CAGUAS
CENTRO Y CORAZÓN DE PUERTO RICO

MOVILIDAD
CIUDADANA

DEVELOPMENT OF CAGUAS' TRANSPORTATION SYSTEM SERVICE PLAN AND FEASIBILITY STUDY FOR IMPLEMENTATION OF ADDITIONAL ROUTES

FINAL PLAN
NOVEMBER 2024

PRESENTED TO: AUTONOMOUS MUNICIPALITY OF CAGUAS

PRESENTED BY: WASHINGTON FEDERAL CONSULTING GROUP, LLC

WFCG
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A copy of the final draft plan, as adopted, is on file at Office of Citizen Mobility of the Autonomous Municipality of Caguas.

Editorial changes for consistency and formatting have been made in this document.

TABLE OF CONTENTS

TABLE OF CONTENTS

1 INTRODUCTION

1.1. PLAN PURPOSE

The Autonomous Municipality of Caguas' Development of Caguas' Transportation System Service Plan and Feasibility Study for Implementation of Additional Routes ("Plan") is envisioned to improve the mobility of its residents and visitors in order to:

- **Optimize citizen mobility;**
- **Support and incentivize the local economy;**
- **Support emergency preparedness;**
- **Discourage sprawl;**
- **Improve public health;**
- **Reduce transportation related greenhouse gas emissions; and**
- **Promote energy conservation.**

The Development of Caguas' Transportation System Service Plan and Feasibility Study for Implementation of Additional Routes articulates a vision for the future of public transportation, created with input from the citizens of Caguas. This Plan sets the stage for a future where public transportation is an essential piece of the Municipality's overall transportation system, while improving the lives of its citizens. It promotes service improvement throughout the Municipality and is responsive to the different needs of communities and populations. Important considerations are services that provide travel choices and those that respond to the needs of populations for whom public transportation provides essential mobility. The System Service Plan and Feasibility Study promotes accommodating diverse people and diverse needs to allow all to use public transportation services.

1.2. PLAN DEVELOPMENT

The Plan was developed from April 2024 through October 2024. Developing the Collective Transportation Plan relied on input from Municipality's officials, "Públicos" operators, and citizens.

Prior to Plan development, review of literature, other plans, available public transportation data, and public transportation performance measures were reviewed to gather information not only about the Municipal context, but for the region. Field visits and observational studies were employed to assess the existing transportation system. Meetings with Municipal Staff and "Públicos" operators were carried out to discuss policies and strategies that would assist in the development of the Plan.

Figure 1. Scope of Work.

1.3. AUTONOMOUS MUNICIPALITY OF CAGUAS' BRIEF CONTEXT

The Autonomous Municipality of Caguas was founded in January 1775 and granted its city rights in 1894. Caguas is approximately 59.07 square miles in size and located in the central region of Puerto Rico. Caguas is east of Aguas Buenas and Cidra, north of Cayey, south of San Juan, and west of Gurabo and Trujillo Alto. It also shares borders with Guayama and Patillas via a five-point border at the summit of Cerro La Santa, with Cayey and San Lorenzo. Caguas is located in one of the largest valleys of Puerto Rico. This valley is fed mainly by the Grande de Loíza Rivera, as well as the Turabo River, Cagüitas River, Cañaboncito River, Bairoa River, and Cañas River. Caguas spans over 11 wards: Caguas Barrio-Pueblo, Bairoa, Beatriz, Borinquen, Cañabón, Cañaboncito, Río Cañas, San Antonio, San Salvador, Tomás de Castro, and Turabo.

In the past, Caguas was a significant producer of sugarcane, yet through industrial development, the sugar cane industry disappeared. The city grew considerably during the 1970s, thus becoming an exurb of San Juan to the north due to its location. The region has since become an important commercial and service area, as well as a residential hub.

Caguas, shown in Figure 2, landmarks and attractions include 11 shopping centers and numerous cultural activities in the downtown area that attract tourists and visitors all year round. Additionally, sports activities are a key attractor towards Caguas. Known as the "Sports Capital" and "City of Champions", Caguas hosts Sports Complex Ángel O. Berríos Díaz to provide its citizens with a variety of recreation and sports services, as well as promote a sport culture, and support the great athletes of Caguas. Caguas is home to world renowned teams and athletes including baseball team "Los Criollos de Caguas", female volleyball team "Criollas de Caguas", male volleyball team "Los Criollos", basketball team "Criollos de Caguas".

Figure 2. Municipality of Caguas Area Map.

2 PLANNING PHASE

2.1 PLANNING FRAMEWORK

The Development of Caguas' Transportation System Service Plan and Feasibility Study for Implementation of Additional Routes is the required municipal transportation system plan, together with its mode and topic plans. The Plan provides policy direction and guides transportation activities throughout Caguas. Public and stakeholder participation, required at all levels of planning, enable the Municipality to shape plans and investments to reflect the needs and concerns of the Caguas' communities. The Plan supports decision making by the Federal, State, and Local agencies as well as public transportation providers. For this reason, it will be used by all these agencies as they develop local policies, plans, and investment programs. Other public transportation stakeholders and all citizens of Caguas can reference this Plan to understand the agreed vision and priorities for public transportation.

The Autonomous Municipality of Caguas has grown over the past few decades. The central urban core developments have shifted into sprawled and spot development patterns, commonly known as "parcelas". "Parcelas" are parcels of land owned by the government and made available to citizens for settling in the area. Parcels were distributed at random throughout the Municipality to combat overcrowding in the urban centers. The lack of defined growth management and site planning strategies resulted in intensive rural development. As a result, rural communities became distanced from services, jobs, educational opportunities, and activities provided in the urban center.

As growth and development in the region continue, recurrent automobile traffic congestion compromises the quality of life for the citizens and visitors of Caguas. As consequence, there is an increased need to evaluate existing conditions and better coordinate land use and the System Service Plan and Feasibility Study to address local mobility issues.

This Plan and Study will focus on transportation alignment options and passenger transport technology within the rural, urbanized, and adjacent areas of the Barrio-Pueblo and other rural settlements of Caguas.

BARRIO-PUEBLO

The Barrio-Pueblo, or Caguas Downtown Center, is the urban center of the Municipality, considered one of the most populated wards in the Municipality. Barrio-Pueblo is approximately 2.67 square miles in size and is considered a mixed-use area due to the combination of residential, commercial, and municipal activities in the area.

The urban center in Barrio-Pueblo is characterized by paved streets, fountains, benches, a clock tower, gazebos, Catedral Dulce Nombre de Jesús, and the city hall complex. Given the density of the infrastructure and population, the urbanized study area is more compact in nature than the Municipality as a whole. A mixed-use public plaza, Plaza de Recreo Santiago R. Palmer, consisting of primarily commercial and service infrastructures, is the urban center's principal attraction for retail, recreation, services, jobs, education, and business.

RURAL SETTLEMENTS

Caguas contains rural settlements, scattered through, mainly peripheral wards, such as: Tomás de Castro, Borinquen, San Salvador, Beatriz, Cañaboncito, Cañabón, Río Cañas, and San Antonio.

DEVELOPMENT OF CAGUAS' TRANSPORTATION SYSTEM SERVICE PLAN AND FEASIBILITY STUDY FOR IMPLEMENTATION OF ADDITIONAL ROUTES

VISION

Public transportation will become an integral and interconnected component of Caguas' transportation system which will make Caguas' diverse wards and communities work as whole. Caguas' Transportation System will be a convenient, affordable, and efficient system which will help further the Municipality's quality of life and economic vitality and contribute to the health and safety of all residents, providing them livable and accessible mobility options on a daily basis.

2.1.1. TRANSPORTATION PLANS

2.1.1.1. 2045 LONG RANGE MULTIMODAL TRANSPORTATION PLAN

In 2018, Puerto Rico adopted its 2045 Long Range Multimodal Transportation Plan (LRMTP). The LRMTP is the principal guide for investing in the Island's transportation infrastructure over the next 25 years. In this Plan are contained the goals and objectives for Puerto Rico's transportation infrastructure.

2045 Long Range Multimodal Transportation Plan Vision

"The Puerto Rico multimodal transportation system will offer safe, efficient, and effective accessibility and mobility for people and goods, focusing on infrastructure resilience, promoting livable and accessible communities and the sustainable socioeconomic development".

Figure 3. Segment Priorization.
Source: Department of Transportation and Public Works & Puerto Rico Highway and Transportation Authority. (2018). 2045 Other Urbanized Areas Long Range Multimodal Transportation Plan

The projects and improvements proposed in the LRTP are framed in four goals, each of which include a series of objectives (See Table 1 below). The goals and objectives presented in this table provide the framework for the recommendations included in the Development of Caguas' Transportation System Service Plan and Feasibility Study for Implementation of Additional Routes.

Table 1. Long Range Transportation Plan Goals

Focus	Goals	Objectives
Efficiency	**Goal A: To Improve Transportation System's Performance**	**A.1 Ease traffic delays and travel time through accurate congestion management programs.** **A.2 Optimize the use of available transportation assets and develop a better investment management structure to balance the efficiency of prior investments.** **A.3 Use available resources to preserve transportation assets in state of good repair.** **A.4 Develop strategies to deal with the cost of managing and operating the Island's transportation systems.** **A.5 Improve transportation system's safety and security and its ability to provide support when emergencies occur.**
Environment	**Goal B: Focus on the Environment's Sustainble Development**	**B.1 To promote transportation infrastructure that preserves balanced ecosystems minimizing adverse impacts to the Island's natural environment by conceding a preponderant weight to rehabilitation and improvement of existing infrastructure alternatives.** **B.2 Reduce greenhouse gas emissions, energy consumption, and carbon footprint emittance; promote "smart growth", livable communities and improve air quality by implementing sustainability strategies and environmental management methodologies.** **B.3 Support integrated transportation and land use planning attempting to maintain consistency with existing and planned land uses.** **B.4 Improve alternative modes of transportation and travel demand strategies by implementing and improving pedestrian access, bikes lanes, public transportation plan, recharge ports for electric vehicles, among other environmentally sustainable alternatives, that reduce motorized vehicles dependency and enhance alternative modes of transportation.** **B.5 Reduce transportation infrastructure's vulnerability for it to withstand extreme weather events through resilient infrastructure.** **B.6 Improve physical and mental health by promoting and increase active modes through interventions or new project with proper infrastructure.**
Effectiveness	**Goal C: Improve Transportation Mobility and Access for the People and for Goods**	**C.1 Improve connectivity between the Island's fundamental activity Regions, such as, but not limited to employment centers, touristic areas, and dense residential districts.** **C.2 Concentrate efforts in enhancing the connectivity of the Island's available modes of transportation.** **C.3 Facilitate mobility to residents, visitors, and workers in the Island by increasing the availability of travel choices.** **C.4 Invest in areas where users get the most benefit.** **C.5 Facilitate the access of transportation to elderly population, people with disabilities, or economic disadvantaged communities.**
Economy	**Goal D: Reinforce Economic Vitality**	**D.1 Facilitate the efficient movement of freight, business, and tourism activities to achieve economic competitiveness.** **D.2 Encourage potential public-private collaborations.** **D.3 Focus in providing commercial connectivity throughout the Island.**

Table 1. Long Range Transportation Plan Goals.

2.1.1.2. 2050 SAN JUAN TRANSPORTATION MANAGEMENT AREA MULTIMODAL LONG RANGE TRANSPORTATION PLAN

The San Juan Transportation Management Area (San Juan TMA) Multimodal Long Range Transportation Plan accounts for approximately 33% of Puerto Rico's total land area. Its residents represent 60% of the Island total population and 65% of employment. The San Juan TMA is bounded to the East by the East Transportation Planning Region, to the West by the North Transportation Planning Region, and to the South by the South Transportation Planning Region. A total of thirty-five (35) municipalities make part of San Juan TMA, among which is Caguas.

Figure 4. South Transportation Planning Region Municipalities and Wards Map.
Source: Department of Transportation and Public Works & Puerto Rico Highway and Transportation Authority. (2018). Other Urbanized Areas Long Range Multimodal Transportation Plan.

The primary urbanized areas in the STPR are San Juan, Bayamón, Carolina, and Caguas.

The Development of Caguas' Transportation System Service Plan and Feasibility Study for Implementation of Additional Routes also acknowledges that this planning area has a combination of both natural and artificial (constructed) natural resources that have been evaluated in light of their attributes and potential for the formulation of transportation improvements that will promote its economic development and conservation.

2.1.1.3. COMPREHENSIVE BICYCLE AND PEDESTRIAN PLAN FOR PUERTO RICO

In 2018, Puerto Rico also adopted the Comprehensive Bicycle and Pedestrian Plan. The Comprehensive Bicycle and Pedestrian Plan was developed as the policy document to guide state and local efforts to improve access and mobility conditions and develop new pedestrian and cyclist facilities to improve the quality of life of all Puerto Rico citizens.

Comprehensive Bicycle and Pedestrian Plan 2018 Vision

"The vision is to make bicycling and walking safe, accessible and integrated transportation choices for residents and visitors of Puerto Rico".

This Plan identified that Caguas is one of the cities most known for walking in the San Juan TMA region. Additionally, Paseo Honor al Río in the Municipality is the most used facility for cycling. The analysis of existing conditions has established Caguas as one of the municipalities with the most cycling potential index. Nonetheless, a safety analysis, which considers the signage installation to warn drivers about the presence of cyclists in these roads, is recommended.

Figure 5. Comprehensive Bicycle and Pedestrian Region Map. Source: Department of Transportation and Public Works & Puerto Rico Highway and Transportation Authority. (2018). Comprehensive Bike and Pedestrian Plan for Puerto Rico..

2.1.1.4. PUERTO RICO'S COMPLETE STREETS AND DESIGN GUIDELINES

The Complete Streets Plan and Design Guidelines for Puerto Rico was also adopted in 2018. The Puerto Rico's Complete Streets Plan and Design Guidelines was established as guiding document to create safe, comfortable and well-connected streets for moving on foot, by bicycle, public transportation and car, regardless of age, skill or ability of individuals towards an increase of social, health and economic advantages of complete streets along Puerto Rico.

The concept of Complete Streets encompasses many approaches to planning, designing, and operating roadways and rights of way with all users in mind to make the transportation network safer and more efficient. Transportation and Complete Street integration will occur at all stages of planning and project development. Each integration practice will be embedded into the Complete Street framework and support different project phases. The Municipality of Caguas will encourage Complete Streets to serve the needs of transportation system users of all ages and abilities, including but not limited to pedestrians, cyclists, motorists, and public transportation riders. When considering how to integrate transportation and Complete Streets, the Municipality will adopt two approaches. The first is new transportation investments—projects or services that advance Complete Streets and networks through major infrastructure improvements. The second approach is roadway improvement projects in areas with existing transportation—projects that improve general mobility and access to destinations, with a focus on transportation access. The Complete Streets Plan and Design Guidelines for Puerto Rico have no current or future projects in development for Caguas.

2.2. LAND USE PLANS

The Autonomous Municipality of Caguas recognizes that Complete Streets are context-sensitive and require a transportation system design that is supportive of land development patterns and use plans. Public transportation supports land use planning in Caguas' diverse communities. Conversely, land use directly influences public transportation and the types of services that can be effective in the area. Compact communities with mixed land uses and busy corridors tend to support frequent public transportation services, while places with dispersed population and land uses may be harder to serve and have basic access service only. While land use is under the authority of the local and state jurisdictions, partnerships with public transportation providers create mutual benefit: appropriate land use supports public transportation and public transportation supports efficient land use.

Engaging in public transportation planning and development processes helps ensure that new growth and development can adequately serve the local communities. Land use plans should consider the public transportation needs of new developments and involve the public transportation provider as early as possible. This better enables land use patterns that will support public transportation service to be coordinated with the service plans of the provider.

Similarly, service plans by the public transportation provider must reflect both the current and future service needs for the community. Involving the affected land use agencies in public transportation service planning will increase coordination and allow for anticipated changes in service needs.

2.2.2. PUERTO RICO LAND USE PLANS

In 2015, Puerto Rico adopted a comprehensive land use plan that builds on the Autonomous Municipalities Act of 1991, which gave the country's 78 municipalities authority to set their own planning based on the unique needs of each community. The proposed new plan aims to consolidate many different land use categories and open up new possible uses in areas previously zoned as natural resource areas, as well as agricultural lands and residential areas. Land use and public transportation planning must be coordinated, for the benefit of both. The policies and strategies for this goal are intended to promote and support greater coordination between land use and public transportation planning at all levels of government.

The Puerto Rico Planning Board established a new regionalized territorial structure based on Functional Areas, by Resolution Number JP-2014-309, First Extension of August 5, 2015. This new structure, with a dynamic formation, interconnects the Municipality based on its interrelations, mobility, dependencies, complementarity and influences, among other social aspects, economic and industrial characteristics that go beyond only shared geographical characteristics. This dynamic structure allows us to understand and attend to the behavior, as well as the influence that the Municipality generates on specific geographical areas.

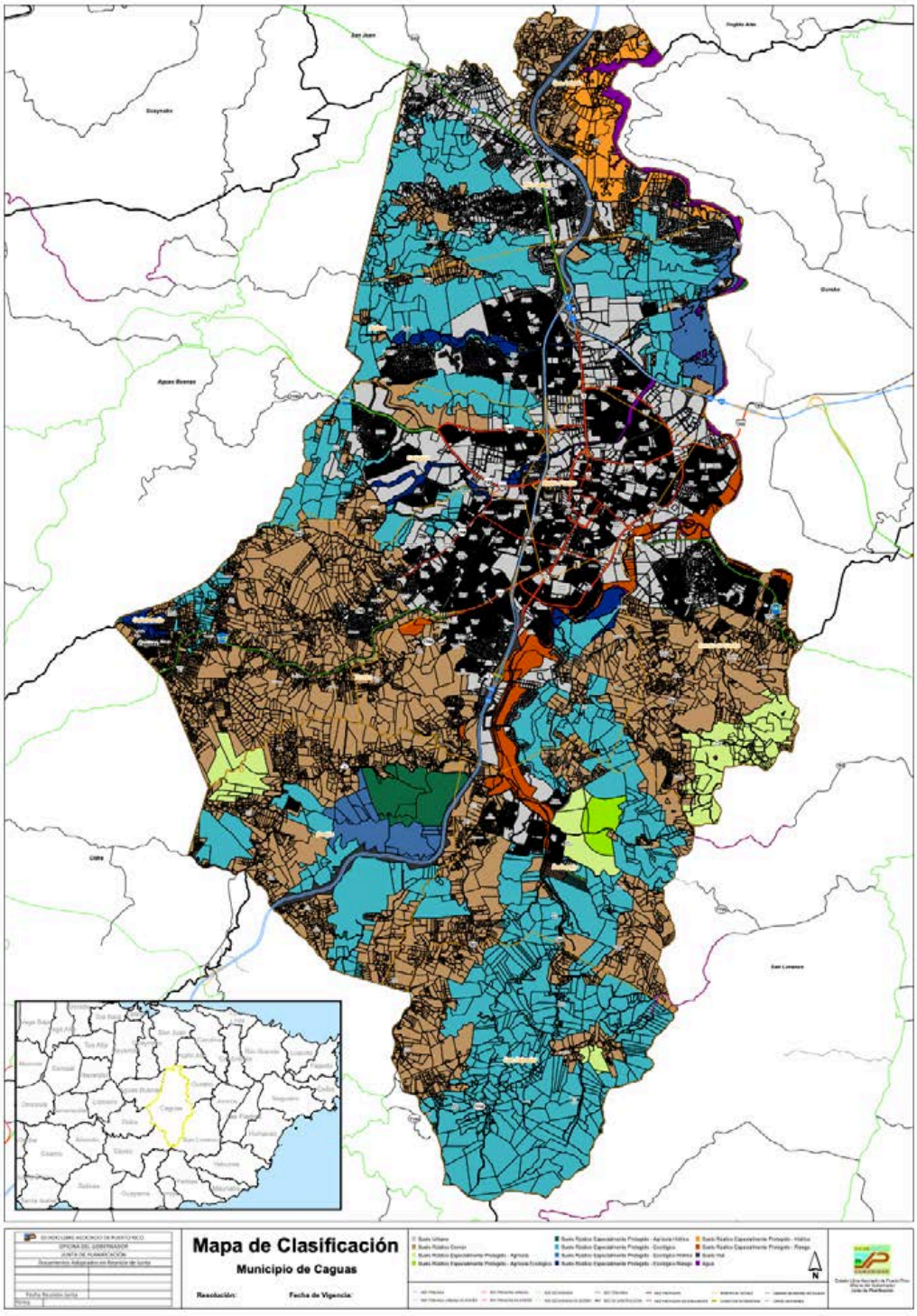


Figure 6. Municipality of Caguas' Land Use Map.

2.2.3. LAND USE ATTRACTORS AND DEVELOPMENT

The Autonomous Municipality of Caguas is primarily residential outside its downtown center, with commercial, office, and governmental activities located mainly within the downtown center. These activities, particularly related to businesses and local restaurants, serve both as attractors and generators for residents, regional visitors, and tourists alike. For this reason, the major employment centers are located in the Barrio-Pueblo, Bairoa, and Turabo ward and major residential areas are located in its neighboring wards.

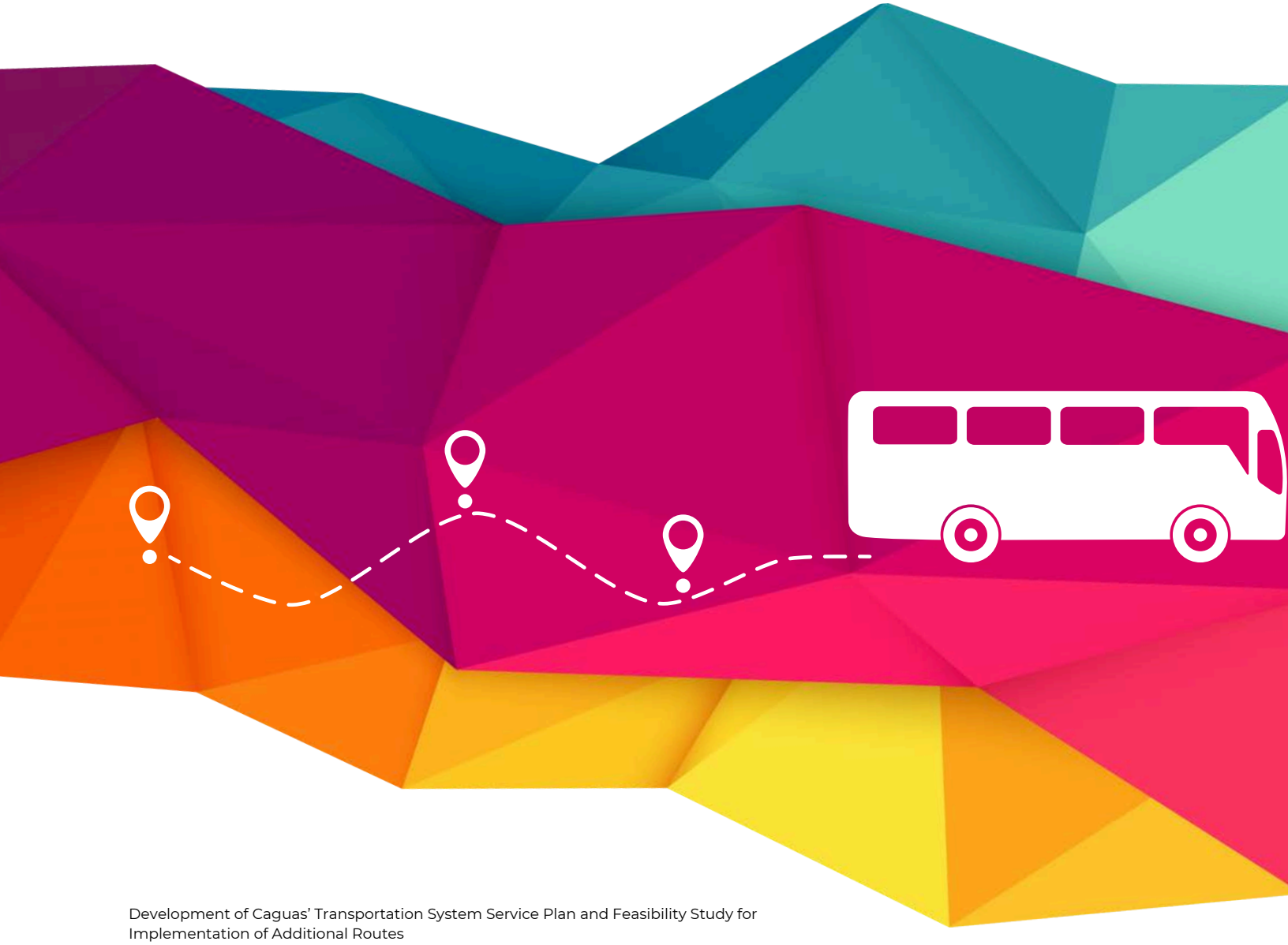
In terms of land use attractors to Caguas, there are several attractors located near the Barrio-Pueblo ward and the vicinity of the Municipality including:

- **Paseo de las Artes**
- **Plaza de Recreo Santiago R. Palmer**
- **Jardín Botánico y Cultural de Caguas William Miranda Marín**
- **Museo del Tabaco Herminio Torres Grillo**
- **Caguas History Museum**
- **Caguas Folk Art Museum**
- **Casa del Trovador Luis Miranda "Pico de Oro"**
- **Casa Rosada Carlos Manuel "Charlie" Rodríguez**
- **Casita Verde Abelardo Díaz Alfaro**
- **Caribbean Criollo Center for Science and Technology (C3TEC)**
- **The Shops @ Caguas**

The Municipality of Caguas is prioritizing investment and development projects for growth through structure redevelopment and infill development. While the economic fiscal crisis in Puerto Rico has slowed down the expected growth, the Autonomous Municipality of Caguas expects that the availability of developable land will create the opportunity for growth in the years to come.

It is of great importance to consider transportation infrastructure needs for new and ongoing development projects. Adequate planning and evaluation of the proposed projects should consider integration of public transportation through dedicated right-of-way for future bus stops, location of access points, development densities, connectivity to the transportation network, pedestrian friendly features, and multimodal design.

Public transportation can facilitate efficient use of land and provide people options to access Caguas's land attractors. Public transportation vehicles help optimize use of roadway capacity. Less parking is needed in areas with robust public transportation systems, freeing up land for higher value uses.



3. ASSESSMENT OF EXISTING CONDITIONS

3.1. DEMOGRAPHICS

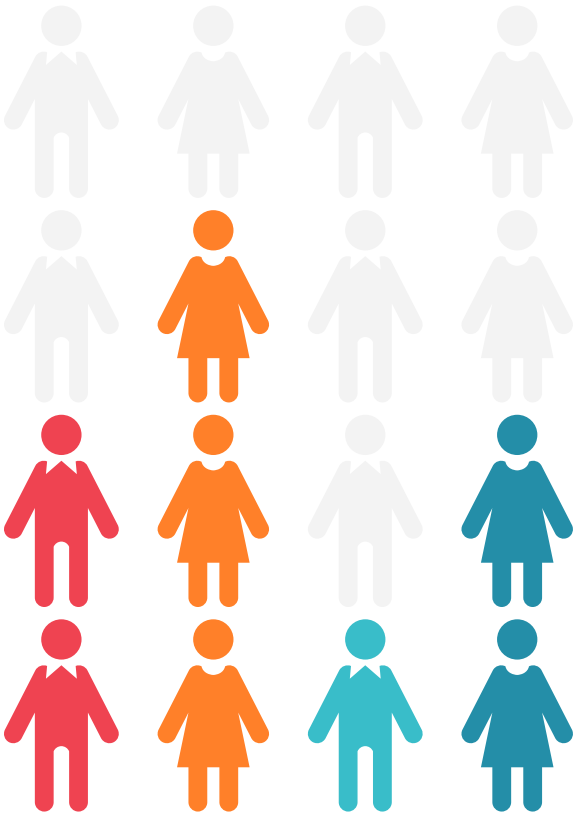
Several major trends contribute to a growing need for public transportation services today and into the future. Population decrease and demographic changes alone significantly increase the need for public transportation in Caguas for years to come. Following are some of these trends:

CAGUAS' POPULATION IS DECREASING.

Over the past decade, Caguas's population decreased by -11% percent. This decrease is expected to continue and accelerate. Improving public transportation is key to reversing Caguas' population loss.

-11%

Population Loss



22.7% 65 and Older and 15.8% Millenials

DEMOGRAPHICS ARE SHIFTING AND HABITS ARE CHANGING.

The Municipality's population is aging, 22.7% percent of citizens are now 65 and older, and that percentage is projected to increase over time. Driving rates drop as people age as changing reflexes and vision can make it less safe and comfortable to drive, especially at night. At the other end of the spectrum, Millennials now represent 15.8% percent of all citizens. This generation is the first in decades to drive less, obtain driver's licenses in lower numbers, and travel more multimodally.

BUDGETS ARE CONSTRAINED.

Low-income citizens use public transportation more than the general population. In Caguas, the percentage of citizens below the poverty rate increased from 37.7% in 2017 to 39.2% in 2023. However, the reported poverty rate in Caguas is almost four times greater than the national average of 11.4% for the total U.S. population, thus justifying the need for public transportation improvements.

39.2% Below Poverty Level

3.1.1. POPULATION

Public transportation in Caguas encompasses a diverse set of services and providers, including fixed route bus service, demand response service, and intercity transportation services. Services respond to the needs of individual communities, considering unique constraints and characteristics of the population. The Plan intends to better understand the characteristics of the current and future population as their physical needs and economic activities define the transportation needs of the Municipality.

Socio-economic data used for this study was obtained from the 2020 U.S. Census Bureau. When available 2023 American Community Survey ("ACS") Data was reported for comparison purposes only. For consistency throughout the analysis, all conclusions were based on officially approved 2020 Census data.

According to the 2020 U.S. Census Data Caguas reported 127,244 citizens within the Municipality. The Municipality's disabled population represents 17.7% and the non-active population represents 51.4% of the total citizens. These sectors of the population represent a priority in the provision of accessible and reliable transportation services in Caguas.

Table 2. 2010-2020 Population Comparison

Wards	2010 Population	2020 Population	Population Change	Percent Change
Caguas Barrio-Pueblo	22,406	24,124	-1,718	7.7
Bairoa	19,258	18,197	1,061	-5.5
Beatriz	4,353	3,436	917	-21.1
Borinquen	7,953	7,251	702	-8.8
Cañabón	11,310	19,020	-7,710	68.2
Cañaboncito	27,464	11,841	15,623	-56.9
Río Cañas	9,683	8,030	1,653	-17.1
San Antonio	2,224	2,030	194	-8.7
San Salvador	3,089	2,523	566	-18.3
Tomás de Castro	19,414	17,755	1,659	-8.5
Turabo	15,739	13,307	2,702	-17.2
TOTAL	142,893	127,244	-15,649	-11.0

Table 2. Population Comparison U.S. Census Bureau 2010 to 2020 Data.

As per the comparison of Caguas' wards population for 2010 and 2020 U.S. Census Data, there was a decrease in population of -11% or -15,649. According to the population projections of the Puerto Rico Planning Board ("PRPB") this trend will continue. Caguas, has a total of 47,849 non-active persons (28,784 aged 65 or over and 19,065 between 0 and 18 years) and 79,395 active persons (between the ages of 18 to 64 years), reflect a dependency ratio of 60%, (6 out of 10 is dependent). It is necessary to take into consideration that having a high or growing population between the ages of 15 to 64 is contributing to further increasing the population aged 65 and over, which will require increased services and special needs.

The Caguas Barrio-Pueblo Ward is physically more compact than the rest of Municipality of Caguas, primarily resulting from the urban development pattern associated with the central plaza. As referenced in Table 3, the urbanized study area has a population size of approximately 24,124 residents. Its geographic size is approximately 2.67 square miles. Based on the population and area, the urbanized study area has a population density of approximately 9,035 residents per square mile, which is approximately four times denser than the Municipality as a whole (2,154 residents per square mile).

Table 3. Population Density

Wards	Land Area (sq. miles)	2020 Population	Population Density (people per sq. mile)
Caguas Barrio-Pueblo	2.67	24,124	9,035
Bairoa	7.67	18,197	2,372
Beatriz	6.14	3,436	560
Borinquen	6.27	7,251	1,156
Cañabón	3.67	19,020	5,183
Cañaboncito	7.61	11,841	1,556
Río Cañas	5.33	8,030	1,507
San Antonio	1.84	2,030	1,103
San Salvador	6.61	2,523	382
Tomás de Castro	5.76	17,755	3,082
Turabo	5.49	13,307	2,375
TOTAL	59.07	127,244	2,154

Table 3. Population Density.

These population changes are the result of dynamic-migratory, biological, local and global economic crises that in turn arise as an effect of economic, political and social patterns. However, in recent years the phenomenon of migration to the United States has again been observed, due to the economic and social crisis that the country is experiencing many families and individuals who migrate in search of improving their economic and social situation. Additionally, natural threats including: Hurricanes Irma and María in 2017, a series of earthquakes on 2020, and the COVID-19 pandemic, accelerated the population loss pattern.

3.1.2. EMPLOYMENT

The Municipality of Caguas employs over 35,943 individuals, according to the 2020 U.S. Census. The biggest generator of jobs in Caguas is the Sales & Related Occupations with 7.8%, followed by Office and Administrative Support Occupations at 13.8%m and Education, Instruction & Library Occupations with 7.8%. On the other hand, 6.23% of the jobs generated in Caguas are related to the Business & Financial Operations Occupations sector. Management Occupations represent 5,43% of jobs, while 4.55% of total jobs are associated with Health Diagnosing, Treating Practitioners, & Other Technical Occupations.

The labor force in Caguas is comprised of the population ages 16 and over actively working or pursuing work. The labor force in Caguas has decreased by 3.9% from 2010 to 2020.

The unemployed population of Caguas is comprised of the population that is not employed but is, however, available to work or were temporarily laid off and expected to return to the workplace. The unemployment rate in Caguas stands at 4.5%., slightly higher than the national average of 3.7%.

3.1.3. INCOME

It is estimated that the median household income is $29,279, which is significantly less than the national median income of $67,521, thus increasing the need for affordable and accessible public transportation. (Figure 7).

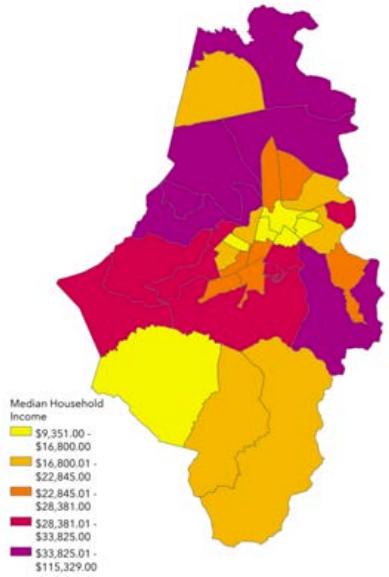


Figure 7. Median Household Income. Source: Data USA. (2021). Caguas Municipio, PR.

Conversely, it is estimated that 39.2% of individuals in Caguas are below the poverty level (Figure 8).

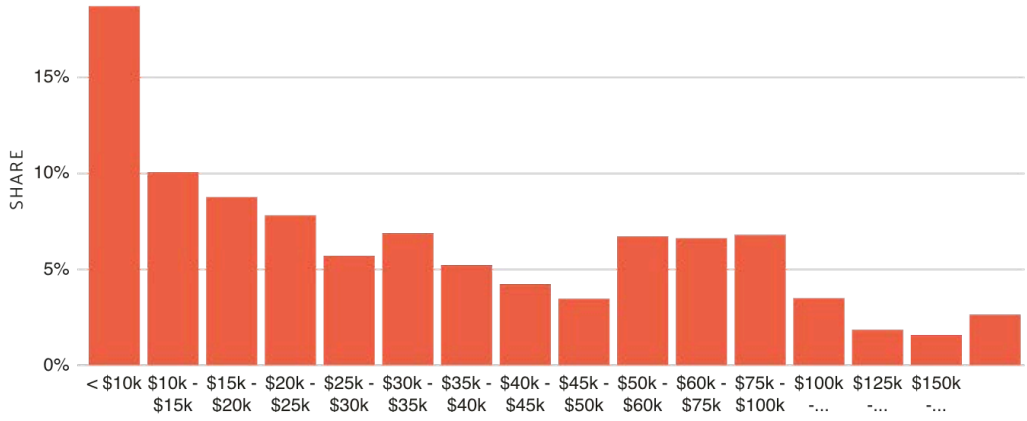


Figure 8. Caguas Median Household Income for 2021. Source: Data USA. (2021). Caguas Municipio, PR.

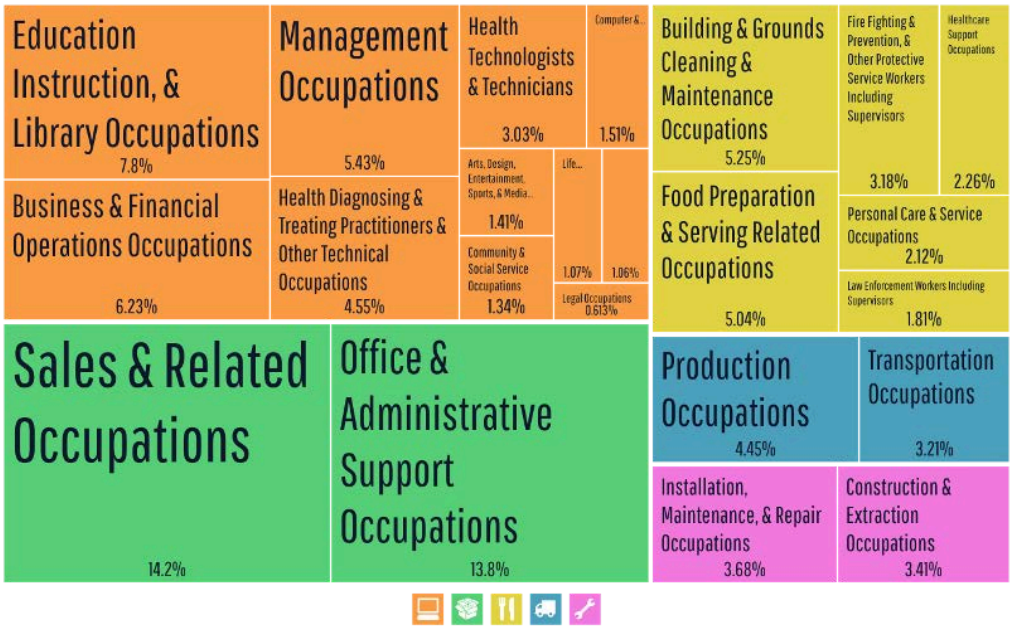


Figure 9. Most Common Industries for 2021. Source: Data USA. (2021). Caguas Municipio, PR.

MOST COMMON INDUSTRIES

- Sales & Related (14.2%)
- Office & Administrative Support (13.8%)
- Education, Instruction, & Library (7.8%)

HIGHEST PAYING INDUSTRIES

- Computer & Mathematical ($83,341)
- Health Diagnosing, Treating Practitioners & Other Technical Occupations ($80,495)
- Management ($70,507)

3.1.4. WORK COMMUTE

Using averages, employees in Caguas have a longer commute (Figure 10) time (29.8 minutes) than the normal US worker (26.9 minutes). Conversely, 4.25% of the workforce in Caguas have "super commutes" in excess of 90 minutes. The average age of commuters is 30-34 years old (Figure 11), which is consistent with a productive demographic group that could benefit from public transportation services.

