



CONNECTING CHENNAI CITY BETTER
Moving People, Sustaining Growth



CHENNAI METRO RAIL LIMITED

The Need

Chennai is the fourth largest city in India. The population of Chennai Metropolitan area is about 8 million. The vehicular population is around 26 lakhs. At present, Chennai is served by a transport system which comprises a suburban railway network, the MRTS and the Metro Transport Corporation (MTC). The system is not adequate to meet the growing transport needs of the public. The National Urban Transport Policy 2006 announced by the Government of India recommends a high capacity Mass Transit System for cities like Chennai. Metro Rail Systems are already in operation in New Delhi, Kolkatta, Bengaluru and have been approved for Hyderabad. The Government of Tamil Nadu, after careful consideration, has decided to implement a rail based Mass Rapid Transport System, i.e, the Metro Rail Project. This project with a base cost of Rs.14,600 crores is being funded by the Government of India and the Government of Tamil Nadu. The JICA is also providing financial assistance for the project. The project will provide the people of Chennai with a fast, reliable, convenient, efficient, modern and economical mode of public transport, which is properly integrated with other forms of public and private transports including buses, sub-urban trains and MRTS.

About Chennai Metro Rail

The Government of Tamil Nadu created a Special Purpose Vehicle (SPV) for implementing the Chennai Metro Rail Project. This SPV named as "Chennai Metro Rail Limited" was incorporated on 03.12.2007 under the Companies Act. It has now been converted into a Joint Venture of Government of India and Government of Tamil Nadu with equal equity holding.

It is proposed to provide about 45km Metro network in the city across two Corridors. **Corridor - 1:** Washermenpet to Airport: would cover a total length of 23.0 km, of which 14.3 km would be underground section with the following stations: Washermenpet Metro, Mannadi, High Court, Central Metro, Govt. Estate, LIC, Thousand Lights, AG-DMS, Teynampet, Nandanam and Saidapet Metro and 8.7 Km would run on elevated sections covering Little Mount, Guindy Metro, Alandur, Nanganallur Road, Meenambakkam Metro and Airport **Corridor - 2:** Central to St. Thomas Mount: would cover a total length of 22km, of which 9.7 km would be underground section with the following stations: Central Metro, Egmore Metro, Nehru Park, Kilpauk, Pachaiyappa's College, Shenoy Nagar, Anna Nagar East, Anna Nagar Tower and Thirumangalam and 12.3 km would run on elevated sections covering Koyambedu, CMBT, Arumbakkam, Vadapalani, Ashok Nagar, Ekkattuthangal, (Alandur) and St. Thomas Mount Metro (please see map). The stations would ensure easy access and exit for the users. The stations will be user-friendly and is designed to serve the disabled also.

Both the corridors of Phase-1 of the project are partly elevated and partly underground. The elevated portion is planned with construction of piers mainly on the median of the road. The underground section is planned with shield tunneling method, except stations which will be constructed by cut and cover method.

Details of Corridors in Phase - I

Details	Corridor 1	Corridor 2	Total
	Washermenpet to Airport	Central to St.Thomas Mount	
Underground length	14.3 Km	9.7 Km	24.0 Km
Elevated length	8.7 Km	12.3 Km	21.0 Km
Total route length	23.0 Km	22.0 Km	45.0 Km
Underground Stations	10 Washermenpet Metro, Mannadi, High Court, (Central Metro), Govt. Estate, LIC, Thousand Lights, AG-DMS, Teynampet, Nandanam and Saidapet Metro	9 Central Metro, Egmore Metro, Nehru Park, Kilpauk, Pachaiyappa's College, Shenoy Nagar, Anna Nagar East, Anna Nagar Tower and Thirumangalam	19
Elevated Stations	6 Little Mount, Guindy Metro, Alandur, Nanganallur Road, Meenambakkam Metro and Airport	7 Koyambedu, CMBT, Arumbakkam, Vadapalani, Ashok Nagar, Ekkattuthangal, (Alandur) and St. Thomas Mount Metro	13
Total Stations	16	16	32

Advantages of Metro Rail System

Metro Rail System is recognized as a modern, reliable, safe and environment-friendly mode of Mass Rapid Transport. The advantages are :-

- Lowest carbon emission amongst various modes of mass transport. Causes no air pollution in the city.
- Provides for very high passenger capacity.
- Uses clean technology and is energy efficient. Requires 1/5th energy per passenger km compared to the road based system.
- Causes lesser noise level.
- Ensures enhanced mobility and reduces congestion on roads.
- Reduction in road accidents, thus protecting human life and yielding financial savings.
- 50 to 75% reduction in journey time compared to road transport.
- Linkage with other forms of transport. (Links will be provided with Chennai Airport, Central Station, Egmore Station, Mofussil Bus Terminus and MRTS).

