

TRANSIT PLANNING & OPERATIONS COMMITTEE

Wednesday, September 16, 2015 11:00 AM

VTA Conference Room B-104
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 <u>limited to 2 minutes</u>. 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. ORDERS OF THE DAY - Approve the Consent Agenda

CONSENT AGENDA

- **4.** Approve the Regular Meeting Minutes of August 19, 2015.
- **5.** INFORMATION ITEM Receive the Transit Operations Performance Report: Annual Report (Fiscal Year 2015).

REGULAR AGENDA

- **6.** ACTION ITEM Conduct voting to determine the Committee's vice chairperson for the remainder of 2015.
- 7. INFORMATION ITEM Receive information on the Dynamic Transit Service Pilot Program Implementation.

- **8.** INFORMATION ITEM Receive a report on the October 2015 Transit Service Changes.
- **9.** INFORMATION ITEM Receive the Quarterly Marketing report.
- **10.** INFORMATION ITEM Receive an update on Compressed Natural Gas (CNG) analysis. (Deferred from the August 19, 2015 TP&O Committee meeting.)
- 11. INFORMATION ITEM Receive and discuss information about land use and transportation in the City of Mountain View.

OTHER ITEMS

- **12.** Receive a report on Stadium Events. (Verbal Report)
- 13. Receive a report on VTA's Safety and Emergency Preparedness Program. (Verbal Report) (Keller)
- **14.** Receive a report on the August 2015 Monthly Ridership and Fare Revenue Performance. (Verbal Report)
- **15.** Items of Concern and Referral to Administration.
- **16.** Review Committee Work Plan. (I. Evans)
- **17.** Committee Staff Report. (I. Evans)
- **18.** Determine Consent Agenda for the October 1, 2015 Board of Directors Meeting.
- **19.** Chairperson's Report. (Khamis)
- 20. ANNOUNCEMENTS
- 21. ADJOURN

The Consent Agenda items may be voted on in one motion at the beginning of the meeting under Orders of the Day. If you wish to discuss any of the Consent Agenda items, please request that the item be removed from the Consent Agenda under Orders of the Day, Agenda Item #3.

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.

Disclosure of Campaign Contributions to Board Members (Government Code Section 84308) In accordance with Government Code Section 84308, no VTA Board Member shall accept, solicit, or direct a contribution of more than \$250 from any party, or his or her agent, or from any participant, or his or her agent, while a proceeding involving a license, permit, or other entitlement for use is pending before the agency. Any Board Member who has received a contribution within the preceding 12 months in an amount of more than \$250 from a party or from any agent or participant shall disclose that fact on the record of the proceeding and shall not make, participate in making, or in any way attempt to use his or her official position to influence the decision. A party to a proceeding before VTA shall disclose on the record of the proceeding any contribution in an amount of more than \$250 made within the preceding 12 months by the party, or his or her agent, to any Board Member. No party, or his or her agent, shall make a contribution of more than \$250 to any Board Member during the proceeding and for three months following the date a final decision is rendered by the agency in the proceeding. The foregoing statements are limited in their entirety by the provisions of Section 84308 and parties are urged to consult with their own legal counsel regarding the requirements of the law.

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, the Monday, Tuesday, and Wednesday prior to the meeting. This information is available on VTA's website at http://www.vta.org and also at the meeting.

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



TRANSIT PLANNING & OPERATIONS COMMITTEE

Wednesday, August 19, 2015

MINUTES

CALL TO ORDER

The Regular Meeting of the Transit Planning and Operations (TP&O) Committee was called to order at 11:02 a.m. by Vice Chairperson Khamis in Conference Room B-104, Valley Transportation Authority (VTA), 3331 North First Street, San Jose, California.

1. ROLL CALL

Attendee Name	Title	Status
Johnny Khamis	Vice Chairperson	Present
Rich Larsen	Chairperson	Absent
Sam Liccardo	Member	Present
Ken Yeager	Member	Absent
Jeannie Bruins	Alternate Member	Present
Dave Cortese	Alternate Member	Absent
Raul Peralez	Alternate Member	Absent

^{*}Alternates do not serve unless participating as a Member.

A quorum was present.

2. PUBLIC PRESENTATIONS

Roland Lebrun, Interested Citizen, expressed concern with the quality of Wi-Fi on the light rail. He also expressed concern with the electronic agenda packet, and noted he was denied access to view **Agenda Item #12.**, Receive an update on Compressed Natural Gas (CNG) analysis.

Nuria I. Fernandez, General Manager, referred Mr. Lebrun to Gary Miskell, Chief Information Officer, for follow-up.

Vice Chairperson Khamis suggested the Agenda Item #12 be deferred to the September 2015 meeting.

3. ORDERS OF THE DAY

Vice Chairperson Khamis noted **Agenda Item #12**, Receive a report on Compressed Natural Gas, would be deferred to the September Committee meeting.

M/S/C (Liccardo/Bruins) to accept the Orders of the Day and approve the Consent Agenda.

CONSENT AGENDA

4. Regular Meeting Minutes of March 18, 2015

M/S/C (Liccardo/Bruins) to approve the Regular Meeting Minutes of March 18, 2015.

5. Regular Meeting Minutes of April 15, 2015

M/S/C (Liccardo/Bruins) to approve the Regular Meeting Minutes of April 15, 2015.

6. Regular Meeting Minutes of May 20, 2015

M/S/C (Liccardo/Bruins) to approve the Regular Meeting Minutes of May 20, 2015

7. <u>2015 TP&O Committee Meeting Schedule</u>

M/S/C (Liccardo/Bruins) to approve the 2015 Transit Planning and Operations (TP&O) Committee Meeting Schedule.

8. Transit Capital Projects Semi-Annual Report

M/S/C (**Liccardo/Bruins**) to receive the Transit Capital Projects Semi-Annual Report Ending March 31, 2015.

REGULAR AGENDA

9. Transit Passenger Environment Plan

Adam Burger, Senior Transportation Planner, provided a brief overview of the staff report.

The Committee discussed the flexibility of shelter designs at certain stops.

Member Bruins thanked staff and expressed approval of the project.

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

Public Comment

Mr. Lebrun made the following comments: 1) questioned the costs of the project; 2) shelters need to provide shade and protection from elements; and 3) expressed concerned about the toughness of the new design and suggested bollards be added for safety.

On order of Vice Chairperson Khamis and there being no objection, the Committee received a presentation on the Transit Passenger Environment Plan.

10. US Department of Transportation (USDOT) Final Rule on Reasonable Modification

Jim Unites, Deputy Director, Operations, provided a brief overview of the staff report and a presentation, highlighting: 1) Reasonable accommodation processes; 2) Required reasonable accommodations; 3) Accommodations not required; and 4) Next steps/in-progress by July 13, 2015.

On order of Vice Chairperson Khamis and there being no objection, the Committee received information regarding the US Department of Transportation (USDOT) Final Rule on reasonable modification.

11. **Dynamic Transit Service Pilot**

Greta Helm, Senior Advisor, Business Services, provided a brief overview of the staff report and the pilot program.

Ms. Helm introduced Aiko Cuenco, Transportation Planner III, who provided a presentation and video highlighting; 1) Background; 2) Program goals; 3) Service features; 4) VTA pilot vs. other ridesharing services; 5) Planning study; 6) Proposed service area: Tasman Zone; 7) Priorities in service design; 8) Operations; 9) Proposed fare structure; 10) Marketing and communications; and 11) Next steps.

Members of the Committee made the following comments and suggestions: 1) develop a target market; 2) service to BART/Caltrain Stations may be the best places where VTA will most likely be more competitive; 3) questioned if the goal is to capture current riders or encourage new ridership; 4) incentives businesses can offer their employees for using the service; 5) partnerships with other companies is crucial; 6) contact companies and have them survey their employees to help find out who their riders are; 7) have interoperability with forms of payment; and 8) identify employers who would like to be a part of the launch.

Member Liccardo left the meeting at 12:08 p.m., the quorum was lost, and a Committee of the Whole was declared.

Public Comment

Mr. Lebrun suggested a pilot serving East San Jose, and a pilot contracting with Uber/Lyft to provide discounts for disadvantaged passengers. He also suggested focusing on picking up/dropping off passengers at Caltrain and BART stations.

On order of Vice Chairperson Khamis and there being no objection, the Committee of the Whole received a report on the Dynamic Transit Service Pilot.

12. (Deferred)

Receive an update on Compressed Natural Gas (CNG) analysis.

OTHER ITEMS

13. Stadium Events

Michael Hursh, Chief Operating Officer and Staff Liaison, provided a brief report highlighting the following: 1) first 49er event; 2) 92 special events for FY2015 carrying 498,000 passengers; and 3) new challenges for the year including the first Thursday night game and first Monday night game at Levi's Stadium.

On order of Vice Chairperson Khamis and there being no objection, the Committee of the Whole received a report on Stadium Events.

14. Ridership Report

Joonie Tolosa, Manager, Operations Analysis, Reporting & Systems, provided a brief overview of the July 2015 Monthly Ridership and Fare Revenue Performance noting the impact on light rail ridership due to closed Montague Station and the Mountain View Double-Track work.

Member Bruins commented on the lack of parking and transit options in Mountain View.

Ms. Fernandez noted staff is aware of the issues and is working with Mountain View to study them but a plan has not been put in place.

Public Comment

Mr. Lebrun expressed support for the Double-Track project and for designing spaces for additional parking.

On order of Vice Chairperson Khamis and there being no objection, the Committee of the Whole received the Ridership Report and Fare Revenue Performance.

15. Items of Concern and Referral to Administration

Vice Chairperson Khamis made the following referrals to staff: 1) He would like to see a feasibility study done to expand Highway 87 to I-280 in an effort to relieve traffic congestion; 2) noted the City of San Jose has a new app that speeds graffiti removal time to within 48 hours of being reported. He requested staff look into having something similar for graffiti removal at the transit stations; and 3) noted the City of San Jose's pilot program with anyCOMM Corporation, which places nodes on light poles that can provide Wi-Fi, assist with traffic and signal control, detect sound, and have various other capabilities. He requested feedback from staff on their thoughts about implementing it for VTA.

16. Review Committee Work Plan

On order of Vice Chairperson Khamis and there being no objection, the Committee of the Whole reviewed the Committee Work Plan.

17. <u>Committee Staff Report</u>

There was no Committee Staff Report.

18. <u>Determine Consent Agenda for the September 3, 2015, Board of Directors Meeting</u>

CONSENT:

Agenda Item #8., Receive the Transit Capital Projects Semi-Annual Report

Agenda Item #9., Receive a presentation on the Transit Passenger Environment Plan

Agenda Item #11., Receive a report on the Dynamic Transit Service Pilot

REGULAR:

None

19. <u>Chairperson's Report</u>

There was no Chairperson's Report.

20. Announcements

There were no Announcements.

21. ADJOURNMENT

On order of Vice Chairperson Khamis and there being no objection, the meeting was adjourned at 12:29 p.m.

Respectfully submitted,

Menominee L. McCarter, Board Assistant VTA Office of the Board Secretary



Date: September 9, 2015 Current Meeting: September 16, 2015 Board Meeting: N/A

BOARD MEMORANDUM

TO: Santa Clara Valley Transportation Authority

Transit Planning & Operations Committee

THROUGH: General Manager, Nuria I. Fernandez

FROM: Chief Operating Officer, Inez Evans

SUBJECT: Transit Operations Performance Report - FY2015

FOR INFORMATION ONLY

BACKGROUND:

The FY 2015 Annual Transit Operations Performance Report presents the Fiscal Year's (July 2014-June 2015) key performance information for VTA Operations. This report is routinely produced after each quarter and at the end of the fiscal year. A summary of the FY 2015 Annual Transit Operations Performance Report follows.

DISCUSSION:

Ridership

Bus ridership for FY2015 totaled 32.62 million, an increase of 0.5% compared to FY2014. Average weekday ridership was 106,214, up 0.2% compared to FY2014.

Light rail ridership recorded 11.32 million boardings in FY2015, an increase of 3.4% compared to the prior fiscal year. Average weekday ridership was 34,935, down 0.2% from FY2014. Average weekend ridership rose significantly due to events at Levis & Avaya Stadiums with Saturday up by 17.6% and Sunday up by 19.8%.

Overall, system ridership (bus and rail) was up 1.2% at 43.94 million. Average weekday ridership increased 0.1%, from 140,981 last year to 141,149 this year. Average Saturday ridership was 80,025 up by 5.3% and average Sunday ridership was 65,575 up by 7.7%. This was primarily due to events at Levis and Avaya stadiums.

Special Event Service: This is the first year of events and service to Levi's Stadium and the second quarter of service to the new Avaya Stadium. VTA provided service to 31 stadium events during FY2015 – eight at Avaya and 23 at Levi's. Events at Levi's Stadium included football games, concerts, an outdoor San Jose Sharks game, and WrestleMania, which was considered an excellent preparation for Super Bowl 50 in 2016. Overall, Levi's stadium has contributed significantly to ridership increases, especially during the weekends, with a total of 404,227 riders from the 23 events and an average of 17,575 riders. Of the 404,227 riders, 39,772

riders were on weekdays, 133,075 riders rode Saturday and 231,380 riders rode Sunday. Express bus service ridership to Avaya Stadium averaged 1,507, with a total of 12,052 riders from the eight events.

