

## **TERMS of REFERENCE**

### **Consulting on the establishment of an improvement plan for the PBR**

Trinidad and Tobago

TT-T1123

*Fast Pass: Scaling-Up Smart Technologies to Reduce Congestion and Improve Social Responsibility of Public Transportation*

#### **1. Background and Justification**

- 1.1** Trinidad and Tobago (T&T) is a twin-island Republic in the Caribbean Sea located on the northern edge of the South American mainland, just 11 kilometers (km) from Venezuela, and 130km south of Grenada. Trinidad, the southern and larger island, measures 4,828 square km, whilst the northern island, Tobago, is comprised of 300 square km. Its population is just approximately 1.4 million inhabitants<sup>1</sup>.
- 1.2** Trinidad and Tobago (T&T) is heavily dependent on roads for internal transportation on the islands, while ocean and air provide cross-country as well as inter-island connection. The concentration of administrative, financial, and commercial activity in Port of Spain (POS) – the capital of Trinidad and Tobago – means that a large number of road trips into and out of the city<sup>2</sup> occur on a daily basis as citizens travel from the housing areas in the suburbs and other towns/cities to access jobs, services, and shopping.
- 1.3** Within recent years, rising household incomes have made car ownership more accessible to a broader share of the population, more of whom traverse urban areas and their peripheries to access jobs, services, and shopping. For example, the concentration of administrative, financial, and commercial activity in Port-of-Spain (POS) results in many daily trips into and out of the city.
- 1.4** High motorization rates and low-quality transit have reduced public transport demand in Trinidad while cramping available road space. Following a trend that is not subsiding, there are over 500 vehicles per 1,000 inhabitants in the country. Congestion is perennial on key road corridors with long travel times and poor air quality. While the rapid rise in private vehicle ownership enhances citizens' mobility and convenience, it exacerbates the widespread congestion problem. The growth in the national fleet – up from 518,831 in 2010 to 786,202 in 2021 – has outpaced road capacity and improvements in public transportation, which has experienced a steady decline in patronage, decreasing by 26% between 1996 and 2005. As a result, private cars account for 88% of the national vehicle fleet in Trinidad, compared to just 56% on average for Latin America and the Caribbean region.

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<sup>1</sup> Trinidad and Tobago Central Statistics Office, Population, Social and Vital Statistics Division, 2016  
<https://www.planning.gov.tt/content/cso-tt%E2%80%99s-population-reaches-14-million-0>

<sup>2</sup> 250,000 vehicles entering POS daily ins 2021

- 1.5** On Trinidad's main corridors, most vehicles – 55% to 66% – have just one occupant, exacerbating congestion at peak travel hours in high-demand roads accessing POS, topping 285,000 vehicles per day. In response to the need to better manage scarce road space, the country is pursuing new policy directions and interventions - such as the roll out High Occupancy Vehicles (HOV) lanes - and seeks to complement this effort with congestion pricing legislation to curb congestion and increase revenue.
- 1.6** As one of the principal efforts to develop public transport system, the country has dedicated transit infrastructure in the form of a 29.4km Priority Bus Route (PBR) that goes from POS in the Northwest to Arima in the Northeast. However, the lack of designated bus stops, synchronized traffic lights, and active enforcement to prevent private cars from using the PBR has severely hindered the expected impact on public transport operational speed. Also, the National Traffic Management Center in POS has played a pivotal role in managing traffic issues like monitoring and administration of traffic signals, design and implementation of traffic management issues, emergency and accident analysis, collection of traffic data, etc. However, the Ministry of Works and Transport has developed plans to upgrade its capacity to meet future traffic management initiatives.
- 1.7** The country has also suffered major flooding and disruptions to the road network in November 2022 after long periods of sustained rainfall which triggered flooding in low-lying communities centered near rivers and swamp land<sup>3</sup>. Approximately 46% of lands classed as 'agricultural' were converted to housing settlements between 1984-2012 which has accounted for flooding in many areas due to rapid surface-run off<sup>4</sup>. In the event of extreme weather events, the disruption to transportation networks can pose a threat to economic activity and human safety. This underscores the need for sustainable and reliable infrastructure and proper urban development planning.
- 1.8** This project aims to add value to Trinidad and Tobago's transport infrastructure and services through application of innovative, harmonized technologies, policies and private sector enabled financial structures to improve efficiency, effectiveness and, thus, usage, of public transportation, as well as increase overall travel speeds during peak times. The project objective will be pursued through a three-pronged approach focused on: (i) improving the efficacy of the existing Priority Bus Route (PBR) by enhancing enforcement of usage restrictions and improving traffic management while reducing congestion by setting up a traffic management and monitoring center which can aid in the early detection of disruptive incidents; (ii) introducing Priority Vehicle Lanes (PVLs) for high occupancy vehicles, public transport service providers who can move a larger number of passengers, fuel-efficient vehicles on the highways as well as congestion charge zone as an effective measure for traffic mitigation in Trinidad and a multimodal transit hub to allow for the inter-connection between transport modes (PTSC, Maxi-taxis, taxis, and private vehicles). Access to PVLs may also be granted to other vehicle categories – single occupant vehicles, for example – for a demand-responsive fee during peak travel times; and (iii) organizing capacity building workshops and site visits for Trinidad's Government Officials to share Korea's experience and knowledge regarding related transportation innovation and smart technologies.

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<sup>3</sup> Flash flooding affects parts of north Trinidad after heavy rains, 2022 <https://tt.loopnews.com/content/traffic-alert-fallen-tree-wrightson-road-flash-flooding>

<sup>4</sup> Urgent action to minimize flood disruption – building resilience, 2023 <https://newsday.co.tt/2023/01/15/urgent-action-to-minimise-flood-disruption-building-resilience/>

## **2. Objectives**

**2.1** The overall objective of these terms of reference is to hire a firm/consultancy to propose solutions that will improve the efficiency and enforce usage restrictions of the Priority Bus Route by analyzing and identifying areas for improvement. The specific outputs include:

- (i) Evaluation of all public transportation stops – the location of public transportation stops have a big impact on a transit system's performance therefore the consultancy should consider the following in its evaluation:
  - a. Location away from urban, suburban, and rural communities along the entire 29.4KM stretch.
  - b. Accessibility and ease of access for all citizens, inclusive of those with disabilities.
  - c. Lighting, shelter and proper signage
  - d. Built to accommodate average number of passengers at peak hours
- (ii) Effectiveness of traffic lights (signal timings, phasing, turns and access points) – Investigating whether the location of the traffic signals along the PBR aid in improving overall traffic flow, assist with pedestrian safety by means of crossing signals, and prioritize the flow of public transportation.
- (iii) Enforcement of rules preventing private vehicle usage – Preventing and penalizing improper usage of the PBR can lead to reduced congestion levels and an overall better quality of service for public transportation users.
- (iv) Assessment of public satisfaction of the PBR in reducing travel time – Includes, but is not limited to:
  - a. Service frequency of public transportation vehicles
- (v) Provide recommendations on the implementation of proposed strategies.

