
A GATEWAY TO OUTDOOR RECREATION AND GREEN SPACES

CIALES GREENWAY



MUNICIPALITY OF CIALES, PUERTO RICO



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Overview	4
Project Focus	7
PHASE I: Community Outreach and Information Gathering	8
PHASE II: Public Land Improvement and Recreational Opportunities Expansion	12
PHASE III: Ciales Greenway Plan	14
Outcomes	16
Public Land Improvement and Recreational Opportunities Expansion Conceptual Design	19
Ciales Greenway Plan Conceptual Design	21
Recommended Next Steps	22
Appendix	25



OVERVIEW

On September 6, 2017, Category 5 Hurricane Irma passed north of Puerto Rico, producing tropical storm-force winds across much of the main island. Just days later, on September 20, Hurricane Maria made landfall in Puerto Rico as a high-end Category 4 hurricane, causing catastrophic damage to the entire territory. As the citizens of Puerto Rico were recovering from the devastation of these hurricanes, they faced the global COVID-19 pandemic, which further led to a significant economic decline, particularly on the tourism industry.

Across the island, the resilient citizens of Puerto Rico rose to repair and heal their land and its people. In 2021, the Municipality of Ciales requested technical assistance from the Environmental Protection Agency (EPA), Federal Emergency Management Agency (FEMA), and the National Park Service – Rivers, Trails, and Conservation Assistance program (NPS-RTCA) to identify resilient recovery strategies for the municipality and its communities following the devastating natural disasters.

With help from the National Park Service, the Municipality of Ciales, which is nestled in the island's Central Mountain Range, set out to expand their outdoor recreation initiatives. Recognizing the municipality's desire to create a vibrant tourist destination to strengthen its economy, NPS-RTCA supported Ciales in building community capacity to help fortify and enhance the area's natural and cultural resources as well as its outdoor recreation assets.

As Ciales evolves into a gateway community to Puerto Rico's scenic mountainous region, local leaders want to improve the quality of life for residents while providing visitor opportunities and access to adjacent public lands and parks. The Municipality of Ciales has expressed great interest in incorporating climate resilience infrastructure and economic development opportunities in their planning as they take strategic steps towards becoming a unique island destination.

As a result of the coordinated efforts between federal agencies and the Municipality of Ciales, local leaders and residents were able to initiate a series of community-led strategic planning sessions to identify the area's core outdoor recreation features.

Working collaboratively, residents and municipality leaders are actively developing a system of sidewalks, trails, and green spaces that connect the natural areas of the Río Grande de Manatí and the scenic Zona Cársica to neighborhood hubs across Ciales.

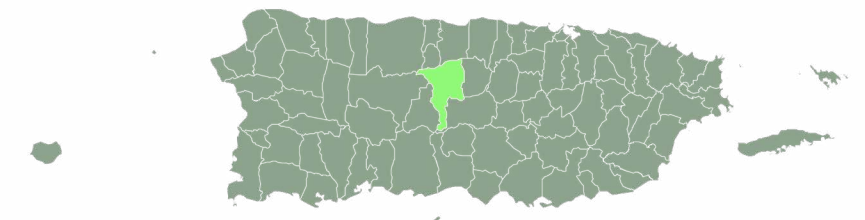


Project Focus

With a three-phase support plan from NPS-RTCA, the Municipality of Ciales facilitated outdoor recreation planning efforts. This included conducting a stakeholder analysis, collecting information on social and recreational resources, and convening community planning workshops with the goal of developing a conceptual community-based plan and recommendations.

The Municipality of Ciales expressed their interest in developing a system of green spaces and trails that connect residents from both the urban core and rural areas with their surrounding cultural, natural, and scenic resources.

As part of Phase One during 2021/2022, NPS-RTCA assisted the municipality with hosting a series of public engagement workshops, gathering ideas from community members, nonprofit organizations, government entities, universities, and U.S. federal agencies. This input helped the community and municipality shape a vision for the project as a network of green spaces and trails. Phase Two of support began in 2023, with a team of National Park Service staff assisting with the development of a conceptual design for the FEMA buyout properties. Phase Three built on the community's original vision, with NPS-RTCA staff creating a concept design for conservation and outdoor recreation in Ciales, providing key documents to help the municipality move forward with trail connectivity planning.



