

**Terms of Reference (TORs)**  
**Short Term ITS Consultant**  
**Karachi Mobility Project**

**1. Introduction**

Karachi, a sprawling metropolis facing significant urban mobility challenges, is currently taking decisive steps to address its transport issues through the implementation of a Bus Rapid Transit System (BRTS) as outlined in the Karachi Urban Transport Master Plan of 2030. The Federal and Provincial Governments, along with the Sindh Mass Transit Authority (SMTA), have been driving efforts since 2018 to realize this comprehensive urban mobility solution. These endeavors encompass various aspects: finalizing roadworks, selecting BRTS operators for the Green/Orange Corridor, advancing contracts for detailed engineering design and business plan formulation for the Red Corridor, and refining preliminary design and feasibility studies for the Yellow Corridor.

The World Bank, an instrumental financial partner, is committed to supporting the infrastructure development and operational framework of the Yellow Corridor within the larger Karachi Mobility Project (KMP). Through a blend of funding instruments, the Bank aims to optimize resources for BRTS development and operation. The KMP embraces an integrated corridor management strategy, aiming to enhance mobility, accessibility, and safety for all road users along the route. By rejuvenating dilapidated road sections, enhancing traffic management, and addressing parking challenges, this project holds the potential to benefit over 700,000 residents, particularly those in the Korangi industrial area.

The Project implementation is designed in a way that specific officers from the SMTA as well as additional staff/specialists/individual consultants are nominated as a Project Management Team (PMT) headed by the Project Director.

The SMTA and its PMT (hereinafter referred to as “the Client” or “the Employer”, as relevant) wish to engage a qualified individual consultant (hereinafter referred to as “the Consultant”), for conducting a Mid-Term Review to more comprehensively assess implementation progress and set out any measures to ensure continued efficient implementation and the achievement of the Project Development Objective by the Project’s closing date.

**2. Description of the Karachi Mobility Project**

The Project Development Objective (PDO) is to improve mobility, accessibility, and safety along selected corridors in Karachi. The delivery of the Project is designed around a mix of publicly procured contracts needed to deliver the Project infrastructure and consultancies. It also includes a Public-Private Partnership (PPP) contract for the operation of the BRT system over a 10-year concession period, whereby a private operator will finance, procure, supply, operate, and maintain various goods and systems. Based on the financial analysis, and to minimize the operating subsidy, it was agreed that the Project would support the concession via a working capital subsidy.

The Project components consist of activities of different natures and scales including infrastructure detailed design and construction supervision, procurement of various consulting services, rolling stock and ITS equipment, construction contracts, capacity building, and stakeholder engagement as well as safeguards and media strategies.

The Project consists of the following three components:

**Component I: Urban Road Infrastructure - Yellow Corridor**

- (a) Rehabilitating or reconstructing road infrastructure (including improving and shifting related utilities such as street lighting, sewer/water supply, drainage, oil pipeline), bridges, and non-motorized transport facilities (such as motorcycle lanes, footpaths, and pedestrian crossing) along the Yellow Corridor and its direct and feeder service routes
- (b) Implementing environmental and social recommendations and mitigation measures before and during construction
- (c) Carrying out detailed designs, construction supervision activities and third-party monitoring;