## **3. Scope of Services**

**3.1** Consultants will meet the following service requirements for the successful development of the consultancy:

- (i) Comprehensive analysis of the PBR taking into consideration the following:
  - a. Traffic flows
  - b. Demand for public transportation
  - c. Public transportation stops (inclusive of location, accessibility, lighting, shelter, size, and proper signage)
- (ii) Analysis of the current traffic light signals on the PBR and access points to the PBR. This includes, but is not limited to, the following:
  - a. Ensure that the timings of the signal improve traffic flow on the PBR
  - b. Ensure that the signals (traffic and crossing) are consistent and obvious to motorists and pedestrians to reduce accidents
- (iii) Propose ways to prevent the illegal use of the PBR by unauthorized public vehicles. This includes, but is not limited to, the following:
  - a. License plate recognition to identify and track private vehicles on the PBR
  - b. Toll systems that will charge private vehicles for the usage of the PBR
  - c. Software to classify vehicles entering the PBR in order to measure private vehicle usage
  - d. Increased presence of traffic wardens along the PBR to enforce against illegal use

- (iv) Proposal of any other technological solutions that can assist with transit scheduling and improving efficiency of the PBR
- (v) Provide detailed recommendations for all strategies identified
- (vi) Training and support for all key stakeholders

#### **4. Key Activities**

**4.1** The Consultant shall perform the following tasks as part of achieving the objectives of the contract, without detriment to those other tasks that in his/her judgment and experience is considered relevant to achieving those objectives.

**4.1.1. Review and Analysis (Phase I).** The firm must analyze all aspects defined in the scope and any relevant reports related to the PBR. The following information should also be reviewed: population surveys, GHG emissions and air pollution data, road accidents statistics, among other relevant documents. The firm must also liaise with the MoWT and other governing bodies to understand the history and previous work carried out with respect to the PBR. The consultants must conduct interview (videoconference or face-to-face) with the relevant staff from the transport sector, and other sectors such as – planning, security, finance, etc.). The coordination of these activities will be between the firm and the local team. The activities include:

- (i) Developing detailed reports on the current state of the PBR
- (ii) Providing recommendations for improving the efficiency of the PBR (inclusive of cost estimates and guidance and support for implementation of selected strategies
- (iii) Developing a SWOT analysis

**4.1.2. Presentation of Results and Recommendations (Phase II).** The firm will present findings to all key stakeholders. Support and guidance for the selected strategies (inclusive of relevant training and capacity building. The activities include:

- (i) Presenting the findings
- (ii) Training activities
- (iii) Capacity Building

## 5. Project Schedule, Deliverables, and Milestones

**5.1** The Consultant shall consider the following products to be developed in the mentioned timeframe (estimated contract start date in December 2023):

| <b>Products/milestones</b>   | <b>Timeframe<sup>5</sup></b> |
|--|------------------------------|
| <b>Product 1. Review and Analysis</b>  | <b>9 months</b>              |
| (i) Detailed reports on the current state of the PBR<br>(ii) Recommendations for improving the efficiency of the PBR (inclusive of cost estimates and guidance and support for implementation of selected strategies)<br>(iii) SWOT Analysis |                              |
| <b>Product 2: Presentation of Results and Recommendations</b>  | <b>3 months</b>              |
| (i) Presentation of findings<br>(ii) Training<br>(iii) Capacity building   |                              |
| <b>Total</b>   | <b>12 months</b>             |

## 6. Reporting Requirements

**6.1** Key project deliverables and milestones must be delivered or executed on the dates proposed by the consultant in the work plan. Any changes to the project schedule must have the express approval of the executing agency, Beneficiary country and the IDB.

**6.2** The consultant shall maintain close coordination and communication with the Beneficiary regarding the execution of activities and events for dissemination.

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<sup>5</sup> Time counted from the signature date of the contract.

## 7. Qualification Requirements

**7.1** The firm interested in developing the solution proposed in these Terms of Reference must comply with the profile detailed below:

- (i) Education: Civil, industrial, or environmental engineer, architect, or any other related careers.
- (ii) Experience: Professional in engineering or architecture with a master's degree or equivalent experience. Must have a minimum of 10 years of professional experience in infrastructure development and especially development of transit corridors.
- (iii) Language: English
- (iv) Competencies:
  - a. Ability to analyze problems related to transit corridors
  - b. Diagnose problems and propose reliable solutions
  - c. Ability to prepare reports and visualizations
  - d. Project management
  - e. Budget management

## 8. Acceptance Criteria

**8.1** All deliverables must be submitted to the English, using electronic files compatible with MS Office formats.

**8.2** For the final version of the reports, the Consultant shall consider and address all the comments received from the key stakeholders.

## 9. Schedule of Payments

**9.1** Payment terms will be based on project milestones or deliverables. The IDB does not expect to make advance payments under consulting contracts, given that most of the work should be conducted remotely, due to the ongoing COVID-19 pandemic.

| Payment Schedule          |          |
|---------------------------|----------|
| <i><b>Deliverable</b></i> | <b>%</b> |
| Product 1                 | 70%      |
| Product 2                 | 30%      |
| <b>TOTAL</b>              | 100%     |

## **TERMS of REFERENCE**

### **Consulting on electronic ticketing and traffic enforcement**

Trinidad and Tobago

TT-T1123

*Fast Pass: Scaling-Up Smart Technologies to Reduce Congestion and Improve Social Responsibility of Public Transportation*

#### **1. Background and Justification**

- 1.1. Trinidad and Tobago (T&T) is a twin-island Republic in the Caribbean Sea located on the northern edge of the South American mainland, just 11 kilometers (km) from Venezuela, and 130km south of Grenada. Trinidad, the southern and larger island, measures 4,828 square km, whilst the northern island, Tobago, is comprised of 300 square km. Its population is just approximately 1.4 million inhabitants<sup>6</sup>.
- 1.2. Trinidad and Tobago (T&T) is heavily dependent on roads for internal transportation on the islands, while ocean and air provide cross-country as well as inter-island connection. The concentration of administrative, financial, and commercial activity in Port of Spain (POS) – the capital of Trinidad and Tobago – means that a large number of road trips into and out of the city<sup>7</sup> occur on a daily basis as citizens travel from the housing areas in the suburbs and other towns/cities to access jobs, services, and shopping.
- 1.3. Within recent years, rising household incomes have made car ownership more accessible to a broader share of the population, more of whom traverse urban areas and their peripheries to access jobs, services, and shopping. For example, the concentration of administrative, financial, and commercial activity in Port-of-Spain (POS) results in many daily trips into and out of the city.
- 1.4. High motorization rates and low-quality transit have reduced public transport demand in Trinidad while cramping available road space. Following a trend that is not subsiding, there are over 500 vehicles per 1,000 inhabitants in the country. Congestion is perennial on key road corridors with long travel times and poor air quality. While the rapid rise in private vehicle ownership enhances citizens' mobility and convenience, it exacerbates the widespread congestion problem. The growth in the national fleet – up from 518,831 in 2010 to 786,202 in 2021 – has outpaced road capacity and improvements in public transportation, which has experienced a steady decline in patronage, decreasing by 26% between 1996 and 2005. As a result, private cars account for 88% of the national vehicle fleet in Trinidad, compared to just 56% on average for Latin America and the Caribbean region.

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<sup>7</sup> 250,000 vehicles entering POS daily ins 2021

