BY ELECTRONIC MAIL

January 29, 2021

The Honorable Pedro Rafael Pierluisi Urrutia
Governor of Puerto Rico

The Honorable Jose Luis Dalmau Santiago
President of the Senate of Puerto Rico

The Honorable Rafael Hernández Montañez
President of the House of Representatives of Puerto Rico

Dear Governor Pierluisi, President Dalmau and President Hernández:

In accordance with PROMESA Section 205(a),[1] the Oversight Board writes to provide recommendations through which the government may integrate and transform components of its public transportation system. These recommendations for a unified, well-performing transportation system are aligned with the goals of reducing traffic congestion, increasing citizens' access to multimodal transportation, improving governance of transportation entities, improving fiscal sustainability of public transportation agencies, and promoting economic growth and development.

The recommendations outlined in this letter should be considered along with the reforms put forth in Chapter 12 of the 2020 Certified Fiscal Plan ("CFP") for the Commonwealth of Puerto Rico. Section 12.2 of the CFP outlines measures to strengthen best practices for infrastructure delivery, including intra-agency investment prioritization, pre-construction process acceleration, sustainable funding models, implementation of contracting best practices, and investment in innovative transportation projects. Additionally, Section 12.3 of the CFP further emphasizes integration of public transit networks and assets as discussed in Recommendations A and B below. Progress on these objectives is critical to the implementation of interagency coordination and integration, as well as improved uptake of funding opportunities.

[1] Specifically, in accordance with PROMESA Sections 205(a)(2), 205(a)(3), 205(a)(5), 205(a)(6), and 205(a)(10).

This letter's recommendations focus on agency integration, performance management, and system funding maximization. As with the measures outlined in the CFP, the joint participation of the Department of Transportation and Public Works ("DTOP"), Highways and Transportation Authority ("HTA"), and Puerto Rico Integrated Transit Authority ("PRITA") is required for successful transformation of the public transportation sector. Therefore, this letter adopts a broader view of holistic optimization within the transportation sector that both complement and follow from the objectives laid out in Chapter 12 of the CFP for the Commonwealth of Puerto Rico.

I. Reimagining Puerto Rico's Transportation System

The vision for the future of Puerto Rico's transportation: A system that catalyzes economic growth

A transformed transportation system would enable Puerto Ricans to seamlessly combine different modes of transport to reach destinations safely, quickly, and affordably. Such transportation systems play a critical role in enabling economic growth through the movement of goods and people. A well-performing system can increase workers' access to jobs and businesses' access to customers, unlocking the productive potential of citizens and firms, increasing economic output, and inviting further private investment into the region. A poorly performing system, on the other hand, can mire its citizenry in wasted time, inequitable access to jobs and opportunities, fractured communities, and productivity losses.

Puerto Rico's transportation sector underperforms across a range of outcomes. Roads in Puerto Rico are crowded and unsafe; road fatalities are 80% higher than the US average.[2] Among US cities, San Juan has the seventh-longest average commute at 31.2 minutes.[3] Drivers lose 58 hours each year in traffic at a cost of $1,274 per driver and $400 million to the city.[4] Puerto Rico's roads suffer from poor conditions—only 4% of the island's non-interstate highways are in good condition, compared to the US median of 57%.[5] The financial performance and sustainability of the transportation sector also lags behind mainland peers. Tren Urbano's ("TU") transit farebox recovery ratio (share of expenses covered by fare revenues) is only 9%,[6] and the percent of non-fare directly-generated public transit revenue (as a percent of total transit revenue) in Puerto Rico is about half of the US median.[7] Puerto Rico receives less than its fair share (about 90%) of the federal funding for roads that could be expected based on its population size.[8] Despite this,

[2] https://www.fhwa.dot.gov/policyinformation/statistics/2019/vm2.cfm https://www.fhwa.dot.gov/policyinformation/statistics/2018/fi20.cfm
[3] https://realestate.usnews.com/places/rankings/best-places-to-live?src=usn_pr
[4] https://static.tti.tamu.edu/tti.tamu.edu/documents/mobility-report-2019.pdf; https://inrix.com/scorecard-city/?city=San%20Juan%2C%20PR&index=163
Costs include lost productivity, increased freight movements costs, higher operating costs and decreased reliability. For more information, see https://www.transportation.gov/sites/dot.gov/files/docs/2016%20Revised%20Value%20of%20Travel%20Time%20Guidance.pdf
[5] https://www.fhwa.dot.gov/policyinformation/statistics/2019/hm64.cfm
[6] https://www.transit.dot.gov/ntd/data-product/2019-data-tables
[7] https://www.transit.dot.gov/ntd/data-product/2019-funding-sources
[8] https://www.fhwa.dot.gov/policyinformation/statistics/2018/sf3.cfm; https://www.fhwa.dot.gov/policyinformation/statistics/2018/sf4.cfm

agencies struggle to spend all the money available to them due to difficulties executing the backlog of projects.

Tren Urbano has suffered from mismanagement that predates its initial construction. Passenger forecasts made in the 1990s overestimated ridership by 60-70%. Construction took 75% longer than expected, delaying TU's opening by four years, and increasing project costs from $1.5 billion to $2.3 billion. Today, ticket machines are obsolete: unable to process credit card transactions, but in some instances, require exact change. TU has failed to fix these problems, despite $170 million in federal funding available to do so. Given TU's current, limited origin-destination trip coverage, increases in ridership and therefore long-term viability of the network must consider ways to enhance coverage and integration of transit options to better serve customers.[9]

Nonetheless, transformation is both possible and precedented. Across the US and Latin America, there are multiple examples of successful transportation reforms that have yielded substantial improvement of transportation outcomes. Bogotá, for example, successfully integrated an industry of private bus operators into a new large-scale Bus Rapid Transit ("BRT") network, TransMilenio, in the early 2000s. TransMilenio led to a 32% reduction in travel times, 92% decrease in road deaths, and 40% reduction in certain air pollutants.[10] In 2002, the State of Florida transformed its transportation department by combining all toll roads under a single entity and seeking private sector funding and support for many of its operational functions. Since 2013, the Florida Department of Transportation has seen a 5.8% compounded annual growth rate in toll revenues, with 2019 toll revenues of $932 million, up from $663 million in 2013.[11] In 1995, Virginia passed legislation to create its public-private partnership ("PPP") office, which has catalyzed at least $10.2 billion of transportation investment since its inception—the highest in the US.

