

VRTA'S BART SILICON VALLEY AD HOC COMMITTEE

Monday, March 13, 2017

10:00 AM

VRTA Conference Room B-106

3331 North First Street

San Jose, CA

AGENDA

CALL TO ORDER


1. ROLL CALL

2. PUBLIC PRESENTATIONS:

This portion of the agenda is reserved for persons desiring to address the Committee on any matter not on the agenda. Speakers are **limited to 2 minutes**. The law does not permit Committee action or extended discussion on any item not on the agenda except under special circumstances. If Committee 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. ACTION ITEM** - Conduct voting to determine the Committee's chairperson and vice chairperson for 2017.
- 4. ACTION ITEM** - Approve the 2017 VRTA's BART Silicon Valley Ad Hoc Committee Meeting Schedule.
- 5. INFORMATION ITEM** - Receive a presentation on VRTA's BART Silicon Valley Phase II Single Bore Technical Studies. (Verbal Report) (Gonot)
- 6. INFORMATION ITEM** - Receive an update on VRTA's BART Silicon Valley Phase II Tunneling Risk Assessment. (Verbal Report) (Gonot)
- 7. INFORMATION ITEM** - Receive an update on VRTA's BART Silicon Valley Phase II Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report (SEIS/SEIR). (Verbal Report) (Hedayat)

8. **INFORMATION ITEM** - Receive an update on VTA's BART Silicon Valley Berryessa Extension Project and VTA's BART Silicon Valley Extension Program. (Verbal Report) (Ratcliffe)
9. Open/Pending issues (Verbal Report)
10. **ANNOUNCEMENTS**
11. **ADJOURN**

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 ✉ board.secretary@vta.org or ☎ (408) 321-2330 (TTY only). VTA's home page is www.vta.org or visit us on  www.facebook.com/scvta. ☎ (408) 321-2300: 中文 / Español / 日本語 / 한국어 / tiếng Việt / Tagalog.

All reports for items on the open meeting agenda are available for review in the Board Secretary's Office, 3331 North First Street, San Jose, California, (408) 321-5680, 72 hours prior to the meeting. This information is available on VTA's website at <http://www.vta.org> and also at the meeting.

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Date: March 6, 2017
 Current Meeting: March 13, 2017
 Board Meeting: N/A

BOARD MEMORANDUM

TO: Santa Clara Valley Transportation Authority
 VTA's BART Silicon Valley Ad Hoc Committee

THROUGH: General Manager, Nuria I. Fernandez

FROM: Board Secretary, Elaine Baltao

SUBJECT: 2017 VTA's BART Silicon Valley Ad Hoc Committee Meeting Schedule

Policy-Related Action: No

Government Code Section 84308 Applies: No

ACTION ITEM

RECOMMENDATION:

Approve the 2017 VTA's BART Silicon Valley Ad Hoc Committee Meeting Schedule.

BACKGROUND:

The following meeting dates are proposed for 2017. VTA's BART Silicon Valley Ad Hoc Committee generally meets at VTA's River Oaks Campus, 3331 North First Street, San Jose, in Conference Room B-106, or as otherwise posted.

Monday, March 13, 2017	10:00 a.m.
Monday, May 15, 2017	10:00 a.m.
Monday, August 14, 2017	10:00 a.m. - Workshop Meeting
Monday, September 18, 2017	10:00 a.m.
Monday November 13, 2017	10:00 a.m.

FISCAL IMPACT:

There is no Fiscal Impact.

Prepared by: Menominee McCarter
 Memo No. 6048





VTA's BART Silicon Valley

Phase II Single Bore Technical Studies Update

March 13, 2017

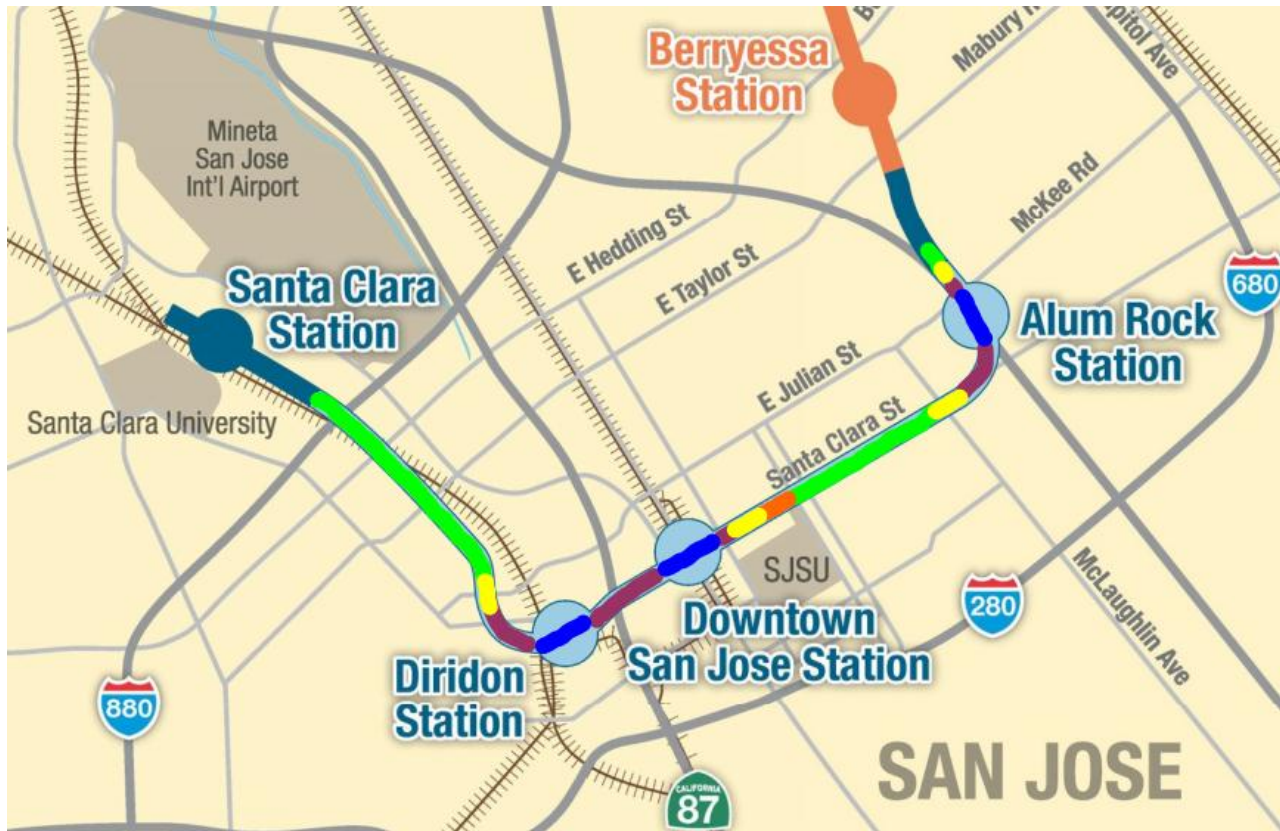


Agenda

1. Opening Remarks
2. Background
3. Tunnel Cross Sections 
4. Station Configuration and Passenger Circulation 
5. Ventilation Concept 
6. Emergency Egress 
7. Open Discussion