Year	Month	Riders (Levi's)	Events	Average per event
2014	August	56,174	3	18,725
2014	September	53,448	3	17,816
2014	October	38,018	2	19,009
2014	November	59,741	3	19,914
2014	December	62,016	4	15,504
2015	February	31,948	1	31,948
2015	March	23,662	1	23,662
2015	April	12,798	2	6,399
2015	May	17,456	2	8,728
2015	June	48,966	2	24,483
Averag	e per event	404,227	23	17,575
Year	Month	Riders (Avaya)		Average per event
2015	February	807	1	807
2015	March	1,861	1	1,861
2015	April	4,338	2	2,169
2015	May	2,762	2	1,381
2015	June	2,284	2	1,142
Averag	e per event	12,052	8	1,507

Key Performance Indicators

Service reliability performance for the system (both bus and light rail) in FY2015 was 99.67%, same as FY2014. Bus on-time performance was 85.6%, down slightly from 85.9% last year. Light rail on-time performance was 77.4%, down from last year's 85.4%. This was primarily due to continuous signal issues at the City of Santa Clara segment of the line.

Bus recorded 9,890 miles between major mechanical schedule losses, down from 9,964 in FY 2014, but exceeding the goal of 8,000 miles. Light rail recorded 20,292 miles between major mechanical schedule losses, down from 37,390 in FY2014, and did not meet the goal of 40,000 miles. This was primarily due to an increase in mechanical rail calls during the period. Absenteeism goals were met in all categories except Way, Power, and Signal staff.

Paratransit

Paratransit ridership decreased by 1.0%, from 727,688 in FY 2014 to 720,617 in FY 2015. The number of active Paratransit customers decreased by 7.8%.

VTA's Paratransit program is meeting or exceeding all of its performance goals. Passengers per revenue hour was 2.6, exceeding the goal of 2.4. Net cost per passenger trip was \$24.28, 9.2% less than the goal of \$26.75. The net cost per trip increased 4.8% compared to FY 2014 in response to planned contractual increases for service vendors, maintenance services, and for basic price increases in goods and services in FY2015.

Farebox recovery was 15.7%, up 10% from last year.

Inter-Agency Partners and Contracted Services

All of VTA's Inter-agency partners and contracted services, except Dumbarton Express, showed increased ridership results for FY2015:

- Dumbarton Express ridership was 305,877, down 4.3%.
- Highway 17 Express ridership was 378,084, up 3.5%.
- Monterey-San Jose Express ridership was 30,818, up 2.4%.
- ACE ridership was 1,204,568, up 9.0%.
- Caltrain ridership was 18.5 million, up 8.5%.
- ACE shuttle ridership was 417,040, up 8.9%.
- Capitol Corridor ridership was 1.46 million, up 3.8%.

Prepared By: Lalitha Konanur Memo No. 4764

Transit Operations Performance Report

FY 2015 Annual Report (July 1, 2014 - June 30, 2015)



Transit Operations Performance Report

FY 2015 Annual Report (July 1, 2014 – June 30, 2015)

Santa Clara Valley Transportation Authority FY 2015 Annual Transit Operations Performance Report

TABLE OF CONTENTS

Executive Summary	
Summary of Performance	1
Event Highlights	3
Key Performance Indicators	9
Ridership Summary	10
Route Performance	
Route details	11
Boardings Per Revenue Hour	12
Average Peak Load (Express)	16
Route Productivity	17
Paratransit Operating Statistics	25
Glossarv	

Prepared by: Operations Analysis, Reporting & Systems

Executive Summary

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY SUMMARY OF PERFORMANCE

FY 2015 Annual Transit Operations Performance Report

Ridership (page 10 of the report)

Bus ridership for FY2015 totaled 32.62 million, an increase of 0.5% compared to FY2014. Average weekday ridership was 106,214, up 0.2% compared to FY2014.

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Overall, system ridership (bus and rail) was up 1.2% at 43.95 million. Average weekday ridership increased 0.1%, from 140,981 last year to 141,149 this year. Average Saturday ridership was 80,025 up by 5.3% and average Sunday ridership was 65,575 up by 7.7%. This was primarily due to events at Levis and Avaya stadiums.

Special Event Service: This is the first year of events and service to Levi's Stadium and the second quarter of service to the new Avaya Stadium. A total of 31 stadium events have been recorded through the fiscal year – eight at Avaya and 23 at Levi's. Events at Levi's Stadium included football games, concerts, an outdoor San Jose Sharks game, and Wrestlemania, which was considered an excellent preparation for Super Bowl 50 in 2016. Overall, Levi's stadium has contributed significantly to ridership increases, especially during the weekends, with a total of 404,227 riders from the 23 events and an average of 17,575 riders. Of the 404,227 riders, 39,772 riders were on weekdays, 133,075 riders rode Saturday and 231,380 riders rode Sunday. Express bus service ridership to Avaya Stadium averaged 1,507, with a total of 12,052 riders from the eight events.

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Key Performance Indicators (page 9 of the report)

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Absenteeism goals were met in all categories except Way, Power, and Signal staff.

Paratransit (page 25 of the report)

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VTA's paratransit program is meeting or exceeding all of its performance goals. Passengers per revenue hour was 2.6, exceeding the goal of 2.4. Net cost per passenger trip was \$24.28, 9.2% less than the goal of \$26.75. The net cost per trip increased 4.8% compared to FY 2014 in response to planned contractual increases for service vendors, maintenance services, and for basic price increases in goods and services in FY2015. Farebox recovery was 15.7%, up 10% from last year.

Inter-Agency Partners and Contracted Services (page 10 of the report)

All of VTA's Inter-agency partners and contracted services, except Dumbarton Express, showed increased ridership results for FY2015:

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SANTA CLARA VALLEY TRANSPORTATION AUTHORITY EVENT HIGHLIGHTS

FY 2015 Annual Transit Operations Performance Report (July 1, 2014 to June 30, 2015)

This section shows events that can affect normal service operations and system ridership. Ridership historically follows employment trends in the Valley, for example. Weather, public events, strikes, traffic, construction, new service, area gasoline prices, and other changes to our operating environment also affect system ridership and service conditions.

July 4, 2014 – Due to the fireworks event in downtown San Jose, VTA light rail service was extended to 11:30 p.m.

July 7, 2014 – VTA quarterly service changes are implemented. One major change adds Saturday service every 15 minutes from 9:00 a.m. to 6:00 p.m. for Line 323.

July 25, 2014 – Spare the Air Day.

July 30, 2014 – PG&E Flip the Switch Day declared due to high temperatures.

July 2014 – Service changes and reroutes were in effect due to the Morgan Hill Cruise'n Show and Parade, The Rotary Centennial Fireworks Show in San Jose, Sunnyvale Music in the Market, the Thursday Night Live Summer Concert Series in Mountain View, and construction projects in Morgan Hill and San Jose.

July 2014 – Santa Clara County unemployment rate was 5.9%.

July 2014 – There was no measurable rainfall in July.

July 2014 – Unleaded fuel averaged \$4.06 a gallon.

August 1, 2014 – Spare the Air Day.

August 2, 2014 – First event at Levi's Stadium – Major League Soccer – San Jose Earthquakes vs. Seattle Sounders.

August 6, 2014 – Warren Avenue in Southern Fremont reopens to traffic.

August 13, 2014 – Cisco Systems announces layoffs of 6,000 workers, 900 in San Jose.

August 17, 2014 – First (pre-season) San Francisco '49ers football game at Levi's Stadium.

August 24, 2014 – A 6.1 magnitude earthquake hits Napa. Caltrain service is delayed connecting to VTA for Levi's Stadium football game due to track inspections. Local VTA service is not affected.

August 2014 – Service changes and reroutes were in effect due to the Thursday Night Live Summer Concert Series in Mountain View, Jazz Summer Fest in San Jose, and construction projects in Mountain View and San Jose.

August 2014 – Santa Clara County unemployment rate was 5.5%.

August 2014 – There was no measurable rainfall in August.

August 2014 – Unleaded fuel averaged \$3.93 a gallon.

September 11-12, 2014 – Spare the Air Days.

September 14, 2014 – '49ers Opening Day at Levi's Stadium. 9,400 attendees ride VTA to the game.

September 30, 2014 – Stevens Creek Boulevard/I-880 interchange opens.

September 2014 – Service changes and reroutes were in effect due to the South First Friday Street Market in San Jose; the Mountain View Art & Wine Festival; the Morgan Hill Auto Show; the Willow Glen Founders' Day Parade; the National Drive Electric Week Parade in Cupertino; construction on the Santa Clara Alum Rock Bus Rapid Transit project on Alum Rock Avenue; and construction projects in Gilroy, San Jose, and Palo Alto.

September 2014 – Santa Clara County unemployment rate was 5.2%.

September 2014 – Rainfall was 200% of normal.

September 2014 – Unleaded fuel averaged \$3.79 a gallon.

October 3, 2014 – Spare the Air Day.

October 5, 2014 – Regular game at Levi's Stadium, '49ers vs. Philadelphia Eagles

October 10, 2014 – Cisco Systems layoffs affect 903 workers in San Jose.

October 17, 2014 – Advanced Micro Devices (AMD) announces layoffs of 7% of its workforce (approximately 710 workers).

October 24, 2014 – College football game at Levi's Stadium, Cal Bears vs. Oregon Ducks.

October 2014 – Service changes and reroutes were in effect due to a memorial event for former San Jose Police Chief McNamara; the annual Rock & Roll Half Marathon in San Jose; parades in Gilroy, Santa Clara, and Cupertino; and various construction projects in San Jose.

October 2014 – Santa Clara County unemployment rate was 5.1%.

October 2014 – Rainfall was 78% of normal.

October 2014 – Unleaded fuel averaged \$3.53 per gallon.

November 2, 2014 – Regular game at Levi's Stadium, '49ers vs. St. Louis Rams.

November 7, 2014 – Work began on double-tracking light rail between Mountain View and Whisman stations.

November 23, 2014 – Regular game at Levi's Stadium, '49ers vs. Washington Redskins.

November 9 and 25-27, 2014 – Winter Spare the Air Days.

November 27, 2014 – Regular game at Levi's Stadium, '49ers vs. Seattle Seahawks.

November 28, 2014 – VTA's Historic Holly Trolley Historic holiday service begins.

November 2014 – Service changes and reroutes were in effect due to the Morgan Hill Marathon; the annual Turkey Trot in San Jose; events at Levi's Stadium; and construction projects in San Jose, Sunnyvale, and Palo Alto. A major gas leak in San Jose also caused disruption of service at the Downtown Customer Service Center and reroutes in downtown San Jose for several days.

November 2014 – Santa Clara County unemployment rate was 5.1%.

November 2014 – Rainfall was 93% of normal.

November 2014 – Unleaded fuel averaged \$3.17 per gallon.

December 5, 2014 – PAC 12 Championship football game at Levi's Stadium.

December 11, 2014 – Major storm hits Bay Area. VTA Lines 22, 55, 63, 522, 58, and light rail in the downtown San Jose area were affected due to flooding.

December 20, 2014 – Regular game at Levi's Stadium, '49ers vs. San Diego Chargers.

December 28, 2014 – Regular game at Levi's Stadium, '49ers vs. Arizona Cardinals.

December 28-29, 2014 – Winter Spare the Air Days.

December 29, 2014 – Qualcomm announces layoffs affecting more than 100 San Jose and Santa Clara workers.

December 30, 2014 – Foster Farms Bowl college football game at Levi's Stadium.

December 2014 – Service changes and reroutes were in effect due to the Children's Holiday Christmas Parade in Los Gatos; Christmas tree lighting event in Sunnyvale; Holiday Parade in Gilroy; Hussain Day Procession in San Jose; Levi's Stadium events; and construction projects in San Jose and Sunnyvale.

December 2014 – Santa Clara County unemployment rate was 4.5%.

December 2014 – Rainfall was 297% of normal.

December 2014 – Unleaded fuel averaged \$2.86 per gallon.

January 2-12, 15-17, and 24-25, 2015 – Winter Spare the Air Days – an unprecedented 16 days.

January 5, 2015 – VTA adds hours to weekday and Saturday service and adds all-new Sunday service to Line 323.

January 5, 2015 – Google-funded Mountain View Community Shuttle begins service.

January 26, 2015 – Nine-month closure of Sierra at Lundy in San Jose begins for BART construction.

January 28, 2015 – Citrix announces 900 job cuts or 10% of its workforce.

January 2015 – Service changes and reroutes were in effect due to Levi's Stadium events, bus stop relocations, police activity, and construction projects in San Jose and Palo Alto.

January 2015 – Santa Clara County unemployment rate was 4.7%.

January 2015 – Rainfall was 1% of normal.

January 2015 – Unleaded fuel averaged \$2.57 per gallon.

February 2, 2015 – EBay and PayPal cut 2,500 jobs (7% of workforce).

February 3, 2015 – Winter Spare the Air Day.

February 4-5, 2015 – Palo Alto Transit Center closed overnight for maintenance work.

February 5, 2015 – New Eastridge Transit Center opened.

February 28, 2015 – Avaya Stadium opening event and VTA Express service to Earthquakes' soccer games begins.

February 2015 – Service changes and reroutes were in effect due to the San Jose 408k Run; Cupid's Undie Run; Levi's Stadium events; rail rehab work; street closures; police activity; and construction projects in San Jose and Mountain View.

February 2015 – Santa Clara County unemployment rate was 4.5%.

February 2015 – Rainfall was 56% of normal.

February 2015 – Unleaded fuel averaged \$2.72 per gallon.

March 12, 2015 – Cypress Semiconductor and Spansion announce 1,600 layoffs.

March 16, 2015 – Evelyn Light Rail Station closes permanently for double-tracking project.

March 23, 2015 – Montague Light Rail Station closes for 5 months for BART construction.

March 29, 2015 – WWE Wrestlemania at Levi's Stadium draws record light rail event ridership.

February 2015 – Service changes and reroutes were in effect due to Levi's Stadium events; street closures; police activity; and construction projects in San Jose.

