

The Manila LRT System

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The Philippines Light Rail Transit Authority (LRTA) was established on 12 July 1980 by Executive Order No. 603 to construct, operate and/or lease LRT systems in the Philippines. Its mission is to create a fully integrated mass rail transit network to alleviate Metro Manila's serious congestion. The Meralco Transit Organization (METRO), then a wholly-owned subsidiary of Meralco (but now a wholly-owned subsidiary of LRTA), was organized and contracted on 31 July 1980 to manage and operate the system on a day-to-day basis under a 10-Year Management and Operating Agreement.

Measuring approximately 15 km, and presently the only operational LRT system in the country, LRT Line 1 (Fig. 1) is a fully elevated, double-track system carried on a concrete superstructure stretching along the Taft-Rizal corridor of Metro Manila. It has three terminals and 15 stations and initially operated with 32 trains, each consisting of two articulated cars, carrying about 450,000 passengers daily. To date, a total of 1.4 billion passengers have been transported since commercial operation started in December 1984. The trains run at a 2- to 3-minute headway from 05:30 until 21:30. Each train has a capacity of 748 passengers (162 seated and 586 standing), and an operating speed of 50–55 km/h (60 km/h max.).



LRT Line 1 running in front of Manila City Hall

(LRTA)

The LRT uses a dual-fare system; passengers boarding in the Token Zone (any of the first 14 stations southbound from the North Terminal or northbound from the South Terminal) pay 10 pesos while those boarding in the Peso Zone (remaining four stations) pay 1 peso.

The LRT Line 1 was financed through an Economic and Technical Cooperation Agreement between the Philippines and Belgium. Initial assistance for building the LRT came from the Belgian government,

which granted a BFr300-million soft and interest-free loan with a 30-year repayment period. A Belgian Consortium consisting of ACEC, BN, TEI and TC* provided an additional loan of 700 million pesos. The consortium provided the cars, signaling, power, telecommunications, training and technical assistance. The actual cost of the project at 1986 was 3.4 billion pesos broken down as follows:



LRT Line 1 entering Pedro Gil Station

(LRTA)



LRT Line 2 under construction

(LRTA)

Local Loans	0.438 billion pesos
Foreign Loans	1.814 billion pesos
Sub-total	<u>2.252 billion pesos</u>
Government Equity	1.124 billion pesos
Total	<u>3.376 billion pesos</u>

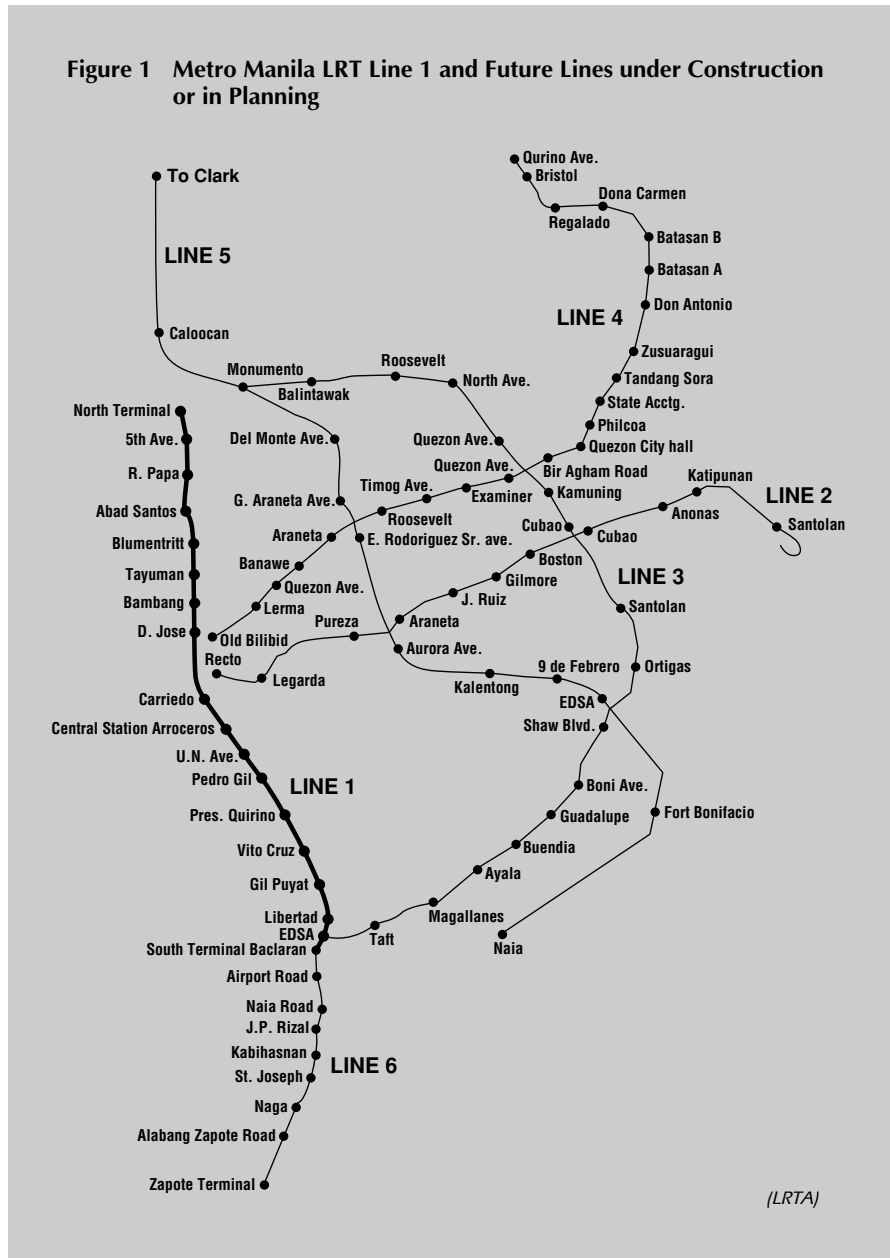
The elevated concrete superstructure was designed and built to withstand a Richter magnitude 8 earthquake. Special provisions were made to dissipate seismic energy at the bridge supports (restraining bars, shear keys) and at the column bases (plastic hinges). Meralco supplies the 35-kV power for the system to nine substations, which convert the supply to 750 V dc using two air-cooled silicon rectifiers. Communications with trains uses a semi-duplex or duplex UHF radio system. Relay-type trackside signals with fail-safe technology are used throughout the line.

An important link with the LRT Line 1 running north-south will be Line 2 running east-west. This project is still in progress and involves construction of a 13.8-km, almost completely elevated 8-m high line (higher than the existing LRT 1) along Marcos Highway, Aurora Boulevard, Ramon Magsaysay Boulevard, Legarda and Recto Avenue corridors. The total estimated cost of the Line 2 project is 25.7 billion pesos financed by Yen Credit Packages (YCP) from the Overseas Economic Cooperation Fund (OECF) in Tokyo. ■

Notes

- * ACEC: Ateliers de Constructions Electriques de Charleroi
- BN: Constructions Ferroviaires et Metalliques, formerly Brugeoise et Nivelles
- TEI: Tractionnel Engineering International
- TC: Transurb Consult

Figure 1 Metro Manila LRT Line 1 and Future Lines under Construction or in Planning



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