

Desirability and Convenience Study for the Toll Roads Monetization Project

Puerto Rico Public-Private
Partnerships Authority



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1. Executive Summary

Overview

This Desirability & Convenience Study (the “Study”) was commissioned by the Puerto Rico Public-Private Partnerships Authority (“P3A” or the “Authority”), in collaboration with the Puerto Rico Highways and Transportation Authority (“PRHTA”). The Study seeks to determine whether it is advisable to procure a public-private partnership (“P3” or “PPP”) for the improvement, operation, and maintenance of PRHTA’s PR-53, PR-20, PR-66, and/or PR-52 toll roads (collectively, the “Toll Roads”) under a future P3 agreement between the PRHTA and a private operator (the “Project”). The Project was identified by the Commonwealth of Puerto Rico (the “Commonwealth”) and the Authority is facilitating the development of the Study, in collaboration with PRHTA, the entity responsible for operating the Toll Roads.

PRHTA’s February 22, 2022, Certified Fiscal Plan (“Fiscal Plan”) highlights the need for PRHTA’s future state to address underperformance in the operation and maintenance of the Toll Roads, which has resulted in suboptimal road conditions, lack of sustainability, increased congestion, and safety concerns. Further, in 2016, the “Commonwealth” faced an unsustainable burden of more than \$72 billion in debt and more than \$55 billion in unfunded pension liabilities, constraining its ability to stabilize its finances with no clear path forward to restructure its debt. Puerto Rico’s debt was issued by more than a dozen public entities, ranging from the Commonwealth itself to separate public corporations, including PRHTA, the entity responsible for the operation of the Toll Roads. The Commonwealth, including PRHTA, has not made any debt payments since 2016, as authorized by the Puerto Rico Oversight, Management, and Economic Stability Act (“PROMESA”) during creditor negotiations. It is estimated that PRHTA had approximately \$5.8 billion in outstanding debt on assets, primarily from the Toll Roads, PR-5, and PR-22, and Tren Urbano. Of the \$5.8 billion, 18%, or approximately \$1 billion, was estimated to be allocated to the Toll Roads.

Objectives of the Study

Objective setting acts as the initial step to develop potential delivery alternatives that align with PRHTA’s mission and address historical issues as outlined in the Fiscal Plan. The Authority considered historical aspects of PRHTA’s operation and identified potential benefits for Puerto Rico when developing the objectives of the Study. The Study objectives are listed below (in no order of preference or importance):

- Improve budget certainty and address PRHTA’s fiscal situation through leveraging up-front funding sources and minimizing public fund contributions
- Modernize the existing infrastructure and improve the quality of Toll Roads
- Improve mobility, accessibility, and safety for users of the Toll Roads
- Improve performance and accountability by allocating responsibilities to the party best able to manage them and integrating performance-based contracts



- Increase revenue opportunities through reduced leakage, optimizing fare collection, and better aligning toll rates to costs
- Accelerate improvements in the Toll Roads and limit risks in the delivery of improvements
- Reduce Commonwealth exposure to current fiscal situation in Puerto Rico

Study Options

The objectives listed above were developed by the Authority to guide this Study and to determine whether an identified option is desirable and convenient to the Authority to consider as an alternative to the Status Quo, as defined below. The options considered by the Authority are based on potential options outlined in the Fiscal Plan.

Option 1 – Status Quo: This option represents PRHTA’s current operation, and no major changes will need to occur at PRHTA to continue to operate and maintain the Toll Roads. PRHTA assumes all risks associated with operations, maintenance, capital investments, and paying outstanding debt, and will continue receiving all toll revenue.

Option 2 – Concession of all Toll Roads: This option would require a private operator to improve, operate, and maintain the Toll Roads under a future P3 agreement, in exchange for toll revenue. This option results in an upfront concession payment that can be used to pay PRHTA’s debt obligations and capital improvements, depending on the level of revenue generated. Any value in excess of debt and capital improvements are net proceeds to PRHTA. In this scenario, the concessionaire assumes revenue risk.

Option 3 – Concession of PR-52: This option is similar to Option 2, though includes only PR-52 in the concession. PR-52 has historically generated the highest level of revenue compared to the remaining Toll Roads and as such, likely has the most investor appetite. This option requires PRHTA to improve, operate and maintain the remaining Toll Roads outside of PR-52 and retain the revenue (and risk) that is generated by these roads. PRHTA may use the concession payment to pay off debt owed to PRHTA bondholders in this option for PR-52, though will be responsible for outstanding debt on the remaining Toll Roads.

Option 4 – Concession of all Toll Roads with Revenue Share: This option is similar to Option 2, though instead of the Commonwealth receiving an upfront payment from the private operator, the Commonwealth would partake in ongoing revenue generated by the Toll Roads through a revenue sharing mechanism. The private operator will receive revenue for the period defined in the concession agreement, subject to revenue sharing provisions. Operating, maintenance, and improvement risks will be the responsibility of the private operator.

Option 5 – Concession of all Toll Roads plus Additional Scope: This option would require a private operator to enhance, operate, and maintain all Toll Roads under a concession model, similar to Option 2. When comparing this option against Option 2, the key difference is that in this alternative, PRHTA will forego any upfront concession payment to require the private operator to operate and maintain scope outside of, and in addition to, the Toll Roads.

Option 6 – Availability Payment for Operations and Maintenance (O&M) of all Toll Roads: This option would require PRHTA to procure a private operator to operate and maintain the Toll Roads under certain performance requirements like Option 2. The primary difference between this option and Option 2 is the payment mechanism. In this option, PRHTA would make periodic payments for the asset being open and available to a predefined standard. In such an arrangement, payments to the private operator would be subject to deductions for lack of performance against the performance standards. The private operator will

be responsible for improving, operating, and maintaining the Toll Roads but would not have responsibility or risk for the level of usage of the Toll Roads or revenues generated from the operations.

Qualitative Assessment of Options

A qualitative assessment of the benefits and considerations of each option, as well as how well the option meets the Authority's Study objectives was considered. The results of which suggest that most of the potential options under consideration do not fully address the objectives without an upfront concession payment. The Status Quo option also presents concerns given the historical challenges that PRHTA has faced, such as funding constraints, aging infrastructure, rising capital costs, shrinking budgets, and lack of asset management planning, which has resulted in a sub-optimal road network.

Benefits and issues to consider for each option were developed to be consistent with the Study objectives. For instance, the objective to "reduce exposure to Puerto Rico's fiscal situation" may be addressed through a variety of different means and procurement approaches. In a concession, a concessionaire that provides an upfront concession payment to the Commonwealth will reduce exposure to Puerto Rico's fiscal situation and may be captured as a benefit below in "alleviating Puerto Rico financial pressure." A summary of these benefits and issues to consider is provided below and described in more detail in Section 5.

Figure 1.1 – Option Benefits/Issues to Consider

Option:	Status Quo	Concession of all Toll Roads	Concession of PR-52	Concession of all Toll Roads with Revenue Share	Concession of all Toll Roads plus Additional Scope	Availability Payment for O&M of all Toll Roads
Benefits						
PRHTA familiarity & acceptance	✓					
PRHTA retains toll revenue	✓			✓		✓
No PRHTA employee reorganization	✓					
Alleviates PRHTA financial pressure		✓	✓			
Governed by performance requirements		✓	✓	✓	✓	✓
Operating synergies from asset portfolio		✓		✓	✓	✓
Toll increases may improve asset value		✓	✓	✓	✓	✓
Enhances quality of additional roads					✓	
Timing and ease of implementation	✓	✓	✓	✓	✓	
Maximizes concession payment		✓				
Issues to Consider						
O&M risks retained by PRHTA	x					
PRHTA required to fund O&M, capex, debt service	x					
PRHTA accountable for performance	x					
Loss of PRHTA revenue stream		x	x		x	
Requires PRHTA employee reorganization		x	x	x	x	x
Potential isolation of non-viable assets			x			
Ongoing payment obligations by PRHTA	x					x

*Some benefits and considerations may only partially apply to a specific option

The results of each of the identified options compared to the Study objectives is provided below. The Authority has also taken each of the options into consideration with respect to the outstanding debt requirements as provided in Section 3. The following chart compares each of the objectives to each delivery option analyzed.

Figure 1.2 – Option Comparison to Objectives

Study Objectives	Status Quo	Concession of all Toll Roads	Concession of PR-52	Concession of all Toll Roads with Revenue Share	Concession of all Toll Roads plus Additional Scope	Availability Payment for O&M of all Toll Roads
Improve budget certainty and address PRHTA’s fiscal situation through leveraging up-front funding sources and minimizing public fund contributions	○	●	●	○	○	○
Modernize the existing infrastructure and improve the quality of Toll Roads	○	●	●	●	●	●
Improve mobility, accessibility, and safety for users of the Toll Roads	◐	●	●	●	●	●
Improve performance and accountability by allocating responsibilities to the party best able to manage them and integrating performance-based contracts	○	●	●	●	●	●
Increase revenue opportunities through reduced leakage, optimizing fare collection, and better aligning toll rates to costs	◐	●	●	●	●	◐
Accelerate improvements in the Toll Roads and limit risks in the delivery of improvements	○	●	●	●	◐	◐
Reduce Commonwealth exposure to current fiscal situation in Puerto Rico	○	●	●	○	◐	○

Addresses Objective: ● **Partially Addresses Objective:** ◐ **Does Not Address Objective:** ○

The two concession options, a Concession of all Toll Roads (Option 2) and Concession of PR-52 (Option 3), appear to fully address the objectives from a qualitative perspective. Both options would likely result in an upfront concession payment that PRHTA could potentially pay PRHTA’s outstanding debt, pay for initial capital investments (if sources of funding are sufficient) and transfer the operating and maintenance risks to the private sector. These options are both considered quantitatively.

Quantitative Assessment of Options

The quantitative assessment informs the Authority of the financial merits of each of the concession options under consideration. To assess each option quantitatively, the Authority developed a financial model that represents the responsibilities and rights of a potential future private operator of the Toll Roads. For each option under consideration, financial, commercial, and technical inputs and assumptions were developed. These assumptions included, for example, revenue, capital improvements, and regular operation and maintenance.

Each scenario assumes that initial capital investments will allow the developer to achieve a state of good repair on the Toll Roads, or in other words, the assets’ condition allows operation at full performance – a significant improvement from the current condition of the Toll Roads. The financial model also considers current PRHTA negotiations with creditors, which suggest that PRHTA will issue new debt to pay all previous PRHTA-related debt. This new debt amount is estimated to total approximately \$1.245 billion and will be secured by toll revenue from the Toll Roads. In addition to the \$1.245 billion, the Commonwealth is expected to provide a loan to PRHTA in the total amount of \$314 million. While the exact repayment terms have not yet been determined, the latest version of the 2022 fiscal plan assumes a 30-year subordinated loan repayment for illustrative purposes that will be updated once the loan details are finalized. Any final

terms or amendments to the loan are subject to approval of the Financial Oversight and Management Board for Puerto Rico (“FOMB”).

The financial model is informed by the inputs and assumptions and solves to return the range of concession payments that PRHTA may expect based on the level of revenue generated by each option, less operations, minor and major maintenance, funding requirements, initial capital investment and outstanding debt requirements. The range of concession payments and concession options assessed are based on a target pre-tax internal rate of return (IRR) between 11% and 13%, and the following toll rate structure:

- **1.5% + Consumer Price Index (CPI):** Current toll rate increased by 1.5% plus increases in CPI beginning FY2022 and annually thereafter to the end of the concession term (July 1 of each fiscal year)

The quantitative assessment suggests that the 1.5% + CPI toll rate structure marginally supports a sufficient level of revenue to address initial investments and outstanding debt, depending on the level of return that a concessionaire requires to invest in the project. In the Concession of all Toll Roads option (Option 2), sources of funding total approximately \$2.1 – \$2.3 billion, resulting in a concession payment to PRHTA of \$1.5 – \$1.7 billion after addressing initial capital investment needs. The remaining amount after issuance fees and reserve requirements are funded can be used to pay outstanding debt. After making the payoff amount related with the outstanding debt and the Commonwealth loan, this option appears to be marginally feasible at the 11% IRR level. This option, however, doesn’t appear to be feasible after making the same debt payoff amount when including higher return requirements. The option is feasible at the return requirements shown if the Commonwealth loan is repaid with alternative sources of funds (other than funds derived from the toll revenues).

Figure 1.3 – Concession of all Toll Roads (Option 2)¹

\$ (in Millions)	11% IRR	13% IRR
Total Sources of Funds	2,254	2,086
Less: Initial Capital Expenditures (CAPEX) Investments	(521)	(521)
Less: Other Fees and Reserve Accounts	(73)	(73)
Net Concession Payment to PRHTA	1,660	1,492
Less: Debt Payoff Requirement	(1,245)	(1,245)
Less: Commonwealth Loan to PRHTA	(314)	(314)
Net Proceeds	101	(67)
EBITDA Multiple	13x	12x

The Concession of PR-52 option (Option 3) shows generally similar results, with sources of funding totaling around \$1.3 – \$1.4 billion, resulting in a concession payment to PRHTA of \$970 million – \$1.1 billion after addressing initial capital investment needs. This option appears to be marginally feasible in its current form and results in net proceeds to PRHTA (in the range of \$35 – \$150 million) after funding of initial capital expenses, payment of outstanding debt and the Commonwealth loan. However, PRHTA will be required to pay for and assume the risk of the remaining obligations on PR-20, PR-53, and PR-66. Further, the

¹ Detailed inputs and assumptions for each scenario are provided in Section 6. Applicable for both tables.

outstanding debt amounts presented in this option are only assumptions and have not been negotiated with creditors or included in PRHTA's restructuring.

Figure 1.4 – Concession of PR-52 (Option 3)

\$ (in Millions)	11% IRR	13% IRR
Total Sources of Funds	1,424	1,309
Less: Initial CAPEX Investments	(291)	(291)
Less: Other Fees and Reserve Accounts	(51)	(49)
Net Concession Payment to PRHTA	1,082	969
Less: Debt Payoff Requirement ²	(746)	(746)
Less: Commonwealth Loan to PRHTA ³	(188)	(188)
Net Proceeds	148	35
EBITDA Multiple	13x	12x

Conclusion & Recommendation

When assessed qualitatively, the results suggest that most of the potential options under consideration would not generate an upfront payment to address the initial capital investment, reserve account funding, and outstanding debt repayment requirements. The Status Quo option (Option 1) includes the continuation of operations by PRHTA which has historically resulted in challenges to maintain the Toll Roads. Further, this option requires PRHTA to retain risks associated with the performance of the Toll Roads which the private market can manage more effectively.

The two concession options, a Concession of all Toll Roads (Option 2) and Concession of PR-52 (Option 3), fully address the primary objectives from a qualitative perspective.

From a quantitative perspective, both options result in an upfront concession payment that PRHTA can utilize to pay for initial capital investments and debt secured by toll revenue, though only in certain circumstances depending on the level of return that a concessionaire requires. For instance, the Concession of all Toll Roads option results in a net shortfall at a 13% IRR but is marginally feasible when the return requirements are reduced to 11%. The Concession of PR-52 is marginally feasible across the IRR range presented, though includes a prorated outstanding debt assumption that has not been negotiated as part of PRHTA's restructuring.

Each quantitative scenario above includes the addition of a subordinate Commonwealth loan to PRHTA totaling \$314 million (prorated for Concession of PR-52). Each of the scenarios above present a wider range of feasibility absent the subordinate loan from the Commonwealth.

The results suggest that a Concession of all Toll Roads option appears to be desirable and convenient for the Authority when compared to the Concession of PR-52 and the remaining options within this Study. A Concession of all Toll Roads presents an opportunity for PRHTA to generate an upfront concession payment which could be used to provide initial capital investment (as shown in Figure 1.3 above) to significantly enhance the quality of the Toll Roads and achieve a state of good repair. Reaching a state of good repair

² Pro rata amount based on the total debt amount and PR-52's amount of revenue compared to the other Toll Roads.

³ Pro rata amount based on the expected loan amount and PR-52's amount of revenue compared to the other Toll Roads



level will contribute to avoid Federal penalties and will allow PRHTA to direct Federal highway funds to other non-toll roads facilities. As such, users will benefit from an improved road network that has historically presented challenges under the Status Quo. It is expected that a best-in-class operator will operate and maintain the Toll Roads at high performance levels and will bring their expertise to enhance and improve efficiency for toll operations. A Concession of PR-52 will result in similar benefits as the Concession of all Toll Roads option. Despite the quantitative results suggesting the Concession of PR-52 is feasible throughout the IRR range shown, the benefits, however, would only apply to PR-52. The improvement, operation, and maintenance of the remaining Toll Roads would be delivered under the Status Quo option, which has historically posed challenges for PRHTA and resulted in sub-optimal road conditions. The cost of PRHTA continuing to operate and maintain the remaining Toll Road assets have not been analyzed within this Study.

In terms of feasibility, the Concession of all Toll Roads appears to be marginally feasible at the lower end of the range of return requirements after payoff of the outstanding debt and the Commonwealth loan. The assets present an investment opportunity given the current private market appetite for established infrastructure assets that generate steady long-term cash flow, the additional confidence in Puerto Rico as the Commonwealth emerges from bankruptcy, and the Authority's long history implementing public-private partnership projects. However, these considerations have not been validated with the market and this may result in different pricing compared to what was assumed in this Study.

Due to the benefits discussed above, it is recommended that the Authority pursue a P3 transaction under a concession model for the long-term improvement, operation, and maintenance of the Toll Roads.

The Authority and PRHTA have included general assumptions around the structure of a potential future transaction for the purposes of developing this Study. The assumptions included in this Study do not necessarily represent the structure of a future transaction, which will be developed by the Authority and PRHTA. Details surrounding the actual structure of the transaction will be provided in future solicitation documents.

2. Objectives of the Study

General Disclosure

The Study was formulated in accordance with Act No. 29-2009, as amended, also known as the Puerto Rico Public-Private Partnerships Act (“Act 29”) and the Regulation for the Procurement, Evaluation, Selection, Negotiation and Award of Participatory Public-Private Partnership Contracts under Act No. 29-2009, as Amended (“Regulation”). The Study was commissioned by the Authority (in collaboration with PRHTA), who appointed KPMG LLP as its financial and commercial advisor, CPM PR, LLC as its technical advisor, and Steer to provide a traffic and revenue analysis (collectively, the “Advisors”). The compensation of the Advisors was not conditioned in any way on the outcome of this Study.

