
# SHORT RANGE TRANSIT PLAN

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY

FY2014 - 2023

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## APPROVED AUGUST, 2014

Federal transportation statutes require that the Metropolitan Transportation Commission (MTC), in partnership with state and local agencies, develop and periodically update a long-range Regional Transportation Plan (RTP), and a Transportation Improvement Program (TIP) which implements the RTP by programming federal funds to transportation projects contained in the RTP. In order to effectively execute these planning and programming responsibilities, MTC requires that each transit operator in its region which receives federal funding through the TIP, prepare, adopt and submit to MTC a Short Range Transit Plan (SRTP).

The preparation of this report has been funded in part by a grant from the U.S. Department of Transportation (DOT) through Section 5303 of the Federal Transit Act. The contents of this SRTP reflect the views of the Santa Clara Valley Transportation Authority, and not necessarily those of the Federal Transit Administration (FTA) or MTC. Santa Clara Valley Transportation Authority is solely responsible for the accuracy of the information presented in this SRTP.

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# CHAPTER 1: OVERVIEW OF TRANSIT SYSTEM

Santa Clara Valley Transportation Authority (VTA) is a multimodal independent special district that provides bus, light rail, and paratransit services. VTA is also a funding partner for the Caltrain, Capital Corridor, and the Altamont Corridor Express regional rail services. VTA is also the county's Congestion Management Agency (CMA). As the CMA, VTA is responsible for countywide transportation planning including the Congestion Management Program (CMP), design and construction of specific highway, pedestrian, and bicycle improvement projects, as well as promotion of transit oriented development. VTA provides these services within the municipalities of Campbell, Cupertino, Gilroy, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Palo Alto, San José, Santa Clara, Saratoga, Sunnyvale, and unincorporated areas of the county. VTA continually builds partnerships to deliver transportation solutions that meet the evolving mobility needs of Santa Clara County.

VTA was created in 1972 pursuant to the Santa Clara County Transit District Act. Effective December 1, 1994, VTA became the Congestion Management Agency in Santa Clara County, undertaking the responsibility for countywide transportation planning and funding and for managing the county's blueprint to reduce congestion and improve air quality.

Prior to January 1, 1995, the County Board of Supervisors served as the Board of Directors of VTA. Effective January 1, 1995, pursuant to State legislation, VTA has operated under a separate Board of Directors composed of County and city representatives. On January 1, 2000, pursuant to State legislation, VTA's name was officially changed from the Santa Clara County Transit District.

## Governance

VTA is governed by its own Board of Directors. The VTA General Manager and staff implement the policy direction that the Board of Directors sets. The Board consists of 12 voting member, six alternate members, and three ex-officio, non-voting members. The VTA Board of Directors consists of elected governing board officials from the cities within Santa Clara County as well as the County of Santa Clara. Metropolitan Transportation Commissioners who reside in Santa Clara County, and who are not members or alternate

members to the Board of Directors, are invited to serve as ex-officio members of the VTA Board. VTA Board members are appointed by the jurisdictions they represent. Board membership is generally based on population, as follows:

## Organizational Structure

The following two pages display the Board roster and VTA's organizational chart.

### Board Member Groupings

| | | |
|---|---|---|
| **Group 1** | **City of San José** | 5 members, 1 alternate |
| **Group 2** | **North County Cities**<br>Los Altos, Los Altos Hills, Mountain View, Palo Alto | 1 member, 1 alternate |
| **Group 3** | **West Valley Cities**<br>Campbell, Cupertino, Los Gatos,<br>Monte Sereno, Saratoga | 1 member, 1 alternate |
| **Group 4** | **South County Cities**<br>Gilroy, Morgan Hill | 1 member, 1 alternate |
| **Group 5** | **Northeast County Cities**<br>Milpitas, Santa Clara, Sunnyvale | 2 members, 1 alternate |
| **Group 6** | **County of Santa Clara** | 2 members, 1 alternate |

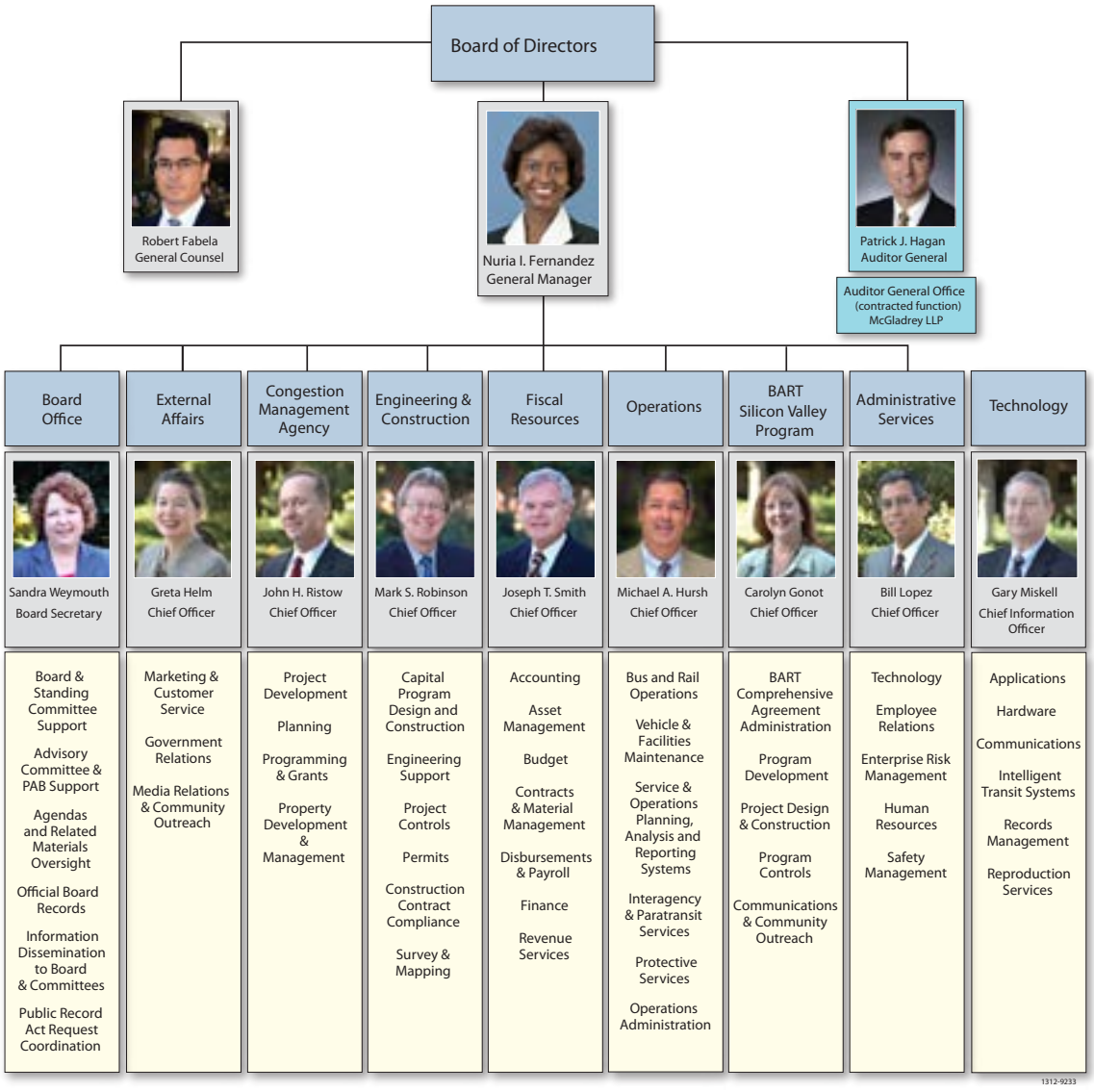
VTA Board members are appointed for two-year terms. Groups 1 and 6 are appointed by the relevant governing entity. In the case of Groups 2, 3, 4 and 5, the cities within those groups determine how their appointments to the Board are made. Appointing authorities are strongly encouraged, where possible, to: (1) appoint individuals with appropriate experience and qualifications in transportation; (2) ensure that there is sufficient remaining time in the elected official's term of office to allow full completion of their term as a Director; and (3) reappoint representatives to consecutive terms.

## VTA Board Of Directors, January 2014

| | | |
|---|---|---|
| GROUP 1 (San José) | | |
| City of San José | Xavier Campos | Term Ends: 12/31/2015 |
| City of San José | Rose Herrera | Term Ends: 12/31/2015 |
| City of San José | Ash Kalra | Term Ends: 12/31/2015 |
| City of San José | Johnny Khamis | Term Ends: 12/31/2015 |
| City of San José | Donald Rocha | Term Ends: 12/31/2015 |
| City of San José | Alternate (TBD) | |
| GROUP 2 (North County) | | |
| City of Los Altos | | |
| Town of Los Altos Hills | Rich Larsen, Alternate | Term Ends: 12/31/2015 |
| City of Mountain View | | |
| City of Palo Alto | Gail A. Price | Term Ends: 12/31/2015 |
| GROUP 3 (West Valley Cities) | | |
| City of Campbell | | |
| City of Cupertino | | |
| Town of Los Gatos | Joe Pirzynski* | Term Ends: 12/31/2015 |
| City of Monte Sereno | | |
| City of Saratoga | Chuck Page, Alternate | Term Ends: 12/31/2015 |
| GROUP 4 (South County) | | |
| City of Gilroy | Perry Woodward | Term Ends: 12/31/2015 |
| City of Morgan Hill | Larry Carr, Alternate | Term Ends: 12/31/2015 |
| GROUP 5 (Northeast County) | | |
| City of Milpitas | Jose Esteves | Term Ends: 12/31/2015 |
| City of Santa Clara | Jamie Matthews, Alternate | Term Ends: 12/31/2015 |
| City of Sunnyvale | David Whittum | Term Ends: 12/31/2015 |
| GROUP 6 (Santa Clara County) | | |
| County of Santa Clara | Cindy Chavez | Term Ends: 12/31/2015 |
| County of Santa Clara | Ken Yeager | Term Ends: 12/31/2015 |
| County of Santa Clara | Dave Cortese, Alternate* | Term Ends: 12/31/2015 |
| EX-OFFICIO, City of San José | Sam Liccardo* | Term Ends: 12/31/2015 |

* Board member Joe Pirzynski and alternate Board member Dave Cortese also serve on the Metropolitan Transportation Commission. MTC commissioners serve as ex-officio members only when not serving as a regular/alternate member of the VTA Board of Directors.

# Santa Clara Valley Transportation Authority (VTA)
# Organizational Structure
# as of December 16, 2013



### Contracted Transportation Services

VTA currently provides two contracted services: the Altamont Commuter Express (ACE) Shuttle program and the Americans with Disabilities Act paratransit service. The VTA contract for ACE Shuttles is with El Paseo Limousine through December 31, 2015. VTA's paratransit service is administrated and operated through a contract with Outreach and Escort, Inc. (OUTREACH). In December 2013, the Board authorized a contract extension with Outreach through June 2021. This chapter provides more detail on these services in a later section.

### Labor Unions

VTA employees are represented by the following unions:

**Amalgamated Transit Union Division (ATU) 265**

Contract term – February 2, 2014 – February 1, 2015

**Services Employees International Union (SEIU Local 521)**

Contract term – 6/1/2013 through 5/31/2015

**American Federation of State County and Municipal Employees Local 101 (AFSCME)**

Contract term – 6/1/2013 through 4/30/2016

**Transportation Authority Engineers and Architects Association (TAEA)**

Contract term – November 11, 2013 through June 30, 2016

## Transit Services Provided and Areas Served

VTA Transit operates 70 bus lines and 3 light rail transit lines, 2 of which travel along the main trunk section between Tasman at the northern end and the Transit Mall in downtown San José for a portion of their route.

## Bus Operations

VTA has an active bus fleet of 432 buses. VTA's bus fleet varies in size and configuration based on service requirements. Overall, 319 buses are low-floor standard buses, 69 are high-floor standard buses, and 44 are high-floor 28-foot gas powered community buses. Of the 388 standard buses, 40 are 60-foot articulated diesel powered buses used on high demand routes such as Line 22 and Rapid 522, 22 are restricted service application 35-foot buses, and 326 are 40-foot buses. All standard buses are diesel powered with the 90 newest buses being hybrid diesel-electric powered. The average age of the active fleet is 10.8 years, as of January 1, 2014. There are approximately 3,800 bus stops and 800 shelters along the bus routes. VTA also maintains 9 bus park & ride lots. Buses are operated and maintained from three operating divisions and an Overhaul and Repair (O&R) facility: Cerone Operating Division, Don Pedro Chaboya Operating Division, North Operating Division, and Cerone O&R Division.

VTA's bus categories, route numbers and service locations are as follows:

**Core**

| | |
|---|---|
| 22 | Palo Alto Transit Center - Eastridge Transit Center via El Camino |
| 23 | DeAnza College - Alum Rock Transit Center via Stevens Creek |
| 25 | DeAnza College - Alum Rock Transit Center via Valley Medical Center |
| 26 | Sunnyvale/Lockheed Martin Transit Center - Eastridge Transit Center |
| 55 | De Anza College - Great America |
| 60 | Winchester Transit Center - Great America |
| 61 | Good Samaritan Hospital - Sierra & Piedmont via Bascom |
| 62 | Good Samaritan Hospital - Sierra & Piedmont via Union |
| 64 | Almaden LRT Station - McKee & White via Downtown San José |
| 66 | Kaiser San José - Milpitas/ Dixon Rd. via Downtown San José |
| 68 | Gilroy Transit Center - San José Diridon Transit Center |
| 70 | Capitol LRT Station - Great Mall/Main Transit Center |
| 71 | Eastridge Transit Center - Great Mall/Main Transit Center via White Road |
| 72 | Senter & Monterey - Downtown San José |
| 73 | Snell & Capitol - Downtown San José |
| 77 | Eastridge Transit Center - Great Mall/ Main Transit Center |
| 323 | De Anza College - Downtown San José |

**Rapid**

522 Palo Alto Transit Center - Eastridge Transit Center

**Local**

10 Free Airport Flyer: Santa Clara Transit Center - Metro Airport LRT Station via San José International Airport
12 San José Civic Center - Eastridge Transit Center via San José Flea Market
27 Good Samaritan Hospital - Kaiser San José
31 Evergreen College - Eastridge Transit Center
35 Downtown Mountain View - Stanford Shopping Center
40 Weekday & Saturday - Foothill College - La Avenida & Shoreline Sunday - San Antonio & Lyell - La Avenida & Shoreline
46 Great Mall/Main Transit Center - Milpitas High School
47 Great Mall/Main Transit Center - McCarthy Ranch
51 De Anza College - Moffett Field/Ames Center
52 Foothill College - Downtown Mountain View
53 West Valley College - Sunnyvale Transit Center
54 De Anza College - Sunnyvale/Lockheed Martin Transit Center
57 West Valley College - Great America via Quito Rd
58 West Valley College - Alviso via Fruitvale
63 Almaden Expwy. & Camden - San José State University
81 Weekday - Vallco-San José State University Sat - Vallco-Santa Clara Transit Center
82 Westgate - Downtown San José
89 California Ave. Caltrain Station - Palo Alto Veteran's Hospital

**Community Bus**

13 Almaden& McKean - Ohlone/Chynoweth LRT Station
14 Gilroy Transit Center - St Louise Hospital
16 Morgan Hill Civic Center - Burnett Avenue
17 Gilroy Transit Center - Monterey & Las Animas
18 Gilroy Transit Center - Gavilan College
19 Gilroy Transit Center - Wren & Mantelli
32 San Antonio Shopping Center - Santa Clara Transit Center
34 San Antonio Shopping Center - Downtown Mountain View
37 West Valley College - Capitol LRT Station

**Community Bus (continued)**

39 The Villages - Eastridge Transit Center
42 Weekday - Kaiser San José - Evergreen Valley College Saturday Santa Teresa LRT - Monterey and Senter
45 Alum Rock Transit Center - Penitencia Creek Transit Center
48 Los Gatos Civic Center - Winchester Transit Center via Winchester Blvd.
49 Los Gatos Civic Center - Winchester Transit Center via Los Gatos Blvd.
65 Kooser & Meridian - 13th & Hedding
88 Palo Alto Veteran's Hospital - Middlefield and Colorado
200 Baypointe LRS - Mountain View LRS Evening Service
201 Downtown San José DASH

**Express Bus**

101 Camden & Highway 85 - Palo Alto
102 South San José - Palo Alto
103 Eastridge Transit Center - Palo Alto
104 Penitencia Creek Transit Center - Palo Alto
120 Fremont BART - Lockheed Martin Transit Center/Moffett Park-Shoreline
121 Gilroy Transit Center - Lockheed Martin Transit Center/Moffett Park
122 South San José - Lockheed Martin Transit Center/Moffett Park
140 Fremont BART - Mission College & Montague Expwy.
168 Gilroy Transit Center - San José Diridon Transit Center
180 Fremont BART Station - Great Mall/Main Transit Center/Aborn& White
181 San José Diridon Transit Center - Fremont BART via Great Mall/Main Transit Center
182 Palo Alto - IBM/Bailey Ave

**Limited Stop Bus**

304 South San José - Sunnyvale Transit Center via Arques
321 Great Mall/Main Transit Center - Lockheed Martin/Moffett Park
328 Almaden Expwy. & Camden - Lockheed Martin Transit Center/Moffett Park
330 Almaden Expwy. & Camden - Tasman Drive

**Figure 1-1 Bus Deployment By Division (April 2014)**

| Division | Bus Type | AM Peak | Mid-day | PM Peak | Weekday Peak | Sat | Sun |
|---|---|---|---|---|---|---|---|
| North | Artic (60 ft) | 27 | 25 | 28 | 28 | 20 | 19 |
| North | BRT | 16 | 16 | 16 | 16 | 15 | 16 |
| North | 40 Foot | 35 | 15 | 40 | 40 | 12 | 10 |
| North | CB | 8 | 7 | 11 | 11 | 2 | 0 |
| North | Total | 86 | 63 | 95 | 95 | 49 | 45 |
| Cerone | Airport | 4 | 4 | 4 | 4 | 2 | 2 |
| Cerone | 40 Foot | 84 | 72 | 94 | 94 | 43 | 36 |
| Cerone | Express | 17 | 0 | 17 | 17 | 0 | 0 |
| Cerone | 35 Foot | 7 | 7 | 7 | 7 | 4 | 2 |
| Cerone | Total | 112 | 83 | 122 | 122 | 49 | 40 |
| Chaboya | 40 Foot | 117 | 93 | 121 | 121 | 71 | 59 |
| Chaboya | 35 Foot | 10 | 9 | 11 | 11 | 2 | 1 |
| Chaboya | CB | 23 | 20 | 23 | 23 | 6 | 5 |
| Chaboya | Total | 150 | 122 | 155 | 155 | 79 | 65 |
| **Total, All Divisions** | | **348** | **268** | **372** | **372** | **177** | **150** |
| **Total (Incl. Standby)** | | **351** | **271** | **375** | **375** | **177** | **150** |

**Figure 1-2 Bus Deployment By Vehicle Type (April 2014)**

| Bus Type | AM Peak | Mid-day | PM Peak | Weekday Peak | Sat | Sun |
|---|---|---|---|---|---|---|
| Airport | 4 | 4 | 4 | 4 | 2 | 2 |
| Artic (60 ft) | 27 | 25 | 28 | 28 | 20 | 19 |
| BRT | 16 | 16 | 16 | 16 | 15 | 16 |
| 40 Foot | 239 | 183 | 258 | 258 | 126 | 105 |
| Express | 17 | 0 | 17 | 17 | 0 | 0 |
| 35 Foot | 17 | 16 | 18 | 18 | 6 | 3 |
| CB | 31 | 27 | 34 | 34 | 8 | 5 |
| **Total (Incl. Standby)** | **351** | **271** | **375** | **375** | **177** | **150** |
| **Total (No Standby)** | **348** | **268** | **372** | **372** | **177** | **150** |

## Light Rail Transit (LRT)

VTA operates a 42-mile LRT system serving 62 stations and 21 park & ride lots. It operates on three alignments: service between Santa Teresa in South San José and Alum Rock in East San José, service between downtown Mountain View and the Winchester Station in Campbell, and service between the Almaden and Ohlone-Chynoweth Stations in South San José. A fleet of 99 Kinkisharyo low floor light rail vehicles, stored and maintained at the Guadalupe Operating Division near downtown San José, are used to operate these three rail lines.

Light rail transit lines and destinations are as follows:

901 Santa Teresa - Alum Rock
902 Mountain View - Winchester
900 Almaden - Ohlone/Chynoweth

**Historical Trolley**

Historic Trolley service operates through Downtown San José on Friday nights and the weekend during the holiday season between Thanksgiving and New Years.

## Paratransit Services

VTA implemented a paratransit brokerage system in 1993, which operates throughout VTA's service area during bus and light rail service hours. Paratransit service is a specialized form of transportation operated for persons who cannot use fixed route public transit service due to their disabilities. As an operator of bus and light rail service, VTA is required under the Americans with Disabilities Act to ensure that paratransit service is provided to eligible individuals with disabilities. The level of service provided must be comparable, in terms of hours of service and area served, to the service provided by the bus and light rail system. VTA contracts with Outreach and Escort, Inc. (OUTREACH), a Santa Clara based non-profit social service agency to serve as a paratransit broker. As VTA's paratransit broker, OUTREACH administers the paratransit program by determining and certifying persons who are eligible for paratransit service, receives and schedules trip requests, manages the customer fare payment system, responds to customer concerns, builds vehicle manifests, contracts for services with taxi, sedan, and accessible van service providers, and reports financial and operating information to VTA.

OUTREACH has been designated Santa Clara County's Consolidated Transportation Service Agency (CTSA) by the San Francisco Bay Area's Metropolitan Transportation Commission (MTC). Under State law, this designation allows OUTREACH to identify and consolidate transportation funding sources and maximize the services of public and private transportation in the county. The benefits of CTSA designation include procurement advantages, cost and vehicle sharing agreements with allied human service agencies and reduced Department of Motor Vehicle fees. These benefits yield cost savings that are passed onto VTA through reduced net paratransit costs.

In addition to being a CTSA, OUTREACH is a Mobility Management Center (MMC). As an MMC with grant funding, OUTREACH provides alternative transportation options to human services agencies, health care providers, and veterans. The alternatives are not funded by VTA and do not add to paratransit program expense. Rather, they reduce paratransit costs by reducing the numbering of active riders who use the ADA paratransit service.

VTA supports OUTREACH's work as the County's CTSA and MMC. OUTREACH's work beyond its paratransit broker responsibilities will extend social service transportation options to senior and persons with disabilities during the SRTP time-frame. These efforts align with the Federal Transit Administration's "United-We-Ride" campaign. OUTREACH's CTSA and MMC work benefits VTA by giving OUTREACH a competitive advantage in pursuing FTA Section 5310 capital grants for vehicle purchases as specified in MTC's *Coordination Public Transit-Human Services Transportation Plan Update* (as specified by Federal transportation authroizations SAFTEA-LU and MAP-21).

## Contracted and Interagency Transit Services

VTA is a partner in various ventures that expand the transportation options for our customers. These relationships include commuter rail, inter-county express bus lines, and rail feeder services. They are operated either by contract or through cooperative agreements. The following is a description of these services:

### Caltrain

Caltrain is a commuter rail service provided by the Peninsula Corridor Joint Powers Board (PCJPB). Three member agencies compose the PCJPB: VTA, the San Mateo County Transit District (SamTrans) and the City and County of San Francisco. VTA provides funding for a portion of the operating and capital costs of the Caltrain commuter rail service. Ninety-two trains (including 22 Baby Bullet Express trains) operate between San José Diridon Station

and San Francisco each weekday. Of these trains, 20 Northbound and 20 Southbound trains run beyond the Diridon Station to the Tamien Station in San José. This provides Caltrain passengers with an opportunity to transfer to the southern portion of VTA's light rail system. Connections from Caltrain to the light rail system are also available at the San José Diridon and Mountain View Caltrain Stations. Six peak-hour weekday trains extend south of Tamien station to Gilroy. Hourly weekend service (36 Saturday trains and 32 Sunday trains) and 4 Baby Bullet Express trains each day are operated between San José Diridon Station and San Francisco. There are 31 stations along the line of which 15 are located in Santa Clara County. Funding of operating costs is apportioned to each member agency of the PCJPB and is based upon an average weekday passenger count by county conducted in February each year. SamTrans manages the service.

**Altamont Commuter Express**

The Altamont Commuter Express (ACE) is administered and funded under a cooperative agreement among VTA, the Alameda County Congestion Management Agency and the San Joaquin Regional Rail Commission (SJRRC). ACE provides four peak hour round trips on weekdays from the Central Valley to Santa Clara County. Stations along the 85-mile route are located in Stockton, Lathrop, Tracy, Livermore (2), Pleasanton, Fremont, Santa Clara (2), and San José. The service operates on tracks owned by the Union Pacific railroad. ACE service began in October 1998. SJRRC is the owner, operator, and policymaking body for ACE service. Pursuant to the ACE agreement, funding of operating costs is based on Fiscal Year 2003 contributions, escalated annually by consumer price index increases.

VTA also provides eight free shuttles to transport ACE riders from the Great America Station in Santa Clara to destinations throughout the Silicon Valley. These shuttles are funded by a grant from the Bay Area Air Quality Management District (BAAQMD) and ACE.

The shuttle numbers, color names and locations are as follows:

822 Gray Line - South Sunnyvale
823 Green Line - North Santa Clara
824 Orange Line - Mountain View/Palo Alto
825 Purple Line - West Milpitas
826 Red Line - North Sunnyvale
827 Yellow Line - South Santa Clara
828 Brown Line - North San José
831 Violet Line - East Milpitas

### Capitol Corridor Intercity Rail Service

VTA is a member of the Capitol Corridor Joint Powers Authority (Capital Corridor JPA) that provides Capitol Corridor Intercity Rail Service, running 30 week-day trains between Sacramento and Oakland, with 15 continuing to San José. Stops are located at stations in Auburn, Rocklin, Roseville, Sacramento, Davis, Suisun/Fairfield, Martinez, Richmond, Berkeley, Emeryville, Oakland (2), Hayward, Fremont, Santa Clara (2) and San José. The Capitol Corridor JPA is composed of VTA, the Sacramento Regional Transit District, the Placer County Transportation Planning Agency, the Congestion Management Agencies of Solano and Yolo Counties, and the San Francisco Bay Area Rapid Transit District (BART). Under contract with the Capitol Corridor JPA, BART manages the service and Amtrak operates the service on tracks owned by Union Pacific Railroad. The State of California provides the funding.

### Inter-County Bus Services

VTA sponsors three inter-county bus services through cooperative arrangements with other transit systems:

- The **Dumbarton Express** is a transbay express bus route operating between the Union City BART station and Stanford Research Park in Palo Alto. The service is administered and governed by the Alameda-Contra Costa Transit District (AC Transit) with oversight by the Dumbarton Bridge Regional Operations Consortium, comprised of AC Transit, BART, Union City Transit, SamTrans, and VTA. The service is operated and maintained by MV Transportation and is funded by Regional Measure 2.

- The **Highway 17 Express**, operating between Santa Cruz, Scotts Valley, and downtown San José, is an inter-county bus service operated through a cooperative arrangement between VTA, the Santa Cruz Metropolitan Transit District (METRO), the Capital Corridor JPA, and Caltrans. VTA, METRO, the Capital Corridor JPA and Caltrans provide funding for the service. The service is managed and operated by Santa Cruz METRO.

- The **Monterey-San José Express** operates daily from Monterey to San José with three round trips, covering commute times in the morning, mid-day, and evening. The service provides passengers with transfers to and from Capitol Corridor trains that operate between San José-Oakland-Sacramento, Caltrain, and VTA's bus and light rail services. The service originates in downtown Monterey with other stops in Monterey County before stopping at the Gilroy Caltrain Station, Morgan Hill Caltrain Station, San José State University, downtown San José and the San José Diridon Station. The Monterey-San José Express is a partnership of Monterey-Salinas Transit (MST), the Capitol Corridor JPA, and VTA. MST operates and maintains the service.

**San José Airport Flyer**

VTA, in partnership with the City of San José, provides free Airport Flyer bus service (Line 10) connecting the Norman Y. Mineta San José International Airport terminals and airport employee parking lots with the Authority's Metro/Airport Light Rail Station and the Santa Clara Caltrain Station. VTA operates and funds this service and the City of San José provides some operating subsidy each year.

**Downtown Area Shuttle (DASH)**

VTA, in partnership with San José State University, provides free shuttle bus service connecting the Diridon Caltrain Station, Downtown San José, and San José State University. VTA operates and funds this service with subsidy from San José State University and grants from the Bay Area Air Quality Management District's Transportation Fund for Clean Air Program.

## Accommodation of Bicyclist and Pedestrians

VTA is committed to improving bicycle and pedestrian infrastructure throughout Santa Clara County by enabling and encouraging people to walk or bike for everyday needs and by connecting people to transit by closing gaps and enhancing pedestrian and bicycle access to bus stops and rail stations. The Bicycle and Pedestrian Program plans for, funds, and delivers countywide infrastructure and programs dedicated to making walking and biking safer and more practical for Santa Clara County residents and visitors.

VTA is a strong proponent of bicycle commuting and allowing bikes and transit to work together seamlessly. Since 1996, all VTA buses are equipped with bike racks and since 2004, all light rail vehicles have internal racks. In addition to bringing bikes on board transit,

bike commuters have access to secure bike parking systemwide with bike racks provided at nearly all VTA Park & Ride lots and Transit Centers. In 2009, VTA upgraded many of its lockers to e-lockers  to address the high demand for bike lockers that currently exceeds the existing supply. In spring 2014, VTA will conduct a user survey to understand how bicyclists use the bus and light rail system, and to identify situations in which demand for on-vehicle bicycle racks exceeds capacity.

In August 2013, VTA in partnership with BAAQMD and other participating agencies, launched a regional **Bike Sharing Program** in the Bay Area. The pilot program offers approximately 1,000 bicycles at 100 automated stations along the Caltrain peninsula corridor, in the cities of  San José, Mountain View, Palo Alto, Redwood City and San Francisco. The program is being carried out in two phases.  The first phase deployed a fleet of approximately 700 bikes region-wide with 280 bikes (40% of the system) in San José, Mountain View and Palo Alto in August 2013. The second phase will deploy the remaining 300 bicycles region-wide in 2014.

Bike sharing complements the existing transit system by expanding the reach of transit stops and destinations, providing residents and visitors alike more options to connect to/ from transit or make any short-distance trip by bike. The results from the pilot will be used to asses opportunities for expanding the program within the pilot communities as well as in additional Bay Area communities.

The **Transit Passenger Environment Plan** takes a fresh look at bus stop design, policies and improvement strategies. The Plan prioritizes improvements toward stops with higher ridership and uses customer surveys to learn which types of improvements are most desired by riders. The Plan also brings all of VTA's policies related to bus stops together and builds on them, making it easy for other parties to work with VTA. Finally, the Plan considers new shelter and bus stop amenity packages and encourages creative and custom station elements.

**Americans with Disabilities Act (ADA) Bus Stop Improvement Program** — VTA has a bus stop improvement program which works to make ADA access improvements to approximately 20 bus stops each year based on customer requests and operational assessments. VTA's bus stop accessibility improvement efforts are based on federal accessibility requirements and California's Title 24 Building Code.

**Countywide Plans**

In 2014, VTA began developing the first countywide **Pedestrian Access to Transit Plan,** which will identify and evaluate the County's pedestrian needs, and result in a list of pedestrian projects and implementation plan to improve access to transit. Running roughly parallel to this effort, VTA will be updating the **Countywide Bicycle Plan** with the intention of developing a countywide system of high quality/low-stress bikeways that serves bicyclists of all ages and skill levels and will connect with VTA's transit network.

The **Bicycle and Pedestrian Program** is constantly looking for ways to expand and improve its current programs and promotions. Greater emphasis is being placed on developing new programs to enhance education and outreach, bicycle and pedestrian data collection and analysis, enhancing bicycle access to transit (bike lockers, pedestrian access to transit program), and improving overall biking and walking conditions in Santa Clara County. New state legislation on the California Environmental Quality Act will undoubtedly create new opportunities for the **VTA Bicycle Program** to contribute to solving the region's transportation and environmental challenges. With the rise of Silicon Valley's high-tech sector, the **Bicycle and Pedestrian Program** is looking for ways to partner with private firms to fund projects, support alternative commute modes, and to identify innovative solutions to transportation challenges.

## Fare Structure

Figure 1-3 summarizes VTA's fare categories. The text below provides further description regarding these fare categories.

**Figure 1-3 VTA Fares Table**

| | Cash Fares | | | | Prepaid Fares | |
|---|---|---|---|---|---|---|
| | Single Ride | Day Pass | 8-Hour Light Rail Pass | Community Bus Single Ride | Monthly Pass | Annual Pass/ Subscription |
| Adult | $2.00 | $6.00 | $4.00 | $1.25 | $70.00 | $770.00 |
| Adult Express | $4.00 | $12.00 | N/A | N/A | $140.00 | N/A |
| Youth (5-17) | $1.75 | $5.00 | $3.50 | $0.75 | $45.00 | $495.00 |
| Senior/Disabled/Medicare | $1.00 | $2.50 | $2.00 | $0.50 | $25.00 | $275.00 |

### Seniors (65+)/Disabled/Medicare Reduced Fare

To qualify for the Senior/Disabled/Medicare fare, you must present one of the following: a Medicare Card, Regional Transit Connection (RTC) Discount Card or a valid card from another California transit provider, DMV Disabled License Plate registration, DMV Disabled Parking Placard printout, or proof of age (65 or older).

### Clipper

VTA has transitioned to Clipper, a regional electronic fare payment collections system. Monthly passes (Adult, Express, Youth and Senior/Disabled/Medicare) are only available on Clipper. Electronic "Clipper cash" can also be loaded on Clipper cards for fare payment on a trip-by-trip basis. Day passes are provided using an "accumulator" feature on the Clipper card which tracks the amount of Clipper cash fare payments during a calendar day, and "caps" the maximum fare for a day at the price of a day pass.

All VTA ticket vending machines can add monthly passes as well as Clipper cash value to Clipper cards. VTA's ticket vending machines accept cash, credit and debit cards as payment. Customers can also add value to Clipper cards online or by phone or in-person at many Walgreens locations, the VTA Downtown Customer Service Center and VTA River Oaks administrative offices.

### Express Bus Service

Adult Express fares apply to Express Bus routes described above. All Youth and Senior/ Disabled/Medicare fares are valid on VTA Express Bus service (this does not include Dumbarton Express, Highway 17 Express or MST 55) without an upgrade payment.

### Community Bus Fares

Community bus fare is $1.25 and applies to all community bus routes described earlier in this document. All Youth and Senior/Disabled/Medicare fares are valid on VTA Community Bus service.

### Single Ride Light Rail Ticket

The Single Ride Light Rail Ticket is valid for up to two hours in any direction only on Light Rail and Historic Trolley service. It is not accepted on bus service. Passengers must have valid fare prior to boarding.

### Annual Pass Subscription

Annual pass subscriptions can be purchased any time of the year. The program offers 12 monthly passes over a 12-month period for the price of 11 monthly passes paid in advance.

## Fare Programs

In addition to prepaid and cash fares described above, VTA offers several reduced-price pass and ticket options

### The Class Pass Program

This program allows teachers within Santa Clara County the opportunity to take their students on field trips traveling by VTA buses and light rail for free. Each teacher is eligible to receive up to two “class passes” every school year. This allows students, teachers and chaperones to ride VTA buses and light rail to museums, cultural events, libraries, and other popular destinations for free.

VTA transported 56,633 teachers and students during 2012-2013 school year through the Class Pass Program.

**Convention Pass**

The Convention Pass is just the ticket for savings and unlimited rides on VTA's Light Rail, Local and Limited Stop Buses and Historic Trolley Service during any convention, seminar, meeting and other large gathering.

Passes are 25% off of the regular day pass price for groups of 100 or more. Passes come in multiple day options (1-Day, 3-Day and 5-Day) for varying schedules. Scratch-off design allows cardholder to select days of use.

**Eco Pass**

Eco Passes may be purchased by employers, colleges and universities, and residential communities to give their employees, students, or residents unlimited rides on VTA Bus, Light Rail and Express Bus service seven days a week. Eco Pass is deeply discounted below the standard cost of passes based on the assumption that not all members of a population will use the pass.

**Youth Summer Blast Pass**

Youth age 17 and under get unlimited rides on VTA buses and trains June through August for just $75 with the Youth Summer Blast Pass. That is $60 off the regular price of three monthly youth passes.

**OUTREACH Paratransit Identification Card**

Passengers eligible for complementary paratransit service under the ADA receive free rides on VTA Local, Express bus service and Light Rail upon presentation of a valid OUTREACH paratransit ID card. OUTREACH cards are not honored on Highway 17 Express, Dumbarton Express, and Caltrain and Sports Service.

**Regional Transit Connection (RTC) Discount Card**

The Regional Transit Connection (RTC) Discount Card is issued to both persons with disabilities and senior citizens 65 and older. The card, when shown to the operator, entitles the bearer to ride for the appropriate Senior/Disabled fare.

**TAP (Transit Access Program)**

Beginning September 2013, with the help of a $1.3 million grant from the Metropolitan Transportation Commission, VTA will make available 24,000 monthly passes over the course of two years at a reduced cost to qualifying low-income individuals. VTA is partnering with Santa Clara County Social Services Agency and the Emergency Assistance Network to distribute the TAP passes.

**UPLIFT (Universal Pass for Life Improvement from Transportation)**

This pass provides free quarterly VTA transit passes to persons who are homeless or at risk of homelessness. The program is coordinated by the County of Santa Clara and is implemented through a consortium of homeless service providers. Eligible recipients must be participants in case management. The program provides passes for up to 2,400 eligible recipients each calendar quarter.

**Day Pass Tokens**

VTA sells Adult and Youth day pass tokens only to public agencies, schools, and non-profit organizations that will distribute them free of charge to clients or students. Tokens are not available for sale to the general public. Tokens are sold in bags of five and are regularly priced at a 10% discount from the cash price for day passes purchased on the bus or light rail system. In fall of 2013, VTA increased the discount on these tokens to 50% on a promotional basis. Following favorable response to this trial, VTA is considering making this price reduction permanent.

**Paratransit Fares**

Effective October 1, 2009, the regular paratransit One-Way Trip fare is $4.00, or two times the Adult Base Fare for VTA bus and light rail services. Figure 1-4 shows the standard and premium tripfares.

Personal care attendants and service animals may accompany an eligible customer at no additional charge.

Paratransit-eligible employees working at companies that participate in VTA's Employer Eco Pass Program pay half the fare for a regular paratransit one-way Trip. There are no discounts under this program for premium fare OUTREACH services. Eligible participants must inform OUTREACH Customer Service that their employer is an Eco Pass participant.

**Figure 1-4 Paratransit Trip Fare Table**

| Trip Type | Fare Description | Fare Amount |
|---|---|---|
| One-Way Standard Paratransit Trip | 2x VTA Adult Bus Fare | $4.00 |
| Companion | Equal to One-Way Trip | $4.00 |
| Open Return Trip | 4x One-Way Trip | $16.00 |
| Second Vehicle Sent | 4x One-Way Trip | $16.00 |
| Same-Day Trip | 4x One-Way Trip | $16.00 |
| Same-Day Trip Companion | 4x One-Way Trip | $16.00 |
| Extended Service Area Trip | 4x One-Way Trip | $16.00 |

## Regional Transfers

VTA works closely with other area transit operators to provide transfers for regional trips, including regional transfer locations and inter-operator transfer or fare agreements.

### AC Transit

When using Clipper, transferring to a VTA local bus, limited stop bus, bus rapid transit, community bus or light rail vehicle is free to all customers within 2 hours of boarding an AC Transit bus (includes Dumbarton Express service). Transferring to a VTA Express bus is free to Youth and Senior/Disabled riders but will cost $2.00 for adults.

For passengers using VTA Fares with valid (day and time for the period when used) AC Transit Transfer or 31-Day Local Pass, see Figure 1-5.

**Figure 1-5 AC Transit Transfer Fares**

| Fare Type | Adult | Youth | Senior |
|---|---|---|---|
| Single Ride | No Charge | No Charge | No Charge |
| Day Pass | $4.00 | $3.25 | $1.50 |
| Express Single Ride | $2.00 | No Charge | No Charge |

Identification is required for Youth, Senior/Disabled fares. Youth and Senior/Disabled VTA Day Pass is valid for VTA Express Service.

**Altamont Corridor Express (ACE) Train**

ACE passengers holding any valid ACE ticket or pass (for day and time period used) may ride free on all VTA Regular, Limited Stop and Express bus service, Light Rail and Historic Trolley. ACE tickets are valid anywhere in the VTA service area, not just at ACE stations. ACE tickets are not valid for the Highway 17 Express, Dumbarton Express or Caltrain.

**BART**

BART-to-Bus paper transfer tickets are valid as partial fare for VTA Express Buses at the Fremont BART Station only.

For VTA fares with valid BART-to-Bus transfer ticket, see Figure 1-6.

**Figure 1-6 BART Transfer Fares**

| Fare Type | Adult | Youth | Senior/Disabled |
|---|---|---|---|
| Express Single Ride | $2.00 | No Charge | No Charge |
| Express Day Pass | $10.00 | | |
| Regular Day Pass | | $3.25 | $1.50 |

BART passengers using Clipper receive a local fare credit when boarding VTA within 1 hour of exiting BART at the Fremont BART station. Transferring to a VTA Express bus is free to Youth and Senior/Disabled riders but costs $2.00 for adults.

## Caltrain

Caltrain patrons can ride free on any VTA local, limited stop bus, bus rapid transit, community buses and light rail if they have at least a 2-zone (1-zone for Senior/Disabled) Caltrain monthly pass loaded onto their Clipper card. Adult customers wishing to upgrade to VTA Express routes may do so for a $2.00 upgrade fee (there is no upgrade fee for youth or senior/disabled), which must be paid using cash fare on the Clipper card.

Caltrain one-way single ride tickets, day passes, 8-ride tickets, and Adult and Youth single-zone monthly passes are not eligible for free rides or fare credit. The Caltrain Go Pass sticker issued on company ID cards is not accepted on VTA.

For VTA fares with valid Caltrain Monthly Ticket, see Figure 1-7.

**Figure 1-7 Caltrain Transfer Fares**

| Fare Type | Adult | Youth | Senior/Disabled |
|---|---|---|---|
| Single Ride | No Charge | No Charge | No Charge |
| Express Single Ride | $2.00 | No Charge | No Charge |

Identification is required for Youth, Senior/Disabled fares.

## Capitol Corridor

The Capitol Corridor (CC) rail service serves San José, Oakland, Sacramento and beyond. Capitol Corridor transfers are accepted as a one-time single-ride fare on VTA Local Buses, Limited Stop Buses, Light Rail and Historic Trolley. The transfer is valid as partial fare on VTA Express Buses.

The Capitol Corridor transfer is issued in two parts. One part is used to allow passengers to transfer from the Capitol Corridor to VTA service. The second part of the transfer allows passengers to use VTA service back to the Capitol Corridor. Transfers are punched by the Capitol Corridor conductor at the time of issue and are valid until the date and time punched.

For VTA fares with valid CC Transfer, see Figure 1-8.

**Figure 1-8 Capitol Corridor Transfer Fares**

| Fare Type | Adult | Youth | Senior/Disabled |
|---|---|---|---|
| Single Ride | No Charge | No Charge | No Charge |
| Day Pass | $4.00 | $3.25 | $1.50 |
| Express Single Ride | $2.00 | | |
| Express Day Pass | $10.00 | | |

## Dumbarton Express

The Dumbarton Bridge (DB) Express bus operates between the Stanford Research Park in Palo Alto and the Union City BART Station. Valid AC Transit Transbay 31-Day Tickets and AC Transit Transfer Tickets are accepted as a local fare credit at VTA bus stops shared with or located close to DB Express bus stops.

For VTA fares with valid (day and time) AC Transit Trans-Bay 31-Day Ticket or AC Transit Transfer Ticket, see Figure 1-9.

**Figure 1-9 Dumbarton Express Transfer Fares**

| Fare Type | Adult | Youth | Senior/Disabled |
|---|---|---|---|
| Single Ride | No Charge | No Charge | No Charge |
| Day Pass | $4.00 | $3.25 | $1.50 |
| Express Single Ride | $2.00 | No Charge | No Charge |
| Adult Express Day Pass | $10.00 | | |

## Highway 17 Express

### Magnetic Tickets

Highway 17 Express Day Pass and 31-Day passes are provided on magnetic strip tickets. These tickets are swiped through the magnetic reader on the top of the farebox, and must be presented for visual inspection on VTA light rail. The Highway 17 Express Day Pass is valid on all VTA Local and Limited Stop Buses, Light Rail and Historic Trolley Service, as well as all Santa Cruz Metropolitan Transit Service. The Highway 17 Express Day Pass is valid as partial payment for VTA Express Adult Single-Ride.

The Highway 17 31-Day Pass can be used for Adult, Youth, Senior or Disabled fares during the calendar month and year shown. The Highway 17 31-Day Pass is valid as partial payment for VTA Express Adult Single-Ride.

For VTA fares with valid (day and time) Highway 17 Express Day Pass or Highway 17 Express Flash Pass, see Figure 1-10.

**Figure 1-10 Highway 17 Express Transfer Fares**

| Fare Type | Adult | Youth | Senior/Disabled |
|---|---|---|---|
| Single Ride | No Charge | No Charge | No Charge |
| Express Single Ride | $2.00 | No Charge | No Charge |

Identification is required for Youth or Senior/Disabled fares.

## Electronic Passes (smart cards)

Blue "Cruz Pass" cards, with a valid 1-, 5- or 31-Day Highway 17 passes electronically loaded, are valid for local fare credit on VTA Local and Limited Stop Buses. Customers must tag the card on the smart card target located at the top left corner of the farebox. On VTA Express bus routes, a $2.00 upgrade fee will apply for Adult passengers. Cruz Pass cards are not valid on VTA light rail.

For boarding a VTA Bus with a valid pass loaded on a Cruz Pass card, see Figure 1-11.

**Figure 1-11 Cruz Passes Transfer Fares**

| Fare Type | Adult | Youth | Senior/Disabled |
|---|---|---|---|
| Single Ride | No Charge | No Charge | No Charge |
| Express Single Ride | $2.00 | No Charge | No Charge |

## Monterey-Salinas Transit

Monterey-Salinas Transit (MST) All-Zone Super Day Pass, MST All-Zone Monthly Pass, MST All-Zone Discount Super Day Pass and MST All-Zone Discount Monthly Pass are accepted as full single-ride fare on VTA Local Buses, Limited Stop Buses, Light Rail and Historic Trolley. MST Passes are valid as partial fare credit for VTA Express Service.

**Figure 1-12 Monterey-Salinas Transit Transfer Fares**

| Fare Type | Adult | Youth | Senior/Disabled |
|---|---|---|---|
| Single Ride | No Charge | No Charge | No Charge |
| Day Pass | $4.00 | $3.25 | $1.50 |
| Express Single Ride | $2.00 | No Charge | No Charge |
| Express Day Pass | $10.00 | | |

For VTA fares with valid (date and time) MST Pass, see Figure 1-12.