**Component II: The Development and Operationalization of a BRT System**

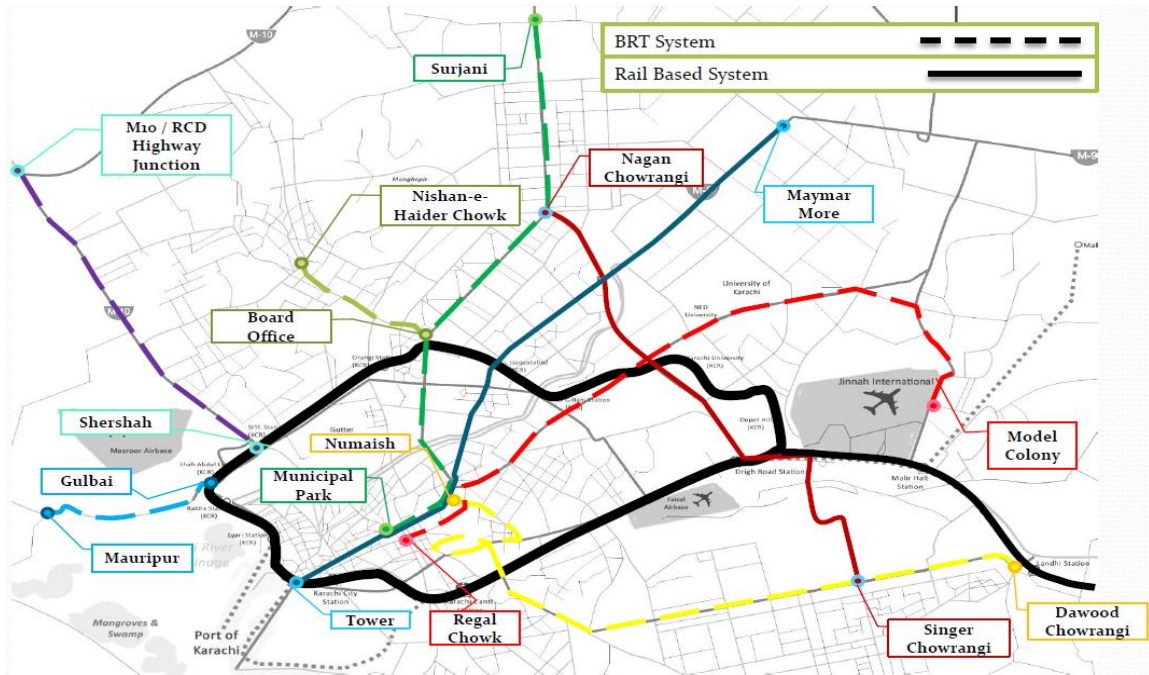
- (a) Constructing and equipping bus rapid transit facilities (including segregated busways, interchange facilities, stations, terminals, and depots) along the Yellow Corridor
- (b) Providing working capital subsidy for the concession of the BRT operation for the Yellow Corridor
- (c) Implementing social management and impact mitigation measures including the labor redeployment for the affected existing bus operators such as drivers, conductors, and route managers
- (d) Implementing and monitoring the SMP including its actions to mitigate gender-based violence and actions to improve women's mobility and economic participation options;
- (e) Designing a transit-oriented development strategy for the Yellow Corridor
- (f) Providing PPP transaction advisory services for BRT operation concession
- (g) Carrying out a program of regular engagement with key stakeholders; and implementing a public relations and media strategy to generate support for and disseminate information on the bus rapid transit system;

**Component III: Capacity Building and Technical Assistance**

- (a) Supporting project management and providing technical assistance for the implementation of social measures
- (b) Provision of technical assistance in traffic management and road safety
- (c) Supporting the regional transport authorities in automating the management and monitoring of bus route permits
- (d) Carrying out capacity-building activities to strengthen SMTA and support the consolidation and improvement of the management of the urban transport sector in Karachi.

## 2.1 BRT Yellow Corridor

The Yellow Corridor, constituting an integral part of the planned Karachi Mass Transit System (KMTS), spans approximately 21 km from Dawood Chowrangi to Numaish (Figure-1) comprising seven segments (Table 1) which include two Depots (near Dawood Chowrangi and Christian Colony near Indus Hospital), Bus Stations and Off-Corridor Routes, this corridor envisages a transformative mobility solution for Karachi. Its strategic significance lies in addressing urban mobility challenges, ensuring accessibility, and enhancing safety for over 700,000 individuals, particularly those within the Korangi industrial area.



**Figure 1: Planned Mass Transit Corridors**

**Table 1: Yellow Corridor segments**

Segment		Length [KM]
0	Dawood Chowrangi - from bus depot entrance to Dawood Chowrangi	0.3
1	Future Colony - from Dawood Chowrangi terminal to Mansehra Colony	1.15
2	8000 Road - from Mansehra Colony to Malir River bridge (Jam Sadiq)	10.65
3	Malir River bridge (Jam Sadiq)	1.1
4	KPT interchange	0.85
5	Korangi Road - from KPT Interchange to Sharah-e-Faisal Interchange	3.9
6	Shahrah-e-Faisal - from Shahrah-e-Faisal Interchange to Shahrah-e-Quaideen	1.65

Segment		Length [KM]
7	Shahrah-e-Quaideen - from Shahrah-e-Faisal to M.A. Jinnah Road	1.4
<b>Total</b>		<b>21</b>

Strategically project is divided into five infrastructure works packages, the Yellow Corridor's development encompasses various segments, from roadworks to bridge construction. The planned improvements and enhancements are poised to alleviate road congestion, optimize traffic management, and address the immediate needs of the communities within its reach. This comprehensive endeavor envisions a modernized urban transportation system that aligns with the Karachi Mobility Project's overarching goals.



**Figure 2: Yellow Corridor Segment**

The PMT has already undertaken the procurement of consulting services to provide Detailed Design, Procurement Support, and Construction Supervision services. This consultant is preparing a detailed design based on the available preliminary design results and recommendations, will finalize the safeguard documents, will prepare the bidding documents for construction contracts (including the Employer's requirements for a 1.1 km long bridge to be undertaken in the EPC mode), provide necessary technical and logistics support during the procurement process of construction works, supervise the construction works, implement the BIM and provide capacity building sessions to the Client. It may be noted that the capacity building and skill development services/training required in these TORs will be different from those included in the above-mentioned contract.