- 1.5. On Trinidad's main corridors, most vehicles – 55% to 66% – have just one occupant, exacerbating congestion at peak travel hours in high-demand roads accessing POS, topping 285,000 vehicles per day. In response to the need to better manage scarce road space, the country is pursuing new policy directions and interventions - such as the roll out High Occupancy Vehicles (HOV) lanes - and seeks to complement this effort with congestion pricing legislation to curb congestion and increase revenue.
- 1.6. As one of the principal efforts to develop public transport system, the country has dedicated transit infrastructure in the form of a 29.4km Priority Bus Route (PBR) that goes from POS in the Northwest to Arima in the Northeast. However, the lack of designated bus stops, synchronized traffic lights, and active enforcement to prevent private cars from using the PBR has severely hindered the expected impact on public transport operational speed. Also, the National Traffic Management Center in POS has played a pivotal role in managing traffic issues like monitoring and administration of traffic signals, design and implementation of traffic management issues, emergency and accident analysis, collection of traffic data, etc. However, the Ministry of Works and Transport has developed plans to upgrade its capacity to meet future traffic management initiatives.
- 1.7. The country has also suffered major flooding and disruptions to the road network in November 2022 after long periods of sustained rainfall which triggered flooding in low-lying communities centered near rivers and swamp land<sup>8</sup>. Approximately 46% of lands classed as 'agricultural' were converted to housing settlements between 1984-2012 which has accounted for flooding in many areas due to rapid surface-run off<sup>9</sup>. In the event of extreme weather events, the disruption to transportation networks can pose a threat to economic activity and human safety. This underscores the need for sustainable and reliable infrastructure and proper urban development planning.
- 1.8. This project aims to add value to Trinidad and Tobago's transport infrastructure and services through application of innovative, harmonized technologies, policies and private sector enabled financial structures to improve efficiency, effectiveness and, thus, usage, of public transportation, as well as increase overall travel speeds during peak times. The project objective will be pursued through a three-pronged approach focused on: (i) improving the efficacy of the existing Priority Bus Route (PBR) by enhancing enforcement of usage restrictions and improving traffic management while reducing congestion by setting up a traffic management and monitoring center which can aid in the early detection of disruptive incidents; (ii) introducing Priority Vehicle Lanes (PVLs) for high occupancy vehicles, public transport service providers who can move a larger number of passengers, fuel-efficient vehicles on the highways as well as congestion charge zone as an effective measure for traffic mitigation in Trinidad and a multimodal transit hub to allow for the inter-connection between transport modes (PTSC, Maxi-taxis, taxis, and private vehicles). Access to PVLs may also be granted to other vehicle categories – single occupant vehicles, for example – for a demand-responsive fee during peak travel times; and (iii) organizing capacity building workshops and site visits for Trinidad's Government Officials to share Korea's experience and knowledge regarding related transportation innovation and smart technologies.

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<sup>8</sup> Flash flooding affects parts of north Trinidad after heavy rains, 2022 <https://tt.loopnews.com/content/traffic-alert-fallen-tree-wrightson-road-flash-flooding>

<sup>9</sup> Urgent action to minimize flood disruption – building resilience, 2023 <https://newsday.co.tt/2023/01/15/urgent-action-to-minimise-flood-disruption-building-resilience/>





## **2. Objectives**

**2.1.** The overall objective of this consultancy is to develop a robust regulatory framework and provide coordination support to implement electronic enforcement in Trinidad and Tobago. The outputs to include a set of strategies, tools, public policies and legislative instructions shall address the following specific objectives:

- (i) Improve the overall quality of service for all road users through enhanced safety.
- (ii) Facilitate enforceability of the Road Traffic Act by supporting the drafting/finalization of electronic enforcement regulation.
- (iii) Increase enforcement actions to reduce traffic related incidents.
- (iv) Modernization of enforcement mechanisms

## **3. Scope of Services**

**3.1.** This Terms of Reference will be used to select and hire a Consultant for building an enabling environment for the modernization of road transport safety and security. The scope of the services includes but is not limited to: Comprehensive analysis of the PBR taking into consideration the following:

- (i) Shaping of the policy and legal framework to promote electronic traffic enforcement
- (ii) Reform of measures to ensure effectiveness of enforcement
- (iii) Development of enforcement mechanism building on existing and planned infrastructure

## **4. Key Activities**

**4.1.** The firm/individual shall perform the following tasks as part of achieving the objectives of the contract, without detriment to those other tasks that in their judgment and experience the team considers relevant to achieving those objectives.

**4.2.** More specifically, the Consultant will:

- (i) Review draft regulations, coordinate the review process within the MOWT and prepare drafting instructions for the necessary updates to regulations to make electronic enforcement enforceable.
- (ii) Document and propose improvements to the current information and financial flows associated with traffic ticket issuance, payments and adjudication to improve the efficacy of traffic tickets as an enforcement measure to influence road user behavior, such as preventing renewal of driver's licenses, fitness certification or motor vehicle registration with unpaid traffic tickets, making it easier for police to check if a driver has outstanding tickets.
- (iii) Conduct a needs assessment to identify gaps in legal and regulatory framework, evaluate institutional readiness and technical capacity within the Government of Trinidad and Tobago, and identify physical/technological infrastructure investments required to effectively implement electronic enforcement.
- (iv) Propose an institutional arrangement (and draft MoU) for the entities involved in implementing electronic enforcement, including the Ministry of Justice, and identify opportunities to build on existing Government modernization initiatives, such as accessing data feed from existing and soon-to-be implemented cameras for the security strengthening efforts, and integration of the related systems.

## 5. Project Schedule, Deliverables, and Milestones

- 5.1. The Consultant shall consider the following products to be developed in the mentioned timeframe:

| Products/milestones   | Timeframe <sup>10</sup> |
|---|-------------------------|
| Product 1. Review of existing information                         | 1 month                 |
| Product 2: Public policies and legislation governing road traffic | 3 months                |
| Product 3: Enforcement Mechanisms                                 | 9 months                |
| Product 4: Final Report   | 12 months               |

## 6. Reporting Requirements

- 6.1. Key project deliverables and milestones must be delivered or executed on the dates proposed by the consultant in the work plan. Any changes to the project schedule must have the express approval of the executing agency, Beneficiary country and the IDB.
- 6.2. The consultant shall maintain close coordination and communication with the Beneficiary regarding the execution of activities and events for dissemination.

## 7. Acceptance Criteria

- 7.1. All deliverables must be submitted to the English, using electronic files compatible with MS Office formats.
- 7.2. For the final version of the reports, the Consultant shall consider and address all the comments received from the key stakeholders.

## 8. Qualification Requirements

- 8.1. The consultancy will require the service of a team of experts with skills and experience in urban/public transport policy analysis and development, urban planning/project preparation and public administration. The Consultant needs to comply, at least, with the following key technical personnel:
- (i) A project manager: The Project Manager shall have specific experience in working with transport policy and legislation in developing countries. Master's degree in Economics, Urban Transport, Civil Engineering, City Planning or related fields with a related professional experience of at least 10 years and at least five years related experience in developing countries.
  - (ii) A specialist in intelligent transport systems: University degree in Engineering or related disciplines with at least Master's degree in assessment and design of

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<sup>10</sup> Time counted from the signature date of the contract.

intelligent transport systems, and with at least 10 years of practice experience and must have served in similar capacity in at least 2 assignments of similar nature.

## 9. Supervision and Reporting

- 9.1. The IDB Transport Division will be responsible for the supervision of this contract. The MOWT will also review the respective contract products prior to payment for these products are made. IDB is responsible for making payments once Government of Trinidad and Tobago approval has been granted.

## 10. Schedule of Payments

- 10.1. Payment terms will be based on project milestones or deliverables. The IDB does not expect to make advance payments under consulting contracts.

| <b>Payment Schedule</b>   |          |
|---------------------------|----------|
| <b><i>Deliverable</i></b> | <b>%</b> |
| Product 1                 | 20%      |
| Product 2                 | 30%      |
| Product 3                 | 30%      |
| Product 4                 | 20%      |
| <b>TOTAL</b>              | 100%     |

## **TERMS of REFERENCE**

### **Consultancy for the Design of Multimodal Transit Hubs**

Trinidad and Tobago

TT-T1123

*Fast Pass: Scaling-Up Smart Technologies to Reduce Congestion and Improve Social Responsibility of Public Transportation*

