

Auditor General’s Initial Monitoring Report on VTA’s BART Silicon Valley Phase II Extension Project

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Executive Summary

Why We Performed this Assessment

In accordance with the Auditor General's (AG) fiscal year 2023-2024 workplan approved by VTA's Board of Directors (Board), the AG team conducted an initial assessment of VTA's BART Silicon Valley Phase II Extension project (BSV II). The objective of our initial assessment was to gain an understanding of the BSV II project to date, including reviews and analyses of cost estimates, schedules, funding strategy, changes in the project construction period, and project risks. This initial work serves the purpose of communicating general information, project transparency, and to assist Board members' directing future work for the committee. To that end, we have recorded our observations as part of our due diligence to document initial observations and risk areas, memorialize potential corrective actions, monitor improvements, and offer oversight and/or critique of VTA's project management activities, and contribute to any lessons learned dialogues.

During the Board workshop meeting on the BSV II project that was held on Friday, October 20, 2023, Chairperson Burt announced the formation of a VTA BSV II ad hoc oversight steering committee [BSV II ad hoc committee] comprised of voting members of the VTA Board of Directors. The purpose of the BSV II ad hoc committee is to provide oversight and guidance on the delivery of the BSV II project. Members of the committee will offer their independent perspectives; review project progress, budget, forecasts, and schedule; assess key milestones; and provide guidance on mitigating potential risks and resolving issues that may arise during the project's life cycle. As requested by the Board, the AG supports and staffs the committee.

Typically, the AG's reports are presented and reviewed by VTA's Governance & Audit Committee. However, with respect to this and future BSV II monitoring reports issued by the AG Team, the reports have been referred to the BSV II ad hoc committee.

What We Found

During the course of our work on this initial monitoring report, the AG team documented what some consider to be "a breach in transparency" to the Board and the public, and in some instances communications that were misleading and/or dismissive of concerns that were raised related to the project. It is essential that those in a leadership capacity in the organization take responsibility and accountability in developing and implementing a communication system to collect, generate, and disseminate project information that can appropriately be shared with all appropriate interested parties, which is factual, timely and relevant.

This initial monitoring report of the BSV II project includes seven observations and two recommendations for the Administration and the Board to consider. A number of these observations, as well as our recommendations, focus on transparency and timely communication protocols.

Our Initial Observations

1. VTA could have been timelier in communicating changes to BSV II project cost and schedule projections to the Board and the Public.
2. The Project Management Oversight Contractor (PMOC) concerns were raised but not widely reported.
3. Project budget vs. actual numbers have not been updated since August 2022.
4. Actual numbers have not been updated on a regular basis since the start of the Project in 2021, leaving a void in evaluating the budget balance by cost center and funding source.
5. Current funding strategy will maximize the federal grant funding while preserving valuable local revenue sources.
6. Extension of the project construction period will continue to put pressure on project cost and funding.
7. Recurring risk themes need heightened attention, monitoring, and resolution.

What We Recommend

1. The VTA General Manager should ensure that the Project Management Oversight Contractor (PMOC) monthly reports are provided to the Ad Hoc Committee as they become available, and each report's executive summary should be made available to the public through postings on the BSVII project web page.

It should be noted that the FTA periodically publishes the PMOC reports, which are available to the public on the FTA's website. Specific to this project, the FTA published the PMOC's report as of May 14, 2021. It can be found at <https://www.transit.dot.gov/sites/fta.dot.gov/files/2022-03/FTA-BART-Silicon-Valley-Phase-II-Extension-Project-Risk-Assessment-Report.pdf>.

2. VTA BSVII Project Management should develop a communications plan, which at a minimum should include the development of a matrix of stakeholders, identify critical information to be disseminated to each stakeholder, and determine the frequency and method of communication, tailored to each stakeholder. Project Management should develop a process for monitoring stakeholder needs and make changes to the plan as needed.
 - Project Management should assign one individual to compile and disseminate appropriate information in various mediums, tailored to each stakeholder.
 - Communication should occur at regular intervals, key milestones and other trigger points in the project when key decisions need to be made, budgets approved, FTA reporting, etc.

VTA BSV II Project Management Acknowledgements

We note that VTA BSV II project management has acknowledged that better communication regarding cost and scheduling estimates for this project is imperative to maintaining public trust and support of the project. They also agree that providing key decision makers with timely access to information is critical to ensuring that the Board can proactively address any obstacles to project progression. Additionally, VTA has restructured its BSV II Project Management Team and activities to, on a going forward basis, mitigate missteps documented in this report.

Objectives, Scope, and Methodology

Objectives

As part of the AG FY 2023-2024 Work Plan, the AG's Office commenced two BART to Silicon Valley Extension Program, Phase Two (BSV II) projects to monitor VTA's overall project management and oversight. Specifically, our assessment objectives include, but are not limited to, on-going independent monitoring of the project through activities such as:

- VTA's monitoring and management of project funding, contracts, and expenses.
- VTA's project management, processes, and procedures.
- VTA's project internal controls.

Additionally, the VTA Board has requested that the AG's Office staff VTA's BART to Silicon Valley Phase II Ad Hoc Steering Committee. The role of the ad-hoc committee is to:

- Monitor and scrutinize BSV II project spending, project structure, funding, and overall progress.
- Make informed recommendations to help the Board be proactive, as opposed to reactive, regarding project issues.

- Provide regular reports to the VTA board to inform them about project status or to properly address legally sensitive matters in closed session.
- Maintain transparency while safeguarding the project's interests.

Scope

The scope of our monitoring report is the past, current, and future of the BSV II project for the purpose of having all relevant information necessary for conducting anticipated analyses.

Methodology

As part of our assessment, we have, and will continue to:

- Review BSV II Project Status Reports presented to the VTA Board. To date, we have reviewed reports between January 2021 and October 2023.
- Review the Federal Transit Administration (FTA) Project Management Oversight Contractor (PMOC) reports. To date, we have reviewed reports between July 2021 (project status as of May 14, 2021) and September 2023.
- Interview executive, management, and staff.
- Identify criteria and best practice frameworks for budgeting, project monitoring, and risk management
- Review previous AG risk assessments and reports on BART-project areas of concern, successes, etc.
- Review cost estimates, including:
 - The initial FTA Expedited Project Delivery (EPD) application submitted to the FTA in April 2021 (Estimated Project Cost: \$6.9B)
 - PMOC Cost Projections in their monthly reports
 - August 2022 - FY2024 New Starts Budget Request Application (Estimated Project Cost: \$9.3B*)
 - October 2023 New Baseline Cost Estimate (Estimated Project Cost: \$12.237B)
- Identify risk and expected internal controls for risk monitoring

* The estimated project cost included in VTA's Budget Request was taken from the FTA PMOC's Risk Assessment estimate of \$9.1B with additional financing costs added.

