DESIRABILITY & CONVENIENCE STUDY: RÍO CAMUY CAVE PARK

Prepared by the Puerto Rico Public-Private Partnership Authority

PUERTO RICO PUBLIC-PRIVATE PARTNERSHIPS AUTHORITY

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EXECUTIVE SUMMARY

OVERVIEW

This Desirability and Convenience Study (the "**Study**") was commissioned by the Puerto Rico Public-Private Partnerships Authority ("**P3A**" or the "**Authority**"), in collaboration with the Puerto Rico Department of Natural and Environmental Resources (the "**DNER**"). The Study seeks to determine whether it is advisable to procure a public-private partnership ("**P3**") between the DNER and a third-party entity for the design, restoration, financing, operation, and maintenance of the Río Camuy Cave Park (the "**Cave Park**") under a future P3 agreement between the DNER and the third-party operator (the "**Project**"). The Project was proposed by the DNER in accordance with Section 7 (a) of Act No. 29-2009, as amended, also known as the Public-Private Partnerships Act ("**Act 29**") and the Authority is facilitating the development of the Study, in collaboration with the DNER, the owner and responsible entity for the operation of the Cave Park.

PROJECT OBJECTIVES

The first step in developing potential delivery alternatives is setting objectives that align with the Cave Park's mission and address the historical challenges outlined in this Study. The Authority considered historical challenges faced in the Cave Park's operation and identified potential benefits for Puerto Rico when developing the objectives of the Project. The Project objectives are listed below in no order of preference or importance:

- Address the infrastructure needs of the Cave Park;
- Finance the capital improvements necessary to bring the facilities to their condition before Hurricanes Irma and Maria (the "Hurricanes"), while providing the necessary funds for further development of the Cave Park;
- Minimize the Cave Park's reliance on government funding;
- Improve operational aspects of the Cave Park and develop the necessary strategy to create additional value for the Cave Park through new and innovative attractions and activities; and
- Improve the fiscal situation of the DNER and increase revenue opportunities for the Cave Park.

STUDY OPTIONS

The objectives listed above were developed by the Authority to guide this Study and to determine whether an identified option is desirable and convenient for the Authority to consider as an alternative to the Status Quo, as defined below. This Study considers the following models as potential options for the Project:

*Option 1 – Mostly Public Status-Quo Model ("**Status-Quo Model**")*: This is the Cave Park's current operational arrangement, whereby the DNER operates and manages the Cave Park and contracts with private concessionaires for the provision of certain visitor services.

Option 2 – Public-Private Operation Model: This arrangement would consist of a management contract between the DNER and a private-sector park operator or manager.

The park operator would be in charge of the day-to-day operations of the Cave Park during the term of the agreement and would be responsible for engaging other private concessionaries for the provision of park and other visitor services. Risk and responsibilities associated with the Project would be distributed to achieve the full potential of the Cave Park. The DNER would continue to be responsible for financing and delivery of the Cave Park's capital improvements.

Option 3 – Public-Private Rehabilitation and Operation Model: This option would entail a long-term Rehabilitate-Operate-Transfer ("**ROT**") contract between the DNER and a private concessionaire. The concessionaire would oversee the operation, rehabilitation, improvement and maintenance of the Cave Park. This option would require that the private sector bear a significant portion of the risk and responsibility associated with the Project. In turn, the DNER would retain the responsibility of ensuring compliance with all applicable federal and local requirements and regulations.

ASSESSMENT OF OPTIONS

Despite the lack of historical information with regards to the financing and operation of the Cave Park, qualitative and quantitative assessments of the benefits and considerations of each option, as well as how well each option meets the Authority's Project objectives, were conducted based on available data gathered by the Authority's advisors and provided by the DNER.

The following five main components were used to evaluate how each option met the Project objectives: (1) overall benefits, (2) financial viability, (3) added value, (4) compliance, and (5) risk management. Each of the components analyzed for each option is described in more detail in the "Analysis Approach" and "Project Delivery Options Assessment" sections of this Study.

CONCLUSION & RECOMMENDATION

The Cave Park is one of Puerto Rico's most important outdoor recreational attractions due to its environmental, historical, scientific, and touristic value. The Cave Park houses one of the largest underground rivers in the world and is home to a diverse ecosystem. Yet, its physical state is progressively deteriorating.

The Cave Park's infrastructure has suffered significantly throughout the years due to a consistent lack of adequate repair and maintenance, which has been exacerbated most recently by the damages caused by the Hurricanes and the COVID-19 pandemic ("**COVID-19**"). The information gathered and analyzed as part of this Study demonstrates that the Cave Park, as currently operated under the Status Quo model, is not achieving its full potential.

Although the findings of this Study suggest that an alternative public-private service model would improve the operation, maintenance, and overall performance of the Cave Park, economic literature such as articles published by the World Bank[1] recommend that a project of this size should not be procured under a conventional P3 arrangement. Also, notwithstanding its best efforts, the DNER was unable to provide sufficient information

[1] A Preliminary Review of Trends in Small-Scale Public-Private Partnership Projects" (World Bank, 2014)

necessary to ascertain the financial and operational needs of the Cave Park and how they would best be achieved through a P3 arrangement. Based on the foregoing, the Authority understands the Project should not be procured as a P3 agreement pursuant to Act 29. However, the Authority understands there is an imminent need to convert the Cave Park to a world-class facility and that the current operational model, the Status Quo, has limited the potential of the asset. As such, the Authority recommends for DNER to procure a concession agreement with a private third-party for the maintenance and operation of the Cave Park following a procurement process to be undertaken by the DNER in accordance with its Regulation No. 8013 of April 6, 2011 (the "**DNER Regulation**"). A private operator will bring efficiencies in the operations and maintenance of the Cave Park, as well offer insight and know-how as the infrastructure enhancements needed.

OBJECTIVES OF THE STUDY

GENERAL DISCLOSURE

This Desirability and Convenience Study (the "**Study**") has been prepared in accordance with Act 29, and the Regulation for the Procurement, Evaluation, Selection, Negotiation and Award of Participatory Public-Private Partnership Contracts under Act No. 29-2009, as amended, Regulation 8968 of May 11, 2017 (the "**P3A Regulation**"). The Study was commissioned by the Public-Private Partnerships Authority ("**P3A**" or the "**Authority**") (in collaboration with the Puerto Rico Department of Natural and Environmental Resources (the "**DNER**"), who engaged Advantage Business Consulting, to provide technical support in connection with the preparation of the Study (the "**Advisor**"). The compensation of the Advisor was not conditioned in any way on the outcome of this Study.

The Study is based on information provided by the Authority, the DNER, market information obtained from sources believed to be reliable, and estimates and assumptions made by the Advisor. The models analyzed for the delivery and structure of the Project are based on historical precedent and good market practices. Actual results may vary from those anticipated in this Study. Changes in local, state, and federal laws, or shifts in the overall economic condition of Puerto Rico may alter the assumptions and conclusions presented in this Study. It is recommended that further analysis and due diligence be conducted in subsequent phases if a procurement for a P3 arrangement under Act 29 occurs. The Authority will continue to evaluate and analyze the desirability and convenience of the Project as new information becomes available.

The Authority does not make any representation or warranty whatsoever, including representations or warranties as to the accuracy or completeness of the information contained herein, including estimates, forecasts, or extrapolations. In addition, the Study includes certain projections and forward-looking statements with respect to anticipated future performance of the Cave Park that reflect certain assumptions and are subject to significant business, economic and competitive uncertainties and contingencies, many of which are beyond the control of the Authority and the DNER. Accordingly, there can be no assurance that such projections and forward-looking statements will materialize. The actual results may vary from the anticipated results and such variations may be material. The Authority and the DNER expressly disclaim any liability for any representation or warranties, expressed or implied, contained herein or for any omissions from this Study

or any related matters. Act 29 and the P3A Regulation, as well as all applicable Puerto Rico and federal laws and regulations, will govern the dissemination of this Study.

PURPOSE OF THE STUDY

The Study was commissioned by the Authority to assist it in determining whether it is desirable and convenient for the Authority, together with the DNER, to procure a long-term concession contract with a third-party operator to improve, operate and maintain the Cave Park or continue to operate and maintain the Cave Park under the Status Quo, which is currently undertaken by the DNER. The purpose of this Study is to evaluate the viability of implementing the Project through an alternative procurement model, as an alternative to conventional means. Therefore, this Study will:

- Determine the service needs of the Cave Park in order to respond to a dynamic tourism market in Puerto Rico;
- Analyze how different service delivery models can meet the identified service needs of the Cave Park;
- Assess and compare the financial, commercial and technical risk implications for the different service delivery models; and
- Provide recommendations that aid in the selection of the most viable service delivery option.

STUDY OBJECTIVES

The objectives of this Study were developed to be consistent with the Cave Park's mission. The Authority considered historical aspects of the Cave Park's operation and identified potential benefits for Puerto Rico. Discussions between the Government of Puerto Rico (the "Government"), the Authority and the DNER have resulted in the following objectives to be achieved through the procurement of the Project, or continuation of the Status Quo. The objectives listed below ensure consistency in the focus of the analysis and provide a benchmark to compare potential options. The selected procurement option should reflect the objectives listed below (in no order of preference or importance):

- Address the infrastructure and operational needs of the Cave Park;
- Finance the capital improvements necessary to bring the facilities to pre-Hurricanes levels, while providing the necessary funds for further development of the Cave Park;
- Minimize the Cave Park's reliance on government funding;
- Improve operational aspects of the Cave Park and develop the necessary strategy to create additional value for the Cave Park through new and innovative attractions and activities; and
- Improve the fiscal situation of the DNER and increase revenue opportunities for the Cave Park.

The Study aims to assess and compare the feasibility of different service delivery models and analyze their benefits in order to identify the preferred method that meets the objectives of the Authority and supports the service needs of the Cave Park.

The selected procurement option should improve visitor experience at the Cave Park to ensure its financial sustainability, meet applicable legal requirements, and protect the Cave Park's natural and cultural wonders. Act No. 111 of July 12, 1985, as amended, known as the "Act for the Protection and Preservation of the Caves, Caverns or Sinkholes of Puerto Rico", was enacted for the conservation of this type of asset. The major aesthetic, scientific and economic importance that the Cave Park has, and the degree of threat to which it is subjected, also makes it a conservation priority.

STUDY PARTICIPANTS

The Authority and the DNER have developed this Study to analyze whether it is desirable and convenient for the Authority to procure a P3 to improve, operate and maintain the Cave Park. The Authority has commissioned the Advisor to assist in the analysis of potential procurement options and development of this report. Each study participant, including their role and description is provided below.

PUERTO RICO PUBLIC-PRIVATE PARTNERSHIPS AUTHORITY

The Authority is the sole entity responsible for the implementation of P3's in Puerto Rico and is the entity responsible for the development of this Study. The Authority promotes an ongoing collaboration between the public and private sector to promote sustainable economic development and establish Puerto Rico as a global competitor. The Authority aims to transform Puerto Rico's economy and lifestyle by enhancing infrastructure and services through the effective integration of the private sector's innovation and expertise. Ultimately, the Authority's goal is to deliver high-quality public services and foster socio-economic development, by optimizing synergies between the Government and the private sector to pursue the best outcome for all stakeholders involved, particularly the residents of Puerto Rico.

PUERTO RICO DEPARTMENT OF NATURAL AND ENVIRONMENTAL RESOURCES

The DNER was created by Act No. 23 of June 20, 1972, as amended (the "**DNER Enabling Act**"). It is the executive agency of the Government tasked with protecting, conserving, developing, and managing the natural and environmental resources in Puerto Rico. The DNER is responsible for the implementation of the Government's environmental public policy, including, but not limited to, the provisions of section 19 of Article VI of the Puerto Rico Constitution and Act No. 416-2004, as amended, also known as the "Environmental Public Policy Act." The DNER is also the owner and operator of Puerto Rico's national, recreational, and historical parks, including the Cave Park, through its National Parks Program. The DNER Enabling Act allows the DNER to contract with municipalities, non-profit institutions and public and private entities for the administration, concession, operating, outsourcing and/or delegation of Puerto Rico's parks, as long as it is consistent with the public interest.

STATEMENT OF NEED AND PROJECT OVERVIEW

STATEMENT OF NEED

Puerto Rico has over 3,000 areas designated for outdoor recreation.[2] Puerto Rico residents and visitors use these areas for different purposes such as exercise, picnics, guided tours of natural areas, and camping, among other activities. Notwithstanding, many outdoor recreational areas in Puerto Rico are currently closed due to unsafe conditions and need significant capital improvements for their use and enjoyment.[3] The Cave Park is one of these outdoor recreational areas that has great environmental, educational, and tourism potential but has fallen into considerable disrepair. Following the direct impact of the Hurricanes in year 2017, the Cave Park was closed to the public for various years until its partial opening in February 2023.

The Cave Park is one of the most important, searched, and visited locations on the Island.[4] Ever since the Taíno Indians first explored the Camuy River and its caverns hundreds of years ago, the Camuy River cave system has held historical, cultural, and scientific value for the people of Puerto Rico and the international community.

The Cave Park houses one of the largest underground rivers in the world and is home to a diverse ecosystem.[5] Prior to its closure, the Cave Park attracted thousands of visitors per year, including both Puerto Rico residents and tourists. Before the Hurricanes made landfall in Puerto Rico in 2017, the Cave Park received more than 80,000 visitors per year. The Cave Park and the visitors it attracted generated from $600,000 to $1.4 million in annual economic activity.[6]

Although the river, caverns, and the environmental, historical, and scientific value of the Cave Park are of great importance for Puerto Rico, its physical state has been deteriorating. The infrastructure of the caverns has suffered substantially throughout the years, exacerbated further by the recent natural disasters that have affected the area. The facilities of the Cave Park have also suffered from significant and consistent lack of repair and maintenance. Many of the services the Cave Park once offered to the public are currently not available until infrastructure conditions are improved. The current state of the Cave Park has reduced the number of visitors that it can host in any given year, affecting revenue sources and thus reducing its economic, tourist and scientific impact.

In the last decade, the Cave Park generated on average $1 million each year. Nevertheless, its substantial operating expenses have resulted in continuous deficits. These expenses are mostly attributed to employee wages and benefits and operations and maintenance expenses (refer to Operating Expenses section for more details).

The Cave Park's economic impact is not just limited to the areas surrounding it. Its importance stretches to all of Puerto Rico and beyond. The Cave Park is considered a

[2] Statewide Comprehensive Outdoor Recreation Plan (SCORP) For Puerto Rico 2020-2025.
[3] Ibid.
[4] El Nuevo Día (2023), "Estas fueron las atracciones de Puerto Rico más buscadas por los turistas en 2022".
[5] As highlighted in Discover Puerto Rico and the New York Times.
[6] Foundation for Puerto Rico (2021), "FPR Enables the Reopening of the Camuy River Cave Park".

major tourist attraction, both for Island residents and visitors. The municipalities of Camuy, Hatillo, and Lares directly benefit from the economic impact of the Cave Park and many of its neighboring communities depend on its continuous operation to maintain their businesses. As one of the most important cave systems in the world, the Cave Park's international recognition and standing is not to be underestimated.

If an operational and financial alternative to the Status Quo is not implemented in the short-term, the Cave Park will continue to experience gradual and irreversible deterioration that will impact the Puerto Rico tourism, education, and scientific sectors in the medium-to-long-term. The Cave Park's infrastructure is already in significant need of repair. The Project aims to address the infrastructure, operation and maintenance needs of the Cave Park through a P3 model that improves the operational aspects of the Cave Park and minimizes the Cave Park's reliance on government funding.

PROJECT DESCRIPTION

The Project entails the potential establishment of a P3 for the improvement, operation, and maintenance of the Cave Park under a long-term P3 agreement between the DNER and a private third-party operator. This Study aims to assess the benefits and considerations for procuring the Project by evaluating three different service models that represent the spectrum of alternatives considered for this type of Project.

While a P3 is not suitable for all infrastructure projects, it has proven to be effective at bringing innovation, optimizing risk transfer, accelerating delivery and bringing a whole-life costing approach, which through a competitive procurement can, in the right circumstances, bring the lowest overall cost of ownership to the public sector.

As discussed in the "Project Delivery Options Assessment" section of this Study, the three service model alternatives being considered for the Project are the Status Quo, Public-Private Operation and Public-Private Rehabilitation and Operation. Each alternative will be subject to a qualitative assessment and the highest-ranking model will be subject to a quantitative assessment.

THE CAVE PARK

HISTORY / BACKGROUND

The Cave Park is a cave system located between the municipalities of Camuy, Hatillo and Lares. The caverns are part of a large network of natural limestone caves and underground waterways carved out by one of largest underground rivers in the world, the Camuy River.

The cave system was discovered in 1958 and was first documented in the 1973 book titled *Discovery at the Río Camuy* by Russell and Jeanne Gurnee. However, there is archaeological evidence that these caves were explored hundreds of years ago by the Taíno Indians, Puerto Rico's first inhabitants. Over 10 miles of caverns, 220 caves and 17 entrances to the Camuy cave system have been mapped so far.