#### **1. Background and Justification**

- 1.1** Trinidad and Tobago (T&T) is a twin-island Republic in the Caribbean Sea located on the northern edge of the South American mainland, just 11 kilometers (km) from Venezuela, and 130km south of Grenada. Trinidad, the southern and larger island, measures 4,828 square km, whilst the northern island, Tobago, is comprised of 300 square km. Its population is just approximately 1.4 million inhabitants<sup>11</sup>.
- 1.2** Trinidad and Tobago (T&T) is heavily dependent on roads for internal transportation on the islands, while ocean and air provide cross-country as well as inter-island connection. The concentration of administrative, financial, and commercial activity in Port of Spain (POS) – the capital of Trinidad and Tobago – means that a large number of road trips into and out of the city<sup>12</sup> occur on a daily basis as citizens travel from the housing areas in the suburbs and other towns/cities to access jobs, services, and shopping.
- 1.3** Within recent years, rising household incomes have made car ownership more accessible to a broader share of the population, more of whom traverse urban areas and their peripheries to access jobs, services, and shopping. For example, the concentration of administrative, financial, and commercial activity in Port-of-Spain (POS) results in many daily trips into and out of the city.
- 1.4** High motorization rates and low-quality transit have reduced public transport demand in Trinidad while cramping available road space. Following a trend that is not subsiding, there are over 500 vehicles per 1,000 inhabitants in the country. Congestion is perennial on key road corridors with long travel times and poor air quality. While the rapid rise in private vehicle ownership enhances citizens' mobility and convenience, it exacerbates the widespread congestion problem. The growth in the national fleet – up from 518,831 in 2010 to 786,202 in 2021 – has outpaced road capacity and improvements in public transportation, which has experienced a steady decline in patronage, decreasing by 26% between 1996 and 2005. As a result, private cars account for 88% of the national vehicle fleet in Trinidad, compared to just 56% on average for Latin America and the Caribbean region.

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<sup>11</sup> Trinidad and Tobago Central Statistics Office, Population, Social and Vital Statistics Division, 2016 <https://www.planning.gov.tt/content/cso-tt%E2%80%99s-population-reaches-14-million-0>

<sup>12</sup> 250,000 vehicles entering POS daily ins 2021

- 1.5** On Trinidad's main corridors, most vehicles – 55% to 66% – have just one occupant, exacerbating congestion at peak travel hours in high-demand roads accessing POS, topping 285,000 vehicles per day. In response to the need to better manage scarce road space, the country is pursuing new policy directions and interventions - such as the roll out High Occupancy Vehicles (HOV) lanes - and seeks to complement this effort with congestion pricing legislation to curb congestion and increase revenue.
- 1.6** As one of the principal efforts to develop public transport system, the country has dedicated transit infrastructure in the form of a 29.4km Priority Bus Route (PBR) that goes from POS in the Northwest to Arima in the Northeast. However, the lack of designated bus stops, synchronized traffic lights, and active enforcement to prevent private cars from using the PBR has severely hindered the expected impact on public transport operational speed. Also, the National Traffic Management Center in POS has played a pivotal role in managing traffic issues like monitoring and administration of traffic signals, design and implementation of traffic management issues, emergency and accident analysis, collection of traffic data, etc. However, the Ministry of Works and Transport has developed plans to upgrade its capacity to meet future traffic management initiatives.
- 1.7** The country has also suffered major flooding and disruptions to the road network in November 2022 after long periods of sustained rainfall which triggered flooding in low-lying communities centered near rivers and swamp land. Approximately 46% of lands classed as 'agricultural' were converted to housing settlements between 1984-2012 which has accounted for flooding in many areas due to rapid surface-run off. In the event of extreme weather events, the disruption to transportation networks can pose a threat to economic activity and human safety. This underscores the need for sustainable and reliable infrastructure and proper urban development planning.
- 1.8** This project aims to add value to Trinidad and Tobago's transport infrastructure and services through application of innovative, harmonized technologies, policies and private sector enabled financial structures to improve efficiency, effectiveness and, thus, usage, of public transportation, as well as increase overall travel speeds during peak times. The project objective will be pursued through a three-pronged approach focused on: (i) improving the efficacy of the existing Priority Bus Route (PBR) by enhancing enforcement of usage restrictions and improving traffic management while reducing congestion by setting up a traffic management and monitoring center which can aid in the early detection of disruptive incidents; (ii) introducing Priority Vehicle Lanes (PVLs) for high occupancy vehicles, public transport service providers who can move a larger number of passengers, fuel-efficient vehicles on the highways as well as congestion charge zone as an effective measure for traffic mitigation in Trinidad and a multimodal transit hub to allow for the inter-connection between transport modes (PTSC, Maxi-taxis, taxis, and private vehicles). Access to PVLs may also be granted to other vehicle categories – single occupant vehicles, for example – for a demand-responsive fee during peak travel times; and (iii) organizing capacity building workshops and site visits for Trinidad's Government Officials to share Korea's experience and knowledge regarding related transportation innovation and smart technologies.

## **2. Objectives**

- 2.1** The overall objective of these terms of reference is to hire a firm/consultancy to advance the development of multimodal transit infrastructure to allow for the inter-connection between transport modes. The specific outputs include:

- (i) Pre-investment studies required to develop multimodal transit hubs in different locations, including Arima, that allow for the inter-connection of PTSC buses, Maxi-taxi, taxi, and pedestrians and non-motorized vehicles, among others.

### 3. Scope of Services

**3.1** This Terms of Reference will be used to select and hire a Consultant for developing all the required pre-investment studies to develop multimodal transit infrastructure in T&T. The scope of the services includes but is not limited to:

- (i) Improving inter-connection between different transport modes, including PTSC, Maxi-taxi, taxi, and non-motorized transport such as bicycle and walking.

### 4. Key Activities

**4.1** The Consultant shall perform the following tasks as part of achieving the objectives of the contract, without detriment to those other tasks that in his/her judgment and experience is considered relevant to achieving those objectives.

#### **4.1.1. Developing all required pre-investment studies to develop multimodal transit hubs in different locations**

- (i) Analyzing the existing conditions, including location, traffic flows and transport services, among others.
- (ii) Developing the project concept design
- (iii) Developing economic studies, including capital and operating costs estimations, and benefit-cost analysis.
- (iv) Developing engineering studies

### 5. Project Schedule, Deliverables, and Milestones

**5.1** The Consultant shall consider the following products to be developed in the mentioned timeframe (estimated contract start date in December 2023):

| Products  | Timeframe <sup>13</sup> |
|---|-------------------------|
| Product 1: Initial report                               | 4 months                |
| Product 2: Multimodal transit hub pre-feasibility study | 8 months                |

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<sup>13</sup> Time counting since signature of the contract

## 6. Reporting Requirements

- 6.1** Key project deliverables and milestones must be delivered or executed on the dates proposed by the consultant in the work plan. Any changes to the project schedule must have the express approval of the executing agency, Beneficiary country and the IDB.
- 6.2** The consultant shall maintain close coordination and communication with the Beneficiary regarding the execution of activities and events for dissemination.

## 7. Qualification Requirements

- 7.1** The firm interested in developing the solution proposed in these Terms of Reference must comply with the profile detailed below:
- (i) Education: Civil or industrial engineer, architect, or any other related careers.
  - (ii) Experience: Professional in engineering or architecture with a master's degree or equivalent experience. Must have a minimum of 10 years of professional experience in infrastructure development, especially developing multimodal transit infrastructure.
  - (iii) Language: English

## 8. Acceptance Criteria

- 8.1** All deliverables must be submitted to the English, using electronic files compatible with MS Office formats.
- 8.2** For the final version of the reports, the Consultant shall consider and address all the comments received from the key stakeholders.

