

## Project No 8

### LIGHT RAIL TRANSIT (LRT) PROJECT COLOMBO BUSINESS DISTRICT & SUBURBS

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1. Project implementation agency: Sri Lanka Railways
2. Estimated project cost; US \$ 2 billion
3. Method of procurement: By open tender.
4. Development model: Joint Venture under PPP system
5. Implementation period: 7 Years

#### Background of the Project

Western Province Megapolis Planning unit has made preliminary designs for Light Railway Transit<sup>1</sup> (LRT) project covering Colombo Central Business Division (CBD) and the suburbs. This LRT system is expected to reduce the traffic congestion in the city and suburbs by a considerable level. It would also derive economic benefits such as reduction of private vehicles entering Colombo, saving of fuel, saving of travel time for commuters as well as a comfortable and fast travel option.



The total distance covered by the LRT system is estimated to be around 75 Kms. The system would be linked to existing bus and railway transport systems. The system would operate at grade as well as at elevated levels depending on the terrain of the route.



The past few decades have witnessed a rapid change in urban transport in Sri Lanka and in the Western Region (WR), particularly. The intense traffic crises in Colombo have worsened to such an extent that environmental quality and economic performance of the region are both under threat. As of now, there are about 10 million trips made daily within the CMC (Colombo Municipal Council), of which 7.8 million are motorized trips. New development under the Megapolis plan would further increase the transport demand and hence create traffic congestion. As the nation's busiest international seaport and airport are located within the area, and expansion of such facilities are also in the pipeline, introduction of structural changes to the transport system is of paramount importance to make the metropolitan area a modern, liveable, environment and investor friendly area.

The Western Region Megapolis (WRMP) Transport Plan aims to provide these much needed structural changes by creating an integrated transportation system, comprised of roads, railways,

waterways and other modes of transport. One of the flagship projects of the WRMPP Transport Plan is the proposed Light Rail Transit (LRT) system, which is a form of urban transport similar to a tramway, but which operates at a higher capacity and frequency.

Implementation of an LRT system will increase mode choice for passengers and private vehicle users, boost the level of service in public transport services, improve the accessibility and mobility of commuters and increase public transport coverage. As a result of these interventions, the overloading of existing transit systems will be avoided, the number of private vehicles (especially motor cycles and three wheelers) on roads will be reduced, the quality of ridership will be improved, with better travel time, safety and comfort, more investors and tourists will be attracted to the country and the land acquisition problem for road widening will be solved.

The passenger demand forecast projected in this study is based on an advanced computer simulation technique used by the Megapolis transport team.

### **Project Description**

As defined by the American Public Transportation Association, light rail is "...a mode of transit service (also called streetcar, tramway, or trolley) operating passenger rail cars singly (or in short, usually two-car or three-car, trains) on fixed rails in right-of-way that is often separated from other traffic for part or much of the way. Light rail vehicles are typically driven electrically with power being drawn from an overhead electric line via a trolley [pole] or a pantograph; driven by an operator on board the vehicle; and may have either high platform loading or low level boarding using steps."



Figure 1 shows an image of a typical LRT system, for illustration purposes.

### **Figure 1: Typical LRT system**

Geographically, the proposed LRT will be confined to two areas; the network in the Colombo CBD and the network in the suburbs. All the major points in the core area will be connected by the new system in the CBD, while the system in the suburbs will cater to the major areas that will attract and generate traffic.

The proposed LRT system for the Western Region will operate on 7 main lines. The total length of the system will be 75km, and will include 40 stations as per tentative estimates.. The portion of the LRT system within the CBD (Central Business District) will be a complete elevated system; in other areas, the system will operate at grade wherever possible.

Table 1 shows an overview of the proposed LRT system.

**Table 1: Summary of proposed LRT system**

Line		Length
<b>Within CBD</b>		
Green Line (RTS1)	(Fort – Kollupitiya-Bambalapitiya- Borella-Union Place-Maradana)	15km
Yellow Line (RTS2)	Fort- Maradana- Mattakkuliya/Peliyagoda	11.5km
Red Line (RTS3)	Dematagoda-Borella-Kirulapone-Havelock City-Bambalapitiya	10km
<b>Outside CBD</b>		
(RTS4)	Borella –Battaramulla	10km
(RTS5)	Battaramulla – Kottawa via Malabe	9.6km
(RTS6)	Malabe–Kaduwela	6km
(RTS 7)	Peliyagoda- Kadawatha	13km
Total		75km

The project life time is assumed to be 33 years, with an initial implementation period of three years. The total cost of the project is estimated at 3.909 billion USD if the system is to be developed in three stages and 3.585 Billion USD if the entire system is to be built in 3 years.