### SamTrans

SamTrans Monthly Pass customers using Clipper receive a local fare credit if they board VTA within 2 hours of first boarding and tagging on SamTrans. Transferring to a VTA Express bus is free to Youth and Seniors but costs $2.00 for adults which must be paid using cash fare on the Clipper card. There is no transfer credit for SamTrans riders who have paid single ride fares either using cash or Clipper.

For VTA fares with valid SamTrans Monthly Pass on Clipper, see Figure 1-13.

**Figure 1-13 SamTrans Transfer Fares**

| Fare Type | Adult | Youth | Senior/Disabled |
|---|---|---|---|
| Single Ride | No Charge | No Charge | No Charge |
| Express Single Ride | $2.00 | | |
| Day Pass | $4.00 | $3.25 | $1.50 |
| Express Day Pass | $10.00 | No Charge | No Charge |

## Revenue Fleet

VTA's detailed Bus, Rail and Paratransit Fleet Management Plans are included in Appendix B.

### Buses

VTA currently has an active fleet of 432 buses (40 of which are 60-foot articulated buses), predominately consisting of diesel or hybrid diesel-electric buses with a small percentage of gasoline-powered buses. At the present time, 319 of these buses are low floor. VTA will purchase low-floor buses for all future fleet needs. Figure 1-14 outlines special sub-fleets within VTA's current fleet.

All buses meet the accessibility requirements of the Americans with Disabilities Act (ADA), and the emission mitigation standards mandated by the Federal Clean Air Act (CAA) and the California Air Resources Board (CARB). New vehicle models must proceed through the FTA First Article Bus Durability Tests Program in order for procurements to qualify for federal funding participation. VTA's active bus fleet has an age range of one year to over 10 years. The average age of a VTA active fleet bus is 10.8 years old as of January 1, 2014. Buses in the active fleet operated an average of at least 40,490 scheduled total miles during FY2013. The spare ratio for the fleet reflects these specialized sub-fleets. Standard bus retirement age for full-length buses is 12 years.

**Figure 1-14 Special Service Sub-Fleets (FY2013)**

| Quantity | Type | Description |
|---|---|---|
| 21 | Rapid 522 | Specially wrapped 40’ and 60’ articulated buses |
| 33 | Line 22 | 60’ articulated buses |
| 5 | Airport Flyer (Line 10) | Luggage Carrier Equipped 40’ buses, no farebox |
| 22 | 35’ Buses | Used for tight turning movements or for lower demand routes |
| 40 | Community Buses | 28 ft cut-away buses |
| 4 | Downtown Area Shuttle Service (DASH) | Specially wrapped 28 ft cut-away buses with no fare box |
| 20 | Express Buses | Specially designed commuter coaches |

## Light Rail Vehicles

VTA operates a fleet of 99 low floor LRVs on its system. The Kinkisharyo International vehicles were purchased in 2002 and 2003. These vehicles have a life of 30 years. The LRV cars are electrically powered by 750 volts of direct current. They are bi-directional articulated, six-axle vehicles.

The maximum operating capacity of each LRV is 150 passengers. Up to three vehicles can be coupled together. Each vehicle seats 66 passengers with room for up to 105 standees. The vehicles can accommodate up to 4 wheelchairs and 4 bicycles on a built-in rack plus 4 bicycles standing.

With 99 LRVs, the VTA fleet is large in comparison to the number of cars required for maximum service. Of this total fleet number, 95 of the vehicles perform standard revenue service assignments. The remaining 4 vehicles are specially wrapped for commuter express service assignments in the morning and evening rush hours. While on any given day, some cars are being held in the shop for preventive maintenance (PM) work, and some may be held for parts, the entire fleet is used for purposes of revenue service. The revenue service mileage, therefore, is spread over a large number of cars.

### Historic Trolley Fleet

The VTA operates restored historic trolleys during the winter holiday season (November through December). Four trolley cars were restored through the efforts of the California Trolley and Railroad Corporation (a nonprofit organization) and modified to run on VTA's light rail system. They own the cars and provide them to VTA through a no-cost lease. The trolley cars are maintained at VTA's Guadalupe Light Rail Maintenance Facility. When in service, the cars ran on light-rail tracks serving a 4.1-mile route through downtown San José.

VTA maintains the following four trolleys:

- Car 1 ran in Sacramento from 1903 to 1906 and then ran in Santa Cruz from 1906 to 1923
- Car 73 ran in San José between 1912 and 1934
- Car 531 is from Melbourne, Australia
- Car 2001 is from Milan, Italy

## Paratransit Fleet

VTA's paratransit service operates with a fleet of 246 vehicles. Of these vehicles, 187 are owned by VTA and leased to the primary service provider. The remaining 59 vehicles are owned by OUTREACH. VTA Cerone and Guadalupe facilities house the paratransit fleet. Another facility, owned by the County in San Martin, is used to house vehicles that provide service in South County. OUTREACH has contracts with Santa Clara County for vehicle maintenance services and access to bulk fuel purchases. These vehicle stationing arrangements and maintenance and fueling contracts reduce paratransit operating expenses. Figure 1-15 describes the paratransit fleet.

**Figure 1-15 FY2014 Paratransit Fleet (October 2013)**

| Vehicle Type | VTA Owned | OUTREACH Owned | Total Paratransit Fleet |
|---|---|---|---|
| Sedans - Prius | 100 | 6 | 106 |
| Mini Vans | 64 | 26 | 90 |
| Modified Vans | 3 | 16 | 19 |
| Van, Type 1b | 20 | 11 | 31 |
| Total Fleet | 187 | 59 | 246 |

# Existing Facilities

## Administrative and Operating Facilities

Figure 1-16 lists VTA's adminstrative and operations facilities including their location. VTA owns all facilities except the Downtown Service Center and California Circle which are leased. Figure 1-17 displays the Park and Ride lots in VTA's jurisdiction. They are owned either by VTA or Caltrain.

**Figure 1-16 VTA Administrative and Operating Facilities Summary**

| Facility Name | Location | Opening Date |
|---|---|---|
| Cerone Division | 3990 Zanker Road, San José | 1979 |
| Cerone Overhaul & Repair Division | 3990 Zanker Road, San José | 1979 |
| Don Pedro Chaboya Division | 2240 S. Seventh Street, San José | 1980 |
| Downtown Customer Service Center | 55-A West Santa Clara Street, San José | 2013 |
| Guadalupe Light Rail Division | 101 W. Younger Street, San José | 1986 |
| North Division | 2240 L'Avenida Avenue, Mountain View | 1975, Rebuilt in 2005 |
| VTA Administrative Complex | 3331 N. First Street, San José | 1992 |

**Figure 1-17 Park-and-Ride Lots**

| City | Location | Capacity | Opened |
|---|---|---|---|
| Campbell | 2400 Winchester Boulevard, Campbell (at the Winchester Light Rail Station) | 54 | January 2006 |
| Cupertino | Vallco Shopping Center, Parking Garage on North side of Vallco Parkway, 2nd level | 50 | May 1980 |
| Gilroy | Gilroy Caltrain Station, Monterey Street at 7th Street | 471 | July 1992 |
| Milpitas | Great Mall/Main Light Rail Station, Great Mall Parkway at Main Street | 93 | June 2004 |
| Milpitas | I-880/Milpitas Light Rail Station, 516 Alder Drive | 275 | May 2001 |
| Morgan Hill | Morgan Hill Caltrain Station, Butterfield Drive between Main Avenue and Diana Avenue | 486 | May 1994 |
| Morgan Hill | Morgan Hill Transit Center, Main Avenue and Hale Avenue | 50 | March 1980 |
| Mountain View | Downtown Mountain View Caltrain Station, Hope Street at Evelyn Avenue | 338 | July 1992 |
| Mountain View | Evelyn Light Rail Station, Pioneer Way at Evelyn Avenue | 196 | December 1999 |
| Mountain View | San Antonio Caltrain Station, Showers Drive at San Antonio Road | 199 | April 1999 |
| Mountain View | Whisman Light Rail Station, 394-399 Whisman Station Drive | 52 | December 1999 |
| Palo Alto | California Avenue Caltrain Station, Park Boulevard at California Avenue | 159 | July 1992 |
| Palo Alto | Palo Alto Caltrain Station, 95 University Avenue at Alma Street | 385 | July 1992 |
| San José | Almaden Light Rail Station, Winfield Road at Coleman Road | 189 | April 1991 |
| San José | Alum Rock Transit Center, Capitol Avenue at Wilbur Avenue | 110 | February 2002 |
| San José | Bascom Light Rail Station, Southwest Street Expressway between Stokes and Bascom Avenue | 102 | January 2006 |
| San José | Blossom Hill Caltrain Station, Monterey Highway at Ford Road | 425 | May 1993 |
| San José | Blossom Hill Light Rail Station, Blossom Hill Road at Canoas Creek | 511 | April 1991 |
| San José | Branham Light Rail Station, Branham Lane at Narvaez Avenue | 271 | April 1991 |
| San José | Capitol Caltrain Station, Monterey Highway at Fehren Drive | 378 | February 1994 |

**Figure 1-17 Park-and-Ride Lots (continued)**

| City | Location | Capacity | Opened |
|---|---|---|---|
| San José | Capitol Light Rail Station, Capitol Expressway at Highway 87 | 951 | April 1991 |
| San José | Cottle Light Rail Station, Cottle Road at Route 85 | 421 | April 1991 |
| San José | Curtner Light Rail Station, Canoas Garden Avenue at Curtner Avenue | 474 | April 1991 |
| San José | Eastridge Transit Center, Eastridge Shopping Center at Capitol Expressway | 135 | December 1986 |
| San José | Highway 85 at Camden Avenue | 176 | February 1995 |
| San José | Hostetter Light Rail Station, Capitol Avenue at Camino del Rey | 100 | June 2004 |
| San José | Ohlone/Chynoweth Light Rail Station, Chynoweth Avenue at Pearl Avenue | 549 | April 1991 |
| San José | Penitencia Creek Light Rail Station, Penitencia Creek at Capitol Avenue | 53 | June 2004 |
| San José | River Oaks Light Rail Station, River Oaks Parkway at North 1st Street | 22 | 1993 |
| San José | San José/Diridon Caltrain Station, Cahill Street at West San Fernando Street | 597 | July 1992 |
| San José | Santa Teresa Light Rail Station, Santa Teresa Boulevard at Miyuki Drive | 1155 | April 1991 |
| San José | Snell Light Rail Station, Snell Avenue at Route 85 | 430 | April 1991 |
| San José | Tamien Light Rail/Caltrain Station, Alma Street at Lelong Avenue | 275 | August 1990 |
| San Martin | San Martin Caltrain Station, San Martin Avenue at Monterey Highway | 167 | April 1991 |
| Santa Clara | Great America ACE Station, Tasman Drive at Stars and Stripes Drive | 189 | July 1992 |
| Santa Clara | Santa Clara Caltrain Station, Railroad Avenue at El Camino Real | 321 | July 1992 |
| Sunnyvale | Moffett Park Light Rail Station, D Street at Moffett Park Drive | 93 | December 2002 |
| Sunnyvale | Sunnyvale Caltrain Station, Evelyn Avenue at South Frances Street | 477 | July 1992 |

## VTA Stations, Stops, Rights of Way, Corridors and Bicycle Facilities

VTA has many transit stations and bus stops described in its Facilities and Properties Reference Book.

In sum, VTA's light rail stations are as follows:

- Alum Rock – Santa Teresa line: 38 stations
- Mountain View – Winchester: 38 stations
- Almaden – Chynoweth: 3 stations
- Total: 62 unique stations

VTA's bus system has 3,805 stops including 797 shelters, 1,933 benches, 824 trash cans, and 23 transit centers.

The Facilities and Properties Reference Book also describes VTA's rights-of-way and corridors.

Information on bicycle facilities is provided earlier in this document under "Accommodation

# CHAPTER 2: SERVICE AND SYSTEM EVALUATION

## VTA Transit Service Planning Process

In 1999, the VTA Board of Directors approved the creation of a Service Management Plan, a process to evaluate the performance of the transit system using adopted standards of productivity. This plan, which included an evaluation of transit service ridership performance and recommendations for route improvements, was presented every year to the VTA Board for review and approval. This annual process was deferred in 2007 and 2008, while VTA developed and conducted the Comprehensive Operations Analysis (COA).

The COA was an 18-month in-depth process to analyze VTA's existing bus services, identify underserved markets, and ultimately produce a new structure for bus services. The VTA Board of Directors adopted the new Bus Service Operating Plan in August 2007 and implementation occurred in January 2008. The COA incorporated the latest in market research and a detailed examination of VTA's existing transit operations and ridership performance to develop a new cost-neutral bus transit network.

As part of the COA, the annual service review process was further defined and strengthened when the VTA Board of Directors adopted the Transit Sustainability Policy (TSP) and the accompanying Service Design Guidelines (SDG) in February 2007. The TSP provides a policy framework for the efficient and effective expenditure of funds to achieve the highest return on transit investments. The policy guides the development and implementation of new transit services, as well as the refinement of existing services. In accordance with the TSP, all transit services are subject to an annual evaluation of ridership and operating efficiency, based on the performance standards contained in the TSP/SDG.

The primary performance standard is Average Boardings per Revenue Hour. This standard applies to Community Bus, Local Bus, Bus Rapid Transit, and Light Rail. For evaluation purposes, the standard is calculated for all time-periods and for weekdays, Saturdays, and Sundays. This standard is recalculated quarterly and may move up or down. This indicator shows how well service is used given the hours of service provided.

The categorical minimum standard for any bus transit service is 15 Boardings per Revenue Hour. Bus lines that consistently operate below this threshold and that are unresponsive to marketing, restructuring, and operational refinements are subject to deletion. Express routes are evaluated on a different standard of 60% of the seated vehicle loading capacity (22 passengers per trip) to reflect the special characteristics of Express lines where seat turnover is low.

The Transit Service Plan functions as the process and document that implements the policies set forward in the TSP. The mandated annual review of transit services, which is now called the Transit Service Plan, includes an evaluation of existing services compared to the performance standards contained in the SDG, review of potential new services based on customer input and new residential, commercial or employment developments, assessment of opportunities for service refinement and resource reallocation, route-specific service changes, and recommendations for further analysis and study. The plan includes an extensive marketing and community outreach effort as modifications to the plan are made based on community concerns. The Transit Service Plan is prepared every two years in conjunction with the VTA budget.

The Quarterly Transit Operations Performance Report provides the VTA Board a regular report card on the performance of every line in the VTA transit system. Based on these performance updates, passenger and operator input, detailed ridership data, and other information, the Transit Service Plan proposes modifications to the bus and rail service. These modifications may include increases or decreases in service hours or frequency, changes in routing or service span, and increased marketing. The ultimate alternative for underperforming lines is deletion and reinvestment of those resources into stronger transit markets.

VTA also has an adopted policy that requires proposed major service changes that meet any of the criteria listed below to be submitted to the VTA Board of Directors for review and approval. The approval process typically takes place with the adoption of the Transit Service Plan. Major service changes requiring VTA Board approval are:

- The establishment of a new transit line or service
- The elimination of a transit line or service
- A route change that impacts 25% or more of a line's route miles

- Span of service or frequency changes affecting 25% or more of a line's revenue vehicle hours
- A series of changes on a single route which are included in the 2-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
- A system-wide change concurrently affecting 5% or more of the total system revenue miles

The following types of modifications are not classified as "major" service changes and shall not require Service Equity Analyses:

- Special event service
- Routing changes due to construction or other road closures
- Special service operated during emergencies

Service change proposals not meeting the criteria for formal approvals described above are handled at the staff level and reported quarterly to the VTA Board of Directors. However, these proposals are still subject to an appropriate level of public and community review and comment. VTA implements service changes quarterly (January, April, July, October). Major changes are typically planned for January and July, while minor changes are implemented in April and October.

To comply with Federal Transit Administration (FTA) Title VI requirements, VTA must evaluate significant system-wide service changes and proposed improvements at the planning and programming stages to determine whether the changes have a discriminatory impact on minority and low-income populations. Staff also analyzes the impact of bus and rail service changes on the ADA paratransit service area. Paratransit is provided in the same area and at the same times of day as fixed route, bus and rail service is provided per ADA requirements. Consequently, changes to bus and rail service could change the times and area that paratransit is provided. These two reviews are provided to the VTA Board of Directors during their review and approval of transit service changes.

Figure 2-1 provides a comparison of the range of VTA transit products. Figure 2-2 shows examples of corridor characteristics for VTA services.

**Figure 2-1 Transit Services Operational Characteristics**

| | Weekday Frequency (minutes) | Weekend Service | Span Hours | Days/Week | Capacity |
|---|---|---|---|---|---|
| Core Network | 15 or lower | 15 or lower | 18+ | 7 | Medium |
| Local Network | 30 | 30 to 60 | 17 or below | 7 or below | Medium |
| Community Bus | 30 to 60 | 30 to 60 | 14 or below | 7 or below | Lowest |
| Express/Limited | Commute-period service, some all day | | 17 or below | 7 or below | Low |
| Bus Rapid Transit | 10 or lower | 10 or lower | 18+ | 7 | High |
| Light Rail | 15 or lower | 15 to 30 | 18+ | 7 | High |
| Heavy Rail/Commuter Rail | 20 to 60 | 60 | 18+ | 7 | Highest |

**Figure 2-2 Corridor Characteristics**

| Type | Description | Example |
|---|---|---|
| Core Network | • Major arterials<br>• Transit interconnectivity<br>• Major generators & attractors<br>• Long distance, multiple jurisdictions | • El Camino Real<br>• Stevens Creek Boulevard<br>• King Road |
| Local Network | • Neighborhood Collectors<br>• Feeder service to Core<br>• Community generators & Schools<br>• Medium Distance trips | • Middlefield Road<br>• Saratoga-Sunnyvale Road<br>• Lincoln Avenue |
| Community Bus | • Residential Streets<br>• Feeder service to core and local networks<br>• Community activity centers<br>• Neighborhood circulators<br>• Downtown circulators | • Gilroy and Morgan Hill<br>• Evergreen District<br>• South Palo Alto<br>• Japantown Community Bus<br>• Downtown San José (DASH) |
| Express Bus/Limited | • Expressways, highways or freeways<br>• Weekday peak directional period<br>• Between transit centers/Park & Rides and Urban Centers<br>• Long distance trips | • Lawrence Expressway<br>• Highway 237<br>• I-880, I-680, I-280 |
| Bus Rapid Transit | • Major arterials<br>• Transit interconnectivity<br>• Major generators & attractors<br>• Long distance, multiple jurisdictions | • Santa Clara/Alum Rock (2015)<br>• El Camino Real (2018)<br>• Stevens Creek Boulevard (2019) |
| Light Rail | • Established trunk corridors<br>• Link major trip generators<br>• Higher capacity than Bus<br>• Well-defined station areas | • North First Street<br>• Tasman Drive |
| Heavy Rail/Commuter Rail | • Established rail corridor<br>• Links regional centers<br>• Higher capacity system<br>• Can operate at high speeds | • Caltrain<br>• BART |

## Goals, Objectives, Values, Strategies and Performance Standards

To provide high-level guidance for VTA's performance evaluation, the agency has set goals, objectives, values, strategies and performance standards as described below. These are outlined in VTA's Valley Transportation Plan (VTP 2035). The agency produced others through a unique Strategic Plan process. This section includes all relevant policy language.

### VTA Mission Statement

VTA provides sustainable, accessible, community-focused transportation options that are innovative, environmentally responsible, and promote the vitality of our region.

### VTA Vision

VTA builds partnerships to deliver transportation solutions that meet the evolving mobility needs of Santa Clara County.

### VTA's Values

VTA's values reflect what the agency believes and how it will behave. They guide the agency's decision making and are applied to everything VTA does. Each value is represented by a value statement as follows:

**Dependability**

We provide services and deliver projects, on schedule and within budget.

**Quality**

We ensure that the services we deliver and projects that we build are well designed and maintained to preserve the investment that has been made.

**Sustainability**

We design our services and projects to minimize the negative impacts on our environment, and in a way that can be maintained over time.

**Safety**

Our services are delivered in a way that promotes the health and safety of our employees and the public.

**Integrity**

We conduct our business in an ethical, honest  and transparent manner.

**Diversity**

We value, respect and serve the unique needs of our community.

**Accountability**

As stewards of the natural resources and tax revenues of the county, we take responsibility for our actions and honestly report our successes and challenges to stakeholders and the public.

## VTA Strategic Plan Goals

Strategic goals are a fundamental component of any planning process as they provide a framework for the development of strategies to attain VTA's objectives. VTA's Strategic Plan is built on its vision, mission and values. The Authority has defined eight goals that, taken together, advance VTA's vision and mission.

1. Maintain Financial Stability: VTA seeks to manage costs, maximize revenues and balance system expansion with maintenance of existing service.
2. Improve Mobility and Access: VTA will invest resources and services in areas with greatest need to enhance the quality of life of all residents, including vulnerable populations. VTA will provide a selection of transportation modes to attract choice riders, as well as promote the economic vitality of our region.
3. Integrate Transportation and Land Use: VTA will advance the principles and practices in the Community Design and Transportation Program and promote transit-oriented and pedestrian development in the County.
4. Enhance Customer Focus: VTA will put customers first by providing safe, reliable, demand-driven service that reflects community input and promotes the benefits of transit.
5. Increase Employee Ownership: VTA aims to offer professional development, advancement opportunities and reward personal investment to make VTA an employer of choice.

6. Build Ridership on Transit System: Increase VTA's operating efficiency, reduce road congestion and promote sustainability.
7. Improve Relationships throughout the County: Leverage resources, facilitate information sharing and tap expertise in private and public sector organizations.
8. Deliver on Capital Program: Build projects that complement and enhance the core services within available resources.

## VTA Transit Sustainability Policy

VTA established performance standards for each travel mode as part of its Transit Sustainability Policy (TSP) / Service Design Guidelines (SDG) as described earlier in this chapter. The TSP was adopted in February 2007. As described, the TSP was one element of VTA's Comprehensive Operations Analysis, an effort to reform VTA's bus system based on market research, operational analysis and policy development. The TSP shifted the historic focus of transit investment for Santa Clara County from providing transit service to all parts of the county regardless of demand to a market-based network intended to serve the greatest number of riders. The TSP states that "it shall be the policy of the Santa Clara Valley Transportation Authority (VTA) to develop an efficient transit system that is responsive to market needs, seeks the highest and best use of funds, obtains maximum benefit for each dollar spent, increases transit usage per capita, and enhances Santa Clara Valley's environment and quality of life. Accordingly, all potential transit projects and services will undergo a study prior to funding approvals to understand the full range of alternatives available for providing service, the costs and benefits, and the effects proposed services will have on system ridership and operations."

The goals established by the VTA Board as part of the TSP are:

- Improve System Ridership, Productivity, and Efficiency
- Improve Farebox Recovery
- Improve Transit's Role as a Viable Alternative Mode
- Use Transit Investments and Resources More Effectively

## Service Design Guidelines Performance Standards

The Service Design Guidelines (SDG) were developed for use in conjunction with the TSP evaluation and recommendation process to evaluate, design, implement and monitor transit services in Santa Clara County. They provide a link between local commitments to transit service, construction and operational feasibility, and overall operational efficiency.

In accordance with the TSP, all transit projects are subject to an evaluation of the effects the proposed capital project or service improvement will have on transit ridership and operating efficiency. The results will determine if the project meets the ridership criteria established for the proposed mode, if the proposed mode is the most feasible and appropriate for the market and operational environment, and if the proposed mode is the most cost-effective option. The evaluation may also result in a recommendation to develop a Project Phasing Plan along with an Improvement Plan. The Phasing Plan would implement a particular service level or mode with the intent of increasing service or changing the mode as conditions develop to support the service.

The SDG are comprised of two parts: 1) Service Performance Standards, and 2) Design Guidelines. Service Performance Standards (Figure 2-3) are the primary criteria for the 2007 TSP evaluation and recommendation process and are applied to service changes, new lines and capital projects. These standards apply to both existing and new services. In the case of existing services, the standards are used to identify underperforming lines and make recommendations for improvement. In the case of new service, the standards are used in the development of recommendations for service refinements, modal alterations, or implementation. The following is a summary of the service performance standards.

### Primary Standard

The Primary Standard is Average Boarding Per Revenue Hour. As shown in Figure 2-3, this standard applies to Community Bus, Local Bus, BRT and Light Rail (LRT). For evaluation purposes, the standard is calculated for all time periods, weekdays, Saturdays and Sundays. This standard is recalculated quarterly as part of the Service Management Plan (SMP), and may move up or down.

### Secondary Standards

- Average Daily Boardings Per Station for BRT, LRT, Commuter Rail and Heavy Rail, and
- The Average Boardings Per Mile applied to BRT and LRT modes.

### Express Bus Standard

The Express bus standard is 60% of the seated vehicle loading capacity, which equates to 22 passengers. This singular standard is needed due to the special characteristics of Express Bus lines where seat turnover is low.

### Minimum Standard

The categorical minimum standard for any bus transit service is 15 Boardings per Revenue Hour. Bus lines that consistently operate below this threshold and that are unresponsive to marketing, restructuring, and operational refinements shall be discontinued. Figure 2-3 displays the standards included in VTA's 2007 Transit Sustainability Document. The standards are regularly updated.

**Figure 2-3 Weekday Service Performance Standards (Source: VTA TSP 2007)**

| Transit Mode | Average Boardings per Revenue Hour | Boardings per Station | Average Boardings per Mile |
|---|---|---|---|
| Community Bus | 20 | N/A | N/A |
| Local Bus | 33 | N/A | N/A |
| Bus Rapid Transit 1 | 45 | 150 | 200 |
| Bus Rapid Transit 2 | 55 | 350 | 350 to 475 |
| Light Rail (Existing Service) | N/A | 310 | N/A |
| Light Rail (New Service) | 55 | 600 | 1,250 |
| Commuter Rail | N/A | 2,200 | N/A |
| Heavy Rail | N/A | 17,300 | N/A |

There is no minimum standard for existing rail lines. Since the capital investments in these lines have already been made, it is the policy of VTA to increase ridership on these lines by working with cities to improve surrounding land uses and develop supporting polices and to apply standards whereby consistently under performing stations may be skipped or closed.

## Transit Operations Performance Report (TOPR)

VTA produces a Transit Operations Performance Report (TOPR) on a quarterly basis. The document assesses the system performance from systemwide down to individuals routes based on the performance standards described in the SDG. Figure 2-3 displays the performance standard in the most recent TSP. VTA uses this document to guide short to long range transit planning decisions.

### Metropolitan Transportation Commission (MTC) Audit of Goals, Objectives, Measures and Standards

To ensure compliance with the California Public Utilities Commission Code (PUC) Section 99246(d) and the Caltrans Performance Audit Guide, as well as to provide a source of potential Productivity Improvement Program (PIP) projects, MTC commissioned an assessment of each operator's goals and objectives, comparison of performance compared with adopted standards and function area performance. The report compared VTA's TSP/SDG goals with the performance measures in the TOPR using a range of assessment categories including comprehensiveness, structure, consistency, adequacy, controllability, and measurability. The audit resulted in the following recommendations:

- VTA should establish clear connections between its goals and objectives in the SRTP and its measures and standards in its TOPR, and develop quantifiable measures and standards to evaluate progress.
- Develop a plan to improve the performance in miles between chargeable incidents for VTA transit services.

The SDG main metric, Boarding Per Revenue Hour (BPRH), is linked with the goals. If BPRH increases then VTA is achieving the first three goals:

- Improve system ridership, productivity and efficiency;
- Improve farebox recovery; and,
- Improve transit's role as viable alternative.

In 2012, MTC recommended cost savings goals as part of their Transit Sustainability Project. Agencies must achieve a 5% reduction in cost metrics: cost per service hour, cost per passenger and cost per passenger mile. Towards these goals, the VTA Board adopted the following cost savings principals:

- Achieve Internal Efficiencies
- Negotiate Sustainable Bargaining Unit Agreements
- Develop Strategic Increases and Improvements in Service
- Work with Local Jurisdictions to Improve Transit and Pedestrian Oriented Development

Thus, VTA is using transit investments and resources more efficiently for operations. In addition, the standards change as ridership improves so, in theory, the bar always gets higher compelling continued productivity improvement.

## Community-Based Transportation Plans

VTA has conducted four MTC-funded Community-Based Transportation Plans (CBTP) to date: Alviso, East San José, Gilroy, and Milpitas. Their descriptions are below.

### Alviso Community-Based Transportation Plan

The Alviso CBTP was completed in May 2013. The process relied on survey-based information. Many of the residents commented on lack of bus service on Line 58 during the day. The solution was to add mid-day service on Line 58 beginning in late 2014 via the VTA Bus Service Plan, adopted in May 2013.

### East San José Community-Based Transportation Plan

The East San José CBTP was completed in May 2009. The final plan created a list of proposals developed through input from the East San José community and to address specific transportation problems experienced by residents that would be eligible for funding through the Lifeline Transportation Program. These changes are part of a systemwide effort. Here are the proposals that VTA has been working on implementing:

- **Extend 522 Service** - VTA extended service on weekday to 10:30 p.m. and is now offering Sunday service. In 2015 with implementation of the Santa Clara-Alum Rock BRT Project, service will be every 10 minutes (from 15 minutes today) and service hours will also be increased.

- **East San José/King/Story Bus Improvements** - Bus stops on King Road from Las Plumas to Tully and Story Road between King and White were improved with new benches, solar lighting, new trash containers, and ADA accessibility where necessary. These improvements were done through VTA's yearly bus stop improvement projects.

- **Real Time Passenger Information** - Recently real time bus stop identifications were installed on the bus stop signs along King and Story Roads so a passenger can dial 511, say "Departures" provide the bus stop ID when prompted and see when the next buses are due at the bus stop. The bus stop decals were provided by MTC and VTA puts the stop appropriate stop ID on each decal for installation.

- **Santa Clara/Alum Rock BRT Station Improvements** - Construction starting in early 2014. New stations will have significant passenger amenities including: Real Time Information, enhanced shelters with seating & lighting, CCTV and Ticket Vending machines.

- **Means Based Public Transit Riders Fare Subsidy** - VTA recently implemented the Transit Assistance Program (TAP) which is a pilot project that provides discounted passes to those eligible.

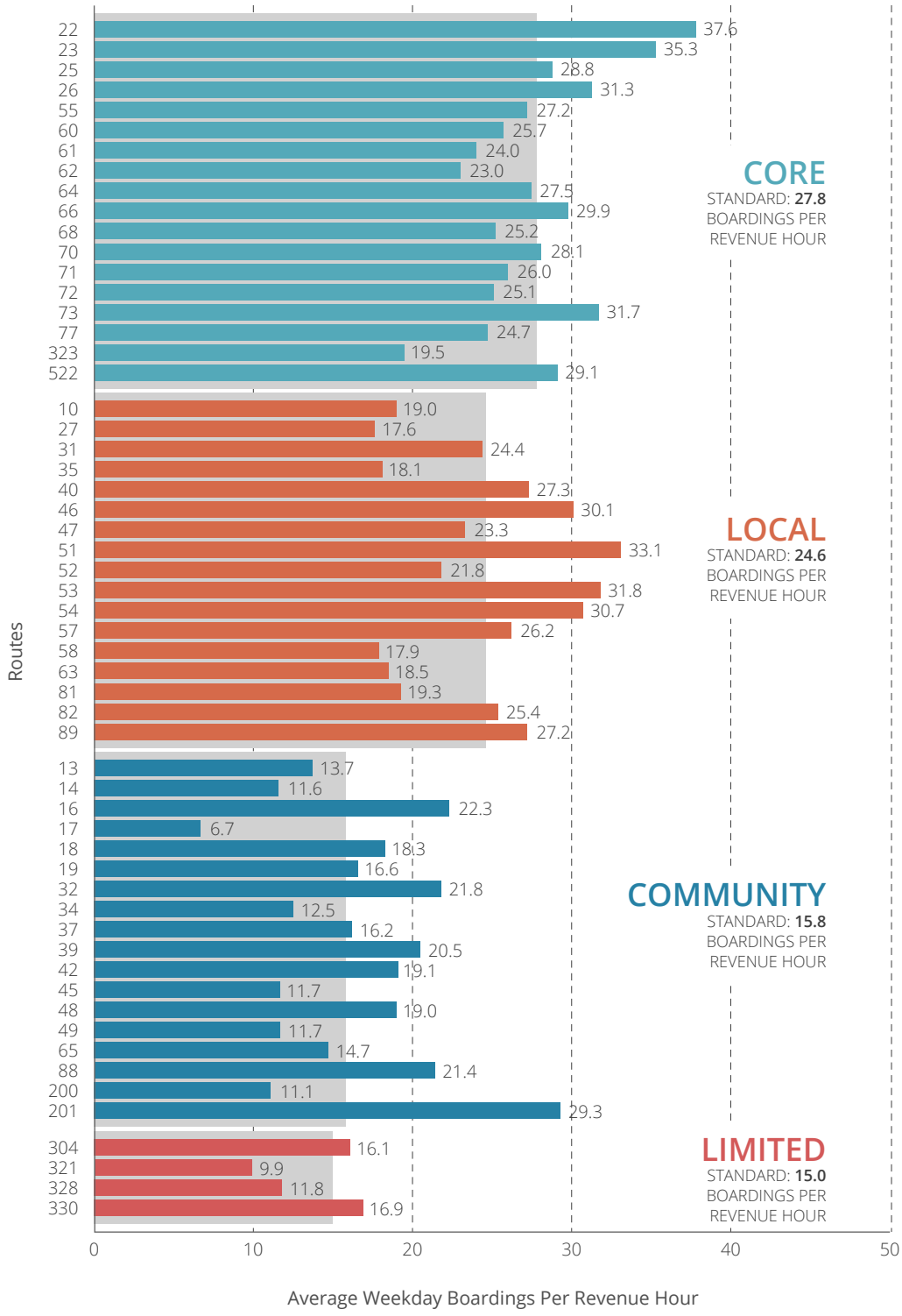
### Gilroy Community-Based Transportation Plan

The Gilroy CBTP was completed in July 2006. The outcomes included Express Transit between Gilroy and San José, Community Bus Services, Shuttle Services, and Enhanced Information Systems. Currently, we are operating Community Bus Service in Gilroy. Proposals also included bus waiting enhancements, bicycle and pedestrian improvements to transit, pedestrian improvements in proximity to transit, and affordability programs for transit passes.

### Milpitas Community-Based Transportation Plan

The Milpitas CBTP was completed in 2009 and resulted in the following recommendations. VTA proposed converting bus lines 46, 33 and 47 into Community Bus service routes. Lines 33 and 47 would combine into a new line 47 providing much needed east-west connection along Calaveras Boulevard and access to destinations such as McCarthy Ranch, Serra Center, Milpitas Library, Valley Medical Center, City Hall, Town Center, Senior Center and Great Mall. Route changes for Line 47 were implemented in January 2010.

**Figure 2-4 Non-Express Bus Route Performance (FY2013)**



## Route Performance – Bus

Figure 2-4 shows the weekday performance of the non-Express bus routes for FY2013. Each route is listed on the vertical axis, grouped by category, and sorted numerically within each category. The routes are all measured in Boardings per Revenue Hour along the horizontal axis. Per VTA's SDG, each route category has a separate performance standard to meet, which is indicated in gray.

### Core Bus Routes

The core bus route network is composed of 18 routes that form the backbone and primary grid of the bus system (this includes the Rapid 522 and the 323 Stevens Creek). Their performance is measured in average weekday Boardings per Revenue Hour. For FY2013, these routes ranged from the low-performing route 62 (at 23.0 Boardings per Revenue Hour) to the popular route 22 (at 37.6 Boardings per Revenue Hour). The standard for the core routes is 27.8 Boardings per Revenue Hour, which 8 of these routes met, although many under-performing routes were relatively close to meeting the standard. The Rapid 522 and Limited Stop 323 are included in the core category.

### Local Bus Routes

The local bus route network is composed of 17 routes that form the local network of the bus system. Their performance is measured in average weekday Boardings per Revenue Hour. For FY2013, these routes ranged from the low-performing route 27 (at 17.6 Boardings per Revenue Hour) to route 51 (at 33.1 Boardings per Revenue Hour). The current standard for the local bus routes is 24.6 Boardings per Revenue Hour (higher than the last SRTP when it was 23.6). Eight of these routes meet the standard.

### Community Bus and Shuttle Bus Routes

The community bus and shuttle routes are 18 routes that serve as community feeders to the rest of the transit system. Their performance is measured in average weekday Boardings per Revenue Hour. For FY2013, these routes ranged from the low-performing route 17 (at 6.7 Boardings per Revenue Hour) to Route 201 (at 29.3 Boardings per Revenue Hour). The current standard for the community bus routes is 15.8 Boardings per Revenue Hour. Ten of these routes meet the standard.

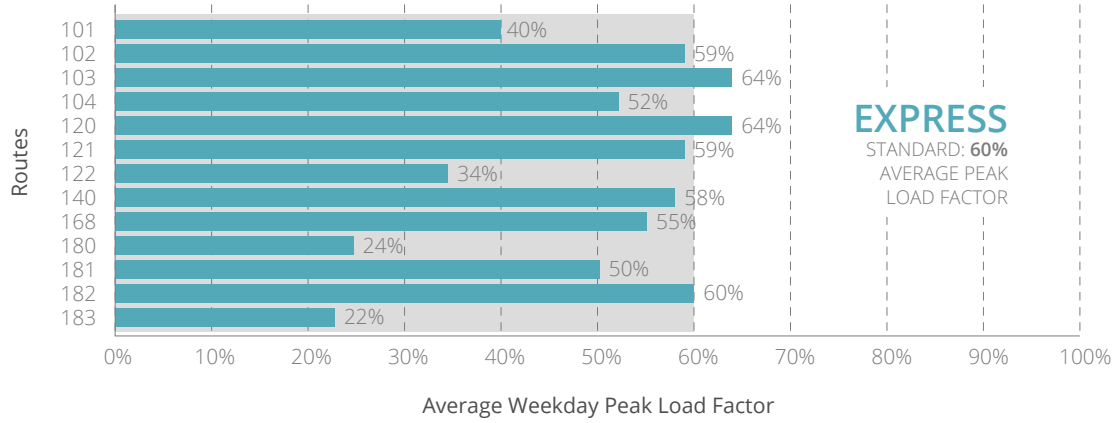
### Limited Stop Bus Routes

The four Limited Stop routes serve as long, commute-oriented service and make limited stops in order to provide faster service. Though Limited Routes are technically classified as a type of Express Service, their performance is measured in average weekday Boardings per Revenue Hour, along with the other non-Express routes. For FY2013, these routes ranged from the low-performing route 321 (both at 9.9 Boardings per Revenue Hour) to route 330 (at 16.9 Boardings per Revenue Hour). The current standard for the Limited Stop routes is 15.0 Boardings per Revenue Hour (the same as the last SRTP). Two Limited Stop routes meet the standard, and two do not.

### Express Bus Service

Express routes provide service that is tailored to meet the needs of commuters traveling long distances, often operating on highways, freeways, and expressways. Express routes have fewer pick-up stops before traveling non-stop to the final destination. These routes are designed to be time-competitive with automobiles and often stop at Park-and-Ride lots. Express routes are evaluated using Peak Load Factors. The average Peak Load Factor of a route compares the supply of seats available on a regular bus (37 seats) to the average peak number of passengers aboard each trip. For all-day routes, the average Peak Load Factor is based on the Peak Load Factor over the entire day. The standard, which does not change year-to-year, is a minimum 60% Peak Load Factor, which equates to 22 passengers. This means that a minimum of 60% of the seats are full during an average trip. Currently, three of the 13 routes meet the standard (182, 120 and 103) and all but 4 are close with at least 50% (see Figure 2-5).

**Figure 2-5 Express Bus Route Performance (FY2013)**



These are great improvements compared with the previous SRTP when only 3 of the 13 reached 50% peak load factor. This may indicate the success of the Express Bus Business Plan, completed in 2010, which resulted in service adjustments, improved marketing and upgraded, specialized vehicles on many of these routes.

## Route Performance - Light Rail

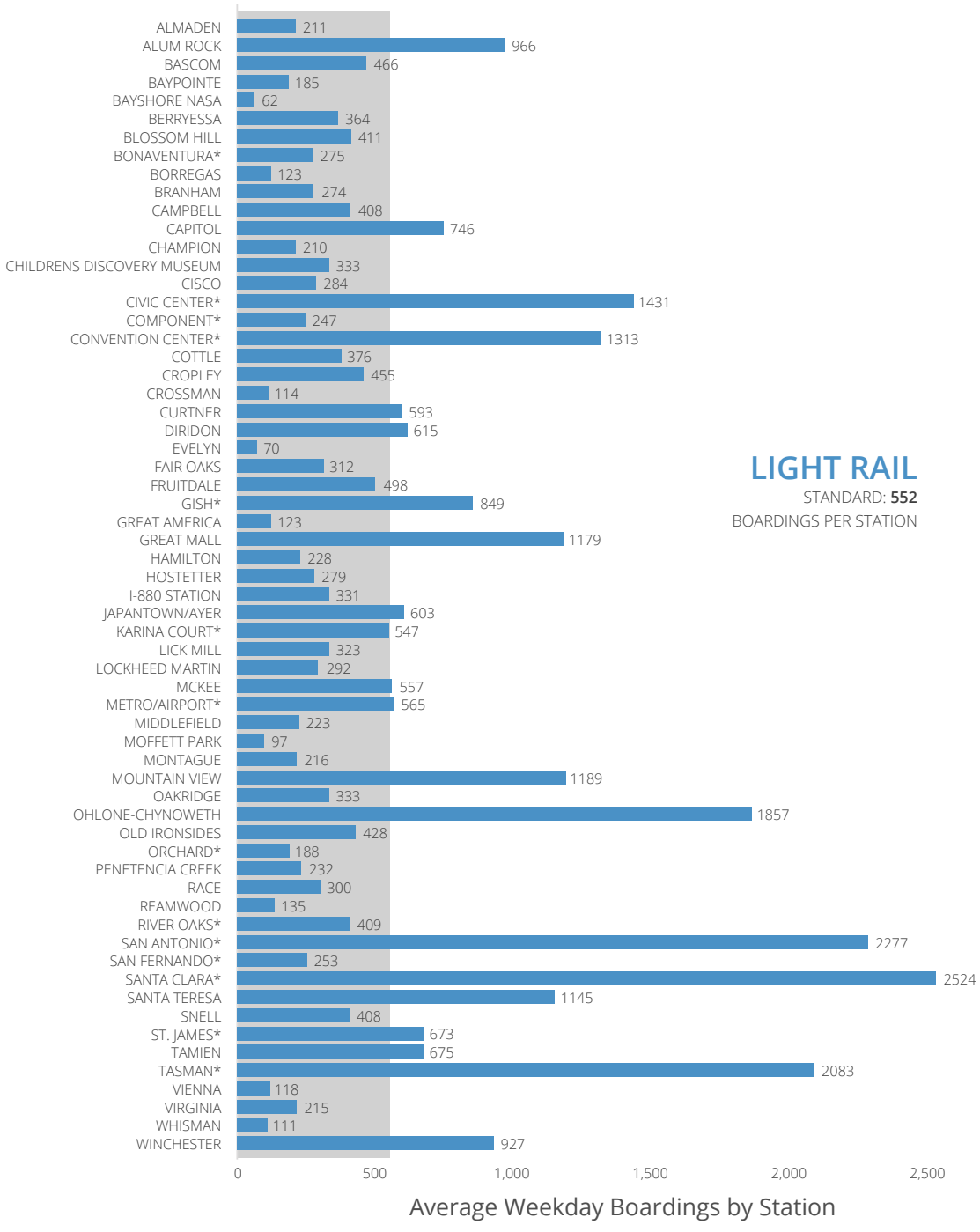
At present, VTA's LRT system has two primary lines: the Alum Rock–Santa Teresa line, and the Mountain View–Winchester line. Additionally, the system operates the Ohlone/Chynoweth–Almaden line. Figure 2-6 shows the system's average weekday boardings per station. The performance standard is the fiscal year average, currently 445 boardings per existing station (FY2013); many stations do not meet this standard. Santa Clara has the highest average daily boardings per station in the system at 2,524. Paseo de San Antonio Station, largely driven by ridership from San José State University, has the second highest at 2,277. In general, most of the high-boarding stations are either located in downtown San José, located at the end-of-line stations, or have heavy transfer activity between lines. One-third of the stations meet the standard.

### Light Rail Efficiency Project

VTA's Light Rail Efficiency Project is advancing a series of capital improvements and service changes that were recommended in the 2010 Light Rail System Analysis. These changes are necessary to support anticipated growth in the county, including increased density in city-identified priority development areas, as well as the opening of the San Francisco 49ers Levi's Stadium, and VTA's extension of BART service to Silicon Valley. Investment in these capital improvements and new service will enable VTA to meet increased ridership demand and improve the system for current riders. Current modeling projects demonstrate that these changes, when fully implemented, could result in travel time savings of as much as 20 to 30% between key origins and destinations.

The Light Rail Efficiency Project improvements will increase speeds, improve on-time performance, and minimize customer waiting time between connecting trains. The improvements will address existing system challenges related to single-track segments in Mountain View, Campbell, and San José, and also address inadequate transit signal prioritization, track layouts, and roadway designs that slow down service.

**Figure 2-6 Light Rail Station Performance (FY2013)**




*Stations served by multiple lines

Although there are a number of projects planned for full implementation, VTA has prioritized planning efforts to advance four primary capital projects: double tracking the Mountain View single track segment, a pocket track in Santa Clara in the vicinity of the new Levi's Stadium, San José track improvements, and system-wide speed and reliability improvements. VTA has identified partial funding for the Light Rail Efficiency capital improvements, as summarized in Figure 4-10. The Rail Fleet Management Plan appendix describes these proposed improvements in more detail.

**Key Performance Indicators**

VTA collects data on key indicators to evaluate performance and measure the efficiency and effectiveness of the transit system. Key indicators covering the period from FY2004 through FY2013 are shown in Figures 2-7 through 2-9.

**VTA Performance – Bus Service**

Figure 2-8 shows that bus service annual ridership is now at approximately the same level as it was 10 years ago. After a high in FY2009, ridership declined sharply but has shown signs of recovery over the last two fiscal years. VTA cut service in FY2009 and FY2010 in response to this drop. Boardings per Revenue Hour, an important measure of efficiency, shows a similar pattern. On-time performance has declined steadily over the past 10 years, with a low point of 87.3% in FY2012. Total Bus Operating Costs recently increased significantly to $216.8 million in FY2012 and $224.5 million in FY2013.

**VTA Performance – Light Rail Service**

Figure 2-9 shows that Light Rail ridership grew steadily between FY2004 and FY2007 with gains of more than 20% each year. Since 2007, ridership has held steady at around 10 million annual boardings. Boardings per Revenue Hour displays this pattern as well. VTA cut service in FY2009 in response to lower ridership. The FY2013 Average Weekday Boardings exceeded the goal for this mode with 34,241. Like bus, light rail on-time performance has also been lower and missed VTA's goal of 95%. Other measures that missed their goals were Miles Between Chargeable Accidents and Miles Between Major Mechanical Schedule Loss. Total Light Rail Operating Cost increased to $62 million.