## 9. Schedule of Payments

- 9.1** Payment terms will be based on project milestones or deliverables. The IDB does not expect to make advance payments under consulting contracts, given that most of the work should be conducted remotely, due to the ongoing COVID-19 pandemic.

| Payment Schedule          |             |
|---------------------------|-------------|
| <i><b>Deliverable</b></i> | <b>%</b>    |
| Product 1                 | 20%         |
| Product 2                 | 80%         |
| <b>TOTAL</b>              | <b>100%</b> |



## **TERMS of REFERENCE**

### **Consulting for the development of a Traffic Management Control Center**

Trinidad and Tobago

TT-T1123

*Fast Pass: Scaling-Up Smart Technologies to Reduce Congestion and Improve Social Responsibility of Public Transportation*

#### **1. Background and Justification**

- 1.1** Trinidad and Tobago (T&T) is a twin-island Republic in the Caribbean Sea located on the northern edge of the South American mainland, just 11 kilometers (km) from Venezuela, and 130km south of Grenada. Trinidad, the southern and larger island, measures 4,828 square km, whilst the northern island, Tobago, is comprised of 300 square km. Its population is just approximately 1.4 million inhabitants<sup>14</sup>.
- 1.2** Trinidad and Tobago (T&T) is heavily dependent on roads for internal transportation on the islands, while ocean and air provide cross-country as well as inter-island connection. The concentration of administrative, financial, and commercial activity in Port of Spain (POS) – the capital of Trinidad and Tobago – means that a large number of road trips into and out of the city<sup>15</sup> occur on a daily basis as citizens travel from the housing areas in the suburbs and other towns/cities to access jobs, services, and shopping.
- 1.3** Within recent years, rising household incomes have made car ownership more accessible to a broader share of the population, more of whom traverse urban areas and their peripheries to access jobs, services, and shopping. For example, the concentration of administrative, financial, and commercial activity in Port-of-Spain (POS) results in many daily trips into and out of the city.
- 1.4** High motorization rates and low-quality transit have reduced public transport demand in Trinidad while cramping available road space. Following a trend that is not subsiding, there are over 500 vehicles per 1,000 inhabitants in the country. Congestion is perennial on key road corridors with long travel times and poor air quality. While the rapid rise in private vehicle ownership enhances citizens' mobility and convenience, it exacerbates the widespread congestion problem. The growth in the national fleet – up from 518,831 in 2010 to 786,202 in 2021 – has outpaced road capacity and improvements in public transportation, which has experienced a steady decline in patronage, decreasing by 26% between 1996 and 2005. As a result, private cars account for 88% of the national vehicle fleet in Trinidad, compared to just 56% on average for Latin America and the Caribbean region.
- 1.5** On Trinidad's main corridors, most vehicles – 55% to 66% – have just one occupant, exacerbating congestion at peak travel hours in high-demand roads accessing POS, topping 285,000 vehicles per day. In response to the need to better manage scarce road space, the

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<sup>14</sup> Trinidad and Tobago Central Statistics Office, Population, Social and Vital Statistics Division, 2016 <https://www.planning.gov.tt/content/cso-tt%E2%80%99s-population-reaches-14-million-0>

<sup>15</sup> 250,000 vehicles entering POS daily ins 2021

country is pursuing new policy directions and interventions - such as the roll out High Occupancy Vehicles (HOV) lanes - and seeks to complement this effort with congestion pricing legislation to curb congestion and increase revenue.

- 1.6 As one of the principal efforts to develop public transport system, the country has dedicated transit infrastructure in the form of a 29.4km Priority Bus Route (PBR) that goes from POS in the Northwest to Arima in the Northeast. However, the lack of designated bus stops, synchronized traffic lights, and active enforcement to prevent private cars from using the PBR has severely hindered the expected impact on public transport operational speed. Also, the National Traffic Management Center in POS has played a pivotal role in managing traffic issues like monitoring and administration of traffic signals, design and implementation of traffic management issues, emergency and accident analysis, collection of traffic data, etc. However, the Ministry of Works and Transport has developed plans to upgrade its capacity to meet future traffic management initiatives.
- 1.7 The country has also suffered major flooding and disruptions to the road network in November 2022 after long periods of sustained rainfall which triggered flooding in low-lying communities centered near rivers and swamp land<sup>16</sup>. Approximately 46% of lands classed as 'agricultural' were converted to housing settlements between 1984-2012 which has accounted for flooding in many areas due to rapid surface-run off<sup>17</sup>. In the event of extreme weather events, the disruption to transportation networks can pose a threat to economic activity and human safety. This underscores the need for sustainable and reliable infrastructure and proper urban development planning.
- 1.8 This project aims to add value to Trinidad and Tobago's transport infrastructure and services through application of innovative, harmonized technologies, policies and private sector enabled financial structures to improve efficiency, effectiveness and, thus, usage, of public transportation, as well as increase overall travel speeds during peak times. The project objective will be pursued through a three-pronged approach focused on: (i) improving the efficacy of the existing Priority Bus Route (PBR) by enhancing enforcement of usage restrictions and improving traffic management while reducing congestion by setting up a traffic management and monitoring center which can aid in the early detection of disruptive incidents; (ii) introducing Priority Vehicle Lanes (PVLs) for high occupancy vehicles, public transport service providers who can move a larger number of passengers, fuel-efficient vehicles on the highways as well as congestion charge zone as an effective measure for traffic mitigation in Trinidad and a multimodal transit hub to allow for the inter-connection between transport modes (PTSC, Maxi-taxis, taxis, and private vehicles). Access to PVLs may also be granted to other vehicle categories – single occupant vehicles, for example – for a demand-responsive fee during peak travel times; and (iii) organizing capacity building workshops and site visits for Trinidad's Government Officials to share Korea's experience and knowledge regarding related transportation innovation and smart technologies.

## 2. Objectives

- 2.1 The overall objective of these terms of reference is to hire a firm/consultancy to develop a plan for the overall implementation of a centralized Traffic Monitoring Center which will

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<sup>16</sup> Flash flooding affects parts of north Trinidad after heavy rains, 2022 <https://tt.loopnews.com/content/traffic-alert-fallen-tree-wrightson-road-flash-flooding>

<sup>17</sup> Urgent action to minimize flood disruption – building resilience, 2023 <https://newsday.co.tt/2023/01/15/urgent-action-to-minimise-flood-disruption-building-resilience/>

reduce congestion and improve the overall performance of the road network. This will be done via a series of steps that include, but is not limited to, the following:

- (i) Conduct a comprehensive overview of the current National Traffic Management Center (NTMC) which operates under the Traffic Management Branch of the Ministry of Works and Transport.
- (ii) Propose a design for an improved Center that includes all software and hardware requirements.
- (iii) Provide a roadmap for successful implementation and continuation (inclusive of all cost analyses and risk assessments)
- (iv) Case study of a successful implementation of a Traffic Monitoring Center
- (v) Merge with existing datasets that the NTMC currently uses.

### **3. Scope of Services**

**3.1** Consultants will meet the following service requirements for the successful development of the consultancy:

- (i) Comprehensive analysis of the current NTMC taking into consideration the following:
  - a. traffic flows
  - b. road Infrastructure
  - c. incident detection
  - d. operations
  - e. maintenance
  - f. coordination with other state agencies (police and ambulance services)
- (ii) Propose technology solutions that will be used in the Traffic Center
- (iii) Propose data management techniques for the various data sources that are found in a Traffic Center
- (iv) Methods for collecting and processing real-time traffic data
- (v) Data analysis to identify congestion patterns, accident zones, and peak hours to provide relevant authorities with data-driven insights to support national transportation plans and policies
- (vi) Predictive modeling to forecast future traffic conditions
- (vii) Proper management of incidents by quickly assessing and responding in order to minimize delays.
- (viii) Coordination between other state agencies such as police and ambulance services for quicker incident control
- (ix) Monitor and respond to bottlenecks by controlling signal timings
- (x) Create an active social media presence to disseminate information quickly to the public regarding accidents, traffic updates, and road closures
- (xi) Provide detailed recommendations for all strategies identified
- (xii) Training and support for all key stakeholders

## **4. Key Activities**

**4.1** The Consultant shall perform the following tasks as part of achieving the objectives of the contract, without detriment to those other tasks that in his/her judgment and experience is considered relevant to achieving those objectives.

