

Recommendations to the U.S. Forest Service: Alternative Transportation at El Yunque National Forest

Provided by the Interagency Transportation Assistance Group (TAG)

**Rio Grande, Puerto Rico
October 15-19, 2007**

At the request of the U.S. Department of Agriculture Forest Service (USFS), an inter-agency Transportation Assistance Group (TAG) site review of the status of planning and the options for providing alternative transportation at the El Yunque National Forest was conducted during October 15-19, 2007. This report was prepared subsequent to the site visit and is based on interactions with federal, state, and local government stakeholders. This report documents the conditions observed, transportation issues and considerations, and recommendations arising from the TAG analysis.

Background and Conditions

Beginning in 1994, seasonal traffic congestion, and potential remedies have been actively studied with respect to the Mameyes - Río Blanco Forest Highway (Puerto Rico 191 (PR-191)) corridor; the route by which the majority of visitors access sites within El Yunque National Forest. Parking capacity at Palo Colorado is exceeded over 50% of the year, and overall, demand exceeds the parking capacity in the PR-191 corridor beyond El Portal during more than 20% of the year. During peak seasonal visitation, aggressive traffic incident management is required to maintain order on busy weekends and holidays. The associated staff cost is estimated at \$20,000.

PR-191 provides access to over 80% of the developed recreation sites and trails on the forest. It is a narrow, winding, two-lane road completed by the Civilian Conservation Corps (CCC) in 1942. PR-191 previously extended through the forest but landslides on an 8 KM section in 1970 and 1975 prompted a 1992 decision not to rebuild, creating a dead-end, spur route. Expansion of PR-191 or parking is not desirable or feasible due to unstable soils and the historical significance of the road.

The 1997 Land and Resources Management Plan (LRMP) called for El Yunque to work with the Puerto Rico Department of Transportation (PRDOT) to study traffic congestion along PR-191 and identify options for addressing it. An initial study completed in 2002 recommended an Alternative Transportation System (ATS) as the most cost effective solution. A subsequent study completed in 2007 analyzed 12 ATS options (six in detail) and concluded that a tram system operating from El Portal during the peak seasons (daily during January – August and on weekends during October – December) was the preferred option. However, a component the proposed financing plan (charging for parking) is not allowed under the Recreation Enhancement Act (REA); thus there is a need to revisit the concept to reduce costs and/or seek alternative financing strategies.