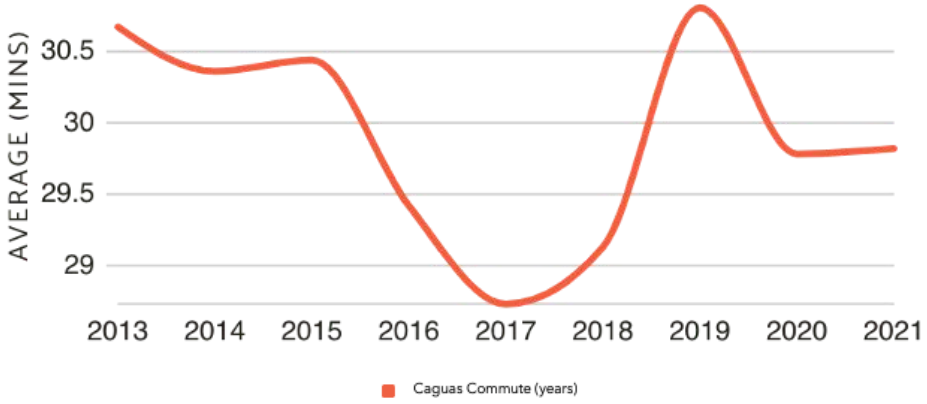


Figure 10. Caguas Commute. Source: Data USA. (2021). Caguas Municipio, PR.

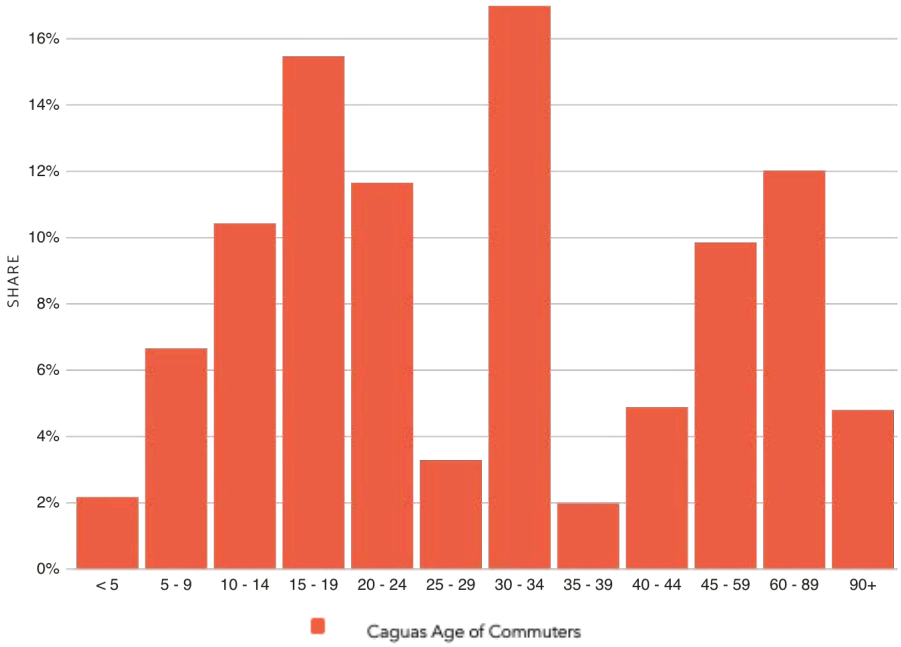


Figure 11. Caguas Age of Commuters. Source: Data USA. (2021). Caguas Municipio, PR.

In 2020, 80.7% of workers in Caguas drove alone to work, followed by those who carpooled to work (8.7%) and those who work from home (3.88%).

The following chart (Figure 12) shows the number of households using each mode of transportation over time, using a logarithmic scale on the y-axis to help better show variations in the smaller means of commuting.

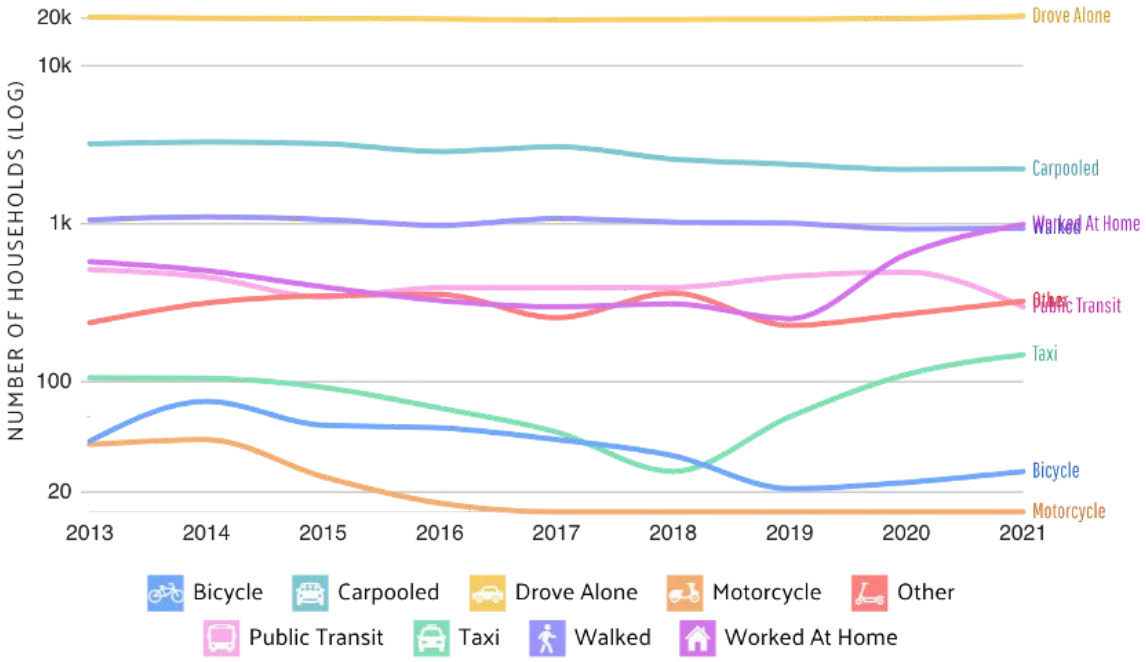


Figure 12. Modes of Transportation in Caguas. Source: Data USA. (2021). Caguas Municipio, PR.

3.1.4. HOUSEHOLD VEHICLE AVAILABILITY

Household Vehicle Availability for this study will be based on existing data and community surveys provided by the U.S. Census Bureau and the ACS 5-year Estimate. Households in Caguas are shown to own, in its largest share, two vehicles per household (Figure 13). The second and third largest groups report owning one and three vehicles within the household, respectively. This data supports the claim that citizens of Caguas rely mostly on their private vehicle as the primary mode of transportation. The following graphs draws a comparison in vehicle availability per household between the Autonomous Municipality of Caguas.

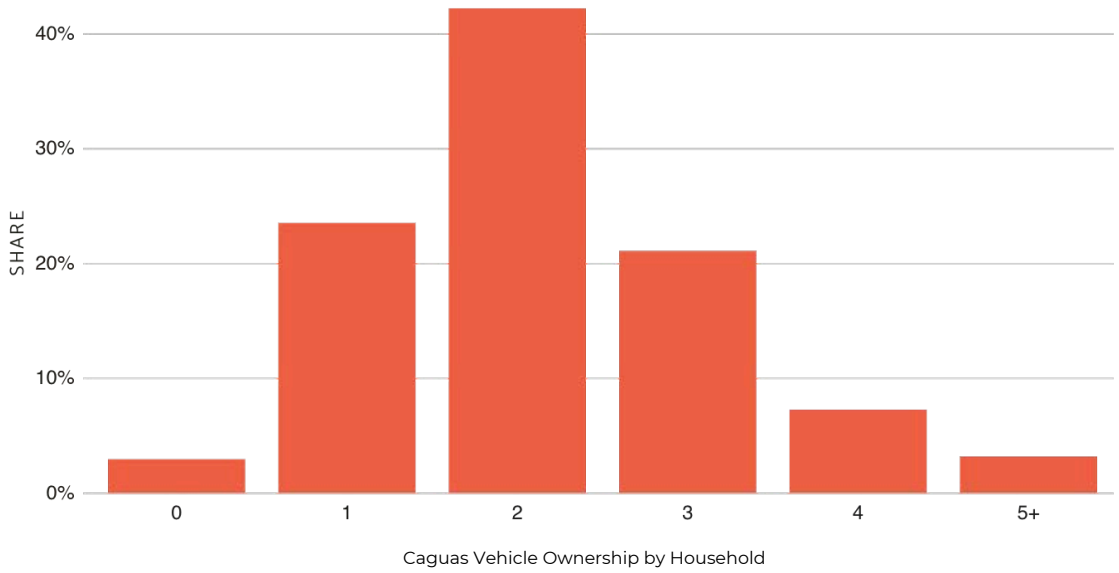


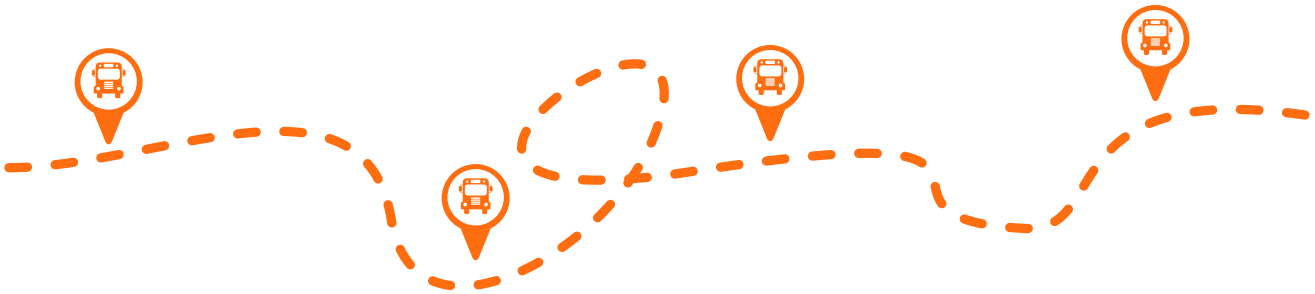
Figure 13. Caguas' Vehicle Ownership by Household. Source: Data USA. (2021). Caguas Municipio, PR.

3.1.5. FUTURE FORECASTS

According to population projections for the years 2025 for the birth rate, death rate, and immigration rate, Caguas will reflect a diminution in all the considered variables. Caguas, shows a reduction in the projections of births and deaths, while the migratory component stabilizes. A declining immigration rate is a positive indicator of the improvement of the Municipality's social and economic situation. Given that less births and deaths are reported, the population's life span increases. A longer life span implicates increased service delivery and needs for a declining population with constant migration. With fewer births and fewer deaths, it places a greater burden on the working population since it will be the principal carrier of the economic and social burden.

Public transportation will become increasingly important as motor vehicle congestion worsens, especially considering limited space and resources to build new roads. In rural areas, population changes will vary by location, with differing implications for public transportation in those areas. Older adults are important public transportation riders, with some preferring public transportation and most depending on it. As people age, their rates of driving lower as they become less comfortable driving or less able to do so. Transitioning to a fixed income also prompts some people to give up personal vehicles. These trends will impact demand and interest in public transportation statewide and require providers to accommodate geographically dispersed riders.

Modern generations are the first in decades to drive less than their parents and obtain driver's licenses in lower numbers. Research shows that Millennials regularly use multiple transportation modes to meet their travel needs, depending on the specific circumstances of various trips. Trends show that Millennials, particularly those who live in urban areas, are less inclined to own personal vehicles and more likely to use public transportation than preceding generations. This will increase the demands on public transportation, as well as offer opportunities for expanded ridership.



3.2. PRIORITY AREAS FOR TRANSPORTATION INVESTMENT

3.2.1. BUSINESS ACTIVITY

The Urban Center maintains its institutional and religious function. In the past years, it has experimented an increase in business activity. The central area of the urban center maintains its business activity, consolidated principally by the Plaza de Recreo Santiago R. Palmer and The Shops @ Caguas shopping mall. With eight shopping malls and plazas, Caguas is a resource that attracts customers from surrounding municipalities and contributes to the regional function of the Municipality.

The Municipality also has three principal industrial areas: Bairoa Industrail Park, Río Cañas Industrial Park, and Angora Industrial Park, which contribute to business and residential activity in Caguas. Figure 16 shows the entirety of the Municipality as an identified Opportunity Zone which incentivizes further economic growth and job creation through all of Caguas.

Investment in road infrastructure has not only had an impact on the shape and section of streets, but also on the development patterns and location of residential areas, jobs, commercial areas, etc., resulting in inadequate land use, with a separation of activities and a spreading of our urban areas, in which it is not safe or convenient to walk and has led to an increasing dependence on the private car. It is therefore becoming increasingly urgent to develop a sustainable collective transportation system which will better connect citizens and residents with the business activity centers of Caguas.

According to the 2020 US Census, in Caguas, 4.4% of workers aged 16 and over work at home and 95.6% work outside their home, of these 0.86% use a means of public transportation, 3.05% go to their workplace on foot and 89.27% of workers use some means of private transportation to get to their jobs (by bicycle 0.25%, 81.20% travel alone by private car and 7.82% shared or car-pool).

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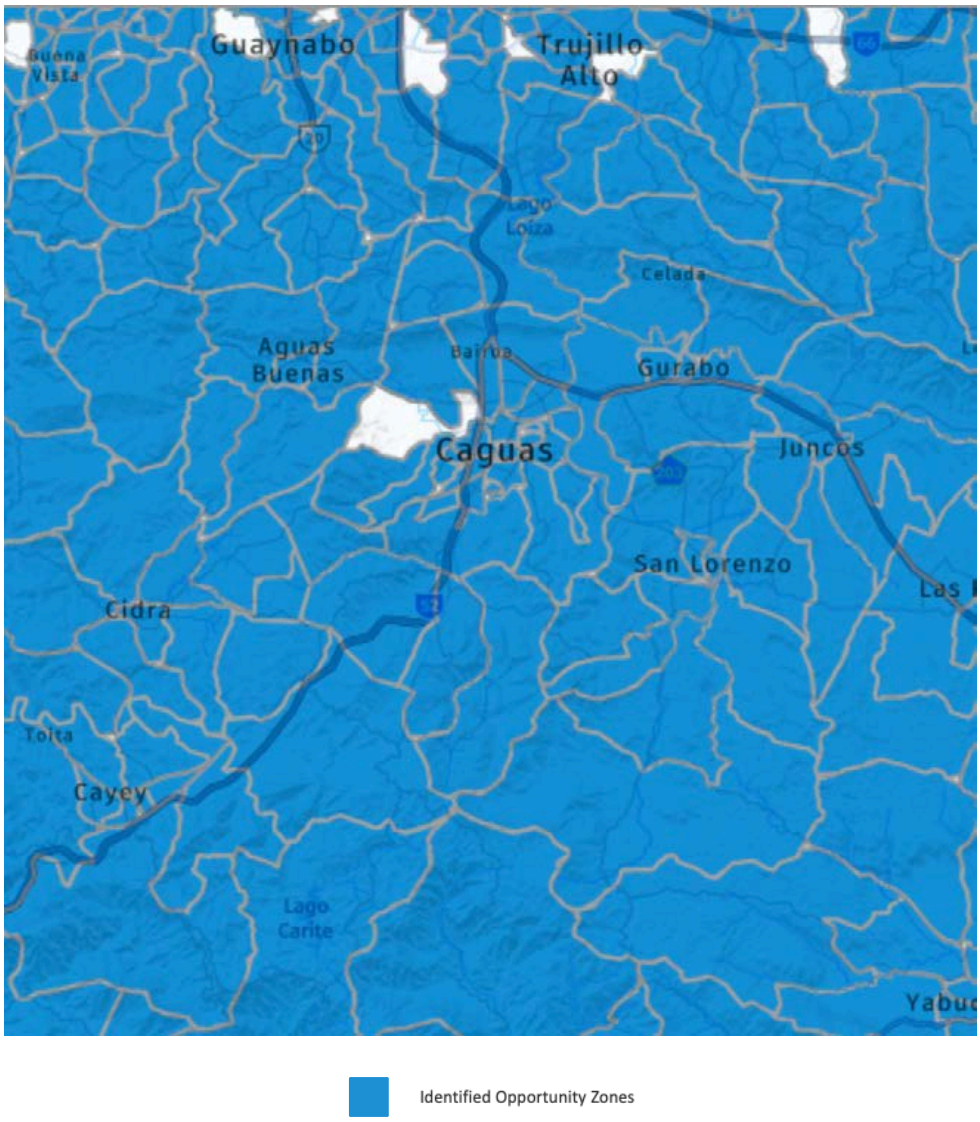


Figure 14. Caguas' Identified Opportunity Zones Map.

3.2.2. RESIDENTIAL ACTIVITY

The population decline in Puerto Rico has been one of the fundamental variables that has impacted the residential activity in Caguas. According to the most recent market study conducted by the Association of Banks "Perspectives of the Housing Market in Puerto Rico 2011-2015", one of the factors that has significantly impacted the residential market has been lower population growth. According to the 2020 Census, Puerto Rico obtained a population decline of 17,954 people (-0.5%) between 2020 and 2021 after seeing a slight increase from 2019 to 2020. This decrease in Puerto Rico's population was largely due to natural decrease (-14,173) and negative net international migration (-3,781).

In the particular case of Caguas, between 2020 and 2021 the population declined from 46,538 to 46,352, a −0.4% decrease, and its median household income declined from $20,845 to $20,657, a −0.4% decrease. According to the population projections of the Puerto Rico Planning Board, this trend will continue.

While the population aged 65 and over has been increasing, the population aged 0-14 is declining and the working population aged 15 to 64 will eventually become people aged 65 and over. Therefore, the population aged 65 and over will continue to increase and require greater accessibility to transportation services and safe housing.

The percent of occupied housing in Caguas and eleven of its neighborhoods (66.7%) is lower than that of Puerto Rico (81.30%).

According to the ACS, the median home value in Caguas of 2018-2022 was $139,000, which is higher than the Puerto Rico median of $125,000.

In Caguas, as in Puerto Rico, there is an evident need of housing for low-income families. The government has since tried to address this need through various programs. There are subsidized housing and affordable housing opportunities in the Municipality, including the Federal Section 8 Program. It is necessary to develop vertical and densified housing, to avoid urban sprawl, which aggravates the growth of the urban footprint and affect the land resource.

The population decrease throughout Puerto Rico has influenced the demand for housing in all municipalities and Caguas is no exception. Other factors that have influenced the demand for housing have been:

1. The **economic crisis** that Puerto Rico and all its municipalities are experiencing, contribute to the fact that many people cannot acquire homes and even lose the one they own.
2. **Median Household Income** in Caguas, as per the 2018-2022 Census, is $29,279, which is below the median household income for Puerto Rico ($24,002) and significantly lower than that of the United States ($80,610).
3. The **lack of public transport and accessibility** to greater services for an aging population, makes this population look for more accessible locations to services, healthcare, commerce, and recreation.

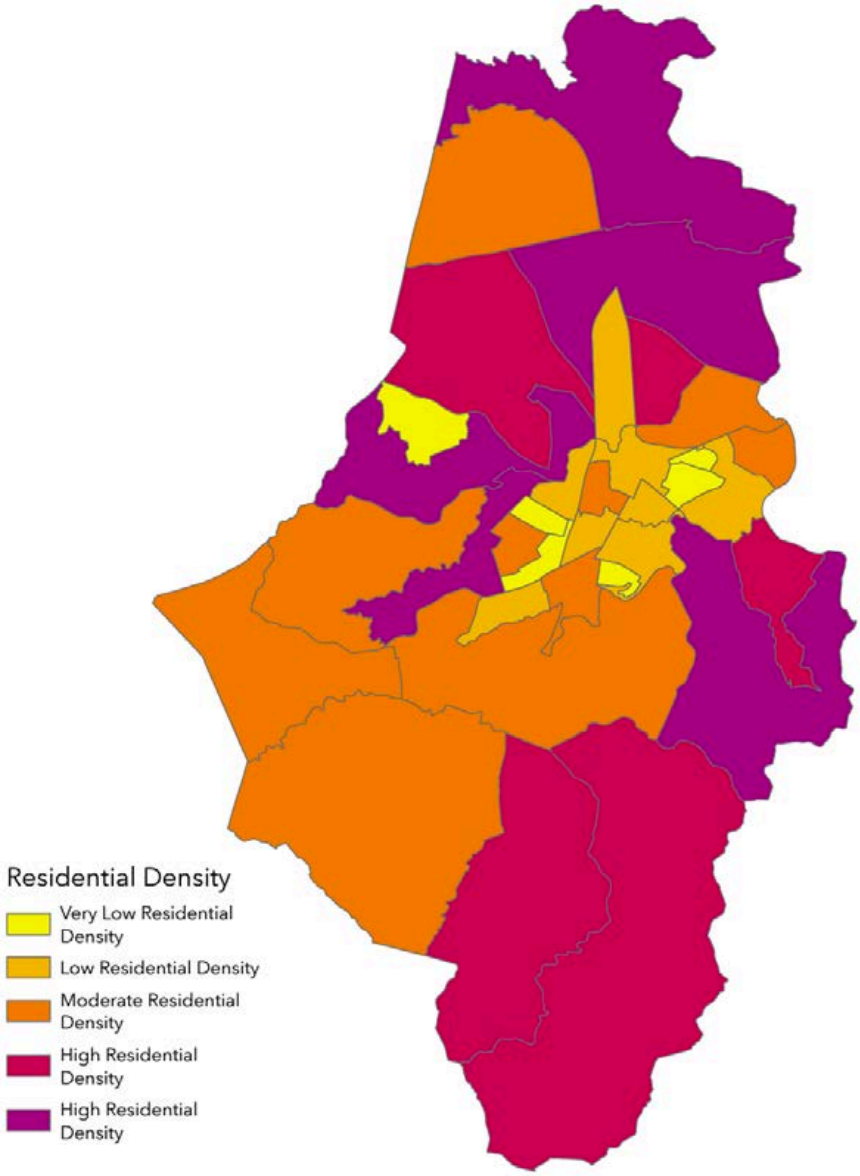


Figure 15. Caguas' Residential Density Map.

3.3. EXISTING TRANSIT INFRASTRUCTURE

3.3.1. INFRASTRUCTURE AND ENDOWMENTS

The description and analysis of the infrastructure systems and land uses of the Municipality of Caguas, are important management components for socio-economic and physical-spatial development and to achieve the goals and objectives in the delineation of the territorial organization. The functionality of them, together with the management organization, are important factors in raising the levels of development and competitiveness in the Municipality.

The construction of the Luis A. Ferré highway from Ponce to San Juan (PR-52) in 1972 meant an increase of visitors and travelers passing through the village. As a result of the accessibility of PR-52, there has been a proliferation of shops and services around or near that route, decentralizing the Urban Center and spreading the urban area of Caguas and surrounding municipalities.

The Municipality of Caguas has primary order road networks PR-52, PR-30, PR-1, PR-183 and secondary road networks PR-172, and PR-34. There are other tertiary roads and municipal roads that serve as a connection between and to the neighborhoods and municipalities that also facilitate communication and accessibility.

3.3.2. ROAD SYSTEM

The road system of the Municipality of Caguas, consists of primary roads of state, regional impact and secondary roads of local impact. The network of regional roads serves to connect the Municipalities surrounding Caguas with its urban area. This regional road communication system benefits the Municipality of Caguas, being the main connecting area of the municipalities to the north that require the regional services provided in San Juan.

One of the main roads is the PR-52 or Luis A. Ferré Highway, which connects the San Juan Metropolitan Area and runs south of the Caguas Urban Center. The PR-1 also connects the southern area of Puerto Rico with the Metropolitan Area. PR-30, is another of the routes of regional importance for the Municipality this connects Caguas with the Municipality of Humacao, while PR-183 connects the Municipality with Cidra. Other internal roads connect PR-172 and PR-34, among others connect the neighborhoods with each other and to other Municipalities.

PR-52

State-stop road, Highway Luis A. Ferré, connects the Metropolitan area of San Juan passing south of the central urban area of Caguas.

PR-30

Known as Expreso Cruz Ortiz Stella, is a main freeway in eastern Puerto Rico which connects the city of Caguas to the Municipality of Humacao.

PR-1

Puerto Rico Highway 1 (PR-1) is a highway in Puerto Rico that connects the Municipality of Ponce to the Municipality of San Juan. Before reaching San Juan, it climbs to make its way to the mountain town of Cayey and then it winds down into the Municipality of Caguas on its final approach to San Juan.

PR-183

Main highway which begins in the downtown/business area of Caguas, near Puerto Rico Highway 1 and ends in Puerto Rico Highway 198 in Las Piedras.

PR-172

Secondary highway that connects Caguas at PR-1 to downtown Cidra and continues its way to its end at Puerto Rico Road 156 in Comerío.

PR-34

Urban road located in Caguas, that extends from Avenida José Garrido (PR-196) in Cañabón Ward to PR-183 in Tomás de Castro barrio, and is part of Turabo and Degetau avenues.

3.3.3. ACCESS TO CAGUAS

NORTH

From San Juan: Luis A. Ferré Highway PR-52 and PR-1.

SOUTH

From Cayey: Luis A. Ferré Highway PR-52 and PR-1.

EAST

From Humacao: Expreso Cruz Ortíz Stella PR-30.

WEST

From Cidra: PR-172 through the PR-1.

AIR

Luis Muñoz Marín International Airport in San Juan, Puerto Rico.

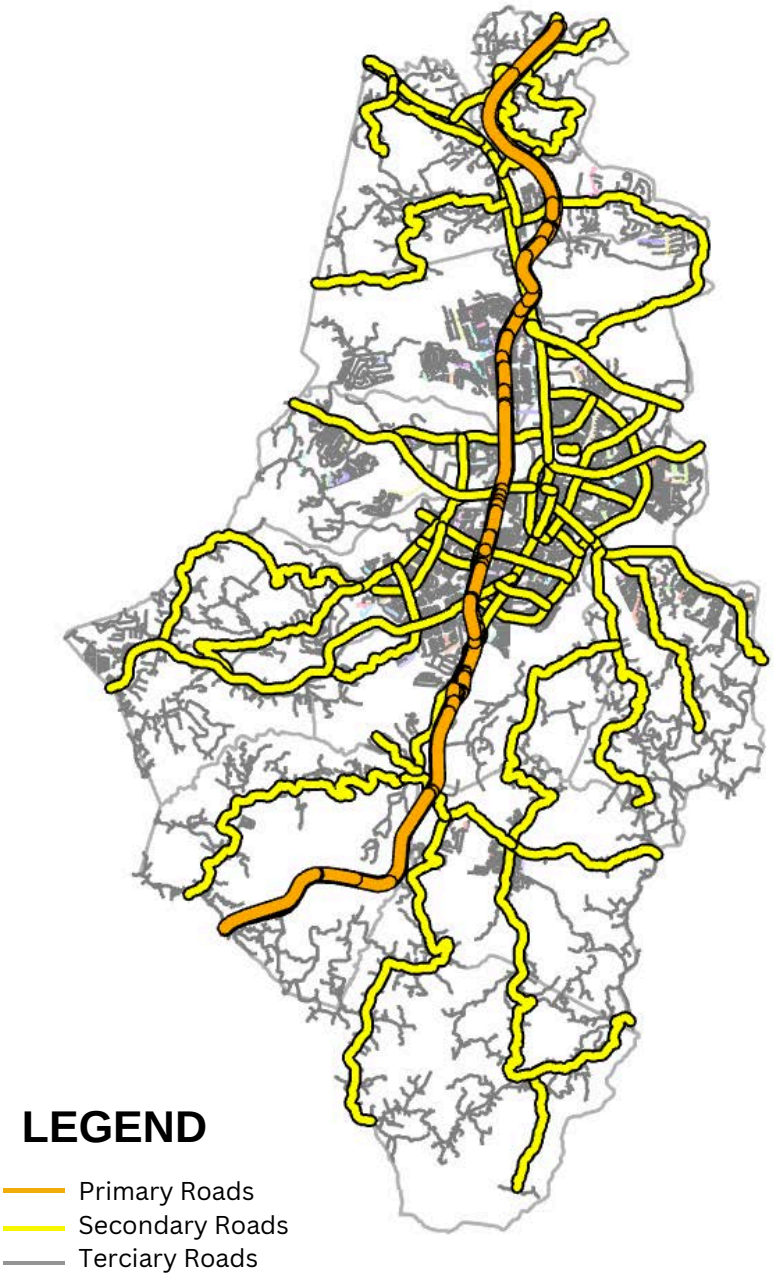


Figure 16. Municipality of Caguas Road System.

3.3.4. COLLECTIVE TRANSPORTATION

The Autonomous Municipality of Caguas established the TransCriollo as a Collective Transportation system from it's Office of Citizen Mobility. The TransCriollo is a free of charge, municipal transportation system, such as the one that owns the Metropolitan Area of San Juan with the Metropolitan Bus Authority, as well as other municipalities that have Trolley service in the urban and peripheral area. Additionally, the Public Vehicle Terminal Francisco “Pancho” Pereira in Caguas, hosts public cars services. The routes includes various wards within the Municipality and an external route to the Municipality of San Juan. The shuttle service hours are from 6:00 am to 6:00 pm, Monday to Friday, and no service on weekends.

Collective transportation is the alternative mean of transport for citizens who, for any reason, have no alternatives for getting from a point of origin to their destination. Substantial change in urban development patterns over the past fifty years has led pedestrians and cyclists to becoming displaced by modern traffic engineering that capacitates large roads exclusively for rapid car movement.

Investment in road infrastructure has not only had an impact on the shape and section of the streets, but on the patterns of development and location of residential areas, work, commercial areas, etc., resulting in inadequate land use, with a separation of activities and a spread of our "urban" areas, in which it is neither safe nor convenient to walk and has led to increased dependence on the private car. It is therefore increasingly urgent to develop a sustainable public transportation system.

Residents of Caguas reflected proportions similar to those of Puerto Rico and San Juan with respect to the means of transportation used to go to work. In 2020, 80.7% of workers in Caguas drove alone to work, followed by those who carpooled to work (8.7%) and those who work from home (3.88%).

3.4. EXISTING ROADWAY PHYSICAL CONDITIONS

While Caguas has roadway physical conditions that can serve the public transportation system, it must address some areas of opportunity for further development of its transportation infrastructure. Pedestrian and Bicycle facilities are an essential component for the success of transportation systems. Sidewalks and safe crossings have been built throughout the Municipality, but some locations still require more amenities such as vegetation shading, lighting, and shelters, which are important for safety and support of greater use of public transportation. Pedestrian facilities should be continuous and compliant with the American with Disabilities Act ("ADA") to improve accessibility of the transportation services for all populations. Likewise, emerging services such as bikeshare and carshare can help improve connections to public transportation. Mobility hubs and shared facilities accommodating multiple modes are two important opportunities for leveraging and improving connections between modes.

Travelers today show increased interest in "shared economy" solutions to meet travel needs that do not require the expense of owning a personal vehicle. As bikeshare and carshare services are becoming more common, there is an opportunity to pair these services with public transportation, helping to create a more interconnected and integrated system.

The streetscape of Caguas may be improved using the roadway design guidelines for Complete Streets. Complete streets are streets designed and operated to enable safe use and support mobility for all users. Those include people of all ages and abilities, regardless of whether they are travelling as drivers, pedestrians, bicyclists, or public transportation riders. The concept of Complete Streets encompasses many approaches to planning, designing, and operating roadways and rights of way with all users in mind to make the transportation network safer and more efficient.

Complete Streets approaches vary based on community context. They may address a wide range of elements, such as sidewalks, bicycle lanes, bus lanes, public transportation stops, crossing opportunities, median islands, accessible pedestrian signals, curb extensions, modified vehicle travel lanes, streetscape, and landscape treatments. Complete Streets reduce motor vehicle-related crashes and pedestrian risk, as well as bicyclist risk when well-designed bicycle-specific infrastructure is included. Walking, bicycling, and micromobility trips are typically short and concentrated within a community. Connections to public transportation services can expand walking, bicycling, and micromobility travel to encompass many trips within the Municipality. Ensuring public transportation stops can be safely accessed by foot and bike, particularly where busy roads must be crossed to reach a bus stop, should be a priority for the Autonomous Municipality of Caguas.

3.5. COMMUNITY SURVEY ANALYSIS

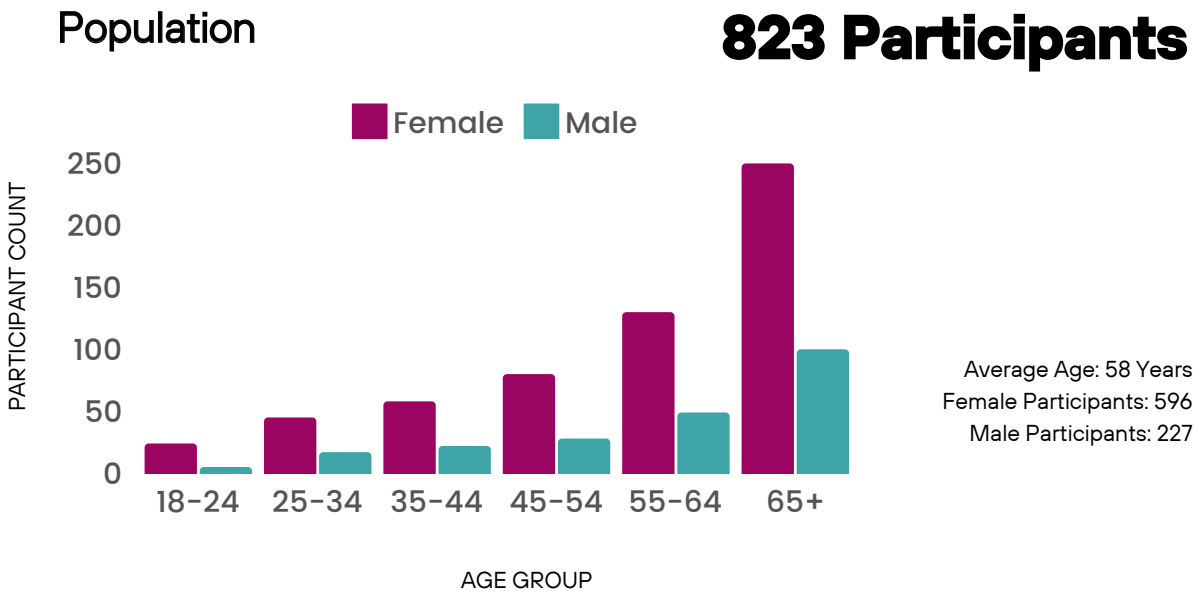
A Community Survey Analysis was carried out to determine the existing travel needs of citizens and levels of satisfaction of users of the existing transportation service system of the Autonomous Municipality of Caguas. The results will serve as basis for route development and capacity determination. Route development aims to deliver consistent and reliable public transportation services so that vehicle frequency and hours of service maximize ridership on the route. Strategic route development using input from the Community Survey Analysis will maximize transportation effectiveness by making location-appropriate choices about whether a route or system is designed to maximize ridership or provide coverage. Additionally, the process will identify and implement strategies for helping public transportation modes and services function as one convenient system for travelers.

The purpose of measuring capacity is not just to provide a measure of system capability to transport passengers but also to provide some insight into the effect of service and physical design on customer service quality. When the demand for a service exceeds its schedule design capacity, service quality deteriorates either due to overcrowding on vehicles or at station platforms or diminished ability of customers to board the next arriving transport vehicle since it is already fully loaded, increased dwell times and hence decrease revenue speeds. The importance of service quality in transportation capacity analysis cannot be overstated. transportation operators should be mindful that the urban transportation marketplace is more competitive. While it might be technically possible to design a service using a loading standard of 7 or 8 passengers per square meter, a number of customers will find that level intolerable and will seek alternate means of travel including walking (in the case of short distance trips), riding with someone else, riding taxis or purchasing a motorcycle or car. Accordingly, such loading standards should be thought of as interim measures until higher capacity at lower crowding can be achieved.

The survey conducted in the field, included in Appendix B for reference, was composed of two major components: Part I. Demographic Survey and Part II. Transportation Survey. The methodology employed in the development of the survey included:

- **Needs Assessment**
  - The Plan should identify and respond to the needs of Caguas's Population. The survey evaluated the existing needs to develop a transportation system that is effective, feasible, and affordable.
- **Sample Selection**
  - A minimum sample size of 450 citizens was established as standard to obtain statistical significance when completing the analysis and projections.
- **Survey Development**
  - In order to gather insight from the identified needs, a survey questionnaire was designed to facilitate the citizen's ability to answer questions related to their experience or opinion of the current public transportation services provided.

- **Survey Conduction**
  - There were 823 completed surveys collected; Figure 19. summarizes the results.