Programme of completion for Phase-I

Tentatively, Phase-1 of the project is programmed for completion in the year 2016. Project Implementation : A Detailed Project Report (DPR) relating to the Chennai Metro Rail Project was prepared and submitted by the Delhi Metro Rail Corporation (DMRC) who were the interim consultants to CMRL. In order to implement the project effectively, CMRL have appointed General Consultants (GC) – EMBYE – a five member consortium comprising (1) EGIS Rail SA (2) EGIS India Consulting Engineers Pvt. Ltd., India (3) Maunsell Consultants Asia Ltd., Hong Kong (4) Balaji Rail Road Systems Ltd., India & (5) Yachiyo Engineering Co. Ltd., Japan. The GC will assist Chennai Metro Rail Limited in design, supervision, quality control, safety and contract management for the project. Chennai Metro Rail Limited (CMRL) has appointed Delhi Metro Rail Corporation (DMRC) as the Prime Consultant (PC) for Phase-1 of the project. The Prime Consultant will assist CMRL in an advisory role in the execution of the project.

Technical Details of the Project

Gauge:

The tracks would be on Standard Gauge (1435 mm).

Speed :

Designed Speed	-	90 kmph
Permissible Speed	-	80 kmph
Average speed	-	34 kmph

Traction System

25 KV overhead traction will be used in the metro system.

Signalling

Sophisticated signalling system with Automatic Train Protection, Automatic Train Operation and Automatic Train Control will ensure a high degree of safety of passengers. Train operations will be controlled centrally from the state of the art operations control centre.

Platform Screen Doors (PSD)

The Platform Screen Door is an integral part of the underground Section comprising of 19 stations, which is full height PSD. It is a screen which separates the platform and

the track and enables smooth operation and energy savings by reducing the overall air-conditioning required on platform. It provides safety to the passengers.

Carrying capacity

The Peak Hour Peak Direction Passenger Traffic (PHPDT) capacity for the year 2016 is estimated at 24,968 in a four car train with a headway of 3.5 minutes for corridor-1. The PHPDT capacity for corridor-2 for the year 2016 is estimated at 24,324 in a four car train with headway of 3 minutes.

Fare

Though the exact fare structure will be finalized at the time of starting the train operation, the fare will be cost effective.

Facilities and services in Metro stations and Trains

Metro stations will be elder friendly and physically challenged friendly with escalators and lifts. Other facilities include AC comfort in underground stations, Automatic fare collection system, Automatic announcement system, electronic information display boards, shopping malls, toilet facilities, CCTV systems, Video surveillance systems, Fire fighting systems, feeder bus services, park & ride facilities etc.

