



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

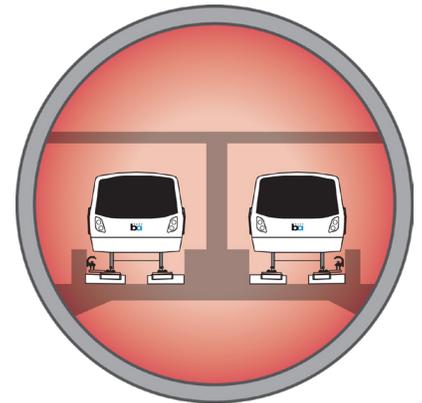
### Tunneling

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. Phase II is planned to include an approximately five-mile tunnel, three underground stations (28th Street/Little Portugal, Downtown San José, and Diridon), one ground-level station (Santa Clara), and a maintenance facility.

#### 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.

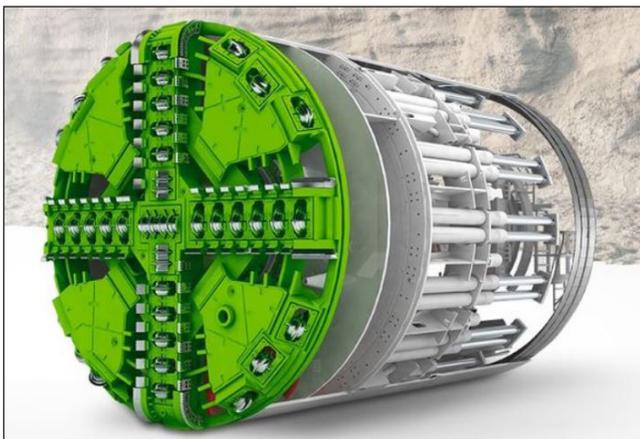
The tunnel will be excavated with a Tunnel Boring Machine. At stations, equipment will be used to excavate the underground passageways between the tunnel (which contains the boarding platform) and the off-street station entrances.



#### How Does a Tunnel Boring Machine Operate?

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



*Example tunnel boring machine cutterhead.  
Source: Herrenknecht*



*Barcelona's Line 9 Single-Bore Tunnel  
Source: Sener*



## How Will a Single-Bore Tunnel Benefit the Community?

A single-bore tunnel reduces construction impacts to the streets because most excavation occurs entirely below the surface. However, a major project like Phase II Project 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, construction contractors, the public, local residents and businesses to minimize impacts.



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