Single Bore Tunnel Alignment



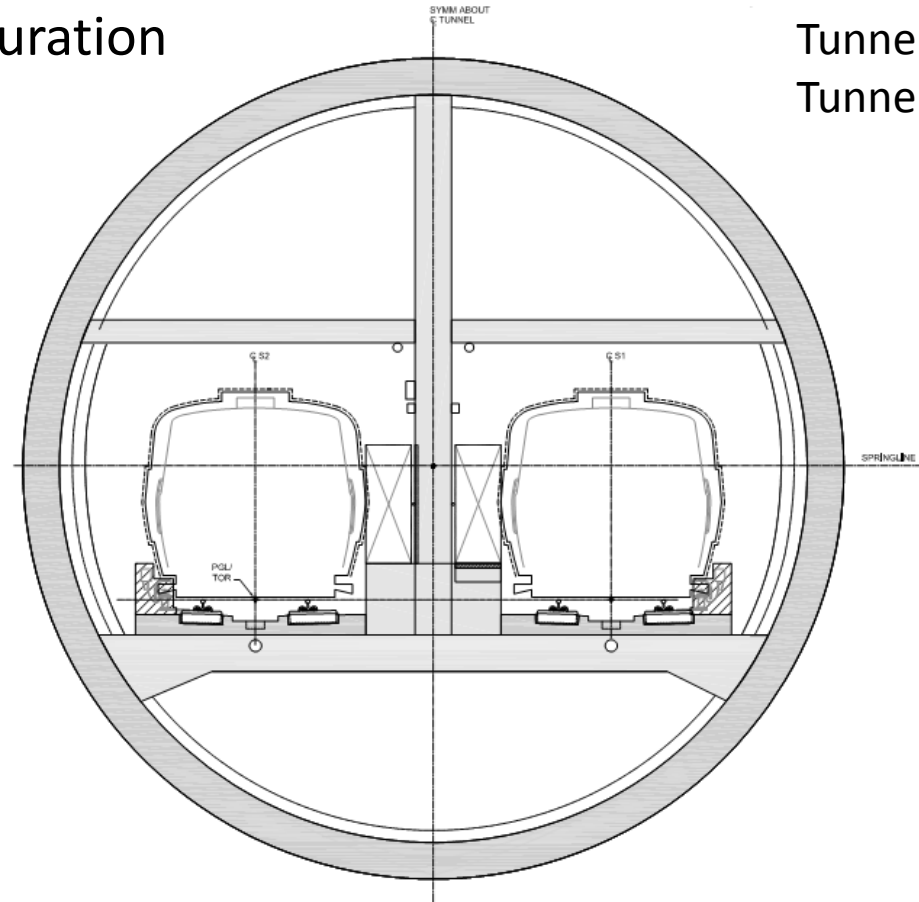
LEGEND

- STATION
- STACKED
- SIDE-BY-SIDE
- CROSSOVER
- TRANSITION



Tunnel Typical Sections

Side-By-Side Configuration

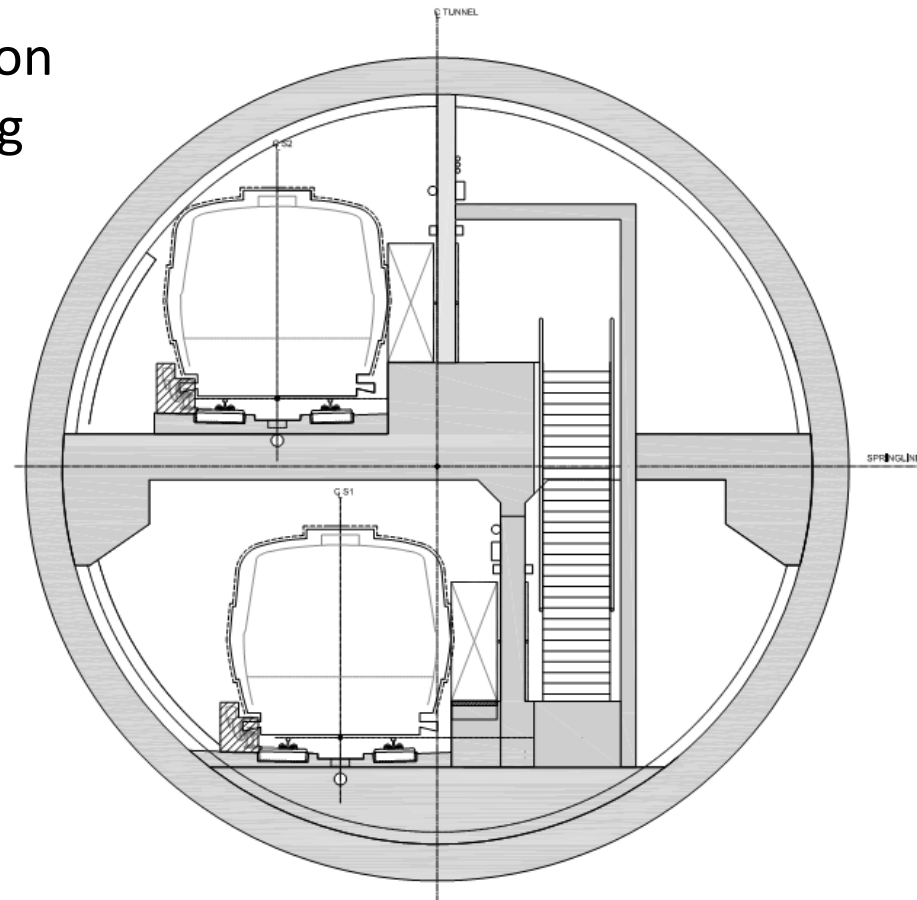


Tunnel Inner Diameter: 41 ft.
Tunnel Outer Diameter: 45 ft.



Tunnel Typical Sections

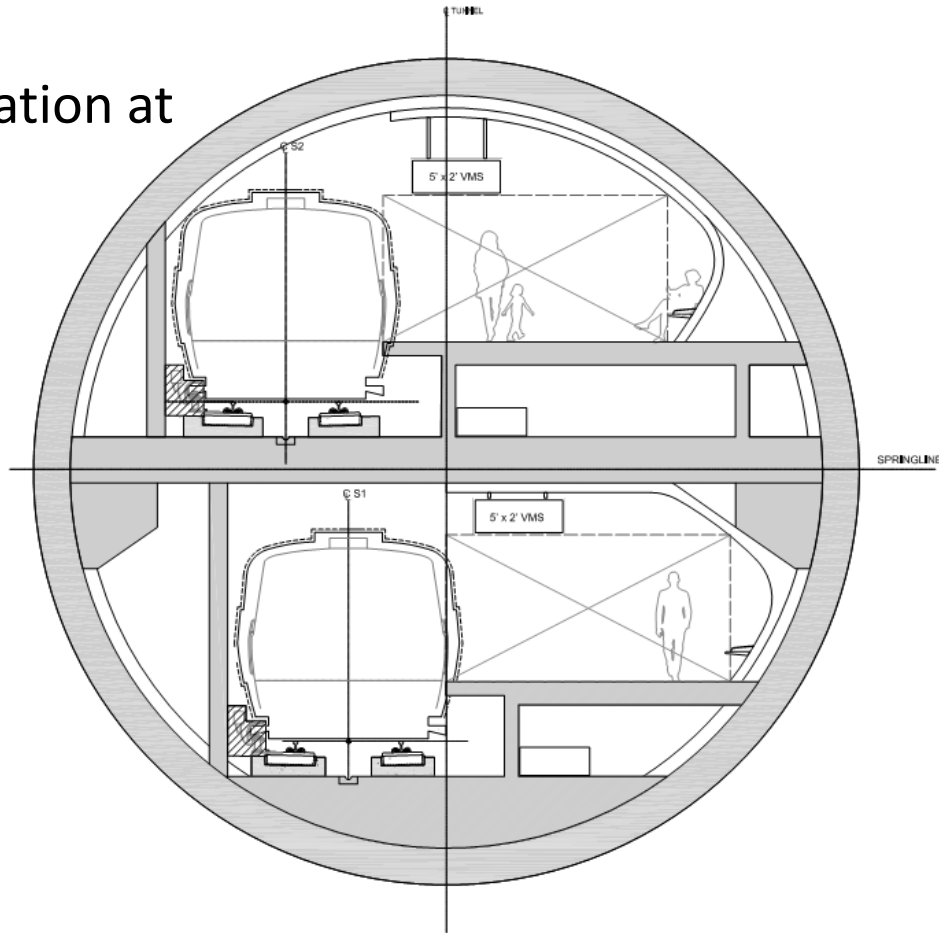
Stacked Configuration
approaching/ exiting
Stations