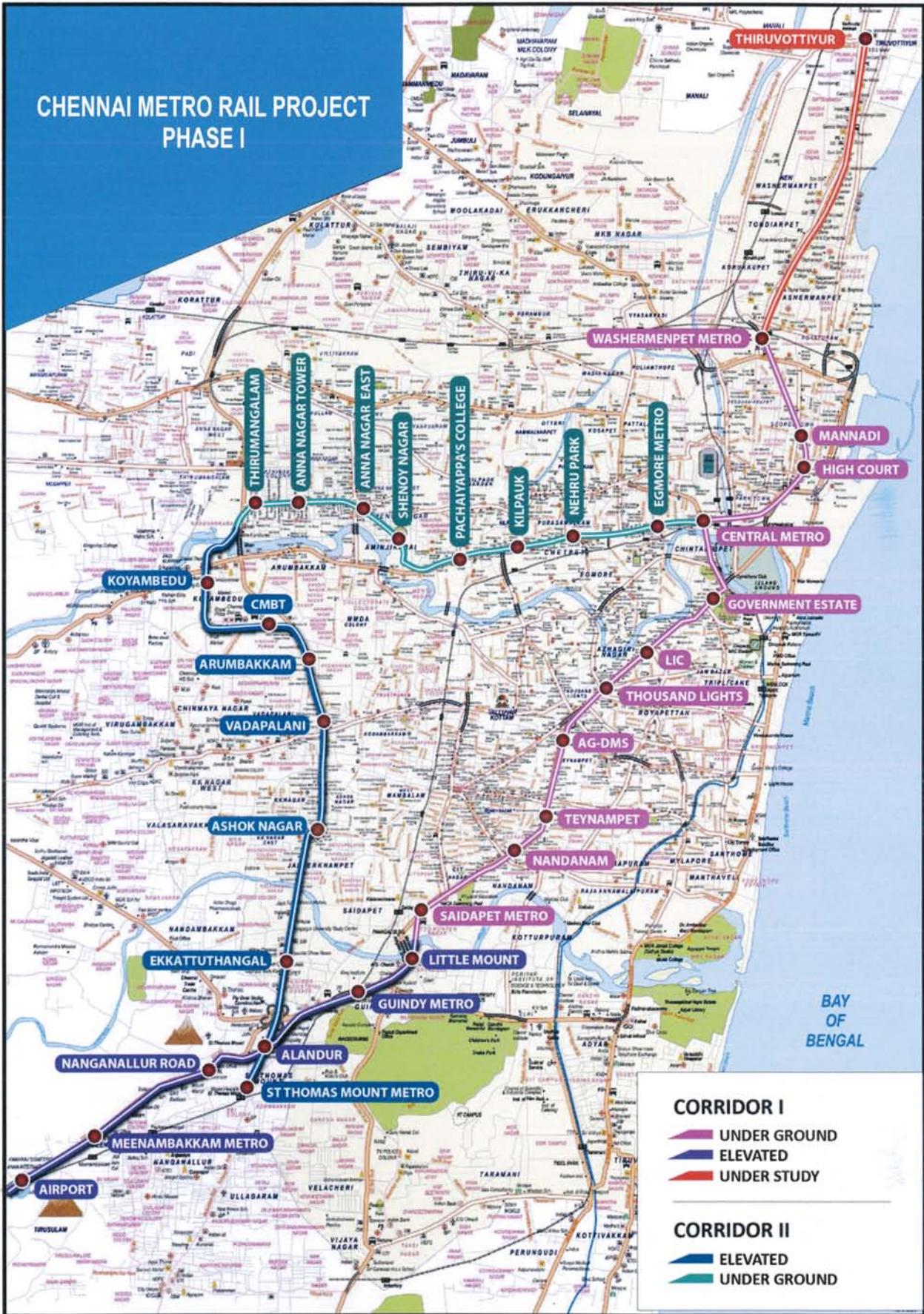
All metro coaches will have emergency buttons to alert the driver. All coaches are of state of the art design, air-conditioned, light weight, made of stainless steel, with 3 phase AC drive and regenerative braking system. The cars will have Automatic Train Protection (ATP) and Automatic Train Operation (ATO). All the cars are provided with electrically operated bi-parting automatic sliding doors to ensure the safety of passengers. Besides, these cars will have electronic route map, Public Address system, Passenger Emergency Intercoms, Video surveillance and CCTV. Each rake shall have two wheel chair parking locations for the benefit of physically challenged persons. The cars will be equipped with gang ways to facilitate easy movement of passengers from one car to another. The cars will operate on 25 KV through an Overhead Catenary System. For a 4-car metro rake composition, the capacity will be 1276 persons including seating and standing. Each 4-car rake will be provided with a 1st class seating section in the coach closest to the operator's cab. The 4-car configuration will be designed and manufactured for future convertibility to a 6-car rake at a later date when traffic demand goes up.

Four car rakes will be operated in the initial stages which can be subsequently upgraded to six car rakes depending upon the need in later stages of operation. Carrying capacity of one 6 Car Metro Rake is 1914 passengers. One 4 car metro rake per trip is expected to remove 16 buses/300 cars/600 two wheelers from road.

Extension of Corridor – I up to Thiruvottiyur

The Government of Tamil Nadu approved in-principle the extension of Corridor-1 of Chennai Metro Rail Project from Washermenpet to Thiruvottiyur-Wimco Nagar, covering a distance of 9.051 k.m. on 15.10.2010. It has also approved the estimated completion cost of Rs.3001 crores and has recommended this extension project to Government of India for Central Government funding and for loan assistance from Japan International Cooperation Agency (JICA).

CHENNAI METRO RAIL PROJECT PHASE I



For additional details, please contact us at:

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