PHASE I

Community Outreach and Information Gathering

At the beginning of 2021, the Municipality of Ciales requested technical assistance from the Environmental Protection Agency (EPA), the Federal Emergency Management Agency (FEMA), and the National Park Service (NPS) to identify climate resilient, natural disaster recovery strategies for the municipality and its communities. Specializing in helping communities foster collaboration and effective communication, NPS-RTCA guided Ciales officials in hosting a series of community engagement events to build trust and gather diverse perspectives related to improving the outdoor recreational resources of Ciales.

As a result of these coordinated efforts between federal agencies and the Municipality of Ciales, NPS-RTCA facilitated a four-day workshop attended by more than 30 organizations and agencies (listed in Appendix 1) in December 2021. During the workshop, community members agreed on an initial vision and set of goals to work towards for the surrounding green spaces and parks of Ciales. Collaborators agreed on an Action Plan with prioritized tasks to move progress forward.

During this initial phase, stakeholders agreed on the key guiding principle for identifying the anchors of the desired regional trail system, which included high recognition for geographical, topographical, socio-economic, and historical characteristics. Community visioning sessions were held to clarify a shared vision for the project, gather recommendations, and agree on concept designs for potential trail connectivity anchor sites around the Town of Ciales. Community members, agency representatives, and municipality leadership participated in field visits to identify areas of interest, including, but not limited to, Mata de Plátano Bridge, Municipal Coliseum, Linear Promenade, Ciales Urban Center, and roads in the areas surrounding the Río Grande de Manatí Basin.

Residents and stakeholder groups participated in cartographic and spatial analysis mapping workshops which led to group agreement on four main anchor points for a Ciales Municipal Trail System: Mata de Plátano Bridge, Juan A. Corretjer Linear Promenade, Ciales Municipal Coliseum, and Ciales Urban Center.

Four key themes emerged as drivers of the initial Action Plan drafted during the community engagement meetings which include:

IMPROVING PUBLIC ACCESS AND USE OF RECREATIONAL AREAS

DEVELOPMENT OF OUTDOOR RECREATION ECONOMIC ACTIVITIES

EDUCATING RESIDENTS AND USERS ABOUT OUTDOOR RECREATION OPPORTUNITIES IN THE AREA

STUDYING AND CONSERVING THE WATERSHED AND OTHER SENSITIVE RESOURCES SURROUNDING CIALES



IMPROVING PUBLIC ACCESS AND USE OF RECREATIONAL AREAS

- ◆ Consider the Linear Promenade, the Municipal Park, and the adjacent parking lot of the Mata Plátanos Bridge as the main access points to the proposed Parque Ecoturismo Manatuabon (PEM) and develop plans and projects for the improvement of the three sites such as installing facilities, signs and information, lighting, shade, etc.
- ◆ Improve the connection between the plaza and the PEM for pedestrians and bicycles.
- ◆ Include stops for the proposed trolley system at trailheads and key access points.
- ◆ Consider temporarily closing the Mata Plátanos Bridge to vehicle traffic during special events to facilitate pedestrian and bicycle use.
- ◆ Establish a separate lane on the Main Bridge for pedestrian and bicycle use.
- ◆ Install one or more removable pedestrian bridges at important points to connect sidewalks on both sides of the river.
- ◆ Evaluate the possibility of designating additional secondary access points (with parking).
- ◆ Designate the most suitable points for river access.
- ◆ Identify and promote a scenic driving route with views of the PEM.
- ◆ Evaluate the possibility of creating a "courageous trail" – a staircase between the Linear Promenade and the Río Grande de Manatí.
- ◆ At each main access point, consider offering opportunities for short walks (1-2 km) that interconnect to form longer hiking trail opportunities.
- ◆ Organize a program to encourage residents and visitors to float on the river in inflated tubes or kayaks.
- ◆ Establish an alert system to warn against entering the river and/or flood-prone areas.
- ◆ Improve user safety, especially in the Coliseum area.

DEVELOPMENT OF OUTDOOR RECREATION ECONOMIC ACTIVITIES

- ◆ Coordinate commercial tourism advocacy activities with outdoor recreation education priorities and identify collaborative strategies to work with local businesses.
- ◆ Organize a youth employment program that would guide the development, maintenance, conservation, and recreational use of the PEM.
- ◆ Host events and activities, such as festivals, related to the PEM.
- ◆ Upgrade and increase vendor stalls at major trail access points.
- ◆ Implement a program where the merchants support the maintenance of the vendor stalls.
- ◆ Offer specialized recreational opportunities (camping, river floating, bird watching, etc.) through commercial operators.
- ◆ Evaluate the possibilities for establishing commercial programs to guide recreational activities or rent equipment.
- ◆ Create consistent design elements and branding for PEM facilities, including communications and activities, to emphasize its identity as an outstanding natural area.
- ◆ Promote Ciales merchants at key PEM access points.

