

Connetics Transportation Group has been assisting the Santa Clara Valley Transportation Authority (VTA) with studying transit improvements for a BART extension to Silicon Valley. This heavily traveled north-south corridor extends BART from its current terminus in Fremont and planned extension to Warm Springs southward to Milpitas, northeast and downtown San Jose, and ultimately to Downtown San Jose and Santa Clara. CTG has been involved in planning efforts since 2001, when VTA conducted a Major Investment Study (MIS) for the corridor which examined six project alternatives involving various rail and bus modes. The locally preferred alternative (LPA) carried forward to the Environmental Impact Statement (EIS) was a BART heavy rail extension from Warm Springs, through Milpitas and San Jose to Santa Clara.

VTA secured Federal funding in March 2012 for the first phase extending BART to the Berryessa Station and construction is underway. Tasks performed by CTG during the development of this major project (some while employed under Manuel Padron & Associates) include:

- **Operations Planning:** Our staff developed operating plans for all modes during the MIS and subsequent phases of the project, including options for a minimum operating segment (MOS) that was studied as part of the EIS. This effort involved developing service plans for corridor and feeder services, calculating running times for corridor alternatives, estimating vehicle fleet needs, and calculating operating statistics such as annual vehicle miles and annual vehicle hours.
- **O&M Costing:** Our staff developed operating and maintenance (O&M) cost models for each of the operators/operating modes studied during the MIS and subsequent phases of the project. VTA and BART O&M cost models were compatible with FTA guidelines for New Starts projects. CTG staff has developed a very detailed BART operating cost model in close consultation with BART and VTA.
- **Evaluation of Alternatives:** For the MIS, our staff conducted the evaluation of alternatives by comparing the benefits and impacts of each proposed alternative against the goals and objectives of the project. As a result of this process, the LPA was selected to be studied during the EIS phase of the project.
- **Preparation of FTA Section 5309 New Starts Submission:** Our staff has assisted VTA with the preparation of its submittal to the Federal Transit Administration to secure federal funding for this \$4 billion project. We prepared most required templates (except for land use), wrote supporting text, and assisted VTA with packaging the data and support documents for submission to FTA.
- **Evaluation of Maintenance Yard Capacity:** Our staff conducted an analysis to determine the size of the end-of-line maintenance yard that would be required for this project, and assisted with basic yard design and layout.
- **Train Simulations:** Our staff prepared simulations to determine the preferred location for crossover tracks in downtown San Jose. The train simulation model determined probable train and passenger delays that would result from single-tracking around a disabled train in the subway portion of the route.

- **Financial Analysis:** Our staff has provided support to the financial analyses conducted for the project. We assisted with sensitivity tests by evaluating O&M cost impacts given various funding and operating scenarios. CTG staff is currently acting as liaison between VTA and the financial planning consultant for operational and O&M cost issues.
- **BART Core Impact Analysis:** CTG staff has assisted VTA and BART with determining the impact of the Silicon Valley extension on the BART core system (the system that will be in place before the BART extension to Silicon Valley is built). The potential impacts may include costs to: increase station capacity, increase the size of the operations control center, and add cash handling facilities.