This Study is based on information provided by the Authority, PRHTA, market information obtained from sources believed to be reliable, and estimates and assumptions made by the Advisors. Furthermore, the Advisors provided recommendations for the delivery and structure of the Project, when applicable, based on historical precedent and market good practice. Actual results may vary from those anticipated in this Study. Changes in local, state, and federal laws, or shifts in the overall economic condition of Puerto Rico may alter the assumptions and conclusions presented in this Study. It is recommended that further analysis and due diligence be conducted in subsequent phases if a procurement occurs. The Authority will continue to evaluate and analyze the Desirability and Convenience of the Project as new information becomes available.

The Authority does not make any representation or warranty whatsoever, including representations or warranties as to the accuracy or completeness of the information contained herein, including estimates, forecasts, or extrapolations. In addition, the Study includes certain projections and forward-looking statements with respect to the anticipated future performance of the Toll Roads that reflect certain assumptions and are subject to significant business, economic and competitive uncertainties and contingencies, many of which are beyond the control of the Authority and PRHTA. Accordingly, there can be no assurance that such projections and forward-looking statements will materialize. The actual results may vary from the anticipated results and such variations may be material. The Authority, PRHTA and the Advisors expressly disclaim any liability for any representations or warranties, expressed or implied, contained herein or for any omissions from this Study or any related matters. Act 29 and the Regulation, as well as all applicable Puerto Rico and federal laws and regulations, will govern the dissemination of this Study.

Purpose of the Desirability & Convenience Study

The Study was commissioned by the Authority to assist it in determining whether it is desirable and convenient for the Authority, together with PRHTA, to procure a long-term concession contract with a private operator to improve, operate, and maintain the Toll Roads, or continue to operate and maintain the Toll Roads under the “Status Quo”, which is currently undertaken by PRHTA. The purpose of this Study is to evaluate the viability of implementing the Project through an alternative procurement model, as an alternative to conventional means. This Study will detail the qualitative and quantitative needs for delivering the Project, evaluate potential structuring options, and assess and compare the financial, commercial, and technical risk implications for the preferred delivery models.

Objectives of the PRHTA Fiscal Plan

PRHTA is statutorily tasked with the responsibility of facilitating movement of vehicles and individuals, ensuring access to highways in good condition, alleviating the dangers and inconveniences of traffic congestion, improving the safety of the Commonwealth's highways, and addressing Puerto Rico's demand for improved transportation infrastructure. PRHTA strives to develop an integrated transportation system that promotes Puerto Rico's economic development in harmony with the environment. In other words, PRHTA's mission involves (i) promoting the safe and easy movement of vehicles and individuals, (ii) reaching and maintaining a state of good repair to ensure the people of Puerto Rico have access to quality roads and modes of transportation, (iii) contributing to the development of Puerto Rico, and (iv) building a strong, resilient road network by strengthening assets that are prone to natural disasters. Given historical issues on the Toll Roads (as further described in Section 3), the Fiscal Plan outlines the need for PRHTA's future state to address Puerto Rico's underperformance with road safety and traffic congestion, resulting in suboptimal financial performance and lack of overall sustainability.

To achieve its future state and deliver on its mission, the Fiscal Plan specifically highlights innovative delivery methods as a potential method to address historical challenges operating and maintaining the Toll Roads, given that P3s leverage private sector delivery capabilities and performance-based contracts can be implemented to govern performance. The Fiscal Plan specifically states:

"The Fiscal Plan calls for strategic initiatives to attract private capital. Aging infrastructure, rising capital costs, shrinking budgets, limited labor availability and constrained funding all limit PRHTA's capacity to deliver a system in state of good repair. By leveraging P3 concessions, PRHTA can accelerate the implementation of needed transportation improvements and access new sources of funding. Through concessions, the public sector can limit risks inherent to the development of infrastructure (cost overruns, schedule overruns, etc.) by sharing responsibility with the private sector."

Transportation improvements and access to funding are benefits of alternative delivery projects, and along with potential drawbacks, are considered as a potential delivery alternative in meeting PRHTA's mission as outlined in the Fiscal Plan.

Study Objectives

Objective setting acts as the initial step in developing a potential delivery alternative to fulfill PRHTA's mission and address historical issues as outlined in the Fiscal Plan. The objectives of the Study were developed to be consistent with PRHTA's mission and the Fiscal Plan, which highlights the need to address historical challenges that PRHTA has faced.

The Authority considered historical aspects of PRHTA's operation and identified potential benefits for Puerto Rico. Discussions between the Commonwealth, the Authority, and PRHTA have resulted in the following objectives to be achieved through the procurement of the Project, or continuation of Status Quo. The objectives listed below ensure consistency in the focus of the analysis and provide a benchmark to compare potential options. The selected procurement method should reflect the objectives listed herein. The Study objectives are listed below (in no order of preference or importance):

- Improve budget certainty and address PRHTA's fiscal situation through leveraging up-front funding sources and minimizing public fund contributions
- Modernize the existing infrastructure and improve the quality of the Toll Roads
- Improve mobility, accessibility, and safety for users of the Toll Roads

- Improve performance and accountability by allocating responsibilities to the party best able to manage them and integrating performance-based contracts
- Increase revenue opportunities through reduced leakage, optimizing fare collection, and better aligning toll rates to costs
- Accelerate improvements in the Toll Roads and limit risks in the delivery of improvements
- Reduce exposure to current fiscal situation in Puerto Rico

Precedent Road Concession Transactions in Puerto Rico

PRHTA has a demonstrated history of successfully utilizing road concessions on its assets to improve asset quality and increase financial sustainability. An excerpt of its precedent road concession, as provided by the Federal Highway Administration (FHWA)⁴, is as follows:

In 2011, the Commonwealth agreed to a \$1.436 billion concession agreement for the long-term improvement, operation, and maintenance of two of its toll roads, PR-22 and PR-5. PR-22 (also known as the Jose de Diego Expressway) is a 52-mile, 4- and 6-lane toll highway that stretches westward from San Juan to Arecibo along Puerto Rico's northern coast. PR-5 (Rio Hondo Expressway) is a 2.5-mile eastward extension of PR-22 to Puerto Rico's second most populous city (Bayamon) that opened in 2006.

Under the agreement, the concessionaire would lease for 40 years (+10 a year extension) the toll roads and assume the responsibility for the operation, maintenance, and long-term improvement of the roads under a set of performance requirements included in the contract that required the concessionaire to maintain the roads in certain shape and operational status. For assuming this responsibility, the concessionaire is permitted to keep (and take the risk of) toll revenue generated by the assets. The concession payment to the Commonwealth by the concessionaire totaled \$1.436 billion and consisted of a mix of senior bank debt (\$725 million) and private equity (\$421 million), with over \$900 million utilized to defease tax-exempt toll revenue debt and the remaining utilized on expected upgrades over the concession period. The concession agreement was extended by 10 years on April 21, 2016 (for a total of 50 years) in exchange for an additional payment from the concessionaire to the project sponsor of \$115 million.

The success of the PR-22 and PR-5 project has shown how increasingly important P3s are for the operational success of Puerto Rico's infrastructure. By leveraging the private sector, Puerto Rico was able to ensure that the roadways and assets are managed in good condition by the operator. These toll roads have been an exemplary reference of how contributions from the private concessionaire can be used to reduce existing debt and improve road quality, with more than 99% of PR-22's pavements in "fair" or better condition.⁵

The PR-22 and PR-5 project represents a local, precedent transaction and a relevant benchmark for the assumptions included within this Study. It also represents a successful approach of Puerto Rico's use of innovative delivery structures to provide solutions to Puerto Rico's infrastructure challenges. This project was the first concession of its type successfully achieved in Puerto Rico and was internationally recognized

⁴ Puerto Rico PR-22 and PR-5 Lease: https://www.fhwa.dot.gov/ipd/project_profiles/pr_pr22_and_pr5_lease.aspx

⁵ Fiscal Plan for the Puerto Rico Highways & Transportation Authority. May 27, 2021



as a successful P3 project, winning both Project Finance International's deal of the year in the Americas award and the American Road and Transportation Builders Association's project of the year award in 2011.

Study Participants

The Authority and PRHTA have developed this report to analyze whether it is desirable and convenient for the Authority to procure a private concessionaire to operate and maintain the Toll Roads. The Authority has commissioned the Advisors to assist in the analysis of potential procurement options and development of the report. Each study participant, including their role and description is provided below.

Puerto Rico Public-Private Partnerships Authority

The Puerto Rico Public-Private Partnerships Authority is the sole entity responsible for the implementation of P3s in Puerto Rico and is the entity responsible for the development of this Desirability & Convenience Study. The Authority promotes an ongoing collaboration between the public and private sector to promote sustainable economic development and establish Puerto Rico as a global competitor. The Authority aims to transform Puerto Rico's economy and lifestyle by enhancing infrastructure and services through the effective integration of the private sector's innovation and expertise. Ultimately, the Authority's goal is to deliver high quality public services and foster socio-economic development, by optimizing synergies between the Commonwealth and the private sector to pursue the best outcome for all stakeholders involved; particularly, the citizens of Puerto Rico.

Puerto Rico Highways and Transportation Authority

The Puerto Rico Highways and Transportation Authority is assisting the Authority in the development of this Desirability & Convenience Study as a key stakeholder. PRHTA is a public corporation and government instrumentality of the Commonwealth, under the oversight of Puerto Rico's Department of Transportation and Public Works. PRHTA is primarily responsible for the operation of toll roads and the construction of roads, highways, and related transportation facilities in Puerto Rico.

PRHTA aims to facilitate movement of vehicles and individuals; ensure access to highways in good condition; alleviate the dangers and inconveniences of traffic congestion; improve the safety of the Commonwealth's highways; and address Puerto Rico's demand for improved transportation infrastructure. PRHTA aims to support the economic development of Puerto Rico through an integrated transportation network, prioritizing safety, environmental responsibility, and excellent service delivery.

3. Statement of Need & Project Overview

Statement of Need

An adequate road network is vital for economic growth and development. A well-functioning transportation system provides access to employment, social and health services and allows users to travel safely and affordably. In addition, an efficient transportation system is critical to the safe and affordable movement of goods and people. PRHTA is solely responsible for most of the road network including the Toll Roads. PRHTA is facing a fundamental challenge as it aims to remain financially sustainable over the long-term while overseeing an adequate transportation network capable of supporting economic growth and development in Puerto Rico.

PRHTA has historically been unable to maintain the highway system in a state of good repair and provide a reliable road network, due to a combination of factors. These factors include funding constraints, aging infrastructure, rising capital costs, shrinking budgets, and lack of asset management planning, among others. Ongoing budget deficits require PRHTA to follow a “worst-first” strategy that prioritizes needs that require urgent investment while disregarding minor and preventive maintenance. In addition, the Commonwealth’s fiscal situation is requiring innovative ways to ensure funding is available for outstanding debt that is directly constraining PRHTA’s ability to serve its road network. Puerto Rico’s outstanding debt situation is further described in the next Section.

Puerto Rico’s current road network ranks below national standards for certain condition and service metrics. According to the Puerto Rico Transportation Asset Management Plan 2019-2028 (“PRTAMP”), 17% of interstate pavement is in poor condition, above the 5% maximum requirement specified by FHWA. Furthermore, 30% of non-interstate pavement in Puerto Rico are also in poor condition. Due to quality of roads, the likelihood of crashes remains high as stopping distances are diminished, and roads continue to experience high roughness and cracking levels. If these needs are not met with the proper level of investment, then the rate of deterioration will accelerate, and the backlog of maintenance will become an unbearable cost for PRHTA.

The conditions of the road network have also affected the free flow of traffic. Data from FHWA’s Highways Statistics Series show that 77% of Puerto Rico’s highway system had a serviceability rating of 2.6 or less, which indicates that speed and free flow of traffic is notably affected due to road conditions. As a result, congestion events are significantly higher compared to the U.S. average where only 19% of the highway system has the same serviceability rating. The 2019 Report Card for Puerto Rico’s Infrastructure, a general infrastructure condition report authored by the American Society of Civil Engineers Puerto Rico Section, recognizes that congestion in the road network is caused by a series of factors including lack of preventive maintenance and poor road conditions. Overall, the 2019 Report Card for Puerto Rico assigns a grade of D- to Puerto Rico’s road network.

Without a quality transportation network, Puerto Rico will lose competitiveness and the prospects of economic expansion will be diminished. In addition, well maintained roads reduce the costs to maintain vehicles which currently burdens residents on the island. Furthermore, poor infrastructure quality increases Puerto Rico’s vulnerability to natural disasters and significantly reduces resiliency.



The consequences of an underperforming road network extend beyond the user safety and efficiency perspectives. Failure to achieve required federal targets as required by the FHWA could be severe and result in PRHTA failing to qualify for funding from the National Highway Performance Program (“NHPP”), further impacting PRHTA’s ability to deliver capital improvements. Continued performance monitoring and investment in the Toll Roads will benefit the Commonwealth’s ability to ensure it meets federal requirements and maintains eligibility for federal funding.

Given that the Toll Roads serve as a catalyst for economic development and prosperity, there is a profound need to enhance the Toll Roads by addressing the quality of the network, safety, and operational issues. Further, innovative funding mechanisms are needed for the Commonwealth and PRHTA to address its current fiscal situation, as described in the Section below.

Outstanding Debt

Puerto Rico Fiscal Situation

In 2016, Puerto Rico faced an unsustainable burden of more than \$72 billion in debt and more than \$55 billion in unfunded pension liabilities, constraining its ability to stabilize its finances with no clear path forward to restructure its debt.⁶ To enable Puerto Rico to restructure its debt and achieve fiscal responsibility, Congress enacted PROMESA, which established the FOMB and provided a mechanism for the FOMB to negotiate with creditors on behalf of Puerto Rico. Other Puerto Rico entities, such as the Puerto Rico Fiscal Agency and Financial Advisory Authority (“FAFAA”), collaborate with FOMB and are also involved in negotiating and restructuring outstanding debt.

Puerto Rico’s debt was issued by more than a dozen public entities, ranging from the Commonwealth itself to separate public corporations, including PRHTA. Neither the Commonwealth nor PRHTA made any debt payments from 2016 – early 2022, as authorized by PROMESA during creditor negotiations with the goal to reduce the amount of debt to a sustainable level.

It is estimated that PRHTA has approximately \$5.8 billion in outstanding debt on assets, primarily attributable to the Toll Roads, PR-5 and PR-22, and Tren Urbano. Of the \$5.8 billion, 18%, or approximately \$1 billion, was estimated to be allocated to the Toll Roads.⁷ Current negotiations suggest that PRHTA will issue new debt to pay all previous PRHTA-related debt. This new debt amount is estimated to total approximately \$1.245 billion and will be secured by toll revenue from the Toll Roads. Debt restructuring negotiations assume the ability for PRHTA to implement initiatives outlined in the Fiscal Plan such as toll rate increases, optimizing fare and fine collection, bi-directional tolling, and improving ancillary revenue, among others. The new debt is expected to have call features (allowing the issuer of the bonds to redeem the bonds prior to the bond’s maturity) including an option to pay down the debt in its entirety using proceeds from a potential concession payment associated with the monetization of PRHTA’s toll road assets. Given the lack of available upfront funding to restructure and pay off the debt, a concession is a primary consideration of the Commonwealth. Negotiations to finalize new debt to be issued for PRHTA to replace previously outstanding debt as part of the Commonwealth’s debt restructuring are in progress. Therefore, this information is preliminary in nature, utilized for assumption purposes only and subject to material change.

⁶ Financial Oversight & Management Board for Puerto Rico: <https://oversightboard.pr.gov/debt/>

⁷ Tender and Defeasance Related to Concession of PR-22 and PR-5 Report. PRHTA. 2011



Impact on D&C Study

Following a thorough review process as described in Section 5, options considered for quantitative analysis include a Concession of all Toll Roads and Concession of PR-52. The following considerations of the new debt issuance are included as part of this Study.

Security

The new debt issuance will be secured by toll revenue generated by the Toll Roads, meaning bondholders of the new debt have the right to toll revenue generated as repayment for the debt after payment of the operating expenses of the Toll Roads. This means that PRHTA would not be able to grant a concession agreement to a private operator under a full concession unless the outstanding debt is paid in full, given that the current bonds have toll revenue as security, which cannot be shared with a concessionaire absent consent of all the bondholders or a permitted subordination. The Commonwealth will be required to pay the new debt issuance in full prior to granting a concessionaire the right to revenue generated from the Toll Roads. Any debt issued by the Concessionaire could then be secured by the Concessionaire's interest in the toll revenue. For purposes of this Study, it is assumed that only a portion of the new debt issuance is secured by PR-52 in the Concession of PR-52 option (e.g. debt is reduced pro rata based on PR-52's revenue compared to other Toll Roads). Remaining debt is secured by toll revenue from PR-20, PR-53, and PR-66 in this option.

Timing

The new debt issuance is expected to occur in 2022. This Study assumes that debt terms will be finalized, and new debt issued prior to the beginning of potential concession options analyzed in this Study. This Study assumes a potential concession beginning in 2023.

Amount

Given that a Concession of all Toll Roads option is unlikely to be feasible without paying the new debt issuance in its entirety, the \$1.245 billion estimate of new debt represents a threshold amount to determine whether a potential monetization option is feasible. The outstanding debt assumption utilized for the Concession of PR-52 totals \$746 million and is pro rata based on the total debt outstanding and PR-52's amount of revenue compared to the other Toll Roads.

Application of Proceeds

Under the concession options, PRHTA will use any initial upfront concession payment to pay the new debt amount in full, and any excess funds beyond the outstanding debt amount can then be used for other purposes, such as capital improvements.

Scope

The Concession of all Toll Roads option includes transferring the responsibility for the improvement, operation, and maintenance of the Toll Roads to a concessionaire. A potential concession payment for this option will be required to pay for the entire debt amount of \$1.245 billion. The Concession of PR-52 will require payment of a reduced amount of \$746 million, although PRHTA will be responsible for paying debt on the remaining Toll Roads.



Commonwealth Loan to Support Plan of Adjustment

In connection with PRHTA's obligations under the Commonwealth's Plan of Adjustment and the PRHTA/CCDA Plan Support Agreement relating to a future PRHTA plan of adjustment ("PRHTA POA"), the Commonwealth will provide a loan to PRHTA in the total amount of \$314 million (which may be drawn in two tranches). While the exact repayment terms have not yet been determined, the latest version of the 2022 PRHTA fiscal plan illustratively assumes a subordinated loan with a 30-year repayment to be updated once the loan details are finalized.

