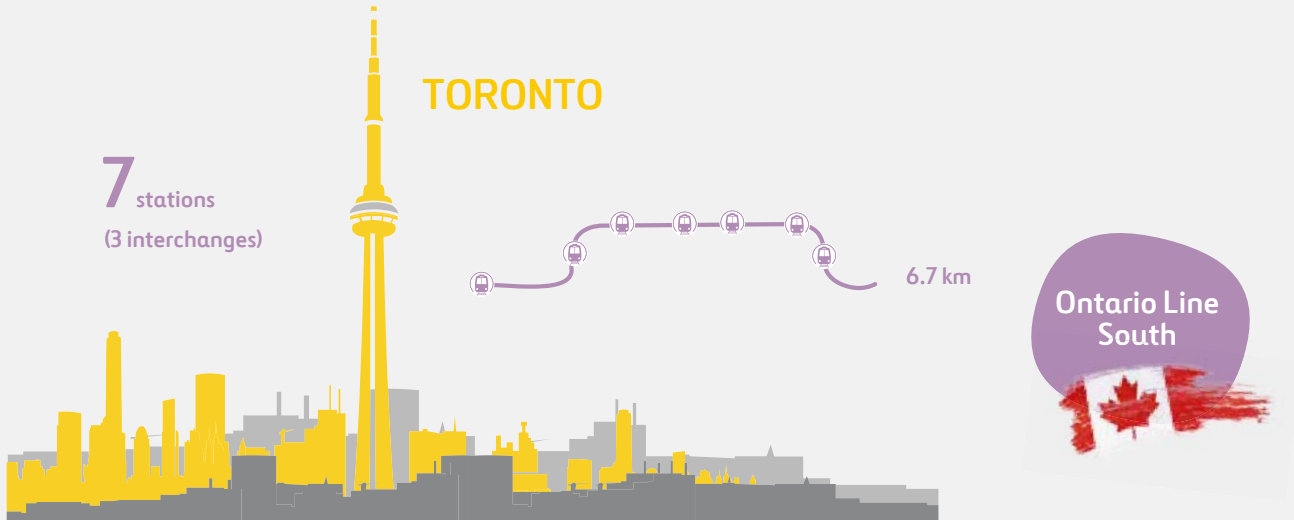


IN 2 MINUTES

# Metro: Ferrovial's line crosses the world

The metro is the urban transport by excellence. Ferrovial has designed, built tunnels, laid tracks and excavated stations in some of the world's major cities. Madrid, London, Lisbon, Barcelona, Santiago, Oporto, are some of these places. Now Ferrovial faces the challenge of working in Toronto, Sydney and Paris. And it will do so while respecting unique buildings.



## THE CONTRACT

**Client:** Ontario Transit Group  
**Type:** design, construction and financing  
**Partners:** Vinci Construction Grands Projects  
**Project value:** 4,450 M€  
**Duration:** 2022-2030

## THE PROJECT

**Diameter:** 6.83 m  
**Depth:** > 35 m  
**TBMs:** 2 twins  
**Machinery:** conventional excavation of tunnels and caverns, gantries and moving cranes, heavy loads, formwork carriages, pile drivers and pile-driving machinery  
**Excavation:** 1,400,000 m<sup>3</sup>  
**Concrete:** 275,000 m<sup>3</sup>  
**Steel:** 25,000 t

## THE MANAGER

**Ricardo Ferreras**  
**Education:** Civil Engineer. IESE and IE Business schools  
**Joined Ferrovial:** 2002  
**Projects:**