March 2015 – Santa Clara County unemployment rate was 4.2%.

March 2015 – Rainfall was 7% of normal.

March 2015 – Unleaded fuel averaged \$3.31 per gallon.

April 2015 – There were a number of light rail service impacts due to the double-tracking work in Mountain View and non-VTA accidents on the trackways.

April 2015 – Bus service reroutes occurred due to construction, bus stop relocations, police activity, the Nihonmachi Run, Mountain View Downtown Spring event, The Great Race, and temporary street closures.

April 7, 2015 – An unusual spring storm with high winds dumped more than $1\frac{1}{2}$ inches of rain, hail, and a dusting of snow on Bay Area peaks.

April 11, 2015 – Monster Jam event at Levi's Stadium.

April 13, 2015 – Due to a potential suicide attempt, US 101 and I-680 freeways are closed in all directions for 4 hours by police, impacting the evening commute and all VTA bus service in the area.

April 18, 2015 – Monster Energy Super X Event at Levi's Stadium.

April 2015 – Santa Clara County unemployment rate was 3.8%.

April 2015 – Rainfall was 75% of normal.

April 2015 – Unleaded fuel averaged \$3.20 per gallon.

May 2015 – Bus service changes and reroutes were in effect due to Cinco de Mayo weekend events, Mountain View's A La Carte and Art Festival, May Fete in Palo Alto, Magic and Wine Stroll in Sunnyvale, the Amgen Tour of California, the Color Run in San Jose, bus stop closures, construction, and bus stop relocations.

May 2015 – Light rail service was impacted by weekend closures of the 902 line from Lockheed Martin to Mountain View, with replacement bus service.

May 2, 2015 – Kenny Chesney Concert at Levi's Stadium.

May 6, 2015 – Broken track and power outages cause BART system shutdown for most of the day.

May 24, 2015 – San Jose Earthquakes vs. Orlando Soccer Match at Levi's Stadium.

May 2015 – Santa Clara County unemployment rate was 4.0%.

May 2015 – Rainfall was 98% of normal.

May 2015 – Unleaded fuel averaged \$3.68 per gallon

June 2015 -- Bus service changes and reroutes were in effect due to construction, bus stop relocations, bus stop closures, the Holy Spirit Parade in San Jose, the Thursday Night Live Summer Concert Series in Mountain View, Dancin' on the Avenue in San Jose, Sunnyvale Music in the Market, SubZero Festival in San Jose, Sunnyvale Art and Wine Festival, San Jose Giants Run, a gas leak, non-VTA accidents, and police activity.

May 2015 – Light rail service was impacted by weekend closures of the 902 line from Lockheed Martin to Mountain View, with replacement bus service, operational and mechanical issues, police activity, maintenance-related track closures, and non-VTA accidents.

June 10, 2015 – VTA announces Dynamic Transit Service Pilot scheduled for Fall 2015.

June 11, 2015 – VTA announces expanded bus service to Gilroy in October 2015.

June 19, 2015 – Intel announces layoffs affecting a few hundred people at each location.

June 19, 2015 – Large American Communications Network Conference at SAP Center.

June 20, 2015 – A severe heat warning was issued for the Bay Area.

June 27-28, 2015 – Grateful Dead Concerts at Levi's Stadium.

June 2015 – There was no measurable rainfall.

June 2015 – Santa Clara County unemployment rate was 4.1%

June 2015 – Unleaded fuel averaged \$3.45 per gallon.

Key Performance Indicators

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY KEY PERFORMANCE INDICATORS

FY 2015 Annual Transit Operations Performance Report

	FY 2012	FY 2013	FY 2014	FY 2015	Met	1	
	Annual	Annual	Annual	Annual	Goal?	F	7 2015 Goals
SYSTEM (Bus & Light Rail)	Tilliuai	Timuai	Ailiuai	Ailliuai	Guara		
Total Boarding Riders (in millions)	42.43	43.15	43.43	43.94	No	>=	45.60
Average Weekday Boarding Riders	137,299	140,402	140,965	141,149		>=	148,400
Boardings per Revenue Hour	31.9	31.9	29.6	28.9		>=	30.9
Percent of Scheduled Service Operated	99.72%	99.73%	99.67%	99.67%		>=	99.55%
Miles Between Major Mechanical Schedule Loss ¹	11,065	13,110	10,839	10,334		>=	9,000
Miles Between Chargeable Accidents	94,649	88,300	80,812	85,350		>=	111,500
Passenger Concerns per 100,000 Boardings	12.5	13.7	16.2	18.4		<=	10.6
BUS OPERATIONS					- 11		
Total Boarding Riders (in millions)	32.05	32.40	32.48	32.62	No	>=	34.00
Average Weekday Boarding Riders	104,583	106,161	105,969	106,214	No	>=	111,500
Boardings per Revenue Hour	26.9	26.7	26.0	25.1	YES	>=	24.0
Percent of Scheduled Service Operated	99.69%	99.70%	99.64%	99.64%	YES	>=	99.50%
Miles Between Major Mechanical Schedule Loss ¹	10,202	12,080	9,964	9,890	YES	>=	8,000
Miles Between Chargeable Accidents	85,926	80,608	73,702	78,449		>=	100,000
On-time Performance	88.4%	87.4%	85.9%	85.6%		>=	92.5%
Operator Personal Time-off	8.8%	8.5%	8.1%	7.2%		<=	10.0%
Maintenance Personal Time-off	8.2%	7.4%	8.2%	6.0%	YES	<=	8.0%
Passenger Concerns per 100,000 Boardings	15.5	17.1	20.2	21.3	No	<=	11.8
LIGHT RAIL OPERATIONS							
Total Boarding Riders (in millions)	10.37	10.74	10.95	11.32	No	>=	11.60
Average Weekday Boarding Riders	32,716	34,241	34,996	34,935	No	>=	36,900
Boardings per Revenue Hour	75.4	78.3	78.8	80.4	YES	>=	74.0
Percent of Scheduled Service Operated	99.97%	99.98%	99.97%	99.96%	YES	>=	99.90%
Miles Between Major Mechanical Schedule Loss ¹	32,489	40,723	37,381	20,292	No	>=	40,000
Miles Between Chargeable Accidents ²	441,847	366,503	367,582	558,019	No	>=	2,214,000
On-time Performance	89.4%		84.5%	77.4%		>=	95.0%
Operator Personal Time-off	6.6%	5.9%	7.2%	7.3%		<=	10.0%
Maintenance Personal Time-off	7.1%	7.3%	8.1%	5.2%	YES	<=	8.0%
Way, Power, & Signal Personal Time-off	6.3%	6.3%	4.0%	8.6%	No	<=	8.0%
Passenger Concerns per 100,000 Boardings	3.3	3.3	4.3	10.0	No	<=	2.8
Fare Evasion Rate	7.8%	3.9%	3.1%	3.0%	YES	<=	5.0%
PARATRANSIT	7.8						
Passengers per Revenue Hour³	2.60	2.50	2.60	2.60	YES	>=	2.40
Net Cost per Passenger	\$22.73	\$22.69	\$25.25	\$24.22		<=	\$26.75
Ontime Performance ³				96.5%		>=	92.0%
Complaints per 1,000 passenger Trips ³				0.47		<=	1.0
Schedule Calls Response Time (minutes) ³				1.36		<=	2.0
Days of Service Calls Response Time (minutes) ³				1.14		<=	2.0
ADA Eligibility Certification within 21 Days ³				100.0%		>=	100.0%
Preventative Maintenance Inspections Ontime ³				100.0%	YES	>=	95.0%
Major Accidents and Incidents per 85,000 Passenger Trips ³				0	YES	<=	1.0
Non-Major Accidents and Incidents per 85,000 Passenger Trips ³				0.47	YES	<=	2.0

Note: Ridership goals were developed using budget projections.

¹ Mechanical failure that prevents the vehicle from completing a scheduled service due to limited vehicle movement or safety concerns.

² Goal is no more than one chargeable accident in a year.

³ New ADA Paratransit Performance Indicators for Paratransit effective FY 2014

Ridership Summary

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY RIDERSHIP SUMMARY

(Directly Operated, Inter-Agency Partners, and Contracted Services) FY 2015 Annual Transit Operations Performance Report

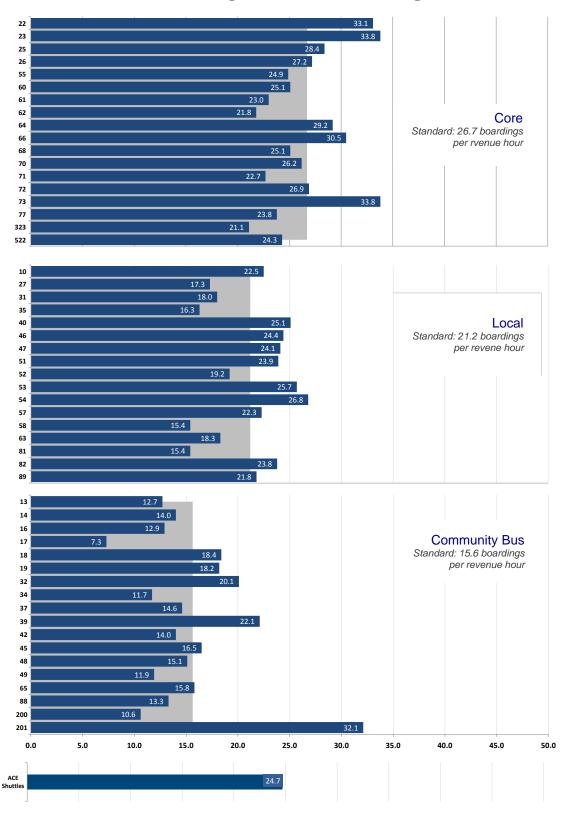
	FY2015	FY2014	% Change
Directly Operated Services			
Bus	32,624,767	32,475,527	0.5%
Average Weekday Riders	106,214	105,969	0.2%
Light Rail	11,320,497	10,952,965	3.4%
Average Weekday Riders	34,927	35,012	-0.2%
Total Directly Operated Services	43,945,264	43,428,492	1.2%
Average Weekday Riders	141,141	140,981	0.1%
Inter-Agency Partners			
Dumbarton Express	305,877	319,642	-4.3%
Average Weekday Riders	1,204	1,258	-4.3%
Highway 17 Express	378,084	365,168	3.5%
Average Weekday Riders	1,170	1,130	3.5%
Monterey-San Jose Express	30,818	30,083	2.4%
Average Weekday Riders	83	81	2.5%
Altamont Commuter Express (ACE)	1,204,568	1,104,963	9.0%
Average Weekday Riders	4,775	4,367	9.3%
Caltrain	18,472,178	17,029,447	8.5%
Average Weekday Riders	58,204	53,471	8.9%
Caltrain Shuttles (in Santa Clara County)	1,660,381	1,465,017	13.3%
Average Weekday Riders	6,386	5,635	13.3%
Contracted Services			
Paratransit	720,617	727,688	
Average Weekday Riders	2,553	2,581	-1.1%
ACE Shuttles	417,040	383,118	
Average Weekday Riders	1,655	1,514	
Total Contracted / Inter-Agency	11,446,923	10,517,148	8.8%
Combined Total Ridership (in Santa Clara County) 1	55,392,187	53,945,640	2.7%

¹ These figures are based on estimated ridership in the VTA service area for Caltrain, ACE, Highway 17 Express, Dumbarton Express, and Monterey-San Jose Express. Paratransit, Light Rail Shuttles, ACE Shuttles, and Caltrain Santa Clara County Shuttles are operated wholly within the service area, therefore, 100% of the ridership is included.

