BOARD OF DIRECTORS MEETING

Friday, February 19, 2021

9:00 AM

*VIDEO AND TELECONFERENCE MEETING ONLY*

Until further notice and pursuant to California Governor Gavin Newsom’s Executive Order N-29-20, the VTA Board of Directors will convene a video and teleconference meeting only.

The meeting will be streamed through VTA’s YouTube channel:

https://www.youtube.com/watch?v=QhMF6QPyDjM and through: https://us02web.zoom.us/j/85254381253

Call in: (one-tap): +16699009128,,85254381253# or +12133388477,,85254381253#
Call in: (telephone): US: +1 669 219 2599  or +1 669 900 9128 Webinar ID: 852 5438 1253

Technology limitations may limit the ability to receive verbal public comments during the meeting. We request the public to submit their comments by 3:00 p.m. on February 18, 2021 to board секретary@vta.org. Instructions for participating in the teleconference will be posted on VTAs website.

WORKSHOP AGENDA

To help you better understand, follow, and participate in the meeting, the following information is provided:

- Persons wishing to address the Board of Directors on any item on the agenda or not on the agenda are requested to submit their written comments by 3:00 p.m. on February 18, 2021, to board分泌ary@vta.org.

- Persons who wish to address the Board of Directors during the teleconference meeting are encouraged to visit VTA’s website, bit.ly/vta-board-agendas for instructions. Speakers are asked to limit their comments to 1 minute. The amount of time allocated to speakers may vary at the Chairperson’s discretion depending on the number of speakers and length of the agenda.

- All reports for items on the open meeting agenda are available on our website, www.vta.org. Any document distributed less than 72-hours prior to the meeting will also be made available to the public at the time of distribution. Copies of items provided by members of the public at the meeting will be made available following the meeting upon request.
In accordance with the Americans with Disabilities Act (ADA) and Title VI of the Civil Rights Act of 1964, VTA will make reasonable arrangements to ensure meaningful access to its meetings for persons who have disabilities and for persons with limited English proficiency who need translation and interpretation services. Individuals requiring ADA accommodations should notify the Board Secretary’s Office at least 48-hours prior to the meeting. Individuals requiring language assistance should notify the Board Secretary’s Office at least 72-hours prior to the meeting. The Board Secretary may be contacted at (408) 321-5680 or *e-mail: board.secretary@vta.org or (408) 321-2330 (TTY only). VTA’s home page is on the web at: www.vta.org or visit us on Facebook at: www.facebook.com/scvta. (408) 321-2300: 中文 / Español / 日本語 / 한국어 / tiếng Việt / Tagalog.

NOTE: THE BOARD OF DIRECTORS MAY ACCEPT, REJECT OR MODIFY ANY ACTION RECOMMENDED ON THIS AGENDA.

There will be no physical location for the February 19, 2021, VTA Board of Directors’ Workshop Meeting. You can use this link to access the meeting: https://us02web.zoom.us/j/85254381253.
1. CALL TO ORDER AND ROLL CALL

1.1. ROLL CALL

2. PUBLIC COMMENT

This portion of the meeting is reserved for persons desiring to address the Board of Directors on any item within the Board’s jurisdiction. Speakers are limited to 1 minute. The amount of time allocated for this section of the agenda may vary at the Chairperson’s discretion depending on the number of speakers and length of the agenda. The law does not permit Board action or extended discussion of any item not on the agenda except under special circumstances. If Board action is requested, the matter can be placed on a subsequent agenda. All statements that require a response will be referred to staff for reply in writing.

3. WORKSHOP ITEM

3.1. INFORMATION ITEM – Receive an update on the Next Generation High Capacity Transit Study. (Verbal Report) (Kim)

4. OTHER ITEMS

4.1. ANNOUNCEMENTS

5. ADJOURN to New Board Member Orientation
VTA Board members,

Thank you for the opportunity to offer additional information to the Board in making a decision on the future of the Light Rail system. Specifically, I would like to address the risks and challenges of "Exclusive ROW Transit".

As the President of LoopWorks, the company creating the Milpitas Personal Rapid Transit (PRT) system, I would like to address the risks listed in the slide presentation. While they do present big risks for traditional mass transit systems with which VTA is familiar, PRT technology would dramatically reduce the risks involved:

• Multi-billion dollar infrastructure investment. While the presentation notes that PRT meets speed and capacity requirements, full grade separation would be required. PRT in Milpitas will be fully grade separated, but without requiring ground-level ROW. If the entire 42 miles of LRT were replaced with PRT technology, the cost is estimated at $1.26B using a $15M/mile one way cost ($15M X 2 directions X 42 miles). Additional cost would be incurred if the LRT infrastructure were replaced, but would be reduced by the value of that infrastructure on the used market or scrap recycling value.

• Long implementation timeline. LoopWorks expects the Milpitas PRT system to be operational within 5 years. Thus, VTA could expect a similar time horizon as that for automation (5-15 years).

• Major disruption of construction. While building and protecting ground-level ROW for mass transit technologies would involve major disruptions, PRT only needs a few square feet of ground-level disrupting every 60 - 90 feet. Such minimal ground-level impact combined with quick construction time means the disruption will be far less.

• Lengthy up-front planning, outreach, permitting. Again, securing ground-level ROW is far more challenging that securing necessary easements for PRT.

• Proprietary solutions, emerging technologies. While existing PRT installations use proprietary technologies, the Milpitas PRT system will use an "open source" technology for the hardware and a software control system from a Bay Area company (Transit Control Solutions, Inc.). PRT has been technically and financially viable for the past 40 years, but institutional inertia and fear of political consequences has impeded progress. So, although it could be considered as "emerging", the Milpitas version of PRT is well within the abilities of current technologies.

Two additional points:

• While LRT trains can speed up to 55 mph, their average speed is only 15 - 25 mph. Because PRT vehicles go non-stop from origin to destination, average speeds are closer to the design limit of 40 mph.
• Rather than replace the LRT system, LoopWorks recommends that the Board consider using the technology to serve as feeders to the existing LRT stations.

For more detailed information, please note:
• Our website (MilpitasPRT.com) will answer most questions.
• In-depth questions are answered in one of our many documents including the LoopWorks Business Plan, Bylaws, and large-format poster of the project.
• If you cannot easily find the answer to your question, please call me at 323-788-5865. Leave a voice mail message if I do not answer immediately and leave the best time to return your call and I will get back to you with an answer or an on-line place with the answer.

In the words of President Biden, “We’ve already waited too long to deal with this climate crisis. We see it with our own eyes. We feel it. We know it in our bones. And it’s time to act.”

Best regards,
Matt Kennedy
Dear VTA & community,

I think, we are all trying to comprehend, the good work, of former General Manager, Nuria Fernandez.

I am hopeful, in how we can count on, good decision making, from new, VTA General Manager Evelyn Tran.

The ideas of continuity, will be important, in what has been many changes, of the VTA, in the past few months.