Professional Reporting Standards

This assessment was performed by the AG team in accordance with the Standards for Consulting Services issued by the American Institute of Certified Public Accountants. We limited our work to that specified in the Objectives and Scope section of this report. We did not conduct an audit in accordance with U.S. generally accepted auditing standards or an examination in accordance with attestation standards, the objective of which would have been the expression of an opinion. Accordingly, we do not express such an opinion. This report was prepared for use by VTA's BSV II Ad Hoc Steering Committee, Governance and Audit Committee, Board of Directors, and management. Recommendations for improvement are presented for management's consideration, and management is responsible for the effective implementation of its corrective action plan.

BSVII Project Background

On November 7, 2000, the voters of Santa Clara County approved Measure A, a countywide measure to authorize a one-half cent sales tax as a special tax that became effective on April 1, 2006. Pursuant to the provisions of Measure A, the sales tax is to be used by Santa Clara Valley Transportation Authority (VTA) for specified transit improvement projects listed on the ballot. One of the proposed specified projects is the extension of BART from Fremont through Milpitas and Downtown San Jose to Santa Clara.

BSV I (Phase I) of the project has been completed and extended service from Alameda County into Santa Clara County, with stops in Milpitas and Berryessa/North San Jose. Service began in June 2020. BSV II (Phase II), which is the focus of the Auditor General's and the Ad Hoc Committee's monitoring efforts, is underway and is currently in the design and engineering phase. As shown in **Exhibit 1**, Phase II will extend service from the Berryessa Transit Center with the end of service in Santa Clara.

Specifically, the planned stations for BSV II are: 1) 28th Street/Little Portugal Station; 2) Downtown San Jose Station; 3) Diridon Station; and 4) Santa Clara Station. Additionally, the BSV II project will include the Newhall Yard Maintenance Facility, a parking garage, and BART vehicles.

According to the Operations and Maintenance Agreement by and between VTA and the San Francisco Bay Area Rapid Transit (BART) District, BART will operate and maintain the BSV II extension, with VTA operating and maintaining some areas. BART will continue to be the sole operator of Revenue Services, and VTA will have full financial responsibility, including a share of core system capital costs.

Exhibit 1: VTA's BART Silicon Valley Phase II Extends from Berryessa/North San Jose Station to 28th Street, Downtown San Jose, Diridon Station, and Santa Clara Station



Source: VTA's BART Silicon Valley Phase II Summary at <https://www.vta.org/projects/bart-sv/phase-ii>.

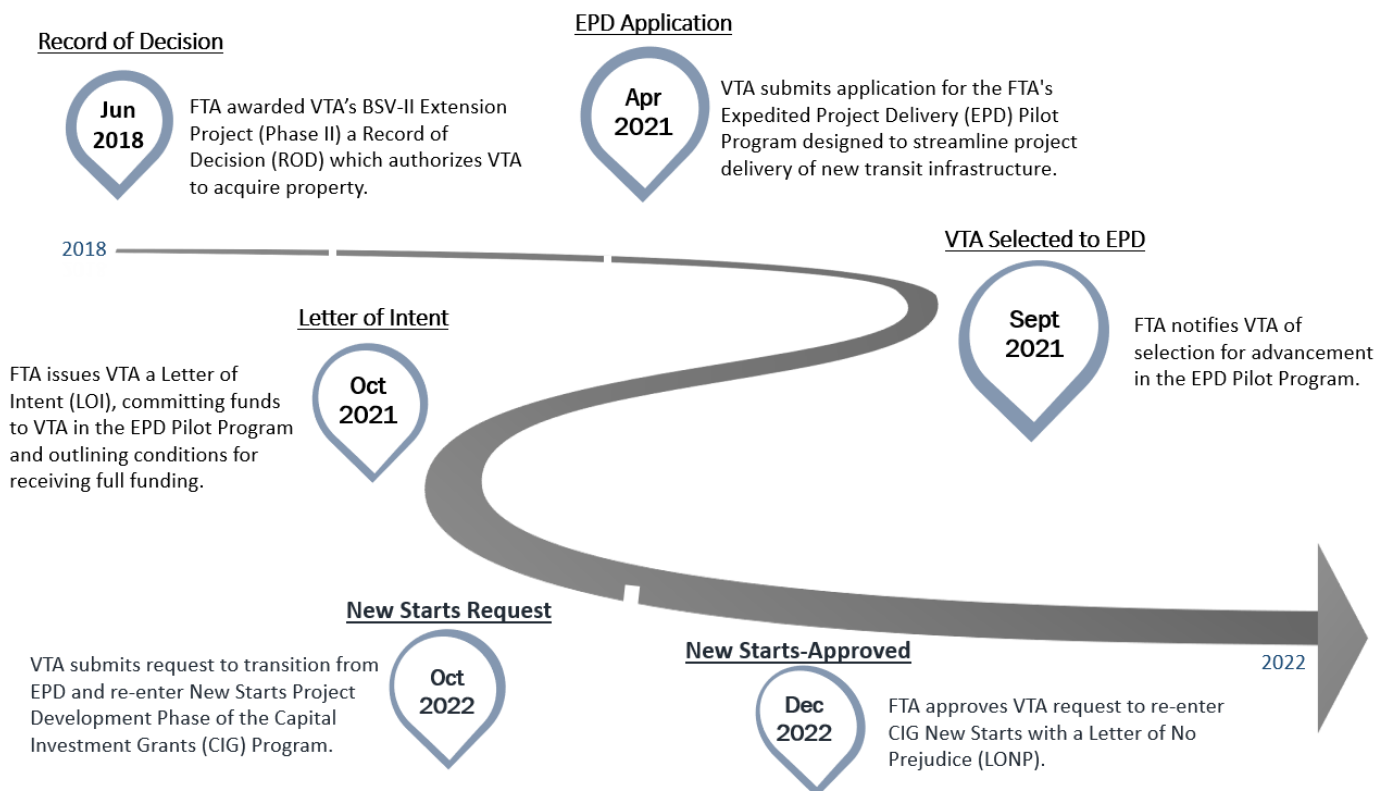
BSV II Key Project Activities

The BSV II Project has progressed via the key activities highlighted in **Exhibit 2**. In 2018, the FTA awarded the BSV II project a Record of Decision (ROD), which indicated that VTA met environmental requirements and was authorized to acquire property for the project.