The potential for dramatic improvement in the performance and financial position of transportation systems in Puerto Rico is demonstrably achievable. This transformation of the public transportation sector would have a dramatic impact on the economic growth trajectory and day-to-day lives of Puerto Ricans. This letter outlines the challenges that Puerto Rico must address to realize a multimodal[12] and citizen-accessible vision for the future of its transportation system, and highlights key lessons and recommendations from benchmark entities as a proposed roadmap for successful implementation. As outlined in Table 1, current challenges are driven by three root causes that can be addressed by implementing six recommendations.

[9] https://www.transportation.gov/buildamerica/projects/tren-urbano; https://www.civilbeat.org/2018/07/what-honolulu-rail; planners-can-learn-from-puerto-rico/; https://news.mit.edu/1998/train-0204; https://www.theweeklyjournal.com/business/puerto-ricos-urban-train-seeking-more-passengers/article_70ef8c0a-86dd-11e9-8d0a-ff2696c39086.html
[10] https://www.centreforpublicimpact.org/case-study/transmilenio/
[11] https://floridasturnpike.com/wp-content/uploads/2020/02/CAFR_2019.pdf
[12] "Multimodal" refers transportation that occurs across many different "modes" or types of transportation, e.g., car, bus, train, bicycling, etc.

Table 1: Underlying challenges resulting in poor outcomes and recommendations to address them

Current state challenges	Recommendations to address
1. Individual modes of transportation have overlapping and fragmented ownership	A. Reorganize Puerto Rico's transportation assets into asset-specific entities[13,14] B. Create an overarching transportation policy board to guide multi-modal transportation strategy across the Island[12,13]
2. Poor performance management within individual modes of transportation and no multi-modal coordination	C. Develop and use objective framework for project selection[15] D. Improve performance management of contractors through integration in public systems, performance-based contracts, and better supervision[12] E. Enhance effectiveness of governance by reforming entity boards of directors, where relevant, to include fewer political appointees and more subject-matter experts[13]
3. Puerto Rico does not maximize its funding potential, leaving public and private dollars on the table	F. Maximize the Commonwealth's utilization of available grants through a more comprehensive federal grants strategy and improved bankability to attract private capital[12,14]

Despite the extraordinary shocks faced by Puerto Rico's transportation sector in recent years—two major hurricanes, a debt crisis, earthquakes, and the current COVID-19 pandemic—there is a clear opportunity to reinvigorate transportation to create a more sustainable, connected, and livable future for all Puerto Ricans. Given the potential impact at stake and the catalytic effect of a revived transportation sector on needed economic growth for the Commonwealth, any delay will come with a significant cost.

[13] Administrative implementation required
[14] Legislative implementation required
[15] Executive implementation required

II. Challenge #1: Individual modes have overlapping and fragmented ownership.

The underlying challenge

Puerto Rico's transportation system is managed by the Department of Transportation and Public Works ("DTOP"), which includes the Highways and Transportation Authority ("HTA") and Integrated Transit Authority ("PRITA"). PRITA is further divided into the Maritime Transit Authority ("MTA") and Metropolitan Bus Authority ("AMA"). HTA is a public corporation that manages 185.6 miles of toll roads, 986 miles of non-toll roads, Tren Urbano (10.7 miles, single line with 16 stations), and feeder bus routes. MTA manages three ferry lines (including 14 ferry boats) and the AMA, which has 23 bus routes and 178 vehicles. DTOP manages a network of 13,754 miles of additional non-toll roads.

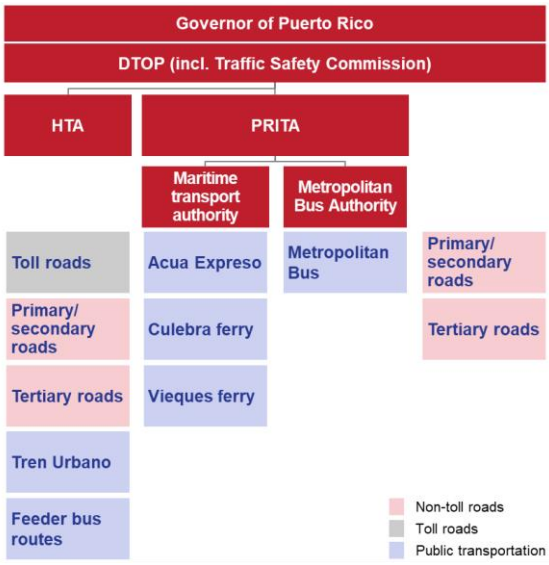


Figure 1: Current alignment of asset types to entities

Asset ownership is fragmented across Puerto Rico's transportation entities. Non-tolled roads are split between HTA and DTOP. Bus routes are divided between HTA and AMA. The urban transit line sits within the highway authority (HTA), rather than the dedicated transit authority (PRITA).