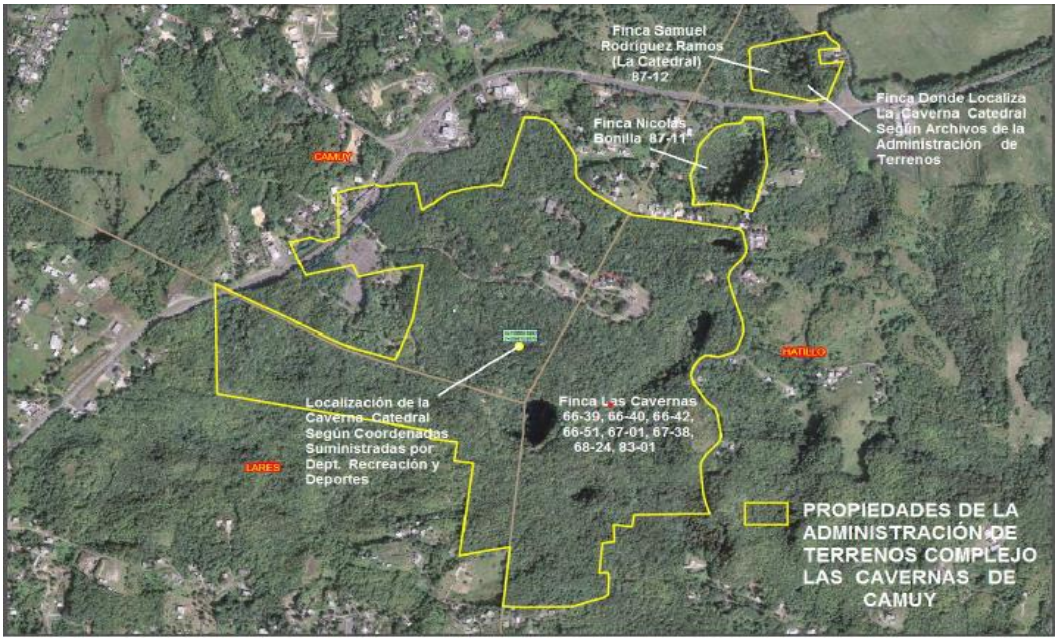
At the end of the 1970s, speleologist José Martínez Oquendo and hydrologist Arturo Torres González, together with speleologist Dr. Norman Veve, his wife and daughter, speleologists Lucy and Talía Veve, respectively, and the Speleological Society of Puerto

Rico, Inc. (SEPRI) recommended that the Government develop a park around the cave system. The objective of the Cave Park was to build facilities that would provide public access to the cave system, while protecting and conserving the area. Work began in the 1980s and the Cave Park was inaugurated in 1986. The Cave Park comprises 268 acres, of which only 2% is developed given that the majority of the Cave Park sits on karst landforms, which are protected and cannot be developed. Nevertheless, there is still potential for recreational activities within the Cave Park that create economic impact.

DESCRIPTION AND LOCATION OF THE CAVE PARK

The Cave Park is located between the municipalities of Camuy, Hatillo, and Lares on PR-129, with the main entrance located in Camuy at kilometer 18.9. The Cave Park is located on a road with high traffic flow and easy access to visitors. The Cave Park has four entrances, one of which is the main one, the other being emergency accesses. There is an emergency access close to the main entrance. Another emergency access is located on the side of the park, entering PR-455 towards the Quebrada Savings and Credit Cooperative. The last emergency access can be found at the back of the park, on PR-134, near the Beekeeping School and the Aqueduct Pumping Station.

Figure 1. Cave Park Location



Source: DNER.

The Cave Park is a recreational facility built by the Puerto Rico Land Administration. Its main purpose is to provide a place for passive recreation, tourism, education, and scientific research. The Cave Park was developed to foster education, awareness, and protection of the environment. As such, Clara de Empalme Cave was developed, and some platforms were created in the Espiral and Tres Pueblos Sinkholes.

The foregoing are three of the most impressive entrances that the cave system has, which also contains a smaller adjoining cave, known as Cathedral Cave. Clara de Empalme Cave is a large underground hall that is 1,640 feet long and 187 feet high. Its interior is

adorned with different speleothems and contains the largest stalagmite found in Puerto Rico, known as the Giant Stalagmite.

Clara de Empalme Cave is the main attraction of the Cave Park and has the following measurements:

- The natural entrance is about twenty-five feet high (25') and about seventy feet wide (70').
- The South Gallery is about eighty feet wide (80') and its arched ceiling is up to fifty feet tall (50').
- Central Hall is about two hundred feet wide (200') and about one hundred seventy feet tall (170').
- In the North Gallery, the impressive exit is about forty-two feet high (42') by about seventy-five feet wide (75').
- Empalme Sinkhole has a depth of four hundred nineteen feet (419').

Tres Pueblos Sinkhole is a huge depression in the ground that is 394 feet deep and 656 feet in diameter. At its bottom runs the Camuy River. Three observation platforms or viewpoints have been built around the Tres Pueblos Sinkhole from where visitors can appreciate the magnitude of this geographical opening. Each of the viewpoints is located in a different municipality, where different angles of the sinkhole can be seen. This area is offered to visitors as an option after they visit Clara de Empalme Cave.

The Spiral Sinkhole is also a depression, smaller in size, and at its bottom is the Spiral Cave, which is another of the Camuy River accesses. The Spiral Cave is located at the bottom of the Spiral Sinkhole. At the bottom of the Spiral Cave runs the Camuy River, heading north. It is one of the most used entrances by cavers to reach the most remote and impressive parts of the Camuy River cave system. Its entrance consists of a vertical drop of approximately 246 feet.

A little further away from the main entrances is Cathedral Cave, another cavern, smaller in size, whose central corridor runs from east to west. This area also hosts a large population of bats. Some 11 pictographs or drawings made on the stone walls by the Taíno Indians have been found at Cathedral Cave.

The Cave Park is administered by the DNER's National Parks Program. The National Parks Program manages and develops parks to offer recreational services to residents and visitors. In addition, the program promotes cultural and educational activities focused on environmental conservation.

The Cave Park is one of the most emblematic natural assets of Puerto Rico. Its economic impact is reflected in the thousands of visitors it receives every year. These visitors also contribute to the local economy of the surrounding communities.

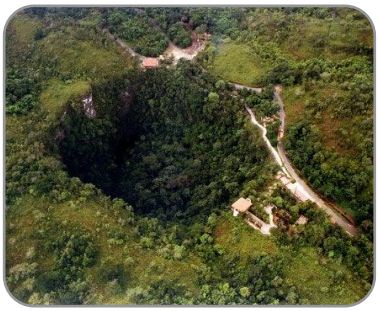
Figure 2. Principal Entrances to the Cave Park

Clara de Empalme Cave

- Clara de Empalme Cave is the Cave Park's main attraction.
- The main cave measures 1,640 feet long and over 187 feet at its highest point.
- It is home to the largest stalagmite in Puerto Rico.

Espiral Sinkhole

- The sinkhole is 348 feet deep and 591 feet in diameter.
- It has a boardwalk that leads to an observation deck, where the entrance to Spiral Cave (Cueva Espiral) can be observed.



Tres Pueblos Sinkhole

- The sinkhole is 394 feet deep and 656 feet in diameter.
- It has three observation platforms, each located in the municipalities of Camuy, Hatillo and Lares.

Source: DNER.

RECENT CLOSURES

Due to the damages caused to the internal and external infrastructure of the Cave Park by the impact of the Hurricanes, which made landfall in Puerto Rico in September 2017, public access to the facilities was prohibited between September 2017 until March 2021. This temporary closure affected the Cave Park's revenue stream, especially during the peak visitor months from June to August. Given the Cave Park's importance to the local economy, the closure immediately affected local businesses, with tourists no longer visiting the areas surrounding the Cave Park. After more than three years closed, the Cave Park resumed operations, in phases, beginning on March 24, 2021 during COVID-19.

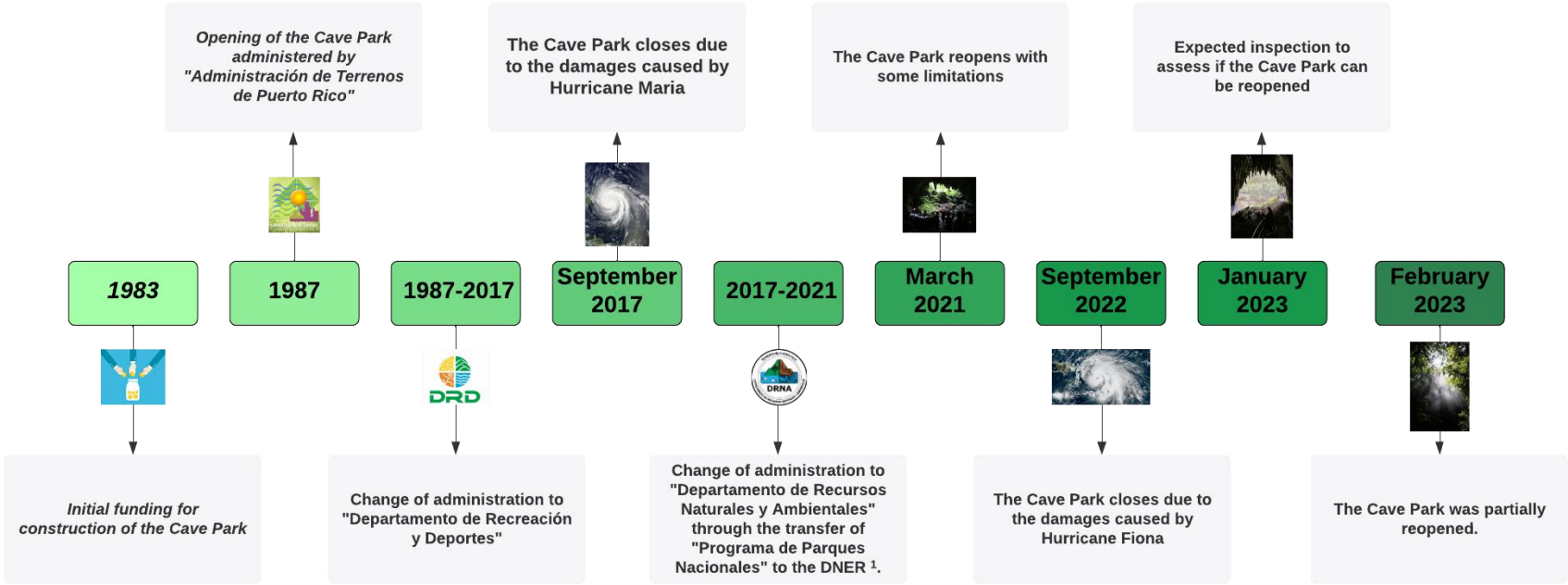
Given that the Cave Park resumed operations during the height of COVID-19, visits were limited to reservations of 6 groups of 20 people per day. On November 4, 2022, the reservation limitations were lifted. However, guided tours continue to be offered with a prior reservation. School trips are allowed for up to 100 students, with 45 to 60 students per tour guide.

In September 2022, the Cave Park closed again due to the passing of Hurricane Fiona. Thereafter, the Cave Park partially reopen on February 22, 2023.

CHANGES IN ADMINISTRATION

The operation and maintenance of the Cave Park has also been impacted by a lack of continuity and frequent changes in agency administration. The next diagram shows a timeline of the different Government agencies that have administered the Cave Park throughout the years.

Figure 3. Cave Park Event Timeline



Sources: DNER, Puerto Rico Land Administration, El Nuevo Día.

Notes:[1]The transfer of the Cave Park occured on the basis of Act 171-2018 "*Ley para implementar el "Plan de Reorganización del Departamento de Recursos Naturales y Ambientales de 2018*", which also provided for the transfer of "Programa de Parques Nacionales" to the DNER.

Amenities

The Cave Park offers the following amenities:

Sources: DNER & Feasibility Study-Municipality of Camuy (2017).

Table 1. Cave Park Amenities

Cave Park Amenities	Status
Cafeteria	Inoperative[7]
Picnic Area	Inoperative
Souvenir Shop	Inoperative
Exhibition Hall	Inoperative
Theater[8]	Operational
Hiking Trails	Inoperative
Three Parking Lots	Operational
Helicopter Pad	Inoperative
Maintenance Workshop	Inoperative
Multiuse Building and Administration Office	Inoperative
Gasoline Station	Inoperative
Trolley Maintenance Workshop	Inoperative
Children's Playground	Inoperative
Basketball Court	Inoperative
Camping Area[9]	Inoperative

In addition to the various amenities present in the Cave Park, the majority of which, as illustrated in Table 1, are not currently operating, the facilities also host three (3) concessionaires. These concessionaires currently operate under provisional lease agreements with the DNER, which were executed as part of the Cave Park's phased reopening that began in March 2021. Table 2 below summarizes the terms of these lease agreements.

[7] Federal Emergency Management Agency ("FEMA") PW Project # 123306 "Camuy Caves-Clara, Espiral, and Catedral System Interior; FEMA PW Project #89462 "Parque las Cavernas del Rio Camuy External Parkwide Damages".
[8] The visitor's theater is currently operational due to contributions made by Foundation for Puerto Rico.
[9] Camping area features bathrooms with showers for visitors.

Table 2. Cave Park Concessionnaires

Concessionaire [10]	Status	Monthly Lease Payment
Taínos Ice Cream	Operational	$200.00
Mesa de Artesanía	Operational	$200.00
La Mina del Parque de las Cavernas del Río Camuy	Operational	$300.00

Source: DNER.
Notes: [1]Concessionaire status as of June 22, 2022.
[2]Audio Tours are not included in the list of concessionaires as they are considered a service provided by the DNER.

According to a Feasibility Study commissioned by the Municipality of Camuy in July 2017 (the "**Camuy Feasibility Study**"), the Cave Park faces various limitations that affect the service offerings of the facilities.[11] The Camuy Feasibility Study was conducted before the Hurricanes. However, the limitations identified in the Camuy Feasibility Study persist to this day. Such limitations include:

- The Cave Park does not have a cultural activities program that extends opening hours. As of 2022, the Cave Park remains without a cultural activities program due to a general lack of available employees. This limits the number of activities and programs that can be offered in the Cave Park at extended hours.

- The Cave Park's multi-use center, which was previously used as a ticket booth and as the starting point for tours, is not in use at the time and has experimented severe deterioration. The repair of this center is contemplated in the $1.5 million Federal Emergency Management Administration ("**FEMA**") allocation, as described in the Government Funding section. The preliminary timeline has such construction process finishing by August 2024.

- The camping facilities are underutilized and are not adequately promoted.

- The children's playground is not in usable condition as confirmed by a visit to the site (see Figure below). The Camuy Feasibility Study indicates that the remaining playground equipment, meaning playground slides and others, pose a risk to visitors and are not safe for children.

[10] The term of each of the leases were not made available to the Authority.
[11] Feasibility Study for Two Economic Development Projects in the Municipality of Camuy, (July 17, 2017).

Figure 4. Children's Playground Equipment

Source: Feasibility Study – Municipality of Camuy (2017).

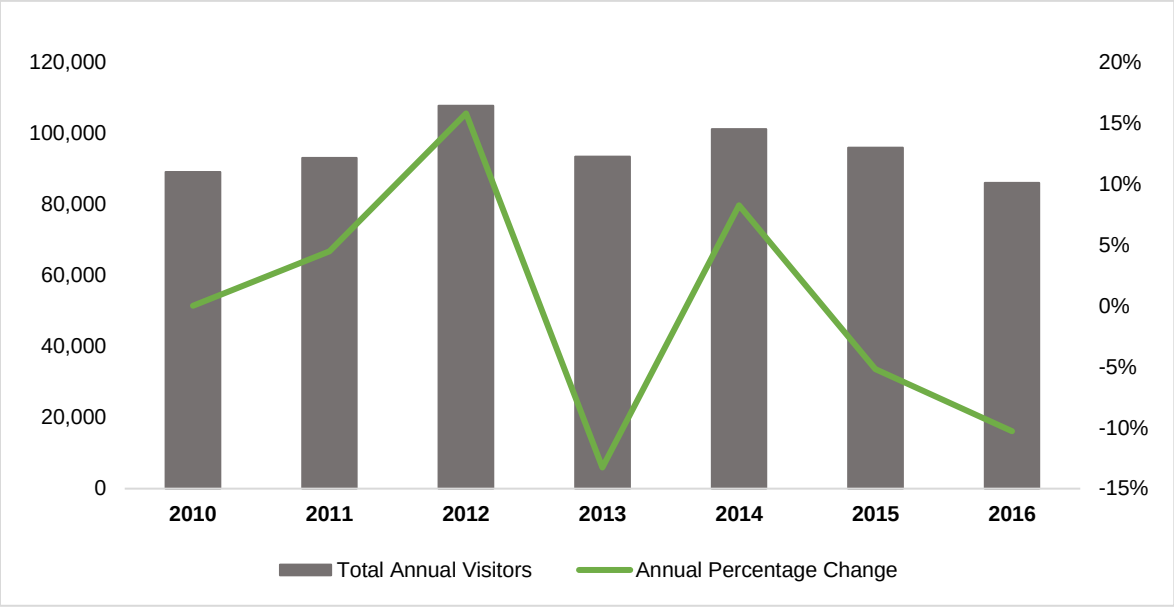
- The Cave Park does not have amenities for family entertainment, and it has not established collaborative agreements with educational or environmental organizations to do so. Efforts towards developing amenities for family entertainment have been hindered by the park's closure and lack of adequate funding.

- The Cave Park does not have an external funds strategy. The Cave Park currently has assigned FEMA and ARPA funds, which are non-recurrent external funds brought forward by a FEMA Major Disaster Declaration. As discussed below, other external funds do contribute to the Cave Park's annual revenue, but these are primarily small amounts of a non-recurrent nature.

VISITORS

From 2010 to 2016, the Cave Park hosted an average of 96,047 visitors annually, according to DNER data.