In 2021, VTA applied, and was selected, for the FTA's Expedited Project Delivery (EPD) Pilot Program. The EPD Pilot Program is part of the Fixing America's Surface Transportation Act (FAST) created to streamline project delivery of new transit infrastructure. Additionally, the FTA issued VTA a Letter of Intent (LOI), committing funds to the EPD Pilot Program and outlining conditions that VTA would need to meet to receive the full funding grant agreement (FFGA).

In 2022, VTA requested from the FTA, and received FTA approval with a Letter of No Prejudice (LONP), to transition from the EPD Pilot Program and re-enter the New Starts Project Development Phase of the Capital Investment Grants (CIG) Program. The CIG funds fixed guideway investments such as new and expanded rapid rail, commuter rail, light rail, and bus rapid transit. The New Starts Program applies to projects with total project costs of \$400M or more and seeks CIG Grant funding of \$150M or more. The LONP provides pre-award authority to cover expenses, up to \$9.3B, that VTA incurred when it started New Starts Project Development in March 2016 through Migration to EPD and remaining work on BSV II project.

Exhibit 2: BSV II Project Activity Between June 2018 and December 2022



Source: AG generated based on review of FTA Project Management Oversight Contractor (PMOC) reports, the New Starts Application Letter, and other pertinent documents.

BSV II Project Delivery Method

The initial project implementation plan anticipated that the BSV II project would be delivered through the four major design-build construction contract packages outlined in **Exhibit 3**: 1) Systems Construction (CP1); 2) Tunnel and Trackwork Construction (CP2); 3) Newhall Yard and Maintenance Facility and Santa Clara Station (CP3); and 4) Stations Construction (CP4), with CP 2 being a Progressive Design Bid contract structure.

CP2 has progressed based on its original scope and procurement. In May 2022, the Board approved the award of the CP2 Progressive Design Build to Kiewit Shea Traylor (KST), a Joint Venture.

Subsequently, in June 2022, VTA issued a Limited Notice to Proceed (LNTP) allowing the contractor to commence a 90-day innovations phase. In September 2022, a Notice to Proceed (NTP1) was issued for Programming Services; and in February 2023, a Notice to Proceed (NTP1A) was issued for Stage 1 Design Professional Services.

In November 2022, VTA conducted a peer review to evaluate contract packages and project delivery methods for CP1, CP3, and CP4. For means of procurement, VTA recommended that CP1, CP3, and CP4 packages proceed on a Design-Bid-Build (DBB) basis. DBB is a construction project delivery method that involves the completion of three distinct phases in sequence. Construction does not begin until the design process is complete (and a bid accepted). Generally, there is no overlap between the design and construction phases. VTA is currently determining how the remaining construction work will be packaged for bids.

Exhibit 3: BSV II Construction Contract Packages

Systems Construction (CP1)	Tunnel and Trackwork Construction (CP2)	Newhall Yard & Maintenance Facility & Santa Clara Station (CP3)	Stations Construction (CP4)
<ul style="list-style-type: none"> • Delivers essential guideway and facility systems required for BART passenger operations • Includes <ul style="list-style-type: none"> ○ Traction power, communications, train control ○ HVAC, plumbing, drainage, lighting, power and fire protection 	<ul style="list-style-type: none"> • Includes <ul style="list-style-type: none"> ○ Five-mile long single-bore tunnel ○ Procurement of a tunnel boring machine, utility relocations, ○ Manufacturing and installation of precast tunnel lining, construction of internal tunnel structures, and construction of several ancillary ventilation/egress facilities 	<ul style="list-style-type: none"> • Includes <ul style="list-style-type: none"> ○ Construction of the Newhall Yard Maintenance Facility ○ Yard track and contact rail, auxiliary buildings, civil site restoration and demobilization ○ Full construction of the at-grade Santa Clara Station ○ Construction of a 500-space parking garage 	<ul style="list-style-type: none"> • Includes <ul style="list-style-type: none"> ○ Construction of three underground stations and associated headhouse, ancillary facilities, and street-level improvements.

Source: AG generated based on VTA's BART Silicon Valley Phase II Extension Project Overview.

Current Project Status as of October 2023

On October 5, 2023, VTA staff presented new cost and schedule baselines (estimates) for the BSV II project to the Board. Updated estimates from 2022 increased from \$9.3B to \$12.2B. The revised Revenue Service Date (RSD) was pushed from March 2033 to October 2036.

On October 20, 2023, VTA staff and the Board held a workshop and discussed the new \$12.2B, October 2036 RSD estimates. During the workshop, the Chair of the Board announced the establishment of an Ad Hoc Committee to provide oversight and monitoring related to increasing project estimates and extended project deadlines.

AG Results and Observations

The Board requested the AG serve as the liaison and provide support to the BSV II Ad Hoc Committee by coordinating and developing presentations, and performing independent monitoring, analysis, and testing related to the Project. Based on our assessment of the PMOC reports, BOD presentations, independent research, and other analyses, the AG team makes the following initial observations related to Board communication, project cost and schedules, cost estimates, the project funding strategy, project construction period, and project risks.

Observation 1: VTA staff could have been timelier in communicating changes to BSV II project cost and schedule projections to the Board and the Public.

Large capital project cost information should be communicated to stakeholders regularly and transparently. Unless properly updated on a regular basis, project estimates (costs, schedules, and risks) cannot provide decision makers with accurate information as the project changes over time. Had BSV II estimates been updated and shared timely and regularly with the Board, the Board would have better understood the genesis of the \$12.2B estimate. Briefing the Board about how an estimate was constructed—including the specific details about the project’s technical characteristics, assumptions, cost estimating methodologies, data, sensitivity, risk, and uncertainty—is necessary for the Board to have confidence that the estimate is accurate, complete, and high in quality.