EDUCATING RESIDENTS AND USERS ABOUT OUTDOOR RECREATION OPPORTUNITIES IN THE AREA

- ◆ Create a map illustrating the vision of the PEM with information on the appropriate use of the area, the importance of respecting the environment, and opportunities to participate in the collaborative effort. Disseminate this information through various means of communication such as signs, websites, social media, brochures, etc.Emphasize watershed-related education, covering topics such as river functions and values, potential impacts, flooding, and aquatic life.
- ◆ Provide users with information about the archaeological resources and cultural history of Ciales.
- ◆ Organize a birding program.
- ◆ Offer guided activities that include environmental education.
- ◆ Develop a system of signs and kiosks that provide information about the PEM, recreational opportunities, resources, and history of the area.
- ◆ Create an environmental education program that promotes the ethics of respecting and caring for the PEM as part of all recreational and tourism activities.
- ◆ Identify and develop areas suitable for field studies or outdoor laboratories in collaboration with universities.
- ◆ Convene and train volunteers to take responsibility for caring for and guarding the PEM.
- ◆ Establish a program of public art installations at the PEM.

STUDYING AND CONSERVING THE WATERSHED AND OTHER SENSITIVE RESOURCES SURROUNDING CIALES

- ◆ Organize a study of the existing conditions of the natural resources of the PEM, with a focus on the river, to establish a baseline for future monitoring and research.
- ◆ Identify and mitigate river pollution caused by stormwater, septic tanks, gravel pits, and other impactful activities.
- ◆ Organize monitoring and science programs and provide training opportunities for citizens and volunteers.
- ◆ Connect with the U.S. Forest Service's Forest Stewardship Initiative.
- ◆ Identify problem areas and activities and develop strategies to address them.
- ◆ Protect existing forest areas that serve as stormwater buffers.
- ◆ Coordinate with upstream efforts to protect the watershed.
- ◆ Consider implementing green infrastructure designs to reduce stormwater impacts on the urban area.
- ◆ Establish acceptable use standards and promote the concept of low or no impact development in and around the PEM.
- ◆ Initiate a study of all flora, fauna, and reptiles in the river ecosystem.

PHASE II

Public Land Improvement and Recreational Opportunities Expansion

In March 2023, NPS-RTCA hosted an in-person design and mapping workshop in Ciales with project partners to identify the most desired recreational amenities, activities, and green infrastructure assets for lands that would be deemed appropriate for the FEMA land acquisition process. Workshop participants included representatives from the Office of the Mayor, directors of federal programs, planners and project leads of federal programs, Pozo Azul Corp., and NPS-RTCA.



PHASE III

Ciales Greenway Plan

In March 2023, NPS-RTCA conducted on-site inventory to document existing and potential outdoor recreation, conservation, historic, and cultural resources within the project area. The inventory focused on public assets in both the urban core and rural periphery, particularly on assets near the Coliseo de Ciales, Río Grande de Manatí, Paseo Lineal Juan Antonio Corretjer, Puente Mata de Plátanos, and Zona Cársica. Initial assessments determined:

- ◆ Shorelines along the Río Grande de Manatí are at risk of intense and recurring flooding. These areas are listed as high risk and are highlighted in flood maps maintained by FEMA.
- ◆ Shoreline degradation along the Río Grande de Manatí is also caused by erosion.
- ◆ The extent of the natural floodplain is limited by residential and commercial development.



In June 2023, the Municipality of Ciales, with support from NPS-RTCA, hosted community outreach meetings at various locations throughout Ciales to gather further input on desired recreational amenities, activities, and green infrastructure assets. Ciales leadership held information-gathering mini-sessions around town including at local retirement homes and public schools, inviting both elders and youth to share their input on recreational preferences for the future development of a Ciales Greenway Plan.

After reviewing the input gathered by the Municipality of Ciales, NPS-RTCA developed three public outreach poster templates (in English and Spanish) that identified desired recreational amenities, activities, and green infrastructure assets in Ciales. The templates were used during in-person meetings with project partners so that they could learn how to replicate the poster activities during future community workshops. NPS-RTCA provided 15 copies of each template to project partners for use during targeted group workshops with community members and stakeholders. The posters offered a simple way for community members to provide their feedback by drawing directly on them or filling out a sticky note next to it, offering real-time input related to greenway planning.