Figure 5. Annual Cave Park Visitors & Percentage Change (2010-2016)

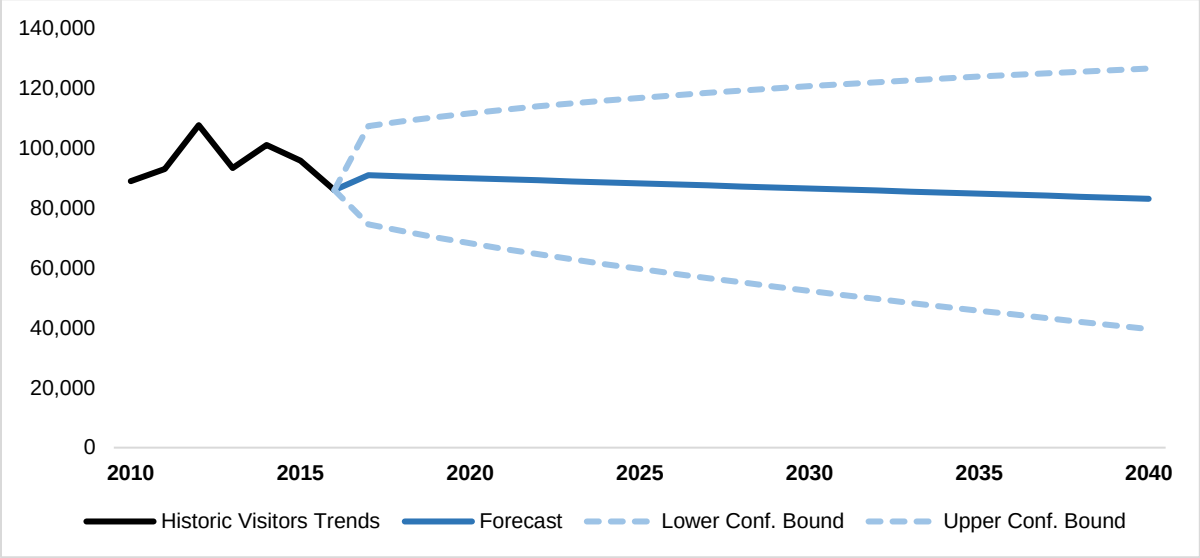


Source: DNER.

Once the facilities reopened in March 2021, amidst COVID-19 restrictions, the Cave Park reported for the months between March and September 2021 a total of 20,487 visitors. Visitor numbers for 2022 are not currently available.

Following the historical trend observed in Figure 5 above, this Study projects that, had the Cave Park not closed from 2017 to 2021 and not been subject to pandemic restrictions, the number of visitors would have gradually declined over the subsequent years under the Status Quo model.

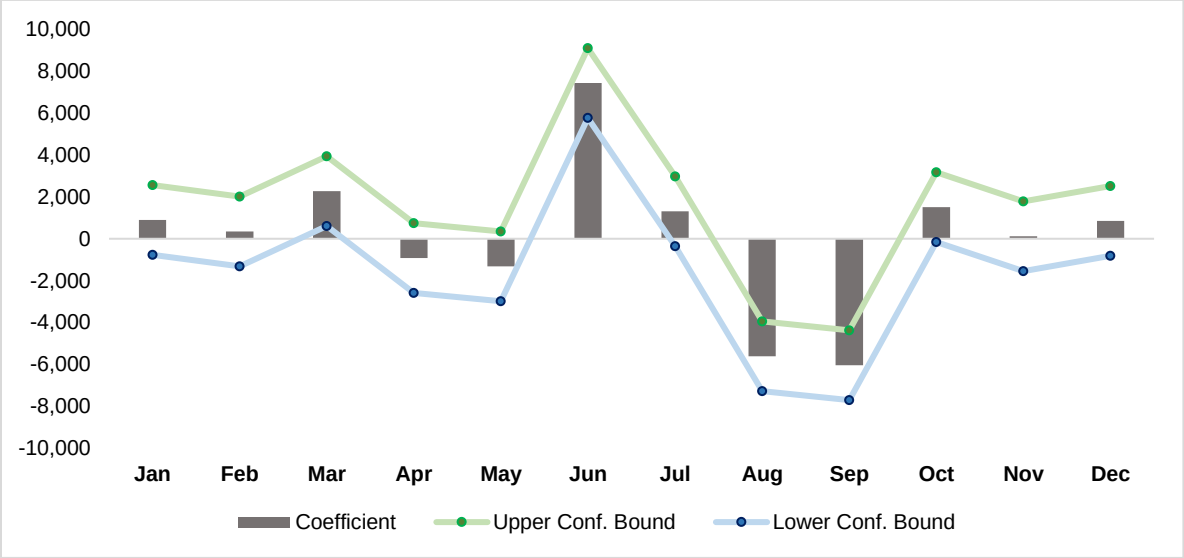
Figure 6. Projected Total Cave Park Visitors From 2017 To 2040 Applying Historic Visitor Trends



Source: Projection using the Feasibility Study – Municipality of Camuy (2017).

When performing a seasonality analysis of monthly visitor changes to the Cave Park from 2010 to 2016, the Study found that the months of May to June represent the most significant change in the number of visitors. The analysis also shows that from the months of July to August, the number of visitors drops significantly until September. In general, June and July represent the peak visitor months, with September exhibiting the lowest number of visitors each year.

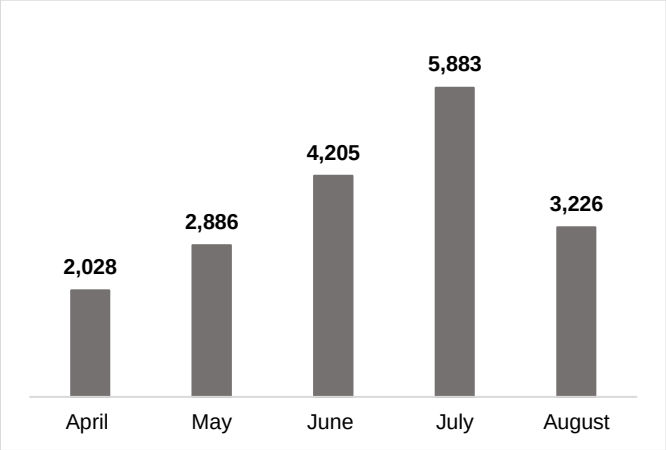
Figure 7. Seasonality Analysis of 1-Month Visitor Change to the Cave Park



Source: Projection using the Feasibility Study – Municipality of Camuy (2017).

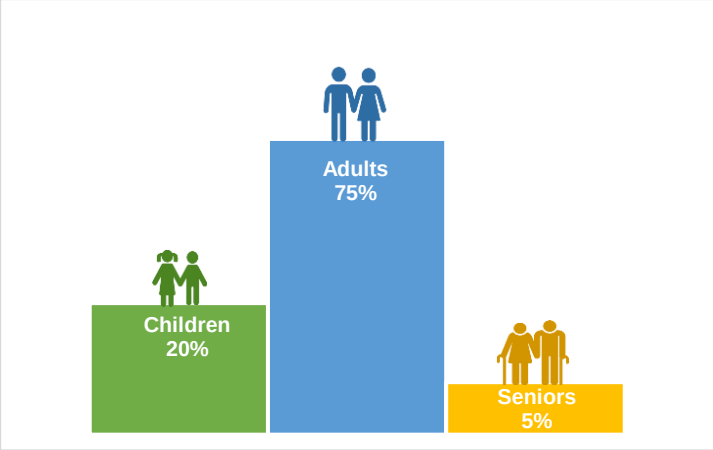
Since the Cave Park remained closed after the Hurricanes and reopened in March 2021, prior visitor trends observed from 2010 to 2016 (seen in Figure 5) have further decreased. After its reopening in 2021, the Cave Park received on average 3,646 monthly visitors, which is far below the average number of monthly visitors observed during 2010-2016 (7,933 monthly average). As of 2021, adults make up 75% of current visitors. Visitor analysis is limited to 2021 since additional information for 2022 is currently not available.

Figure 8. Cave Park Monthly Visitors in 2021



Source: DNER.

Figure 9. Distribution of Monthly Visitors in 2021



Source: DNER.

According to anecdotal information provided by current Cave Park employees, before the Hurricanes, the Cave Park would receive up to 600 visitors a day during high season, which would then be divided into groups of 30, 45, or 60 visitors per each of the 10 guides available. During the low season, the Cave Park would receive up to 200 visitors a day.

OPERATING SCHEDULE

Prior to the passing of Hurricane Fiona in September 2022, the Cave Park had been operating on its regular schedule, from Wednesdays to Sundays (8:00 a.m. – 5:00 p.m.). Visitors could reserve space on guided tours from 9:00 a.m. to 3:00 p.m. Up to six (6) groups of 20 people could be accommodated with prior reservation, to comply with COVID-19 restrictions[12] Before COVID-19 restrictions and the Hurricanes large groups (up to 50 visitors) could be accommodated with a prior reservation. Guided tours lasted around 1 hour and 30 minutes. Following the Hurricanes , the only guided tour available was through Clara de Empalme Cave, with the service hours presented in Table 3.

[12] Government of Puerto Rico -Press Release (March 24, 2021). *"Parque de las Cavernas del Río Camuy ya está listo para recibir visitantes por cita previa"*

Table 3. Guided Tour Hours

Guided Tour Hours	
Morning	**Afternoon**
9:00 a.m., 10:00 a.m.,11:00 a.m.	1:00 p.m., 2:00 p.m., 3:00 p.m.

Source: DNER.

REVENUES

Since its establishment and throughout its operation, the Cave Park's main sources of revenue, described in more detail below, have been: (1) admissions fees, (2) concessionaire lease payments, (3) rental fees, (4) parking fees, (5) camping site fees, and (6) other revenues (such as donations, tour audio services, and permits). All the revenues generated by the Cave Park are reinvested into its operation.

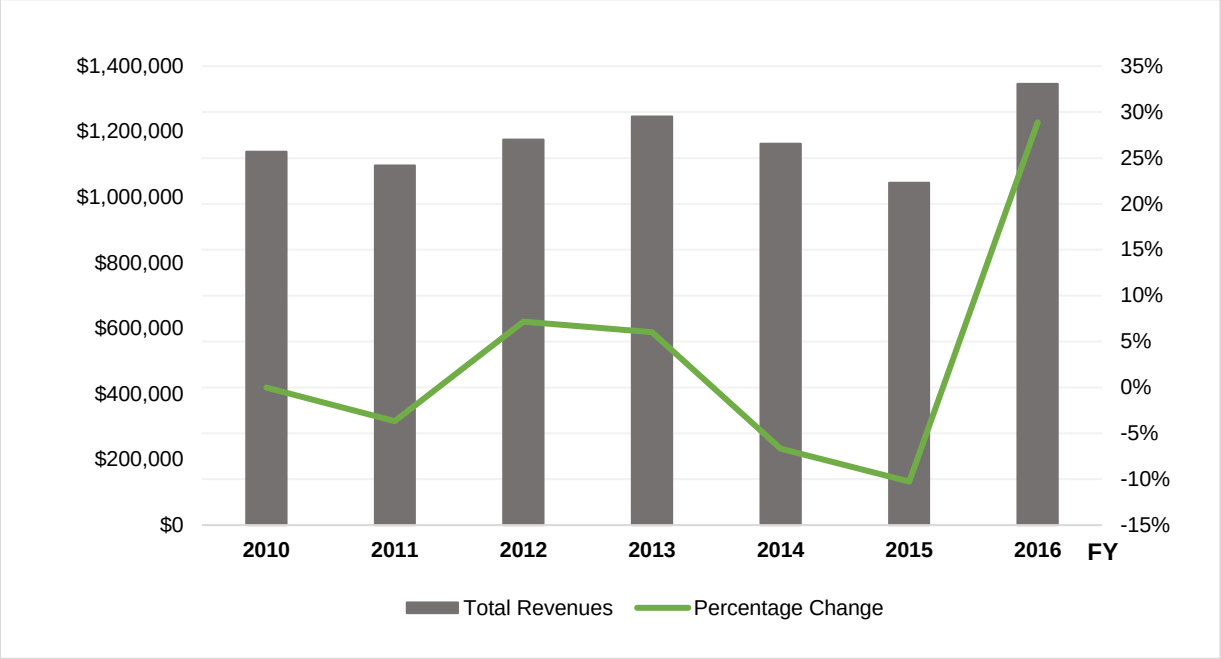
The DNER has reliable Cave Park revenue data for years 2007 and 2010 through 2016. From fiscal years 2010 to 2016, the Cave Park generated an average of $1.1 million in revenues per year. Over the years, admissions fees have represented over 80% of total revenue. The other significant component of the Cave Park's revenue is derived from the parking facilities, generating 7% of total revenues[13].

Additional sources of revenue have fallen short of their potential, as is the case with the camping area (0.3%) and the concessionaries' monthly rental fees (1.5%). These have exhibited almost no growth over time and in some cases, have ceased to exist.

The passing of the Hurricanes significantly reduced the potential of each revenue source. However, there is currently no revenue data available for years 2017 to 2020. Furthermore, the DNER only has revenue information pertaining only to the Cave Park's admissions for year 2021 and no revenue numbers for year 2022.

[13] At the time of this Study, there was no detailed information on costs and number of parkings available.

Figure 10. Cave Park Annual Revenue (in millions)



Source: Feasibility Study – Municipality of Camuy (2017).

Figure 11. Cave Park Average Revenue Distribution

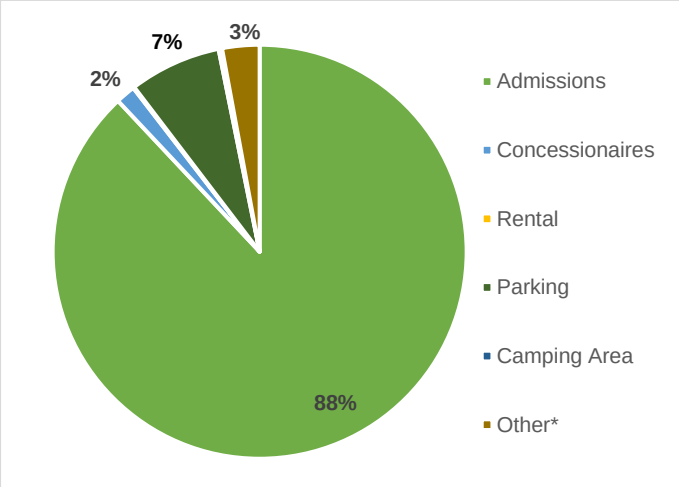
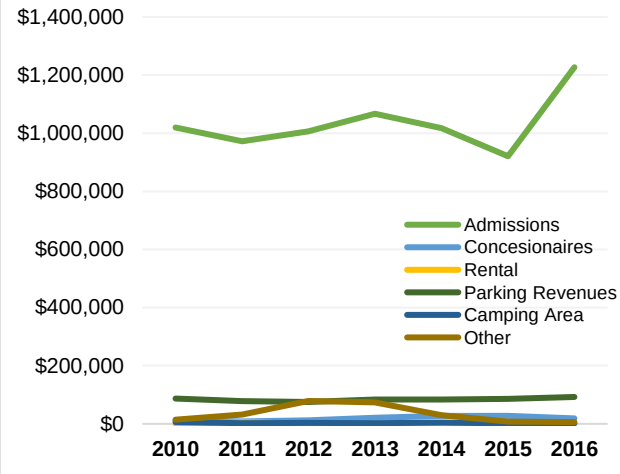


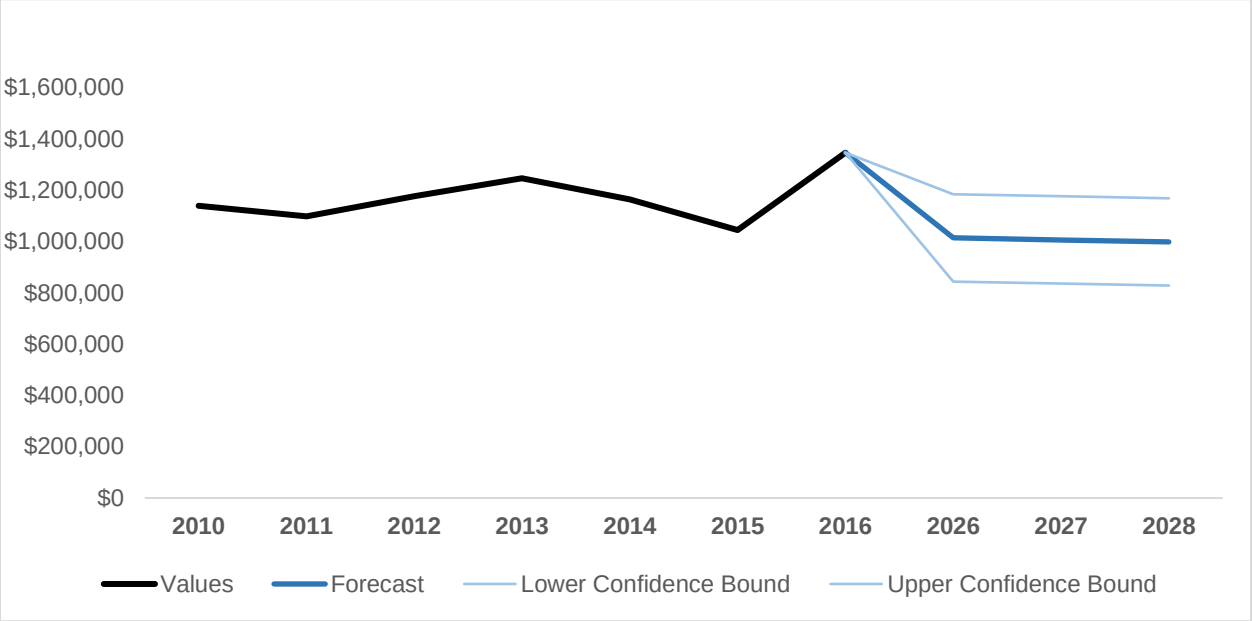
Figure 12. Trajectory of Revenue Sources



Source: Feasibility Study-Municipality of Camuy (2017).
Note: **Other Revenue* categories include, but are not limited to, donations, Eco Nights activities, audio services, return-service audio guides, permits, return on deposits and other miscellaneous revenue.