Tunnel Typical Sections

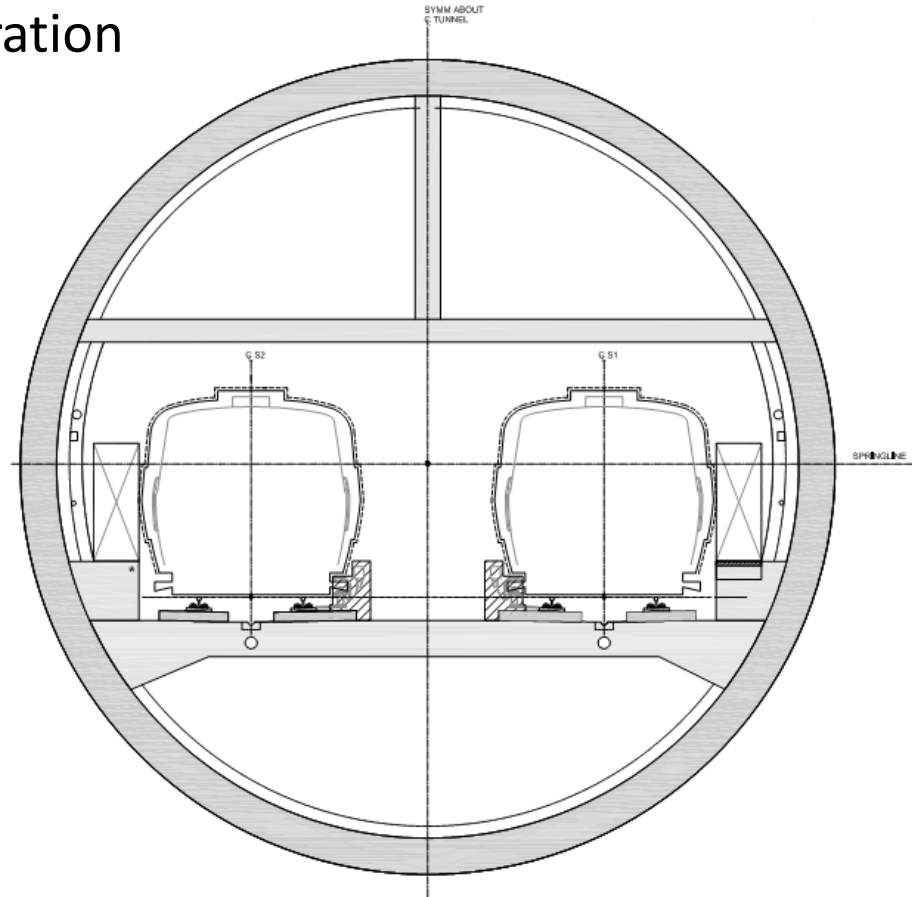
Stacked Configuration at Stations





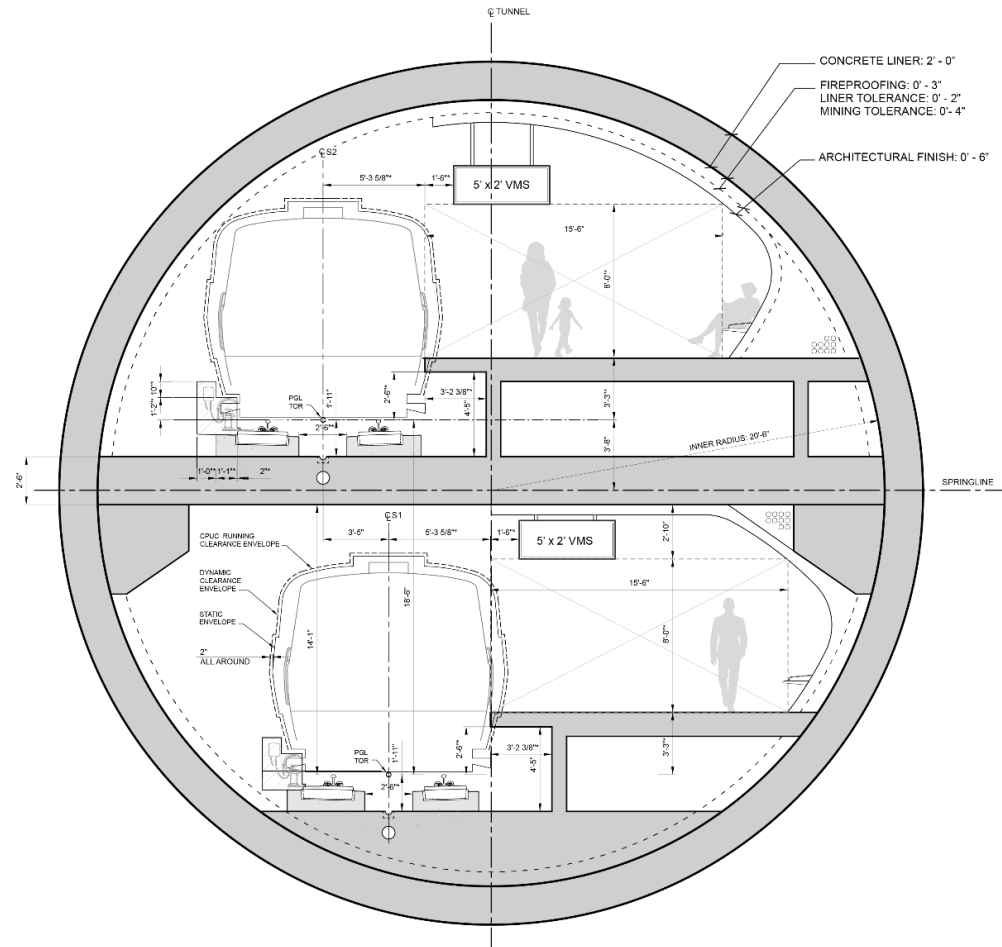
Tunnel Typical Sections

Crossover configuration



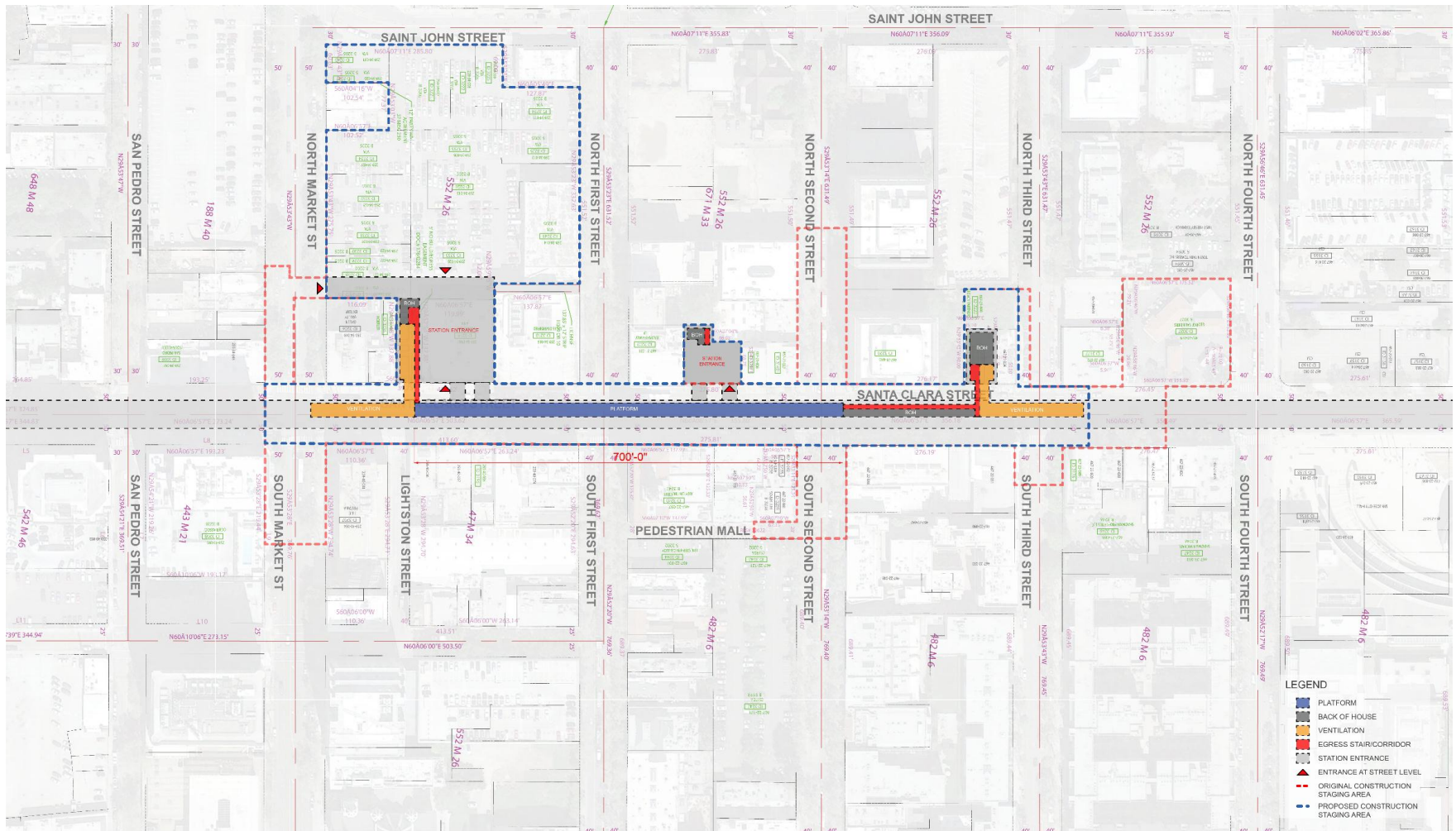


- Unobstructed 15'-6" platform
- Exceeds BFS requirements:
 - 8-foot minimum unobstructed platform
 - 7 square feet/person min. (LOS C)





