



Mission/Warren Area Improvements in Fremont

As part of the Berryessa Extension Project, during corridor preparations, VTA maximized public dollars and community benefits by coordinating with state and local transportation partners to construct major mobility improvements in the City of Fremont. As a result, the Mission/Warren Area Improvement Project included widening a section of Mission Boulevard from four to six lanes, building new on- and off-ramps between Kato Road and Mission Boulevard, trenching Warren Avenue under the existing Union Pacific Railroad and future BART system, and building five new bridges over Warren Avenue and Mission Boulevard to carry both Union Pacific freight trains and the future BART trains. Commuters are now benefiting from improved traffic flow between Interstates I-880 and I-680, and pedestrians and cyclists have safer sidewalks and bikeways.



Habitat Restoration

When building a project of this size, protecting natural resources including water, soil, plants and wildlife, is paramount. Three significant environmental mitigation projects were completed as part of the Berryessa Extension Project. In San Jose's Alum Rock Park, work was done to remove a fish barrier, expand a floodplain, repair erosion, remove non-native vegetation and improve the overall habitat for steelhead fish. Work was also done to preserve a 1930's historic bridge. In addition, trash was removed from the Upper Penitencia Creek, which passes through the Berryessa Transit Center. This area has now been transformed into a picturesque habitat that includes a meandering floodplain populated by ducks and native plants. It is also conducive to growing the native fish population. Finally, an 8-acre mitigation site at Wrigley Creek in Milpitas was established. At the site, fish and wildlife habitat were enhanced, storage capacity for flood waters was created and special status plant species, such as the Congdon's tar plant, were replanted.

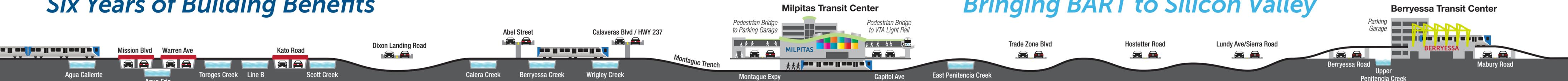


New and Enhanced Roadways

As part of the Berryessa Extension Project roadways were also added, extended or enhanced around the new transit centers to address traffic and provide convenient, direct access to station parking and pick-up/drop-off areas. For example, South Milpitas Boulevard, which was extended from Montague Expressway to Capitol Avenue at the Milpitas Transit Center, provides an additional point of access to the Milpitas BART Station, provides new access for development in the area and alleviates traffic congestion at the Great Mall Parkway/Capitol Avenue and Montague Expressway intersection. Montague Expressway was also widened with an additional lane for both east and west bound traffic which will alleviate congestion in the area for commuters. Berryessa Station Way was newly constructed through the center of the Berryessa Transit Center. This new roadway will reduce traffic impacts on Berryessa and Mabury roads.



Six Years of Building Benefits



Bringing BART to Silicon Valley



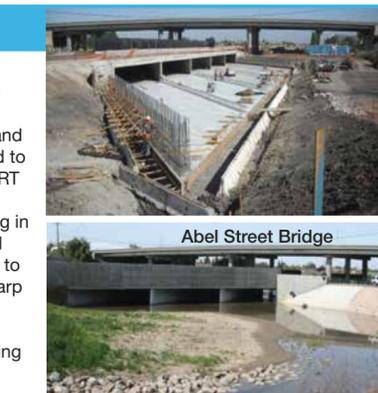
11 Grade Separations Completed

BART is a "fully grade separated system," meaning that the trains travel under or over every major intersection. This makes the BART system efficient because there is no need for trains to stop at intersections. It also allows vehicles, bicycles and pedestrians to safely cross over or under the train tracks. A total of 11 grade separated intersections have been completed as part of the Berryessa Extension Project. In Milpitas, BART trains will travel under Dixon Landing Road, Montague Expressway and Capital Avenue; and, in San Jose, they will travel under Trade Zone Boulevard, Hostetter Road and the Sierra Road/Lundy Avenue intersection. The last mile of the Berryessa Extension Project is elevated above ground. The tracks begin to rise just north of Berryessa Road, are elevated at the Berryessa station and travel over Mabury Road.



Flood Control

In addition to crossing roadways, the Berryessa Extension Project crosses 10 large creeks. Improvements to these creeks, including re-engineered banks and concrete box culverts, were constructed to help protect the community and the BART system from future flooding. Berryessa Creek, which experienced major flooding in 1982, 1983 and 1998, was widened and re-engineered in two separate locations to increase flow capacity and eliminate sharp curves. The benefits of these improvements were realized in 2017, when the areas with improvements avoided flooding during historical rainfall levels.



