists who value environmental preservation. Thus, making it a recurring event for its followers.

Conclusion



Implementation strategies and governance

The communities of Cubuy, Florida, and Río Blanco have a series of resources that present a great opportunity in the creation of a destination. The Comité Desarrollo Barrio Cubuy, Inc., the U.S. Forest Service (USDA), Rural Development (USDA), the Puerto Rico Tourism Company, CIRMA, Foundation for Puerto Rico and other important stakeholder organizations have united to provide a support network that aims to see through the community development and Cultural Route projects. While the community does not have all the resources to implement every recommendation on its own, leaders maintain a strong connection to the forest, a sense of responsibility in the community's development and becoming agents for the historical, cultural and natural conservation of the neighborhood. These new collaborations help the community to keep their zestful spirit and ensure the continuation of the project.

The Center's revitalization, the process of community mapping, profile development, and community survey, among other project achievements, happen through a combination of interventions from stakeholders who remain active in the seeking of resources. To continue amplifying the network of rural partners, continuous collaborations are required at a multisectoral and multijurisdictional

level including local and worldwide universities who want to learn and serve communities.

Furthermore, the Comité can seek other public and private partners to carry out projects on different scales, as well as performing fundraising activities and grant prospecting. Along the plan, there has been listed a series of projects, procedures, collaborators and financial resources to guide the governance of this project.

It is important to remember that to ensure an equitable economic development, the community development projects must be prioritized while continuing to develop Route 191 with the initial purpose of improving the residents' quality of life, and

then, to promote greater visitation to the destination.

This initiative presents a unique opportunity and has the end goal of improving the quality of life of all its residents. The projects that are clearly of a public nature, such as electrical infrastructure, transportation infrastructure, and parks, the community will need inter-agency public assistance. These kinds of relationships should continue to be strengthened to ensure the resources necessary to execute projects. achievements. The governmental agencies already involved should give emphasis to the projects for community development, parallel to the community's efforts of developing tourism experiences for the Destino 191.



References

"Comisión Topográfica." Río Blanco Map.1885. <https://tinyurl.com/mapa-Río-Blanco>

"Propuesta de Desarrollo en Comunidad: El País Posible Comunidad Tierra del Pueblo San Lorenzo, PR." 2017.

"Sección 1. Desarrollar un plan para identificar recursos y necesidades locales." Caja de Herramientas Comunitarias. <https://ctb.ku.edu/es/tabla-decontenidos/valoracion/valorar-las-necesidades-y-recursos-comunitarios/desarrollar-un-plan/principal>

ABCD Institute. "Asset-Based Community Development Institute." DePaul. <https://resources.depaul.edu/abcd-institute/Pages/default.aspx>

About the New Horizons for Seniors Program, 8 80 Cities, Woodgreen, and Government of Canada. Seniors Outdoor Activation Toolkit. 8 80 Cities, 2022. Seniors-Outdoor-Activation-Toolkit-English.pdf

Administración de parques y recreo. Área Recreativa La Mina. San Juan: Estado Libre Asociado de Puerto Rico Administración de Parques y Recreo Público, 1960. https://issuu.com/coleccionpuertorriquena/docs/area_recreativa_la_mina_1960

Aguirre-Álvarez, Josefa, Javiera Barriga López, María José Jorquera Sepúlveda y María José Peralta Ramírez. Guía para el Desarrollo de Experiencias de Turismo Comunitario. Santiago de Chile: Universidad San Sebastián, 2019. https://www.academedia.edu/41157082/Gu%C3%ADa_para_el_desarrollo_de_experiencias_de_turismo_comunitario

Alvarez-Díaz, Ricardo. "Resilient Placemaking for Communities and Cities: Essential for Disaster Preparedness and Crisis Management." The Weekly Journal. June 9, 2021. https://www.theweeklyjournal.com/opinion/resilient-placemaking-for-communities-and-cities/article_fe853aa6c88f-11eb-aebb-2ba5ebe337c4.html

Andreu, Cristina. "Desarrollo Comunitario: Estrategias de Intervención y Rol de la Educadora Social." Revista de Educación Social 7, (Noviembre). <https://eduso.net/res- revista/7/marco-teorico/desarrollo-comunitario-estrategias-de-intervencion-y-rol-de-la-educadora-social#:~:text=Es%20una%20metodolog%C3%ADa%20de%20trabajo,mejorar%20sus%20condiciones%20de%20existencia>.