Exhibit 4: Increase in Cost and Schedule Estimates Between April 2021 and September 2023

VTA BSV-II Project and Revenue Service Date Estimates

	<u>Estimate</u>	<u>Revenue Service Date</u>
Initial Expedited Project Delivery Application (EPD)	\$6.9B	May 2030
Request to Re-Enter New Starts Project Development Phase	\$9.3B	March 2033
New Starts Entry to Engineering Revision No. A	\$12.2B	October 2036

Between May 2021 and September 2023, PMOC consistently estimated \$9.1B in project costs with a revenue service date of June 2034.

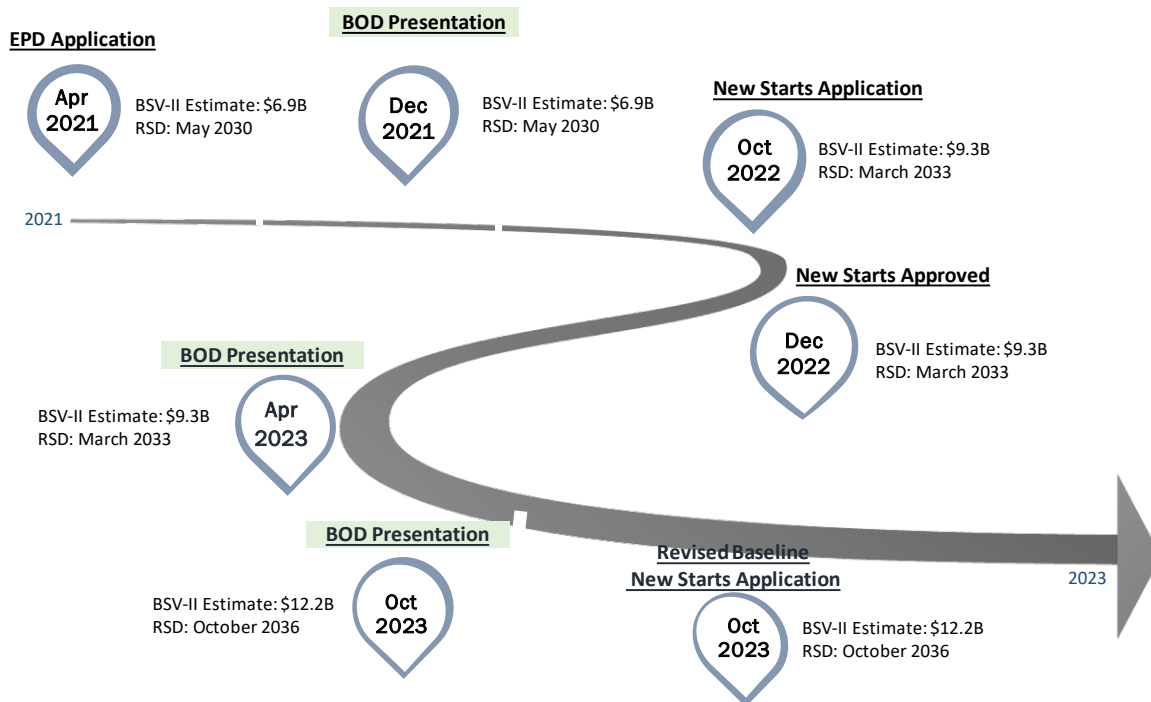
Source: Auditor General generated based on review of FTA Project Management Oversight Committee (PMOC) reports, the New Starts Application Letter, and other pertinent documents.

While VTA informed the board at monthly meetings that they were re-baselining costs and schedule estimates were increasing, there was little detail, and untimely notification, regarding the significance and detail of the increases. For example, **no detailed budget and cost estimate, schedule, and risk updates were reported to the Board for almost a year and a half, between April 2021 and October 2022.** Within that same timeframe, cost estimates increased from \$6.9B to \$9.3B, or approximately 34 percent. Eleven months later, project cost estimates jumped another 33 percent, for a total of a 76 percent increase, to \$12.2B, when a revision to the New Starts Engineering was submitted to the FTA in September 2023.

Board not informed of changes to project estimates and schedule until after federal applications submitted

VTA BSVII Project Management did not inform the Board of cost estimates and schedule forecasts until after applications were submitted and approved, providing the Board with no opportunity to provide feedback on EPD and New Starts applications, as shown in **Exhibit 5**. We reviewed VTA’s application submissions to the Federal Transportation Authority’s (FTA) Expedited Program (EPD) Pilot Program and the Capital Investments Grants (CIG) New Starts Program. We found that VTA informed the Board of the project estimate increase from \$6.9B to \$9.3B in April 2023, four months after receiving FTA approval to reenter into the New Starts program in December 2022.

Exhibit 5: Application and Board of Directors Notification Timeline



Since April 2021, VTA has moved up the RSD by six years and five months, as shown in Exhibit 5 above. VTA informed the Board of the project estimate increase from \$6.9B to \$9.3B in April 2023, four months after receiving FTA approval to reenter the New Starts program in December 2022.

Source: Auditor generated based on review of The Federal Transit Administration Project Management Oversight Contractor (PMOC) reports, the New Starts Application Letter, and other pertinent documents.

At the October 5, 2023, Board Meeting, VTA shared the new baseline project estimate of \$12.2B for its New Starts Application. According to VTA’s General Manager and the project management team, in the weeks leading up to this meeting, staff briefed Board members, FTA officials, and other key stakeholders of these forthcoming cost increases. Subsequently, on October 11, 2023, VTA transmitted this cost estimate to FTA for their review. With the new baseline project estimate, the RSD has been pushed out another 3.5 years, from March 2033 to October 2036.

Observation 2: Project Management Oversight Contractor concerns were raised but not widely reported.

The FTA oversees sponsors and grantees like VTA, with the help of a Project Management Oversight Contractor (PMOC), by evaluating each project's risk, scope, cost, schedule, financial plan, and project management plan, as well as the sponsor's technical capacity and capability to complete the project. Per the FTA, cost estimation is a process that provides progressively more accurate information as a project moves from conceptual through final design, award of construction and/or equipment/materials contracts, and updated as estimates to complete throughout such contracts until close-out. It establishes initial budget limits and is the crucial element of a project management/control system.