## Figure 2-7 Key Performance Indicators for Bus (FY2013)

| Bus | FY2004 | FY2005 | FY2006 | FY2007 | FY2008 | FY2009 | FY2010 | FY2011 | FY2012 | FY2013 | Budget/Goal (effective FY2013) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Scheduled Hours | 1,359,608 | 1,330,707 | 1,346,841 | 1,364,903 | 1,389,344 | 1,379,428 | 1,322,661 | 1,269,071 | 1,296,660 | 1,284,529 | 1,305,000 |
| Total Revenue Hours | 1,247,051 | 1,202,770 | 1,236,301 | 1,254,464 | 1,282,419 | 1,277,905 | 1,222,650 | 1,171,805 | 1,191,992 | 1,216,191 | 1,203,390 |
| Total Scheduled Miles | 18,681,967 | 18,259,119 | 18,499,971 | 18,705,711 | 18,784,524 | 18,500,655 | 17,739,605 | 16,990,315 | 17,099,227 | 17,491,993 | 17,227,000 |
| Total Revenue Miles | 15,754,661 | 15,416,363 | 15,678,367 | 15,882,356 | 16,013,930 | 15,849,345 | 15,177,565 | 14,415,732 | 14,419,038 | 14,626,386 | 14,603,050 |
| Total Annual Boarding Riders | 32,902,350 | 30,296,718 | 30,938,044 | 31,646,555 | 33,103,495 | 34,510,273 | 31,983,494 | 31,395,126 | 32,053,755 | 32,432,354 | 31,800,000 |
| % Annual Change in Boardings | -16% | -8% | 2% | 2% | 5% | 4% | -7% | -2% | 2% | 1% | - |
| Average Weekday Boardings | 105,588 | 97,117 | 99,966 | 102,123 | 106,673 | 111,820 | 103,575 | 102,187 | 104,583 | 106,161 | 103,600 |
| Boardings per Revenue Hour | 26.4 | 25.2 | 25 | 25.2 | 25.8 | 27 | 26.2 | 26.8 | 26.9 | 26.7 | 26.4 |
| Total Bus Operating Cost* | $182,460,378 | $184,895,543 | $193,456,328 | $199,010,149 | $199,074,243 | $196,217,250 | $201,267,916 | $204,499,377 | $216,846,364 | $224,474,914 * | $206,300,835 |
| Operating Cost per Revenue Hour | $146.31 | $153.72 | $156.48 | $158.64 | $155.23 | $153.55 | $164.62 | $174.52 | $181.92 | $184.57 | $158.08 |
| Operating Cost per Boarding | $5.55 | $6.10 | $6.25 | $6.29 | $6.01 | $5.69 | $6.29 | $6.51 | $6.77 | $6.92 | $6.49 |
| Ontime Performance - Bus | 96.60% | 93.50% | 90.30% | 89.70% | 90.10% | 88.60% | 89.10% | 88.60% | 87.30% | 87.50% | 92.50% |
| Percent of Scheduled Service Operated | 99.30% | 99.34% | 99.33% | 99.44% | 99.61% | 99.69% | 99.69% | 99.73% | 99.69% | 99.69% | 99.50% |
| Miles Between Chargeable Accidents | 263,126 | 198,469 | 169,725 | 122,260 | 90,310 | 91,136 | 90,049 | 106,857 | 85,926 | 80,608 | 100,000 |
| Miles Between Major Mechanical Schedule Loss | 6,192 | 6,260 | 5,394 | 5,590 | 7,475 | 8,289 | 8,670 | 9,810 | 10,202 | 12,080 | 8,000 |

* Per costs reported to NTD

## Figure 2-8 Key Performance Indicators for Light Rail

| Light Rail | FY2004 | FY2005 | FY2006 | FY2007 | FY2008 | FY2009 | FY2010 | FY2011 | FY2012 | FY2013 | Budget/Goal (effective FY2013) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Scheduled Train Hours | 98,930 | 114,663 | 138,348 | 143,816 | 143,576 | 143,533 | 141,095 | 141,849 | 147,847 | 147,723 | 148,000 |
| Total Revenue Train Hours | 93,564 | 107,060 | 129,636 | 136,380 | 136,566 | 136,519 | 133,290 | 132,452 | 137,495 | 137,077 | 138,200 |
| Total Scheduled Train Miles | 1,464,325 | 1,774,543 | 2,129,189 | 2,220,230 | 2,223,823 | 2,216,957 | 2,182,849 | 2,190,140 | 2,209,233 | 2,198,478 | 2,221,000 |
| Total Revenue Train Miles | 1,372,375 | 1,647,376 | 1,993,940 | 2,105,819 | 2,112,080 | 2,105,555 | 2,063,245 | 2,056,283 | 2,065,719 | 2,055,289 | 2,088,627 |
| Total Annual Boarding Riders | 5,473,024 | 6,780,431 | 8,279,807 | 10,278,460 | 10,451,136 | 10,754,161 | 9,749,882 | 10,014,504 | 10,372,862 | 10,742,292 | 10,200,000 |
| % Annual Change in Boardings | -10% | 24% | 22% | 24% | 2% | 3% | -9% | 3% | 4% | 4% | |
| Average Weekday Boardings | 17,636 | 21,436 | 26,137 | 32,567 | 33,043 | 34,305 | 31,355 | 31,871 | 32,716 | 34,241 | 32,500 |
| Boardings per Revenue Hour | 58.5 | 63.3 | 63.9 | 75.4 | 76.5 | 78.8 | 73.1 | 75.6 | 75.4 | 78.4 | 74.0 |
| Total Light Rail Operating Cost* | $45,752,516 | $47,898,953 | $53,866,962 | $55,935,496 | $55,544,365 | $58,068,693 | $56,685,665 | $58,822,920 | $61,685,649 | $68,972,255 | $65,745,491 |
| Operating Cost per Revenue Train Hour | $489.00 | $447.40 | $415.52 | $410.14 | $406.72 | $425.35 | $425.28 | $444.11 | $448.64 | $503.16 | $444.23 |
| Operating Cost per Boarding | $8.36 | $7.06 | $6.51 | $5.44 | $5.31 | $5.40 | $5.81 | $5.87 | $5.95 | $6.42 | $6.45 |
| Ontime Performance - Light Rail | 95.60% | 96.70% | 92.00% | 90.00% | 87.40% | 90.10% | 88.20% | 87.70% | 89.80% | 88.50% | 95% |
| Percent of Scheduled Service Operated | 99.94% | 99.93% | 99.94% | 99.95% | 99.96% | 99.97% | 99.98% | 99.98% | 99.97% | 99.98% | 99.90% |
| Miles Between Chargeable Accidents | 488,109 | 1,774,543 | 2,129,189 | 2,220,230 | 444,765 | 1,108,615 | 1,091,425 | 365,023 | 441,847 | 366,503 | 2,214,000 |
| Miles Between Major Mechanical Schedule Loss | 17,027 | 24,646 | 26,615 | 25,817 | 28,511 | 38,223 | 43,657 | 39,821 | 32,018 | 40,723 | 40,000 |

* Per costs reported to NTD

**Figure 2-9 Key Performance Indicators for Total System**

| Total System | FY2004 | FY2005 | FY2006 | FY2007 | FY2008 | FY2009 | FY2010 | FY2011 | FY2012 | FY2013 | Budget/Goal (effective FY2013) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Annual Boarding Riders | 38,375,374 | 37,077,149 | 39,217,851 | 41,925,015 | 43,554,631 | 45,264,434 | 41,733,376 | 41,409,630 | 42,426,617 | 43,174,646 | 42,000,000 |
| % Annual Change in Boardings | -15% | -3% | 6% | 7% | 4% | 4% | -8% | -1% | 2% | 2% | |
| Total System Operating Costs | $228,212,894 | $232,794,496 | $247,323,290 | $254,945,645 | $254,618,608 | $254,285,943 | $257,953,581 | $263,331,942 * | $278,532,013 * | $293,447,169 | $272,046,326 |
| Operating Cost per Revenue Hour | $170.23 | $177.73 | $181.06 | $183.30 | $179.44 | $179.78 | $190.24 | $201.90 | $209.50 | $216.84 | $187.23 |
| Operating Cost per Boarding | $5.95 | $6.28 | $6.31 | $6.08 | $5.85 | $5.62 | $6.18 | $6.36 | $6.57 | $6.80 | $6.48 |
| Total Fare Revenues | $30,625,336 | $32,061,053 | $34,334,622 | $35,242,544 | $35,830,186 | $36,183,749 | $36,856,943 | $38,106,058 * | $37,707,703 * | $38,331,156 | $38,415,000 |
| Average Fare per Boarding | $0.80 | $0.86 | $0.88 | $0.84 | $0.82 | $0.80 | $0.88 | $0.92 | $0.89 | $0.89 | $0.91 |

* Per costs reported to NTD

### VTA Performance – Total System

Figure 2-10 shows that system ridership maintained a relatively high level since FY2007 and continues to exceed the agency goal. The system wide Farebox Recovery Ratio decreased slightly to 13.5%. VTA is concerned about the Average Fare per Boarding which decreased slightly between FY2011 and FY2012, but it is still a bit higher than the 10-year average, now resting at $0.89 per boarding.

**Figure 2-10 Key Performance Indicators for Paratransit**

| Fiscal Year | Passengers Per Revenue Hour | Cost Per Trip |
|---|---|---|
| FY2003 | 2.1 | $27.87 |
| FY2004 | 2.3 | $27.26 |
| FY2005 | 2.3 | $25.64 |
| FY2006 | 2.3 | $25.53 |
| FY2007 | 2.3 | $25.39 |
| FY2008 | 2.4 | $25.29 |
| FY2009 | 2.4 | $24.84 |
| FY2010 | 2.5 | $24.51 |
| FY2011 | 2.6 | $23.43 |
| FY2012 | 2.6 | $22.72 |
| FY2013 | 2.5 | $22.69 |
| Goal (effective FY2013) | 2.3 | $27.00 |

### VTA Performance – Paratransit

VTA is required under the Americans with Disabilities Act to provide paratransit service to eligible persons with disabilities who are unable to use fixed route bus or light rail service. Figure 2-10 shows two key performance measures for our paratransit service. Passengers per Revenue Hour was 2.5 in FY2013. Net Cost per Passenger also continues to improve, falling to $22.69 in FY2013.  Both measures exceed VTA's goals for this service.

Beginning in FY2014, VTA will expand the measures it monitors to track the performance of its paratransit service. These performance measures include the goals described in Figure 2-11. Actual performance indicators from the first two quarters of FY2014 are also shown. VTA paratransit service is meeting and exceeding all of the expanded performance goals.

**Figure 2-11 ADA Paratransit Performance Indicators**

| Performance Indicators | Goal | YTD FY2014 Actual |
|---|---|---|
| VTA Net-Cost Per Passenger Trip | Less than or equal to $26.75 | $22.52 |
| On-Time Performance | Less than or equal to 92% | 96.8% |
| Passengers per Revenue Hour | Less than or equal to 2.4 | 2.6 |
| Complaints per 1,000 Passenger Trips | Less than or equal to 1.0 | .37 |
| Schedule Calls Response Time (minutes) | Less than or equal to 2.0 | 1.26 |
| Day of Service Calls Response Time (minutes) | Less than or equal to 2.0 | 1.00 |
| ADA Eligibility Certification within 21 Days | Equal to 100% | 100% |
| Preventative Maintenance Inspections On-Time | Greater than or equal to 95% | 99.6% |
| Major Accidents and Incidents per 85,000 Trips | Less than or equal to 1 | 0 |
| Non-Major Accidents and Incidents per 85,000 Passenger Trips | Less than or equal to 2 | 0 |

# CHAPTER 3: OPERATING PLAN

## Plan for Future Bus and Rail Service

Figure 3-1 presents planned service levels for bus, light rail, and paratransit during the SRTP planning period of FY2014 through FY2023. In addition to the services described below, VTA will continue to be a funding partner for Caltrain, ACE and Highway 17 Express and other interagency services. Figure 3-2 summarizes major planned service changes through 2019. Additional service changes will be developed as part of VTA's 2-year Transit Service Plan, as described in Chapter 2. The date for revenue services of the Silicon Valley Berryessa Extension, as shown in the executed Full Funding Grant Agreement with Federal Transit Adminitration, is June 29, 2018. However, this chapter displays an earlier opening day of *January 2017* as a planning assumption. For the time period between 2019 and 2023, this plan has assumed at 2% increase in service per year.

Following a reduction in bus service in FY2010 as a result of the recession, VTA increased bus service in FY2011-FY2013 to restore most of that reduction. In FY2016, VTA is planning to add BRT bus service along the Santa Clara/Alum Rock and El Camino corridor (an upgrade of the Rapid 522 line). VTA is currently studying how to best modify its network once the new BART stations open; the study is called the BART Transit Integration Plan. More bus service will be added in FY2017 with the opening of BART service to Berryessa, with the introduction of the Berryessa BART Connector service (301 Downtown Limited Stop/323 Stevens Creek/King Road BRT). In FY2019, additional BRT service is planned to start along the Stevens Creek to downtown corridor.

Light rail service that was cut in FY2010 has been restored and new service was added with the introduction of Commuter Express service along the Guadalupe corridor. VTA plans a series of light rail system improvements as described in Figure 3-2 below. These include planned service between Alum Rock and Mountain View to connect with BART at Milpitas.

This SRTP also incorporates the first years of BART service to Santa Clara County. Upon completion of the SVRT extension to Berryessa in FY2017, BART will begin operating trains to Santa Clara County on two lines–Berryessa to Richmond and Berryessa to Daly City. Each

**Figure 3-1 Planned Service Levels**

| | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| BUS | | | | | << Service Plan | | 2% Growth >> | | | |
| Bus Total Hours | 1,381,001 | 1,433,223 | 1,463,335 | 1,499,552 | 1,532,312 | 1,549,663 | 1,580,656 | 1,612,269 | 1,644,515 | 1,677,405 |
| % Change | - | 3.8% | 2.1% | 2.5% | 2.2% | 1.1% | 2.0% | 2.0% | 2.0% | 2.0% |
| Bus Total Miles | 18,005,506 | 18,686,381 | 19,072,488 | 19,576,580 | 20,001,430 | 20,326,296 | 20,732,822 | 21,147,479 | 21,570,428 | 22,001,837 |
| Peak Vehicles | 372 | 379 | 384 | 396 | 398 | 402 | 410 | 418 | 426 | 435 |
| LIGHT RAIL | | | | | | | | | | |
| Total Train Hours | 149,990 | 151,693 | 162,332 | 191,225 | 212,363 | 215,247 | 219,552 | 223,943 | 228,422 | 232,990 |
| % Change | - | 1.1% | 7.0% | 17.8% | 11.1% | 1.4% | 2.0% | 2.0% | 2.0% | 0.02 |
| Total Car Hours | 222,694 | 225,223 | 253,847 | 315,386 | 354,001 | 359,702 | 366,896 | 374,234 | 381,718 | 389,353 |
| Total Train Miles | 2,211,995 | 2,237,110 | 2,394,022 | 2,820,126 | 3,131,852 | 3,174,385 | 3,237,872 | 3,302,630 | 3,368,682 | 3,436,056 |
| Total Car Miles | 3,284,214 | 3,321,504 | 3,743,652 | 4,651,206 | 5,220,682 | 5,304,751 | 5,410,846 | 5,519,063 | 5,629,445 | 5,742,034 |
| Peak Trains | 29 | 29 | 30 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| Peak Cars | 57 | 57 | 60 | 76 | 76 | 76 | 77 | 79 | 80 | 82 |
| SYSTEM TOTAL (BUS AND LIGHT RAIL) | | | | | | | | | | |
| Revenue Bus/Train Hours | 1,530,991 | 1,584,916 | 1,625,668 | 1,690,778 | 1,744,675 | 1,764,910 | 1,800,208 | 1,836,212 | 1,872,937 | 1,910,395 |
| Revenue Vehicle Miles | 21,289,721 | 22,007,885 | 22,816,140 | 24,227,787 | 25,222,112 | 25,631,048 | 26,143,669 | 26,666,542 | 27,199,873 | 27,743,871 |
| Peak Vehicles | 429 | 436 | 444 | 472 | 474 | 478 | 487 | 497 | 507 | 517 |
| PARATRANSIT | | | | | | | | | | |
| Revenue Vehicle Miles (Millions) | 6,091,830 | 6,195,391 | 6,300,712 | 6,407,824 | 6,516,757 | 6,627,542 | 6,740,211 | 6,854,794 | 6,971,326 | 7,089,838 |
| Revenue Vehicle Hours (Millions) | 296,090 | 302,307 | 308,656 | 315,138 | 321,756 | 328,512 | 335,411 | 342,455 | 349,646 | 356,989 |

**Figure 3-2 Summary of Significant Planned Transit Service Changes**

LAST UPDATED 1/15/2014

| FY | Sign-up | Route | Description |
|---|---|---|---|
| 2015 | July 2014 | 17 | Discontinue if ridership does not meet minimum standards. |
| 2015 | July 2014 | 101 | Operate with new Express vehicles. |
| 2015 | July 2014 | 104 | Operate with new Express vehicles and add trip in each direction if passenger volume warrants. |
| 2015 | July 2014 | 120 | Operate additional trip in each direction if passenger volume warrants. |
| 2015 | July 2014 | 168 | Operate additional trip in each direction if passenger volume warrants. |
| 2015 | July 2014 | 323 | Start Saturday service, every 15 minutes from 9am - 6pm. |
| 2015 | October 2014 | 37 | Extend service to 10pm between West Valley College and Winchester Transit Center. |
| 2015 | October 2014 | 52 | Extend service to 9:30pm. |
| 2015 | October 2014 | 58 | Extend midday service to Alviso. |
| 2015 | January 2015 | 323 | Operate 30 minute weekday evening service from 6:30pm to 10:30pm, operate 30 minute Saturday service from 8am - 9am and 6pm - 10pm, start Sunday service every 20 minutes from 9am - 6pm. |
| 2016 | October 2015 | 120 | Terminate route at Warm Springs BART instead of Fremont. |
| 2016 | October 2015 | 140, 180 | Combine and convert to limited route 380 with opening of Warm Springs BART. |
| 2016 | October 2015 | 181 | Terminate route at Warm Springs BART instead of Fremont. |
| 2016 | October 2015 | 323 | Start operating some blocks with articulated buses instead of 40'. |

**Figure 3-2 Summary of Significant Planned Transit Service Changes (continued)**

| FY | Sign-up | Route | Description |
|---|---|---|---|
| 2016 | October 2015 | 522 | BRT starts in Santa Clara/Alum Rock, Increase Weekday service span to 11pm, increase to 10 min. frequency from 6:00am-7:00pm, 20 min. from 5:00am - 6:00am and 7:00pm - 11:00pm. Saturday service starts at 6:00am with 20 min. frequency before 8am and after 7:00pm. Expand Sunday service to operate between 7:00am and 9:00pm with 15 minute headways between 8:00am and 7:00pm, with 20 minute headways before 8:00am, and after 7:00pm. |
| 2016 | January 2016 | Light Rail | Begin operating new operating plan based on major service change 1. Almaden to Mountain View, Santa Teresa to Alum Rock with Express between Ohlone-Chynoweth and Convention Center on weekdays for Santa Teresa to Alum Rock line, Winchester to Downtown San José. |
| 2017 | January 2017 | 181 | Discontinue Route with BART service beginning to Berryessa and Montague. |
| 2017 | January 2017 | 301 | Implement new Downtown Connector Route from Berryessa BART Station. |
| 2017 | January 2017 | 323 | Convert to all Articulated buses with 12 minute headways on weekdays and extend route to Berryessa BART via Santa Clara and King Road. |
| 2017 | January 2017 | Many | Implement BART Integration Plan. Details to be determined. |
| 2017 | January 2017 | Light Rail | Begin major service change 2 Alum Rock to Mountain View service in conjunction with BART service extending to Berryessa and Montague. New route would operate 15 minute headways on Weekdays and 30 minute on weekends. Peak hour trips would serve Mountain View will off-peak and weekends would terminate at Old Ironsides. |
| 2018 | January 2018 | 23 | Terminate route in Downtown San José and operate with Articulated buses instead of 40'. Maintain existing 12 minute weekday and 15 minute weekend headways. |
| 2018 | January 2018 | 28 | New route connecting Alum Rock Transit Center with Berryessa BART and provide local service on Alum Rock between Capitol and King. |

**Figure 3-2 Summary of Significant Planned Transit Service Changes (continued)**

| FY | Sign-up | Route | Description |
|---|---|---|---|
| 2018 | January 2018 | Light Rail | Operate 15 min. service all day on Almaden - Mtn. View and Winchester - Downtown San José lines. Begin Guadalupe Express service on Saturdays, 15 minute headways on Saturday between Almaden and Baypointe. |
| 2019 | July 2018 | 522 | Improve evening headways to 15 minute headways instead of 20. |
| 2019 | July 2018 | 323, 523 | Convert 323 to BRT 523 with improved service hours and headways, route will end at Berryessa BART. |

line will operate at 15-minute frequencies, resulting in a combined service of eight trains per hour for both the Milpitas and Berryessa stations. Appendix D describes the financial details of the SVRT project.

## Financial Plan

The financial plan applies a financial analysis model that integrates projections of expenses and revenues, both capital and operating. The model addresses the capital cost, level of service and resulting operating and maintenance cost, ridership and resulting fare revenue, and grant implications of each "line-item" capital project or program. The model also applies a comprehensive economic projection of inflation and interest rates. In addition to projecting a baseline rate of inflation (CPI-U) that applies to most financial data , separate inflation projections were applied to construction and vehicle capital costs, as well as energy cost.

A forecast of operating sources-and-uses-of-funds is shown in Figure 3-3. Tier II operating and capital expenditures are not currently funded during the SRTP period, and as a result are offset by Unspecified Tier II Revenues. See Section 4.1 for a description of the two project tiers. The SRTP process involves close coordination between the divisions to prioritize operating needs, grants and financing to constrain these needs based on anticipated funds over the 10-year plan period.

**Figure 3-3 Operating Forecast (Year of Expenditure Dollars in Millions)**

| | Actual | SRTP Range | | | | | | | | | | Total SRTP Range |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OPERATING SOURCES OF FUNDS | FY2013 | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 | FY2014-2023 |
| Fare Revenues | 38.33 | 38.83 | 39.91 | 44.06 | 47.92 | 55.22 | 57.89 | 62.59 | 65.60 | 71.69 | 74.67 | 558.39 |
| 1976 1/2 Cent Sales Tax | 176.72 | 182.43 | 190.85 | 203.55 | 214.61 | 223.79 | 230.91 | 237.80 | 244.94 | 252.29 | 259.76 | 2,240.92 |
| TDA | 86.30 | 85.74 | 89.70 | 95.67 | 100.87 | 105.18 | 108.53 | 111.77 | 115.12 | 118.58 | 122.09 | 1,053.23 |
| STA & State Operating Grants (AB 434) | 16.92 | 16.24 | 16.24 | 16.75 | 17.28 | 17.82 | 18.32 | 18.83 | 19.34 | 19.89 | 20.47 | 181.18 |
| FTA Sec. 5307 Preventive Maintenance | 28.31 | 20.03 | 13.62 | 13.09 | 13.48 | 13.88 | 14.30 | 14.73 | 17.43 | 18.19 | 18.77 | 157.50 |
| Investment, Advertising and Other Income | 3.50 | 3.04 | 3.32 | 4.21 | 6.46 | 7.87 | 5.68 | 5.66 | 5.87 | 6.21 | 6.70 | 55.02 |
| Leasing and Licensing | 2.34 | 2.01 | 2.25 | 2.75 | 2.82 | 2.86 | 2.93 | 3.00 | 3.07 | 3.14 | 2.97 | 27.80 |
| Measure A 1/2 Cent Sales Tax - Operating Assistance | 32.58 | 33.62 | 35.17 | 37.51 | 39.55 | 41.24 | 42.56 | 43.82 | 45.14 | 46.50 | 47.87 | 412.99 |
| Measure A Reimbursement of VTA Debt Service | 10.87 | 10.70 | 11.11 | 16.07 | 15.96 | 15.85 | 15.74 | 15.62 | 15.50 | 18.38 | 18.26 | 153.19 |
| Section 5307 Grants Applied to Debt Service | - | - | - | - | - | - | - | - | - | 32.23 | 17.20 | 49.43 |
| Uspecified Revenue (Tier II / Measure A Projects) | - | - | - | - | - | - | - | - | 2.13 | 2.20 | 5.70 | 10.02 |
| **TOTAL OPERATING SOURCES OF FUNDS** | **395.86** | **392.64** | **402.16** | **433.66** | **458.95** | **483.71** | **496.85** | **513.81** | **534.13** | **589.30** | **594.47** | **4,899.68** |

**Figure 3-3 Operating Forecast (Year of Expenditure Dollars in Millions, continued)**

| | Actual | SRTP Range | | | | | | | | | | Total SRTP Range |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OPERATING USES OF FUNDS | FY2013 | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 | FY2014-2023 |
| VTA Operations | | | | | | | | | | | | |
| Bus | 240.21 | 267.05 | 276.01 | 290.36 | 307.77 | 324.00 | 337.55 | 355.61 | 372.40 | 390.13 | 409.20 | 3,330.08 |
| Light Rail | 56.66 | 61.01 | 61.69 | 67.38 | 80.55 | 89.36 | 93.22 | 97.73 | 102.50 | 107.55 | 112.95 | 873.93 |
| ADA Paratransit | 18.83 | 19.10 | 20.80 | 21.76 | 23.16 | 24.18 | 25.22 | 25.83 | 26.81 | 27.33 | 28.44 | 242.63 |
| Caltrain | 15.41 | 7.29 | 14.11 | 14.61 | 15.11 | 15.63 | 16.12 | 16.60 | 17.11 | 17.64 | 18.21 | 152.42 |
| ACE | 4.89 | 4.61 | 4.75 | 4.92 | 5.09 | 5.26 | 5.43 | 5.59 | 5.76 | 5.94 | 6.13 | 53.46 |
| Other Services | 0.95 | 1.01 | 1.01 | 1.04 | 1.08 | 1.11 | 1.15 | 1.18 | 1.22 | 1.26 | 1.30 | 11.36 |
| Tier II CIP / Measure A Projects | - | - | - | - | - | - | - | - | 2.13 | 2.20 | 5.70 | 10.02 |
| Debt Service | 19.49 | 20.10 | 20.48 | 24.94 | 24.79 | 24.61 | 31.29 | 30.71 | 36.28 | 67.78 | 52.07 | 333.05 |
| Operating Cost Savings Measures | - | - | - | - | (4.00) | (4.00) | (17.00) | (24.00) | (41.00) | (33.00) | (41.00) | (164.00) |
| **TOTAL OPERATING USES OF FUNDS** | **356.44** | **380.16** | **398.85** | **425.00** | **453.55** | **480.15** | **492.98** | **509.25** | **523.21** | **586.82** | **593.00** | **4,842.95** |
| **NET OPERATING CASH FLOW** | **39.42** | **12.48** | **3.31** | **8.67** | **5.40** | **3.55** | **3.87** | **4.56** | **10.92** | **2.48** | **1.47** | |

**Figure 3-3 Operating Forecast (Year of Expenditure Dollars in Millions, continued)**

| | Actual | SRTP Range | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CORE SYSTEM FUND BALANCE | FY2013 | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 |
| Beginning Balance[1] | | 223.16 | 200.32 | 203.52 | 146.73 | 166.47 | 118.08 | 124.01 | 127.42 | 139.77 | 139.97 |
| Net Operating Cash Flow | | 12.48 | 3.31 | 8.67 | 5.40 | 3.55 | 3.87 | 4.56 | 10.92 | 2.48 | 1.47 |
| Net Capital Cash Flow - VTA Core Capital (See Figure 4-1) | | (35.33) | (0.12) | (65.45) | 14.33 | (51.94) | 2.06 | (1.16) | 1.43 | (2.28) | (1.80) |
| **CUMULATIVE FUND BALANCE** | **223.16** | **200.32** | **203.52** | **146.73** | **166.47** | **118.08** | **124.01** | **127.42** | **139.77** | **139.97** | **139.64** |

| | Actual | SRTP Range | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2008 MEASURE B FUND BALANCE | FY2013 | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 |
| Beginning Balance[2] | | 41.64 | 87.24 | 135.03 | 187.41 | 213.93 | 208.44 | 201.93 | 194.70 | 187.12 | 179.12 |
| Measure B 1/8 Cent Sales Tax | | 45.54 | 47.64 | 50.81 | 53.57 | 55.86 | 57.64 | 59.36 | 61.14 | 62.98 | 64.84 |
| BART Subsidy | | - | - | - | (33.04) | (69.47) | (71.68) | (73.82) | (76.04) | (78.32) | (80.64) |
| Interest on Prior Year Balance | | 0.06 | 0.15 | 1.57 | 5.98 | 8.12 | 7.53 | 7.24 | 7.32 | 7.34 | 7.21 |
| **CUMULATIVE FUND BALANCE** | **41.64** | **87.24** | **135.03** | **187.41** | **213.93** | **208.44** | **201.93** | **194.70** | **187.12** | **179.12** | **170.53** |

[1] Includes Operating Reserve, Transit Debt Reduction Fund & Sales Tax Stabilization Fund

[2] Measure B Fund is dedicated for operating and maintenance expenses and capital reserve contributions for VTA's BART Silicon Valley Extension

### Financial Assumptions – VTA Core System

The financial model includes assumptions, listed below, which are fundamentally uncertain. These assumptions reflect what VTA believes to be the most likely financial scenario over the next ten years. If any one of the assumptions does not materialize, VTA may be required to revisit the planned expenditures and reprioritize them to achieve a balanced financial plan.

### Operating Sources of Funds

**Fare Revenues:** The VTA financial plan captures the impacts on ridership—and the resulting fare revenue—associated with the set of transit service changes modeled both in the travel demand analysis and the financial plan. Projected fare revenues are affected by two factors: 1) change in passengers; 2) change in average fare paid per passenger. Ridership projections assumed baseline growth rates based on the VTA travel demand analysis used to support project planning.

The ridership forecast applied in the financial plan is consistent with the service plan assumed in both the financial plan and the travel demand forecast model. Both assume the following service level changes: 1) BRT route 522 introduction in FY2016; 2) Santa Clara County BART service introduction in FY2017; and 3) BRT route 523 introduction in FY2019. These service changes are reflected in the ridership projections in Figure 3-4 and the resulting fare projections are reflected in Figures 3-5 and 3-6. Ridership and revenue projections do not assume the VTA system benefits from the implementation of Tier II projects. Fare projections assume fare increases at the rate of CPI-U (cumulative) every two years until 2020, then annually at the rate of inflation + 0.38% thereafter.

**Figure 3-4 Annual Ridership Projections**

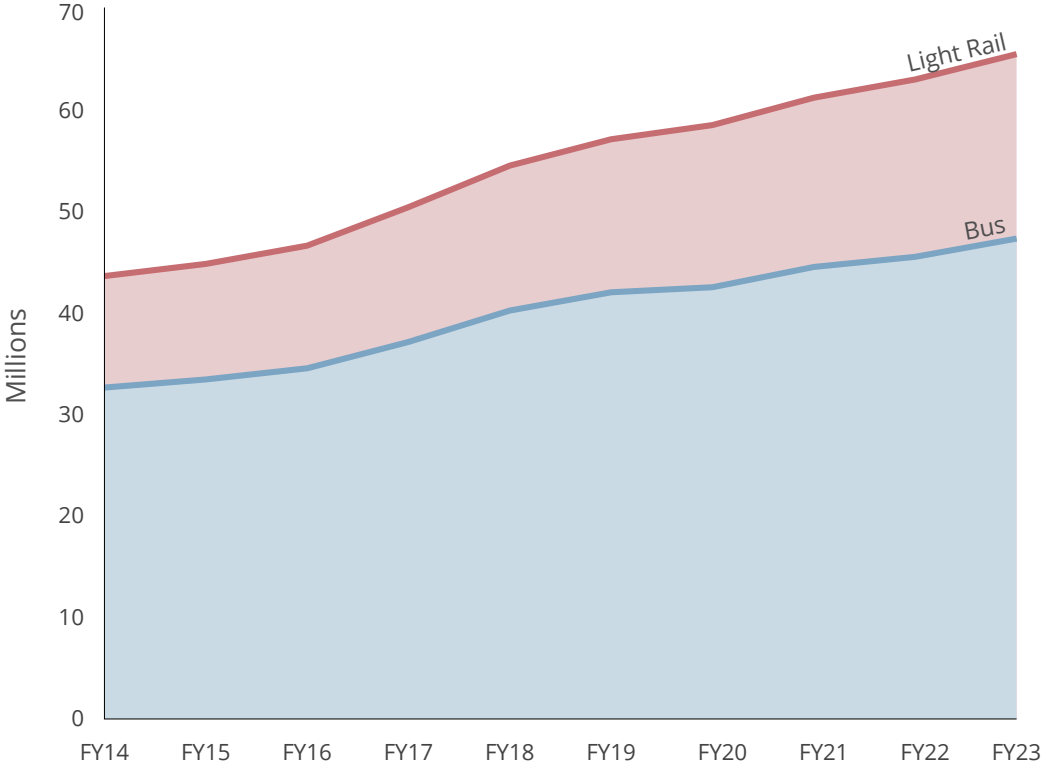



**Figure 3-5 Fare Projections (Inflated)**

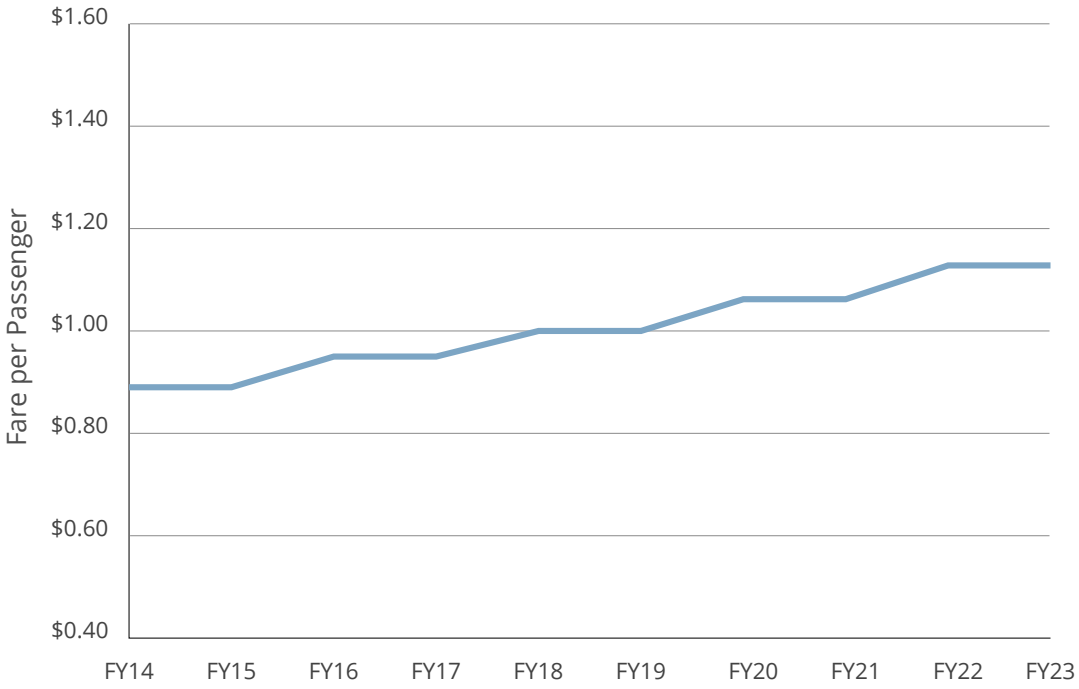
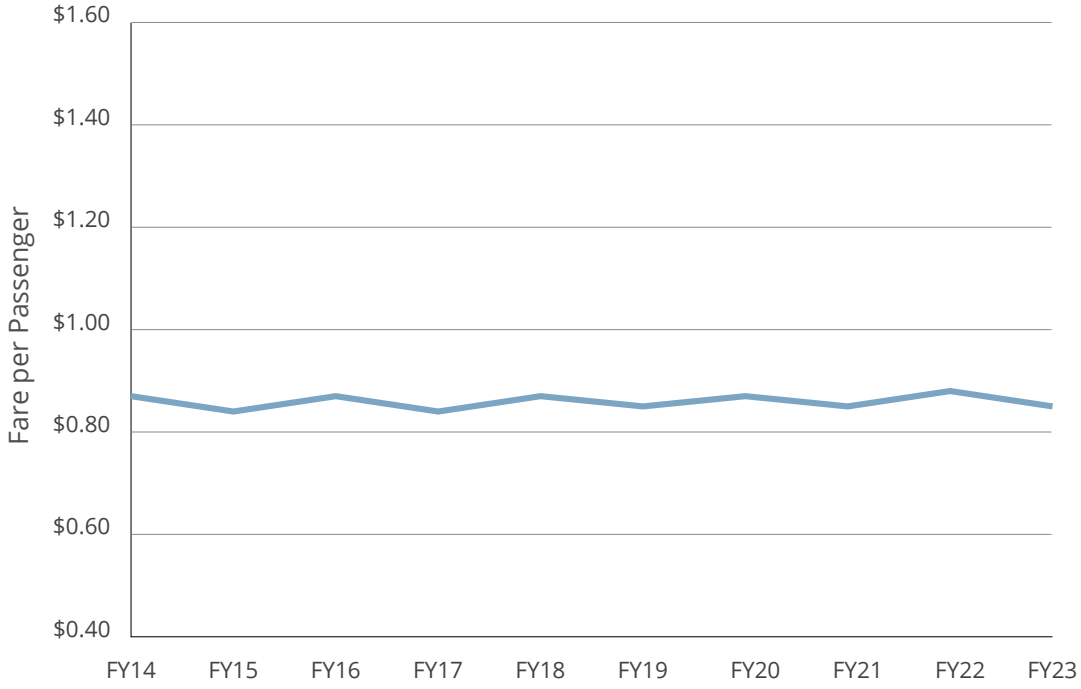


**Figure 3-6 Fare Projections (2013 Dollars)**




Future fare increases are assumed to have adjustments every two years at a rate slightly lower than projected inflation to maintain no real growth in fares in the long term, consistent with the travel demand analysis. See Figure 3-6.

**1976 half-cent Sales Tax:** This funding source is used to support both operating and capital needs. The projections and assumptions underlying sales tax forecasts are described in Appendix E. Figures 3-7 and 3-8 show projected sales tax receipts for the 1976 half-cent sales tax in year-of-expenditure and 2013 dollars, respectively.

**Figure 3-7 Sales Tax Projection (Inflated)**

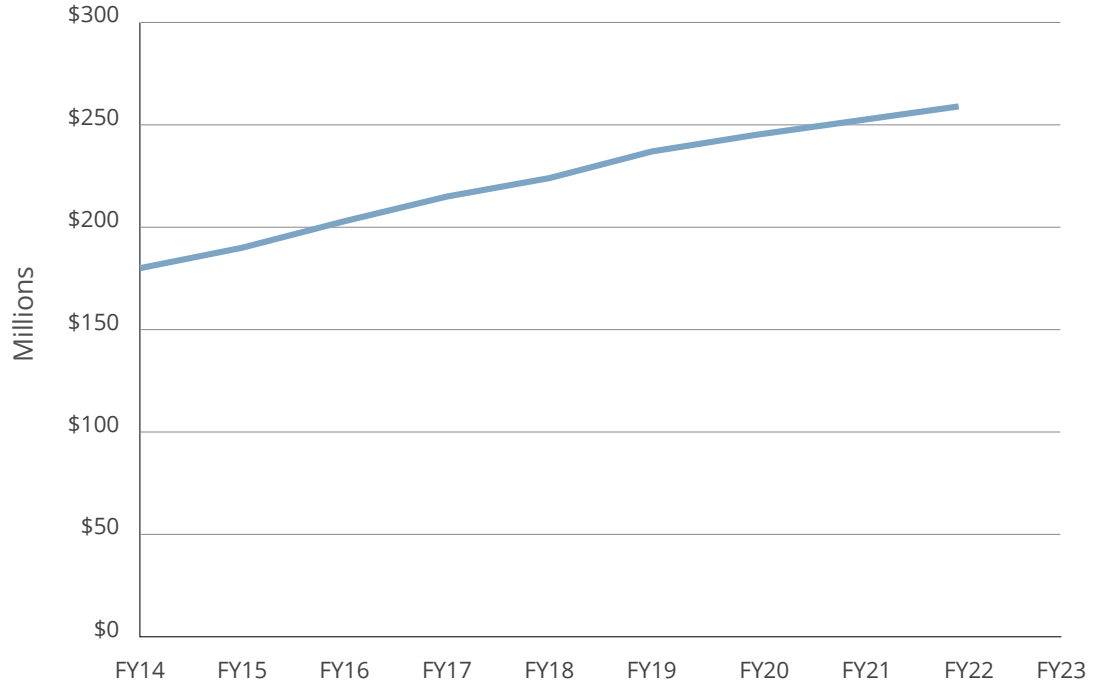
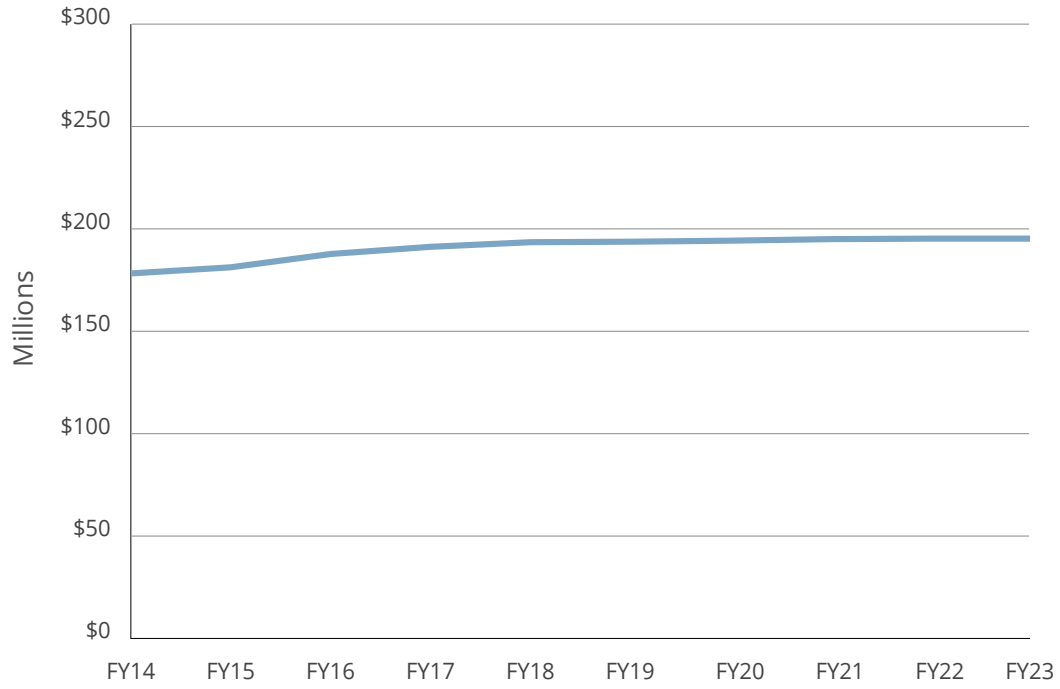



**Figure 3-8 Sales Tax Projection (2013 Dollars)**



**TDA and STA:** The Transportation Development Act (TDA) of 1971 provides state funding allocated to transit properties complying with regional plans. The program provides two funding sources: the Local Transportation Fund (LTF) is derived from a 1/4-cent statewide sales tax, and the State Transit Assistance (STA) is derived from the statewide sales tax on gasoline and diesel fuel. LTF revenues are returned to their originating county, while STA revenues are allocated based on population and transit revenues from the prior year.

Beginning in FY2012, the state diesel sales tax rate was increased to 6.75% in conjunction with a corresponding drop in the per-gallon diesel fuel excise tax to ensure that consumers felt no impact at the pump. High-speed rail/transit bond debt service has first call on the revenues generated by the diesel sales tax. Any remaining revenues are split 75% to STA and 25% to intercity rail and other miscellaneous state transit programs. The intent is to ensure, at minimum, an annual STA Program of $350 million statewide. STA revenues are projected to grow at the rate of San José CPI.

TDA revenues are projected to grow proportionate to sales tax receipts in Santa Clara County.

**Federal 5307 Preventive Maintenance Grants:** The MAP-21 federal surface transportation program's Section 5307 Large Urban Cities grant program (formerly the Urbanized Area Formula grant program) and Section 5309 Rail and Fixed Guideway Modernization programs are major sources of capital funding for VTA. Federal formula funds are awarded to the San José urbanized area (UZA, an area defined by the U.S. Census Bureau) based on demographics, levels of service, ridership, and operating measures. Funding for the region, which includes several UZAs, is allocated to individual transit operators by the Metropolitan Transportation Commission (MTC). The financial forecast applies an MTC forecast of 3.0% annual growth in federal transit capital funding beyond the term of VTA's adopted FY2014 and FY2015 budget. This projection assumes that the current tiered system of Section 5307 Large Urban Cities grants and Section 5309 Rail and Fixed Guideway Modernization grants and MTC's present system of allocating grants to the region's transit agencies continues throughout the SRTP period. The operating forecast assumes that 35% of Section 5307 Large Urban Cities grants are applied to preventive maintenance-related operating and maintenance costs through FY2023.

**Investment Income:** Year-end cash balances earn interest at the projected 3-month Treasury bill rate. A portion of this interest is allocated to the operating program and the balance is applied to the capital program.

**Advertising:** VTA collects revenues from the placement of advertisements inside and upon its bus and light rail vehicles and at its bus shelters. Advertising revenues are projected to grow at the rate of San José CPI.

**2000 Measure A Sales Tax Operating Assistance**: In November 2000, Santa Clara County voters approved Measure A, which enacted a half-cent sales tax to be collected beginning April 1, 2006 and continuing for a period of 30 years. A portion of this tax (18.5%) is to be used to provide operating assistance for VTA. The projections and assumptions underlying sales tax forecasts are described in Appendix C.

**2000 Measure A Sales Tax Reimbursement of VTA Sales Tax Bond Debt Service**: A portion of the debt issued against the VTA 1976 half-cent Sales Tax supports Measure A projects, so a commensurate portion of debt issued against the VTA sales tax is covered by funds transferred from Measure A.

**Section 5307 Grants Applied to Debt Service:** The delivery of VTA's capital program requires the issuance of short-term financing in anticipation of future grants. The financing is assumed to be repaid in the following fiscal year.

**Unspecified Revenue**: Tier II of Measure A includes the Light Rail Extension to Vasona Junction and Capitol Expressway Light Rail Extension to Eastridge for which neither capital nor operating funding has been identified. The operating and maintenance cost impact of these projects, therefore, is covered by an unspecified revenue source in the financial forecast. If no funding is identified, these expansion projects will not proceed.

