SANTA CLARA Valley Transportation Authority

Policy Advisory Committee

Thursday, October 9, 2008

MINUTES

CALL TO ORDER

The Regular Meeting of the Valley Transportation Authority (VTA) Policy Advisory Committee (PAC) was called to order at 4:07 p.m. by Chairperson Christopher Moylan in Conference Room B-104, Valley Transportation Authority (VTA), 3331 North First Street, San Jose, California.

1. ROLL CALL

Attendee Name	Representing	Status	Arrived
Chris Moylan	City of Sunnyvale	Present	
Pete McHugh	County of Santa Clara	Absent	
Evan Low	City of Campbell	Absent	
Gilbert Wong (Alt)	City of Cupertino	Present	
Perry Woodward	City of Gilroy	Absent	
Megan Satterlee (Alt)	City of Los Altos	Present	
Steve Glickman	Town of Los Gatos	Absent	
Armando Gomez	City of Milpitas	Absent	
Curtis Wright	City of Monte Sereno	Present	
Marby Lee	City of Morgan Hill	Present	
Margaret Abe-Koga	City of Mountain View	Present	
Sid Espinosa	City of Palo Alto	Present	
Pierluigi Oliverio	City of San Jose	Present	
Joe Kornder	City of Santa Clara	Present	
Chuck Page	City of Saratoga	Present	

A quorum was present.

2. ORDERS OF THE DAY

There were no Orders of the Day.

3. PUBLIC PRESENTATIONS:

There were no Public Presentations.

4. Committee Staff Report

Jim Lawson, Senior Policy Advisor, provided a report highlighting: 1) Announced the opening of the San Martin project improvements; 2) The De Anza Transit Center will open October 30, 2008; 3) At the Board of Directors Regular Meeting on October 2, 2008 the Board ratified the pending ATU labor contract; 4) Passage of the State of California Budget; and 5) Announced ridership has increased for bus and light rail boardings.

Joonie Tolosa, Manager, Operations Analysis and Reporting, provided a brief report highlighting: 1) FY 2008 Bus ridership totaled 33.1 million, a 4.6 percent increase compared to the previous fiscal year; 2) Average weekday ridership increased to 4.5 percent; 3) Light Rail ridership has increased 1.7 percent compared to the same period last year; 4) Bus and Light Rail ridership has increased by 3.9 percent; and 5) FY 2008 had the highest light rail ridership performance levels in the following measures: Bus Percent of Service of Service Provided (99.61 percent), Light Rail Percent of Service Provided (99.96 percent), and Bus Miles Between Major Mechanical Failures with Loss of Service (7,520).

5. Chairperson's Report

Chairperson Moylan provided a brief overview of the September 12, 2008 PAC meeting to the Board of Directors.

Chairperson Moylan provided a brief overview of the recommendations from the Governance Subcommittee that was presented to the Administration and Finance (A&F) Committee.

Member Wright recommended consideration be given to having an advocate to represent each of the proposed scenarios.

6. City Grouping Report

There was no City Grouping Report.

BUSINESS REFERRED TO COMMITTEE BY THE BOARD OF DIRECTORS/ GENERAL MANAGER

CONSENT AGENDA

7. Minutes of September 10, 2008

M/S/C (Wong/Page) to defer the Minutes of September 8, 2008.

REGULAR AGENDA

8. Local Transportation Needs & Priorities: Cupertino

Alternate Member Wong introduced Greg Goepfert, Assistant Public Works Director, provided a PowerPoint presentation regarding the Transportation Projects, Needs & Priorities for the City of Cupertino highlighting: 1) Background; 2) Transit; 3) Mary Avenue Bicycle Footbridge Construction Sequence; 4) Rancho Rinconada Neighborhood Traffic Study to develop neighborhood - wide traffic calming and to promote bicycle and pedestrian safe connectivity; 5) Pavement Management projects; 6) Heart of the City Specific Plan; 7) Safe Routes to School; and 8) The South Vallco Master Plan.

Chairperson Moylan inquired regarding the amount of unincorporated County pockets of land within Cupertino city limits. Alternate Member Wong replied there are unincorporated pockets of land within Cupertino and stated the Garden Gate. Rancho Rinconada, and Monte Vista areas have now been annexed.

On order of Chairperson Moylan, the Committee received the Local Transportation Needs & Priorities: Cupertino.

Alternate Member Wong left the meeting at 4:45 p.m.

9. BART Extension Economic Effects Evaluation - Summary of Results

Kevin Kurimoto, Transportation Planner, stated that VTA commissioned Wilbur Smith Associates to conduct a study to assess the economic impacts of the proposed Bay Area Rapid Transit (BART) to Silicon Valley Project over the analysis period of 2008-2030 and introduced Karen Dowell, Consultant, to the Committee.

Mr. Kurimoto stated the Evaluation studied travel efficiency gains, construction and operations maintenance expenditures, strategic development, and mobility and accessibility benefits. He further stated the Evaluation was initiated as a result of the Federal Transportation Association (FTA) New Starts Guidelines.

NOTE: M/S/C MEANS MOTION SECONDED AND CARRIED AND, UNLESS OTHERWISE INDICATED, THE MOTION PASSED UNANIMOUSLY.

Mr. Kurimoto introduced Paula Dowell, Vice President of Economics, Freight and Finance, for Wilbur Smith Associates. Miss Dowell commented that a report detailing the Economics Effects Analysis of the BART Extension including estimations of the potential transportation efficiency gains and the long-term economic impacts resulting from: 1) Travel efficiency gains accruing to highway users and potential SVRT BART users; 2) Construction, operations, and maintenance expenditures of the SVRT BART Extension; 3) New land developments at future SVRT BART stations; and 4) The expanded labor market attributable to improved worker mobility and accessibility.

Ms. Dowell stated the Regional Economic Modeling Incorporated (REMI) model was used to determine the indirect or multiplier benefits of the project. Ms. Dowell commented the REMI is a dynamic simulation model that is widely accepted to determine transportation benefits. She stated the study area consisted of Santa Clara, Alameda, and the rest of the Bay Area Counties of Contra Costa, San Mateo, and San Francisco.

Ms. Dowell stated that key findings from the evaluations were summarized with the analysis results including low and high monetary estimates of the overall economic impacts that the SVRT BART Extension is expected to have on Santa Clara County and the study region from 2008 to 2030.

Ms. Dowell noted the Return of Investment (ROI) estimation of the SVRT BART Extension into Santa Clara County generated a significantly positive value, and it is expected the returns will outweigh the costs associated with constructing the SVRT Extension as well as with the operations and maintenance of the extension over the life of the project.

Member Lee requested clarification regarding the route of the SVRT-BART Extension. Mr. Kurimoto clarified the route of the extension would proceed from the Warm Springs Extension through Downtown San Jose to Santa Clara.

Member Kornder queried if the model indicates what types of jobs and employment opportunities would exist. Ms. Dowell noted the REMI model indicates in great detail the area of industry and employment where jobs will be created.

On order of Chairperson Moylan, there being no objection, the Committee reviewed the Information on the BART Extension Economic Effects Evaluation.

Member Oliverio left the meeting at 5:10 p.m.

10. Advisory Committee Enhancement Update

Jennie Loft, Public Information Officer, provided a brief overview and update of the Advisory Committee Enhancement process highlighting: 1) All Advisory Committees have formed Subcommittees; 2) Staff has met with all subcommittees to discuss respective mission statements and bylaws; and 3) Discussion will be ongoing between staff and subcommittee to review the process.

On order of Chairperson Moylan, there being no objection, the Committee reviewed the Advisory Committee Enhancement Update.

11. Advisory Committee Enhancement Subcommittee Report

Vice Chairperson Abe Koga stated the PAC Advisory Committee Enhancement Subcommittee met and has composed a draft mission statement for the PAC.

Vice Chairperson Abe-Koga reported the Subcommittee discussed how to better organize the PAC and proposes that the Committee discusses items referred by the Board and staff as well as items that are initiated by the PAC and become a proactive body.

Vice Chairperson Abe-Koga noted the Subcommittee will meet again in the near future.

On order of Chairperson Moylan, there being no objection, the Committee received the Advisory Committee Enhancement Subcommittee Report.

12. High Occupancy Toll (HOT) Lanes - Public Outreach

Murali Ramanujam, Senior Transportation Engineer, provided a PowerPoint presentation and brief overview regarding the High Occupancy Toll (HOT) Lanes - Public Outreach highlighting: 1) VTA Public Opinion Research findings; 2) Purpose of the Research; 3) Scope of Research; 4) Overall Findings - Potential User Support is in Place; 5) What they Liked Best; 6) Key Preconception/Concerns; 7) Double Taxation; 8) Fairness; 9) Public Concerns; 10) Where does the Money go; 11) The need to Educate and Inform; 12) Findings Are Similar Across Counties; 13) Key Points; and 14) Conclusions.

On order of Chairperson Moylan, there being no objection, the Committee reviewed the High Occupancy Toll (HOT) Lanes - Public Outreach.

OTHER

13. Committee Workplan

On order of Chairperson Moylan, there being no objection, the Committee reviewed the Work Plan.

14. Announcements

There were no Announcements.

15. ADJOURNMENT

On order of Chairperson Moylan, there being no objection, the meeting was adjourned at 5:45 p.m.