The projections set forth in Figure 13 below show the potential total revenue of the Cave Park based on historic revenue trends had operations not been disrupted by the Hurricanes, COVID-19 and Hurricane Fiona. It is projected that total Cave Park revenues would have decreased from 2017 onwards based on available historic revenue trends.

Figure 13. Projected Total Cave Park Revenues from 2016 to 2040 Applying Historic Revenue Trends



Source: Projection using the Feasibility Study – Municipality of Camuy (2017).

ADMISSIONS

Admission fees refer to the charges made to visitors of the Cave Park who want to take part in the guided cave tours. Admission fees have been the main source of revenue for the Cave Park. Admission fees vary by age group and have remained unchanged since 2010, as presented in the Table 4.

Table 4. Cave Park Admission Fees Pricing Structure

Admission Fees	
Children	$13.00
Adults	$18.00
Seniors (> 65 years old)	$9.00

Source: DNER.
Note: Pricing structure as of June 22, 2022.

From 2010 to 2015, admission fee revenues provided an average of $1 million per year. A sharp 33% increase in admission fee revenues occurred in 2016, reaching $1.2 million. In 2017, even though the Cave Park only operated until September, an even sharper increase in admissions revenues occurred, reaching $1.4 million and surpassing the revenue performance seen in every other year since 2007.

In 2021, after the Cave Park's reopening, the total revenue generated from admissions was $338,716 from March 2021 to September 2021. This reduction in admissions fee

revenues was likely caused by the reduced number of visitors the Cave Park could host due to COVID-19 restrictions and limited infrastructure capacity.

CONCESSIONAIRES

The private concessionaires present in the facilities offer retail goods and services to visitors. As of June 2022, there are three (3) concessionaires operating at the Cave Park: *"Taínos Ice Cream," "Mesa de Artesanía*," and *"La Mina del Parque de las Cavernas del Río Camuy."* From 2007 to 2011 the Cave Park's revenue from the concessionaires' rent payments fell by 60%.[14] After 2011, such revenue source mostly experienced consistent growth. It must be noted that revenues from concessionaire fees only account for 1% to 3% of the Cave Park's total revenues.

RENTAL FEES

Rental fees involve renting certain areas of the Cave Park for events. Historically, certain events had fees of up to $700.[15] Rental fees have consistently been the lowest revenue source for the Cave Park. Its fluctuations from year to year are too inconsistent to show relevant information about possible revenue trends since it has been as low as $35 in 2012 and as high as $5,252 in 2011, average rental fee for the period between 2010 and 2016 is $1,046. Currently, these fees represent less than 1% of the Cave Park's total revenues.

PARKING FEES

Parking fees correspond to fees charged to all motor vehicles for the use of the designated lots within the Cave Park facilities. The fees charged depend on the type of motor vehicle used. Parking fees have consistently been the second highest source of revenue for the Cave Park. Parking fee revenue experienced a decline from 2007 through 2012, falling by 33%. After 2012, parking fee revenues started to increase until 2017, which reflected a sharp decrease of 18% due to the passing of the Hurricanes. Current parking fees charged to visitors are listed in Table 5.

Table 5. Cave Park Parking Fees Pricing Structure

Parking Fees	
Motorcycles	$2.00
Cars	$4.00
Buses	$5.00

Source: DNER.
Note: Pricing structure as of June 22, 2022.

[14] The Authority was not able to assess the reasoning for this decrease.
[15] As indicated by Cave Park staff, the rental of the multiuse building for activities ranged up to $700.00 per activity.

CAMPING AREA FEES

Camping area fees correspond to the fees charged for the use of the designated camping area within the Cave Park facilities. Similar to rental fees, the camping area fee is the second lowest revenue source for the Cave Park, with fluctuations from year to year that identify no trend. These fees represent less than 1% of the yearly revenue of the Cave Park.

OTHER REVENUES

Other revenues that the Cave Park has received historically include, but are not limited to, the following:

- Donations
- Eco Nights activities: activities organized by the Cave Park staff to provide nocturnal visits to the facilities.
- Audio services: related to the audio tours that the Cave Park offers.
- Return-service audio guides
- Permits
- Return on deposits
- Other miscellaneous revenue

Many of these additional revenues are non-recurrent revenues and therefore subject to significant variability each year.

GOVERNMENT FUNDING

Since the development of the Cave Park, the facilities have operated with both federal and local funding. In 1983 the Cave Park received $800,000 in assistance from the Land and Water Conservation Fund (the "**LWCF**"), under the U.S. National Park Service's ("**NPS**") State and Local Assistance Program.[16] This state grant program provides matching grants to state, local and tribal governments to create and expand parks, develop recreational facilities, and further local recreation projects.[17] As a condition to receiving said assistance, the primary recipient (in this case the Government) must comply with the LWCF Federal Financial Assistance Manual (the "**Manual**")[18] and the latest edition of the Statewide Comprehensive Outdoor Recreation Plan (the "**SCORP**").[19] Both the Manual and the SCORP dictate a significant number of requirements that must be met by the Government and any potential concessionaire; hence they shall be highly considered during this service model evaluation process.

Some of the most prominent requirements stated in the Manual and the SCORP are:

[16] The Land and Water Conservation Fund – Past Projects database (2022). Link: https://lwcf.tplgis.org/mappast/.
[17] The Land and Water Conservation Fund – LWCF State and Local Assistance Program (2022). Link: https://lwcf.tplgis.org/about/lwcf-programs/.
[18] Land & Water Conservation Fund State Assistance Program – Federal Financial Assistance Manual Vol. 71.
[19] Statewide Comprehensive Outdoor Recreation Plan (SCORP) for Puerto Rico 2020-2025.

1. Since DNER was the primary recipient of the assistance, DNER is responsible for complying with the Manual and the SCORP. This responsibility cannot be delegated or transferred.
2. DNER must revise its SCORP every five years.
3. Only the designated government agency can request assistance from the LWCF.
4. If a procurement process takes place, the primary recipient (i.e., DNER) must maintain sufficient control over the property to assure that the facilities do not suffer a "conversion," meaning a change in its original, intended outdoor recreational use.
5. DNER must provide an adequate inspection system of all the facilities that receive LWCF funds.
6. Admission fees for nonresidents cannot exceed twice the amount charged to residents.
7. Private concessions are permitted as long as the private entity continues to pursue a public outdoor-recreation activity. However, DNER is responsible for ensuring that the concessionaire complies with the laws and regulations established under the Manual and the SCORP. DNER is also required to:
    a. Audit the concessionaires' level of compliance.
    b. Ensure that the facilities pursue a public outdoor-recreation activity.
    c. Guarantee that admission fees are competitive and correspond to similar facilities.
    d. Ensure that the lease agreement document contains requirements of compliance with all Civil Rights and accessibility legislation.
8. Income earned by the concessionaire from non-recreational activities have a time limit of three years, as the intended use of the Cave Park facilities must return to outdoor recreational use and the direct service of the visitors who participate in those recreational activities. Nevertheless, the corresponding income stated above must be distributed as follows:

    - Funds must be committed to further eligible LWCF program objectives at the project site. In this case a plan for the use of such monies shall be forwarded to the U.S. National Park Service (the "**NPS**") for concurrence prior to grant approval. This plan shall detail the sources(s) of the income and include the timeframe in which the non-recreational use(s) shall cease.[20]

Since the initial assistance received from the LWCF in 1983, no additional efforts have been made by the Government to request additional funds for the Cave Park.[21] However, the DNER must comply with LWCF and SCORP requirements. Also, the Cave Park has recently received $1,498,061 in Public Assistance and Hazard Mitigation funds

[20] Land & Water Conservation Fund State Assistance Program – Federal Financial Assistance Manual Vol. 71.- Chapter 7(A) 7(a)(1).
[21] The corresponding government agency according to the LWCF website is the Puerto Rico Department of Sports and Recreation (2020).

corresponding to the Major Disaster Declaration made by FEMA in the wake of the Hurricanes.[22]

As for local funds, in 2013 more than $1.1 million of non-recurring state funds were appropriated to the Cave Park for permanent improvements through Joint Resolution No. 208.[23] These funds were used for Cave Park improvements from 2013 to 2014. Furthermore, since the Cave Park's transfer from the Puerto Rico Department of Sports and Recreation ("**DSR**") to the DNER through Act 171-2018,[24] the facility is given a recurring set of funds annually from the DNER National Parks Program's operating budget. The National Parks Program's operating budget is composed of park generated income and General Fund budget appropriations. The funds are distributed throughout the 18 park facilities that are currently under DNER administration. Since no precise information is available regarding the exact portion of the National Parks Program's annual budget received by the Cave Park, this Study presumes for projection purposes that each park under the DNER National Parks Program is given an equal portion of the program's annual operating funds. Under this assumption and based on the information set forth in Table 6 below, the Cave Park may have received from 2019 to 2021, on average, $631,537[25] a year from the DNER National Parks Program to cover operating expenses.

Table 6. DNER National Park s Program Income Source

DNER - National Park Program Income Sources			
	2019	**2020**	**2021**
Park Generated Income	$0	$5,890,000	$7,556,000
General Fund Budget Appropriation	$4,699,000	$9,157,000	$6,801,000
Total Income	$4,699,000	$15,047,000	$14,357,000

Source: The Office of Management and Budget of Puerto Rico

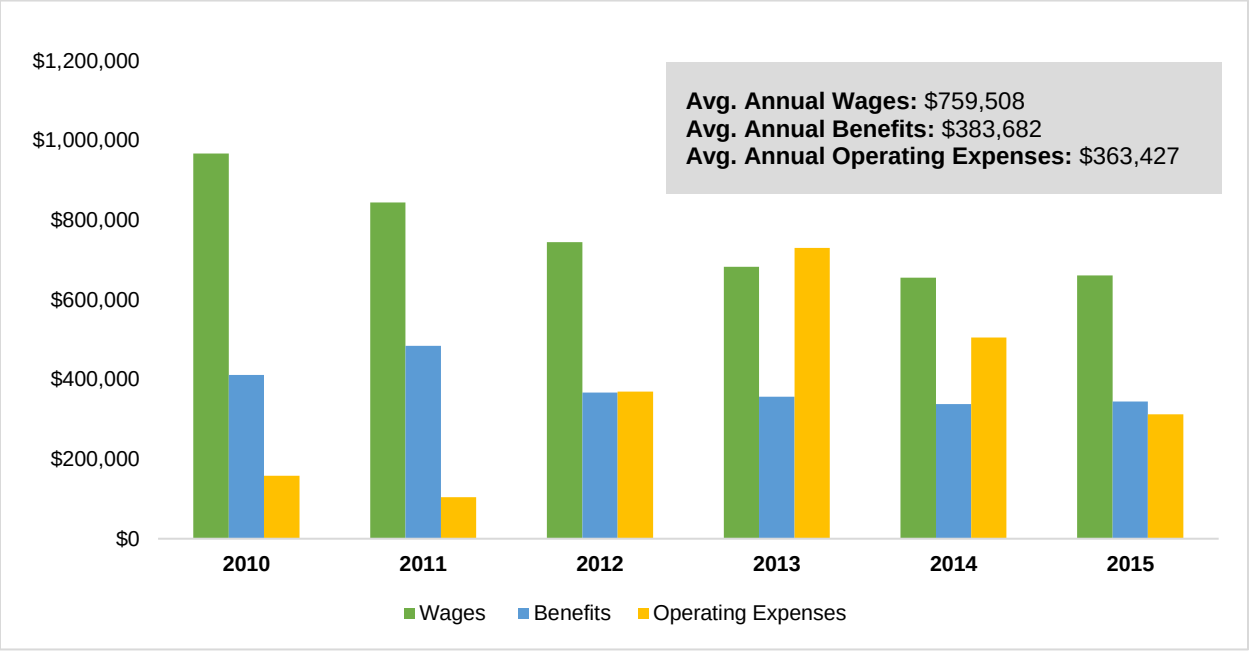
OPERATING EXPENSES

The Cave Park facilities incur, on average, over $1.5 million in annual expenses from 2010-2015. Employee wages account for 50%[26], employee benefits account for 26%, and operating expenses account for 24% of total Cave Park expenses per year. Operating expenses from 2016 to 2022 were not made available for review by the Authority. Figure

[22] FEMA Project # 89462 (Parque las Cavernas del Río Camuy External Parkwide Damages). It must be noted that an additional FEMA Hazard Mitigation Proposal (Project # 123306) awaits to be obligated, hence not accounted for in this Study.
[23] Joint Resolution of the House of Representatives of Puerto Rico No. 208.
[24] Act 171-2018 *"Plan de Reorganización del Departamento de Recursos Naturales".*
[25] The Office of Management and Budget of Puerto Rico – DNER (2021).
[26] At the time of this Study, employee data was limited, as such, average wage expenses is estimated from net expenses reported in the period between 2010 and 2015.

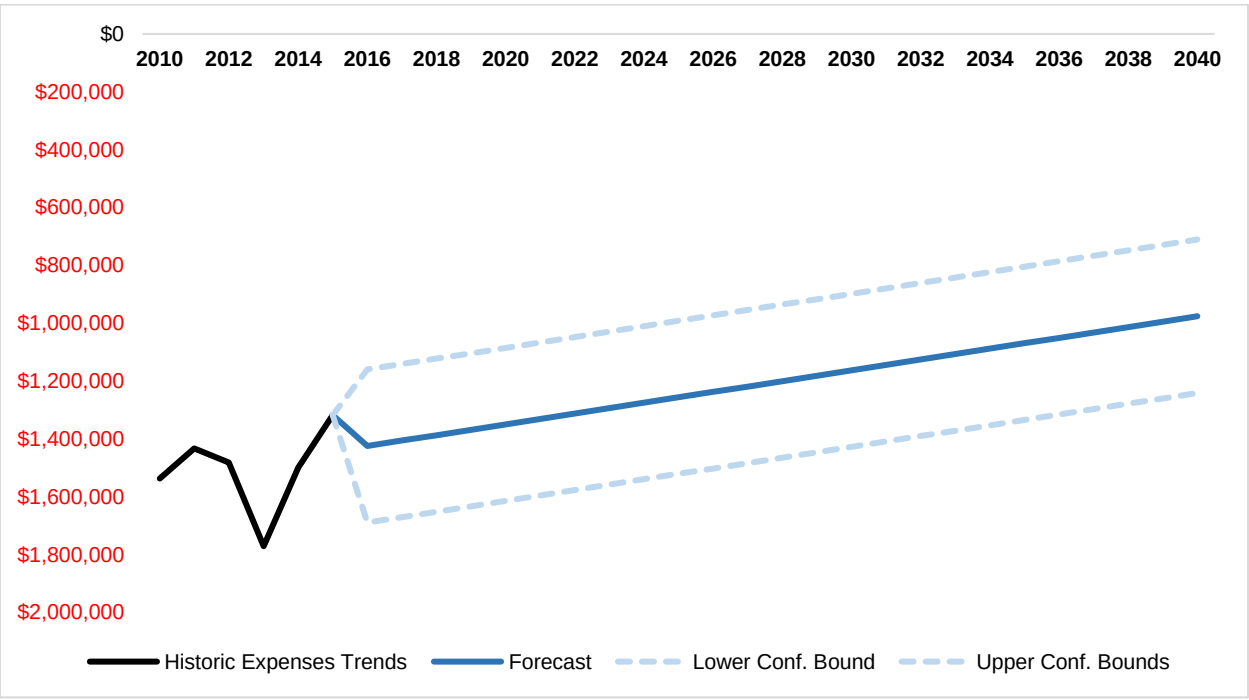
14 below projects Cave Park operating expenses from 2016 onwards using historical expense data.

Figure 14. Cave Park Annual Average Expenses (Fiscal Year 2010-2015)



Source: Feasibility Study – Municipality of Camuy (2017).

Figure 15. Projected Total Cave Park Expenses From 2016 To 2040 Applying Historic Expenses Trends



Source: Projection using the Feasibility Study – Municipality of Camuy (2017).

WAGES

As of June 2022, the Cave Park has 13 full- and part-time employees, which represent over $200,000 in annual payroll expenses.[27]. The most recent annual data available regarding expenditures shows that employee wages constitute the Cave Park's highest expenditure. In 2010, with an amount of $967,377, wages accounted for 63% of the total Cave Park expenses. However, the Cave Park's expenses associated with employee wages continuously decreased from 2010 to 2014[28]. Only from the years 2014 to 2015 did the Cave Park have an increase in wage expenses from $655,594 in 2014 to $661,000 in 2015, with this amount accounting for 50% of the Cave Park's expenditures. Wage expenses are estimated to continue decreasing throughout the years after 2016, in line with the reduction in Cave Park staff.

Current employees have the following positions:

- 6 Tour Guides (Tour guides must be fluent in both Spanish and English and also be in good physical condition to endure the amount of physical activity required as part of the walking tours through the facilities).
- 2 Park Conservation Assistants
- 2 Automotive Technicians
- 1 Office Assistant
- 1 Operator of Heavy and Light Vehicles
- 1 Park Superintendent

BENEFITS

Employee benefit expenses represent the additional benefits provided to employees of the Cave Park. These benefits include items such as health insurance, Social Security, retirement, employee meals, among others. Benefits move in line with the number of Cave Park employees.

OPERATING EXPENSES: MAINTENANCE, RENOVATION, ETC.