**4.2 Review and Analysis (Phase I).** The firm must analyze all aspects defined in the scope and any relevant reports related to the PBR. The following information should also be reviewed: population surveys, GHG emissions and air pollution data, road accidents statistics, among other relevant documents. The firm must also liaise with the MoWT and other governing bodies to understand the history and previous work carried out with respect to the PBR. The consultants must conduct interview (videoconference or face-to-face) with the relevant staff from the transport sector, and other sectors such as – planning, security, finance, etc.). The coordination of these activities will be between the firm and the local team. The activities include:

- (i) Developing detailed reports on the current state of the NTMC
- (ii) Analyzing case studies of other successful Traffic Centers
- (iii) Providing recommendations and roadmap for setting up a Traffic Monitoring Center (inclusive of hardware, software, cost estimates and guidance and support for implementation of selected strategies)
- (iv) Developing a SWOT Analysis

**4.3 Presentation of Results and Recommendations (Phase II).** The firm will present findings to all key stakeholders. Support and guidance for the selected strategies (inclusive of relevant training and capacity building. The activities include:

- (i) Presenting the findings
- (ii) Training activities
- (iii) Capacity building

## 5. Project Schedule, Deliverables, and Milestones

**5.1** The Consultant shall consider the following products to be developed in the mentioned timeframe (estimated contract start date in May 2024):

| Products/milestones   | Timeframe <sup>18</sup> |
|---|-------------------------|
| <b>Product 1. Review and Analysis</b>   | <b>9 months</b>         |
| (i) Detailed reports on the current state of the NTMC<br>(ii) Case studies of other successful Traffic Centers<br>(iii) Recommendations and roadmap for setting up a Traffic Monitoring Center (inclusive of hardware, software, cost estimates and guidance and support for implementation of selected strategies)<br>(iv) SWOT Analysis |                         |
| <b>Product 2. Presentation of Results and Recommendations</b>   | <b>3 months</b>         |
| (i) Presentation of findings<br>(ii) Training<br>(iii) Capacity building  |                         |
| <b>Total</b>  | <b>12 months</b>        |

## 6. Reporting Requirements

**6.1** Key project deliverables and milestones must be delivered or executed on the dates proposed by the consultant in the work plan. Any changes to the project schedule must have the express approval of the executing agency, Beneficiary country and the IDB.

**6.2** The consultant shall maintain close coordination and communication with the Beneficiary regarding the execution of activities and events for dissemination.

## 7. Qualification Requirements

**7.1** The firm interested in developing the solution proposed in these Terms of Reference must comply with the profile detailed below:

- (i) Education: Civil, industrial, or environmental engineer, architect, or any other related careers.
- (ii) Experience: Professional in engineering or architecture with a master's degree or equivalent experience. Must have a minimum of 10 years of professional experience in infrastructure development and especially development of traffic control centers.
- (iii) Language: English

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<sup>18</sup> Time counted from the signature date of the contract.

(iv) Competencies:

- a. Ability to analyze problems related to transit corridors
- b. Diagnose problems and propose reliable solutions
- c. Ability to prepare reports and visualizations
- d. Project management
- e. Budget management

## 8. Acceptance Criteria

- 8.1** All deliverables must be submitted to the English, using electronic files compatible with MS Office formats.
- 8.2** For the final version of the reports, the Consultant shall consider and address all the comments received from the key stakeholders.

## 9. Schedule of Payments

- 9.1** Payment terms will be based on project milestones or deliverables. The IDB does not expect to make advance payments under consulting contracts, given that most of the work should be conducted remotely, due to the ongoing COVID-19 pandemic.

| Payment Schedule   |             |
|--------------------|-------------|
| <i>Deliverable</i> | %           |
| Product 1          | 70%         |
| Product 2          | 30%         |
| <b>TOTAL</b>       | <b>100%</b> |

## **TERMS of REFERENCE**

### **Consulting on the implementation of PVLs in the existing HOV lanes and introduction of Congestion Charge Zone policy**

Trinidad and Tobago

TT-T1123

*Improving Mobility in Trinidad and Tobago*

#### **1. Background and Justification**

- 1.1** Trinidad and Tobago (T&T) is a twin-island Republic in the Caribbean Sea located on the northern edge of the South American mainland, just 11 kilometers (km) from Venezuela, and 130km south of Grenada. Trinidad, the southern and larger island, measures 4,828 square km, whilst the northern island, Tobago, is comprised of 300 square km. Its population is just approximately 1.4 million inhabitants<sup>19</sup>.
- 1.2** Trinidad and Tobago (T&T) is heavily dependent on roads for internal transportation on the islands, while ocean and air provide cross-country as well as inter-island connection. The concentration of administrative, financial, and commercial activity in Port of Spain (POS) – the capital of Trinidad and Tobago – means that a large number of road trips into and out of the city<sup>20</sup> occur on a daily basis as citizens travel from the housing areas in the suburbs and other towns/cities to access jobs, services, and shopping.
- 1.3** Within recent years, rising household incomes have made car ownership more accessible to a broader share of the population, more of whom traverse urban areas and their peripheries to access jobs, services, and shopping. For example, the concentration of administrative, financial, and commercial activity in Port-of-Spain (POS) results in many daily trips into and out of the city.
- 1.4** High motorization rates and low-quality transit have reduced public transport demand in Trinidad while cramping available road space. Following a trend that is not subsiding, there are over 500 vehicles per 1,000 inhabitants in the country. Congestion is perennial on key road corridors with long travel times and poor air quality. While the rapid rise in private vehicle ownership enhances citizens' mobility and convenience, it exacerbates the widespread congestion problem. The growth in the national fleet – up from 518,831 in 2010 to 786,202 in 2021 – has outpaced road capacity and improvements in public transportation, which has experienced a steady decline in patronage, decreasing by 26% between 1996 and 2005. As a result, private cars account for 88% of the national vehicle fleet in Trinidad, compared to just 56% on average for Latin America and the Caribbean region.

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<sup>19</sup> Trinidad and Tobago Central Statistics Office, Population, Social and Vital Statistics Division, 2016  
<https://www.planning.gov.tt/content/cso-tt%E2%80%99s-population-reaches-14-million-0>