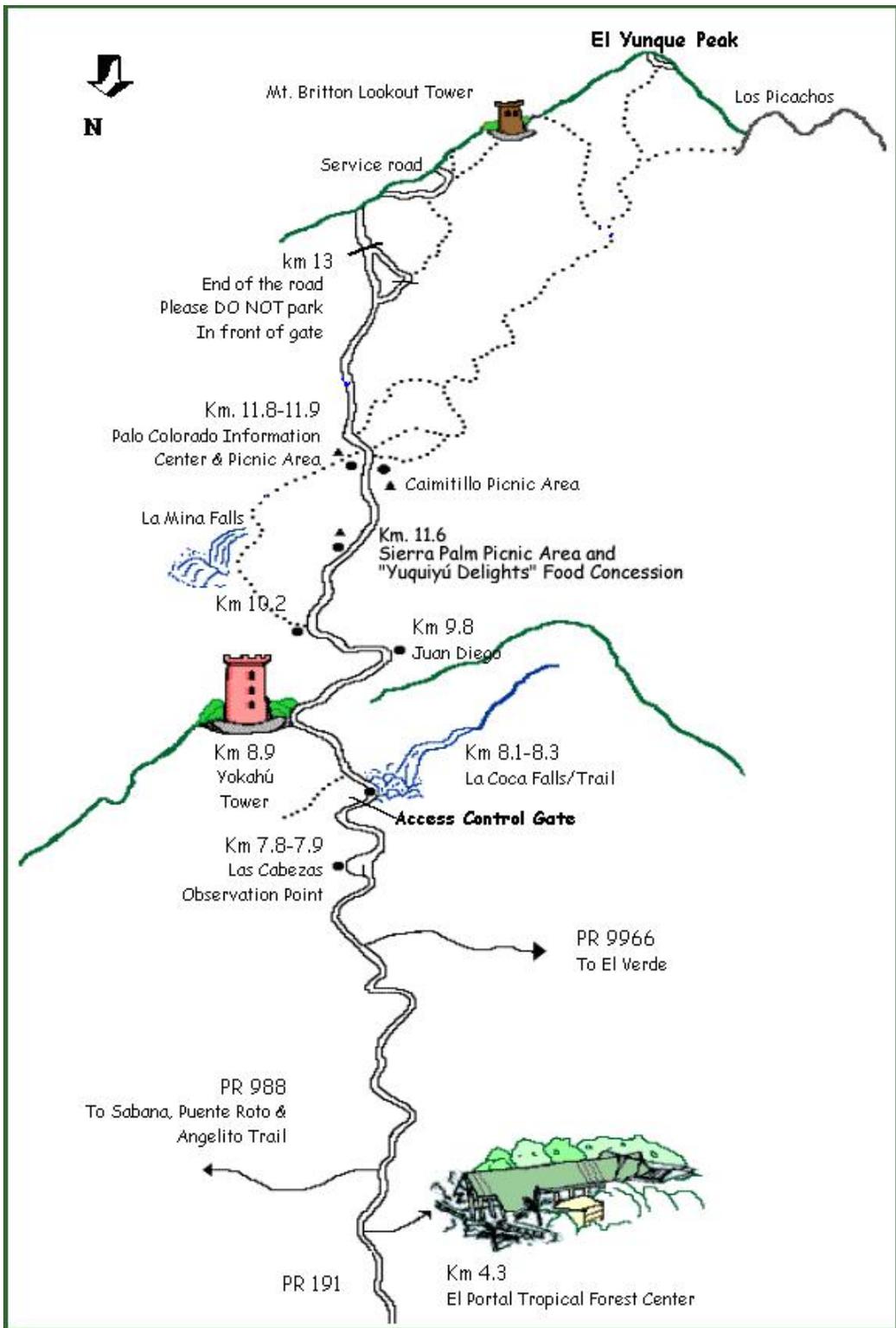


Figure 1: Map of PR-191 in El Yunque National Forest

A recent National Visitor Use Monitoring Survey estimated El Yunque visitation at 1.2 million annually. On the busiest days, about 1,400 vehicles enter El Yunque, and in the mid-day up to 400 vehicles compete for the 175 parking spaces located near the most visited places. Visitation spikes during March, July (the peak month), and August, and ebbs in September. Spring visitation includes a greater proportion of visitors from outside of the Commonwealth, whereas summer visitation has a greater proportion of Puerto Rico residents. The nature of visitation varies among tourists and residents, the latter generally having lower household incomes and seeking relief from the summer heat offered by water play and picnic areas at higher elevations within the forest. Tourists tend to engage in sightseeing, interpretive, and hiking activities, and in many cases arrive by bus as part of commercial tours operated by outfitter guides under permits issued by the Forest Service. Since June 2002, PRDOT, in the interest of safety, has restricted full-size motor coaches from operating on PR-191 within the Forest beyond El Portal Visitor Center.

Prospective partners

There are several prospective partners that have an interest in alternative transportation in El Yunque.