Route Performance

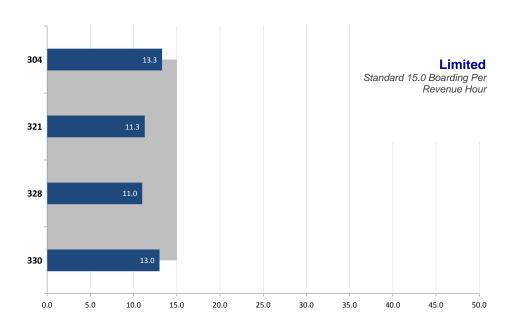
	Route Listing						
Route	Destination	Route	Destination				
10	Santa Clara Transit CtrSan Jose International Airport- Metro Airport LRT Station	70	Capitol LRT Station-Great Mall/Main Transit Ctr.				
12	San Jose Civic CtrEastridge Transit Ctr. via San Jose Flea Market	71	Eastridge Transit CtrGreat Mall/Main Transit Ctr. via White Rd.				
13*	Almaden Expwy. & McKean-Ohlone/Chynoweth LRT Station	72	Senter & Monterey-Downtown San Jose				
14*	Gilroy Transit Ctr. to St. Louise Hospital	73	Snell/Capitol-Downtown San Jose				
16*	Morgan Hill Civic Ctr. to Burnett Ave.	77	Eastridge Tran CtrGreat Mall/Main Transit Ctr. via King Rd.				
17*	Gilroy Transit Ctr. to Monterey & Las Animas	81	Weekday-Vallco-San Jose State University ; Sat-Vallco-Santa Clara Tran.Ctr				
18*	Gilroy Transit Ctr. to Gavilan College	82	Westgate-Downtown San Jose				
19*	Gilroy Transit Ctr. to Wren & Mantelli	88*	Palo Alto Veteran's Hospital-Middlefield & Colorado				
22	Palo Alto Transit CtrEastridge Transit Ctr. via El Camino	89	California Ave. Caltrain Station-Palo Alto Veteran's Hospital				
23	DeAnza College-Alum Rock Transit Ctr. via Stevens Creek	101	Camden & Hwy 85-Palo Alto				
25	DeAnza College-Alum Rock Transit Ctr. via Valley Medical Ctr.	102	South San Jose-Palo Alto				
26	Sunnyvale/Lockheed Martin Transit CtrEastridge Transit Ctr.	103	Eastridge Transit CtrPalo Alto				
27	Good Samaritan Hospital-Kaiser San Jose	104	Penitencia Creek Transit CtrPalo Alto				
31	Evergreen Valley College-Eastridge Transit Ctr.	120	Fremont BART-Lockheed Martin/Moffett Park-Shoreline				
32*	San Antonio Shopping CtrSanta Clara Transit Ctr.	121	Gilroy Transit CtrLockheed Martin/Moffett Park				
34*	San Antonio Shopping CtrDowntown Mountain View	122	South San Jose-Lockheed Martin/Moffett Park				
35	Downtown Mountain View-Stanford Shopping Ctr.	140	Fremont BART-Mission College & Montague Expwy.				
37*	West Valley College-Capitol LRT Station	168	Gilroy Transit CtrSan Jose Diridon Transit Ctr.				
39*	The Villages-Eastridge Transit Ctr.	180	Great Mall/Main Transit Ctr./Aborn & White-Fremont BART				
40	Weekday & Sat-Foothill College-La Avenida & Shoreline Sun-San Antonio & Lyell-La Avenida & Shoreline	181	San Jose Diridon Transit CtrFremont BART via Great Mall/Main Transit Ctr. late evenings & weekends				
42*	Weekday-Kaiser San Jose-Evergreen Valley College Sat-Santa Teresa LRT-Monterey & Senter	182	Palo Alto-IBM/Bailey Ave.				
45*	Alum Rock Transit CtrPenitencia Creek Transit Ctr.	201	DASH San Jose Diridon Station-Downtown San Jose LRT Stations				
46	Great Mall/Main Transit CtrMilpitas High School	251	Fremont BART-Levi's Stadium (Gamedays Only)				
47	Great Mall/Main Transit CtrMcCarthy Ranch	252	Vallco-Levi's Stadium (Gamedays Only)				
48*	Los Gatos Civic CtrWinchester Transit Ctr. via Winchester Blvd.	253	Gilroy/Morgan Hill-Levi's Stadium (Gamedays Only)				
49*	Los Gatos Civic CtrWinchester Transit Ctr. via Los Gatos Blvd.	254	Eastridge Transit CtrLevi's Stadium (Gamedays Only)				
51	De Anza College-Moffett Field/Ames Ctr.	255	Almaden-Levi's Stadium (Gamedays Only)				
52	Foothill College-Downtown Mountain View	256	Ohlone-Chynoweth-Levi's Stadium (Gamedays Only)				
53	West Valley College-Sunnyvale Transit Ctr.	304	South San Jose-Sunnyvale Transit Ctr. via Arques				
54	De Anza College-Sunnyvale/Lockheed Martin Transit Ctr.	321	Great Mall/Main Transit CtrLockheed Martin/Moffett Park				
55	De Anza College-Great America	323	De Anza College-Downtown San Jose				
57	West Valley College-Great America via Quito Rd.	328	Almaden Expy. & Via Valiente-Lockheed Martin/Moffett Park				
58	West Valley College-Alviso via Fruitvale	330	Almaden Expy. & Via Valiente-Tasman Drive				
60	Winchester Transit CtrGreat America	522	Palo Alto Transit CtrEastridge Transit Ctr.				
61	Good Samaritan Hospital-Sierra & Piedmont via Bascom	LRT	Line 902 - Mountain View-Winchester				
62	Good Samaritan Hospital-Sierra & Piedmont via Union		Line 901 - Alum Rock-Santa Teresa				
63	Almaden Expy & Camden-San Jose State University		Line 900 - Ohlone/Chynoweth-Almaden				
64	Almaden LRT Station-McKee & White via Downtown San Jose	970	Highway 17 Express - Santa Cruz & Scotts Valley-San Jose Diridon Transit Ctr.				
65*	Kooser & Meridian-13th & Hedding	971	Dumbarton Express - Union City BART-Palo Alto				
66	Kaiser San Jose-Milpitas/Dixon Rd. via Downtown San Jose	972	Monterey-San Jose Express (MST55)				
68	Gilroy Transit CtrSan Jose Diridon Transit Ctr.						

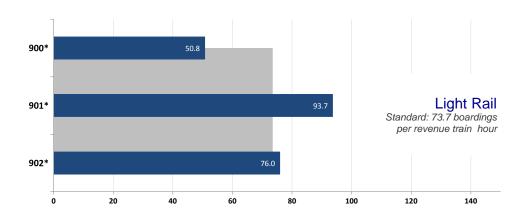
Weekday Boardings per revenue hour FY 2015 Annual Transit Operations Performance Report



Note: ACE shuttles are not considered in the calculation of the Community Bus standard, which is VTA-based only.

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY Weekday Boardings per revenue hour FY 2015 Annual Transit Operations Performance Report

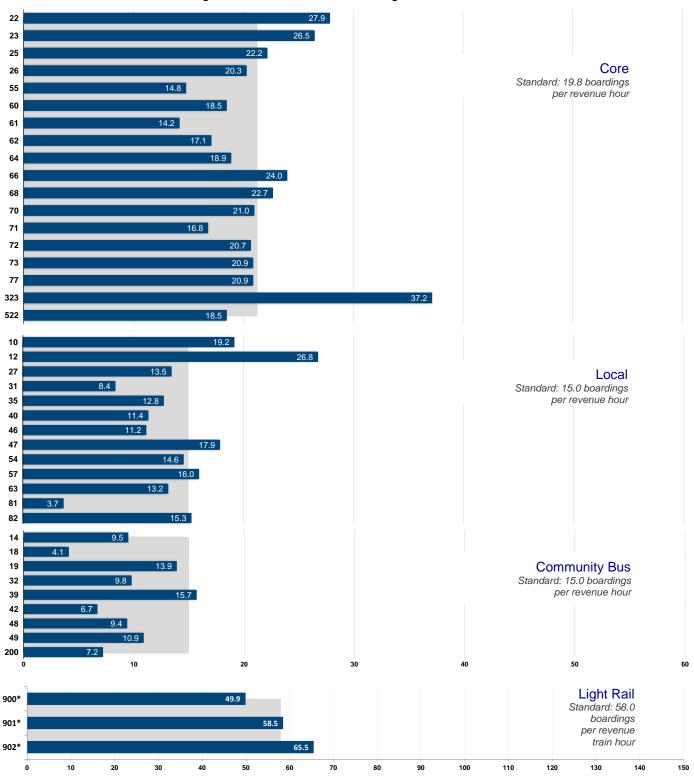




^{*} Line 900 is the Ohlone/Chynoweth – Almaden line Line 901 is the Alum Rock - Santa Teresa Line Line 902 is the Mountain View - Winchester Line.

Saturday Boardings per revenue hour

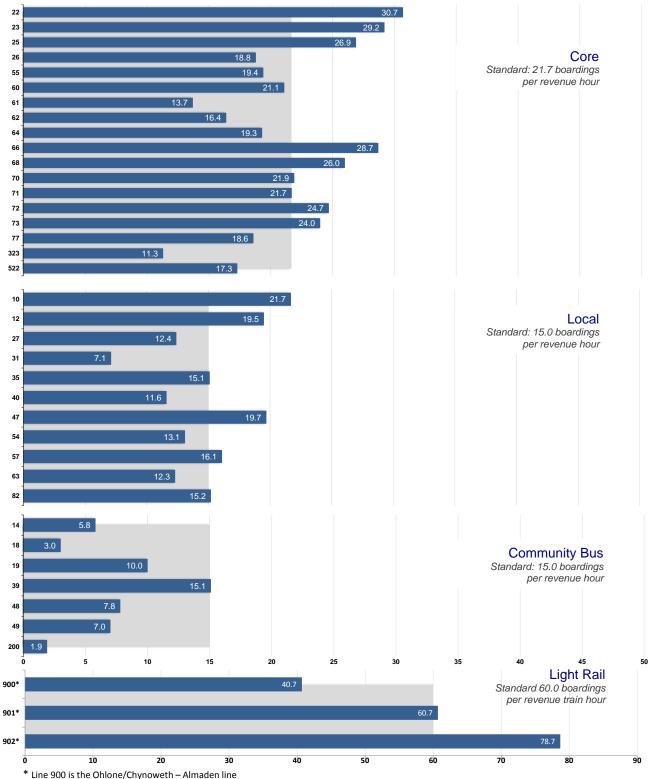
FY 2015 Annual Transit Operations Performance Report



^{*} Line 900 is the Ohlone/Chynoweth – Almaden line Line 901 is the Alum Rock - Santa Teresa Line Line 902 is the Mountain View - Winchester Line.

Sunday Boardings per revenue hour

FY 2015 Annual Transit Operations Performance Report

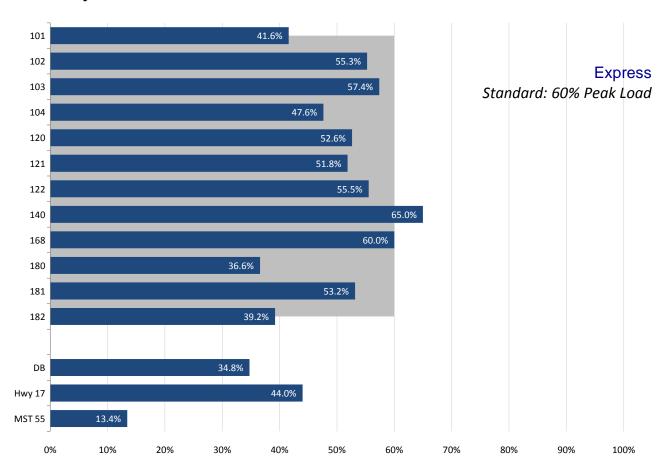


Line 900 is the Onione/Chynoweth – Almaden line
Line 901 is the Alum Rock - Santa Teresa Line
Line 902 is the Mountain View - Winchester Line

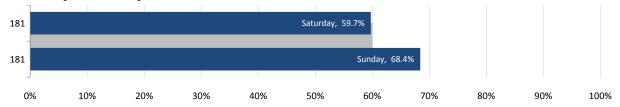
FY 2015 Annual Transit Operations Performance Report

Express Routes Average Peak Load

Weekday



Saturday / Sunday



Note: HWY 17, MST and DB are not considered in the calculation of the standard which is VTA- based only.



Boardings per Revenue Hour by Time Period FY 2015 Annual Transit Operations Performance Report

Core Routes

WEEKDAY

ROUTE	PEAK	MIDDAY	OFF PEAK	TOTAL
22	30.4	35.0	36.5	33.1
23	30.1	38.4	31.4	33.8
25	26.1	30.9	28.4	28.4
26	24.3	31.5	25.1	27.2
55	22.8	28.2	27.6	24.9
60	22.0	30.6	22.2	25.1
61	22.3	26.2	13.4	23.0
62	19.2	27.5	12.2	21.8
64	27.5	33.6	17.2	29.2
66	26.4	36.1	31.7	30.5
68	21.5	29.1	28.3	25.1
70	23.3	29.6	26.2	26.2
71	20.3	26.9	22.4	22.7
72	24.5	29.6	28.0	26.9
73	28.0	41.3	29.1	33.8
77	19.8	28.4	31.6	23.8
323	20.5	23.1	15.5	21.1
522	23.3	25.0	26.0	24.3
Standard	24.0	30.6	25.2	26.7

Weeko	lay	Service	<u>Periods</u>

5:00 AM to 9:00 AM &
3:00 PM to 7:00 PM
9:00 AM to 3:00 PM
7:00 PM to 5:00 AM

Legend:

Below standard
No Service



Boardings per Revenue Hour by Time Period FY 2015 Annual Transit Operations Performance Report

Core Routes

SATURDAY

ROUTE	AM	BASE	NIGHT	TOTAL
22	25.9	30.1	25.0	27.9
23	24.0	29.1	21.0	26.5
25	20.2	23.1	19.6	22.2
26	20.3	20.3	20.3	20.3
55	15.7	14.6	15.8	14.8
60	21.3	18.4	17.0	18.5
61	10.7	17.2	7.0	14.2
62	17.6	17.8	11.5	17.1
64	15.8	21.2	12.7	18.9
66	19.2	28.5	16.3	24.0
68	18.7	26.5	17.2	22.7
70	20.7	21.5	18.4	21.0
71	28.6	16.1	14.6	16.8
72	17.7	21.9	17.6	20.7
73	17.9	21.5	21.0	20.9
77	16.7	21.7	19.1	20.9
323	37.9	38.2	26.3	37.2
522	14.1	20.0	15.2	18.5
Standard	20.2	22.7	17.5	21.3

Saturday Service Periods

AM	5:00 AM to 9:00 AM
Base	9:00 AM to 6:00 PM
Night	6:00 PM to 5:00 AM

SUNDAY

ROUTE	AM	BASE	NIGHT	TOTAL
22	25.7	31.2	34.9	30.7
23	27.5	30.1	27.2	29.2
25	21.2	30.7	17.1	26.9
26	16.3	19.0	21.7	18.8
55	15.6	20.1	18.1	19.4
60	20.8	22.7	12.9	21.1
61	10.2	16.1	6.7	13.7
62	15.9	17.0	12.4	16.4
64	16.7	20.9	13.3	19.3
66	23.4	32.9	19.1	28.7
68	19.0	30.6	21.7	26.0
70	19.6	23.0	18.8	21.9
71	17.7	23.7	17.0	21.7
72	24.4	25.5	21.0	24.7
73	18.9	25.8	16.9	24.0
77	17.6	19.1	13.8	18.6
323	1.2	11.5		11.3
522	4.5	17.9		17.3
Standard	17.6	23.2	18.3	21.7