## Operating Uses of Funds

VTA's Operation and Maintenance (O&M) costs are driven by the level of service and the unit cost associated with each level of service input. The level of service changes assumed in the model are: 1) BRT route 522 introduction in FY2016; 2) Santa Clara County BART service introduction in FY2017 (a planning assumption); and 3) BRT route 523 introduction in July 2018. BART service to Santa Clara County and its associated expenses are detailed in Appendix D and the separate SVBX New Starts financial plan report. The service inputs are as follows:

**VTA Bus O&M Costs**

- Peak Buses
- Active Fleet Vehicles
- Operating Divisions (Maintenance Facilities)
- Annual Revenue Vehicle-Miles
- Annual Revenue Vehicle-Hours
- Annual Boardings (Unlinked Trips)
- Articulated Bus Revenue Vehicle Miles
- BRT Stations

**Light Rail O&M Costs**

- Directional Track Miles
- Total Stations
- Elevated Stations
- At-Grade Stations
- Peak Vehicles
- Active Fleet Vehicles
- Operating Divisions (Maintenance Facilities)
- Annual Revenue Car Miles
- Annual Revenue Train Hours
- Annual Boardings (Unlinked Trips)

**Annual O&M Unit Costs**: Operating and Maintenance (O&M) costs were computed by multiplying the unit cost results estimated from VTA's O&M cost model by projected level of service (LOS) indicators. The level of service was estimated based on future year changes to the bus, BRT, BART, and light rail service. Costs are categorized into seven object classes. The growth projection applied to each object class is summarized in Figure 3-9.

**Figure 3-9 Growth Projections by Object Class**

| Object Class | Growth Rate |
|---|---|
| Labor & Salary Costs | San José Consumer Price Index (CPI) |
| Healthcare Fringe Benefits | San José CPI |
| Other Fringe Benefits | San José CPI |
| Materials & Supplies | San José CPI |
| Other Costs | San José CPI |
| Electricity Costs | California Commodity-Specific Forecast |
| Fuel Costs | California Commodity-Specific Forecast |

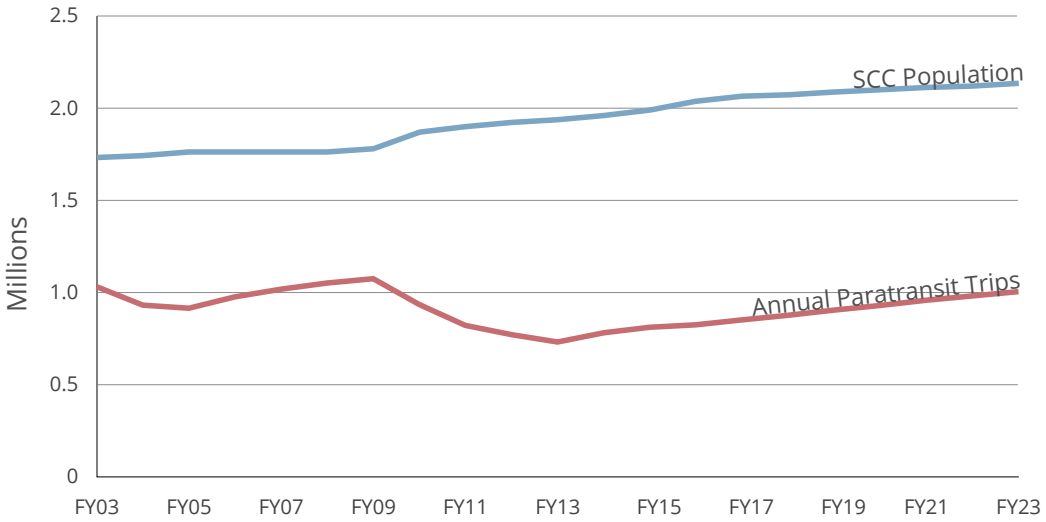
Source: Moody's Economy.com

The resulting unit costs are applied to the total level of service values and escalated as described above to compute total O&M cost estimates.

**ADA Paratransit**: Paratransit ridership, the cost driver for ADA service costs, is forecasted to track closely with the aging of the Santa Clara County baby-boom population at an average annual increase of 4% is shown in Figure 3-10. Currently, 64% of ADA paratransit customers are 65 years old or older.

**Other Services:** The operating forecast projects VTA annual payments to other operators including Caltrain, Altamont Commuter Express (ACE), and Monterey-San José bus service, on the basis of VTA's budgeted FY2014 and FY2015 payments to these operators, inflated by Moody's Economy.com annual projection of Bay Area CPI multiplied by 110%. This reflects the historic growth in the cost of these services at a rate greater than inflation.

**Figure 3-10 Santa Clara County Population**




### 2008 Measure B

On November 4, 2008, the voters of Santa Clara County approved 2008 Measure B, a 30-year one-eighth cent sales and use tax dedicated solely to providing the operating and maintenance expenses and capital reserve contribution for VTA's BART Silicon Valley Extension. The tax commenced collection on July 1, 2012.

**Measure B 1/8 Cent Sales Tax:** The projections and assumptions underlying sales tax forecasts are described in Appendix C.

**BART Subsidy:** VTA's payment to BART to cover costs associated with VTA's BART Silicon Valley Extension. This payment and funding agreement are detailed in Appendix D.

# CHAPTER 4: CAPITAL IMPROVEMENT PROGRAM

## VTA's Capital Improvement Program

Chapter 4 presents VTA's ten-year Capital Improvement Program (CIP) for FY2014 through FY2023. The project lists outline VTA's program needs. As in the last SRTP, projects fall into either the core capital program (Figures 4-1 to 4-8) or the Measure A capital program (Figures 4-9 and 4-10).

VTA categorizes projects based on funding constraints. This approach is intended to show a comprehensive capital needs list with the need to consider the reality of constrained funding. The projects are divided into two tiers:

- Tier I: Fiscally constrained projects that may be considered "funded." These are projects that have a reasonable source of funding identified.
- Tier II: Fiscally unconstrained projects that are not yet considered "funded." These projects do not have a reasonable funding source identified and can be considered unmet capital needs. Funding for these projects are shown in the "Sources of Funds" tables as "Unspecified".

The SRTP process involves close coordination between VTA's divisions to prioritize capital needs, grants and financing and to constrain these needs based on anticipated funds over the 10-year plan period.

## VTA Core Capital Program

Figure 4-1 shows an overview list of the sources and uses of capital funds over the SRTP period. Figures 4-2 through 4-8 show the capital projects in each of the program areas of the core capital program. The core program funds approximately $164 million in capital investments during the budget years (FY2014-FY2015) and $590 million for the remaining years (FY2016-FY2023) in order to maintain VTA's existing bus and rail system (including bus replacement, rail rehabilitation, and facility modifications and improvements). The core program focuses on VTA's current transit network and ensures adequate investment and enhancements in its existing infrastructure. VTA has prioritized a number of rehabilitation

and replacement projects to keep the bus and light rail system in a state of good repair. Clean fuel, safety and security, and passenger facility improvements will also contribute to improving the overall level of transit service in Santa Clara County. Appendix G displays a brief description of each project included in these figures.  All project funding reflects known plan as of January 2014. VTA receives funds from a range of sources. State and TSA Security Grant ends in FY2016 and is replaced with Federal 5307 in FY2017. Short Term Financing represents debt issued on a short term basis in anticipation of Section 5307 Grants.

## Measure A Capital Program

In November 2000, the voters in Santa Clara County approved Measure A, a 30-year countywide ½-cent sales tax devoted to specified public transit capital improvement projects and operations (see Appendix A for a complete text of the Measure A ballot language). Those projects that are eligible for Measure A are shown in the Measure A capital program (Figures 4-9 and 4-10). Collection of the sales tax began on April 1, 2006 and will continue through March 31, 2036. New Measure A revenue projections, as compared with the previous SRTP, include the following assumptions:

- New Moody's projections for sales tax revenues
- Changes in the agency's project priorities
- Increased debt capacity due to new Moody's projections
- An increase in contribution towards Caltrain electrification

The VTA Board of Directors is responsible for implementation of the 2000 Measure A Program and for all policy-related decisions including the composition, implementation schedule, and funding level of projects. Figures 4-9 and 4-10 detail the Measure A program through FY2023. Appendix G displays a brief description of each of these projects. The financial plan includes the full build of the BART to Santa Clara project. The first phase of this project is scheduled to start operation in FY2017 with the extension of BART to the Berryessa Station in San José.

## Figure 4-1 VTA Core Capital Sources of and Uses of Funds (Year of Expenditure Dollars in Millions)

| | Actual | SRTP Range | | | | | | | | | | SRTP Range |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VTA CORE CAPITAL SOURCES OF FUNDS | FY2013 | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 | FY2014-2023 |
| **GRANTS** | | | | | | | | | | | | |
| Section 5337 State of Good Repair | 4.90 | 8.97 | 9.45 | 12.31 | 9.47 | 10.10 | 10.76 | 11.43 | 12.12 | 24.50 | 25.24 | 134.34 |
| Section 5307 Large Urban Cities Urbanized Area Formula Grants | 11.65 | 18.12 | 25.67 | 24.69 | 25.02 | 25.77 | 26.54 | 27.35 | 32.37 | 33.78 | 34.85 | 274.16 |
| Prop 1B Public Transp Mod Imprvmt & Svc Enhanc Acct (PTMISEA) | 6.87 | - | 45.68 | - | - | - | - | - | - | - | - | 45.68 |
| CMAQ | - | 0.26 | 0.26 | - | - | - | - | - | - | - | - | 0.52 |
| Regional Measure 2 Capital Grants | 0.44 | - | - | - | - | - | - | - | - | - | - | - |
| State and TSA Security Grant | 2.51 | 3.29 | 3.29 | 3.29 | - | - | - | - | - | - | - | 9.87 |
| Section 5307 Security | - | - | - | - | 0.41 | 0.42 | 0.43 | 0.43 | 0.51 | 0.53 | 0.55 | 3.30 |
| Section 5339 Bus & Bus Facilities | - | 5.90 | - | 3.22 | 3.22 | 3.32 | 3.42 | 3.52 | 3.63 | 3.74 | 3.85 | 33.83 |
| Other | 1.55 | 4.05 | 3.86 | 6.00 | 1.08 | 1.00 | 1.04 | 1.00 | 1.08 | 1.00 | 1.00 | 21.10 |
| **SUBTOTAL GRANTS** | **27.92** | **40.60** | **88.21** | **49.50** | **39.20** | **40.61** | **42.19** | **43.74** | **49.70** | **63.56** | **65.49** | **522.80** |
| **UNSPECIFIED FUNDING (TIER II CIP PROJECTS)** | **-** | **-** | **-** | **12.33** | **4.19** | **3.89** | **1.58** | **1.70** | **2.18** | **22.74** | **24.07** | **72.68** |
| **FINANCING PROGRAM** | | | | | | | | | | | | |
| VTA 1976 1/2 Sales Tax Bonds | - | - | - | - | - | - | 54.46 | - | 38.93 | - | - | 93.39 |
| Short-Term Financing | - | - | - | - | - | - | - | - | 30.86 | 16.46 | - | 47.33 |
| **SUBTOTAL FINANCING PROGRAM** | **-** | **-** | **-** | **-** | **-** | **-** | **54.46** | **-** | **69.79** | **16.46** | **-** | **140.72** |
| **TOTAL VTA CORE CAPITAL SOURCES OF FUNDS** | **27.92** | **40.60** | **88.21** | **61.84** | **43.38** | **44.50** | **98.23** | **45.44** | **121.68** | **102.75** | **89.55** | **736.19** |

## Figure 4-1 VTA Core Capital Sources of and Uses of Funds (Year of Expenditure Dollars in Millions) (continued)

| | Actual | SRTP Range | | | | | | | | | | SRTP Range |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VTA CORE CAPITAL USES OF FUNDS | FY2013 | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 | FY2014-2023 |
| **TIER I: FISCALLY CONSTRAINED** | | | | | | | | | | | | |
| Vehicles & Equipment | 5.90 | 37.33 | 52.21 | 77.45 | 6.16 | 61.42 | 56.83 | 6.85 | 78.34 | 24.37 | 9.76 | 410.74 |
| Operations Facilities & Equipment | 4.80 | 6.14 | 7.55 | 4.66 | 3.67 | 3.70 | 4.08 | 5.83 | 2.36 | 3.19 | 4.55 | 45.71 |
| Light Rail Way, Power & Signal | 6.42 | 12.48 | 10.97 | 19.05 | 4.69 | 14.32 | 18.85 | 16.30 | 19.89 | 10.11 | 25.01 | 151.66 |
| Passenger Facilities | 4.37 | 2.33 | 1.04 | 1.18 | 1.49 | 4.51 | 7.14 | 8.29 | 9.15 | 2.85 | 0.79 | 38.78 |
| Information Systems & Technology | 3.75 | 8.49 | 7.40 | 3.45 | 2.36 | 1.98 | 0.91 | 0.73 | 1.21 | 2.25 | 2.53 | 31.30 |
| Security Projects | - | 3.50 | 3.50 | 3.29 | 0.51 | 0.53 | 0.54 | 0.54 | 0.64 | 0.67 | 0.69 | 14.41 |
| Miscellaneous | 3.94 | 5.65 | 5.65 | 5.87 | 5.99 | 6.11 | 6.23 | 6.36 | 6.49 | 6.62 | 6.76 | 61.73 |
| **SUBTOTAL TIER I** | **29.18** | **75.92** | **88.33** | **114.95** | **24.86** | **92.55** | **94.59** | **44.90** | **118.07** | **50.07** | **50.09** | **754.33** |
| **TIER II: UNFUNDED IN 2014 SRTP** | | | | | | | | | | | | |
| Vehicles & Equipment | - | - | - | 2.00 | 0.58 | 0.71 | - | 0.41 | - | 0.02 | 0.48 | 4.20 |
| Operations Facilities & Equipment | - | - | - | 3.81 | 1.68 | 1.43 | 1.33 | 1.04 | 1.93 | 1.30 | 15.47 | 28.01 |
| Light Rail Way, Power & Signal | - | - | - | - | - | - | - | - | - | 21.16 | 7.87 | 29.03 |
| Passenger Facilities | - | - | - | 3.58 | 1.50 | 1.50 | - | - | - | - | - | 6.58 |
| Information Systems & Technology | - | - | - | 2.95 | 0.43 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 4.88 |
| Security Projects | - | - | - | - | - | - | - | - | - | - | - | - |
| Miscellaneous | - | - | - | - | - | - | - | - | - | - | - | - |
| **SUBTOTAL TIER II** | **-** | **-** | **-** | **12.33** | **4.19** | **3.89** | **1.58** | **1.70** | **2.18** | **22.74** | **24.07** | **72.68** |
| **FINANCING PROGRAM** | | | | | | | | | | | | |
| Section 5307 Urbanized Area Formula Grants Applied to Debt Service | - | - | - | - | - | - | - | - | - | 32.23 | 17.20 | 49.43 |
| **SUBTOTAL FINANCING PROGRAM** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **32.23** | **17.20** | **49.43** |
| **TOTAL VTA CORE CAPITAL USES OF FUNDS** | **29.18** | **75.92** | **88.33** | **127.29** | **29.05** | **96.44** | **96.17** | **46.60** | **120.25** | **105.03** | **91.35** | **876.44** |
| **NET CAPITAL CASH FLOW - VTA CORE CAPITAL** | **(1.26)** | **(35.33)** | **(0.12)** | **(65.45)** | **14.33** | **(51.94)** | **2.06** | **(1.16)** | **1.43** | **(2.28)** | **(1.80)** | **(140.25)** |

## Figure 4-2 VTA Core: Vehicles and Equipment (Year of Expenditure Dollars)

| PROJECT TITLE | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 | FY2014-2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TIER I: FISCALLY CONSTRAINED** | | | | | | | | | | | |
| 40' Bus Procurement | 33,500,000 | - | 66,414,125 | - | 52,627,348 | 53,489,649 | - | 71,521,009 | 21,127,992 | - | 298,680,122 |
| 60' Articulated Bus Procurement | - | 52,214,000 | 8,533,428 | - | - | - | - | - | - | - | 60,747,428 |
| Automatic Passenger Counters for LR Vehicles | 1,450,000 | - | - | - | - | - | - | - | - | - | 1,450,000 |
| Kinkisharyo LRV Overhaul Program | 1,312,400 | - | - | 2,065,933 | 2,137,722 | 2,211,548 | 2,287,580 | 2,365,648 | 2,445,923 | 2,529,253 | 17,356,007 |
| Non-Revenue Vehicle Procurement | 1,071,600 | - | - | 800,000 | 800,000 | 185,189 | 800,000 | 511,915 | 800,000 | 800,000 | 5,768,704 |
| Paratransit Vehicle Procurement | - | - | - | - | 4,878,000 | 944,000 | 3,767,000 | 3,943,000 | - | 6,434,000 | 19,966,000 |
| LR On-Board Messaging/ Announcement System | - | - | 2,500,000 | - | - | - | - | - | - | - | 2,500,000 |
| Hybrid Bus Battery replacements | - | - | - | 3,296,704 | 973,544 | - | - | - | - | - | 4,270,248 |
| **TOTAL TIER I** | **37,334,000** | **52,214,000** | **77,447,553** | **6,162,637** | **61,416,614** | **56,830,385** | **6,854,580** | **78,341,572** | **24,373,915** | **9,763,253** | **410,738,510** |
| **TIER II: UNFUNDED IN 2014 SRTP** | | | | | | | | | | | |
| Non-Revenue Vehicle Procurement | - | - | - | 578,760 | 706,938 | - | 406,117 | - | 23,392 | 479,818 | 2,195,025 |
| CCTV Door Monitoring System for LRVs | - | - | 2,000,000 | - | - | - | - | - | - | - | 2,000,000 |
| **TOTAL TIER II** | **-** | **-** | **2,000,000** | **578,760** | **706,938** | **-** | **406,117** | **-** | **23,392** | **479,818** | **4,195,025** |

## Figure 4-3 VTA Core: Operations Facilities & Equipment (Year of Expenditure Dollars)

| PROJECT TITLE | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 | FY2014-2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TIER I: FISCALLY CONSTRAINED** | | | | | | | | | | | |
| Cerone Boiler Replacement | 49,000 | 251,000 | - | - | - | - | - | - | - | - | 300,000 |
| Cerone Emergency Generator Replacement | 138,600 | 1,061,400 | - | - | - | - | - | - | - | - | 1,200,000 |
| Cerone Propane Tank Replacement | 51,950 | 298,050 | - | - | - | - | - | - | - | - | 350,000 |
| Facilities & Equipment Emergency Repair | 375,000 | 375,000 | 375,000 | 375,000 | 375,000 | 375,000 | 375,000 | 375,000 | 375,000 | 375,000 | 3,750,000 |
| Facility Maintenance Equipment Program | 731,110 | 394,790 | 609,055 | 274,495 | 1,001,983 | 410,020 | 356,028 | 394,748 | 618,678 | 227,115 | 5,018,021 |
| HVAC Replacement Program | 325,500 | 225,300 | 590,625 | 554,392 | 998,076 | 49,082 | - | 210,606 | 145,060 | - | 3,098,641 |
| LED Exterior Lighting Replacement | 300,000 | 600,000 | - | - | - | - | - | - | - | - | 900,000 |
| LR Signal Shop Modification | 74,250 | 420,750 | - | - | - | - | - | - | - | - | 495,000 |
| Painting Management Program | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 5,000,000 |
| Paving Management Program | 845,300 | 1,470,700 | 386,742 | 285,983 | 319,363 | 1,014,292 | 482,927 | 250,000 | 250,000 | 1,130,821 | 6,436,129 |
| Replace Wheel Truing Machine | 1 ,500,000 | 1,100,000 | - | - | - | - | - | - | - | - | 2,600,000 |
| Roofing Management Program | 645,500 | 254,500 | 150,000 | 377,960 | 180,583 | 1,435,048 | 2 ,811,070 | 260,261 | 150,000 | 150,000 | 6,414,922 |
| Replace Currency and Coin Counting Equipment | - | - | 57,964 | - | 20,913 | - | - | 68,664 | - | - | 147,541 |
| Replace Back-up Power Generators | - | - | 1,687,573 | - | - | - | - | - | 846,977 | 863,912 | 3,398,462 |
| Replace Bus/Train Washers at Light Rail and Bus Divisions | - | - | - | 1,000,000 | - | - | 1,000,000 | - | - | 1,000,000 | 3,000,000 |
| Green Sustainability Facility Improvements | 600,000 | 600,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 3,600,000 |
| **TOTAL TIER I** | **6,136,210** | **7,551,490** | **4,656,959** | **3,667,830** | **3,695,918** | **4,083,442** | **5,825,025** | **2,359,279** | **3,185,715** | **4,546,848** | **45,708,716** |
| **TIER II: UNFUNDED IN 2014 SRTP** | | | | | | | | | | | |
| Painting Management Program | - | - | 1,458,544 | 1,384,732 | 1,132,418 | 1,032,938 | 744,391 | 1,075,984 | 427,029 | 329,946 | 7,585,983 |
| Lighting Control System Upgrade at all Operating Divisions | - | - | 500,000 | - | - | - | - | - | - | - | 500,000 |
| Way, Power & Signal Storage Building | - | - | 300,000 | - | - | - | - | - | - | - | 300,000 |
| Guadalupe Roll-Up Door Replacement | - | - | 500,000 | - | - | - | - | - | - | - | 500,000 |
| Replace Pollution/Waste Treatment Systems | - | - | - | - | - | - | - | 558,532 | 577,485 | 10,378,237 | 11,514,253 |
| Replace Bus/Train Washers at Light Rail and Bus Divisions | - | - | - | - | - | - | - | - | - | 4,458,856 | 4,458,856 |
| Green Sustainability Facility Improvements | - | - | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 300,000 | 2,400,000 |
| Cerone Bus Detail Area | - | - | 750,000 | - | - | - | - | - | - | - | 750,000 |
| **TOTAL TIER II** | **-** | **-** | **3,808,544** | **1,684,732** | **1,432,418** | **1,332,938** | **1,044,391** | **1,934,516** | **1,304,514** | **5,467,038** | **28,009,092** |

## Figure 4-4 VTA Core: Light Rail Way, Power & Signal (Year of Expenditure Dollars)

| PROJECT TITLE | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 | FY2014-2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TIER I: FISCALLY CONSTRAINED** | | | | | | | | | | | |
| LR Crossovers and Switches | 2,249,527 | 474,773 | 227,734 | 325,340 | 3,194,654 | - | 1,597,840 | 5,382,849 | - | - | 13,452,717 |
| Rail Rehab and Replacement Program | 2,524,000 | 4,799,900 | 9,202,036 | 3,327,906 | 7,663,026 | 10,467,794 | 5,040,127 | 5,755,242 | 6,097,504 | 6,304,819 | 61,182,354 |
| Track Intrusion Abatement | 1,298,761 | 701,239 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 500,000 | 6,000,000 |
| Traction Power Substation Replacement Program | 4,000,000 | 1,700,000 | 601,092 | - | 2,347,038 | 1,345,055 | 8,651,173 | 6,761,385 | - | - | 25,405,743 |
| Upgrade Ohlone/Chynoweth Interlocking | 39,148 | 1,160,852 | - | - | - | - | - | - | - | - | 1,200,000 |
| Overhead Catenary System (OCS) Rehabilitation | - | - | - | - | - | 6,534,821 | - | 1,461,907 | 3,012,107 | 18,203,652 | 29,212,487 |
| Bridge and Structures SGR Repairs | - | - | 500,000 | | 500,000 | | 500,000 | | 500,000 | | 2,000,000 |
| Replace Emergency Backup Systems at Light Rail Transit Stations & Diridon Tunnel | - | - | - | 538,496 | - | - | - | - | - | - | 538,496 |
| Replace Bar (Traffic) Signals for Train Control | - | - | 21,688 | - | 111,436 | - | 9,937 | 25,691 | - | - | 168,751 |
| LR Transit Performance Initiative Projects | 2,000,000 | 2,000,000 | - | - | - | - | - | - | - | - | 4,000,000 |
| North First Street Corridor LR Speed Improvements | 367,725 | 132,275 | 8,000,000 | - | - | - | - | - | - | - | 8,500,000 |
| **TOTAL TIER I** | **12,479,161** | **10,969,039** | **19,052,550** | **4,691,742** | **14,316,154** | **18,847,670** | **16,299,076** | **19,887,073** | **10,109,611** | **25,008,471** | **151,660,548** |
| **TIER II: UNFUNDED IN 2014 SRTP** | | | | | | | | | | | |
| Rail Rehab and Replacement Program | - | - | - | - | - | - | - | - | 21,157,323 | 7,868,413 | 29,025,736 |
| **TOTAL TIER II** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **21,157,323** | **7,868,413** | **29,025,736** |

## Figure 4-5 VTA Core: Passenger Facilities (Year of Expenditure Dollars)

| PROJECT TITLE | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 | FY2014-2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TIER I: FISCALLY CONSTRAINED** | | | | | | | | | | | |
| Back-up Power Devices for Elevated Stations | 200,000 | 200,000 | - | - | - | - | - | - | - | - | 400,000 |
| Bus Stop Pavement/Duckout Improv FY2014 | 700,335 | 344,165 | 360,517 | 496,716 | 511,618 | 526,966 | 542,775 | 640,526 | 668,407 | 689,526 | 5,481,551 |
| High Priority Corridor Bus Stop Improvements | 500,000 | 500,000 | - | - | - | - | - | - | - | - | 1,000,000 |
| Infrastructure for Additional Clipper® Fare Devices | 550,000 | - | - | - | - | - | - | - | - | - | 550,000 |
| LR Station and Transit Center Shelter Study | 100,000 | - | - | - | - | - | - | - | - | - | 100,000 |
| Bus Shelter Replacement and Expansion | - | - | - | - | 3,750,000 | 6,250,000 | 7,500,000 | - | - | - | 17,500,000 |
| Transit Center Park and Ride Upgrades | 282,000 | - | 250,000 | - | 250,000 | - | 250,000 | - | 250,000 | - | 1,282,000 |
| PA/VMB Announcements | - | - | 568,589 | 490,173 | - | 367,305 | - | 785,799 | 1,334,762 | 96,870 | 3,643,496 |
| Replace Elevators at Light Rail Transit Stations | - | - | - | 500,000 | - | - | - | - | 600,000 | - | 1,100,000 |
| Replace Ticket Vending Machines at Light Rail Stations | - | - | - | - | - | - | - | 7,719,638 | - | - | 7,719,638 |
| **TOTAL TIER I** | **2,332,335** | **1,044,165** | **1,179,106** | **1,486,889** | **4,511,618** | **7,144,271** | **8,292,775** | **9,145,963** | **2,853,168** | **786,396** | **38,776,686** |
| **TIER II: UNFUNDED IN 2014 SRTP** | | | | | | | | | | | |
| High Priority Corridor Bus Stop Improvements | - | - | 1,000,000 | - | - | - | - | - | - | - | 1,000,000 |
| LR Destination Signs | - | - | 1,300,000 | 1,500,000 | 1,500,000 | - | - | - | - | - | 4,300,000 |
| Line 323 Bus Stop Improvement Project | - | - | 1,275,000 | - | - | - | - | - | - | - | 1,275,000 |
| **TOTAL TIER II** | **-** | **-** | **3,575,000** | **1,500,000** | **1,500,000** | **-** | **-** | **-** | **-** | **-** | **6,575,000** |

## Figure 4-6 VTA Core: Information Technology (Year of Expenditure Dollars)

| PROJECT TITLE | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 | FY2014-2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TIER I: FISCALLY CONSTRAINED** | | | | | | | | | | | |
| Business Automation | 270,000 | 185,000 | - | - | - | - | - | - | - | - | 455,000 |
| CAD-AVL Update | 3,500,000 | 3,500,000 | 2,500,000 | 1,000,000 | 250,000 | - | - | - | - | - | 10,750,000 |
| Emergency IT Infrastructure Replacement | 54,500 | 54,500 | 54,500 | 54,500 | 54,500 | 54,500 | 54,500 | 54,500 | 54,500 | 54,500 | 545,000 |
| IT Server Upgrades | 173,700 | 276,300 | 173,700 | 276,300 | 173,700 | 276,300 | 173,700 | 276,300 | 173,700 | 276,300 | 2,250,000 |
| Network Enhancements at Guadalupe & North Yard | 600,000 | - | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 2,200,000 |
| Radio System Upgrade | 1,300,000 | 1,200,000 | - | - | - | - | - | - | 1,300,000 | 1,200,000 | 5,000,000 |
| SAP Plant Maintenance & Materials Management | 3,000 | 297,000 | - | - | - | - | - | - | - | - | 300,000 |
| Telecommunications System Updates | 200,000 | 175,000 | - | - | - | - | - | - | - | - | 375,000 |
| TERM Lite Deployment | 600,000 | | - | - | - | - | - | - | - | - | 600,000 |
| Train to Wayside Communication System Upgrade | 29,762 | 220,238 | - | - | - | - | - | - | - | - | 250,000 |
| Trapeze OPS Software Installation | 335,000 | 65,000 | - | - | - | - | - | - | - | - | 400,000 |
| Upgrade Countywide Travel Demand Model | 325,000 | 325,000 | - | 150,000 | - | 75,000 | - | 150,000 | - | - | 1,025,000 |
| Upgrade LR Ring #1 Communications Equipment | 1,100,000 | 1,100,000 | - | - | - | - | - | - | - | - | 2,200,000 |
| SAP New Release 2017-18 | - | - | - | - | 350,000 | - | - | - | - | - | 350,000 |
| Data Storage | - | - | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 1,200,000 |
| Record Information Management | - | - | - | - | 500,000 | - | - | - | - | 500,000 | 1,000,000 |
| Security Systems Refresh | - | - | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 1,200,000 |
| Wifi Refresh | - | - | - | 150,000 | 150,000 | - | - | - | - | - | 300,000 |
| MSFT Software Suite | - | - | 225,000 | 225,000 | - | - | - | 225,000 | 225,000 | - | 900,000 |
| **TOTAL TIER I** | **8,490,962** | **7,398,038** | **3,453,200** | **2,355,800** | **1,978,200** | **905,800** | **728,200** | **1,205,800** | **2,253,200** | **2,530,800** | **31,300,000** |
| **TIER II: UNFUNDED IN 2014 SRTP** | | | | | | | | | | | |
| Construction and Engineering New Software Releases | - | - | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 2,000,000 |
| Maintenance Management System | - | - | 1,500,000 | - | - | - | - | - | - | - | 1,500,000 |
| Update Electronic As-Built Drawings of LRT System | - | - | 1,000,000 | - | - | - | - | - | - | - | 1,000,000 |
| Telecommunications System Updates | - | - | 200,000 | 175,000 | - | - | - | - | - | - | 375,000 |
| **TOTAL TIER II** | **-** | **-** | **2,950,000** | **425,000** | **250,000** | **250,000** | **250,000** | **250,000** | **250,000** | **250,000** | **4,875,000** |

## Figure 4-7 VTA Core: Security (Year of Expenditure Dollars)

| PROJECT TITLE | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 | FY2014-2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TIER I: FISCALLY CONSTRAINED** | | | | | | | | | | | |
| Security Improvement Projects | 3,500,000 | 3,500,000 | 3,289,948 | 511,618 | 526,966 | 542,775 | 542,775 | 640,526 | 668,407 | 689,526 | 14,412,541 |
| **TOTAL TIER I** | **3,500,000** | **3,500,000** | **3,289,948** | **511,618** | **526,966** | **542,775** | **542,775** | **640,526** | **668,407** | **689,526** | **14,412,541** |
| **TIER II: UNFUNDED IN 2014 SRTP** | | | | | | | | | | | |
| None | - | - | - | - | - | - | - | - | - | - | - |
| **TOTAL TIER II** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |

## Figure 4-8 VTA Core: Miscellaneous (Year of Expenditure Dollars)

| PROJECT TITLE | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 | FY2014-2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TIER I: FISCALLY CONSTRAINED** | | | | | | | | | | | |
| Caltrain Capital - Annual Local Match | 3,650,000 | 3,650,000 | 3,872,285 | 3,988,454 | 4,108,107 | 4,231,350 | 4,358,291 | 4,489,040 | 4,623,711 | 4,762,422 | 41,733,659 |
| Capital Contingency | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 | 20,000,000 |
| **TOTAL TIER I** | **5,650,000** | **5,650,000** | **5,872,285** | **5,988,454** | **6,108,107** | **6,231,350** | **6,358,291** | **6,489,040** | **6,623,711** | **6,762,422** | **61,733,659** |
| **TIER II: UNFUNDED IN 2014 SRTP** | | | | | | | | | | | |
| None | - | - | - | - | - | - | - | - | - | - | - |
| **TOTAL TIER II** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |

## Figure 4-9 Measure A Program Sources of Funds (Year of Expenditure Dollars in Millions)

| | Actual | SRTP Range | | | | | | | | | | SRTP Range |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MEASURE A | FY2013 | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 | FY2014-2023 |
| **Measure A Sales Tax Revenue** | **176.53** | **182.16** | **190.56** | **203.24** | **214.29** | **223.45** | **230.56** | **237.44** | **244.57** | **251.91** | **259.37** | **2,237.56** |
| **GRANTS** | | | | | | | | | | | | |
| Federal/Section 5309 New Starts - Berryessa Extension (SVBX) | 142.28 | 179.09 | 150.00 | 150.00 | 100.00 | 70.61 | 74.12 | - | - | - | - | 723.81 |
| Federal/Section 5309 New Starts - Santa Clara Extension (SVSX) | - | - | - | - | - | 69.54 | 191.02 | 230.33 | 187.06 | 171.72 | 147.38 | 997.05[1] |
| Federal/Other | 3.35 | 6.19 | 7.97 | 15.73 | 30.91 | 78.01 | 16.74 | - | - | - | - | 155.55 |
| State/TCRP | 34.82 | 40.46 | 32.32 | 1.12 | - | - | - | - | - | - | - | 73.90 |
| State/SLPP | - | 9.54 | 0.92 | 1.70 | 10.24 | 12.47 | - | - | - | - | - | 34.87 |
| STIP | 56.07 | 9.49 | 9.60 | 0.06 | - | - | - | - | - | - | - | 19.15 |
| State/Prop 1B | 6.73 | 13.01 | 61.09 | 13.30 | 8.06 | 0.02 | - | - | - | - | - | 95.47 |
| Other | 12.82 | 34.54 | 33.88 | 17.05 | 2.62 | - | - | - | - | - | - | 88.09 |
| **SUBTOTAL GRANTS** | **256.06** | **292.33** | **295.77** | **198.96** | **151.83** | **230.64** | **281.89** | **230.33** | **187.06** | **171.72** | **147.38** | **2,187.89** |
| **UNSPECIFIED FUNDING** | | | | | | | | | | | | |
| BART Silicon Valley Santa Clara Extension (SVSX)[2] | - | - | - | - | - | 115.95 | 182.99 | 297.41 | 331.52 | 289.48 | 165.69 | 1.383.04[2] |
| Newhall Yard Maintenance Facility[3] | - | - | - | - | - | - | - | - | 89.66 | 115.63 | 68.74 | 274.03[3] |
| Tier II Projects | 0.14 | 4.82 | 30.66 | 31.69 | 34.68 | 69.01 | 110.41 | 68.50 | 60.00 | 5.43 | - | 415.20 |
| **SUBTOTAL UNSPECIFIED FUNDING** | **0.14** | **4.82** | **30.66** | **31.69** | **34.68** | **184.96** | **293.40** | **365.91** | **481.18** | **410.54** | **234.43** | **2,072.26** |
| **Financing Program** | | | | | | | | | | | | |
| 2000 Measure A Bonds | - | - | - | 220.64 | - | - | 1,012.00 | - | - | - | - | 1,232.63 |
| Debt Service Sinking Fund Transfer | - | - | - | - | 32.32 | - | - | - | - | - | - | 32.32 |
| **SUBTOTAL FINANCING PROGRAM** | **-** | **-** | **-** | **220.64** | **32.32** | **-** | **1,012.00** | **-** | **-** | **-** | **-** | **1,264.95** |
| **TOTAL MEASURE A PROGRAM SOURCES OF FUNDS** | **432.74** | **479.31** | **516.99** | **654.52** | **433.11** | **639.05** | **1,817.85** | **833.68** | **912.81** | **834.17** | **641.18** | **7,762.66** |

| MEASURE A FUND BALANCE | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | FY2014-2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Beginning Balance | - | 1,009.73 | 729.5 | 253.98 | 243.39 | 286.53 | 105.66 | 657.98 | 422.24 | 342.37 | 255.97 | |
| Interest Earnings | - | 1.46 | 1.47 | 4.36 | 4.95 | 8.92 | 6.57 | 32.15 | 24.91 | 13.77 | 3.35 | 101.90 |
| Net Capital Cash Flow-Measure A Program (See Figure 4-10) | - | (168.82) | (362.23) | 110.27 | 171.67 | (30.24) | 749.83 | (120.88) | 43.45 | 52.47 | 5.54 | 451.06 |
| Measure A Operating Assistance | - | (33.62) | (35.17) | (37.51) | (39.55) | (41.24) | (42.56) | (43.82) | (45.14) | (46.50) | (47.87) | (412.99) |
| Federal BABs Subsidy | - | 8.65 | 8.72 | 8.72 | 8.72 | 8.72 | 8.72 | 8.72 | 8.72 | 8.26 | 7.76 | 85.74 |
| Debt Service - Measure A Bonds | - | (87.90) | (88.30) | (96.43) | (102.65) | (127.02) | (170.25) | (111.92) | (111.81) | (114.42) | (121.20) | (1,131.90) |
| **CUMULATIVE FUND BALANCE** | **1,009.73** | **729.50** | **253.98** | **243.39** | **286.53** | **105.66** | **657.98** | **422.24** | **342.37** | **255.97** | **103.54** | |

[1] Project completeion beyond 10-year timeframe, anticipated total Federal/Section 5309 New Starts Grants through FY2025 $1,100M
[2] Project completion beyond 10-year timeframe, anticipated total Unspecified Funding through FY2025 $1,612M
[3] Project completion beyond 10-year timeframe, anticpated total Unspecified Funding through FY2025 $362M

## Figure 4-10 Measure A Program Uses of Funds (Year of Expenditure Dollars in Millions)

| | Actual | SRTP Range | | | | | | | | | | SRTP Range |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROJECT TITLE | FY2013 | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 | FY2014-2023 |
| **TIER I: FISCALLY CONSTRAINED** | | | | | | | | | | | | |
| **SVRT BART EXTENSION PROJECT** | | | | | | | | | | | | |
| BART Silicon Valley Berryessa Extension (SVBX) | 166.89 | 419.70 | 558.32 | 349.30 | 136.21 | 73.27 | 128.69 | - | - | - | - | 1,665.48 |
| SVRT Program Development and Implementation | 14.66 | 8.30 | 8.01 | 5.96 | 2.80 | - | - | - | - | - | - | 25.07 |
| Corridor Establishment and Maintenance (CEM) | 60.59 | 40.99 | 22.28 | 13.11 | 1.02 | (0.69) | 0.03 | - | - | - | - | 76.73 |
| BART Core System Modification (BCS) | 54.30 | 61.25 | 37.92 | 22.14 | 27.61 | 42.79 | 15.72 | - | - | - | - | 207.43 |
| Warm Springs Extension (WSX) | 2.47 | 5.53 | - | - | - | - | - | - | - | - | - | 5.53 |
| BART Silicon Valley Santa Clara Extension (SVSX)[1] | - | - | - | - | - | 267.45 | 734.70 | 885.87 | 719.48 | 660.45 | 566.85 | 3,834.79[1] |
| Newhall Yard Maintenance Facility[2] | - | - | - | - | - | - | - | - | 89.66 | 115.63 | 68.74 | 274.03[2] |
| **SUBTOTAL SVRT BART EXTENSION PROJECT** | **298.91** | **535.76** | **626.53** | **390.50** | **167.64** | **382.82** | **879.15** | **885.87** | **809.14** | **776.08** | **635.59** | **6,089.07** |
| **LIGHT RAIL PROGRAM** | | | | | | | | | | | | |
| Northern Light Rail Express | 2.41 | 4.92 | 35.10 | 20.60 | - | - | - | - | - | - | - | 60.62 |
| Southern Light Rail Express | 0.87 | 0.73 | - | - | - | - | - | - | - | - | - | 0.73 |
| Capitol Expessway Light Rail Pedestrian Improvements & Eastridge Transit Center | 8.15 | 32.16 | 14.40 | 7.34 | - | - | - | - | - | - | - | 53.90 |
| Santa Clara Pocket Track | - | 16.02 | 8.79 | - | - | - | - | - | - | - | - | 24.81 |
| Other Light Rail Projects | 1.50 | 0.41 | 0.02 | - | - | - | - | - | - | - | - | 0.43 |
| **COMMUTER RAIL PROGRAM** | | | | | | | | | | | | |
| Caltrain Investment Program | - | 10.00 | 20.00 | 20.00 | 10.00 | - | - | - | - | - | - | 60.00 |
| Santa Clara & San José Diridon Station Upgrade | 6.11 | 0.25 | - | - | - | - | - | - | - | - | - | 0.25 |
| Santa Clara Station Pedestrian Underpass Extension | 0.55 | 1.65 | 6.11 | 2.37 | - | - | - | - | - | - | - | 10.13 |
| Caltrain Safety Enhancements | 0.38 | 2.02 | 6.85 | 2.79 | - | - | - | - | - | - | - | 11.65 |
| Blossom Hill Pedestrian Overcrossing | 1.91 | 1.09 | - | - | - | - | - | - | - | - | - | 1.09 |
| Other Commuter Rail Projects | 0.74 | 1.44 | 0.27 | 0.25 | 0.31 | - | - | - | - | - | - | 2.27 |

## Figure 4-10 Measure A Program Uses of Funds (Year of Expenditure Dollars in Millions) (continued)

| | Actual | SRTP Range | | | | | | | | | | SRTP Range |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROJECT TITLE | FY2013 | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 | FY2014-2023 |
| **BUS PROGRAM** | | | | | | | | | | | | |
| Santa Clara/Alum Rock BRT | 13.87 | 16.40 | 62.24 | 16.16 | - | - | - | - | - | - | - | 94.79 |
| BRT Buses | 0.07 | 1.76 | 30.73 | 0.30 | 18.78 | 0.06 | - | - | - | - | - | 51.62 |
| Stevens Creek BRT | 0.91 | 2.43 | 3.31 | 17.55 | 12.13 | 84.03 | 24.50 | - | - | - | - | 143.93 |
| El Camino Real BRT | 1.39 | 5.44 | 12.95 | 21.10 | 17.80 | 133.25 | 53.80 | - | - | - | - | 244.33 |
| Facility Modifications for BRT Buses | - | 0.80 | 8.35 | 3.68 | - | - | - | - | - | - | - | 12.83 |
| Berryessa BART Connector | 0.16 | 0.62 | 1.65 | 1.35 | - | - | - | - | - | - | - | 3.62 |
| Money Counting Facility Replacement | 0.07 | 0.94 | 2.80 | 0.37 | - | - | - | - | - | - | - | 4.10 |
| Other Bus Projects | 0.00 | 0.09 | 0.11 | - | - | - | - | - | - | - | - | 0.20 |
| Swap Payments To Other Agencies | 7.94 | 8.12 | 8.13 | 8.14 | 0.05 | - | - | - | - | - | - | 24.44 |
| Measure A Programwide Management Costs | - | 0.26 | 0.25 | 0.07 | 0.05 | 0.13 | 0.16 | 0.19 | 0.22 | 0.18 | 0.06 | 1.58 |
| **SUBTOTAL TIER I MEASURE A** | **345.94** | **643.31** | **848.56** | **512.57** | **226.76** | **600.28** | **957.60** | **886.06** | **809.36** | **776.26** | **635.65** | **6,896.40** |
| **TIER II: UNFUNDED IN 2014 SRTP** | | | | | | | | | | | | |
| Light Rail Extension to Vasona Junction | 0.14 | 0.08 | 14.80 | 10.50 | 17.18 | 45.23 | 65.41 | 6.00 | - | - | - | 159.19 |
| Capitol Expressway Light Rail Extension to Eastridge | - | 4.74 | 15.86 | 21.19 | 17.50 | 23.79 | 45.00 | 62.50 | 60.00 | 5.43 | - | 256.01 |
| SUBTOTAL TIER II | 0.14 | 4.82 | 30.66 | 31.69 | 34.68 | 69.01 | 110.41 | 68.50 | 60.00 | 5.43 | - | 415.20 |
| TOTAL MEASURE A CAPITAL EXPENDITURES | 346.09 | 648.13 | 879.22 | 544.25 | 261.44 | 669.29 | 1,068.01 | 954.56 | 869.36 | 781.69 | 635.65 | 7,311.60 |
| **NET CAPITAL CASH FLOW - MEASURE A PROGRAM** | **86.65** | **(168.82)** | **(362.23)** | **110.27** | **171.67** | **(30.24)** | **749.83** | **(120.88)** | **43.45** | **52.47** | **5.54** | **451.06** |

[1] Project completion beyond 10-year timeframe, anticipated expenditures FY2018 through FY2025 $4,168M

[2] Project completion beyond 10-year timeframe, anticipated expenditures FY2021 through FY2025 $362M

Phase II of the BART extension is planned to begin construction during this SRTP 10-year period and scheduled to open in 2025, two years after of the final year of this plan. Figure 4-11 displays its funding in greater detail: 37% Measure A, 26% FTA New Starts, and 39% anticipated/unspecified for the anticipated expenditures from FY2018 through FY2025. The Federal New Starts grant program provides funding for major transit capital investments. Anticipated/unspecified funding may include a TIGER Grant, new financing, a new sales tax, an extension of existing sales tax in 2036 by 4, 10, or 30 years, or Express Lane revenues.

**Figure 4-11 BART Silicon Valley Santa Clara Extension (SVSX)**

| Funding Source | Amount YOE ($Millions) | Percentage |
|---|---|---|
| Measure A | $1,456 | 35% |
| New Starts | $1,100 | 26% |
| Anticipated/Unspecified | $1,612 | 39% |
| Total | $4,168 | |

# APPENDIX A: BALLOT TEXT OF MEASURE A

ADOPTED BY THE VOTERS OF SANTA CLARA COUNTY ON NOVEMBER 7, 2000

Shall the Board of Directors of the Santa Clara Valley Transportation Authority (VTA) be authorized to enact a retail transactions and use tax ordinance imposing (a) a tax for the privilege of selling tangible personal property at retail upon every retailer in Santa Clara County, the territory of VTA; such tax to be at the rate of one-half of one percent of the gross receipts of the retailer from the sale of all tangible personal property sold by him at retail in the territory of VTA, and (b) a complimentary tax upon the storage, use, or other consumption in Santa Clara County, the territory of VTA; such tax to be at the rate of one-half of one percent of the sales price of the property whose storage, use, or other consumption is subject to the tax, such taxes to be imposed for a period not to exceed 30 years, and to take effect only upon the expiration of the current County of Santa Clara 1996 Measure B ½-cent sales tax in April, 2006, and to be used only to:

**Extend BART from Fremont through Milpitas to Downtown San José and the Santa Clara Caltrain Station, specifically,**
To build a BART Extension from Fremont to Milpitas, San José and Santa Clara with a major connection to the Tasman Light Rail line at the Milpitas BART Station. In San José to include a BART subway section with stations at San José State University, the new San José City Hall, Downtown San José at Market Street, San José Arena and the Diridon Multimodal Station connecting to Caltrain, ACE, Amtrak, the Vasona Light Rail line and VTA bus service. In Santa Clara, to serve Santa Clara University, and the Caltrain Station with a people mover connection to San José International Airport

**Provide Connections from San José International Airport to BART, Caltrain and the VTA Light Rail, specifically,**
To build a people mover rail line connecting the airport passenger terminals directly with BART, Caltrain, and the VTA Light Rail line.

**Extend Light Rail from Downtown San José to the East Valley by**
Building a Downtown/East Valley Light Rail line from downtown San José serving the new San José City Hall and San José State University, out Santa Clara Street to Capitol Avenue to join the Capitol Light Rail line then south to Eastridge Shopping Center.