Operating expenses include items like water, electricity, telephone, gasoline, car parts, construction and office materials, food, among other expenses. Historically, this has been the lowest expenditure of the Cave Park. This pattern changed in 2013 when there was almost a 100% increase in this type of expenditure compared to the previous year. The increase in operating expenditures for 2013 was probably due to the non-recurring funds received from House Joint Resolution No. 208, which assigned more than $1.1 million for Cave Park renovations.[29]

The reduction observed in total expenses throughout the years has come with the cost of deteriorating services and infrastructure and a reduction in the number of visitors. In order

[27] The 2022 estimated wage expenses is based on information provided by DNER.
[28] Based on discussion with Cave Park employees, between 2010-2014 the Cave Park had over 100 employees. However, the Authority couldn't corroborate this information.
[29] Primera Hora (2013), "*Inyección monetaria para el Parque de las Cavernas de Camuy*".

to generate higher revenues, a certain amount of expenses should be maintained. The present level of 13 employees is not sustainable for the proper operation of the Cave Park.

CAPITAL IMPROVEMENTS

According to the assessment conducted as part of the Camuy Feasibility Study, there are several Cave Park assets in need of repair and other infrastructure elements that have suffered significant deterioration over time.

- **Technical problems in the theater facilities.** These problems do not allow visitors to enjoy the Cave Park guided tour's documentary film, limiting the Cave Park tour experience. Although donations provided by Foundation for Puerto Rico in 2021 allowed the theater facilities to reopen, recurrent funding is needed in order to maintain the operation of these facilities.[30]

- **The cafeteria is not in service**. The building where the cafeteria is located requires serious structural improvements. This has contributed to limited food and beverage offerings within the Cave Park.

Adding to the already precarious state of the Cave Park's infrastructure are the severe damages caused by the Hurricanes. As a result of the Hurricanes, the Cave Park was closed and did not reopen until March 24, 2021, closing once again in September 2022 due to Hurricane Fionna. Some of the damages caused by Hurricane María are highlighted below. The Tres Pueblos Sinkhole observation decks, currently closed to the public, were also severely damaged and have not been restored.

[30] Foundation for Puerto Rico (2021), "FPR Enables the Reopening of the Camuy River Cave Park".

The trolley is currently out of service.

The electricity system was severely damaged.

The capital investment projects that are currently under development for the Cave Park include:[31]

- Repair of the walkway platform located in “Paseo del Norte,” through a Puerto Rico legislative allocation of $75,000.

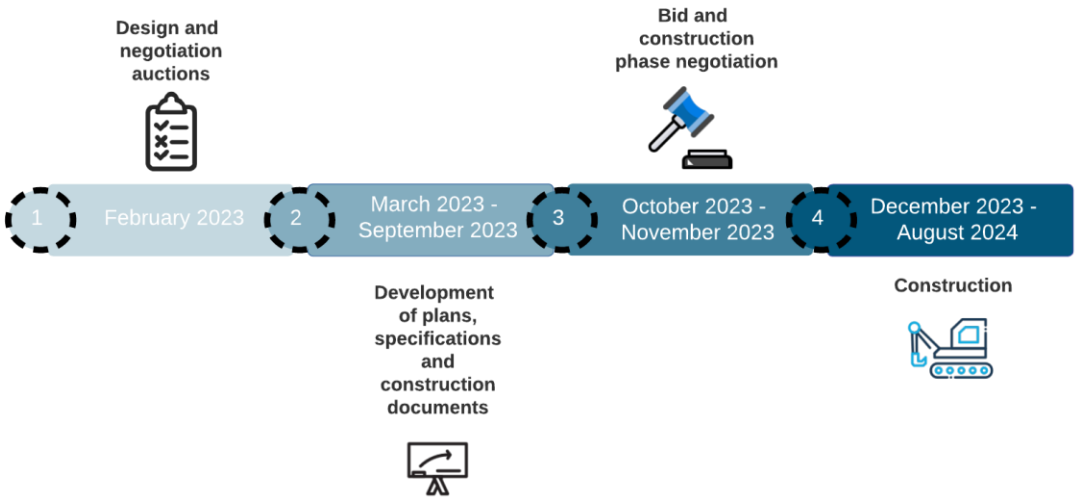
- Through FEMA and ARPA, the facilities have been assigned almost $2 million for infrastructure improvements.[32]

The capital improvements project to be funded by FEMA funds were estimated to begin by February 2023. These improvements are aimed at fixing the structural damages caused by the Hurricanes. They include repairs to electrical equipment, bridge sections, fences, and gates. These improvements should allow for better accessibility and overall infrastructure improvements to the Cave Park.

[31] Puerto Rico Department of Natural and Environmental Resources (June 22, 2022).
[32] FEMA Project # 89462 (Parque las Cavernas del Río Camuy External Parkwide Damages).

When these improvements are completed, the Cave Park will be able to accommodate more visitors. These capital improvements are projected to be completed by August 2024 as detailed in the Figure 16.

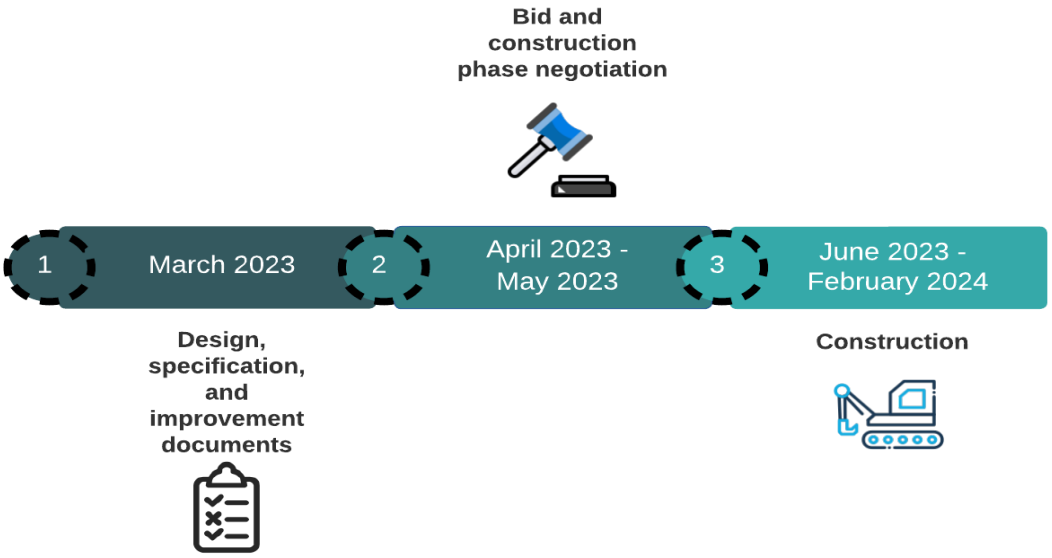
Figure 16. FEMA Funds Work Scope Timeline



Source: M2A Group

For the assigned ARPA funds, the process of document creation and negotiations is expected to start in March 2023. These funds are intended for improvements relating to Cueva Clara and the viewing platforms located in the municipalities of Camuy and Hatillo within the Cave Park facilities. These improvements will also allow for greater access to different areas of the Cave Park that are currently inoperable, therefore potentially increasing the available recreational space for visitors. The planning and construction phases are expected to conclude in February 2024 as detailed in Figure 17.

Figure 17. ARPA Funds Work Scope Timeline

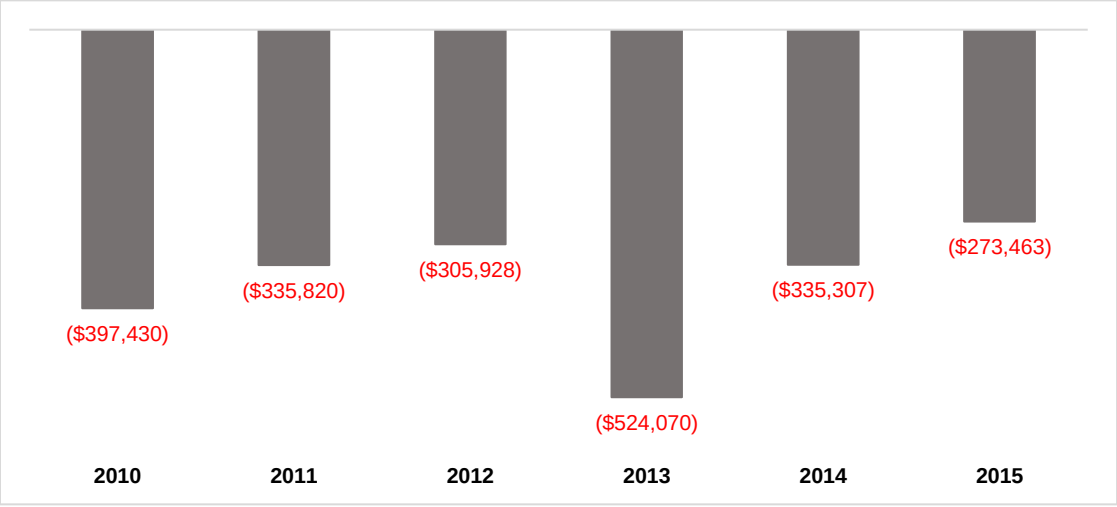


Source: M2A Group.

OPERATIONAL DEFICITS

With underperforming revenues that rely heavily on admission fees and no growth strategy in place, the Cave Park has had operating deficits at least from fiscal year 2010 to 2015. On average, the Cave Park has suffered an annual operational deficit of $362,003 from fiscal years 2010 to 2015. Deficits and/or surpluses for the years after 2016 were not made available to the Authority for analysis.

Figure 18. Cave Park Annual Operating Income Deficits

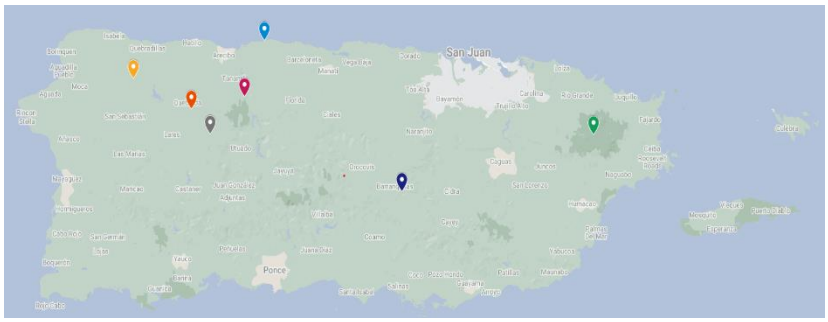


Source: Feasibility Study – Municipality of Camuy (2017).

BENCHMARKING SIMILAR PUERTO RICO ATTRACTIONS

Puerto Rico's natural environment and tropical weather provides the necessary elements for the development of a wide range of park attractions that cater to all types of clienteles, including residents and tourists. The graph below highlights other park attractions that directly compete with the Cave Park due to their nature-oriented aesthetics and service offerings.

Figure 19. Direct Competitors of the Cave Park



Source: Discover Puerto Rico.

Compared to the pricing structures observed in these other attractions, the Cave Park is among the priciest, considering the limited number of services it currently offers. The natural tourist attractions that charge the highest fees and offer the most variety in services operate under different service delivery structures compared to the Cave Park. These alternative structures allow these attractions to devote resources to the development of immersive and unique experiences that result in added value, while increasing operational revenue.

For example, Cañón de Tanamá, located in the municipality of Utuado, is a network of caverns, canyons, and tunnels, where several private ecotourism companies (i.e., Aventuras Tierra Adentro, Tanamá River Adventures, Tanamá Tours, Cacique EcoAdventures) offer numerous activities for their adventure-seeking customers.[33] These attractions include services that vary in price. A similar service delivery structure is also observed in United States National Parks, such as El Yunque National Forest.

[33] Discover Puerto Rico - https://www.discoverpuertorico.com/article/exploring-caves-puerto-rico.

Table 7. Competing Nature-Oriented Attractions in Puerto Rico

Municipality	Attraction	Management Agency	Open Hours	Entrance Fees	Services
Arecibo	Cueva Ventana	Private	Mon.- Sun. 10 a.m. to 4 p.m.	$10.00 - $19.00	Guided Tours
Arecibo	Cueva del Indio	DNER	Mon.- Sun. 9 a.m. to 5 p.m.	$5.00	Several travel companies offer various excursion packages.
Barranquitas / Aibonito	Cañón de San Cristóbal	Fideicomiso de Conservación	Vary	Vary	Hiking, rappelling, among other activities.
Isabela	Cueva del Viento	DNER	Mon.- Sun. 9 a.m. to 5 p.m.	No entrance fee	Hiking and camping
Utuado	Cañon de Tanamá	Tanamá River Adventures	Vary	Vary	Several ecotourism companies offer various tours.
Río Grande	El Yunque National Rainforest	U.S. Department of Agriculture Forest Service	Mon.- Sun. 7:30 a.m. to 5 p.m.	$2.00 Reservation Fee	Hiking, wildlife viewing, interpretive programs, etc.
Camuy	**Río Camuy Cave Park**	**DNER**	**Wed. – Sun. 8:00 a.m. to 5:00 p.m.**	**$9.00 - $18.00**	**Guided Tours**

Sources: DNER, Discover Puerto Rico, Trip Advisor, and PuertoRicodaytrips.com.

When contemplating the structures of similar outdoor recreational facilities throughout Puerto Rico, the limited data available does not allow for an appropriate comparative analysis between these facilities. Nonetheless, their current operational structures highlight the diversity of privately held and publicly managed facilities on the Island. Much like the Cave Park, Cueva del Indio and Cueva del Viento are administrated by the DNER. While Cueva Ventana and Cañón de Tanamá enjoy multiple private concessionaires that offer a wide array of services that are parallel to the natural wonders of the area, they lack a definite management structure, such as the one observed in the Cave Park. On the other hand, El Yunque National Rainforest is under the management of the U.S. Department of Agriculture - Forest Service.

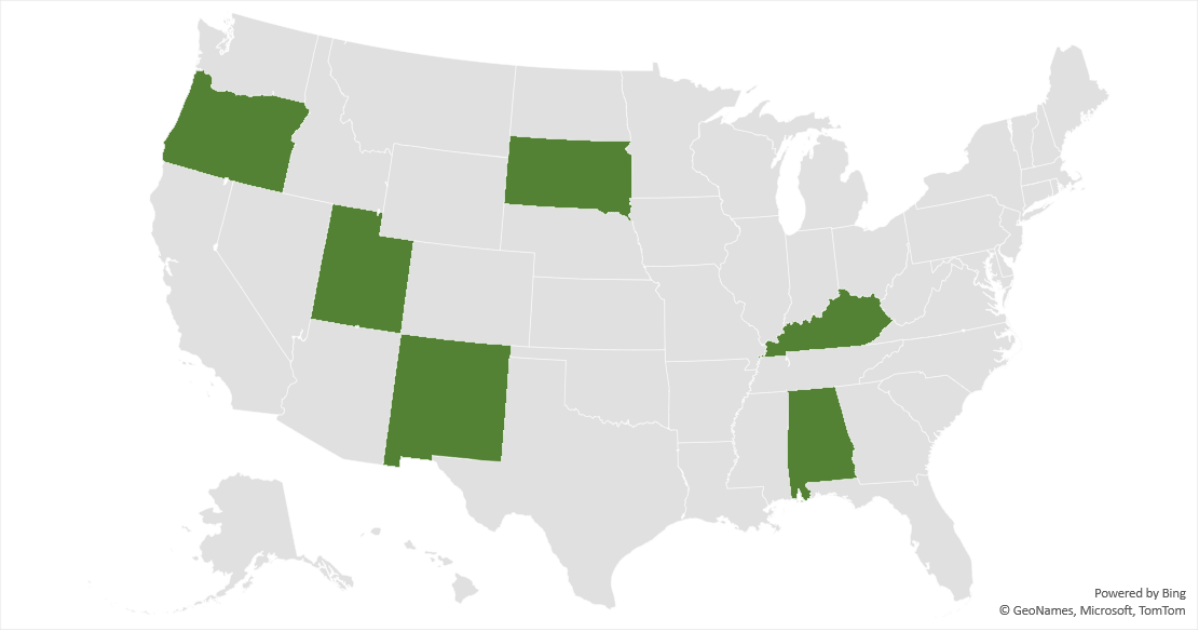
BENCHMARKING SIMILAR U.S. ATTRACTIONS

The United States has several cavern systems that are under the management of the NPS, a bureau of the U.S. Department of the Interior. The mission of the NPS is to protect and provide access to the nation's natural and cultural heritage. To be eligible for consideration as a unit of the NPS, an area must meet the following criteria:[34]

- Possess nationally significant natural, cultural, or recreational resources;
- Be a suitable and feasible addition to the NPS; and
- Require direct NPS management instead of protection by some other government agency or the private sector.

The national cave parks that are currently managed by the NPS are located in New Mexico, South Dakota (two), Kentucky, Oregon, Alabama, and Utah.[35]

Figure 20. National Cave Parks in the United States (2020)



Source: The National Park Service.

The national cave parks that are under NPS management receive an estimated 300,000 visitors annually (2019 figures), representing a significant source of economic activity for their respective states. [36] On average, each state mentioned above receives approximately $28 million a year in economic benefits from national park tourism.[37] The service offerings available in these facilities are designed to cater to visitors of all ages,

[34] The National Park Service "Criteria for Parklands is a National Park Service" https://www.nps.gov/iceagefloods/pdf/f.pdf.
[35] South Dakota has two national park caves: Jewel Cave National Monument and Wind Cave National Park.
[36] The National Park Service, Annual Visitation and Record Year by Park (1904 – Last Calendar Year) - https://irma.nps.gov/STATS/Reports/National.
[37] Ibid. Reference 6.

ranging from guided theme tours to Junior Ranger programs. These diverse service offerings not only make these national parks more appealing to the public and promote the importance of preserving the natural asset, but also create additional revenue sources that allow the facilities to provide the necessary maintenance to the parks and improve guest experience.