I will do my part, to remind of good practices, of this past summer & fall and of past few years.

It is then up to yourselves, how to address, a mostly positive idealism and sustainability, we all can offer, and try to work towards.

The Rt. 85 committee, last fall, wanted to hold tight, on its previous plans, of how to address their future needs, along the highway 85 route.

I have been trying to suggest, since this past November, the importance, of how new affordable housing concepts, studies and practices, can simply offer much help, and give good examples, in whatever may be, the current questions, of the rt. 85 committee.

From this, I have also tried to offer, to the Rt. 85 committee, how today's agenda item, can be treated, in a small, piece meal fashion. And can be allowed, a small niche, to study and question, by the rt. 85 committee.

I think, all of this, can be accomplished, while maintaining the intentions, of the state 85 committee, from this past fall.

And can work towards, the important goals, of an open shared, public process, to help develop, realistic, non-competitive, non-hyped, good perspectives.

From this, it is my hope, the future of the Rt. 85 committee, can be, of open public policy, how new affordable housing ideas, can help in whatever decision making, may be needed, at this time.

And that, a small study space, can develop, for the av light rail project, that can be, non-competitive, with a minimal use of hype.

sincerely,
blair beekman
Next Generation High Capacity Transit Study
Study Roadmap

Study Context
- This study was requested by the Board to assess potential options for the future of the Light Rail system
- Light Rail fleet may reach end of useful life within the next 10 years
- Study will be used to inform the Board of viable options and their implications

May 2020
• Study Initiated

August
• Early update on Study progress at CPC

November
• Briefing on existing service and technology review

TODAY
• Study Background and Scenario Development
• Receive Feedback on Study Direction and Next Steps

Spring 2021
• Scenario Refinement
• Complete Initial Study
Next Generation High Capacity Transit Study

Today’s Agenda

- Context for this study
- Review previous work
  - Existing system
  - Technology review
- Detail 3 potential scenarios
  - Light Rail
  - Integrated Bus and Light Rail
  - Exclusive ROW Transit
- Feedback and discussion
Next Generation High Capacity Transit Study

Direction Received from the Capital Program Committee

- Focus on modes that are appropriate for VTA
- Opportunities to pilot technologies and incremental implementation
- Consider flexible operations
Questions and Feedback

Is there additional information the Board needs to make a decision on the future of the Light Rail system?

Which ideas should be analyzed further and should any be dropped?

Are there any refinements to the Scenarios that the Board would like analyzed?
Existing System Profile

- 42-miles of Right-of-Way
- 60+ stations
- Average Daily Ridership ~27,000 boardings
- Over $2 billion in total investment into the system
- Can handle 1,000 to 6,000 passengers per hour
- Up to 55 mph (Average speed 15-25 mph)
- Vehicles
  - 98 cars (61 cars used in typical daily service)
  - Typical life expectancy of 30 years (1,000,000 miles)
  - Vehicles purchased around the year 2003
Existing System Key Observations

Performance Observations
• Relatively low ridership
• Relatively high operating and maintenance costs
• Relatively low frequency
• System and vehicles are very well maintained
• Slow speeds due to at-grade crossings
• Low land use density is a key factor related to ridership

Technology and Mode Considerations
• May increase operating flexibility
• May not decrease maintenance costs
• Limited impact on ridership due to nearby land-use density
• Would not improve operating speeds if configured similarly to today
Which Modes Make Sense for VTA

**Lower speed and capacity than Light Rail**
- Buses
- Streetcar
- Aerial Guideway Transit

**Incongruent with existing infrastructure and operations**
- Metro
- Commuter Rail
- Hyperloop

**Meets speed and capacity requirements, requires full grade separation**
- Light Metro
- Automated People Movers (APM)
- Personal Rapid Transit (PRT)
- Group Rapid Transit (GRT)

**Matches speed and capacity requirements, can operate at-grade**
- Bus Rapid Transit
- Light Rail
- Separated Bus Rapid Transit
Technology Review Findings

• No single mode stands out

• Standard modes (Light Rail and Bus) meet VTA’s capacity and frequency needs without significant infrastructure investment

• Non-standard modes have more risks and infrastructure investment

• Autonomous features will be incorporated into all modes in near to medium term future

• APM, PRT and GRT technologies provide speed and capacity similar to a grade separated autonomous bus or light rail system, but with higher frequency
Light Rail Automation

- Byproduct of self-driving car research
- Increased safety
- Increased frequency
- Demonstration deployments
  - Potsdam, Germany
  - Zhuzhou, China
  - Krakow, Poland
  - Moscow, Russia

Zhuzhou, China and Potsdam, Germany
How does the Light Rail Vehicle see the railroad?

- A high-resolution video camera
- Millimeter wave radar

Courtesy of Cognitive Pilot
Diesel Multiple Units in 21st Century America: A Comparative Survey and Evaluation

David O. Nelson, Tara Blakey and Kay O'Neil

Slide 12

Courtesy of Cognitive Pilot

Courtesy of Cognitive Pilot
Next Generation High Capacity Transit Study

Light Rail Automation Outlook

• No upgrades required to existing signal system or infrastructure
• Increases frequency of service while reducing operating cost
• Improves operating flexibility
• Existing vehicles can likely be retrofitted for autonomous operations
• Technology will be ready in the near to medium term future, regulations will take longer
• Safety increases with driver assist features
Potential Scenarios

These are conceptual Scenarios being used to give the Board ideas on how to move forward. The study is not making an explicit recommendation.

- Continue operating Light Rail, extend useful life of existing vehicles, pilot autonomous technology
- Integrate Bus and Light Rail, reduce Light Rail usage and fleet, supplement with bus operations
- Decommission Light Rail system, build an exclusive ROW transit system, not recommended by Capital Program Committee
Light Rail Useful Life Extension and Pilot Automation

Extend Useful life

- At current pace, fleet would reach end of useful life in 2032
- Operating more single cars trains could extend fleet life by 7 years (2039)
- Save up to $10M per year in operating costs

Pilot Automation

- Pathway to automation is 5-15 years, would require a phased implementation
- Pilot demonstration on small sub-fleet of retrofit vehicles
- Autonomous pilot programs require an operator on board. Some pilot programs have an additional ambassador on board.
# Steps for Autonomous LRV Implementation

<table>
<thead>
<tr>
<th>Step</th>
<th>Progress (Activities)</th>
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</thead>
<tbody>
<tr>
<td>1. Driver Warning System</td>
<td>Install and debug hardware and software, Artificial Intelligence (AI) starts learning the routes</td>
</tr>
<tr>
<td>2. AEBS Emergency Brakes</td>
<td>Automatic Emergency Braking System. Increased utility and safety AI continues to learn</td>
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<tr>
<td>3. Driver Assistance</td>
<td>Builds confidence and acceptance</td>
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<tr>
<td>4. Depot Autonomous Pilot</td>
<td>Demonstrates and debugs autonomous operation and remote route assignment in nonrevenue setting</td>
</tr>
<tr>
<td>5. Advanced Driver Assistance</td>
<td>Adds to confidence and acceptance. Debugging continues</td>
</tr>
<tr>
<td>6. Nonrevenue Street Demo</td>
<td>Enlist support from senior officials and public</td>
</tr>
<tr>
<td>7. Full Autonomous Operation</td>
<td>Requires Regulatory and Public Acceptance Upgrade interior surveillance cameras and passenger assistance intercoms</td>
</tr>
</tbody>
</table>
Risks, Challenges, and Benefits