For New Starts projects, sponsors or their contractors develop and revise cost estimates throughout project development, engineering, and construction to inform key decisions, such as determining how much funding to request from FTA. FTA and its PMOC review sponsors' cost estimates multiple times during the engineering and construction phases, as sponsors revise estimates to reflect changes and update them based on actual data.

PMOC Expressed Concerns About VTA Not Conducting Timely Cost Estimates

The PMOC's concerns should have been presented to the Board by management, with corrective actions documented; but these issues were not openly addressed. Per FTA guidelines, the PMOC's review of project risk and risk mitigation requires evaluation of the project sponsor's (VTA's) project scope, cost estimate, and schedule. FTA guidelines state that the PMOC should place special focus on elements of uncertainty associated with the sponsor's project implementation and project conditions.

Between May 2021 and September 2023, PMOC estimates consistently listed project estimates at \$9.1B (at a 65 percent confidence level), with a revenue service date (RSD) of June 2034, a difference of \$2.2 billion from VTA's estimate of \$6.9B. The PMOC submitted their Scope, Cost, Schedule Risk and Contingency Review Report, status as of May 2021, to VTA management on July 20, 2021. In the same report, the PMOC also provided seven recommendations for how VTA should update and adjust their costs.

As early as December 2021, VTA was dismissive of PMOC concerns. For example, in the December 2021 Board meeting, the Chief BART Delivery Officer at the time explained that the assessment value of \$9.1B was not an official cost estimate and was based on risk and "what if" scenarios. He indicated that VTA's independent cost estimates were being updated, and the results would be shared with the PMOC in early 2022. At that meeting, project estimates were still being reported as \$6.9B. VTA did not incorporate PMOC recommended updates into their cost estimate until October 2022, more than a year later.

The PMOC remained concerned about VTA's cost estimates for a year and a half, as evidenced in reports from January 2022 to June 2023 that repeated the following concern: *"Until such time as VTA updates schedule, cost, and risk assessment for the program, PMOC continues to be concerned that the project estimate is under-representing the total cost due in part to contingency, inflation, and an optimistic base schedule and risk profile."* See attached Appendix A: Executive Summary Sample, PMOC Report as of September 30, 2023.

Industry Expectations and Best Practices

The FTA provides project sponsors limited guidance on when re-estimation is recommended. However, the PMOC had indicated that they considered it, *"essential on a project of this magnitude and complexity that a formal trend program is tabulated for estimate and schedule updates at least semiannually and is supported by interim trend documentation capturing changes in cost and schedule as they emerge and evolve. PMOC strongly recommends VTA demonstrate progress toward implementing such a program or exhibit a comparable process in monthly reporting to FTA and PMOC."*

Additionally, the U.S Government Accountability Office (GAO), states that cost estimates must be updated whenever requirements change; and the results should be reconciled and recorded against the old estimate baseline. The documented comparison between the current estimate (updated with actual costs) and the old estimate allows the cost estimator to determine the level of variance between the two estimates.

Lastly, in terms of industry guidance, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) – Internal Control Integrated Framework states that communication should occur both internally and externally and that providing stakeholders with the right information, in the right time, is key to successfully meeting organizational (and project) goals.

AG Recommendations:

1. The VTA General Manager should ensure that the Project Management Oversight Contractor (PMOC) monthly reports are provided to the Ad Hoc Committee as they become available, and each report's executive summary (see Appendix A) should be made available to the public through postings on the BSVII project web page.

Other Ongoing Matters and Observations Requiring the Board's Attention

Budget, Funding Strategy, and Project Construction Period Need Further Analysis

During the course of our initial monitoring assessment, we had observations related to cost estimates and funding strategies related to the BSV II project. We have not conducted a root cause analysis of these issues, nor have we conducted a full analysis regarding risks and potential project implications. However, we bring the items to the Board's attention for transparency, to inquire if the Board had feedback or insight, and to document a snapshot in time regarding project observations.

Observation 3: Project budget versus actual numbers have not been updated since August 2022, leaving a void in evaluating the budget balance by cost center and funding source.

Per the FTA, cost estimation establishes initial budget limits and is the crucial element of a project management and control system. FTA relies heavily on a project sponsor's (e.g., VTA) ability to develop, monitor, tend, and update an accurate project budget. Over time, budget estimates should be refined as more detailed engineering information becomes available. However, VTA did not update the project budget for over a year due to untimely cost estimate updates, as previously discussed. We highlight this issue because it underscores the potential need for VTA to strengthen its budgeting internal controls and monitoring.

According to the Government Finance Officers Association of the U.S. and Canada (GFOA), budget monitoring is crucial for ensuring that organizations: 1) enforce accountability related to spending; 2) ensure new initiatives are progressing as expected; 3) learn about trends and other deviations that may impact future operations; and 4) demonstrate transparency by sharing findings from regular oversight. The GFOA also recommends regularly monitoring capital projects' financial and project activity information, which should at a minimum include: 1) a review of project-related financial transactions to support budget review, auditing, and asset management; 2) a review of expenditures related to current budget and entire project life; 3) a review of encumbrances and estimates of planned expenditure activity; and 4) confirmation of continued availability and appropriateness of revenue sources identified in the budget.

Further, VTA administrative rules specify that all budgets, once approved by the Board, cannot be increased without further Board approval. The current project estimate of \$12.2B exceeds the September 2022 New Starts application of \$9.3B. Based on our assessment to date, while we have found evidence that VTA informed the

Board of cost and schedule changes, we have not confirmed the Board incorporated the increases from the \$6.9B estimate into the capital budget.

While there is little risk of the project going over budget at this early stage of construction, it raises concerns about internal budget controls that will require review to mitigate cost overruns in the future. For example, the unallocated project contingency is significantly higher in the revised New Starts application than the original EPD submittal. However, without updated budget and actual expense information, there is a lack of information on the allocation, use, and accurate balance of the project contingency. VTA may be waiting for formal grant approval to amend the budget; but in the meantime, significant contracts are being let and costs incurred that do not reflect an accurate picture of budget encumbrances against that budget.

Observation 4: Change in funding strategy will maximize the federal grant funding while preserving valuable local revenue resources.

The change from the EPD Pilot Program to the New Starts CIG nearly doubled the project eligibility for FTA grant funding. This change provides an opportunity for a potential change in funding ratio from 75 percent local and 25 percent federal to approximately a 50/50 funding ratio between federal and local funding, equating to a \$4.3B potential increase in federal funding under the New Starts program. While the project cost estimate has risen 76 percent compared to the initial application, local funding for the project is anticipated to increase by 19 percent, or \$1.0B from the EPD application.