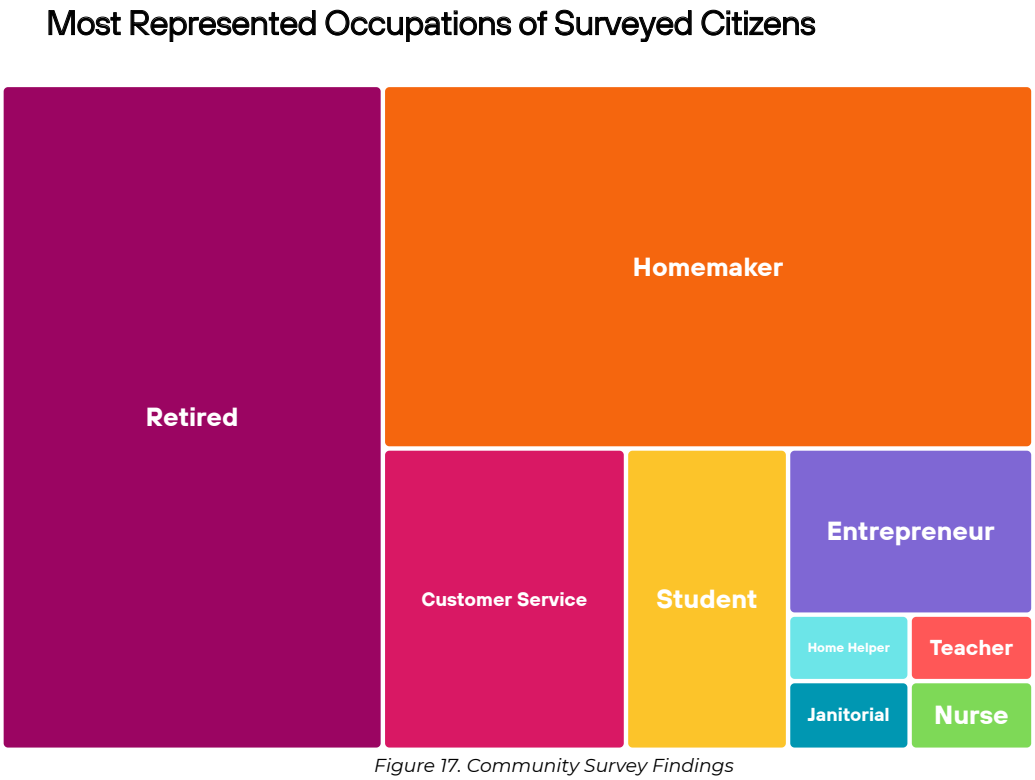
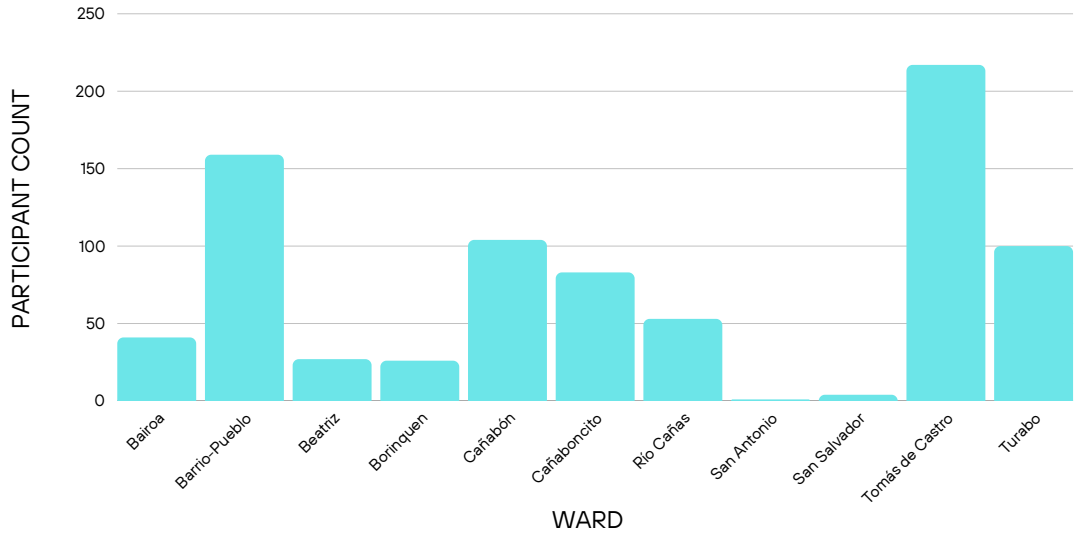


Figure 17. Community Survey Findings

Participation by Ward



Number of Family Members

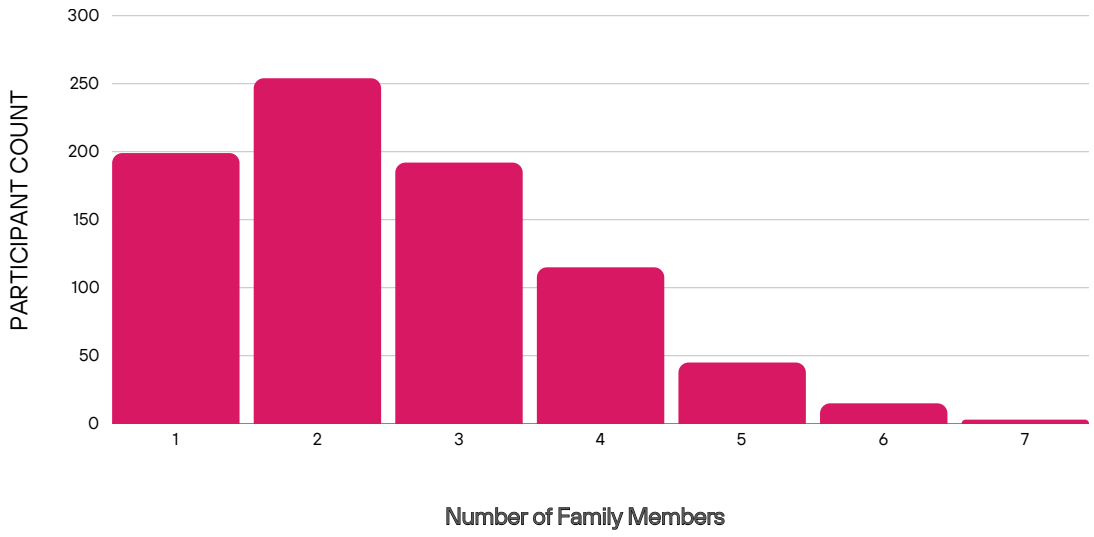
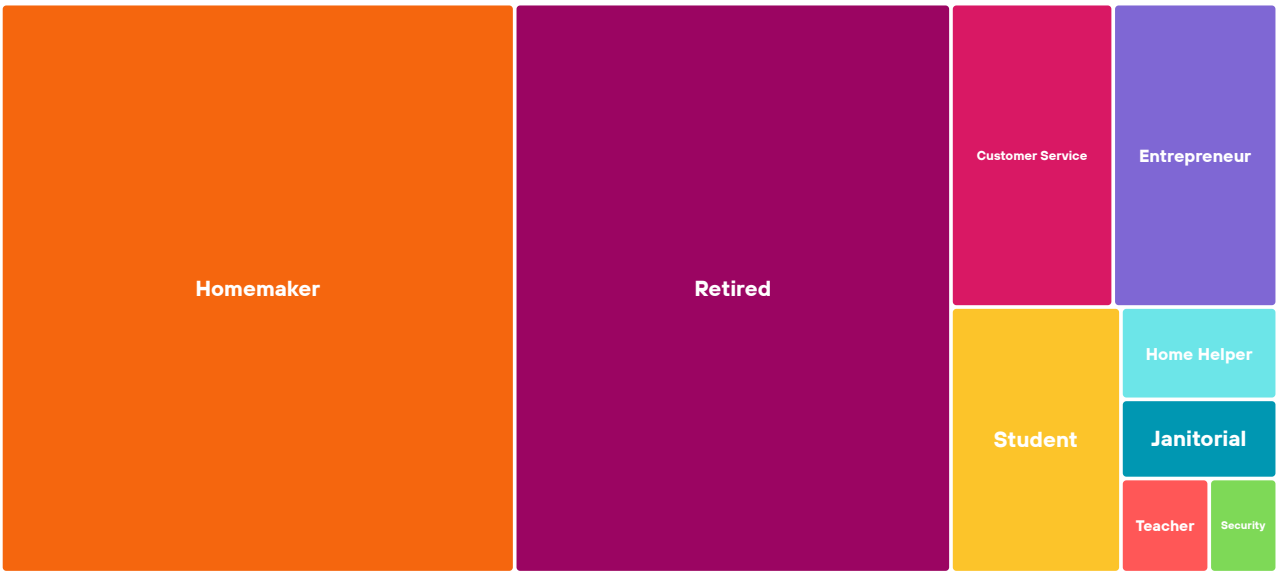


Figure 18. Community Survey Findings

Most Represented Occupations of System Users



Participation by Ward of System Users

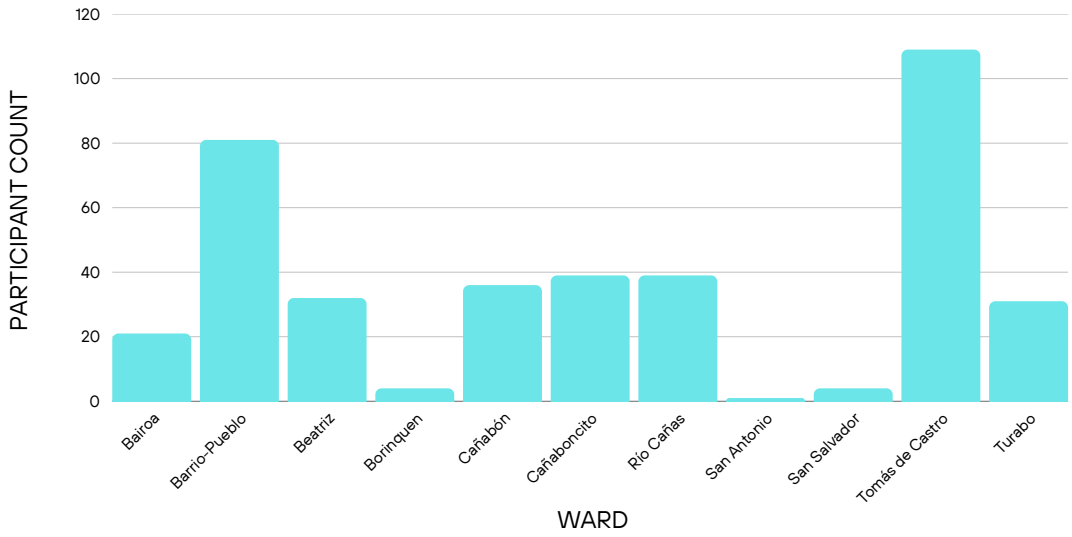
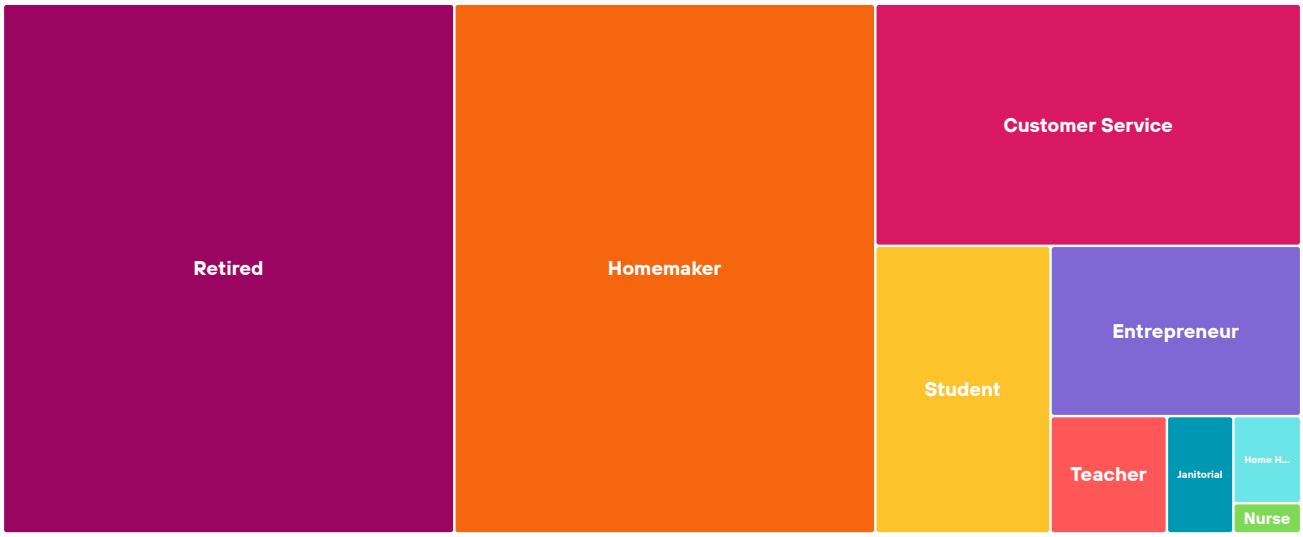


Figure 19. Community Survey Findings

Most Represented Occupations of Non-Users



Participation by Ward of Non-Users

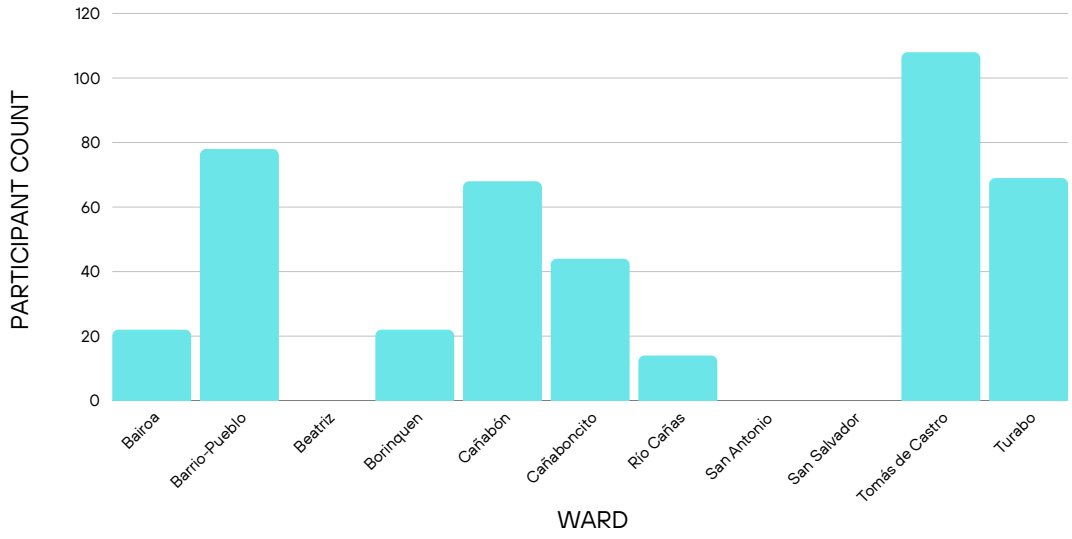


Figure 20. Community Survey Findings

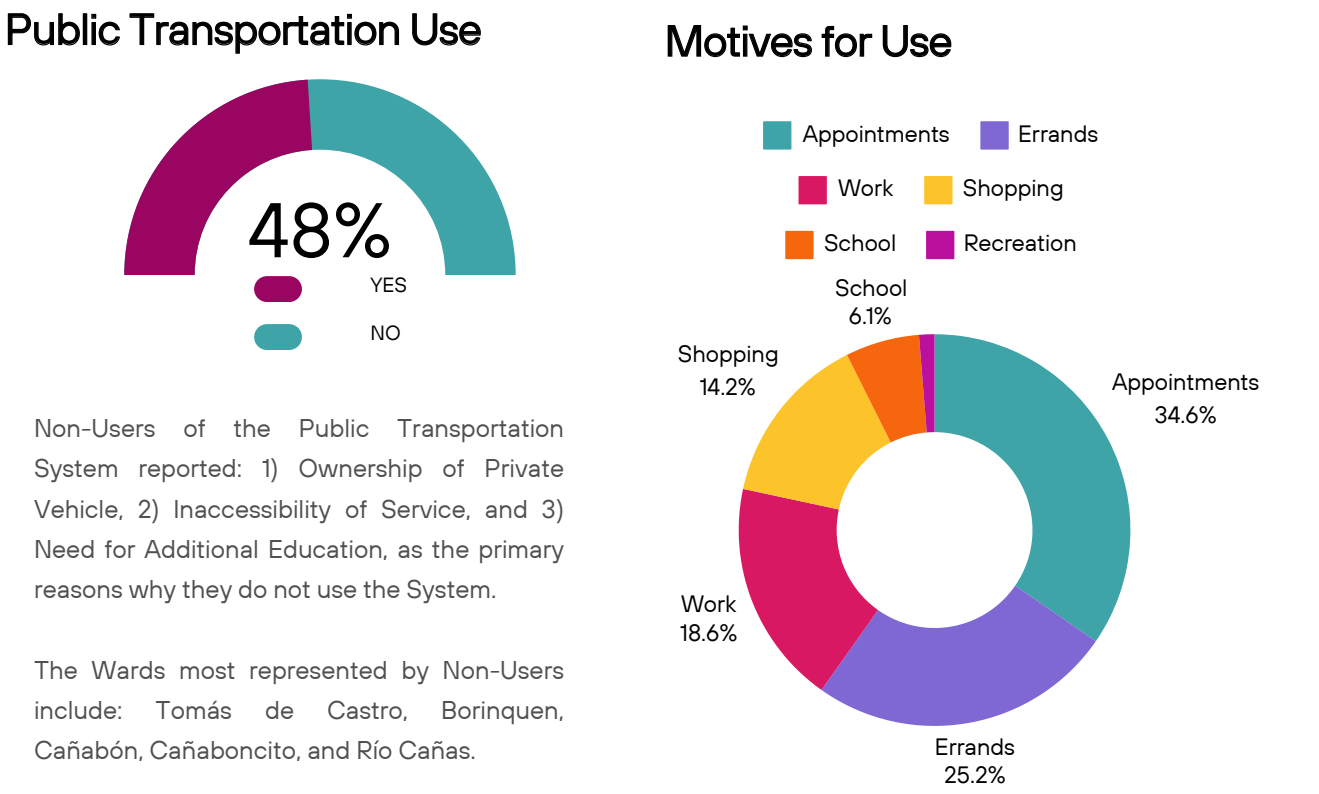
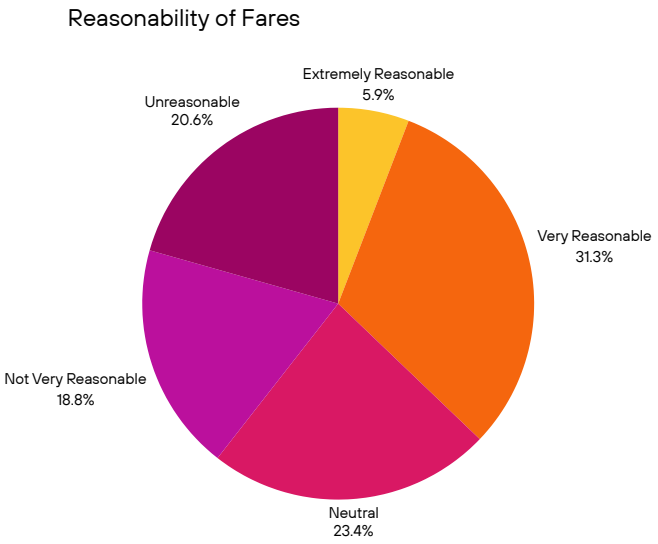


Figure 21. Community Survey Findings

Average Transportation Cost

$7.21



Participants reported that the most reasonable wait times in Bus Stops were: 15-30 minutes.

Overall Satisfaction Rate

Participants reporting lowest levels of satisfaction resided in: Barrio-Pueblo, Tomás de Castro, Río Cañas, and Cañabón.

Principal Modes of Transportation

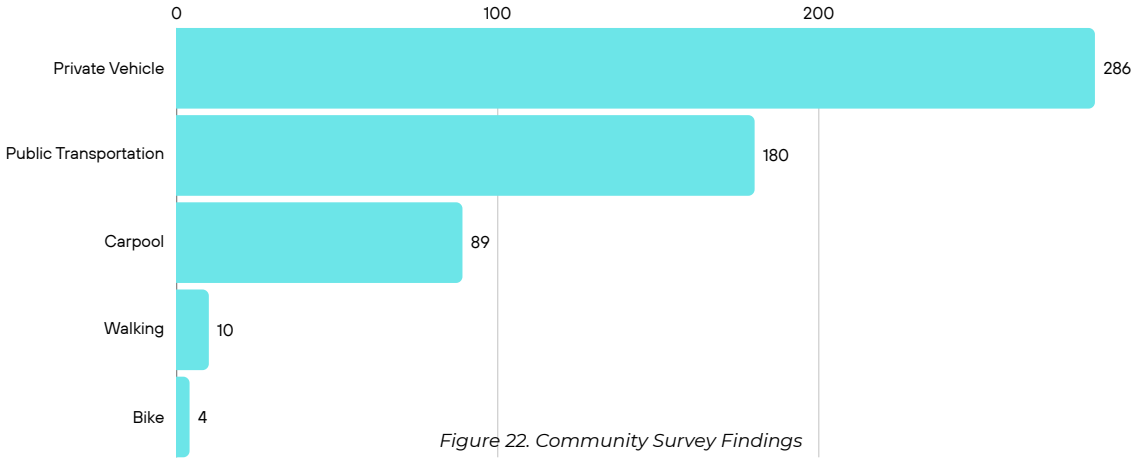


Figure 22. Community Survey Findings

- **Survey Findings**

  - **Population**
    - Females represent 72% of the survey sample.
    - Average Age of the surveyed citizen is 58 years old, which is consistent with the municipal demographic trend of aging population.
    - The Most Represented Occupations for the Surveyed Individuals were Retired (37%), Homemakers (34%), Customer Service (11%), Student (75%), Entrepreneur (6%), and HomeHelpers, Entrepreneurs, Janitorial, and Nurse with (0.12%)
    - Family Composition was mainly 2 individuals per household, followed by single citizens living alone and 3 individuals per household.
    - The Most Represented Occupations of System Users were Homemaker (40%), Retired (34%), Customer Service and Entrepreneur (6.8%), Student (6.2%), Home Helper (1.98%), Janitorial (1.7%), Teacher (1.1%), and Security (0.9%).
    - The Most Represented Occupations of System Non-Users were Retired (35%),, Homemaker (33%), Customer Service (15%), Student (7.37%), Entrepreneur (6.23%), Teacher (1.98%), Janitorial (1.1%), Home Helper (0.85%) and Nurse (0.19%).

  - **Transportation Services Needs**
    - Participation by Ward was principally from the Tomás de Castro Ward with 26%, followed by Barrio-Pueblo (19%) and Turabo (12%) wards.
    - Around 48% of the surveyed sample use the Public Transportation System.
    - Non-Users of the Public Transportation System reported: 1) Ownership of Private Vehicle, 2) Inaccessibility of Service, and 3) Need for Additional Education, as the primary reasons why they do not use the System.
    - The Wards most represented by Non-Users include: Tomás de Castro, Borinquen, Cañabón, Cañaboncito, and Río Cañas.
    - The principal motives for public transportation use were: Appointments 34.6%, Errands 25.2%, and Work 18.6%.
    - The Area mainly visited by surveyed individuals was the Barrio-Pueblo Ward.
    - The System patronage was distributed as follows: 36% Bus Use, 39% Públicos Use, and 25% Trolley Use.
    - The Average Transportation Cost incurred daily was $7.21, which was mainly considered a Very Reasonable (31.3%) fare.
    - The Overall System Satisfaction Rate was Very Satisfied 29%, Neutral 28%, Unsatisfied 19%, Not Very Satisfied 18%, and Extremely Satisfied 5%.
    - The principal mode of transportation for surveyed individuals was Private Vehicle, followed by Public Transportation, and Carpool.
    - The weekdays in which surveyed individuals reported the most transportation need were Saturdays and Sundays.

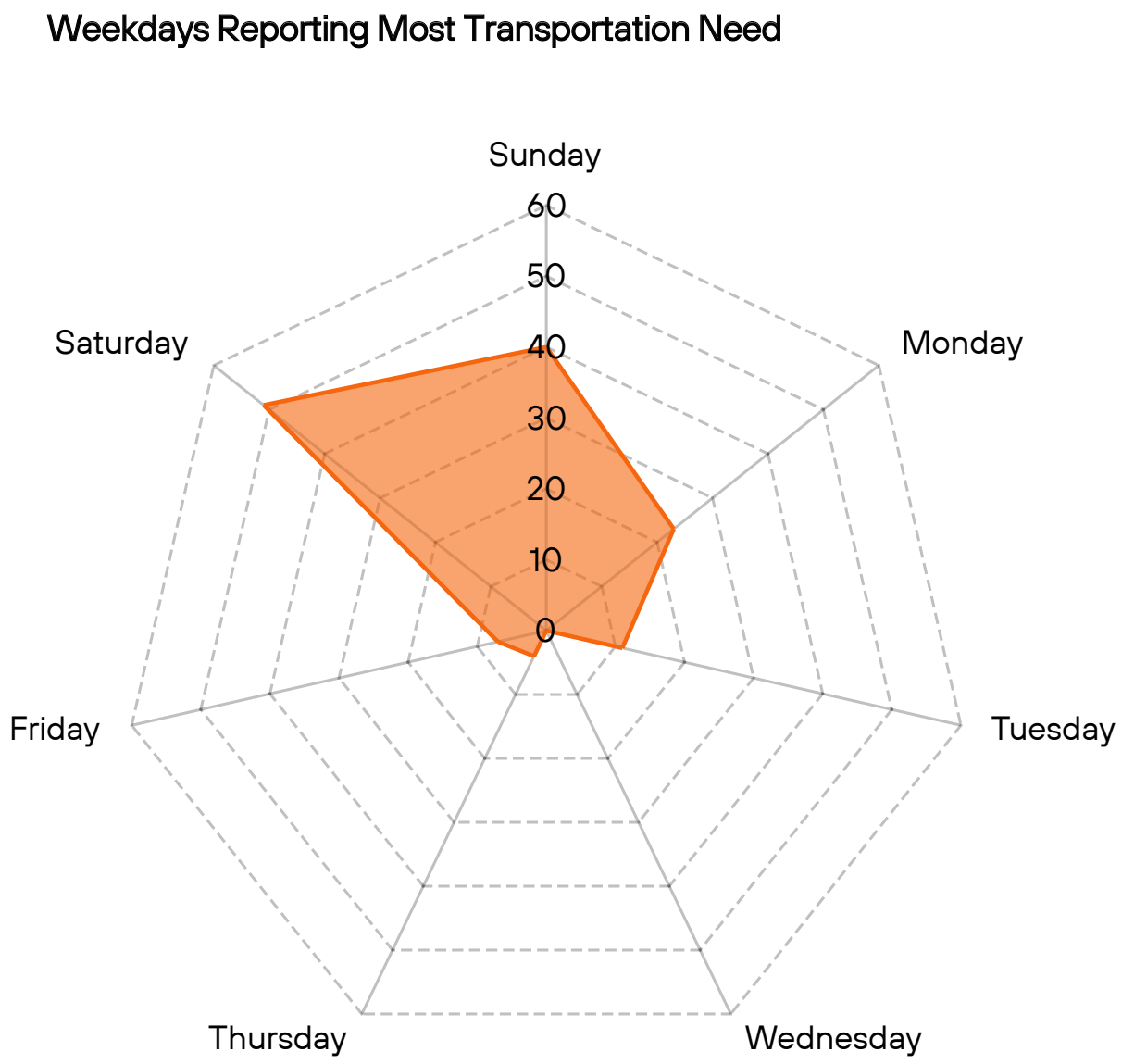


Figure 23. Community Survey Findings

The highest reported timeframes for need of public transportation were: Early Morning 5:00am-8:00am (44%), Late Morning 8:00am-12:00pm (37%), and Afternoon 3:00pm-6:00pm (12%).

3.6. EXISTING TRANSPORTATION SYSTEMS AND CONDITIONS

3.6.1. TRANSCRIOLLO

Established in 2011 as an alliance between the Municipality of Caguas and over 150 public cars, or "Públicos" operators, the Transcriollo public transportation system offers free of charge transportation services within Caguas. With around five routes (Trans-C1, Trans-C2, Trans-C3-C4, Trans-C5, and Trans-C6), the Transcriollo offers it's services from Monday to Friday from 6:00am-6:00pm. In average each vehicle circulates each bus stop area from 20 to 30 minutes.

3.6.2. TROLLEYS

The trolley system offers free of charge transportation services within the urban center of Caguas. The established trolley system has four routes (Poblado, Este, Norte/Sur, and Trans-C9) and offers it's services from Monday to Friday from 7:00am-6:00pm. In average each vehicle circulates each bus stop area from 20 to 30 minutes.

3.6.3. PUBLIC CARS

"Públicos" are privately owned and operated transportation services regulated under the Department of Transportation and Public Works ("DTPW"). "Públicos" are allowed to operate specific routes with a fixed schedule and fare. The Municipality of Caguas utilizes the "Públicos'" system for local and regional access. "Públicos'" routes commonly transport passengers to and from Caguas's Urban Center to the rural wards. "Públicos'" services have charged a variety of fares and do not have specific stops. Vehicle capacity varies from eight 8 to 12, and the vehicles may be owned or leased by the operator. "Públicos" have been operating for years without following specific routes, schedules, or fares as consequence of not being regulated by DTPW as they should. These conditions are negatively affecting public transportation users and service in the Municipality of Caguas.

The “Públicos” services are based on current transportation demands. The service operates mostly during regular business hours and passengers usually must wait for a vehicle to be fully loaded before departing to its routes. The number of “Públicos” has significantly reduced due to issues related to system profitability and inefficiency.

Act #148 transferred the planning and regulation of the mass transportation services provided by the “Públicos” from the Public Service Commission to the Department of Transportation and Public Works. The Department of Transportation is in the process of completing new licensing and operations requirements which are expected to have a positive impact on the number of providers and the quality of service.

The implementation of a Collective Transportation Plan in Caguas must consider integration of the “Públicos” as an integral part of the mass transportation system. The 2045 Multimodal Transportation Plan shows that there are currently 18 routes operating in the Municipality. Washington Federal Consulting Group, LLC conducted a Public Vehicle Trip Distribution Survey which identified approximately 18 private operators providing transportation services to locally and regionally. The routes served by the “Públicos” include the Municipalities of Cidra, Cayey, and San Lorenzo.

As stated above, the “Públicos” are not in compliance with federal or local regulations as, almost all, do not comply with the specific routes, schedules and fares. A great number of them operate using private vehicles that do not include ADA-required specifications, while almost all of them operate as taxis. Additionally, the “Públicos” operate mostly before the noontime, which creates a service unavailability during more than half of the day. Operators commonly provide services during three or four days a week and do not provide users with continuity of services when absent through an additional designated driver.

Operator 00366TC
San Lorenzo

Operator 00368TC
Cidra

Operator 01503TC
San Lorenzo

Operator 01802TC
Borinquen

Operator 01808TC
Villas del Rey 2-3-4-5

Operator 01849TC
Las Carolinas

Operator 01849TC
Las Carolinas

Operator 01871TC
Villa Esperanza

Operator 01969TC
Turabo Gardens

Operator 0304TC
Guavate

Operator 0314TC
Villas de Castro → Tomás de Castro

Operator 0312TC
Tomás de Castro II

Operator 0342TC
Turabo Gardens → Plaza del Carmen

Operator 0356TC
La Barra → La Mesa

Operator 0368TC
Cidra

Operator 03259TC
San Lorenzo

Operator 04871TC
Villa Esperanza

Operator 07560TC
Cidra → Aguas Buenas → Caguas

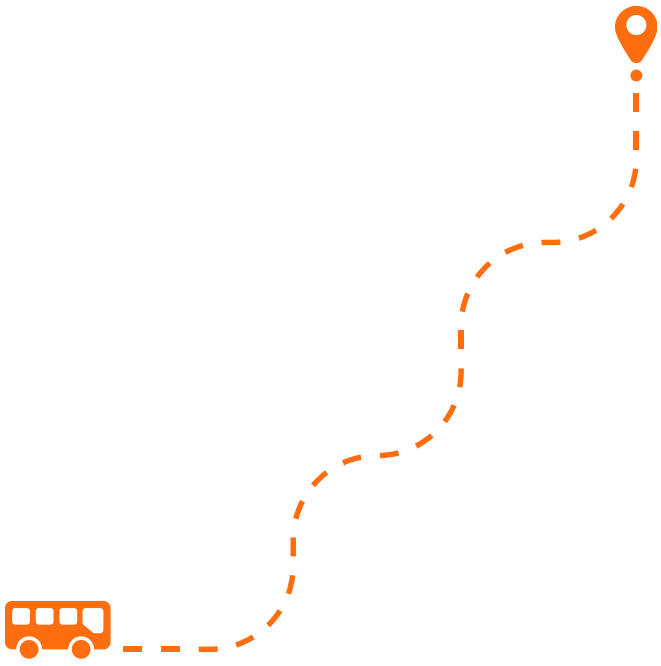


Table 4. Recorded “Públicos” Operators

3.6.4. PUBLIC VEHICLE TERMINAL FRANCISCO “PANCHO” PEREIRA

The Municipality of Caguas has administered the Public Vehicle Terminal Francisco “Pancho” Pereira in support of the Transcriollo, Trolley System, “Públicos” System, and Taxi services. Shown in Figure 21, the terminal facility is centrally located in the Esteban Padilla del Caribe Sreet. The Francisco “Pancho” Pereira Terminal has the purpose of organizing and consolidating the services provided in order to improve the transportation system for its residents.As this Terminal was constructed in the 1990’s, it’s necessary to renovate the structure for Americans with Disabilities Act (“ADA”) Compliance and to make it more accessible and comfortable for public transportation users. (See Appendix C)

Figure 24. Fransico “Pancho” Pereira Entrance View.

3.6.5. ÜBER SERVICES

The Municipality of Caguas is partially served by Über, as shown in Figure 23. For passengers traveling from Caguas to San Juan, the estimated fare, is approximately $33.54 per trip.

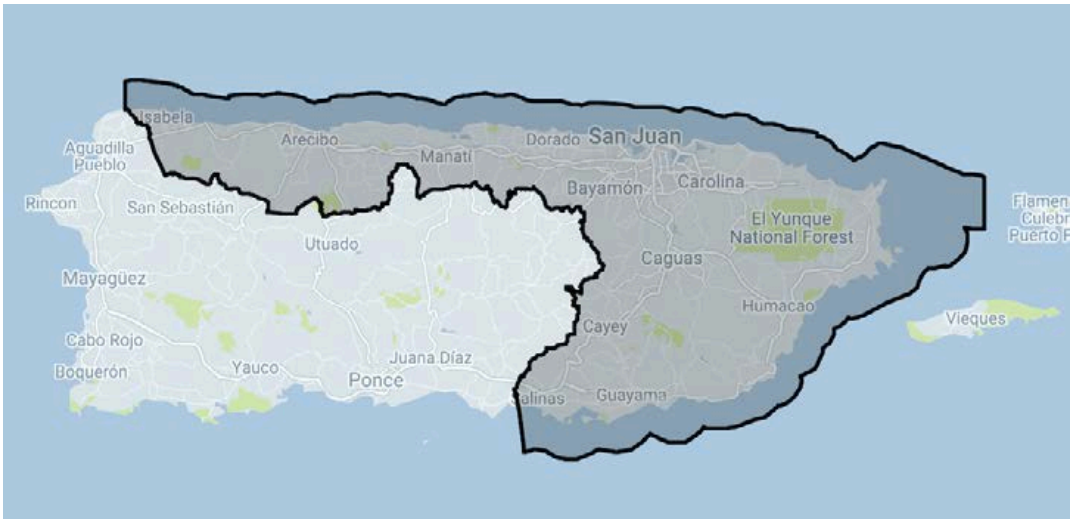


Figure 25. Über Service Area Map.

4. NEED FOR TRANSPORTATION IMPROVEMENTS

4.1. ROUTE DEVELOPMENT

The collected information on the Municipality of Caguas' needs and current conditions provide the necessary insight for route development. Route development will provide transportation effectiveness by making location-appropriate choices to maximize ridership and provide geographic coverage through a transportation-supportive system. A transportation-supportive system encompasses the utilization of effective and predictable transportation to encourage surrounding developments, which, in turn, support public transportation. The basic principle is that convenient access to transportation can be a key attraction that fosters mixed-use development, and the increased density in station areas not only supports transportation but also may accomplish other goals, including reducing urban sprawl, reducing congestion, increasing pedestrian activity, increasing economic development potential, realizing environmental benefits, and building sustainable communities.

Based on the information provided by the Municipality's officials, "Públicos" operators, citizens, as well as the analysis performed, a public transportation system comprised of eleven routes is being implemented to benefit the citizen's and visitors of Caguas. The routes will provide a network to connect all citizens and visitors with Caguas' services and resources.

Municipal officials expressed their vision of further developing the TransCriollo as an effective and efficient public transportation system to connect the rural and urban areas of the Municipality. Additionally, it should become an integral part of a unified multimodal system. The transportation services provided are intended to provide accessible and reliable transportation for the daily commute of citizens, as well as tourist who visit Caguas.

4.2 TRANSIT CORRIDORS

Once the areas that could support transit were identified, potential public transit roadways were identified to provide the appropriate connections and efficiency of services in the provision of public transit services. All major connections were considered because the public transit service is expected to operate in these roadways.

4.3 EXISTING TRANSPORTATION ROUTES

The existing transportation routes were evaluated with the goal of determining their feasibility, accessibility, maneuverability, and connectivity.

- **Feasibility**
    - The public transportation system was evaluated for its feasibility of providing frequent and/or high-capacity public transportation connecting key destinations where population and land use characteristics support such services.
- **Accessibility**
    - Caguas values the livelihood and contributions of all its citizens, making equity vital to healthy and vibrant communities. Public transportation is an important tool for addressing equitable access to opportunity, including employment, affordable housing, education, and other community resources.
    - Public transportation also provides affordable access to opportunities for citizens with lower incomes, and other transportation disadvantaged citizens, making the community more livable and affordable for many. Public transportation is an alternative to private automobiles for youth, older adults, and citizens with disabilities who cannot drive.
- **Maneuverability**
    - Transportation vehicles typically require an effective turning radius of approximately 20–30 feet, depending on lane width and presence of curbside parking lanes or buffer distance. At intersections, geometric decisions must balance efficient accommodation of transportation turns with pedestrian safety.
- **Connectivity**
    - Public transportation contributes to connecting people with services, jobs, educational, and recreational opportunities, which are essential to keeping Caguas as a competitive Municipality.
    - Public transportation supports tourism and economic development, connecting citizens and visitors to rural and scenic areas. Workers in rural areas rely on public transportation to connect their communities to employment centers. Businesses and Caguas Tourism Office should develop partnerships with public transportation providers to leverage and accommodate recreational activity.

The existing routes follow the main transportation corridors and favorable travel times. Additionally, the routes were analyzed to consider stopping points to increase the number of patrons for Caguas' local services and businesses, which will in turn promote livability in the Municipality. The existing routes are described as follows:

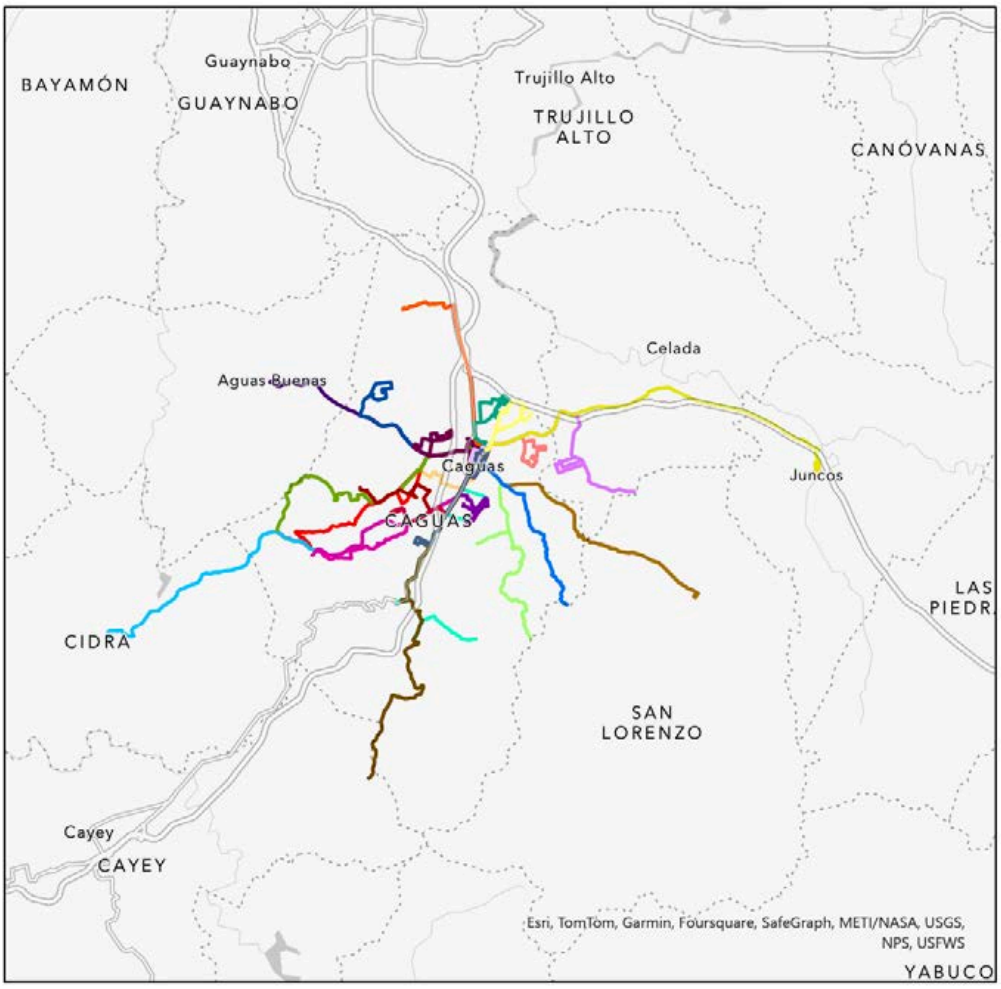


Figure 26. Existing Transportation Routes Map.

CAGUAS → AGUAS BUENAS
CODE: I-13-04

DEPARTURE:

"STAND"- PADIAL STREET

Left on Ruiz Belvis Street, Left on PR-33 Road, Right on PR- 156, Right on PR-173, Left on PR-156, Left at the Second Street Entrance, Left at the First Street Entrance, Left at the Second Street Entrance; Left Entrance to the Municipality of Aguas Buenas' Terminal.

"STAND" – AGUAS BUENAS PUBLIC CAR TERMINAL

ARRIVAL:

"STAND" – MUNICIPALITY OF AGUAS BUENAS PUBLIC CAR TERMINAL

Right on PR-156, Left, "STAND" Padial Street.