Interest is expected to be paid semi-annually, commencing January 1, 2023, while principal is expected to amortize annually commencing in FY2023. The final repayment structure may need to be adjusted depending on the ultimate confirmation of the PRHTA POA. Any final terms of, or amendments to, the loan are subject to approval of the FOMB.

Project Description

Project Overview

The Project entails the potential establishment of a P3 for the improvement, finance, operation, and maintenance of the Commonwealth's Toll Roads under a long-term P3 agreement between PRHTA and a private operator. Under a P3, a concessionaire is responsible for conducting capital improvements, financing such improvements, and operating and maintaining the Toll Roads subject to certain performance standards included in the P3 agreement. This Study analyzes a variety of P3 options with different payment mechanisms to the concessionaire in exchange for its obligations and risks under the P3 agreement. This Study aims to assess the benefits and considerations for procuring the Project as a P3 versus the Status Quo where PRHTA continues to improve, fund, operate, and maintain the Toll Roads.

The Project considers different procurement alternatives for three interstate toll roads, known as PR-52, PR-53, and PR-66 and one non-interstate toll road known as PR-20. Collectively, the Toll Roads amount to 622.25 lane miles and served nearly 118 million vehicle transactions in fiscal year 2021. Interstate highways are designed and built for long-distance travel and have the highest functional classification within the U.S. National Highway System ("NHS") due to their economic and mobility importance.

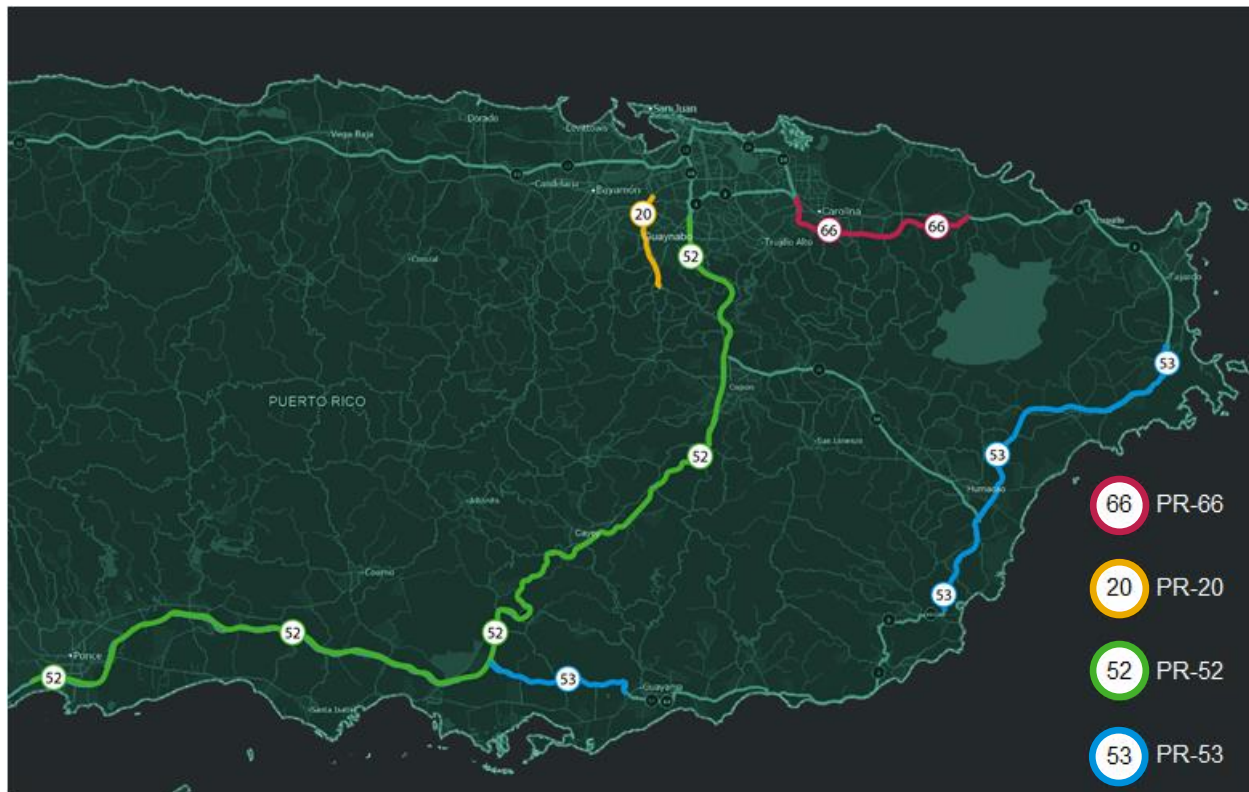
The Project considers the possibility of a P3 agreement for a 50-year term, which is consistent with precedent toll road concessions in Puerto Rico and represents the base term for all options considered, including the Status Quo option (Option 1) described in Section 4. The options considered assume a similar contractual structure, requiring a concessionaire to improve, finance, operate, and maintain the Toll Roads. The differences in alternatives lies in the payment mechanism to the concessionaire (e.g. availability payment, demand-based concession, revenue sharing, etc.) as well as the scope of work to be included in each option (e.g. private sector responsible for all Toll Roads, only PR-52, additional scope, etc.). Risk transfer and payment mechanism characteristics of each option are further described in Section 4.

PRHTA's Fiscal Plan considers P3s given a variety of market considerations including budgetary constraints, advances in asset management methods, PRHTA's fiscal situation, and the need to maintain the Toll Roads in a state of good repair. While a P3 is not suitable for all infrastructure projects, on large or more complex projects it has proven to be effective at bringing innovation, optimizing risk transfer, accelerating delivery, and bringing a whole-life costing approach, which through a competitive procurement can, in the right circumstances, bring the lowest overall total cost of ownership to the public sector. P3 models are increasingly being utilized to deliver projects for government agencies across the United States and the world.

Current Status of the Toll Roads

Puerto Rico has an extensive roadway network. According to the 2021 PRHTA Fiscal Plan, the Commonwealth’s road system consists of approximately 11,653 lane miles, of which approximately 1,057 lane miles are toll roads managed by PRHTA. The PRTAMP, states that 11% of network lane miles are designated as interstates that are part of the NHS, while 16% are not considered interstates but remain part of the NHS. The rest of the network is composed by a complex local network that is not part of the NHS and is not intended for long distance travel. PRHTA is directly responsible for the interstates and non-interstate roads that are part of the NHS system. As part of its primary responsibilities, PRHTA also performs oversight functions of the private concessionaire responsible for the existing concession of PR-22 and PR-5.

The Toll Roads provide direct links throughout northern, eastern, and southern Puerto Rico. The interstates composed by PR-52, PR-53, and PR-66 all originate within the San Juan metropolitan area and extend into the southern and eastern municipalities of the island. Meanwhile, PR-20 is a critical freeway that increases mobility through the Municipality of Guaynabo, one of the largest cities outside San Juan and part of the San Juan Metropolitan Area. The following map provides the location of the Toll Roads within Puerto Rico.



According to the Analysis of Investment Needs for PRHTA Tolloed and Non-Tolloed Highways, a report commissioned by PRHTA in October 2021, Puerto Rico is ranked #1, or the worst in the United States, for the percentage of interstate pavement rated “Poor”. The same report also states that Puerto Rico holds the seventh highest percentage of poor bridges.

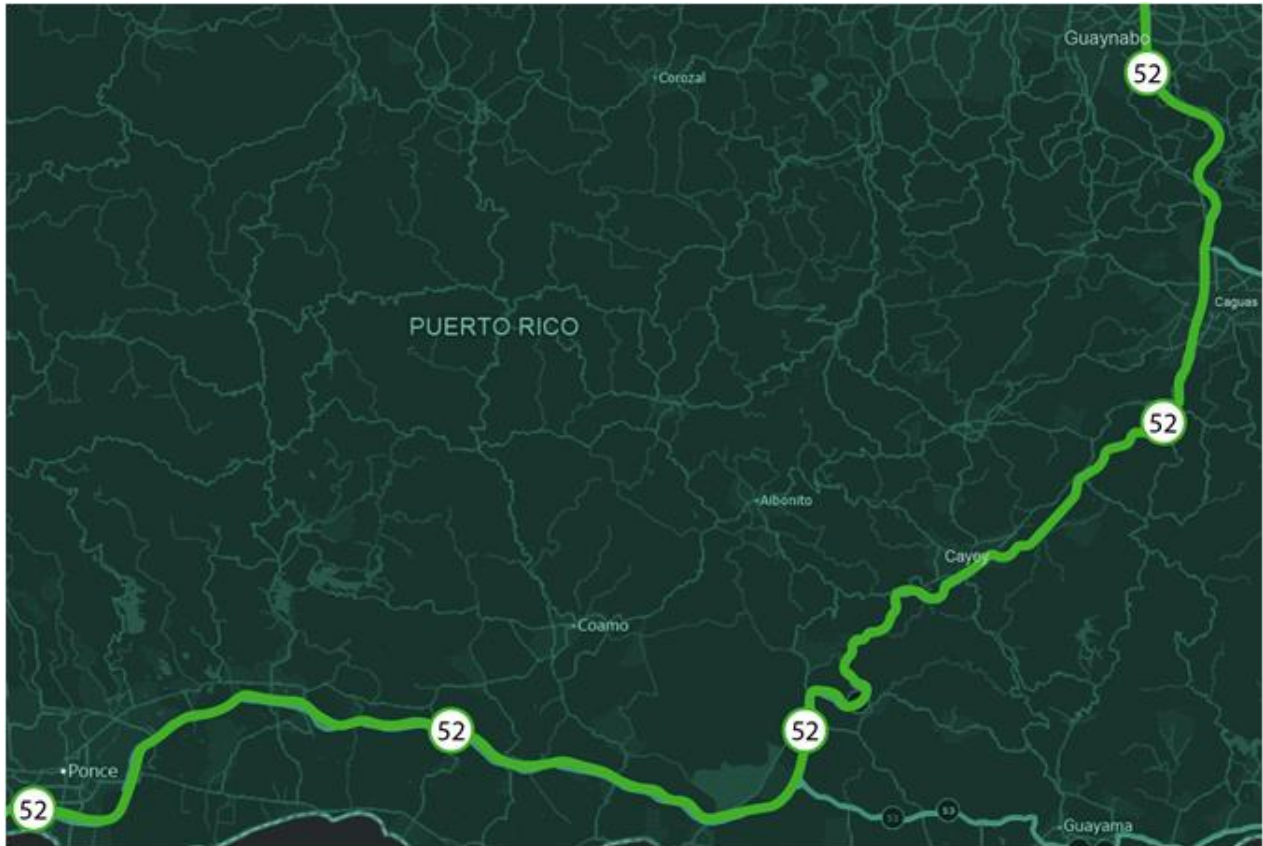
This Study includes options that analyze all or part of the Toll Road network. An overview of each one of the Toll Roads is included below:

PR-52

Also known as the Luis A. Ferré Highway, PR-52 is the longest toll road on the island and is designated an interstate part of the NHS. PR-52 commences at the intersection of PR-18 and PR-1 and runs southwest for a total length of 108.3 km (67.3 miles). PR-52 connects the municipality of San Juan with the municipalities of Trujillo Alto, Caguas, Cayey and leads into Salinas, Santa Isabel, Juana Díaz and ends in Ponce in the south of the island. PR-52 directly serves a total of fifteen municipalities with a resident population over one million. There are no continuous competing routes, making PR-52 a critical interstate between San Juan in the north and the economic activity that takes place in southern Puerto Rico, which includes large pharmaceutical manufacturing operations, tourist attractions, and higher education institutions, among others.

The construction of PR-52 began in 1968 and was completed in 1975. In 1993, the Commonwealth of Puerto Rico enacted the Act 118, which named the PR-52 as the Luis A. Ferré Highway.

In fiscal year 2019, PR-52 registered 76.8 million of vehicle transactions, which represented \$79.4 million in toll revenue. Currently, PR-52 has eight toll plazas including the Caguas Norte, the second largest toll station in Puerto Rico and a Dynamic Toll Lane that connects with PR-18.



Key Statistics

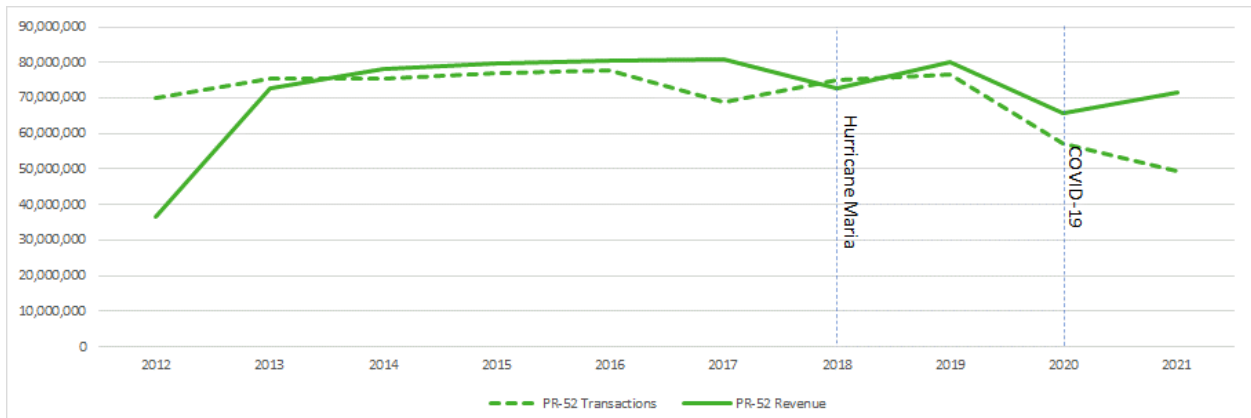
Traffic Base	Primarily commuters to the San Juan, Caguas, and Ponce urban centers.
Vehicle Type	Passenger and Commercial
Toll Collection Method	ETC
Toll Gantries	8
Average Daily Traffic (2019)	210,372
Average Toll Rate (2019)	\$1.03
Annual Revenue (2019)	\$79.4m
Competing Roads	PR-1
Revenue Contribution (2019)	60% of Revenue from PR-20, PR-52, PR-53, PR-66

Traffic & Revenue

PR-52 is situated in inland region of Puerto Rico, spanning the island longitudinally between San Juan and Salinas and then continuing onto Ponce. It is among the busiest toll roads in Puerto Rico and the one with most transactions among the roads considered in this report, owing to its length and location through major cities, a fact which shaped the modeling process for this route. Toll plazas at Montehiedra, Caguas Norte, Caguas Sur, Salinas, Salinas Sur, Juana Díaz Este, Juana Díaz Oeste, and Ponce serve this route. The Ponce and Salinas plazas are bidirectional.

Over the 2013-2021 period (years in which data for the full fiscal year is available), transactions on this route have declined at 0.93% compound annual growth rate (CAGR). There was substantial heterogeneity in growth rate over this time: the overall number is a net of the 2013-2017 period when transactions grew at 1.53% CAGR, the 2017-2019 period (Hurricane María and recovery) where they declined at 0.31% CAGR, and 2019 to 2021 which has seen a 6.24% CAGR decline.

Figure 3.1 – PR-52 Transactions and Revenue by Fiscal Year



Maintenance & Investment Needs

As the longest toll road and one of the most traveled interstates in Puerto Rico, PR-52 faces maintenance and capital improvement needs. As a result, there are certain segments of PR-52 that experience significant and frequent travel delays. PRHTA records show that a total of \$418.9 million have been invested in capital improvement projects in PR-52 since 2000. Completed capital projects have been conducted in pavements, rehabilitation of concrete slabs, signaling, safety barriers, replacement of superstructures, and the construction of a dynamic toll lane.

However, the PRTAMP, identifies PR-52 as the interstate with the most lane miles with poor pavement conditions. Specifically, it has been estimated that 72.7 lane miles have a poor pavement condition, which represents 23% of total lane miles. Similarly, PR-52 also registered the highest number of lane miles with poor roughness measures.

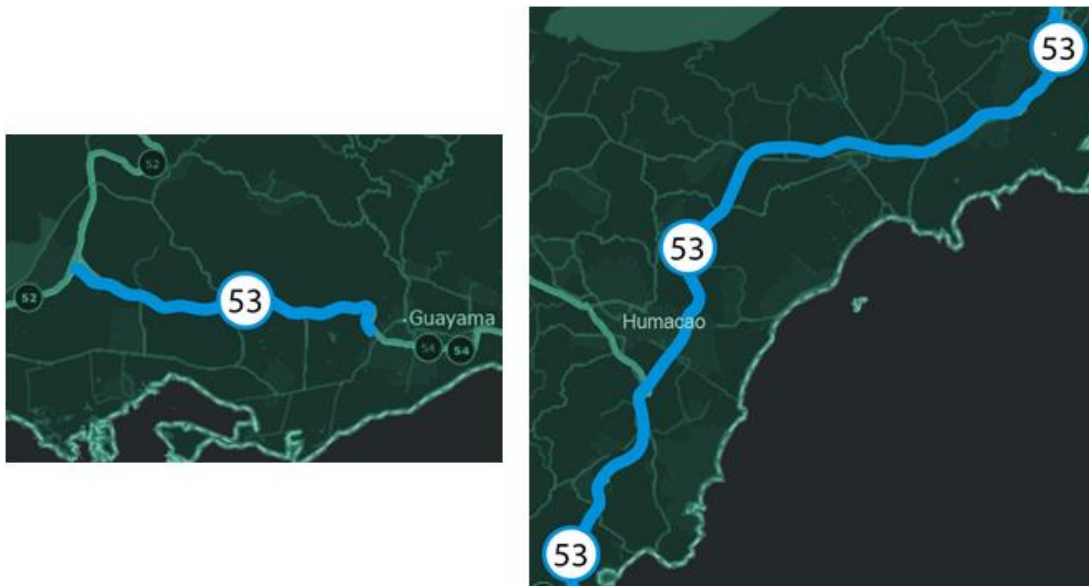
PRHTA has targeted projects to improve pavements, especially to correct roughness and cracking. For instance, the local capital improvement program known as *Abriendo Caminos* treated 44 lane miles (70-kilometer lanes) at a cost of \$8.9 million. The treatments focused on the most damaged sections. Sections of deteriorated asphalt pavement were milled off and replaced while damaged concrete slabs were also replaced. These actions addressed the most immediate distressed sections and prepared the pavement for more extensive treatments in future years.

The programmed capital improvements for PR-52, considers \$78.5 million to be invested in pavement rehabilitation. This investment is scheduled to occur between fiscal years 2021 and 2023. In addition, it has been estimated that in the next 10 years, PR-52 can require an average annual investment of \$8.4 million in minor maintenance activities that include pavement maintenance repairs, among others.

