

# Shenzhen Line 3 – Pre Investment Study (China)



## INTRODUCTION

The Mass Transit Railway Corporation (MTRCL) of Hong Kong were invited by the Shenzhen Government to consider investing in the implementation of the Shenzhen Line 3 from Hong Ling Zong Lu in the Central Business District to Longgang.

Line 3 will be 32 km long, partly in tunnel and on viaduct, with six underground stations and 13 above ground stations. It will interchange with the existing Line 1 at Laojie and the future Line II.

MTRCL appointed Atkins to carry out a pre-investment study on the project with the primary aim of identifying the preferred scheme and providing cost estimates of the project and assisting in identifying project revenues. This information was used by MTRCL to develop a project financial model and hence an understanding of its viability.

## OUR SOLUTION

Atkins carried out the following studies:

- Value engineering study to identify ways of improving the original scheme developed by others;
- Planning reviews to provide data for estimating patronage and also to identify associated property development opportunities;
- Engineering reviews of all major infrastructural element including tunnels, below ground and above ground stations and viaducts;
- Construction planning; and
- Environmental, traffic and geotechnical services.

## OUR APPROACH

Comprehensive reviews were carried out of the previous studies carried out by a local Design Institute. Particular emphasis was placed on understanding the proposed planning of the project area to facilitate the preparation of accurate ridership forecasts and to identify suitable property / opportunities. In addition the proposed location of stations, and vehicular and pedestrian access to the stations was also subjected to a comprehensive value engineering study. Alternative methods of construction and a construction programme were developed with a full appreciation of associated design and construction risks.

## OUTCOMES

MTRCL were provided with a comprehensive Report documenting the information that they required for their subsequent discussions with the Shenzhen Government and for use in establishing the design of Line 3.