The visitor offerings and the attractive park infrastructure available in these NPS facilities are possible given in part to the participation of third-party entities, which have forged important concession agreements with the NPS. These authorized concessionaires are managed through the Commercial Services Program of the NPS, which currently administers over 500 concession contracts, generating about $1 billion annually in gross earnings.[38] Through these concession contracts, the NPS can offer additional goods and services that increase the value of these national parks and further benefit the surrounding communities.

Figure 21. Characteristics of National Cave Parks under National Park Service Management

Source: The National Park Service

[38] The National Park Service - https://www.nps.gov/subjects/concessions/authorized-concessioners.htm.

Currently the NPS is funded through (1) annual appropriations, and (2) fees, donations, and other funding sources.[39] Annual appropriations to the NPS have consistently been the largest revenue source for the agency, representing 88% of total funding. From 2005 to 2014, annual appropriations to the NPS rose in nominal terms but declined when adjusted for inflation. The remaining 12% of total funding stems from recreation fees, commercial service fees, and donations that NPS is authorized to collect and use. These funding sources saw a 64% increase from 2005 to 2014.

Further analyzing the structural models of the national parks under NPS administration and the Cave Park, the following aspects can be highlighted:

1. Admissions/Entrance fees and tour offerings

Admission fees for NPS managed cave parks vary by season, age of the visitor, how strenuous walking tours are, among other aspects. It is frequently observed that the more strenuous the cave tour offering is, the higher the costs to participate, such as wild caving tours that can cost around three times as much as a regular tour. The current admission fees to the Cave Park guided tours and the level of physical strain they entail fall in line with the lower intensity tours of the various NPS cave parks, which are usually the least expensive tours.

In contrast to NPS managed parks, the Cave Park has a limited selection of activities. These additional services are generally offered by private concessionaires.

The Cave Park could expand its offerings to include more strenuous tours for potentially higher revenue. Higher-intensity tours would have higher fees but offer more specialized experiences. These experiences could include night tours, which was a type of tour provided by the Cave Park at some point but is no longer an option due to lack of electricity and additional staff. An experience in many NPS cave parks that could be considered for the Cave Park is an introduction to caving to learn about safety and ethical caving skills, and wild caving tours for the highest intensity offering, which visitors with highly specialized skills could do with the prior approval of the Cave Park's management.

2. Concessionaires

Concessionaires have played a vital cooperative role with NPS by broadening the "economic base of the region and the communities' surrounding parks."[40] As stated previously, the NPS has nearly 500 concession contracts that gross over $1 billion every year, with more than 25,000 employees during peak seasons. Currently, the Cave Park has three concessionaires, which together account for between 1% and 3% of its yearly revenue. Should more concessionaires be authorized to operate in the Cave Park, this revenue source could potentially increase and serve to diversify service offerings.

3. Rental and camping area

[39] The United States Government Accountability Office (December 2015).
[40] The National Park Service - https://www.nps.gov/subjects/concessions/authorized-concessioners.htm

Given the low visibility that rental and camping areas have had throughout the years, these revenue sources could benefit from strategies that highlight these options when visiting the Cave Park, therefore increasing their potential revenue. NPS cave parks benefit from having a website where visitors can look at the offerings that the cave park provides. The Cave Park could benefit from having a website that lists the different services it provides, alongside the rental spaces that it currently offers, and potential spaces that could be created in the long term.

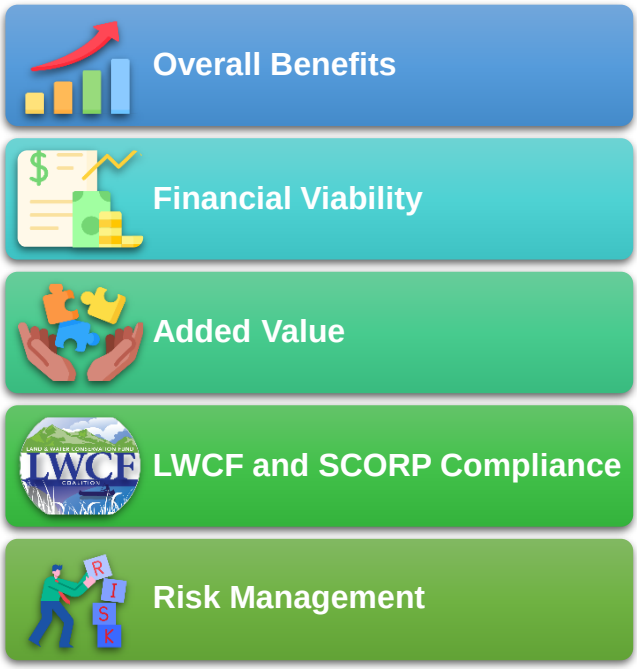
4. Cultural festivals and events

The Cave Park does not offer recurrent festivals, gatherings, and shows. However, these types of events are commonplace in many of the NPS parks. The Cave Park could benefit from establishing events related to the caves, encouraging visitors both locally and off-island to visit the areas in and around the Cave Park.

Both the local and national benchmarks presented provide examples of alternative service delivery structures, which have resulted in positive outcomes in other outdoor recreational parks in Puerto Rico and the United States. The Cave Park differs from the NPS parks in the way it generates its revenues. The Cave Park currently relies on admission fees to generate the funding necessary to continue operations. In contrast, NPS parks rely heavily on federal funding to continue their operations and make improvements. Sources such as concessionaires and rental fees, which have been effectively implemented by the NPS, have been stagnant for the Cave Park. As for the local benchmarks, these have successfully managed a mixture of public, private and, in some instances, federal service models, which have allowed them to extend their service offerings and increase their revenue.

ANALYSIS APPROACH

To determine the most appropriate service delivery option for the Project, this Study conducts a qualitative and quantitative analysis based on the following five main components, that together account for the necessary characteristics of a potentially successful service model.



1. **Overall Benefits:**
   Accounts for the level of acceptance of each service model, considering how different stakeholders will perceive and respond to the model selected. This also contemplates the impact of the model in the overall economy, in terms of economic impact and job creation.

2. **Financial Viability:**
   To fully achieve the primary objectives of the Project, the financial viability of each service model must be determined, considering each model's ability to cover operating costs and the required capital investments.

3. **Added Value:**
   Since the primary objectives of the Project include the development of innovative strategies to increase revenue opportunities through new attractions and activities, each service model will be evaluated on its potential to ensure the creation of new attractions and activities.

4. **LWCF and SCORP Compliance:**
   In order to maintain and continue receiving federal funding, the LWCF Manual and the SCORP require that fund recipients maintain sufficient control over the facilities subject to a procurement process such as the Project to assure that they do not suffer a "conversion", that is a change in its original, intended outdoor recreational use. Therefore, each service model will be evaluated based on its ability to best comply with the LWCF Manual, the SCORP and any other applicable federal and local provisions.

5. **Risk Management:**
   Risk management will be evaluated considering (1) how financial and operational risk will be distributed throughout each service model and its participating entities and (2) how effectively each participating entity would manage its share of the risk.

PROJECT DELIVERY OPTIONS ASSESSMENT

OVERVIEW

This Study carries out a qualitative and quantitative analysis of the three (3) service delivery options being considered for the optimal function of the Cave Park. As part of the qualitative analysis, each option is described in accordance with the characteristics present in each model. The qualitative analysis also includes a final assessment of how each service model performs in all five of the above-mentioned components. This will help to identify the preferred service model that would advance for further quantitative analysis.

The risk and responsibilities of financing, operating, and maintaining the facilities are distributed among the different private and/or public entities within each model. The optimal service model should have the following characteristics:

- Protect the natural asset;
- Build on the expertise of each entity involved;
- Transfer risk to where it is better borne;
- Lower project costs,
- Optimize the use of available resources; and
- Employ new technologies and innovative procedures.

Figure 22: Project Delivery Options

This Study analyses the advantages and disadvantages of the following service models:

Option 1 – Mostly Public Status-Quo Model

Option 2 – Public-Private Operation Model

Option 3 – Public-Private Rehabilitation and Operation Model

QUALITATIVE OPTIONS ASSESSMENT

The qualitative assessment describes the key components of the service model options being considered for the Project by the Authority and the DNER, based on good industry practice and market precedent. This section also describes the respective benefits and considerations for each option. The options considered represent the potential alternatives to the Status Quo that the Government aspires to consider in addressing the objectives of this Study.

Based on the outcome of the following qualitative assessment, the best suited model is then advanced for further quantitative analysis.

OPTION 1 – MOSTLY PUBLIC STATUS-QUO MODEL

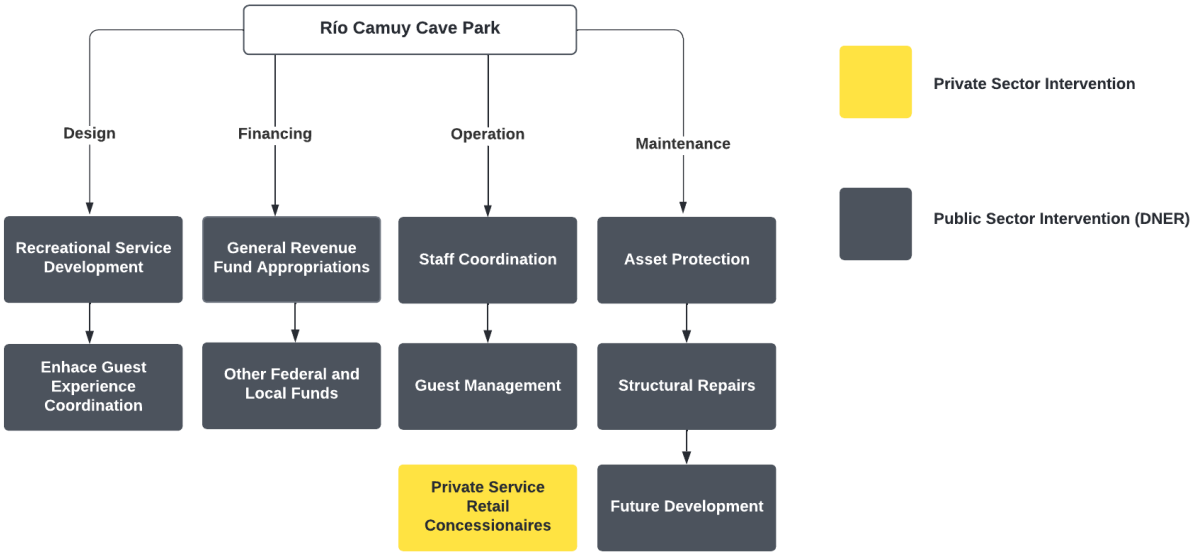
OVERVIEW

The Status-Quo Model consists of the Cave Park's current service arrangement, with the DNER as administrator and a handful of private concessionaires offering retail goods and services to park visitors through lease agreements with the DNER. Under this service model, the DNER is responsible for establishing, building, developing, operating, and maintaining the recreational areas, structures, and facilities of the Cave Park.[41]

The model contemplates that the facility will remain under public domain and designated for outdoor recreational purposes. However, based on the information made available and analyzed in this Study, this model is not financially viable.

[41] Statewide Comprehensive Outdoor Recreation Plan (SCORP) for Puerto Rico 2020-2025.The DNER's duties and powers come from DNER Enabling Act and Act No. 171 of 2018, known as the 2018 Reorganization Plan of the Department of Natural and Environmental Resources.

Figure 23. Mostly Public Status-Quo Model Structure



OVERALL BENEFITS

The SCORP highlights the following findings regarding the DNER's current management of outdoor recreation facilities, including the Cave Park:[42]

1. The general public indicates a high level of satisfaction with the recreational opportunities available in Puerto Rico and its municipalities. However, it identifies a lack of opportunities for people with disabilities and notes that the lack of safety in such facilities leads to a level of dissatisfaction among the general public. The general public also indicated dissatisfaction with the condition of the recreation facilities due to lack of maintenance and necessary repairs since the Hurricanes.
2. As for non-governmental organizations ("**NGOs**"), they understand that while the demand for outdoor recreation has increased over the past five years, they perceive that it has not been adequately met by the DNER because of lack of maintenance of facilities, vandalism, and lack of safety.

Considering the overall sentiment of the general public and NGOs, it can be safely assumed that maintaining the Status-Quo Model for the Project would not lead to a high level of public acceptance, considering that as of now, there is a general sentiment of

[42] Even though the DNER does not manage all outdoor recreation facilities compiled in the SCORP, the agency is responsible for a significant number of facilities throughout Puerto Rico. Hence the overall evaluation of the facilities on the Island represents a dependable outlook of public satisfaction towards facilities such as the Cave Park.

dissatisfaction with the maintenance and overall management of similar facilities on the Island.

Since September 2017, the Cave Park has not operated under a continuous schedule. Furthermore, even while in operation, the Cave Park has offered limited recreational activities for visitors and the DNER has been unable to adequately operate and maintain the premises. A study commissioned by the National Park System of Puerto Rico in 2007 estimated that, at the time, the Cave Park generated over $6 million in operational impact and created some 99 jobs.[43] The economic impact that could be generated today under the Status-Quo Model is unknown and the DNER's capacity to turn the Cave Park around is questionable.

FINANCIAL VIABILITY

As discussed in the "Statement of Need and Project Overview" section of the Study, the Cave Park's most recent revenue and expenses numbers indicate that the current Status-Quo Model is not financially viable. Concessionaire revenue only makes up 1.5% of the total park revenue.[44] In addition, the DNER would continue to rely on local Government appropriations and on the following two non-recurrent federal fund appropriations for capital spending: (1) $1.5 million in FEMA funds and (2) $500,000 in ARPA funds both of which impose limitations on the use of the assigned funds.[45]

The DNER could potentially solicit additional funds through the LWCF State and Local Assistance Program for the development of additional recreation facilities. However, this funding would also require the Government to provide a 50% match of the solicited funds.[46] It must be noted that the DNER has not presented a request for additional LWCF funds since 1983.

In terms of operating costs, prior experience under the current model has resulted in the facilities operating under deficits, largely attributed to high operational costs, the highest being payroll expenses. There is no evidence that indicates that under the Status Quo, operating costs would be controlled, allowing for the facilities to generate sufficient surplus for financial success.

Beyond the federal funds currently and potentially available to the DNER, an aspect that should be considered is the limited fiscal capacity of the DNER. This makes it difficult for DNER to improve and expand the Cave Park's infrastructure.[47] In general, the financial viability of the Project under the Status-Quo Model is unlikely.

[43] Compañía de Parques Nacionales de Puerto Rico "Impacto económico y fiscal por Parque Nacional" (2007).
[44] Average concessionaire revenue is based on historical data from (2010-2016) in the Feasibility Study.
[45] M2A Group (As of December 2022).
[46] LWCF Manual – Chapter 5. Cost Principles.
[47] Statewide Comprehensive Outdoor Recreation Plan (SCORP) For Puerto Rico 2020-2025.

ADDED VALUE

Under the Status-Quo Model, the Project could greatly benefit from the Government's current recovery efforts, such as the long-term recovery plan.[48] One of the central courses of action stipulated in this plan is the redesigning and rebuilding of Puerto Rican parks. Through this initiative, the DNER and the DSR could conduct assessments to help the Puerto Rico Park System improve governance, operational efficiency, and align park amenities to community needs, among other elements.

The Project would also continue to benefit from innovative marketing and promotional strategies developed by Discover Puerto Rico, the island's official destination marketing organization ("**DMO**") and Puerto Rico's Tourism Company.

LWCF AND SCORP COMPLIANCE

If the Project remains under the Status-Quo Model, the DNER must continue to follow the LWCF Manual and the SCORP as guidance for the appropriate management of the Cave Park. Given that the current use of the facilities is LWCF and SCORP compliant, it can be safely assumed that under the Status-Quo Model, the Project would continue to meet LWCF and SCORP requirements.[49] This component remains invariable throughout all the service model options contemplated in this Study.

RISK MANAGEMENT

With DNER as the Cave Park's sole administrator under the Status-Quo Model, the financial and operational risks of managing the Cave Park would continue to be borne entirely by the Government. Hence, the DNER would continue to be responsible for the design, financing, operation, and maintenance of the Cave Park. Since the transfer of the Cave Park to the DNER in 2018, the facilities have been mostly closed due to major disaster declarations and COVID-19. Therefore, it is unclear how effectively the DNER would be able to manage the corresponding risks associated with the ongoing operation of the Cave Park.

OPTION 2 – PUBLIC-PRIVATE OPERATION MODEL

OVERVIEW

The Public-Private Operation Model entails a management contract between the DNER and a private park operator. Essentially the DNRE would outsource the operations and maintenance of the Cave Park while keeping all revenues, less operating fees. In such a management contract, "the state retains asset ownership, and capital expenditure is the responsibility of the public sector, whereas operation and maintenance are handled by the private sector."[50] These types of contracts extend typically from 3 to 5 years, with possible time extensions, and require a payment (monthly, quarterly, or annual) to the

[48] The Central Office of Recovery, Reconstruction and Resilience (COR3)." Transformation and Innovation in the Wake of Devastation: An Economic and Disaster Recovery Plan for Puerto Rico: (2018)".

