The Project
Since 1966, a transport master plan considered the implementation of an Independent Transportation Network (ITN) on the basis of metro technology, consisting of 5 lines with an overall length of 60 km. The construction of the proposed Metro System started in 1969. Meanwhile, in the second oldest Metro System of South America, 5 lines are now in operation or under construction. In 2009 this Metro System will reach a length of approximately 83 km and will include 85 stations.

Line 1 was opened in 1975 one as first part of Metro Santiago de Chile, running from San Pablo and underpassing Alameda del Libertador Bernardo O’Higgins to La Moneda. The First extension was in 1977, to Station Salvador and in 1980, line 1 was extended to present terminal Escuela Militar.

In March 1978, Line 2 running from Los Héroes to Franklin was opened. In December of the same year, Line 2 was extended to station Lo Ovalle and in 1987, to station Puente Cal y Canto. Since this time, Geoconsult was permanently involved in design and consulting works for further extension of the metro system. In 2004, Line 2 was extended to station Lo Ovalle and in 1987, to station Puente Cal y Canto. Since this time, Geoconsult was permanently involved in design and consulting works for further extension of the metro system. In 2004, Line 2 was extended to present terminal Cerro Blanco and in southern direction to terminal La Cisterna.

The third line of Metro System, Line 5, was opened in April 1997. The first section led from station Baquedano to station Bellavista de La Florida. In March 2000, Line 5 was extended to Santa Ana and beyond in March 2004 to station Quinta Normal. Line 4 and Line 4a are under construction. Opening of these lines are foreseen in 2009.

Geology
The main geological formations at subsoil are Quaternary sediments of Santiago Basin, named „Ripio“. This sediment consists of coarse-grained, sandy gravel, mainly consolidated, partly with clay-like and silty strongly weathered parts intercalations. At one northern section of Line 2, andesites, partly strongly weathered and with fault zones, were found.
Selected Examples of Geoconsult’s Services

Extension of Line 2 from station Dorsal at Avenida Recoleta to Avenida America Vespuci

**Structures:**
Mined station (NATM) including access and platform tunnels; cross section area: 125 – 150 m²;
various emergency exits and ventilation shafts, single track running tunnel: 2.7 km; cross section area: 50 – 66 m²

**Services:**
General project, tender design and documents, detailed design, construction supervision for mined sections.

**Line 4**
**Structures:**
Approx. 9 km twin track running tunnel, 7 mined stations with a platform tunnel; cross section of station: 160-180 m², length of station: 140 m

**Services:**
Preliminary project, tender documents, detailed design, construction supervision

**Line 5**
This line connects Metro Line 1 with the south-eastern city districts.

**Structures:**
Three mined stations (NATM); cross sections: 2 x 100 m² and 1 x 150 m²; approx. 2 km running tunnel (NATM) with a cross section of ~ 60 m², ventilation shafts etc.; one access shaft to running tunnel, 2 construction pits, access tunnel

**Services:**
Feasibility study, preliminary project and general project, detailed project, construction supervision