Risks and Challenges

• Continued reliance on Light Rail technology (higher maintenance costs than traditional buses)
• Risks associated with early adopting autonomous technology

Benefits

• Limited capital cost
• No significant changes to passenger experience
• May allow for more frequent service
• Improved safety
# Implementation

| Status Quo                          | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 |
|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Purchase of 75 New Cars             |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Retire Existing Fleet               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Extend Fleet Life                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Operate 1-car trains                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Purchase 75 car Fleet               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Retire Existing Fleet               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Autonomous Operations               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Pilot Demonstration Program         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Full Deployment                     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

**Notes:**
- Status Quo: Current state of operations.
- Extend Fleet Life: Strategies to prolong the life of existing fleet.
- Autonomous Operations: Transition to autonomous vehicle operations.

**Actions:**
- Purchase of 75 New Cars
- Retire Existing Fleet
- Operate 1-car trains
- Purchase 75 car Fleet
- Retire Existing Fleet
- Pilot Demonstration Program
- Full Deployment
Integrated Bus and Light Rail

- Pave ROW to allow rail and rubber tire vehicles to share the traffic segregated space
- Bus and Light Rail can either operate at the same time or different times
- Recommendation to pilot on one segment first
- Full system conversion could take decades
- Combine with extending life of Light Rail vehicles
Examples

- Pittsburgh Mount Washington Tunnel
- Seattle Transit Tunnel
- Numerous Streetcar ROW’s across North America

Typically used in short segments,
No systemwide examples of Bus/Light Rail Integration
VTA LRT ROW Types

CPUC Alignment Classification (GO143B)

Exclusive
- Median with barrier and grade separated crossings
  - ABS (55 mph max) (25% of system)
- Aerial guideway
  - ABS (55 mph max)

Semi Exclusive
- Fenced right of way with at grade crossings
  - Gates and ABS (55 mph max)
- Fenced right of way with at grade crossings
  - Side running with gates and ABS (55 mph max)
- Street Median with curb
  - Traffic signal (35 mph max)
- Mountable curb
  - Traffic signal (35 mph max)

Non Exclusive
- Pedestrian Mall
  - Traffic signal (20 mph max) (3% of system)

Yard
Tunnel or depressed track

Double Track
Single Track

Lick Spur
(training use only)
Bus/Light Rail Integration
Infrastructure Program

Required Infrastructure Conversion
New Embedded Track – 76 Track Miles
New CBTC Signals – 37 Track Miles
- Embedded Track and New Signal System
- Embedded Track Only
- No Infrastructure Improvement Needed
Risks, Challenges, and Benefits

Risks and Challenges
• Station, track, overhead power configuration incompatibility
• Long transition period (decades for full conversion)
• Regulatory - CPUC currently does not allow for these kinds of operations

Benefits
• Increased utilization of transit ROW
• Increased operating flexibility
• Improved bus speeds
• Reduced operating costs
# Implementation

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<tr>
<td>Orange Line Implementation</td>
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<tr>
<td>Purchase <strong>40</strong> New Specialized Buses</td>
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</tbody>
</table>
Exclusive ROW Transit

Not recommended by Capital Program Committee, but shown for comparison purposes

Risks and Challenges

• Multi-billion dollar infrastructure investment
• Long implementation timeline
• Major disruption of construction
• Lengthy up-front planning, outreach, permitting
• Proprietary solutions, emerging technologies
Converting Surface LRT to Exclusive ROW Transit

12 miles already on exclusive ROW
- 10 miles of Blue Line
- 2 miles of Orange Line
- Enhance 13 stations

Remaining 30 miles
- Remove existing facilities
- Build new elevated two-track guideway
- Build 46 new elevated stations

Rolling stock and facilities
- 100+ new automated passenger cars
- New automated control center
## Capital and Operating Costs (Rough Order of Magnitude)

<table>
<thead>
<tr>
<th>Item</th>
<th>Light Rail</th>
<th>Integrated Bus and Light Rail</th>
<th>Exclusive ROW Transit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle procurement</td>
<td>$415M</td>
<td>$320M</td>
<td>$660M</td>
</tr>
<tr>
<td>Vehicle modifications</td>
<td>$10M</td>
<td>$65M</td>
<td>$0</td>
</tr>
<tr>
<td>Infrastructure and support</td>
<td>$31M</td>
<td>$450M</td>
<td>$8,800M</td>
</tr>
<tr>
<td>Contingency</td>
<td>$16M</td>
<td>$240M</td>
<td>$3,800M</td>
</tr>
<tr>
<td>Total</td>
<td>$457M</td>
<td>$1,075M</td>
<td>$13,000M</td>
</tr>
</tbody>
</table>

### Annual Operating Cost Savings ($130M Base)

<table>
<thead>
<tr>
<th></th>
<th>Light Rail</th>
<th>Integrated Bus and Light Rail</th>
<th>Exclusive ROW Transit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-car train operations</td>
<td>$10M</td>
<td>$6M</td>
<td></td>
</tr>
<tr>
<td>Integrated Bus and Light Rail operations</td>
<td>$5M</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Scenario Summary

**Light Rail Scenario**
- Least capital investment
- Least disruption to passengers
- High maintenance costs

**Bus/Light Rail Integrated Scenario**
- Significant capital investment
- Most operating flexibility
- Moderate operating cost savings
- Service disruptions during conversion

**Exclusive ROW Transit Scenario**
- Multi-billion dollar infrastructure investment
- Significant number of risks and unknowns
- Major construction disruption
- Most disruption to passengers
Questions and Feedback

Is there additional information the Board needs to make a decision on the future of the Light Rail system?

Which ideas should be analyzed further and should any be dropped?

Are there any refinements to the Scenarios that the Board would like analyzed?
From: Zachary Zeliff <>
Sent: Thursday, February 18, 2021 3:27 PM
To: VTA Board Secretary <Board.Secretary@vta.org>
Subject: Glydways - high capacity autonomous transit

Dear VTA Board of Directors,

In response to the Next Generation High Capacity Transit Study results, we suggest that the assumptions of timeline, cost and capabilities of high capacity autonomous transit do not take into consideration recent developments.

Autonomous high capacity transit is not 20 years away. Glydways will have an operating system within months. Glydways as a on-demand autonomous solution CAN offer the capacities required 1000-6000 pphpd. Glydways system build costs are significantly less than projected and fare based cost neutral solutions can be achieved.