Figure 2 illustrates the proposed traces for the implementation of the LRT system. The system is expected to be implemented either in three stages or at once depending on the recommendation of consultants. The stages identified are as follows

**Table 2: Stages of implementation of the proposed LRT project**

	Stage I	Stage II	Stage III
Total length to be completed (km)	25	21	29
Period (Tentative )	2018-2020	2020-2022	2022-2025
No of stations at grade	0	5	4
No of stations elevated <sup>2</sup>	22	12	9
Tracks at grade (km)	0	5	7
Tracks elevated (km)	25	16	22

Out of the lines listed in table 1, line 1 and line 4 have been taken for feasibility study and finance by JICA. Therefore, the balance 5 lines only included in this project for development. Basically one or more investors will be selected for the development of 5 lines with a time schedule given in table 2.

The preliminary cost estimates show that the total investment will be US \$ 2 billion and the Government of Sri Lanka is proposing to implement the project under PPP basis.

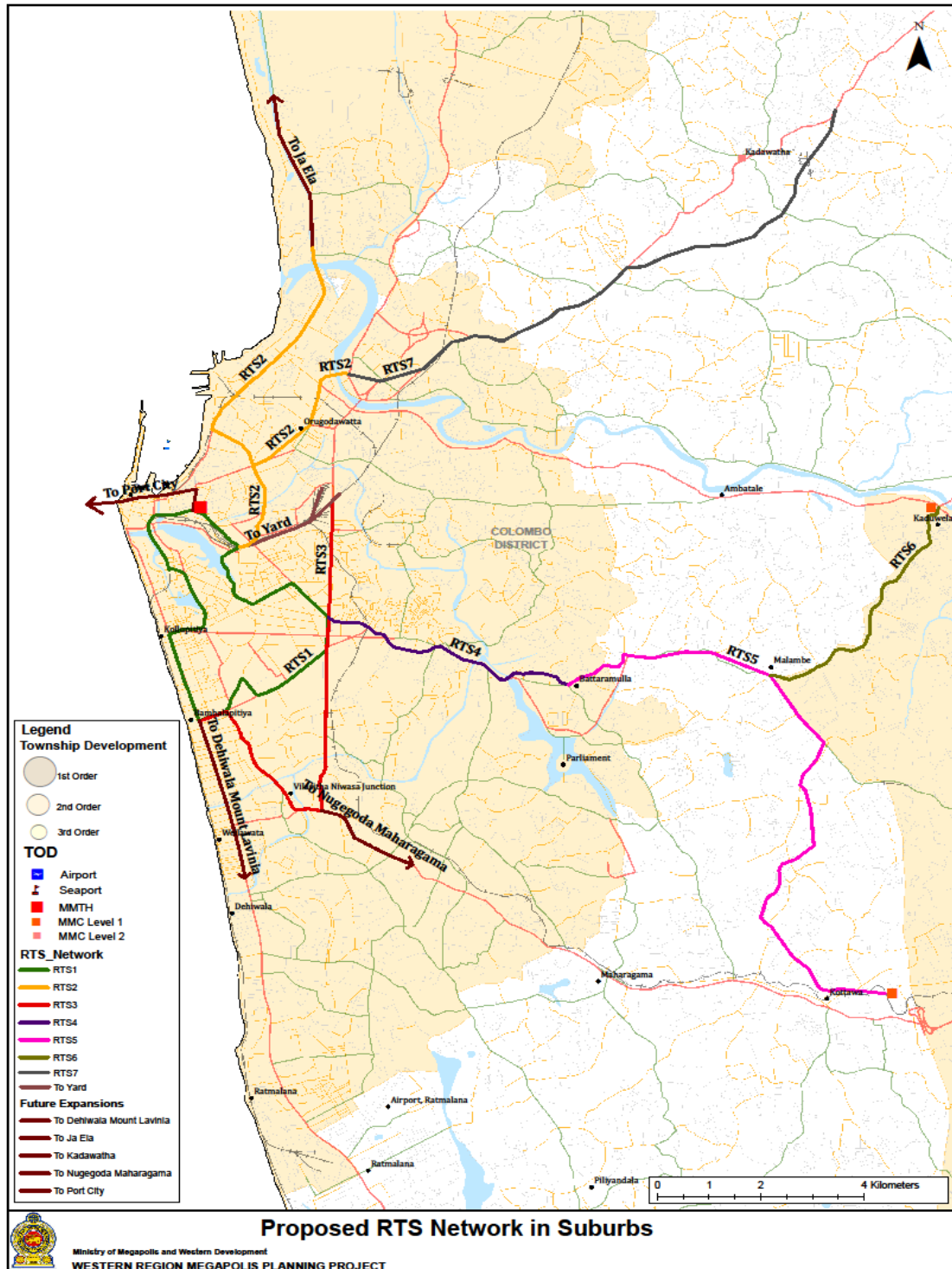


Figure 2: Proposed traces for the LRT system