Respectfully submitted,

Jacqueline F. Golzio, Board Assistant
VTA Board of Directors

SANTA CLARA
Valley Transportation Authority

Date: October 2, 2008
Current Meeting: October 9, 2008
Board Meeting: N/A

BOARD MEMORANDUM

TO: Santa Clara Valley Transportation Authority
Policy Advisory Committee

THROUGH: General Manager, Michael T. Burns

FROM: Chief SVRT Program Officer, Carolyn M. Gonot

SUBJECT: BART Extension Economic Effects Evaluation - Summary of Results

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FOR INFORMATION ONLY

BACKGROUND:

Santa Clara Valley Transportation Authority (VTA) commissioned Wilbur Smith Associates to conduct a study to assess the economic impacts of the proposed Silicon Valley Rapid Transit (SVRT) BART Extension over the analysis period 2008-2030. VTA conducted the economic effects evaluation in response to Federal Transit Administration and federal surface transportation legislation - *Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (*SAFETEA-LU) guidelines. Projects seeking federal funding are encouraged to include a project's economic development benefits as part of FTA's evaluation and ratings process.

The *Economics Effects Analysis of the BART Extension* includes estimations of the potential transportation efficiency gains and the long-term economic impacts resulting from (a) travel efficiency gains accruing to highway users and potential SVRT BART users, (b) construction, operations, and maintenance expenditures of the SVRT BART Extension, (c) new land developments at future SVRT BART stations, and (d) an expanded labor market attributable to improved worker mobility and accessibility.

The region analyzed in this study is comprised of Santa Clara, Alameda, Contra Costa, San Francisco, and San Mateo counties. Some benefits of the SVRT BART investment are anticipated to spill over from the immediately impacted geography of Santa Clara County into the aforementioned counties. In order to quantify the spillover effect and evaluate as much of the total economic impacts as reasonably possible, the overall study region is considered when modeling the long-term economic impacts of the proposed investment.

The findings from this study are intended to enable decision-makers within VTA to strategically assess the available policy options concerning the SVRT BART Extension investment and to have sufficient information to make key decisions with the consideration of the corridor as a

potential economic asset to the county, the region, and the State of California. Findings of this study include an indication of the general magnitude of the regional economic impacts ensuing from the SVRT BART Extension.

To assist with the study, VTA formed a Study Technical Advisory Committee (TAC) comprised of members from each local jurisdiction to provide input and analysis. The Study TAC members included representatives such as economic development directors, redevelopment managers, planning directors and city managers. Additionally, the consultant interviewed individuals from local and regional stakeholder organizations, including chamber of commerce offices, business and city associations, and transportation and planning organizations to obtain a better understanding of the region prior to conducting the evaluation.

DISCUSSION:

Short-term and long-term economic impacts of the proposed SVRT BART Extension were estimated utilizing an economic impact modeling software, developed by Regional Economic Models Inc. (REMI). This economic simulation model has the capability to forecast the impact that a change in an economic activity or policy will have on a region's economy. Impacts measured include changes in gross regional product (GRP), personal income, and employment. GRP is defined as the market value of all final goods and services produced within a metropolitan area in a given period of time. Personal income is defined by the United States' Bureau of Economic Analysis as income received by persons from all sources. Employment is defined by temporary and permanent jobs. Temporary jobs are predominantly associated with construction of the extension and influx of new construction development around stations. Permanent jobs are predominantly associated with highway/transit user benefits, operations & maintenance, and increased mobility and accessibility once the project is in operation.

Key findings from the evaluation are summarized in **Table 1**. The analysis results include low and high monetary estimates of the overall economic impacts that the SVRT BART Extension is expected to have on Santa Clara County and the study region from 2008 to 2030. Low estimates are based on initial conservative inputs for the evaluation's estimates, forecasts and assumptions. High estimates are based on sensitivity tests conducted to gauge the responsiveness to changes in input assumptions. Each factor introduces the possibility of error into the results, which is important when assessing and making policy decisions. Additionally, this evaluation estimates the Return on Investment (ROI) associated with the extension. The above-mentioned results are summarized below.

- Based on lower and higher estimates, the evaluation anticipates that the SVRT BART Extension will generate between $6 billion and $11.42 billion, respectively, in GRP in the study region.

- The evaluation estimates that between $2.28 billion to $3.27 billion in personal income, and $4.56 billion to $8.65 billion in travel-time savings to travelers commuting over the analysis period will be generated in the study region.

- Highway user benefits, construction of the SVRT BART Extension, and affordable mobility and accessibility benefits will comprise 86% of GRP (32.4%, 25.6% and 28.0%, respectively) based on the lower estimates of the overall benefits. Based on higher estimates, these three items will account for 89.4% of GRP with highway user benefits comprising 60.0% of GRP.

- It is expected that the SVRT BART Extension will create, on average, between 2,415 and 2,555 temporary jobs annually in association with construction activities pertaining to both the SVRT BART Extension and induced land use development around the six proposed stations. Between 2,426 and 7,357 permanent jobs are estimated to be tied to the travel efficiency gains, operation and maintenance of the SVRT BART Extension, induced development, and affordable mobility and accessibility benefits on average, annually.

- In Santa Clara County, it is anticipated that the GRP generated would range from $4.48 billion as a low estimate to $6.99 billion as a high estimate, personal income benefits would range from $1.5 billion to $2.1 billion, and travel-time savings would range from $2.5 billion to $4.8 billion. On average the extension would generate between 1,606 to 1,746 temporary jobs and 1,643 to 5,755 permanent jobs.

- Project ROI associated with construction, operations and maintenance was estimated based on a 50-year "years of useful life" timeframe. The estimated range of ROI for the project ranges from a factor of 3.83 to 10.01, based on estimated low and high monetary gains of $25.98 to $59.26 billion in the study region.

- In addition to estimating ROI on 50-years of useful life, a sensitivity analysis was conducted for 30-years of useful life and 70-years of useful life scenarios.

Table 1: Summary of Key SVRT Economic Impact Findings in millions in 2005$ (2008 - 2030)

Economic Factors/Measures	Economic Impact (Low Range)	Economic Impact (High Range)
Gross Regional Product (Study Region)	$6,009.94	$11,420.12
Gross Regional Product (Santa Clara County)	$4,479.85	$6,999.69
Personal Income (Study Region)	$2,278.99	$3,270.06
Personal Income (Santa Clara County)	$1,538.71	$2,052.98
Commute Travel Time Savings (Study Region)	$4,556.27	$8,648.81
Commute Travel Time Savings (Santa Clara County)	$2,536.59	$4,798.54
Average Annual Temporary Employment (Study Region)	2,415	2,555
Average Annual Temporary Employment (Santa Clara County)	1,606	1,746
Average Annual Permanent Employment (Study Region)	2,426	7,357
Average Annual Permanent Employment (Santa Clara County)	1,643	5,755
50-Year Return on Investment	3.83	10.01

30-Year Return on Investment (Sensitivity Analysis)	2.42	8.85
70-Year Return on Investment (Sensitivity Analysis)	4.57	12.42

Prepared By: Kevin Kurimoto

Economic Impact Analysis of the SVRT BART Extension

Prepared For:

VTA

Prepared By:

September 2008

Purpose of the Study

The Santa Clara Valley Transportation Authority (VTA) commissioned Wilbur Smith Associates to conduct a study to assess the economic impacts of the proposed Bay Area Rapid Transit (BART) to Silicon Valley Project over the analysis period 2008-2030. The Silicon Valley Rapid Transit (SVRT) BART Extension is a 16-mile long extension of the existing BART system. The extension will originate south of the planned Warm Springs BART Station in the City of Fremont in Alameda County (to be implemented by 2013) and extend through the cities of Milpitas, San Jose, and Santa Clara in Santa Clara County using the former Union Pacific Railroad (UPRR). The SVRT Project is scheduled for completion in Fiscal Year (FY) 2016.

The findings from this study are intended to enable decision-makers within VTA to strategically assess the available policy options concerning the SVRT BART Extension investment and to have sufficient information to make key decisions that support and enhance the potential of the corridor as an economic asset to the State of California. Findings of this study include an indication of the general magnitude of the regional economic impacts ensuing from the SVRT BART Extension.

Scope of Work

The objective of this study is to evaluate the economic impacts of the proposed SVRT BART Extension over the analysis period (2008-2030). Within this evaluation are the estimations of the potential transportation efficiency gains and the long-term economic impacts resulting from (a) travel efficiency gains accruing to highway users and potential SVRT BART users, (b) construction, operations, and maintenance expenditures of the SVRT BART Extension, (c) new land developments at future SVRT BART stations, and (d) an expanded labor market attributable to improved worker mobility and accessibility.

The region analyzed in this study is comprised of Santa Clara, Alameda, Contra Costa, San Francisco, and San Mateo counties, California. Some benefits of the SVRT BART investment are anticipated to spill over (a positive externality) from the immediately impacted geography of Santa Clara County into the adjoining, aforementioned counties. In order to quantify the spillover effect and evaluate as much of the total economic impacts as reasonably possible, Alameda and the remaining aforementioned counties (i.e., Contra Costa, San Francisco, and San Mateo Counties) are considered in the overall study region when modeling the long-term economic impacts of the proposed investment.

Methodology

The four categories of benefits arising from the SVRT BART Extension include:

1. **Travel Efficiencies**, which are benefits accruing to highway users and potential SVRT BART users upon completion of the extension, as measured in terms of travel-time, vehicle-operating cost, accident, and emission savings.