Fragmentation across transportation modes inhibits efficient management of the transportation system by complicating priority-setting and decision-making. For instance, HTA's responsibility for both tolled and non-tolled roads leaves it with a mix of private revenue streams (e.g., tolls and fines) and public funds (e.g., transfers from the Commonwealth) that politicizes decisions about toll fare adjustments. As a result, HTA has not adjusted toll rates since 2005 despite increases in both congestion and inflation, while non-toll roads suffer from a backlog of maintenance projects. In other states, by contrast, toll roads and non-toll roads are managed by independent, apolitical public entities (e.g., Florida Turnpike Enterprise, New Jersey Turnpike Authority) that can focus on maintaining their own financial sustainability.

Meanwhile, the fragmented ownership of transit assets inhibits cross-modal coordination: Tren Urbano, AMA, and the feeder bus networks do not have harmonized schedules that would allow easy and efficient transfers between modes. This creates a negative user experience for riders and encourages commuters to travel via private vehicle rather than transit, which in turn worsens the financial performance of transit systems and increases road congestion. Many US cities, by contrast, have integrated transit authorities so all transit assets across modes coordinate schedules

and payment methods, ensuring a seamless experience for customers and efficiency in delivering services. For example, Portland's TriMet system operates bus, light rail, heavy rail, and streetcar services under one network with a single payment system and harmonized schedules.

Recommendation A: Reorganize Puerto Rico's transportation assets into transportation mode-specific entities.

In response to overlapping and fragmented ownership, the Commonwealth should restructure its transportation agencies into specialized entities that align assets to the agency's mandate. Doing so will focus management priorities and facilitate the in-house development of focused expertise. This reorganization is a prerequisite for Puerto Rico's transportation entities to achieve financial sustainability.[16]

The Commonwealth should distinguish between tolled roads and non-tolled roads and manage them via separate entities. Separation will enable the toll authority to focus on its core mandate. Best-practice examples from the mainland US illustrate this in practice: In New Jersey, for instance, the New Jersey Turnpike Authority ("NJTA") is a focused, independent entity responsible for managing the state's two tolled roads, while the New Jersey Department of Transportation manages the state's non-tolled roads. The NJTA funds routine operations and maintenance using toll revenues and maximizes non-toll revenues, for example by negotiating profit-share arrangements with its vendors (e.g., rest stop operators). Periodic toll increases, meanwhile, support bond offerings to fund new capital projects. This revenue maximization has resulted in bonds rated investment-grade and over $440 million in available cash reserves at the end of 2019.[17] Many other successful tollway authorities also operate with either full independence (e.g., Georgia's State Road and Tollway Authority and the Pennsylvania Turnpike) or an independent organization and mandate within the Department of Transportation (e.g., the Florida Turnpike Enterprise).

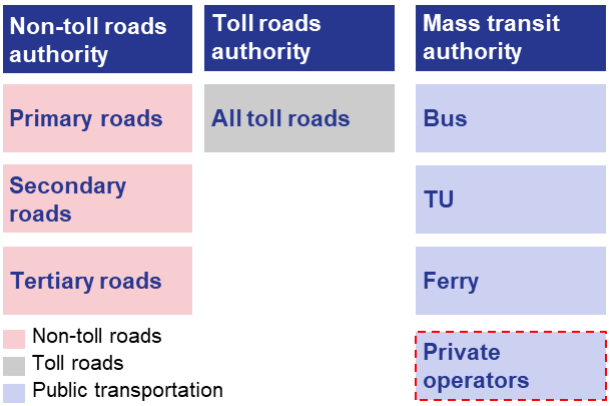


Figure 2: Proposed alignment of asset types to entities

Furthermore, the Commonwealth should consolidate all transit assets under a single entity to improve cross-modal coordination. Transferring Tren Urbano and the bus feeder routes to AMA and MBA, respectively, would enable a more effective coordination of schedules and

[16] There is an existing legislative precedent for this type of effort, as outlined under 23 L.P.R.A. § 11161. The enactment of PRITA was originally intended to integrate mass transit systems under one authority, thus relieving HTA from its responsibilities related to the Tren Urbano transit system. Current legislation per Act No. 74 of June 23, 1965 allows but does not obligate HTA to oversee non-toll roads and assets (in addition to toll roads).
[17] https://www.njta.com/investor-relations/financial-statements-and-reports

standardization of payment methods, which in turn would improve rider experience and increase transit ridership and accessibility.

Oregon's TriMet system shows how this can work in practice. Like TU, TriMet is a relatively new transit system, having developed its light rail in the 1980s. TriMet consolidates all Portland-area transit assets into a single entity that coordinates route planning, scheduling, and payments. Riders use "Hop Fastpass," a smart fare card, to pay for their travel and can plan multi-modal trips using TriMet's website. This user-friendly system encourages high levels of ridership on the city's light rail and bus systems, saving the city $150 million annually due to reduced traffic congestion. Finally, a major emphasis in TriMet's planning was to use transit to improve land use, leading to $25 billion in new development near light rail stations.[18]

Recommendation B: Create an overarching transportation policy board to guide multi-modal transportation strategy across the Island.

The Commonwealth should create an independent Transportation Policy Board ("TPB") to set and execute an island-wide transportation strategy. The TPB could emulate a structure successfully employed in Virginia, wherein the Commonwealth Transportation Board ("CTB") sets statewide transportation priorities and selects projects for funding using an objective, data-driven, and publicly accountable system: the SMART SCALE framework (detailed in Recommendation #D). The CTB's board is appointed by the Governor with membership representing each of Virginia's congressional districts. The CTB functions with a lean organization, leveraging back-office resources of the entities it oversees. The proposed TPB would provide oversight and guidance for the transportation entities within DTOP. The TPB could build on an existing legislative mandate that established an Advisory Board on Transportation ("TAB," see footnote).[19] The Commonwealth could either create a new entity for this purpose or modify the TAB to enhance its ability to effect such coordination at a project level.