Station Configuration



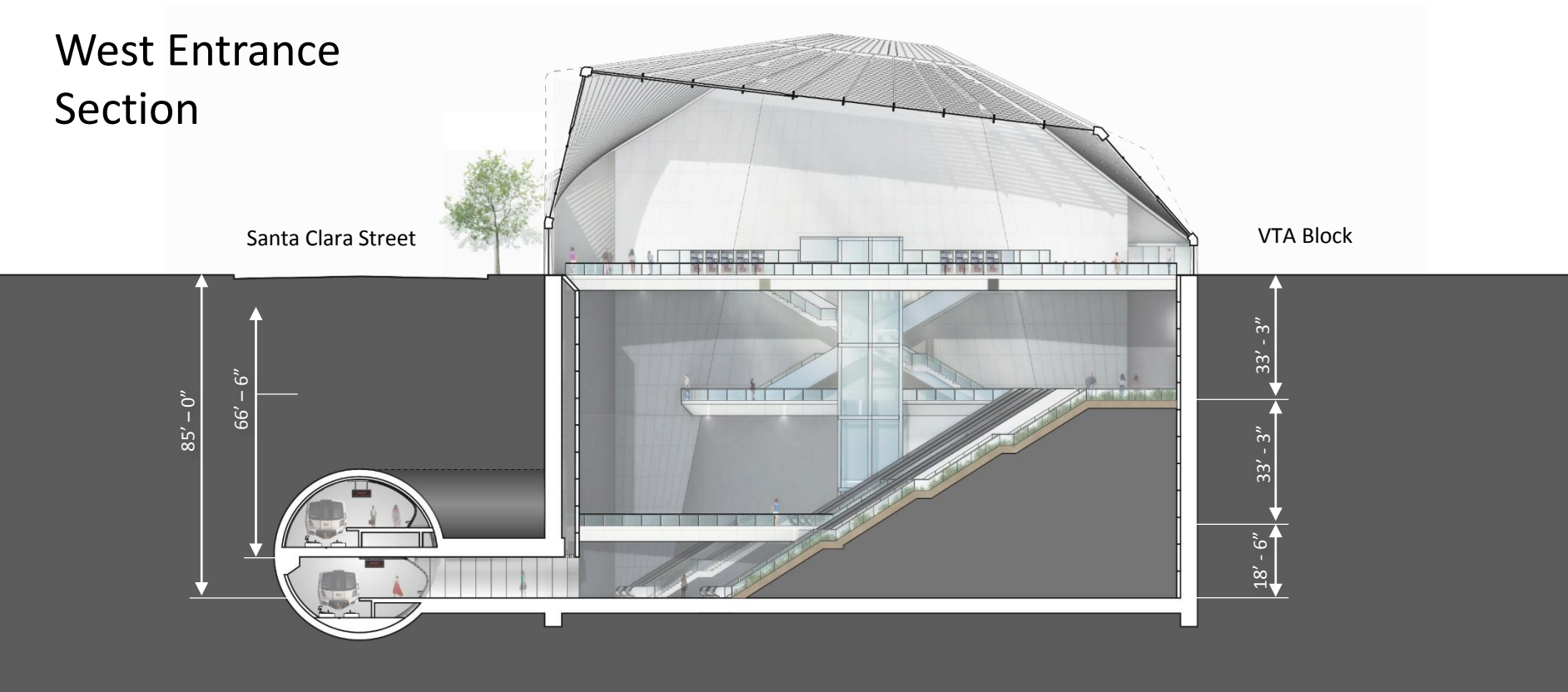
DOWNTOWN SAN JOSE STATION - STREET PLAN





Station Configuration

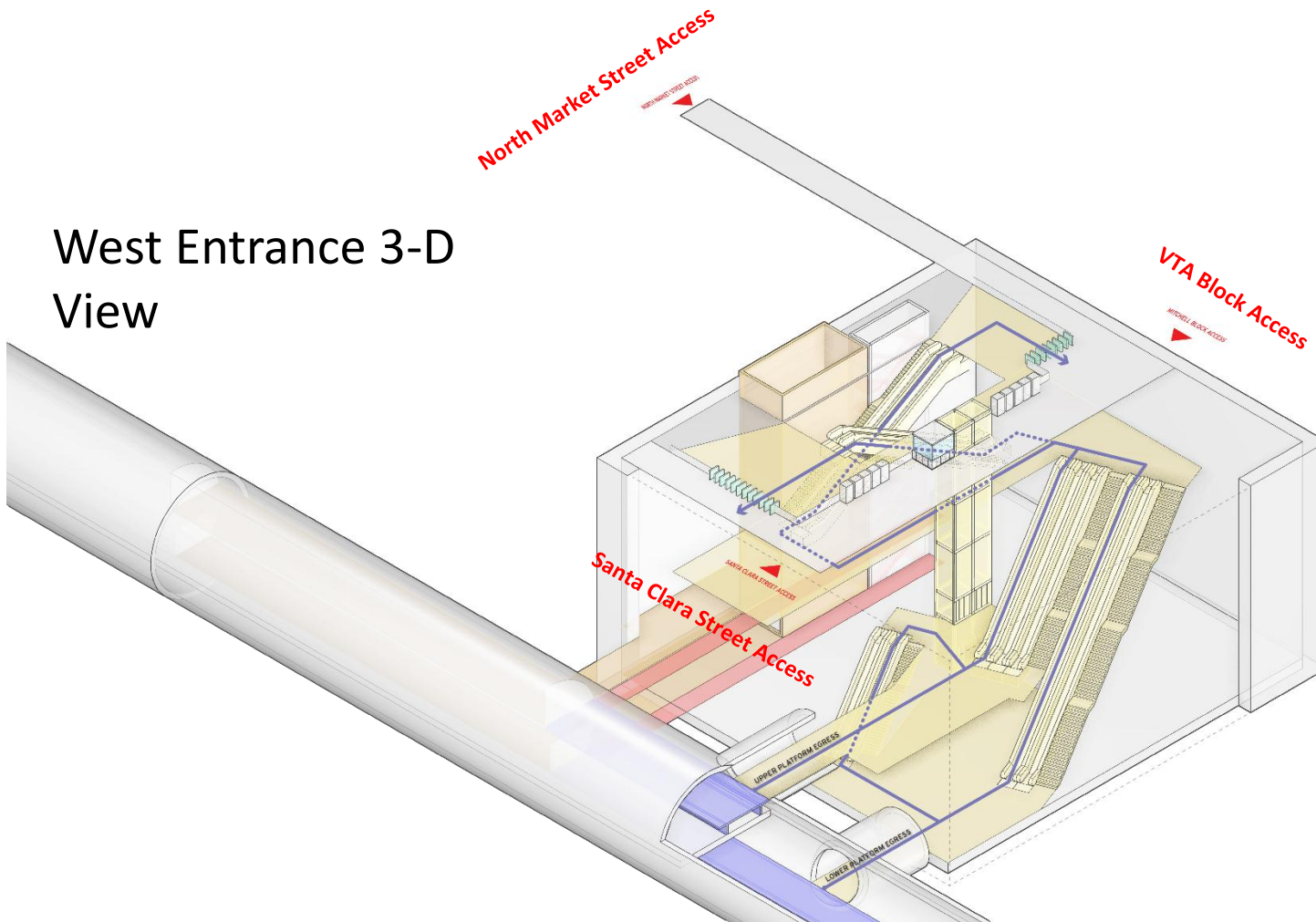
West Entrance Section





Station Configuration

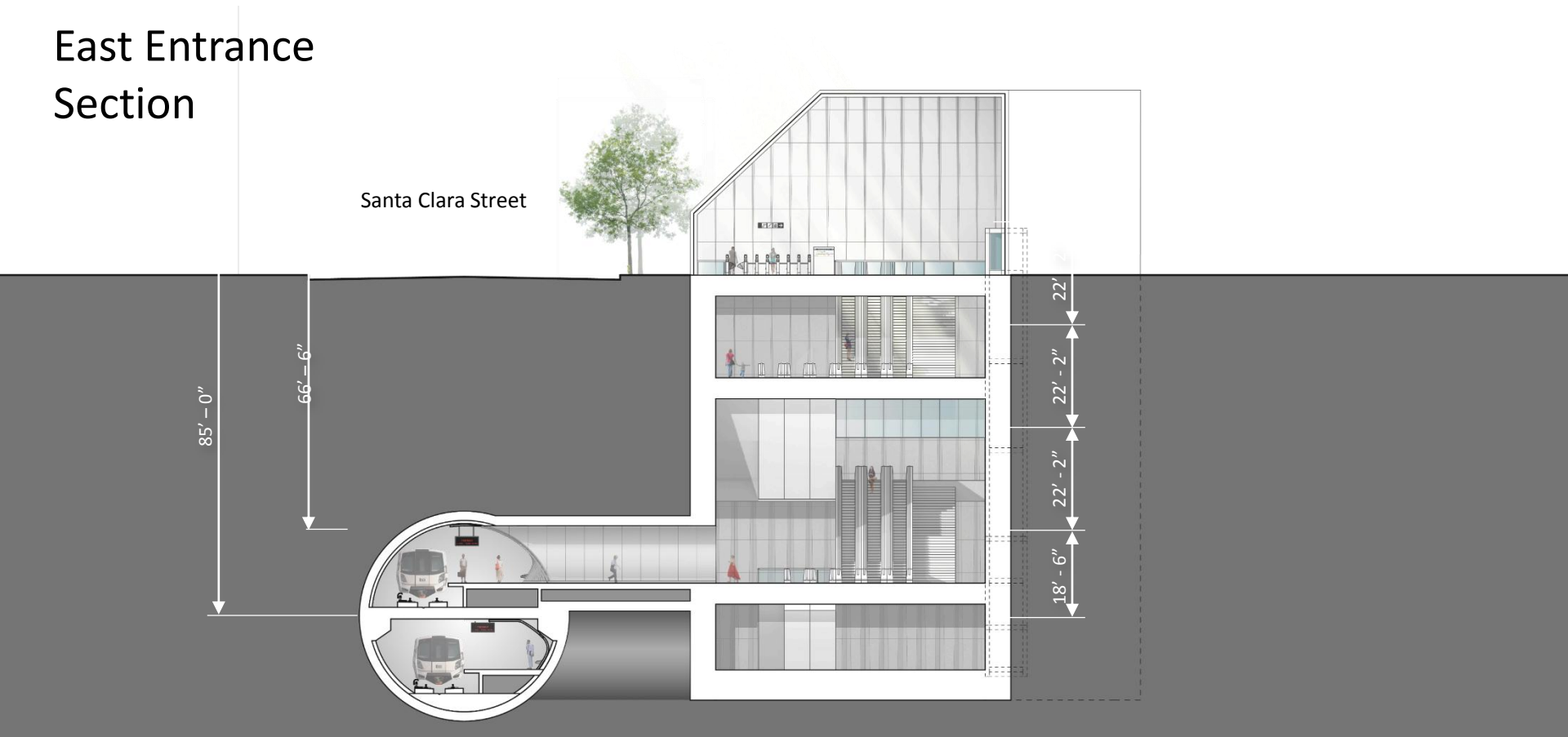
West Entrance 3-D View





Station Configuration

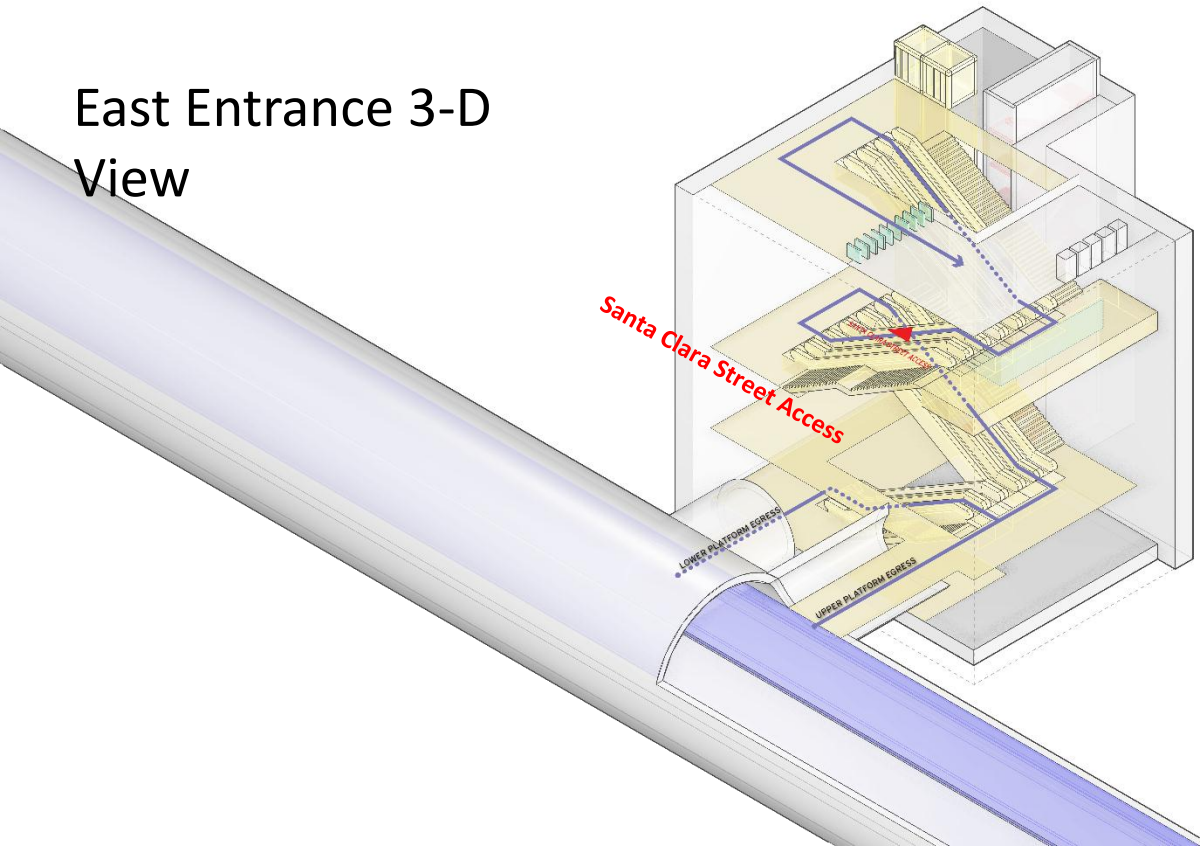
East Entrance Section





Station Configuration

East Entrance 3-D View





Station Interior

West Entrance Rendering- Concept





Tunnel and Station Ventilation

Technical Tasks:

1. Conceptual Ventilation Design
 - Normal Ventilation
 - Emergency Ventilation
2. Assessment of Ventilation System Key Elements
 - Evaluation of Track Crossovers and Mid-Point Ventilation Shafts
 - Mid-Tunnel Ventilation Structures Assessment
3. Computational Fluid Dynamics (CFD) Assessment of Station Ventilation (Prototype and Site Adapted Station)
4. Conceptual Layouts of Ventilation Facilities and Systems: DTSJ Station West
 - Satisfies Tunnel Ventilation Requirements
 - Satisfies Station Ventilation Requirements
 - Space requirements
 - Operating pressures