Sunday Service Periods

AM	5:00 AM to 9:00 AM
Base	9:00 AM to 6:00 PM
Night	6:00 PM to 5:00 AM

Legend:

Below standard No Service



Local Routes

WEEKDAY

ROUTE	PEAK	MIDDAY	OFF PEAK	TOTAL
10	21.2	23.8	22.9	22.5
27	15.0	21.0	16.0	17.3
31	15.4	22.4	13.4	18.0
35	16.0	16.8	15.0	16.3
40	22.3	29.1	19.2	25.1
46	22.6	28.4	0.0	24.4
47	20.2	29.1	22.4	24.1
51	23.5	24.5	0.0	23.9
52	18.3	22.1	9.2	19.2
53	21.6	31.2	0.0	25.7
54	28.1	25.2	28.5	26.8
57	18.6	27.3	17.2	22.3
58	16.9	10.3	18.5	15.4
63	16.6	21.2	15.2	18.3
81	15.0	16.2	12.1	15.4
82	20.9	28.1	18.3	23.8
89	21.2	27.5	0.0	21.8
Standard	19.6	23.8	17.5	21.2

Peak	5:00 AM to 9:00 AM &
	3:00 PM to 7:00 PM
Midday	9:00 AM to 3:00 PM
Off Peak	7:00 PM to 5:00 AM

Legend:

Below standard
No Service



Local Routes

SATURDAY

ROUTE	AM	BASE	NIGHT	TOTAL
10	14.6	23.8	14.1	19.2
12		26.8		26.8
27	14.4	13.9	8.2	13.5
31	7.3	8.9	5.2	8.4
35	15.2	13.3	7.9	12.8
40	11.4	11.4		11.4
46		11.2		11.2
47	21.3	17.4	19.7	17.9
54	12.6	14.8	14.6	14.6
57	16.8	15.9	16.3	16.0
63	12.4	13.7	7.4	13.2
81		3.7		3.7
82	14.2	16.3	8.7	15.3
Standard	15.0	15.0	15.0	15.0

Saturday Service Periods

AM 5:00 AM to 9:00 AM
Base 9:00 AM to 6:00 PM
Night 6:00 PM to 5:00 AM

SUNDAY

ROUTE	AM	BASE	NIGHT	TOTAL
10	12.1	26.2	19.1	21.7
12		19.5		19.5
27		12.4		12.4
31		7.1		7.1
35	14.8	15.5	9.0	15.1
40		11.6		11.6
47	30.2	19.4	20.3	19.7
54	8.3	13.8	1.9	13.1
57	11.0	18.2	4.3	16.1
63		12.3		12.3
82		15.2		15.2
Standard	15.3	15.6	15.0	15.0

Sunday Service Periods

AM 5:00 AM to 9:00 AM
Base 9:00 AM to 6:00 PM
Night 6:00 PM to 5:00 AM

Legend:

Below standard No Service



Community Bus

WEEKDAY

ROUTE	PEAK	MIDDAY	OFF PEAK	TOTAL
13	12.0	13.4		12.7
14	11.2	15.7		14.0
16	14.0	8.4		12.9
17	6.5	7.8		7.3
18	16.5	20.5		18.4
19	16.2	21.1	10.1	18.2
32	19.7	20.8	16.9	20.1
34		11.7		11.7
37	14.5	16.5	5.4	14.6
39	17.9	30.7	17.7	22.1
42	12.0	16.7	7.8	14.0
45	16.9	16.1		16.5
48	14.5	17.0	8.1	15.1
49	10.8	14.4	7.0	11.9
65	14.2	17.6		15.8
88	13.0	13.7		13.3
200			10.6	10.6
201	34.7	29.3	29.6	32.1
Standard	15.3	17.1	15.0	15.6

Peak	5:00 AM to 9:00 AM &
	3:00 PM to 7:00 PM
Midday	9:00 AM to 3:00 PM
Off Peak	7:00 PM to 5:00 AM



Community Bus

SATURDAY

ROUTE	AM	BASE	NIGHT	TOTAL
14		9.5		9.5
18		4.1		4.1
19	13.5	14.0		13.9
32	3.7	10.6		9.8
39	15.0	16.3	3.6	15.7
42	3.1	6.9		6.7
48	9.4	9.3	10.3	9.4
49	24.6	10.0	6.2	10.9
200			7.2	7.2
Standard	15.0	15.0	15.0	15.0

Saturday Service Periods

AM 5:00 AM to 9:00 AM
Base 9:00 AM to 6:00 PM
Night 6:00 PM to 5:00 AM

SUNDAY

ROUTE	AM	BASE	NIGHT	TOTAL
14		5.8		5.8
18		3.0		3.0
19	7.8	10.2		10.0
39		15.1		15.1
48		7.8		7.8
49		7.0		7.0
200			1.9	1.9
Standard	15.0	15.0	15.0	15.0

Sunday Service Periods

Base 9:00 AM to 6:00 PM Night 6:00 PM to 5:00 AM

Legend:

Below standard No Service



Light Rail

WEEKDAY

ROUTE	PEAK	MIDDAY	OFF PEAK	TOTAL
900*	52.8	56.6	36.7	50.8
901*	103.6	105.1	46.5	93.7
902*	81.2	78.4	51.2	76.0
Standard	79.2	80.0	44.8	73.5

Peak	5:00 AM to 9:00 AM &
	3:00 PM to 7:00 PM
Midday	9:00 AM to 3:00 PM
Off Peak	7:00 PM to 5:00 AM

SATURDAY

ROUTE	AM	BASE	NIGHT	TOTAL
900*	26.3	57.3	37.2	49.9
901*	33.5	71.0	51.9	58.5
902*	58.6	79.5	46.4	65.5
Standard	39.5	69.3	45.2	58.0

Saturday Service Periods

Weekday Service Periods

AM	5:00 AM to 9:00 AM
Base	9:00 AM to 6:00 PM
Night	6:00 PM to 5:00 AM

SUNDAY

ROUTE	AM	BASE	NIGHT	TOTAL
900*	19.4	46.9	30.4	40.7
901*	32.8	74.6	53.9	60.7
902*	54.3	88.6	70.7	78.7
Standard	35.5	70.0	51.7	60.0

Sunday Service Periods

AM	5:00 AM to 9:00 AM
Base	9:00 AM to 6:00 PM
Night	6:00 PM to 5:00 AM

Legend:

Below standard
No Service

^{*} Line 900 is the Ohlone/Chynoweth – Almaden line Line 901 is the Alum Rock to Santa Teresa Line Line 902 is the Mountain View to Winchester Line.

Paratransit Operating Statistics

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY PARATRANSIT OPERATING STATISTICS FY 2015 Annual Transit Operations Performance Report

PYTD 2015 PYTD 2014 Percent Change			_	
Clients		FYTD 2015	FYTD 2014	Percent Change
Attendants	RIDERSHIP			
Companions	Clients			
Total Ridership 720,617 727,688 -1.0%	Attendants			
Average Weekday Trips	Companions			7.6%
Active Clients 7,479 8,112 -7.8% Active Clients 7,479 8,112 -7.8% Active Clients 7,479 8,112 -7.8% Active Clients 69 64 6.5% PREMIUM SERVICES Same Day Trips	Total Ridership	720,617	727,688	-1.0%
Active Clients	Average Weekday Trips	2,553	2,581	-1.1%
Average Trips per Client	Average Weekday Client Trips	1,815	1,852	-2.0%
REMIUM SERVICES 1,660	Active Clients	7,479	8,112	-7.8%
Same Day Trips	Average Trips per Client	69	64	6.5%
Same Day Trips	PREMIUM SERVICES			
Open Returns		1,660	1,457	13.9%
Scrivice Area Surcharge Trips 2,912 3,322 -12.3%	Second Vehicles	167	203	-17.7%
Subscription Trips	Open Returns	258	387	-33.3%
Subscription Trips	Service Area Surcharge Trips	2,912	3,322	
Total 96,114 105,668 -9.0%			· ·	
Revenue Miles				
Revenue Miles		,	,	
Revenue Hours	Revenue Miles	5,922,864	6,196,215	-4.4%
Passenger Miles (NTD)	Revenue Hours			
Total Data Cards Received 6,842 6,777 1.0%				
Total Data Cards Received 6,842 6,777 1.0% New Applicants Certified 2,274 2,229 2.0% New Applicants Denied 541 568 -4.8% Clients Recertified 2,382 2,422 -1.7% Clients Denied Recertification 558 631 -11.6% Total Eligibility Assessments 5,755 5,850 -1.6% EXPENSES 8 605,349 \$520,084 16.4% Broker Costs \$4,241,800 \$3,797,824 11.7% Vendor Costs \$15,906,125 \$15,479,411 2.8% REVENUES \$20,753,274 \$19,797,319 4.8% Client Fare \$1,951,458 \$1,988,039 -1.8% Other Fare \$1,290,425 \$938,766 37.5% Non-VTA Broker Revenue \$14,575 \$13,711 6.3% Fare Recovery Rate \$1,562% \$1,7496,815 \$16,856,804 Fare Recovery Rate \$15,62% \$17,786,815 \$16,856,804 Cost PER PASSENGER TRIP (excludes capital expenses) \$		-,,	2,000,000	
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Non-fare revenue \$0.02 \$0.02 0.0%				
Net Cost \$24.28 \$23.16 4.8%				
	Net Cost	\$24.28	\$23.16	4.8%

Glossary

GLOSSARY

AVERAGE FARE PER BOARDING – This measure is calculated by dividing the total fare revenue (cash, passes, tokens, and Eco Pass) by total boarding riders. It measures the rider contribution towards the farebox recovery ratio.

AVERAGE WEEKDAY BOARDINGS – The average number of persons who board the transit system on a day that normal weekday revenue service is provided.

BOARDINGS PER REVENUE HOUR – This is a productivity measure comparing the number of boardings to the number of revenue hours operated. It measures service utilization per unit of service operated. The Revenue hours is the time when a vehicle is available to the general public to carry passengers. This will include layover but exclude deadheads.

BRT (BUS RAPID TRANSIT) ROUTES – The BRT route is a multi-component transit improvement that includes preferential treatment at traffic signals to improve bus operating speed and on-time performance. It operates in mixed traffic and relies on priority for buses at traffic signals to provide much of its time advantage over conventional buses.

COMMUNITY BUS ROUTES – Community Bus service is characterized by weekday frequencies of 30 minutes or more in both the peak and midday periods. Service span is 14 hours or less, usually 12 hours for weekdays. Community Bus services operate seven days per week or less. These routes are defined as neighborhood-based circulator and feeder routes that travel within a limited area .They may be distinguished from Core and Local service by a unique and smaller vehicle.

CORE ROUTES – Core network routes are defined as bus routes or shared corridors that feature weekday frequencies of 15 minutes or less during the peak and midday periods and/or service spans of 18 hours or more. Core routes operate seven days per week. They typically travel on long distance corridors, which connect major trip generators such as universities, regional shopping malls and high-density housing and employment sites. Multiple core routes will sometimes operate on the same corridor where demand warrants, providing additional service frequency and transfer opportunities. Core network corridors are typically large arterial streets and intersect with freeways and expressways.

DEADHEAD: Time during movement of a transit vehicle without passengers aboard, typically from the operating division to the start of the route.

EXPRESS & LIMITED SERVICE ROUTES – Express routes generally operate during peak periods and are primarily commuter oriented. Midday, evening, and weekend service may be offered on regional express lines. Express routes emphasize direct service, use freeways and expressways to reduce travel time, and make few stops. Limited Service routes are characterized by limited stops.

FEEDER ROUTES – Feeder routes are short-length lines, usually less than 10 miles in length, that provide feeder or distribution service to and from major stops, transit centers, activity centers or rail stations. This classification of service includes neighborhood lines, which link residential areas to rail stations, activity centers, and/or transit centers; and shuttle lines, which serve industrial areas from nearby rail stations or transit centers.

LAYOVER: Break the driver or the vehicle is given at the end of a trip before it starts operating its reverse route, or if the route is circular, before beginning its next trip

LIMITED STOP ROUTES – Limited-stop service generally operates during peak periods and is primarily commuter oriented. Midday, evening, and weekend service may be offered on limited-stop lines. Limited-stop routes use major arterials, freeways, and/or expressways; and make fewer stops than grid routes, but more stops than express routes.

LOCAL ROUTES – Local network routes are defined as bus routes or corridors that feature weekday frequencies of thirty minutes or more during the peak and midday periods and/or service spans less than 18 hours. Local Network routes operate seven days per week or less. They typically travel on medium distance corridors, serving minor trip generators such as schools, hospitals and medium-density housing and employment. They also provide feeder service to the core network or to rail stations and transit centers.

MILES BETWEEN CHARGEABLE ACCIDENTS – Safety measure that captures the number of total scheduled miles traveled between each occurrence of a preventable accident. A preventable accident is defined as accidents in which the transit driver is normally deemed responsible or partly responsible for the occurrence of the accident.

MILES BETWEEN MECHANICAL SERVICE LOSS – Service quality measure capturing the number of total scheduled miles traveled between each mechanical breakdown that result in a loss of service to the public.

SPECIAL SERVICE ROUTES – Special services routes only operate on certain days of the week or on a seasonal basis to address a specific service need.