Glydways is a solution to a problem everyone hates: TRAFFIC. Glydways’ Dynamic Personal Mass Transit (DPMT) is a revolutionary new autonomous mass transportation solution providing on-demand, point-to-point travel in nimble, private, electric vehicles. Once on your way, your Glydcar will never stop due to traffic or accidents by operating in its own narrow dedicated space. Quietly moving thousands of vehicles per hour, Glydways frees you and many more from traffic, noise, pollution and the precious time we lose everyday.

Case in point, our consortium submission (Glydways, Plenary Group, Obayashi, Webcor) submission in response to the San Jose RFI: (RFI 2019-DOT-PPD-4, New Transit Options: Airport-Diridon-Stevens Creek Transit Connection) outlines a system with significantly less cost, operating by 2025. Viewable at the following link: https://www.sanjoseca.gov/home/showpublisheddocument?id=49781

Appreciate the time to explain details of our system and how it can enable a better, lower cost, more equitable transit future.

Best Regards,

Zachary Zeliff
Chief Business Development Officer
Glydways Inc.

Zachary Zeliff
Chief Business Development Officer
Glydways Inc.
better.

Beat Traffic.
Glydways is a solution to a problem everyone hates: TRAFFIC. Glydways’ Dynamic Personal Mass Transit (DPMT) is a revolutionary new autonomous mass transportation solution providing on-demand, point-to-point travel in nimble, private, electric vehicles. Once on your way, your Glydcar will never stop due to traffic or accidents by operating in its own narrow dedicated space. Quietly moving thousands of vehicles per hour, Glydways frees you and many more from traffic, noise, pollution and the precious time we lose everyday.

Experience
Non-stop quiet ride
Solo or Shared
Space for pets, bikes, gear and luggage
No traffic accidents, safest ride
Universal accessibility

Environment
Energy efficient electric vehicles
Solar-ready infrastructure
Designed to run on renewables
Minimal CO2 emission

Community
More community coverage
More affordable operations
Enables pedestrians, bikes and micro modes
Equitable connectivity

Mobility
5-lane freeway in a 5 foot lane (10kph/direction)
Costs begin at $1.5m/mile on-grade and $16m/mile for a fully elevated, 2 direction Glydway
On-demand in seconds, predictable arrival times
Suitable for Public, Private or PPP deployment

No Traffic. No Driving. Immediate Service.

Glydways.com #AlwaysMoving

high capacity. affordable. better experience sustainable. on-demand 24/7.
Dear Chair Hendricks,

The only system in the United States with a lowest farebox recovery than the VTA light rail is the VTA BART extension with an operating subsidy in excess of $300/passenger.

Please direct staff to provide farebox recovery numbers for every mode of Transportation in Santa Clara County.

Thank You
Dear VTA & community,

It is my understanding, it is the delivery, of small packages and pizzas, using AV technology, that is what can be, our more regular practices, in the next 10-15 years.

This AV project, will also have to take into account, Bay Area natural disasters, in the next 5-10 years.

There is, an incredibly important VTA project, about the future of electric buses, and it’s charging stations.

And that, can very much help address, the future of green sustainability and renewable needs.

It has had, well-established practices, and ideas developing, for several years now, that I hope this AV project, today, will not be competitive with, or use hype.

I hope this meeting today, can be a good example, of how to begin a new era, in a more open, shared, cooperative process, between VTA projects, and the community.

This does not have to be, an all or nothing approach. It is having, a good, sober perspective, that is important, for this project.

This is how we can better grow & innovate, at this time.

Sincerely,
Blair Beekman
BOARD OF DIRECTORS

NEW BOARD ORIENTATION

Friday, February 19, 2021

*The Board Orientation will begin at the conclusion of the Workshop*

*VIDEO AND TELECONFERENCE MEETING ONLY*

Until further notice and pursuant to California Governor Gavin Newsom’s Executive Order N-29-20, the VTA Board of Directors will convene a video and teleconference meeting only.

The meeting will be streamed through VTA’s YouTube channel:

https://www.youtube.com/watch?v=QhMF6QPvDjM and through: https://us02web.zoom.us/j/85254381253

Call in: (one-tap): +16699009128,,85254381253# or +12133388477,,85254381253#
Call in: (telephone): US: +1 669 219 2599 or +1 669 900 9128 Webinar ID: 852 5438 1253

ORIENTATION AGENDA

1. VTA Overview
   • VTA Governance
   • VTA as a CMA/CTA
   • VTA as a Sales Tax Authority
   • VTA Finances
     o Sources of Revenues
     o Local Measures

2. VTA Board of Directors
   • Priorities
   • Roles, Responsibilities, Expectations
   • Fiduciary Responsibility

3. VTA Divisions

4. Roundtable Discussion

5. Adjourn
Board Orientation
Video and Teleconference Only

February 19, 2021

*Zoom link- https://us02web.zoom.us/j/85254381253
*Audio/video of meeting is recorded
Outline

• VTA Overview
  o Governance
    o Committee Structure
    o VTA Board of Directors Roles and Responsibilities
  o Transit Operator
  o Congestion Management Agency/County Transportation Agency
  o Sales Tax Authority
  o VTA Finances
• VTA Divisions
• Roundtable discussion
VTA Overview

• **Mission**: Provide solutions that move you
• **Vision**: Innovate the way Silicon Valley moves
• **Core Values**: Safety, Integrity, Quality, Sustainability, Diversity, Accountability
• **Employees**: 2,090
• **Responsible for**:
  - Public transit service (bus, light rail, paratransit)
  - Congestion Management
  - Programming of discretionary federal, state and some regional funds
  - Interregional partner services
  - Managing voter-approved local sales tax programs
VTA Overview: Governance & 2021 Priorities

- 12 voting members, 6 alternates (1 per City Group) and Ex-Officio
- City Groups appoint their members for two-year terms and can be appointed to successive terms
- Board Leadership selected annually.