The Transportation Policy Board would control a common transportation fund and suggest projects for funding across all transportation modes based on their potential to advance the island-wide transportation strategy. These projects could be proposed by a variety of transportation stakeholders, including metropolitan planning organizations, local governments, and local transit agencies. This multi-modal view would ensure that projects compete to deliver holistic transportation benefits to Puerto Rico. Centralizing the decision-making would also help prioritize investments that create value for other modes of transportation—for example, a multi-modal view can enable strategic investments to facilitate freight transfers between ports and airports, thus making the island a more attractive hub for freight shipping. With the TPB setting strategy and

[18] https://trimet.org/business/

[19] P.R. Laws tit. 9, § 3152 establishes an Advisory Board on Transportation to counsel the Secretary of the Department of Transportation and Public Works on interagency coordination and policy development. The Advisory Board on Transportation has legislative mandates to promote mass transportation and the joint coordination of interagency programs per clauses (b) and (e) of its enabling Act. The proposed Transportation Policy Board is recommended to support or modify the existing TAB and shall require legislation for its establishment.

allocating funds accordingly, the primary responsibilities of the non-toll road, toll road, and transit authorities would therefore be the execution and delivery of the projects prioritized and funded by the TPB.

In order to insulate board members from political pressure and maintain continuity across electoral cycles, members should serve staggered terms of no less than 5 years and only be removed otherwise as a result of external causes. Professional requirements should exist for a subset of the board's membership (e.g., two engineers, two financial professionals, one lawyer).

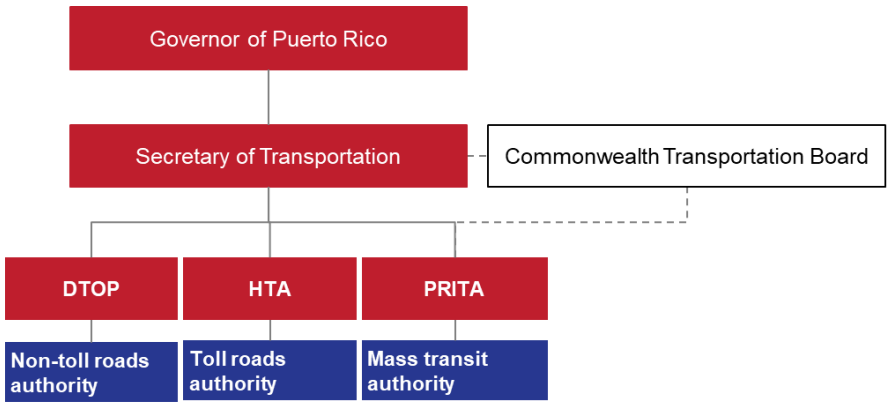


Figure 3: Potential relationship of Commonwealth Transportation Board to proposed structure.

III. Challenge #2: Poor performance management within modes and limited multi-modal coordination

The underlying challenge

In Puerto Rico, poor performance management results in a backlog of maintenance projects, high costs relative to service levels, and a disconnected system that cannot effectively execute a multi-modal strategy. Customer experience in transit is sub-optimal (e.g., scheduling and payment are not synchronized across transit system options). Puerto Rico's transportation agencies lack an established and consistent method for inter-agency communication and coordination.[20]

Furthermore, individual agencies struggle with performance management. HTA, for instance, historically struggles to deploy its available capital funding to maintain a State of Good Repair ("SOGR").[21] Estimates suggest that an average of $357 million of capital investment per year between now and 2028 would be required to reach and sustain SOGR; yet, HTA has only achieved

[20] DTOP has limited resources and a mandate that overlaps with that of HTA's. Despite PRITA's broad mandate, there has not been a single entity responsible for developing multi-modal transit networks because urban transit and some bus routes have remained under HTA's ownership.
[21] The exact definition of the term is left to the discretion of State DOTs. However, FHWA has defined SOGR in the context of exercises. This definition is the following: 97% of Interstate pavement in Good or Fair Condition, 85% of Non-Interstate National Highway System (NHS) pavement in Good or Fair Condition and 75% of Non-Interstate Non-NHS pavement in Good or Fair Condition. Good Condition is, in turn, defined as having an International Roughness Index (IRI) score of less than 95 and Fair Condition is defined as having an IRI score of less than 120. FHWA exercise found online at: https://www.fhwa.dot.gov/asset/guidance/hif19006.pdf

this level of investment once in the past five years, in 2018.[22] Unmet targets are not due to lack of available funding, but are rather a result of HTA's struggle to successfully execute its backlog of projects.

There are signs, however, of progress. HTA recently developed a Performance Management Information System to support performance management metrics, with the most recent modules put online in December 2019. HTA also has established a separate dashboard that tracks project-level performance against budget. These measures, if adopted by each of the relevant transportation entities and implemented across the entire transportation sector, could enable significant progress in diagnosing project bottlenecks and prescribing needed improvements.

Recommendation C: Develop and use objective frameworks for project selection.

Puerto Rico needs a framework to compare investment decisions objectively and transparently across transportation modes and maximize investment impact on transportation goals. In recent years, HTA developed one such prioritization framework, which has only sparingly been applied to capital project selection. This type of framework could be adapted for use across the transportation sector, applied to all investment decisions, and tracked at the project level (see Appendix A).[23]

Peer governments have employed these approaches with great success. The SMART SCALE framework used in Virginia evaluates project proposals across all transportation modes by scoring them against six equally weighted factors: safety, congestion mitigation, accessibility, environmental impact, economic development, and efficient land use (see Appendix B for details). Metropolitan planning organizations, local governments, and local transit agencies can all propose projects, and the CTB is permitted to propose two projects directly. These projects are rank-ordered across the six factors and presented to the CTB, which then selects which projects to pursue. The results are publicly available on the Virginia Department of Transportation's website to increase transparency. Projects are then tracked and evaluated against these metrics on the project level.