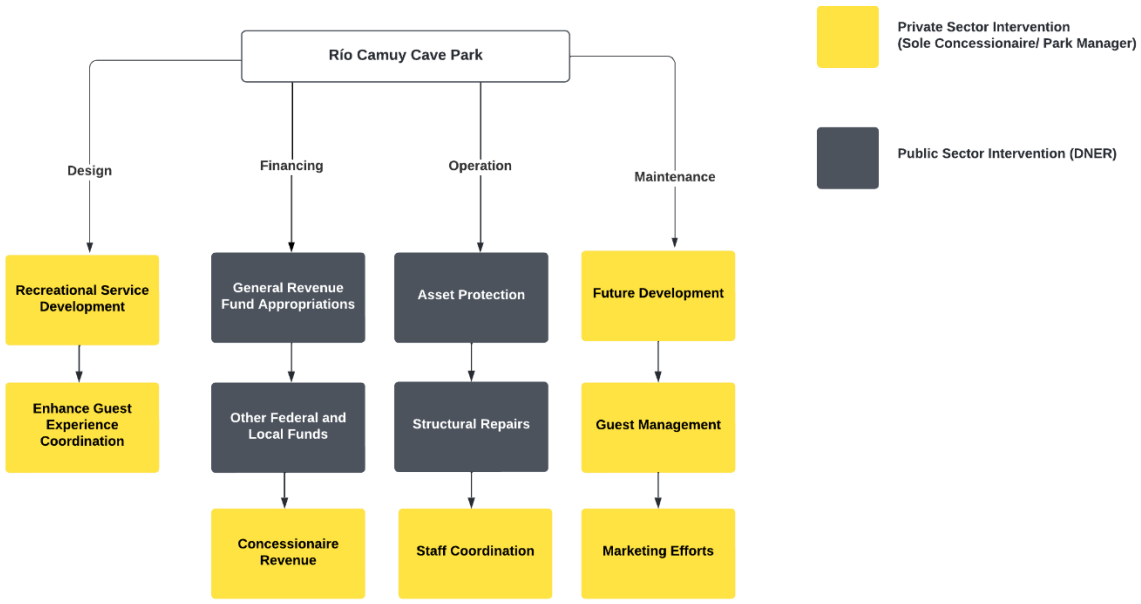
[49] Land & Water Conservation Fund State Assistance Program – Federal Financial Assistance Manual Vol. 71, Chapter 8, Subsection (B).

[50] The World Bank (2017) – Public-Private Partnership Reference Guide (Version 3).

operator for the scope of services.[51] In the case of this Project, the private sector operator would have the responsibility to directly administer the day-to-day operations of the Cave Park and coordinate and manage all of the private concessionaire lease agreements for visitor services. The DNER would retain the responsibility of ensuring that the private park operator complies with any applicable state and federal laws and regulations, and the Government would continue to own the Cave Park.

Ideally, the private park operator would possess the following characteristics: (1) be an NGO, local cooperative, or for-profit entity, with prior experience in managing recreational facilities; (2) possess the necessary network to attract additional concessionaires that fit the Cave Park's mission and provide the goods and services diversification needed to increase the facility's revenues and competitiveness; and (3) have prior experience working with federal and local Government entities to ensure compliance with applicable federal and local laws and regulations.

Figure 24. Public-Private Operation Model Structure



Overall Benefits

As discussed above, the overall sentiment expressed in the SCORP by the general public and the NGOs is dissatisfaction with the maintenance and overall management of park facilities on the Island. The incorporation of a private operator under the Public-Private Operation Model could potentially address such concerns.

Evidence demonstrates that when a private entity manages destinations or recreational facilities, it provides increased asset protection through the mutual cooperation between

[51] Ibid.

the private and public sectors. A private park operator can also provide additional business opportunities that will enable visitors to obtain worthwhile experiences.[52]

Even though a Public-Private Operation Model established through a management contract would still require the public sector to maintain capital expenditure responsibility, the private operator could generate significant economic impact and job creation. As mentioned before, one of the main goals and aspirations for this park operator is its ability to attract concessionaries that diversify the Cave Park's service offerings, thereby improving overall visitor experience. If the ideal park operator is identified, the economic impact generated from the facilities could be considerable.

Economic literature suggests that the integration of a fully functional outdoor recreational facility leads to: (1) an increase in real property value of over 5% for homes within 500 feet of the facilities[53]; (2) an increase in municipal revenues in accordance with the economic cycles of each particular local economy; and (3) attracts knowledge workers and talent to live and work within the facilities and in the surrounding communities.[54] All this additional economic activity generates additional jobs within the facilities and among the surrounding communities. The same could be expected in the Cave Park if procured under this model.

FINANCIAL VIABILITY

In the Public Private Operation Model, the DNER would remain responsible for the capital expenditures designated for the Project, as well as for the recurring payments for the operations contract. The DNRE would need to identify funding sources for the contract's payments, which currently may be limited to the revenues generated from ticket sales and parking fees. The DNRE will potentially need a subsidy from the Central Government to cover any outstanding balance.

In regards to other Government contributions, initially, the DNER would rely on the two non-recurring federal fund appropriations from FEMA and ARPA funds for capital improvements.[55] In addition to federal appropriations, similar to the Status Quo Model, the DNER could request additional federal funds through the LWCF State and Local Assistance Program

The operations contract in the Public Private Operation Model should include incentives, and penalties, for the private operator to meet key performance indicators ("**KPIs**") such as number of visitors, ticket sales for other activities at the Cave Park, number of new offerings, etc. The introduction of incentives in this type of model could allow for the introduction of profit-sharing mechanism, allowing DNRE to obtain revenues for the payment of the operations contract or to use for other obligations.

[52] Pacific Asia Travel Association (2021) "Parks & Culture: Visitor Management".
[53] See illustratively, Pennsylvania Land Trust Association (2012). "Economic Benefits of Parks".
[54] Ibid.
[55] M2A Group (As of December 2022).

Added Value

The added value of this Public-Private Operation Model derives from the integration of an effective private park operator. As stated above, this operator should maintain LWCF and SCORP compliance at the forefront while implementing innovative strategies in order to minimize the Cave Park's reliance on government funding and create additional value through new and innovative attractions. This added value would be highly dependent on the quality of the contracted park operator and the partnership forged between the public and private sectors that actively participate in this model.

LWCF and SCORP Compliance

If the Project is procured under a Public-Private Operation Model, the DNER will be responsible for holding the private sector accountable for complying with the LWCF and SCORP requirements and any other applicable local and federal laws and regulations.[56] The introduction of KPIs in the operation's contract will guarantee compliance with these regulations. The private park operator's ability to promote the Cave Park, enhance visitor experience and increase overall park revenue will help to ensure compliance with the operation and maintenance requirements established in the LWCF Manual, the SCORP and any other applicable local and federal laws and regulations. As owner of the Cave Park and counterparty to the contract, the DNER will monitor the park operator's performance with all applicable local and federal regulations.

Risk Management

In a Public-Private Operation Model, the overall risk is shared between both the private and the public sectors. If the DNER and the private park operator reach an adequate partnership, both parties will be able to manage their respective shares of the risk associated with the Project. The DNER would retain asset ownership and capital expenditure responsibility, while the private park manager would be responsible for the day-to-day operation and maintenance of the facilities. The private park manager would bear the financial risk that park visits may come below expectations and affect park revenues, overall operating budget, and the ability to receive incentive payments.

Option 3 – Public-Private Rehabilitation and Operation Model

Overview

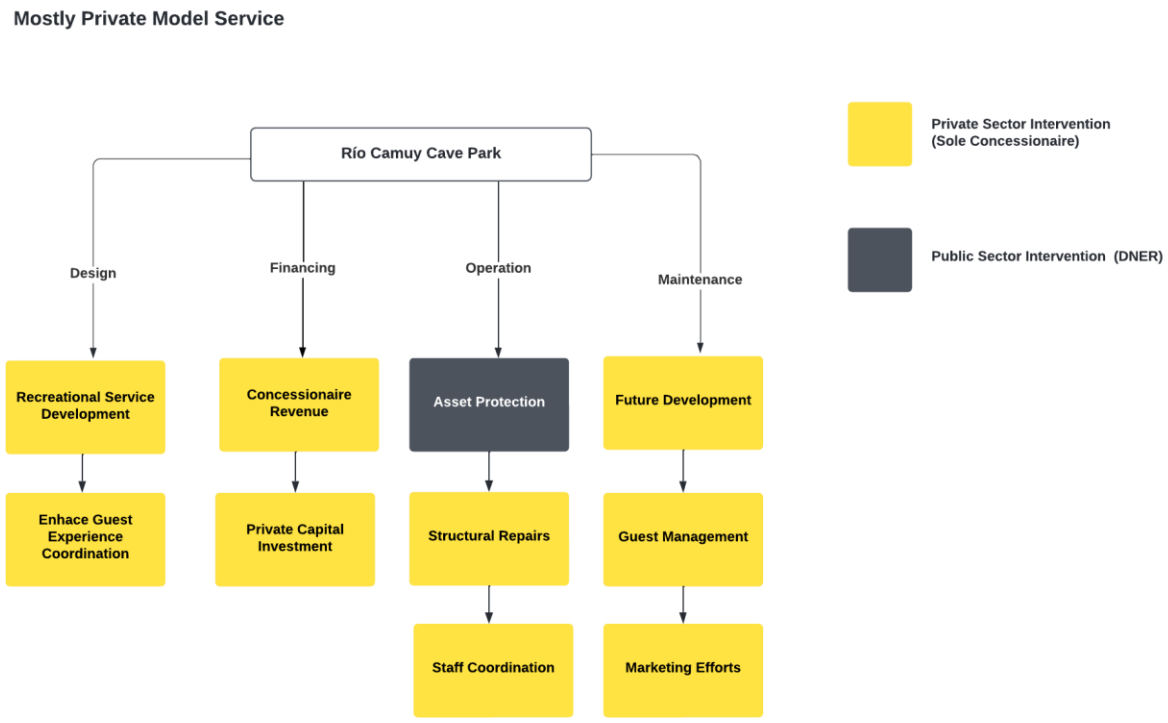
The Public-Private Rehabilitation and Operation Model would entail a ROT contract between the DNER and a single long-term private concessionaire. This contract may be structured either as a traditional concession agreement with an upfront payment or as a concession agreement with no upfront payment, either one of them providing for a revenue share mechanism. Under this arrangement, the concessionaire would be responsible for (i) rehabilitating, upgrading, or extending the footprint of the existing assets and (ii) operating and maintaining the facilities for a specific period. After the expiration of the ROT agreement, the Cave Park concession would be transferred back to the DNER. Throughout the term of the Project, the DNER would be responsible for

[56] Land & Water Conservation Fund State Assistance Program – Federal Financial Assistance Manual Volume 71, Chapter 8, Subsection (E).

ensuring compliance with the LWCF guidelines, the SCORP and any applicable federal and local laws and regulations.

There are potentially many benefits that would derive from the implementation of this model. For instance, the financial burden of the Project would be mostly borne by the private concessionaire. However, as discussed below, one of the potential downsides of this model is that the intended Project might not muster private sector interest.

Figure 25. Public-Private Rehabilitation and Operation Model Structure



Overall Benefits

Through a Public-Private Rehabilitation and Operation Model, the private concessionaire would be responsible for the rehabilitation and operation of the Cave Park during a medium-to-long term concession agreement (i.e., 10 to 30 years). During this time, the concessionaire would be responsible for operating, maintaining, repairing and potentially renovating the Cave Park. The public sector will continue to oversee compliance with applicable laws and regulations.

If the ideal concessionaire is identified, the economic impact that could be generated from the facilities could be considerable. Economic literature suggests that the integration of a fully functional outdoor recreational facility (1) leads to an increase in real property value of over 5% for homes within 500 feet of the facilities and municipal revenues in accordance with the economic cycles of each particular economy; and (2) attracts knowledge workers and talent to live and work in the facilities and surrounding

communities.[57] All this additional economic activity generates additional jobs within the facilities and among the surrounding communities. The same could be expected to happen in the Cave Park if procured under this model.

FINANCIAL VIABILITY

One of the main benefits of the Public-Private Rehabilitation and Operation Model is that, absent government contributions and the incorporation of a revenue share mechanism, the private sector as the concessionaire would be solely responsible for obtaining the necessary funds for any capital improvements and infrastructure development.

A study conducted by Foundation for Puerto Rico estimated that the facilities could benefit from an estimated $200,000+ investment to "carry out physical improvements, purchase new equipment and furniture for visitor comfort and safety, and rebrand, market and program the facilities."[58] The Advisor believes that such estimate is understated, but it is currently the only available estimate of further investment needed in the Cave Park.

However, this model may not be financially feasible from a private sector perspective given the limited revenues currently generated in the Cave Park and the required capital expenditure ("**CapEx**") needed to bring the asset to pre-Hurricane levels. While the private operator may introduce additional revenue generating activities in the Cave Park, the estimated cash flow from operating the asset is negative for the first three years of the concession agreement and would reach some $0.5 million after 10 years. Therefore, the additional CapEx that could be injected into the facilities by a private operator are limited by the cash flow projections. As a result, private sector appetite for this model might not exist.

ADDED VALUE

The added value provided by the private concessionaire in the Public-Private Rehabilitation and Operation Model would depend on its prior experience and its extensive know-how in adventure-tourism related attractions and guest services management, as well as private sector funding for the required CapEx without the need of government contributions. However, government contributions might still be available in this model as with the other models and the contract may include additional profit-sharing mechanism in the case these funds are made available. If a private entity specialized in leisure and entertainment facilities is able to undertake this endeavor, the facilities could potentially have safe and improved infrastructure, offer state-of-the-art services, and forge healthy partnerships with the public sector to ensure that initiatives are backed by local and federal authorities.

LWCF AND SCORP COMPLIANCE

If the Project is procured under a Public-Private Rehabilitation and Operation Model, the DNER would be responsible for holding the private sector accountable for complying with the LWCF and SCORP requirements and any other applicable federal and local laws and

[57] Ibid.
[58] Foundation for Puerto Rico (2021) "Destination Plan Arecibo & Camuy".

regulations.[59] The DNER would also be responsible for enforcing compliance with the concession agreement.

The private sector's ability to enhance visitor experience through the rehabilitation of the facilities and resulting increase in overall park revenue would help to comply with the operation and maintenance requirements established in the LWCF Manual and the SCORP, such as maintaining a well-kept facility, safe for the use of the general public, among other elements.

RISK MANAGEMENT

In a Public-Private Rehabilitation and Operation Model, the overall risk would be mostly borne by the private concessionaire, which under a ROT agreement would assume the risk pertaining to the rehabilitation, maintenance, and operation of the Cave Park.

Under the Public-Private Rehabilitation and Operation Model, the DNER would remain responsible for ensuring contract and regulatory compliance (including, without limitation, LWCF). The DNER would also remain liable for the concessionaire's failure to comply with any applicable federal and local laws and regulations.

OVERALL QUALITATIVE ASSESSMENT

- Below is an overall performance evaluation of the three service delivery options based on The Public-Private Operation Model can potentially lead to significant economic benefits through the incorporation of a reputable operator with the necessary know-how to manage the facility and maximize its potential, not to mention stakeholder approval that would stem from the prioritization of infrastructure improvements and new development. The Public-Private Rehabilitation and Operation Model would also incorporate the expertise and operational capabilities of the private sector and would allow for private capital injection necessary to repair, rebuild and attain a state-of-the-art facility.
- **Financial Viability:** The financial viability of the Status-Quo Model is highly unlikely, considering the limitations in the execution capacity of the DNER. As for the Public-Private Operation Model, if by using its expertise and know-how the private sector operator can successfully operate and promote the facility increasing the number of visitors and turning it into a profitable operation, then this model would potentially be more viable. Notwithstanding, the DNER would need to identify funding sources for the contract, which are currently limited to the revenues generated at the Cave Park. Therefore, a Government subsidy is likely needed. On the other hand, a Public-Private Rehabilitation and Operation Model is highly unlikely taking into consideration the significant monetary investment to be assumed by the private concessionaire (including initial investment in the form of an upfront payment fee plus the financing of future capital improvements) *vis a vis* the limited profitability outlook of the facility.
- **Added Value:** Under the Status-Quo Model, the Cave Park benefits from numerous Government initiatives, such as the DMO's assistance for promotion

[59] Land & Water Conservation Fund State Assistance Program – Federal Financial Assistance Manual Volume 71, Chapter 8, Subsection (E).

and marketing the facility, to improve the National Park System. However, incorporation of the private sector expertise and know-how, through either the Public-Private Operation Model or the Public-Private Rehabilitation and Operation, provides a better execution capability in order to add value. This added value is subject to the quality, expertise and experience of the private sector entity to be selected. Additional KPIs profit-sharing mechanisms may be put in place in both models.

- **LWCF and SCORP Compliance:** LWCF and SCORP compliance is nonnegotiable for the viability of all three service models. In the Status Quo the DNER will remain directly liable for compliance and under the Public-Private Operation Model or the Public-Private Rehabilitation and Operation the private party will have to comply with all local and federal regulations, including LWCF and SCORP and the DNER will monitor the private party's compliance.
- **Risk Management:** In the Status-Quo Model, the DNER would continue to bare all risks related to the operation of the facility without any additional support. Under the Public-Private Operation Model the financial risk is shared with the private operator while DNER contributes and closely monitors contract and regulatory compliance. The Public-Private Rehabilitation and Operation Model exhibits the best performance in terms of risk management because the Government is relieved of most of the financial and operational risk. However, DNER retains the regulatory compliance risk and relies on the private entity for management and capital improvement execution.

The current conditions of the asset, it is evident that the DNER shouldn't continue to operate the Cave Park under the Status Quo model. The other two delivery model options would represent an opportunity for the DNER to bring private sector expertise and know-how in the operations and management of similar facilities. However, the financial viability of both options is unknown. While the Public-Private Rehabilitation and Operations Model transfers the greatest risk to the private sector, the initial capital investment necessary to bring the Cave Park to pre-Hurricane levels and additional investment required to convert the Cave Park in a state-of-the-art, touristic attraction, outweighs potential revenues in the short-term. The Authority believes that there might not be appetite in the private sector for this type of model. Considering the overall results of the qualitative assessment, the Authority believes that the Public-Private Operation Model is the best delivery option, though the DNER will need to identify funding sources for the contract fees.