PR-53

Officially named the José Celso Barbosa Highway, PR-53 is an interstate that is part of the NHS. PR-53 is 59.3 km (36.8 miles) long and commences in Fajardo, passing through the municipalities of Ceiba, Naguabo, and Humacao, ending in Yabucoa where it connects with PR-901. PR-53 directly serves traffic in the eastern most part of the island with direct service to seven municipalities including the adjacent municipalities of Las Piedras and San Lorenzo that in total registered a resident population of 222,050 in 2019. PR-53 is incomplete and has additional intermittent segments in the municipalities of Salinas, Guayama, Arroyo and Patillas. PR-53 runs parallel to PR-3, which goes from Fajardo to Salinas. The extension of PR-53 has been identified as a key network enhancement project. Potential extension of PR-53 includes 8.4 miles from Patillas to Maunabo, which can be a key freight corridor. The construction of PR-53 began in 1988 with its first segment opening to the public in 1994.

In fiscal year 2019, PR-53 registered 16.2 million of vehicle transactions, which represented \$13.6 million in toll revenues. Traffic in PR-53 is not expected to increase since it serves a region of low population density. In addition, PR-53 is an open toll facility with over 20 exits that allow for partial usage along the tollway. PR-53 has six toll plazas that include: Ceiba, Humacao Norte, Humacao Sur, Guayama and Hucar.



Key Statistics

Traffic Base	Mixed Use, connecting Fajardo to Salinas but not passing through urban centers
Vehicle Type	Passenger and Commercial
Toll Collection Method	ETC
Toll Gantries	6
Average Daily Traffic (2019)	44,427
Average Toll Rate (2019)	\$0.84

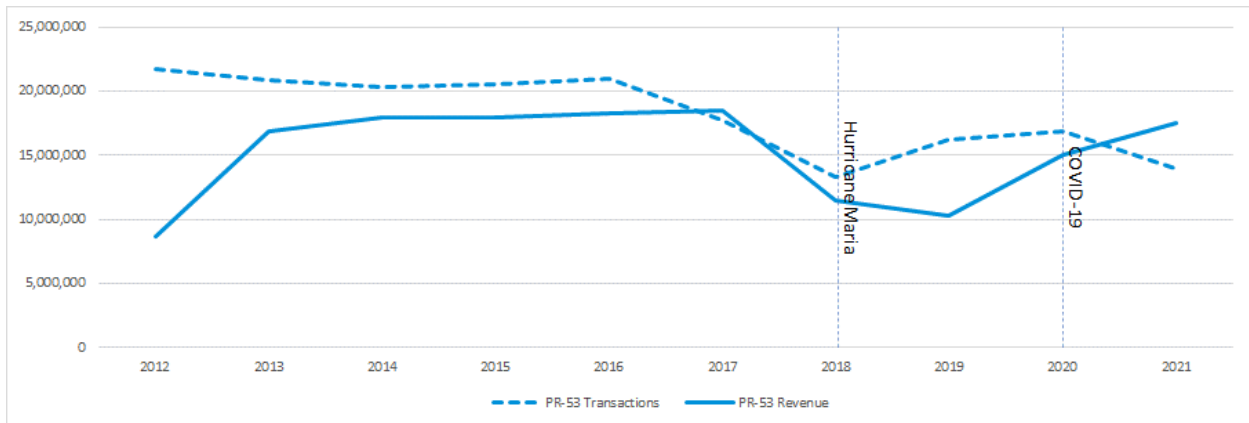
Annual Revenue (2019)	\$13.6m
Competing Roads	PR-30 to PR-52 from Humacao to Salinas PR-3
Revenue Contribution (2019)	10% of Revenue from PR-20, PR-52, PR-53, PR-66

Traffic & Revenue

PR-53 runs along the eastern coast of Puerto Rico, connecting Fajardo and Salinas (with certain sections in the middle to be completed in the future). It is served by toll plazas in Hucar, Guayama, Ceiba, Humacao Sur, and Humacao Norte; the Guayama plaza is bidirectional. Note that transactions at the Humacao Sur and Humacao Norte toll plazas are not reported in the data below for approximately two years following Hurricane Maria (October 2017 through July 2019).

Transactions on PR-53 have declined at 1.03% CAGR over the FY 2013-2021 period. From 2013 to 2017 transactions were relatively stable at -0.49% CAGR. From 2017 to 2019, the three toll plazas excluding the Humacao plazas (which data was not reported) grew at modest rates between 0.01% to 0.84% CAGR. Since 2019, those plazas have declined again at CAGRs ranging from -1.09% to -6.42%.

Figure 3.2 – PR-53 Transactions and Revenue by Fiscal Year



Maintenance & Investment Needs

Records from PRHTA show that 17 major capital improvement projects have been conducted since 2000 on PR-53. The total amount of investment for these projects has reached \$198.6 million since 2000. Projects covered a wide range of areas including improvement to traffic signs, geometric improvements, pavement rehabilitation, pavement markings, rumble strips and improvement to access and exit ramps, among others.

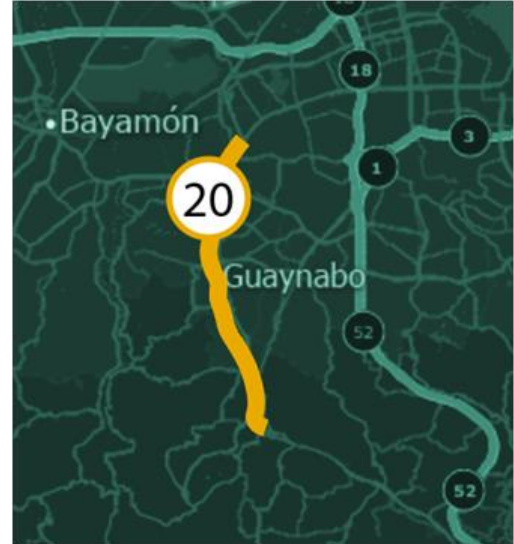
The PRTAMP shows that PR-53 has a poor pavement condition. The report estimates that 29.17 lane miles are in poor condition, which equates to 21.5% of lane miles of PR-53. As a result, PR-53 is the second Interstate with most lane miles in poor pavement condition after PR-52. In addition, PR-53 also reflects many lane miles with poor roughness and cracking conditions.

PRHTA analysis has developed projects to improve roughness at all roads, including PR-53. In 2010, PRHTA completed a pavement rehabilitation project between Humacao and Yabucoa that amounted to \$16.2 million. Future projects include a series of programmed capital improvements for rehabilitation of pavement that total \$66.2 million to be deployed between fiscal year 2021 and 2022. These projects have been

included in the 2019-2022 State Transportation Improvement Program for PRHTA. In addition, it has been estimated that operations and maintenance expenses can average \$5.9 million annually for PR-53, which includes preventive maintenance for pavements among other operating and maintenance activities.

PR-20

Officially named the Rafael Martínez Nadal Expressway, PR-20 is a 9.5 kilometer (5.9 miles) urban expressway entirely located in the Municipality of Guaynabo. PR-20 runs from an intersection with PR-2 near San Patricio Plaza Mall in Caparra, Guaynabo, to its convergence with PR-1 near the area of La Muda in Guaynabo. The Municipality of Guaynabo registered a resident population of 83,728 in 2019 but it is located between the two most populous municipalities of Puerto Rico, San Juan, and Bayamón, which together added a resident population of 487,710 in 2019. Guaynabo is part of the San Juan Metropolitan Area and tends to record more favorable economic indicators relative to San Juan. For instance, U.S. Census data for 2019 show that Guaynabo’s median household income was 58% higher than San Juan while the median value of the owner-occupied housing was 16% higher than San Juan.



PR-20 registered a total of 4.2 million of vehicle transactions in calendar year 2019, up 5.5% from the previous year. This level of vehicle transactions generated a total of \$3.56 million in toll revenues in 2019. PR-20 has only one toll plaza going north from PR-1, but not in the other direction.

Key Statistics

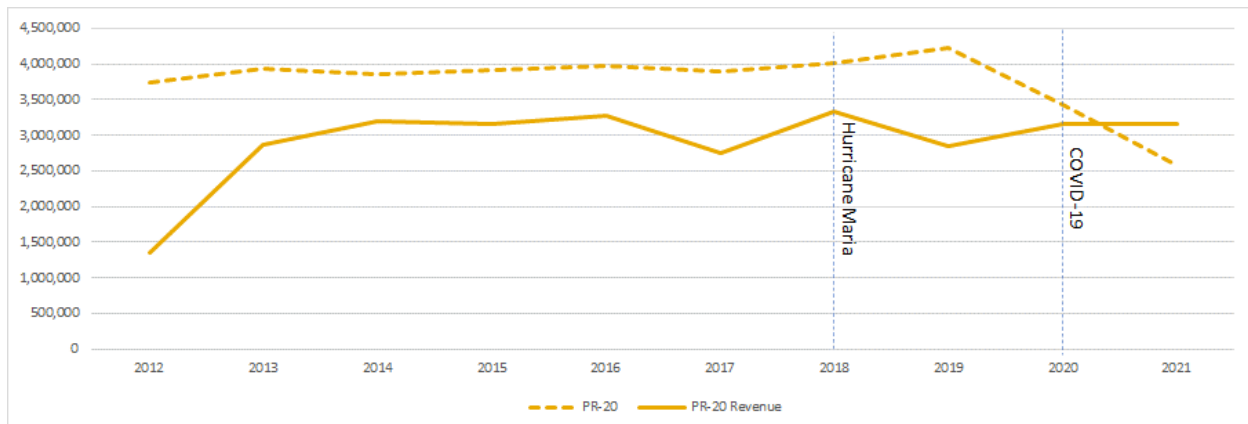
Traffic Base	Commuters
Vehicle Type	Passenger and Commercial
Toll Collection Method	ETC
Toll Gantries	1
Average Daily Traffic (2019)	11,589
Average Toll Rate (2019)	\$0.84
Annual Revenue (2019)	\$3.6m
Competing Roads	PR-1, PR-18
Revenue Contribution (2019)	3% of Revenue from PR-20, PR-52, PR-53, PR-66

Traffic & Revenue

PR-20 is a relatively short stretch of toll road in Guaynabo and is served by one toll site; transaction and revenue volume in this route is several times smaller than for the other routes considered in this study, totaling about 4 million transactions per year in the past decade. Between 2013 and 2021 transactions

were relatively stable, declining at 0.45% CAGR; they grew at 0.72% CAGR from 2013 to 2017 and at 0.48% from 2017 to 2019, before declining at 3.65% CAGR from 2019 to 2021.

Figure 3.3 – PR-20 Transactions and Revenue by Fiscal Year



Maintenance & Investment Needs

Data from PRHTA show that a total of six projects have been completed in the Rafael Martínez Nadal Expressway since 2002. These projects have amounted to a total of \$39 million and cover improvements such as repair of bridge bearings, flood emergency repairs, improvements at different intersections and security related enhancements.

An internal state of good repair assessment commissioned by PRHTA, dated October 2019, stated that 32.1% of the bridge deck area of PR-20 was fair nearing poor conditions.

The most recent capital improvement program for PR-20 allocates a total amount of \$23.1 million in safety improvements that are planned to be deployed between fiscal year 2022 and 2023. Also, estimates for operations and maintenance expenses for PR-20 are forecasted to amount to an average of \$755,000 annually for a 10-year period, which includes minor pavement maintenance.

PR-66

Officially named as the Roberto Sánchez Vilella Highway, PR-66 is an Interstate that leads east with 14.1 km in length (8.8 miles). PR-66 commences at the PR-3 Intersection and extends through Carolina, Canóvanas, and ends on PR-3 in the municipality of Río Grande. PR-66 serves the northeastern portion of Puerto Rico, which is known for its popular hotels and tourist attractions. The three municipalities directly served by PR-66 registered a total resident population of 240,000 in 2019. However, the municipality of Carolina serves as the home location of Puerto Rico’s International Airport and is part of the San Juan Metropolitan Region, which makes PR-66 a key corridor within the San Juan metro transportation system. PR-66 was developed to improve connectivity to the eastern region, which was a strong desire due to heavy traffic on the only route at the time that was PR-3.



PR-66 was developed in two major phases. The first phase crossed the municipalities of Carolina and Canóvanas began construction in 1997 and opened for operations in 2006. This first phase has the widest bridges in Puerto Rico. Subsequently, the second phase extended PR-66 from PR-188 in Canóvanas to PR-3 in Río Grande. The second phase of PR-66 consisted of an extension of 3.8 miles that opened to the public in 2012. The competing alternate route, PR-3, is a non-tolled, signaled road with notable congestion.

PR-66 is a popular route to the eastern part of Puerto Rico. In calendar year 2019, PR-66 registered 27.1 million of vehicle transactions. As a result, PR-66 generated approximately \$36.5 million in toll revenues in 2019. Currently, PR-66 has five tolling stations (but six toll gantries).

Key Statistics

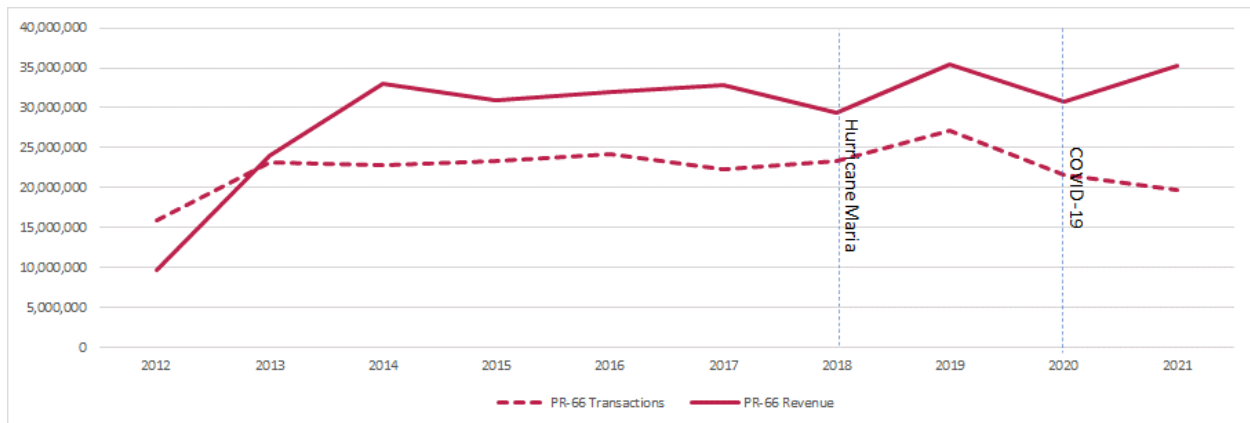
Traffic Base	Commuter
Vehicle Type	Passenger and Commercial
Toll Collection Method	ETC
Toll Gantries	6
Average Daily Traffic (2019)	74,267
Average Toll Rate (2019)	\$1.34
Annual Revenue (2019)	\$36.5m
Competing Roads	PR-3
Revenue Contribution (2019)	27% of Revenue from PR-20, PR-52, PR-53, PR-66

Traffic & Revenue

PR-66 is also a relatively short toll route in northeastern Puerto Rico, connecting Carolina to Río Grande and running parallel to PR-3. It is served by five toll plazas at Carolina, Carolina Norte, Carlina Sur, Carolina Este, and Carolina Oeste. The Carolina Este and Oeste plazas (which began reporting data in November 2012) are bi-directional, and combined with the Carolina Plaza, account for the vast majority of transaction and revenue volume on PR-66.

Between 2013 and 2021, transactions on PR-66 grew at 3.2% CAGR, with all plazas except Carolina Oeste having positive annual growth. This CAGR was 4.7% from 2013 to 2017 and 3.5% from 2017 to 2019; between 2019 and 2021 it dropped to -0.1%.

Figure 3.4 – PR-66 Transactions and Revenue by Fiscal Year



Maintenance & Investment Needs

Given that PR-66 is a relative new roadway its level of capital improvements has remained low compared to the other Toll Roads. PRHTA records show that a capital improvement project for \$14.7 million related to safety improvements has been undergoing since 2019 and it is scheduled to be completed in fiscal year 2022. This is the only major capital investment since the completion of the last phase of PR-66.

PR-66 relative short history also allows for pavement and bridge conditions to compare favorably against other toll roads. For instance, the PRTAMP show that only 0.40 lane miles are in poor condition, which only accounts for less than 1% of the roadway. Similarly, PR-66 ranks on the top in terms of smoothness.

With respect to capital needs, PRHTA has programmed additional investments for safety. Capital improvement programs for fiscal 2020 include investments for \$17.6 million. In terms of operations and maintenance, it is expected that annual O&M expense for the next ten years can average \$1.3 million annually.

4. Analysis Approach

Analysis Approach

The approach used in this analysis focuses on evaluating potential project delivery options and determining the most appropriate option for the Project considering both qualitative and quantitative factors – to ultimately recommend a solution that most closely aligns with the objectives as described in Section 2.

Methodologies utilized as part of this Study are based on generally accepted principles used by state and local governments when evaluating the case for investment and evaluating the various approaches to project delivery, as well as considering Puerto Rico’s legal framework and other requirements. Analyses of this type are routinely used by government agencies and public sector project sponsors in the U.S. and globally for making and supporting decisions. The analysis follows the steps as outlined below:



Identify Study Objectives and Needs

The first step in developing the analysis focuses on identification of the Study objectives and needs, or in other words, what are the ultimate goals that the Commonwealth, facilitated by the Authority and PRHTA, is attempting to achieve? Development of these initial goals are integral to the ability to compare whether potential solutions are more beneficial than others. Without them, it would be difficult to determine whether a potential solution is desirable and convenient for the Authority to consider as its path forward.

The initial stages of the analysis involve significant discussions with the Commonwealth, the Authority, PRHTA, and other affiliated stakeholders. This process allows the Commonwealth to identify the key objectives for the Study, which ensure consistency and focus throughout the following steps in the analysis and verify if the selected procurement model is consistent with procurement intentions.

Determine Potential Options to Consider

The second step in the analysis after Study objectives have been identified includes determining the universe of options for consideration that have the potential to meet the Authority’s objectives. This step is determined similar to the development of project goals – including significant collaboration between the Commonwealth, the Authority, PRHTA and other affiliated stakeholders, as well as input from the Advisors on good practices. In the case of this Study, the Fiscal Plan identified potential options to be considered within the analysis as determined by the Commonwealth, PRHTA, and certified by FOMB. Once determined, these options are considered for the qualitative assessment portion of the analysis.