2. **Construction Impacts**, which are the impacts arising from expenditures on local labor and materials used in constructing the facility.

3. **Operating and Maintenance Impacts**, which are the benefits arising from expenditures on local labor and materials used in operating and maintaining the facility, upon completion.

4. **Strategic Development Impacts**, which are the economic development impacts associated with attracting new land development and retaining business activity due to increased job accessibility and affordable mobility.

Short-term and long-term economic impacts of the proposed SVRT BART Extension are estimated utilizing an economic impact modeling software, developed by Regional Economic Models Inc. (REMI). This economic simulation model has the capability to forecast the impact that a change in an economic activity or policy will have on a region's economy. Impacts measured include changes in gross regional product (GRP), personal income, and employment.

Travel Efficiency Gains

In estimating the travel efficiencies for highway users and SVRT BART riders, and the ensuing economic implications thereof, the study utilizes the outputs of highway travel and ridership characteristics, provided by VTA and AECOM Consult. The traffic data provided by VTA included vehicle-miles traveled (VMT) and vehicle-hours traveled (VHT) for the benchmark years 2005, 2016 (the opening year), and 2030 (the horizon year). Traffic forecasts were provided by vehicle classification (automobiles and trucks); trip purpose (work-related and non-work-related); daily peaks (AM and PM combined) and off-peak; and, total daily VHTs and VMTs for drive alone, two person carpool, three or more person carpool, and trucks. System-wide ridership[1] (boardings) for the baseline year 2005 and the benchmark years 2016 and 2030, which were based on the VTA travel demand model for the six-station SVRT BART scenario and the No-SVRT BART scenario, was provided by VTA. The SVRT BART Extension's annual ridership for the analysis period 2016-2030 was provided by AECOM Consult.

[1] Including the existing BART system in San Francisco, San Mateo, Contra Costa, and Alameda Counties.

Anticipated gains in travel efficiencies and the pertinent economic impacts included:

- Travel-time savings - Increasing BART ridership reduces auto travel and highway system dependency, which, in turn, reduces highway congestion. Reduced highway congestion potentially reduces travel times for both transit and highway users. Travel-time savings translate into lower operations costs for industries transporting commodities and for business travelers.

- Accident-cost savings - As diverted traffic to transit reduces the number of automobiles traveling on the highway network, the number of accidents is also reduced. Accident savings are quantified through the reductions in productivity losses, property damages, and insurance costs.

- Vehicle-operating cost savings (fuel and non-fuel) - As VMT and VHT are reduced, expenditures on fuel, non-fuel, and related expenses are reduced, as well. However, as these expenses are curtailed from reduced VHT and VMT caused by diverted traffic to transit, riders of the SVRT BART Extension incur an additional cost, which roadway users avoid: transit fares. Therefore, the net-change in costs is used in the analysis. The difference between the vehicle-operating cost savings and the incurred transit fares, if significant enough, provides area residents with an incentive to alter transportation patterns, from driving to the use of the SVRT BART Extension.

- Emission-cost savings - If a significant number of automobiles are removed from the highway system after the completion of the SVRT BART Extension, improvements in air quality for the San Francisco Bay area could be appreciable. Impacts from reduced pollution are entered as inputs into the economic model to examine the total effects on the regional economy.

Lower and upper estimates of highway user benefits are based on changes in the estimation of the VMT and VHT for the analysis period; the duration of peak and off-peak periods; and, fluctuations in fuel prices. The lower and upper values of the economic impacts that the proposed SVRT BART Extension is forecasted to have on highway users is due to changes in the duration of the peak period from two hours (lower values) to four hours (higher values) assuming an average working day of eight hours. Any increase in the duration of the peak period is expected to result in more economic benefits for the whole study region.

Lower and upper estimates of transit user benefits are based on (a) travel time cost values by rail relative to travel time cost by car[2]; (b) the estimated annual cost of driving a personal auto,

[2] A stated preference survey in Brisbane, Australia, showed that travel time cost by rail was between 12% and 17% lower than travel time cost by car (Todd Litman. *Valuing Transit Service Quality Improvements – Considering Comfort and Convenience In Transport Project Evaluation.* Victoria Transport Policy Institute. May 7, 2007)

depending of the vehicle type[3]; and, (c) a minimum and maximum train size of three and ten vehicles (cars) per train[4], respectively.

Construction, Operations and Maintenance Expenditures

In assessing the benefits resulting from the construction, operations and maintenance costs of the SVRT BART Extension over the analysis period 2016-2030, the study utilizes the expenditures on construction, operations, and maintenance activities estimated by VTA. Construction costs utilized in this analysis captures only the hard costs (e.g., site preparation activities, structures, earthwork, maintenance facilities, and vehicles). This analysis does not include planning, engineering, and land or building acquisition costs since these costs do not contribute to the construction industry.

Economic impacts from the SVRT BART Extension to Santa Clara County will initially occur as a result of the actual construction of the facility, as expenditures on construction are of economic value to both the primary impact area (i.e., Santa Clara County) and the neighboring counties. Construction expenditures are of economic value because a large-scale infrastructure development expenditure increases GRP and supports the creation and retention of construction related jobs. Once the construction phase is completed, subsequent expenditures on operations and maintenance activities are required. This will also result in additional economic impacts for these counties. In analyzing the economic impacts of the SVRT BART Extension, the estimated construction, operations, and maintenance expenditures serve as inputs into the regional economic model for analyzing the economic impacts on the study region.

Land Use Development Impacts

In estimating the strategic development impacts, the study utilizes the possible land use changes that may occur as a consequence of the SVRT BART Extension within a one-quarter mile radius of six future stations in Santa Clara County (i.e., Milpitas Station, Berryessa, Diridon/Arena, Alum Rock, Downtown San Jose, and Santa Clara). According to analysis conducted by Economic Research Associates (ERA), the projected changes within close proximity of the six identified future SVRT BART stations would likely be realized in terms of increased demand for housing[5], office space, retail space, and hotel rooms. Anticipated changes in the demand for land development in the immediate proximity of the six stations include the reallocation of land use within Santa Clara County and the influx of resources from outside of Santa Clara County. This study focused on the influx of resources since it represents induced development from the SVRT BART Extension.

[3] APTA 2007 Public Transportation Fact Book, *58th Edition*, American Public Transportation Association, May 2007, pp 39

[4] San Francisco Bay Area Rapid Transit District. Short-Range Transit Plan FY08 through FY17 & Capital Improvement Program FY08 through FY32. August 2007, pp 2-14

[5] In terms of housing, high-density, multi-family housing (e.g., condominiums, townhouses, and cooperatives) is the focal point of the analysis, in line with the ERA study, which points to the fact that low-density, single-family housing is not desirable near train station areas.

The projected demand values were converted into monetary terms, such as costs of constructing the development. Monetized demands were then entered as inputs into the REMI model to determine the corresponding economic benefits resulting from the construction phase of the influx of resources from outside the county, as well as the long-term impacts given the fact that the employment, income, and GRP generated extend beyond the short-term effects of the construction phase.

Affordable Mobility Benefits

Affordable mobility benefits that accrue to residents and workers in the study region are other anticipated benefits resulting from the SVRT BART Extension that will contribute to the economic competitiveness of Santa Clara County. Population groups with a statistically higher propensity to utilize the proposed SVRT BART Extension, based on socio-demographic characteristics and the catchment areas of the proposed SVRT BART stations, were identified for the purposes of determining the extent of the affordable mobility benefits that will accumulate. Affordable mobility benefits accruing to targeted population groups (i.e., low-income people, households without a personal vehicle, minority population, and disabled residents) within one quarter mile catchment area of the SVRT BART Extension, that may likely utilize this alternative mode of transportation as a commuting means, were estimated based on historical U.S. Census data and GIS-based techniques applied to the existing and future BART system in the study area.

Upon its completion, the SVRT BART Extension will complement the regional rail transportation network by connecting the cities of Santa Clara, San Jose, and Milpitas in Santa Clara County with major Bay Area cities in San Mateo, Alameda, and San Francisco counties. Improved transit systems in Santa Clara County have the potential to expand employment opportunities for the workforce in the county by providing an expanded employment market to public transportation users in locations outside Santa Clara County where wages are higher than within the county.

This study estimated the potential increases in wages, as calculated by the annual wage differentials between the wages in Santa Clara and the counties with higher wages accessible via the SVRT BART extension (i.e., San Mateo and San Francisco Counties). The lower estimate represents the income differential difference between San Mateo and Santa Clara Counties while the higher estimate represents the income differential between San Francisco and Santa Clara Counties. Based on these findings, this analysis assumed that the targeted public transportation users who are anticipated to be employed in San Francisco and San Mateo Counties (because of working in areas with higher wages than Santa Clara County) are expected to spend a significant portion (68%) of the increase in their income in Santa Clara County.[6] The additional retail expenditures were input into the REMI models to assess the economic impacts resulting from affordable mobility benefits in Santa Clara County.

[6] According to the Census Bureau's Consumer Expenditure Survey, roughly 68% of total consumer expenditures were on retail items other than automobiles and associated expenses (e.g., gasoline), in 2005.

Accessibility Benefits

The new SVRT BART infrastructure is anticipated to lay the foundation for future economic growth via increased worker accessibility. Due to mitigated congestion and increased travel speeds on the roadway network, workers, given designated travel times, are expected to have access to places of employment beyond that which was previously attainable prior to the completion of the public transportation expansion.