NATIONAL TRANSIT DATABASE (NTD) – The Federal Transit Administration's (FTA's) primary national database for statistics on the transit industry. Recipients of FTA's Urbanized Area Formula Program (Section 5307) grants are required by statute to submit data to the NTD. Each year, NTD performance data are used to apportion over \$4 billion of FTA funds to transit agencies in urbanized areas (UZAs). Annual NTD reports are submitted to Congress summarizing transit service and safety data. The NTD is the system through which FTA collects uniform data needed by the Secretary of Transportation to administer department programs. The data consist of selected financial and operating data that describe public transportation characteristics. The legislative requirement for the NTD is found in Title 49 U.S.C. 5335(a).

ON-TIME PERFORMANCE – A reliability measure capturing the percentage of transit vehicles departing or arriving at a location on time. On-time performance is measured only for specific locations called timepoints for which a schedule is published. A bus transit vehicle is considered "on time" if it departs a location within three minutes before and five minutes after its published scheduled time. A light rail transit vehicle is considered "on time" if it departs a location within one minute before and three minutes after its published scheduled time. At the last timepoint location of a trip, early arrival is considered on-time.

PASSENGER CONCERNS PER 100,000 BOARDINGS – A customer service measure that captures the number of passenger complaints/concerns per 100,000 boardings. This measure reports the amount of customer complaints received on the service that is attributed to an operating division.

PEAK LOAD (Express) - The Express bus standard is 60 percent of the seated vehicle loading capacity. This singular standard is needed due to the special characteristics of Express Bus lines where seat turnover is low.

PERCENT SCHEDULED SERVICE OPERATED – This service reliability measure indicates the percent of service hours completed based on published schedule. A service is considered not completed when scheduled service hours are lost due to equipment failure, missed or late pull-outs caused by operator absenteeism, pullouts, accidents/incidents, or natural causes.

PERSONAL TIME OFF (PTO) – This is defined as time off for non-scheduled absences such as: sick, industrial injury, FMLA (Family Medical Leave Act.), excused/unexcused leave, union business, and suspensions.

REVENUE HOURS: Time when a vehicle is available to the general public to carry passengers. This will include layover but exclude deadhead.

STANDARD (**Boardings per revenue Hour**): This is the average boardings per Revenue Hour and applies to Community Bus, Local, BRT, and Light Rail. The minimum standard is 15 boardings per revenue hour.

TOTAL BOARDINGS – The total number of boarding riders using VTA directly operated bus service and light rail service. Riders are counted each time they board a bus or light rail vehicle.



Date: September 8, 2015

Current Meeting: September 16, 2015

Board Meeting: N/A

BOARD MEMORANDUM

TO: Santa Clara Valley Transportation Authority

Transit Planning & Operations Committee

THROUGH: General Manager, Nuria I. Fernandez

FROM: Board Secretary, Elaine Baltao

SUBJECT: Conduct Election to Select Successor TP&O Vice Chairperson

Policy-Related Action: No Government Code Section 84308 Applies: No

ACTION ITEM

RECOMMENDATION:

Conduct voting to determine the Committee's vice chairperson for the remainder of 2015.

BACKGROUND:

The VTA Administrative Code has established five board standing committees to review items in detail and provide recommendations to the full Board on matters within their respective assigned areas of responsibility. The Transit Planning & Operations (TP&O) Committee is one of these committees.

The Administrative Code specifies that the Governance & Audit Committee nominates for Board approval the members and chairpersons of all standing committees of the Board. Standing committee chairpersons serve a one-year term of office coinciding with the calendar year.

In August 2015, Director Rich Larsen, due to relocating out of the county, resigned from the VTA Board. For 2015, he served on the TP&O Committee and was that committee's chairperson. Due to this vacancy, at their September 2015 meetings the Governance & Audit Committee nominated, and the Board of Directors approved, appointment of TP&O vice chairperson Johnny Khamis to serve as chairperson of that committee for the remained of 2015.

DISCUSSION:

It is in the public's best interest to fill a vacancy in a standing committee vice chairperson position as soon as is reasonably possible. In this instance, it is recommended that the TP&O Committee elect a successor vice chairperson to replace Johnny Khamis, who was recently

appointed as the committee chairperson.

The vice chairperson performs the duties of the chairperson in the event of the chairperson's absence or inability to act, and while so acting has all the authority of the chairperson. The vice chairperson is eligible for election to successive terms and only members, not alternates, are eligible to serve. The term of office for this specific position commences immediately following completion of the voting and runs through the end of 2015.

The affirmative vote of a majority of the total authorized committee membership, which is three members, is required to elect the vice chairperson.

ALTERNATIVES:

There are no alternatives since the VTA Administrative Code specifies the election process.

FISCAL IMPACT:

There is no fiscal impact resulting from the election process.

Prepared by: Stephen Flynn, Advisory Committee Coordinator

Memo No. 5184



Date: September 1, 2015
Current Meeting: September 16, 2015
Board Meeting: October 1, 2015

BOARD MEMORANDUM

TO: Santa Clara Valley Transportation Authority

Transit Planning & Operations Committee

THROUGH: General Manager, Nuria I. Fernandez

FROM: Director of Planning and Program Development, John Ristow

SUBJECT: Dynamic Transit Service Pilot Program Implementation

FOR INFORMATION ONLY

BACKGROUND:

VTA is launching a new, innovative, Dynamic Transit Service Pilot program in fall 2015. The first proposed pilot will provide dynamic and flexible transit service within a predetermined zone to fill in gaps in the existing transit network and provide first/last mile connectivity. This innovative pilot will serve as a demonstration project to test the functionality of a dynamic dispatch and routing software, and to provide proof-of-concept for new dynamic transit service models.

VTA staff first introduced the Dynamic Transit Pilot Program to the Advisory Committees in June 2015. In August 2015, staff provided a status update on the development of the pilot program to the committees and Board of Directors. This month, staff will present final details of the implementation plan and service design in a PowerPoint presentation to the committees and Board of Directors.

DISCUSSION:

VTA has identified key implementation steps necessary to launch, operate and evaluate the Dynamic Transit Pilot Program. The details of the service plan are summarized below:

Proposed Service Area

VTA's travel and market pattern analysis identified "Tasman Zone," an area roughly bounded by SR 237, Montague Expressway, Coyote Creek and Guadalupe River as a promising market for Pilot 1 implementation (see Attachment 1). The proposed service area is approximately 3.3 square miles with significant potential demand due to rail connections, a variety of trip patterns, and mix of trip generators, which includes high-density housing and major employment centers such as Cisco, Cadence, Nortech business park and the new Samsung headquarters.

Implementation

The following details of the service design are in still in the process of being finalized and may be revised prior to implementation:

User experience: VTA has contracted with a software vendor to provide the front and back end of the service. The service's entire trip making process will be designed with the customer in mind, leveraging technology to automate and consolidate trip requests, booking, confirmation, and payment processes. Riders will use their computer or smartphone for the process, with telephone operator as backup. The service model will allow for both advance reservation and ondemand trip requests in order to "batch" riders and provide an optimal window for pick-up times.

Service span: The proposed service span is Monday through Friday from 5:30 AM to 8:30 PM, providing short distance trips throughout the Tasman zone.

Fare structure: VTA will test a range of \$2-\$5 to determine the appropriate fare structure to implement with flexibility to test various price points throughout the pilot based on changes in service design or market demand.

Fare payment: The new pilot service will use a cashless, account-based payment system which will require customers to add a credit or debit card to a user account prior to first-time use. Payments will be automatically deducted from the account upon each trip ensuring payment is collected for "no shows." Additionally, VTA is working with the Metropolitan Transportation Commission (MTC) to configure Clipper as a fare payment option in the future.

As staff continues to finalize the details of the service plan, the following implementation priorities will be key in designing a successful dynamic transit service:

- Ease of use is key for passengers. Dynamic service is attractive because it is flexible and responsive. Staff will ensure that the dynamic nature of this new service will be easy for passengers to use.
- **Distinctive branding.** Staff will develop a distinct brand that will communicate the unique nature of this service.
- **Track real-time performance metrics**. To be iterative, staff will track metrics to be able to make adjustments and improvements to the service. Staff will be using Key Performance Indicators (KPIs) and data collected by the software to ensure the service is optimized to meet ridership goals.
- **Flexibility and iteration.** Every aspect of the service will be monitored and considered for continual adjustment throughout the pilot including the size and location of the implementation zone, service model, number and type of vehicles, marketing strategy, and fare structure.

Partnership Building

VTA will explore strategies to subsidize operating costs and future expansion of the pilot by pursuing available funding grants and public-private partnership opportunities. Currently, VTA and the City of Sunnyvale are exploring opportunities to implement "Peery Parks Ride," a future

phase of the dynamic transit service pilot program. The concept is to apply new service models in Sunnyvale's Peery Park, an office development with aggressive trip reduction targets and a prime candidate for an innovative alternative commute solution.

Evaluation and Expansion of the Pilot Program

Many of the ridership strategies will be tested through the Dynamic Transit Pilot Program, with an initial period of 6-12 months. Evaluation of the pilot(s) will use key performance metrics such as effectiveness in increasing ridership, accessing new markets or improving existing markets, and cost effectiveness measured by fare revenue and cost per hour/mile.

The following is a list of considerations to determine where and how to expand the program:

- Expand existing pilot service area to include additional Caltrain and light rail stations, new BART stations, business parks and/or underserved transit areas in order of most employment/residential density
- Expand to new geographic locations in the County with service gaps
- Expand to gain a larger share of the long-distance commute market especially along the most congested corridors

Next Steps

Service and implementation planning for future pilots may begin after the first pilot has been implemented, as part of a larger program effort to implement several new dynamic transit service solutions throughout Santa Clara County.

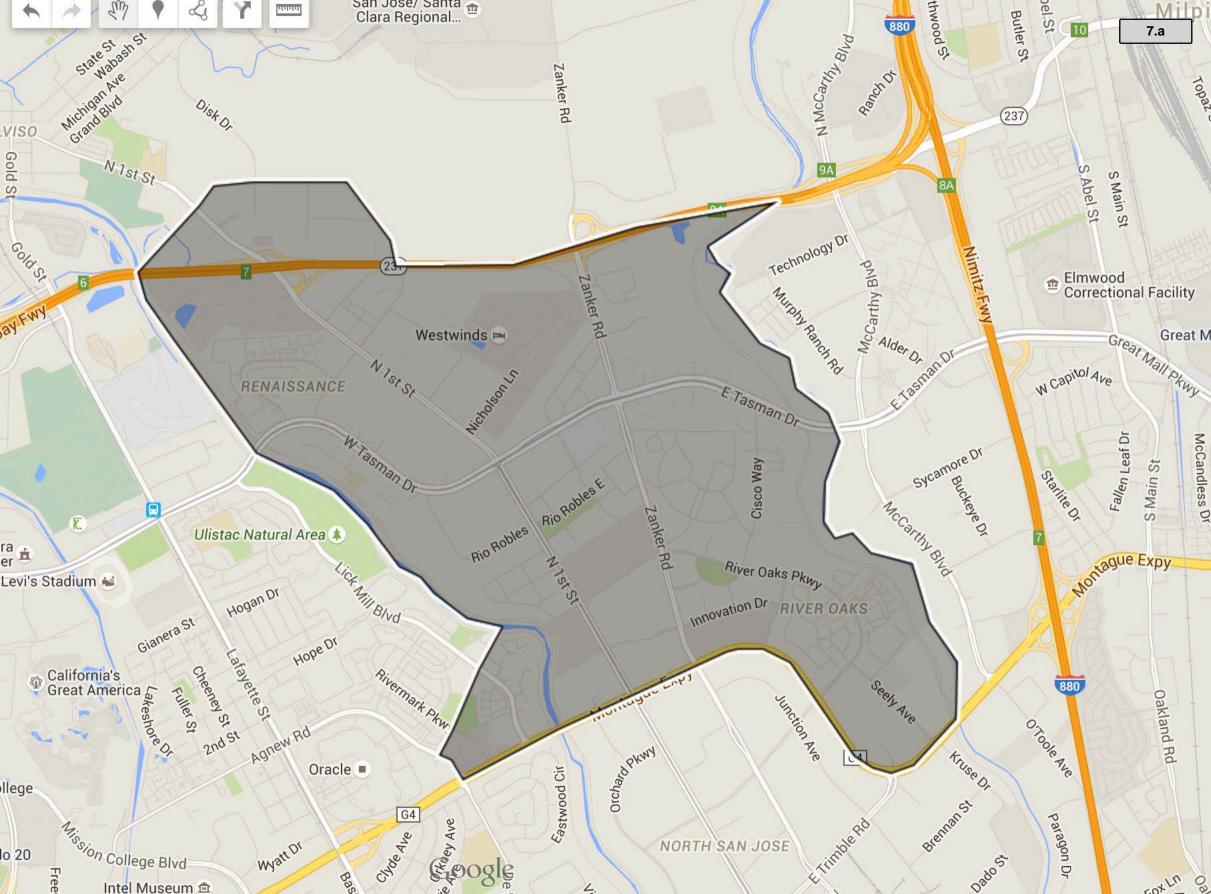
September 2015: Vehicles ready, software and system testing, operators training, field testing

September-October 2015: VTA Committees and Board of Directors meeting

October 2015: Launch pilot service

Prepared By: Aiko Cuenco

Memo No. 5160





Date: September 1, 2015
Current Meeting: September 16, 2015
Board Meeting: October 1, 2015

BOARD MEMORANDUM

TO: Santa Clara Valley Transportation Authority

Transit Planning & Operations Committee

THROUGH: General Manager, Nuria I. Fernandez

FROM: Chief Operating Officer, Inez Evans

SUBJECT: Transit Service Changes - October 2015

FOR INFORMATION ONLY

BACKGROUND:

VTA implements transit service changes on a quarterly basis in January, April, July and October. Major changes are typically planned for January and July, while minor changes are implemented in April and October. Proposed "major" service changes must be submitted to the VTA Board of Directors for review and approval. For Title VI compliance purposes, all "major" service changes also require that VTA staff perform a Service Equity Analysis.