2021 Priorities
- Safe & reliable service
- Funding Stability & Operational Sustainability
- 2016 Measure B spending plan
- VTA's Business Plan
VTA Board of Directors: Roles and Responsibilities

- Make policy decisions pertaining to:
  - VTA Governance
  - VTA Administration
  - VTA Financial Management
  - Congestion Management for Santa Clara County
- Appoint General Manager/CEO, General Counsel, and Auditor General
- Approve contracts in the amount of $1 million or more
- Adopt resolutions and ordinances
- Represent VTA
- Provide organizational oversight
VTA Overview: Governance - Committee Structure

VTA Committee Structure

Board of Directors

Standing Committees
- Administration and Finance (A&F) Committee
- Governance and Audit Committee
- Congestion Management Program and Planning (CMPP) Committee
- Capital Program Committee (CPC)
- Safety, Security, and Transit Planning and Operations (SSTPO) Committee

Advisory Committees
- Bicycle and Pedestrian Advisory Committee (BPAC)
- Citizens Advisory Committee (CAC)
- Committee for Transportation Mobility and Accessibility (CTMA)
- Policy Advisory Committee (PAC)
- Technical Advisory Committee (TAC)

Policy Advisory Boards
Ad Hoc Committees
**PROPOSED ITEM**

**ADVISORY COMMITTEES**
- Bicycle & Pedestrian (BPAC)
- Citizens Advisory (CAC)
- Committee for Transportation Mobility & Accessibility (CTMA)
- Policy Advisory (PAC)
- Technical Advisory (TAC)

**Purpose:**
Make recommendations to the Standing Committees and/or Board on item(s) within Advisory Committee’s expertise

**Meeting Frequency:**
Once a month except for CTMA, which meets six times per year.

**STANDING COMMITTEES**
- Administration & Finance (A&F)
- Capital Program Committee (CPC)
- Congestion Management Program & Planning (CMPP)
- Governance & Audit (G&A)
- Safety, Security, & Transit Planning & Operations (SSTPO)

**Purpose:**
Make recommendations to Board on items in Committee’s focus area.

**Meeting Frequency**
- Once a month except June & July. G&A meets 7/year while CPC meets 4-5 times per year.

**BOARD OF DIRECTORS**

**Purpose:**
Makes policy decisions and those required by the VTA Administrative or government code.

**Meeting Frequency**
- Once a month on first Thursday of the month except December. No July meeting.

---

Some items may go directly to the Standing Committees/Board (i.e. contracts, commendations, etc.)

- Advisory Committee input provided to Standing Committees
- Advisory & Standing Committee input included in final Board report
- The Board may refer the item back to the Advisory and/or Standing for further development
- Standing Committee may refer the item back to Advisory Committees for information or further development
- Item approved by the Board

---

7
VTA Board of Directors: Expectations & Meetings

• **Board Member Expectations:**
  • Support VTA’s goals and policies
  • Think regionally
  • Be an advocate and ambassador for VTA
  • Participate actively at Board and committee meetings
  • Communicate and work collaboratively Board Members and staff

• **Regular Meetings:** 1st Thursdays of the month, 5:30 p.m.

• **Workshop Meetings:** at least 2 each year or as needed

• **Vote:** Seven (7) affirmative votes required to pass most items. Other items that require higher threshold

• Noticed in Accordance with Ralph M. Brown Act
VTA Board of Directors: Fiduciary Duties

VTA Board Member Fiduciary Duties:

• **Be Diligent and Responsible** - Consider all relevant information before making judgments and decisions

• **Be Loyal to VTA’s Regional Mission** – Make decisions that are in the best interest of the VTA and region, subordinating the interests of individual Directors or local jurisdictions

• **Be Informed** – Understand the complete financial consequences of policy proposals as they relate to VTA’s mission and financial condition.

VTA Board Member Areas of Fiduciary Responsibilities:

- Approval of capital and operating budgets
- Approval of expenditure plans and projects
- Asset management (Real estate, cash/investments, infrastructure)
- Sale of bonds
VTA Board of Directors: Duty to the Region

• Think regionally
  o Individual Board Members can and are expected to promote constituency interests during Board deliberations

• Board cannot act except through concerted action of directors as a single governing body

• Work through GM/CEO or General Counsel to give direction to staff; can interact with staff for purposes of inquiry/information only

• Must act in best interest of all stakeholders, on behalf of VTA as a whole
VTA Board of Directors: Code of Ethics

• Board Members must abide by VTA's Code of Ethics

• Ethical Restrictions
  o No incompatible or inconsistent employment or activity
  o No participation in decision where Board Member has close personal interest impairing impartiality
  o No gifts over $50 from current or potential contractors/consultants
  o No use of confidential information acquired through office or VTA resources or other things of value for private gain
  o No participation or interest in a decision in which Board Member has a financial interest
Consequences of Ethical Violations

• Board may report potential violations to Auditor General or General Counsel
• If ethical violation found, several options:
  o Public censure
  o Removal from office
  o Forfeiture of funds
  o Penalties of at least $500 per violation

Procedures if Financial Conflict Arises

• Board Member discloses interest
• Refrains from participating in any way in the decision-making process
• If closed session, withdraws from the room
• Government Code §84308 prohibits the Acceptance of Campaign Contributions of Over $250 by Board Member Who Makes a Decision in Which the Contributor Has a Financial Interest

• Timing
  o Twelve months Preceding the Decision in Question
  o Three months Following the Final Decision

• Board Member Options
  o Disclose and disqualify yourself from participating in the decision
  o Return the contribution within 30 days from knowledge to be able to participate in the decision.
VTA Overview: Public Transit Operator

• **Bus Routes**
  o 58 Routes serving 346 square miles

• **Light Rail**
  o 3 Lines on 42 miles of track

• **Fleet**
  o 468 buses
  o 98 light rail cars
  o 5 historic trolley

• **Operating Facilities:** 4

• **Paratransit**
VTA Overview: Congestion Management Agency and County Transportation Agency

• VTA is Santa Clara County’s Congestion Management Agency
  o Prepares and implements congestion management programs (CMP)
  o Oversees and delivers voter-approved transportation sales tax measures
  o The CMP is required to receive state gas tax funding.
    ➢ Comprehensive transportation improvement program
    ➢ Reduce traffic congestion
    ➢ Improve land use decision-making and air quality

• VTA is also Santa Clara County’s County Transportation Agency
  o Multimodal transportation approach
  o Incorporates VTA’s role as a CMA
VTA Overview: Finances

- FY 21 Annual operating budget is approximately $525 million
- Total Capital program is approximately $3.5 billion
- Budget Adopted every two years; Development of new Biennial Budget underway
  - Eight (8) Budgeted Funds
    - VTA Transit
    - 2000 Measure A Transit Improvement Program
    - 2008 Measure B – BART Operating Sales Tax Program
    - 2016 Measure B Program
    - Congestion Management Program
    - VTP Highway Improvement Program
    - Transit-Oriented Development Program
    - Silicon Valley Express Lanes Program
### VTA Overview: Local Sales Tax Measures (existing)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Rate</th>
<th>Operating</th>
<th>Capital</th>
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<tbody>
<tr>
<td>1976 (Perpetuity)</td>
<td>1/2¢</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>2000 Measure A (2006-2036)</td>
<td>1/2¢</td>
<td>20.75%</td>
<td>Specific projects</td>
</tr>
<tr>
<td>2008 Measure B (2012-2042)</td>
<td>1/8¢</td>
<td>BART-Related Only</td>
<td>BART-Related Only</td>
</tr>
<tr>
<td>2016 Measure B (2017-2047)</td>
<td>1/2¢</td>
<td>Approx 8%*</td>
<td>Specific projects</td>
</tr>
</tbody>
</table>