In this part of the analysis, the focus is on the accessibility benefits resulting from the SVRT BART Extension to Santa Clara County because of (geographically) expanded available labor markets. A spatial distribution of the main employment generators in Santa Clara County was mapped from Traffic Analysis Zones (TAZs) data, provided by VTA, in conjunction with GIS-based techniques. Main employment generators along the freeway system in Santa Clara County were identified. Main employment generators correspond to the 0.75 (or 75%) quartile and represent 25% of the TAZs with the highest number of jobs in the San Francisco Bay Area and Santa Cruz, Monterey, San Benito, and San Joaquin counties. The geographically expanded labor market was approximated by calculating the difference between the numbers of workers who travel to places of employment via personal vehicle under the BART Scenario and under the No-BART Scenario for the constant, designated travel times.

Retail expenditures on food away from home served as the basis for estimating the economic impacts associated with accessibility benefits resulting from the SVRT BART Extension. For the purposes of this analysis, it was assumed that the additional number of workers with access to main employment generators in Santa Clara County will spend roughly 5.7% of his/her total retail expenditures on food away from home.[7] The additional retail expenditures are input into the REMI model to assess the economic impacts resulting from the improved accessibility to main employment generators in Santa Clara County.

Concluding Remarks

Relevant Findings

Table E 1 and **Table E 2** present the low and high monetary estimates (in 2005 constant dollars) of the overall economic impacts that the SVRT BART Extension is expected to have on the study region. Economic impacts are expressed in constant 2005 dollars, using a constant discount rate of seven percent.[8] In addition, the estimated number of additional jobs, both temporary and permanent, that are likely to be generated in the study region over the analysis period 2008-2030, are presented.

[7] According to the U.S. Census Bureau's Consumer Expenditure Survey, the average person spends roughly 5.7% of his/her total retail expenditures on food away from home.

[8] The U.S. Office of Management and Budget (OMB) directs federal agencies to use a seven percent discount rate in their base-case analysis of proposed investment; this rate is seen as the marginal pre-tax rate of return on an average investment in the private sector in recent years.

As suggested by the lower estimate, it is anticipated that the SVRT BART Extension will generate an additional $6.00 billion in GRP, $2.28 billion in personal income, and $4.56 billion in travel-time savings to travelers commuting over the analysis period (2008-2030). In addition, it is expected that the SVRT BART Extension will create, on average, 2,415 temporary jobs annually associated with construction activities pertaining to both the SVRT BART Extension and the land use development around the new six stations[9] and 2,426 permanent jobs, on average, annually that are tied to the travel efficiency gains, operation and maintenance of the SVRT BART Extension, induced development, and affordable mobility and accessibility benefits.

[9] As a result of the influx of resources from outside Santa Clara County.

Table E 1: Overall Benefits Received as a result of the SVRT BART Extension over the Analysis Period 2008-2030 based on

Economic Impact	Highway User Benefits	Transit User Benefits	Construction of the SVRT BART Extension	Operations and Maintenance of the SVRT BART Extension	Construction Phase of the Influx of Resources from Outside the County	Influx of Resources from Outside of Santa Clara County	Mobility and Accessibility Benefits	GRAND TOTAL
Low Estimates of the Economic Impacts								
Santa Clara County								
GRP (millions of 2005$)	$1,221.00	$16.61	$920.25	$338.66	$143.82	$159.12	$1,680.39	$4,479.85
Average Annual Temporary Jobs	---	---	1,487	---	119	---	---	1,606
Average Annual Permanent Jobs	571	16	---	468	---	85	503	1,643
Personal Income (millions of 2005$)	$251.00	$5.56	$598.23	$199.50	$90.72	$66.60	$327.10	$1,538.71
Commute travel time savings (millions of 2005$)	$2,497.00	$39.59	---	---	---	---	---	$2,536.59
Alameda County								
GRP (millions of 2005$)	$341.00	$1.34	$181.35	$57.12	---	---	---	$580.81
Average Annual Temporary Jobs	---	---	259	---	---	---	---	259
Average Annual Permanent Jobs	266	1	---	65	---	---	---	332
Personal Income (millions of 2005$)	$79.00	$0.32	$110.16	$26.32	---	---	---	$215.80
Commute travel time savings (millions of 2005$)	$1,116.00	$2.40	---	---	---	---	---	$1,118.40
Rest of Bay Area								
GRP (millions of 2005$)	$387.00	$1.15	$439.47	$121.66	---	---	---	$949.28
Average Annual Temporary Jobs	---	---	550	---	---	---	---	550
Average Annual Permanent Jobs	327	1	---	123	---	---	---	451
Personal Income (millions of 2005$)	$101.00	$0.31	$331.47	$91.70	---	---	---	$524.48
Commute travel time savings (millions of 2005$)	$899.00	$2.28	---	---	---	---	---	$901.28
Study Region								
GRP (millions of 2005$)	$1,949.00	$19.10	$1,541.07	$517.44	$143.82	$159.12	$1,680.39	$6,009.94
Average Annual Temporary Jobs	---	---	2,296	---	119	---	---	2,415
Average Annual Permanent Jobs	1,164	18	---	656	---	85	503	2,426
Personal Income (millions of 2005$)	$431.00	$6.19	$1,039.86	$317.52	$90.72	$66.60	$327.10	$2,278.99
Commute travel time savings (millions of 2005$)	$4,512.00	$44.27	---	---	---	---	---	$4,556.27

Table E 2: Overall Benefits Received as a result of the SVRT BART Extension over the Analysis Period 2008-2030 based on High Estimates of the Economic Impacts

Economic Impact	Highway User Benefits	Transit User Benefits	Construction of the SVRT BART Extension	Operations and Maintenance of the SVRT BART Extension	Construction Phase of the Influx of Resources from Outside the County	Influx of Resources from Outside of Santa Clara County	Mobility and Accessibility Benefits	GRAND TOTAL
Santa Clara County								
GRP (millions of 2005$)	$3,228.00	$33.29	$920.25	$338.66	$310.68	$347.76	$1,821.05	$6,999.69
Average Annual Temporary Jobs	---	---	1,487	---	259	---	---	1,746
Average Annual Permanent Jobs	1,137	36	---	468	---	182	3,932	5,755
Personal Income (millions of 2005$)	$508.00	$12.48	$598.23	$199.50	$191.70	$137.34	$405.73	$2,052.98
Commute travel time savings (millions of 2005$)	$4,754.00	$44.54	---	---	---	---	---	$4,798.54
Alameda County								
GRP (millions of 2005$)	$1,310.00	$2.11	$181.35	$57.12	---	---	---	$1,550.58
Average Annual Temporary Jobs	---	---	259	---	---	---	---	259
Average Annual Permanent Jobs	531	3	---	65	---	---	---	599
Personal Income (millions of 2005$)	$160.00	$0.58	$110.16	$26.32	---	---	---	$297.06
Commute travel time savings (millions of 2005$)	$2,086.00	$2.70	---	---	---	---	---	$2,088.70
Rest of Bay Area								
GRP (millions of 2005$)	$2,306.00	$2.72	$439.47	$121.66	---	---	---	$2,869.85
Average Annual Temporary Jobs	---	---	550	---	---	---	---	550
Average Annual Permanent Jobs	878	3	---	123	---	---	---	1,004
Personal Income (millions of 2005$)	$496.00	$0.85	$331.47	$91.70	---	---	---	$920.02
Commute travel time savings (millions of 2005$)	$1,759.00	$2.57	---	---	---	---	---	$1,761.57
Study Region								
GRP (millions of 2005$)	$6,844.00	$38.12	$1,541.07	$517.44	$310.68	$347.76	$1,821.05	$11,420.12
Average Annual Temporary Jobs	---	---	2,296	---	259	---	---	2,555
Average Annual Permanent Jobs	2,546	41	---	656	---	182	3,932	7,357
Personal Income (millions of 2005$)	$1,164.00	$13.91	$1,039.86	$317.52	$191.70	$137.34	$405.73	$3,270.06
Commute travel time savings (millions of 2005$)	$8,599.00	$49.81	---	---	---	---	---	$8,648.81

As suggested by the higher estimate, the SVRT BART Extension is expected to generate an additional $11.42 billion in GRP, $3.27 billion in personal income, and $8.65 billion in travel-time savings to travelers commuting over the analysis period (2008-2030). In addition, the SVRT BART Extension is anticipated to generate an annual average of 2,555 temporary construction jobs and 7,357 permanent jobs.

Santa Clara County is expected to be the main beneficiary of the expected economic benefits. Based on the lower estimates, it is anticipated that Santa Clara County will account for 66% of the total benefits, while Alameda and the rest of the Bay Area will account for 14% and 20%, respectively, of the total economic benefits generated by the SVRT BART Extension. Based on the higher estimates, it is anticipated that Santa Clara County will account for 65% of the total benefits, while Alameda and the rest of the Bay Area will account for 13% and 22%, respectively of the total economic benefits generated by the SVRT BART Extension.

Highway user benefits, construction of the SVRT BART Extension, and affordable mobility and accessibility benefits will comprise 86.0% of GRP (32.4%, 25.6% and 28.0%, respectively) based on the lower estimates of the overall benefits. As far as the higher estimates are concerned, these three items will account for 89.4% of GRP with highway user benefits comprising 60.0% of GRP.