The proposed Transportation Policy Board (see Recommendation B) could use a similar approach in project prioritization. With a sufficiently transparent and objective framework, transportation entities could score their projects and submit them to receive cursory approvals from the Board. A ranking of infrastructure projects by score could be made publicly available. After the completion of each major infrastructure investment, the framework could be revisited and enhanced to further improve outcomes and drive major goals of the transportation sector (e.g., economic development, sustainability, customer experience, financial performance).

[22] From 2014 – 2018 based on the HTA FY 2020 fiscal plan
[23] For purposes of implementation, the Governor could require the Secretary of Transportation through Executive Order to develop the framework and mandate its use by all entities under DTOP.

Recommendation D: Improve performance management through integration in public systems, performance-based contracts, and better supervision

At present, *públicos* and transportation network companies ("TNC") operate broadly across Puerto Rico to satisfy excess demand for transportation beyond that provided by the public sector. There is limited coordination, however, between these private operators and the public networks. Similarly, private contractors execute much of the Island's transportation construction without providing visibility into individual project performance. If managed well, the private sector can be a key partner in both operating transit systems and delivering capital projects efficiently and cost-effectively. The management of private sector players is critical for transportation agencies to ensure that they can maximize available funds and mitigate risks.[24]

Bogotá's TransMilenio project provides a successful example of the positive impact resulting from the integration of private operators into a public system. Through TransMilenio, Bogotá's transit agency integrated a large group of private bus operators into a streamlined bus rapid transit system. Prior to the TransMilenio integration, private bus operators competed to serve the most populous routes, leading to oversupply in the most populous routes and undersupply in others. San Juan and other cities in Puerto Rico could follow the example of Bogotá by integrating *públicos* into their bus network and supporting them with key infrastructure investments like rapid transit lanes and fare collection stations. Doing so would enable smarter, more centralized supply management and network planning. Like Bogotá, *público* operators could bid on major bus routes that would be serviced by higher-capacity vehicles. The current vehicles could continue to operate in less-populated routes and be phased out over time. Much like TransMilenio, infrastructure and regulation from the public sector could be used to organize private operators and encourage more investment in bus stations and higher-quality, higher-capacity vehicles, improving rider experience.

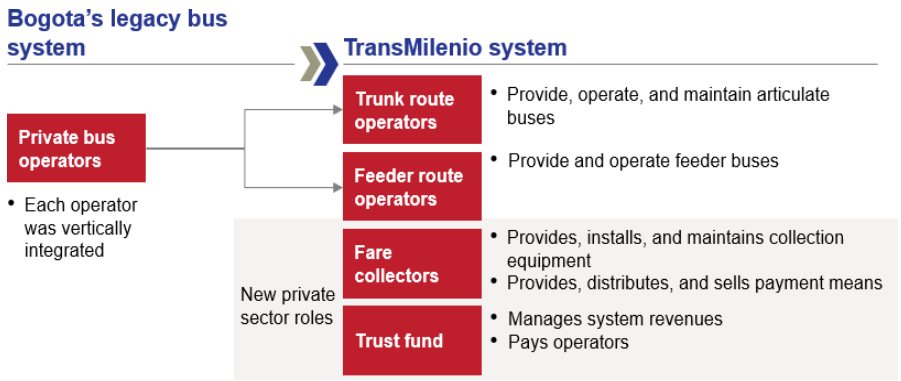


Figure 4: How private operators changed under Bogota's TransMilenio system

The Pennsylvania Department of Transportation's ("PennDOT") billion-dollar multi-asset bridge repair PPP contract offers additional lessons to Puerto Rico, providing an alternative example of hiring private vendors as contractors rather than integrating them into the public system. Puerto

[24] At present, the Acts governing PRITA and HTA provide for the implementation of this measure per P.R. Laws tit. 9, § 2004a.

Rico could experiment with PennDOT's framework by leveraging private consortia to handle repairs, construction, and maintenance in exchange for availability payments.[25] Contracts with multiple assets of the same class also reduce overhead costs through the standardization of processes, materials, and designs. This structure aligns incentives by paying contractors upon project execution, while insulating them from demand risk that might otherwise be a deterrence. For PennDOT, this approach resulted in an estimated 2-3 times faster project delivery than expected (4 years for the replacement of 558 bridges vs. the estimated 8-12 years), which, if leveraged in Puerto Rico, could provide a roadmap to reaching a state of good repair across the island's roads.

Recommendation E: Enhance effectiveness of governance by reforming entity boards of directors, where relevant, to include fewer political appointees and more subject-matter experts.

An effective, independent board of directors for each mode-specific transportation organization would ensure that the entity's funds are optimally used to improve system performance, asset condition, and user experience of each transportation mode. The HTA Fiscal Plan calls for reforming its board to include four experts from the private sector, but changes have yet to be made to the current board structure. Prompt implementation of these outlined measures will increase subject-matter expertise in the governance of HTA and further insulate the board from political pressures.

On PRITA's board, seven of the nine members are government-appointed, and five are sitting officials in other government entities. Increasing the proportion of independent board members with technical and industry management expertise can allow the agency to better leverage innovations from the private sector. DTOP, as a Constitutionally created Department, cannot have its own Board of Directors, but it could turn instead to a refined Advisory Board or newly-created Policy Board (see recommendation B) for similar guidance.[26]

Governance structures of other successful transportation agencies highlight the benefits of an independent, expertise-based board of directors:

- *North Texas Tollway Authority ("NTTA")* maintains a nine-member board, including eight independent officials (two each representing the four counties in the service area) and one governor-appointed member. The NTTA has constantly performed well, winning an award in 2020 from the International Bridge, Tunnel and Turnpike Association for its strategic refinancing plan, which has helped NTTA to navigate the COVID-19 pandemic while continuing to deliver on essential transportation projects.[27]