QUANTITATIVE OPTIONS ASSESSMENT

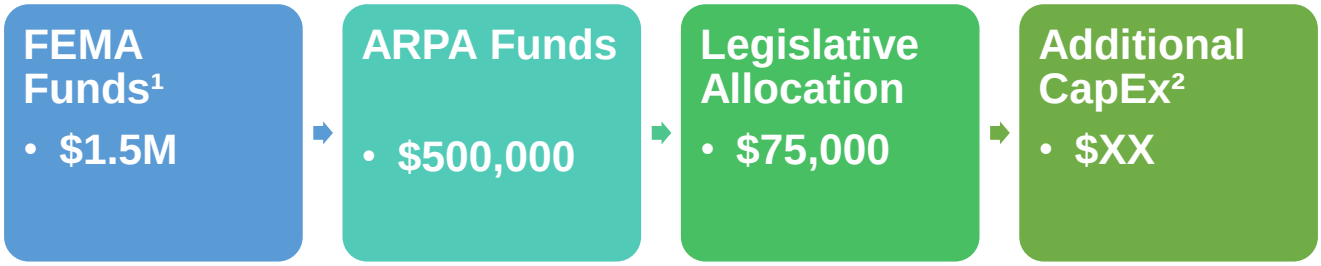
Based on the results of the qualitative assessment, the quantitative assessment evaluates whether revenue generation under the Public-Private Operation Model would be sufficient to pay for ongoing operating and capital expenses, and generate a profit deemed appropriate for this type of transaction. A financial model was developed to assess capital expenditures, operating cost, and revenue forecast for what could be an Operating and Management Contract. The financial model was developed with the information available at the time of this Study.

One of the main benefits of a management contract is its potential to distribute responsibilities among the public and private sectors. Under a management contract, DNER would not only retain asset ownership but also capital expenditure responsibility.

CAPITAL EXPENDITURES

In order for the Cave Park to return to pre-Hurricanes conditions, the Government must complete the approved federally funded capital investment projects. These include both FEMA and ARPA funded projects, which together represent a total investment of approximately $2 million. The scope of work for these projects include repairs to restore facilities back to pre-disaster design, capacity and function within the existing footprint and includes works to repair the activity room, the administration lobby, the bus station, camping area, bathrooms, gazebos, cafeteria, and Cueva Clara water system. In addition, there is a Puerto Rico legislative allocation of $75,000.[60] This may not necessarily bring the Cave Park to optimal conditions as further investments might be necessary. At this time, a final estimate of the potential CapEx needed cannot be determined.

Figure 26. Capital Expenditure Distribution under the Recommended Service Model



Sources: DNER & FEMA.

Notes: ¹FEMA Funds include allocations related to Project # 89462 (Parque las Cavernas del Río Camuy External Parkwide Damages). It must be noted that an additional FEMA Hazard Mitigation Proposal (Project # 123306) awaits to be obligated, hence not accounted for in this Study.
²Additional CapEx is to be determined between the DNER and the designated park manager in order to bring the Cave Park to optimal conditions and further development of the facilities.

[60] According to the engineering firm M2A Group, this legislative allocation is assigned for the removal and reconstruction of boardwalks close to the administrative offices and wood benches throughout the facilities.

Table 8. Capital Expenditure Projected Yearly Distribution under the Recommended Service Model

Capital Expenditures	Years									
	1	2	3	4	5	6	7	8	9	10
FEMA Funds										
ARPA Funds										
Legislative Allocation										
Additional CapEx										

Source: M2A Group and estimated yearly distribution by the Advisors.

OPERATIONAL EXPENSES & REVENUE FORECAST

Under the Public-Private Operation Model, operational and maintenance expenses would be the responsibility of the Cave Park operator, which must implement the necessary strategies to assure a profitable operation while complying with the contract and with applicable federal and local requirements. To achieve this, the Cave Park operator, along with DNER, would have to establish as their core strategy and objective to increase the number of park visitors. This core strategy is vital for the financial viability of the Cave Park because visitor flow is the driver for revenue generation, leading the facilities to a more self-sustainable future performance. To increase the regular flow of visitors, the Cave Park must undergo a restructuring of its current service offerings to diversify and meet the needs of the tourism market in Puerto Rico.

The designated park operator would delineate and oversee the implementation of a strategic plan for the Cave Park, including the procurement process of all the additional private concessionaries that will take part in the Cave Park's ecosystem of offerings. Meanwhile, the DNER would be responsible for overseeing and ensuring that these efforts meet local and federal requirements, as well as paying for the annual operational fee. After the third year, when federally funded capital improvements in the Cave Park are expected to be completed, a significant increase in the number of visitors should be expected given enhancement of the available services in the Cave Park.

Table 9. Operation Expenses & Revenue Forecast Assumptions under the Highest-Ranking Model

Project Terms	Assumptions
Operations and Management Contract Term	Management Contracts usually have a duration of five (5) years.[61] There could be an extension for an additional five (5) years.
Capital Improvements Timeline	Federally Funded capital improvements are expected to be completed on or before the first three (3) years of the agreement. This timeline is based on the information provided by the engineering firm M2A Group, who currently assess the state of the local National Parks for DNER.
Additional CapEx	The development timeline for additional CapEx and. estimated amount depends on the innovation strategies designed by the park operator along with the DNER. Hence, these are not specified in the forecast.
Visitors	The baseline for the visitor forecast set forth below is the average monthly visitors observed in the Cave Park during fiscal year 2021, which presents the most reliable data in view of the parks subsequent closure due to the Hurricanes, COVD-19, and Hurricane Fiona. Based on the 2021 baseline, after the third year of the management contract term, when most capital improvements are expected to be completed, almost 100,000 visitors should be expected at the Cave Park, assuming the corresponding marketing strategies have been put in place. This visitor growth rate is consistent with the average rate of visitors observed in NPS facilities over the last decade.[62] After the fourth year, the number of visitors is expected to grow at a 5% rate per year. This growth rate is consistent with the increase in park service offerings expected to take place after the culmination of the federally funded capital improvements projects. It is unclear at this point whether the Cave Park could absorb the environmental pressure of additional number of visitors over and beyond the projected figures.
Admissions	The current pricing structure could remain in place since the facilities already possess a pricing structure on the higher end, when compared to similar attractions on the Island. The demographic mix observed throughout 2021 (*75% Adults, 20% Children and 5% Seniors)* was considered for the forecast.
Camping	Campsites will be fully functional after the third year, consistent with the completion of the federally funded capital investment projects. The baseline forecast of potential camping activities includes 10 campsites, operating 260 days a year with a 40% rate of occupancy that will slowly increase to approximately 66% corresponding to set marketing

[61] The World Bank (2017) – Public-Private Partnership Reference Guide (Version 3).
[62] National Park Service – Annual Visitation Statistics by Year (2022).

	strategies. This occupancy rate is also consistent with the average rate observed in the hotel sector in Puerto Rico during (FY2014-FY2022).[63] The proposed camping fee would be $50 per group, which is consistent with the price of campsites available throughout Puerto Rico (2022 figures).[64] Over time, this pricing structure may be adjusted, depending on the amenities made available by the Cave Park operator.
Cafeteria	The necessary repairs to the cafeteria infrastructure, part of the Capital Improvements project, are expected to be completed in the first three years of the management contract, considering that it represents a priority project since there are currently no food and beverage options in the Cave Park. Assuming the cafeteria would operate as a separate concessionaire, the corresponding revenue stream is estimated, taking into consideration an average expenditure of $8.00 per visitor, of which 4% represents the concessionaire leasing fee.[65]
Parking	The baseline parking-revenue estimate corresponds to the average revenue observed from FY2010-FY2016, adjusted to the average accumulated inflation of 20.6% (2017-second quarter of 2022). In the fourth year, parking fee revenue is expected to increase substantially to account for the increase of almost double the park visitors. The revenue will presumably remain constant until the eighth year. Another 3% increase in the parking fee is assigned in the ninth and 10th years, as the number of visitors continues to rise.
Concessionaires	One of the main benefits of this service model is that, through the ideal park operator, the facilities integrate additional concessionaires to provide diverse goods and services to the public. These are estimated to represent an increase of approximately 10% of total park revenue. The type of goods and services to be offered in the facilities will depend on the solicitation process done by the park operator subject to DNER's approval, as they must comply with the LWCF and SCORP requirements. Some services that potentially could be offered by the concessionaires include activities such as rock climbing, zipline attractions and river explorations, among other more strenuous activities, which according to market research would generate higher revenue.
Other Revenues	Other revenues include the rental of the multiuse building for activities, as well as additional nocturnal activities that were previously available in the Cave Park. Such activities are expected to take place after the fourth year, once the federally funded capital investment projects are

[63] Puerto Rico Tourism Company – Total Hotel & *Paradores* Occupancy Rate.

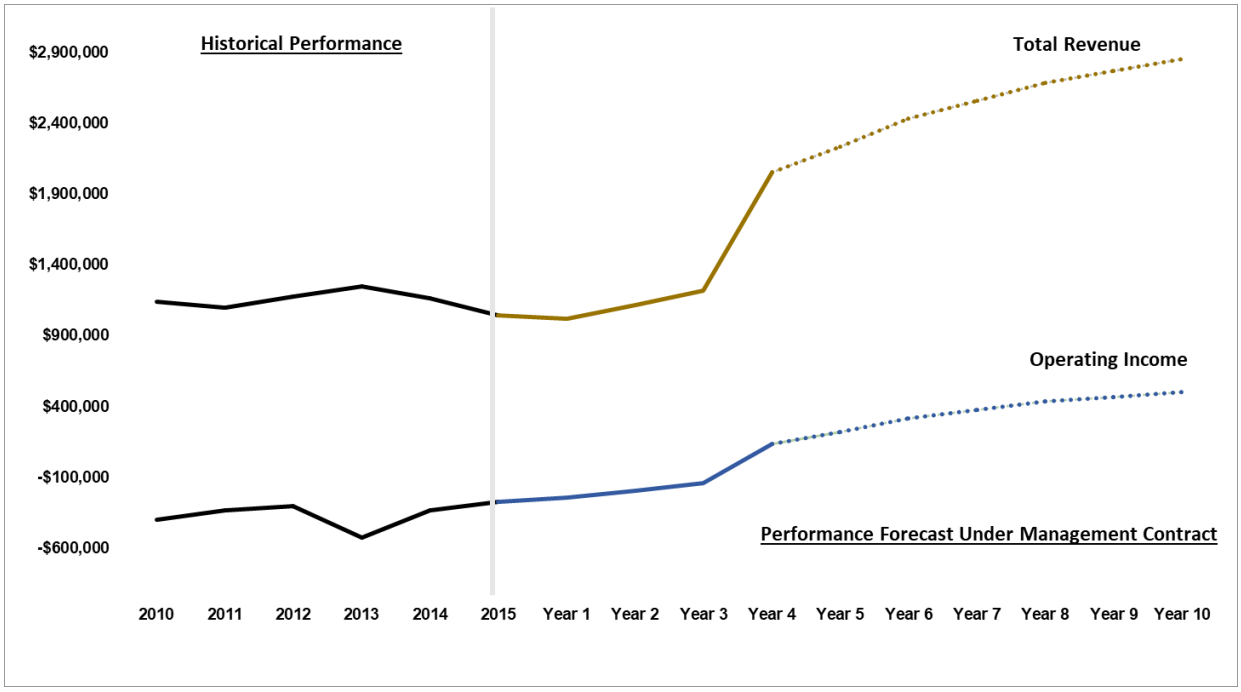
[64] www.HIPCAMP.com.

[65] The cafeteria concessionaire leasing fee is consistent with data compiled from a restaurant leasing survey (2022).

	completed. The baseline for such revenues is the average observed from FY 2010 to FY 2017. These other revenues would grow at a 1% rate, consistent with the increase in park visitors. This is a conservative estimate and could potentially be greater.
Expenses	Operating expenses are based on the average operational expenses observed in the facilities from FY2010-FY2015. These expenses are expected to grow at a 5% rate, in proportion to the increase in total revenue, which will require additional operational input. Wage expenses are estimated on the basis of 30 park employees with an annual average salary of $25,000, which is consistent with the average salary of current park staff. In proportion with the increase in park visitors, by the fourth year, park employees will increase to 50. For each 2% growth in the number of visitors, there is a 1% increase in wage expenses. An increase in park visitors holds a strong correlation to additional staffing needs. Fringe benefits such as Social Security and healthcare, are estimated at 20% of total salary.

Taking into consideration the visitor and revenue increase assumptions detailed in the previous Table 9, as of the fourth year of the operations and management contract, the Cave Park revenue should increase sufficiently for the facility to exhibit an operational surplus. The revenue and operating income forecast presented in this Study is subject to negotiation between the selected park operator, the Authority and the DNER. However, such assumptions serve to highlight the potential success of this type of service delivery model for the Cave Park. All numbers presented in the financial model illustrated below are in 2023 constant U.S. dollars (i.e., adjusted for inflation). Using constant dollars is a standard methodology, used by federal government agencies.

Figure 27. Revenue and Operating Income Historic Performance vs Forecast for the Cave Park under the Highest-Ranking Model (5-year Management Contract Term +5-Year Extension)



Source: Financial model was developed by the Advisor.

Table 10. Financial Model Under Public-Private Operation Model

Proforma Cave Park Income Statement Under Public-Private Operation Model										
Management Contract Years	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Visitors	50,000	55,000	60,500	96,800	106,480	117,128	122,984	129,134	133,008	136,998
Revenues										
Admissions	$827,500	$910,250	$1,001,275	$1,602,040	$1,762,244	$1,938,468	$2,035,392	$2,137,161	$2,201,276	$2,267,315
Camping Area	-	-	-	$52,000	$52,000	$52,000	$65,000	$71,500	$78,000	$85,800
Cafeteria	-	-	-	$30,976	$34,074	$37,481	$39,355	$41,323	$42,562	$43,839
Parking	$101,133	$102,347	$103,575	$134,648	$134,648	$134,648	$134,648	$138,687	$142,848	$147,133
Other	-	-	-	$49,486	$49,981	$50,480	$50,985	$51,495	$52,010	$52,530
Concessionaries	$92,863	$101,260	$110,485	$186,915	$203,295	$221,308	$232,538	$244,017	$251,670	$259,662
Total Revenues	**$1,021,497**	**$1,113,857**	**$1,215,335**	**$2,056,064**	**$2,236,241**	**$2,434,385**	**$2,557,918**	**$2,684,183**	**$2,768,366**	**$2,856,279**
Expenses										
Wages	$750,000	$772,500	$795,675	$1,250,000	$1,312,500	$1,378,125	$1,412,578	$1,447,893	$1,469,611	$1,491,655
Fringe Benefits	$150,000	$154,500	$159,135	$250,000	$262,500	$275,625	$282,516	$289,579	$293,922	$298,331
Operating Expenses	$363,427	$381,599	$400,679	$420,713	$441,748	$463,836	$487,027	$511,379	$536,948	$563,795
Total Expenses	**$1,263,427**	**$1,308,599**	**$1,355,489**	**$1,920,713**	**$2,016,748**	**$2,117,586**	**$2,182,121**	**$2,248,850**	**$2,300,481**	**$2,353,781**
EBITDA	**($241,931)**	**($194,742)**	**($140,153)**	**$135,352**	**$219,492**	**$316,800**	**$375,797**	**$435,333**	**$467,885**	**$502,498**

Source: Financial Model was developed by the Advisor.
Notes: All numbers presented in this financial model are in 2023 dollars. See assumptions in Table 10 for further insight.

CONCLUSION AND RECOMMENDATION

Under the Status-Quo model, the Cave Park is not being operated nor maintained to its full potential. This Study suggests that a Public-Private Operation Model could potentially reduce the Cave Park's operating losses while allowing the Government to fulfill its responsibility of maintaining the park open and in optimal conditions. There is an economic benefit to keeping the Cave Park open, as it aids in positioning Puerto Rico as a tourist destination, generating income that is not currently being captured by the Cave Park. At the same time, there are other benefits, including the protection of a natural asset for which Puerto Ricans take pride, and the provision of accessible outdoor recreational facilities that encourage a healthy lifestyle.

Based on the information available at this time, the operation of the Cave Park will commence to be profitable on the fourth year of the Public-Private Operation Model, thereafter, generating profits within a range of 6% to 18%. Economic literature defines small scale P3 projects as those below $50 million. Based on the financial model generated for this Project, a private entity would be generating profit margins of around $3 million per year starting on the fourth year of the agreement. Such a small stream of profit may not be enough to attract private market participation under a P3 arrangement. Furthermore, the applicable literature highlights the many challenges present in the wake of small projects as this one, such as lack of strategy and standardized documents, financing constraints, cumbersome institutional structures, among others .[66]

Based on the foregoing, this Study suggests for the Project not be procured at this time under a P3 arrangement. Instead, the DNER should begin a procurement process for an Operation and Management Contract ("**O&M Contract")** pursuant to DNER Regulation. This would ensure that a private sector profit or nonprofit entity would take on the operational and management of the Cave Park for a specific period of time, to be negotiated with the DNER during the procurement process. The O&M Contract will bring efficiencies in the operations and management of the Cave Park and would prepare the asset for a potential positive and attractive P3 transaction in the future. Nevertheless, the DNER will still need to identify the source of funds to cover the operating fees and applicable incentives to be negotiated with the private operator.

[66] The World Bank Group (2014). "A Preliminary Review of Trends in Small-Scale Public-Private Partnership Projects".