The construction activities associated with the new land development around the proposed six SVRT BART stations, due to influx of resources from outside of Santa Clara County (i.e., induced development), are expected to contribute between 2.4% (lower estimate) and 2.7% (higher estimate) of the additional total GRP. In terms of personal income, this activity will account for 4.0% (at the low end) and 5.9% (at the higher end) of the additional total personal income. As far as employment is concerned, this activity will contribute an average of between 4.9% (lower estimate) and 10.1% (higher estimate) per year of the additional total temporary jobs created over the analysis period 2008-2025.

The long-term economic benefits associated with the new land development around the proposed six SVRT BART stations, due to influx of resources from outside of Santa Clara County (i.e., induced development), are expected to contribute between 2.6% (lower estimate) and 3.0% (higher estimate) of the additional total GRP and between 2.9% (at the low end) and 4.2% (at the higher end) of the additional total personal income. As far as employment is concerned, this activity will contribute an average of between 2.5% and 3.5% per year of the additional total permanent jobs created over the analysis period 2008-2025.

Operations and maintenance of the SVRT BART Extension, between 2017 and 2030, is estimated to contribute between 4.5% to 8.6% to the additional total GRP. In terms of personal income, this activity is expected to account for 9.7% to 13.9% of the additional total personal income. As far as employment is concerned, operations and maintenance of the SVRT BART Extension will contribute between 8.9% to 27.0% of average annual employment over the entire analysis period.

An improved and expanded BART system is anticipated to increase passenger mobility and accessibility in the Bay Area. This analysis reveals that the SVRT BART Extension is estimated to generate mobility benefits for the targeted population groups[10] by providing them with an affordable transportation alternative for commuting to work.

Over the analysis period 2017-2030, the average annual number of workers from the four targeted population groups, who are anticipated to commute to work using the SVRT BART Extension in conjunction with the existing BART system, is estimated to be around 30,479 workers. In terms of accessibility benefits, the anticipated expanded labor market will account for 384,420 additional workers per year with access to main employment generators in Santa Clara County for the designated commute travel time (i.e., 30, 45, 60, and 90 minutes) over the analysis period 2017-2030.

Workers who are classified into one or more of the targeted population groups within the catchment areas of the SVRT BART stations are expected to have access to, and use, the SVRT BART to commute to work to neighboring counties that offer higher wages, as compared with Santa Clara County. As a result of crating an affordable transportation alternative, the SVRT BART Extension will contribute to the economic wellbeing of disadvantaged residents of Santa Clara County. This affordable mobility benefit will result in an additional average annual income ranging from $68.88 million to $536.16 million over the analysis period 2017-2030. A significant portion of this income (68%) generated from outside of Santa Clara County will be spent on retail purchases within the county, thereby generating additional GRP, jobs, and personal income in Santa Clara County.

The new SVRT BART infrastructure is expected to lay the foundation for future economic growth via increased worker accessibility. A positive change in the size of the labor market, accessible to the main employment generators, given a constant travel time for commuting to places of employment, is suggestive that the SVRT BART Extension will expand the job market in Santa Clara County by providing employment access to more workers, irrespectively of their commute travel time. These accessibility benefits are translated into additional GRP, jobs, and personal income in Santa Clara County from the retail expenditures that workers are anticipated to make in Santa Clara County.

As suggested by the lower estimate, the affordable mobility and accessibility benefits are estimated to generate an additional $1.68 billion in GRP, 503 annual jobs, and $327 million in personal income in Santa Clara County, from 2017 to 2030. As suggested by the higher estimate, the mobility and accessibility benefits are estimated to generate an additional $1.82 billion in GRP, 3,932 annual jobs, and $ 405.73 personal income in Santa Clara County from 2017 to 2030.

[10] These target population groups are (1) low income populations; (2) minority population groups; (3) households with no personal vehicle available; and, (4) the disabled population.

Extensions of Work

Given the exhaustive analyses carried out in this study, several segments exhibit the potential for further investigation. These segments are as follows:

1. Travel Time Savings for Freight Trips

   In estimating the travel-time savings for freight trips, it was assumed that there were 365 workdays per year. It was further assumed that each workday lasts for 8 hours. While some truck trips are constrained by the operating hours of the businesses receiving the goods being delivered by these trucks, other truck trips are restricted by the business' guidelines on delivery hours. A typical example of the distribution of truck trips by time of day[11] suggest that truck trips extend beyond 8 hours. On average, truck trips extend to 12 hours per day. The conservative estimates presented in Section 5.5.1 of the technical memorandum could be refined in future work based on more information regarding truck travel characteristics in the study region.

2. Incidental Costs for New SVRT BART Riders

   Some new SVRT BART riders could incur additional costs in the form of parking fees that they need to pay if they park-and-ride to get to their final destinations. This additional cost should be included in the estimation of the potential net vehicle-operating cost (VOC) savings that accrue to riders who park their cars and ride the SVRT BART. If information on parking fees are available, the estimates presented in Section 5.2.2 could be refined. This additional cost is expected to reduce the net VOC savings presented in the aforementioned section.

3. Foregone Employment Benefits

   As shown in this analysis, the potential benefits resulting from new residential and commercial development around new SVRT BART stations, improves targeted worker's mobility of residents within the SVRT BART catchment areas. Furthermore, the resulting increased accessibility to main employment generators in Santa Clara County will contribute to the attractiveness of Santa Clara County as a place to live and work. The SVRT BART Extension has the potential to create foregone employment benefits for Santa Clara residents who forgo job related trips in the absence of transit services. This subject deserves attention since it contributes to the attractiveness of Santa Clara County. This additional analysis will require information on county population who are not working because of the lack of a means of public transportation to get to work.

[11] Barber, Gerald. *Aggregate Characteristics of Urban Travel*. The Geographic of Urban Transportation. Second Edition. 1995.

4. Correlation between Accessibility Benefits and Housing Prices

Northern California is home to one of the nation's most expensive housing markets where housing prices are much higher than other regions in the U.S. For Bay Area workers with lower incomes, affordable housing is a major concern. Once the SVRT BART Extension becomes fully operational, people could live further away from their places of work because of the improved accessibility to main employment generators in Santa Clara County.

A useful extension of the present work would be to correlate housing property values in the study region, including rental rates, with the estimated SVRT BART accessibility benefits. The aims of such an undertaking are to determine (whether the improved transit system (access thereto) in the study region allows low-income residents to live further away from their places of employment thereby offsetting the high housing prices in the Bay Area.

Return on Investment of the SVRT BART Extension

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September 2008

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1. Introduction

This memorandum presents the estimation of the return on investment (ROI) of the SVRT BART Extension into Santa Clara County, CA, over 50 years after the opening of the extension in Fiscal Year (FY) 2017.

The Silicon Valley Rapid Transit (SVRT) Project is a 16-mile long extension of the existing Bay Area Rapid Transit (BART) system. It is slated to begin south of the planned Warm Springs BART Station in the City of Fremont in Alameda County (implemented by 2013) and extend, on the former Union Pacific Railroad (UPRR), through the cities of Milpitas, San Jose, and Santa Clara in Santa Clara County.

The numbers used in this analysis, except the operation and maintenance costs of the SVRT BART Extension, come from the *Supplemental Environmental Impact Report* certified in June 2007 by the VTA Board of Directors. The *Supplemental Environmental Impact Report* includes the traffic data and the ridership information that were used to estimate the economic impacts of the SVRT Extension as reported in the *Economic Impact Analysis of the SVRT BART Extension* (September, 2008). The updated operation and maintenance costs used in this analysis correspond to the estimates prepared by AECOM Consult in August 2008.

2. Methodology

The ROI is a performance measure used to evaluate the investment potential by comparing the magnitude and timing of expected gains to the investment costs. The ROI over the life of the SVRT BART Project is estimated as follows:

$$ROI = \frac{Gain\ \ from\ investment - Cost\ of\ \ investment}{Cost\ of\ \ investment}$$

The four categories of expected gains arising from the SVRT BART Extension include:

1. **Travel Efficiencies**, which are the benefits accruing to highway users and potential SVRT BART users upon completion of the extension, as measured in terms of travel-time savings, vehicle-operating cost savings, accident-cost savings, and emission-cost savings.

2. **Construction Impacts**, which are the economic impacts arising from expenditures on local labor and materials used in constructing the SVRT BART Extension.

3. **Operating and Maintenance Impacts**, which are the benefits arising from expenditures on local labor and materials used in operating and maintaining the facility, upon completion.

4. **Strategic Development Impacts**, which are the economic development impacts associated with attracting new land development and retaining business activity due to increased job accessibility and affordable mobility.

As described in the *Economic Impact Analysis of the SVRT BART Extension*, the economic benefits associated with each of the four categories of expected gains arising from the SVRT BART Extension over the analysis period 2016-2030 were estimated utilizing the Regional Economic Models Inc. (REMI). The high and low estimates of the economic benefits were reported as changes in Gross Regional Product (GRP), personal income and employment.