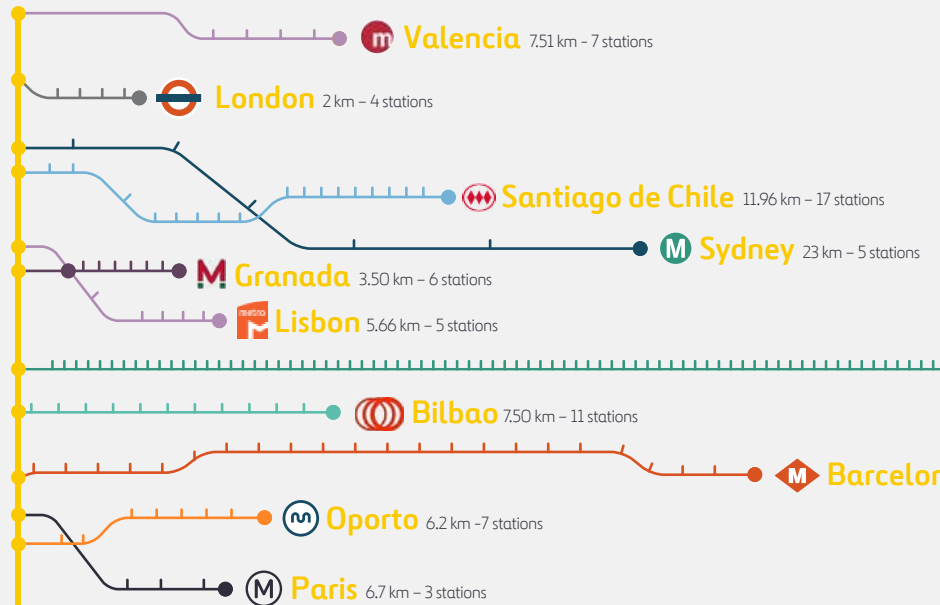
- Guadarrama Tunnels
- Pajares Tunnel
- High Speed Basque Y Tunnels
- Venta de Baños High Speed Railway Viaducts
- Valladolid-Palencia High Speed Railway Track Assembly
- Peña Rayada Tunnel
- Thames Tideway Tunnel
- HS2 London-Birmingham

“The biggest challenge is the logistics and planning to efficiently execute a project of this magnitude in the center of a city like Toronto.”



Ricardo Ferreras,  
project manager

## SINCE 1927, 200 KILOMETERS BUILT





**THE CONTRACT**

**Client:** Grand Paris Express  
**Type:** design and construction  
**Partners:** Spie Batignolles  
**Project value:** 420 M€  
**Duration:** 2022-2029

**THE PROJECT**

**Diameter:** 9.10 m  
**Depth:** 45 m  
**TBM:** 1  
**Excavation:** 755,000 m<sup>3</sup>  
**Concrete:** 178,000 m<sup>3</sup>  
**Steel:** 15,000 t

**THE MANAGER**

**Albert Molné**  
**Education:** Civil Engineer, Business Administration and Management, IESE Business School  
**Joined Ferrovial:** 1995  
**Projects:**

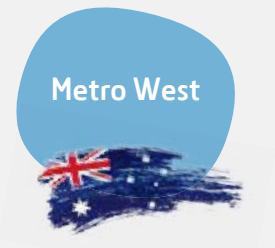
- Barcelona Metro Line 9
- Grand Parkway Houston
- NTI Dallas
- LHT Perpignan

“ The use of a Variable Density TBM will help to minimize the settlements at Versailles. ”



Albert Molné,  
project manager

**SYDNEY**



**THE CONTRACT**

**Client:** Sydney Metro  
**TYPE:** design and construction  
**Partners:** Acciona  
**Project value:** 1,200 M€  
**Duration:** 2021-2025

**THE PROJECT**

**Diameter:** 7.01 m  
**Depth:** max. 92 m  
**TBMs:** 2 double-shield twins  
**Machinery:** 2 TBMs, 4 roadheaders, gantry cranes, carousel and molds  
**Excavation:** 1,700,000 m<sup>3</sup>  
**Concrete:** 175,000 m<sup>3</sup>  
**Steel:** 10,500 t and 4,000 t fibers

**THE MANAGER**

**David García Azaña**  
**Education:** Civil Engineer  
**Joined Ferrovial:** 1998 and 2016  
**Projects:**

- Extension of Line 4 Barcelona metro
- Construction of line 12 Madrid metro
- Extension of Line 1 Madrid metro
- Sanchinarro light train (Madrid)
- Boadilla light railway workshops and depots (Madrid)
- Tramway Alcalá de Guadaíra (Seville)
- Malaga metro
- Train line 229 Gdansk (Poland)
- Batinah highway (Oman)



David García Azaña,  
project manager

“ A project to be executed in a tight time schedule with TBMs launches in a complicated geology. ”

**Madrid** 84.56 km - 88 stations

**Barcelona** 43.28 km - 20 stations

**FOR A WORLD  
ON THE MOVE**