 - Maintenance access
5. Ventilation System Noise Impacts and Mitigation





Ventilation Analysis

- Purpose
 - Confirm viable ventilation concept
 - Emergency ventilation determines ventilation capacity requirements
 - Develop fire hazard analysis demonstrating patrons can safely self evacuate and first responders can gain access
- Criteria
 - Smoke visibility
 - Temperature control
 - Limit build up of carbon monoxide





Ventilation Summary

- ✓ System ventilation configuration defined
 - Meets industry standards and BFS requirements
 - Opportunities to eliminate intermediate ventilation facilities
- ✓ Downtown station ventilation defined
 - Tunnel ventilation requirements satisfied
 - Station Ventilation Requirements satisfied
 - Space requirements assigned
 - Fan operating pressures confirmed
 - Maintenance access addressed

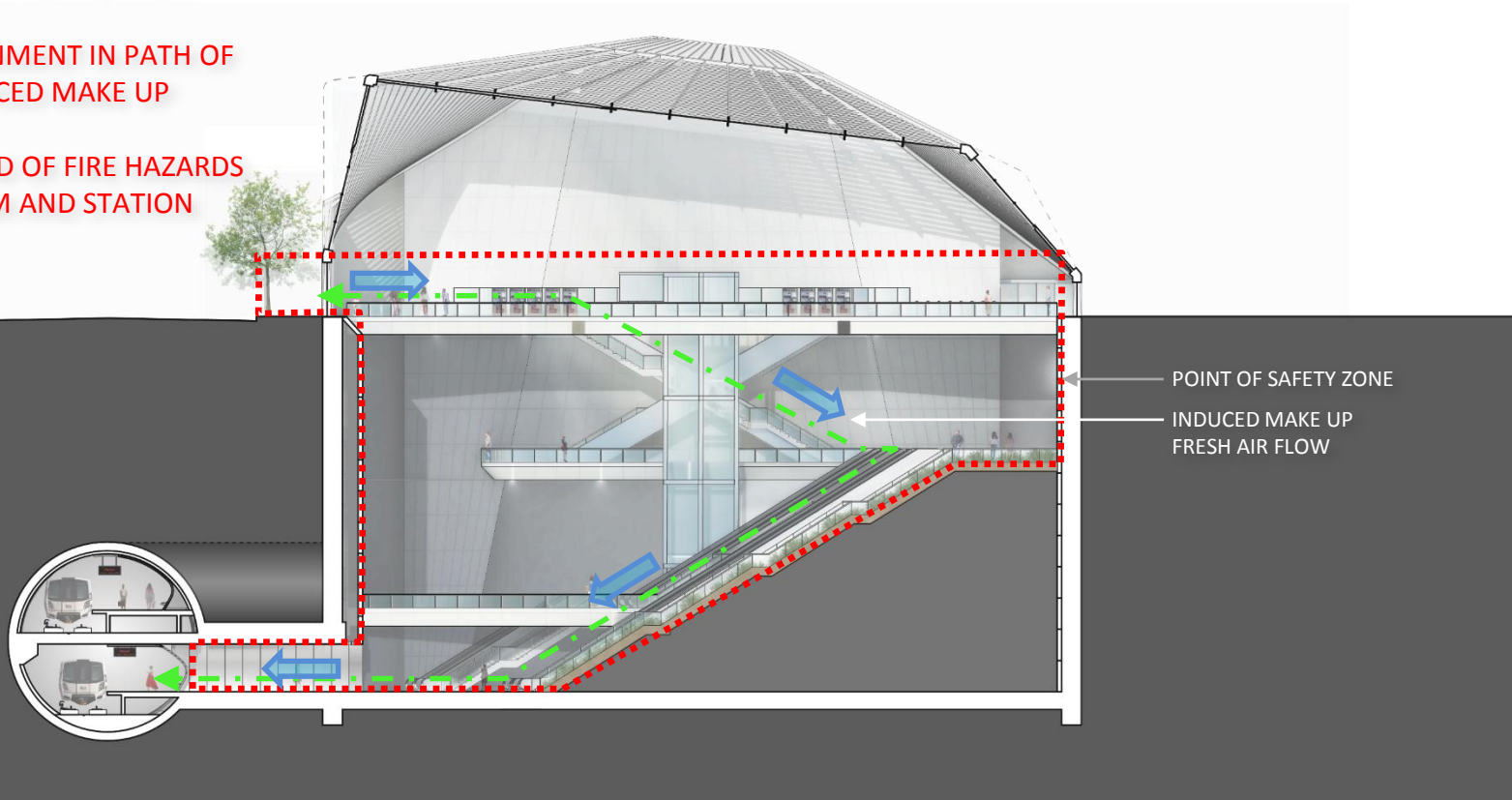


Station Configuration

Point of Safety

FORCED EXHAUST AIR VENTILATION PROVIDES

- TENABLE ENVIRONMENT IN PATH OF EGRESS VIA INDUCED MAKE UP FRESH AIR FLOW
- LIMITS THE SPREAD OF FIRE HAZARDS WITHIN PLATFORM AND STATION AREAS