Trend analyses are used to estimate the economic benefits for each of the four categories of expected gains arising from the SVRT BART Extension over the life of the project. The high and low estimates of the economic impacts reported in the *Economic Impact Analysis of the SVRT BART Extension* (September, 2008) are extrapolated to generate values through 2067. The trendlines (i.e., linear or polynomial) that provide the best fit are used to estimate changes in GRP and personal income over the extended analysis period as follows:

- To estimate changes in GRP and personal income through 2067 due to changes in travel efficiency gains accruing to highway users and potential SVRT BART users -attributed to the SVRT BART Extension-, changes in GRP and personal income between 2016 and 2030 estimated by the REMI model were extrapolated using two-order polynomial regressions.[1]

- To estimate changes in GRP and personal income through 2067 due to strategic development benefits (i.e., new land development within a one-quarter mile radius of six future SVRT BART Stations, affordable mobility benefits and accessibility benefits) resulting from the SVRT BART Extension, changes in GRP and personal income between 2016 and 2030 estimated by the REMI model were extrapolated using six-order polynomial regressions.[2]

- To estimate changes in GRP and personal income through 2067 due to construction, operations and maintenance expenditures of the SVRT BART Extension, changes in GRP and personal income between 2017 and 2030 estimated by the REMI model were extrapolated using linear regressions.[3]

[1] Equations of the form $Y=a+b_1X+b_2X^2$ where X= Year and Y = GRP or Personal Income
[2] Equations of the form $Y=a+b_1X+b_2X^2+b_3X^3+b_4X^4+b_5X^5+b_6X^6$ where X= Year and Y = GRP or Personal Income
[3] Equations of the form $Y=a+b_1X$ where X= Year and Y = GRP or Personal Income

The investment costs arising from the SVRT BART Extension include the Project, operations, and maintenance costs. Construction of the SVRT BART Extension is currently scheduled to occur from FY 2008 to FY 2016 and the extension is scheduled to be opened to the public in Fiscal Year 2017.

The total estimated cost of the SVRT BART Extension is expected to be approximately $4.7 billion (in 2005 dollars) spanning the period FY 2002 to FY 2018[4], with subsequent operations and maintenance costs in the following twenty years (i.e., from FY 2017 to FY 2036) estimated to be approximately $1.7 billion (in nominal dollars).[5] The estimated project costs presented in this analysis captures the hard costs (e.g., site preparation activities, structures, earthwork, maintenance facilities, and vehicles), the soft costs (e.g., planning and engineering), and the land and building acquisition costs.

To determine a direct comparison between the expected gains and the costs of the investment, the project, operations and maintenance costs of the SVRT BART Extension and the benefits that accrue over the 50-year period between the years 2017 and 2067 are discounted back to 2005 dollars using a constant discount rate of seven percent as suggested by the U.S. Office of Management and Budget (OMB).[6]

3. Overall Economic Benefits over the Project Life

Table 1A and **Table 1B** present the low and high monetary estimates, respectively, of the overall economic impacts (in millions of 2005 dollars) that the SVRT BART Extension is expected to have on the study region through 2067.

The region analyzed in this study is comprised of Santa Clara, Alameda, Contra Costa, San Francisco, and San Mateo Counties, California. Some benefits of the SVRT BART investment are anticipated to spill over (a positive externality) from the immediately impacted geography of Santa Clara into the adjoining, aforementioned counties. In order to quantify the spillover effect and evaluate as much of the total economic impacts as reasonably possible, Alameda and the remaining aforementioned counties (i.e., Contra Costa, San Francisco, and San Mateo Counties) are considered in the overall study region when modeling the long-term economic impacts of the proposed investment.

[4] Source: Brain Hughes (VTA, August 2007)
[5] Source: AECOM Consult (August 2008)
[6] The OMB directs federal agencies to use a seven percent discount rate in their base-case analysis of proposed investment; this rate is seen as the marginal pre-tax rate of return on an average investment in the private sector un recent years.

Table 1A: Total Gains (in millions of 2005$) of the SVRT BART Extension through 2067 based on Low Estimates of the Economic Impacts

Period 2016-2067				
Highway User Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$8,247	$2,099	$2,504	$12,850
Personal Income	$1,481	$452	$921	$2,854
Transit User Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	Study Region
GRP	$135	$9	$8	$152
Personal Income	$32	$1	$1	$34
Construction Expenditure Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$920	$181	$439	$1,540
Personal Income	$598	$110	$331	$1,039
Operations and Maintenance Expenditure Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$815	$153	$304	$1,272
Personal Income	$487	$74	$224	$785
Benefits from the Construction Phase of the Influx of Resources from outside Santa Clara County				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$144	-	-	$144
Personal Income	$91	-	-	$91
Benefits from the Long-Term Phase of the Influx of Resources from outside Santa Clara County				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$218	-	-	$218
Personal Income	$80	-	-	$80
Affordable Mobility Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$129	-	-	$129
Personal Income	$72	-	-	$72
Accessibility Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$4,067	-	-	$4,067
Personal Income	$651	-	-	$651
			Total Gains =	$25,980

Table 1B: Total Gains (in millions of 2005$) of the SVRT BART Extension through 2067 based on High Estimates of the Economic Impacts

Period 2016-2067				
Highway user Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$27,126	$4,675	$7,097	$38,898
Personal Income	$4,066	$1,108	$2,922	$8,096
Transit User Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	Study Region
GRP	$135	$9	$8	$152
Personal Income	$32	$1	$1	$34
Construction Expenditure Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$920	$181	$439	$1,540
Personal Income	$598	$110	$331	$1,039
Operations and Maintenance Expenditure Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$815	$153	$304	$1,272
Personal Income	$487	$74	$224	$785
Benefits from the Construction Phase of the Influx of Resources from outside Santa Clara County				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$311	-	-	$311
Personal Income	$192	-	-	$192
Benefits from the Long-Term Phase of the Influx of Resources from outside Santa Clara County				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$483	-	-	$483
Personal Income	$173	-	-	$173
Affordable Mobility Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$1,004	-	-	$1,004
Personal Income	$565	-	-	$565
Accessibility Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$4,067	-	-	$4,067
Personal Income	$651	-	-	$651
			Total Gains =	$59,262

3. Return on Investment

Table 2 presents the return on investment (ROI) associated with the construction of the SVRT BART Extension and operation and maintenance expenditures over 50 years after the opening of the extension in Fiscal Year (FY) 2017 based on low and high estimates of the economic impacts. **Table 2** also presents the potential ROI associated with VTA investing in joint land use development by shouldering 50% of the construction cost associated with the housing, office, retail and hotel development within a one-quarter mile radius of six future SVRT BART stations in Santa Clara County.

Table 2: Return on Investment (ROI) of the SVRT BART Extension through 2067

Based on Low Estimates of the Economic Impacts	
Assuming no Joint Development Cost by VTA	
Total Gains (from Table 1A) =	**$25,980**
Project Costs (millions of 2005$)	$4,700
Operations and Maintenance Costs (millions of 2005$)	$681
Total Cost =	**$5,381**
ROI =	**3.83**
Assuming 50% Joint Development Cost by VTA	
Total Gains (from Table 1A) =	**$25,980**
Project Costs (millions of 2005$)	$4,700
Operations and Maintenance Costs (millions of 2005$)	$681
Construction Costs from Induced Land Use Development (millions of 2005$)	$256
Total Costs =	**$5,637**
ROI =	**3.61**
Based on High Estimates of the Economic Impacts	
Assuming no Joint Development Cost by VTA	
Total Gains (from Table 1B) =	**$59,262**
Project Costs (millions of 2005$)	$4,700
Operations and Maintenance Costs (millions of 2005$)	$681
Total Cost =	**$5,381**
ROI =	**10.01**
Assuming 50% Joint Development Cost by VTA	
Total Gains (from Table 1B) =	**$59,262**
Project Costs (millions of 2005$)	$4,700
Operations and Maintenance Costs (millions of 2005$)	$681
Construction Costs from Induced Land Use Development (millions of 2005$)	$256
Total Costs =	**$5,637**
ROI =	**9.51**

According to **Table 2**, the estimated ROI for the SVRT BART Extension, assuming no investment by VTA in construction costs associated with induced land use development, is estimated to be between 3.83 and 10.01. Since the ROI generated a significant positive value, it is expected that the returns will outweigh the costs associated with the constructing the SVRT BART Extension, as well as with the operations and maintenance of the extension over the life of the project.

The estimated ROI for the SVRT BART Extension, assuming 50% investment by VTA in construction costs associated with induced land use development, is estimated to be between 3.61 and 9.51. The estimated ROI suggests that the returns will outweigh the costs of construction, operations and maintenance of the SVRT BART Extension and 50% investment by VTA in construction costs associated with induced land use development.

4. Sensitivity Analysis

Sensitivity tests were conducted to gauge the responsiveness of the ROI to changes in the life of the project since shorter or longer analysis periods may produce different ROI figures for the same investment. Subsequently, the life of the SVRT BART Extension was modified and the benefits and costs were estimated using the methodology outlined in **Section 2**.

Table 3A and **Table 3B** presents the low and high monetary estimates, respectively, of the overall economic impacts (in millions of 2005 dollars) that the SVRT BART Extension is expected to have on the study region through 2047 (i.e., over a 30-year period after the opening of the extension in FY 2017).

Table 4A and **Table 4B** presents the low and high monetary estimates, respectively, of the overall economic impacts (in millions of 2005 dollars) that the SVRT BART Extension is expected to have on the study region through 2087 (i.e., over a 70-year period after the opening of the extension in FY 2017).