*To increase ridership, improve efficiency, enhance mobility services for seniors and disabled, and improve affordability for underserved and vulnerable constituencies.
VTA Overview: 2016 Measure B Program Categories

2016 Measure B Transparency Website: https://2016measureb.vta.org
VTA Divisions

- Office of the General Manager/CEO
  - Employee Relations & Office of Civil Rights
- Office of the General Counsel
- Office of the Auditor General
- Finance, Budget and Real Estate Division
- Operations Division
- Planning & Programming
- Engineering & Program Delivery
- System Safety & Security
- External Affairs
- Administrative Services
- BART Delivery Program
Office of the General Manager/CEO

Evelynn Tran
General Counsel and Interim GM/CEO
Office of the General Manager/CEO

Responsibilities

• Chief Executive Officer of VTA who reports directly to the Board of Directors
• Responsible for overall administration, day-to-day operations and decision making at VTA
• Responsible for overseeing VTA’s planning, financial, construction and capital program development and implementation strategies
• VTA’s Congestion Management Agent
• VTA Purchasing Agent
• Executes and implements Real Estate transactions, as authorized by the Board
• Executes grant agreements in accordance with VTA’s Administrative Code or as authorized by the Board
Responsibilities

- Chief Legal Officer for VTA
- General Counsel specifically mandated by the Santa Clara Valley Transportation Authority Act. (Cal. Pub. Util. Code §100090.)
- Advise the Board of Directors and Board standing committees on all legal matters pertaining to VTA
- Perform all legal services for VTA as directed by the Board
- Attend all meetings of the Board
- Draw resolutions, ordinances and contracts
- Represent VTA in all matters, actions or proceedings in which VTA is a party or is interested
- Prepare legal opinion letters
Office of the General Counsel

Duties

• Authorize VTA to instigate or participate in litigation under certain circumstances
• Inspect records and issue subpoenas for witness and records that may be relevant to investigations into alleged violations of the Administrative Code or Board Ordinances
• Keep a record of closed session proceedings
• Perform such other duties as the Board may prescribe
Finance, Budget & Real Estate

Kathleen Kelly
Interim Chief Financial Officer
VTA Finance, Budget & Real Estate

Grants & Fund Allocation
- Advocates, programs, manages, and ensures compliance for all grants

Finance, Budget & Program Management
- Manages accounting activities, disburses payments to employees and vendors, handles fare collection for transit operations, develops and monitors the operating and capital budget, and identifies and implements debt related transactions

Real Estate & Transit-Oriented Development
- Manages VTA’s real property assets, acquires right-of-way to support capital projects, implements the agency’s Joint Development program

Enterprise Risk Management
- Manages self-insured Workers’ Compensation and Liability claims and agency’s construction insurance programs
Operations Division

David Hill
Chief Operating Officer
Operations Division: Responsibilities

Operates, maintains, analyzes, and manages VTA's Bus and Light Rail transit systems, as well as vehicle and building maintenance, Facilities Maintenance, Paratransit, shuttle services and related programs, Non-Revenue vehicles and related services and programs, Joint Workforce Initiative (JWI) Apprenticeship programs and Special Events.

Three Bus Yards with both Transportation and Maintenance personnel: Cerone, Chaboya, North

One Light Rail Yard with Transportation and Maintenance of both the vehicles and the Maintenance of Way, along with Operations Control Center: Guadalupe
Operations Division: Facts and Figures

• Over 1.5 million Annual Hours of Bus Service
• Over 170,000 Annual Hours of Light Rail Service
• 27 million - Annual Bus Ridership
• 88,171 - Average Weekday Bus Ridership
• 8.4 million - Annual Light Rail Ridership
• 27,290 - Average Weekday Light Rail Ridership
• Delivered 99.69% of bus and 99.87% of light rail service scheduled
• On-time Performance
  Bus Service = 84.8%
  Light Rail Service = 82.6%
Operations Division: Regional Transportation Services

**Contracted Services**
- Paratransit
- ACE Shuttles

**Interagency Services**
- Caltrain
- ACE
- Highway 17 Express
- Dumbarton Express
- Monterey-San Jose Express
- Capitol Corridor
Planning & Programming

Deborah Dagang
Chief Planning & Programming Officer
Planning & Programming Division: County Transportation Agency/ Congestion Management Agency

- **Plan**
  - Long-Range Countywide Plans
  - Corridors/Special Project Studies
  - Transit Service Plans
  - Bicycle & Pedestrian Plans
  - Complete Streets Studies and Policies
  - Congestion Management Plan
  - Modeling & Analysis
  - Strategic Plan
  - Business Plan

- **Fund**
  - Program Federal, State, Regional/Local Grants

- **Review & Advise**
  - Development Review
  - SB 743: VMT Tool and Guidance
  - Transportation Impact Analysis (TIA) Reports
  - Complete Streets Elements of Local Jurisdiction Projects

- **Implement**
  - Transit Service Scheduling
  - Transit, Bicycle & Pedestrian Projects
  - Countywide Travel Demand Model

- **Coordinate**
  - Corridor, regional, statewide
  - Policy and funding programs
Leads process of progressive improvements to transit network in order to fulfill strategic plan goal of **Fast, Frequent, Reliable transit**

Planning & Programming Division: Transit Service Planning

- Monitor transit service performance and travel market changes
- Develop and implement revised service schedules
- Develop service change recommendations
- Engage community for feedback and suggestions
- Develop annual transit service plans
Innovation Vision

*We will bring Silicon Valley into VTA by:*

- Fostering an entrepreneurial spirit to develop creative solutions;
- Leveraging VTA interests and skills; and
- Building strong relationships within the community to support innovative trials and deployment

Activities

- Automated Vehicle: Accessible, Electric, On Demand
- Innovation Officer Peer Exchange
- Vehicle to Grid Electric Bus project
- Charge management platform and integrate into systems
- Pursue grant applications to fund unique Innovation activities
Engineering & Program Delivery Division

Casey Emoto
Chief Engineer & Program Delivery Officer
### EPD Division: Organization

**Casey Emoto**
Chief Engineering & Program Delivery Officer

<table>
<thead>
<tr>
<th>Environmental Programs</th>
<th>Transit Engineering</th>
<th>Capital Highway Program</th>
<th>Toll Systems and Traffic Engineering</th>
<th>Tech. Engineering Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ann Calnan</td>
<td>Ken Ronsse</td>
<td>Gene Gonzalo</td>
<td>Murali Ramanujam</td>
<td>Dennis Ratcliffe</td>
</tr>
</tbody>
</table>
### EPD Division: Roles/Duties

Serves as the Engineering and Construction Division for VTA (and leads certain Programs)