[25] A compensation structure where the concessionaire is paid based on set performance standards, often the availability of an asset being maintained or repaired.
[26] If the Government elects to create a distinct non-toll road entity within the purview of DTOP, then this new entity should have its own independent board aligned with these recommendations. Establishing or modifying independent boards will require legislation and/or amendments to current legislation in order to expand board membership requirements, set term limits, and define board functionsand responsibilities.
[27] https://www.ibtta.org/toll-excellence-awards

- *Metro de Santiago* maintains a seven-member board nominated by metro shareholders,[28] which includes two civil industrial engineers, two journalists, two commercial engineers, and one attorney. The metro averages 2.5 million passengers per working day (within the city's population of about 6 million) and has a positive net income margin of 27%—a notable achievement given that most transit networks only cover a fraction of their operating costs.[29]

- *Florida Department of Transportation* maintains a nine-member Florida Transportation Commission ("FTC"), appointed by the Governor and confirmed by the Senate to staggered four-year terms. The commissioners must have relevant experience in the private sector, are prohibited from involvement in day-to-day actions (e.g. project or route selection), and nominate candidates for Secretary of Transportation. This governance model is designed to provide accountability and expertise rather than set a sector-wide strategy. The FTC has governed the department as a technocracy with the aid of its Chief Engineering Officer, who determines many of the department's investments. The department was recognized by the Institute of Transportation Engineers in 2007 and 2018 for its work on Transportation Systems Management and Operations.[30]

IV. Challenge #3: Puerto Rico does not maximize its funding potential

The underlying challenge

Given the challenges faced by Puerto Rico's transportation sector, any significant transformation will require major investment to address the backlog of capital-spending priorities. To generate this type of investment, the Commonwealth will need to maximize investments in Puerto Rico's transportation sector by ensuring access to all available federal and private funding.

Puerto Rico's 3.1 million residents represent 1.0% of the United States population, and yet, Puerto Rico rarely sees a proportional amount of federal funding from large transportation-related grants programs. HTA, for instance, received zero new discretionary grants in FY 2020. If Puerto Rico received discretionary grants[31] proportional to its population, agencies would have an additional $1.5 billion available for strategically important, non-SOGR projects over the next 30 years.

Furthermore, Puerto Rico should consider opportunities to leverage private capital. While there are several examples of successful PPP projects, a transportation-focused strategy can invite additional private funding to this sector. Puerto Rico could also leverage private funding and non-

[28] The Metro is organized as a public limited company with the two shareholders being the Chilean treasury and a government organization dedicated to Chile's economic development
[29] Metro de Santiago's website, press clippings, World Bank Group 'The Operator's Story Appendix: Santiago's Story'
[30] https://www.ite.org/professional-and-career-development/awards/transportation-systems-management-operations-individual-and-project-organization/

[31] E.g., Capital Investment Grants, Better Utilizing Investments to Leverage Development (BUILD) grants, Infrastructure for Rebuilding America (INFRA) grants, Highways for Life (HfL) grants

toll sources of revenue through PPP deals and innovative vendor contract management by way of availability payments, equity-sharing functions, and more aggressive renewal negotiation.[32]

Recommendation F: Maximize the Commonwealth's funding envelope through a more aggressive federal grants strategy and by improving bankability to attract private capital.

Puerto Rico would benefit from a holistic strategy to maximize funding flowing into its transportation network. By establishing an island-wide federal funding strategy, attracting more private investment, and increasing ancillary revenue, Puerto Rico can improve the transportation sector's financial health and invest more in-service delivery to public transportation users. As outlined in HTA's Certified Fiscal Plan, in order to obtain Puerto Rico's proportional share of federal funds, transportation entities must have a proactive strategy to identify, apply for, and pursue additional discretionary federal funding. Hiring dedicated resources to manage transportation-related grant applications can maximize receipt of discretionary federal funding for the Commonwealth.[33]

On the other hand, PPPs can be an effective tool to attract private investment. Puerto Rico's PPP office is separate from other agencies and does not strategically steer funds toward targeted projects. Of the ten projects currently in the pipeline, representing at least $1 billion in investment, none impact transportation.[34] Greater coordination between transportation sector entities and the PPP authority can enhance the potential of private funds leveraged for transportation, specifically by identifying, developing, and structuring bankable projects. Puerto Rico could also create an in-house business development team with a mandate to make transportation deals, piloted successfully in Pennsylvania and Virginia's PPP offices. Such a team could develop better industry relationships and build in-house expertise, enabling them to improve transportation deal flow and negotiate better terms on the deals they execute. If Puerto Rico achieved the same amount of PPP investment per capita as Virginia, it would receive an influx of $3.7 billion in private investment.[35] While may be unrealistic to expect best-in-class performance immediately, even modest improvements would lead to substantial increases in private funding for new projects.

Puerto Rico should also systematically identify ancillary revenue opportunities for the public transportation system. The Florida Turnpike Authority and the North Texas Tollway Authority each bring in ancillary revenue equivalent to about 3-5% toll revenues. The NJTA is particularly successful in collecting non-toll revenue, and they regularly renegotiate with private operators

[32] To generate initial investment from vendors, it is sometimes necessary to provide attractive contract terms, but once there is proven financial return from being a vendor to the system, subsequent contracts should reflect that by being more friendly to the system through better revenue sharing or maintenance requirements.
[33] At present, the Center of Federal Opportunities (under the Office of Management and Budget) is tasked with providing technical assistance to the Government of Puerto Rico and its related agencies in order to obtain and maximize federal grants. This recommendation requires that the Center of Federal Opportunities fulfill its mandate by supporting transportation authorities to secure further public funding.
[34] https://aafaf.pr.gov/p3/projects/
[35] https://www.fhwa.dot.gov/ipd/PPP/defined/new_build_facilities/projects_new_build.aspx\
$10.2 B in new build PPP at 8.5 M people in Virginia is about $1200 per person. $1200 per person for 3.2 M people in Puerto Rico represents $3.8 B and Puerto Rico currently has $127 M in new build PPP projects/