END OF ROUTE

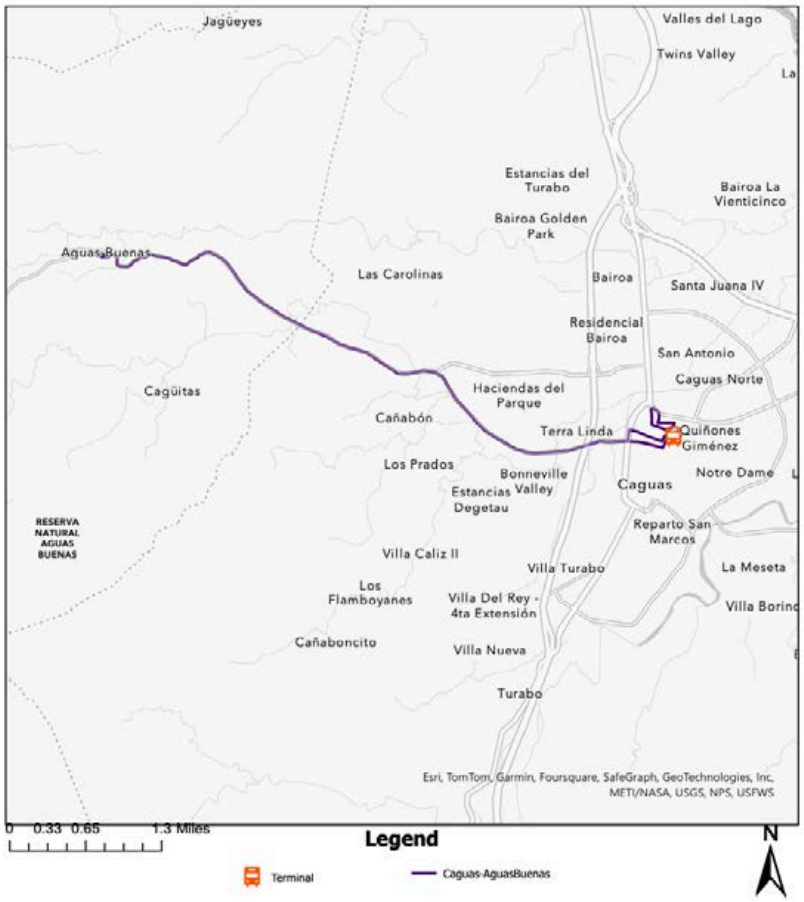


Figure 27. Caguas - Aguas Buenas Map.

CAGUAS → BORINQUEN WARD
CODE: L-13-03

DEPARTURE:

“STAND" – GAUTIER BENÍTEZ PLAZA (GEORGETTI STREET)
Right on Gautier Benítez Avenue, Right on PR-33 José Mercado Avenue, Left Gautier Benítez Avenue, Right on PR-1 San Carlos Villa Turabo Sector, Left on PR-765, maintain direction until Intersection # 763 Praderas Sector, U-turn on Intersection and Turn Right onto PR-765 by Borinquen Parcels, maintain direction until reaching La Charca Sector, Rio Abajo Sector, Felipito Sector, U-turn.

ARRIVAL:

“STAND" – FELIPITO SECTOR (PR-765)
Heading straight on Felipito Sector PR-765, onto PR-763 intersection, Right onto PR-765 under the freeway bridge, Right onto PR-1 Miguel Hernández Agosto, San Carlos Sector and Villa Turabo, Straight onto Gautier Benítez Avenue, Right Georgetti Street, Left onto José L. Acosta Street, Right, Left at Francisco Pereira Casillas Terminal.

END OF ROUTE

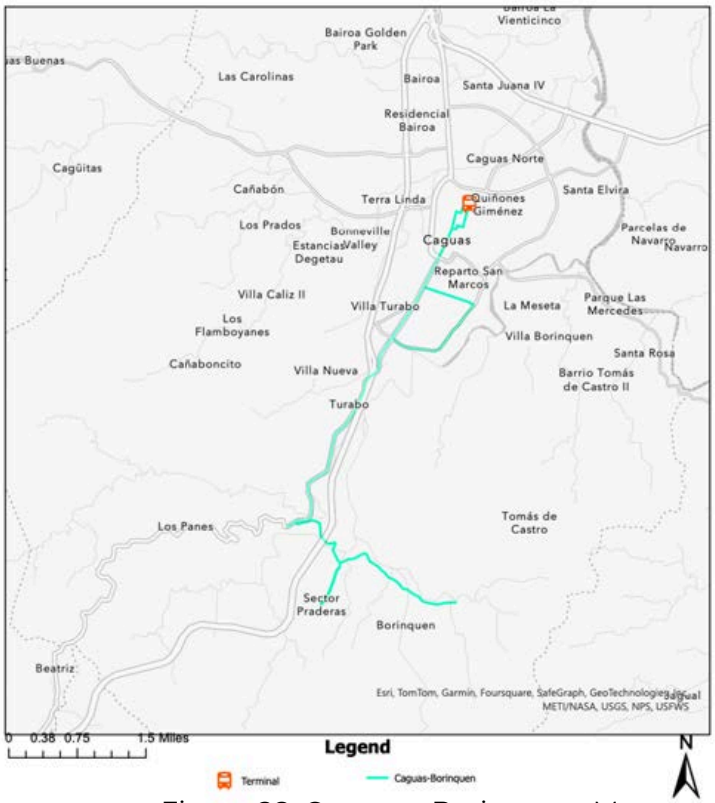


Figure 28. Cgauas - Borinquen Map.

CAGUAS → LA MESA & LA BARRA
CODE: L-13-12

DEPARTURE:

“STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Left on Dr. Goyco Street, Right on Muñoz Rivera Avenue, Left on José Villares Avenue, Right on PR-1, Left on PR-715 13th Street (La Mesa y la Barra Community), Left on 11th Street, U-turn, Left on PR-795, straight onto La Mesa Sector, End route at PR-795 Street 7 K3 H9.

ARRIVAL:

“STAND" – PR-795 STREET 7 K3 H9
Straight onto PR-795 Street 7 K3 H9, Head towards 13th Street (La Mesa y la Barra Community), Right onto PR-1, Right onto José L. Acosta Street, Left, Left at Francisco Pereira Casillas Terminal.

END OF ROUTE

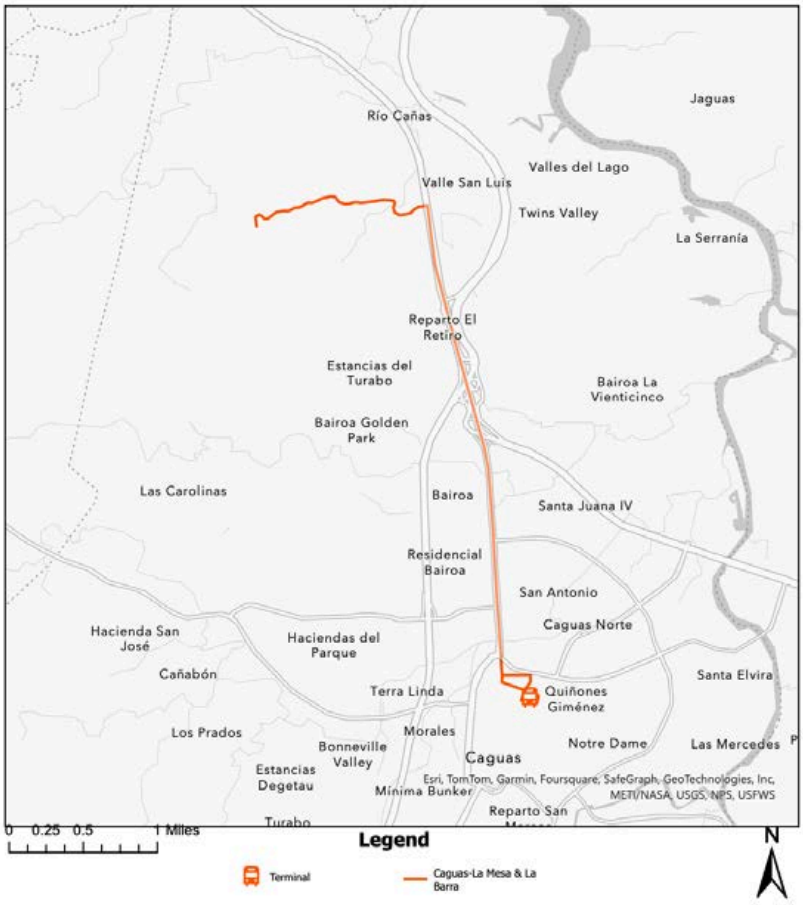


Figure 29. Caguas - La Mesa & La Barra Map.

CAGUAS → NAVARRO WARD
CODE: L-13-15

DEPARTURE:

"STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Right on Dr. Goyco Street, Left on Rafael Cordero Avenue, Right on PR-189, Right onto PR-931, Right onto PR-1 (Navarro Ward), Right on 2nd Street, Right on 2nd Street, Right on 12th Street, Right on PR-931, Right on Navarro Ward.

ARRIVAL:

"STAND" – NAVARRO WARD KM #4
Left on PR-931, Left on PR-189, Left on Rafael Cordero Avenue, Right at Francisco Pereira Casillas Terminal.

END OF ROUTE

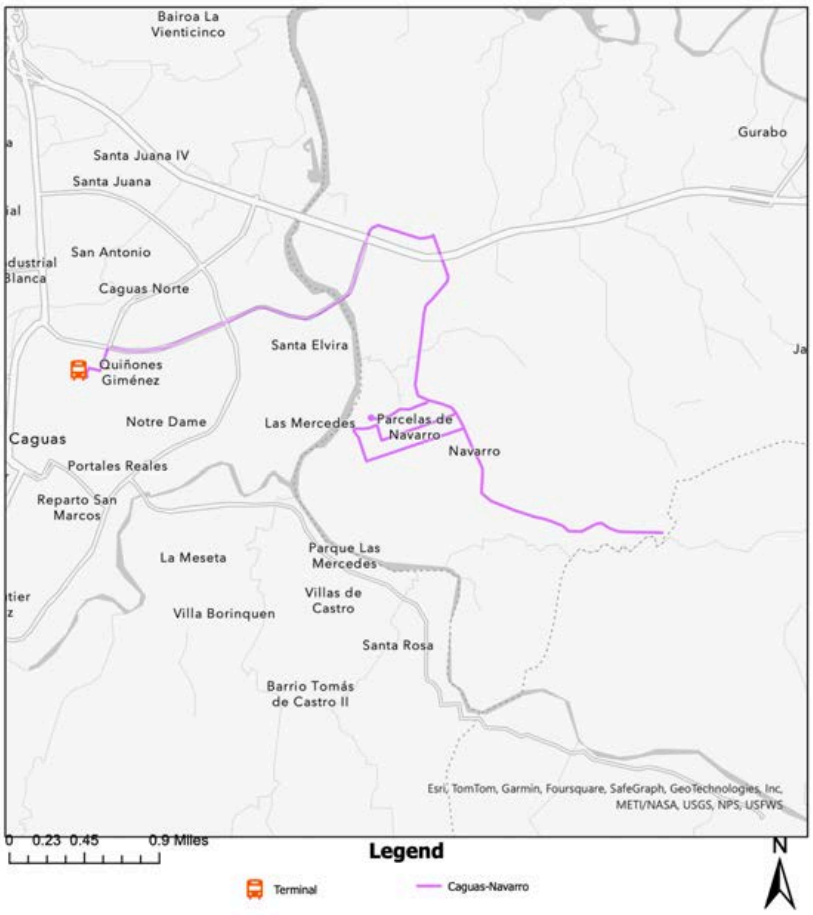


Figure 30. Caguas - Navarro Map.

CAGUAS → BONNEVILLE
CODE: L-13-03

DEPARTURE:

"STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Right on Dr. Goyco Street, Left on Rafael Cordero Avenue, Left on Eugenio María de Hostos Street, Left on Gautier Benítez Avenue, Right on Degetau Avenue, Right on Urb. Bonneville Luquillo Street, Left on Las Piedras Street, Right on Juncos Street, Left on Barranquitas Street, Right on Degetau Avenue, U-turn in front of Paseo Degetau Cristo Rey Senior Center, Right on Degetau Avenue, Left, Left on Plaza Degetau.

ARRIVAL:

"STAND" – PLAZA DEGETAU
Right on Degetau Avenue, Left on Gautier Benítez Avenue, Right, Left onto Rafael Cordero Avenue, Right onto Dr. Rufo Street, Left, Right at Francisco Pereira Casillas Terminal.

END OF ROUTE

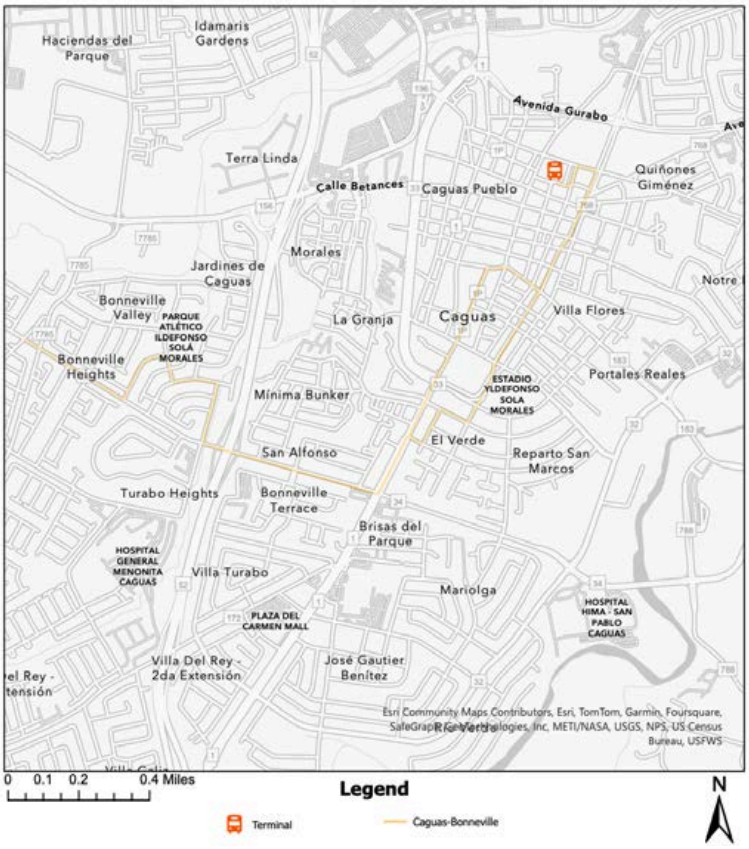


Figure 31. Caguas - Bonneville Map.

CAGUAS → CAGUAX
CODE: L-13-18

DEPARTURE:

"STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Right on Dr. Goyco Street, Left on Rafael Cordero Avenue, Right PR- 189, Right ON Muñoz Marín Avenue, Left on Urb. Caguax, Right on Paraná Street, Right on Dúho Street, Right on Turey Street, Left Cemí Street, Right Santa Lucia Street, Right Violeta Street, Left Juracon Street, Right Buren Street, Left Urb. Guadalupe 16th Street, Left 1st Street, Right on 12th Street, Right on 18th Street Right, Right on 16th Street right, Left on 3rd Street, Straight onto Urb. Villa María.

ARRIVAL:

"STAND" – URB. VILLA MARÍA
Right Muñoz Marín Avenue, Left on PR-189, Left on Rafael Cordero Avenue, Right, Left at Francisco Pereira Casillas Terminal.

END OF ROUTE

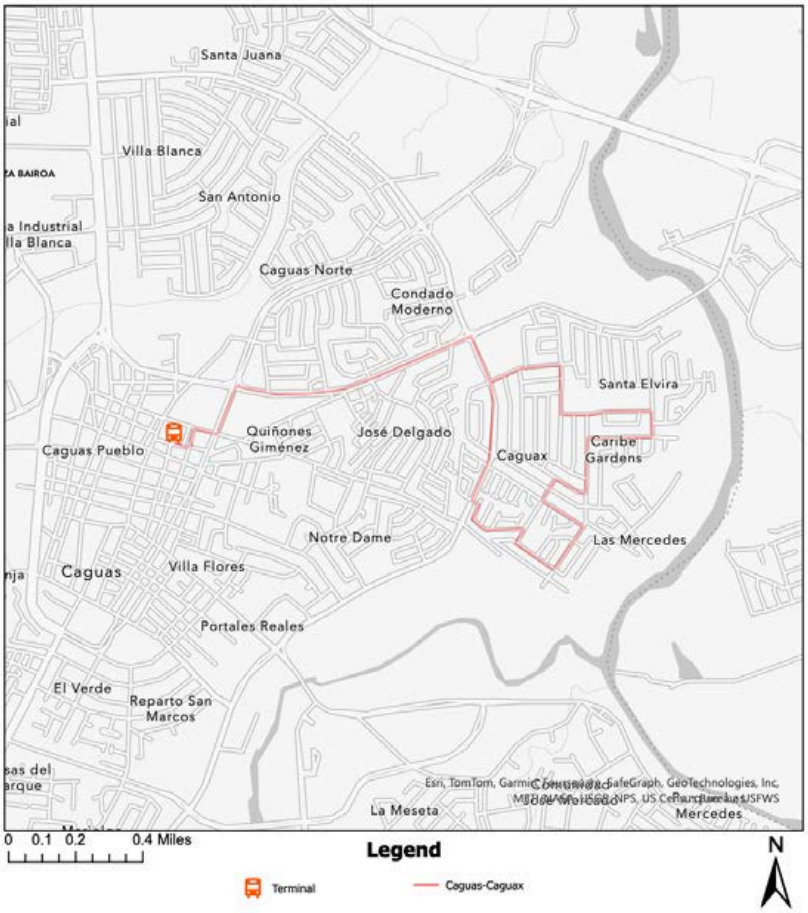


Figure 32. Caguas - Caguax Map.

CAGUAS → CAÑABONCITO
CODE: L-13-05

DEPARTURE:

"STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Left on Dr. Goyco Street, Left on Intendente Ramírez Street, Right on Segundo Ruiz Belvis Street, Left on José Mercado Avenue, Right on PR-156, Left on Cañaboncito PR-34, Right on PR-784, Left on PR-784 Los García Sector, Straight onto Los Ayala Sector, Straight onto Los Solas Sector, Straight onto Los Carrasquillo Sector, Right onto PR-172 to intersection PR-785.

ARRIVAL:

"STAND" – U-TURN (PR-785 & PR-172)
Straight onto PR-172, Left PR-784, Straight onto Los Carrasquillo Sector, Straight onto Sector Los Velázquez, Straight onto Los Solas Sector, Straight onto Los Ayalas Sector, straight onto Los García Sector, Right onto PR-784, Left at PR-34, Right onto PR- 156, Straight onto Betances Street, Left on Acosta Street, Right on Celis Aguilera Street, Left at Francisco Pereira Casillas Terminal.

END OF ROUTE

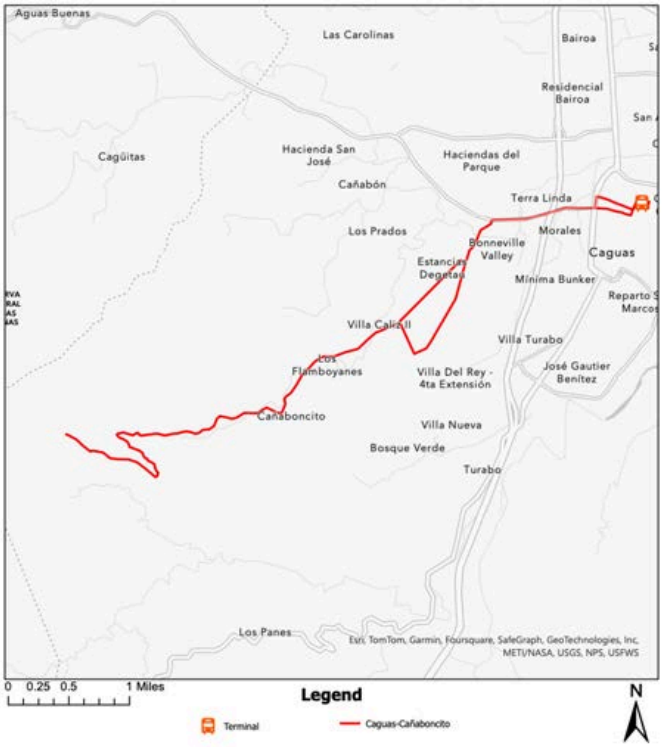


Figure 33. Caguas - Cañaboncito Map.

CAGUAS → LAS CAROLINAS
CODE: L-13-13

DEPARTURE:

“STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Right on Dr. Goyco Street, Left at Intendente Ramírez Street, Right at Segundo Ruiz Belvis Street, Left at José Mercado Avenue, Right at PR-156 North Joviniano Ríos Avenue, Right at Las Carolinas Community, Right at Gardenia Street, Right at Ceciliana Street, Left at Amapola Street, Right at Jazmín Street, Right at Azucena Street, Right at Hortensia Street, Left at Amapola Street.

ARRIVAL:

“STAND" – AMAPOLA STREET
Left at Violeta Street, Left at PR-156, Straight onto Betances Street, Left at Acosta Street, Right at Terminal Street, Left at Francisco Pereira Casillas Terminal.

END OF ROUTE

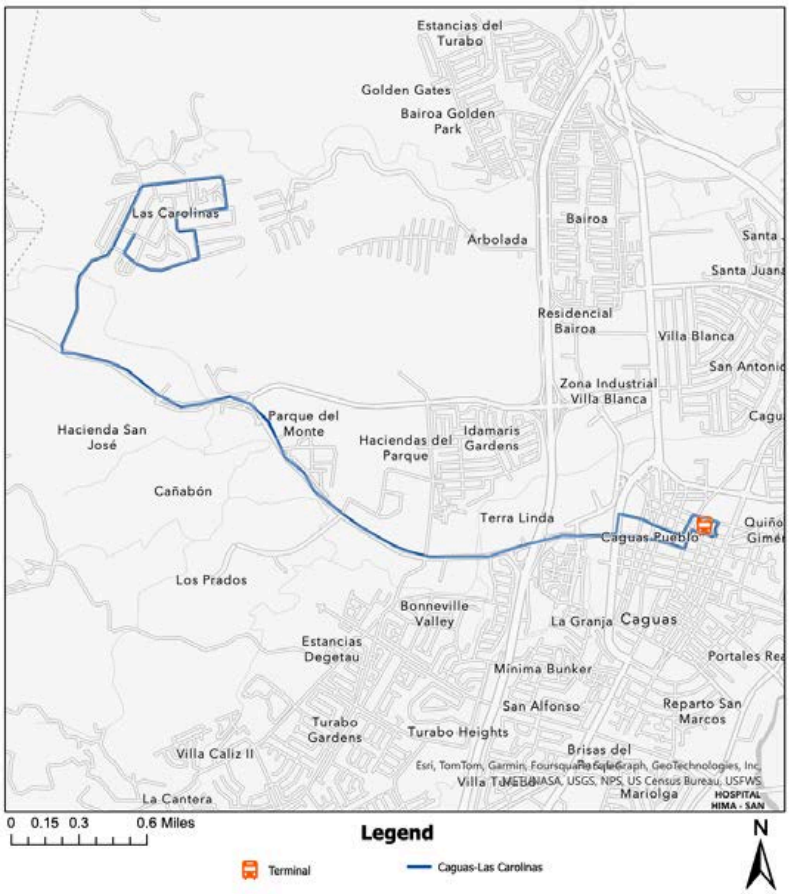


Figure 34. Caguas - Las Carolinas Map.

CAGUAS → CIDRA
CODE: I-13-21

DEPARTURE:

"STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Right on Dr. Goyco Street, Left at Rafael Cordero Avenue, Right at Jiménez Cristóbal Colon Street, Left at PR-1 (Gautier Benítez), Right at P-172 (Plaza del Carmen Mall), Right at Municipality of Cidra's Public Car Terminal.

ARRIVAL:

"STAND" – MUNICIPALITY OF CIDRA PUBLIC CAR TERMINAL
Right at PR-172, Left on PR-1, Right on Mercurio Street, Left on PR-1, Right on Venus Street, Left on Estrella Street, Left on Jiménez Sicardó Street, Right on Acosta Street, Right at Terminal Street, Right at Jiménez Sicardó Street, Left on Acosta street, Right at Francisco Pereira Casillas Terminal.

END OF ROUTE

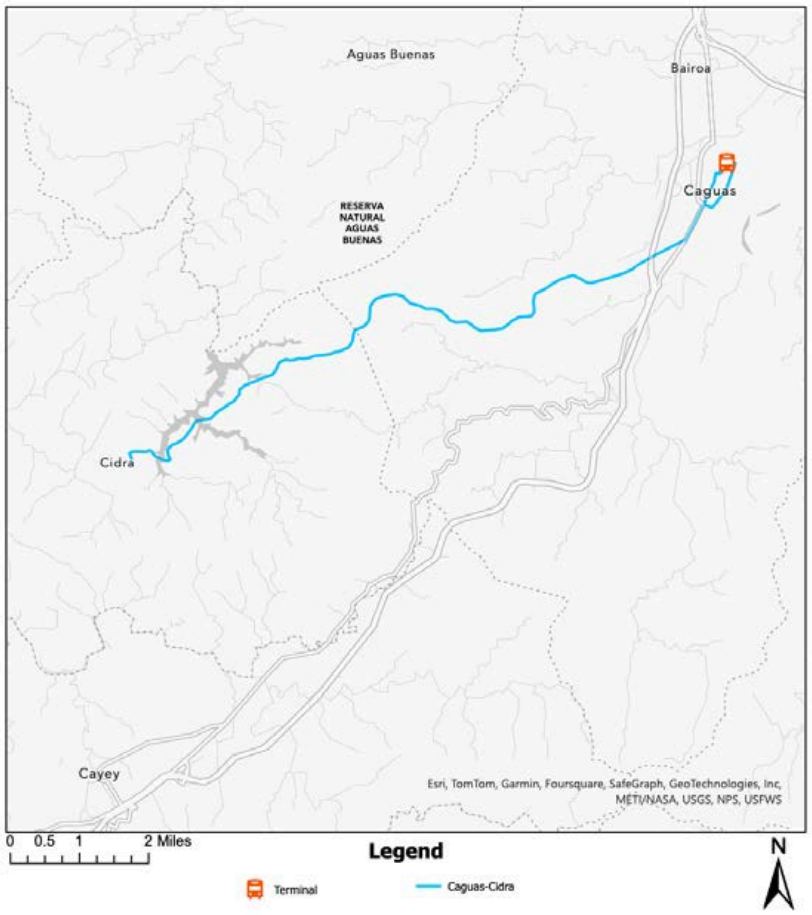


Figure 35. Caguas - Cidra Map.

CAGUAS → GUAVATE
CODE: L-13-11

DEPARTURE:

“STAND" – GEORGETTI STREET (GAUTIER BENÍTEZ PLAZA)
Right on Gautier Benítez Avenue, Left on PR-1, Left on PR-765, Right on PR-763 Km 0 Hm. 0.

ARRIVAL:

“STAND" – PR-763 Km 0 Hm. 0.
U-turn at PR-763 Km 0 Hm. 0. Head onto PR-763, Right onto PR-765, U-turn onto PR-1, Head onto Gautier Benítez Avenue, Right on Georgetti Street, Left at Acosta Street, Left at Terminal, Left Goyco Street, Left at Intendente Ramírez Street, Right at Ruiz Belvis Street, Left at Muñoz Rivera Avenue, Left at Georgetti Street.

END OF ROUTE

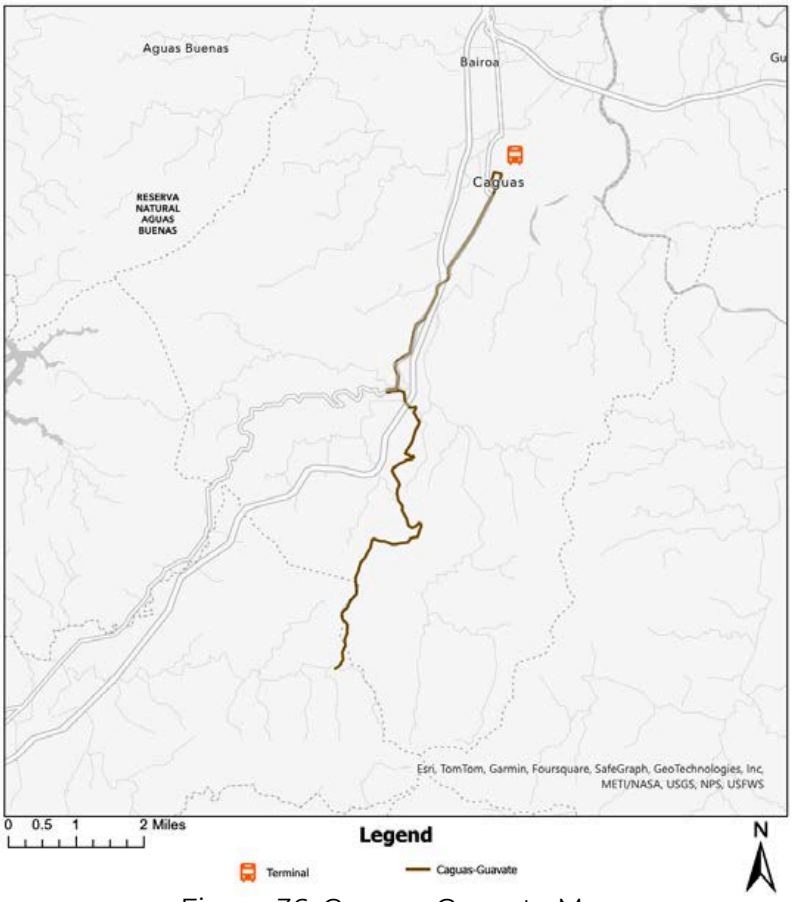


Figure 36. Caguas-Guavate Map.

CAGUAS → HORMIGAS
CODE: L-13-32

DEPARTURE:

"STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Left on Dr. Goyco Street, Right at Padial Street, Left at José Mercado Avenue PR-33, Right at PR-156, Left PR-784, Right at PR-785 to Intersection PR-172.

ARRIVAL:

"STAND" – PR-785 & PR-172 INTERSECTION
Left onto PR-784, Right at PR-156, Left at José Mercado Avenue PR-33, Rightat Padial Street, Left at Celis Aguilera Street, Right at Acosta Street, Left at Celis Aguilera Street, Left at Francisco Pereira Casillas Terminal.

END OF ROUTE

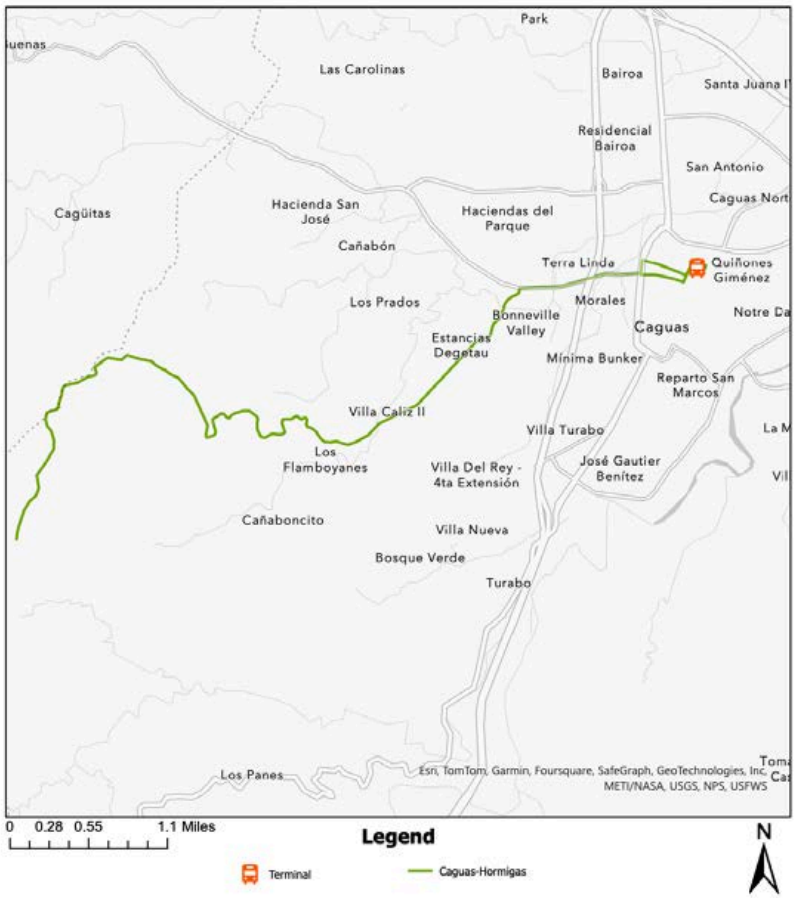


Figure 37. Caguas-Hormigas Map.

CAGUAS → VILLA DEL REY
CODE: L-13-E-03

DEPARTURE:

"STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Right on Dr. Goyco Street, Right at Rafael Cordero Avenue, Head onto Jiménez Sicardó Street, Left at Dr. Rufo Street, Right at Cristóbal Colon Street, Left at Gautier Benítez Avenue, Right at Luis Muñoz Marín Avenue, Left at Pino Street onto PR-172, Right at "Hospital Menonita de Caguas".

ARRIVAL:

"STAND" – "Hospital Menonita de Caguas"
U-turn at "Hospital Menonita de Caguas". Left on PR-172, Right at Muñoz Marín Street, Left at Gautier Benítez Street, Right on Georgetti Street, Left on Acosta Street, Right at Francisco Pereira Casillas Terminal.

END OF ROUTE

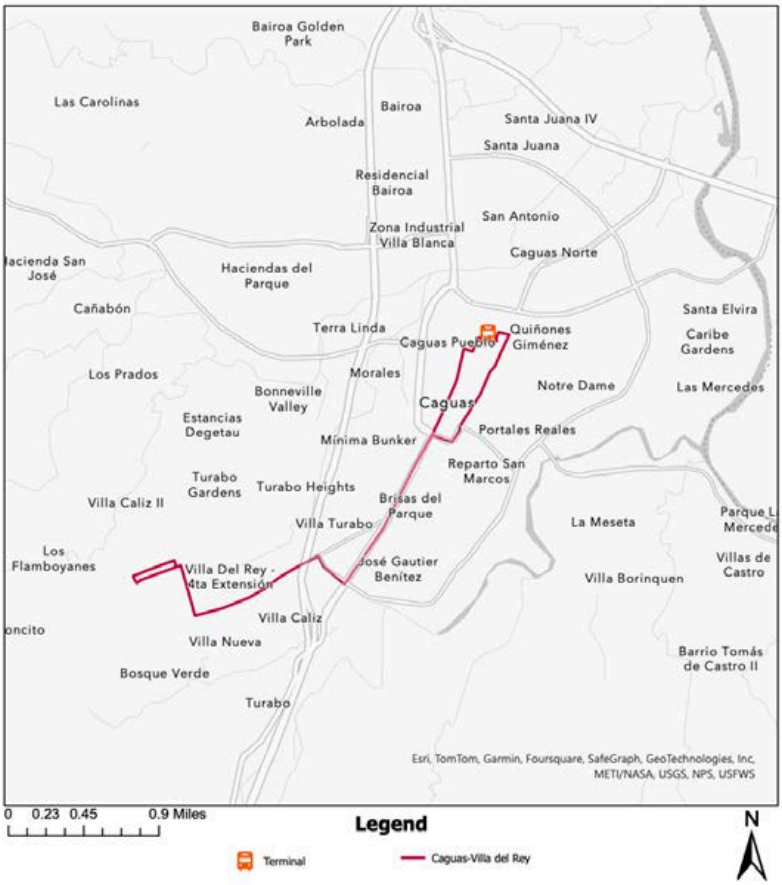


Figure 38.Caguas - Villa del Rey Map.

CAGUAS → JUNCOS
CODE: L-13-40

DEPARTURE:

"STAND" – MUNICIPALITY OF JUNCOS PUBLIC CAR TERMINAL
Right on PR-189 (Luis Muñoz Rivera Street), Left on PR-189, Left on Rafael Cordero Street, Right at Terminal.

ARRIVAL:

"STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Right on Dr. Goyco Street, Left at Rafael Cordero Avenue, Right at PR-189, Right on Emilia Príncipe Street, Left at Hormazabel Street, Left at Costa Street, Right at Dr. Ramírez Street, Left at Martínez Street, Right at Dr. Almodóvar Street, Left at PR-189 (Luis Muñoz Rivera Street), Right at Francisco Pereira Casillas Terminal.

END OF ROUTE

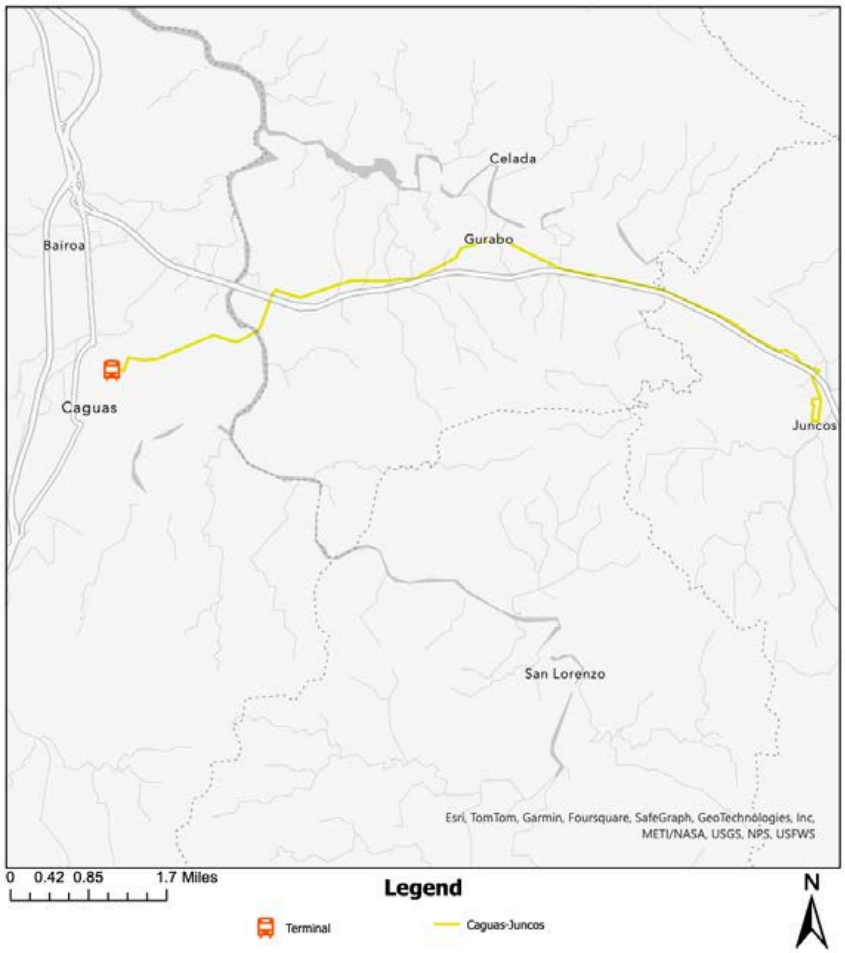


Figure 39. Caguas - Juncos Map.

CAGUAS → MARIOLGA
CODE: L-13-E-08

DEPARTURE:

"STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Right on Dr. Goyco Street, Right on Rafael Cordero Avenue, Right at Eugenio María de Hostos Street, Right at José Mercado Avenue (PR-33), Left at Gautier Benítez Avenue, Left at San Bernardo Street (Urb. Mariolga), Right at San Pablo Street, Right at San Felipe Street, Left at San José Street, Left at San Antonio Street, Right at San Vicente Street, Right at San Miguel Street, Left at San Marco Street, Right at San Alberto Street, Left Muñoz Marín Avenue, Right at Hospital Pavía Caguas, Left at Luis Muños Marín Street, Left at 18th Street (Urb. Río Verde).

ARRIVAL:

"STAND" – HOSPITAL PAVÍA CAGUAS
Left at Muñoz Marín Avenue, Left at San Alberto Street, Right at San José Street, Right at San Fernando Street, Left at San Fernando Street, Right at San Pablo Street, Left at San Bernardo Street, Right at Gautier Benítez Avenue (PR-1), Right at Georgetti Street, Left at Acosta Street, Right at Celis Aguilera Street, Left at TFrancisco Pereira Casillas Terminal.