Project partners displayed the poster templates during public outreach meetings and at various public offices, including the Office of the Mayor and Citizen Support, Office of Municipal Services, and Office of Tourism, to collect public information about desired recreational amenities, activities, and green infrastructure assets in Ciales. Additionally, the partners developed a website to introduce the community to the project and created an online survey based on the activity templates, providing an opportunity for the public to provide their feedback online. The website and online survey can be found here: [Municipio de Ciales](#).

OUTCOMES



PUBLIC LAND IMPROVEMENT AND RECREATIONAL OPPORTUNITIES EXPANSION

CONCEPTUAL DESIGN

A conceptual design was created to highlight the key interventions proposed for the communities of Dos Ríos and Alturas de Ciales, focusing on the appropriate acquisition of lands prone to recurrent flooding. The proposal includes three programmatic areas aimed at enhancing the conservation of natural and cultural resources while promoting outdoor recreation and connectivity among all communities. The three programmatic areas are outdoor recreation, infrastructure and services, and sustainability and conservation.

OUTDOOR RECREATION

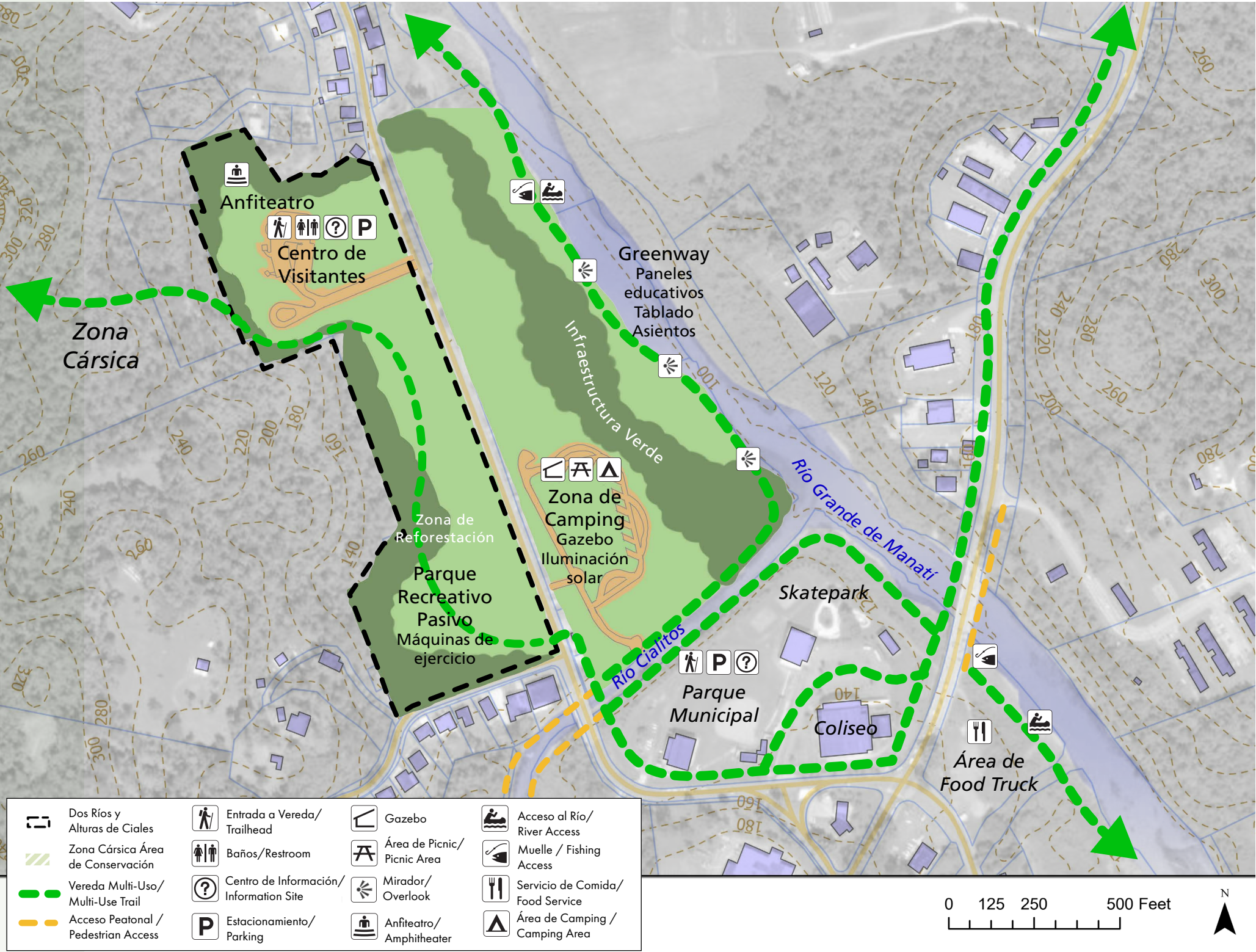
- ◆ A network of multi-use trails with multiple access points to provide opportunities for short and long walks.
- ◆ New recreational spaces designated for camping, kayak and fishing access, and birdwatching.