(including toll collectors, gas stations, and service plazas) at the end of every contract. The NJTA successfully leverages the lucrative nature of these concession agreements to build performance incentives into contracts and pursue profit-sharing agreements between vendors and the agency. In 2019, non-toll revenues were equal to 15.5% of NJTA's toll revenues[36] and included cellular tower rentals, park-and-ride facilities, rent, towing fees, property sales, billboard commissions, video feed licensing, an Arts Center, and other investments, compared to 5% in Puerto Rico.[37] If Puerto Rico achieved a similar level of non-toll revenue, HTA would realize an incremental $12.7 million in annual revenues.[38] As with PPP funding, this best-in-class example should serve not as a specific target, but as an indication of what is possible.

V. Implementation of the Recommendations

A two-phased approach to achieving the transportation sector vision

Implementation of these recommendations should be considered as a phased approach. The first phase (recommendations A, B, and C) would aim to establish the optimal organizational structure, while the second phase (recommendations D, E, and F) would implement process changes within this structure. The first phase, therefore, creates the critical structural foundation upon which process and operational changes could be realized. Each recommendation should also be

[36] https://www.njta.com/media/5723/njta-2021-budget-in-brief.pdf
[37] https://www.njta.com/media/5731/2020-2021-revenue-certification.pdf; HTA FY2020 Fiscal Plan
[38] $121M in toll fares * 15.5% = $16.2M; $16.2M - $6M in "other income" = ~$10M

developed with its own clear goals and milestones. Figure 7 highlights a proposed set of milestones associated with each of these recommendation areas across the two phases.

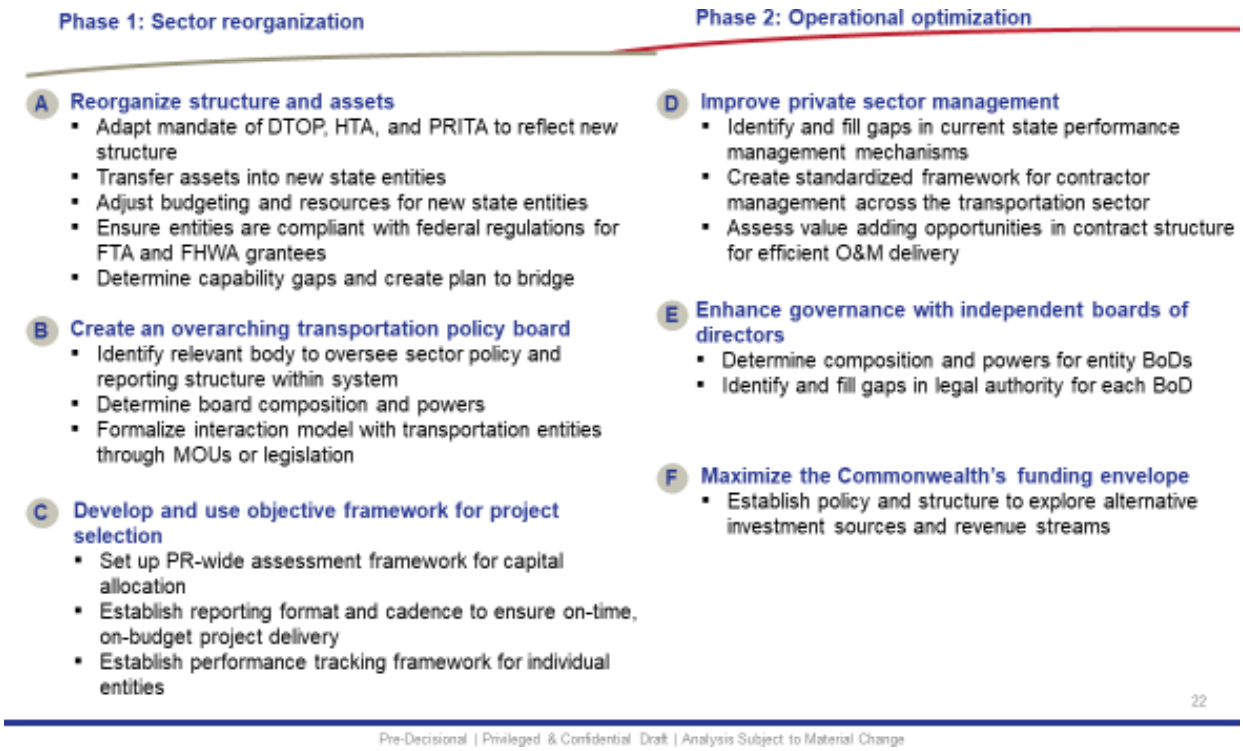


Figure 5: Proposed implementation phases and milestones

Tracking progress toward outcomes

By following this roadmap, Puerto Rico can support a transportation system that is safe, efficient, clean, and financially sustainable. In order to measure progress towards that future, the Commonwealth should develop a scorecard to track leading and lagging indicators of this transformation. See Appendix C for a scorecard template.

Improving the transportation system will be a gradual process that builds momentum over time. By ensuring that operating assets are used more efficiently and projects are delivered on time and on budget, Puerto Rico can recycle savings back into the system and augment the budget with additional private and public funds. Puerto Rico could add billions to its transportation budget by achieving higher levels of PPP investment, as demonstrated by other state governments. By indexing tolls to the CPI and finding ancillary revenues at a level commensurate with NJTA, HTA could further increase its budget. As trains and buses become faster and more reliable, they will witness increased ridership, creating an encouraging cycle of financial health and positive customer experiences. San Juan could save up to $400 million annually in lost productivity from congestion delays. These improvements will ultimately have an impact on every Puerto Rican, supporting shorter, more predictable commutes (whether by car, transit, foot, or bike); improved

road safety; and cleaner air. With key investments and dedicated management, Puerto Rico can build a safer, more sustainable, and more livable environment for its citizens.