All procurement activities under the KMP will be made using the **WB Procurement Regulations for IPF Borrowers for Goods, Works, Non-Consulting and Consulting Services (July 2016; revised November 2017 and August 2018)**. Based on the Yellow BRT Corridor segments and the complexity of the operations during the construction phase, the summary of anticipated procurement packages is provided in Table 2 below. Currently the Package I (Lot I, Depot 1 and Lot II, Depot II) and Package IV (New Jam Sadiq Bridge) is in construction phase and BRT Package's design are finalized and Notice Inviting to Tenders will be issued after approval of Procurement Documents by the World Bank.

**Table 2: Yellow Corridor Infrastructure Works Packages**

<b>Works package</b>
Package 1: Lot I (Construction of Depot 1), Lot II (Construction of Depot 2)
Package 3A and 3B: Road corridor & BRT infrastructure (segments 0, 1 and 2)
Package 4: Construction of New Jam Sadiq Bridge 1.1 km long (Segment 3)
Package 5 Lot I and Lot II: Road corridor & BRT infrastructure (segments 4, 5, 6 and 7)
Package 6 Lot I and II: Off-corridor improvements

Apart from the above-mentioned construction contracts, there are contracts related to the procurement of rolling stock, ITS equipment, and operationalization of the BRT corridor in all aspects to be undertaken as a part of the Project. Additionally, there are contracts related to various consultancies (transit-orient demand strategy, stakeholder engagement, etc.) to be undertaken over time as a part of the Project.

Furthermore, independent consulting firms will be hired as Third-Party Monitoring Agent (TPMA) and Project Management Consultant (PMC) to provide a monitoring layer to ensure that the Bank's funds executed by the implementing agency (i.e., SMTA) are utilized for the purposes specified in the loan agreement and provide expected results.

### **3. Objective**

The primary objective for this STC is to review ITS design, procurement, installation, and operations from two BRT systems in Pakistan (including 1x 3<sup>rd</sup> Generation BRT) and three international BRT systems, including Dakar BRT. Analyze these systems' technical, financial, and operational frameworks to identify best practices. Recommend a comprehensive IITS strategy tailored to the Karachi BRT, ensuring value for money and technical robustness.

### **4. Scope**

The consultant will be responsible for the following:

- Collect and analyze ITS data and documentation from the identified BRT systems.
- Conduct a comparative study focusing on technology adopted (e.g., AFC, AVL, passenger information systems with special focus on interoperability).
- Procurement and installation processes.
- Operational strategies and performance outcomes.
- Evaluation and Recommendations
  - Assess the financial implications (CAPEX and OPEX) and technical feasibility of ITS options.
  - Recommend the most suitable ITS framework for the Karachi BRT Project, including, Design and implementation roadmap including supervision, procurement strategy ensuring alignment with World Bank regulations, key performance indicators (KPIs) for operational success.

- Prepare a comprehensive report detailing the review, analysis, and recommendations.
- Present findings and recommendations to the project team and stakeholders.
- Any other task assigned by the Project Director.

## 5. Deliverables:

- **Inception Report:** Outlining the methodology and work plan, to be submitted within one week.
- **Comparative Analysis Report:** Detailing findings from the reviewed BRT systems, to be submitted by the end of the third week
- **Final Report:** Including a detailed ITS recommendation plan and implementation strategy, to be submitted at the end of the consultancy.

## 6. Qualifications and Experience:

The candidate should at least have:

- Bachelor's degree in Civil/Transportation engineering/Information Technology/Computer Science/Electrical Engineering, or a related field.
- A minimum of 10 years of experience in providing advisory services for Intelligent Transportation Systems (ITS). The ITS Expert should have experience in the transportation sector and knowledge of BRT systems. Additionally, they should possess excellent technical skills and knowledge of industry standards and regulations related to ITS.
- Familiarity with World Bank procurement guidelines and regulations.
- Proven expertise in conducting comparative studies and delivering actionable recommendations.
- Excellent analytical, communication, and reporting skills

## 7. Contract Duration:

The commencement of this engagement is deemed effective upon the signing of the agreement. This timeframe comprises Six weeks for review and submission of the Final Report.

## 8. Type of Contract & Breakdown of Contract Price

Lump - Sum contract including all expenses such as communication, office equipment, etc., and payments are based on deliverables. The Consultant shall submit invoices within 30 calendar days of completing the scope of works and submission of deliverables for each task. Payments are made within 30 days after the submittal of the invoice.