INFRASTRUCTURE AND SERVICES

- ◆ An information and visitor center.
- ◆ Amenities such as signage, lighting, and shade at access points and along the trails.
- ◆ Designated areas for parking, picnic tables, overlooks, restrooms, and food stalls.

SUSTAINABILITY AND CONSERVATION

- ◆ Green infrastructure design to help mitigate flooding and impacts from natural disasters.
- ◆ Protection of existing tree canopy to help reduce storm-water runoff.



CIALES GREENWAY PLAN

CONNECTIVITY

- ◆ Ciales' urban core will be connected to the surrounding cultural, natural, and scenic resources through a network of multi-use trails and pedestrian/bicycle designated routes.

PUBLIC SPACES

- ◆ A visitor center will welcome residents and visitors.
- ◆ Designated areas for camping, kayaking, and fishing will promote ecotourism and outdoor recreation.

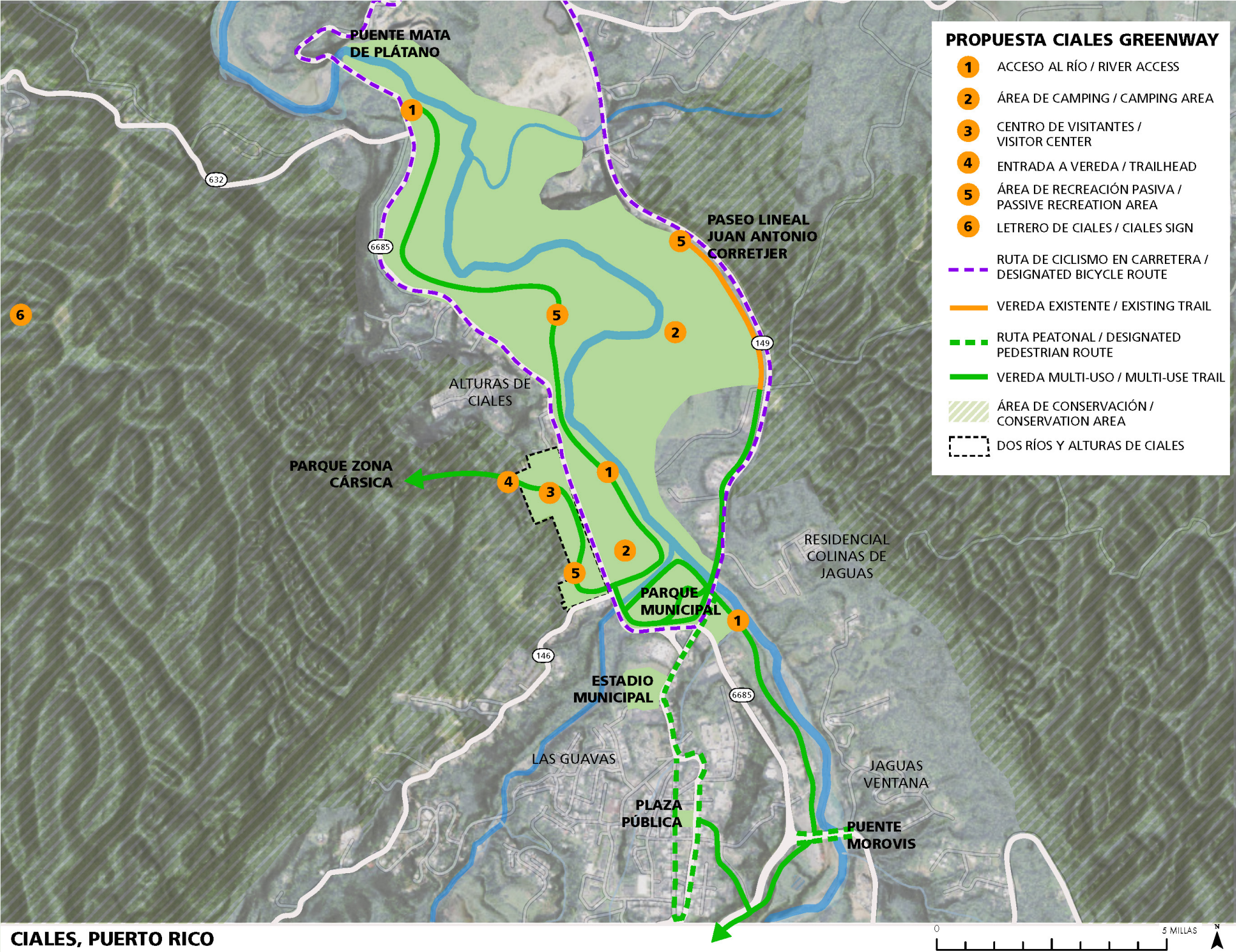
SCENIC VIEWS

- ◆ Maximize the scenic values of Ciales by leveraging the panoramic views of the Zona Cárstica.

SUSTAINABILITY AND CONSERVATION

- ◆ The conservation of Ciales' natural and cultural resources along with green infrastructure design will help mitigate flooding and impacts from natural disasters.

CONCEPTUAL DESIGN



Recommended Next Steps

The NPS-RTCA Disaster Recovery Assistance Team completed the initial work phases in Ciales in June 2023. To continue the greenway and trails efforts, it is recommended that the Municipality of Ciales seek guidance on the following matters:

Completing a comprehensive asset inventory for the outdoor recreation areas of Ciales.

Strengthening community engagement for the project, including facilitating additional public meetings and design workshops to create conceptual designs based on diverse and inclusive public input.

Further exploring community recommendations for new greenways, trails, streetscape improvements, and node connections for green spaces.

