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 ACTION X DISCUSSION      INFO     

**BOARD MEMORANDUM**

**TO:** Downtown East Valley Policy Advisory Board

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**DATE:** August 28, 2007

**SUBJECT:** Santa Clara/Alum Rock Transit Improvement Project Recommendation

**RECOMMENDATION**

Approve the Bus Rapid Transit (BRT) alternative as the preferred near-term development strategy for the Santa Clara/Alum Rock Transit Improvement project, pending environmental analysis.

**BACKGROUND**

The Santa Clara/Alum Rock Transit Improvement Project is included in the 2000 Measure A Program as one of the components of the Downtown East Valley Program of transit projects intended to serve high transit ridership areas of East San Jose. The corridor has been the subject of a significant level of analysis beginning with the 1999 Major Investment Study and continuing on with additional conceptual planning studies and environmental documentation since early 2001. Project alternatives considered for implementation include Enhanced Bus Service, Bus Rapid Transit using exclusive lanes and Single-car Light Rail service.

Based on an approach of developing transit service gradually in a corridor over time defined in VTA's Transit Sustainability Policy (TSP), the conceptual analysis now proposes the phasing of transit improvements in the Santa Clara/Alum Rock corridor as land uses develop and the demand for transit service grows over time. According to the TSP and the accompanying Service Design Guidelines (SDG), a corridor can develop transit services beginning with enhanced bus as a lower cost and an early implementation opportunity for improvement. Enhanced Bus is then followed by more a capital-intensive BRT product, which utilizes components such as dedicated lanes and a higher grade of pedestrian and station facilities. Finally, fixed rail service such as Light Rail can be

developed as demand for transit reaches a level requiring higher capacity and land uses within the corridor intensify.

Following this model, VTA implemented the new Route 522 Rapid Service in the corridor in 2005, which included specially branded vehicles, skip-stop service and headway-based schedules. The service improvements provided by the new Route 522 line provided for a faster service and reduced overall travel time in the corridor by 20 percent. Since inception ridership has increased approximately 14 percent over previous levels.

Since early 2006, the two primary alternatives that were originally evaluated (Single-car Light Rail and Enhanced Bus) have undergone revisions in scope. The redefined BRT alternative presented to the PAB in April 2007 is more capital intensive with a dedicated busway in the median of Alum Rock Avenue and rail-like stations both in the Alum Rock median and at bulb-outs on Santa Clara Street. The BRT alternative is identified as the next level of near-term investment for upgraded transit services for the corridor with fixed rail services considered a long-term future investment upgrade.

Refinements of the BRT alternative include the introduction of an additional BRT Line (523 Stevens Creek BRT) reduced number of stations from 11 to 10, and specialized BRT vehicles. Parking impacts have been minimized through the use of a median busway and better utilization of existing on-street parking capacity. Pedestrian improvements and amenities will also be added throughout the corridor. The service has been improved to 6-minute frequencies and a travel time reduction of 11 minutes.

The Light Rail alternative has undergone less extensive changes in the update but there have been some adjustments based on operational considerations. The alternative remains a single-car train due to physical constraints on Santa Clara Street. Stations have been reduced from 13 to 10. Parking impacts have also been reduced. The frequency of the service was increased from 10-minutes to 15-minutes based on operational constraints in the overall Light Rail System, especially the Vasona Line. Because of these constraints, trains approaching the Diridon Station will be held on average for three minutes to allow Vasona Line trains an operational window to pass both outbound and inbound. Additional analysis of Light Rail operational scenarios is still taking place through the development of VTA's Rail Simulation Model.

## **DISCUSSION**

During the period of the project analysis and update, VTA has also developed criteria for the measurement and evaluation of both existing and future transit services. The criteria are a component of the Transit Sustainability Policy (TSP), which was developed in the fall of 2006 and winter of 2007 as a key input into the Comprehensive Operations Analysis. The Board of Directors approved the TSP at its February 2007 meeting. VTA staff has used the criteria to evaluate the two revised alternatives.

Additionally, the Metropolitan Transportation Commission recently allocated \$45 million from the State Proposition 1B funds to VTA to be used for BRT in this corridor. The action to allocate the funds serves as further justification for the staff recommendation.

The primary rationale is the analysis included in Attachment A, comparing BRT with Single-car LRT as a near-term development strategy.

Based on funding opportunities, the refined scope of both alternatives and the results of the TSP analysis, staff recommends proceeding with BRT as the next phase of transit improvement for the Santa Clara /Alum Corridor.

**Project Next Steps**

If the PAB concurs with the recommendation for near-term BRT development, staff will be carrying the updated project alternatives into the environmental review process. State-level environmental clearance of the project will begin in September and be expected to conclude in late 2009.

**ALTERNATIVE**

The Policy Advisory Board can elect to not accept the staff recommendation and proceed into the environmental documentation process without identifying a near-term development strategy. A preferred alternative would have to be identified at the conclusion of the environmental process, however.

**FISCAL**

Budget for both alternatives are included in the Measure A Expenditure Plan adopted by the Board of Directors on June 15, 2005.

There are no direct fiscal consequences to accepting or rejecting the staff recommendation.