Table 3A: Total Gains (in millions of 2005$) of the SVRT BART Extension through 2047 based on Low Estimates of the Economic Impacts

Period 2016-2047				
Highway User Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$4,664	$1,209	$1,476	$7,349
Personal Income	$878	$272	$559	$1,709
Transit User Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	
GRP	$88	$6	$6	$100
Personal Income	$25	$1	$1	$28
Construction Expenditure Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$920	$181	$439	$1,540
Personal Income	$598	$110	$331	$1,039
Operations and Maintenance Expenditure Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$721	$127	$260	$1,108
Personal Income	$421	$62	$192	$675
Benefits from the Construction Phase of the Influx of Resources from outside Santa Clara County				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$144	-	-	$144
Personal Income	$91	-	-	$91
Benefits from the Long-Term Phase of the Influx of Resources from outside Santa Clara County				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$207	-	-	$207
Personal Income	$78	-	-	$78
Affordable Mobility Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$82	-	-	$82
Personal Income	$46	-	-	$46
Accessibility Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$3,197	-	-	$3,197
Personal Income	$538	-	-	$538
			Total Gains =	$17,933

Table 3B: Total Gains (in millions of 2005$) of the SVRT BART Extension through 2047 based on High Estimates of the Economic Impacts

Period 2016-2047				
Highway User Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$13,692	$2,607	$20,438	$36,737
Personal Income	$2,201	$632	$1,757	$4,590
Transit User Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	
GRP	$88	$6	$6	$100
Personal Income	$25	$1	$1	$28
Construction Expenditure Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$920	$181	$439	$1,540
Personal Income	$598	$110	$331	$1,039
Operations and Maintenance Expenditure Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$721	$127	$260	$1,108
Personal Income	$421	$62	$192	$675
Benefits from the Construction Phase of the Influx of Resources from outside Santa Clara County				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$311	-	-	$311
Personal Income	$192	-	-	$192
Benefits from the Long-Term Phase of the Influx of Resources from outside Santa Clara County				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$459	-	-	$459
Personal Income	$168	-	-	$168
Affordable Mobility Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$641	-	-	$641
Personal Income	$356	-	-	$356
Accessibility Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$3,197	-	-	$3,197
Personal Income	$538	-	-	$538
			Total Gains =	$51,680

Table 4A: Total Gains (in millions of 2005$) of the SVRT BART Extension through 2087 based on Low Estimates of the Economic Impacts

Total Gains Over the Period 2016-2087				
Highway User Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$10,261	$2,594	$3,067	$15,921
Personal Income	$1,809	$549	$1,113	$3,472
Transit User Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	
GRP	$158	$10	$9	$177
Personal Income	$33	$1	$1	$36
Construction Expenditure Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$920	$181	$439	$1,540
Personal Income	$598	$110	$331	$1,039
Operations and Maintenance Expenditure Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$878	$166	$328	$1,373
Personal Income	$526	$80	$241	$847
Benefits from the Construction Phase of the Influx of Resources from outside Santa Clara County				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$144	-	-	$144
Personal Income	$91	-	-	$91
Benefits from the Long-Term Phase of the Influx of Resources from outside Santa Clara County				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$221	-	-	$221
Personal Income	$81	-	-	$81
Affordable Mobility Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$148	-	-	$148
Personal Income	$84	-	-	$84
Accessibility Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$4,390	-	-	$4,390
Personal Income	$692	-	-	$692
			Total Gains =	$30,256

Table 4B: Total Gains (in millions of 2005$) of the SVRT BART Extension through 2087 based on High Estimates of the Economic Impacts

Total Gains Over the Period 2016-2087				
Highway User Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$35,195	$5,852	$8,728	$49,775
Personal Income	$5,147	$1,375	$3,547	$10,069
Transit User Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	
GRP	$158	$10	$9	$177
Personal Income	$33	$1	$1	$36
Construction Expenditure Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$920	$181	$439	$1,540
Personal Income	$598	$110	$331	$1,039
Operations and Maintenance Expenditure Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$878	$166	$328	$1,373
Personal Income	$526	$80	$241	$847
Benefits from the Construction Phase of the Influx of Resources from outside Santa Clara County				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$311	-	-	$311
Personal Income	$192	-	-	$192
Benefits from the Long-Term Phase of the Influx of Resources from outside Santa Clara County				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$489	-	-	$489
Personal Income	$174	-	-	$174
Affordable Mobility Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$1,154	-	-	$1,154
Personal Income	$652	-	-	$652
Accessibility Benefits				
Economic Impact	**Santa Clara County**	**Alameda County**	**Rest of Bay Area**	**Study Region**
GRP	$4,390	-	-	$4,390
Personal Income	$692	-	-	$692
			Total Gains =	$72,912

Table 5 presents the ROI associated with the construction of the SVRT BART Extension and operation and maintenance expenditures over 30 years after the opening of the extension in FY 2017 based on low and high estimates of the economic impacts. This table also presents the potential ROI associated with VTA investing in joint land use development by shouldering 50% of the construction cost associated with the housing, office, retail and hotel development within a one-quarter mile radius of six future SVRT BART stations in Santa Clara County.

Table 5: Return on Investment (ROI) of the SVRT BART Extension through 2047

Based on Low Estimates of the Economic Impacts	
Assuming no Joint Development Cost by VTA	
Total Gains (from Table 3A) =	**$17,933**
Project Costs (millions of 2005$)	$4,700
Operations and Maintenance Costs (millions of 2005$)	$546
Total Cost =	**$5,246**
ROI =	**2.42**
Total Gains (from Table 3A) =	**$17,933**
Project Costs (millions of 2005$)	$4,700
Operations and Maintenance Costs (millions of 2005$)	$546
Construction Costs from Induced Land Use Development (millions of 2005$)	$256
Total Costs =	**$5,502**
ROI =	**2.26**
Based on High Estimates of the Economic Impacts	
Assuming no Joint Development Cost by VTA	
Total Gains (from Table 3B) =	**$51,680**
Project Costs (millions of 2005$)	$4,700
Operations and Maintenance Costs (millions of 2005$)	$546
Total Cost =	**$5,246**
ROI =	**8.85**
Total Gains (from Table 3B) =	**$51,680**
Project Costs (millions of 2005$)	$4,700
Operations and Maintenance Costs (millions of 2005$)	$546
Construction Costs from Induced Land Use Development (millions of 2005$)	$256
Total Costs =	**$5,502**
ROI =	**8.39**

The ROI associated with the construction of the SVRT BART Extension and operation and maintenance expenditures assuming the life of the SVRT BART Extension is 70 years is depicted in **Table 6**. This table also presents the expected ROI associated with VTA investing in joint land use development by shouldering 50% of the construction cost associated with the housing, office, retail and hotel development within a one-quarter mile radius of six future SVRT BART stations in Santa Clara County.

Table 6: Return on Investment (ROI) of the SVRT BART Extension through 2087

Based on Low Estimates of the Economic Impacts	
Assuming no Joint Development Cost by VTA	
Total Gains (from Table 4A) =	**$30,256**
Project Costs (millions of 2005$)	$4,700
Operations and Maintenance Costs (millions of 2005$)	$734
Total Cost =	**$5,434**
ROI =	**4.57**
Assuming 50% Joint Development Cost by VTA	
Total Gains (from Table 4A) =	**$30,256**
Project Costs (millions of 2005$)	$4,700
Operations and Maintenance Costs (millions of 2005$)	$734
Construction Costs from Induced Land Use Development (millions of 2005$)	$256
Total Costs =	**$5,690**
ROI =	**4.32**
Based on High Estimates of the Economic Impacts	
Assuming no Joint Development Cost by VTA	
Total Gains (from Table 4B) =	**$72,912**
Project Costs (millions of 2005$)	$4,700
Operations and Maintenance Costs (millions of 2005$)	$734
Total Cost =	**$5,434**
ROI =	**12.42**
Assuming 50% Joint Development Cost by VTA	
Total Gains (from Table 4B) =	**$72,912**
Project Costs (millions of 2005$)	$4,700
Operations and Maintenance Costs (millions of 2005$)	$734
Construction Costs from Induced Land Use Development (millions of 2005$)	$256
Total Costs =	**$5,690**
ROI =	**11.81**

In summary, the anticipated ROIs assuming the life of the SVRT BART Extension is 30 and 70 years also generated positive values. These estimates suggest that the gains resulting from increases in GRP and personal income in the study region will outweigh the costs associated with the construction, operations and maintenance of the SVRT BART Extension over the life of the project.

Table 7 summarizes the ROIs of the SVRT BART Extension based on the low and high estimates of the economic benefits attributed to the SVRT BART investment over the periods 2016-2047, 2016-2067 and 2016-2087. These estimates suggest that the gains generated by the low estimates represent between 35% and 45% the gains generated by the high estimates. In all cases, the gains resulting from increases in GRP and personal income in the study region will outweigh the costs associated with the construction, operations and maintenance of the SVRT BART Extension. Therefore, the SVRT BART investment is deemed to be economically feasible.