END OF ROUTE

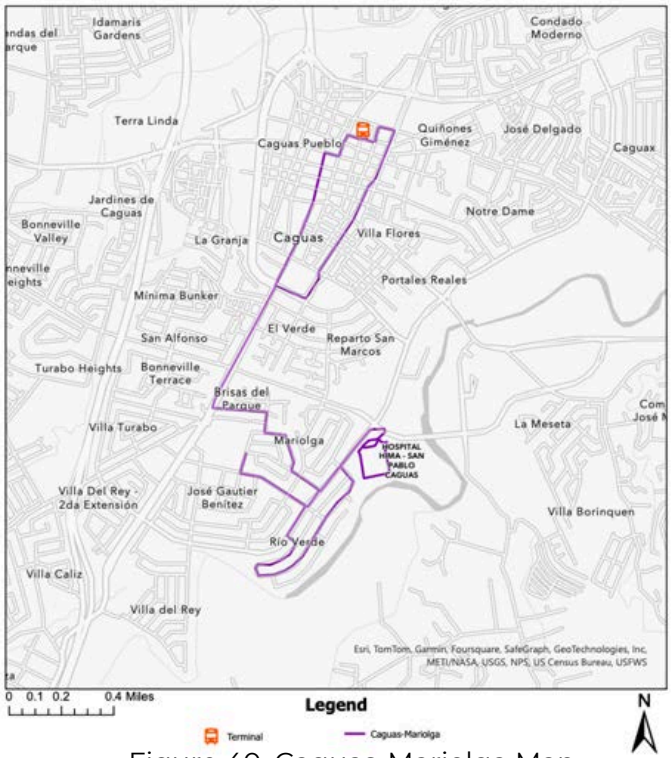


Figure 40. Caguas-Mariolga Map.

CAGUAS → PLAZA DEL CARMEN
CODE: L-13-08

DEPARTURE:

"STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Right on Dr. Goyco Street, Left at Rafael Cordero Avenue, continue on Eugenio María de Hostos Street, Left at Gautier Benítez Avenue, Right at Luis Muñoz Marín Avenue, Left at PR-172, Right at PR-172 Main Avenue.

ARRIVAL:

"STAND" – PR-172 MAIN AVENUE
Left at PR-172 at Muñoz Marín Avenue, Left Gautier Benítez Avenue, Right at Georgetti Street, Left at José L. Acosta Street, Right, Left at Francisco Pereira Casillas Terminal.

END OF ROUTE

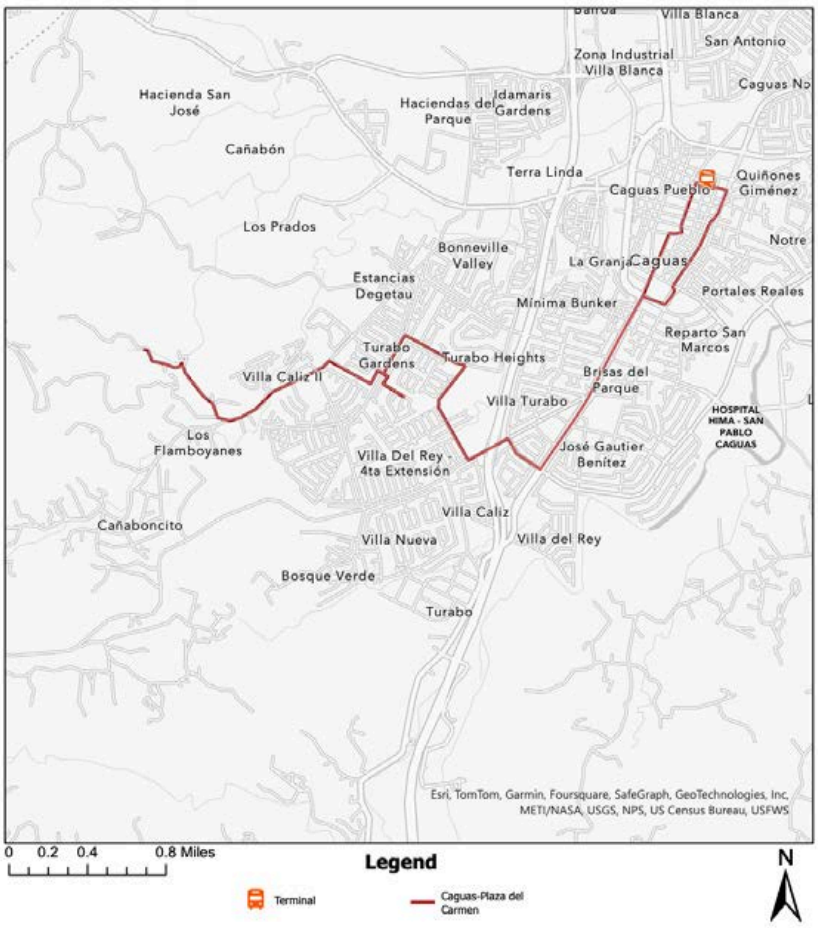


Figure 41. Caguas - Plaza del Carmen Map.

CAGUAS → SAN LORENZO
CODE: L-13-67

DEPARTURE:

"STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Right on Dr. Goyco Street, Right on Rafael Cordero Avenue, Left on Dr. Rufo Street, Left at GeorgettI Street (PR-183), Straight onto PR-183, Left onto PR-9931, Head onto José de Diego Street, Right at Luis Muñoz Rivera Street, Right at Valeriano Muñoz Street, Right at Eugenio Sánchez López Street, Left at José De Diego Street.

ARRIVAL:

"STAND" – JOSÉ DE DIEGO STREET & EUGENIO SÁNCHEZ LÓPEZ STREET CORNER

Head onto José de Diego Street, Right on PR-183, Head onto onto Georgetti Street, Right at Rafael Cordero Avenue, Left at Ruiz Belvis Street, Right at Acosta Street, Right at Dr. Goyco Street, Right at Rafael Cordero Avenue, Right at Francisco Pereira Casillas Terminal.

END OF ROUTE

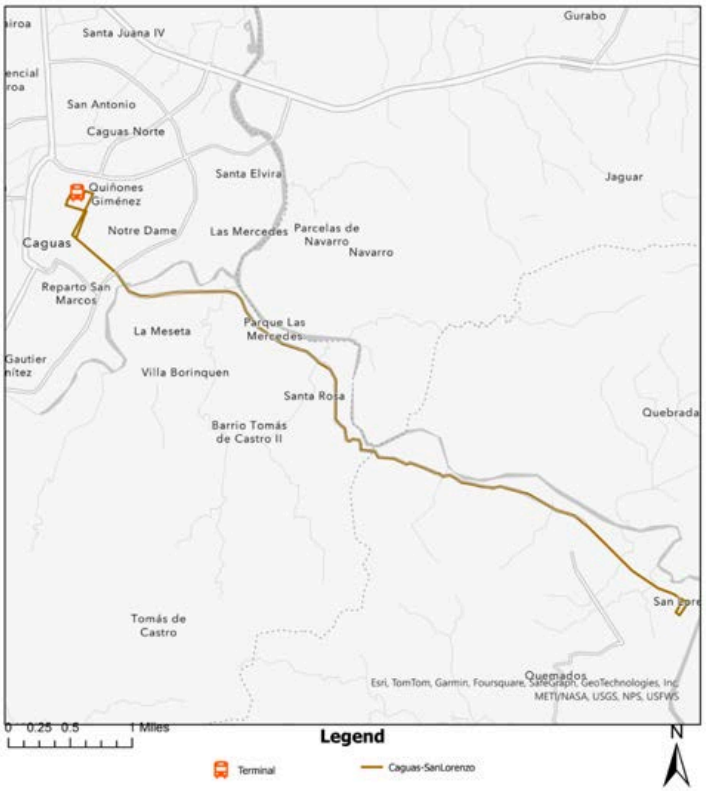


Figure 42 Caguas - San Lorenzo Map.

CAGUAS → TOMÁS DE CASTRO I
CODE: L-13-21

DEPARTURE:

“STAND" – GEORGETTI STREET

Head onto Georgetti Street going straight over to PR-183, Right on PR-788 (Tomás de Castro I and La Palmera Sector), Head towards PR-761 and PR-788 Intersection, Right at Km. 2, Make U-Turn, Right at PR-788 K2.0 H3.0 Los Montañéz Sector PR-788, Straight onto Tomás de Castro Parcels, Straight onto PR-766 (Buenos Aires Sector), Straight onto PR-788 (Los Muleros Sector).

ARRIVAL:

“STAND" – NO STAND

Straight onto Los Muleros Sector, Left at PR-788, Right onto PR-788 at the PR-788 and PR-766 Intersection, Straight onto PR-761, Straight onto PR-788, Left at the PR-183 Intersection, Straight onto Georgetti Street, Right onto Rafael Cordero Avenue, Left at Segundo Ruiz Belvis Street, Right at Acosta Street, Left, Right at Francisco Pereira Casillas Terminal.

END OF ROUTE

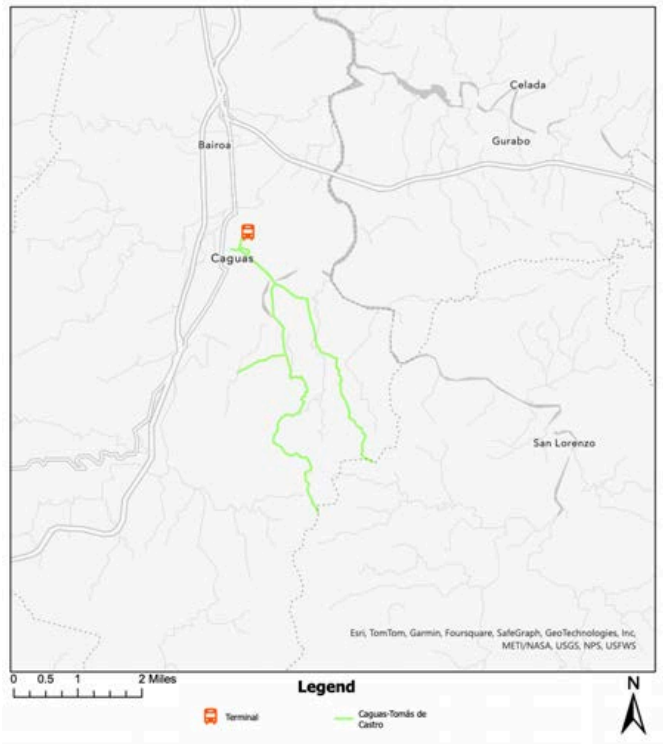


Figure 43. Caguas - Tomás de Castro I Map.

CAGUAS → TOMÁS DE CASTRO II
CODE: L-13-22

DEPARTURE:

“STAND" – GEORGETTI STREET

Head onto Georgetti Street going straight over to PR-183, Right on PR-78((Tomás de Castro II).

ARRIVAL:

“STAND" – RODRÍGUEZ MARKET IN RODRÍGUEZ SECTOR

On PR-789 make a Left at PR-183, Head towards Georgetti Street, Right at Rafael Cordero Avenue, Left at Alonso Street, Left at Dr. Rufo Street, Left at Georgetti Street.

END OF ROUTE

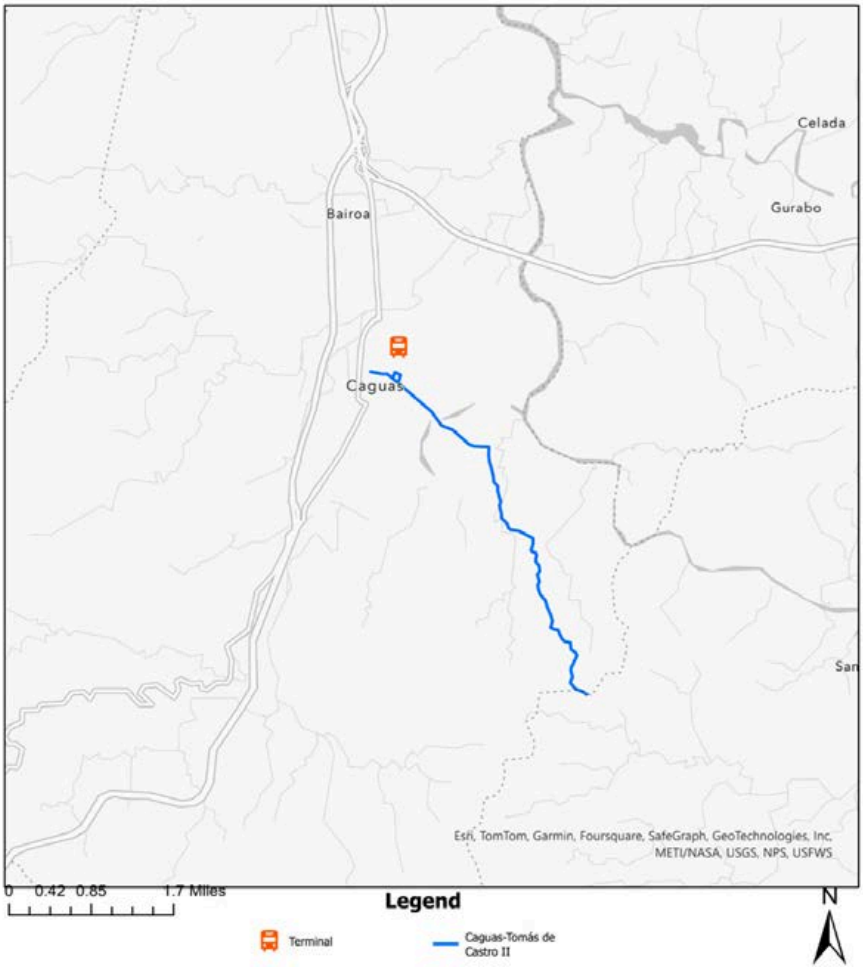


Figure 44. Caguas - Tomás de Castro II Map.

CAGUAS → TURABO ARRIBA
CODE: L-13-__

DEPARTURE:

"STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Right on Dr. Goyco Street, Left at Rafael Cordero Avenue, continue on Eugenio María de Hostos Street, Left at Gautier Benítez Avenue, Right at Pino Street, Head onto PR-172, Left at PR-7784, Head onto PR-7784 until reaching PR-172 Intersection.

ARRIVAL:

"STAND" – PR-172 & PR-7784 INTERSECTION
Right at PR-172, Head onto Pino Street, Left at PR-1, Left at Gautier Benítez Avenue, Right at Georgetti Street, Left at José L. Acosta Street, Right Celis Aguilera Street, Left at Francisco Pereira Casillas Terminal.

END OF ROUTE

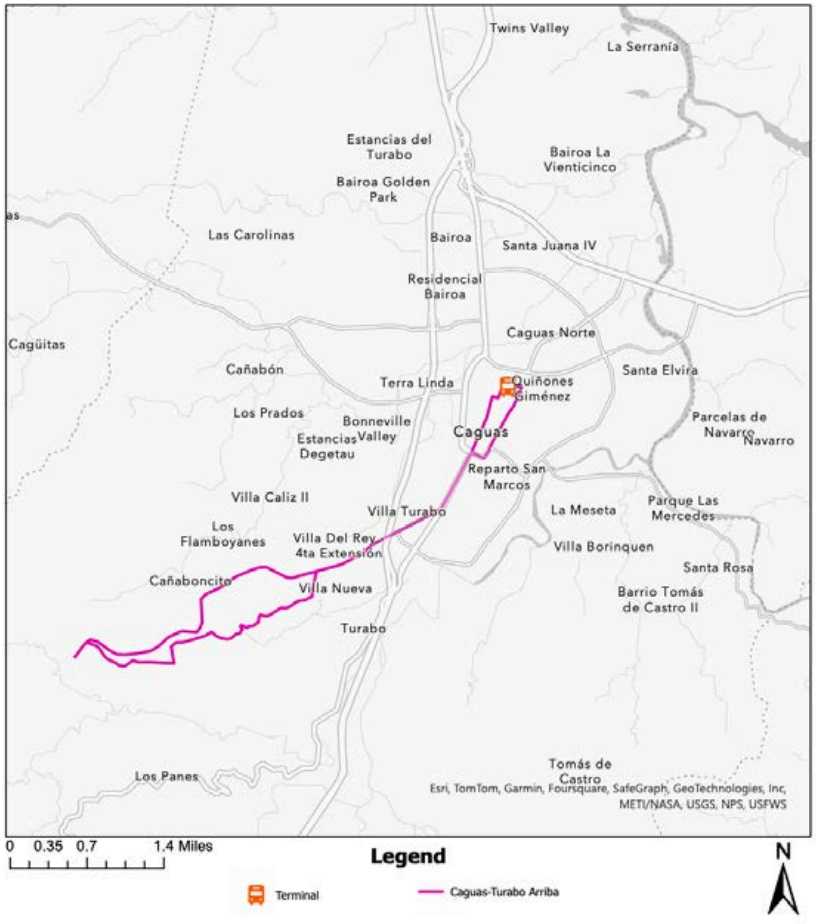


Figure 45. Caguas - Turabo Arriba Map.

CAGUAS → VALLE TOLIMA
CODE: L-13-07

DEPARTURE:

"STAND" – RUIZ BELVIS STREET

Left on Dr. Goyco Street, Right at Padial Street Entrance to Las Catalinas Mall, Left at Mall Entrance, Right at Mall Street, Left, Right, Right at PR-52 and PR-156 Intersection, Right at PR-34, Right at Urb. Valle Tolima Cañabon Ricky Seda Street, Left at Avelino Fuentes Avenue, Left at William Santiago Street, Left at Ramón Meléndez, Left at Jossie Pérez Street, Right at Milagros Carrillo Street, Left at Alicea Moreda Street, Right onto Nelson Millán Street.

ARRIVAL:

"STAND" – NELSON MILLÁN STREET

Right at Nelson Millán Street, Right at Ricky Seda Street, Left at PR-34 Avenue, Left at PR-156, Left at Las Catalinas Mall, Right at Mall Street, Left at Mall Exit, Right at Padial Street, Left at Celis Aguilera, Right at José L. Acosta Street, Left, Left.

END OF ROUTE

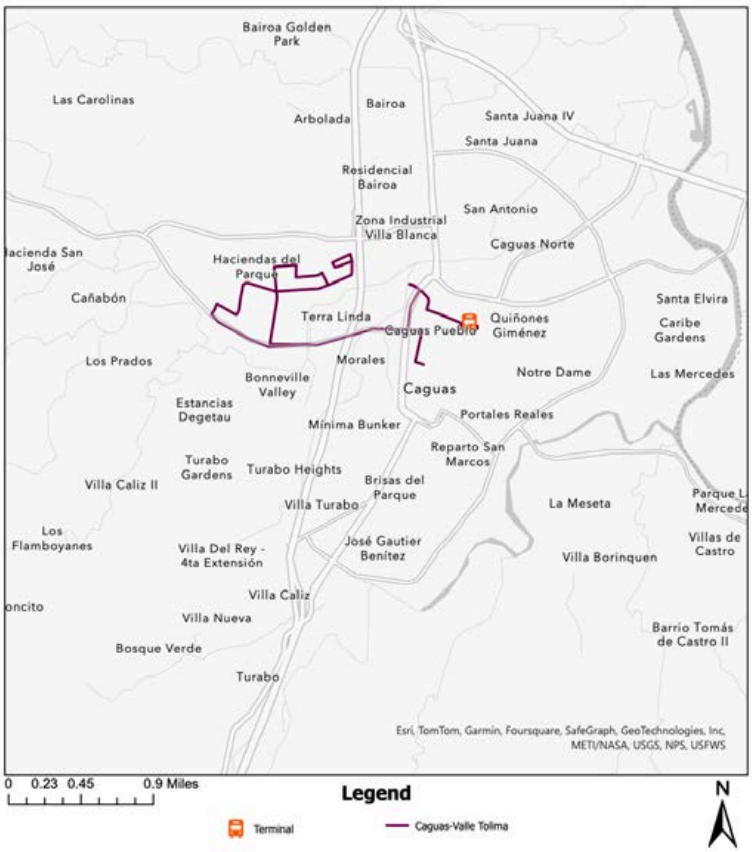


Figure 46. Caguas - Valle Tolima Map.

CAGUAS → VILLA BLANCA
CODE: L-13-E-33

DEPARTURE:

"STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Left on Dr. Goyco Street, Right José L. Acosta Street, Left at José Villares Avenue, Right at PR- 1, Right at Acerina Street, Right at Urb. Villa Blanca José Garrido Avenue, Right at 12th Street, Left at 4th Street, Right at José Garrido Avenue, Right at 4th Street, Left at Urb. Santa Juana 1st Street, Right at 5th Street, Left at 7th Street, Right at 6th Street, Right at 6th Street, U-Turn at 9th Street.

ARRIVAL:

"STAND" – NO STAND
Right 3rd Street, Right at 2nd Street, Left at 13th Street, Right at Luis Muñoz Marín Avenue, Left at Diamante Street, Right at José Garrido Avenue, Right at PR- 1, Left at José Villares Avenue, Right at José L. Acosta Street, Left at Francisco Pereira Casillas Terminal.

END OF ROUTE

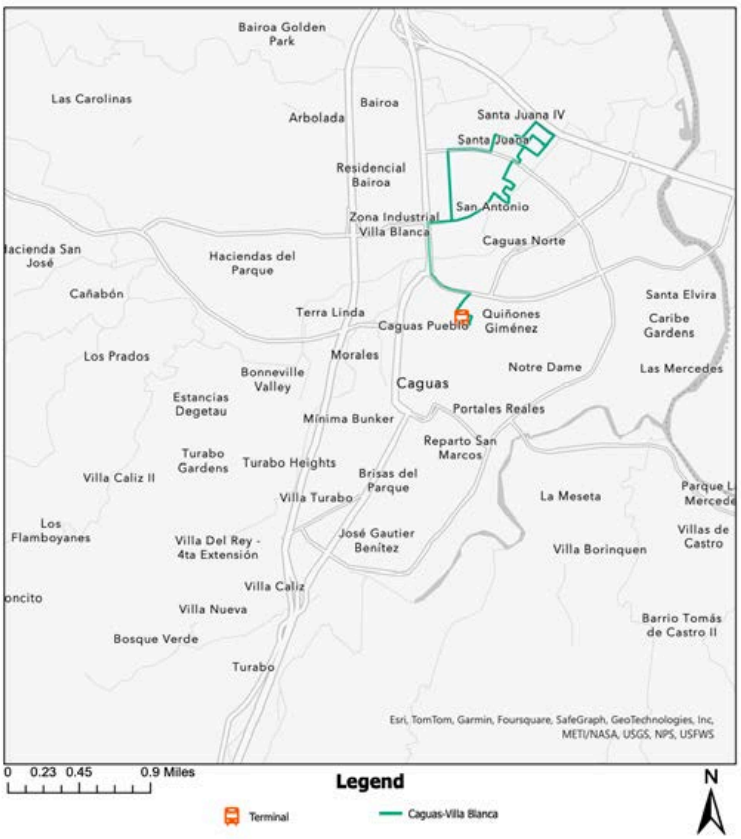


Figure 47. Caguas - Villa Blanca Map.

CAGUAS → VILLA DEL REY
CODE: L-13-23

DEPARTURE:

"STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Right on Dr. Goyco Street, Right on Rafael Cordero Avenue, Right at Eugenio María de Hostos Street, Left at Eugenio María de Hostos Street, Left at Gautier Benítez Avenue, Right at Luis Muñoz Marín Avenue, Left at PR-172, Right at Main Avenue 2nd Street, Left 31st Street, Right at Damascus Street, Right at 1st Street, Right at 32nd Street, Left at 31st Street.

ARRIVAL:

"STAND" – VILLA DEL REY BUENO SUPERMARKET
Right at Main Avenue, Left at PR-1172, Right at Luis Muñoz Marín Avenue, Left at Gautier Benítez Avenue, Right at Georgetti Street, Left at José L. Acosta Street, Right, Left at Francisco Pereira Casillas Terminal.

END OF ROUTE

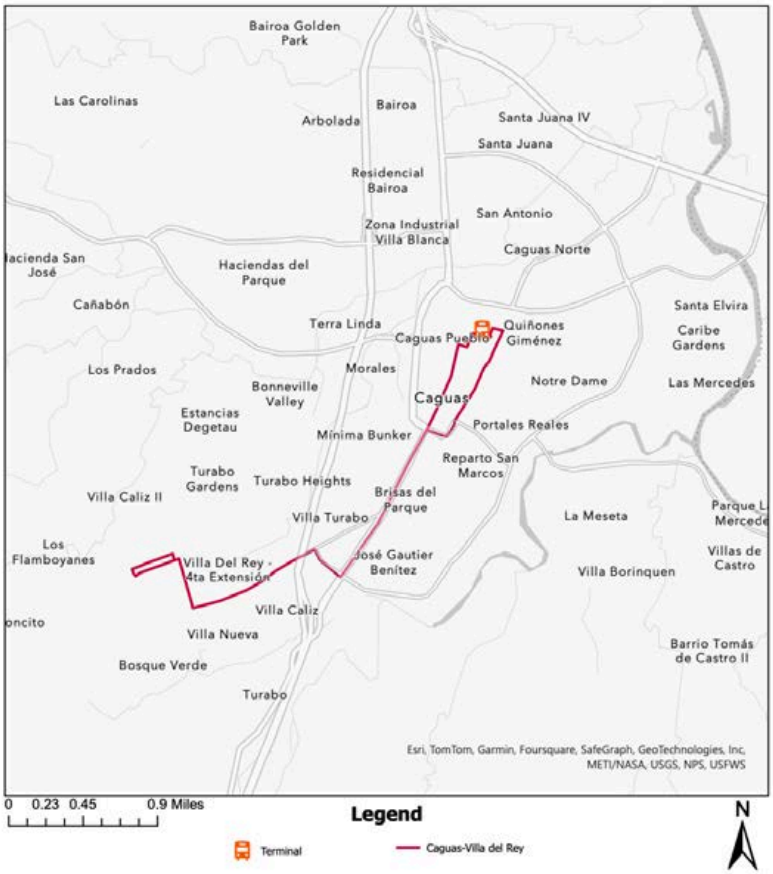


Figure 48. Caguas - Villa del Rey Map.

CAGUAS → VILLA ESPERANZA
CODE: L-13-24

DEPARTURE:

"STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Right on Dr. Goyco Street, Right on Rafael Cordero Avenue, Right at Eugenio María de Hostos Street, Left at Eugenio María de Hostos Street, Left at Gautier Benítez Avenue, Right at PR-1, Right at Esperanza Street, Left at Nobleza Street, Right at Igualdad Street, Right at Fraternidad Street, Right Esperanza Street.

ARRIVAL:

"STAND" – ESPERANZA STREET
Left at Gautier Benítez Avenue, Right at Georgetti Street, Left at José L. Acosta Street, Right, Left at Francisco Pereira Casillas Terminal.

END OF ROUTE

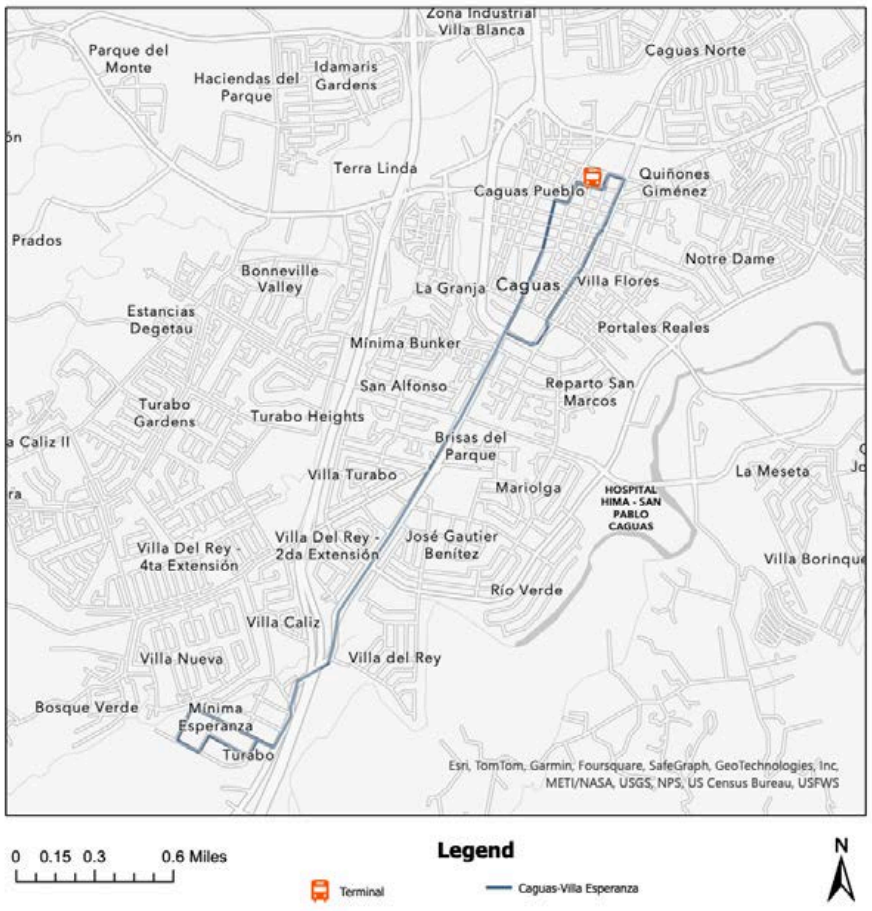


Figure 49. Caguas - Villa Esperanza Map.

CAGUAS → CAGUAS NORTE
CODE: L-13-06

DEPARTURE:

"STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Right on Dr. Goyco Street, Right on Rafael Cordero Avenue, Left at Caguas Norte Urbanization, Left at Génova Street, Left at Nebraska Street, Right Plaza Centro Mall, Left, Right at Plaza Centro Mall, Right at Mall Street, Right at Mall Street, Right at Mall Street, Left at Mall Street, Right at Mall Avenue, Head onto Walmart Plaza Centro.

ARRIVAL:

"STAND" – WALMART PLAZA CENTRO
Left at Mall Street, Right at Mall Street, Left, Left, Head onto Rafael Cordero Avenue, Right at Francisco Pereira Casillas Terminal.

END OF ROUTE

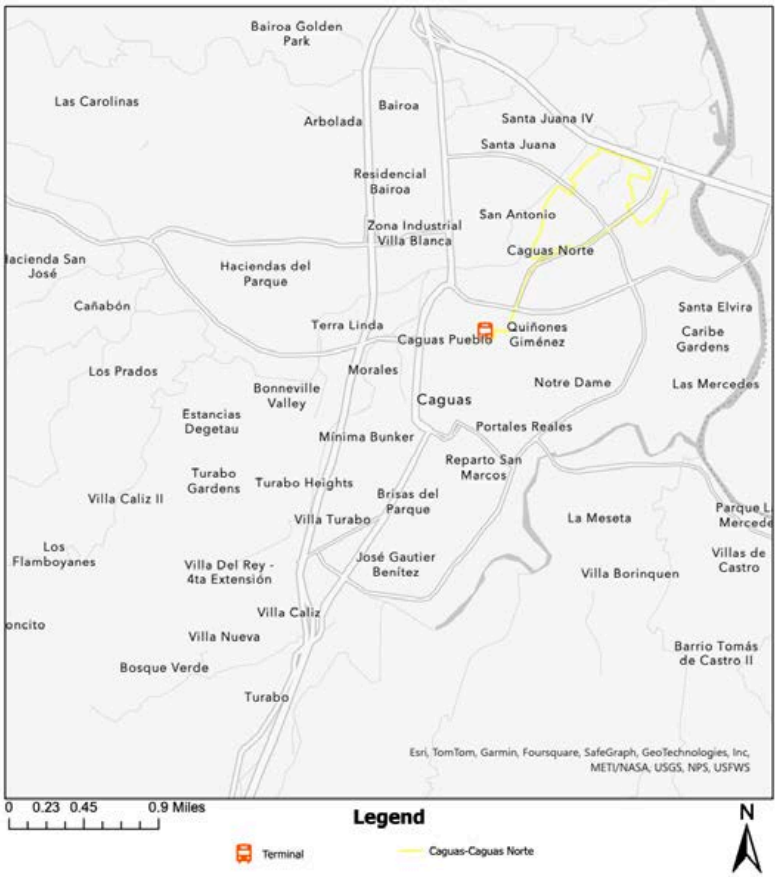


Figure 50. Caguas - Caguas Norte Map.

CAGUAS → TRADITIONAL URBAN CENTER
CODE: L-13-__

DEPARTURE:

"STAND" – FRANCISO PEREIRA CASILLAS PUBLIC CAR TERMINAL
Right at Dr. Goyco Street, Right at Rafael Cordero Avenue, Right at Segundo Ruiz Belviz Street, Left at Muñoz Rivera Street (Stop), Left at Georgetti Street (Stop 2).

ARRIVAL:

"STAND" – PLAZA GAUTIER
Head onto Georgetti Street, Left at Acosta Street, Right at Francisco Pereira Casillas Terminal.

END OF ROUTE

Figure 51. Caguas - Traditional Urban Center Map.

4.4. PROPOSED TRANSPORTATION ROUTES

Once the areas that could support the additional transit demands were identified, potential public transit roadways for the TransCriollo system were identified to provide the appropriate connections and efficiency of services in the provision of public transit services. All major connections were considered because the public transit service is expected to operate in these roadways.

The new roadways considered as additional potential transit corridors are: Tomás de Castro (Trans-C10) and Villas de Castro (Trans-C11). The potential transit corridors were then used to identify the potential transit coverage area. The Transcriollo System Proposed Transportation Routes System will include the following routes:

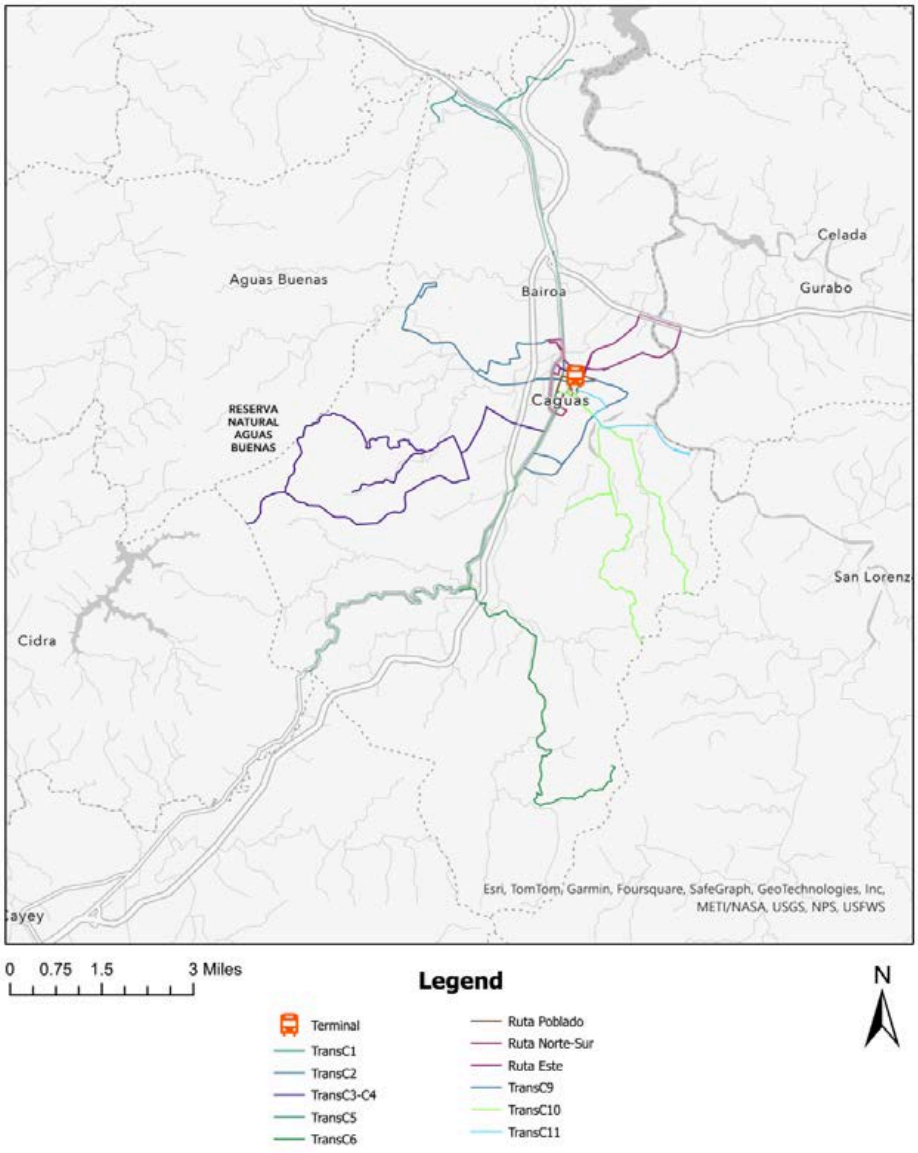


Figure 52. Proposed Transportation Routes Map.

TRANS-C1
SAN ANTONIO WARD, RÍO CAÑAS WARD, AND LA CHANGA SECTOR

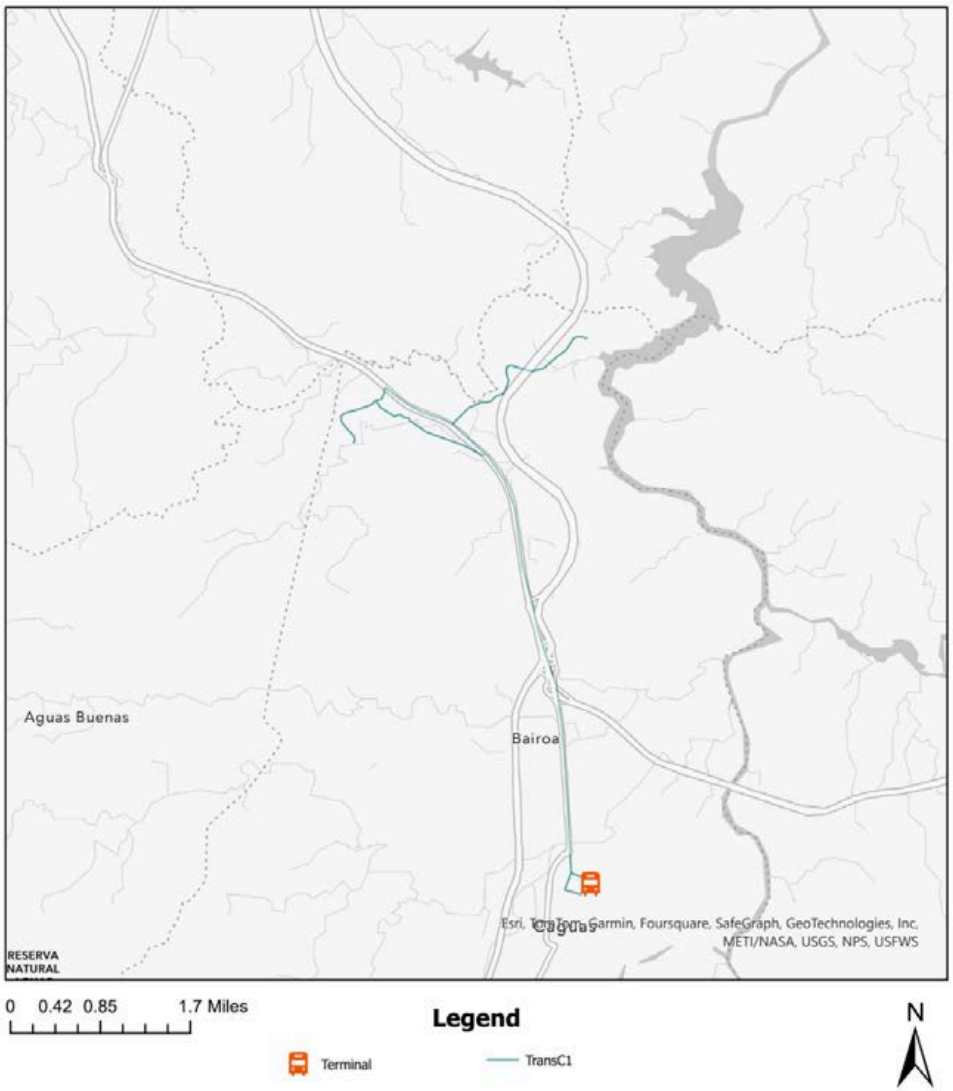


Figure 53. TRANS-C1 Map.