<table>
<thead>
<tr>
<th>Environmental Programs</th>
<th>Leads Environmental Documentation</th>
<th>Manages Mitigation Sites</th>
<th>Leads Sustainability Program</th>
<th>Leads Stormwater Permitting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transit Engineering</td>
<td>Leads Transit Engineering</td>
<td>Leads Transit Construction</td>
<td>Leads Transit Rehabilitation Program</td>
<td>Leads Architectural Services</td>
</tr>
<tr>
<td>Highway Capital Program</td>
<td>Leads Highway Project Development</td>
<td>Leads Highway Construction Management</td>
<td>Leads Express Lanes Capital Delivery</td>
<td></td>
</tr>
<tr>
<td>Technical Engineering Services</td>
<td>Provides Survey, Mapping &amp; Utilities</td>
<td>Provides Quality Assurance &amp; Project Controls</td>
<td>Provides Construction Inspection</td>
<td>Provides Environmental Engineering</td>
</tr>
</tbody>
</table>
EPD Division: Major 2021 Initiatives

- BART to Silicon Valley Phase II - Environmental
- Eastridge to BART Regional Connector (EBRC)
- US 101 Express Lanes

Highway Construction:
- US 101/Trimble Rd/De La Cruz Blvd
- US 101/Blossom Hill Blvd
- US 101 to SR 87 Connector Ramp
- US 101/Story Rd Ramp Meters
- US 101/SR 25 Phase 1 Improvement

- Climate Action & Adaptation Plan
- Sustainability Plan
- Montague Expressway Pedestrian Overcrossing
- Various Transit Capital & Rehab Projects
System Safety & Security Division

Angelique M. Gaeta
Chief of System Safety & Security
System Safety & Security Division: Roles & Functions

Transit Safety Unit
- Develop, maintain, and implement the Public Transportation Agency Safety Plan (PTASP)
- Perform Accident Investigations and administer the Hazard Management Program
- Manage VTA's Emergency Operations Center (EOC)
- National Incident Management System & Standard Emergency Management System training

Environmental Health & Safety (EH&S) Unit
- Manage Injury Illness Prevention Program (IIPP)
- Ensure compliance with hazardous materials/waste storage and disposal
- Oversee storm water sampling, reporting, and written plans for industrial work sites
Safety Audit and Analysis Unit

- Manage Internal Safety Audits
- Coordinate triennial audits with California Public Utilities Commission (CPUC) and the Federal Transit Administration (FTA)
- Coordinate resolution and mandatory reporting on audit-related corrective action plans (CAPs)

Security: Protective Services / Law Enforcement Contracts

- Oversee Fare Enforcement Program
- Manage Private Security for security on the system and at VTA facilities
- Coordinate Supplemental Law Enforcement services on the system and at VTA facilities
External Affairs Division

Jim Lawson
Chief of External Affairs
External Affairs Division

Jim Lawson
Chief External Affairs Officer

Government Affairs
Board Office
Communications
Community Engagement
Customer Service
Marketing & Business Development
Creative Services
External Affairs Division

**Government Affairs & Board Office: your “go-to” teams!**

- Fully support and staff VTA Board and Committees
- Provide Regional Partner support:
  - Caltrain
  - Capitol Corridor
  - Altamont Corridor Express (ACE)
  - Highway 17 Express
  - Monterey-Salinas Express Transit
  - Dumbarton
  - Metropolitan Transportation Commission
  - California Transportation Commission
- Develop & pursue VTA Legislative Programs
- Plan, coordinate and deliver VTA’s policy positions in relations with Federal and State government (State Assembly and Senate, Federal Delegation) and with Local and Regional government and organizations:
  - 15 Cities
  - Santa Clara County Board of Supervisors
  - Metropolitan Transportation Commission (MTC)
  - Silicon Valley Leadership Group
  - Joint Venture Silicon Valley
External Affairs Division

Communications
Sharing our good news, addressing agency challenges with a high degree of transparency, and making multifaceted projects interesting and understandable
• Develop and implement strategic communications plans for internal and external audiences
• Leverage traditional and social media, press events, presentations, blogs and videos to tell our story

Community Engagement
Building and fostering relationships with community stakeholders to deliver better transportation solutions
• Develop and implement outreach plans and collateral to support the planning, design and construction project phases
• Ensure adherence to established polices and industry best practices to reach and engage diverse audiences

Creative Services
Establishing, strengthening and preserving VTA’s brand identity through creative imagery and graphic design
• Design and produce collateral, printed materials, signage
• Produce videos and other digital assets that support marketing and communications campaigns

Marketing and Business Development
Creating award-winning campaigns that promote and highlight the good work and breadth of our agency
• Establish and maintain promotional partnerships
• Conduct market research to inform ridership strategies

Customer Service
Connecting riders to information and services
• Provide trip planning, inquiry and complaint resolution
• Manage website and service notifications
• Multilingual phone agents and in-person staffing of Downtown San Jose Customer Service Center
Administrative Services Division

Sylvester Fadal
Chief Administrative Officer
Our Goal: To cultivate relationships and provide excellent customer service for all VTA stakeholders in order to facilitate growth and improve processes across VTA’s various businesses.


Human Resources
- Manage workforce HR Systems.
- Administer Pension (CalPERS) benefits and Wellness Programs.
- Manage VTA’s Classification and Compensation programs.
- Manage VTA/ATU Pension plan.
- Recruit, select, and retain a talented workforce.

Bus and Light Rail Maintenance Training
- Trains new and veteran bus maintenance personnel in the proper service, repair, and maintenance of bus and light rail vehicles and related vehicle systems.
- Provides training on the use and maintenance of vehicle test equipment, shop tools, and troubleshooting and diagnostics.
- Coordinate vendor and on-the-job training programs.
Human Capital Management
• Manage VTA’s human capital program including mandated and general training to ensure staff maintains the required skills.
• Implement job-specific training to obtain critical job skills as needed.
• Oversee the building of a competent workforce through mentorship, coaching, and other critical leadership competencies.
• Manage workforce through Talent Management System Solution.
• Oversee compliance with all government mandated trainings.

Bus and Light Rail Technical Training
• Responsible for training all new bus and light rail operators compliant with DMV and other government regulations.
• Recertification of all operators, including mandatory retraining of staff per compliance.
• Manage light rail related roadway protection training for external and internal clients.
• Oversees all light rail safety training and recertification.

Procurement & Contracts
• Responsible for purchasing, messenger/mail services, contracts administration.
• Ensures Federal and State procurement Compliance.
• Responsible for the centralized contracting for all VTA projects.
• Responsible for Materials Management enterprise-wide.
• Management of VTA's business equity programs (DBE, SBE, MWBE, LGBT/DVBE).
Projects Compliance
• Manages review of all construction, professional services and maintenance contracts to ensure compliance with terms of the contract.
• Ensures that contracts are following certified payroll payments as accordance with DIR prevailing wage guidelines.
• Implement and enforce federal, state and local ordinance and labor laws and regulations pertaining to VTA contracts.
• Develop and monitor Contractors’ compliance with project labor agreements.
• Monitor Stormwater compliance laws consistent with government regulations including compliance with CA Water Board Agencies.