- **The Departamento De Transportacion y Obras Publicas de Puerto Rico** (the Puerto Rico Department of Transportation (PRDOT), and more specifically the Autoridad De Carreteras y Transportacion (the Puerto Rico Highway and Transportation Authority (PRHTA)) within PRDOT, has a longstanding cooperative partnership with the Forest. The primary access to El Yunque, highway PR-191, is a PRHTA road and a designated Forest Highway. The PRHTA has worked cooperatively with the Forest to analyze issues and work toward mutually agreeable solutions to address the public access and mobility needs at El Yunque. Several planning studies have been jointly funded and conducted by PRHTA in association with the Forest, including recent planning assessments of alternative transportation system concepts. The Forest benefits from a close and supportive working relationship with PRHTA, which is committed to assisting El Yunque in its efforts to develop an alternative transportation system yet is not in a position to make a major capital investment or assume operational responsibilities for a transit system.
- **Municipalities** surrounding El Yunque recognize the significance of the Forest as an important natural resource and tourist attraction. Three adjacent municipalities (Rio Grande, Luquillo, and Canóvanas) seek to serve as gateways into El Yunque. Currently most visitors arrive through the Rio Grande community of Palmer that is located at the junction of PR Highway 3 and PR-191, just outside of El Yunque. PR 3 is the primary highway connecting El Yunque to San Juan, where the airport and cruise ship port are located.
 - The mayor of **Rio Grande** has expressed interest in exploring partnership possibilities whereby Rio Grande would provide service to the forest using

vehicles acquired by the Forest in exchange for the use of the vehicles for other purposes during off-peak times. The possibility is at an early stage and requires further exploration before serious negotiations are undertaken. Key issues include whether the vehicles needed by the Forest are suitable for any of the intended Rio Grande purposes, and the extent to which added financial reporting and regulatory compliance burdens would result in meeting Federal Transit Authority (FTA) requirements for transit operators – particularly the Americans with Disabilities Act requirement to serve all needs within ¾ miles of a transit route.

- In 2006, the Mayor of **Luiquillo** expressed an interest in working to promote the use of secondary roads from Luiquillo as an alternative access route to El Yunque, as did representatives from Canóvanas. Such possibilities may merit further exploration, but these offer little as far as easing traffic congestion on PR-191 unless coupled with an alternative transportation system.
- The Territorial Plan for **Canóvanas** mentions the possibility of promoting the municipality as an ecotourism destination, including alternative transportation access to El Yunque along PR-186 as a scenic road corridor.
- **Puerto Rico Department of Economical and Commercial Development / Puerto Rico Tourism Company** oversees tourist transportation within the commonwealth. According to the PRDOT, there may be some limited, short-term financial aid available to assist in the start-up of tourist related transportation at El Yunque. This possibility will require further exploration once a definitive tourist transportation concept is determined.
- **National Park Service (NPS) – San Juan National Historic Site** has inaugurated a new tram service between Castillo San Cristóbal and Castillo San Felipe de Morro. The trams were purchased by the NPS and will be operated in partnership with the municipality of San Juan and the Corporación para el Desarrollo Empresarial y Cultural de la Isleta de San Juan (CODEVISA). The park may present opportunities to share experiences and/or spare equipment with the Forest, as well as allow the Forest to test the suitability of this type of tram on PR 191.
- **CODEVISA**, which was established to run a trolley system throughout Old San Juan currently lacks the authority to operate outside of San Juan, but might be a possible partner for El Yunque if the CODEVISA charter was expanded to allow operations between San Juan and El Yunque, as well as within the Forest.



- **El Yunque Outfitter / Guides** provide motor bus tour services to tourists visiting Puerto Rico. Although inconsistent with a distinctive tram experience, outfitter / guides have been used by the Forest to provide occasional transit service on busy days, and may be a useful resource going forward to help address peak conditions which cannot be cost effectively addressed otherwise.

- **Eastern National** currently operates educational retail outlets in 30 states, from Maine to the Caribbean. Its mission includes support of “research in cultural and natural resources to provide a sound basis for educational and park management activities.” The organization produces books, audio visual and other information to educate the public in public land units, homes, and schools. Eastern National operates the gift shop at the El Portal visitor center, and may be helpful in efforts to educate the public regarding the benefits of having alternative transportation at El Yunque as part of an updated audio visual presentation. There may be longer term possibilities for incorporating tram related tourist items in the gift shop.

- **Environmental Groups** in general have the potential to help promote the benefits of alternative transportation in minimizing the transportation impacts of visitors to the Forest. Specific groups have yet to be identified, but such groups can serve as allies in educating the visiting public.