Qualitative Assessment of Options

After determining the universe of options that have the potential to meet the Authority's objectives, each option is considered on a qualitative basis. The outcome of this first-level option screening is to identify if the established goals can best be achieved via alternative delivery options versus the traditional Status Quo option (Option 1). Following that determination, the Authority will assess commercial viability of each potential procurement option and the degree in which each option meets the Study objectives. As part of the qualitative assessment, a risk allocation table is developed to summarize benefits and issues to consider in each option. The Authority will determine during this step whether an option exhibits potential commercial merit and is aligned with the Study objectives. Scenarios that exhibit potential commercial merit and align with the Study objectives will be quantitatively analyzed.

Quantitative Assessment of Options

The quantitative assessment of options includes a financial analysis of each of the chosen options to determine potential financial viability. Results of the quantitative analysis inform the Authority of the financial merits of each option and allows the Authority to better understand the degree to which an option exhibits financial feasibility. Results of the quantitative analysis, in combination with the qualitative analysis, assist the Authority in ultimately determining which option is desirable and convenient for the Authority to implement. The quantitative assessment includes the following steps:

Inputs Analysis

The quantitative assessment is based on inputs developed from market and Puerto Rico precedent. Assumptions are based on historical operating, maintenance, and financial data, market precedent, current market conditions in Puerto Rico, and discussions with local experts. As part of the project inputs, preliminary estimates of the needs of the Project, functional requirements, and future expectations are developed. These inputs are used as the basis for the financial analysis.

Financial Analysis

The financial analysis portion of the quantitative assessment is developed to evaluate the Project's ability to generate the necessary revenues to pay for the Project's obligations. In a concession sense, the financial analysis aims to evaluate whether revenue generated by the Project is sufficient to cover the initial major maintenance and ongoing lifecycle, operating, and maintenance needs. The degree to which revenue is sufficient to cover expected costs plus compensation to a private operator for assuming these project risks (a rate of return) is analyzed to determine the potential range of values that the Commonwealth can expect as an initial payment under a concession option. In this specific case, the financial analysis also considers the primary obligation of PRHTA to pay for the existing debt secured by the Toll Roads, as well as the need to implement required capital improvements on the system. Based on these financial results, a comparison of the options is provided.

Conclusions and Next Steps

A combined summary of the outputs obtained through the qualitative and quantitative assessments is developed for this section that will inform the Authority of its recommended path forward and ultimately allow the Authority to identify the approach that is most desirable and convenient in accordance with Act 29 and the Regulation.

5. Qualitative Scenario Assessment

Overview of Qualitative Scenario Assessment

The qualitative assessment describes delivery model options available for the Project that were identified by the Authority and PRHTA as directed by the Fiscal Plan. The Authority and PRHTA have identified additional options based on good industry practice and market precedent as well as variations in options for consideration. This section also describes the respective benefits and considerations for each option. In P3A and PRHTA's view, the broad spectrum of options considered represent the universe of potential alternatives to the Status Quo that the Commonwealth may consider in addressing the objectives included in this Study.

Based on the outcome of the qualitative assessment, the preferred delivery models are advanced for further quantitative analysis. The following Sections of the Study provide a high-level summary of the qualitative delivery model analysis that was performed to determine which models were best suited to deliver the Project. Each option is evaluated against the objectives of the Study as provided in Section 2.

Selection of Scenarios for Qualitative Assessment

To address repayment of outstanding debt owed to PRHTA bondholders, historical aging infrastructure, rising capital costs, shrinking budgets, limited labor availability, and constrained funding, the Fiscal Plan outlines objectives for transportation reform for Puerto Rico. The Fiscal Plan specifically highlights the need to evaluate P3s, specifically regarding a potential concession of the Toll Roads, as a method of leveraging private capital and efficiency and limiting public sector risk to deliver infrastructure solutions.

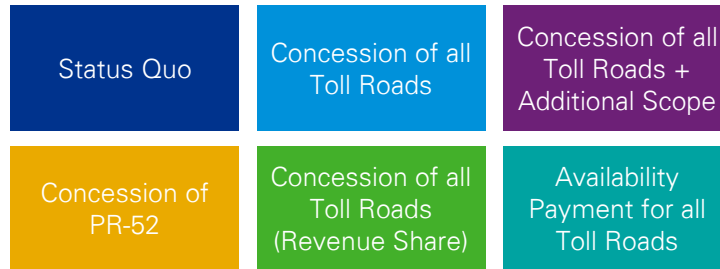
The Fiscal Plan includes three (3) potential alternative delivery options to be considered in its concession analysis of the Toll Roads, as follows:

1. Outsourcing of toll operations and hiring of a contract manager (with PRHTA keeping all revenues, less operating fees)
2. Traditional concession agreements with an upfront payment
3. Concession agreement with no upfront payment and including revenue share

Development and consideration of each of the options for the Fiscal Plan required iterative collaboration between Commonwealth entities and subject matter experts, who ultimately agreed upon the potential options for PRHTA to consider. The options selected for the Fiscal Plan are deemed the potential best path forward for PRHTA given historical considerations, analysis, market discussions, and good practices from other jurisdictions in similar situations.

The options considered in this Study include the Status Quo as well as delivery options that shift most of the risk and responsibility of the Toll Roads to the private sector. The outsourcing of toll operations and hiring of a contract manager (option #1 above as described in the Fiscal Plan) requires PRHTA to retain most of the risk and as such, this option is not considered in the traditional sense within this Study.

However, the mechanics of this option (PRHTA oversight manager monitors contract obligations and risks are shifted to the private sector) are considered via procurement options where PRHTA maintains its revenue stream yet transfers risks associated with operations and maintenance to a private operator. PRHTA performs contract oversight in these situations.



Qualitative Assessment of Potential Options

Option 1 – Status Quo

Overview

The Status Quo option is considered as the baseline, or base case analysis for comparative purposes to the remainder of the options considered. The Status Quo option assumes that PRHTA will continue to operate, maintain, and improve the Toll Roads as has been done historically. In this option, PRHTA is required to provide the initial investment to bring the roads to state of good repair and is required to operate and maintain the roads over the 50-year term. PRHTA will keep the toll revenue but will be required to pay ongoing debt service requirements on outstanding debt (outstanding debt not paid off in this option). The Status Quo has historically been the traditional approach for PRHTA. For this option, PRHTA retains the risk and responsibility for all elements of the Project.

Benefits

Familiarity & Acceptance: Given that this is the Status Quo, PRHTA and the Commonwealth are familiar with the current operation and operating the Project is relatively straightforward. No major changes will need to occur at PRHTA to continue to operate and maintain the Toll Roads, though improvements in the management of the assets need to occur so that they are more efficient and effective.

Implementation Timeline: The Status Quo will not require substantial changes to continue to operate and maintain the Toll Roads and thus the implementation timeline to continue to operate is likely shorter than other options which will require a procurement process. However, ease and timing of Toll Road improvements may be longer under a traditional delivery approach.

Retain Toll Revenue: Under this option, PRHTA is entitled to keep all toll and other revenue generated by the Toll Road assets. This revenue source represents a significant stream of income for PRHTA which may be utilized for ongoing operations, maintenance, improvements, paying down debt, etc. A steady source of revenue generation may also be required to maintain grantee status for federal funding for certain improvements of the Toll Roads. Further, new debt will have a claim to the Toll Road assets, meaning a level of revenue will be required to pay ongoing debt service requirements.

No Employee Reorganization: Given PRHTA will continue to operate and maintain the Toll Roads, there is no need under this option to reorganize and/or relocate current employees. Further, there is not a requirement (though may be beneficial) to hire a contract manager to oversee performance against contractual requirements, given that PRHTA is self-performing its operation and maintenance responsibilities.

Issues to Consider

Capital Investment and O&M Risks Retained by PRHTA: The Status Quo option does not present a clear path forward on how PRHTA will right-size the operation and maintenance of the Toll Roads. Current condition of the Toll Roads is subpar and requires a significant upfront investment, which under this option, PRHTA may be unable to fund. Further, PRHTA has historically been unable to maintain the Toll Roads in a state of good repair due to funding constraints, aging infrastructure, rising capital costs, shrinking budgets, and limited labor availability, among others. Thus, even if the Toll Roads were in better condition, risks associated with funding ongoing operations and maintenance are borne by PRHTA in this option. As such, cost overruns, delays, inability to maintain the network, etc., are all PRHTA related responsibilities, which may be impacted by ongoing lack of funding and result in similar challenges that PRHTA has faced.

Retain Financial Requirements: The Status Quo option means that PRHTA would not receive any upfront payment for the operation and maintenance of the Toll Roads, and as such, will be required to fund capital improvements and debt service requirements with PRHTA funds. Debt service requirements on new debt will likely take a high priority claim to the toll revenue generated by the Toll Roads. In addition, ongoing operation and maintenance expenditures will challenge PRHTA to set aside funding for needed capital improvements. The Status Quo has historically resulted in major maintenance backlogs.

Accountability and Performance Requirements: There are no incentives or explicitly monitored requirements under the Status Quo structure that ensure accountability for PRHTA in operating and maintaining the Toll Roads, which has resulted in PRHTA's inability to maintain the Toll Roads in a state of good repair. Monetary liquidated damages are not included in a contract under this option to ensure accountability.

Option 2 – Concession of All Toll Roads

Overview

The Concession of all Toll Roads option requires a private operator to enhance, operate, and maintain all Toll Roads under a concession model, in exchange for the ability to collect and keep toll revenue. This option will generate an upfront concession payment that may be used to pay off debt owed to PRHTA bondholders (depending on the toll rate scenario). Any surplus from the concession payment may be utilized to fund initial capital expenditure needs. This option shifts nearly all operating and maintenance risks to the private sector and will be governed by a long-term P3 agreement between the private operator and PRHTA. PRHTA will be required to shift the focus of its organization under this structure to ensure it can monitor the private operator and ensure it meets the performance requirements of a P3 agreement, which may include the assessment of non-performance damages, etc. A PRHTA contract manager will oversee the contractual requirements of the operator.

Benefits

Alleviate Financial Pressure: Due to a potential upfront concession payment, this option allows PRHTA to utilize funding to pay outstanding debt obligations secured by toll revenue (depending on the toll rate scenario). Further, if available, additional upfront funding may be utilized to improve the Toll Roads. This option also transfers the costs associated with operating and maintain the Toll Roads to the private sector. Lack of ongoing expense requirements will provide budget certainty and may alleviate ongoing financial pressure.

Maximize Concession Payment: Due to a potential upfront concession payment associated with toll revenue derived from multiple roads, this option has the potential to maximize the upfront concession payment to pay for outstanding debt obligations and implementing initial capital improvements.

Shifts Performance Responsibilities to Private Sector: A long-term P3 agreement will govern the responsibilities of the private sector in this option. Performance requirements in the contract may include monetary penalties for lack of performance, maintaining road standards, etc., which will hold the private operator accountable for its obligations. Other risks, such as cost overruns, delays and other issues are the responsibility of the private sector. The private sector may be better positioned to assume these risks given its expertise in delivering similar services for profit.

Synergies from Operating Portfolio of Assets: Given that this concession is comprised of four Toll Road assets, implementing a concession for the portfolio of assets may allow the operator to realize synergies which could lead to cost savings when compared to individual operators of single assets. These savings may be passed to the PRHTA through more competitive pricing. Further, this option may attract international expertise from leading toll operators, which may contribute to new technology and improvement in operations and maintenance processes (e.g. toll operation, collection, maintenance, etc.)

Potential Negotiated Toll Increases May Improve Asset Value: The sensitive nature, political, and socioeconomic factors in Puerto Rico have resulted in no toll increases on the Toll Roads since 2005 and as such, toll rates are misaligned with the cost to operate. Toll rate increases that occur under a concession will ensure users are receiving the benefit from assets in good repair and properly operated for increased safety and efficiency. Allowing toll rates increases through a contractual mechanism will increase revenue and quality and result in a higher valuation.

Implementation Timeline: The implementation timeline of a Concession of all Toll Roads may be shorter than other innovative procurement options (such as those with availability payment or revenue share-based payment mechanisms) given previous experience of implementing a similar concession model on Puerto Rico based toll roads. While any deviation from the Status Quo will result in additional procurement implementation time, the ease and timing of delivering capital improvements may be more streamlined when responsibilities are shifted from the public sector.

Issues to Consider

Loss of Revenue Stream: Under this option the PRHTA has the potential to receive an upfront concession payment that can be utilized to pay down current debt and fund required capital improvements. In exchange of receiving an upfront payment, PRHTA transfers the right to toll revenue to the private operator. A lack of revenue stream will require PRHTA to fund other obligations from a separate source of revenue and may impact its grantee status for federal funding.

Employee Reorganization: A concession option where a private operator assumes responsibility for the operation and maintenance of the Toll Roads will require a reorganization of current PRHTA employees, given that PRHTA will no longer need to fill technical roles as it's not responsible for maintaining the toll assets. An analysis of a potential restructuring under a concession model is currently being undertaken. A future concession will also consider the realignment of the Commonwealth's transportation entities to ensure consistency as described in the Fiscal Plan. In lieu of managing day to day aspects of the operation, PRHTA (or another Commonwealth entity) will be required to provide ongoing contract monitoring and funds management.

Option 3 – Concession of PR-52

Overview

The Concession of PR-52 option is a similar option to Option 2, though it includes only PR-52 in an attempt to generate a sufficient concession payment to pay initial investment and debt obligations, given PR-52's size in comparison to the other Toll Roads. This concession option will require PRHTA to improve, operate, and maintain the remainder of the Toll Roads outside of PR-52 and keep the revenue that is generated by

these other roads. The Commonwealth may use the concession payment to pay off debt owed to PRHTA bondholders. PRHTA will be responsible for any debt repayment that is required with revenue from the remaining Toll Roads. This option shifts nearly all operating and maintenance risks to the private sector and will be governed under a long-term P3 agreement between the private operator and PRHTA.

Benefits

Alleviate Financial Pressure: This option may potentially allow PRHTA to utilize an upfront concession payment to pay outstanding debt obligations secured by toll revenue. This option will require PRHTA to operate and maintain all Toll Roads other than PR-52 and as such, PRHTA will be responsible for the costs associated with their operation.

Shifts Partial Performance Responsibilities to Private Sector: A long-term P3 agreement provided for the concession of PR-52 will govern the responsibilities of the private sector in this option. Thus, the private operator will be responsible for operating, maintenance, and capital investment risks on PR-52. Performance requirements may include monetary penalties for lack of performance with the aim to incentivize a quality operation. PRHTA will be responsible for the long-term performance of the remaining Toll Roads in this option, including the costs associated with capital investment, operating, and maintenance.

Private Sector Expertise: The private operator may bring international expertise which may enhance and improve efficiency for toll operations on PR-52. These industry leading practices will not materialize on the remaining toll roads given that PRHTA will be required to operate and maintain those segments.

Negotiated Toll Increases May Improve Asset Value: No toll increases on the Toll Roads since 2005 has created a misalignment between revenue generation and the costs to operate the Toll Roads. Toll rate increases will generate additional revenue in this option which will allow the private operator to enhance road operations, leading to a better, safer, and more efficient service. Allowing toll rate increases through a contractual mechanism may result in a higher valuation.

Implementation Timeline: The implementation timeline of a Concession of PR-52 option may be similar to the Concession of all Toll Roads option (Option 2) and likely shorter than other innovative procurement options (such as those with availability payment or revenue share-based payment mechanisms) given previous experience of implementing a similar concession model on Puerto Rico based toll roads. Like Option 2, any deviation from the Status Quo will result in additional procurement implementation time. Ease and timing of delivering capital improvements may be more streamlined on PR-52, however in this option PRHTA remains responsible for implementing capital improvements on the remaining Toll Roads.

Issues to Consider

Potential Isolation of Non-Viable Assets: Given that this option includes the concession of only PR-52, it may result in the isolation of the remaining Toll Roads if they are not commercially viable. As such, there may be difficulty in attracting standalone investment in these assets in the future. In addition, an upfront concession payment to the Commonwealth on the largest of the Toll Roads will result in the loss of PRHTA's main revenue stream.

Some Employee Reorganization: There may be a need to reorganize some employees given that PRHTA will no longer be responsible for operating and maintaining all Toll Roads – only a smaller portion. A future concession will also consider the realignment of the Commonwealth's transportation entities to ensure consistency as described in the Fiscal Plan. PRHTA (or another Commonwealth entity) will be required to provide ongoing contract monitoring under this option. However, PRHTA will be required to improve, operate, and maintain the remaining Toll Roads, which will still require a workforce.

PRHTA responsible for Capital Investment and O&M of Remaining Toll Roads: Given that this option only requires a private operator to operate and maintain PR-52, improving, operating, and maintaining the remaining Toll Roads will be the responsibility of PRHTA.

Option 4 – Concession of all Toll Roads with Revenue Share

Overview

The Concession of all Toll Roads with Revenue Share option is a similar option to Option 2, though instead of the Commonwealth receiving an upfront payment from the private operator, the Commonwealth will partake in ongoing revenue generated by the Toll Roads through a revenue sharing mechanism. The private operator will receive revenue for the period defined in the concession agreement, subject to revenue sharing provisions. Operating, maintenance, and improvement risks will be the responsibility of the private sector.

Benefits

Retain Toll Revenue: Under a revenue sharing option, PRHTA will be entitled to share in the toll revenue that is generated by the Toll Road assets. This revenue source can be utilized by PRHTA for ongoing improvements, paying down debt, etc. This recurring income source may also be sufficient to maintain grantee status for federal funding for certain improvements of the Toll Roads system.

Shifts Performance Responsibilities to Private Sector: A long-term P3 agreement will govern the responsibilities of the private sector and is expected to require certain performance standards to incentivize efficient operations. Cost overruns, delays and other issues are the responsibility of the private sector.

Synergies from Operating Portfolio of Assets: A private operator may be able to leverage economies of scale given the requirement to operate a larger portfolio of assets compared to a single asset. These cost savings can be passed on to the Commonwealth through more competitive pricing. Further, private operators may bring specialized experience in operating and maintaining toll road assets which can lead to more efficient and cost-effective operations compared to the Status Quo.

Negotiated Toll Increases May Improve Asset Value: Given that toll rates are not aligned with the current costs to operate the Toll Roads, toll rate increases will allow the private operator to generate additional revenue that isn't available under a no toll increase scenario. By doing so, a private operator will have additional revenue to meet more stringent performance requirements, leading to a safer and more-reliable service for Puerto Ricans. Increased revenue and properly maintained assets will result in a higher valuation.