The following modifications are considered "major" service changes as adopted by the VTA Board of Directors.

- Establishment of a new transit line or service.
- Elimination of a transit line or service.
- Route change that impacts 25 percent or more of a line's route miles.
- Span of service or frequency changes affecting 25 percent or more of a line's revenue vehicle hours.
- Series of changes on a single route which are included in the two-year Transit Service Plan and cumulatively meet any of the above criteria.
- Proposed changes that are anticipated to be controversial with a particular community or interested parties based on public feedback.
- System-wide change concurrently affecting five percent or more of the total system revenue hours.

Service change proposals that do not meet the criteria for "major" service changes are handled at the staff level and are still subject to an appropriate level of public and community review and comment.

DISCUSSION:

The following transit service changes will take effect on Monday, October 12, 2015, and were approved by the VTA Board of Directors in May 2015 as part of the two year FY16-FY17 Transit Service Plan. The Transit Service Plan also included the required Title VI Service Equity Analysis. The service changes for October are all considered minor in nature and are mainly to revise schedules, connections and running times.

Community Bus Line 37 (West Valley College-Capitol LRT Station): Minor schedule changes will be made.

Community Bus Line 45 (Alum Rock Transit Center-Penitencia Creek Transit Center): Minor schedule changes will be made.

Community Bus Line 48 (Los Gatos-Winchester Transit Center): On weekdays, afternoon schedule changes will be made due to a change in school hours at Los Gatos High School.

Community Bus Line 49 (Los Gatos-Winchester Transit Center): On weekdays, afternoon schedule changes will be made due to a change in school hours at Los Gatos High School.

Line 51 (De Anza College-Moffett Field/Ames Center): Minor schedule changes will be made in the northbound direction.

Line 53 (West Valley College-Sunnyvale Transit Center): Minor schedule changes will be made.

Express Line 101 (Camden & Highway 85-Palo Alto): Minor schedule changes will be made.

Express Line 102 (South San Jose-Palo Alto): Due to passenger requests, the first southbound afternoon trip will be moved 10 minutes earlier to start at Hansen & Page Mill at 3:15 p.m. Minor schedule changes will be made to the other afternoon trips.

Express Line 104 (Penitencia Creek Transit Center-Palo Alto): Minor schedule changes will be made. The 6:39 a.m. westbound trip will start at 6:33 a.m. due to increasing traffic congestion.

Express Line 120 (Fremont BART-Lockheed Martin/Moffett Park-Shoreline): Minor schedule changes will be made.

Express Line 121 (Gilroy-Lockheed Martin/Moffett Park): Minor schedule changes will be made. Most morning northbound trips will start earlier due to increasing traffic congestion.

Limited Stop Line 304 (South San Jose-Sunnyvale Transit Center): Minor schedule changes will be made.

Prepared By: Jim Unites

Memo No. 4785



Date: September 9, 2015 Current Meeting: September 16, 2015 Board Meeting: N/A

BOARD MEMORANDUM

TO: Santa Clara Valley Transportation Authority

Transit Planning & Operations Committee

THROUGH: General Manager, Nuria I. Fernandez

FROM: Director of Public Affairs and Marketing, Bernice Alaniz

SUBJECT: Quarterly Marketing Report

FOR INFORMATION ONLY

BACKGROUND:

In August, VTA received two (2) First Place 2015 APTA Annual AdWheel Awards. The first award was for VTA's wrapped holiday train that was in service December 2014. VTA designed an eye-catching holiday light rail wrap to induce holiday shoppers to take notice and ride light rail to shopping destinations. Using state-of-the-art electroluminescent tape and reflective vinyl tape, VTA graphic designers coordinated with the light tape manufacturer, Electro-LuminX; transit advertising firm, Lamar and the California Public Utilities Commission to produce and install the holiday wrap on the light rail trains that featured flashing holiday lights "displayed" across the top of the light rail vehicle as well as gifts outlined in reflective vinyl tape that illuminated when hit with direct light such as a car's headlights. The second award was for VTA's 2014 Annual Report. This Annual Report differs in size and look than traditional reports. It was a visual demonstration of how VTA was taking a new approach to projects and service delivery. The smaller size made it easy to distribute and keep as a handy reference to refer to for important statistics. The look was modern and the copy was clean and clutter free.

VTA marketing staff has been working on a number of promotions to increase revenue and ridership on our system. Significant time has been focused on promoting select Express Bus lines. With the Express Bus campaign, staff has been actively engaging employers whose work locations are along Express Bus routes. As part of the promotion, employers were offered an opportunity to purchase Clipper cards with 5 round-trip express bus fares for the price of 4. This ongoing campaign will build upon previous marketing efforts that has seen VTA's Express Bus ridership steadily grow into one of its great success stories. As an example, in June 2015, average weekday ridership for Express Bus was up 15.1% compared to June 2014. In addition, June 2015 average Saturday and average Sunday/Holiday were also up 19.2% and 13.4% compared to June 2014.

Lastly, first quarter FY 2016 marketing efforts focused on promoting VTA to county residents whenever attending cultural, community and sporting events emphasizing the need to purchase round-trip fare in advance through the use of Clipper cards or VTA's mobile fare platform, EventTIK.

DISCUSSION:

Marketing Efforts & Promotions

Express Bus

Beginning August

The objective of the campaign is to promote VTA Express Bus service to potential customers who travel to jobs along the express bus routes. A secondary objective is to highlight the message that VTA is the total transportation solution provider in Santa Clara County. Based on the 2013 VTA On-Board survey, the typical Express Bus customer is:

- 58% Male; 42% Female
- Average age 37.3 years old
- 17% Hispanic; 50% Asian; 24% White
- Has an avg. annual household income of \$83K
- 71% have access to a vehicle
- 45% use Eco Pass; 38% use a Clipper card

To implement the campaign, the following strategies were used:

- Established a pre-loaded fare for Express Bus offering 5 days for the price of four on Clipper cards
- Established partnerships with Eco Pass clients, 511 Rideshare, business and downtown associations, colleges, chambers of commerce, and through other contacts to promote express bus service.
- Created and distributed targeted flyers/collateral highlighting the connection between origin points and final destination.
- Targeted online/digital ads to employer sites that are served by Express bus lines.

Summer Blast Pass

June - August

Once again, VTA offered youth 17 and under unlimited rides on VTA bus and light rail with the \$75.00 Summer Blast Pass. Summer Blast Pass represented a savings of \$60.00 off the regular price of three youth monthly passes and was the perfect VTA pass to get to summer jobs, the movies, the mall and all favorite places in Santa Clara County. For customer convenience, passes were sold online, mail and at VTA's retail locations. An estimated total of 1,500 passes were sold this Summer.

Dump the Pump Day

June 18, 2015

The 2015 Dump the Pump (DTP) promotion highlighted using public transportation as a great alternative to driving. To our external customers, VTA promoted DTP with a selfie contest. Participants were asked to take a selfie and post the picture on VTA's social media platform using the hashtag #vtadumpthepump. Those who participated were automatically entered in a random drawing to win prizes from VTA. For our internal audience, the General Manager again launched a campaign to get VTA employees to ride the entire month in June. Employees who went the extra mile and adopted a green commute for all work days in June became exclusive members of the GM's "Winners Circle". Approximately 50 employees answered the call! All became part of the Winners Circle and each received VTA prizes and participated in a GM-hosted ice cream social.

July Service Changes (major) July 6, 2015

For the 2015 July Service Changes, the following lines were highlighted:

- 1. Express Line 181 On weekdays, midday service began operating every 15 minutes. On Sundays, all trips began operating to downtown San Jose.
- 2. Line 55 On weekdays, the new 55X trips began operating on school days between Lakewood Village and Fremont High School in order to provide faster services.

To inform the public, the following pieces were produced:

- VTA Take One article
- Onboard Flyers, bus stop signs, carcards
- Information was provided through:
 - VTA's website
 - News Releases
 - o Email to various groups
 - GovDelivery and social media
 - o Outreach to current passengers onboard vehicles and at light rail stations

National Night Out - Mayfair Community Center

August 4, 2015

Promoting safety is the main message VTA conveyed to the public during National Night Out. Safety practices onboard, while waiting for transit vehicles and even driving around vehicles were emphasized throughout the day. Approximately 250 people visited the VTA booth and received information about VTA Lines 22, 66, 70, 77 and the 522.

Current and Recent Partnership

VTA continues to partner with public and private sector organizations to promote riding VTA to community events and local destinations. These partnerships increase the public's awareness of VTA service and stress the ease of taking VTA to these popular destinations.

With these in-kind promotional partnerships, VTA generally provides partner organizations with valuable public exposure through select advertising media such as VTA's Take-One monthly passenger newsletter, the VTA web site, and transit ad spaces. In exchange, VTA receives an equivalent amount of recognition and advertising exposure, such as logo placement or promotional message in the partners' collateral and promotional activities. Marketing and Communications completed the following promotional partnerships during the first quarter of FY 2016:

America's Festival
July 4, 2015

The Rotary Club of San Jose again announced a free spectacular professional fireworks display in downtown San Jose. VTA partnered with the rotary club to promote taking public transportation to the event at Discovery Meadows Park. VTA provided and received from San Jose Rotary the equivalent of more than \$14,000 in advertising value.

<u>San Jose Jazz Summer Fest</u> August 7 - 9, 2015

The San Jose Jazz Summer Fest reached a major milestone this year as it proudly presented its 26th festival season. Silicon Valley's largest premier annual music cultural event returned with an exceptional line-up of talent in and around Plaza de Cesar Chavez park in downtown. San Jose. VTA partnered with the San Jose Jazz to encourage riders to use VTA to the festival.

<u>Chacho's Taco Festival</u> August 15, 2015

This first time partnership with Chacho's Taco Festival & Milagro Marketing provided VTA an opportunity to reach a wider audience. Both VTA and the festival received promotional and advertising opportunities equivalent to \$12,000.

Silicon Valley Pride August 30, 2015

VTA was a proud partner of the Silicon Valley Pride which hosted a high-tech festival to celebrate Lesbian, Gay, Bisexual and Transgender Pride. This 40th anniversary highlighted the youth of the community with strong engagement from the Gay/Straight Alliance Network.

Prepared By: Dino Guevarra, Manager, Market Development Memo No. 4915



Date: September 9, 2015
Current Meeting: August 19, 2015
Board Meeting: N/A

BOARD MEMORANDUM

TO: Santa Clara Valley Transportation Authority

Transit Planning & Operations Committee

THROUGH: General Manager, Nuria I. Fernandez

FROM: Chief Operating Officer, Inez Evans

SUBJECT: Update on Compressed Natural Gas (CNG) analysis

FOR INFORMATION ONLY

On August 15, 2013 Santa Clara Valley Transportation Authority (VTA) staff began an analysis of Compressed Natural Gas (CNG) as a potential fuel for the transit fleet. This study was requested by the Transit Planning and Operations Committee (TP&O) based on a recommendation from Director Khamis. The analysis is complete and staff's recommendation is to continue with the policy the Board adopted in 2000; namely to pursue the diesel path to conversion to a zero emission fleet.

BACKGROUND:

In 1999 the California Air Resources Board (CARB) required transit operators to select either a diesel path or a CNG fuel path to achieve a zero emission standard. Based upon available evidence at that time, the Board selected the low sulfur diesel fuel path. Because of the recent low cost and increased availability of CNG, the committee requested staff to reevaluate this decision.

With the continued requirement of transitioning to a zero emission fleet, staff evaluated the several aspects of a proposed conversion to determine if there was an opportunity to achieve a cost savings to the organization through the use of CNG fuel. The analysis shows that while there is a theoretical savings of \$2.3 million per year, this is offset by other factors involved in conversion to a CNG fuel source beyond the cost of fuel:

- Capital cost of facilities for service and fueling
- Potentially greater Green House Gas (GHG) emissions
- Increased service costs
- Decreased service reliability
- Challenge of supporting three technologies (diesel, electric and CNG) simultaneously

Given the importance of potential savings suggested by the cost comparison of diesel fuel to CNG, staff analyzed the overall impacts on our operation with great care. We also participated with CARB in an extensive test of emissions generated by our hybrid electric coaches as compared to CNG coaches on both dynamometer testing as well as actual revenue service testing. Staff's decision was influenced by the fact that the majority of the cost savings is in the purchase comparison of the vehicles (diesel electric hybrid v. CNG). Due to CARB's requirement that we begin purchasing a percentage of zero emission vehicles in 2018 transitioning to all zero emission bus purchases by 2028, this advantage is reduced.

Staff recognizes and appreciates the opportunity to examine this potential economy. As a result of this analysis, we are reassured that the Board has selected the most prudent and path to achieve the transition to a zero emission fleet. Attachment A provides more detailed information on the analysis that was performed and updates the previous report.

SUMMARY

Conversion to CNG buses could potentially result in some operating cost savings. However, the cost for yearly maintenance is higher. The buses are less fuel efficient. CNG may increase Greenhouse Gas emissions. Pending regulations requiring zero-emission buses would require additional facility costs and result in three different fuel structures per division, increasing maintenance, parts and materials complexity and likely requiring expansion of two divisions. The timeline to complete facility modifications and fueling station infrastructure is also substantial. These factors offset any potential savings.

Therefore, VTA staff recommends continuing the purchase of hybrid buses with a shift to zeroemission battery buses as they become more widely available.