Transportation planning studies

The need for alternative transportation has been studied for over 13 years through a series of progressively more detailed plans and studies, culminating in a May 2007 analysis of implementation alternatives.

- Alternative Transportation Study for PR 191 Recreation Corridor, Ramiro Villalvazo, USFS, May 1994,
- Land and Resources Management Plan, USFS, 1997
- Safety Study of Highway PR-191 at the Caribbean National Forest, FHWA / USFS, March 2001
- Transportation and Access Study for the Caribbean National Forest (El Yunque), Basora & Rodriguez and Associates, June 2002
- *Field Report* Caribbean National Forest – Summary of Forest Service ATS Needs, January 2004
- *Alternative Analysis for the Provision of a Mass Transportation System for the Caribbean National Forest (El Yunque)*, Steer-Davies-Gleeve, May 2007

Existing alternative transportation

Alternative transportation serving El Yunque exists only in the form of that provided by authorized outfitter / guides, including those operating in association with cruise ships and hotels.

Transportation Review Findings

The Forest Service requested the TAG to review the status of planning relative to plans for introducing Alternative Transportation in the PR-191 corridor, to identify partnering opportunities, and provide an overview of funding strategies with a particular focus on options for the upcoming anticipated solicitation for proposals under the FTA Alternative Transportation in Parks and Public Lands (ATPPL) program.

- The Forest Land and Resources Management Plan supports the development of visitor transportation services to alleviate traffic and parking congestion in El Yunque during peak periods of visitation, as well as to promote alternative transportation accessibility for residents and tourists from locations throughout the Commonwealth.
- Prior studies have demonstrated an essential need for alternative transportation and have identified and analyzed possible alternatives – culminating in the Steer Davies Gleave conclusion that a tram transportation system is the most suitable and cost effective concept going forward. Whereas the TAG generally accepts with the report as the basis for a long-range vision for alternative transportation at El Yunque, the TAG believes that the concept is overly ambitious given the lack of funding for the full development and lifecycle operation and maintenance of the proposed system. The TAG also considers that an incremental, progressive implementation strategy would help mitigate financial risk and help build public acceptance of alternative transportation by initially introducing it to address traffic and parking congestion during peak visitation rather than throughout most of the year.
- In addition to the tram system, the TAG considers implementation of Intelligent Transportation System (ITS) capabilities for parking monitoring and for providing parking status information to travelers before and as they travel to El Yunque, to be an essential part of any strategy. In this regard, a parking management system along with one or more portable electronic message signs and possibly a highway advisory radio system are recommended for implementation in cooperation with PRDOT.
- Fares alone are insufficient to make development and operation of a tram system with associated new parking facilities to accommodate anticipated visitation levels during weekdays, January – August, and on weekends during October – December, attractive as a business venture for a concessionaire. Higher fares are considered to be burdensome for resident visitors from lower income areas, who traditionally have frequented the Forest. Proposed parking fees are not allowable under the Federal Lands Recreation Enhancement Act (REA). A scaled back tram concept and funding strategy needs to be developed to compensate for the lack of parking fee revenue.
- Although partnership possibilities are promising, none are sufficiently well formed, resulting in a need for the Forest to take a leading and perhaps solitary role initially in advancing the development of alternative transportation in the Forest.

- The Forest has access to FTA Section 5309 earmarked funding for developing a transit system. Currently about \$1.2 million is available, with another \$1.3 million anticipated over the next two years. Current funding is earmarked for buses and bus facilities. Using these funds to underwrite a portion of the capital costs will improve financial sustainability, and thus contribute to keeping fares low.
- Planning to date has laid the foundation for moving forward in implementation planning for a scaled back demonstration system, development of a corresponding request for fee authority, vehicle acquisition, and environmental compliance (as appropriate), as well as ongoing exploration of future partnering opportunities. Steep road grades and tight curves / turnaround areas will require careful vehicle specification and selection to ensure suitability for operation in mixed traffic on PR-191.
- The PRDOT has programmed \$100,000 (\$20,000 of which is to be matching funds from the Forest Service) within its Unified Planning Work Program for environmental analysis leading to implantation of alternative transportation at El Yunque.
- Reconsider the traffic control at La Coca Falls to be moved slightly to the first overlook on the curve prior to La Coca Falls. It seems there is better spacing there for turn around movements and this change would give the parking area at La Coca Falls a more intact use and allow for less congestion right at a key scenic attraction.

