

Metro Line 3 – Expression of Interest Background Information

1. Project Background

Mumbai Metro Master Plan envisages access to an efficient MRTS system for over 90% of the population within 1-2 km. The Mumbai Mumbai Metro Project is to be implemented in 3 phases; Phase 1: Versova-Andheri-Ghatkopar Corridor (Line-1) of length 11 km and Charkop-Bandra-Mankhurd Corridor (Line 2) of length 32 km are being implemented on PPP/BOT format. Colaba-Bandra-SEEPZ (Line 3) connects Colaba in south Mumbai to SEEPZ in the north. The total length of the fully underground corridor is 33.5 km, with 27 stations. The Car Depot will be at-grade and is located at Aarey Colony north of Jogeshwari Vikhroli Link Road.

The Detailed Project Report (DPR) was prepared by RITES in December 2011. In June 2012 MMRC appointed an Interim Consultant (IC) to carry out detailed topographical surveys, geotechnical investigations, utility mapping, building condition surveys, traffic diversion plans, preliminary tunnel and station designs, car depot design and all pre-tender services for design-build civil contracts etc.

Mumbai Metro Rail Corporation (MMRC) a Joint Venture company of Govt of India (GoI) and Govt of Maharashtra (GoM) has been pledged a loan from JICA towards the cost of MML3 and intends to apply part of the proceeds of this loan for procurement of General Consultancy (GC) services for implementation of MML3.

2. Project Description

2.1 Outline of Project

As shown in red in the Figure 1, the alignment of Mumbai Metro Line 3 spans approximately 33.5 kilometres from Colaba (Cuffe Parade) in the south through Bandra, ending within the Special Electronics Export Processing Zone (SEEPZ) in the north, and consists of 27 stations. The depot is planned to be located at the northern end.

Mumbai Metro Line 3 has 9 interchanges with other transport systems (railways and bus depots) to complement each other. The PHPDT forecast is 39,000 in 2025 and 42,000 in 2031. The designed capacity of the system however is 72,000 PHPDT.

The corridor is standard gauge (1,435 mm) system with twin tunnels having finished diameter of 5.8 m are proposed. The tunnels will be constructed using tunnel boring



machines. The stations will however be constructed by Cut and Cover and/or NATM. The alignment passes mainly along arterial roads through some of the most congested areas of Mumbai and heritage precincts.

This system is will have 25 kv A/C traction. Each train will initially have 6 coaches 3.2 m wide and fully air-conditioned with a capacity of 1,792 passengers. System is however designed for 8 coach trains. The train services will run at 3 minute headway in 2021 and 2.5 minutes in 2031 at a design speed of 80 kmph and an average speed of 32 kmph. Communication Based Train Control System (CBTC) is proposed for the corridor

All the stations will be access controlled with Automatic Fare Collection (AFC) system using smart cards/tokens. The stations will also be integrated with suburban rail stations and BEST bus stops with all commuter facilities such as escalators, elevators, skywalks etc. The stations will be provided with suitable security systems.

The estimated project completion cost is Rs 23,136 cr.

2.2 Scope of Services for General Consultant

The scope of consultancy mainly includes:

- i) Review and if, necessary, supplement the details given in DPR for MML3 and reports submitted by Interim Consultant (IC), if and when required.
- ii) Review and proof checking of designs prepared by the Detailed Design Consultants with respect to works awarded to contractors on “Design – Build” basis.
- iii) Assist in evaluation, negotiation (if necessary) of bids for civil works invited by MMRC and award of contracts.
- iv) Preparation of tender design and tender documents for procurement of systems, rolling stock and depot equipment plant & machinery, evaluation of bids and finalisation of contracts.
- v) Construction supervision including contract administration, safety, quality and environment aspects.
- vi) Testing and Commissioning of the entire system
- vii) Preparation of Construction, Operation and Maintenance Manuals for the MML3.
- viii) Planning training to the personnel of MMRC in operation, maintenance and repair of various equipments, plants and the system as a whole.
- ix) Developing suitable model for ‘seamless travel’ with common ticketing and integration with Metro Line 1 & 2, suburban railway, bus services and monorail.
- x) Management of Environmental and Social aspects related to implementation of the project.
- xi) Assist MMRC in land acquisition and resettlement action plan.
- xii) Prepare HIV/AIDS prevention programme and assist MMRC in management and monitoring.
- xiii) Prepare and incorporate Universal design and barrier free promotion (UD/BF) concept in implementation of the project.

- xiv) Assist MMRC in obtaining various technical approvals from MoR / RDSO in accordance with the 'Procedure for Safety Certification & Technical Clearance of Metro Systems by RDSO' issued by MoR in January 2013 including preparation of documents / reports
- xv) GC will have to closely interact with JICA officials in obtaining their approvals for various documents / tenders etc in terms of provisions in the loan agreement. This will include submission of periodic status reports / data / analysis in prescribed formats
- xvi) Planning and design of Station Area Traffic Improvement Scheme (SATIS) including validation through computer simulation
- xvii) Any other activity / task not specifically included in the scope of services but considered essential for successful implementation & commissioning of the project shall be within the purview of the GC's responsibility / scope of work.

2.3 Contract packaging

- 2.3.1 The civil works of this project except the depot consist of seven (7) contract packages. Every package includes Design & Build of stations and tunnelling works and overall design co-ordination among other interfacing Contractors. Interim Consultant shall assist MMRC in evaluating these tenders.
- 2.3.2 There will be a separate tender for each of the following:
 - i. Design, manufacture, installation, testing and commissioning of signalling system / train control system including OCC.
 - ii. Design, manufacture, supply, installation, testing and commissioning of Telecommunication system.
 - iii. Design, manufacture, supply, installation, testing and commissioning of lifts.
 - iv. Design, manufacture, supply, installation, testing and commissioning of escalators/ travellers.
 - v. Design, manufacture, supply, installation, testing and commissioning of Automatic Fare Collection System.
 - vi. Design of Track works, supply, installation and testing of Track works
 - vii. Design, manufacture, installation, testing and commissioning of rolling stock.
 - viii. Design, manufacture, supply, installation, testing and commissioning of OHE & power supply system.
 - ix. Any other miscellaneous related item.
- 2.3.3 The above list is tentative and may undergo changes in the overall interest of the project.