Table 7: Return on Investment (ROI) of the SVRT BART Extension (based on Low and High Estimates of the Economic Impacts)

	Total Gains Over Period 2016-2047 (in millions of 2005$)		**Total Gains Over Period 2016-2067** (in millions of 2005$)		**Total Gains Over Period 2016-2087** (in millions of 2005$)	
Source	**Low Estimates**	**High Estimates**	**Low Estimates**	**High Estimates**	**Low Estimates**	**High Estimates**
Highway User Benefits	$9,058	$41,327	$15,704	$46,994	$19,393	$59,844
Transit User Benefits	$128	$128	$185	$185	$213	$213
Construction Expenditure Benefits	$2,581	$2,581	$2,581	$2,581	$2,581	$2,581
Operations and Maintenance Expenditure Benefits	$1,784	$1,784	$2,057	$2,057	$2,220	$2,220
Benefits from the Construction Phase of the Influx of Resources (Land-Use Development) from outside Santa Clara County	$235	$502	$235	$502	$235	$502
Benefits from the Long-Term Phase of the Influx of Resources (Land-Use Development) from outside Santa Clara County	$285	$626	$298	$656	$301	$664
Affordable Mobility Benefits	$128	$997	$201	$1,568	$232	$1,807
Accessibility Benefits	$3,735	$3,735	$4,718	$4,718	$5,082	$5,082
Total Gains =	$17,933	$51,680	$25,980	$59,262	$30,256	$67,830
ROI Assuming no Joint Development Cost by VTA	**2.42**	**8.85**	**3.83**	**10.01**	**4.57**	**12.42**
ROI Assuming 50% Joint Development Cost by VTA	**2.26**	**8.39**	**3.61**	**9.51**	**4.32**	**11.81**

REFERENCES

1. *OMB Circular A*-94. The U.S. Office of Management and Budget. .

2. *Supplemental Environmental Impact Report* certified in June 2007 by the VTA Board of Directors.

3. *The Economic Impact Analysis of the SVRT BART Extension* (September, 2008).

SANTA CLARA
Valley Transportation Authority

Date: October 7, 2008
Current Meeting: October 9, 2008
Board Meeting: November 6, 2008

BOARD MEMORANDUM

TO: Santa Clara Valley Transportation Authority
Policy Advisory Committee

THROUGH: General Manager, Michael T. Burns

FROM: Chief CMA Officer, John Ristow

SUBJECT: High Occupancy Toll (HOT) Lanes - Public Outreach

FOR INFORMATION ONLY

BACKGROUND:

The Silicon Valley High Occupancy Toll (HOT) Lanes Program (referred to as the Express Lanes Program) has been under development since 2003 when the Santa Clara Valley Transportation Authority (VTA) Board of Directors' Ad Hoc Financial Stability Committee requested a presentation from staff on HOT lanes and their potential benefits and opportunities in Santa Clara County.

The Silicon Valley Express Lanes Program (Program) has been undertaken to provide long-term mobility benefits and to provide another funding stream for transportation improvements. Specifically, the primary objectives of the Program are the following:

1. Provide congestion relief through more effective use of existing roadways;
2. Provide commuters with a new mobility option; and
3. Provide a new funding source for transportation improvements including public transit.

DISCUSSION:

The purpose of this memorandum is to provide an update on the most recent activities of the Program relating to public education and outreach. This memorandum is a continuation of the project team's efforts to keep the VTA Board updated on the Program's progress. At the December 2008 Board meeting, the project team will be seeking approval from Board on an implementation plan for the Express Lanes Program.

Update on Express Lanes Program Outreach

The objectives for the Program outreach and opinion research are as follows:

1. To give the general public, potential Express Lanes users and key community and project stakeholders an opportunity to provide comments on the Program.
2. To explore how public opinion toward HOV and HOT lanes affects the proposed Program.
3. To determine the strengths, weaknesses, opportunities and threats facing the Program.
4. To determine how best to educate the general public about the Program while formulating an outreach plan that best addresses the areas of interest to the public, project stakeholders and elected officials.

Among the work completed to date are as follows:

- Interviews with project stakeholders
- Focus Groups with 42 carpoolers and solo drivers
- Presentations to the VTA Advisory and Standing Committees
- Presentation to VTA and City staff, and professional organizations

There are several other outreach efforts that are planned and ongoing to provide information and get feedback. This includes:

- A public opinion survey with 500 SR 85 and US 101 users
- Public open houses
- Presentation to business communities and environmental groups
- Provide information materials at public events (Fact sheet and FAQ's)
- Interactive website providing program information, on-line survey and program update database
- Project video for SR 85 and US 101

This planned and ongoing outreach will be used to verify the initial findings from interviews and focus group survey. These results will help further shape the education and outreach programs to obtain greater general acceptance for the Program. This will form the basis for the Outreach Plan that will be used throughout the course of the implementation of the Program.

The following are key findings covering broad areas from the focus group surveys and the interviews with stakeholders:

What is the Congestion Level in Santa Clara County?
While residents have a good feel for where the traffic hot spots are in the county, views were mixed on the current state of the problem. There was skepticism about growth projections, however most agreed congestion would increase and a solution was needed.

Will Residents Accept Congestion Pricing?
Results from outreach show residents in this area are well prepared for congestion pricing and would easily understand the concept. Other key points include:

- The public is able to grasp a great deal of complicated and technical information in a relatively short period of time.
- A strong majority of carpool lane users stated they would likely use the Express lanes in the future.
- Successful examples from other areas are important to demonstrate how congestion

pricing works and can benefit commuters in Santa Clara County.

Where Does the Money Go?
This was the most important concern of both stakeholders and the public. Skepticism and distrust of government at all levels including VTA's ability to ensure the funds will remain and be reinvested within the corridor was generally raised. This concern remained despite the participants being told that the legislation bill stipulates the revenue to be reinvested within the corridor. The focus group participants highlighted that VTA can build support if the public is convinced that revenue:

- Are effectively spent on additional improvements in the corridor including public transit.
- Are overseen by a citizen's watchdog committee or independent auditing committee to ensure proper use of revenues.

What about Equity Implications?
Focus groups showed that concerns about equity could be mitigated through a policy that directs that revenues be spent on improving transit service in the corridor. This approach proved very successful in San Diego on the I-15 Express Lanes. Furthermore, experience shows people from all walks of life can obtain access to the lanes through ridesharing and improved transit. Moderate and low-income solo drivers can choose to obtain a transponder and use the lanes when they need reliable travel (i.e., to pick-up a child at day care and avoid stiff overtime penalties that far exceed the toll). Surveys across the country have shown that all income levels support and use Express Lanes on an as-needed basis.

Are Express Lanes Double Taxation?
The initial outreach effort showed that as taxpayers, residents feel they have already paid for the use of highways. By having to pay to use the Express Lanes, it is perceived they are paying for the road twice. There is also a feeling of economic inequity in that only wealthier drivers will be able to afford to use the road. The overriding issue here is that the majority of the public interviewed do not fully understand where transportation funding comes from, what it is used for, and why there is a pressing need to raise more money.

There was general support when it was highlighted that:

- Solo commuters choosing to pay a toll can access the lanes, which they cannot do now.
- The benefits of toll revenues being reinvested in the corridor to provide greater transportation options for all commuters.
- This is a better use of existing roadways and the toll amount would be less than the increase in taxes necessary to build and maintain additional lanes.

How Will Express Lane User Access Be Enforced?
The focus group indicated enforcement is a key factor in the success of the lanes and one that needs to be clearly understood. Many drivers questioned the ability to prevent "cheaters" from using the lanes. Although there was general consensus that the use of revenue to have additional California Highway Patrol (CHP) presence is helpful, it was still not clear to the group if the "cheaters" can be enforced and what the level of disruption would be to general traffic related to enforcement activities.

Are Express Lanes Safe?
Safety was a key factor mentioned at the focus group surveys. Some focus group participants felt that merging in and out of Express Lanes at designated locations could be dangerous. On the contrary, there were others who were more positive towards the striped buffer separation between the general purpose lane and Express Lane. There were others that thought drivers on Express Lanes should be protected when moving faster than other traffic on the roadway using a physical barrier. With no barrier, there is some concern that safety will be jeopardized if people do move in and out of the lanes by crossing the striped buffer.

What Are Other Major Challenges?
As mentioned earlier, the public is able to grasp a great deal of complicated and technical information in a relatively short period of time. However, there is a need to "educate" drivers to the "new" way of using Express Lanes. This includes:

- Explanation of how dynamic pricing works so that prospective users understand and believe it is designed to reduce congestion in all lanes and perhaps more importantly will ensure a reliable trip on Express Lanes.
- Description of how entry and exit to/from Express Lanes work. Communications materials should include maps, diagrams and other illustrations that clearly define the Express Lane access points that will be guided by signage and striping.
- While the use of technology was well received, it is important to educate how to use the FasTrak transponder.

What Was The Preferred Name For HOT Lanes?
"Express Lanes" was the name favored by most focus group participants. It is also the name that is being used by other HOT Lanes projects in this region namely the I-680 and I-580 Express Lanes projects.

Who is VTA?
The public is not generally aware of what VTA does or the purpose of the organization. Consideration should be given to initiating a concerted effort to elevate VTA's profile in order to build public trust and gain the public and leadership support the organization needs as it implements the Express Lanes project along with other major initiatives in the future.

Summary
Results from the various reports indicate that the public will not have difficulty understanding the project, and once provided with information, they quickly grasp the idea and tend to be open to its possibilities. It is important that motorists need to be informed about physical roadway changes and reassured of safety. Strong, consistent communication will be the key to gaining approval.

Many community leaders already support VTA's leadership and feel the organization is on the right track. However, it is important to continue to communicate the specifics of the Express Lanes Program because the general awareness about the Express Lanes Program is still at its infancy stage. While there is general agreement, even among carpoolers, that the carpool lanes are underutilized, most people have only a general idea of what is being proposed. Hence there is a need to continue to do outreach at every stage of the Program implementation to ensure

successful implementation.

Next Steps
VTA staff will be incorporating the research findings to implement comprehensive education and outreach efforts moving forward. Planned activities include stakeholder presentations, public open houses, and extensive media relations.

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