Implementation Timeline: The implementation timeline of this option may be similar to the Concession of all Toll Roads option (Option 2) and likely shorter than other innovative procurement options as previously noted given the experience of implementing a concession model on Puerto Rico based toll roads. Ease and timing of delivering capital improvements may be more streamlined in this option compared to the Status Quo.

Issues to Consider

Retain Financial Requirements: This option foregoes an upfront payment for the operation and maintenance of the Toll Roads in lieu of ongoing revenue sharing, and as such, PRHTA will be required to fund capital improvements and debt repayment requirements with PRHTA funds.

Employee Reorganization: PRHTA (or another Commonwealth entity) will be required to provide ongoing contract oversight (monitoring performance, assessing damages, funds management, etc.) in this option.

PRHTA will no longer be required to engage in the ongoing operation of the Toll Roads or assume maintenance responsibilities, and as such will need to reorganize employees who previously provided those services. A future concession will also consider the realignment of the Commonwealth's transportation system to ensure consistency as described in the Fiscal Plan.

Option 5 – Concession of all Toll Roads plus Additional Scope

Overview

The Concession of all Toll Roads plus Additional Scope option requires a private operator to enhance, operate, and maintain all Toll Roads under a concession model, similar to Option 2 described above. The key difference between both Options (1 vis-à-vis 2) is that under this scenario, PRHTA will forego its upfront concession payment and will require the private operator to operate and maintain scope outside of, but in addition to, the Toll Roads. For example, under this option, a long-term agreement will require the private operator to improve, operate, and maintain the Toll Roads, as well as defined non-tolled assets, such as PR-30 or other local roads. The concession payment payable to PRHTA will be foregone to pay for the improvement, operation, and maintenance of the additional scope.

Benefits

Potentially Enhances Quality of Additional Roads: In lieu of a concession payment, this option requires the private operator to operate and maintain additional roads outside of the Toll Roads. As such, users will benefit from enhanced quality of additional roads given the P3 agreement will include performance requirements for the O&M of both the Toll Roads and the additional roads.

Shifts Performance Responsibilities to Private Sector: This option shifts the initial improvements and ongoing operations and maintenance to the private sector for the Toll Roads as well as additional roads outside of the original scope. Performance requirements will be contractually obligated with the aim to improve the quality of operations for the Toll Roads and additional identified scope.

Synergies from Operating Portfolio of Assets: This option requires a private operator to operate and maintain the portfolio of Toll Road assets as well as additional scope for other road assets. A private operator brings specialized experience in efficiently operating and maintain toll road assets compared to the Status Quo, and the cost savings from operating a portfolio of assets will likely be greater than if the operator were to be responsible for a single asset. These savings may be passed to PRHTA through more competitive pricing. In addition, a private operator may bring improvements in toll road operating and maintenance procedures that PRHTA has not considered.

Negotiated Toll Increases May Improve Asset Value: Increasing revenue through toll rate increases and reducing costs through proper operating and maintenance of the Toll Roads will lead to a safer and more efficient road network. Given PRHTA is foregoing its concession payment to require the private operator to operate and maintain additional roads, citizens will get the benefit of increased quality outside of the Toll Roads. A more efficiently operated service and toll rate increases may lead to a higher valuation of the assets.

Implementation Timeline: The implementation timeline of this option may be similar to the Concession of all Toll Roads option (Option 2) and likely shorter than other innovative procurement options as previously noted. Implementation of capital improvements on additional roads may require a longer timeline compared to other concession models (given the additional scope), though ease of delivering capital improvements may be more streamlined in this option due to private sector efficiencies and the contractual structure compared to the Status Quo.

Issues to Consider

Retain Financial Requirements: This option foregoes an upfront payment for the operation and maintenance of the Toll Roads in lieu of additional operation and maintenance scope from other roads. As such, PRHTA will be required to fund capital improvements and debt repayment requirements with PRHTA funds.

Employee Reorganization: A concession option where a private operator assumes responsibility for the operation and maintenance of the Toll Roads will require a reorganization of current employees, given that PRHTA will no longer need to fill technical roles as it's not responsible for maintaining the toll assets. This option may require a shift in the need for employees to provide oversight roles in lieu of day to day operations. PRHTA (or another Commonwealth entity) will be required to provide ongoing contract monitoring and funds management under this option. A future concession will also consider the realignment of the Commonwealth's transportation system to ensure consistency as described in the Fiscal Plan.

Loss of Revenue Stream: PRHTA will forego its upfront concession payment under this option for additional scope. PRHTA will no longer have the right to collect the toll revenue on the Toll Roads as the operator will be entitled to this revenue. A lack of revenue stream will require PRHTA to fund its operations from a separate source of revenue and may impact its grantee status for federal funding.

Not Maximize Concession Payment: This option does not maximize the concession payment to the Commonwealth given the addition of roads that are not separately viable to investors.

Option 6 – Availability Payment for O&M of all Toll Roads

Overview

The Availability Payment for O&M of all Toll Roads option is intended to analyze an option where PRHTA will procure a private operator to operate and maintain the Toll Roads under certain performance requirements. It is assumed that PRHTA will not receive an upfront concession payment, nor will it transfer the demand risk of the asset to the private sector. Rather, PRHTA will collect and keep the revenue generated by the Toll Roads and make an ongoing payment for "availability" of the Toll Roads to the private operator (e.g. ongoing compensation through payments to the private operator subject to deductions for lack of performance against requirements). The private operator will be responsible for operating and maintaining the Toll Roads and implementing capital improvements. In exchange, PRHTA will pay the private operator an ongoing availability payment subject to certain performance standards.

Benefits

Retain Toll Revenue: Under this option, PRHTA will be entitled to keep all toll and other revenue generated by the Toll Road assets. This revenue source represents a significant stream of income for PRHTA which may be utilized for a variety of purposes, though primarily for availability payments to the private sector for operating and maintaining the asset. A steady source of revenue may also be required to maintain grantee status for federal funding for certain improvements of the Toll Roads.

Shifts Performance Responsibilities to Private Sector: A long-term P3 agreement will govern the responsibilities of the private sector in this option. Performance requirements will inform the amount of availability payment that is made to the private operator (may include monetary penalties for lack of performance based on maintaining road standards and other performance requirements). Other risks, such as cost overruns, delays, and other issues are the responsibility of the private sector.

Synergies from Operating Portfolio of Assets: This option may allow the operator to realize synergies from operating a portfolio of assets compared to a single asset, which may result in cost savings that can be passed on to the Commonwealth. This option may also attract leading toll road operators who can bring market leading operations and maintenance processes.

Negotiated Toll Increases May Improve Asset Value: No toll increases on the Toll Roads since 2005 has created a misalignment between revenue generation and the costs to operate the Toll Roads. Toll rate increases will generate additional revenue under this option which will allow the private operator to enhance road operations, leading to a better, safer, and more efficient service. Allowing toll rate increases through a contractual mechanism may result in a higher valuation.

Issues to Consider

Retain Financial Requirements: This option foregoes an upfront payment for the operation and maintenance of the Toll Roads. PRHTA will keep revenue on the Toll Roads and assume demand risk. The private operator will receive an availability payment for performance of its obligations, which will include implementing capital improvements.

Employee Reorganization: Given that the private operator assumes responsibility for the operation and maintenance of the Toll Roads, a reorganization of current employees will be required. PRHTA's (or another Commonwealth entity) focus will shift to ongoing contract oversight, monitoring and funds management. This procurement option will also consider the realignment of the Commonwealth's transportation system to ensure consistency as described in the Fiscal Plan.

Ongoing Payment Obligations: This option will require an ongoing payment obligation from PRHTA to the private operator, and thus will require PRHTA to ensure proper ongoing monitoring of the P3 agreement. Given that this option requires PRHTA to retain revenue risk, PRHTA will be responsible for making payments to the private operator based on contractual obligations, as opposed to payment based on the amount of revenue that is generated by the Toll Roads (e.g. PRHTA retains demand risk).

The following chart provides a summary of the key qualitative considerations of each option:

Figure 5.1 – Option Benefits/Issues to Consider

Option:	Status Quo	Concession of all Toll Roads	Concession of PR-52	Concession of all Toll Roads with Revenue Share	Concession of all Toll Roads plus Additional Scope	Availability Payment for O&M of all Toll Roads
Benefits						
PRHTA familiarity & acceptance	✓					
PRHTA retains toll revenue	✓			✓		✓
No PRHTA employee reorganization	✓					
Alleviates PRHTA financial pressure		✓	✓			
Governed by performance requirements		✓	✓	✓	✓	✓
Operating synergies from asset portfolio		✓		✓	✓	✓
Toll increases may improve asset value		✓	✓	✓	✓	✓
Enhances quality of additional roads					✓	
Timing and ease of implementation	✓	✓	✓	✓	✓	
Maximizes concession payment		✓				
Issues to Consider						
O&M risks retained by PRHTA	X					
PRHTA required to fund O&M, capex, debt service	X					
PRHTA accountable for performance	X					
Loss of PRHTA revenue stream		X	X		X	
Requires PRHTA employee reorganization		X	X	X	X	X
Potential isolation of non-viable assets			X			
Ongoing payment obligations by PRHTA	X					X

*Some benefits and issues to consider may only partially apply to a specific option

Results of Qualitative Options Assessment

This section compares the results of each of the identified options to the Study objectives provided in Section 2. The Authority has also taken each of the options into consideration with respect to the outstanding debt requirements as provided in Section 3. The following chart compares each of the objectives to each delivery options analyzed.

Figure 5.2 – Option Comparison to Objectives

Study Objectives	Status Quo	Concession of all Toll Roads	Concession of PR-52	Concession of all Toll Roads with Revenue Share	Concession of all Toll Roads plus Additional Scope	Availability Payment for O&M of all Toll Roads
Improve budget certainty and address PRHTA’s fiscal situation through leveraging up-front funding sources and minimizing public fund contributions						
Modernize the existing infrastructure and improve the quality of Toll Roads						
Improve mobility, accessibility, and safety for users of the Toll Roads						
Improve performance and accountability by allocating responsibilities to the party best able to manage them and integrating performance-based contracts						
Increase revenue opportunities through reduced leakage, optimizing fare collection, and better aligning toll rates to costs						
Accelerate improvements in the Toll Roads and limit risks in the delivery of improvements						
Reduce Commonwealth exposure to current fiscal situation in Puerto Rico						

Addresses Objective: **Partially Addresses Objective:** **Does Not Address Objective:**

The results of the qualitative assessment suggest that most of the potential options under consideration are not feasible when the upfront concession payment from a private operator is removed, whether it be to share annual revenue for PRHTA, include additional scope requirements that reduce the payment, or for PRHTA to keep all toll revenue and assume demand risk on the asset. The primary driver for these options not being feasible is the initial debt requirements that PRHTA must address prior to transferring the right to keep toll revenue to a private operator. As described in Section 3, current negotiations suggest that PRHTA will issue new debt to pay all previous PRHTA-issued debt, which will be secured by toll revenue from the Toll Roads. As such, any of the considered procurement options other than the Status Quo will require PRHTA to pay the outstanding debt amount prior to granting the right to a private operator to partake in toll revenue. This requirement deems the following options not feasible: Concession of all Toll Roads with Revenue Share, Concession of all Toll Roads plus Additional Scope, and Availability Payment for O&M of all Toll Roads.

The Status Quo option presents significant concerns for PRHTA given its historical inability to maintain the Toll Roads in a status of good repair, due to funding constraints, lack of performance requirements, major maintenance backlog, limited labor, and other constraints. The Status Quo option will require PRHTA to retain risks associated with the performance of the Toll Roads, and as such, PRHTA will be responsible for delivering initial network improvements, development and accountability of its own performance requirements, ensuring proper operation and maintenance to avoid backlogs, and proper funding of costs including situations of cost overruns. Proper operation and maintenance of the Toll Roads must be completed in light of ensuring ongoing debt service requirements are met – which strains PRHTA’s ability to utilize toll revenue for its operation. While the Status Quo option structurally works, it does not appear to represent the preferred path forward based on the Study’s objectives and historical results.

Both concession options, a Concession of all Toll Roads and Concession of PR-52 appear to be feasible from a qualitative perspective. Both options potentially result in an upfront concession payment that PRHTA can utilize to pay outstanding debt secured by toll revenue. Further, the two options will transfer the risks associated with operation and maintenance to the private sector, which is expected to bring innovation and enhanced asset management capability. While PRHTA will lose the right to toll revenue (partially on Concession of PR-52), the potential upfront payment may be sufficient to address initial capital expense requirements to bring the Toll Roads to a state of good repair. Performance requirements will

govern the private operator's performance under a P3 agreement which incentivizes performance in-line with expectations, and that performance is expected to be significantly elevated from PRHTA's historical operation. As such, P3A is considering both options quantitatively in the next section. The Authority is not considering the remaining options in the quantitative analysis given such options do not meet the Authority's Study main objectives.

6. Quantitative Options Assessment

Overview of Quantitative Options Assessment

Overview

The quantitative options assessment analyzes each option's ability to generate a sufficient level of revenue to pay for the obligations of each option, ultimately to determine whether an option is feasible to implement from a market perspective. In PRHTA's case, the quantitative assessment will evaluate whether revenue generation is sufficient to cover the payment needed to pay off outstanding debt owed to PRHTA bondholders, initial capital investment to bring the Toll Roads to a state of good repair, as well as pay for ongoing major maintenance costs, operating and routine maintenance, and generate a sufficient return for a private concessionaire to assume related risks. The quantitative assessment determines the potential range of values that the Commonwealth can expect as an initial concession payment considering these factors.

A financial model is developed to assess each option from a quantitative perspective and estimate the potential range of concession values. The results of the financial model allow the P3A to be better informed and make a business decision on whether an option has merit. The financial model considers long-term estimated traffic and revenue, outstanding debt requirements, and the costs associated with operating, improving, and maintaining the Toll Roads. The options assessed quantitatively are deemed feasible from a qualitative perspective.

The financial model is developed based on assumptions from historical revenue, operating, maintenance, and financial data, market precedent, current market conditions in Puerto Rico, and discussions with subject matter professionals. As part of the project inputs development, preliminary estimates of needs, functional requirements, and future expectations are developed for each option. These inputs are used as the basis for the financial analysis.

General Quantitative Assessment Assumptions

The Study includes assumptions for levels of risk transfer, payment mechanisms, operations, routine and major maintenance responsibilities, and other commercial terms that will be required in a P3 agreement between a public sponsor and a private concessionaire in a brownfield toll concession transaction. The table below summarizes – at a high-level – the general assumptions that are included in this Study and considered in a potential P3. Additional assumptions are included in the following segments in this section.

Figure 6.1 – General Concession Assumptions

Assumption	Description (Concession Scenarios)	Rationale
Term	50-year term	Consistent with market precedent transaction in Puerto Rico
Timing	Term beginning January 1, 2023	General assumption
Road Condition	PRHTA transfers risks of rehabilitation and maintenance of Toll Roads under the current condition to private operator. Private operator required to rehabilitate and maintain in state of good repair (or similar) following initial investment.	Consistent with market precedent P3 transactions
Operation	Private operator responsible for all operating risk for Toll Roads in P3 options subject to performance standards.	Consistent with market precedent transactions in Puerto Rico
Initial Investments	Private operator is responsible for initial investments in the Toll Roads to ensure proper condition (state of good repair).	Consistent with market precedent transactions in Puerto Rico
Ongoing Maintenance	Private operator is responsible for ongoing maintenance of the Toll Roads. Toll Road condition subject to performance requirements.	Consistent with market precedent transactions in Puerto Rico
Major Maintenance	Private operator is responsible for major maintenance of the Toll Roads. Toll Road condition subject to performance requirements.	Consistent with market precedent transactions in Puerto Rico
Toll Collections Risk	PRHTA assumes toll collections risk Concessionaire is paid on a per transaction basis irrespective of collection	Consistent with market precedent transactions in Puerto Rico

The inputs are preliminary estimates and should continually be refined if the Project progresses. The analysis herein considers the costs and revenues associated with each segment in nominal year of input values. Nominal dollar estimates are helpful when looking at cash flows over a long period of time, as the values consider the effects of inflation. To derive nominal values, the inputs (presented in real U.S. dollars) were indexed to a long-term inflation rate of around 2%. The present value of each input refers to the current value of expected future dollar amounts, discounted back to the present using a discount rate. The inputs utilized for the development of the model used to assess the affordability of the Project are discussed below.

Development of Traffic and Revenue Inputs

Overview

PRHTA engaged Steer to assist in performing a traffic and revenue analysis of PRHTA's toll facilities. Steer's work was primarily focused on toll rate analysis, with focus on the near-term. Traffic and revenue inputs and analysis provided by Steer were utilized as quantitative assumptions in the development of the Study. Steer utilized a variety of assumptions and data provided from internal and external sources including PRHTA, World Bank, U.S. Bureau of Labor Statistics, U.S. Census, and others. Steer's analysis was utilized as an input in the development of analysis for PRHTA's Fiscal Plan.

An overview of the data utilized in the development of the traffic and revenue analysis is provided below.

Existing Conditions

Toll Plazas included in Steer’s Analysis

Steer’s traffic and revenue analysis included three key elements: (i) prepare revenue forecasts for all PRHTA toll facilities considering different toll rate scenarios (forecasts), (ii) analyze the impact of modifying the current one-way tolling to two-way tolling structure for some toll plazas (new locations), and (iii) analyze the impact of re-locating some toll plazas to reduce the amount of toll evasion/leakage from traffic that exits the toll facilities prior to passing the toll plaza (2-way tolling). The table below summarizes the tolled facilities included in the traffic and revenue analysis. Toll plazas currently charging in one direction but with no real alternative roads are not included as part of the two-way analysis.

Figure 6.2 – Tolled Facilities

ID	Toll Plaza	Road	1-Way / 2-Way	Forecasts	New Location	2-Way Tolling
1	Río Grande (including ramps)	PR-66	2	X		
2	Carolinás (including ramps)	PR-66	2	X		
3	Guaynabo	PR-20	1 – NB	X	X	X
4	Montehiedra	PR-52	1 – NB	X		
5	Ceiba	PR-53	1 – SB	X		X
6	Humacao Norte	PR-53	1 – NB	X		X
7	Humacao Sur	PR-52	1 – SB	X		X
8	Caguas Norte	PR-52	1 – NB	X		X
9	Caguas Sur	PR-52	1 – SB	X		
10	Salinas (including ramps)	PR-52	1 – NB	X		
11	Ponce	PR-52	2	X	X	
12	Juana Díaz EB/WB	PR-52	2	X		
13	Guayama	PR-53	2	X		
14	Hucar	PR-53	1 – EB	X		X

Historical Rates, Traffic & Revenue

While toll rates on other facilities in Puerto Rico like PR-22 and Teodoro Moscoso are adjusted annually, PRHTA has not adjusted any of the toll rates on their toll plazas since 2005. Average toll rates for each plaza are provided in the table below.