**Purchase Low Floor Light Rail Vehicles, specifically**
To better serve disabled, seniors and others; purchase an additional 20 low floor light rail vehicles to join the 30 low floor vehicles now being constructed for the new Tasman, Capitol and Vasona Light Rail lines and 50 new low floor vehicles to replace VTA's existing 50 light rail vehicles.

**Improve Caltrain: Double Track to Gilroy and Electrify from Palo Alto to Gilroy**
Extend the Caltrain double track from the San José Tamien Station through Morgan Hill to Gilroy. Provide VTA's funds for the partnership with San Francisco and San Mateo counties to electrify Caltrain from San Francisco to Gilroy.

**Increase Caltrain Service, specifically**
Purchase new locomotive train sets for increased Caltrain service in Santa Clara County from Gilroy to Palo Alto and provide additional facilities to support the increased service.

**Construct a New Palo Alto Intermodal Transit Center**
In partnership with the City of Palo Alto and Stanford University, design and construct a new parkway and underpass for University Avenue from the campus to downtown Palo Alto to improve bicycle, pedestrian and transit access to the campus, Palo Alto Caltrain station and downtown Palo Alto. Upgrade passenger facilities at the historic Palo Alto Caltrain station, upgrade transit facilities for VTA, SAMTRANS, Dumbarton Express and the Stanford Marguerita and Palo Alto shuttle services.

**Improve Bus Service in Major Bus Corridors**
For VTA Line 22 (Palo Alto to Eastridge Center) and the Stevens Creek Boulevard Corridor, purchase new low floor articulated buses. Improve bus stops and major passenger transfer points and provide bus queue jumping lanes at intersections to permit buses quick access along the corridors.

**Upgrade Altamont Commuter Express (ACE)**
Provide VTA's matching funds for additional train sets, passenger facilities and service upgrades for the ACE Commuter Service from San Joaquin and Alameda Counties.

**Improve Highway 17 Express Bus Service**
Provide VTA's share of funds for the partnership with the Santa Cruz County Transit District for additional buses and service upgrades for the Highway 17 Express Bus Service.

**Connect Caltrain with Dumbarton Rail Corridor**
Provide VTA's share of matching funds for a partnership with Alameda and San Mateo counties for the rebuilding of the Dumbarton Rail Corridor to connect to Caltrain and train sets for this new service conditioned on Alameda and San Mateo County's funding.

**Purchase Zero Emission Buses and Construct Service Facilities**
Provide funds to supplement federal funds to expand and replace existing VTA diesel bus fleet from current size of just over 500 vehicles to 750 vehicles with the new zero emission buses and to provide maintenance facilities for this new, clean vehicle propulsion system. All new buses to be low floor for easier boarding by seniors and the disabled.

**Develop New Light Rail Corridors**
Provide capital funds for at least two new future light rail corridors to be determined by Major Investment Studies (MIS). Potential corridors include: Sunnyvale/Cupertino; Santa Teresa/Coyote Valley; Downtown/East Valley Connection to Guadalupe Line; Stevens Creek Boulevard; North County/Palo Alto; Winchester/Vasona Junction; and initial study of BART connection from Santa Clara through Palo Alto to San Mateo County.

**Fund Operating and Maintenance Costs for Increased Bus, Rail and Paratransit Service**
Provide revenue to ensure funding, to at least 2014, and possibly longer, of the following: the new Tasman East, Capitol and Vasona Light Rail lines, the commuter rail connection to BART, expanded paratransit services, expanded bus fleet of 750 vehicles, the Downtown/ East Valley Light Rail line operations, which can commence in 2008, and the BART extension to San José which can commence operations by 2018; all subject to the following mandatory requirements:

**The Tax Must Expire 30 Years After Implementation.**
If approved by the voters, this half-cent sales tax must expire 30 years after implementation. The tax will be imposed for the period commencing April 1, 2006 when current tax expires and terminate on March 31, 2036. The length of this tax cannot be extended without a vote—and the approval—of the residents of Santa Clara County.

**An Independent Citizen's Watchdog Committee Must Review all Expenditures.**
The Independent Citizen's Watchdog Committee will consist of private citizens, not elected officials, who comprise the VTA's Citizen's Advisory Committee. Responsibilities of the Citizen's Watchdog Committee are:

Public Hearings and Reports: The Committee will hold public hearings and issue reports on at least an annual basis to inform Santa Clara County residents how the funds are being spent. The hearings will be held in full compliance with the Brown Act, California's open meeting law with information announcing the hearings well-publicized and posted in advance.

Annual Independent Audits: An annual audit conducted by an Independent Auditor will be done each fiscal year to ensure tax dollars are being spent in accordance with the intent of this measure.

Published Results of Audits and Annual Reports: The Committee must publish the results of the Independent Auditor and the Annual Report in local newspapers. In addition, copies of these documents must be made available to the public at large. Such authorization being pursuant to the provisions of Sections 100250 et seq. of the Public Utilities Code and Sections 7251 et seq. of the Revenue and Taxation Code.

# BUS FLEET MANAGEMENT PLAN

APPENDIX B TO THE SHORT RANGE TRANSIT PLAN

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY

FY2014 - 2023

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## B-1 Appendix B: Bus Fleet Management Plan

# BUS FLEET MANAGEMENT PLAN

## Executive Summary

The Bus Fleet Management Plan (BFMP) describes and documents bus vehicle demand, year-by-year, for the 2014-2023 timeframe. It incorporates additional vehicle demand to support bus services for VTA's Silicon Valley BART Extension Project; new Bus Rapid Transit (BRT) service; and to serve large sports and entertainment venues (Levi's Stadium in Santa Clara), business/employment, and housing development expansion in Silicon Valley.

The plan outlines overall fleet expansion to achieve and maintain the 20% spare ratio according to FTA guidelines to meet peak service requirements and keep buses well maintained. This fleet plan is a dynamic document to be revised as VTA's plans and timelines change.

**Figure E-1 Bus Fleet Inventory Goals**

| | FY2014 | FY2017 | FY2018 w/BART | FY2023 w/ BART |
|---|---|---|---|---|
| Standard Bus (40' and 35') | 348 | 369 | 349 | 349 |
| Articulated Buses | 40 | 55 | 55 | 55 |
| BRT | 0 | 29 | 49 | 49 |
| <30' Buses | 44 | 38 | 38 | 38 |
| **TOTAL** | **432** | **491** | **491** | **491** |
| Inactive/Contingency | 11 | 10 | 10 | 10 |
| **GRAND TOTAL** | **443** | **501** | **501** | **501** |

Table E-1 displays bus fleet inventory goals at key points in time under this plan.

The BFMP outlines when VTA vehicles will be ordered, retained, and retired, taking into consideration state and federal requirements as well as VTA's stated fleet management goals. Other planning documents provide policies, goals, guidance, and input for the BFMP in more detail, including:

- Transit Service Plan (FY 2014-2015)
- VTA Transit Sustainability Policy (2007)
- Valley Transportation Plan 2035
- Short-Range Transit Plan (2010)
- Service Design Guidelines (2007)
- 2010 Facilities Master Plan (2010)
- Comprehensive Operations Analysis (2008)
- BRT Strategic Plan (2009)
- Express Bus Business Plan (2011)
- Light Rail System Analysis (2010)
- Title VI Policies and Standards (2013)

## Operating Policies and Service Design Guidelines

The Santa Clara Valley Transportation Authority (VTA) is an independent special district responsible for bus, light rail, and paratransit operations; congestion management; specific highway improvement projects; and county-wide transportation planning for a 326 square-mile service area. VTA is both an accessible transit provider and multi-modal transportation planning organization, providing services to more than 1.8 million people in 15 cities in Santa Clara County: Campbell, Cupertino, Gilroy, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Palo Alto, San José, Santa Clara, Saratoga and Sunnyvale.

VTA's entire bus and light rail system is accessible for persons with disabilities. For those unable to independently use VTA's fixed-route service due to their disabilities, VTA provides paratransit service aligned with fixed-route service, in accordance with the Americans with Disabilities Act. VTA's paratransit service is managed through a brokerage contract with Outreach and Escort, Inc., a San José based non-profit social services agency.

## Operating Policies

The Transit Sustainability Policy (TSP) and its accompanying Service Design Guidelines (SDG) were adopted by the VTA Board of Directors in February 2007 to further refine and strengthen the service review process. The TSP provides a policy framework for the efficient and effective use of funds to achieve the highest return on transit investments. Its procedures guide the implementation of new transit services, and evaluation and improvement of existing services.

Goals

- Improve system ridership, productivity, and efficiency
- Improve farebox recovery
- Improve VTA's role as a viable alternative mode of transportation
- Use transit investments and resources more effectively

Core Principles

- Develop a financially sustainable transit system
- Match capital investment with quantifiable service needs and local participation and commitments
- Improve customer focus
- Target markets where transit can compete
- Improve system integration and efficiency

## Service Design Guidelines

The Service Design Guidelines identify Service Performance Standards used to regularly evaluate ridership and operating efficiency. They include:

- Primary Standard. The primary standard is average boardings per revenue hour. This standard is used for Community Bus, Local Bus, and BRT. The standard is calculated for all time periods on weekdays, Saturdays, and Sundays. It is recalculated quarterly and may be modified as needed.

- Secondary Standard. The Secondary Standards are average daily boardings per station and average boardings per mile for BRT.
- Express Bus Standard. The Express Bus Standard is 60% of the seated vehicle loading capacity, which equates to approximately 22 passengers. This singular standard is used due to the low seat turnover rate characteristic of Express Bus lines.
- Minimum Standard. The categorical minimum standard for any bus transit service is 15 boardings per revenue hour. Bus lines that consistently operate below this threshold, and are unresponsive to marketing, restructuring, and operational refinements are proposed to be discontinued.

New transit services are also subject to annual review, but are provided with a 24-month growth period to enable ridership to mature.

| Time from Implementation | Expected Ridership Percentage of Service Classification Standard |
|---|---|
| 6 months | 70% |
| 12 months | 80% |
| 18 months | 90% |
| 24 months | 100% |

The Service Design Guidelines provide specific standards for each type of VTA service, including vehicle characteristics. Bus service types include Community Bus, Core/Local Bus, Express Bus, and Bus Rapid Transit (BRT). Their characteristics and fleet specifications are discussed in the next chapter.

**Comprehensive Operations Analysis**

In conjunction with the adoption of the Transit Sustainability Policy and Service Design Guidelines in 2007, VTA performed a Comprehensive Operations Analysis (COA). The COA was an in-depth effort to analyze existing transit services, identify underserved markets, and ultimately produce a new structure for bus services. The VTA Board adopted a new Bus Service Operating Plan at its August 30, 2007 meeting. VTA implemented the service changes in January 2008.

### Key Performance Indicators

VTA's key performance indicators are reported quarterly to reflect overall effectiveness of transit services operated. The established goals are as follows:

**Figure 1-1 Key Performance Indicator Goals**

| | | |
|---|---|---|
| **SYSTEM (Bus & Light Rail)** | | |
| Total Boarding Riders (in millions) | >= | 44.1 |
| Average Weekday Boarding Riders | >= | 142,800 |
| Boardings per Revenue Houir | >= | 28.9 |
| Percent of Scheduled Service Operated | >= | 99.55% |
| Miles Between Major Mechanical Schedule Loss | >= | 9,000 |
| Miles Between Chargeable Accidents | >= | 112,300 |
| Passenger Concerns per 100,000 Boardings | <= | 10.6 |
| **BUS** | | |
| Total Boarding Riders (in millions) | >= | 33.0 |
| Average Weekday Boarding Riders | >= | 107,500 |
| Boardings per Revenue Hour | >= | 24.0 |
| Percent of Scheduled Service Operated | >= | 99.50% |
| Miles Between Major Mechanical Schedule Loss | >= | 8,000 |
| Miles Between Chargeable Accidents | >= | 100,000 |
| On-time Performance | >= | 95.0% |
| Operator Personal Time-off | <= | 10.0% |
| Maintenance Personal Time-off | <= | 8.0% |
| Passenger Concerns per 100,000 Boardings | <= | 11.8 |

**Figure 1-1 Key Performance Indicator Goals (continued)**

| LIGHT RAIL | |
|---|---|
| Total Boarding Riders (in millions) | >= 11.1 |
| Average Weekday Boarding Riders | >= 35,300 |
| BPRH | >= 74.0 |
| Percent of Scheduled Service Operated | >= 99.90% |
| Miles Between Major Mechanical Schedule Loss | >= 40,000 |
| Miles Between Chargeable Accidents | >= 2,214,000 |
| On-time Performance | >= 95.0% |
| Operator Personal Time-off | <= 10.0% |
| Maintenance Personal Time-off | <= 8.0% |
| Way, Power, & Signal Personal Time-off | <= 8.0% |
| Passenger Concerns per 100,000 Boardings | <= 2.8 |

***Service Changes***

VTA implements service changes on a quarterly basis in January, April, July and October. Proposed "major" service changes must be submitted to the VTA Board of Directors for review and approval. For Title VI purposes, all "major" service changes will require a Service Equity Analysis.

The following modifications shall be considered "major" service changes:

- The establishment of a new transit line or service;
- The elimination of a transit line or service;
- A 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;
- A 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; and
- A system-wide change concurrently affecting 5 percent or more of the total system revenue hours.

The following types of modifications are not classified as "major" service changes and shall not require Service Equity Analyses:

- Special event service;
- Routing changes due to construction or other road closures; and
- Special service operated during emergencies;

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

***Title VI***

Title VI (codified at 42 U.S.C. §2000 et seq.) was enacted as part of the landmark Civil Rights Act of 1964. It prohibits discrimination on the basis of race, color, and national origin in programs and activities receiving federal financial assistance.

To comply with Federal Transit Administration's (FTA) Title VI Circular 4702.1B and Environmental Justice Circular 4703.1 requirements, VTA has created and adopted Major Service Change, Disparate Impact, and Disproportionate Burden Policies. These policies are used during the planning process to evaluate the impact of major service and fare changes on minority and low-income passengers.

In conformance with Title VI regulations, VTA has also adopted system-wide service standards and policies to measure system performance and ensure that transit services are being provided in a fair and equitable manner.

## Service Overview and Vehicle Requirements

VTA has established categories of bus transit for service planning purposes and to more easily monitor performance. Operational characteristics such as frequency, service span, and days of operation distinguish the categories. Local bus level of service is determined by the market demand for transit within travel corridors. High-intensity corridors with many large attractors and generators are provided with the highest level of service. Land use and corridor characteristics further define local bus service categories. VTA's Service Design Guidelines further describes each type of bus service.

**Figure 2-1 Bus Products Operational Characteristics**

| | Weekday Frequency (min.) | Weekend Service | Span Hours | Days/ Week | Capacity |
|---|---|---|---|---|---|
| Core Network | 15 or less | 15 or less | 18+ | 7 | Medium |
| Local Network | 30 | 30 – 60 | 17 or less | 7 or less | Low |
| Community Bus | 30 – 60 | 30 – 60 | 14 or less | 7 or less | Lowest |
| Express | Scheduled Service | N/A | 17 or less | 7 or less | Low |
| Bus Rapid Transit | 10 or less | 10 or less | 18+ | 7 | High |

**Figure 2-2 Corridor Characteristics**

| | Corridor Characteristics | Examples |
|---|---|---|
| Core Network | • Major arterials<br>• Transit interconnectivity<br>• Major generators & attractors<br>• Long distance, multiple jurisdictions | • El Camino Real<br>• Stevens Creek Blvd<br>• King Road |
| Local Network | • Neighborhood collectors<br>• Feeder service to Core<br>• Community generators & schools<br>• Medium Distance trips | • Middlefield Road<br>• Wolfe Road<br>• Lincoln Avenue |
| Community Bus | • Residential streets<br>• Feeder service to core, and local networks<br>• Community activity centers<br>• Neighborhood circulators<br>• Downtown circulators | • Gilroy and Morgan Hill<br>• Evergreen District<br>• South Palo Alto<br>• Los Gatos<br>• Downtown San Jose (DASH) |
| Express & Limited Stop Buses | • Expressways, highways or freeways<br>• Weekday peak directional period<br>• Between transit centers/Park & Rides and Urban Centers<br>• Long distance trips | • Lawrence Expressway<br>• Hwy 237<br>• I-880, I-680, I-280 |
| Bus Rapid Transit | • Major arterials<br>• Transit interconnectivity<br>• Major generators & attractors<br>• Long distance, multiple jurisdictions | • Santa Clara Alum Rock (2015)<br>• El Camino Real (Sept. 2018)<br>• Stevens Creek Blvd (Oct. 2019) |

**Vehicle Requirements**

VTA has developed guidelines and business plans for existing and future services that include specific vehicle requirements. Those individual plans form the basis for this Fleet Management Plan to meet service needs. Plans and guidelines in place for current service levels include the following fleet of 432 active buses:

- 40 Articulated 60-foot buses
- 237 40-foot buses
- 70 40-foot hybrid powered buses
- 22 35-foot buses
- 43 Community Buses
- 20 40-foot hybrid powered Express Buses

11 additional buses are inactive (7 40-foot diesel buses, 1 Community Bus, and 3 Zero Emission Hydrogen buses).

All buses meet the accessibility requirements of the Americans with Disabilities Act (ADA), and the emission mitigation standards mandated by the Federal Clean Air Act (CAA) and the California Air Resources Board (CARB). New vehicle models must proceed through the FTA First Article Bus Durability Tests Program for procurements to qualify for federal funding participation. Standard bus retirement age for diesel and diesel hybrid buses is 12 years, but some buses are kept longer due to funding availability and service needs.

VTA's active bus fleet has an age range of one year to over 10 years. The average age of a VTA active fleet bus is 10.8 years old as of January 1, 2014. Buses in the active fleet operated an average of 39,543 scheduled miles during FY 2013. The overall spare ratio for the fleet of 19% reflects the specialized sub-fleets shown in the table below.

**Table 2-3 Special Service Sub-fleets (March 2014)**

| Quantity | Type | Description | Peak Service Requirement | Spare Ratio |
|---|---|---|---|---|
| 21 | BRT 522 | Specially wrapped 40’ and 60’ articulated buses | 16 | 24% |
| 33 | Route 22 | 60’ articulated buses | 29 | 12% |
| 5 | Airport Service | Luggage Carrier Equipped 40’ buses, no farebox | 4 | 20% |
| 22 | 35’ Buses | Restricted service application buses | N/A | N/A |
| 40 | Community Buses | Small cutaway buses | 26 | 35% |
| 4 | Downtown Area Shuttle Service (DASH) | Specially wrapped small cutaway buses with no farebox | 3 | 25% |
| 20 | Express Buses | Specialty paint scheme, improved commuter interior features including luggage racks, personal reading lights, free wi-fi access, reclining seats, and no rear doors. | 17 | 15% |

### Service Overview

VTA operates 70 bus routes in the urbanized area of Santa Clara County.

**Table 2-4 VTA Routes By Category (January 2014)**

| Core | Local | Community Bus | Express | Limited Stop | LightRail |
|---|---|---|---|---|---|
| 22 | 10 | 13 w | 101 w | 304 w | 900 |
| 23 | 12 nw | 14 | 102 w | 321 w | 901 |
| 25 | 27 | 16 w | 103 w | 328 w | 902 |
| 26 | 31 | 17 w | 104 w | 330 w | |
| 55 | 35 | 18 | 120 w | | |
| 60 | 40 | 19 | 121 w | | |
| 61 | 46 ns | 32 ns | 122 w | | |
| 62 | 47 | 34 w | 140 w | | |
| 64 | 51 w | 37 w | 168 w | | |
| 66 | 52 w | 39 | 180 w | | |
| 68 | 53 w | 42 ns | 181 | | |
| 70 | 54 | 45 w | 182 w | | |
| 71 | 57 | 48 | | | |
| 72 | 58 w | 49 | | | |
| 73 | 63 | 65 w | | | |
| 77 | 81 ns | 88 w | | | |
| 323 w | 82 | 200 | | | |
| 522 | 89 w | 201 w | | | |
| **Total routes:18** | **Total routes:18** | **Total routes:18** | **Total routes:12** | **Total routes:4** | **Total routes:3** |
| **73 Total Routes (70 Bus, 3 Light Rail)** | | | | | |

**Legend:** ns = No Sunday Service nw = No Weekday Service w = Weekday only Service

A description of each type of service and the vehicles operated on the services follows:

***Core Lines***

VTA operates 16 Core Lines. The Core Network is defined as bus routes or shared corridors that feature weekday service frequencies of 15 minutes or less during the peak and midday periods and/or have service that spans 18 hours or more. Core routes operate 7 days per week and typically travel on long distance corridors. They connect major trip generators such as universities, regional shopping malls, and high-density housing and employment sites.


Line 22 is VTA's highest-capacity core route. In 2014, VTA has a fleet of thirty-three 60-foot diesel articulated buses to operate on this route.

Line 22 operates along the same corridor as the Rapid 522, but offers more stops. The Rapid 522 also uses articulated buses with branded design, and is discussed below in the section on Bus Rapid Transit. Because of the corridor overlap, VTA currently categorizes Rapid 522 and Limited Stop 323 as Core Lines, but that will transition with the implementation of BRT service.

***Local Lines***

VTA operates 18 Local Lines. The Local Network is defined as bus routes or corridors that feature weekday service frequencies of 30 minutes or more during the peak and midday periods and/or have service that spans less than 18 hours.

Local routes may operate up to 7 days per week and typically travel on medium distance corridors. They serve minor trip generators such as schools, hospitals, and medium density housing and employment sites.

Local Transit service utilizes 40-foot diesel and diesel-electric hybrid transit buses. These buses are assigned to Core, Local, Limited Stop, and some Express routes, as well as special service, bus bridge, and stand-by emergency coaches.

Diesel-electric hybrid coaches were introduced in 2010 to reduce greenhouse gas emissions and fuel consumption.

Seventeen of the regular 40-foot buses run on bio-diesel fuel. The remainder of the fleet runs on ultra-low-sulphur diesel fuel.

VTA is purchasing 15 additional 40' buses in FY2015, as it will be retiring 61 high-floor 40' buses in FY2016 that were purchased in 1997 and 1998.

***Airport Flyer***

One specialized local line is Line 10 – The Airport Flyer. VTA operates this free shuttle serving the Norman Y. Mineta International Airport in San José, the Metro Airport Light Rail Station, and the Santa Clara Caltrain station. The Airport Flyer is partially funded by the City of San José.

The buses assigned to the Airport Flyer service are specially wrapped, do not have fareboxes, and are equipped with luggage racks and special roof-mounted airport gate sensors. Thus, these buses can only operate on this service.

***Bus Rapid Transit (BRT)***

Bus Rapid Transit (BRT) is defined in the Service Design Guidelines as a means to provide high quality rapid transit service with rubber-tire vehicles. The Service Design Guidelines describes two types of BRT service, BRT 1 and BRT 2, which are distinguished by their capital and infrastructure requirements.


The initial phase of BRT includes VTA Rapid 522 and Limited Stop 323. VTA operates Rapid service on the 522 using 21 specially wrapped buses that can only be used on this service. Fourteen of these buses are 40' diesel buses and seven are 60' articulated diesel buses.

VTA Rapid Line 522 supplements Line 22 service in the El Camino Real corridor, providing faster, more frequent, and more direct service between Eastridge and the Palo Alto Transit Center. The service combines state-of-the-art technology including bus signal priority and service enhancements. Compared to Line 22 schedules, travel times have been reduced about 25 percent. Line 522 is VTA's first Rapid service and a precursor to full BRT implementation in this corridor.

Line 522 was implemented in July 2005. Bus Signal Priority, limited stops, frequent service, headway-based schedules, queue-jump lanes and a new service image were key elements of the implementation.

Limited Stop Line 323 was added in October 2012, supplementing Line 23 service on the Stevens Creek Boulevard corridor, providing service between Alum Rock Transit Center and De Anza College in Cupertino. Again, Line 323 is a precursor to full BRT implementation for the Santa Clara Alum Rock corridor. In February 2014, the VTA Board of Directors approved the purchase of signal priority equipment for this route.

BRT 2 is designed to build on these initial services. VTA's SRTP identifies funds for design and construction of BRT lines. Future improvements could include permanent rail-like stations, more intersections with Bus Signal Priority, real-time station display information, new higher-capacity special designed and branded vehicles, exclusive bus lanes and off-vehicle fare payment as outlined in the BRT Strategic Plan. VTA is purchasing 29 specially branded 60' articulated vehicles for BRT in FY2016.

### *Express Lines*

VTA operates 12 Express lines. Express lines are commute-oriented, usually over 20 miles in length. They serve a maximum of three park & ride lots with more than 50 percent of the line on freeways and/or expressways.

In January 2012, VTA implemented a new Express Bus and Limited Stop Service plan, with 20 new diesel-electric hybrid coaches designed specifically for Express Bus Service and the commuters it serves. The buses feature premium amenities such as reclining, high-back seats; free Wi-Fi; overhead storage racks; footrests; and personal reading lights. VTA will be purchasing 20 additional Express buses in FY2015 for this sub-fleet.

The new coaches operate on Lines 102, 103, 120, 121, 122, and 182. Lines 102 and 103 serve Palo Alto employment locales from the Santa Teresa and Eastridge Transit Centers, respectively. Lines 120, 121, and 122 serve the Lockheed Martin and Mountain View employment areas from the Fremont BART station, Morgan Hill and Gilroy, and the Santa Teresa Transit Center. Line 182 serves Palo Alto and the IBM/Bailey Avenue facility.

### *Community Bus Lines*

Current Community Bus

VTA operates 18 Community Bus lines. Community Bus service is defined as routes that have weekday frequencies of 30 minutes or more in both the peak and midday periods. Service spans are usually 12 hours for weekdays. Community Bus services operate up to 7 days. These routes are neighborhood-based and travel within a limited area connecting small-scale trip generators to light rail stations, transit centers, and destination points within the core transit system.

VTA's Community Bus service is provided to meet the needs of individual communities and neighborhoods, improve general circulation within a local area, and provide access to arterial bus routes, light rail, and transit centers. Community Bus service is typically deployed in lower-density residential developments, central business districts, and to provide connections between housing, schools, shopping malls, employment centers, and recreational areas. This service is provided in areas not physically conducive to operating standard-size bus service or exhibiting higher ridership demand.

Future Low Floor Community Bus

The service uses smaller vehicles with a distinctive paint scheme. VTA's community buses are 28 feet long, seat 25 and accommodate 10 to 12 standees. VTA has 45 Community Buses in the active fleet. Of these, 4 are specially painted to operate exclusively on the Downtown Area Shuttle (DASH) service (described below).

These buses are high-floor gasoline vehicles, with a lift using a separate door located just behind the front door. The buses are equipped with VTA's Advanced Communication System, automatic passenger counters, automated stop annunciations and onboard security cameras. The current Community Buses have an expected lifespan of five years.
VTA is in the process of procuring 38 new small low-floor diesel hybrid Community Buses to replace its current Community Bus sub-fleet (including DASH vehicles), which will be retired.

***Downtown Area Shuttle Service (Dash)***

VTA operates the free Downtown Area Shuttle Service (DASH) in San José. To accommodate this service, VTA has painted four Community Buses with a specialized DASH logo. These buses are not equipped with fareboxes, so they can only be used for this service. DASH service is supported by funds from the Bay Area Air Quality Management District and by San José State University.

***Limited Stop Lines***

VTA operates 4 Limited Stop lines, which are long routes operating through major corridors, generally on arterials and expressways. These lines serve major transfer points and operate during weekday peak hours. These lines operate standard 40' diesel and diesel hybrid buses.

## System and Service Expansion

VTA's service expansion currently centers on three main areas – service to support the BART expansion to Santa Clara County, service to support the new Levi's Stadium facility in Santa Clara, and Bus Rapid Transit Service on VTA's two main corridors. Additionally, service to the Northern Peninsula service area and Silicon Valley technology and work sites is undergoing review and analysis for revisions to support the three service expansion plans and to align with current and future service demands. The North Central County Bus Improvement Plan is being developed to address those needs.

Figure 3-1 shows service plan total hours and miles, assuming 2% per year increases after FY 2019. Given this plan, VTA will need to increase its bus fleet each year after 2021 to maintain a 20% spare ratio, given the service increase assumption of 2% per year. This differs from the current Bus Procurement Plan because it is a projection of future service needs. The Bus Procurement Plan is updated regularly as projections mature and services are approved.

**Figure 3-1 Service Plan By Year (Miles)**

| Total Hours | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| Standard Bus | 1,381,001 | 1,433,223 | 1,380,268 | 1,386,361 | 1,419,121 | 1,349,040 | 1,376,021 | 1,403,541 | 1,431,612 | 1,460,244 |
| BRT | | | 83,067 | 113,191 | 113,191 | 200,623 | 204,636 | 208,729 | 212,903 | 217,161 |
| Bus Total Hours | 1,381,001 | 1,433,223 | 1,463,335 | 1,499,553 | 1,532,312 | 1,549,663 | 1,580,656 | 1,612,270 | 1,644,515 | 1,677,405 |
| % Change | | 3.80% | 2.10% | 2.50% | 2.20% | 1.10% | 2.00% | 2.00% | 2.00% | 2.00% |
| Peak | 372 | 379 | 384 | 396 | 398 | 402 | 410 | 418 | 427 | 435 |
| Total Fleet | 430 | 457 | 484 | 480 | 490 | 490 | 490 | 502 | 512 | 522 |
| Spare Ratio | 16% | 21% | 26% | 21% | 23% | 22% | 20% | 20% | 20% | 20% |
| **Total Miles** | **18,005,506** | **18,686,381** | **19,072,488** | **19,576,581** | **20,001,430** | **20,326,297** | **20,732,823** | **21,147,479** | **21,570,429** | **22,001,837** |

**Bus Rapid Transit (BRT) Strategic Plan**

VTA is developing an integrated Bus Rapid Transit (BRT) network linking activity centers throughout the county. The BRT Strategic Plan studied candidate BRT corridors identified in VTA's long-range plan, Valley Transportation Plan 2030, and the Comprehensive Operations Analysis (COA).

The BRT Strategic Plan proposed implementing BRT improvements on Santa Clara-Alum Rock/El Camino (22/522) and Stevens Creek (23/523). The BRT plan includes three projects—the first two split the existing Line 22/522 Corridor, and the third runs along the existing 23/323 Corridor:

- Santa Clara/Alum Rock
- El Camino Real
- Stevens Creek

Recommendations from this study included unique vehicle specifications for the new service(s). These are 60' articulated hybrid diesel-electric buses designed for operation on BRT corridors. The BRT service will include:

- Specialized Vehicles – Hybrid, comfortable modern interiors, and Wi-Fi on board
- Enhanced Stations – Weather protection, live schedule displays, and passenger amenities
- Rapid Boarding – Ticket machines and all-door boarding means faster stops
- Bus-Only Lane– In certain roadway segments, BRT buses will travel in a median bus-way, separating buses from traffic to improve travel time
- Transit Signal Priority – Improves speed by holding green signals or shortening red signals for approaching buses
- Fast, Frequent, Reliable – Service every ten (10) minutes

Figure 3-3 displays the vehicle requirements of BRT implementation.

**Figure 3-3 BRT Planned Vehicle Requirements**

| Route | Service Type | Peak Headway | Peak # of Vehicles | Total Vehicles |
|---|---|---|---|---|
| 522 | Santa Clara/Alum Rock – El Camino | 10 | 23 | 29 |
| 523 | Stevens Creek | 10 | 16 | 20 |
| | | **Total** | **39** | **49** |

***Santa Clara-Alum Rock Bus Rapid Transit Project***

The Santa Clara-Alum Rock route is one of VTA's busiest corridors, with Routes 22 and Rapid 522 currently serving it. The Santa Clara-Alum Rock Bus Rapid Transit (BRT) Project will provide limited-stop rapid transit service for 7.1 miles, from the Eastridge Transit Center to the Arena Station in downtown San José using Capitol Expressway, Alum Rock Avenue, and Santa Clara Street. The project includes improvements to the surrounding streetscape, as shown in the rendering below:

Simulation of King Westbound BRT station

The Santa Clara/Alum Rock BRT Project is the first of three BRT lines, which will be followed by El Camino Real BRT and Stevens Creek BRT. Service will be provided at 11 BRT stations shown in the map below.

Service is scheduled to begin in the Fall of 2015.


***El Camino Real Bus Rapid Transit Project***

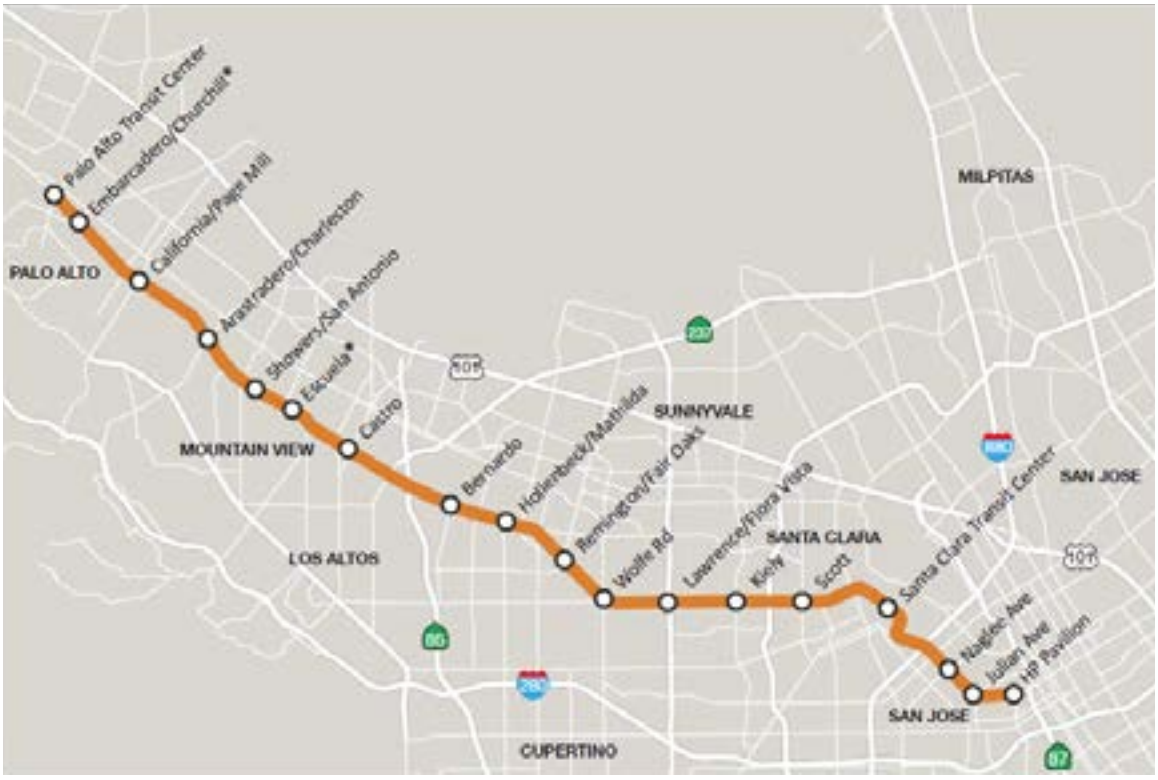
El Camino Real is currently VTA's busiest corridor, with Route 22 and Rapid 522 bus service. The El Camino Real Bus Rapid Transit Project would upgrade the 522 Rapid Bus Route on El Camino Real to Bus Rapid Transit status from the Palo Alto Transit Center to downtown San José. The project will improve the El Camino Real corridor by implementing bus-only lanes in some locations, installing light-rail-like stations that will create faster, more frequent bus service. Proposed service would include the cities of Palo Alto, Los Altos, Mountain View, Sunnyvale, Santa Clara, and San José.

Transit improvements could include conversion of two lanes of El Camino Real (one lane in each direction, adjacent to the median) into dedicated BRT lanes that would use median stations like the Santa Clara/Alum Rock BRT, or be used to install curb bulb-out stations at BRT stops.

Existing 522 stations would be upgraded to more substantial, rail-like stations that feature weather protection, off-board fare payment, real-time next bus information and Clipper card tap stations. The project could also install bicycle lanes on El Camino Real in areas where there are dedicated BRT lanes, provided that the cities wish to do so.

The 522 BRT service would serve 16 stops (with 2 possible additional stations indicated by *) as shown in the map below. Line 22 would continue to make all local stops in the corridor. VTA is currently conducting an environmental analysis for several project alternatives for the El Camino Real Bus Rapid Transit Project. VTA's Board of Directors will select a Locally Preferred Alternative (LPA) in late 2014.

Service is scheduled to begin in September 2018.

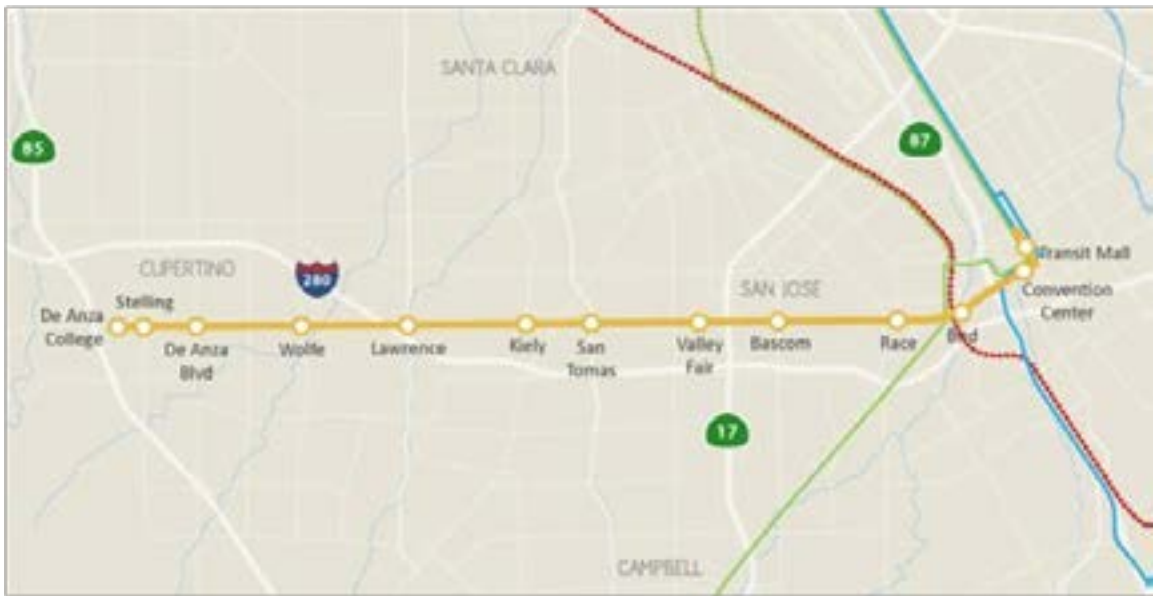


***Stevens Creek Bus Rapid Transit Project***

The Stevens Creek Bus Rapid Transit (BRT) Project would provide a rapid transit service for 8.5 miles from De Anza College to the Transit Mall in downtown San José using San Carlos Avenue and Stevens Creek Boulevard. The Stevens Creek BRT project would add BRT service (BRT 523) in addition to the local (Line 23) to provide fast, frequent service with limited stops, and enhanced amenities for passengers. The Stevens Creek BRT project is the third of three BRT lines preceded by Santa Clara/Alum Rock and El Camino Real projects.

The Stevens Creek corridor is served by VTA's second highest ridership line. Due to increased demand on Line 23, VTA began service with the Limited Stop Line 323, which provides faster and more direct service between De Anza College and downtown San José by supplementing Line 23, but making fewer stops. The Limited Stop Line 323 service operates weekdays and is a first step towards building an effective Bus Rapid Transit (BRT) line on Stevens Creek. Service would be provided at 13 stations, as shown in the map. The stations would also feature enhanced amenities as shown in the rendering below:

Service is scheduled to begin in 2018.



Proposed BRT Station

**BART Transit Integration Plan**

By 2018, BART trains will be running to the Milpitas and Berryessa stations in Santa Clara County. To ensure riders have easy, timely connections to destinations throughout the County and beyond, VTA is analyzing its existing bus and light rail service, along with future demands once BART is operating.

The analysis will be used to create a plan for how BART and VTA's bus and light rail network will best complement each other and provide riders convenient, efficient service.
This plan, the BART Transit Integration Plan, will focus primarily on routes that will directly serve the new BART stations, either because they currently serve the Fremont BART station or because they serve areas near the future Milpitas and Berryessa stations. VTA will also consider refinements to routes that have the potential to serve the two new stations, and the implementation of new routes if market potential warrants.

The Plan will also take into consideration coordinating with private shuttles to reduce service duplication, improving conditions for transit-dependent communities, and improving stop and station passenger facilities.

*Berryessa Connector Study*

VTA also has studied how to connect the Berryessa BART Station to downtown San José with new routes offering frequent service and VTA's largest buses.

The recommended service includes rerouting the 323 Limited Stop service to terminate at the Berryessa BART station, plus creating a Downtown Limited Stop service that travels between the Berryessa station and downtown San José. The Santa Clara Alum Rock BRT project will still run to Eastridge Transit Center.

The BART Transit Integration Plan will incorporate these proposed new BART station connections, as well as investigate how BRT will connect with the Berryessa BART station. Since the existing Great Mall Transit Center is located roughly one-half mile from the new Milpitas BART Station, the study will also examine how these two transit centers will work together or if the Milpitas BART station will replace the Great Mall Transit Center.

**Event Service To Levi's Stadium**

VTA is developing a service plan that would support the projected demand for transit services to and from Levi's Stadium (68,500 person capacity), which is scheduled to open in August 2014. This organization-wide effort includes plans for significantly increased levels of bus and light rail service on event days, as well as the full spectrum of activities necessary to support the delivery of a specialized service, such as Marketing, Community Outreach and Ambassador plans; a Security and Fare Enforcement Plan; and strategies for safely and efficiently moving large crowds on and off light rail trains at congested stations such as the Great America Station, which directly serves the stadium. VTA is part of the Stadium Operations group that will prepare a plan for each event depending on estimated crowd size, day of the week, and type of event.

The plan is for 26 events in the first year of operations. Ten events are planned 49ers games and the others are concerts, soccer matches, etc. of various sizes. Staff is planning for a 20% transit share.

Light Rail service is a major focus of transit efforts. The Great America station is adjacent to the Stadium. Service will be increased by 60 cars on game days (lesser numbers for other events, depending on size). The regular trains will be increased from one-car to two- and three-cars and an additional thirteen train sets will augment this regular service. Current bus service on the three routes (55, 57, and 60) serving the Stadium will be

supplemented with additional service based on the model demand. Staff is planning seven game-day express routes, including one to connect to the Fremont BART Station. Additionally, there will be standby buses to help meet any situation that arises on event days.

VTA is also working closely with Caltrain, Altamont Corridor Express (ACE), and the Capitol Corridor to ensure a seamless transit experience for fans coming from throughout the Bay Area.

**North Central County Bus Improvement Plan**

VTA is evaluating bus service in Sunnyvale, Mountain View, Santa Clara, and Cupertino to prepare for the proposed arrival of bus rapid transit service on El Camino Real and Stevens Creek Boulevard and to support transportation needs resulting from booming development growth in employment and housing in the area. The study will examine crosstown bus service connecting to proposed Bus Rapid Transit service to evaluate the current range of transit services and recommend improvements to route structure and service levels.

VTA will work closely with city staff, large employers, and the Sunnyvale and Mountain View Transportation Management Associations to identify current and future needs based on anticipated development. The plan will analyze existing service levels and consider the effect of the projected ridership increase that the proposed BRT routes would have on connecting routes when they begin service in 2018.

**Transit Service Plan**

The Transit Service Plan functions as the process and document that implements the policies set forward in the Transit Sustainability Policy. The mandated annual review of transit services, incorporated into the Transit Service Plan includes an evaluation of existing services compared to the performance standards contained in the Service Design Guidelines. The Transit Service Plan also includes a review of potential new services based on customer input and new residential, commercial, or employment developments; assessment of opportunities for service refinement and resource reallocation; route-specific service changes; and recommendations for further analysis and study. The plan includes an extensive marketing and community outreach effort and modifications to the plan are made based on community concerns. The Transit Service Plan is prepared every two years in conjunction with the VTA budget.

Below is a summary of the major transit service changes adopted in the FY2014-15 Transit Service Plan and projected major service changes through 2019.

**Figure 3-4 Summary Of Significant Planned Transit Service Changes**

| FY | Sign-up | Route | Description |
|---|---|---|---|
| 2014 | Apr-14 | 103 | Operate additional trip in each direction if passenger volume warrants. |
| 2015 | Jul-14 | 17 | Discontinue if ridership does not meet minimum standards. |
| 2015 | Jul-14 | 101 | Operate with new Express vehicles. |
| 2015 | Jul-14 | 104 | Operate with new Express vehicles and add trip in each direction if passenger volume warrants. |
| 2015 | Jul-14 | 120 | Operate additional trip in each direction if passenger volume warrants. |
| 2015 | Jul-14 | 168 | Operate additional trip in each direction if passenger volume warrants. |
| 2015 | Jul-14 | 323 | Start Saturday service, every 15 minutes from 9:00am - 6:00pm. |
| 2015 | Oct-14 | 37 | Extend service to 10:00pm between West Valley College and Winchester Transit Center. |
| 2015 | Oct-14 | 52 | Extend service to 9:30pm. |
| 2015 | Oct-14 | 58 | Extend midday service to Alviso. |
| 2015 | Jan-15 | 323 | Operate 30 minute weekday evening service from 6:30pm to 10:30pm, operate 30-minute Saturday service from 8:00am - 9:00am and 6:00pm - 10:00pm, start Sunday service every 20 minutes from 9:00am - 6:00pm. |
| 2016 | Oct-15 | 120 | Terminate route at Warm Springs BART instead of Fremont. |
| 2016 | Oct-15 | 140/180 | Combine and convert to limited stop route 380 with opening of Warm Springs BART. |
| 2016 | Oct-15 | 181 | Terminate route at Warm Springs BART instead of Fremont. |
| 2016 | Oct-15 | 323 | Start operating some blocks with articulated buses instead of 40’ |

**Figure 3-4 Summary Of Significant Planned Transit Service Changes (continued)**

| FY | Sign-up | Route | Description |
|---|---|---|---|
| 2016 | Oct-15 | 522 | BRT starts in Santa Clara/Alum Rock, Increase Weekday service span to 11:00pm., increase to 10-minute headways from 6:00am-7:00pm, 20 min. from 5:00am - 6:00am and 7:00pm - 11:00pm. Saturday service starts at 6:00am with 20 min. frequency before 8:00am and after 7:00pm. Expand Sunday service to operate between 7:00am and 9:00pm with 15-minute headways between 8:00am and 7:00pm, with 20-minute headways before 8:00am, and after 7:00pm. |
| 2016 | Jan-16 | Light Rail | Begin operating new operating plan based on Phase I reduced. Almaden to Mountain View, Santa Teresa to Alum Rock with Express between Ohlone-Chynoweth and Convention Center on weekdays for Santa Teresa to Alum Rock line, Winchester to Downtown San Jose. |
| 2017 | Jan-17 | 181 | Discontinue Route with BART service beginning to Berryessa and Montague. |
| 2017 | Jan-17 | 301 | Implement new Downtown Connector Route from Berryessa BART Station. |
| 2017 | Jan-17 | 323 | Convert to all Articulated buses with 12 minute headways on weekdays and extend route to Berryessa BART via Santa Clara and King Road. |
| 2017 | Jan-17 | Many | Implement BART Integration Plan. Details to be determined. |
| 2017 | Jan-17 | Light Rail | Begin Alum Rock to Mountain View service in conjunction with BART service extending to Berryessa and Montague. New route would operate 15-minute headways on Weekdays and 30 minute on weekends. Peak hour trips would serve Mountain View off-peak and weekends and would terminate at Old Ironsides. |
| 2018 | Jan-18 | 23 | Terminate route in Downtown San Jose and operate with Articulated buses instead of 40'. Maintain existing 12 minute weekday and 15-minute weekend headways. |
| 2018 | Jan-18 | 28 | New route connecting Alum Rock Transit Center with Berryessa BART and provide local service on Alum Rock between Capitol and King. |
| 2018 | Jan-18 | Light Rail | Operate 15-minute service all day on Almaden - Mtn. View and Winchester - Downtown San Jose lines. Begin Guadalupe Express service on Saturdays, 15-minute headways on Saturday between Almaden and Baypointe. |
| 2019 | Jul-18 | 522 | Improve evening headways to 15 minutes instead of 20. |
| 2019 | Jul-18 | 323/523 | Convert 323 to BRT 523 with improved service hours and headways, route will end at Berryessa BART. |

## Bus Procurement Plan and Schedule

The following table shows the existing bus fleet, along with planned purchases and retirements through FY2030.

