



Feasibility Study and Preliminary Design for the Subway Line 2 & 4 of Lima

Main expertise: Urban & Regional Transport Planning

Other expertise: Public Transport Consultancy

Sectors: Public Transport Infrastructure

Location: Lima

Year: 2012

Client: Proinversión | Private Investment Promotion Agency - Perú

Lima is a megalopolis of 12 million inhabitants which is experiencing a demographic boom and economic exploded in recent years. This situation has resulted in a heterogeneous and contradictory urban sprawl followed by a deficient infrastructure programming. Only in recent years the city has tried to remedy this situation with a long-term transport development plan which establishes in the resolution of traffic nodes the priority. Key element of the program was the creation of interconnections between of the only two major public transport lines available (BRT and metro line L1 viaduct) which, to date, have not been able to create network effect.

The project consisted of the Feasibility Study and the Preliminary Design of 2 fully automated underground lines: the main one is the Line 2, which crosses the city from east to west (27km) between the Municipality of Ate and the port of Callao. The secondary branch is actually part of the future Line 4 (9km) that connects the Line 2 with the International Airport Jorge Chavez to the north. In the project there areas many as 36 stations (35 underground + 1 elevated).

Our contribution:

MIC's role in the project was the transport study that determined the key design inputs for the project and its business case:

- the expected ridership [pax per hour per direction] in the most loaded segment and direction during the peak hour, and
- the potential demand captured by the new system (i.e. how many tickets one could sell).

The transport analyses that MIC carried out as consultant to the Consortium took advantage of the existing multi-modal transport model developed by AATE (Autoridad Autonoma del Sistema Electrico de Transporte Masivo de Lima y Callao) made available by Proinversión.

In particular, MIC's inputs were critical in

- the definition of the best alternative among the options proposed by the main Client and the consortium; KPIs from MIC informed the Multi-Criteria Analysis developed for the selection of the best alternative;
- the definition of the optimal location of stations along the main track in relation to their accessibility from the neighbouring areas;
- the estimates of boarding, alighting and transfer passengers at stations, which were useful for the definition of stations' standards and the expected footfall, relevant for the computation of revenues for the commercial areas within the project.

The modelling activities were carried out with Transcad by Caliper.

[See more](#)