Prepared By: Art Douwes

Memo No. 5154

FUEL COSTS

The fuel cost analysis in the 2013 report was based on average pricing for that year, with a 3% inflation escalator going forward, as projected by the Federal Department of Energy. Since that time, both diesel and CNG prices have actually fallen significantly, as shown below. Forecasting fuel prices is likely to remain extremely difficult.

	Diesel (per gallon)	CNG (per diesel gallon equivalent)
2013 Report Cost Assumption	\$3.64	\$0.91
2015 Year to Date Actual Average	\$1.88	\$0.36

Please note that VTA pays wholesale prices and receives some tax exemptions. Diesel pricing shown is per gallon; CNG pricing is given in diesel gallon equivalency (DGE). These figures include sales tax.

Considering the updated fuel pricing, any savings from switching the fleet to CNG are substantially reduced. Fuel savings would decline from an estimated cumulative of \$35,162,503 to \$19,577,657. The total savings over 12 years, which included cost estimates for maintenance of CNG vehicles, facility installation and maintenance costs, and the cost savings from buying CNG vehicles instead of hybrid vehicles, would now be \$27,357,619, down from \$42,942,465 in the 2013 analysis.

BUS COST

The 2013 evaluation indicated a bus cost differential between comparably equipped CNG and hybrid buses of approximately \$150,000 per bus. This is the main area of savings in all analyses done. This price differential appears to be the same in 2015.

FUELING FACILITY O&M COST

VTA's experience indicates that the diesel fueling facilities have negligible Operation and Maintenance (O&M) costs. VTA does not have any experience operating a CNG fueling facility. However, based on other transit agencies such as Los Angeles County Metropolitan Transportation Authority (LACMTA) and figures from CNG providers, there is a significant cost for the compression of natural gas as well as maintenance cost of the compressors and other parts of the facility. This cost is estimated to be approximately \$0.41 per diesel gallon equivalent (DGE).

FACILITY MODIFICATION

Modifications are required for maintenance facilities to safely accommodate CNG buses. Procurement and installation of CNG fueling facilities is required as well. Estimates for these facility projects range from \$18,000,000 to \$47,000,000, for VTA's three bus divisions. In the 2013 analysis, VTA estimated these costs at \$28,000,000. These numbers are still valid in 2015. These are construction cost estimates. There may also be some real estate acquisition costs, as noted on the Fleet Projections section of this memorandum.

MAINTENANCE COST

It is widely acknowledged that the maintenance cost for CNG buses is higher than diesel hybrid buses. VTA's maintenance cost for standard diesel buses is approximately \$1.30 per mile, which includes parts and labor. VTA's maintenance cost for hybrid buses is lower, approximately \$1.01 per mile -- though it should be noted that the hybrid buses are newer and they will require a one-time battery replacement. The estimated cost for the battery replacement adds approximately \$0.08 per mile.

Other agencies with CNG fleets contacted for this analysis indicated that the additional costs for maintenance of the CNG buses are between \$0.06 and \$0.20 per mile more than standard diesel buses. VTA buses logged 18,071,293 miles in FY 2015. Using an average of \$0.13 per mile, this would add \$2.35 million per year to VTA's annual maintenance cost for a CNG fleet. This alone offsets the purchasing and fuel cost advantages of CNG.

EFFICIENCY

All of the cost analyses provided take into account the lower energy capacity of CNG versus diesel hybrid. Because of that lower energy capacity, the mileage for CNG buses is approximately 3.6 mpg (using DGE) as compared to 5.1 mpg for diesel hybrid buses. This could potentially exacerbate future fuel cost increases because the CNG fleet would require more fuel. The current fleet used approximately 4 million gallons of fuel in FY 2015. A CNG fleet would have required 5 million gallons to complete the same number of miles.

The 2013 CNG analysis assumed 176 new buses in service by FY 2018. For a variety of regulatory and funding reasons, VTA purchases are now planned to be compressed for delivery between FY 2017 and FY 2020 (see Fleet Projections section). While this alone would change the numbers of the estimate, it does not affect the overall conclusion from 2013.

That analysis showed that when the costs of maintenance, fuel and facilities, and new bus costs are taken into account, savings are possible by switching from hybrid diesel buses to CNG buses for VTA's fleet. However, the savings are offset by reliability and emissions issues. We also know, going forward, we face the costs associated with the State's mandate to switch to zero-emission buses. Other potential costs and issues are discussed elsewhere in this report.

CALIFORNIA AIR RESOURCES BOARD (CARB) TESTING and RESULTS:

EMISSIONS

The California Air Resources Board (CARB) requested the use of three VTA hybrid buses for emissions testing and evaluation. In 2014, CARB tested three VTA hybrid buses (low mileage, medium mileage, and high mileage) on a chassis dynamometer as well as on the road over a specific route. The preliminary result of the testing indicated that there was no apparent degradation of the emissions system.

Previously, CARB contracted with West Virginia University (WVU) to test CNG buses. CARB provided the following analysis based on those and the VTA bus tests:

"Results from these two studies, as well as those from the VTA study, are reported in the attached table. CNG Total Hydrocarbon (THC) emissions were higher for both chassis dynamometer and on-road testing relative to the hybrid and diesel buses. This is most likely due to the use of CH_4 , a hydrocarbon itself, as the primary fuel source. Emissions of Carbon Monoxide (CO) were also considerably higher for CNG buses relative to the hybrid and diesel buses for chassis dynamometer and on-road testing. CO emissions are significantly larger for the more aggressive urban driving routes and for the higher-mileage CNG buses relative to the low-mid-mileage buses tested. Nitrogen Oxides (NO_x) emissions are on average lower for CNG buses for dynamometer testing, and similar values for on-road testing compared to hybrid buses. However, for both testing regimes, CNG buses show large inter-bus variability for NO_x emissions. CO_2 emissions are comparable between hybrid, diesel, and CNG buses for all tests. However, CNG buses again show larger variability between buses and routes than for hybrid and diesel buses."

CARB also provided their Emission Comparison of Transit Bus Technologies. This assessment indicates that the greenhouse gas (GHG) emissions of the hybrid bus, on a well-to-wheel basis, are lower than that of a CNG bus. The electric bus is projected to produce the least GHG. More detail on the CARB testing data is included in Appendix A of this memorandum.

BUS FLEET PROJECTIONS

CARB proposed new regulations to reduce Greenhouse Gas Emissions as well as other regulated emissions for transit bus fleets. The goal is to have 100% of the transit buses be zero emissions buses (ZEBs) by 2040. To achieve this goal and transition from fossil fuel buses to ZEBs, the proposed regulation is to mandate that a percentage of transit buses purchased in California after 2018 be ZEBs and that all new transit buses purchased after 2028 be ZEBs.

VTA'S BUS PROCUREMENT NEEDS

VTA's bus procurement plans include bus replacements and buses for service expansion. Between now and 2028, VTA estimates purchasing approximately 600 new buses. Considering the expected requirement to start purchasing ZEBs effective 2018, the estimated bus procurement plan is as follows:

Year Order	Fossil Fuel Buses	ZEBs	Total
2015	179	5	184
2017	57	0	57
2018	45	11	56
2021	56	14	70
2022		20	20
2025	37	37	74
2026	65	65	130
Total	439	147	591

VTA will be purchasing another (439) fossil fuel buses, which could be diesel, hybrid electric diesel, or CNG. The following factors should be considered for the purchase of the buses.

FACILITIES

To operate CNG or electric buses, VTA must make significant facility modifications. For CNG buses, the maintenance facilities need to be modified to safely accommodate the volatile lighter-than-air natural gas.

Additionally, CNG fueling facilities must be installed at the three bus divisions. For zero emission buses, charging stations must also be installed at each bus division.

The use of CNG buses would mean that, in the near future, VTA would be operating buses on three different fuels (diesel, CNG and electricity). This would also mean that the facilities would need to be equipped for such. Adding both CNG fueling and electric charging facilities will be difficult at two of the bus divisions due to space limitations, compounded by the expansion of VTA's fleet -- especially with plans to more than double the number of 60' articulated buses.

The Chaboya Division is VTA's most crowded facility, and the introduction of articulated buses to that yard for planned BRT routes will bring it to maximum capacity, even without additional fueling facilities.

At North Division, the situation is similar, full introduction of the Santa Clara-Alum Rock BRT service and the future increase in standard articulated buses will also bring it to its maximum practical capacity. The issue overall is more critical at North because, with Hwy 101 and surface roads on all sides, there is no adjacent property that could be used for expansion.

CNG will be new technology to VTA. There will be costs associated with introducing it to the fleet. As examples, other properties have experienced issues with the methane detection and fire suppression systems becoming sources of service interruptions and requiring specialized maintenance. They found it critical to work with the fuel station manufacturer to review and revise maintenance practices and procedures, and to determine life-cycle planning, including regulatory agencies periodic inspections. They found it essential to review and revise staffing levels, financial plans, and capital funding, and they discovered that some materials required for vehicle and station maintenance have long lead times.

OPERATIONS RELIABILITY

Reliability is a major factor in transit operation. Breakdowns on the road (Roadcalls) are a disruption to passengers. An excessive number of Roadcalls could lead the public to lose confidence in the system and therefore reduced ridership. Although the CNG buses have made improvements in their performance, they are still more prone to breakdowns than diesel engines. CNG Engines require more frequent overhauls.

VTA's experience with the hybrid buses indicates a better reliability. For the 3rd quarter of FY 2014, the overall fleet averaged 8,409 miles between road calls, while the standard hybrid bus averaged 11,556 miles between road calls. This equates to a 37% improvement in reliability. The Express hybrid buses operated at more than 67,000 miles between road calls.

MAINTAINABILITY

Extensive new equipment and training of maintenance mechanics at an unknown cost will be required to safely maintain CNG buses. VTA training staff will need to be expanded if both CNG and zero-emission buses are introduced to the fleet. Along with specialized training for the CNG itself, specialized training will be needed for handling the high-pressure tanks, valves, and plumbing used to store the CNG on board the buses.



Date: September 3, 2015 Current Meeting: September 17, 2015 Board Meeting: N/A

BOARD MEMORANDUM

TO: Santa Clara Valley Transportation Authority

Congestion Management Program & Planning Committee

THROUGH: General Manager, Nuria I. Fernandez

FROM: Director of Planning and Program Development, John Ristow

SUBJECT: Land Use and Transportation Briefing Series: Mountain View

FOR INFORMATION ONLY

BACKGROUND:

As the Congestion Management Agency (CMA) and transit agency for Santa Clara County, VTA has a valuable role in the integration of land use and transportation planning. State legislation requires CMAs to establish "A program to analyze the impacts of land use decisions made by local jurisdictions on the regional transportation system." (Government Code 65089 (b) (4)). In addition, transit agencies typically work with local jurisdictions to review and provide comments on development proposals near transit routes and facilities. However, VTA does not have land use decision-making authority, and it is therefore essential for VTA and its Member Agencies (Cities of Campbell, Cupertino, Gilroy, Morgan Hill, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, Sunnyvale, town of Los Gatos and Los Altos and Santa Clara County), to work hand-in-hand to achieve an integrated and thriving land use and transportation system.

The core goal of VTA's land use activities is to strengthen the connection between land use decisions and transportation investments in order to increase walking, biking, and transit ridership, manage congestion, and improve the livability and economic vitality of Santa Clara County. With this in mind, VTA has developed several programs and initiatives to coordinate local land use decision-making with countywide transportation planning. These efforts, which VTA refers to as the Land Use and Transportation Integration (LUTI) Partnerships Program, were discussed in presentations to VTA Board Committees in August 2014 and January 2015.

The purpose of the LUTI Partnerships Program is to build on existing VTA initiatives to enhance VTA's involvement in land use decision-making. A key objective is to create opportunities for VTA and Member Agencies to work together earlier in the planning and development process to produce more effective and meaningful collaborative outcomes. This relationship is mutually beneficial: VTA's transportation investments greatly influence many aspects of city livability

and sustainability, and local land use decisions influence the effectiveness of the various modes of travel (e.g., car, walk, bike, and transit). Both VTA and local efforts attain greater value by working together through each phase of development.

DISCUSSION:

Building on the LUTI Partnerships objective of creating opportunities for VTA and Member Agencies to work together, VTA staff is initiating a series of Land Use and Transportation Briefings at VTA Board Standing and Advisory Committees starting in September 2015. The purpose of this series is to highlight areas around the county where large-scale development is currently occurring, planned or proposed in the near future. These briefings will provide an opportunity for VTA and local agency staff to highlight the development projects or plans that are occurring in an area, the transportation opportunities and challenges associated with this growth, and potential strategies to address these issues. Bringing these items to VTA Committees will provide a forum for multi-jurisdictional discussions about land use decisions that are likely to have implications for the regional transportation system - fulfilling one of VTA's roles as a CMA.

At the September Technical Advisory Committee (TAC), Policy Advisory Committee (PAC), and Congestion Management Program & Planning Committee (CMPP) meetings, VTA and City of Mountain View staff will provide a brief presentation on major development projects and area plans occurring in Mountain View. Among the areas staff will highlight include developments in the North Bayshore area; the San Antonio Center area; along El Camino Real; and in the South/East Whisman area. Staff will also outline current transportation initiatives in Mountain View including the Shoreline Boulevard Corridor Study and an upcoming master plan for the Mountain View Transit Center, and will solicit input on other potential strategies to address the effects of development on the regional transportation system.

VTA staff's intent is to bring these briefings to the TAC, PAC and CMPP on a regular basis, based on the timing of major development projects and proposals, and interest from VTA Committee members and Member Agency staff. VTA welcomes suggestions for other areas of the county to cover, or ways to enhance and further this dialogue.

Prepared By: Robert Swierk

Memo No. 5157