The planned procurements assume a standard 2-year order cycle for new vehicles and a vehicle life of 12 years for diesel or diesel-hybrid vehicles. The plan also allows extended life, but not early retirement of vehicles.

The Emergency/Contingency fleet goal is 10 vehicles, all 40-foot buses.

As the table illustrates, the vehicle fleet, by type, will change to fewer 40-foot buses after FY2015 to increase the number of larger 60-foot articulated vehicles for BRT service. In FY2015, VTA will retire its fleet of small cutaway gasoline-powered buses that were purchased in 2007 and 2008 and only have a 5-year expected lifespan. These 44 buses are being replaced with 38 small diesel-electric hybrid buses with a 12-year expected lifespan. That will bring the spare ratio for this sub-fleet down to 23%.

The Express bus sub-fleet will also be expanded from 20 buses to 40 buses to cover all of VTA's Express routes with this commuter-friendly bus type, as VTA has experienced strong ridership growth for this segment.

The current 60-foot articulated fleet will be retired in FY2016 and be replaced by 55 new 60-foot articulated buses.

FY2015 and FY2016 contain the largest number of planned vehicle purchases over the next 16 years to evolve the fleet to meet future planned service changes and new services. Beyond that, vehicle purchases are leveled out to maintain the fleet in good order and balance capital expenditures year-over-year.

**Figure 4-1 Bus Procurement Plan And Schedule (As Of February 2014)**

| | | | | | | | FY2012 | | FY2013 | | FY2014 | | FY2015 | | FY2016 | | FY2017 | | FY2018 | | FY2019 | | FY2020 | | FY2021 | | FY2022 | | FY2023 | | FY2024 | | FY2025 | | FY2026 | | FY2027 | | FY2028 | | FY2029 | | FY2030 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Notes | Order Year | Delivery Year | Manufacturer | Type | Retirement | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire |
| 1 | CB | | 2007 | EL DORADO 7000 | Small Bus | 2015 | 20 | | 20 | | 20 | | | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | CB | | 2008 | EL DORADO 8000 | Small Bus | 2015 | 25 | | 25 | | 25 | | | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | 1997 | GILLIG 9700 | 40 ft | 2016 | 18 | 69 | 18 | | 18 | | 18 | | | 18 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | 1998 | GILLIG 9800 | 40 ft | 2017 | 46 | | 46 | | 46 | | 46 | | 3 | 43 | | 3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | 1999 | GILLIG 9950 | 40 ft | 2017 | 2 | | 2 | | 2 | | 2 | | 2 | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | 1999 | GILLIG 9900 | 40 ft | 2017 | 12 | | 12 | | 12 | | 12 | | 12 | | | 12 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | 2001 | GILLIG 1000 | 40 ft | 2018 | 52 | | 52 | | 52 | | 52 | | 52 | | 50 | 2 | | 50 | | | | | | | | | | | | | | | | | | | | | |
| 8 | 35-footer | | 2002 | GILLIG 2100 | 40 ft | 2018 | 22 | | 22 | | 22 | | 22 | | 22 | | 12 | 10 | | 12 | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | 2002 | FLYER 2300 | Artic | 2016 | 40 | | 40 | | 40 | | 40 | | | 40 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | 2002 | GILLIG 2000 | 40 ft | 2020 | 57 | 2 | 57 | | 57 | | 57 | | 57 | | 57 | | 57 | | 57 | | | 57 | | | | | | | | | | | | | | | | | |
| 11 | | | 2002 | GILLIG 2200 | 40 ft | 2021 | 56 | | 56 | | 56 | | 56 | | 56 | | 56 | | 56 | | 56 | | 56 | | | 56 | | | | | | | | | | | | | | | |
| 12 | Replace ID 3 | 2009 | 2011 | Gillig Hybrid (P-0698) | 40 ft | 2023 | 70 | | 70 | | 70 | | 70 | | 70 | | 70 | | 70 | | 70 | | 70 | | 70 | | 70 | | | 70 | | | | | | | | | | | |
| 13 | New subfleet | 2010 | 2012 | Gillig Hybrid (Express, P-0698) | 40 ft Express | 2024 | 20 | | 20 | | 20 | | 20 | | 20 | | 20 | | 20 | | 20 | | 20 | | 20 | | 20 | | 20 | | | 20 | | | | | | | | | | |
| 14 | Replace ID 1,2 | 2013 | 2015 | New (P-0768) | Small Bus | 2027 | | | | | | | 34 | | 34 | | 34 | | 34 | | 34 | | 34 | | 34 | | 34 | | 34 | | 34 | | 34 | | 1 | 33 | 1 | | 1 | | 1 | |
| 15 | Replace ID 1,2 | 2013 | 2015 | New (P-0768) | Small Bus | 2027 | | | | | | | 4 | | 4 | | 4 | | 4 | | 4 | | 4 | | 4 | | 4 | | 4 | | 4 | | 4 | | | 4 | | | | | |
| 16 | Replace ID 3,4,5 | 2013 | 2015 | New - (P-0760) | 40 ft Express | 2027 | | | | | | | 20 | | 20 | | 20 | | 20 | | 20 | | 20 | | 20 | | 20 | | 20 | | 20 | | 20 | | | 20 | | | | | |
| 17 | Replace ID 4,5,6 | 2013 | 2015 | New | 40 ft | 2027 | | | | | | | 15 | | 15 | | 15 | | 15 | | 15 | | 15 | | 15 | | 15 | | 15 | | 15 | | 15 | | | 15 | | | | | |
| 18 | Expansion | 2014 | 2016 | New - BRT 522 (P-0719) | BRT | 2028 | | | | | | | | | 29 | | 29 | | 29 | | 29 | | 29 | | 29 | | 29 | | 29 | | 29 | | 29 | | 29 | | | 29 | | | | |
| 19 | Replace ID 4,5,6 | 2014 | 2016 | New (PNEW1) | 40 ft | 2028 | | | | | | | | | 44 | | 44 | | 44 | | 44 | | 44 | | 44 | | 44 | | 44 | | 44 | | 44 | | 44 | | | 44 | | | | |
| 20 | Replace ID 9 | 2014 | 2016 | New (PNEW2) | Artic | 2028 | | | | | | | | | 55 | | 55 | | 55 | | 55 | | 55 | | 55 | | 55 | | 55 | | 55 | | 55 | | 55 | | | 55 | | | | |
| 21 | Replace ID 8 | 2015 | 2017 | New | 40 ft | 2029 | | | | | | | | | | | 25 | | 25 | | 25 | | 25 | | 25 | | 25 | | 25 | | 25 | | 25 | | 25 | | | 25 | | 25 | | |
| 22 | Expansion | 2016 | 2018 | New - BRT 523 (P-0719) | BRT | 2030 | | | | | | | | | | | | | 20 | | 20 | | 20 | | 20 | | 20 | | 20 | | 20 | | 20 | | 20 | | | 20 | | | | 20 |
| 23 | Replace ID 7 | 2016 | 2018 | New | 40 ft | 2030 | | | | | | | | | | | | | 52 | | 52 | | 52 | | 52 | | 52 | | 52 | | 52 | | 52 | | 52 | | | 52 | | | | 52 |
| 24 | Replace ID 10 | 2018 | 2020 | New | 40 ft | 2032 | | | | | | | | | | | | | | | | | 57 | | 57 | | 57 | | 57 | | 57 | | 57 | | 57 | | | 57 | | 57 | | |
| 25 | Replace ID 11 | 2019 | 2021 | New | 40 ft | 2033 | | | | | | | | | | | | | | | | | | | 56 | | 56 | | 56 | | 56 | | 56 | | 56 | | | 56 | | 56 | | |
| 26 | Replace ID 12 | 2021 | 2023 | New | 40 ft | 2035 | | | | | | | | | | | | | | | | | | | | | | | 70 | | 70 | | 70 | | 70 | | | 70 | | 70 | | |
| 27 | Replace ID 13 | 2022 | 2024 | New | 40 ft Express | 2036 | | | | | | | | | | | | | | | | | | | | | | | | | 20 | | 20 | | 20 | | | 20 | | 20 | | |
| 28 | Replace ID 14 | 2025 | 2027 | New | Small Bus | 2039 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 33 | | 33 | | 33 | |
| 29 | Replace ID 15 | 2025 | 2027 | New | Small Bus | 2039 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | 4 | | 4 | |
| 30 | Replace ID 16 | 2025 | 2027 | New | 40 ft Express | 2039 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 20 | | 20 | | 20 | |
| 31 | Replace ID 17 | 2025 | 2027 | New | 40 ft | 2039 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | 15 | | 15 | |
| 32 | Replace ID 18 | 2026 | 2028 | New | BRT | 2040 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 29 | | 29 | | |
| 33 | Replace ID 19 | 2026 | 2028 | New | 40 ft | 2040 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 44 | | 44 | | |
| 34 | Replace ID 20 | 2026 | 2028 | New | Artic | 2040 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 55 | | 55 | | |
| 35 | Replace ID 21 | 2027 | 2029 | New | 40 ft | 2041 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 25 | | 25 | |
| 36 | Replace ID 22 | 2028 | 2030 | New | BRT | 2042 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 20 | |
| 37 | Replace ID 23 | 2028 | 2030 | New | 40 ft | 2042 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 52 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | Total Fleet/Retirements | 440 | 71 | 440 | | 440 | | 468 | 45 | 495 | 101 | 491 | 29 | 501 | 62 | 501 | | 501 | 57 | 501 | 56 | 501 | | 501 | 70 | 501 | 20 | 501 | | 501 | | 501 | 72 | 501 | 128 | 501 | 25 | 501 | 72 |
| | | | | | | Inactive/Emergency/Contingency | 15 | | 14 | | 10 | | 10 | | 10 | | 10 | | 10 | | 10 | | 10 | | 10 | | 10 | | 10 | | 10 | | 10 | | 10 | | 10 | | 10 | | 10 | | |
| | | | | | | Active Fleet | 425 | | 426 | | 430 | | 458 | | 485 | | 481 | | 491 | | 491 | | 491 | | 491 | | 491 | | 491 | | 491 | | 491 | | 491 | | 491 | | 491 | | 491 | | |
| | | | | | | Peak Requirement | 355 | | 363 | | 377 | | 384 | | 391 | | 400 | | 407 | | 407 | | 407 | | 407 | | 407 | | 407 | | 407 | | 407 | | 407 | | 407 | | 407 | | 407 | | |
| | | | | | | Spares | 70 | | 63 | | 53 | | 74 | | 94 | | 81 | | 84 | | 84 | | 84 | | 84 | | 84 | | 84 | | 84 | | 84 | | 84 | | 84 | | 84 | | 84 | | |
| | | | | | | Spare Ratio | 20% | | 17% | | 14% | | 19% | | 24% | | 20% | | 21% | | 21% | | 21% | | 21% | | 21% | | 21% | | 21% | | 21% | | 21% | | 21% | | 21% | | 21% | | |

Note: ZEB not included

**Figure 4-1 Bus Procurement Plan And Schedule (As Of February 2014) (continued)**

| | FY2012 | | FY2013 | | FY2014 | | FY2015 | | FY2016 | | FY2017 | | FY2018 | | FY2019 | | FY2020 | | FY2021 | | FY2022 | | FY2023 | | FY2024 | | FY2025 | | FY2026 | | FY2027 | | FY2028 | | FY2029 | | FY2030 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Summary by vehicle type | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire | Fleet Total | Retire |
| 40 ft | 335 | 71 | 335 | 0 | 335 | 0 | 350 | 0 | 333 | 61 | 329 | 29 | 319 | 62 | 319 | 0 | 319 | 57 | 319 | 56 | 319 | 0 | 319 | 70 | 319 | 0 | 319 | 0 | 319 | 0 | 319 | 15 | 319 | 44 | 319 | 25 | 319 | 52 |
| 40 ft Express | 20 | 0 | 20 | 0 | 20 | 0 | 40 | 0 | 40 | 0 | 40 | 0 | 40 | 0 | 40 | 0 | 40 | 0 | 40 | 0 | 40 | 0 | 40 | 0 | 40 | 20 | 40 | 0 | 40 | 0 | 40 | 20 | 40 | 0 | 40 | 0 | 40 | 0 |
| Artic | 40 | 0 | 40 | 0 | 40 | 0 | 40 | 0 | 55 | 40 | 55 | 0 | 55 | 0 | 55 | 0 | 55 | 0 | 55 | 0 | 55 | 0 | 55 | 0 | 55 | 0 | 55 | 0 | 55 | 0 | 55 | 0 | 55 | 55 | 55 | 0 | 55 | 0 |
| BRT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 29 | 0 | 49 | 0 | 49 | 0 | 49 | 0 | 49 | 0 | 49 | 0 | 49 | 0 | 49 | 0 | 49 | 0 | 49 | 0 | 49 | 0 | 49 | 29 | 49 | 0 | 49 | 20 |
| Small Bus | 45 | 0 | 45 | 0 | 45 | 0 | 38 | 45 | 38 | 0 | 38 | 0 | 38 | 0 | 38 | 0 | 38 | 0 | 38 | 0 | 38 | 0 | 38 | 0 | 38 | 0 | 38 | 0 | 38 | 0 | 38 | 37 | 38 | 0 | 38 | 0 | 38 | 0 |
| **Total** | **440** | **71** | **440** | **0** | **440** | **0** | **468** | **45** | **495** | **101** | **491** | **29** | **501** | **62** | **501** | **0** | **501** | **57** | **501** | **56** | **501** | **0** | **501** | **70** | **501** | **20** | **501** | **0** | **501** | **0** | **501** | **72** | **501** | **128** | **501** | **25** | **501** | **72** |

| | FY2012 | | FY2013 | | FY2014 | | FY2015 | | FY2016 | | FY2017 | | FY2018 | | FY2019 | | FY2020 | | FY2021 | | FY2022 | | FY2023 | | FY2024 | | FY2025 | | FY2026 | | FY2027 | | FY2028 | | FY2029 | | FY2030 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Summary by vehicle type (percent to total) | Fleet (Net) | Percent | Fleet (Net) | Percent | Fleet (Net) | Percent | Fleet (Net) | Percent | Fleet (Net) | Percent | Fleet (Net) | Percent | Fleet (Net) | Percent | Fleet (Net) | Percent | Fleet (Net) | Percent | Fleet (Net) | Percent | Fleet (Net) | Percent | Fleet (Net) | Percent | Fleet (Net) | Percent | Fleet (Net) | Percent | Fleet (Net) | Percent | Fleet (Net) | Percent | Fleet (Net) | Percent | Fleet (Net) | Percent |
| 40 ft | 335 | 76 | 335 | 76 | 335 | 76 | 350 | 75 | 333 | 67 | 329 | 67 | 319 | 64 | 319 | 64 | 319 | 64 | 319 | 64 | 319 | 64 | 319 | 64 | 319 | 64 | 319 | 64 | 319 | 64 | 319 | 64 | 319 | 64 | 319 | 64 | 319 | 64 |
| 40 ft Express | 20 | 5 | 20 | 5 | 20 | 5 | 40 | 9 | 40 | 8 | 40 | 8 | 40 | 8 | 40 | 8 | 40 | 8 | 40 | 8 | 40 | 8 | 40 | 8 | 40 | 8 | 40 | 8 | 40 | 8 | 40 | 8 | 40 | 8 | 40 | 8 | 40 | 8 |
| Artic | 40 | 9 | 40 | 9 | 40 | 9 | 40 | 9 | 55 | 11 | 55 | 11 | 55 | 11 | 55 | 11 | 55 | 11 | 55 | 11 | 55 | 11 | 55 | 11 | 55 | 11 | 55 | 11 | 55 | 11 | 55 | 11 | 55 | 11 | 55 | 11 | 55 | 11 |
| BRT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 6 | 29 | 6 | 49 | 10 | 49 | 10 | 49 | 10 | 49 | 10 | 49 | 10 | 49 | 10 | 49 | 10 | 49 | 10 | 49 | 10 | 49 | 10 | 49 | 10 | 49 | 10 | 49 | 10 |
| Small Bus | 45 | 10 | 45 | 10 | 45 | 10 | 38 | 8 | 38 | 8 | 38 | 8 | 38 | 8 | 38 | 8 | 38 | 8 | 38 | 8 | 38 | 8 | 38 | 8 | 38 | 8 | 38 | 8 | 38 | 8 | 38 | 8 | 38 | 8 | 38 | 8 | 38 | 8 |
| **Total** | **440** | **100** | **440** | **100** | **440** | **100** | **468** | **100** | **495** | **100** | **491** | **100** | **501** | **100** | **501** | **100** | **501** | **100** | **501** | **100** | **501** | **100** | **501** | **100** | **501** | **100** | **501** | **100** | **501** | **100** | **501** | **100** | **501** | **100** | **501** | **100** | **501** | **100** |

| | FY2012 | | FY2013 | | FY2014 | | FY2015 | | FY2016 | | FY2017 | | FY2018 | | FY2019 | | FY2020 | | FY2021 | | FY2022 | | FY2023 | | FY2024 | | FY2025 | | FY2026 | | FY2027 | | FY2028 | | FY2029 | | FY2030 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Spare ratio by fleet type (assumption: contingency vehicles are all 40-footer) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) | Peak | Spare Ratio (%) |
| 40 ft | 274 | 17 | 282 | 14 | 294 | 11 | 290 | 17 | 280 | 15 | 272 | 17 | 262 | 18 | 262 | 18 | 262 | 18 | 262 | 18 | 262 | 18 | 262 | 18 | 262 | 18 | 262 | 18 | 262 | 18 | 262 | 18 | 262 | 18 | 262 | 18 | 262 | 18 |
| 40 ft Express | 17 | 18 | 17 | 18 | 17 | 18 | 29 | 38 | 28 | 43 | 28 | 43 | 28 | 43 | 28 | 43 | 28 | 43 | 28 | 43 | 28 | 43 | 28 | 43 | 28 | 43 | 28 | 43 | 28 | 43 | 28 | 43 | 28 | 43 | 28 | 43 | 28 | 43 |
| Artic | 34 | 18 | 34 | 18 | 34 | 18 | 34 | 18 | 29 | 90 | 46 | 20 | 46 | 20 | 46 | 20 | 46 | 20 | 46 | 20 | 46 | 20 | 46 | 20 | 46 | 20 | 46 | 20 | 46 | 20 | 46 | 20 | 46 | 20 | 46 | 20 | 46 | 20 |
| BRT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 26 | 23 | 26 | 40 | 23 | 40 | 23 | 40 | 23 | 40 | 23 | 40 | 23 | 40 | 23 | 40 | 23 | 40 | 23 | 40 | 23 | 40 | 23 | 40 | 23 | 40 | 23 | 40 | 23 |
| Small Bus | 30 | 50 | 30 | 50 | 32 | 41 | 31 | 23 | 31 | 23 | 31 | 23 | 31 | 23 | 31 | 23 | 31 | 23 | 31 | 23 | 31 | 23 | 31 | 23 | 31 | 23 | 31 | 23 | 31 | 23 | 31 | 23 | 31 | 23 | 31 | 23 | 31 | 23 |
| **Total** | **355** | **20** | **363** | **17** | **377** | **14** | **384** | **19** | **391** | **24** | **400** | **20** | **407** | **21** | **407** | **21** | **407** | **21** | **407** | **21** | **407** | **21** | **407** | **21** | **407** | **21** | **407** | **21** | **407** | **21** | **407** | **21** | **407** | **21** | **407** | **21** | **407** | **21** |

| | FY2012 | FY2013 | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 | FY2024 | FY2025 | FY2026 | FY2027 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FY Ordering Schedule | Biennial order = 73 | | Biennial order = 153 | | Biennial order = 72 | | Biennial order = 113 | | Biennial order = 70 | | Biennial order = 20 | | Biennial order = 72 | | Biennial order = 153 | |
| 40 ft | 0 | 15 | 44 | 25 | 52 | 0 | 57 | 56 | 0 | 70 | 0 | 0 | 0 | 15 | 44 | 25 |
| 40 ft Express | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 0 | 0 |
| Artic | 0 | 0 | 55 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | 0 |
| BRT | 0 | 0 | 29 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 0 |
| Small Bus | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 0 |
| **Total** | **0** | **73** | **128** | **25** | **72** | **0** | **57** | **56** | **0** | **70** | **20** | **0** | **0** | **72** | **128** | **25** |

## Spare Ratio

The FTA recommended spare ratio is defined as vehicles available for service, but not engaged in service, and it is derived by subtracting the peak vehicle requirement from the total active fleet and dividing the difference by the peak vehicle requirement.

**Spare Ratio = (Total Active Fleet - Peak Vehicle Requirement)/Peak Vehicle Requirement**

The FTA guidance regarding a bus fleet spare ratio states "The number of spare buses in the active fleet (for operators receiving FTA funding that operate 50 or more fixed route vehicles) should not exceed 20 percent of the vehicles operated in peak service."

VTA provides emergency contingency support for a number of agencies and also maintains an inactive fleet for such support as well as for operator training purposes. VTA's current bus spare ratio, as of February 2014, is 19 percent. Figure 5-1 displays more information on VTA's vehicle requirements and spares. The contingency fleet includes vehicles 9755, 9756, 9776, 9778 and 9780.

**Figure 5-1 Bus Spare Ratio By Vehicle Type (February 2014)**

| System | Peak Requirement | Spares | Total | Spare Ratio |
|---|---|---|---|---|
| 35' - 40' Standard | 268 | 41 | 302 | 13% |
| Airport | 4 | 1 | 5 | 25% |
| Artic 60' | 29 | 5 | 34 | 17% |
| Artic BRT | 4 | 2 | 6 | 50% |
| 40' BRT | 12 | 2 | 14 | 17% |
| DASH | 3 | 1 | 4 | 33% |
| Community Bus | 26 | 14 | 40 | 54% |
| Express | 17 | 3 | 20 | 18% |
| **Total Active** | **363** | **69** | **432** | **19%** |
| 40' | ADA Training Special Bus | | 1 | |
| 40' | Emergency Reserve Fleet Assignment | | 5 | |
| ZEB | CARB Demonstration Bus | | 3 | |
| Total Buses in Fleet | | | 443 | |

The Procurement Schedule provides details of equipment by type, year of manufacture and a summary of the active, inactive and total fleet by type.

The projected increase in ridership will be served through a shift in fleet mix to more articulated, express, and BRT buses. The spare ratio is expected to remain at 20% through FY2023.

Expansion of the Chaboya facility is proposed by the Facilities Master Plan and included in VTA's financial plan for FY2017, prior to the start of the Stevens Creek BRT service. This expansion will be to increase the facility's maintenance capacity, particularly for articulated buses.

Figure 5-2 shows the number of buses that will remain in service beyond their federally anticipated service lives. With the exception of Small Buses (any vehicle less than 35' long), buses have an anticipated service life of 12 years. Small cut-away buses are anticipated to provide service for five years. The fleet's weighted average number of years in service beyond anticipated service life is 3 years. This means that VTA extends the life of its vehicles 3 years through maintenance in order to maintain scheduled service and required spare ratios for each service subtype it provides.

**Figure 5-2 Buses Planned For Active Fleet Beyond Standard Retirement**

| Manufacturer | Vehicle Type | Number of Buses | Delivery Year | Planned Retirement | Retirement Extension |
|---|---|---|---|---|---|
| El Dorado 7000 | Small Bus | 20 | 2007 | 2014 | 2 |
| El Dorado 8000 | Small Bus | 25 | 2008 | 2015 | 2 |
| Gillig 9700 | 40' Standard | 17 | 1997 | 2015 | 6 |
| Gillig 9800 | 40' Standard | 47 | 1998 | 2015 | 5 |
| Gillig9950 | 40' Low Floor | 2 | 1999 | 2015 | 4 |
| Gillig 9900 | 40' Standard | 12 | 1999 | 2015 | 4 |
| Gillig 1000 | 40' Low Floor | 52 | 2001 | 2016 | 3 |
| Gillig 2100 | 35' Low Floor | 22 | 2002 | 2016 | 2 |
| Flyer 2300 | Articulated Low Floor | 40 | 2002 | 2017 | 3 |
| Gillig 2000 | 40' Low Floor | 59 | 2002 | 2017 | 3 |
| Gillig 2200 | 40' Low Floor | 56 | 2002 | 2017 | 3 |
| **Weighted Average Years Beyond Anticipated Service Life:** | | | | | **3** |

## Maintenance and Overhaul Program

VTA's Maintenance Plan provides consistent, systematic and integrated program guidance to properly maintain and service the vehicles, equipment, and facilities supporting revenue operations. The Maintenance Plan details the approach to supporting this mission. Policies for maintenance reflect:

- Standardized procedures, training, and practices for vehicle maintenance, equipment and facilities.
- Maintenance procedures and work performed in compliance with all applicable regulatory requirements.

The VTA Maintenance Plan is a "living document," updated on a periodic basis to reflect changes in equipment, personnel, system requirements and improvements. Maintenance requirements correspond with fleet size and age. Bus maintenance includes the following:

- **Daily Servicing**: Servicing of the bus after it is returned from service at the end of each day: includes fueling, cleaning, vandalism repair, and analyzing the operator defect cards.
- **Preventive Maintenance**: Regular maintenance performed at prescheduled cycles, as specified by the manufacturer, to ensure optimal performance, efficiency, safety and reliability of equipment.
- **Running Repair/Corrective Maintenance**: Repair items identified by operators during the daily operation of a bus. These repairs are completed without removing or withholding a vehicle from normal service and may be done either the day reported or scheduled when parts are available.
- **Scheduled Component Change-out**: A component change-out program based on manufacturer's recommendations, failure history, and failure analysis.
- **Overhaul and Repair (O&R) Program**: A centralized maintenance program that includes paint and body repair, upholstery, farebox repair, component overhaul and the heavy repair/rebuild of engines and other components.

### Fleet Maintenance

VTA buses are maintained at VTA's Chaboya, North, and Cerone bus operating divisions. The Cerone Overhaul and Repair division provides heavy repair, component rebuild, electronics shop, upholstery and additional maintenance services.

Bus Maintenance includes the daily management of bus maintenance, including timely and reliable maintenance, preventive maintenance, inspections and servicing of transit buses and service equipment.

VTA evaluates bus maintenance efficiency and implements corrective action when required. Transit buses are maintained in a manner suitable to the needs of the public in a cost-effective manner. All preventive maintenance and corrective maintenance report data is entered into the Maintenance Management Information System/SAP/Fleet Information System.

**Figure 6-1 Bus Preventive Maintenance Cycles**

| PM Type | Inspection | Cycle (Every) | Within |
|---|---|---|---|
| Minor/safety | "A" | 2,000 miles | + 500 miles |
| Intermediate | "B" | 6,000 miles | -1000/+500 miles |
| Intermediate | "C" | 12,000 miles | -1000/+500 miles |
| Major | "D" | 24,000 miles | -1000/+500 miles |
| Special Service | Winter | Seasonal | |
| Special Service | Summer | Seasonal | |

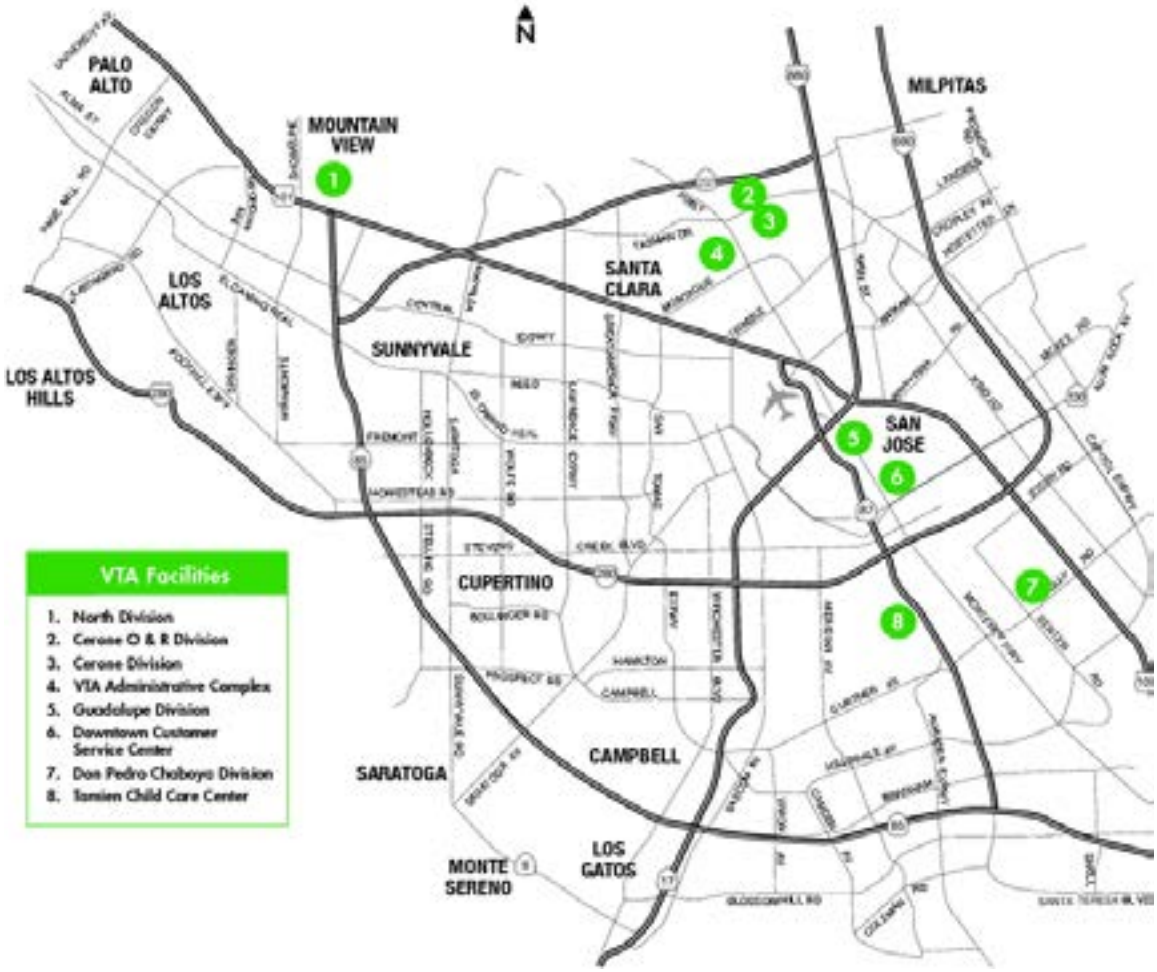
**Running Repair/Corrective Maintenance**: Bus Maintenance has established a program to repair items identified by operators during the daily operation of a bus. These repairs may be completed with minimal impact to normal service and may be done either the day reported or scheduled when parts are available. The Roadcall maintenance unit is an integral part of the Running Repair Program. Maintenance repairs or actions for roadcalls are checked to ensure that proper corrections are made.

**Repairs**: Bus Maintenance has an efficient and effective program to repair buses and return them to revenue service. The program takes into account parts, personnel, equipment and facility availability when scheduling buses for repairs. Where possible, inoperable passenger lifts or ramps are repaired the day of notification that the unit is not operational. Otherwise, following ADA requirements, the vehicle is exchanged during the day if possible, or taken out of service before the beginning of the vehicle's next service day and VTA ensures the lift or ramp is repaired before the vehicle is returned to service.

**Scheduled Component Change-out**: Component change-out programs have been established based on manufacturers' recommendations, failure history, and failure analyses. Designated components are tracked and monitored to ensure that the program is efficient and cost effective. This program allows for the preparation of complete standardized kits with standardized replacement practices to improve efficiency.

**Overhaul And Repair (O&R) Program**: The O&R program is centralized at Cerone Division, separate from minor maintenance and running repair, to ensure efficient and effective specialized service that includes paint and body repair, upholstery, farebox and electronic repair, component overhaul, and the heavy repair/rebuild of engines, transmissions and other components.

**Figure 6-2 Map Of VTA Facilities**




## Facilities

Buses are operated and maintained from the following three operating divisions and an Overhaul and Repair (O&R) facility:

### Cerone Bus Operating Division And O&R Facility (North San José)

VTA's Cerone facility includes the Cerone Bus Operating Division (Transportation and Minor Maintenance), the Overhaul &Repair Division and the Distribution Center. The Cerone facility occupies 57.5 acres. VTA also owns additional property to the south of the Cerone facility.

Cerone Minor Maintenance currently serves as a base for operations, fueling (diesel only), servicing, detailing, running repair, and preventive maintenance for at least 135 coaches. The O&R facility provides a centralized major maintenance program for the entire VTA bus fleet, including paint and body repair, upholstery, farebox repair, transmission and small component rebuild, engine overhaul, and the heavy repair and maintenance associated with major component removal.

The Distribution Center is responsible for the distribution of parts to support all bus operating divisions.

This division is also responsible for VTA's fleet of inactive buses that currently totals 11. Currently, 134 active buses are assigned to the Cerone Division.

**Don Pedro Chaboya Bus Operating Division (South San José)**

Chaboya is VTA's largest-capacity bus operations and maintenance facility, able to maintain at least 150 buses. The facility occupies approximately 18.9 acres and includes a maintenance shop, fueling facility, two bus washers, transit operations, bus operator training, and a Maintenance Training and facility maintenance building. There is also steam cleaning equipment and a water treatment plant to treat wastewater from steam cleaning operations. The division is equipped with a fueling facility for both diesel and gasoline vehicles.

According to VTA's 2010 Fleet Management Plan, Chaboya is capable of storing a larger number of buses than currently assigned to the Division. To accommodate additional vehicles, the facility would need to be designed more efficiently. Currently, Chaboya's maintenance building capacity limits the number of buses that can be stationed at the facility. To effectively and efficiently utilize the site, a major redesign and rebuilding of the Division's facilities and the layout of its functional areas is necessary. Minor improvements to its storage capacity and efficiency are possible without a major redesign.

The facility is proposed to be modified to handle 60' articulated buses in the future in conjunction with the planned BRT projects.

Currently, 184 buses are assigned to the Chaboya Division.

**North Bus Operating Division (Mountain View)**

The North Division is the smallest of VTA's operating facilities at 16.9 acres. It currently serves as a base for operations, fueling, servicing, detailing, running repair, and preventive maintenance. North Division has a capacity to maintain at least 210 buses, including 40 New Flyer 60-foot articulated buses. The division is equipped with a fueling facility for diesel, bio-diesel, and gasoline vehicles.

Currently, 114 buses are assigned to the North Division.

The type and number of buses assigned to each facility is shown in Table 6-3.

**Figure 6-3 Bus Assignment Summary (February 2014)**

| FIS Code | Bus Type | #-Series | Year of Mfg. | Cerone | Chaboya | North | Total Active | Inactive Fleet | Total Fleet |
|---|---|---|---|---|---|---|---|---|---|
| 9700 | Gillig 97 | 9701-9786 | 1997 | 5 | | 7 | 12 | 6 | 18 |
| 9800 | Gillig 98 | 9801-9847 | 1998 | 20 | 25 | | 45 | 1 | 46 |
| 9900 | Gillig 99 | 9901-9912 | 1999 | 12 | | | 12 | | 12 |
| 9950 | Gillig 99 LF | 9952-9953 | 1999 | | | 2 | 2 | | 2 |
| 1000 | Gillig 10 LF | 1001-1015 & 1030-1052 | 2001 | | 26 | 12 | 38 | | 38 |
| 1000 | Gillig 10 BRT | 1016-1029 | 2001 | | | 14 | 14 | | 14 |
| 2000 | Gillig 20 LF | 2011-2024 & 2027-2071 | 2002 | 22 | 25 | 10 | 57 | | 57 |
| 2100 | Gillig 21 LF 35’ | 2102-2123 | 2002 | 9 | 13 | | 22 | | 22 |
| 2200 | Gillig 22 LF | 2201-2256 | 2002 | 28 | 28 | | 56 | | 56 |
| 2300 | NF Artic LF | 2301-2307 & 2314-2340 | 2002 | | | 33 | 33 | | 33 |
| 2300 | NF Artic BRT | 2308-2317 | 2002 | | | 7 | 7 | | 7 |
| 4000 | Gillig LF ZEB | 4001-4003 | 2004 | | | | | 3 | 3 |
| 7000 | CB 07 | 7001-7017 | 2007 | | 16 | | 16 | 1 | 17 |
| 7000 | CB 07 DASH | 7018-7020 | 2007 | | 3 | | 3 | | 3 |
| 8000 | CB 08 | 8002-8025 | 2008 | | 12 | 12 | 24 | | 24 |
| 8000 | CB 08 DASH | 8001 | 2008 | | 1 | | 1 | | 1 |
| 2010 | Gillig HYB | 130-194 | 2010 | 13 | 35 | 17 | 65 | | 65 |
| 2010 | Gillig HYB APF | 195-199 | 2010 | 5 | | | 5 | | 5 |
| 2012 | Gillig HYB EXP | 201-220 | 2011 | 20 | | | 20 | | 20 |
| | | | **Total** | **134** | **184** | **114** | **432** | **11** | **443** |


# RAIL FLEET MANAGEMENT PLAN

APPENDIX C TO THE SHORT RANGE TRANSIT PLAN

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY

FY2014 - 2023

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# RAIL FLEET MANAGEMENT PLAN

## Executive Summary

This Rail Fleet Management Plan (RFMP) describes and documents vehicle demand on a year-by-year basis for the FY 2013-2023 time frame. It reflects current plans for changes to the Santa Clara Valley Transportation Authority (VTA) rail system. The Fleet Management Plan is prepared in accordance with Federal Transit Administration (FTA) guidance for capital program assistance (49 U.S.C. § 5309) and will accompany any grant application VTA may submit to obtain federal assistance for fleet and service needs.

This Fleet Management Plan is a dynamic document that will be revised and updated as VTA's plans and timelines for those plans change. The Plan is prepared with the goal of meeting vehicle requirements as dictated by the service plan, future planned fleet expansion, rehabilitation program to meet fleet demand; and accommodating future fleet size and composition changes with operating and maintenance facilities.

It includes analysis of existing facilities and fleet, light rail performance indicators, and future fleet plan assumptions and inputs. The most significant changes in rail system needs under this plan will be the implementation of the following:

- Northern Light Rail Express service will be a new line directly connecting the Mountain View Station with the Alum Rock Station. This service will connect with the Silicon Valley BART extension in Milpitas in 2017/2018.
- Southern Light Rail Express service that will operate as an all-day service. The Almaden Spur would then be through-routed to Mountain View, and the Vasonalne will operate separately with a new downtown turnback.
- North First Street Speed Improvements to possibly include fencing, gates, signaling, and other improvements to increase light rail operating speed along North First Street.
- Successful service to the new Levi's Stadium, located adjacent to the Great America Light Rail Station and scheduled to open in August 2014.

## System Overview

VTA is an independent special district responsible for bus, light rail, and paratransit operations; congestion management; specific highway improvement projects; and countywide transportation planning. As such, VTA is both an accessible transit provider and multi-modal transportation planning organization involved with transit, highways and roadways, bikeways, and pedestrian facilities. VTA provides services to cities and towns throughout the county, including Campbell, Cupertino, Gilroy, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga and Sunnyvale.

VTA's entire bus and light rail system is accessible for persons with disabilities. Additionally, in accordance with the Americans with Disabilities Act (ADA), VTA provides a complementary paratransit service throughout its service area for persons with disabilities who are unable to independently use VTA's fixed-route service as a result of their disabilities. VTA provides this service through a paratransit brokerage contract with Outreach and Escort, Inc., a San Jose based non-profit social service agency.

VTA currently has 99 fully accessible light rail vehicles (LRVs). Peak pull out is 57 vehicles and 29 trains. Given peak pullout requirements and a74 percent spare ratio, VTA has sufficient light rail vehicles to accommodate planned light rail system service expansion, summarized in Figure 1-1.

**Figure 1-1 Projected Light Rail Fleet**

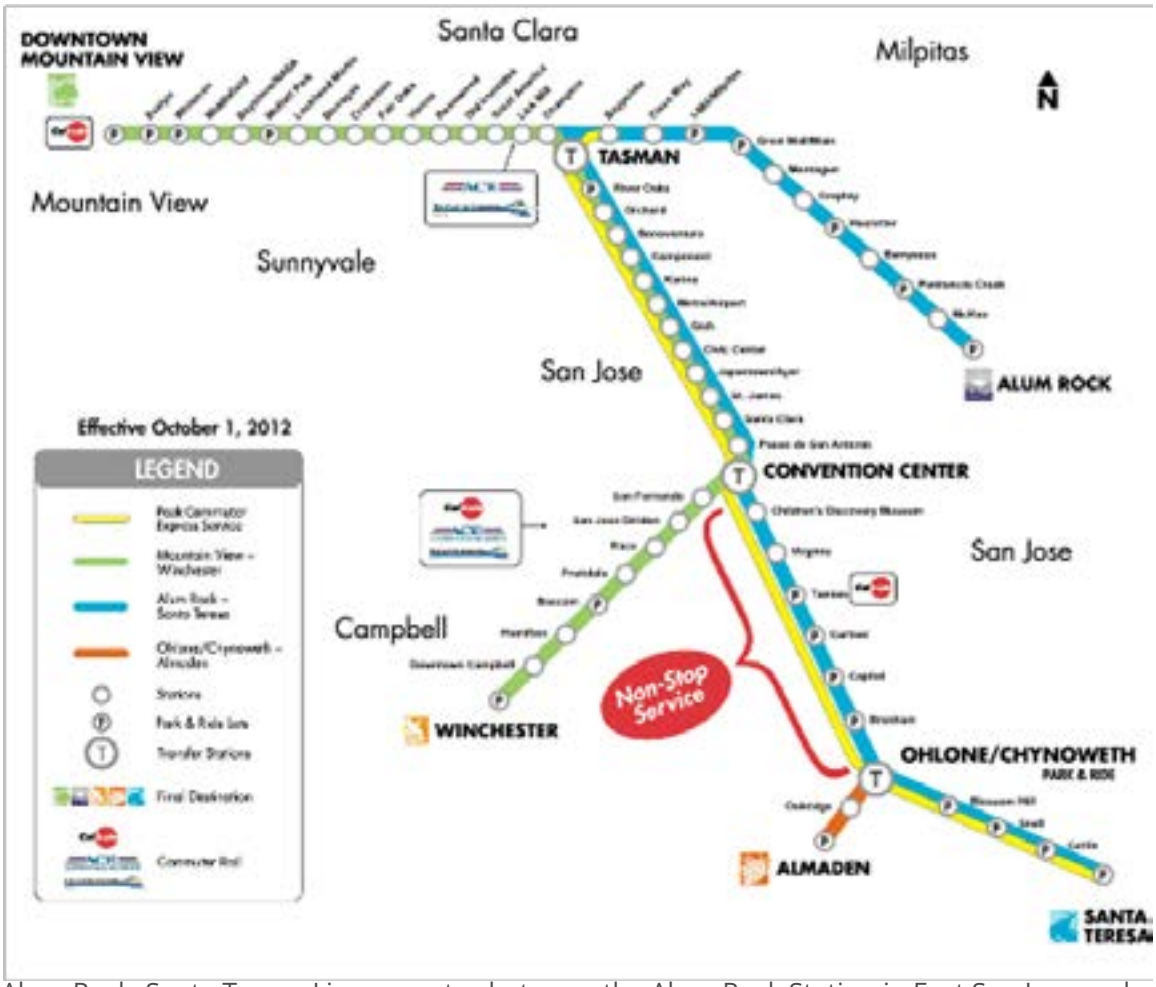
| | FY2014 | FY2017 | FY2018 | FY2023 |
|---|---|---|---|---|
| Total Fleet | 99 | 99 | 99 | 99 |
| Total Peak Car Pullouts | 57 | 60 | 76 | 82 |
| Total Peak Train Pullouts | 29 | 30 | 38 | 38 |
| Spare Ratio | 74% | 65% | 30% | 20% |

Key performance indicators are used within this document to assess the efficiency and effectiveness of VTA's light rail system. Projections, when suitable, are made to assess the future state of VTA as it relates to the RFMP. Maintenance and other operational indicators, including past performance and future goals, for all years is covered by this document.

### Light Rail Service

VTA operates 42.2 miles of light rail service and serves 62 stations. Light rail service is provided along three routes (Figure 1-2):

**Figure 1-2 Light Rail System Map**




Alum Rock–Santa Teresa Line operates between the Alum Rock Station in East San Jose and the Santa Teresa Station in South San Jose. It is 26.6 miles long, serving 38 stations.

The Alum Rock-Santa Teresa line operates approximately 22 hours a day on weekdays and approximately 21 hours on weekends. Weekday service operates on a 15-minute headway from 5:00 a.m. to 7:30 p.m., and 30- to 60-minute headways during early morning and late evening periods. Weekend and holiday service operates on a 15-minute headway during most of the day except in the early mornings and late evenings when headways are 30 to 60 minutes.

Mountain View–Winchester Line operates between the downtown Mountain View multi-modal station and Winchester Station in Campbell. It is 22.3 miles long, serving 38 stations, including the segment jointly served by the Alum Rock-Santa Teresa and Mountain View-Winchester Lines from the Convention Center Station in downtown San Jose to Tasman Station in North San Jose.

The Mountain View-Winchester Line operates approximately 20 hours a day on weekdays and 18 hours on weekends. Weekday service operates on a 15-minute headway from 5:00 a.m. to 10:00 a.m. and 3:00 to 8:30 p.m. and 30-minute service during the midday and late evenings. Weekend and holiday service operates on a 30-minute headway throughout the day.

Ohlone/Chynoweth–Almaden Shuttle operates between the Ohlone/Chynoweth Station and Almaden Station in Almaden Valley, South San Jose. This line is slightly over one mile in length serving 3 stations. It provides service for approximately 16 hours a day on weekdays with a 15-minute headway. On weekends it provides service for 14 hours a day, also on 15-minute headways.

From the San Jose Convention Center to Tasman Station, peak-hour light-rail frequency is 7.5 minutes because two lines (Alum Rock–Santa Teresa and Mountain View-Winchester) operate on this section together.

Figures 1-3, 1-4, and 1-5 depict Light Rail system information as of January 2014.