Technology Department
• Continuous review and improvement on Cyber Security and PCI / DSS compliance, support for eFare payments and TVMs.
• Communications: Ensures 99.999 uptime for phones, wired & wireless networks, CAD/AVL, radio system, CCTV security, digital signage.
• Keeps all software applications current. Manage data center and servers with fault tolerance and fail over on all critical applications.
• Support for VTA’s enterprise resource planning tool (SAP) for budget, payroll, finance, HR, grants, and inventory modules.
• Design of BART phase II Technology and Comms strategy and BART phase II Technology support.
• Technology Project Management Office (PMO) support and tracking of technology budget, audits and $25M capital projects.
VTA’s BART Silicon Valley Phase II Extension

VTA Board of Directors Orientation
February 19, 2021
VTA’s BART Silicon Valley Phase II Extension: Project Overview

- 6-mile extension:
  - ~1.5 mile single-bore stacked
  - ~3.5 mile single-bore side-by-side
  - ~1 mile at-grade
- 4 stations:
  - 3 underground
  - 1 at-grade
- 2 Mid-Tunnel Facilities
- Newhall Yard Maintenance Facility
<table>
<thead>
<tr>
<th>Contract</th>
<th>Title</th>
<th>Delivery Method</th>
<th>General Scope*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Systems</td>
<td>Design-Build (DB)</td>
<td>• All rail system elements</td>
</tr>
<tr>
<td>2</td>
<td>Tunnel &amp; Trackwork</td>
<td>Progressive Design-Build (PDB)</td>
<td>• Tunnel &amp; trackwork&lt;br&gt;• Mid-tunnel facilities&lt;br&gt;• Demolition, site prep and support of excavation for underground stations&lt;br&gt;• Utility relocations as required&lt;br&gt;• Adits</td>
</tr>
<tr>
<td>3</td>
<td>Newhall Yard &amp; Santa Clara Station</td>
<td>Design-Build (DB)</td>
<td>• Yard &amp; Maintenance Facility&lt;br&gt;• Line &amp; track&lt;br&gt;• Santa Clara Station&lt;br&gt;• 500 space parking garage&lt;br&gt;• Utility relocations as required</td>
</tr>
<tr>
<td>4</td>
<td>Stations</td>
<td>Design-Build (DB)</td>
<td>• 28&lt;sup&gt;th&lt;/sup&gt; Street/Little Portugal, Downtown and Diridon stations&lt;br&gt;• 1200 space parking garage (28&lt;sup&gt;th&lt;/sup&gt; Street/Little Portugal Station)&lt;br&gt;• Streetscape and final site work</td>
</tr>
</tbody>
</table>

* Final Scope Elements under evaluation
## VTA’s BART Silicon Valley Phase II Extension: Proposed Project Financial Plan

### Cost Estimate

<table>
<thead>
<tr>
<th>FTA Standard Cost Category</th>
<th>Description</th>
<th>Estimate ($M YOE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Guideway &amp; Track Elements</td>
<td>$1,525</td>
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<tr>
<td>20</td>
<td>Stations, Stops, Terminals, Intermodal</td>
<td>$1,593</td>
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<tr>
<td>30</td>
<td>Support Facilities: Yards, Shops, Admin. Bldgs</td>
<td>$275</td>
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<tr>
<td>40</td>
<td>Sitework &amp; Special Conditions</td>
<td>$202</td>
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<tr>
<td>50</td>
<td>Systems</td>
<td>$471</td>
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<td>Construction Subtotal:</td>
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<tr>
<td>60</td>
<td>ROW, Land, Existing Improvements</td>
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<td>70</td>
<td>Vehicles</td>
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<td>80</td>
<td>Professional Services</td>
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<td>Unallocated Contingency</td>
<td>$551</td>
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<td>100</td>
<td>Finance Charges</td>
<td>$142</td>
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<td>Subtotal:</td>
<td>$6,538</td>
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<td><strong>Investment to Date:</strong></td>
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<td></td>
<td>Legacy &amp; Historical Costs (2003-2020) (Environmental, Planning, Community Outreach, Project Management, Conceptual Engineering)</td>
<td>$322</td>
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<td><strong>Total:</strong></td>
<td><strong>$6,860</strong></td>
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Note: FTA may reduce the legacy cost eligible for funding to those incurred after acceptance into FTA New Starts Project Development (March 2016).

### Funding Plan

<table>
<thead>
<tr>
<th>Funding Source</th>
<th>Amount Year of Expenditure (YOE) $ millions</th>
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</thead>
<tbody>
<tr>
<td>Federal - FTA Expedited Project Delivery Grant (25%)</td>
<td>$1,714</td>
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<tr>
<td>Non-Federal (75%)</td>
<td>$5,145</td>
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<tr>
<td>State/TIRCP Grant</td>
<td>$750</td>
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<td>State/TCRP Grant</td>
<td>$161</td>
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<td>Transit Oriented Development/P3</td>
<td>$75</td>
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<td>2000 Measure A Sales Tax</td>
<td>$1,954</td>
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<td>2016 Measure B Sales Tax</td>
<td>$1,831</td>
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<td>Regional Measure 3</td>
<td>$375</td>
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<td><strong>TOTAL SOURCES OF FUNDS</strong></td>
<td><strong>$6,860</strong></td>
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</table>

Note: FTA may reduce the federal share based on eligible legacy cost incurred after acceptance into FTA New Starts Project Development (March 2016).
VTA’s BART Silicon Valley Phase II Extension: 2021 Look Ahead

- Continue development of detailed cooperative agreements with third parties
- Real estate acquisitions for key properties and finalization of right-of-way
- Complete project specific requirements/design criteria with BART to be included as part of procurement documents for each Contract
- Preparation and issuance of Request for Qualifications (RFQ) and Request for Proposals procurement documents

<table>
<thead>
<tr>
<th>Contract No.</th>
<th>Contract</th>
<th>Procurement Document</th>
<th>Anticipated Release*</th>
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<tbody>
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<td>1</td>
<td>Systems</td>
<td>RFQ</td>
<td>February 2021</td>
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<td>RFP</td>
<td>August 2021</td>
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<td>2</td>
<td>Tunnel &amp; Trackwork</td>
<td>RFP</td>
<td>July 2021</td>
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<td>3</td>
<td>Newhall Yard &amp; Santa Clara Station</td>
<td>RFIF</td>
<td>March 2021</td>
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<td>RFQ</td>
<td>December 2021</td>
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<td>4</td>
<td>Stations</td>
<td>RFQ</td>
<td>March 2021</td>
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<td></td>
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<td>RFP</td>
<td>September 2021</td>
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* Working dates; subject to change based on RFIF/industry feedback
# VTA’s BART Silicon Valley Phase II Extension: Framework to Completion

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<tr>
<th></th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
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<td><strong>BART System Testing/Rail Acceptance/CPUC Certification</strong></td>
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*Working schedule subject to change based on RFIF/industry feedback*