Recommendations and Next Steps

The TAG recommends pursuing implementation planning and vehicle acquisition activities in parallel – leading toward deployment of a scaled back, seasonal demonstration system based on the “Alternative Analysis for the Provision of a Mass Transportation System for the Caribbean National Forest (El Yunque)” final report prepared by Steer Davies Gleave for the PRDOT/PRHTA.

Key elements of the scaled back demonstration system include:

- PR-191 Traffic Restrictions and Alternative Transportation service employed during peak visitation and on weekends as appropriate during other times of the year. Target service frequency is 15 minutes depending on financial capability.
- Use of existing forest parking, particularly overflow at El Portal (136 spaces) at the outset of the demonstration
- Traffic control check point at La Coca Falls
- Parking beyond check point limited to authorized spaces; no roadside parking when alternative transportation is operating. Parking Management is employed during “peak times,” along with ITS traveler information services. Associated ITS (Intelligent Transportation Systems) include:
 - Parking Management System

- Portable electronic message sign(s) and possibly highway advisory radio to communicate:
 - Parking Availability
 - PR-191 Traffic and Parking Restrictions
 - Alternative Transportation Service Alternative
- As part of this effort, a simple ITS Architecture should be developed to assure full compatibility among all ITS technologies.
- Maintenance to be performed off site so as to not require a dedicated facility
- Transportation Fee collected on days when alternative transportation system is needed and operating. Extent of service determined initially by financial limits.
- Supplemental transit service explored in partnership with Outfitter / Guides for Jul / Aug in order to augment leased / purchased tram which would serve as the primary service during winter and summer peak seasons.
- Special interpretive tram tours from El Portal outside of peak times would be tried using available trams operated for a premium fee.

The Forest is positioned to move forward with finalizing an alternative transportation system demonstration concept. Doing so requires a number of separate but interrelated tasks and steps. Recommended next steps are as follows.

1. **Execute Funding Agreement with FTA** to secure available Section 5309 funding (\$1.2 million) that has been earmarked. Securing these funds is fundamental to being able to use some of this funding for hiring a solely-dedicated project manager.
 - 1.1. Establish with FTA the protocol to be used in transferring the funds through a Memorandum of Understanding (MOU). If it is possible to append these funds on the agreement used to transfer ATPPL funds, determine whether the FTA requirements associated with the funds are those used for ATPPL or Section 5309. This should be pursued as a cooperative endeavor of regional and headquarters groups within the USDA Forest Service and FTA.
 - 1.2. Prepare a progressive, evolutionary development concept, along with an updated financial analysis that demonstrates financial feasibility of the trial demonstration based on anticipated revenues from all sources.
 - 1.3. Section 5309 funds are three-year funds in that they are appropriated in one year and obligated the following two years.
2. **Appoint project manager for 2-4 years.** The TAG views the lack of a solely-dedicated project manager as a primary impediment to advancing development of alternative transportation at El Yunque expeditiously under the direction of the Forest Supervisor and the Customer Services and Property Team Leader.
3. **Initiate initial implementation planning strategies.** The scaled back demonstration concept needs to be fleshed out in multiple dimensions.