**Figure 1-3: Light Rail Facilities,Transit Way Mileages, Vehicles, & Parking**

| | Alum Rock – Santa Teresa | Mountain View – Winchester | Total Unique Stations |
|---|---|---|---|
| Total Number of Stations | 38 | 38 | 62 |
| Length of Line | 26.6 miles | 22.3 miles | 42.2 miles |
| Track Miles | 52.0 miles | 34.5 miles | 79.6 miles |

- Light Rail Fleet: 99 vehicles
- Historic Trolley Fleet: 4 vehicles
- Parking Lots at Light Rail Stations: 21 parking lots (6,471 spaces)
- Caltrain Parking Lots near Light Rail Stations: 4 parking lots (1,337 spaces)

**Figure 1-4: VTA Light Rail Service Hours And Frequencies**

| | Alum Rock – Santa Teresa | Mountain View-Winchester |
|---|---|---|
| Hours of Operation | 4:30 am to 1:30 am | 5:00 am to midnight |
| Service Frequencies | | |
| Commute Hours | Every 15 minutes | Every 15 minutes |
| Midday | Every 15 minutes | Every 30 minutes |
| Nighttime | Every 30 minutes | Every 30 minutes |
| Saturday & Sunday | Every 15 minutes | Every 30 minutes |

**Figure 1-5: VTA Light Rail Fares**

| Fare Category | Single Ride | Day Pass | Monthly Pass |
|---|---|---|---|
| Senior/Disabled | $1.00 | $2.50 | $25.00 |
| Youth | $1.75 | $5.00 | $45.00 |
| Adult | $2.00 | $6.00 | $70.00 |

### Commuter Express Service

On October 4, 2010, VTA introduced a new express line, the Commuter Express. This service operates in addition to the previously identified service headways during peak morning and evening commute hours.

The Commuter Express service offers customers a faster, more frequent light rail service that runs between the Santa Teresa and Baypointe light rail stations. Three northbound express trains are operated during the morning peak period and three southbound trains during the afternoon peak period. The trains make all stops between Santa Teresa and Ohlone/Chynoweth stations, then continue non-stop to Convention Center, and then resume making all regular stops until Baypointe station in North San Jose.

The express trips are estimated to shave five to six minutes off the travel time between the Ohlone/Chynoweth and Convention Center stations. This translates to a 36% travel time savings for riders traveling between those two stations and a 12% travel time savings for riders traveling the entirety of the express route from Santa Teresa to Baypointe.


VTA conducted a customer survey during this period, which was designed to gauge overall satisfaction and determine factors influencing riders to utilize the Commuter Express service. The results of the survey showed that 97 percent of riders were somewhat/very satisfied and 73 percent were very satisfied with the new service. Additionally, 16 percent of respondents indicated that they were new riders, and 69 percent of the new riders reported riding four to five days a week.

## Light Rail Fleet

VTA operates a fleet of 99 low-floor LRVs on the Alum Rock-Santa Teresa, Mountain View-Winchester, and Ohlone/Chynoweth-Almaden Lines. The vehicles, built by Kinkisharyo Intl., LLC were commissioned in 2002 and 2003. These vehicles have a life of 30 years. The LRV cars are electrically powered by 750 volts of direct current. They are bi-directional, articulated, six-axle vehicles.

The maximum operating capacity of each LRV is 150 passengers. Up to three vehicles can be coupled together. Each vehicle seats 66 passengers. The vehicles can accommodate up to 4 wheelchairs and 4 bicycles on a built-in rack, plus 4 bicycles standing.

With 99 LRVs, the VTA fleet is large in comparison to the number of cars required for maximum service. Of this total fleet number, 95 of the vehicles perform standard revenue service assignments.The remaining 4 vehicles are specially wrapped for commuter express service assignments in the morning and evening rush hours. While on any given day, some cars are being held in the shop for preventive maintenance (PM) work, and some may be held for parts, the entire fleet is used for purposes of revenue service. The revenue service mileage, therefore, is spread over a large number of cars.

VTA must maintain the entire fleet. PM intervals at VTA are mileage based, suggesting that the average LRV in revenue service might be inspected fairly infrequently. However, VTA's maintenance performance results are good. The light rail 12-month rolling MDBF, or "Mean Distance Between in-service Failures," for the 12-month period ending in February 2014 was 46,849 miles.

**Historic Trolley Fleet**

VTA operates historic trolley service during the winter holiday season (November through December) as resources permit. Four trolley cars are owned by and were restored through the efforts of the California Trolley and Railroad Corporation (a nonprofit organization). They have been modified to run on VTA's light rail system.The trolley cars are maintained at VTA's Guadalupe Light Rail Maintenance Facility. When in service, the cars run on light-rail tracks serving a 4.1-mile route through downtown San Jose.

Volunteers at the Trolley Barn have restored seven vintage cars. VTA maintains the following four trolleys:

- Car 1 ran in Sacramento from 1903 to 1906 and in Santa Cruz from 1906 to 1923
- Car 73 ran in San Jose between 1912 and 1934
- Car 531 is from Melbourne, Australia
- Car 2001 is from Milan, Italy

**Light Rail Vehicle Characteristics**

Light Rail systems in North America deploy a variety of electric catenary vehicles for service, with varying lengths, looks, and configurations. For light rail services operated by VTA, a standard 88.5-foot boxy articulated vehicle is deployed. The vehicles may be joined with up to two additional cars to form a three-car train consist.

All VTA light rail vehicles are low-floor and have four sets of doors on each side for both alighting and boarding. Fare is on a proof-of-purchase basis and no cash is exchanged on the vehicles. Typical light rail vehicle characteristics are shown in Figure 2-1 below.

**Figure 2-1. Typical LRT Vehicle Characteristics**

| Aspect | Recommended Characteristics |
|---|---|
| Vehicle Type | Bi-directional, articulated vehicles |
| Vehicle Length | Standard (88.5') |
| Floor Height | Low floor (14" above top of rail) |
| Seating Capacity | 66 (single car consist) |
| Seating + Standing Capacity | 150 |
| Train Consist | Up to three cars |
| Boarding/Alighting | Doors used for boarding and alighting |
| Propulsion System | Overhead catenary (750 volts DC) |
| Branding | Matches standard VTA branding |
| Bicycle Racks | Vehicles accommodate bicycles inside the cars. Bike racks are in the articulated section of the car and there is room for hand-carried bicycles. Compliance with VTA Bicycle Policy required. |


## Light Rail Operating And Maintenance Facility

LRVs are stored and maintained at the Guadalupe Light Rail Maintenance Facility near downtown San Jose. This facility is equipped and staffed to perform all operations and maintenance functions, including major vehicle overhaul, historic trolley maintenance, and light rail operator and maintenance training.

The same facility is also home to the Way, Power and Signal Department, which is responsible for preventive maintenance and repair of wayside facilities, including substations and overhead contact systems, light rail signals, tracks, stations, and park & ride lots.

VTA's Operations Control Center (OCC) is also located at this facility. The OCC is responsible for communication with all VTA revenue vehicles, including LRVs and buses, and response to emergencies.

The Guadalupe Maintenance Facility has been modified and expanded to store and maintain 100 LRVs. In July 2001, the facility was modified and expanded to provide space for the maintenance of the new low-floor vehicles, additional areas for employees, and material storage for the maintenance of additional trackway.

**Light Rail Vehicle Maintenance**

The LRV Maintenance unit provides timely and reliable maintenance, preventive maintenance, inspections, repair and servicing of light rail vehicles and service equipment. Components of the LRV Maintenance Program are as follows:

Daily Inspection: After an LRV is returned from service at the end of each day, the following actions take place and work orders are written, if applicable:

- Interior Inspection/Walk-through
- Operator Defect Card Analyzed
- Visual Inspection of Undercarriage
- Interior/Exterior Cleaning
- Seat and Window Cleaning
- Graffiti Removal/Vandalism Repair

Preventive Maintenance: Regular maintenance is performed at prescheduled cycles using a direct scheduling method based on mileage to ensure optimal performance, efficiency, safety, and reliability of assigned equipment to assist in providing improved services to transit customers. The direct scheduling method ensures that each LRV receives the correct number of preventive maintenance inspections, as specified by the manufacturer. Preventive maintenance cycles are as follows:

**Figure 3-1. Light Rail Preventative Maintenance Cycles**

| PM Type | Inspection | Cycle (Every) | Within |
|---|---|---|---|
| Daily/Safety | Daily | Daily | |
| Minor | "A" | 10,000 miles | -500/+1000 miles |
| Major | "B" | 30,000 miles | -500/+1000 miles |
| Major | "C" | 60,000 miles | -500/+1000 miles |
| Major | "D" | 120,000 miles | -500/+1000 miles |
| Major | "E" | 240,000 miles | -500/+1000 miles |

Running Repair/Corrective Maintenance: LRV Maintenance repairs items identified by operators during the daily operation of an LRV. The program completes these repairs without removing or withholding a vehicle from normal service. This happens either the day the operator reports a problem or as scheduled when parts are available. LRVs with running repair defects are routed to have the defects repaired or repairs scheduled.

Light Rail Vehicle Overhaul Program: The normal service life of VTA's LRV fleet is about 30 years. To achieve this efficiency, the manufacturer, Kinkisharyo, has recommended scheduled overhauls in accordance with manufacturer and vendor specifications. VTA has established a 3-phased maintenance overhaul program involving major components of the LRV fleet. A brief description of each phase follows:

- ***Overhaul I*** - Rebuild and overhaul air compressor and systems, and subcomponents consisting of mag valves, test fittings, pressure switches, sand valves, indicator switches, isolation valves, drain valves, uncoupling valves, couplers, and pantograph collectors (120,000 miles or two years).
- ***Overhaul II*** - Rebuild and overhaul major components including: gearbox, traction motor, pantographs, coupler assembly, trucks and sub-assemblies, and axle bearing assembly (240,000 miles or four years).
- ***Overhaul III*** - Rebuild and overhaul the air conditioning system, car body repainting and furnishings, and potential replacement of major electronic components, roof resistors, and PC boards (as needed, approx. every 7 to 10 years).

**Way, Power & Signal Maintenance**

Way, Power & Signal Maintenance is responsible for the timely and reliable maintenance, preventive maintenance, inspections, repair and servicing of the light rail right-of-way, rail system power, tracks, signals, station facilities and related equipment. Preventive maintenance is primarily time-driven in accordance with system-specific functions. Components of the Way, Power & Signal unit are described as follows:

Station and Wayside Maintenance: Station and Wayside Maintenance is responsible for the maintenance and repair of light rail stations, terminal buildings, restrooms, park & ride lots, landscaping, fences, guardrails, station graffiti removal, and other trackside areas.

Track Maintenance: Track Maintenance is responsible for the maintenance (including right-of-way weed eradication, vegetation control, and graffiti removal), preventive maintenance, inspections, and servicing and repair of rail, switches, ties, trackway roadbed and track systems.

Power Maintenance: Power Maintenance is responsible for maintenance (including trackside right-of-way tree trimming); preventive maintenance; inspections; and repair and servicing of light rail electric power systems including overhead, substations, lighting, and other electrical systems.

Signal Maintenance: Signal Maintenance is responsible for the maintenance; preventive maintenance; inspections; repair; and servicing of signal systems, crossing gates, fare machines, SCADA (Supervisory Control and Data Acquisition) control, and station audio/video equipment.

Passenger Facilities Maintenance: Passenger Facilities Maintenance is responsible for the timely and reliable maintenance, preventive maintenance, inspections, repair, and servicing of all VTA-maintained passenger facilities, including bus stops. VTA has approximately 3,805 bus stops and 23 transit centers throughout the Santa Clara Valley. Bus stops and transit centers are inspected and serviced by VTA Passenger Facilities staff either daily, twice a week, once a week, or as needed depending on ridership and other factors. Services include, but are not limited to the following: bench installation, painting, repair, core drilling for poles at new bus stops, garbage collection, trash receptacle installation and relocation, graffiti abatement, litter removal, pressure washing, red curb painting, signage inspection, route updates, and sweeping services. Janitorial services for transit centers are provided daily through a Facilities Maintenance service contract with a vendor.

## Service Planning

The Transit Sustainability Policy (TSP) and its accompanying Service Design Guidelines (SDG) were adopted by the VTA Board of Directors in February 2007 to further refine and strengthen the service review process. The TSP provides a policy framework for the efficient and effective use of funds to achieve the highest return on transit investments. Its procedures guide the implementation of new transit services, and evaluation and improvement of existing services.

### Goals

- Improve system ridership, productivity, and efficiency
- Improve farebox recovery
- Improve VTA's role as a viable alternative mode of transportation
- Use transit investments and resources more effectively

### Core Principles

- Develop a financially sustainable transit system
- Match capital investment with quantifiable service needs and local participation and commitments
- Improve customer focus
- Target markets where transit can compete
- Improve system integration and efficiency

### Service Design Guidelines

The Service Design Guidelines provide specific standards for each type of VTA service. For Light Rail, three performance measures have been developed to ensure that Light Rail routes and stations contribute to the productivity and efficiency of the service. These measures include:

Boardings per Revenue Vehicle Hour measures the number of boardings during a given revenue hour of vehicle service. It has served as VTA's long-established evaluation criteria to assess productivity of transit services. This indicator shows how well service is utilized given the hours of service provided. It also indicates whether the transit capacity offered is appropriate, and how well capital and operating resources are deployed to provide service.

Boardings per Station measures the number of daily boardings at a given light rail station and gauges how well a station is being utilized. This is important, given operating and maintenance costs associated with keeping a station operational. An under-used station impacts light rail operating performance, as well as farebox recovery and cost efficiency. This is especially true for larger light rail stations designed to handle high passenger and transfer volumes. Highly utilized stations can be considered for additional station amenities. Existing light rail service is evaluated by this standard only.

Boardings per Route Mile compares the number of daily boardings to the total length of a light rail route or the entire light rail network. This standard shows whether a route is effectively designed given its length. Furthermore, it can be used to identify route segments with higher demand, which allows the operator to best tailor service and capacity to serve this ridership.

Figure 4-1 shows performance indicators that are used to measure the use and effectiveness of VTA Light Rail services. This information is presented to the VTA Board of Directors in the Annual Transit Service Plan and in the Quarterly Transit Operations Performance Report.

**Figure 4-1 Light Rail Performance Indicators**

| | FY 2011 | FY 2012 | FY2013 | FY 2013 Goal | FY2013 Met Goal? |
|---|---|---|---|---|---|
| Total Annual Boardings | 10,014,504 | 10,373,042 | 10,742,292 | 10,210,000 | Yes |
| Average Weekday Boardings | 31,871 | 32,716 | 34,242 | 32,500 | Yes |
| Boardings per Revenue Hour | 75.6 | 75.4 | 78.3 | 74 | Yes |
| Percent of Scheduled Service Operated | 99.98% | 99.97% | 99.98% | 99.90% | Yes |
| Miles Between Major Mechanical Schedule Loss | 39,821 | 32,489 | 40,723 | 40,000 | Yes |
| Miles Between Chargeable Accidents | 243,349 | 441,847 | 366,503 | 2,210,000 | No |
| On-time Performance | 87.70% | 89.40% | 88.50% | 95.00% | No |

### Transit Service Plan

The Transit Service Plan (TSP) assesses service performance against established criteria set forward in VTA's Service Design Guidelines in accordance with VTA's Transit Sustainability Policy. The mandated TSP review of transit services includes an evaluation of existing services compared to adopted performance standards, review of potential new services, assessment of opportunities for service refinement and resource reallocation, route-specific service changes, and recommendations for further analysis and study. The plan includes an extensive marketing and community outreach effort.

### Transit Operations Performance Report

The quarterly Transit Operations Performance Report provides the VTA Board a regular report card on the performance of every line in the VTA transit system. Based on these performance updates, passenger and operator input, detailed ridership data, and other information, the Annual Transit Service Plan proposes modifications to the bus and rail service through measures such as increases or decreases in service hours or frequency, changes in routing or service span, and increased marketing.

### Service Changes

VTA implements service changes on a quarterly basis in January, April, July and October. Proposed "major" service changes must be submitted to the VTA Board of Directors for review and approval. For Title VI purposes, all "major" service changes will require a Service Equity Analysis.

The following modifications shall be considered "major" service changes:

- The establishment of a new transit line or service;
- The elimination of a transit line or service;
- A 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;
- A 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; and

- A system-wide change concurrently affecting 5 percent or more of the total system revenue hours.

The following types of modifications are not classified as “major” service changes and shall not require Service Equity Analyses:

- Special event service;
- Routing changes due to construction or other road closures; and
- Special service operated during emergencies;

Service change proposals that do not meet the criteria for “major” service changes are still subject to an appropriate level of public review and comment.

**Title VI**

Title VI (codified at 42 U.S.C. §2000 et seq.) was enacted as part of the landmark Civil Rights Act of 1964. It prohibits discrimination on the basis of race, color, and national origin in programs and activities receiving federal financial assistance.

To comply with Federal Transit Administration’s (FTA) Title VI Circular 4702.1B and Environmental Justice Circular 4703.1 requirements, VTA has created and adopted Major Service Change, Disparate Impact, and Disproportionate Burden Policies. These policies are used during the planning process to evaluate the impact of major service and fare changes on minority and low-income passengers.

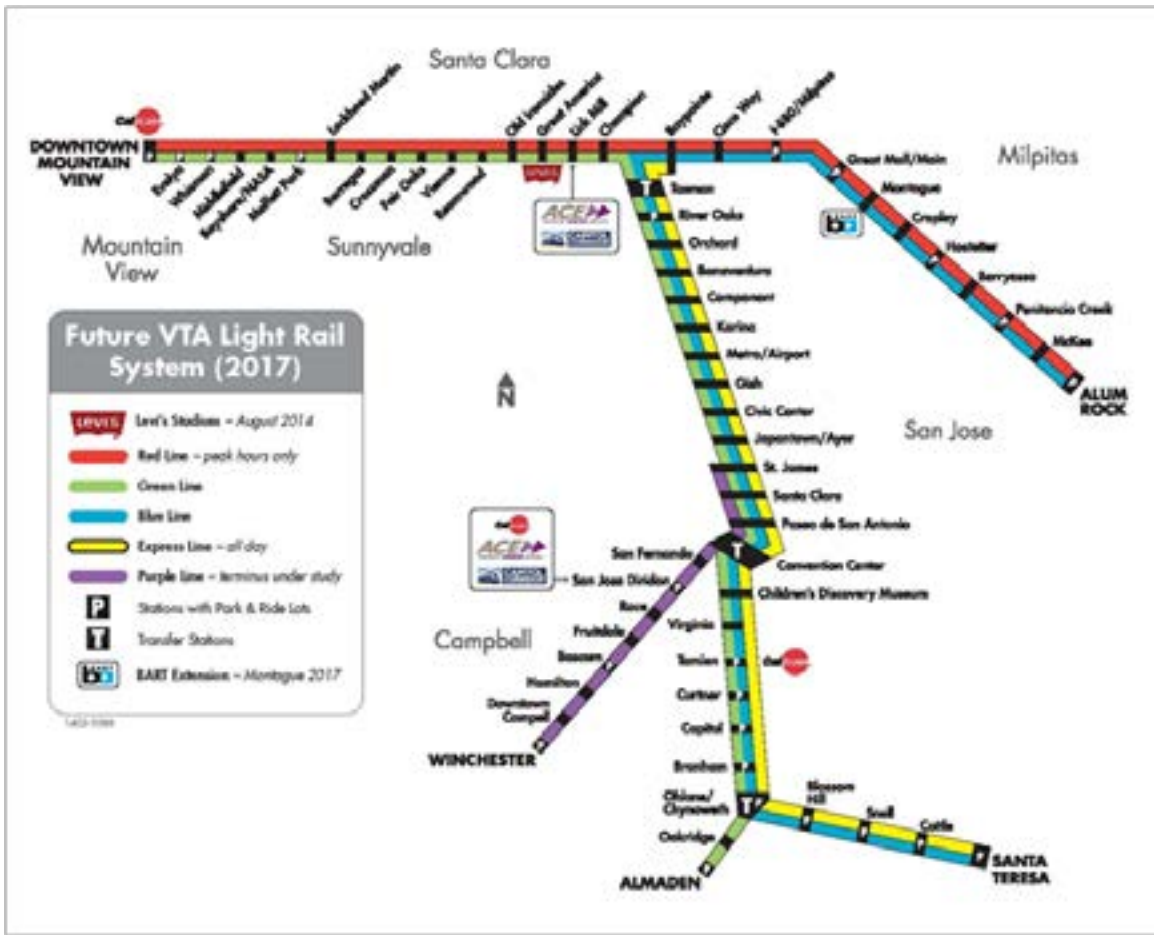
In conformance with Title VI regulations, VTA has also adopted system-wide service standards and policies to measure system performance and ensure that transit services are being provided in a fair and equitable manner.

**Light Rail Transit System Analysis**

The Light Rail Transit System Analysis study was designed to provide the first comprehensive evaluation of the infrastructure and operational flexibility of the existing light rail lines as a system, and evaluate the operational impacts created by population and employment growth along with planned light rail and BART extensions. This study focuses on making the LRT system as productive and efficient as possible given existing and potential travel markets, and positioning the system to capture projected and latent passenger growth to the year 2035.

The study recommends a two phase plan.

- **Phase I** has been partly implemented with the introduction of the Commuter Express service between Ohlone/Chynoweth and Convention Center. The completion of Phase I would expand this to an all-day service. Phase I also identifies a new independent Vasona branch service, operating between Campbell and Downtown San Jose. Almaden trains would then be through-routed to Mountain View.
- **Phase II** proposes service options to complement the introduction of BART service to East San Jose in 2017 (a planning assumption). This Phase of the Light Rail Systems Analysis calls for an additional service, the Northern Light Rail Express, that would travel from Downtown Mountain View to Alum Rock at 15-minute headways during peak periods, with express service from Downtown Mountain View to Old Ironsides and an intermediate stop at Lockheed Martin. It would make all stops between Old Ironsides and Alum Rock. During the off-peak period, the service is planned to turn back at Old Ironsides.



Implementing this entire set of improvements would require a 76-car peak deployment. This package would utilize the Santa Clara pocket track to turn back trains during off-peak periods, as well as the construction of a double track along the Mountain View single-track segment to accommodate additional services. The estimated capital cost for the Mountain View double track is $63 million, while projections place ridership at 64,500 boardings on an average weekday in 2018.

Phase II is oriented towards the BART/VTA Light Rail connection at the Montague station in Milpitas and the connection to the new Levi's Stadium complex in Santa Clara. Phase II also addresses the issues of low ridership on the Tasman West line.

**Event Service To Levi's Stadium**

VTA is developing a service plan that would support the projected demand for transit services to and from Levi's Stadium (68,500 person capacity), which is scheduled to open in August 2014. This organization-wide effort includes plans for significantly increased levels of bus and light rail service on event days, as well as the full spectrum of activities necessary to support the delivery of a specialized service, such as Marketing, Community Outreach and Ambassador plans; a Security and Fare Enforcement Plan; and strategies for safely and efficiently moving large crowds on and off light rail trains at congested stations such as the Great America Station, which directly serves the stadium. VTA is part of the Stadium Operations group that will prepare a plan for each event depending on estimated crowd size, day of the week, and type of event.

The plan is for 26 events in the first year of operations. Ten events are planned 49ers games and the others are concerts, soccer matches, etc. of various sizes. Staff is planning for a 20% transit share.

Light Rail service is a major focus of transit efforts. The Great America station is adjacent to the Stadium. Service will be increased by 60 cars on game days (lesser numbers for other events, depending on size). The regular trains will be increased from one-car to two- and three-cars and an additional thirteen train sets will augment this regular service.

Current bus service on the three routes (55, 57, and 60) serving the Stadium will be supplemented with additional service based on the model demand. Staff is planning to add seven game-day express routes to serve the Stadium, including one to connect to the Fremont BART Station. Additionally, there will be standby buses to help meet any situation that arises on event days.

VTA is also working closely with Caltrain, Altamont Corridor Express (ACE), and the Capitol Corridor to ensure a seamless transit experience for fans coming from throughout the Bay Area.

## Fleet Plan Assumptions And Future Inputs

Light rail passenger demand is projected to increase significantly over the Rail Fleet Management Plan time period. Figure 5-1 shows this ridership increase between FY2013 and FY2017. Between FY2013 and FY2017, Light Rail ridership is projected to increase by almost 42%.

**Figure 5-1 FY2013 To FY2017 Projected Light Rail Ridership**

| | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| Light Rail Ridership | 10,774,000 | 11,230,000 | 12,450,000 | 13,920,000 | 15,980,000 |
| Light Rail Ridership % increases | -- | 4.23% | 10.86% | 11.81% | 14.80% |

The current Light Rail system has significant capacity for growth before an increase in service will be necessary. The current fleet of 99 vehicles and the current demand of 57 vehicles, including spares, indicates that the excess of 42 vehicles is adequate and will accommodate future demand as peak pullout requirements increase to 76 by FY2018.

### Future Needs

The most significant changes planned over the next few years are the ongoing implementation of the Light Rail System Analysis recommendations and the Silicon Valley BART extension. Based on current and planned system needs, Figure 5-2 displays VTA's anticipated LRV fleet demands for fiscal year 2013 through 2023. The plan incorporates fleet requirements associated with the BART extension to Silicon Valley and a resulting increase in transit passenger demand. While VTA will not be responsible for the storage, operation, and maintenance of the BART vehicles, the BART extension will increase ridership on VTA-operated rail and bus services that connect to future BART stations.

As shown in Figure 5-2, the spare ratio is expected to gradually decline over the next 15 years due to the increase in ridership and service levels, while the number of LRVs remains static. Although steadily declining over the duration of this plan, the spare ratio in 2023 is still more than sufficient and no additional system light rail vehicle capacity is required.

**Figure 5-2 Projected Rail Fleet Chart To FY2023**

| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TOTAL FLEET | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |
| TOTAL PEAK PULLOUTS | 57 | 57 | 57 | 60 | 76 | 76 | 76 | 78 | 79 | 81 | 82 |
| SPARE RATIO | 74% | 74% | 74% | 65% | 30% | 30% | 30% | 28% | 25% | 23% | 20% |

The increase in peak pullouts in 2016 reflects the start of the new operating plan in January 2016 based on Phase I that includes Almaden to Mountain View; Santa Teresa to Alum Rock, with Express between Ohlone-Chynoweth and Convention Center on weekdays for Santa Teresa to Alum Rock line; and the Winchester to Downtown San Jose service.

The increase to 76 peak pullouts in 2017 is based on the January 2017 plan to begin the Alum Rock to Mountain View service in conjunction with BART service extending to Berryessa and Montague. The new route would operate 15-minute headways on weekdays and 30-minute headways on weekends. Peak hour trips would serve Mountain View, while off-peak and weekends would terminate at Old Ironsides.

After 2017, increases are incremental to match ridership increases.

No LRV fleet increase is anticipated over the next 15 years. The current stock of vehicles is more than sufficient to accommodate the projected transit passenger demand associated with the BART extension and other planned light rail projects. Additionally, the existing LRV fleet will not need to be replaced through the period covered by this plan. All LRT vehicles were purchased in 2002/2003 and, therefore, are anticipated to remain in service until after 2030. No LRVs are anticipated to be purchased through the duration of this plan.

## Appendix: Acronyms And Definition Of Terms

| | |
|---|---|
| ADA | Americans with Disabilities Act of 1990 {42 U.S.C. 12101 - 12213; and 49 U.S.C. 322} |
| BART | Bay Area Rapid Transit |
| LRT | Light Rail Transit |
| LRV | Light Rail Vehicle |
| CARB | California Air Resources Board |
| CAA | Federal Clean Air Act |
| FTA | Federal Transit Administration |
| O&R | Overhaul and Repair |
| VTA | Santa Clara Valley Transportation Authority |
| SDG | Service Design Guidelines |
| SRTP | Short-Range Transit Plan |
| SVBX | Silicon Valley Berryessa Extension |
| VTP | Valley Transportation Plan |

# APPENDIX D: PARATRANSIT FLEET MANAGEMENT PLAN

The VTA/OUTREACH Americans with Disabilities Act (ADA) paratransit fleet is currently composed of 246 vehicles. The vehicles consist of hybrid sedans, minivans, and modified cut-a-way vans. Of these vehicles, VTA owns 187 and OUTREACH owns 59. VTA purchases its vehicles using federal grants and state transportation funds. OUTREACH-owned vehicles are purchased with funds provided by the Federal Transit Administration's Section 5310 program.

Outreach and VTA have also received a state grant to procure up to 90 no-emission vehicles, likely electric plug-ins, that can be shared for both VTA's ADA paratransit service and OUTREACH's other transportation program that serve seniors, low income persons, persons with disabilities and others. Since they are shared, half of the vehicle fleet is shown for ADA paratransit purposes, however, fleet and demand needs will be adjusted as needed.

VTA's paratransit fleet is planned to meet customer demand without capacity restraints as required by federal ADA regulations. The paratransit fleet management plan is subject to available funding, grant requirement dynamics, paratransit client needs and operational considerations. The current fleet is well maintained, but vehicles will need to be replaced as they age. Additional vehicles will be added to the fleet to meet anticipated future demand increases. Mobility devices change quickly (such as electric wheelchairs of variable sizes); thus, the composition of the vehicle types in the fleet may need to change over time. OUTREACH and VTA also plan to acquire more energy-efficient vehicles to reduce fuel costs and lower the program's carbon footprint.

**FIgure D-1 Paratransit Fleet Plan**

| | FY2014 | | FY2015 | | FY2016 | | FY2017 | | FY2018 | | FY2019 | | FY2020 | | FY2021 | | FY2022 | | FY2023 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | VTA | Outreach | VTA | Outreach | VTA | Outreach | VTA | Outreach | VTA | Outreach | VTA | Outreach | VTA | Outreach | VTA | Outreach | VTA | Outreach | VTA | Outreach |
| Sedans, Prius | 100 | 6 | 100 | 6 | 77 | 6 | 77 | 6 | 70 | 6 | 70 | 6 | 70 | 6 | 70 | 6 | 70 | 6 | 70 | 6 |
| MiniVans | 64 | 26 | 64 | 26 | 64 | 26 | 64 | 26 | 64 | 38 | 74 | 38 | 74 | 38 | 74 | 38 | 74 | 38 | 84 | 38 |
| Modified Vans | 3 | 16 | 3 | 16 | 19 | 0 | 19 | 0 | 19 | 0 | 19 | 0 | 19 | 0 | 19 | 0 | 19 | 0 | 19 | 0 |
| Van | 20 | 11 | 20 | 11 | 20 | 11 | 20 | 11 | 20 | 11 | 20 | 11 | 20 | 11 | 20 | 11 | 20 | 11 | 20 | 11 |
| Shared Sedans | | | | 15 | | 45 | | 45 | | 45 | | 45 | | 45 | | 45 | | 45 | | 45 |
| **TOTAL** | **187** | **59** | **187** | **74** | **180** | **88** | **180** | **88** | **173** | **100** | **183** | **100** | **183** | **100** | **183** | **100** | **183** | **100** | **193** | **100** |
| | 246 | | 261 | | 268 | | 268 | | 273 | | 283 | | 283 | | 283 | | 283 | | 293 | |
| PROCUREMENT SCHEDULE | | | | | | | | | | | | | | | | | | | | |
| VTA | | | | | 16 | mod vans | | | 55 | Prius | | | 16 | mod vans | | | | | 55 | Prius |
| | | | | | | | | | 52 | mini | 10 | mini expan | 45 | Shared | | | | | 52 | mini |
| | | | | | | | | | | | | | | | | | | | 10 | mini expan |
| OUTREACH | | | 13 | replace mini | 12 | replace mini | 12 | replace mini | 12 | mini | 12 | mini | 12 | mini | 12 | mini | 12 | mini | 12 | mini |

# APPENDIX E: SALES TAX, INFLATION, INTEREST RATE AND OTHER PROJECTIONS

VTA contracted with Moody's Economy.com to produce a custom economic forecast for the Silicon Valley Rapid Transit (SVRT) project financial analysis, which has also been used for the SRTP. Moody's Economy.com, a division of Moody's Analytics, is a leading provider of economic, financial, country, and industry research for planning and information needs of businesses, governments, and professional investors worldwide.

The firm's research includes financial markets and regional markets. Its information and services are applied in a variety of ways, including strategic planning and risk analysis.

The Moody's August 2, 2013 forecast includes 30 years (2014 to 2043) of annual projections of national and local (San José, San Francisco Bay Area, or California) inflation and interest rates including San José CPI, as well as Santa Clara County taxable sales. This forecast is an integrated projection of economic trends, meeting a high standard of professional practice consistent with Federal Transit Administration (FTA) guidance on financial planning regarding internal consistency of planning assumptions. The period contained in the SRTP represents the first 10 years of forecasted data, with adjustments to FY2014, FY2015, and FY2016, which reflect forecasted growth obtained from Beacon Economics, as explained below.

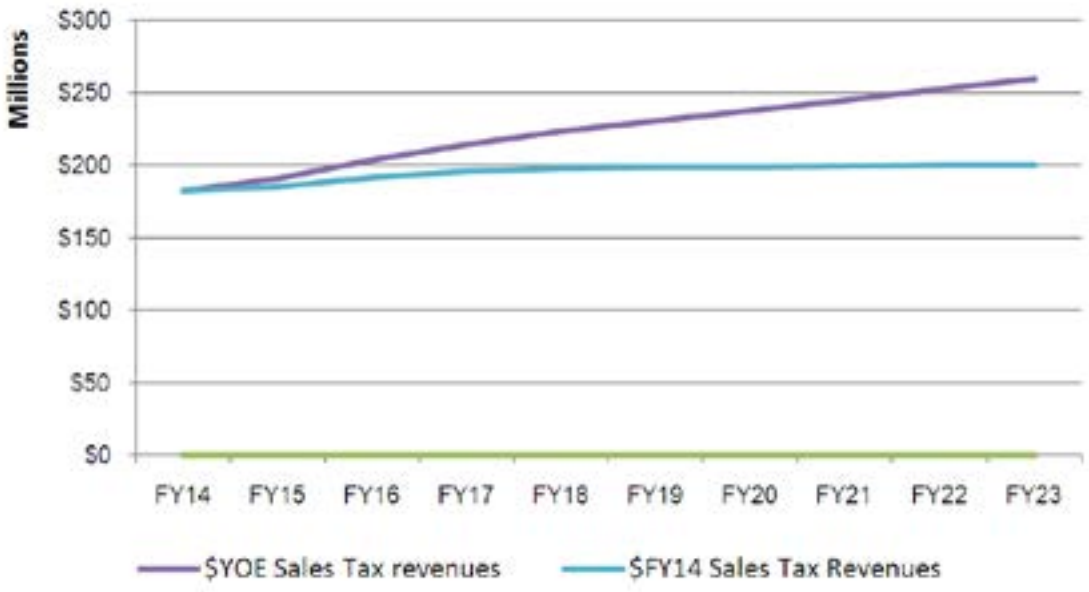
The Moody's forecast is based on historic and projected economic conditions at a single point in time and reflects a best estimate of future conditions given information available at the time the forecast was produced, usually on an annual basis. The methodology and assumptions underlying this forecast are subject to future revision as economic conditions change.

VTA contracted separately with Beacon Economics to produce a short-term Sales Tax revenue forecast to supplement Moody's economy.com longer term forecast. The financial model uses Beacon Economic forecast for the first 2-3 years of the SRTP range, and Moody's economy.com forecast for the latter part of the SRTP range.

## Sales Tax Forecasts

For the SRTP range of FY2014-FY2023, average annual growth in Santa Clara County retail sales is expected to grow at an average rate of 3.93%. This compares to the 10 year projected growth in San José CPI of 2.88%.

**Figure E-1 1976 ½-Cent Sales Tax Projections ($YOE v. $FY2014)**




Source: Beacon Economics and Moody's Economy.com

Figure E-1 summarizes the forecast of VTA ½-cent sales tax revenue annually for the period 2014-2023. The top line in the graph shows current dollars value while the line below it shows base year (FY2014) dollars, to net out the effect of inflation, as measured by CPI-U in the San José area. Sales Tax revenues grow at a rate of 4.04% over the SRTP period, but in real terms, as measured by the lower line, growth is much smaller, 1.02%

## Santa Clara County Taxable Sales

Santa Clara County taxable sales are forecast on the basis of actual receipts of the VTA 1976 ½-cent sales tax, a permanent sales tax dedicated to VTA operations and capital. This tax shares its base with two other VTA sales taxes: 1) 2000 Measure A, a 30-year sales tax approved in November 2000 and first collected in April 2006; and 2) 2008 Measure B, a 30-

year tax approved in November 2008 and first collected in July 2012. Measure A is dedicated to VTA operations and various transit expansion projects including the SVRT project, and will sunset in April 2036. Measure B is dedicated to providing operating and maintenance expenses and capital reserve contributions for VTA's BART Silicon Valley Extension and will sunset in July 2042.

Purchases to which VTA's sales taxes apply are specified by California state laws and regulations. In general, California law requires sales and use tax on all purchases of tangible personal property to its ultimate consumer. Services are not subject to sales tax. Groceries are not generally taxed, but prepared foods and restaurant meals are. Sales taxes also apply to gasoline, levied on top of the actual cost of the fuel and state and federal gallon-based fuel taxes. A number of items are exempt from sales taxes, including certain agricultural supplies, prescription drugs and certain medical supplies, and certain energy devices and supplies. Vehicle purchases are taxed based on the locality in which the purchaser registers the vehicle, not the location in which the vehicle is purchased. Sales tax does not apply to sales of tangible personal property to persons who purchase it for the purpose of incorporating it into the manufactured articles to be sold, as, for example, any raw material becoming an ingredient or component part of the manufactured article.

## Inflation and Interest Rates

Figure E-2 lists the inflation and interest rates included in the forecast applied in the SRTP operating and capital forecasts.

**Figure E-2 Inflation and Interest Rates**

Inflation and Income

- US CPI: Urban Consumer - All Items, (Index 1982-84=100, SA)
- US NIPA: Personal consumption expenditures, (Bil. C$, SAAR)
- San José, CA CPI: Urban Consumer - All Items, (Index 1982-84=100, SA)

Energy Cost Indices

- US Petroleum Crude Oil Price: West Texas Intermediate - Sweet Wellhead, ($)

- CA Petroleum Crude Oil Price, WTI Equivalent ($)
- US Natural Gas: Henry Hub, ($ per mmbtu)
- CA Natural Gas ($ per mmbtu)
- US CPI: Urban Consumer - Electricity, (1982-84=100, SA)
- San Francisco, CA CPI: Urban Consumer - Electricity, (1982-84=100, SA)

Construction Cost Indices

- US ENR: Construction Cost Index, (Index 1913=100)
- San Francisco, CA ENR: Construction Cost Index, (Index 1913=100)
- US ENR: Building Cost Index, (Index 1913=100)
- San Francisco, CA ENR: Building Cost Index, (Index 1913=100)
- US RS Means Construction Cost Index, (Jan 1993=100)
- San José, CA RS Means Construction Cost Index, (Jan 1993=100)

Interest Rates (U.S. National)

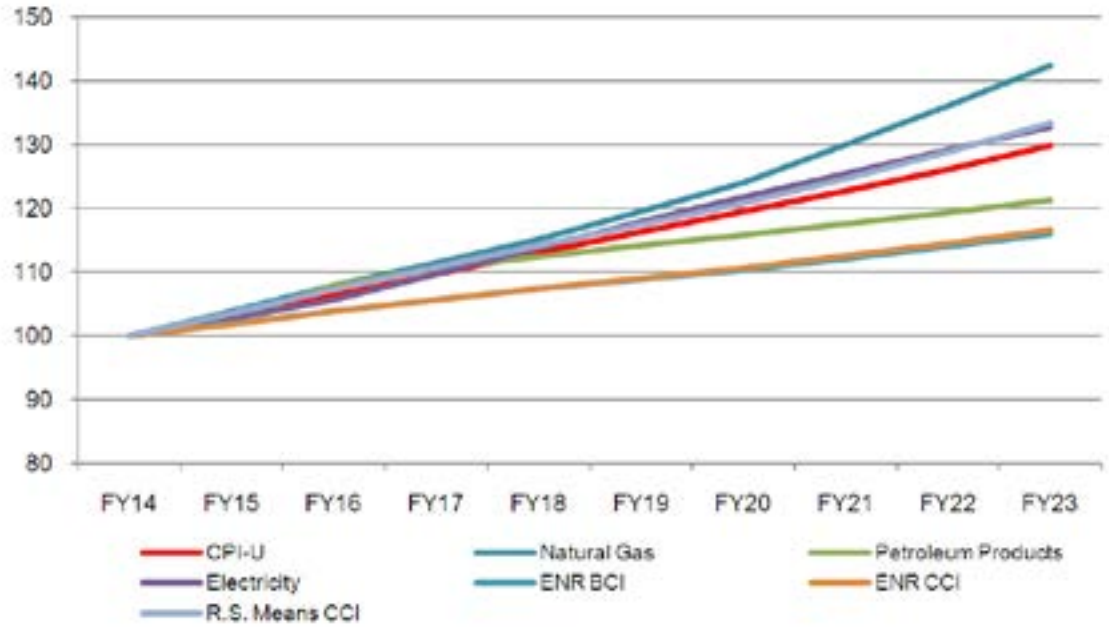
- Revenue Bond Index
- Bond Buyer Index: General Obligation 20-Years to Maturity, (%)
- Non-Financial Commercial Papers – 1 Month, (%)
- 3-Months, 6-Months T-Bills, (%)
- 1-Year, 2-Year, 3-Year, 5-Year T-Notes, (%)
- 10-Year, 30-Year T-Bonds

Revenue Forecast

- Santa Clara County sales tax receipts, ($mil, VTA fiscal years)

## Inflation Rate Forecasts

**Figure E-3 Compound Inflation Forecast Trends**




Source: Moody's Economy.com

Historic and Projected Trends: Figure E-3 illustrates compound trends in several key projected (2014-2023) baseline cycle inflation rates. San José Consumer Price Index Urban Consumer - All Items (CPI), depicted as a red line on the graph, has a forecast annual growth rate of 2.88% from 2014 to 2023.

Energy prices show varying growth trends. Petroleum products are forecast to have an average annual growth rate of 1.57% and are projected to be highly volatile in the near future, but then settle at 1.5-1.6% growth rate between 2018 and 2023.

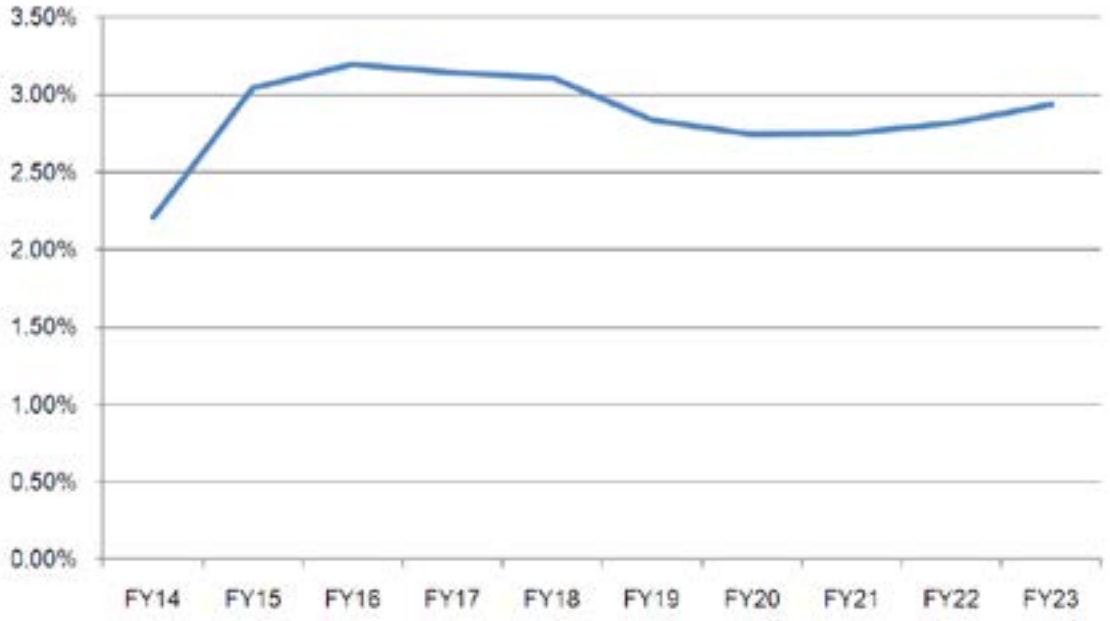
Electricity is forecast to grow at a relatively steady average, following a negative growth in 2014, averaging  3.21% annual rate, higher than the CPI-U.

Construction prices are forecast to follow forecast trends in CPI much more closely than energy prices. The ENR Building Cost Index has a forecast annual rate of growth of 1.64% from 2014 to 2023, and the ENR Construction Cost Index is forecast to grow 1.72%, both of which are significantly below the CPI. The RS Means Construction Cost Index is forecast to have an annual rate of growth of 3.27%, higher than the two ENR indices and higher than the CPI as well.

## Consumer Inflation

Figure E-4 presents the San José CPI inflation projections by Moody's Economy.com. Business cycle trends are apparent in this graph, with regular upswings and downswings in inflation resulting from assumed swings in the business cycle. The forecast shows a slowing trend in inflation over time.

**Figure E-4 San José CPI-U Projections**



## Energy Inflation

Figure E-5 shows petroleum products (diesel fuel) inflation projections. The forecast is of the California Petroleum Crude Oil Price: West Texas Intermediate - Sweet Wellhead equivalent. The forecast shows a significant increase in petroleum price in the 2014-2016 range, but then a remarkable decline through 2018. Following 2018, petroleum prices are expected to remain stable. The average inflation rate of petroleum products in the SRTP range is forecast to be 1.57%.