AARP Livable Communities and Team Better Block. The Pop-Up Placemaking Toolkit 2020. Obtained from <https://www.aarp.org/livable-communities/tool-kits-re-sources/info-2019/pop-up-tool-kit.html>

Asociación de Estados del Caribe. "El Turismo Comunitario." ACS- AEC. <http://www.acs-aec.org/index.php?q=es/sustainable-tourism/el-turismocomunitario>

Autoridad de Acueductos y Alcantarillados (@ACUEDUCTO-SPR). 2015. "El Embalse de Río Blanco en Naguabo nos ha ayudado a combatir sequía en zona este. Lloviendo en El Yunque al fondo." Twitter, August 25, 2015, 12:11PM. <https://twitter.com/acueductospr/status/636209404325576704>

Autoridad de Acueductos y Alcantarillados. "Detalle de los Embalsee: Embalse Río Blanco." AAA. <https://past.acueductospr.com/AAARepresas/reservoir?i=9>

Autoridad de Acueductos y Alcantarillados. "Información adicional para cada embalse." AAA. <https://www.acueductospr.com/niveles-de-losembales>

Azali, Negin Najjar. "'Urban-Gamification' as a Collaborative Placemaking Toolkit in Nighttime." In Transforming Urban Nightlife and the Development of Smart Public Spaces, 94-113. Information Science Reference, 2021. https://www.researchgate.net/publication/351329777_'Urban-Gamification'_as_a_Collaborative_Placemaking_Toolkit_in_Nighttime_Let's_Play_the_City

Bernar, Guillermo. David, Louis. Guilguet, Héléne. "Libro Blanco de Placemaking: Programa de urbanismo táctico e innovación en el espacio público". Placemaking Latinoamérica México. 2018. Nov. <https://www.scribd.com/document/395841838/Libro-Blanco-de-Placemaking2018>

Bosque Nacional El Yunque. a. "El Bosque De Nubes Del Bosque Nacional El Yunque." U.S. Forest Service, https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5338931.pdf.

Bosque Nacional El Yunque. b. "Área Recreativa Río Sabana." Bosque Nacional El Yunque. U.S. Forest Service. <https://eynf.oncell.com/es/riosabana-recreation-area-199018.html>

Boyd, Allison, Barry Hokanson J., Johnson Laurie A., Schwab James C., and Topping Kenneth C. "Planning for Post-Disaster Recovery: Next Generation." American Planning Association. https://www.fema.gov/sites/default/files/2020-06/apa_planning-for-post-disaster-recovery-nextgeneration_03-04-2015.pdf2018.

Brix, Jacob. 2019. "Innovation capacity building: An approach to maintaining balance between exploration and exploitation on organizational learning." Emerald Publishing Limited 12-26. <https://www.emerald.com/insight/content/doi/10.1108/T->

LO-08-2018- 0143/full/pdf?title=innovation-capacity-building-an-approach-to-maintaining-balance-between-exploration-and-exploitation-in-organizationallearning

Bullet, Paul. "Community development models and language." March, 2017 comdevmodel.pdf

Business Continuity. "Business Continuity Toolkit for Affordable Housing Organizations." Business Continuity. https://businesscontinuity.enterprisecommunity.org/?_ga=2.150056757.2085546403.1683754715-8940642.1683754715

Buta, Natalia, Taylor V. Stein, Jenna B. Linhart, and Michael Stone. El Yunque National Forest, Puerto Rico Visitor Carrying Capacity Study. U.S. Forest Service, 2014.

Byrne, Chloe, Akhil Chilamkurthi, Rachel Flanagan, and Celeste Rehm. Exploring Perspectives and Expectations of El Yunque National Forest Visitors. Puerto Rico Project Center Worcester Polytechnic Institute, 2021. <https://wp.wpi.edu/puertorico/projects/2021-fall/eynf/>

Byrne,Chloe, Akhil Chilamkurthi, Rachel Flanagan, and Celeste Rehm. Exploring Perspectives and Expectations of El Yunque National Forest Visitors. Worcester Polytechnic Institute, 2021. <https://wp.wpi.edu/puertorico/projects/2021-fall/eynf/>

Byrne,Chloe, Akhil Chilamkurthi, Rachel Flanagan, and Celeste Rehm. Exploring Perspectives and Expectations of El Yunque National Forest Visitors. Worcester Polytechnic Institute, 2021. Pamphlet. <https://bpb-us-w2.wpmucdn.com/wp.wpi.edu/dist/e/203/files/2021/12/What-Makes-Cubuy-Naguabo-Attractive-to-Visitors.pdf>

Byrne,Chloe, Akhil Chilamkurthi, Rachel Flanagan, and Celeste Rehm. Exploring Perspectives and Expectations of El Yunque National Forest Visitors. Worcester Polytechnic Institute, 2021. Infographic. <https://bpb-us-w2.wpmucdn.com/wp.wpi.edu/dist/e/203/files/2021/12/What-Makes-Cubuy-Naguabo-Attractive-to-Visitors-2.pdf>

Byrne,Chloe, Akhil Chilamkurthi, Rachel Flanagan, and Celeste Rehm. "Exploring Perspectives and Expectations of El Yunque National Forest Visitors." Worcester Polytechnic Institute, 2021. Presentation. <https://bpb-usw2.wpmucdn.com/wp.wpi.edu/dist/e/203/files/2021/12/IQP-Final-Presentation.pdf>

Byrne,Chloe, Akhil Chilamkurthi, Rachel Flanagan, and Celeste Rehm. "Exploring Perspectives and Expectations of El Yunque National Forest Visitors." Worcester Polytechnic Institute, 2021. Report. https://www.canva.com/design/DAEwZVnfcXU/WJ6fL9tiuzMja9zou6q-JoA/view?utm_content=DAEwZVnfcXU&utm_campaign=designshare&utm_medium=link&utm_source=sharebutton