Steer obtained transaction and revenue information from PRHTA for all toll plazas. Considering the recent impacts due to COVID-19, Steer selected 2019 as the base year for the analysis. Annual Average Daily Traffic (AADT), recent growth rates, annual revenue, and average toll rates for 2019 are summarized in the table below. These revenue values do not include the additional revenue that can be collected from violators and so there may be discrepancies between the actual audited revenue values and the ones reported in the table.

Figure 6.3 – 2019 Traffic, Revenue, Toll Rates, and Recent Growth by Facility

Plaza	AADT	Average Toll Rate	Annual Revenue (Millions - Nominal)	AADT CAGR (2013- 2019)
Río Grande	25,840	\$1.05	\$9.90	3.26%
Carolinás	48,427	\$1.50	\$26.57	2.37%
Guaynabo	11,589	\$0.84	\$3.56	1.21%
Montehiedra	11,645	\$0.36	\$1.52	0.55%
Ceiba	9,283	\$1.01	\$3.44	0.87%
Humacao Norte	3,795	\$1.03	\$1.43	-18.38%
Humacao Sur	4,803	\$1.04	\$1.83	-9.96%
Caguas Norte	52,622	\$1.56	\$29.95	-0.74%
Caguas Sur	30,955	\$1.08	\$12.17	-0.27%
Salinas	27,178	\$1.49	\$14.79	0.32%
Ponce	39,673	\$0.79	\$11.44	1.60%
Juana Díaz	48,298	\$0.54	\$9.55	0.64%
Guayama	16,980	\$0.52	\$3.20	-0.07%
Hucar	9,565	\$1.05	\$3.67	0.05%
Total	340,654	\$1.07	\$133.01	0.11%

COVID-19's Impact

To understand the impact of COVID-19 and its related mobility restrictions on PRHTA toll plazas, monthly profiles of the last couple of years were analyzed. Humacao and Río Grande were excluded from the analysis given a lack of data availability. In January and February 2020, traffic was close to 2019 levels but in March 2020, driven by COVID-19 and its related restrictions, traffic across the island started decreasing, reaching its lowest point in April 2020, 70% lower than April 2019. Though traffic levels started to slowly recover for the remaining of the year, they did not fully reach 2019 levels. In 2021, traffic continued recovering and by July 2021, all the toll plazas reported traffic volumes higher than observed in 2019, with two exceptions, Guaynabo and Juan Díaz which both experienced exceptional growth rates in 2019.

Population

The analysis considers the historical population of the island as estimated by the U.S. Census Bureau. The population of Puerto Rico declined by nearly 440,000, or 12%, over the past decade. According to estimates by the U.S. Census Bureau, this decline was relatively steady throughout the decade but did lessen between 2018 and 2020. The population has been declining since 2000 due to low birth rates and outward migration, with economic factors and natural disasters also contributing to the decrease. This trend is expected to continue but probably with some re-allocation of population around the main cities of the island.

Employment

The analysis considers the historical employment of the island as reported by the U.S. Bureau of Labor Statistics. Employment in Puerto Rico declined by nearly 94,000 jobs, or 9%, over the past decade, but increased between 2014 and 2019 as the economy strengthened. As annual data is reported by averaging monthly data and data was not collected in March 2020 and April 2020, the employment impact of the COVID-19 pandemic is likely underestimated.

Gross Domestic Product (GDP)

The analysis considers the Puerto Rico and U.S. GDP as reported by World Bank. Between 2010 and 2020, Puerto Rico’s GDP increased from over \$98 billion in 2010 to over \$103 billion in 2020, or by over 4%. While GDP increased relatively quickly at the beginning of the decade, Hurricanes Irma and María caused it to fall in 2017 and 2018. Recovery was then interrupted in 2020 by the economic repercussions of the COVID-19 pandemic. Puerto Rico GDP growth between 2010 and 2020 is small compared to that of the United States, which increased by nearly 40% in the same period. GDP and the gross national product (GNP), which is the variable used for the forecasts, follow similar trends.

On the other hand, GDP per capita in Puerto Rico has increased steadily through the decade, growing from \$26,436 in 2010 to \$32,291 in 2020, or by 22%. This is relatively closer to the growth observed in the US.

Conclusions from Existing Information

Population and other socioeconomic factors have contributed to changes in traffic trends. In the last ten years Puerto Rico has suffered from a consistent decrease in population due to low birth rates and outward migration. Further, except for a short period of economic recovery after 2014 and after Hurricane Maria, employment has declined in Puerto Rico since 2010. Although GDP has grown at a slow pace in the last 10 years, the GDP per capita reflects a faster growth due to the declining population.

In terms of traffic, over the last few years traffic levels across the island have been impacted by several events, including strong hurricanes in 2017 (Hurricane Irma and Hurricane María in September 2017), earthquakes in 2019 and 2020, and COVID-19 in 2020. Despite these events, and declining population in the island, transactions overall have shown small growth rates, with more growth for those plazas near big urban areas like San Juan and Ponce and less in other parts of the island. While COVID-19 and its related restrictions heavily impacted traffic across the island, traffic has slowly recovered and by July 2021, all toll plazas reported traffic volumes higher than previously observed.

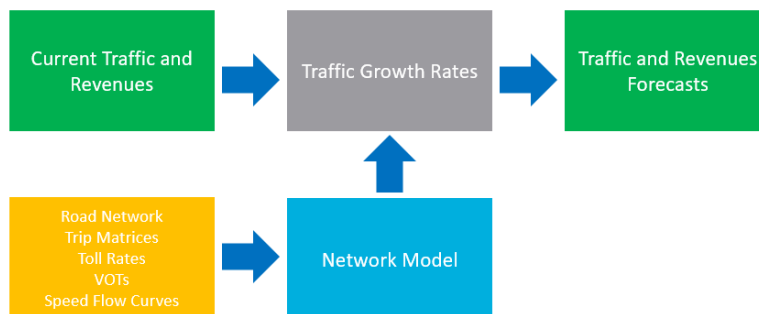
Forecasting Methodology

Overview

While the PRHTA toll plazas are brownfield assets where the current and historical transactions are known, the primary objective of this analysis is to forecast the response to toll rate changes not seen in the past as well as significant changes in the tolling structure of some of the toll plazas. Thus, forecasts were developed using network models, which consider the total in-scope demand for each toll plaza, the competitive position of each plaza with respect to its alternatives, congestion levels and the willingness to pay of the current and potential users. An overview of the forecast approach is provided below:

Steer’s Forecast Approach

The forecasting modeling framework is shown in the figure below. It depicts the current base traffic as the starting point and uses a network model with the new toll rates to generate traffic and revenue forecasts.



Network models for different areas of the island were developed covering all the toll plazas included in the analysis. Each model is independent and groups toll plazas that are likely to have common network effects due to their proximity. The network models developed utilize a variety of inputs and assumptions surrounding zoning systems and highway networks, trip matrices, value of time (VOT), speed flow curves, toll rates, and other behavioral parameters.

A key objective of the modeling approach is for the network models to produce forecasts that represent the actual traffic conditions on the main roads. Thus, traffic data (transactions, traffic counts, travel times) from various sources was used to calibrate the models for the base year of 2019.

Once models were calibrated, outputs were utilized to understand the potential revenue that could be provided for the current and new toll plazas across the network. Models were utilized to translate into traffic and revenue forecasts for each toll plaza based on a variety of GNP and inflation, future market landscape, future demand, and value of time, etc.

Toll Rate Scenario

Traffic and revenue forecasts were prepared for all the plazas assuming annual increases of CPI plus 1.5%. Toll rate increases for all toll plazas are assumed to be effective March 1, 2022, except for PR-66 plazas (Carolinás and Río Grande) for which toll increases are effective January 1, 2025.

Steer also calculated a scenario that aligns with the toll rates as provided in the Fiscal Plan, which includes an 8.3% rate increase annually for the three-year period from FY2022 – FY2025, followed by annual increases thereafter of 1.5% plus CPI.

Forecast Results

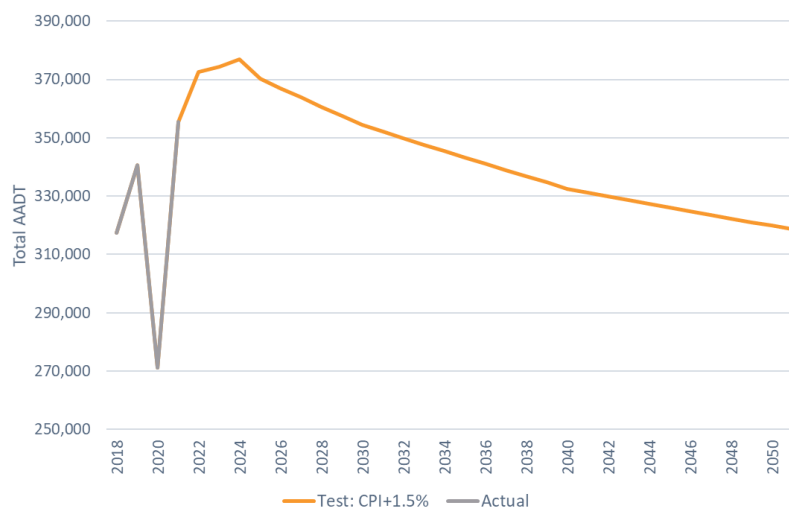
Traffic

Results suggest that traffic is expected to decline over the long-term, ranging from -0.62% through 2030 to -0.39% through 2051. A similar projection is included beyond 2051 to account for the proposed 50-year term.

Figure 6.4 – Compounded Annual Growth Rate (CAGR) AADT – All Plazas

Toll Increase	2022-2030	2030-2040	2040-2051
CPI+1.5%	-0.62%	-0.63%	-0.39%

Figure 6.5 – Total AADT Forecasts



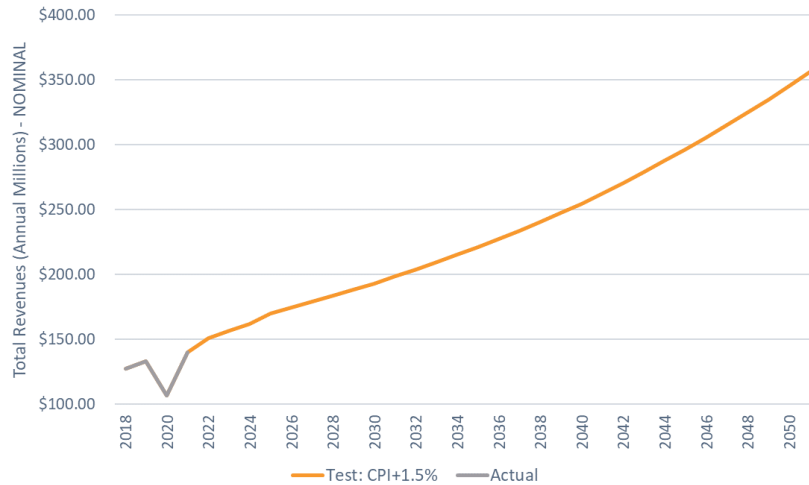
Revenue

Results suggest that revenue is expected to increase over the long-term despite a decline in traffic due to the increase in toll rates. Revenue is anticipated to increase each year from 3.14% through 2030, to 2.81% between 2030 and 2040, to 3.10% between 2040 and 2051; all in nominal terms. A similar projection is included beyond 2051 to account for the proposed 50-year term.

Figure 6.6 – 2019 CAGR Revenue – All Plazas

Toll Increase	2022-2030	2030-2040	2040-2051
CPI+1.5%	3.14%	2.81%	3.10%

Figure 6.7 – Total Annual Revenue Forecasts (Millions – in Nominal \$)



Toll Revenue Optimization Measures

No future infrastructure projects or optimization initiatives were assumed for any scenario in the traffic and revenue analysis described above. However, PRHTA is either undertaking or planning in the near term measures that are expected to enhance the level of traffic and revenue that is currently generated on the Toll Roads, which will impact the base traffic and revenue analysis given it was formulated from current conditions. These measures are outlined in the Fiscal Plan and many are currently underway. These measures include the following:

- Dynamic Toll Lanes: Dynamic toll lanes are being considered for inclusion at the entrance of PR-18, Caguas Norte (PR-52), Montehiedra (PR-52), and PR-1 PM (PR-52), similar to what has been implemented on PR-22. The inclusion of dynamic toll lanes (due to dynamic pricing) is expected to result in additional 6.5% uplift in total revenue over the term compared to the total revenue generated by the base traffic and revenue analysis.
- Two-Way Tolling: A series of plazas are currently tolled only in one direction and are expected to be converted to bi-directional plazas, which will influence the amount of toll revenue that is generated. Two-way tolling will increase revenue for converted plazas across PR-20, PR-53, and PR-52.
- Optimization of Tolling Locations: In addition to two-way tolling, optimizing the location of toll plazas is aimed to reduce the amount of toll evasion and leakage from traffic that exits prior to passing the toll plaza. Together, the optimization of tolling locations to better capture users and two-way tolling is expected to result in additional 2.8% uplift in total revenue over the term compared to the total revenue generated by the base traffic and revenue analysis.



- Tolling System Enhancements: PRHTA is currently in the process of installing new tolling systems at the roadside, simultaneously expanding Open Road Tolling (ORT), and improving its back-office system operations, which is expected to increase toll revenues through greater efficiency, capture rates, and processing. All these measures collectively are expected to result in additional 2.6% uplift in total revenue over the term compared to the total revenue generated by the base traffic and revenue analysis.
- Commercial Leakage: The traffic and revenue study is formulated based on a historical level of traffic and revenue from PRHTA. This historical amount does not include users of the Toll Roads where revenue cannot be collected from the users despite a transaction being generated. In a concession scenario, the collections risk is the responsibility of PRHTA (similar to precedent transactions in Puerto Rico) and thus a concessionaire will be paid on each transaction that is generated irrespective of collection. As such, an adjustment to revenue to account for commercial leakage was made that totals approximately 18% uplift in total revenue over the term compared to the total revenue generated by the base traffic and revenue analysis.

The toll revenue optimization measures described above are anticipated to enhance revenue on the Toll Roads in addition to the traffic and revenue analysis provided by Steer, which did not consider these measures. These measures are anticipated to result in an approximately 30% increase over the term in addition to the base level of toll revenue.

Development of Initial Investment and O&M Inputs

Initial Investment Needs

The Toll Roads are capital assets that require investments and maintenance expenses to maximize their useful life and ensure continuation of services to the public. Previous condition assessments and capital improvement records indicate that the Toll Roads have unmet needs that require capital investments. There are notable differences on how capital investment needs are addressed under the current operation and the P3 options. P3 options consider a private partner will be responsible for conducting and financing capital improvements to achieve state of good repair, implementing preventive maintenance, and efficiently operate the Toll Roads. Furthermore, the P3 options assume that a private partner will implement a strategic and disciplined approach to capital improvements. This approach contrasts with the current Status Quo where PRHTA will continue to face budgetary pressures and remain as a “worst first” repair approach.

Capital investment needs for the Toll Roads can be divided between programmed and unprogrammed capital expenditures. Programmed capital expenditures consist of planned investments for the period between fiscal year 2019 to fiscal year 2028. The programmed capital improvements are estimated to amount to \$370.7 million and have identified sources of funding. Meanwhile, unprogrammed investments are future capital expenditures needed to achieve state of good repair. These unprogrammed capital expenditures have been estimated to range from \$487.3 million to \$521.4 million for the 10-year period starting in 2023 for the Toll Roads.

Initial investment improvements are considered over an initial 10-year period. Thereafter, these improvements are considered ongoing major maintenance expenses; this is consistent with the Fiscal Plan. Initial investments are assumed to be paid with upfront financing in the concession options, whereas ongoing major maintenance expenses are paid with toll revenue.

Concession of all Toll Roads

Under this option it is assumed that all Toll Roads are bundled under a single P3 procurement and agreement. Given that this option represents an extensive scope of work and a significant risk transfer to a concessionaire, the following assumptions were taken in relation to capital expenditures:

- Programmed capital expenditures that amount to \$370.7 million will be deployed as retained capital improvements by PRHTA, which means that PRHTA will proceed as planned with the funding and execution of these projects on the Toll Roads.
- Unprogrammed capital expenditures in pavements and bridges necessary to reach a state of good repair are estimated to average \$49.5 million annually (total of \$494.8 million) in real 2023 dollars from fiscal year 2023 to fiscal year 2032. This level of investment will improve the percentage of pavements in “good” condition to reach the national standard in the late 2020s and will gradually reduce the amount of pavement in poor condition. However, bridge conditions will hover near 10% poor through 2052. This level of investment is equivalent to the Scenario 2 included in the report Analysis of Investment Needs for PRHTA Tolloed and Non-Tolloed Highways commissioned by PRHTA in October 2021.
- Private concessionaire would seek to deploy unprogrammed capital improvements over a minimum period of 10 years.
- When executing the capital improvements, there will be a sequence where PR-52 is addressed first. This will avoid conducting major capital improvements simultaneously.

Concession of PR-52

Under this option, the concessionaire will focus on a discrete toll facility. This option is built on the following capital improvements assumptions:

- Programmed capital expenditures are estimated to total \$206.6 million and will be deployed as retained capital improvements by PRHTA. Capital investment projects already programmed will proceed as planned with PRHTA being responsible for the funding and execution of these projects on PR-52.
- Unprogrammed capital expenditures in pavements and bridges necessary to reach a state of good repair are estimated to average \$27.5 million annually (total of \$275.3 million) in real 2023 dollars from fiscal year 2023 to fiscal year 2032. This level of investment produces the same level of improvements in pavements as the Concession of all Toll Roads but will significantly enhance bridge conditions and reduce the percentage of poor bridges. This level of investment is equivalent to the Scenario 3 included in the report Analysis of Investment Needs for PRHTA Tolloed and Non-Tolloed Highways commissioned by PRHTA in October 2021.
- Private concessionaire would seek to deploy capital improvements over a minimum period of 10 years.

Other Ongoing Major Maintenance Needs

As described above, initial investment improvements are considered over an initial 10-year period. Thereafter, these ongoing required improvements to maintain the Toll Roads in a state of good repair are considered ongoing major maintenance expenses. The major maintenance assumptions described in this section are in addition to the initial investment and ongoing major maintenance assumptions described above.

