

Taipei Prepares for New Mass-Transit Infrastructure

The 6 million residents of bustling Taipei in Taiwan can look forward to a series of new mass transit systems over the next few years as 88 km of networks finally come into operation.

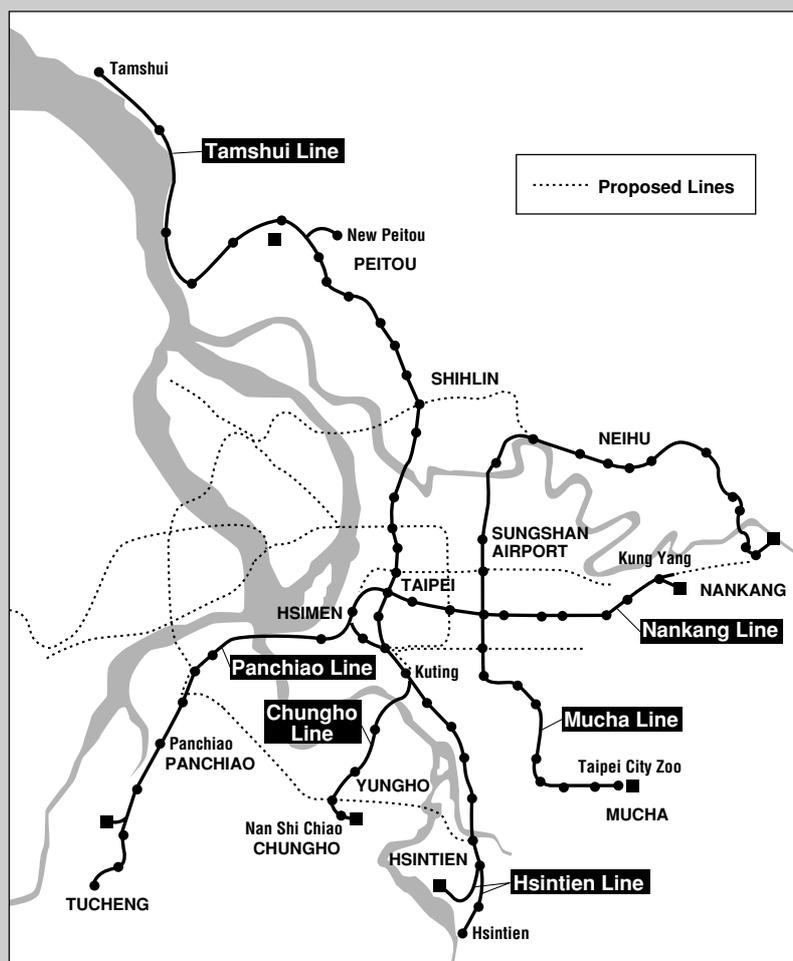
Preparations to establish the Taipei Rapid Transit Systems (TRTS) got underway back in 1986 and were soon followed by the 1987 establishment of the Department of Rapid Transit Systems (DORTS) for the specific task of managing this US\$18 billion project.

The basic plan was to build five lines through 8 major transport corridors in metropolitan Taipei between the downtown area and satellite towns and cities. The budget for the entire TRTS project was shared between the central government (\$9 billion), Taipei City government (\$6.5 billion) and the Taiwan provincial government (\$2.5 billion).

Land Acquisition Problems and Construction Delays

The first construction of the planned network started on the Red (Tamshui) Line in 1988, extending 22.8 km northwards from Taipei Main Station of Taiwan Railways (TRA) to Tamshui (Fig. 1). The line runs through cut-and-cover for 3 km, and on an elevated section for 13 km before taking over the alignment of the TRA Tamshui Line. Cut-and-cover was chosen over conventional tunnelling due to extreme geological problems in the Taipei area. Although the Red Line was scheduled to open in 1993, the inauguration was delayed until March 1997 by many problems, not least of which was acquiring land, prices of which were soaring, for the project. DORTS took up the task of promoting joint land development in 50 areas in order to obtain the needed land, as well as to protect landowners' interests, and to make effective use of the land along the routes and around terminals.

Figure 1 The TRTS Network



(DORTS)

50,000 Passengers per Hour

The Red Line now has 22 six-car trains in operation each carrying a maximum of 2200 passengers, permitting transport of 50,000 passengers per hour in each direction at a 2-minute headway. The 1435-mm track uses a third-rail current collection system at 750 V dc. Computerized fare collection systems, automatic ticket vending machines, automatic gates and magnetic tickets all speed access to

platforms. The cars were built in the USA by a consortium of Nissho Iwai American Corp., and Kawasaki Rolling Stock (USA).

VAL 256 Brown Line

The first line to open was the 24-km mini-Metro Brown (Mucha) Line, but it was also beset by problems and major remedial work had to be carried out on the elevated structures. Trial running started in 1992 but the 10.9-km section between

Taipei City Zoo and Sungshan Airport was not opened until March 1996. The Brown Line is the only Automatic Guided Transit (AGT) line in the planned network. It is entirely on elevated sections and the 23 stations are served by VAL 256 unmanned medium-capacity trains manufactured by Matra of France. The rubber-tired four-car trains run at a headway of 72 seconds during rush hours, carrying up to 25,000 passengers in each direction per hour at a maximum speed of 70 km/h. Future introduction of six-car trains will increase capacity to 30,000 per hour. In its first year of operation, the Line carried over 2 million passengers.

Future Openings

The 10.3-km Green (Hsintien) Line running underground from the city centre south to Hsintien is expected to open on 31 May 1999. The cars are being built by a consortium of Siemens, SGP, and Union Carriage. 2005 is expected to see the completion of the Blue (Nankang-Tucheng) Line. The Blue Line, joining the Nankang and Panchiao Lines, will have a total length of 23.9 km. The Nankang Line, scheduled to open in 2000, will run from Nankang to Hsimen. Its 11.5-km underground route will include 12 stations and a Nankang train depot. The cars for this line are being built by the same consortium as for the Green Line. The Panchiao Line, scheduled to open in 2005, will run from Hsimen to Tucheng. Its 12.4-km route will include 9 stations and a Tucheng train depot. The Orange (Chungho) Line is expected to open in June 1999. It will run north from Chungho to join the Hsintien Line at Kuting. Its 5.4-km underground route will have four stations and a train depot.

Long-term proposals

DORTS has set the year 2021 as the target year for completion of a long-term



TRTS Elevated track under construction

(DORTS)

network adding a further six lines totalling 108 km to the current TRTS (Fig. 1). They include the Hsinyi Line, Sunshan Line, Sanchung-Hsinchuang Line, Luchou Line, an orbital line, and the Chiang Kai-Shek International Airport Line.

1996) have brought increasing traffic congestion to Taipei's streets. The long-term plans to build a modern mass-transit infrastructure are gradually bearing fruit, bringing a much brighter future to the city's 6 million residents. ■

Conclusion

Taiwan's rapid economic growth coupled with the increasing prosperity of its citizens (over \$10,000 per capita income in

Acknowledgement

This article is based on information received by JRTR from the Department of Rapid Transit System (DORTS), Taiwan.



Train running on Red Line of TRTS

(DORTS)