While this financial shift in costs from local to federal is beneficial to VTA, it is important to note that FTA's New Starts grant agreements provide a fixed amount of federal funding; and, therefore, any future project cost overruns are generally assumed by the sponsor of the project and not the federal government. Therefore, any future project cost overruns will impact the reduced "local match" requirement. Additionally, the increase in the project estimates alone has raised concerns documented in PMOC reports regarding VTA's financial capacity to complete the project. There is a need for further analysis by the AG team of revenue and cash flow modeling, including capacity to meet project changes. This is underscored by the fact that underground construction often has higher costs than elevated or at grade construction and has higher risk for cost overruns and delays due to unforeseen soil conditions.

Observation 5: Any further extension of the project construction period will continue to put pressure on project cost and funding plan.

The estimated construction period has increased by over 77 months since the initial application in April 2021. This increase in cost and construction duration happened prior to significant construction beginning on what is expected to be an extraordinarily complex construction project. In fact, PMOC reports have consistently ranked the integration of the complex construction contracts as one of the highest potential risks to schedule and cost estimates. The complexity of construction brings further cost and schedule increases into view: In the New Starts application, VTA placed a cost estimate of \$34 million per month of delay. Any further increase in cost or schedule will put significant strain on the revenue resources available to complete the project. As such, the PMOC has consistently emphasized the need for independent project cost analysis both at the beginning and updated as the project progresses. Moreover, the New Starts Revised Application indicates the project has the capacity to maintain positive cashflow only through April 2024, without a fully approved FFGA.

Further Exploration and Interim Advisements

Based on our observations, further research and analysis is necessary to understand VTA's internal project management processes. As part of our monitoring efforts associated with the Ad Hoc Committee, we anticipate further exploration regarding how VTA updates project cost estimates, identifies requirements that would necessitate a new cost estimate, and communicates costs. Additionally, we will assess VTA policies regarding

fiscal transparency to ensure information shared is aligned with existing policy and communicated on a specified frequency to specified recipients.

While VTA BSV II project managers currently present monthly project status updates that include project metrics such as contract status, work completed to-date, and costs incurred to date, the reports regularly omitted updated cost and schedule estimates. We recommend that VTA Project Management staff develop a comprehensive communication plan that, at a minimum, formalizes who will communicate with stakeholders, what will be communicated, how information will be disseminated, and the frequency by which communication should occur regarding updates to the BSV II project cost, estimates, risks, and milestones.

According to Project Management Body of Knowledge (PMBOK), [which is a collection of processes, best practices, terminologies, and guidelines that are accepted as standard within the project management industry], it is essential to develop and implement a communication system to collect, generate, and disseminate timely, appropriate, and relevant project information to all interested parties. Information of importance includes, but is not limited to, accomplishments, costs, issues, risks. Moreover, information could be distributed via various methods, such as written or verbal, formal or informal, etc. Lastly, the information communicated should keep pace with stakeholder needs, project changes, etc.

A communication plan, at minimum, will outline roles and responsibilities of who will do what, when, and how. A communication plan further expands on this by addressing the following:

- Who initiates the project communication
- Who receives the information, i.e., stakeholders
- When and how often the information will be disseminated to appropriate stakeholders
- What critical information is to be disseminated (overall project status, contracts, costs incurred, updated cost estimates, etc.)
- How (with what method or medium) the information will be disseminated – monthly Board meetings, committees, VTA website project dashboard, VTA blog, community working groups, etc.

AG Recommendations

- VTA BSVII Project Management should develop a communications plan, which at a minimum should include the development of a matrix of stakeholders, identify critical information to be disseminated to each stakeholder, and determine the frequency and method of communication, tailored to each stakeholder. Project Management should develop a process for monitoring stakeholder needs and make changes to the plan as needed.
- To ensure accuracy and consistent messaging, Project Management should assign one individual to compile and disseminate appropriate information in various mediums, tailored to each stakeholder.
- Communication should occur at regular intervals, i.e., key milestones and other trigger points in the project when key decisions need to be made, budgets approved, FTA reporting, etc.

Observation 6: Recurring risk themes need heightened attention, monitoring, and resolution.

Since 2014, AG reports have consistently made observations and recommendations to VTA related to invoicing, change orders, contracts and procurement, staffing related to reliance on institutional knowledge, reliance on contractors for long-term project oversight, and communication. Notable observations in previous AG reports include:

- **Invoicing** – VTA receiving late invoices, which significantly delays review and approval processes; and invoices lacking appropriate documentation to support invoices, which increases the risk of duplicate payments or overpayments, or payments for services not rendered.
- **Change Orders** – VTA approving numerous change orders that increase contract values from the original award value. Recommendations have included suggestions to VTA to: 1) update and enhance its procedures for change order initiation and review; and 2) consider how large change orders are presented to the Board.
- **Contracts and Procurement** – A 2017 AG report noted that VTA should strengthen the consistency of its compliance monitoring. The report recommended that VTA should independently validate key contract or high-risk areas, while utilizing existing contractual rights to audit more frequently.
- **Staffing and Knowledge Resources** – AG reports have made observations that: 1) VTA may not have sufficient resources to manage the roles and responsibilities for maintenance of the BSV Extension Project; and 2) contractor turnover impacted planning and scheduling efforts, increasing the risk of inaccurate or untimely schedule submissions.
- **Communication** – Emphasis has been made on the importance of properly notifying stakeholders about project scheduling by producing current, accurate, and complete schedules to minimize the adverse public perception about the project that could jeopardize public support for the now existent BSV II Extension Project.

We reviewed prior AG reports, PMOC reports, and other external reports that identified key risks, key observations, findings, and recommendations, and noticed that in addition to project specific BSV II risks, there are recurring risks similar to those outlined in previous AG reports. We also noticed repeat risks in PMOC reports.

Based on the reports we reviewed, we consolidated outstanding recommendations and key risks into a Master Risk Matrix that the AG’s Office will monitor. We categorized the risks into areas such as financial, procurement, operational, and reputational, etc. As shown in **Exhibit 6**, as of this report, there are eight theme areas (the types of risk included in each theme area is also noted) and a total of 77 risks that we are monitoring. The AG will be issuing a preliminary risk assessment report for G&A’s and the BSV II Ad Hoc Committee’s review for the February/March 2024 meetings.