Major Utilities Relocated

There are 13 major utilities that travel alongside, cross under the rail corridor or pass through the station areas. All of these utilities, which include electric, natural gas, hydrogen, fuel, communications, water, sewer, and storm drains had to be relocated. With these relocations came improvements to the integrity, location and integration of these utilities.

Noise and Vibration Mitigations

Before VTA began construction on the Berryessa Extension Project, environmental analysis identified mitigation measures to reduce noise and vibration impacts from BART train operations. While state and federal regulations do not require mitigation measures to be in place until passenger service begins, VTA began work on a Residential Noise Insulation Program during early construction, so residents could benefit from noise insulation as soon as possible. Homes determined to potentially have interior noise levels greater than government thresholds received improvements such as multi-pane windows and insulation. All improvements have been completed for homes whose owners participated in the program. Other noise mitigation measures that are part of the project include new sound walls, noise and vibration absorbing materials under the tracks, and equipment enclosures.



Benefits Timeline:



- \$900 million Federal Funding Grant Agreement
- BART Berryessa Extension Groundbreaking



- Upper Penitencia Creek Flood Mitigation
- Kato Road depressed under future BART System
- Alum Rock Fish Passage Environmental Mitigation
- New railroad bridges over Mission and Warren



- Hostetter Road Bridge over future BART System
- Mission Warren Project, widening, ramps, bridges
- Elevated BART track way over Berryessa Road
- BART trench under Montague Expressway



- First set of BART tracks installed
- BART trench under Sierra/Lundy Intersection



- Montague Expressway Flood Improvements
- Upper Penitencia Creek Trail Connector
- Residential Noise Installation Program
- BART Trench under Dixon Landing Road



- BART Pedestrian Bridge connecting to VTA Light Rail
- BART tracks energized
- South Milpitas Boulevard Extension



- Milpitas and Berryessa Transit Centers finished



Milpitas Transit Center

The Milpitas Transit Center will become the community's one stop public transportation destination, offering a combination of regional and local public transportation services, including BART, VTA light rail and bus service, along with employer shuttles. VTA services will offer access to major high tech employment sites and educational institutions throughout Santa Clara County, while BART will offer similar service to the East Bay and San Francisco regions. Amenities at the station include an expansive transit center for bus services, retail services including food trucks, charge stations for electric vehicles and secure indoor parking for bicycles. A link between BART and the Norman Mineta San Jose International Airport will be offered by VTA bus service.



Berryessa Transit Center

The Berryessa Transit Center will provide easy access to BART service for San Jose residents, while providing equally convenient access to downtown San Jose for BART riders with VTA's limited-stop and rapid service bus routes. The Penitencia Creek Bike Trail extension into the station greatly enhances access for cyclists and pedestrians. The newly-constructed Berryessa Station Way will provide vehicle access to the station from both Berryessa and Mabury roads. Interpretative display panels in a creekside garden area will highlight the area's Native American heritage. The elevated BART passenger loading platforms offer sweeping panoramic views of both downtown San Jose and the eastern foothills.



Next Steps to Passenger Service

Although construction of the BART stations, trackway and systems is nearly completed, there is still critical work that needs to be done before the public can start riding BART in Santa Clara County. While the physical structures, power source and communications are operational, preparing for safe and efficient passenger service requires an enormous amount of testing, troubleshooting and retesting. Every aspect of the BART Extension project has been designed and built to meet rigorous requirements. Only when all the physical assets are in place, connected and the system is live in its own unique configuration, can real-situational scenarios be tested. This is because each extension of the regional system has its own unique characteristics and is not an exact replica of anything previously built or operated.

How it Works

BART trains are powered by direct current (DC) electricity that runs through an energized third rail along-side the tracks. The trains are operated in an "automatic" mode of a complex and modern train control system. This means that in addition to having an operator physically in the cab who can manually control the train, the train movements are controlled by a combination of track circuits and train electronics. When operating in this "automatic" mode, the train runs without operator input. The trains are controlled and monitored from a remote Operations Control Center, where BART staff control and monitor telephones, radios, lights, thermostats, fire alarms, emergency ventilation fans, closed circuit television and the public announcement system. Train operators are on board to monitor all train movements and conditions, as well as provide a failsafe back-up.

Testing

The combination of track circuits and train electronics means that all points of contact between the train wheels and the track completes a control circuit—and it all has to be tested. Each and every inch of track must be tested for every possible condition and situation to ensure the trains are programmed to respond appropriately. When something in the system is not operating or responding as designed, corrections are made. The resulting fix is then tested again. The fix could be as simple as tightening a wire, or more complex such as reprogramming a part of the system, communications or network. In addition, every piece of system equipment is tested independently as well as integrated with the entire system. Only after an aspect of the system passes the testing phase, can it receive the required safety certifications by BART and safety regulators.