<sup>20</sup> 250,000 vehicles entering POS daily ins 2021

- 1.5** On Trinidad's main corridors, most vehicles – 55% to 66% – have just one occupant, exacerbating congestion at peak travel hours in high-demand roads accessing POS, topping 285,000 vehicles per day. In response to the need to better manage scarce road space, the country is pursuing new policy directions and interventions - such as the roll out High Occupancy Vehicles (HOV) lanes - and seeks to complement this effort with congestion pricing legislation to curb congestion and increase revenue.
- 1.6** As one of the principal efforts to develop public transport system, the country has dedicated transit infrastructure in the form of a 29.4km Priority Bus Route (PBR) that goes from POS in the Northwest to Arima in the Northeast. However, the lack of designated bus stops, synchronized traffic lights, and active enforcement to prevent private cars from using the PBR has severely hindered the expected impact on public transport operational speed. Also, the National Traffic Management Center in POS has played a pivotal role in managing traffic issues like monitoring and administration of traffic signals, design and implementation of traffic management issues, emergency and accident analysis, collection of traffic data, etc. However, the Ministry of Works and Transport has developed plans to upgrade its capacity to meet future traffic management initiatives.
- 1.7** The country has also suffered major flooding and disruptions to the road network in November 2022 after long periods of sustained rainfall which triggered flooding in low-lying communities centered near rivers and swamp land<sup>21</sup>. Approximately 46% of lands classed as 'agricultural' were converted to housing settlements between 1984-2012 which has accounted for flooding in many areas due to rapid surface-run off<sup>22</sup>. In the event of extreme weather events, the disruption to transportation networks can pose a threat to economic activity and human safety. This underscores the need for sustainable and reliable infrastructure and proper urban development planning.
- 1.8** This project aims to add value to Trinidad and Tobago's transport infrastructure and services through application of innovative, harmonized technologies, policies and private sector enabled financial structures to improve efficiency, effectiveness and, thus, usage, of public transportation, as well as increase overall travel speeds during peak times. The project objective will be pursued through a three-pronged approach focused on: (i) improving the efficacy of the existing Priority Bus Route (PBR) by enhancing enforcement of usage restrictions and improving traffic management while reducing congestion by setting up a traffic management and monitoring center which can aid in the early detection of disruptive incidents; (ii) introducing Priority Vehicle Lanes (PVLs) for high occupancy vehicles, public transport service providers who can move a larger number of passengers, fuel-efficient vehicles on the highways as well as congestion charge zone as an effective measure for traffic mitigation in Trinidad and a multimodal transit hub to allow for the inter-connection between transport modes (PTSC, Maxi-taxis, taxis, and private vehicles). Access to PVLs may also be granted to other vehicle categories – single occupant vehicles, for example – for a demand-responsive fee during peak travel times; and (iii) organizing capacity building workshops and site visits for Trinidad's Government Officials to share Korea's experience and knowledge regarding related transportation innovation and smart technologies.

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<sup>21</sup> Flash flooding affects parts of north Trinidad after heavy rains, 2022 <https://tt.loopnews.com/content/traffic-alert-fallen-tree-wrightson-road-flash-flooding>

<sup>22</sup> Urgent action to minimize flood disruption – building resilience, 2023 <https://newsday.co.tt/2023/01/15/urgent-action-to-minimise-flood-disruption-building-resilience/>



## **2. Objectives**

**2.1** The objectives of this consultancy are increasing overall speeds and reducing congestion by introducing PVLs for high occupancy vehicles and implementing congestion charge zone policy. The specific outputs include:

- (i) Engineering studies, technical specifications, and investments need required to implement PVLs in already existing HOV lanes
- (ii) Implementation plan to facilitate seamless toll-collection without interrupting traffic flow
- (iii) Study of the introduction of congestion charge zone in Port of Spain in terms of institution, technology, and policy updates
- (iv) Investment plan for the introduction of PVLs and congestion charge zone in downtown

## **3. Scope of Services**

**3.1** This Terms of Reference will be used to select and hire a Consultant for developing engineering studies, technical specifications, investments need and implementation plans to implement PVLs in already existing HOV lanes, seamless toll-collection, and a congestion charge zone policy in Port of Spain. The scope of the services includes but is not limited to:

- (i) Improving efficiency, effectiveness and usage of public transportation in Trinidad and Tobago, as well as overall travel speeds
- (ii) Promoting technology to reduce congestion in Trinidad
- (iii) Promoting different technological means to increase revenue for public transportation system

## **4. Key Activities**

**4.1** The Consultant shall perform the following tasks as part of achieving the objectives of the contract, without detriment to those other tasks that in his/her judgment and experience is considered relevant to achieving those objectives.

### **4.1.2. Establishment of a plan to convert the existing HOV lanes to PVLs based on a technology solution**

- (i) A review of technical specifications and engineering studies for the implementation of PVLs
- (ii) Development of technology-based solutions
- (iii) Implementation plan for seamless toll-collection
- (iv) Establishment of an investment plan to finance PVLs

### **4.1.3. Setting up a plan to introduce the Congestion Charge Zone Policy in Port of Spain**

- (i) Review of the relevant institution, technology, and policy updates
- (ii) Benchmarking studies and Review of Congestion Charge Zone policies in major cities, such as Seoul and London, to identify a suitable plan for Port of Spain

## 5. Project schedule, deliverables, and milestones

- 5.1 The Consultant shall consider the following products to be developed in the mentioned timeframe (estimated contract start date in May 2025):

| Products   | Timeframe <sup>23</sup> |
|--|-------------------------|
| Product 1: Consulting report   | 4 months                |
| Product 2: Plan for the implementation of PVLs in the existing HOV lanes, and introduction of Congestion Charge Zone Policy in Port of Spain | 6 months                |

## 6. Reporting Requirements

- 6.1 Key project deliverables and milestones must be delivered or executed on the dates proposed by the consultant in the work plan. Any changes to the project schedule must have the express approval of the executing agency, Beneficiary country and the IDB.
- 6.2 The consultant shall maintain close coordination and communication with the Beneficiary regarding the execution of activities and events for dissemination.

## 7. Qualification Requirements

- 7.1 The consultancy will require the service of a team of experts with skills and experience in urban/public transport policy analysis and development, urban planning/project preparation, public administration, multimodal transport, and tolling system. The Consultant needs to comply, at least, with the following key technical personnel:
- 7.2 **A project manager:** The Project Manager shall have specific experience in working with public transport policy and legislation in developing countries. Master's degree in Economics, Urban Transport, Civil Engineering, City Planning, or related fields with a related professional experience of at least 10 years and specific experience assessing development countries at least five years.
- 7.3 **A specialist in public transport:** University degree in Economy, Transport, Civil Engineering, or related disciplines with at least Master's degree in assessment, planning of public transport systems, involvement of private sector and with at least 10 years of practice experience and must have served in similar capacity in at least 2 assignments of similar nature. Comprehensive mastery of public transport system, planning techniques and tools generally used in this discipline are also required.
- 7.4 **An ITS expert:** University degree in Engineering with at least 5 years of professional experience. Experience in design and deploy of tolling system and ITS solution in highways with at least one completed assignment of a similar nature.

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<sup>23</sup> Time counting since signature of the contract

## 8. Acceptance Criteria

- 8.1** All deliverables must be submitted to the English, using electronic files compatible with MS Office formats.
- 8.2** For the final version of the reports, the Consultant shall consider and address all the comments received from the key stakeholders.

## 9. Schedule of Payments

- 9.1** Payment terms will be based on project milestones or deliverables.
- 9.2** The IDB Official Exchange Rate indicated in the RFP will be applied for necessary conversions of local currency payments.

| Payment Schedule |      |
|------------------|------|
| Deliverable      | %    |
| Product 1        | 30%  |
| Product 2        | 70%  |
| <b>TOTAL</b>     | 100% |

## **TERMS of REFERENCE**

### **Consulting on Capacity Building and Knowledge Dissemination**

Trinidad and Tobago

TT-T1123

*Improving Mobility in Trinidad and Tobago*

#### **1. Background and Justification**

- 1.1** Trinidad and Tobago (T&T) is a twin-island Republic in the Caribbean Sea located on the northern edge of the South American mainland, just 11 kilometers (km) from Venezuela, and 130km south of Grenada. Trinidad, the southern and larger island, measures 4,828 square km, whilst the northern island, Tobago, is comprised of 300 square km. Its population is just approximately 1.4 million inhabitants<sup>24</sup>.
- 1.2** Trinidad and Tobago (T&T) is heavily dependent on roads for internal transportation on the islands, while ocean and air provide cross-country as well as inter-island connection. The concentration of administrative, financial, and commercial activity in Port of Spain (POS) – the capital of Trinidad and Tobago – means that a large number of road trips into and out of the city<sup>25</sup> occur on a daily basis as citizens travel from the housing areas in the suburbs and other towns/cities to access jobs, services, and shopping.
- 1.3** Within recent years, rising household incomes have made car ownership more accessible to a broader share of the population, more of whom traverse urban areas and their peripheries to access jobs, services, and shopping. For example, the concentration of administrative, financial, and commercial activity in Port-of-Spain (POS) results in many daily trips into and out of the city.
- 1.4** High motorization rates and low-quality transit have reduced public transport demand in Trinidad while cramping available road space. Following a trend that is not subsiding, there are over 500 vehicles per 1,000 inhabitants in the country. Congestion is perennial on key road corridors with long travel times and poor air quality. While the rapid rise in private vehicle ownership enhances citizens' mobility and convenience, it exacerbates the widespread congestion problem. The growth in the national fleet – up from 518,831 in 2010 to 786,202 in 2021 – has outpaced road capacity and improvements in public transportation, which has experienced a steady decline in patronage, decreasing by 26% between 1996 and 2005. As a result, private cars account for 88% of the national vehicle fleet in Trinidad, compared to just 56% on average for Latin America and the Caribbean region.