Emergency Egress

Within Station:

- Key Criteria: NFPA 130 (also reflected in BFS)
 - Clear platforms in 4 minutes or less
 - Reach a “Point of Safety” in 6 minutes or less
- Key Assumptions
 - One peak load train with 2,500 passengers
 - Off-peak ¼ load in opposite direction, 625 passengers
 - Platform loads include delay equal to one headway



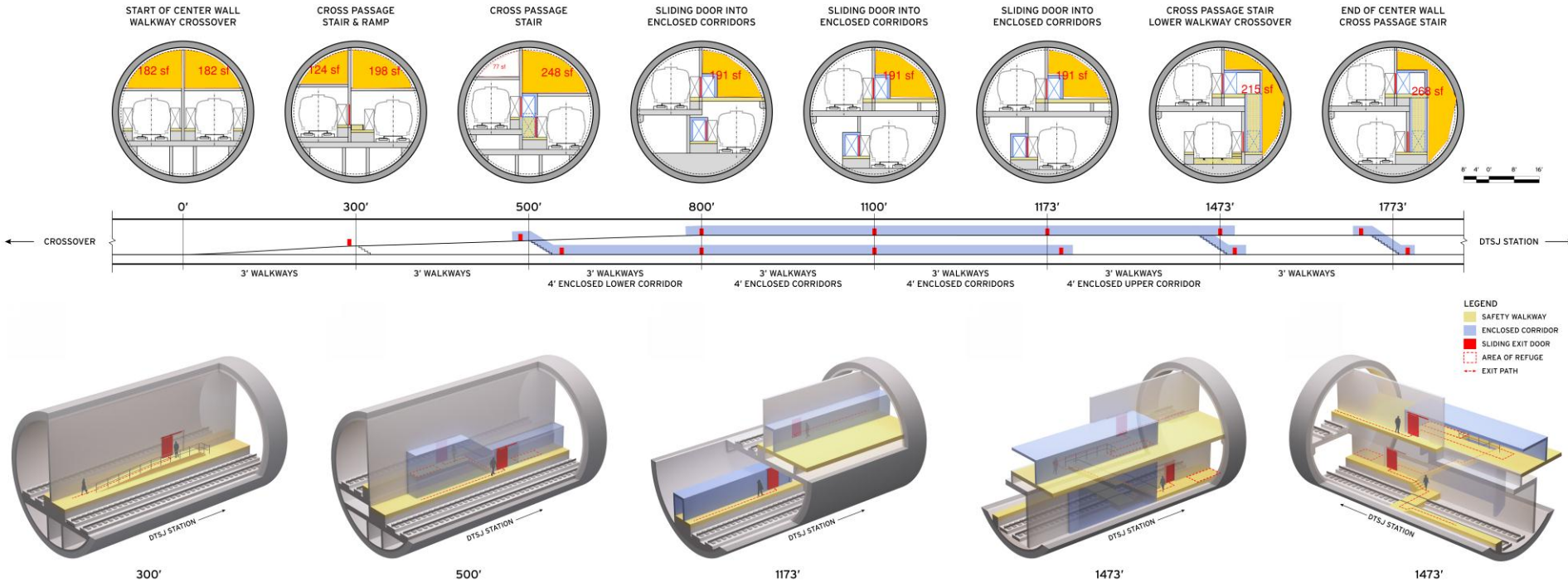
Emergency Egress

Within Running Tunnel:

- BART Facility Standards modification to NFPA 130 Prescriptive Provisions
 - BFS cross-passage spacing 300 feet
 - NFPA 130 cross-passage spacing <800 feet
- Special Flow Conditions Identified along Emergency Walkway
 - 25 cross-passages include stairwell (in stacked section)
 - 51 cross-passages do not include stairwell (in side- by- side section)
- Use of Rescue Train in Emergency