**Figure E-5 Petroleum Products Inflation Projections**

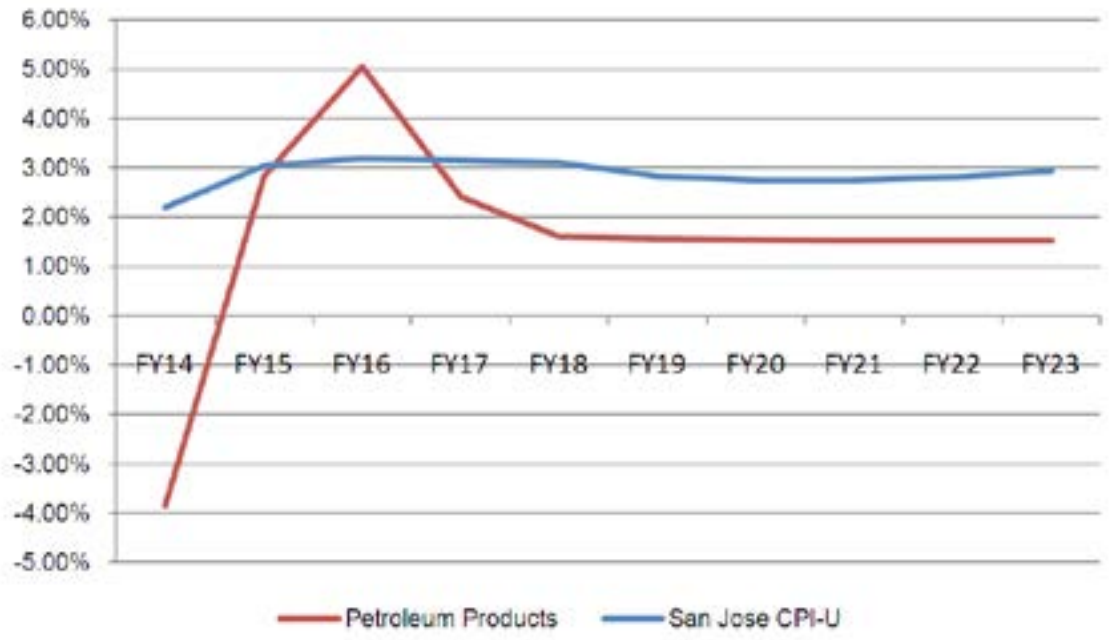
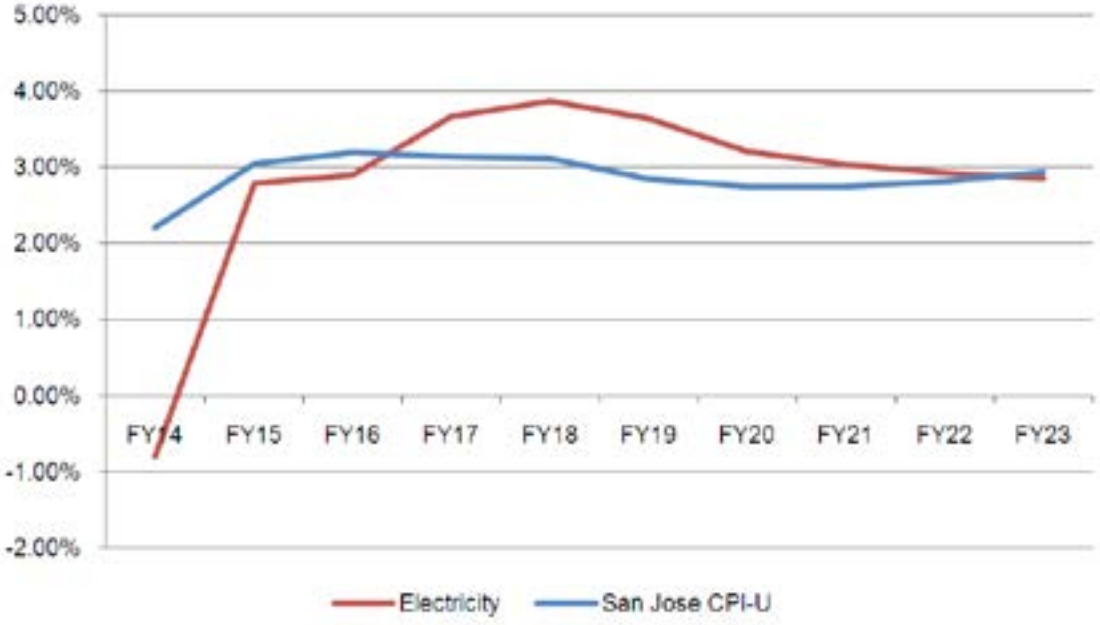


**Figure E-6 Electricity inflation projections**




The forecast is of San Francisco CPI: Urban Consumer – Electricity. Electricity prices are forecast to have a rate of growth lower than the CPI, with somenear-term volatility in prices.

## Construction Inflation Forecasts

Construction Inflation: Moody's Economy.com provided forecasts of three different construction cost indices for the San Francisco Bay Area:

- Engineering News Record Construction Cost Index (ENR CCI)
- Engineering News Record Building Cost Index(ENR BCI)
- RS Means Construction Cost Index (RS Means CCI)

Each of these indices is based on a different mix of construction commodities and labor. The ENR indices each include the same "market-basket" of construction commodities prices: 25 cwt of standard structural steel shapes at the mill price prior to 1996 and the fabricated price from 1996, plus 1.128 tons of Portland cement, plus 1,088 board-ft of 2 x 4 lumber. The ENR Construction Cost Index includes only unskilled labor (200 hours of common labor) while the

ENR Building Cost Index includes both skilled (68.38 hours of skilled labor at the average of bricklayers, carpenters and structural iron workers rates) and unskilled labor (200 hours of common labor).

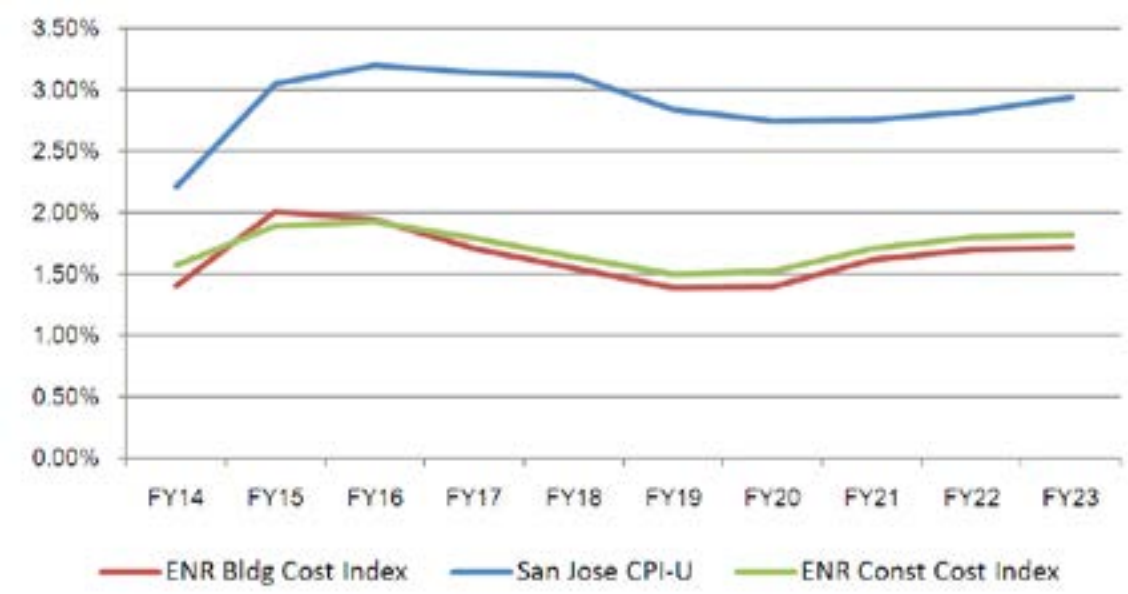
The RS Means cost index is a weighted average of "put-in-place" cost of a broad range of components of construction cost across nine major building types. The index gives more value to more expensive components of construction cost and less influence to those elements that are usually the least expensive.

The index applies actual skilled and unskilled labor costs rather than explicit consideration of trade wage rates, and also considers commodities, finished goods, and construction equipment rental costs. The index's exact material, labor, and equipment quantities are based on nine commonly constructed building types, weighted in proportion to expected usage. The building types include factory, office, retail, government, academic, healthcare, parking, lodging, and multi-family residential. The index considers specificquantities of 66 construction materials, specific labor hours for 21 construction trades, and specific days of equipment rental for six types of construction equipment. The RS Means Index is more representative of the mix of materials and labor in rapid transit construction than the ENR indices.

## ENR Construction Cost Index and Build Cost Index

Figure E-7 shows Bay Area ENR construction cost inflation projections. In this figure, the line graph summarizes the baseline forecasts by Moody's Economy.com of the ENR Construction Cost. Both rates are forecast to grow at a slower rate than CPI. Like forecast CPI, both ENR indices show slowing growth over time

**Figure E-7 ENR Bay Area construction Cost Inflation Projections**

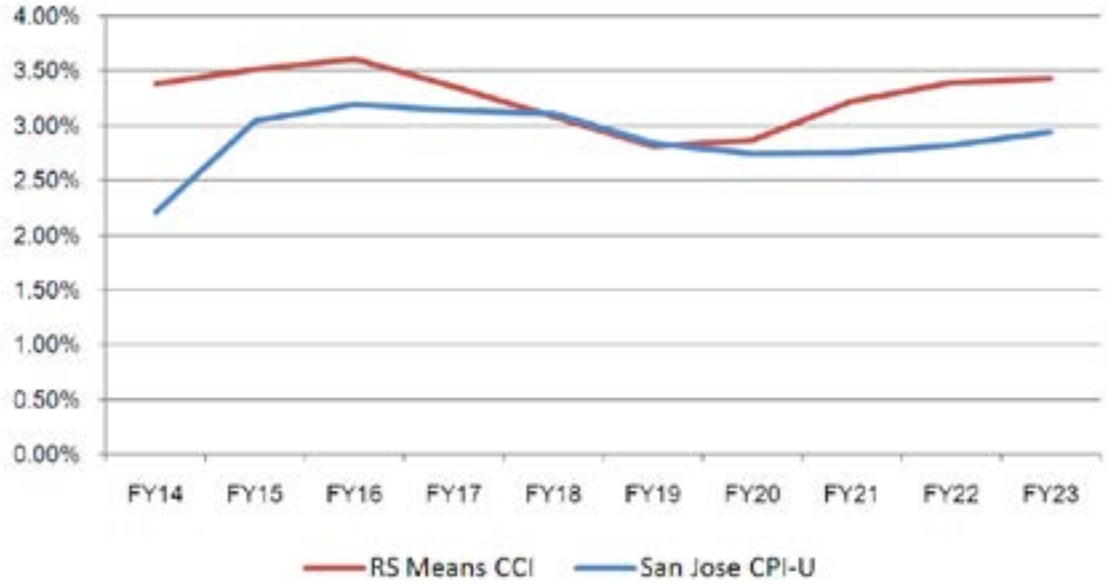



## RS Means Construction Cost Index

Figure E-8 shows the Bay Area RS Means construction cost inflation projections. The RS Means Construction Cost Index is forecast to grow at a slightly higher rate than the CPI-U. VTA has opted to apply the Moody's Economy.com forecast of the RS Means Construction Cost Index as the basis for capital construction cost escalation.

This is based on the historically faster rate of growth of the RS Means index compared to the ENR construction inflation indices, reflecting the RS Means calculation on a wider variety of construction trades and commodities prices than the ENR indices. The RS Means Construction Cost Index is also forecast to have a higher average annual rate than the ENR indices, which makes it a more conservative measure of construction inflation forecast by Moody's Economy.com. In addition, the RS Means Construction Cost Index is forecast to grow at a higher average annual rate than Bay Area CPI through the SVRT project construction period, consistent with historical trends.

**Figure E-8 RS Means Bay Area Construction Cost Index Inflation Projections**




## Interest Rate Forecasts

Figure E-9 displays three-month U.S. Treasury Bill  interest rate projections, applied in the financial model to calculate interest earnings. The average rate over the 10-year period is 2.70%. Following the accommodating monetary policy that is still evident in FY2014-FY2015, rates are projected to return to normal levels by FY2018 and remain at this level for the rest of the SRTP range.

**Figure E-9 3 Month US Treasury Bill Interest Rate Projections**

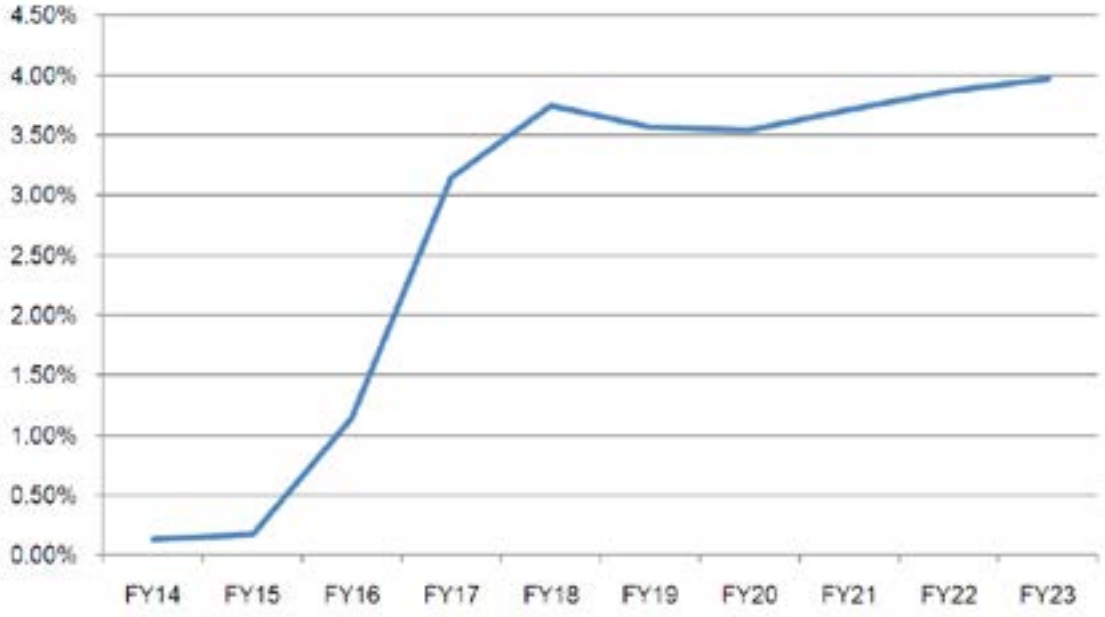



Figure E-10 shows the projection of non-financial commercial paper interest rates, applied in the financial model as the interest rate for tax-exempt commercial paper. The average projected rate over the 10-year period of the Measure A Program is 2.69%.

**Figure E-10 Non-Financial Commercial Paper Interest Rate Projections**

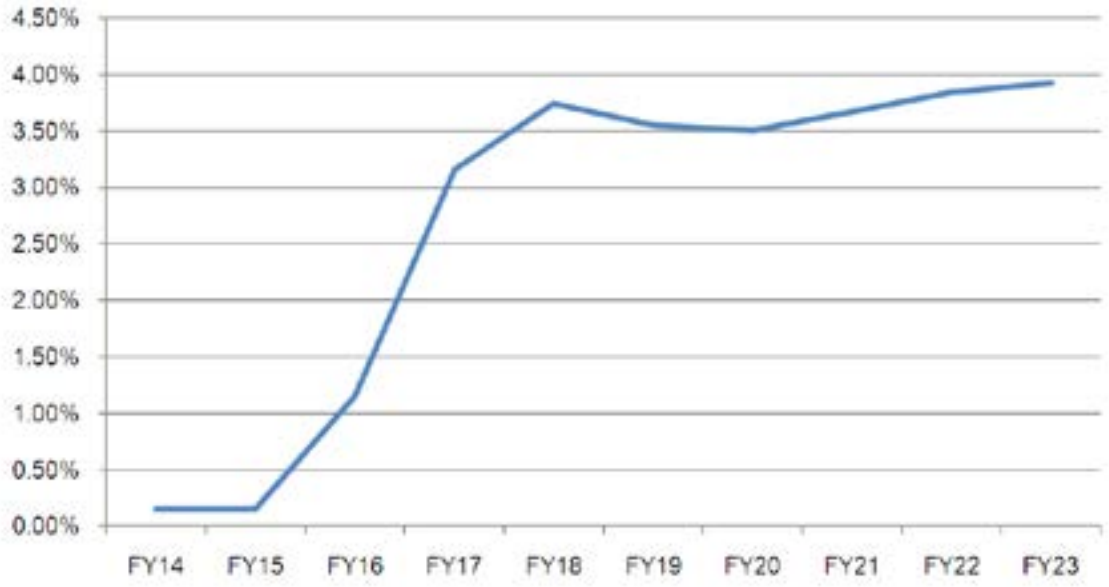



Figure E-11 shows Bond Buyer Index 20-year bond issue interest rate projections. The Bond Buyer Index is applied in the financial model as the interest rate for conventional (long term) bonds. The average projected rate over the 30-year period encompassing the Measure A Program is 5.72%

**Figure E-11 Bond Buyer Index Interest Rate Projections**

# APPENDIX F: BART EXTENSION FINANCIAL DETAILS

The 2001 Comprehensive Agreement between the VTA and BART calls for BART to operate the SVRT extension and to credit VTA for a portion of the fare revenue collected. VTA will pay the operating subsidy and capital costs associated with BART "core capacity" requirements through a subsidy payment to BART.

In summary, the flow of funds is calculated as follows:

## BART Subsidy

VTA makes a payment to BART which funds BART O&M costs, including direct and fixed O&M costs.

VTA is credited with the operating revenues that are generated by the extension, including fare revenue, advertising income, and parking revenue.

The difference between VTA's payment to BART plus operating revenues credited to VTA and the O&M costs is applied as Capital Sources of Funds.

In addition, federal transit formula funds accruing to the San José Urbanized Area may be applied as Capital Sources of Funds.

Capital Sources of Funds fund a capital reserve contribution. Capital Sources of Funds equaling up to 30 percent of O&M costs are credited to a Capital Reserve Fund. Capital Sources of Funds in excess of the Capital Reserve Fund contribution are either credited to an Excess Capital Reserve Fund or refunded to VTA's Measure B Operating Tax Fund.

In November 2008, Santa Clara County voters approved the Measure B one-eighth cent Sales Tax. This tax is limited to thirty years and will provide funds for operating and maintenance expenses and capital reserve contribution related to the BART extension. Per the Measure, the tax would only commence collection if sufficient state and federal funds were secured to match local construction dollars. A Full Funding Grant Agreement with FTA was executed on March 12, 2012 and collection of Measure B began July 1, 2012. The Measure B sales

tax base is assumed to grow at the same rate as the VTA 1976 1/2-cent Sales Tax and 2000 Measure A 1/2-cent Sales Tax. The sales tax projection is described in Appendix E.

There are two components of the SVRT Extension O&M cost: direct and fixed overhead costs. Direct O&M costs are calculated by multiplying cost drivers—level-of-service variables defined in the planning process—by unit costs calculated from the current BART O&M cost model which was calibrated based on the BART FY2005 budget.

BART's fixed overhead costs are allocated to the extension on the basis of extension related systemwide direct O&M costs relative to BART Core System direct O&M costs.

The O&M cost drivers, unit costs, and inflation assumptions, as well as the calculation of direct and fixed overhead O&M costs, are described below.

In addition to fixed overhead O&M costs, there are 18 variable cost drivers, which include:

- Linked Passenger Trips
- Early/Late Trains
- At-Grade Stations
- Lines
- Total Car Hours
- Subway Stations
- Peak Vehicles
- Total Train Hours
- Parking Spaces
- Fleet Vehicles
- Revenue Route Miles
- Yard with Back Shops
- Peak Trains
- Total Stations
- Service & Inspection Yards
- Base Trains
- Elevated Stations

Costs are forecasted to the design year (2030) and then interpolated based on the level-of-service in each year of operation.

Unit costs are derived by cost driver from the O&M cost model developed for BART by Connetics Transportation Group. As specified in Section IV.C.3 of the Comprehensive Agreement, an O&M cost model is required as the basis for estimating VTA's subsidy to BART for operating the extension. The precise method by which the O&M cost model is developed and applied is specified in Exhibit B of the Comprehensive Agreement. The O&M cost model is calibrated to BART O&M costs, employee headcounts, and service levels specified in BART's Fiscal Year 2005 budget, which is the most recent model version available. The model has been periodically updated to reflect changes in service plans for the extension alternative as well as the steep growth in BART electricity costs since 2005.

Costs are specified by cost driver by object class, each of which may apply its own inflation rate. Object classes include:

- Labor Net of Healthcare
- ADA Service
- Healthcare Fringe
- Electric & Natural Gas
- Shuttle Service
- Other Non-Labor
- Express Bus Service

Certain of these object classes are excluded from the calculation of incremental O&M costs, per Exhibit B of the Comprehensive Agreement. These object classes include Shuttle Service, Express Bus Service, and ADA Service. ADA paratransit service costs are excluded based on the assumption that VTA will separately and apart from the Comprehensive Agreement assume financial responsibility for any additional ADA Paratransit services in Santa Clara County required due to the operation of the extension.

Unit costs are inflated to year-of-expenditure dollars by applying a specific inflation projection for each object class to each unit cost by cost driver.

The following basis is used to project inflation for each object class, consistent with inflation assumptions in the VTA core system:

Labor and Fringe Benefits: Moody's Economy.com forecast of Bay Area Consumer Price Index (CPI) for all urban consumers

Electric: Moody's Economy.com forecast of California electric prices. (Note that the predominant share of this object class is traction power for rail service, as well as electricity for stations and other BART facilities. Also, note that electricity unit costs reflect BART's current practice of purchasing electric power on the open market with no power purchased from the Bonneville Power Administration.)

Other Non-Labor: Moody's Economy.com forecast of Bay Area CPI

# APPENDIX G: CIP PROJECT DESCRIPTIONS

| Figure 4-2 Vehicles & Equipment | | |
|---|---|---|
| VTA CORE | Project Description | Project Status |
| TIER I | | |
| 40' Bus Procurement | VTA will purchase 44 forty-foot diesel or diesel/electric hybrid buses to replace buses placed in service in 1998 and 1999 that have reached the end of their useful life (12 years). | In October 2013, VTA will execute a purchase contract for up to 135 buses, 100 of which are included in an option clause. These 44 buses are included in the set of option buses. |
| 60' Articulated Bus Procurement | VTA will purchase 48 sixty-foot articulated buses to replace the existing articulated bus fleet and prepare for BART service requirements. | Staff are preparing technical documents and work scope necessary to issue a Request for Proposal by the end of 2013. |
| Automatic Passenger Counters for LR Vehicles | VTA will purchase and install Automatic Passenger Counters (APC) that are compatible with the existing APC system for 58 additional Light Rail Vehicles (LRV). | Contract for APCs was executed in August 2013. Installation will commence in late 2013. |
| Kinkisharyo LRV Overhaul Program | This ongoing project encompasses the manufacturer prescribed overhaul of key components for the Kinkisharyo Light Rail Vehicle fleet. | This project began in FY2013 with the rebuild of pantographs and HVAC units on a small number of Light Rail Vehicles and is an on-going program. In this phase, pantographs and HVAC units will be rebuilt in 49 additional LRVs. |
| Non-Revenue Vehicle Procurement | This ongoing program schedules the acquisition of Non-Revenue Vehicles to replace existing units that have high mileage, have had a history of mechanical failures, or have been decommissioned because of mechanical failures which were not cost-effective to repair. | Staff have identified vehicles for replacement. Purchase of new vehicles is scheduled for early 2014. |
| Paratransit Vehicle Procurement | This ongoing program schedules the acquisition of Paratransit Vehicles to replace existing units that have reached the end of their useful lives. | The current phase calls for purchasing 90 gas/electric hybrid vehicles and charging stations. This procurement is underway. |

| Figure 4-2 Vehicles & Equipment (continued) | | |
|---|---|---|
| VTA CORE | Project Description | Project Status |
| LR On-Board Messaging/ Announcement System | The system that provides onboard audio and visual messages will be replaced with a modern system that allows for changes being pushed out the trains wirelessly. The current system requires extensive manipulation, replacing chips, and testing prior to deployment and on average requires a six week lag time. The extensive testing is required because message selection is input through the EBIS system onboard the train which is also the input for the train transponder selection that communicates with the interrogators along the right of way that select the trains path. In order to ensure that there are no conflicts with the message changes, the entire system must be tested with a non-revenue train to ensure that the power switches are aligned for the trains destination. | |
| Hybrid Bus Battery replacements | This project calls for the midlife replacement of NiMH batteries in 90 hybrid buses purchased in 2010 necessary to continue the operation of the buses through the expected lifetime. | A project request will be submitted for the FY2016/FY2017 biennial budget cycle. |
| Small Bus Replacements | Number of Paratransit Vehicles in respective fiscal years. | |
| TIER II | | |
| Non-Revenue Vehicle Procurement | This ongoing program schedules the acquisition of Non-Revenue Vehicles to replace existing units that have high mileage, have had a history of mechanical failures, or have been decommissioned because of mechanical failures which were not cost-effective to repair. | Staff have identified vehicles for replacement. Purchase of new vehicles is scheduled for early 2014. |
| CCTV Door Monitoring System for LRVs | Replace existing door monitoring CCTV systems on Light Rail Vehicles | |

| Figure 4-3 Operations Facilities & Equipment | | |
|---|---|---|
| VTA CORE | Project Description | Project Status |
| TIER I | | |
| Cerone Boiler Replacement | This project will remove and replace two 1978 York-Shipley fire tube boilers that have reached the end of their useful life with updated, energy efficient hot water boilers. | Engineering assessment will begin in late 2013. |
| Cerone Emergency Generator Replacement | This project will remove and replace two 500kw Liquid Propane Gas (LPG) generators with one 1200kw diesel generator. | Design work will begin in late 2013. |
| Cerone Propane Tank Replacement | This project allows for the decommissioning, removal and disposal of one 30,000 gallon liquid propane gas (LPG) tank which has reached the end of its useful life and the installation of one replacement 10,000 gallon LPG tank. | Design work will begin in late 2013. |
| Facilities & Equip Emergency Repair | This project allows VTA to expedite unplanned repairs that may be required at facilities or to equipment that is essential to normal or safe operations. | This is an “as needed” project for emergency repairs or replacement of assets. |
| Facility Maintenance Equipment Program | This project allows for the scheduled replacement of equipment that has reached the end of its useful life. | Equipment for replacement has been identified and specifactions for each are being developed. |
| HVAC Replacement Program | The HVAC Replacement Program is a long-term plan intended to take advantage of technological advances in HVAC equipment and stay ahead of major system failures that impact operations. | HVAC units and associated equipment identified for replacement. |
| LED Exterior Lighting Replacement | VTA will purchase and install LED (light-emitting diode) lighting fixtures to replace aging exterior fixtures at various locations. | Design work will begin in late 2013. |
| LR Signal Shop Modification | VTA will modify the light rail signal shop at the Guadalupe Division, to provide a better work area for maintenance of ticket vending machines (TVMs). | Design work will begin in late 2013. |

| Figure 4-3 Operations Facilities & Equipment (continued) | | |
|---|---|---|
| VTA CORE | Project Description | Project Status |
| Painting Management Program | The Painting Management Program is an ongoing, comprehensive long-term preventive maintenance program that protects and extends the useful life of all facilities maintained by VTA. | All VTA facilities are included in the painting schedule. LR Stations and other public, transit facilities take priority. |
| Paving Management Program | This ongoing program provides paving maintenance and repair to all VTA operational, administrative, passenger, equipment, and Park and Ride facilities. | Engineering and design work will be done in FY2014 with work scheduled in FY2015. |
| Replace Wheel Truing Machine | VTA will replace the rail wheel truing machine at the Guadalupe Light Rail facility. Periodic wheel truing is required to eliminate flat spots on wheels; prevent hollow wheels; prevent damage to the rails, granite, and wheels; and maintain a true ride for the car and a comfortable ride for the passengers. | Design work will begin in late 2013. |
| Roofing Management Program | This is an ongoing, comprehensive program to maximize the useful life and integrity of VTA facilities. | On-going roof replacement per VTA's replacement schedule. |
| Replace Currency and Coin Counting Equipment | To periodically replace currency and coin counting equipment used daily for high-volume processing activities in the VTA Money Room. | Planned replacement FY2016. |
| Replace Back-up Power Generators | This work is for the rehab of the emergency generators located at each of VTA's operating facility as well as River Oaks to maintain its useful life of 20 years (work includes overhaul of the engines with emissions upgrades, replacement of transfer boxes, etc.). | Design work will begin in late 2013 for the Cerone division generator. Generators at other location will be programmed in future years. |
| Replace Bus/Train Washers at Light Rail and Bus Divisions | This work is for the replacement and rehab of the bus and train wash facilities at the Maintenance Divisions. The Chaboya bus wash and Guadalupe LRV wash were installed in 1980 and 1989 respectively and thus have exceeded their expected life and would be scheduled for replacement. | 2017 - Guadalupe; 2020, North; 2023. Cerone (2026, Chaboya) |

| Figure 4-3 Operations Facilities & Equipment (continued) | | |
|---|---|---|
| VTA CLRE | Project Description | Project Status |
| Green Sustainability Facility Improvements | This appropriation supports the continuation of the VTA Board approved "Sustainability Program," which includes energy reduction, solid waste reduction, hazardous waste reduction, recycling programs, water conservation, and solar energy projects. | VTA's "Green Committee" is prioritizing a list of projects in support of this program. |
| TIER II | | |
| Painting Management Program | The Painting Management Program is an ongoing, comprehensive long-term preventive maintenance program that protects and extends the useful life of all facilities maintained by VTA. | All VTA facilities are included in the painting schedule. LR Stations and other public, transit facilities take priority. |
| Lighting Control System Upgrade at all Operating Division | This project would replace existing unreliable lighting control systems at all the operating divisions including the River Oaks campus. This project would also add controls to existing buildings that are not currently on a control system wasting energy. | |
| Way, Power & Signal Storage Building | The project will purchase and construct 3,500 sq ft materials storage building over the existing open air concrete storage area behind the Guadalupe WP&S building that would offer security, protection from the weather, and fire protection for the valuable components stored in the area. | |
| Guadalupe Roll-Up Door Replacement | Over the years, all of the maintenance bay doors have been changed from the old section type doors to the new roll up style. This project would replace the 10 remaining sectional doors that have reached the end of their useful life with the new roll-up style doors. | |
| Replace Pollution/Waste Treatment Systems | This work is for the replacement of several Maintenance Divisions pollution/waste water treatment systems and rehab of others to maintain their useful life of 20 years. | |

| Figure 4-3 Operations Facilities & Equipment (continued) | | |
|---|---|---|
| VTA CORE | Project Description | Project Status |
| Replace Bus/Train Washers at Light Rail and Bus Divisions | This work is for the replacement and rehab of the bus and train wash facilities at the Maintenance Divisions. The Chaboya bus wash and Guadalupe LRV wash were installed in 1980 and 1989 respectively and thus have exceeded their expected life and would be scheduled for replacement. | |
| Green Sustainability Facility Improvements | This appropriation supports the continuation of the VTA Board approved "Sustainability Program," which includes energy reduction, solid waste reduction, hazardous waste reduction, recycling programs, water conservation, and solar energy projects. | VTA's "Green Committee" is prioritizing a list of projects in support of this program. |
| Cerone Bus Detail Area | Construct a bus detailing station at Cerone Division to allow for more efficient and thorough interior cleaning of buses. | |

| Figure 4-4 Light Rail Way, Power & Signal | | |
|---|---|---|
| VTA CORE | Project Description | Project Status |
| TIER I | | |
| LR Crossovers and Switches | VTA will begin a series of crossover installations at six priority locations. The additional crossovers will improve the ability to provide track way maintenance and improve operational flexibility. | Design work will begin in late 2013. |
| Rail Rehab and Replacement Program | VTA will perform an annual rail grinding and measurement program to refine wear trends; special track work replacement at various locations for wear and tear including embedded crossovers, tie replacement cycles and other track components; ballast replacement concurrent with tie replacement; and crossing replacements where concrete breaks are visible. | This is an on-going project. Current work includes: Tasman/Lick Mill track Rehab, repair broken rail, concrete and panels at various locations, and rehab of Clayton crossovers. |
| Track Intrusion Abatement | VTA will install fencing, barriers, signage, flashing signs, and pavement markings at locations identified and approved by VTA's Safety Committee. | Design work will begin in late 2013. |
| Traction Power Substation Replacement Program | VTA will replace the 14 Traction Power Substations (TPSS) on the Guadalupe Corridor that are over 20 years old. | This is a phased project. The current phase will replace 2 Guadalupe corridor substations and one Tasman West substation by mid-2015. |
| Upgrade Ohlone/ Chynoweth Interlocking | VTA will redesign the existing relay based interlocking at Ohlone/Chynoweth and purchase and install new signal vital processor control equipment, train to wayside control, and integration and related communication equipment and hardware. | Design work will begin in late 2013. |
| Overhead Catenary System (OCS) Rehabilitation | VTA will rehab the entire overhead catenary system including cables and conduit. | Rehab begins in fall 2013 and is scheduled to conclude by spring 2014. |
| Bridge and Structures SGR Repairs | Capital rehab pursuant to mandated Biennial Inspections. | |

| Figure 4-4 Light Rail Way, Power & Signal (continued) | | |
|---|---|---|
| VTA CORE | Project Description | Project Status |
| Replace Emergency Backup Systems at Light Rail Transit Stations & Diridon Tunnel. | VTA will replace the emergency backup systems at the light rail stations and Diridon tunnel. The specific work at each location varies based on the existing equipment. | Emergency back up replacement at Diridon Tunnel in progress. |
| Replace Bar (Traffic) Signals for Train Control | VTA will rehab and replace 97 bar signals installed between 1991 and 2005 along the LR corridor. Bar signals have a useful life of 30 years and have one mid-life rehab per unit. | Some have been replaced. Waiting for additional information. |
| LR Transit Performance Initiative Projects | Local match for Light Rail projects responsive to the Transit Performance Initiative criteria that will increase speeds and reliability throughout the system. | MTC Call for projects anticipated in December, applications due in January. VTA will submit multiple applications for various LRT Efficiency projects. Grant selection anticipated in April 2014. |
| North First Street Corridor LR Speed Improvements | VTA will construct a series of small capital improvements which will allow VTA to increase Light Rail train speeds on North First Street from the current maximum of 35 mph operations to 45 mph operations. | Project has not started. Conceptual Planning, Preliminary Engineering, and Environmental Clearance activities planned for 2014. |
| TIER II | | |
| Rail Rehab and Replacement Program | VTA will perform an annual rail grinding and measurement program to refine wear trends; special track work replacement at various locations for wear and tear including embedded crossovers, tie replacement cycles and other track components; ballast replacement concurrent with tie replacement; and crossing replacements where concrete breaks are visible. | This is an on-going project. Current work includes: Tasman/Lick Mill track Rehab, repair broken rail, concrete and panels at various locations, and rehab of Clayton crossovers. |

| Figure 4-5 Passenger Facilities | | |
|---|---|---|
| VTA CORE | Project Description | Project Status |
| TIER I | | |
| Back-up Power Devices for Elevated Stations | VTA will replace the generators and automatic power bypass switch for elevated stations on the Guadalupe Light Rail line including Cottle, Snell, Blossom Hill, Branham, Curtner, Tamien, and Virginia. | Wating for release of grant funds to begin this Board approved project. |
| Bus Stop Pavement/ Duckout Improvements FY2014 | VTA will provide physical improvements at bus stops to ensure Americans with Disabilities Act (ADA) compliance including increasing passenger waiting pads, enhancing sidewalk access, providing additional lighting at bus stops, and repairing bus pavement at heavily used bus stops. | Project approved, but Federal funds are not yet available to begin work. |
| High Priority Corridor Bus Stop Improvements | VTA will upgrade amenities at bus stops by installing new amenities like seating and shelters. The routes and specific amenities installed will be based on methodology developed in the Transit Waiting Environment Study. | First phase of data analysis underway. Project will be underway through June 2015. |
| Infrastructure for Additional Clipper® Fare Devices | VTA will provide infrastructure for additional electronic Clipper fare devices at high use light rail stations. The scope of this project includes design, construction, and power and network connectivity. | Requested additional devices from MTC. Project will continue until March 2015. |
| LR Station and Transit Center Shelter Study | VTA will assess and estimate repair needs and costs as well as develop a repair plan for shelter modifications at light rail stations and transit centers. | Scope of work underway. |
| Bus Shelter Replacement and Expansion | Replacement and expand the current bus shelters. | |
| Transit Center Park and Ride Upgrades | This appropriation will augment the existing project for refurbishment and repair of maintenance issues at transit centers and Park and Ride lots throughout the VTA service area. | Upgrades are in progress and will continue until the end of 2013. |

| Figure 4-5 Passenger Facilities (continued) | | |
|---|---|---|
| VTA CORE | Project Description | Project Status |
| PA/VMB Announcements | VTA will replace PA systems at 62 LR stations, some of which have more than one system due to split platforms. | |
| Replace Elevators at Light Rail Transit Stations | This work is to rehab/overhaul the existing elevators at the various light rail stations. The standard life for elevators per the MTC guideline is 15 years. VTA has extended this for a proposed life of 40 years. This will require that the elevators undergo extensive rehab and overhaul due to wear and deterioration conditions encountered in this type of service. | Project to rehab and replace elevators and escalators in close out phase. |
| Replace Ticket Vending Machines at Light Rail Stations | VTA will repair/replace ticket vending machines at light rail stations as needed. | Next replacement cycle is scheduled for 2021. |
| TIER II | | |
| High Priority Corridor Bus Stop Improvements | VTA will upgrade amenities at bus stops by installing new amenities like seating and shelters. The routes and specific amenities installed will be based on methodology developed in the Transit Waiting Environment Study. | First phase of data analysis underway. Project will be underway through June 2015. |
| LR Destination Signs | Replace Visual Message Boards at Light Rail station platforms. | |
| Line 323 Bus Stop Improvement Project | Upgrade bus stops by extending concrete bus pads and improve concrete boarding areas at Line 323 bus stops along San Carlos, Stevens Creek to accommodate future articulated coaches. | |

| Figure 4-6 Information Technology | | |
|---|---|---|
| VTA CORE | Project Description | Project Status |
| TIER I | | |
| Business Automation | VTA will evaluate business processes in the Accounts Payable department to facilitate migration to a more electronic and automated process including integration into the Records Information Management (RIM) program and SAP. | Kick off meeting is in September to further define detail scope and assign resources |
| CAD-AVL Update | VTA will provide updated Computer Aided Dispatch-Automated Vehicle Location equipment; enhanced CAD-AVL tools; and improved server cabling, connectivity, and data transfer speed. | The scope of the project will be developed by the end of 2013. |
| Emergency IT Infrastructure Replacement | VTA will address the need for replacement of critical technology infrastructure as they arise over the two-year timeframe. | These funds are used only during an emergency or critical equipment failure. Ongoing Project. |
| IT Server Upgrades | VTA will provide updated server equipment, enhanced server tools, and improved server cabling/connectivity/data transfer speed by replacing server equipment that is at the end of its useful life and no longer supported. | Planning started on the design of the Architecture to upgrade SAP into a virtual environment using the latest generation blade servers and Operating system |
| Network Enhancements at Guadalupe & North Yard | VTA will provide enhanced networking equipment, enhanced network security tools, improved network cabling/connectivity/data transfer speed, and wireless access points to the Guadalupe and North Yard operating facilities. | Kick off to start in October |
| Radio System Upgrade | VTA will provide updated LMR (land mobile radio) or LTE (long term evolution) radio equipment, enhanced radio tools, and improved radio cabling/connectivity/data transfer speed by replacing radio equipment that is at the end of its useful life and no longer supported. | Radio replacement project to start in late calendar 2013. |

| Figure 4-6 Information Technology (continued) | | |
|---|---|---|
| VTA CORE | Project Description | Project Status |
| SAP Plant Maintenance & Materials Management | VTA will purchase and install console optimization and mobile solution packages for SAP Plant Maintenance and Materials Management in order to accelerate the simplification and usability of most SAP maintenance and materials management related transactions. | Due to resource constraints, this project will start in calendar 2014 after Trapeze OPS deployment |
| Telecommunications System Updates | VTA will provide updated VoIP (voice over Internet Protocol) equipment, enhanced telecommunication tools, and improved telecommunication cabling/connectivity/data transfer speed by replacing telecommunications equipment that is at the end of its useful life and no longer supported. | Scheduling started, and putting in place the procurement strategy |
| TERM Lite Deployment | VTA will deploy TERM (Transit Economics Requirements Model) Lite, an asset assessment tool designed to help transit agencies assess their State of Good Repair (SGR). | Q2 2014 project kick off due to term lite availability and SAP enhancement pack deployment |
| Train to Wayside Communication System Upgrade | VTA will upgrade the existing DOS based train-to-wayside communications (TWC) system to a Windows based system while keeping the original system's operational functionality. | Project Approved. Waiting for release of Federal Grant Funds to begin the project. |
| Trapeze OPS Software Installation | VTA will complete the Trapeze OPS software purchase and installation project. | Design work complete. Various modules are beginning first phase testing. Full roll-out by end of 2014. |
| Upgrade Countywide Travel Demand Model | VTA will implement incremental improvements to the existing, trip-based Countywide Travel Demand Model, until it can be updated to an activity-based model to maintain consistency with the Metropolitan Transportation Commission's (MTC) Regional activity-based models. | Initial phases of the project have begun, including development of a draft Scope of Work and Schedule. Subsequent work on the project is dependent on hardware upgrades to run the activity-based models (memory expansion currently under requisition). |

| Figure 4-6 Information Technology (continued) | | |
|---|---|---|
| VTA CORE | Project Description | Project Status |
| Upgrade LR Ring #1 Communications Equipment | VTA will replace the Sonet network equipment with modern network gear with enhanced security features for network Ring #1. | Project Approved. Waiting for release of Federal Grant Funds to begin the project. |
| SAP New Release 2017-18 | This project goal is to do a major upgrade of our ERP system the next release. ECC 7.0 is schedule to be released in 2016 and we would need to upgrade to the new release by 2018. | |
| Data Storage | As the agency moves from a paper model to electronic we will continually need to upgrade and grow our data storage systems, and keep them current on the latest DB releases. | |
| Record Information Management | Starting in 2013, we started deploying an Electronic Record management solution. Every 5 years, VTA will need to refresh the solution and bring it up to current best practice. | |
| Security Systems Refresh | VTA has a large number of CCTV, and perimeter intrusion systems that require continuous upgrade and replacement, per our SOGR model. | |
| Wifi Refresh | VTA has a large number of transit vehicles that support customer Wi-Fi and as the standards change require continuous upgrade and replacement, per our SOGR model. | |
| MSFT Software Suite | VTA uses Microsoft Server, SQL, SharePoint, Exchange, Office and other tools that require constant updates and as the standards change require continuous upgrade and replacement, per our SOGR model. | |

| Figure 4-6 Information Technology (continued) | | |
|---|---|---|
| VTA CORE | Project Description | Project Status |
| TIER II | | |
| Construction and Engineering New Software Releases | Make enhancements to contract management, work flow, project costing, project management, reporting, dashboards, and integration into existing software. | |
| Maintenance Management System | This project will design, purchase and install a maintenance management system and its supporting equipment that provides real-time control and data acquisition of vehicle commodities, engine/transmission performance, and mileages. The data collected will be used to improve overall preventive maintenance activities in the Divisions. | |
| Update Electronic As-Built Drawings of LRT System | This project will research, review, file, verify and update existing as-built drawings of LRT elements especially electrical and communication system. Work also includes establishment of a database for the storage and retrieval of the electronic files of the as-built drawings. | |
| Telecommunications System Updates | VTA will provide updated VoIP (voice over Internet Protocol) equipment, enhanced telecommunication tools, and improved telecommunication cabling/connectivity/ data transfer speed by replacing telecommunications equipment; that is at the end of its useful life and no longer supported. | |

| Figure 4-7 Security (Year of Expenditure Dollars) | | |
|---|---|---|
| VTA CORE | Project Description | Project Status |
| TIER I | | |
| Security Improvement Projects | This project reserves appropriation for grant funding identified specifically for transit security projects. The specific activities will be identified consistent with grant guidelines and assessments of projects. | Security projects are identified consistent with grant guidelines and VTA's security program priorities. |

| Figure 4-8 Miscellaneous | | |
|---|---|---|
| VTA CORE | Project Description | Project Status |
| TIER I | | |
| Caltrain Capital - Annual Local Match | The local capital funds that Caltrain receives from VTA and the other two funding partners (San Mateo County Transit District and the City and County of San Francisco) are used to match state and federal grant funds that are provided to Caltrain. | Annual payments to Caltrain. Payment for FY2014 will be made by end of 2013. |
| Capital Contingency | This appropriation is a placeholder for projects that are not currently anticipated but may arise during the two-year budget cycle. | |

| Figure 4-10 Measure A Program Uses Of Funds | | |
|---|---|---|
| VTA CORE | Project Description | |
| TIER I | | |
| BART Silicon Valley Berryessa Extension (SVBX) | Construction of 10-mile extension of BART from Warm Springs to Berryessa | |
| SVRT Program Development and Implementation | Planning, environmental, and design for extension of BART to Santa Clara County | |
| Corridor Establishment and Maintenance (CEM) | Property acquisition and freight railroad relocation for BART corridor establishment | |
| BART Core System Modification (BCS) | Costs associated with core system impacts (e.g, facility additions, revenue vehicles, and operations control center) as described in the VTA/BART Comprensive Agreement | |
| Warm Springs Extension (WSX) | VTA share of project to extend BART from Fremont Warm Springs | |
| BART Silicon Valley Santa Clara Extension (SVSX) | Construction of 6.1-mile extension of BART from Berryessa to Santa Clara via Downtown San Jose | |
| Newhall Yard Maintenance Facility | Construction of end-of-line maintenance facility | |
| Northern Light Rail Express | Construction of double-tracking in Mountain View to facilitate a new line to Alum Rock connecting Caltrain with the Milpitas BART Station | |
| Southern Light Rail Express | Reconfiguration of southern half of the light rail system to allow express trains and integrate Almaden shuttle trains in the larger system | |

| Figure 4-10 Measure A Program Uses Of Funds (Continued) | | |
|---|---|---|
| Project Title | Project Description | |
| Capitol Expessway Light Rail Pedestrian Improvements & Eastridge Transit Center | Pedestrian and bus improvements along Capitol Expressway and reconstruction of the Eastridge Transit Center | |
| Santa Clara Pocket Track | Construction of a pocket track and supporting infrastructure in Santa Clara to facilitate a new line from Mountain View to Alum Rock connecting Caltrain with the Milpitas BART Station | |
| Caltrain Investment Program | VTA share of Caltrain's Advanced Signal System and Electrification Infrastructure projects | |
| Santa Clara & San Jose Diridon Station Upgrade | VTA share of Caltrain project to add center boarding and pedestrian underpass at Santa Clara and additional station capacity at San Jose Diridon | |
| Santa Clara Station Pedestrian Underpass Extension | Construction of an extension to the Caltrain pedestrian underpass to Brokaw Road | |
| Caltrain Safety Enhancements | Engineering and construction for at-grade crossing improvements (e.g., pedestrian gates, sidewalks, signaling and striping, and advanced signal preemption) | |
| Blossom Hill Pedestrian Overcrossing | Final construction of pedestrian grade separation over Monterey Road and UPRR tracks | |

| Figure 4-10 Measure A Program Uses Of Funds (Continued) | | |
|---|---|---|
| Project Title | Project Description | |
| Santa Clara/Alum Rock BRT | Capital improvements to bring BRT service from downtown San Jose to Eastridge Transit Center | |
| BRT Buses | Purchase of 49 specialized hybrid BRT vehicles | |
| Stevens Creek BRT | Capital improvements to bring BRT service from downtown San Jose to De Anza College | |
| El Camino Real BRT | Capital improvements to bring BRT service from downtown San Jose to Palo Alto | |
| Facility Modifications for BRT Buses | Modifications to bus facilities to accommodate BRT buses | |
| Berryessa BART Connector | Development of a bus connection between Berryessa BART station and origin and destinations throughout Santa Clara County | |
| Money Counting Facility Replacement | Construction of new revenue processing facility | |
| Swap Payments To Other Agencies | Distribution of funds to projects and programs in exchange for State Transportation Improvement Program (STIP) funds | |
| Measure A Programwide Mgmt Costs | Administration and management costs to support the Measure A program | |
| Tier II | | |
| Light Rail Extension to Vasona Junction | Light rail from Winchester to Vasona Junction | |
| Capitol Expressway Light Rail Extension to Eastridge | Light rail from Alum Rock Transit Center to Eastridge Transit Center | |