- 3.1. Based on the scaled back demonstration concept to be provided to FTA as the basis for transferring funding, prepare a cost analysis and corresponding REA fee proposal for review and approval.
- 3.2. Also based on the scaled back demonstration, determine the environmental compliance requirements, and the intended approach to meeting these. The societal impacts are considered an important consideration, even if physical changes are kept to a minimum. Work with PRDOT to initiate appropriate action(s), if any.
- 3.3. An Incident / Traffic Management Concept of Operations needs to be developed in cooperation with PRDOT relative to the specific conditions which will trigger traffic restrictions and strict parking enforcement, along with mandatory fees and tram service. An over-length vehicle exemption may be needed to operate trams on the section of PR-191 where large motor coaches are prohibited.
- 3.4. A document outlining various organizational roles and responsibilities needs to be prepared with respect to all aspects of developing, implementing, operating, and maintaining the demonstration service, including public outreach and service evaluation functions. Fee proposal and concession / contract model
- 3.5. Prepare a public involvement, outreach and education plan describing how the public will be consulted in the implementation of the demonstration traffic and parking management actions along with the demonstration tram service. This plan is to be an extension of prior public involvement and stakeholder outreach that has been conducted throughout prior planning studies.
4. **Determine vehicle and facility needs associated with the demonstration concept.**
 - 4.1. Develop functional specifications for the tram and confirm via road testing that the intended configuration is suitable. Work with the federal General Services Administration (GSA) or partners to acquire vehicles. GSA is the designated source for vehicle procurement within the Federal Government.
 - 4.2. Based on tram road trials, identify and design passenger boarding and alighting areas, pull-outs, turn-a-round locations, no-passing zones (where necessary) and parking spaces at major sites. Identify minor infrastructure improvements that may be necessary to facilitate safe and efficient operation of intended trams.
 - 4.3. Identify and design temporary traffic control measures in the vicinity of vehicle checkpoints. These may include traffic cone layouts, temporary traffic signing, parking signs, and other traffic control devices needed to covert to “managed” operations.
 - 4.4. Identify and layout plans for temporary tram fueling and storage facilities on the Forest. An area near where PR-191 enters the forests from the north, and which occasionally has been used as a construction staging area, is considered a likely location.
 - 4.5. Identify a location for traffic operations and tram dispatching, preferably within the Catalina complex.

5. Determine specific needs and acquire ITS technology and equipment associated with parking monitoring and management, and related traveler information. The FHWA Puerto Rico Division indicated it would be available to provide planning assistance. In doing so, identify electrical power and communications need both within the PR-191 corridor and along major roadways used to access the Forest.
6. Develop an evaluation plan by which the public acceptance and cost effectiveness of the tram demonstration phase can be judged. Identify an independent and objective source to perform the evaluation based on clearly established performance measures and measurement criteria. The plan should include measures to assess the impact of the tram on natural resource protection and visitor experience related to the planning goals and objectives outlined in studies to date.
7. Regional FTA and Forest Service office staff should continue to work cooperatively to seek definitive answers to specific questions for FTA that were raised during the TAG review, including:
 - 7.1. Can ATPPL and 5309 funds be mixed?
 - 7.2. Does EL Yunque National Forest meet FTA requirements for demonstration project?
 - 7.3. Are there limitations on use of FTA 5309 funds (i.e., for overhead costs, etc.)?
 - 7.4. What FTA program requirements exist for ATPPL and 5309 (monitoring, reporting etc), and what differences exist?
 - 7.5. Does initiating service on a demonstration basis with outfitter-provided buses and then converting to contract operation of trams acquired by the Forest Service trigger and policy, regulation or legal prohibition against competing with private entities?

Concluding Remarks

El Yunque is poised to move forward in implementing alternative transportation on the forest. The recommended strategy is to start slow, allowing for a demonstration period to introduce, test and evaluate operations, before growing the service based on successful experiences and lessons learned. The intent is to leverage existing parking infrastructure to extent possible, and avoid irrevocable commitments until such time it is determined what physical changes are warranted. To the extent that major parking area expansion and/or other are deemed to be needed as a result of the demonstration phase, the LRMP revision can reflect this along with a more definitive vision and role for alternative transportation on the forest. Finally, the development of an alternative transportation system at El Yunque will allow for enhanced visitor experiences above and beyond simply mitigating PR-191 traffic and parking congestion.

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