TRANS-C2
URB. IDAMARIS GARDENS, URB. VALLE TOLIMA, AND LAS CAROLINAS

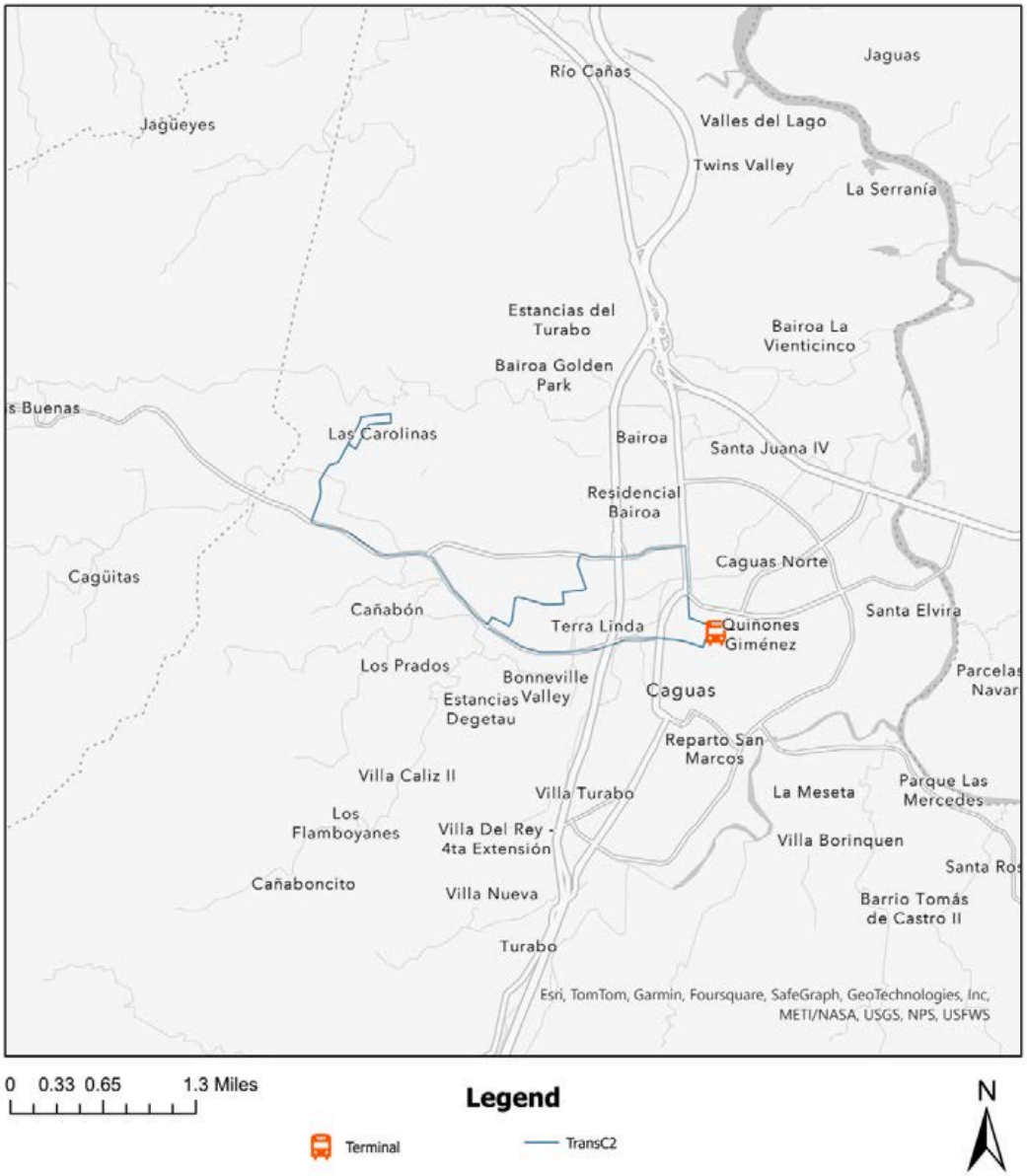


Figure 54. TRANS-C2 Map.

TRANS-C3 & C4
CAÑABONCITO WARD, HORMIGAS SECTOR, AND LA SIERRA SECTOR

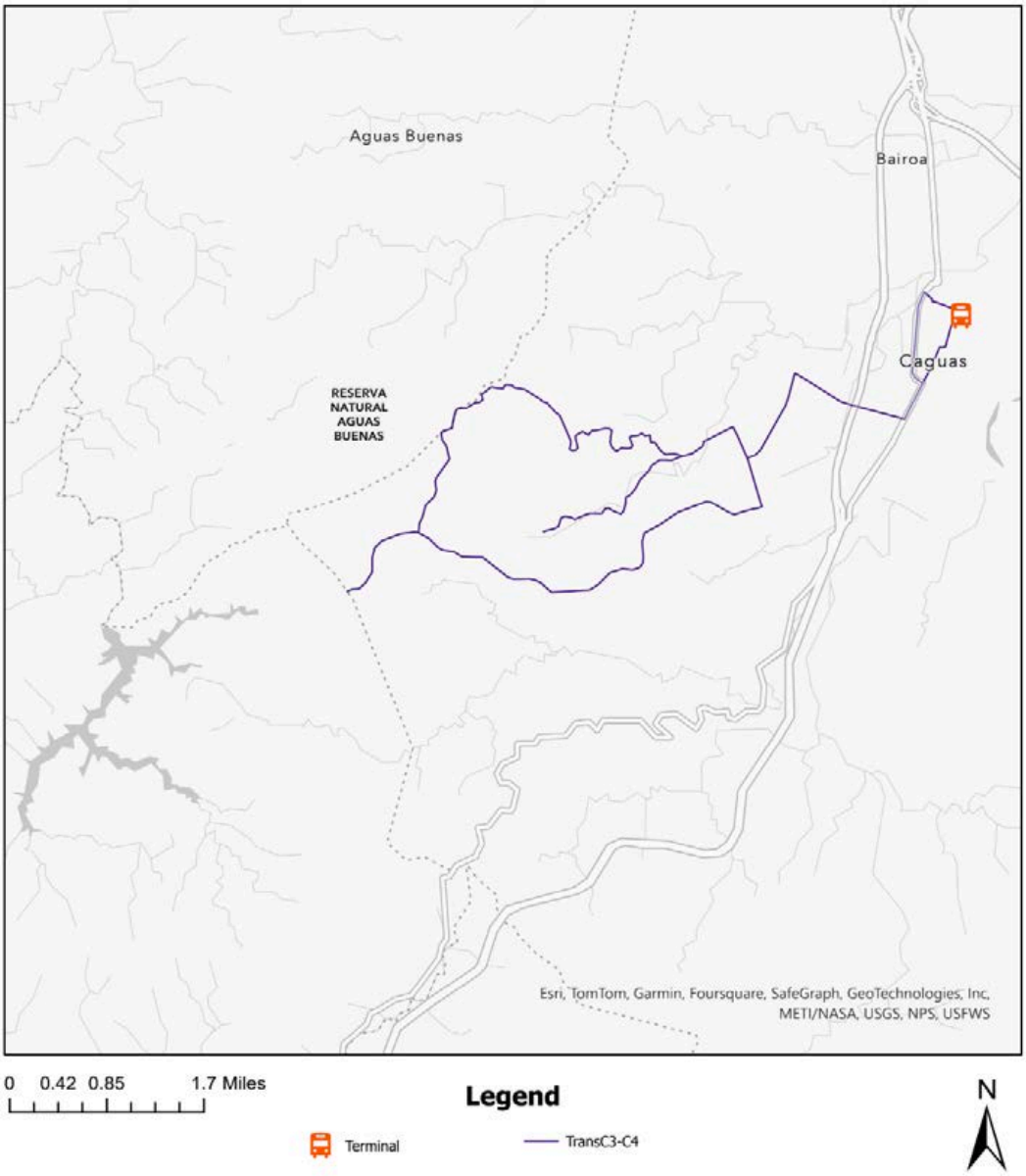


Figure 55. TRANS-C3 C4 Map.

TRANS-C5
BEATRIZ WARD

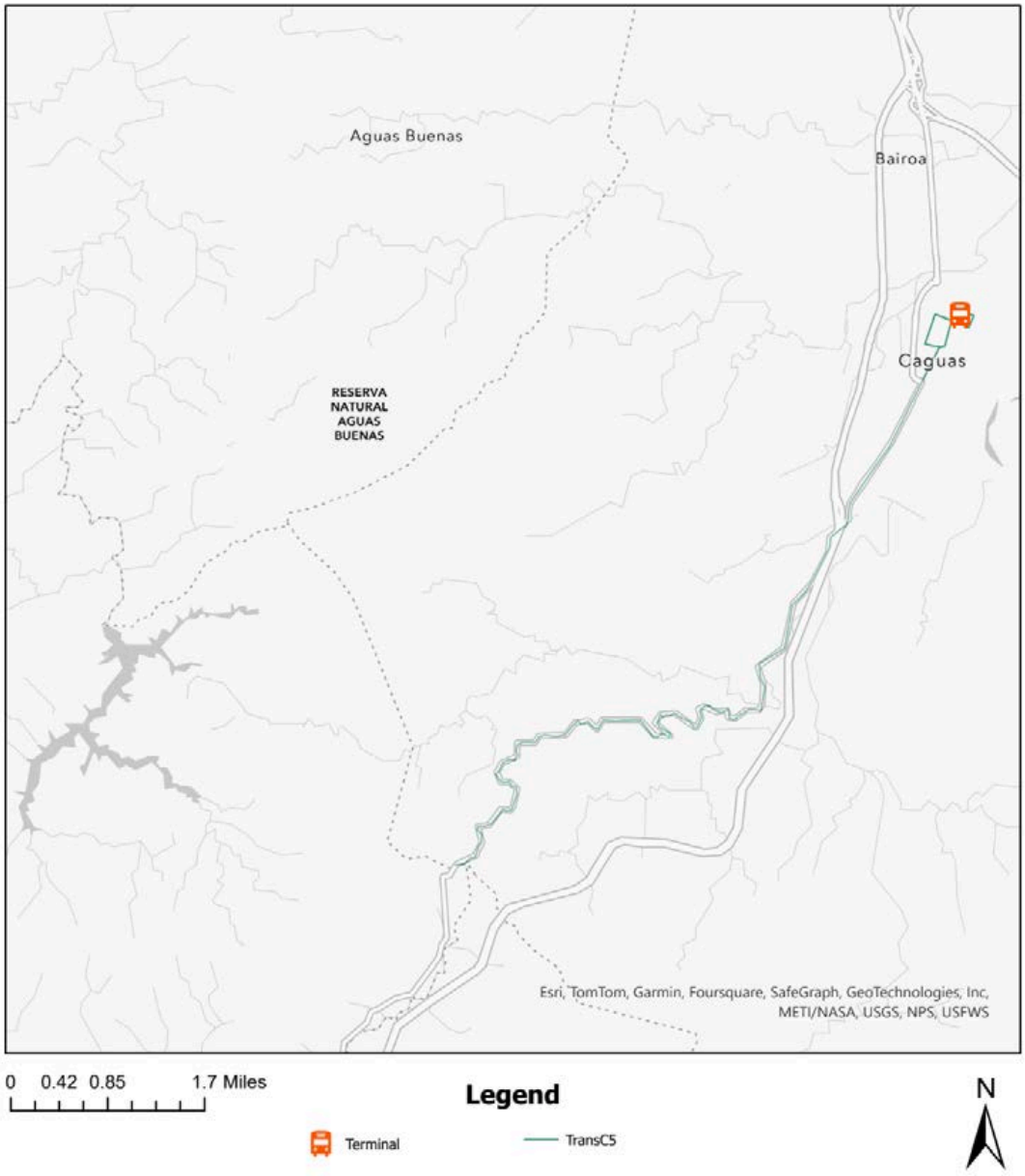


Figure 56. TRANS-C5 Map.

TRANS-C6
SAN SALVADOR WARD

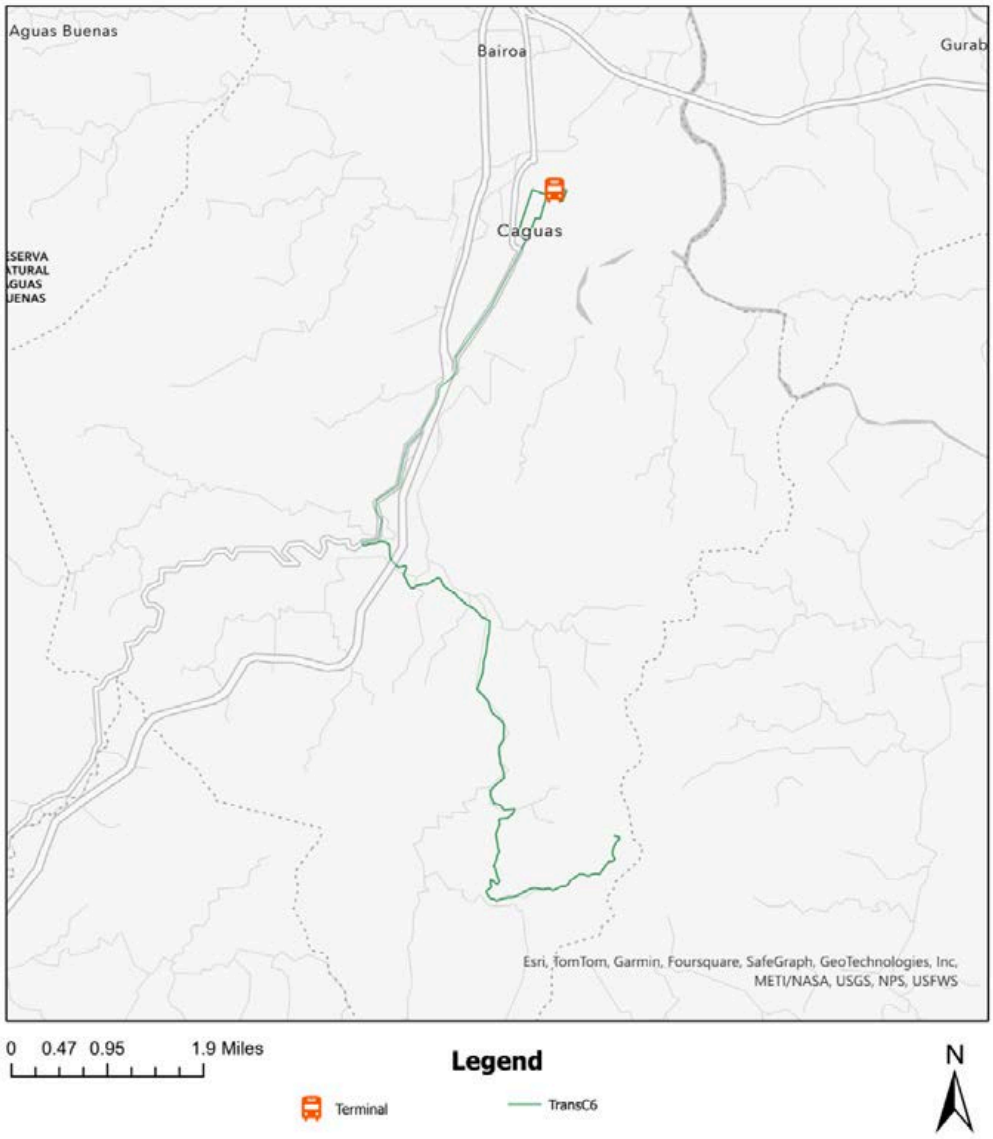


Figure 57. TRANS-C6 Map.

POBLADO ROUTE
TROLLEY ROUTE

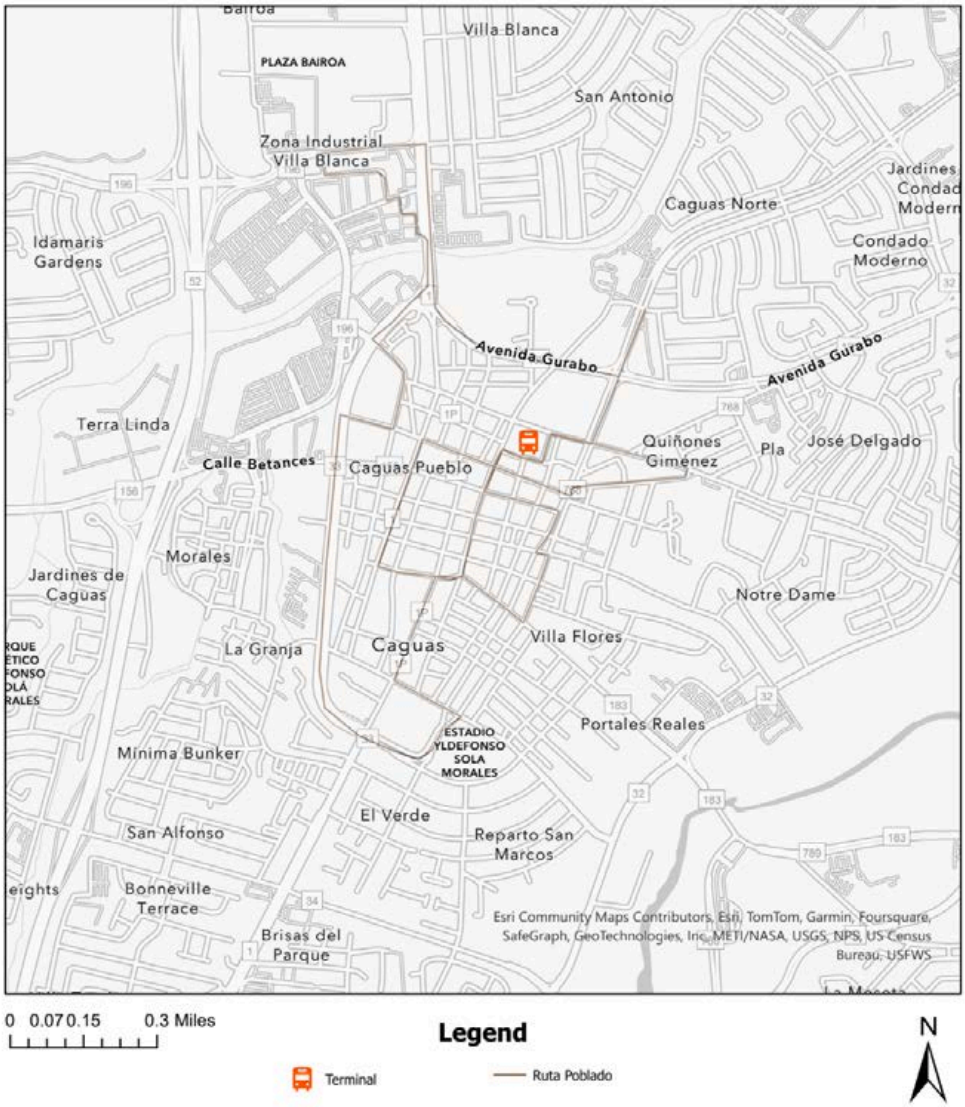


Figure 58. Poblado Route Map.

EAST ROUTE
SANTA ELVIRA, PLAZA CENTRO, AND PUEBLO

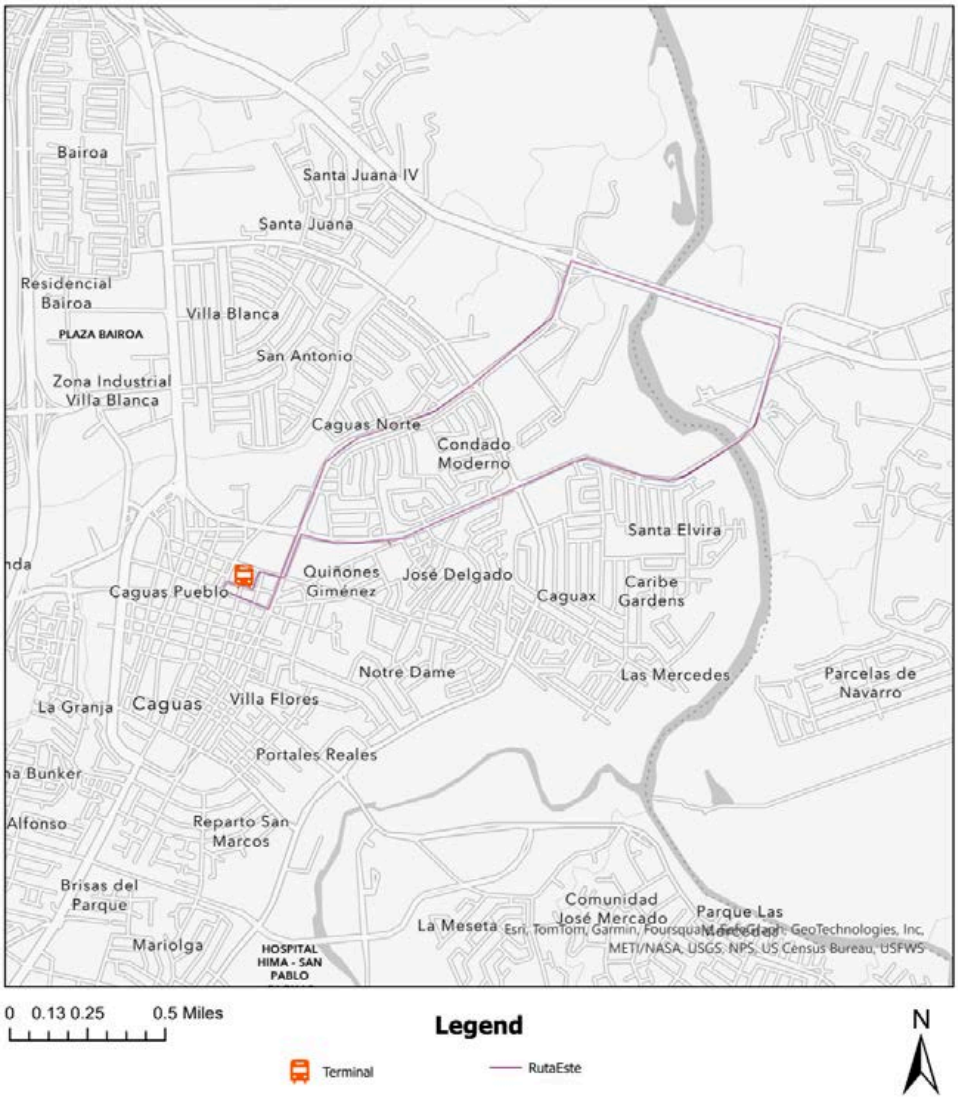


Figure 59. East Route Map.

NORTH/SOUTH ROUTE
VILLA BLANCA, SAVARONA, AND PUEBLO

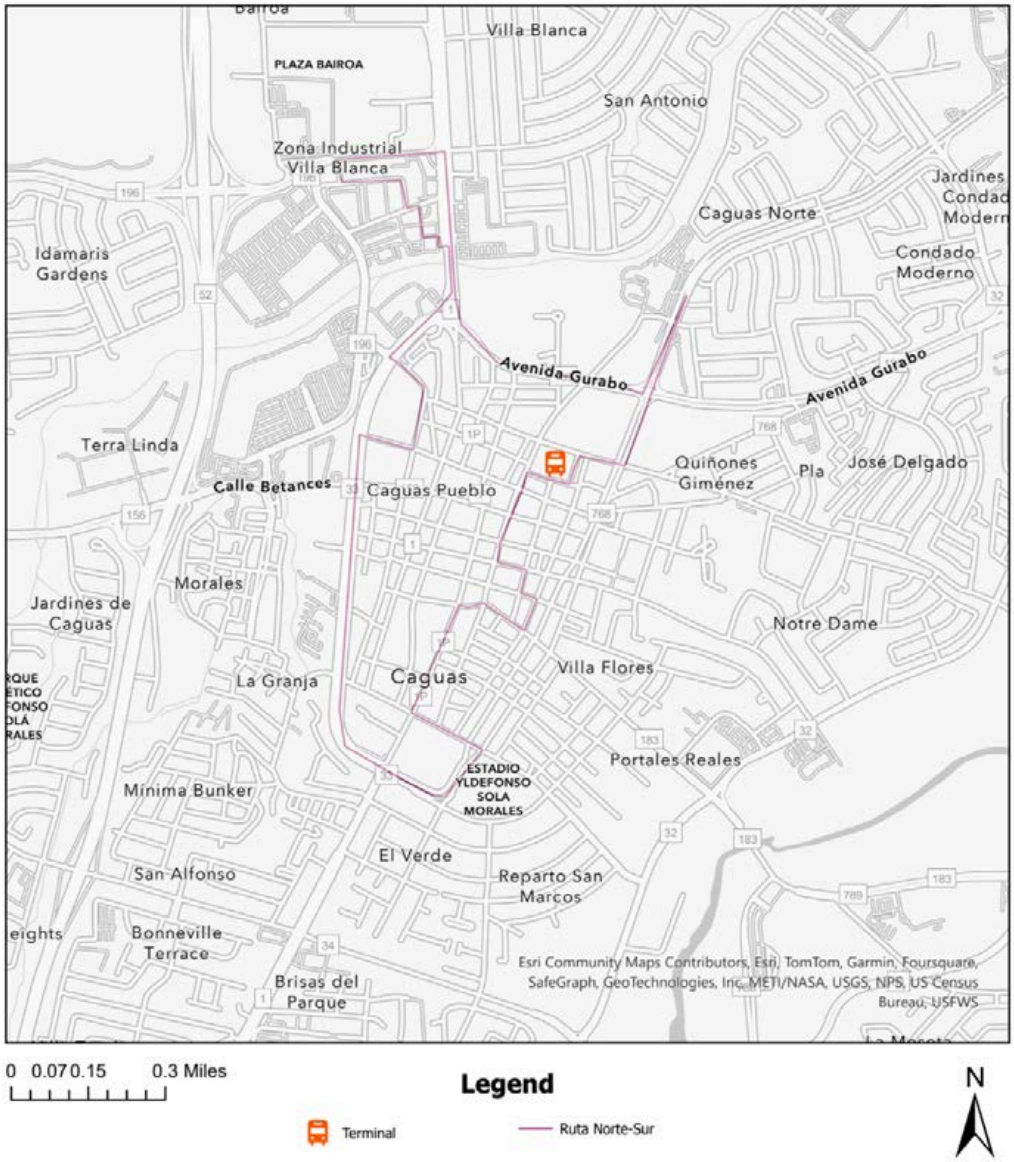


Figure 60. North/South Route Map.

TRANS-C9
HOSPITAL PAVÍA, PEPE GANGA, VILLA DEL REY, AND VILLA DEL CARMEN

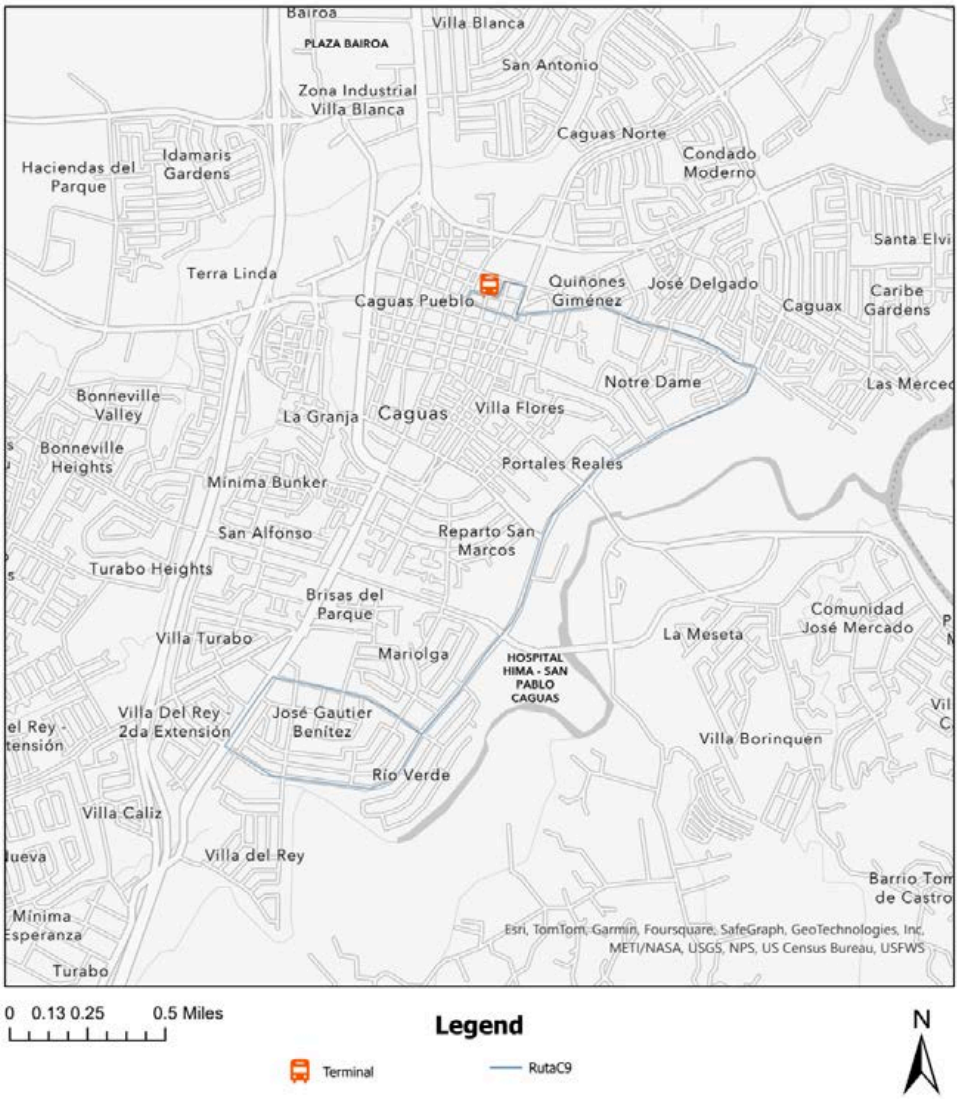


Figure 61. TRANS-C9 Map.

TRANS-C10
TOMÁS DE CASTRO

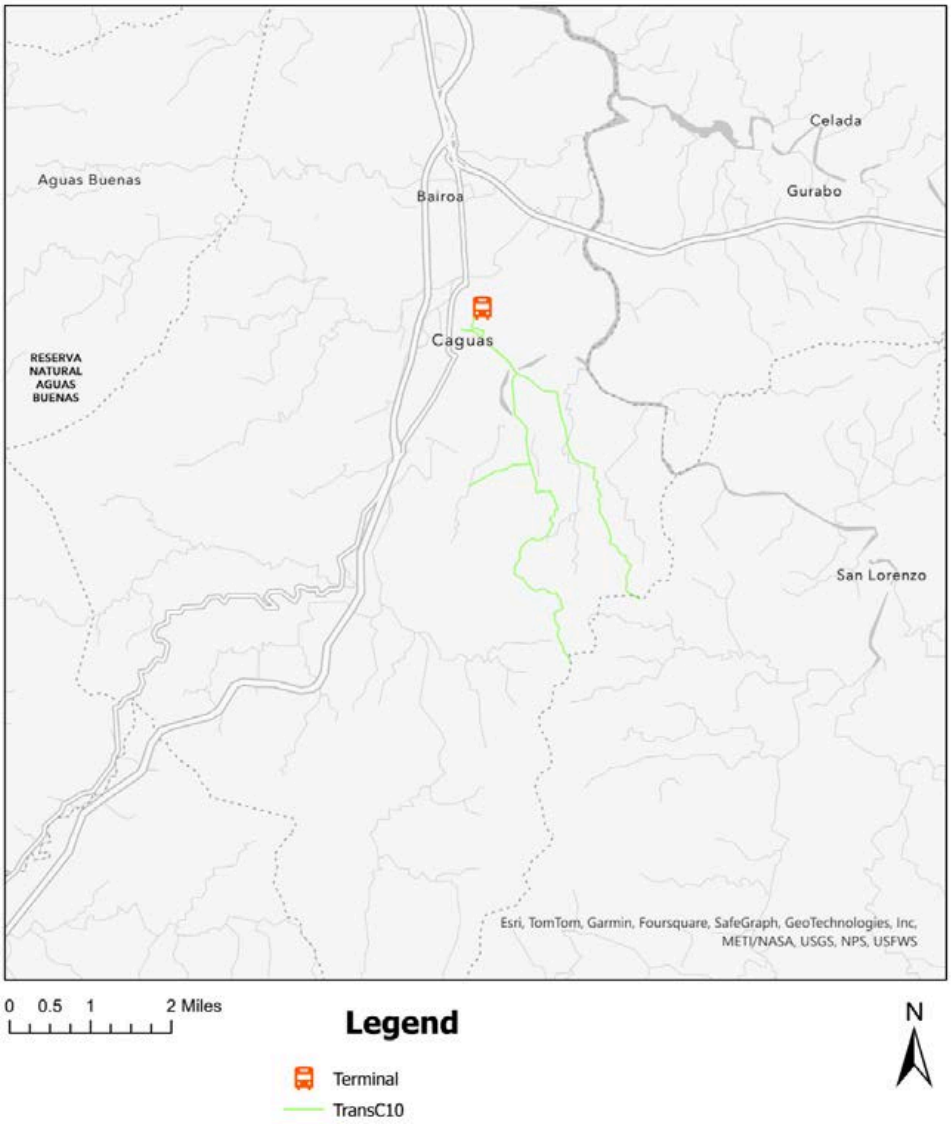


Figure 62. TRANS-C10 Map.

TRANS-C11
VILLAS DE CASTRO

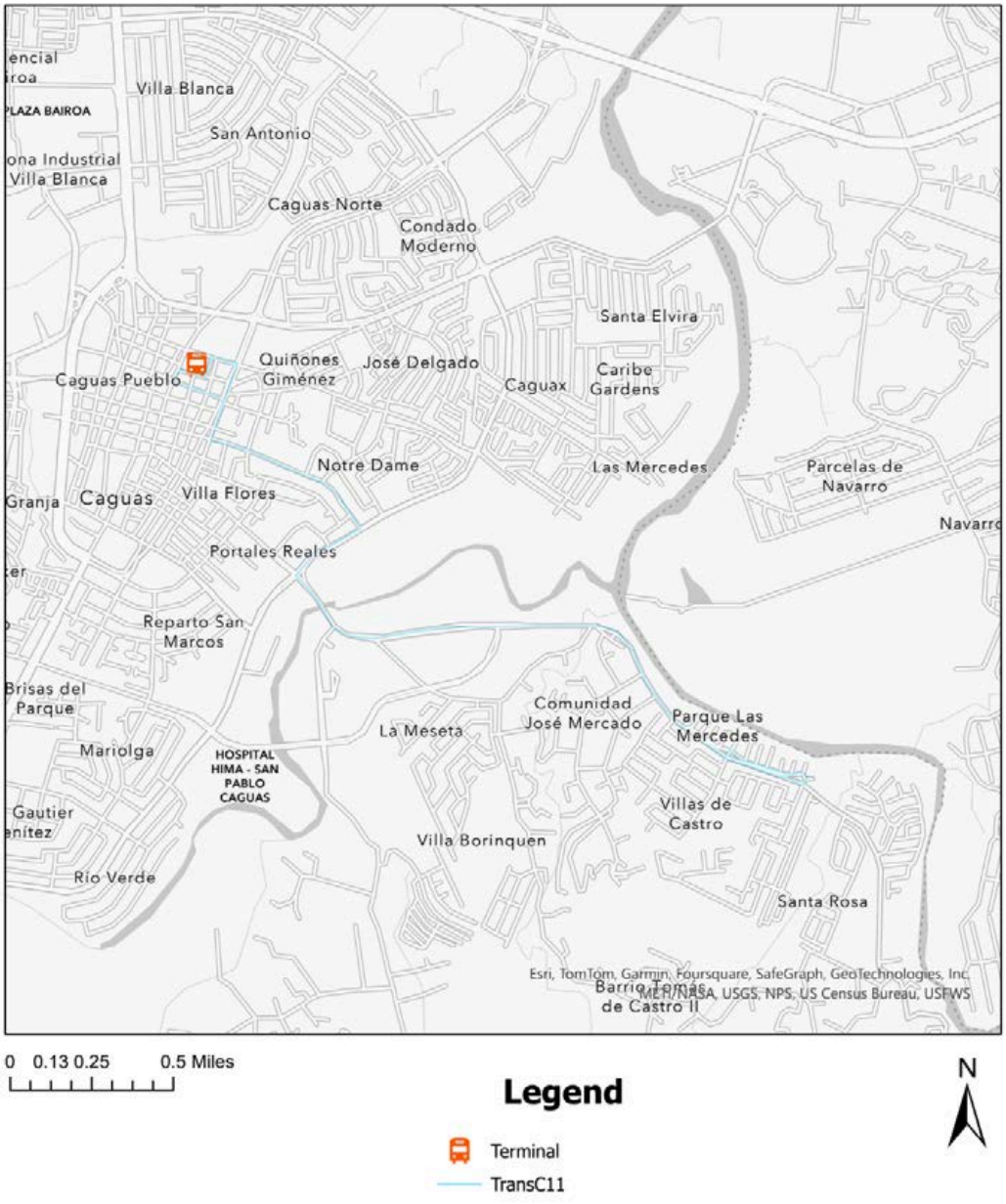


Figure 63. TRANS-C11 Map.

5. IMPLEMENTATION PROCESS

The System Service Plan will require time and effort to implement. The Plan's policies and strategies require collaboration to be effective, and many of them require local government and stakeholder commitment over the long-term. Implementation will occur stepwise as plans are updated, laws and rules change, and funding is allocated to different projects, services, and programs.

As previously mentioned, support from "Públicos" is required for the implementation of the public transportation system. "Públicos" have experienced a significant drop in ridership, routes and trips. A trend that is expected to continue in the absence of policies and programs aimed at stabilizing the services.

The public transportation system will be financed by the Municipality matching 20% of capital expenses (occasionally covered with Toll Credits of PRHTA) and 50% of salaries, among other operational expenses. The Municipality will match Federal funding from the Federal Transit Administration (FTA) for eligible activities within the different available Section Programs for Collective Transportation Systems. The Municipality will offer free of charge services to citizens and visitors of Caguas. The lack of fares possesses challenges to the services' coverage areas and long-term funding. As a result, it is important to provide recommendations about how to strengthen and support these services.

The integration of both Municipal and "Públicos" to the system could be a practical alternative for many reasons including better use of resources, economic development alternatives and cost-effectiveness. "Públicos" operators could enter into agreements with the Municipality to support the implementation of the proposed system. The agreement could include provisions such as:

1. Providing drivers with an economic incentive suitable for the specific route to ensure minimum income levels;

2. Establish service requirements including vehicles/drivers available to a particular route, fares, standards of service and frequencies;

and

3. Providing mechanical and maintenance service of fleets.

5.1. ELEMENTS OF IMPLEMENTATION

The following elements will determine the feasibility of public transportation in Caguas and should be considered as key elements of the implementation process:

5.1.1. VISION

The Collective Transportation Plan articulates a vision for the future of public transportation, created with input from Municipality's officials, transportation operators and citizens of Caguas. The Plan sets the stage for a future where public transportation:

- Becomes an essential piece of the Municipality's overall transportation system.
- Improves citizen's and visitor's experience in the Municipality.
- Promotes the local economy and access to services, jobs, educational, and recreational opportunities.
- Responds to the different needs of communities and populations, specially for whom public transportation provides essential mobility.
- Promotes accommodating diverse people and diverse needs to allow all to use public transportation services for many trips.

5.1.2. SERVICE HOURS

The schedule recommended for the operation of the proposed Transportation Plan is the following:

All routes will operate from 6:00 a.m. to 6:00 p.m. from Monday to Friday (First Phase), and between 8:00 a.m. and 4:00 p.m. on Saturday and Sunday (Second Phase).

5.1.4. FLEET DESCRIPTION

The layout characteristics and current transportation terminal of the Municipality of Caguas were considered when determining the fleet necessary for implementing the Collective Transportation Plan. There are several models currently in the market that fit the fleet description. As example, a van similar to the Transit, shown in Figure 64, is recommended. This model can be acquired to support 30 and 14 passengers in a mini-bus and paratransit bus, respectively.

Figure 64. Recommended Fleet.

5.1.5. CAPITAL IMPROVEMENTS

5.1.5.1. BUS STOPS

Considering the accessibility and security measures, 62 bus shelters should be acquired and strategically located at both sides of the street and at a reasonable distance from the communities along the public transportation bus stops. These measures will decrease the complimentary paratransit demand.