Exhibit 6: Recurring Risk Themes Need Heightened Attention, Monitoring, and Resolution

Theme	Inclusions	Total
Environmental	<i>Tunneling Procedures</i>	5
Financial	<i>AP, Budgeting, Cost Drivers, Revenue</i>	15
Legal	<i>Right-of-Way, Litigation</i>	2
Operational	<i>Schedules, Staffing</i>	22
Procurement	<i>Change Orders, Contracts, Risk-Share, Labor</i>	24
Reputational	<i>Communication, Corrective Actions</i>	2
Safety/Natural Disasters	<i>Infrastructure, Insurance</i>	6
Technology	<i>Systems</i>	1
Grand Total		77

Source: Auditor General generated based on risk matrix.

Industry Expectations and Best Practices

In terms of industry guidance, COSO states that ongoing evaluations are built into routine operations to ascertain whether project activities are operating as intended. To that end, periodic assessments are also conducted by external parties, such as the AG, to validate the organization's efforts, identify deficiencies, and communicate serious matters to senior management and the Board.

The AG team will use professional and industry standards to perform ongoing monitoring and reporting analysis. We will use the same frameworks as a basis for reporting on project status and activities. Our criteria will include, but not be limited to:

- ***United States Federal Transit Administration (FTA) Project and Construction Management Guidelines*** – guidelines developed under the FTA to assist entities involved in advancing transit capital projects to successfully implement them through focus on areas such as scope, function, schedule, cost, safety, and quality.
- ***United States Government Accountability Office (GAO) Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Program Costs (included in FTA guidelines)*** – guidelines established by the GAO to address generally accepted best practices for ensuring reliable cost estimates and to provide a detailed link between cost estimating and earned value management (EVM).
- ***Association for the Advancement of Cost Engineering (AACE) Cost Estimation Classification System as applied in Engineering, Procurement, and Construction for the Building and General Construction Industries 56R-08, revised August 2020*** – provides generally accepted guidelines for estimate classification to project cost estimates, including cost estimates used to evaluate, approve, and/or fund projects.
- ***Government Finance Officers Association (GFOA) Capital Project Monitoring and Reporting Best Practices*** – where the GFOA recommends that jurisdictions establish policies and procedures for capital project monitoring and reporting, including becoming familiar with and implementing project management practices, software systems for project management and project accounting, and capital project reporting procedures.
- ***Committee of Sponsoring Organizations of the Treadway Commission (COSO) Internal Control Integrated Framework*** – which outlines a set of principles and components for entities to assess the effectiveness of the internal controls in place to meet organizational operational, reporting, and compliance objectives.
- ***National Grants Management Association – Grants Management Body of Knowledge*** – which provides guidance on the grants management lifecycle, including solicitation, application evaluation, closeout, and audit.
- ***Project Management Institute's Project Management Body of Knowledge (PMBok)*** – provides guidance on generally accepted documents and standards and project management information and practices.

Further Exploration

In addition to the master list of risks that we will monitor, we will also conduct ongoing monitoring of monthly PMOC- and VTA-identified top risks on an ongoing basis. Each month, we will be reviewing the risk themes in collaboration with the Project Management Team. These risks are typically identified in PMOC reports. We will review top risks to ensure: 1) those risks are communicated to the Board; 2) that the PMOC, VTA, and the Board clearly understand the risks, implications, and reasons for each group's prioritization; and 3) that all available information is presented to the Board to aid in decision-making processes.

Moving forward, future AG quarterly monitoring reports related to the BSV II project may include an assessment of the following project activities:

Significant changes to project scope, costs, scheduling, and funding.

- Progress on key milestones.
- Revenues and expenditure activity.
- Percent of project completed compared to percent of budget expended.
- Contract status information including time and percentage used.
- Cash flow, funding commitments, contingencies, and other key financial activities.
- Monitoring of internal controls developed and implemented related to identified risks.

In addition, the AG Team may also review:

- The adequacy of VTA's current policies and procedures, project management plans (internal planning, management and monitoring).
- VTA's policies regarding fiscal transparency (how they can be improved).
- Once receiving federal grant allocations, assess the adequacy of VTA's grant management system, processes, and controls.

BART SILICON VALLEY PHASE II EXTENSION PROJECT
SANTA CLARA VALLEY TRANSPORTATION AUTHORITY
CITIES OF SAN JOSE AND SANTA CLARA, CA

FTA Region IX

Status as of September 30, 2023

PROJECT MONITORING REPORT

Draft – October 27, 2023

Final – November 03, 2023

PMOC Contract Number: 69319519D000021

Task Order Number: 69319522F30057N

1. Executive Summary

A. Project Description

Bay Area Rapid Transit (BART) Silicon Valley Phase II (BSVII) is an approximately 6.0-mile extension of the BART system from the existing terminus at the Berryessa / North San Jose BART Station through downtown San Jose to the proposed Santa Clara Station in the City of Santa Clara. BSVII includes a total of four stations: three below-grade (28th Street / Little Portugal Station, Downtown San Jose Station, and Diridon Station) and one at grade (Santa Clara Station). BSVII also includes two parking garages, two mid-tunnel ventilation/emergency egress facilities and the Newhall storage Yard and Maintenance Facility (NYMF). Forty-eight vehicles will be paid for with project funds but are included in the procurement for BART Federal Transit Administration (FTA) Core Capacity grant program fleet upgrades. The project is being designed and constructed by Santa Clara Valley Transportation Authority (VTA), will be owned by VTA, and operated and maintained by BART. Service is planned to operate in the opening year from 4:00 AM to 1:00 AM on weekdays and from 6:00 AM to 1:00 AM on weekends, with trains every 7.5 minutes during the weekday peak period, every 7.5-15 minutes off-peak during the weekday, and every 20 minutes on evenings and weekends.

B. Project Status

BSVII is in the New Starts Project Development phase. The project new baseline cost & schedule estimates required prior to the New Starts Entry to Engineering were submitted to FTA/PMOC on October 11, 2023. The project new baseline cost and schedule estimates subject to change following FTA's Risk Assessment and review is a total project cost of \$12.237B and a Revenue Service Date in October of 2036.

