



Westside Purple Line Extension, Section 1

Los Angeles, California

Project Stats

Owner

Los Angeles County Metropolitan
Transportation Authority

Engineer

Parsons Corporation - Pasadena

Delivery Method

Design-Build

Construction Cost

\$2,243,457,393

Start Date

January 2015

Completion Date

June 2024

About the Project

Skanska, as managing joint venture partner, designed and constructed a 3.9-mile heavy rail subway in the Wilshire Corridor of Los Angeles, as part of the Purple Line Extension. The Westside Subway Extension, Section 1 is the first of three projects to extend the Metro Purple Line from the Wilshire Corridor to Westwood. The scope of work included twin bored tunnels, three underground stations, track work and systems work. The project used two slurry pressure balance (SPB) tunnel boring machines (TBM's) for 3.9 miles of twin-bored tunnels. Each 21 foot diameter tunnel used a precast segmental lining that serves as the initial ground support and final lining in the tunnel. The project included tunnels classified as gassy conditions and also asphalt impacted soils (known as the "tar sands"), which required extensive monitoring and ventilation systems to ensure safety of the public and all employees. The Westside Subway's three underground stations (Wilshire/La Brea, Wilshire/Fairfax, and Wilshire/La Cienega) are approximately 850-1000 feet long and 65-80 feet deep. The cut and cover stations were constructed during 55-hour weekend closures and with the use of temporary traffic decking. Skanska used top-down excavation and bottom-up concrete construction using soldier piles and lagging, tiebacks, internal bracing, utility support and HDPE membrane.

Track work included the installation of direct fixation track (mounted on concrete plinths or low vibration precast block-encased in concrete) and two tail tracks at the end of the tunnels, west of the Wilshire/La Cienega station, for future phases of the project. The design, installation, testing and commissioning of systems and finishes work included traction power, automatic train control, signaling, communications and a ventilation system. Additional work included utility relocation and protection, street improvements, and a cut and cover TBM interface chamber for retrieval of the TBM at the existing Wilshire/Western station.