5.1.5.2. SATELLITE TERMINALS

Satellite terminals are essential to a successful public transportation system because they improve accessibility, reduce congestion at main hubs, and optimize the flow of passengers across the network. By establishing secondary hubs in suburban and outlying areas, they make public transit more accessible to people who live farther from the downtown terminal and principal transit corridors, encouraging more ridership and reducing car dependency. These terminals help distribute traffic away from overcrowded central stations, enhancing operational efficiency and reducing wait times. Additionally, satellite terminals support intermodal transfers by connecting with other transit modes, providing flexibility and resilience during disruptions. Altogether, satellite terminals contribute to a more connected, balanced, and reliable transportation system that can serve a broader population effectively.

The recommended satellite terminals shall be located in:

1. EcoPlaza - Borinquen Ward
2. Centro Comunal Cañaboncito - Cañaboncito Ward
3. Centro Criollo del Saber - Beatriz Ward
4. Ing. Ángel O. Berríos Díaz Sports Complex Center - Cañabón Ward
5. La Mesa y La Barra Communities
6. Complejo Recreo Deportivo del Este - Tomás de Castro Ward

5.1.5.3. LAND PARCEL ACQUISITION FOR BUS STOPS

Acquiring land parcels around bus stops enhances public transportation by allowing for more spacious, accessible, and safer transit areas. With additional space, transit agencies can build larger waiting areas, shelters, and ADA-compliant paths, creating a comfortable experience for all riders. Dedicated pull-off lanes for buses can reduce congestion and improve traffic flow by keeping buses from blocking main lanes during loading and unloading. Extra land also allows for landscaping, lighting, and signage improvements, making bus stops safer and more inviting. Overall, land acquisition provides the flexibility needed to adapt bus stops to evolving ridership needs and future transportation innovations, ensuring a robust and efficient transit system.

The recommended sites for improvement locate in:

1. Cañaboncito Ward PR- 784 Km. 5.1
2. La Sierra Sector PR-172 Km. 19.6*
3. La Changa Sector PR-799 Km. 2.8
4. San Antonio Ward PR-175 Km. 2.1

**No Land Acquisition required. Dedicate pull-off lane will locate in a municipal parcel.*

5.1.5.4. CONSTRUCTION AND RECONSTRUCTION OF SIDEWALKS AND RAMPS ALONG THE TRANSPORTATION SYSTEM STOP AREAS

REFERENCE POINT	KM	TYPE OF STOP	SUGGESTED/ EXISTENT	WARD	WAY	ROUTE
Cancha La Barra	PR-1 Km. 29.9	Shelter	Existent	Rio Cañas	Departing	C1
Carr. PR-1 (Int. San Pedro State)	PR-1 Km. 28.5	Shelter	Existent	Rio Cañas	Departing	C1
Sec. El Salchichón	PR-175 Km. 1.8	Shelter	Existent	San Antonio	Departing	C1
Rest. El Bohio	PR-175 Km. 2.7	Sign	Suggested	San Antonio	Turning Point	C1
Sec. El Salchichón	PR-175 Km. 1.8	Sign	Suggested	San Antonio	Return	C1
Centro De Usos Multiples (Bienvenido a San Antonio)	PR-175 Km. 1.1	Sign	Suggested	San Antonio	Return	C1
Sec. Los Pinos	PR-175 Km. 0.8	Shelter	Existent	San Antonio	Return	C1
Facilidades Recreativa La Changa	PR-799	Sign	Suggested	La Changa	Turning Point	C1
Centro para Damas Puerto Rico Teen Challenge	PR-798 Km. 1.7	Sign	Suggested	Rio Cañas	Return	C1
San Pedro State	PR-798 Km. 2.8	Shelter	Existent	Rio Cañas	Return	C1
La Mesa (Crossing Bridge)	PR-1 Km. 29.6	Shelter	Existent	Rio Cañas	Return	C1
Liberty Bairoa	PR-1 Km. 32.6	Sign	Suggested	Bairoa	Return	C1
Jardín Botánico	PR-156 Km. 55.6	Shelter	Existent	Cañabón	Departing	C2
Hacienda San José	PR-156 Km. 54.8	Shelter	Existent	Cañabón	Departing	C2
Ave. Las Carolinas	Int Azucena	Sign	Suggested	Cañabón	Departing	C2
Ave. Las Carolinas	Int. Amapola	Sign	Suggested	Cañabón	Departing	C2
Las Carolinas	Calle Gardenia	Sign	Suggested	Cañabón	Departing	C2
Vista de San José	Ave. Las Carolinas	Sign	Suggested	Cañabón	Return	C2
Salida de Las Carlina	PR-156	Sign	Existent	Cañabón	Return	C2
Hacienda San José	PR-156	Sign	Suggested	Cañabón	Return	C2

Table 5. Construction and Reconsruction of Sidewals and Ramps along Transportation System Stop Areas

REFERENCE POINT	KM	TYPE OF STOP	SUGGESTED/ EXISTENT	WARD	WAY	ROUTE
Iglesia Boneville Manor	Ave. Turabo Int. Ave. Shuford	Sign	Suggested	Turabo	Departing	C3-C4
Turabo Garden II y III	Ave. Turabo	Sign	Suggested	Turabo	Departing	C3-C4
Turabo Garden III	Ave. Principal Int Calle 32 Oeste	Sign	Suggested	Turabo	Departing	C3-C4
Centro Comunal Cañaboncito	PR-784 Km. 3.4	Sign	Suggested	Cañaboncito	Departing	C3-C4
Bario Cañaboncito	PR-784 Km. 4	Shelter	Existent	Cañaboncito	Departing	C3-C4
Sec. Los Velazquez	PR-784 Km. 4.7	Sign	Suggested	Cañaboncito	Departing	C3-C4
Sec. Los Guzman (Iglesia La Bendición)	PR-785 Km. 0.1	Sign	Suggested	Hormigas	Departing	C3-C4
Sec. Hormigas	PR-785 Km. 2.6	Sign	Suggested	Hormigas	Departing	C3-C4
Sec. Hormigas	PR-785 Km. 3.6	Shelter	Suggested	Hormigas	Departing	C3-C4
Sec. Hormigas	PR-785 Km. 4.1	Sign	Suggested	Hormigas	Departing	C3-C4
Sec. Los Osorios	PR-785 Km. 5.0	Shelter	Existent	Hormigas	Departing	C3-C4
Ecomax	PR-785 Km. 6.5	Sign	Suggested	Hormigas	Departing	C3-C4
Buzones	PR-172 Km. 20.4	Shelter	Suggested	Sec. Certeneja	Departing	C3-C4
Sec. La Sierra	PR-172 Km. 19.5	Shelter	Suggested	Sec. La Sierra	Turning Point	C3-C4
Sec. La Sierra	PR-172 Km. 19.6	Shelter	Existent	Sec. La Sierra	Return	C3-C4
Centro Criollo de Informacion, La Sierra	PR-172 Km. 20.2	Shelter	Suggested	Sec. La Sierra	Return	C3-C4
Sec. La Sierra	PR-172 Km. 20.9	Shelter	Existent	Sec. La Sierra	Return	C3-C4
Sec. Palmar	PR-172 Km. 22.5	Shelter	Existent	Sec. El Palmar	Return	C3-C4

Table 6. Construction and Reconsruction of Sidewals and Ramps along Transportation System Stop Areas

REFERENCE POINT	KM	TYPE OF STOP	SUGGESTED/ EXISTENT	WARD	WAY	ROUTE
Sec. Ortíz	PR-1 Km. 44.6	Sign	Suggested	Beatriz	Departing	C5
PR-1	PR-1 Km. 46.4	Sign	Suggested	Beatriz	Departing	C5
Alt. De Beatriz (Los Cheitos)	PR-1 Km. 46.7	Sign	Suggested	Beatriz	Departing	C5
Sec. Muñoz Grillo	PR-1 Km. 47	Sign	Suggested	Beatriz	Departing	C5
Sec. Las Piñas	PR-1 Km. 48.1	Shelter	Existent	Beatriz	Departing	C5
Sec. Las Piñas	PR-1 Km. 48.1	Shelter	Existent	Beatriz	Return	C5
Sec. Muñoz Grillo	PR-1 Km. 47	Shelter	Existent	Beatriz	Return	C5
Alt. De Beatriz (Los Cheitos)	PR-1 Km. 46.8	Shelter	Existent	Beatriz	Return	C5
Sec. Jurado (Col. El Mango)	PR-1 Km. 45.6	Shelter	Existent	Beatriz	Return	C5
Sec. Ortiz	PR-1 Km. 44.5	Sign	Suggested	Beatriz	Return	C5
Sec. Los Panes	PR-1 Km. 44.3	Shelter	Existent	Beatriz	Return	C5
PR-765 Int. PR-1	PR-765 Km. 0	Shelter	Suggested	Turabo	Departing	C5, C6
Villa Sauri	PR-765 Km. 1.3	Sign	Suggested	Turabo	Departing	C6
Terrazas de Borinquen	PR-765 Km. 3.5	Shelter	Suggested	Turabo	Departing	C6
Sec. Anon	PR-765 Km. 6.3	Sign	Suggested	Turabo	Departing	C6
Bienvenido a San Salvador	PR-765 Km. 8.2	Shelter	Suggested	San Salvador	Departing	C6
Sec. Morena	PR-765 Km. 8.4	Sign	Suggested	San Salvador	Departing	C6
Sec. Maracal	PR-765 Km. 8.8	Sign	Suggested	San Salvador	Departing	C6
Sec. Maracal	PR-765 Km. 9.2	Sign	Suggested	San Salvador	Departing	C6
Sec. Maracal	PR-765 Km. 9.5	Sign	Suggested	San Salvador	Departing	C6
Sec. Maracal	PR-765 Km. 10.5	Sign	Suggested	San Salvador	Departing	C6
Sec. Maracal	PR-765 Km. 10.4	Sign	Suggested	San Salvador	Return	C6

Table 7. Construction and Reconsruction of Sidewals and Ramps along Transportation System Stop Areas

REFERENCE POINT	KM	TYPE OF STOP	SUGGESTED/ EXISTENT	WARD	WAY	ROUTE
Sec.Maracal (Mailboxes)	PR-765 Km. 9.4	Sign	Suggested	San Salvador	Return	C6
Sec. Maracal (Cross - Mailboxes)	PR-765 Km. 9.2	Sign	Suggested	San Salvador	Return	C6
Sec. Maracal (Mailboxes)	PR-765 Km. 8.8	Sign	Suggested	San Salvador	Return	C6
Sec. Morena (School Sign)	PR-765 Km. 8.5	Sign	Suggested	San Salvador	Return	C6
Bienvenido a San Salvador	PR-765 Km. 8.2	Sign	Suggested	San Salvador	Return	C6
Los Buzones	PR-765 Km. 6.8	Sign	Suggested	San Salvador	Return	C6
Sec. Anon	PR-765 Km. 6.3	Shelter	Existent	San Salvador	Return	C6
Los Rosales	PR-765 Km. 5.4	Shelter	Suggested	Turabo	Return	C6
Terrazas de Borinquen	PR-765 Km. 3.6	Shelter	Suggested	Borinquen	Return	C6
Eco Plaza	PR-765 Km. 2.9	Shelter	Suggested	Borinquen	Return	C6
Bosque de la Sierra	PR-765 Km. 2.0	Shelter	Suggested	Borinquen	Return	C6
PR-765 Int. PR-1	PR-765 Km. 0	Shelter	Suggested	Beatriz	Return	C5, C6
Iglesia Gosén	PR-1 Km. 40.7	Shelter	Existent	Turabo	Return	C5, C6
Villa Esperanza, Int. Calle Bonanza	PR-1 Km. 38.3	Shelter	Suggested	Turabo	Return	C5, C6
Plaza Elena Housing	PR-768 calle Dr. Goyco	Sign	Suggested	Pueblo	Departing	C9, Poblado
Apartamento Norte Dame	Ave. El Troche	Sign	Suggested	Pueblo	Departing	C9, Poblado
Urb. Delgado	Calle 2	Sign	Suggested	Pueblo	Return	Poblado
Plavica	Ave. El Troche, Int Calle Ramón Santini	Sign	Suggested	Pueblo	Return	C9, Poblado

Table 8. Construction and Reconsruction of Sidewals and Ramps along Transportation System Stop Areas

REFERENCE POINT	KM	TYPE OF STOP	SUGGESTED/ EXISTENT	WARD	WAY	ROUTE
Parque Recreativo Notre Dame	Ave. El Troche, Int Calle Ramón Santini	Sign	Suggested	Pueblo	Return	C9, Poblado
Galeria Urbana	Ave. Rafael Cordero	Sign	Existent	Pueblo	Return	C5, C6, C9, Este,Poblado
Plaza Palmer (Old City Hall)	Calle Muñoz Rivera	Sign	Existent	Pueblo	Return	C1, C5, C6, Poblado
Calle Muñoz Rivera	Calle Muñoz Rivera	Sign	Existent	Pueblo	Return	C5, C6, Poblado
Esc Luis Muñoz Rivera	Calle Georgeti	Sign	Suggested	Pueblo	Return	C5, C6, Poblado
Plaza Gautier Benitez	Calle Georgeti	Sign	Existent	Pueblo	Return	C5, C6, Poblado
Casco Urbano	Calle Acosta Int. Vizcarrondo	Sign	Suggested	Pueblo	Return	C3, C4, C5, C6, Poblado
Casco Urbano	Calle Acosta Int. Betancez	Sign	Suggested	Pueblo	Return	C3, C4, C5, C6, Poblado
Econo	Condado Moderno, Ave. Rafael Cordero	Sign	Existent	Pueblo	Departing	Norte/Sur
FOK Brewing Co.	PR-189, Ave. Gurabo	Sign	Existent	Tomás de Castro	Departing	Este
Pavía Hospital	PR-32 Ave. Luis Muñoz Marin, Mariolga	Sign	Suggested	Turabo	Departing	C9
Pavía Hospital	PR-32 Ave. Luis Muñoz Marin, Mariolga	Sign	Suggested	Turabo	Return	C9

Table 9. Construction and Reconsruction of Sidewals and Ramps along Transportation System Stop Areas

5.1.6. IMPLEMENTATION SCHEDULE

The First Phase of Implementation will begin on January 2025 and will be completed by the end of December 2026. The First Phase of Implementation includes the following activities:

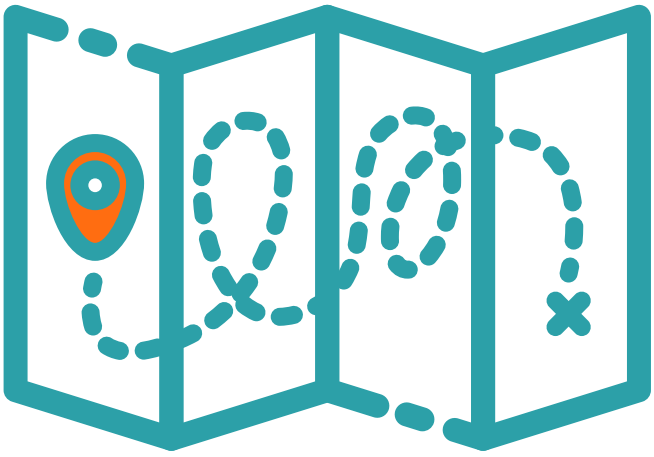
- **Acquisition of 3 30-Passenger Mini Buses (First Trimester 2025)**
- **Acquisition of 3 14-Passenger Paratransit Vans Design, NEPA, Permisology, and Supervision for the Construction of Three Bus Stop Shelter Areas Construction of Three Stop Areas (Second Trimester 2025)**
- **Design, NEPA, Permisology and Supervision for the Construction of Four Satellite Terminals (Second Trimester 2025)**
- **Construction of Four Satellite Terminals (Third Trimester 2025)**
- **Design, NEPA, Permisology, and Supervision for the Construction and Reconstruction of Sidewalks and Ramps along the Transportation System Stop Areas (Third Trimester 2025)**
- **Construction and Reconstruction of Sidewalks and Ramps along the Transportation System Stop Areas (First Trimester 2026)**
- **Acquisition of Three Land Parcels for the Construction of Three Bus Stop Shelter Areas (Second Trimester 2026)**
- **Acquisition of Shelters & Signage for the Bus Stops (First Phase) (Second Trimester 2026)**
- **Acquisition of Shelters & Signage for the Bus Stops (Second Phase) (Third Trimester 2026)**
- **Acquisition and Installation of a Camera Surveillance System (Third Semester 2026)**

5.1.7. PROMOTIONAL CAMPAIGN

The purpose of the promotional campaign is to educate and promote use of public transportation for citizens and visitors of Caguas. In doing so, the Municipality will ensure successful implementation and long-term ridership of its public transportation system.

Promoting public transportation as a safe travel option through public outreach campaigns and rider education programs should include:

- **Implementation of public outreach campaigns that highlight public transportation as a safe travel option and show public transportation's contribution to safe travel.**
    - **Benefits to Personal Health**
    - **Lower Vehicle Operating Cost**
    - **Reduction of Traffic Congestion**
    - **Prevention of Vehicle Accidents**
- **Developing educational programs and materials (e.g. Student Orientations, Rider Education) that demonstrate how to use public transportation safely and encourages drivers, bicyclists, and pedestrians to safely interact with public transportation vehicles on roadways.**



To effectively educate public transportation users, a multi-channel approach should be implemented to reach diverse audiences. Key channels and strategies should include:

1. Distribution of Flyers and Brochures by Route:

- Details: Printed route maps that include key stops, landmarks, and connections.
- Distribution Points: Hand out at stations, bus stops, local businesses, libraries, community centers, and schools.
- QR Codes: Link to real-time schedules or route updates through QR codes printed on flyers.

2. Social Media Promotion:

- Platform-Specific Campaigns: Using the Autonomous Municipality of Caguas Official Facebook page to target different demographics.
- Real-Time Updates: Use the Autonomous Municipality of Caguas Official Facebook page for live service announcements, delays, or route changes.
- Community Engagement: Run Q&A sessions, engage in comments, and repost user-generated content like photos or stories about public transport use.

3. Official Website:

- Interactive Maps: Create interactive maps with layers for stops, route paths, landmarks, and major connections.
- Trip Planner Tool: Help users easily find routes and plan trips by inputting start and end points.
- Real-Time Service Alerts: Highlight real-time status updates for delays, route adjustments, or other important notifications.
- Mobile Optimization: Ensure the site is mobile-friendly for easy access on the go.

4. In-Station and In-Vehicle Signage:

- Digital Screens: Display updates, announcements, and route maps on digital screens within stations and vehicles.
- Audio Announcements: Offer periodic route information or landmark callouts for key points along routes.

5. Community Outreach Programs:

- Workshops and Public Meetings: Organize community workshops or info sessions where transit officials can present routes and updates, answer questions, and distribute materials.
- School and Community Center Partnerships: Collaborate with schools, senior centers, and community hubs to distribute route information and promote public transport use.

5.2 KEY PERFORMANCE MEASURES

Criteria for selecting performance measures for the public transportation system were based on a review of literature, other plans, available public transportation data, and public transportation performance measures used at the local, regional, and state level.

The public transportation system's performance measures meet the following criteria:

- **Clear and Concise**
    - Measures should be easy to understand and clearly defined in the context of Caguas and the statewide public transportation system.
- **Linked to Goals**
    - Measures should be directly linked to assess progress toward the public transportation system's goals.
- **Reliable and Trackable**
    - Measures should use data that are readily available throughout Caguas and can be reliably tracked over time to deliver a clear and convincing story of public transportation.
- **Informative and Meaningful**
    - Measures should be meaningful and easily understood by citizens and visitors of Caguas, incorporate social values, and help inform decisions on future policy, goals, and investments.
- **Flexible**
    - Measures should be flexible enough to permit change as the public transportation system's policies and strategies evolve over time, but they should also retain context with historical measurements.
- **Balancing Agency Resources**
    - Resources are needed to keep track of performance measures. Washington Federal Consulting Group, LLC balanced the number of performance measures selected for the Plan with available agency resources to track them.

TRANSPORTATION KEY PERFORMANCE MEASURES

Performance Measures are used by Caguas to track progress made toward the public transportation system's goals and objectives. Puerto Rico Highways and Transportation Authority has several performance measures, including some tied to public transportation. Listed below are current key performance measures related to public transportation:

- **Rolling Stock** – The percentage of non-revenue vehicles that exceeded the Useful Life Benchmark (ULB). This measure reveals information about the financial condition of the Municipality as transportation agency, as well as information about the age of buses that is relevant to safety, environmental sustainability (new and/or clean technologies), and service for those who benefit from state- of-the-art equipment such as people with disabilities.

- **Facilities** - Requires asset inventory and asset condition assessments at a level of detail sufficient to monitor and predict the performance of assets and to inform investment prioritization.

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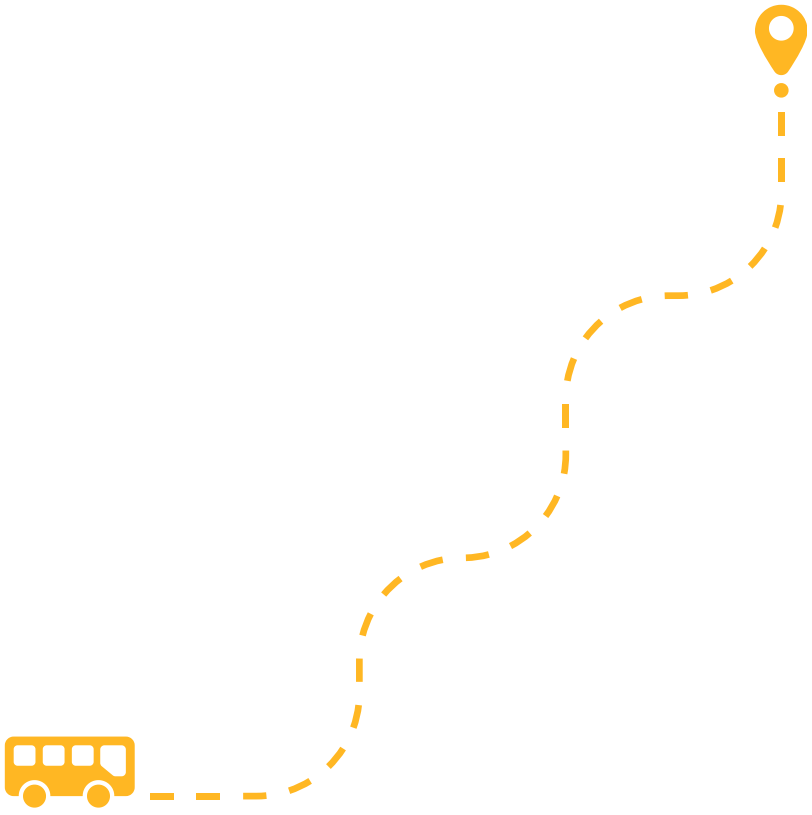


6. CONCLUSIONS AND RECOMMENDATIONS

A public transportation system that serves the diverse communities of Caguas represents a significant milestone in providing mobility and promoting urban revitalization. Having access to a reliable and efficient public transportation system brings social justice to underserved communities in Caguas, which currently suffer high unemployment and poverty rates.

A transportation system provides a feasible alternative to private vehicle users who wish to commute within the Municipality. Furthermore, having an effective and reliable public transportation system is paramount in the revitalization of the urban landscape of any city. Thus, with the proposed system, economic and social development is directly promoted.

Promoting public transportation use results in lower traffic congestion and the environmental pollution and health issues associated to it, making Caguas more livable. The existing surface transportation network is also more efficiently used when traffic congestion is reduced, therefore reducing the need for additional road enhancement and elimination of natural and environmental resources.

The proposed system will serve the CBD and its outlying areas, providing accessibility to residents and visitors. The initial coverage and frequency of service may be, respectively, extended and reduced as demand grows. Furthermore, the system could connect to a Regional Transportation Service that may be implemented in the future to promote Regional mobility across municipal boundaries.

Based on the results presented in this Plan, the acquisition of nine (9) 15-passenger buses will be needed for the implementation of the Municipal routes.

The quantitative and qualitative benefits of the proposed Plan, attest for the systems' financial and operational feasibility, as well as socially favorable for the impacted population and commuters.

7. FINANCE PLAN

A finance plan is necessary to achieve the complete implementation of the Collective Transportation Plan for the Municipality of Caguas. This section presents estimates for the capital, operational and maintenance expenditures to operate the Collective Transportation System, including the recommended additional routes. This plan will help the Municipality to identify the financial resources for the operation of the transportation services.

7.1. CAPITAL PROJECTS FINANCE PLAN

The Collective Transportation Plan for the Municipality of Caguas considers nine actual municipal routes, fifteen private "publico drivers" routes and two additional municipal routes recommended as part of the whole system. The Municipality owns the main Terminal Francisco "Pancho" Pereira which is an ownership shared facility with the Federal Transit Administration (FTA). As its location is in the downtown area in a short distance from main commercial areas and City Hall, it is considered as the departing area for the twenty-six routes.

This Terminal is not in compliance with the American with Disabilities Act (ADA). It will be completely renovated in its first and second floor, waiting areas, bathrooms, commercial areas, offices, reception, entrances, exits, ceilings, intercommunication system installation, air conditioning, elevators, escalators, automatic doors, between other necessary. During the completion of this Plan, the estimated cost of $16,500,000 for this major capital project has been identified and assigned from Sections 5307, 5339, FTA Discretionary and Municipal Funds.This capital renovation is not included as part of this financial plan as the funds for this project have been identified and assigned before the completion of this Plan.

The Collective Transportation System of the Municipality of Caguas needs a capital expenditure of $1,975,000 for the acquisition of two land parcels for the design and construction of four bus stop areas, of which two are located on private property. From this total estimated cost, $360,000 will be used for the acquisition of two land parcels, $245,000 for the design of the bus stop areas which will include a semicircle driveway for the bus, and $1,370,000 for the construction of the three bus stop areas.

For the two additional routes recommended as per this study, the Municipality capital expenditure for the acquisition of buses is estimated at $1,560,000 for the acquisition of three (3) thirty passenger buses and three (3) 14 passengers vans for a total of six (6) transportation vehicles. These six buses include 2 buses for fixed routes, 2 paratransit vans, 1 spare bus and 1 spare paratransit van. All vehicles must be ADA compliant.

The capital expenditures also include bus stop shelters and signage acquisitions for installations in every bus stop of the additional routes and replacement of six damage shelters in the actual routes. This project considers the acquisition and installation of 68 bus stop shelters and signage.

The total estimated cost is $1,341,640. This cost includes the acquisition and installation of the bus stop shelters and signage for each bus stop at an estimated cost of $19,730 per unit.

Six areas have been identified as per this study to be used as satellite terminals. These areas are located on six central sites, of which five are currently used for community meetings and are municipal property. The Municipality needs $4,380,750 for the design and rehabilitation of these areas which will be used as satellite terminals in different wards.

The final two necessary capital projects expenditures will impact the accessibility and security of the Collective Transportation System. These projects are the construction and reconstruction of sidewalks and ramps along the transportation system stop areas for a total of capital expenditures in design and construction of $4,542,328, and the acquisition and installation of a surveillance camera system at an estimated cost of $798,400. The following table (Table 10) includes a detail of the necessary capital expenditures for the Collective Transportation System of the Municipality of Caguas.

CATEGORY	DESCRIPTION	UNITS	UNIT PRICE	ESTIMATED TOTAL COST
Buses and Vans Acquisitions	Acquisition of 3 30-Passenger Mini-Buses	3	$318,500.00	$955,500.00
	Acquisition of 3 14-Passenger Paratransit Vans	3	$201,500.00	$604,500.00
Construction Projects	Design, NEPA, Permisology, and Supervision for the Construction of Four Bus Stop Shelter Areas	1	$245,000.00	$245,000.00
	Construction of Four Bus Stop Shelter Areas	1	$1,370,000.00	$1,370,000.00
	Design, NEPA, Permisology, and Supervision for the Construction of Six Satellite Terminals	1	$668,250.00	$668,250.00

Table 10. Capital Projects Finance Plan

Construction Projects	Construction of Six Satellite Terminals	6	$618,750.00	$3,712,500.00
	Design, NEPA, Permisology, and Supervision for the Construction of Sidewalks and Ramps along the Transportation System Stop Areas	1	$626,528.00	$626,528.00
	Construction and Reconstruction of Sidewalks and Ramps along the Transportation System Stop Areas	7,831.60 (lm)	$500.00	$3,915,800.00
Land Acquisition	Acquisition of Two Land Parcels for the Construction of Two Bus Stop Shelter Areas	1	$360,000.00	$360,000.00
Bus Stop Shelter Areas	Acquisition of Shelters & Signage for the Bus Stops (First Phase)	38	$19,730.00	$749,740.00
	Acquisition of Shelters & Signage for the Bus Stops (Second Phase)	30	$19,730.00	$591,900.00
Security	Acquisition and Installation of a Surveillance Camera System	1	$798,400.00	$798,400.00
TOTAL				**$14,598,118.00**

Prepared by Architectural and Engineering, PSC

Table 10. Capital Projects Finance Plan

7.2. OPERATING EXPENDITURES FINANCE PLAN

The operating expenditures financial plan for the Collective Transportation System of the Municipality of Caguas includes the necessary costs for an efficient operation of the System. These costs are payroll, vehicle and facility maintenance, fuel, administrative expenses, insurance, legal costs, accounting, and other expenses. The following table, (Table 11), present the Capital Expenditures for the recommended additional routes of the Collective Transportation System:

ROUTE	TYPE OF VEHICLE	QUANTITY	OPERATING HOURS PER YEAR	MILES TRAVELED PER YEAR	STOPS
Tomás de Castro	Bus	1	4,318.34	44,050.00	40
Villas de Castro	Bus	1	3,116.26	31,788.70	22
Paratransit Bus	Bus	2	6,477.51	66,075	-
Spare Bus	Bus	2	5,410.20	55,187.71	-
TOTAL		**6**	**19,322.31**	**197,101.41**	

Table 11. Operating Expenditures Finance Plan

7.2.1. PAYROLL EXPENSE

The Collective Transportation System will need different additional positions to be recruited to comply with the necessary daily tasks at facility and routes operations. The projected 2024-2025 payroll expense to manage the Collective Transportation System is $697,919. However, there are more positions needed for the two additional routes implementation. These positions are Coordinator, Administrative Assistant, Drivers, Janitor, Handyman and an Accountant. The table below (Table 9) presents the additional payroll expenses.

POSITION	NUMBER	COST PER HOUR	SALARY (ANNUAL)	FRINGE BENEFITS	TOTAL PAYROLL EXPENSE (ANNUAL)
Coordinator	1	$13.00	$26,208.00	$4,194.00	$30,402.00
Administrative Assistant	1	$11.00	$22,176.00	$3,548.00	$25,724.00
Driver (8 Hours)	2	$13.00	$52,402.00	$8,384.00	$60,786.00
Driver Part-Time (4 Hours)	2	$13.00	$26,208.00	$4,194.00	$30,402.00
Janitor	2	$9.50	$38,304.00	$6,129.00	$44,433.00
Handyman	1	$11.50	$23,184.00	$3,709.00	$26,893.00
Accountant	1	$14.50	$29,232.00	$4,677.00	$33,909.00
TOTAL	**9**	**-**	**$217,714.00**	**$34,835.00**	**$252,549.00**

Table 12. Payroll Expense

The table above presents that additional payroll cost was estimated for the total amount of $252,549. This total amount includes the fringe benefits. It is estimated that 9 additional employees are needed to operate the Collective Transportation System of the Municipality of Caguas.

ITEM	NUMBER OF VEHICLES	COST PER VEHICLE (FIRST YEAR)	UNIT COST	TOTAL EXPENSE (FIRST YEAR)
Buses - Fuel Expense	6	$7,685.00	$32,850 miles traveled (Per Vehicle)	$46,110.00
Buses Maintenance-Parts & Materials	6	$8,000.00	-	$48,000.00
Buses - Cleaning	6	$1,600.00	-	$9,600.00
Office Supplies	-	-	$14,000.00	$14,000.00
Office Photocopier Lease	-	-	$8,200.00	$8,200.00
Transportation System Promotional Campaign	-	-	$102,000.00	$102,000.00
Insurance	6	$3,250.00	-	$19,500.00
Miscellaneous	-		$52,000.00	$52,000.00
TOTAL				**$299,410.00**

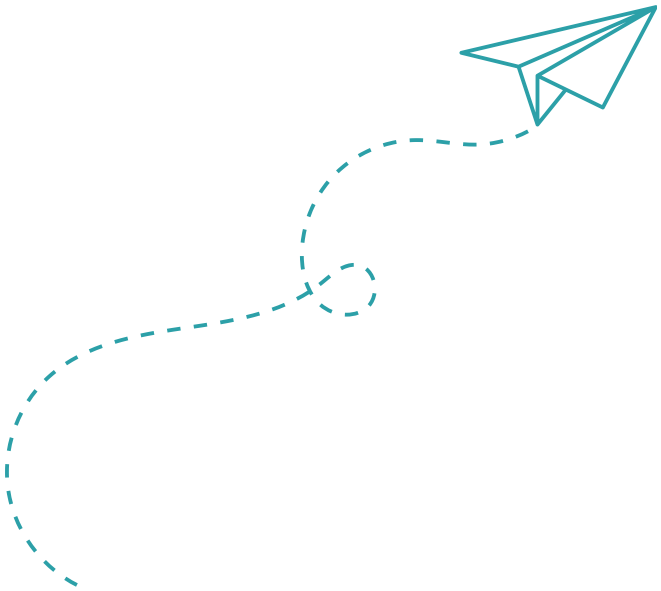
Table 13. Additional Routes Expenses

As shown above in Table 13, the estimates prepared for these purposes considered that the proposed additional routes will operate a total of 19,322.31 hours. The fuel expenses were estimated using a fuel efficiency of 15 miles per gallon at a cost of $3.51 per gallon. Fuel expenses for the first year were estimated at a cost of $46,110.00

Maintenance costs were estimated at $57,600.00 for the first year of operation. This amount includes parts, materials and cleaning services for all the vehicles. The transportation office expenses include office supplies and a photocopier for a total amount of $22,200 for the first year. Other expenses include promotional campaign, insurance and miscellaneous expenses for a total amount of $173,500. The projected operating budget for the proposed additional routes was estimated $551,959 for the first year of operations.

8. NEXT STEPS

The Collective Transportation Plan and the recommendations provided in this report are subject to evaluation from the Municipality's officials. Additionally, public participation activities should be conducted to present and discuss the results of the Plan.



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APPENDIX A

ACRONYMS AND ABBREVIATIONS

ACRONYM MEANING

ADA Americans with Disabilities Act

ACS American Community Survey

DTPW Department of Transportation and Public Works

LRMTP Long-Range Multimodal Transportation Plan

PRHTA Puerto Rico Highway and Transportation Authorities

PRPB Puerto Rico Planning Board

PÚBLICOS Privately owned and operated transportation services

STPR South Transportation Planning Region

TMA Transportation Management Area

APPENDIX B

MOVILIDAD CIUDADANA

CAGUAS
CENTRO Y CORAZÓN DE PUERTO RICO

Municipio Autónomo de Caguas
Censo Comunitario
Sistema de Transportación Colectiva

Parte I. Información Demográfica

1. Sexo: ☐ Masculino ☐ Femenino ☐ Otro:_____
2. Edad: _____
3. ¿A qué se dedica? _____
4. Barrio de Residencia: _____
5. Número de Miembros en su Núcleo Familiar (Incluyéndose): _____
6. Número de Miembros en su Núcleo Familiar Menores de Cinco Años: _____
7. Número de Miembros en su Núcleo Familiar que Requieren Asistencia Especial por Problemas de Movilidad: _____

Parte II. Servicios de Transportación

1. ¿Utiliza usted el servicio de transportación pública? ☐ Sí ☐ No
2. De haber contestado 'No', explique ¿por qué? Y proceda a las preguntas 12-14
   _____
3. Tiempo que ha utilizado el sistema de transportación: _____☐Meses ☐Años
4. Propósito de viaje en el sistema de transportación pública: _____
5. Barrio en el que realiza la mayor cantidad de sus gestiones: _____
6. ¿En qué horario usa el servicio de transportación? _____☐ a.m. ☐ p.m.
7. ¿Cuál medio de transportación pública ha usado? ☐Trolley ☐Guagua ☐Públicos
8. ¿Cuál es el costo en que incurre en transportación pública? _____ Diario
9. ¿Qué tiempo de espera en una parada considera razonable?
   - ☐ 10-15mins.
   - ☐ 15-30mins.
   - ☐ 30-45mins.
   - ☐ 45-60mins.

10. ¿Considera que el sistema de tarifas es razonable?
    - ☐ No Razonable
    - ☐ Poco Razonable
    - ☐ Neutral
    - ☐ Muy Razonable
    - ☐ Extremadamente Razonable
11. ¿Cuán satisfecho se encuentra con las siguientes características: 1-Comodidad del Vehículo, 2- Limpieza del Vehículo, 3-Terminales y Paradas de Guaguas?
    - ☐ No Satisfecho
    - ☐ Poco Satisfecho
    - ☐ Neutral
    - ☐ Muy Satisfecho
    - ☐ Extremadamente Satisfecho
12. ¿Cómo viaja a su lugar de trabajo?
    - ☐ Transportación pública
    - ☐ Vehículo privado
    - ☐ Vehículo compartido
    - ☐ Bicicleta
    - ☐ Caminando
    - ☐ Miembro de la familia me transporta
    - ☐ No trabajo actualmente
13. ¿Qué día de la semana se le hace más difícil ir a su lugar de trabajo? (Marque todas las que aplique)
    - ☐ Domingo ☐ Lunes ☐ Martes ☐ Miércoles ☐ Jueves ☐ Viernes ☐ Sábado
14. ¿Durante qué tiempo serían más convenientes los servicios de transportación?
    - ☐ Temprano en la mañana (5:00 a.m. – 8:00 a.m.)
    - ☐ Tarde en la mañana (8:00 a.m. – 12:00 p.m.)
    - ☐ Temprano en la tarde (12:00 p.m. – 3:00 p.m.)
    - ☐ Tarde en la tarde (3:00 p.m. – 6:00 p.m.)
    - ☐ Noche (6:00 p.m. – 9:00 p.m.)

APPENDIX C

PROPOSED TRANSPORTATION PROJECTS

- Acquisition of 3 30-Passenger Mini Buses
- Acquisition of 3 14-Passenger Paratransit Vans
- Design, NEPA, Permisology, and Supervision for the Construction of Three Bus Stop Shelter Areas
- Construction of Three Stop Areas
- Design, NEPA, Permisology and Supervision for the Construction of Four Satellite Terminals
- Construction of Four Satellite Terminals
- Design, NEPA, Permisology, and Supervision for the Construction and Reconstruction of Sidewalks and Ramps along the Transportation System Stop Areas
- Construction and Reconstruction of Sidewalks and Ramps along the Transportation System Stop Areas
- Acquisition of Three Land Parcels for the Construction of Three Bus Stop Shelter Areas
- Acquisition of Shelters & Signage for the Bus Stops (First Phase)
- Acquisition of Shelters & Signage for the Bus Stops (Second Phase)
- Acquisition and Installation of a Camera Surveillance System

APPENDIX D

ENVIRONMENTAL ASSESSMENT FOR IMPACT OF PROPOSED TRANSPORTATION PROJECTS

FTA Region 4
CATEGORICAL EXCLUSION and
DOCUMENTED CATEGORICAL EXCLUSION WORKSHEET

Note: The purpose of this worksheet is to assist sponsoring agencies (grantees) in gathering and organizing materials for environmental analysis required under the National Environmental Policy Act (NEPA), particularly for projects that may qualify as a Categorical Exclusion (CE) or Documented Categorical Exclusion (DCE). The use and submission of this particular worksheet is NOT required. The worksheet is provided merely as a helpful tool for assembling information needed by FTA to determine the likelihood and magnitude of potential project impacts. **NOTE: Fields are expandable, so feel free to use more than a line or two if needed.**

Submission of the worksheet does not satisfy NEPA requirements. FTA must concur in writing in the sponsoring agency's NEPA recommendation. Project activities may not begin until this process is complete. Contact the FTA Region 4 office at (404) 865-5600 if you have any questions or require assistance.