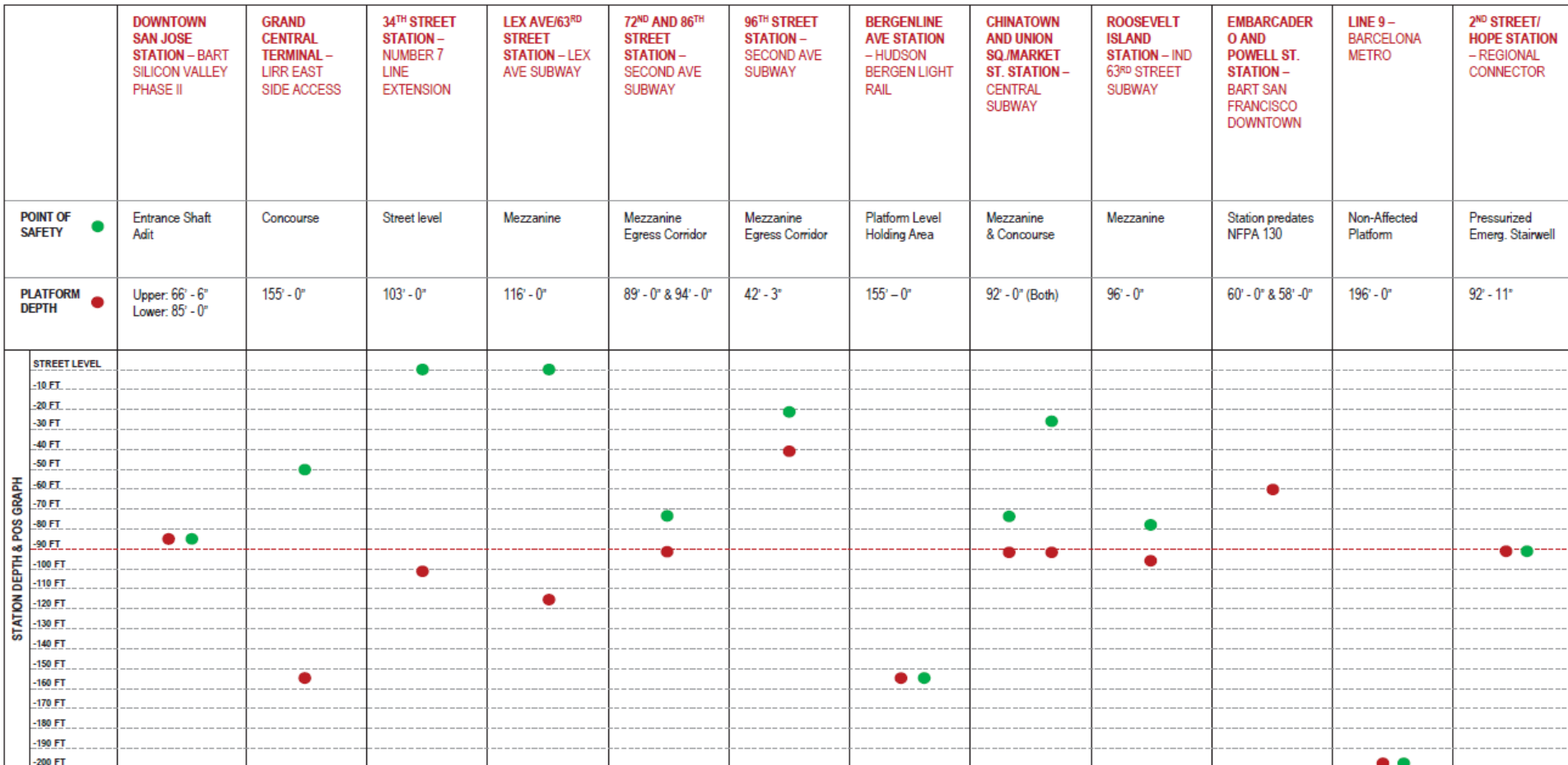


Cross-passages at Transitions



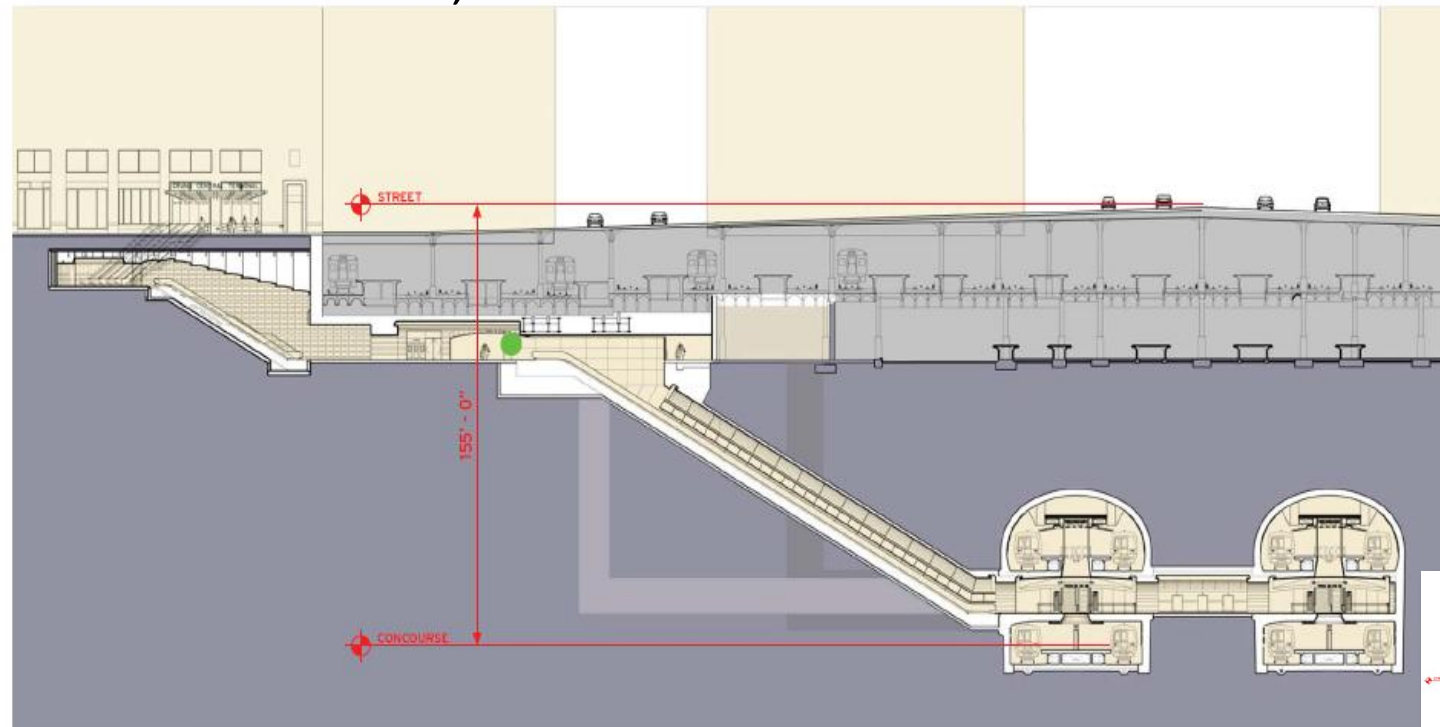
Deeper Transit Stations and Point of Safety

Comparative Analyses



Examples of Deeper Transit Stations in the US

East Side Access, New York



City:
New York, New York

Owner:
Metropolitan Transportation Authority

Estimated Year of Completion:
2022

Platform Depth:
155' - 0"

Point of Safety ● :
LIRR Concourse Level

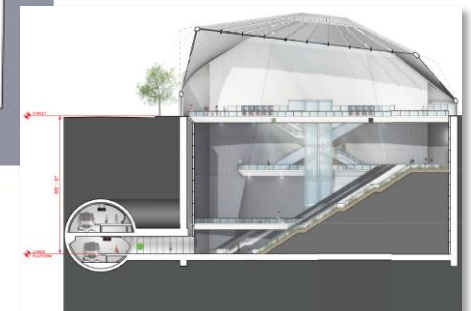


Image Courtesy of AECOM



Examples of Deeper Transit Stations in the US

Second Avenue Subway 72nd Street Station, New York



Image Courtesy of AECOM

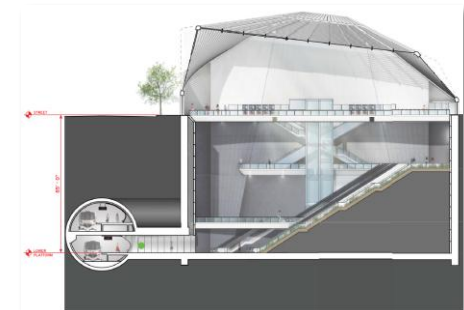
City:
New York, New York

Owner:
Metropolitan Transportation Authority,
New York City Transit

Year Completed:
2017

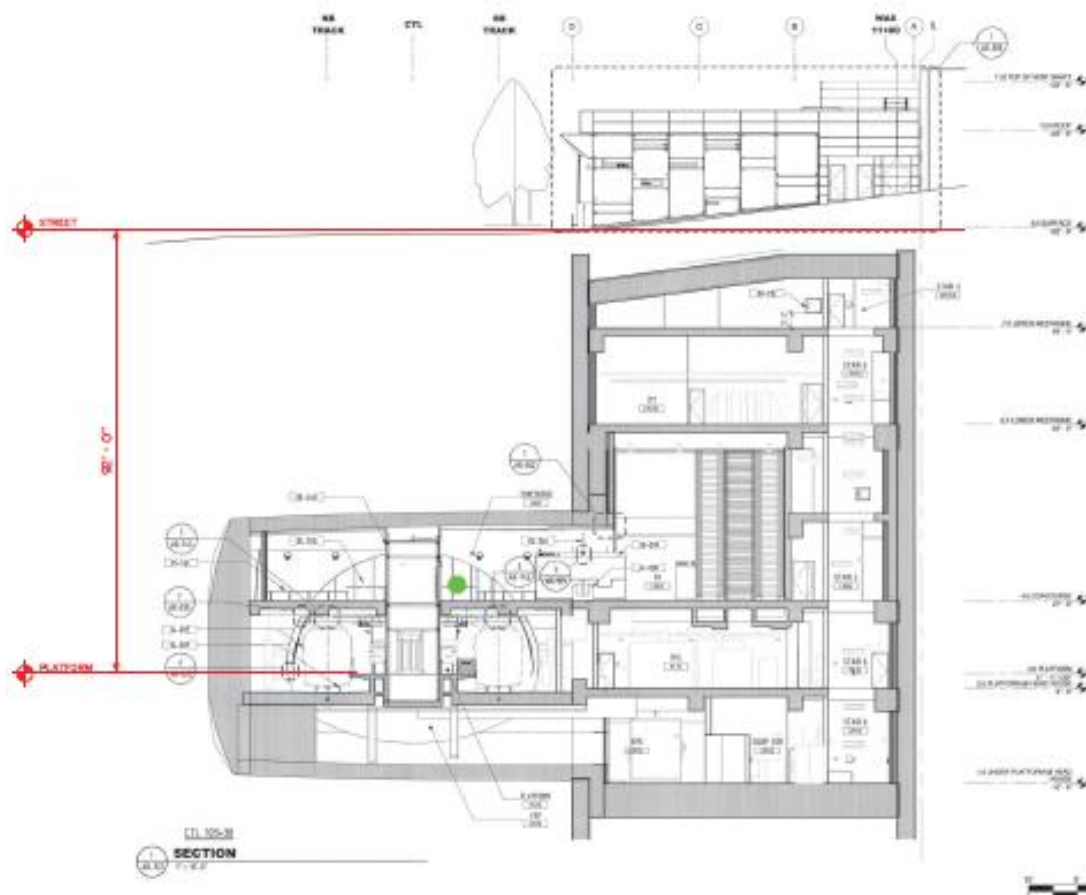
Platform Depth:
89' - 0"

Point of Safety ●:
The concept includes back of the house
egress corridor at Mezzanine Level



Examples of Deeper Transit Stations in the US

Central Subway- Chinatown Station, San Francisco



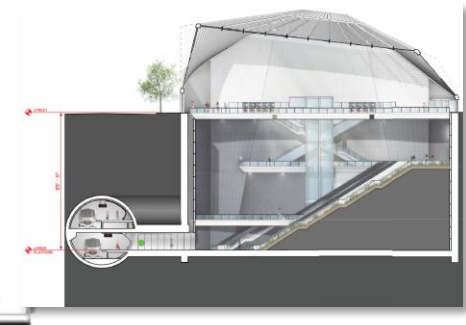
City:
San Francisco, California

Owner:
San Francisco Municipal Transportation
Agency

Estimated Year of Completion:
2018

Platform Depth:
92' - 0"

Point of Safety ● :
Mezzanine



VTA's BART Silicon Valley

Tunneling Risk Assessment

March 13, 2017

Tunneling Methodology

Independent Risk Assessment

- Independent risk assessment of tunneling alternatives under consideration
- Assessment to evaluate risks (cost, schedule, performance) associated with tunneling alternatives
- Scope of work includes:
 - Interviews with technical experts and stakeholders
 - Qualitative & quantitative assessment
 - Development of risk profiles and report
- Proposals received in early January, evaluated by a joint VTA/BART review panel
- Contract awarded to Aldea Services LLC, Maryland
- Study anticipated to be completed in Summer 2017



VTA's BART Silicon Valley

Phase II Supplemental Environmental Impact Statement/ Subsequent Environmental Impact Report Update

March 13, 2017



Summary of Draft SEIS/SEIR Public Comments

- 110 commenters
- 800 comments received
- Comments were generally in these topical areas:
 - alternatives
 - station locations
 - noise and vibration impacts during construction and operation
 - support for the project or various options
 - ventilation structures
 - impacts to historic structures
 - traffic impacts during construction
 - Diridon area parking loss during and after construction