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<sup>24</sup> Trinidad and Tobago Central Statistics Office, Population, Social and Vital Statistics Division, 2016 <https://www.planning.gov.tt/content/cso-tt%E2%80%99s-population-reaches-14-million-0>

<sup>25</sup> 250,000 vehicles entering POS daily ins 2021

- 1.5** On Trinidad's main corridors, most vehicles – 55% to 66% – have just one occupant, exacerbating congestion at peak travel hours in high-demand roads accessing POS, topping 285,000 vehicles per day. In response to the need to better manage scarce road space, the country is pursuing new policy directions and interventions - such as the roll out High Occupancy Vehicles (HOV) lanes - and seeks to complement this effort with congestion pricing legislation to curb congestion and increase revenue.
- 1.6** As one of the principal efforts to develop public transport system, the country has dedicated transit infrastructure in the form of a 29.4km Priority Bus Route (PBR) that goes from POS in the Northwest to Arima in the Northeast. However, the lack of designated bus stops, synchronized traffic lights, and active enforcement to prevent private cars from using the PBR has severely hindered the expected impact on public transport operational speed. Also, the National Traffic Management Center in POS has played a pivotal role in managing traffic issues like monitoring and administration of traffic signals, design and implementation of traffic management issues, emergency and accident analysis, collection of traffic data, etc. However, the Ministry of Works and Transport has developed plans to upgrade its capacity to meet future traffic management initiatives.
- 1.7** The country has also suffered major flooding and disruptions to the road network in November 2022 after long periods of sustained rainfall which triggered flooding in low-lying communities centered near rivers and swamp land<sup>26</sup>. Approximately 46% of lands classed as 'agricultural' were converted to housing settlements between 1984-2012 which has accounted for flooding in many areas due to rapid surface-run off<sup>27</sup>. In the event of extreme weather events, the disruption to transportation networks can pose a threat to economic activity and human safety. This underscores the need for sustainable and reliable infrastructure and proper urban development planning.
- 1.8** This project aims to add value to Trinidad and Tobago's transport infrastructure and services through application of innovative, harmonized technologies, policies and private sector enabled financial structures to improve efficiency, effectiveness and, thus, usage, of public transportation, as well as increase overall travel speeds during peak times. The project objective will be pursued through a three-pronged approach focused on: (i) improving the efficacy of the existing Priority Bus Route (PBR) by enhancing enforcement of usage restrictions and improving traffic management while reducing congestion by setting up a traffic management and monitoring center which can aid in the early detection of disruptive incidents; (ii) introducing Priority Vehicle Lanes (PVLs) for high occupancy vehicles, public transport service providers who can move a larger number of passengers, fuel-efficient vehicles on the highways as well as congestion charge zone as an effective measure for traffic mitigation in Trinidad and a multimodal transit hub to allow for the inter-connection between transport modes (PTSC, Maxi-taxis, taxis, and private vehicles). Access to PVLs may also be granted to other vehicle categories – single occupant vehicles, for example – for a demand-responsive fee during peak travel times; and (iii) organizing capacity building workshops and site visits for Trinidad's Government Officials to share Korea's experience and knowledge regarding related transportation innovation and smart technologies.

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<sup>26</sup> Flash flooding affects parts of north Trinidad after heavy rains, 2022 <https://tt.loopnews.com/content/traffic-alert-fallen-tree-wrightson-road-flash-flooding>

<sup>27</sup> Urgent action to minimize flood disruption – building resilience, 2023 <https://newsday.co.tt/2023/01/15/urgent-action-to-minimise-flood-disruption-building-resilience/>

## **2. Objectives**

**2.1** The objective of this consultancy building capacity by promoting knowledge exchange with South Korea and studying relevant South Korean cases and experience. The specific outputs include:

- (i) Capacitation plan to train Trinidad and Tobago government officials
- (ii) Study of relevant South Korean cases regarding technology and congestion mitigation policies
- (iii) Site visits and capacity building workshops in South Korea for Trinidad and Tobago government officials, covering South Korea's experience and knowledge regarding transport innovation and smart technologies
- (iv) Knowledge dissemination and communication activities, including publications, translations, events organization, etc.

## **3. Scope of Services**

**3.1** This Terms of Reference will be used to select and hire a Consultant for developing a capacitation plan for Trinidad and Tobago government officials building on South Korea's knowledge and experience. The scope of the services includes but is not limited to:

- (i) Capacity building activities for Trinidad and Tobago government officials
- (ii) Knowledge dissemination and communication activities of the project

## **4. Key Activities**

**4.1** The Consultant shall perform the following tasks as part of achieving the objectives of the contract, without detriment to those other tasks that in his/her judgment and experience is considered relevant to achieving those objectives.

### **4.1.1. Capacity Building Program in South Korea**

- (i) Organizing a Capacity Building Program in Korea for government officials of Trinidad and Tobago

### **4.1.2. Knowledge Dissemination and Communication Activities**

- (i) Develop a knowledge dissemination and communications plan
- (ii) Prepare dissemination and communications activities and materials, including publications, translations, events, etc.

## 5. Project Schedule, deliverables, and milestone

- 5.1 The Consultant shall consider the following products to be developed in the mentioned timeframe (estimated contract start date in June 2023):

| Products  | Timeframe <sup>28</sup> |
|---|-------------------------|
| Product 1: Final report on the capacity building program in South Korea | 12 months               |

## 6. Reporting Requirements

- 6.1 Key project deliverables and milestones must be delivered or executed on the dates proposed by the consultant in the work plan. Any changes to the project schedule must have the express approval of the executing agency, Beneficiary country and the IDB.
- 6.2 The consultant shall maintain close coordination and communication with the Beneficiary regarding the execution of activities and events for dissemination.

## 7. Qualification Requirements

- 7.1 The consultancy will require the service of a team of experts with skills and experience in urban/public transport policy analysis and development, urban planning/project preparation, public administration, multimodal transport, and tolling system. The Consultant needs to comply, at least, with the following key technical personnel:

**7.1.1. Technical expertise:** A specialist in public transport: University degree in Economics, Transport, Civil Engineering, or related disciplines with a master's degree in assessment, or planning of public transport systems, with at least 10 years of practice experience and must have served in similar capacity in at least 2 assignments of similar nature. Comprehensive mastery of public transport system, planning techniques and tools generally used in this discipline are required.

## 8. Acceptance Criteria

- 8.1 All deliverables must be submitted to the English, using electronic files compatible with MS Office formats.
- 8.2 For the final version of the reports, the Consultant shall consider and address all the comments received from the key stakeholders.

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<sup>28</sup> Time counting since signature of the contract

## 9. Schedule of Payments

9.1 Payment terms will be based on project milestones or deliverables.

9.2 The IDB Official Exchange Rate indicated in the RFP will be applied for necessary conversions of local currency payments.

| Payment Schedule |      |
|------------------|------|
| Deliverable      | %    |
| Product 1        | 100% |