I. Project Description

Sponsoring Agency	Date Submitted	FTA Grant Number(s) (if known)
Autonomous Municipality of Caguas	11/13/2024	

Project Title
Construction of Three Stop Areas

Project Description (brief, 1-2 sentences)
This project involves constructing three designated stop areas along a transportation route to improve passenger access, safety, and service efficiency. These new stops aim to enhance connectivity for the community and support the growing demand for accessible public transportation options.

Purpose and Need for Project (brief, 1-2 sentences, include as an attachment if adopted statement is lengthy)
The purpose of this project is to provide safe and convenient access points along a transportation route by constructing three new stop areas. The need for this project arises from increased ridership demand and the goal to improve accessibility, reduce congestion at existing stops, and enhance overall service efficiency for passengers.

Project Location (include City and Street address)
Various Locations

Project Contact (include phone number, mailing address and email address)
Juan J. Greenaway, Director of Citizens' Mobility Office, T: (787) 653-8833, E: juan.jacob@caguas.gov.pr

If your project involves construction, include the following:

- Project vicinity map
- Project site plan showing access points and project boundaries
- Other useful maps as appropriate (topo, for instance, depending on circumstances, and/or Google Earth aerial, NEPA Assist, etc.)
- A few photographs of the site if useful to illustrate important features
- Details pertaining to the depth of soil excavation
- Note if the soil has been previously disturbed by prior construction or other activity
- List parks or recreation areas within the project vicinity
- Any previous consultations that might be relevant? (HUD, SHPO, or DOTs)

II. NEPA Class of Action

Answer the following questions to determine the project's potential class of action. If the answer to any of the questions in Section A is "YES", contact the FTA Region 4 office to determine whether the project requires preparation of a NEPA environmental assessment (EA) or environmental impact statement (EIS).

A. Will the project significantly impact the natural, social and/or economic environment?

☐ YES (contact FTA Regional office)

☒ NO (continue)

A.1 Is the significance of the project's social, economic or environmental impacts unknown?

☐ YES (contact FTA Regional office)

☒ NO (continue)

A.2 Is the project likely to require detailed evaluation of more than a few potential impacts?

☐ YES (contact FTA Regional office)

☒ NO (continue)

A.3 Is the project likely to generate intense public discussion, concern or controversy, even though it may be limited to a relatively small subset of the community?

☐ YES (contact FTA Regional office)

☒ NO (continue)

B. Does the project appear on the following list of Categorical Exclusions (CEs)?

The types of activities listed below describe actions which, when the corresponding conditions are met, are under usual circumstances categorically excluded from further NEPA analysis under 23 CFR 771.118(c). Unusual circumstances may include, but are not limited to, the presence of wetlands, historic buildings and structures, parklands, or floodplains in the project area, or the potential for the project to impact other resources. (Descriptions of each type of activity, and corresponding conditions, are available here; this worksheet simply lists the name of each exclusion.)

☒ YES (If checked AND there are no special circumstances, check the applicable box and briefly describe the activity in Section III. A; then proceed to the signature block on the back page.)

☐ NO (continue to Section II. C)

23 CFR 771.118(c)(1-16)

☐ (1) Utility and Similar Appurtenance Action

☐ (2) Pedestrian or Bicycle Action

☐ (3) Environmental Mitigation or Stewardship Activity

☐ (4) Planning and Administrative Activity

☐ (5) Activities Promoting Transportation Safety, Security, Accessibility and Communication

☐ (6) Acquisition, Transfer of Real Property Interest

☐ (7) Acquisition, Rehab, Maintenance of Vehicles or Equipment

☐ (8) Maintenance, Rehab, Reconstruction of Facilities

☒ (9) Assembly or Construction of Facilities

☐ (10) Joint Development of Facilities

☐ (11) Emergency Recovery Actions
(Several conditions attach to this type of CE. We recommend you consult with FTA if you think this CE may apply to your action.)

☐ (12) Projects Entirely within the Existing Operational Right-of-Way.

☐ (13) Federally Funded Projects
(Must be less than $5 million in federal funding, or having a total estimated cost of not more than $30,000,000 and Federal funds comprising less than 15 percent of the total estimated project cost.

☐ (14) Bridge Removal and Related Activities.

☐ (15) Preventative Maintenance to Certain Culverts and Channels

☐ (16) Geotechnical and Similar Investigations

C. Does the project appear on the following list of potential documented Categorical Exclusions?

Projects that are categorical exclusions under 23 CFR 771.118(d) require additional documentation demonstrating that the specific conditions or criteria for the CEs are satisfied and that significant effects will not result.

☐ YES (Check correct box below and continue to Part III)

☐ NO (Contact FTA Regional Office)

23 CFR 771.118(d)(1-8)

☐ (1) Modernization of a highway by resurfacing, restoring, rehabilitating, or reconstructing shoulders or auxiliary lanes.

☐ (2) Bridge replacement or the construction of grade separation to replace existing at-grade railroad crossings.

☐ (3) Acquisition of land for hardship or protective purposes. (NOTE: Hardship and protective buying will be permitted only for one or a limited number of parcels, and only where it will not limit the evaluation of alternatives (including alignments) for

☐ planned construction projects.

(4) Acquisition of right-of-way. (NOTE: No project development on the acquired right-of-way may proceed until the NEPA process for such project development, including the ☐ consideration of alternatives, where appropriate, has been completed.)

☐ (5) [Reserved]

☐ (6) Facility modernization through construction or replacement of existing components.

☐ (7) Minor realignment for rail safety purposes

☐ (8) Facility modernization/expansion outside existing ROW

"Other" actions which meet the criteria for a CE in the CEQ regulations (40 CFR 1508.4) and will not result in significant environmental effects. Actions must not: induce significant impacts to planned growth or land use; require the relocation of significant numbers of people; have a significant impact on any natural, cultural, recreational, historic or other resource; cause significant air, noise, or water quality impacts; have significant impacts on travel patterns; or otherwise have significant environmental impacts (either individually or cumulatively).

III. Information Required for Documented Categorical Exclusions

If you checked "Yes" to any of the options in Part II. C, complete each relevant subject area for Part III. Sections B-AA and submit to FTA. Depending on the project, some of the subject areas may not be applicable. In such cases, no discussion is needed.

The list below is not all-inclusive. If your proposed project has the potential to cause impacts to resources which are not listed below, please provide supplemental information about those potential impacts.

A. Detailed Project Description

Describe the project and explain how it satisfies the purpose and need identified in Part I.

This project involves constructing three designated stop areas along a transportation route to improve passenger access, safety, and service efficiency. These new stops aim to enhance connectivity for the community and support the growing demand for accessible public transportation options.

B. Location and Zoning

Attach a map identifying the project's location and surrounding land uses. Note any critical resource areas (historic, cultural or environmental) or sensitive noise or vibration receptors (schools, hospitals, churches, residences, etc). Briefly describe the project area's zoning and indicate whether the proposed project is consistent with it. Briefly describe the community (geographic, demographic, economic and population characteristics) in the project vicinity.

C. Traffic

Describe potential traffic and parking impacts, including whether the existing roadways have adequate capacity to handle increased bus or other vehicular traffic. Include a map or diagram if the project will modify existing roadway configurations. Describe connectivity to other transportation facilities and modes, and coordination with relevant agencies.

D. Aesthetics

Will the project have an adverse effect on a scenic vista?

☐ No

☐ Yes, describe

Will the project substantially degrade the existing visual character or quality of the site and its surroundings?

☐ No

☐ Yes, describe

Will the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

☐ No

☐ Yes, describe

E. Air Quality

Does the project have the potential to impact air quality?

☐ No

☐ Yes, describe

Is the project located in an EPA-designated non-attainment or maintenance area?

☐ No

☐ Yes, indicate the criteria pollutant and contact FTA to determine if a hot spot analysis is necessary.

- ☐ Carbon Monoxide (CO)
- ☐ Ozone (O_3)
- ☐ Particulate Matter (PM_{10} or $PM_{2.5}$)

If the non-attainment area is also in a metropolitan area, was the project included in the MPO's Transportation Improvement Program (TIP) air quality conformity analysis?

☐ No

☐ Yes Date of USDOT conformity finding:

F. Coastal Zone

Is the proposed project located in a designated coastal zone management area?

☐ No

☐ Yes, describe coordination with the State regarding consistency with the coastal zone management plan and attach the State finding, if available.

G. Environmental Justice

Determine the presence of minority and low-income populations (business owners, land owners, and residents) within about a a quarter-mile of the project area. Indicate whether the project will have disproportionately high and adverse impacts on minority or low-income populations. Describe any potential adverse effects. Describe outreach efforts targeted specifically at minority or low-income populations. Guidance is here.

H. Floodplains

Is the proposed project located within the Federal Emergency Management Agency (FEMA) 100-year floodplain?

☐ No

☐ Yes, describe potential impacts, indicate if the project will impact the base flood elevation, and include or link to the FEMA Flood Insurance Rate Map (FIRM) with the project location identified.

I. Hazardous Materials

Is there any known or potential contamination at the project site? This may include, but is not limited to, lead/asbestos in existing facilities or building materials; above or below ground storage tanks; or a history of industrial uses of the site.

☐ No, describe steps taken to determine whether hazardous materials are present on the site.

☐ Yes, note mitigation and clean-up measures that will be taken to remove hazardous materials from the project site. If the project includes property acquisition, identify if a Phase I Environmental Site Assessment for the land to be acquired has been completed and the results.

J. Navigable Waterways

Does the proposed project cross or have the potential to impact a navigable waterway?

☐ No

☐ Yes, describe potential impacts and any coordination with the US Coast Guard.

K. Noise and vibration

Does the project have the potential to increase noise or vibration?

☐ NO

☐ YES, describe impact and provide map identifying sensitive receptors such as schools, hospitals, parks and residences. If the project will result in a change in noise and vibration sources, you must use FTA's "Transit Noise and Vibration Impact Assessment" methodology to determine impact.

L. Prime and Unique Farmlands

Does the proposal involve the use of any prime or unique farmlands?

☐ No

☐ Yes, describe potential impacts and any coordination with the Soil Conservation Service of the U.S. Department of Agriculture.

M. Historic & Cultural Resources

Impacts to cultural, historic, or recreational properties may trigger Section 106 or tribal consultations or a Section 4(f) evaluation, requiring consideration of avoidance alternatives.

Does the project involve any ground disturbing activities?

☐ No

☐ Yes, provide the approximate maximum ground disturbance depth. Also provide information on previous disturbances or where ground disturbance will occur.

Are there any historic resources in the vicinity of the project?

☐ No

☐ Yes, Attach photos of structures more than 45 years old that are within or adjacent to the project site and describe any direct or indirect impacts the project may cause.

N. Biological

Are there any species located within the project vicinity that are listed as threatened or endangered under the Endangered Species Act? Determine this by obtaining lists of threatened and endangered species and critical habitat from the US Fish and Wildlife Service and the National Marine Fisheries Service.

Describe any critical habitat, essential fish habitat or other ecologically sensitive areas within or near the project area.

O. Recreational

Is the project located in or adjacent to a park or recreation area?

☐ No

☐ Yes, provide information on potential impacts to the park or recreation area. Please also indicate if the park involved Land and Water Conservation Act funds (Section 6(f))

P. Seismic and Soils

Are there any unusual seismic or soil conditions in the project vicinity? If so, indicate on project map and describe the seismic standards to which the project will be designed.

☐ No

☐ Yes, describe

Q. Water Quality

Does the project have the potential to impact water quality, including during construction.

☐ No

☐ Yes, describe potential impacts and best management practices which will be in place.

Will there be an increase in new impervious surface or restored pervious surface?

☐ No

☐ Yes, describe potential impacts and proposed treatment for stormwater runoff.

Is the project located in the vicinity of an EPA-designated sole source aquifer (SSA)?

☐ No

☐ Yes, provide the name of the aquifer which the project is located in and describe any potential impacts to the aquifer. Also include the approximate amount of new impervious surface created by the project. (May require completion of SSA worksheet.)

R. Wetlands

Does the proposal temporarily or permanently impact wetlands or require alterations to streams or waterways?

☐ No

☐ Yes, describe potential impacts

S. Construction Impacts

Describe the construction plan and identify impacts due to construction noise, utility disruption, debris and spoil disposal, and staging areas. Address air and water quality impacts, safety and security issues, and disruptions to traffic and access to property.

T. Cumulative and Indirect Impacts

Are cumulative and indirect impacts likely?

☐ No

☐ Yes, describe the reasonably foreseeable:

a) Cumulative impacts, which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes them. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

b) Indirect impacts, which are caused by the action but are later in time or farther removed in distance, yet are still reasonably foreseeable. Indirect impacts may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air, water and other natural systems, including ecosystems.

U. Property Acquisition

If property is to be acquired for the project, indicate whether acquisition will result in relocation of businesses or individuals.

Note: For acquisitions over $500,000, FTA concurrence in the property's valuation is also required.

V. Energy

If the project includes the construction or reconstruction of a building, identify potential opportunities to conserve energy which could be employed. This includes building materials and techniques used for construction; special innovative conservation features; fuel use for heating, cooling and operations; and alternative renewable energy sources.

W. Public Involvement

Describe public outreach efforts undertaken on behalf of the project. Indicate opportunities for public meetings (e.g. board meetings, open houses, special hearings). Indicate any significant concerns expressed by agencies or the public regarding the project.

X. Mitigation Measures

Describe all measures to be taken to mitigate project impacts.

Y. Other Federal Actions

Provide a list of other federal NEPA actions related to the proposed project or in the vicinity.

Z. State and Local Policies and Ordinances

Is the project in compliance with all applicable state and local policies and ordinances?

- ☐ No, describe noncompliance:
- ☐ Yes

AA. Related Federal and State/Local Actions

- ☐ Corps of Engineers Permit (Section 10, Section 404)
- ☐ Coast Guard Permit
- ☐ Coastal Zone Management Certification
- ☐ Critical Area Ordinance Permit
- ☐ ESA and EFH Consultation
- ☐ Floodplain Development Permit
- ☐ Forest Practice Act Permit
- ☐ Hydraulic Project Approval
- ☐ Local Building or Site Development Permits
- ☐ Local Clearing and Grubbing Permit
- ☐ National Historic Preservation Act-Section 106 consultation
- ☐ National Pollutant Discharge Elimination System General Construction Permit
- ☐ Shoreline Permit
- ☐ Solid Waste Discharge Permit
- ☐ Sole Source Aquifer Consultation
- ☐ Section 4(f) (Historic or Recreational Properties; Wildlife Refuges)
- ☐ Section 6(f) (Recreational Properties)
- ☐ Section 106 (Historic Properties)
- ☐ Stormwater Site Plan (SSP)
- ☐ Temporary Erosion and Sediment Control Plan (TESC)
- ☐ Water Rights Permit
- ☐ Water Quality Certification—Section 401
- ☐ Tribal Consultation or Permits (if any, describe below)
- ☐ Other

Others (describe as applicable):

Submitted By (name, title):	**Date:**
Omar Santos Crespo	November 13, 2024

Please submit an electronic copy of this form, attachments, and a signed transmittal letter recommending a NEPA finding to either julia.walker@dot.gov or stanley.a.mitchell@dot.gov

For links to further topical guidance, please visit Region 4's webpage.

FTA Region 4
CATEGORICAL EXCLUSION and
DOCUMENTED CATEGORICAL EXCLUSION WORKSHEET

Note: The purpose of this worksheet is to assist sponsoring agencies (grantees) in gathering and organizing materials for environmental analysis required under the National Environmental Policy Act (NEPA), particularly for projects that may qualify as a Categorical Exclusion (CE) or Documented Categorical Exclusion (DCE). The use and submission of this particular worksheet is NOT required. The worksheet is provided merely as a helpful tool for assembling information needed by FTA to determine the likelihood and magnitude of potential project impacts. **NOTE: Fields are expandable, so feel free to use more than a line or two if needed.**

Submission of the worksheet does not satisfy NEPA requirements. FTA must concur in writing in the sponsoring agency's NEPA recommendation. Project activities may not begin until this process is complete. Contact the FTA Region 4 office at (404) 865-5600 if you have any questions or require assistance.

I. Project Description

Sponsoring Agency	Date Submitted	FTA Grant Number(s) (if known)
Autonomous Municipality of Caguas	11/13/2024	

Project Title

Construction of Four Satellite Terminals

Project Description (brief, 1-2 sentences)

This project involves constructing four satellite terminals to expand transportation capacity and improve service coverage across a wider area. These terminals aim to reduce congestion at main hubs, streamline passenger flow, and enhance access to public transit options for surrounding communities.

Purpose and Need for Project (brief, 1-2 sentences, include as an attachment if adopted statement is lengthy)

The purpose of this project is to increase transit capacity and accessibility by constructing four satellite terminals, reducing the reliance on central hubs. The need arises from growing demand for efficient, decentralized transit options that alleviate congestion, shorten travel times, and better serve outlying communities.

Project Location (include City and Street address)

Various Locations

Project Contact (include phone number, mailing address and email address)

Juan J. Greenaway, Director of Citizens' Mobility Office, T: (787) 653-8833, E: juan.jacob@caguas.gov.pr

If your project involves construction, include the following:

- Project vicinity map
- Project site plan showing access points and project boundaries
- Other useful maps as appropriate (topo, for instance, depending on circumstances, and/or Google Earth aerial, NEPA Assist, etc.)
- A few photographs of the site if useful to illustrate important features
- Details pertaining to the depth of soil excavation
- Note if the soil has been previously disturbed by prior construction or other activity
- List parks or recreation areas within the project vicinity
- Any previous consultations that might be relevant? (HUD, SHPO, or DOTs)

II. NEPA Class of Action

Answer the following questions to determine the project's potential class of action. If the answer to any of the questions in Section A is "YES", contact the FTA Region 4 office to determine whether the project requires preparation of a NEPA environmental assessment (EA) or environmental impact statement (EIS).

A. Will the project significantly impact the natural, social and/or economic environment?

☐ YES (contact FTA Regional office)

☒ NO (continue)

A.1 Is the significance of the project's social, economic or environmental impacts unknown?

☐ YES (contact FTA Regional office)

☒ NO (continue)

A.2 Is the project likely to require detailed evaluation of more than a few potential impacts?

☐ YES (contact FTA Regional office)

☒ NO (continue)

A.3 Is the project likely to generate intense public discussion, concern or controversy, even though it may be limited to a relatively small subset of the community?

☐ YES (contact FTA Regional office)

☒ NO (continue)

B. Does the project appear on the following list of Categorical Exclusions (CEs)?

The types of activities listed below describe actions which, when the corresponding conditions are met, are under usual circumstances categorically excluded from further NEPA analysis under 23 CFR 771.118(c). Unusual circumstances may include, but are not limited to, the presence of wetlands, historic buildings and structures, parklands, or floodplains in the project area, or the potential for the project to impact other resources. (Descriptions of each type of activity, and corresponding conditions, are available here; this worksheet simply lists the name of each exclusion.)

☐ YES (If checked AND there are no special circumstances, check the applicable box and briefly describe the activity in Section III. A; then proceed to the signature block on the back page.)

☐ NO (continue to Section II. C)

23 CFR 771.118(c)(1-16)

☐ (1) Utility and Similar Appurtenance Action

☐ (2) Pedestrian or Bicycle Action

☐ (3) Environmental Mitigation or Stewardship Activity

☐ (4) Planning and Administrative Activity

☐ (5) Activities Promoting Transportation Safety, Security, Accessibility and Communication

☐ (6) Acquisition, Transfer of Real Property Interest

☐ (7) Acquisition, Rehab, Maintenance of Vehicles or Equipment

☐ (8) Maintenance, Rehab, Reconstruction of Facilities

☐ (9) Assembly or Construction of Facilities

☐ (10) Joint Development of Facilities

☐ (11) Emergency Recovery Actions
(Several conditions attach to this type of CE. We recommend you consult with FTA if you think this CE may apply to your action.)

☐ (12) Projects Entirely within the Existing Operational Right-of-Way.

☐ (13) Federally Funded Projects
(Must be less than $5 million in federal funding, or having a total estimated cost of not more than $30,000,000 and Federal funds comprising less than 15 percent of the total estimated project cost.

☐ (14) Bridge Removal and Related Activities.

☐ (15) Preventative Maintenance to Certain Culverts and Channels

☐ (16) Geotechnical and Similar Investigations

C. Does the project appear on the following list of potential documented Categorical Exclusions?

Projects that are categorical exclusions under 23 CFR 771.118(d) require additional documentation demonstrating that the specific conditions or criteria for the CEs are satisfied and that significant effects will not result.

☐ YES (Check correct box below and continue to Part III)

☐ NO (Contact FTA Regional Office)

23 CFR 771.118(d)(1-8)

☐ (1) Modernization of a highway by resurfacing, restoring, rehabilitating, or reconstructing shoulders or auxiliary lanes.

☐ (2) Bridge replacement or the construction of grade separation to replace existing at-grade railroad crossings.

☐ (3) Acquisition of land for hardship or protective purposes. (NOTE: Hardship and protective buying will be permitted only for one or a limited number of parcels, and only where it will not limit the evaluation of alternatives (including alignments) for

☐ planned construction projects.

(4) Acquisition of right-of-way. (NOTE: No project development on the acquired right-of-way may proceed until the NEPA process for such project development, including the ☐ consideration of alternatives, where appropriate, has been completed.)

☐ (5) [Reserved]

☐ (6) Facility modernization through construction or replacement of existing components.

☐ (7) Minor realignment for rail safety purposes

☐ (8) Facility modernization/expansion outside existing ROW

"Other" actions which meet the criteria for a CE in the CEQ regulations (40 CFR 1508.4) and will not result in significant environmental effects. Actions must not: induce significant impacts to planned growth or land use; require the relocation of significant numbers of people; have a significant impact on any natural, cultural, recreational, historic or other resource; cause significant air, noise, or water quality impacts; have significant impacts on travel patterns; or otherwise have significant environmental impacts (either individually or cumulatively).

III. Information Required for Documented Categorical Exclusions

If you checked "Yes" to any of the options in Part II. C, complete each relevant subject area for Part III. Sections B-AA and submit to FTA. Depending on the project, some of the subject areas may not be applicable. In such cases, no discussion is needed.

The list below is not all-inclusive. If your proposed project has the potential to cause impacts to resources which are not listed below, please provide supplemental information about those potential impacts.

A. Detailed Project Description

Describe the project and explain how it satisfies the purpose and need identified in Part I.

This project involves constructing four satellite terminals to expand transportation capacity and improve service coverage across a wider area. These terminals aim to reduce congestion at main hubs, streamline passenger flow, and enhance access to public transit options for surrounding communities.

B. Location and Zoning

Attach a map identifying the project's location and surrounding land uses. Note any critical resource areas (historic, cultural or environmental) or sensitive noise or vibration receptors (schools, hospitals, churches, residences, etc). Briefly describe the project area's zoning and indicate whether the proposed project is consistent with it. Briefly describe the community (geographic, demographic, economic and population characteristics) in the project vicinity.

C. Traffic

Describe potential traffic and parking impacts, including whether the existing roadways have adequate capacity to handle increased bus or other vehicular traffic. Include a map or diagram if the project will modify existing roadway configurations. Describe connectivity to other transportation facilities and modes, and coordination with relevant agencies.

D. Aesthetics

Will the project have an adverse effect on a scenic vista?

☐ No

☐ Yes, describe

Will the project substantially degrade the existing visual character or quality of the site and its surroundings?

☐ No

☐ Yes, describe

Will the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

☐ No

☐ Yes, describe

E. Air Quality

Does the project have the potential to impact air quality?

☐ No

☐ Yes, describe

Is the project located in an EPA-designated non-attainment or maintenance area?

☐ No

☐ Yes, indicate the criteria pollutant and contact FTA to determine if a hot spot analysis is necessary.

- ☐ Carbon Monoxide (CO)
- ☐ Ozone (O_3)
- ☐ Particulate Matter (PM_{10} or $PM_{2.5}$)

If the non-attainment area is also in a metropolitan area, was the project included in the MPO's Transportation Improvement Program (TIP) air quality conformity analysis?

☐ No

☐ Yes Date of USDOT conformity finding:

F. Coastal Zone

Is the proposed project located in a designated coastal zone management area?

☐ No

☐ Yes, describe coordination with the State regarding consistency with the coastal zone management plan and attach the State finding, if available.

G. Environmental Justice

Determine the presence of minority and low-income populations (business owners, land owners, and residents) within about a a quarter-mile of the project area. Indicate whether the project will have disproportionately high and adverse impacts on minority or low-income populations. Describe any potential adverse effects. Describe outreach efforts targeted specifically at minority or low-income populations. Guidance is here.

H. Floodplains

Is the proposed project located within the Federal Emergency Management Agency (FEMA) 100-year floodplain?

☐ No

☐ Yes, describe potential impacts, indicate if the project will impact the base flood elevation, and include or link to the FEMA Flood Insurance Rate Map (FIRM) with the project location identified.

I. Hazardous Materials

Is there any known or potential contamination at the project site? This may include, but is not limited to, lead/asbestos in existing facilities or building materials; above or below ground storage tanks; or a history of industrial uses of the site.

☐ No, describe steps taken to determine whether hazardous materials are present on the site.

☐ Yes, note mitigation and clean-up measures that will be taken to remove hazardous materials from the project site. If the project includes property acquisition, identify if a Phase I Environmental Site Assessment for the land to be acquired has been completed and the results.

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Does the proposed project cross or have the potential to impact a navigable waterway?

☐ No

☐ Yes, describe potential impacts and any coordination with the US Coast Guard.

K. Noise and vibration

Does the project have the potential to increase noise or vibration?

☐ NO

☐ YES, describe impact and provide map identifying sensitive receptors such as schools, hospitals, parks and residences. If the project will result in a change in noise and vibration sources, you must use FTA's "Transit Noise and Vibration Impact Assessment" methodology to determine impact.

L. Prime and Unique Farmlands

Does the proposal involve the use of any prime or unique farmlands?

☐ No

☐ Yes, describe potential impacts and any coordination with the Soil Conservation Service of the U.S. Department of Agriculture.

M. Historic & Cultural Resources

Impacts to cultural, historic, or recreational properties may trigger Section 106 or tribal consultations or a Section 4(f) evaluation, requiring consideration of avoidance alternatives.

Does the project involve any ground disturbing activities?

☐ No

☐ Yes, provide the approximate maximum ground disturbance depth. Also provide information on previous disturbances or where ground disturbance will occur.

Are there any historic resources in the vicinity of the project?

☐ No

☐ Yes, Attach photos of structures more than 45 years old that are within or adjacent to the project site and describe any direct or indirect impacts the project may cause.

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Are there any species located within the project vicinity that are listed as threatened or endangered under the Endangered Species Act? Determine this by obtaining lists of threatened and endangered species and critical habitat from the US Fish and Wildlife Service and the National Marine Fisheries Service.

Describe any critical habitat, essential fish habitat or other ecologically sensitive areas within or near the project area.

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Is the project located in or adjacent to a park or recreation area?

☐ No

☐ Yes, provide information on potential impacts to the park or recreation area. Please also indicate if the park involved Land and Water Conservation Act funds (Section 6(f))

P. Seismic and Soils

Are there any unusual seismic or soil conditions in the project vicinity? If so, indicate on project map and describe the seismic standards to which the project will be designed.

☐ No

☐ Yes, describe

Q. Water Quality

Does the project have the potential to impact water quality, including during construction.

☐ No

☐ Yes, describe potential impacts and best management practices which will be in place.

Will there be an increase in new impervious surface or restored pervious surface?

☐ No

☐ Yes, describe potential impacts and proposed treatment for stormwater runoff.

Is the project located in the vicinity of an EPA-designated sole source aquifer (SSA)?

☐ No

☐ Yes, provide the name of the aquifer which the project is located in and describe any potential impacts to the aquifer. Also include the approximate amount of new impervious surface created by the project. (May require completion of SSA worksheet.)

R. Wetlands

Does the proposal temporarily or permanently impact wetlands or require alterations to streams or waterways?

☐ No

☐ Yes, describe potential impacts

S. Construction Impacts

Describe the construction plan and identify impacts due to construction noise, utility disruption, debris and spoil disposal, and staging areas. Address air and water quality impacts, safety and security issues, and disruptions to traffic and access to property.

T. Cumulative and Indirect Impacts

Are cumulative and indirect impacts likely?

☐ No

☐ Yes, describe the reasonably foreseeable:

a) Cumulative impacts, which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes them. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

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If property is to be acquired for the project, indicate whether acquisition will result in relocation of businesses or individuals.

Note: For acquisitions over $500,000, FTA concurrence in the property's valuation is also required.

V. Energy

If the project includes the construction or reconstruction of a building, identify potential opportunities to conserve energy which could be employed. This includes building materials and techniques used for construction; special innovative conservation features; fuel use for heating, cooling and operations; and alternative renewable energy sources.

W. Public Involvement

Describe public outreach efforts undertaken on behalf of the project. Indicate opportunities for public meetings (e.g. board meetings, open houses, special hearings). Indicate any significant concerns expressed by agencies or the public regarding the project.

X. Mitigation Measures

Describe all measures to be taken to mitigate project impacts.

Y. Other Federal Actions

Provide a list of other federal NEPA actions related to the proposed project or in the vicinity.

Z. State and Local Policies and Ordinances

Is the project in compliance with all applicable state and local policies and ordinances?

- ☐ No, describe noncompliance:
- ☐ Yes

AA. Related Federal and State/Local Actions

- ☐ Corps of Engineers Permit (Section 10, Section 404)
- ☐ Coast Guard Permit
- ☐ Coastal Zone Management Certification
- ☐ Critical Area Ordinance Permit
- ☐ ESA and EFH Consultation
- ☐ Floodplain Development Permit
- ☐ Forest Practice Act Permit
- ☐ Hydraulic Project Approval
- ☐ Local Building or Site Development Permits
- ☐ Local Clearing and Grubbing Permit
- ☐ National Historic Preservation Act-Section 106 consultation
- ☐ National Pollutant Discharge Elimination System General Construction Permit
- ☐ Shoreline Permit
- ☐ Solid Waste Discharge Permit
- ☐ Sole Source Aquifer Consultation
- ☐ Section 4(f) (Historic or Recreational Properties; Wildlife Refuges)
- ☐ Section 6(f) (Recreational Properties)
- ☐ Section 106 (Historic Properties)
- ☐ Stormwater Site Plan (SSP)
- ☐ Temporary Erosion and Sediment Control Plan (TESC)
- ☐ Water Rights Permit
- ☐ Water Quality Certification—Section 401
- ☐ Tribal Consultation or Permits (if any, describe below)
- ☐ Other

Others (describe as applicable):

Submitted By (name, title):	**Date:**
Omar Santos Crespo	November 13, 2024

Please submit an electronic copy of this form, attachments, and a signed transmittal letter recommending a NEPA finding to either julia.walker@dot.gov or stanley.a.mitchell@dot.gov

For links to further topical guidance, please visit Region 4's webpage.

FTA Region 4
CATEGORICAL EXCLUSION and
DOCUMENTED CATEGORICAL EXCLUSION WORKSHEET

Note: The purpose of this worksheet is to assist sponsoring agencies (grantees) in gathering and organizing materials for environmental analysis required under the National Environmental Policy Act (NEPA), particularly for projects that may qualify as a Categorical Exclusion (CE) or Documented Categorical Exclusion (DCE). The use and submission of this particular worksheet is NOT required. The worksheet is provided merely as a helpful tool for assembling information needed by FTA to determine the likelihood and magnitude of potential project impacts. **NOTE: Fields are expandable, so feel free to use more than a line or two if needed.**

Submission of the worksheet does not satisfy NEPA requirements. FTA must concur in writing in the sponsoring agency's NEPA recommendation. Project activities may not begin until this process is complete. Contact the FTA Region 4 office at (404) 865-5600 if you have any questions or require assistance.

I. Project Description

Sponsoring Agency	Date Submitted	FTA Grant Number(s) (if known)
Autonomous Municipality of Caguas	11/13/2024	

Project Title

Construction and Reconstruction of Sidewalks and Ramps along the Transportation System Stop Areas

Project Description (brief, 1-2 sentences)

The project involves building and refurbishing sidewalks and ramps at transportation system stop areas to improve accessibility, safety, and usability for pedestrians, including those with disabilities. The project scope focuses on enhancing pathways to meet modern standards and accommodate all users efficiently.

Purpose and Need for Project (brief, 1-2 sentences, include as an attachment if adopted statement is lengthy)

The purpose of this project is to enhance accessibility and safety for all pedestrians at transportation stop areas by constructing and upgrading sidewalks and ramps to meet ADA standards. This need arises from the importance of providing safe, inclusive, and functional pathways for individuals of all mobility levels, reducing barriers to public transportation access.

Project Location (include City and Street address)

Various Locations

Project Contact (include phone number, mailing address and email address)

Juan J. Greenaway, Director of Citizens' Mobility Office, T: (787) 653-8833, E: juan.jacob@caguas.gov.pr

If your project involves construction, include the following:

- Project vicinity map
- Project site plan showing access points and project boundaries
- Other useful maps as appropriate (topo, for instance, depending on circumstances, and/or Google Earth aerial, NEPA Assist, etc.)
- A few photographs of the site if useful to illustrate important features
- Details pertaining to the depth of soil excavation
- Note if the soil has been previously disturbed by prior construction or other activity
- List parks or recreation areas within the project vicinity
- Any previous consultations that might be relevant? (HUD, SHPO, or DOTs)

II. NEPA Class of Action

Answer the following questions to determine the project's potential class of action. If the answer to any of the questions in Section A is "YES", contact the FTA Region 4 office to determine whether the project requires preparation of a NEPA environmental assessment (EA) or environmental impact statement (EIS).

A. Will the project significantly impact the natural, social and/or economic environment?

☐ YES (contact FTA Regional office)

☒ NO (continue)

A.1 Is the significance of the project's social, economic or environmental impacts unknown?

☐ YES (contact FTA Regional office)

☒ NO (continue)

A.2 Is the project likely to require detailed evaluation of more than a few potential impacts?

☐ YES (contact FTA Regional office)

☒ NO (continue)

A.3 Is the project likely to generate intense public discussion, concern or controversy, even though it may be limited to a relatively small subset of the community?

☐ YES (contact FTA Regional office)

☒ NO (continue)

B. Does the project appear on the following list of Categorical Exclusions (CEs)?

The types of activities listed below describe actions which, when the corresponding conditions are met, are under usual circumstances categorically excluded from further NEPA analysis under 23 CFR 771.118(c). Unusual circumstances may include, but are not limited to, the presence of wetlands, historic buildings and structures, parklands, or floodplains in the project area, or the potential for the project to impact other resources. (Descriptions of each type of activity, and corresponding conditions, are available here; this worksheet simply lists the name of each exclusion.)

☒ YES (If checked AND there are no special circumstances, check the applicable box and briefly describe the activity in Section III. A; then proceed to the signature block on the back page.)

☐ NO (continue to Section II. C)

23 CFR 771.118(c)(1-16)

☐ (1) Utility and Similar Appurtenance Action

☐ (2) Pedestrian or Bicycle Action

☐ (3) Environmental Mitigation or Stewardship Activity

☐ (4) Planning and Administrative Activity

☐ (5) Activities Promoting Transportation Safety, Security, Accessibility and Communication

☐ (6) Acquisition, Transfer of Real Property Interest

☐ (7) Acquisition, Rehab, Maintenance of Vehicles or Equipment

☐ (8) Maintenance, Rehab, Reconstruction of Facilities

☐ (9) Assembly or Construction of Facilities

☐ (10) Joint Development of Facilities

☐ (11) Emergency Recovery Actions
(Several conditions attach to this type of CE. We recommend you consult with FTA if you think this CE may apply to your action.)

☐ (12) Projects Entirely within the Existing Operational Right-of-Way.

☐ (13) Federally Funded Projects
(Must be less than $5 million in federal funding, or having a total estimated cost of not more than $30,000,000 and Federal funds comprising less than 15 percent of the total estimated project cost.

☐ (14) Bridge Removal and Related Activities.

☐ (15) Preventative Maintenance to Certain Culverts and Channels

☐ (16) Geotechnical and Similar Investigations

C. Does the project appear on the following list of potential documented Categorical Exclusions?

Projects that are categorical exclusions under 23 CFR 771.118(d) require additional documentation demonstrating that the specific conditions or criteria for the CEs are satisfied and that significant effects will not result.

☐ YES (Check correct box below and continue to Part III)

☐ NO (Contact FTA Regional Office)

23 CFR 771.118(d)(1-8)

☐ (1) Modernization of a highway by resurfacing, restoring, rehabilitating, or reconstructing shoulders or auxiliary lanes.

☐ (2) Bridge replacement or the construction of grade separation to replace existing at-grade railroad crossings.

☐ (3) Acquisition of land for hardship or protective purposes. (NOTE: Hardship and protective buying will be permitted only for one or a limited number of parcels, and only where it will not limit the evaluation of alternatives (including alignments) for

☐ planned construction projects.

(4) Acquisition of right-of-way. (NOTE: No project development on the acquired right-of-way may proceed until the NEPA process for such project development, including the ☐ consideration of alternatives, where appropriate, has been completed.)

☐ (5) [Reserved]

☐ (6) Facility modernization through construction or replacement of existing components.

☐ (7) Minor realignment for rail safety purposes

☐ (8) Facility modernization/expansion outside existing ROW

"Other" actions which meet the criteria for a CE in the CEQ regulations (40 CFR 1508.4) and will not result in significant environmental effects. Actions must not: induce significant impacts to planned growth or land use; require the relocation of significant numbers of people; have a significant impact on any natural, cultural, recreational, historic or other resource; cause significant air, noise, or water quality impacts; have significant impacts on travel patterns; or otherwise have significant environmental impacts (either individually or cumulatively).

III. Information Required for Documented Categorical Exclusions

If you checked "Yes" to any of the options in Part II. C, complete each relevant subject area for Part III. Sections B-AA and submit to FTA. Depending on the project, some of the subject areas may not be applicable. In such cases, no discussion is needed.

The list below is not all-inclusive. If your proposed project has the potential to cause impacts to resources which are not listed below, please provide supplemental information about those potential impacts.

A. Detailed Project Description

Describe the project and explain how it satisfies the purpose and need identified in Part I.

The project involves building and refurbishing sidewalks and ramps at transportation system stop areas to improve accessibility, safety, and usability for pedestrians, including those with disabilities. The project scope focuses on enhancing pathways to meet modern standards and accommodate all users efficiently.

B. Location and Zoning

Attach a map identifying the project's location and surrounding land uses. Note any critical resource areas (historic, cultural or environmental) or sensitive noise or vibration receptors (schools, hospitals, churches, residences, etc). Briefly describe the project area's zoning and indicate whether the proposed project is consistent with it. Briefly describe the community (geographic, demographic, economic and population characteristics) in the project vicinity.

C. Traffic

Describe potential traffic and parking impacts, including whether the existing roadways have adequate capacity to handle increased bus or other vehicular traffic. Include a map or diagram if the project will modify existing roadway configurations. Describe connectivity to other transportation facilities and modes, and coordination with relevant agencies.

D. Aesthetics

Will the project have an adverse effect on a scenic vista?

☐ No

☐ Yes, describe

Will the project substantially degrade the existing visual character or quality of the site and its surroundings?

☐ No

☐ Yes, describe

Will the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

☐ No

☐ Yes, describe

E. Air Quality

Does the project have the potential to impact air quality?

☐ No

☐ Yes, describe

Is the project located in an EPA-designated non-attainment or maintenance area?

☐ No

☐ Yes, indicate the criteria pollutant and contact FTA to determine if a hot spot analysis is necessary.

- ☐ Carbon Monoxide (CO)
- ☐ Ozone (O_3)
- ☐ Particulate Matter (PM_{10} or $PM_{2.5}$)

If the non-attainment area is also in a metropolitan area, was the project included in the MPO's Transportation Improvement Program (TIP) air quality conformity analysis?

☐ No

☐ Yes Date of USDOT conformity finding:

F. Coastal Zone

Is the proposed project located in a designated coastal zone management area?

☐ No

☐ Yes, describe coordination with the State regarding consistency with the coastal zone management plan and attach the State finding, if available.

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Submitted By (name, title):	**Date:**
Omar Santos Crespo	November 13, 2024

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