Continuing to support increased economic development opportunities paired with outdoor recreation facilities, such as local food initiatives at town parks with vendor stations, farmers markets, recreational equipment vendors, guide services, etc.

Prioritizing user education needs and seeking funding to develop maps and guides for surrounding outdoor recreation opportunities.

Enlisting local universities to complete a flora, fauna, and reptile study for the river ecosystem.





PROJECT TEAM

NPS-RTCA PUERTO RICO COORDINATOR, LIZ SMITH-INCER

NPS-RTCA CIALES COORDINATOR, NATALIA SANCHEZ HERNANDEZ

NPS-RTCA STAFF, KAT SHIFFLER

NPS-RTCA STAFF, TOMÁS DEZA

NPS-RTCA STAFF, EVELYN MORENO

NPS-RTCA CONSULTANT, ALAN RAGINS

NPS-RTCA CONSULTANT, BRIAN AVILES

APPENDIX 1

NPS-RTCA, IN COLLABORATION WITH FEDERAL AGENCIES AND THE MUNICIPALITY OF CIALES, HOSTED A FOUR-DAY WORKSHOP THAT CONVENED MORE THAN 30 ORGANIZATIONS AND AGENCIES, INCLUDING:

FOUNDATION FOR PUERTO RICO

PARA LA NATURALEZA

PUERTO RICO TOURISM COMPANY

POLYTECHNIC UNIVERSITY OF PUERTO RICO SCHOOL OF ARCHITECTURE, LANDSCAPE PROGRAM

U.S. ENVIRONMENTAL PROTECTION AGENCY

MUNICIPALITY OF CIALES

CIALES FEDERAL AFFAIRS OFFICE

PUERTO RICO PLANNING BOARD

LANDSCAPE CONSERVATION

PUERTO RICO DEPARTMENT OF NATURAL AND ENVIRONMENTAL RESOURCES

U.S. ARMY CORPS OF ENGINEERS

PUERTO RICAN SPELEOLOGICAL SOCIETY

PUERTO RICAN PLANNING SOCIETY

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

GOTOCIALES

FINCA PUERCO SUELTO

CAFIESENCIA

FUNDACIÓN BUCARABÓN

CIALES FOREST

UNIVERSITY OF PUERTO RICO, UTUADO CAMPUS, DEPARTMENT OF AGRICULTURE

NEW URBAN BEAT COMMUNITY CENTER

LUNNABIS PHARMA INC.

BOY SCOUTS OF AMERICA

GIRL SCOUTS OF CARIBE

BASIN PROTECTORS

HACIENDA CARVAJAL

POZO AZUL COMMUNITY LEADERSHIP

VALIANT ACTION

SHADOW BONES K-SAUR

TORO NEGRO COMMUNITY

CIALITOS COMMUNITY

FRONTÓN COMMUNITY