Concession of all Toll Roads

Besides capital improvements in pavements and bridges, the Toll Roads require a series of investments in other asset components such as safety features, drainage, and lighting. Major maintenance needs for the Toll Roads include investments in these components which are critical for the adequate functioning of the Toll Roads. Under the Concession of all Toll Roads option, it is assumed that the average investment amount needed to address safety, signage, drainage, and lighting totals \$2.7 million annually in real 2023 dollars.

It is important to keep in mind that there are no Federal performance measures for guardrail, lighting, and other components, thus, a state of good repair is not forecasted for these elements. Instead, the level of investment was assumed to stay fixed throughout the concession term.

Concession of PR-52

Similar to the Concession of all Toll Roads option, major maintenance needs include investments in safety features such as guardrails and signage, and other elements including drainage, and lighting. Under the Concession of PR-52 option, an average investment amount of \$1.6 million annually in real 2023 is assumed.

PR-52 is the toll road with the greatest number of lane miles in the bundle of Toll Roads. As a result, PR-52 requires more than half of the major maintenance needs of the total Toll Roads. The estimated investment level of \$1.6 million annually in real 2023 dollars was assumed to remain fixed throughout the term of the concession contract.

Operating & Maintenance Needs

Concession of all Toll Roads

Operations and maintenance refer to the day-to-day efficient functioning and upkeep of the Toll Road. Operations and maintenance play a fundamental role in increasing the commercial value and extending the useful life of transportation assets. Under the Status Quo option, PRHTA is fully responsible for all daily tasks related to operations and maintenance.

Under the concession options, the risks associated to operations and maintenance are transferred to a concessionaire. In the Concession of all Toll Roads option, the following assumptions were considered.

- Toll administration or toll collection costs: these costs were estimated using two major variables: i) the forecasted number of traffic transactions per year and ii) the inflated cost per transaction. The forecasted number of traffic transactions comes from the estimation of future traffic while the inflated cost per transaction originates from the present cost per transaction that PRHTA pays for this service. The product of these two variables yields a total cost of toll collection based on the specific projected traffic transactions for each year. In addition, the estimation of toll administration costs considers a discount provided to PRHTA. Presently, PRHTA contracts with an external vendor the services of toll administration. The vendor provides PRHTA a discount of 4.5% on the total cost due to its large scope of work that covers the majority of the toll roads network in Puerto Rico. Under the Concession of all Toll Roads option, this discount was assumed to be 3% given that the scope of work would not be as extensive compared to the actual vendor scope under PRHTA. Overall, the costs of toll administration services are estimated by the product between projected traffic transactions for each year and inflated cost per transactions less a 3% discount.
- Salaries and benefits: contrary to the Status Quo option, compensation for overtime was eliminated. In accordance with recent trends in private sector compensation in Puerto Rico, salaries were escalated at an annual rate of 1.4% until 2027 then 1% onwards.
- Other operating expenses: based on the premise that private sector will seek efficiencies across different expense components, a 15% savings on third party contracts and suppliers was assumed.
- Maintenance: target safety related needs first, reduce investment in non-essential aesthetics, reduce level of service in non-critical areas.

Concession of PR-52

Under the Concession of PR-52 option, the concessionaire will focus on the longest toll asset. The main operations and maintenance assumptions under this option are the following:

- Toll administration or toll collection costs: similar to the Concession of all Toll Roads option, the toll administration costs were estimated using two variables: i) the forecasted number of traffic transactions per year and ii) the inflated cost per transaction. The forecasted number of traffic transactions comes from the estimation of future traffic while the inflated cost per transaction originates from the present cost per transaction that PRHTA pays for this service. The product of these two variables yields a total cost of toll collection based on the specific projected traffic transactions for each year. Under this Concession of PR-52 option, no discounts on the total toll administration costs were considered. It is assumed that the Concession of PR-52 option represents a reduced scope of work compared to the Concession of all Toll Roads option and the Status Quo. Therefore, it is assumed that a third-party vendor will be limited from providing a discount on a reduced base of traffic transactions. Therefore, the total toll administration costs under the Concession of PR-52 option were estimated using the product of the projected traffic transactions and the inflated costs per transaction per year and no discounts were applied.
- Salaries and benefits: compensation for overtime was eliminated while salaries were escalated at an annual rate of 1.4% until 2027 then 1% onwards.
- Other operating expenses: assumes a 10% savings on third party contracts and suppliers.
- Maintenance: target safety related needs first, reduce investment in non-essential aesthetics, reduce level of service in non-critical areas

Development of Funding Inputs

The availability of public funding is essential for the development of infrastructure. Most public infrastructure is developed with public or government funding. When assessing a P3 project, it is important to consider any available or programmed public funding that may support the proposed project.

A certain amount of public funding has been programmed and identified as part of the capital planning responsibilities of PRHTA for the Toll Roads. Specifically, records from PRHTA indicate that a total of \$370.7 million in capital expenditures is programmed to be publicly funded and executed on the Toll Roads from fiscal year 2019 to fiscal year 2028. These programmed investments are contained in capital improvement planning documents such as the April 2020 version of the Statewide Transportation Investment Program for 2019-2022 (“STIP”) and other planning documents from PRHTA. Below is the breakdown of this programmed capital improvements by each toll road.

Figure 6.8 – Programmed Capital Investments by Road

Toll Road	Programmed Capital Investments 2019-2028
PR-52	\$206,591,733
PR-53	\$106,562,576
PR-66	\$33,778,735
PR-20	\$23,804,984
TOTAL	\$370,738,027

This programmed capital investments are to be funded by a combination of sources including appropriations from the Commonwealth's Central Government budget, PRHTA's own funding, and FHWA funding.

Under the P3 concession options, it is assumed for all programmed and planned capital improvements to be publicly funded at the time of the P3 concession and proceed as retained capital improvements by PRHTA. This means that PRHTA will continue to fund and execute the improvement projects as planned on the Toll Roads. These funds are separate from the sources of funds assumed in the Study.

At the time of this Study, the programmed and publicly funded improvements for the Toll Roads amount to \$370.7 million but this amount is subject to change as PRHTA continues to make progress with the completion of such capital expenditures. The initial investment and major maintenance requirements under a concession structure are separate (and the concessionaire's responsibility) from the programmed capital improvements described in this section. Programmed capital improvements have identified sources of funding and are assumed to be implemented by PRHTA outside of this Study. The Study does not assume any additional sources of public funds other than programmed funds for capital improvements (implemented outside of this Study) as discussed above. Future identified public funds may be available and if implemented will ultimately increase the value of the Toll Roads.

The funding assumptions and structure for programmed capital improvements utilized in this Study do not necessarily reflect the transaction structure that the Authority and PRHTA may implement. The Authority, and PRHTA, will revisit the status of its capital improvements and include details and requirements in future solicitation documents.

Financial Model Development

The financial model developed for the quantitative assessment relies on financial inputs and assumptions that are estimated based on market precedent, the future landscape of a potential transaction, investor appetite, general market conditions, and the fiscal situation in Puerto Rico. The financing assumptions utilized reflect a sufficiently marketable deal to the private sector and assume an appropriate level of market liquidity and availability of funds that can be accessed by a concessionaire. At a high-level, the financial model solves each option based on the revenue, cost, and initial investment inputs at a certain gearing level and target range for a concessionaire's IRR. Gearing refers to the ratio of debt relative to equity in the transaction. IRR is used to estimate the return that an equity member expects to receive on its equity in the transaction for assuming a certain level of transaction risks. The financial model is optimized to ensure that standard transaction covenants are not breached and are in line with expectations (repayment requirements, debt service coverage, etc.).

Capital structure assumptions utilized in the financial model are in line with recent precedent transactions in Puerto Rico and consider recent movement in interest rates in the debt market. The debt structure assumes a long-term issuance and includes conservative assumptions to target an investment grade debt rating. The debt matures prior to the end of the concession term (leaving a short tail) and is in line with conservative lender requirements. Given the Commonwealth's current fiscal situation, it is difficult to estimate the interest rate that will be priced under debt repayment terms. As such, a similar interest rate to that of recent Puerto Rico brownfield toll road concessions was assumed.

The model solves to provide the range of concession payments that PRHTA may expect from a concessionaire based on the level of revenue generated by each option, less operations, minor and major maintenance, debt service, and other costs and funding requirements – a generally standard cash flow waterfall. Initial investments to bring the Toll Roads to a state of good repair are considered as required in a future P3 agreement. The range of concession payments is based on a target IRR between 11% and 13%. Any upfront concession payment will be used to pay down outstanding debt.

Figure 6.9 – Key Financing Metrics

Key Financing Metrics	Assumption
Gearing	≤70%
Interest Rate	7%
Tenor	35 years
Minimum debt service coverage ratio	1.60x
Target Pre-Tax Equity IRR Range	11% - 13%
Total Restructured Puerto Rico Debt Payoff Requirement	\$1,245 million
Commonwealth Loan to PRHTA	\$314 million

Quantitative Options Assessment

Concession of all Toll Roads

The Concession of all Toll Roads option is quantitatively assessed in the financial model based on the revenue, cost, financing, and general assumptions as described in this section. Results of this option are presented below based on an IRR of 11-13%. The total sources of funds in the table below is the total capital structure (debt plus equity) a concessionaire can raise based on the toll rate scenario provided. The initial capex investment includes the amount of initial investment costs that is required to bring the Toll Roads to a state of good repair. The debt payoff requirement includes the total amount that is required to be paid on outstanding debt and the additional Commonwealth loan amount.

Figure 6.10 – Concession of all Toll Roads (Option 2)

\$ (in Millions)	11% IRR	13% IRR
Total Sources of Funds	2,254	2,086
Less: Initial CAPEX Investments	(521)	(521)
Less: Other Fees and Reserve Accounts	(73)	(73)
Net Concession Payment to PRHTA	1,660	1,492
Less: Debt Payoff Requirement	(1,245)	(1,245)
Less: Commonwealth Loan to PRHTA	(314)	(314)
Net Proceeds	101	(67)
EBITDA ⁸ Multiple	13x	12x

The results of the Concession of all Toll Roads option based on the toll rate scenario described in this section suggest that a concessionaire can raise between \$2.1 and \$2.3 billion in total sources of funding, which can be used to fund initial capital expenses. The remaining amount after issuance fees and reserve requirements are funded can be used to pay outstanding debt. After making the payoff amount related with the outstanding debt and the Commonwealth loan this option appears to be marginally feasible at the 11% IRR level. This option, however, doesn't appear to be feasible after making the same debt payoff

⁸ Earnings before interest, taxes, depreciation, and amortization.

amount when including higher return requirements. The Concession of all Toll Roads option is feasible at the return requirements shown if the Commonwealth loan is repaid with alternative sources of funds (other than funds derived from the toll revenues).

Concession of PR-52

The Concession of PR-52 is quantitatively assessed in the financial model based on the revenue, cost, financing, and general assumptions as described in this section. Results of this option are presented below based on an IRR of 11-13%. This option assumes a lower debt payoff requirement on outstanding PRHTA debt and the Commonwealth loan given this option is for only PR-52. This debt amount is estimated based on the total amount of debt outstanding and PR-52's revenue in relation to the remaining toll roads. Debt is reduced on a pro rata basis. This assumption is preliminary in nature, only used for analysis and estimation purposes, and does not reflect the potential of a pro rata debt repayment scenario in practice.

Figure 6.11 – Concession of PR-52 (Option 3)

\$ (in Millions)	11% IRR	13% IRR
Total Sources of Funds	1,424	1,309
Less: Initial CAPEX Investments	(291)	(291)
Less: Other Fees and Reserve Accounts	(51)	(49)
Net Concession Payment to PRHTA	1,082	969
Less: Debt Payoff Requirement ⁹	(746)	(746)
Less: Commonwealth Loan to PRHTA ¹⁰	(188)	(188)
Net Proceeds	148	35
EBITDA Multiple	13x	12x

The results of the Concession of PR-52 option based on the toll rate scenario described in this Section suggest that a concessionaire can raise between \$1.3 and \$1.4 billion in sources of funding, that can be used to fund initial capital expenses, issuance fees and reserve funding requirements, as well as pay outstanding debt. This option appears to be marginally feasible in its current form and results in net proceeds to PRHTA of (ranging from \$35 to \$150 million) after funding of initial capital expenses and payment of outstanding debt and the Commonwealth loan (pro-rata).

However, the Concession of PR-52 option requires a private operator to improve, operate, and maintain only PR-52. The remaining Toll Roads (as well as the remaining debt assumed to be associated with these assets) will be the obligation of PRHTA under the Status Quo. Accordingly, PRHTA will receive revenue from the assets but will be responsible for the costs and risks associated with initial capital investments to bring these assets to a state of good repair, ongoing operation, and maintenance costs, as well as outstanding debt service requirements. Additional costs associated with the operation of these remaining Toll Roads under PRHTA control and oversight are not measured in this option but should be considered when assessing this option as a potential path forward.

⁹ Pro rata amount based on the total debt amount and PR-52's amount of revenue compared to the other Toll Roads.

¹⁰ Pro rata amount based on the expected loan amount and PR-52's amount of revenue compared to the other Toll Roads.

7. Conclusion and Recommendation

Conclusion

PRHTA has historically been unable to maintain the Toll Roads in a state of good repair and provide a reliable road network, due to funding constraints, aging infrastructure, rising capital costs, shrinking budgets, and lack of asset management planning, among others. PRHTA has historically followed a “worst-first” asset management strategy that prioritizes needs that require urgent investment instead of a preventative maintenance strategy. This has resulted in subpar condition of the roads and a maintenance backlog. In addition, the Commonwealth’s fiscal situation requires PRHTA to ensure funding is available for outstanding debt that is constraining PRHTA’s ability to serve its road network.

A variety of options are considered in this Study that aim to solve PRHTA’s historical challenges and address its outstanding debt situation. As highlighted in the Fiscal Plan, this Study analyzes the potential for P3 options through which significant level of risk is transferred to the private concessionaire in exchange for compensation via revenue generated by the Toll Roads. This Study aims to assess which of these options are desirable and convenient for the Authority to consider as it makes a go/no-go decision on whether to proceed with a potential procurement.

When assessed qualitatively, the results suggest that most of the potential options under consideration are not feasible without an upfront concession payment to address initial capital investment and outstanding debt repayment needs. The Status Quo option presents significant concerns for PRHTA given the historical challenges to maintain the Toll Roads and PRHTA’s responsibility to retain risks associated with the performance of the Toll Roads. The two concession options, a Concession of all Toll Roads and Concession of PR-52 are deemed feasible from a qualitative perspective.

From a quantitative perspective, both options result in an upfront concession payment that PRHTA can utilize to pay for initial capital investments and outstanding debt secured by toll revenue, though only in certain circumstances depending on the level of return that a concessionaire requires. For instance, the Concession of all Toll Roads option results in a net shortfall at a 13% IRR but appears to be marginally feasible when the return requirements are reduced to 11%. The Concession of PR-52 is marginally feasible across all scenarios, though includes a prorated outstanding debt assumption that has not been negotiated as part of PRHTA’s restructuring.

Recommendation

The results suggest that a Concession of all Toll Roads option appears to be desirable and convenient for the Authority when compared to the Concession of PR-52 and the remaining options within this Study. A Concession of all Toll Roads presents an opportunity for the Commonwealth to generate a concession payment which could be used to address the outstanding debt burden and provide initial capital investment (as shown in Figure 6.10) that significantly enhances the quality of the Toll Roads and achieves state of good repair. Users will benefit from an improved road network that has historically presented challenges under the Status Quo. The expectation is that a best-in-class operator will operate and maintain the Toll Roads at high performance levels and will bring their expertise to enhance and improve efficiency for toll operations. A Concession of PR-52 will result in similar benefits as the Concession of all Toll Roads option.

Despite the quantitative results suggesting the Concession of PR-52 is feasible throughout the IRR range shown, the benefits would only pertain to PR-52. The improvement, operation, and maintenance of the remaining Toll Roads will be delivered under the Status Quo option, which has historically posed challenges for PRHTA and resulted in sub-optimal road conditions. The cost of PRHTA continuing to operate and maintain the remaining Toll Road assets have not been analyzed within this Study.

In terms of feasibility, the Concession of all Toll Roads appears to be marginally feasible at the lower end of the range of return requirements after payoff of the amounts related to the outstanding debt and the Commonwealth loan. Depending on the results obtained in this transaction, the Commonwealth might also consider different alternatives for the repayment of the subordinate debt obligation which will contribute to enhanced feasibility. The assets present an investment opportunity given the current private market appetite for established infrastructure assets that generate steady long-term cash flow, the additional confidence in Puerto Rico as the Commonwealth emerges from bankruptcy, and the Authority's long history implementing public-private partnership projects. However, these considerations have not been validated with the market yet and this may result in different pricing compared to what is assumed in this Study.

Due to the benefits discussed above, it is recommended that the Authority pursue a P3 transaction under a concession model for the long-term improvement, operation, and maintenance of the Toll Roads.

The Authority and PRHTA have included general assumptions around the structure of a potential future transaction for the purposes of developing this Study. The assumptions included in this Study do not necessarily represent the structure of a future transaction, which will be developed by the Authority and PRHTA. Details surrounding the actual structure of the transaction will be provided in future solicitation documents.

Next Steps

Pursuant to the requirements of Article 7 of Act 29 and Section 5 of the Regulation, the Authority is asking for comments in connection with the Study. The comments must be submitted in writing to the following email: tollroadsproject@p3.pr.gov. The Authority will acknowledge receipt of those comments submitted by email within two (2) business days of receipt. The Authority may also, but will not be obliged to, respond or ask follow-up questions regarding the comments received. The deadline for submitting comments is **April 25, 2022 on or before 5:00pm AST.**

In parallel with the public comment period, the Authority will solicit industry feedback to gauge interest and considerations on the recommended transaction structure from potential industry participants. **The Authority encourages entities that are interested in participating in the Authority's market sounding process to contact the email address provided above.**

Following the adoption of the Study in the second quarter of 2022, a formal procurement is anticipated to commence with the issuance of the Request for Qualifications (RFQ). Shortlisting, issuance of a draft RFP, and one on one meetings will be completed leading up to the publication of the Final Request for Proposals (RFP). This Request for Proposals phase of the procurement is expected between Q2 2022 and Q1 2023. The final steps of the P3 procurement process, project award, and financial close are expected to be reached by the first quarter of 2023 and span throughout the rest of the year. The timeline below summarizes the expected next steps of the transaction. The expected dates for each step are subject to change.

Figure 7.1 – Anticipated Timeline