The Oversight Board believes that the recommendations above articulate a vision for a Puerto Rican transportation sector that enhances safety, condition, performance, and sustainability. Implementation of the outlined recommendations and execution steps therein will result in a well-performing public transportation system that will ultimately catalyze economic growth for the people of Puerto Rico. The Oversight Board looks forward to the Government's response in developing a plan to implement the first phase of recommendations and beyond, including a set timeline for key milestones. In addition, it is anticipated that these recommendations will be included as measures in the Commonwealth's 2021 Fiscal Plan and associated budget for the Commonwealth.

The Oversight Board is dedicated to working alongside the Government and Legislature to facilitate transformation and financial stability for the public transportation sector and the people of Puerto Rico.

We look forward to your response to this letter within 90 days.

Sincerely,

Natalie A. Jaresko

CC: Mr. Omar Marrero Díaz
Ing. Rosana M. Aguilar Zapata
HTA Governing Board
PRITA Governing Board

Appendix A: HTA's current prioritization framework

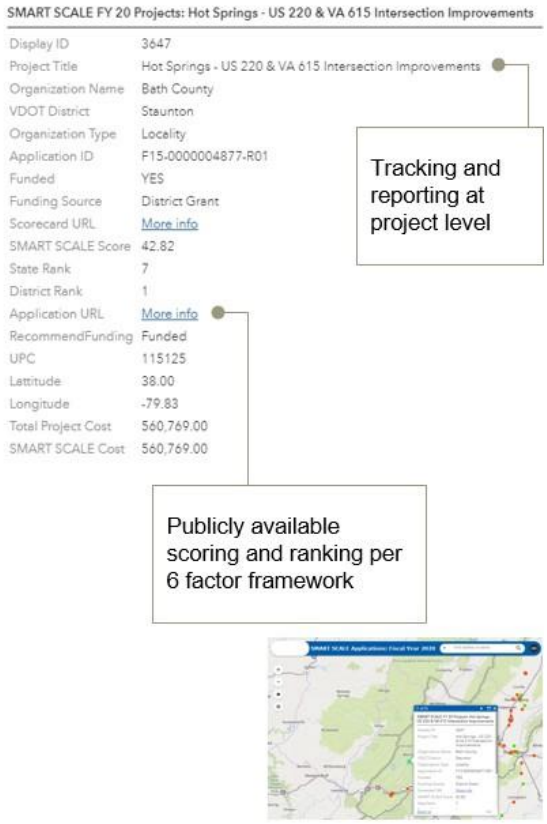
Decision Criteria	Long Range Transportation Plan (LRTP) Goal	Weight	Corresponding Objectives
Achieve a state of good repair	System Performance	30	▪ Improve/maintain condition of capital assets
Improve performance of most critical corridors	System Performance; Economic Vitality; Mobility and Accessibility	25	▪ Improve intersection performance, system bottlenecks, and transit ▪ Increase operational capacity in a cost effective manner ▪ Improve performance of freight and high travel corridors ▪ Prioritize the completion of projects which connect to ports and economic centers, and complete the island's strategic highway network
Resiliency, safety, and emergency response	System Performance; Environmental Sustainability	20	▪ Improve safety, resiliency, and emergency response ▪ Improve resiliency and emergency response ▪ Reduce reliance on motorized travel, promote energy efficiency, and incorporate "reduce, reuse, recycle", practices in delivering infrastructure
Promote alternative modes of travel	Environmental sustainability; Mobility and Accessibility	15	▪ Invest in redevelopment of urban centers to reduce need for motorized travel ▪ Improve coverage, capacity, and service of alternative modes of travel ▪ Improve modal connectivity (first mile/last mile) ▪ Improve coverage, capacity, and service of alternative modes of travel
Ensure cost effective-ness	Mobility and Accessibility	10	▪ Cost effectiveness assuming mobility benefits ▪ Provide mobility for transportation-disadvantaged populations

Appendix B: Details on Virginia's SMART SCALE framework

SMART SCALE 6 factor evaluation framework

Factors (equally weighted)	Measure	Measure weight, % of factor
Safety	Equivalent Property Damage Only rate of Fatal and Injury crashes	70%
	EPDO Rate of Fatal and injury crashes per VMT	30%
Congestion mitigation	Person throughput	50%
	Person hours of delay	50%
Accessibility	Access to jobs (total population)	60%
	Access to jobs (disadvantaged populations)	20%
	Access to multimodal choices	20%
Environmental quality	Air quality and energy environmental effect	100%
	Impact to natural and cultural resources	(*)
Economic development	Project support for economic development	60%
	Intermodal access and efficiency	20%
	Travel time reliability	20%
Transportation efficient land use	Transportation efficient land use	50%
	Increase in transportation efficient land use	50%

SMART SCALE Evaluation scorecard



Appendix C: An example outcome-based scorecard, with Puerto Rico's current performance compared to the US median

Objectives	Impact metrics	Current PR performance	US median performance
Performance & Condition	**Monetization of toll roads:** Toll revenue/lane mile of toll roads, $	$10	$6
	Transit revenue generation: Non-fare directly-generated funding as % of total	12.3	23.7
	Road condition: % of interstate pavement in poor condition	35	2
	Train system condition: # of failures per 1M revenue mile	373	55
Experience & Efficiency	**Driving experience**: Hours lost to congestion per person per year	58	54
Sustainability & Resilience	**Sustainable commuting options:** % sustainable mode share	22	27
	Road safety: Road fatalities, # per 100M VMT	2.1	1.1
	Air quality: Days with AQI > 100	19	4