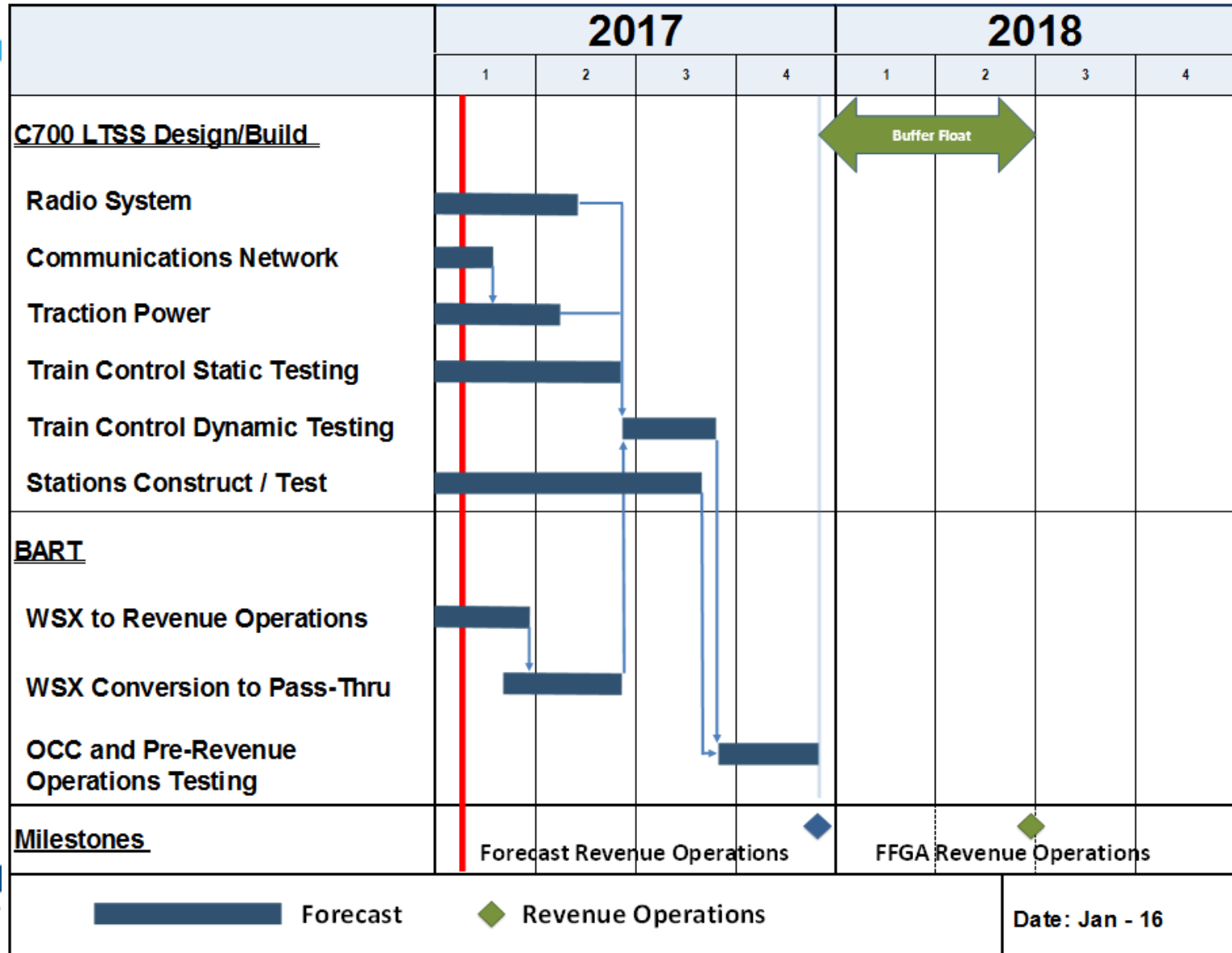
VTA's BART Silicon Valley

Phase I Project Update

March 13, 2017



BSV Phase I Update - Schedule



BSV Phase I Update – Status of Contracts

Contract	Value	NTP	% Comp. ¹	Notes
C610 – Water, Storm and Sewer Util. Relo. at Piper Drive	\$3,130,084	12/22/11	100%	Complete
C750 – SVBX Residential Noise Improvement Program 1	\$758,048	07/15/13	100%	Complete
C751 – SVBX Residential Noise Improvement Program 2	\$771,752	10/21/13	100%	Complete
C752 – SVBX Residential Noise Improvement Program 3	\$715,444	01/20/14	100%	Complete
C753 – SVBX Residential Noise Improvement Program 4	\$1,142,214	04/15/14	100%	Complete
C792 – Environmental Mitigation	\$179,200	06/10/15	100%	Complete
C700 – SVBX Line, Track, Stations, and Systems	\$897,172,959	02/16/12	95%	Construction
C730 – Design/Build Campus Parking Structures	\$91,828,542	10/02/14	99%	Construction
C740 – Milpitas Surface Parking & Roadway Improvements	\$6,038,627	03/13/15	99%	Complete
C742 – Berryessa Station Campus Area and Roadway	\$27,993,153	09/15/15	92%	Construction
C640 – Montague Expy. & S. Milpitas Blvd. Improvements	\$20,370,556	01/11/16	51%	Construction
C754 – SVBX Residential Noise Improvement Program 5	\$155,242	05/16/16	100%	Complete
C671 – VTA Communications Backbone Network	\$4,546,400	07/08/16	33%	Construction
C741 – Milpitas/Berryessa Campus Landscaping	\$5,830,000	04/07/17 ²	0%	Procurement
C650 – Completion of SVBX Civil Elements	\$4,000,000	07/15/17 ³	0%	Procurement

BSV Phase I Update – Program Cost Summary

\$Millions - Year of Expenditure			
SVRT Program Element	Estimate	Incurred To-Date*	Status
SVRT Project Development			
Project Development Through 2009	209.2	209.2	Closed
Project Development 2010 and Ongoing	71.2	66.0	Ongoing
Project Development Total	\$ 280.4	\$ 275.2	
SVRT Corridor Establishment And Maintenance			
CEM Program-wide (CEMPW)	3.0	3.0	Closed
UPRR-Performed Activities (UPRR)	60.6	59.2	Ongoing
Newhall Yard Property (NHY)	42.6	40.7	Ongoing
Mitchell Block Property (MBP)	39.5	34.7	Ongoing
Kato Grade Separation Project (KGS)	56.0	55.1	Closeout
Mission Warren Truck-Rail (MWT)	160.2	151.4	Closeout
Lower Berryessa Creek Project (LBC)	81.2	77.6	Closeout
Montague Reconstruction Project (MRP)	22.0	9.5	Under Construction
Upper Penitencia Creek Trail Connector (UPC)	2.5	1.1	Under Construction
Montague Pedestrian Overcrossing (MPOC)	0.8	0.1	Environmental & Design
Berryessa Garage Solar Panels	2.0	1.8	Substantially Complete
Corridor Establishment And Maintenance Total	\$ 470.4	\$ 434.2	
BART Silicon Valley Extension			
SVBX - Berryessa Extension Project	2,421.3	1,755.2	Under Construction
SVSX - Future Extension to Santa Clara**	4,304.4	148.6	Under Development
Newhall Maintenance Facility**	388.3	25.9	Under Development
BART Core System Modifications (BCS)	264.6	136.8	Ongoing
BART Silicon Valley Extension Total	\$ 7,378.6	\$ 2,066.5	
BART Warm Springs Extension			
Warm Springs Extension (WSX)***	9.5	9.5	VTA Funding Commitment
SVRT PROGRAM TOTALS	\$ 8,138.9	\$ 2,785.4	

* Incurred through February 28, 2016; The totals may differ from SAP totals due to rounding.

** Source: Short Range Transportation Plan FY2014-2023.

*** Program Estimates adjusted to reflect assignment of grant funds appropriated between VTA and BART.

BSV Phase I Update – SVBX Project Cost Summary

SVBX Estimate at Completion - Jan. 2017*

By FTA's Standard Cost Categories (SCC)

SCC	SCC Description	FFGA Estimate	Forecast At Completion	Incurred to Date
10	Guideway and Trackwork Elements	\$ 416.1	\$ 334.7	\$ 326.1
20	Stations, Stops, terminals	\$ 250.3	\$ 262.3	\$ 201.0
30	Support Facilities	\$ 46.5	\$ 63.0	\$ 13.5
40	Sitework and Special Conditions	\$ 220.1	\$ 252.7	\$ 200.5
50	Systems	\$ 260.7	\$ 234.6	\$ 190.2
60	ROW, Land	\$ 261.0	\$ 181.8	\$ 160.2
70	Vehicles	\$ 174.3	\$ 146.3	\$ 14.8
80	Professional Services	\$ 548.3	\$ 592.0	\$ 487.0
Subtotal SCC		\$ 2,177.3	\$ 2,067.4	\$ 1,593.2
90	Unallocated Contingency	\$ 40.2	\$ 150.1	\$ -
100	Finance Charges	\$ 112.5	\$ 112.5	\$ 82.4
Total NSP - New Starts Project		\$ 2,330.0	\$ 2,330.0	\$ 1,675.6
CNPA - Concurrent Non-Project Activities		\$ 91.3	\$ 91.3	\$ 66.6
Total SVBX		\$ 2,421.3	\$ 2,421.3	\$ 1,742.1

*Work in Progress; Costs in Millions

Construction Progress



Construction Progress (cont.)



Construction Progress (cont.)



Construction Progress (cont.)



Construction Progress (cont.)



Solutions
that move you

Ballasted track, systems raceway installation in the guideway near Trade Zone in San Jose.



Construction Progress (cont.)

03/2017



Construction Progress (cont.)

