

APPENDIX J

Ridership impacts of TOC



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Memorandum

Date: July 17 2019
To: Dennis Dornan, Perkins + Will
Copy To: Adriano Rothschild, VTA BART Silicon Valley Program
Dennis Kearney, VTA BART Silicon Valley Program
From: Jill Hough, CHS Consulting Group
Re: VTA BART Transit-Oriented-Development Strategies – Ridership Memorandum Draft #1

Background

CHS prepared an analysis of transit ridership that could result from incorporating the preferred TOD Strategy with the extension of BART to the Phase 2 stations of Alum Rock/28th Street, Downtown San Jose and Santa Clara. The analysis consisted of incorporating recently revised land use assumptions for a 2038 Baseline scenario, and generating ridership forecasts for BART (not including the TOD Strategies for the above Phase 2 BART Extension stations). In addition, the TOD-Strategy residential units and total jobs at the station areas were incorporated into a TOD Strategy alternative, for which transit ridership forecasts were developed and summarized. This latter alternative also included elements of station access planning improvements that have been identified by VTA.

Land Use Assumptions – Reallocating Growth

Specifically, the land use growth associated with the preferred TOD strategy was added to the 2038 Baseline scenario that was provided by VTA. These additional future households and jobs were added to sets of zones corresponding to the opportunity sites identified and stratified by the Perkins+Will team [The Perkins+Will team developed a hierarchy of transit-oriented development density patterns resulting from detailed economic development models]. The aforementioned additions of households and jobs to zones were accompanied by reductions in future growth in households and jobs throughout the County, excluding zones close to all existing and future rail stations. These offsetting growth reductions result in countywide household and job growth remaining constant between the 2038 Baseline (status quo growth) scenario and the TOD Strategy scenario, but with the distribution of growth for the TOD strategy scenario more concentrated at the Alum Rock/28th Street, Downtown San Jose and Santa Clara stations. This process was consistent with VTA's analytical framework for analyzing effects of Transit-Oriented Development on Travel Demand.

The assumed countywide population and job growth for the 2038 Baseline scenario, compared with existing conditions, was 518,969 additional population and 196,405 additional jobs. [In comparison, the BART Phase II Supplemental EIS/EIR had evaluated countywide population growth of 555,257 and jobs growth of 191,506 for Year 2035.] For purposes of modeling the 2038 TOD Strategy scenario, a total of 22,835 future households and a total increase in jobs of 20,744 were assumed for the three station areas. This TOD Strategy would not be affected by future development in the Diridon Station area that is in the pre-planning stages by the City of San Jose.

Results of Ridership Increases

The VTA-BART Model was used to analyze the effects of the TOD Strategy on the transit boardings and alightings at the three stations by 2038.¹ The increased residential household growth and increased ridership are shown in the following table. With the TOD Strategies at Alum Rock/28th Avenue, Downtown San Jose, and Santa Clara BART stations, residential households will increase in the range of 77 percent to 180 percent, and jobs will increase in the range of 76 percent to 166 percent depending on the station area.

Summary of Land Use Growth & Daily BART Boardings and Alightings

Station Area	Land Use Growth Due to TOD Strategy		Net Ridership Increase (%) TOD Strategy Compared to Baseline
	Increase in Households	Increase in Total Jobs	
Alum Rock/28th St	90%	21%	85%
Downtown San Jose	77%	51%	17%
Santa Clara	180%	84%	69%
Total	101%	40%	40%

This percentage increases in average weekday boardings and alightings for the station areas is forecast to increase as follows:

- The Alum Rock/28th St station is forecast to increase by 85 percent due to TOD Strategy growth of 90 percent increased residential household growth and 21 percent increased total jobs within the station area;
- The Downtown San Jose station is forecast to increase by 17 percent due to TOD Strategy growth of 77 percent increased residential household growth and 51 percent increased total jobs within the station area;
- The Santa Clara station is forecast to increase by 69 percent due to TOD Strategy growth of 180 percent increased residential household growth and 84 percent increased total jobs within the station area.
- The results of modeling the TOD Strategy scenario showed that overall average weekday boardings and alightings at the three stations would increase by approximately 18,710.

The above increases in boardings and alightings are relative to Year 2038 BART Future Baseline boardings and alightings (without the TOD strategies). As mentioned previously, the increased growth in TOD at the station areas was modeled with offsetting decreases in land-use growth (resulting in decreased forecast ridership levels) outside TOD areas and rail stations -- the above increases in station area ridership are net increases.

¹ Since the current VTA BART Model is continuing to undergo updating and refinement, an earlier version of the VTA-BART Model was used for this purpose.

The results suggest that the ridership response to the TOD Strategies may be higher at the Santa Clara and Alum Rock/28th Street stations, however there are considerations for building transit-oriented development beyond ridership impact, such as economic and financial factors. Also, the increase in forecast boardings and alightings overall with the TOD strategies is over 40 percent, which is significant.

The forecasted percent increase in boardings and alightings with the TOD Strategies for the Downtown San Jose station is less than the other two station areas. However, the density of development within the Downtown San Jose station area for existing conditions as well as the future business-as-usual scenario is significantly higher than at either of the other two station areas. In that sense, some of the forecast boardings and alightings at the Downtown San Jose station under the future business-as-usual scenario essentially reflects transit-oriented development projected as part of 'Plan Bay Area' growth within the City of San Jose.

Increased Parking at Stations - Preliminary

The increased ridership discussed above assumes enhanced high-quality access and convenient walking paths and pedestrian facilities at all three station areas. Based on an analysis utilizing the VTA-BART model, the additional ridership associated with the TOD Strategy will result in the following parking demand at the individual stations:

- No additional increase in parking demand at the downtown San Jose station,
- A reduction in parking demand at the Santa Clara station, and
- An increase in parking demand at the Alum Rock/28th Street station.