



# FACT SHEET: VTA's BART Silicon Valley Phase II Extension Project

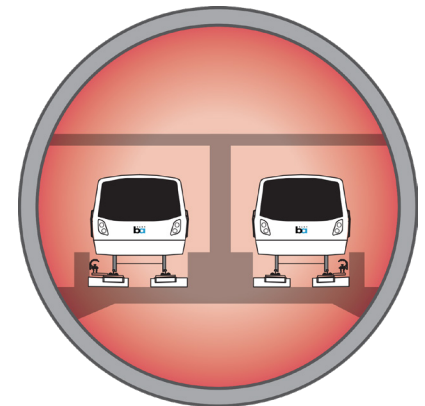
## Tunneling Methodology

VTA's BART Silicon Valley Phase II Project is a six-mile, four-station extension that will bring BART train service from Berryessa/North San José through downtown San José to the City of Santa Clara. The Phase II Project is planned to include an approximately five-mile tunnel which includes three underground stations (Alum Rock/ 28th Street, Downtown San José, and Diridon), one ground-level station (Santa Clara) as well as general and maintenance facilities.

## Single-Bore Tunnel

The tunnel will be constructed as a single, large diameter tunnel. The tunnel will contain two independent trackways, one for each direction of travel. Passenger platforms will be located within the tunnel, connected to station entrances via underground passageways. Within the tunnel, there will be emergency exits that will allow passengers to reach designated safety areas during an emergency situation.

The tunnel will be excavated with a Tunnel Boring Machine (TBM). At stations, equipment will be used to excavate the underground passageways between the tunnel (which contains the boarding platform) and the off-street station entrances.



## How does a Tunnel Boring Machine (TBM) Operate?

A tunnel boring machine (TBM) is a large drill that excavates the soil and installs the tunnel support segments. The segments form rings which are the initial concrete lining that supports the tunnel. The front section of the TBM (the cutter head, seen in photo below on the left) uses a combination of cutting tools to cut and excavate the soil.

- Within the large hole created, precast concrete segments will be installed to form rings to support the tunnel. The precast rings will be sealed to prevent water and mud from seeping inside.
- Soil will be removed via the off-street launch portal and either hauled away or reused for the project.
- The TBM uses electrical power and will enter and exit the tunnel through off-street portals. The specific type of machine and path of travel will be determined as the project progresses.
- Once the TBM has completed digging the tunnel, the track and facilities can be installed.



Istanbul Straight Road Project





## How will the community be impacted during construction?

A single-bore tunnel reduces construction impacts to the streets because most excavation occurs entirely below the surface. However, a major project like the Phase II Extension may affect limited areas surrounding specific structures during construction. For example, there may be sidewalk and lane closures during construction of the station entrances, tunnel portals and other structures. VTA will continue to work with the cities of San José and Santa Clara, the construction contractors, the public, local residents and businesses to minimize impacts to the extent possible.



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