Training

Concurrently with these efforts, engineers, maintenance and operations staff and station agents are being trained on the unique aspects of the new extension. VTA and BART are dedicating all available resources to advancing testing in an expedient manner, to deliver a safe and fully operational system as soon as possible.



Champions and Partners

The BART Silicon Valley Berryessa Extension project has moved from a vision to a reality due to the determination of our ardent champions and dedicated partners. VTA would like to thank the federal, state and local officials who helped secure project funding, our city, county transportation and utility partners who we collaborated with for funding and project delivery and the Santa Clara County residents who voted to tax themselves to pay for the construction and operation of the future BART extension.



Six Years of Building Benefits Bringing BART to Silicon Valley



BART Extension Already Benefiting Silicon Valley

On April 12, 2012, the Santa Clara Valley Transportation Authority (VTA) broke ground on the Berryessa Extension Project, the first 10 miles of the 16-mile, six-station extension of the regional Bay Area Rapid Transit System (BART). The 10-mile, two-station Berryessa Extension, begins in southern Fremont and extends through Milpitas and northeast San Jose. Even before the first shovels hit the ground, Santa Clara County residents, employers and businesses were seeing signs of the project's employment, economic, development and mobility benefits. Now after six years of construction,

even before passenger service begins, Santa Clara County residents, employees and commuters are experiencing the project benefits first hand. Thousands of jobs were created, and housing for thousands has been built. Millions of square feet of development has occurred, and our communities are protected with better flood control and safer ways for pedestrian and cyclists to move about. These benefits will only increase when passenger service on the Berryessa Extension begins and then will increase again when the remaining six-mile second phase of the project is completed several years later.

New Transit Centers with BART Stations Spur Redevelopment

Adjacent to the Milpitas Transit Center you will see hundreds of new, high-density housing units, as well as office space, hotel rooms and retail space recently built or under construction.

The City of Milpitas paved the way in 2008 with adoption of the Milpitas Transit Area Specific Plan. In the plan, approximately 437 acres of previously zoned industrial land was slated for redevelopment and uses that better support a major transportation hub.

The plan calls for 7,109 units of housing; 993,843 square feet of office space; 340 hotel rooms; and, 287,075 square feet of retail space centered around the new BART Station and VTA Light Rail.

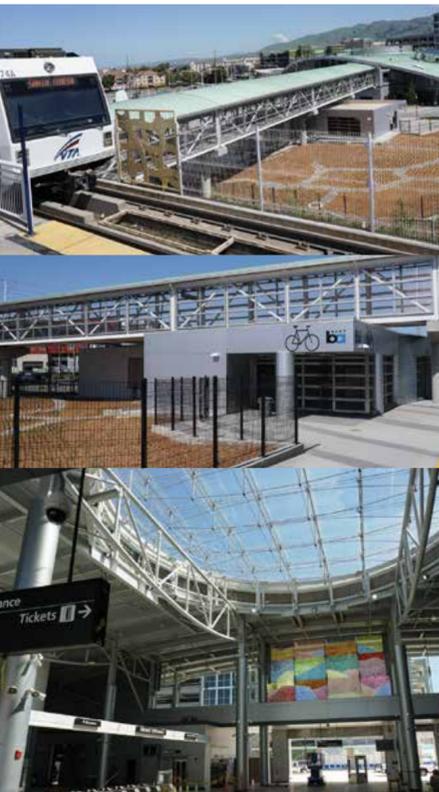
The area surrounding the Berryessa Transit Center exhibits the redevelopment potential there also, with new

housing and new employment opportunities replacing less intensive land uses.

The station is adjacent to the expansive Berryessa Flea Market and parking lots that include land on both sides of Berryessa Road. The Flea Market has been rezoned as a Planned Development Zoning District.

Currently, single-family homes and apartments have been developed on a portion of the land north of Berryessa Road. Higher density, mixed use development is anticipated closer to the new station.

The City of San Jose is also expected to initiate an Urban Village Study and workshops later this year for the area. San Jose defines an urban village as a walkable, bicycle-friendly, transit-oriented, mixed use, high density setting that provides both housing and jobs.



BART train average frequency	8 minutes
VTA bus connections (per hour)	42 28
BART travel time to SF (minutes)	50 55
Projected BART ridership, year 2030	20K 25K
Parking spaces	1,635 1,527
Secure, indoor bicycle parking	YES YES