## Attachment A

### **Santa Clara/Alum Rock Project Transit Sustainability Policy Evaluation**

The Transit Sustainability Policy (TSP) is a ridership-based policy that provides a framework for the efficient and effective expenditure of transit funds, and for realizing the highest return on investment in terms of public good and ridership productivity. The Service Design Guidelines (SDGs) are a mode specific step in the TSP process to evaluate, design, implement and monitor transit services in the region. They provide a link between local commitments to transit service, construction and operational feasibility, and overall operational efficiency. In accordance with the TSP, all transit projects are subject to an evaluation of the effects the proposed capitol project or service improvement will have on transit ridership and operating efficiency. The Service Design Guidelines are comprised of two parts: 1) Service Performance Standards, and 2) Design Guidelines.

The Service Design Guidelines provide specific performance standards based on ridership and productivity to help achieve the goals of the Transit Sustainability Policy. The Santa Clara/Alum Rock project alternatives have been measured against the SDGs standards to determine if they meet, do not meet, or exceed these standards based on the goals of the Transit Sustainability Policy. Under the Board adopted TSP/ Service Design Guidelines, VTA projects will be evaluated based on the measures in the policy including: Boardings Per Revenue Hour; Boardings per Route Mile and Boardings Per Station. Attachment a to this memorandum provides a more detailed evaluation of the two alternatives BRT and Single Car LRT using the TSP guidelines.

**Boardings per Revenue Hour** is VTA's established evaluation criteria to assess productivity of transit services. This indicator shows how well a unit of cost (vehicle revenue hours) is utilized. It also indicates whether the transit capacity offered is appropriate, and how well operating resources are deployed to provide service.

**Table 1** shows Boardings per Revenue Hour for the SC/AR project alternatives. As Table 1 shows, both the BRT and LRT alternatives exceed the SDG standard of 55 Boardings per Revenue Hour.

**Table 1 -- Boardings per Revenue Hour**

<b>Project Alternative</b>	<b>VTA Standard</b>	<b>Alternative Performance</b>	<b>Variance</b>
BRT	55	434	+379
Single-car LRT	55	114	+59

**Boardings per Route Mile** compares the number of daily boardings versus the total length of the route or network. This gives a sense of whether a route is effectively designed, given its length, and whether extraneous destinations are included in the project limits that reduce overall productivity and efficiency. Furthermore, it can be used to

identify route segments with higher intensity demand and thus allow the agency to best tailor service and capacity to serve this ridership.

**Table 2** shows the standard established by the Service Design Guidelines for Boardings per Route Mile. This standard varies depending on the mode or technology under consideration. Thus, a less capital-intensive mode results in a lower criteria for Boardings per Route Mile because the per mile capital cost is lower. The SC/AR BRT alternative far exceeds the SDG standard of 350 for BRT while the Light Rail standard of 1,250 is not met by the Single-car LRT alternative.

**Table 2 -- Boardings per Route Mile**

<b>Project Alternative</b>	<b>VTA Standard</b>	<b>Alternative Performance</b>	<b>Variance</b>
BRT	350	3,509	+3,159
Single-car LRT	1,250	921	-329

**Boardings per Station** measures the number of daily boardings entering a transit station and gauges how well a station is being utilized. This is important given operating and maintenance costs associated with keeping a station operational, as well as sunk costs for selecting and developing a station. An under-used station impacts transit operating performance, as well as farebox recovery and cost efficiency. Highly utilized stations can be considered for additional station amenities.

The Service Design Guideline for Boardings per Station for Bus Rapid Transit is 350 average daily boardings. **Table 3** presents the Boarding per Station for the BRT alternative stations against the SDG standard. As the table indicates almost all of the BRT stations meet or exceed the standard established by the Service Design Guidelines. The exception is 16<sup>th</sup> Street with 238 average daily boardings.

**Table 3  
Boardings per Station  
Bus Rapid Transit Alternative**

<b>BRT Station Standard:</b>		<b>350</b>
<b>Stations</b>	<b>Boardings</b>	<b>Variance</b>
Bird Street	445	+95
Convention Center	795	+445
Diridon	971	+621
Transit Mall	3,976	+3,626
6 <sup>th</sup> Street	1,149	+799
16 <sup>th</sup> Street	238	-112
28 <sup>th</sup> Street	4,255	+3,905
King Road	890	+540
Jackson Avenue	1,505	+1,155
Alum Rock Transit Center	865	+515
Corridor Ridership	15,089	

The SDG standard established for Boardings per Station for Light Rail is 600. **Table 4** evaluates the Single-car LRT alternative against this standard. Seven of the LRT stations are below the SDG standard. Three SC/AR LRT stations (King, Jackson, and Alum Rock Transit Center) are above the standard.

**Table 4**  
**Boardings per Station**  
**Single-car Light Rail Alternative**

<b>LRT Station Standard:</b>		<b>600</b>
<b>Stations</b>	<b>Boardings</b>	<b>Variance</b>
Diridon	221	-379
Delmas	98	-502
Almaden	92	-508
Transit Mall	540	-60
6 <sup>th</sup> Street	148	-452
16 <sup>th</sup> Street	167	-433
28 <sup>th</sup> Street	286	-314
King Road	726	+126
Jackson Avenue	891	+126
Alum Rock Transit Center	790	+190
Corridor Ridership	3,959	