FTA issued a Record of Decision (ROD) to the BSVII project in June 2018. BSVII was selected for advancement under the Expedited Project Delivery (EPD) Pilot Program on September 21, 2021. In October 2022, VTA submitted a letter to FTA requesting the BSVII project be allowed to re-enter the New Starts Project Development phase of the Capital Investment Grants (CIG) program and seeking a Letter of No Prejudice (LONP). On December 1, 2022, FTA agreed to move the project from the (EPD) Pilot Program back into the Project Development phase as a New Starts project. FTA also approved a LONP covering expenses VTA incurred when it started in New Starts Project Development in March 2016, through the Project's migration to the EPD Pilot Program, as well as for all remaining work on the project, thereby matching the pre-award authority VTA had been given while it was in the EPD Pilot Program for the New Starts Basis total project cost of \$9.318 billion.

The project implementation plan had previously been that BSVII would be delivered through four major design-build construction contract packages: Systems Construction Package 1 (CP1); Tunnel and Trackwork Construction Package 2 (CP2); Newhall Yard and Maintenance Facility and Santa Clara Station Construction Package 3 (CP3); and Stations Construction Package 4 (CP4).

CP2 has progressed based on its original procurement. The VTA Board of Directors approved the award of the CP2 Progressive Design Build contract on May 5, 2022. CP2 Limited Notice to

Proceed (LNTP) for a 90-day innovations phase was issued on June 9, 2022; NTP1 was issued for Programming Services on September 7, 2022; and NTP1A was issued for Stage 1 Design Professional Services on February 21, 2023.

All major packages other than CP2 have been reconsidered for alternative package composition and means of procurement. VTA convened a Peer Review in November 2022 that evaluated the project delivery methods for all contracts other than CP2. Since then, VTA has selected Design-Bid-Build delivery for all work previously identified as CP1, CP3 and CP4, and now described as Systems and Facilities. *VTA is in the process of determining how this remaining construction work will be packaged for bids. Then it can be communicated to the PMOC and incorporated into the project management documents.*

C. Major Issues and/or Concerns

The December 2022 schedule was updated to reflect the New Starts Basis and monthly updates were generated through April 2023. The April 2023 schedule update moved the Revenue Service Date (RSD) out from July 29, 2033, to February 22, 2034. This further extends the schedule delay beyond VTA's New Starts Basis RSD of March 2033. The Project Management Oversight Contractor (PMOC) remains concerned that much of that extension is due to delays experienced in early activities. Further delays are occurring while some activities have paused while value engineering and the new baseline development have been underway. One example of the project's experienced delay is the procurement of the Tunnel Boring Machine (TBM), which did not occur as was planned. The TBM is on or near the critical path as reported in recent months, so continued delays in the procurement of the TBM could result in additional delays to the Revenue Service Date.

VTA suspended monthly schedule and cost updates with the May 2023 period. PMOC understands the incongruities of reporting against the old schedule basis while developing the new baseline. Expenditure reporting was restored in VTA's July progress report in response to PMOC's prior request. PMOC recommends VTA reporting of contracted commitments also be restored and that the detailed Right of Way Status Report appendix be restored since they are not impacted by the new baseline effort.

Until such time as VTA reconfigures its contract implementation planning, updates schedule, cost, and risk assessment for the program, PMOC continues to be concerned that the project estimate is under-representing the total cost due in part to contingency, inflation, and an optimistic base schedule and risk profile. PMOC anticipates that VTA's risk assessment update and new baseline of the project cost and schedule to be completed in late October 2023 / early November 2023. They will be reviewed by PMOC in support of FTA's Entry to Engineering Risk Assessment and Readiness Review in the subsequent months.

D. Table 1 Core Accountability Items

		Original (Grant)	FTA Current P65 Forecast (EPD Letter of Intent)	VTA New Starts Basis (Sept 2022) ⁷	PMOC Assessment of Current Forecast ⁷
Cost	Capital Cost Estimate ¹	N/A	\$9.148B	\$9.318B	No change from LOI. Pending VTA project delivery re-packaging, new baseline, and risk refresh.
Contingency	Unallocated Contingency	N/A		\$875M ²	
	Allocated Contingency	N/A		\$854M ²	
	Total Contingency	N/A	\$2.653B ³	\$1.729B ²	
Schedule	Revenue Service Date	N/A	June 21, 2034 ⁵	March 1, 2033 ⁴	
Project Progress				Amount (\$M)	Percent of Total
Total Expenditures	Actual cost of all eligible expenditures completed to date ⁶		\$708.99	7.6%	
Planned Value to Date	Estimated value of work planned to date		N/A	N/A	
Actual Value to Date	Actual value of work completed to date		N/A	N/A	
Contract Status				Amount (\$)	Percent
Total Contracts Awarded	Value of all contracts (design, support, construction, equipment) awarded: % of total value to be awarded		\$969.91	N/A	
Construction Contracts Awarded	Value of construction contracts awarded: % of total construction value to be awarded		0	0	
Physical Construction Completed	Value of physical construction (infrastructure) completed: % of total construction value completed		0	0	
Rolling Stock Vehicle Status	Date Awarded	No. Ordered	No. Delivered		
Heavy Rail Vehicles	N/A	48 (planned)	0		
Next Quarterly Review Meeting Date:				TBD	

¹ FTA P65 Capital Costs include a sum of YOE \$389.72M in finance costs based on the EPD submission, whereas VTA New Starts Basis includes YOE \$564.95M in finance costs.

² Contingency amounts are base year dollars taken from VTA's New Starts Basis SCC Cost Estimate (September 2022).

³ PMOC P65 risk on Stripped and Adjusted Base Cost of \$6.495B at EPD risk assessment.

⁴ VTA's New Starts Basis RSD was not supported with a detailed schedule submission, and the project baseline has yet to be revised to reflect the revised project delivery methodology.

⁵ Based upon recommended 125% of remaining duration of critical path as of PMOC risk assessment conducted May 2021 (PMOC P65 RSD was February 2, 2034).

⁶ Includes standard cost categories (SCC) 40, 60 and 80 expenditures in Project Development, reported through August 31, 2023, based on accruals. Percentage calculated based on New Starts Basis Total \$9.318B.

⁷ The BSVII team has prepared new baseline documents for Entry to Engineering which are currently under review.