**LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY**
**1362 Rutan Court, Suite 100**
**Livermore, CA 94551**

# BOARD OF DIRECTORS MEETING

## BOARD MEMBERS

**KARLA BROWN – CHAIR**
**GINA BONANNO**
**KATHY NARUM**
**BRITTNI KIICK**
**DAVID HAUBERT– VICE CHAIR**
**JEAN JOSEY**
**MELISSA HERNANDEZ**

---

*Agenda Questions: Please call the Executive Director at (925) 455-7564 or send an email to frontdesk@lavta.org*

*Documents received after publication of the Agenda and considered by the Board of Directors in its deliberation will be available for inspection only via electronic document transfer, due to the COVID-19 outbreak. See the COVID-19 provisions outlined below. Please call or email the Executive Director during normal business hours if you require access to any such documents.*

**TELECONFERENCE** **SEPTEMBER 13, 2021 – 4:00 PM**

## CORONAVIRUS DISEASE (COVID-19) ADVISORY AND MEETING PROCEDURE

On June 5, 2020 (updated June 18, 2020), the Health Officer of Alameda County issued an Order that will continue to be in effect until it is rescinded, superseded, or amended in writing by the Health Officer. The Order directed that all individuals living in the county to shelter at their place of residence except that they may leave to provide or receive certain essential services or engage in certain essential activities and work for essential businesses and governmental services.

Under the Governor's Executive Order N-29-20, this meeting may utilize teleconferencing. As a precaution to protect the health and safety of staff, officials, and the general public. Councilmembers will not be physically in attendance, but will be available via video conference.

The administrative office of Livermore Amador Valley Transit Authority (LAVTA) is currently closed to the public and will remain closed for the duration of the Board of Directors (BOD) meeting. Consequently, there will be no physical location for members of the public to participate in the meeting. We encourage members of the public to shelter in place and access the meeting online using the web-video communication application, Zoom. Zoom participants will have the opportunity to speak during Public Comment.

If you are submitting public comment via email, please do so by 1:00 p.m. on Monday, September 13, 2021 to frontdesk@lavta.org. Please include "Public Comment 9/13/2021" and the agenda item in the subject line. In the body of the email please include your name. Public comments submitted will be read during Public Comment and will be subject to the regular three-minute time restriction.

This Board of Directors meeting will be conducted on the web-video communication platform, Zoom. In order to view and/or participate in this meeting, members of the public will need to download Zoom from its website, www.zoom.us.

It is recommended that anyone wishing to participate in the meeting complete the download process before the start of the meeting.

There will be zero tolerance for any person addressing the Board making profane, offensive and disruptive remarks, or engaging in loud, boisterous, or other disorderly conduct, that disrupts the orderly conduct of the public meeting.

**How to listen and view meeting video:**

- From a PC, Mac, iPad, iPhone or Android device click the link below:
  https://zoom.us/j/86715841855
  Passcode: BOD1362Mtg

- To supplement a PC, Mac, tablet or device without audio, please also join by phone:
  Dial: 1 (669) 900-6833
  Webinar ID: 867 1584 1855
  Passcode: 761222

  *To comment by video conference, click the "Raise Your Hand" button to request to speak when Public Comment is being taken on the Agenda item. You will then be unmuted when it is your turn to make your comment for up to 3 minutes. After the allotted time, you will be muted.*

- Livestream online at: Livermore Amador Valley Transit Authority YouTube Channel

  *No option to make Public Comment on YouTube live stream.*

**How to listen only to the meeting:**

- For audio access to the meeting by telephone, use the dial-in information below:
  Dial: 1 (669) 900-6833
  Webinar ID: 867 1584 1855
  Passcode: 761222

  *Please note to submit public comment via telephone dial *9 on your dial pad. The meeting's host will be informed that you would like to speak. If you are chosen, you will be notified that your request has been approved and you will be allowed to speak. You will then be unmuted when it is your turn to make your comment for up to 3 minutes. After the allotted time, you will be muted.*

**To submit written comments:**

- Provide public written comments prior to the meeting by email, to frontdesk@lavta.org

If you are submitting public comment via email, please do so by 1:00 p.m. on Monday, September 13, 2021 to frontdesk@lavta.org. Please include "Public Comment 9/13/2021" and the agenda item to which your comment applies in the subject line. In the body of the email please include your name. Public comments submitted will be read during Public Comment and will be subject to the regular three-minute time restriction.

1. **Call to Order**

2. **Roll Call of Members**

3. **Meeting Open to Public**
   - Members of the audience may address the Board of Directors on any matter within the general subject matter jurisdiction of the LAVTA Board of Directors.
   - Unless members of the audience submit speaker forms before the start of the meeting requesting to address the board on specific items on the agenda, all comments must be made during this item of business. Speaker cards are available at the entrance to the meeting room and should be submitted to the Board secretary.
   - Public comments should not exceed three (3) minutes.
   - Items are placed on the Agenda by the Chairman of the Board of Directors, the Executive Director, or by any three members of the Board of Directors. Agendas are published 72 hours prior to the meeting.
   - No action may be taken on matters raised that are not on the Agenda.
   - For the sake of brevity, all questions from the public, Board and Staff will be directed through the Chair.

4. **July Tri-Valley Accessible Advisory Committee Minutes**

5. **Consent Agenda**

   **Recommend approval of all items on Consent Agenda as follows:**

   A. **Minutes of the July 12, 2021 Board of Directors meeting.**

   B. **Treasurer's Report for June 2021 (Preliminary) and July 2021**

      **Recommendation:** The Finance and Administration Committee recommends that the Board of Directors approve the June 2021 (preliminary) and July 2021 Treasurer's Report.

   C. **DBE Policy Revision**

      Recommendation: The Finance & Administration Committee recommends that the Board of Directors approve Resolution 28-2021 revising LAVTA's DBE policy.

   D. **Consideration and approval of the establishment of a California Employers' Pension prefunding trust account with CalPERS**

      **Recommendation:** The Finance &Administration Committee recommends that the Board approve Resolution 29-2021 establishing a California Employers' Pension Prefunding Trust (CEPPT) Account with CalPERS for the purpose of refunding LAVTA's required pension contributions and authorize an initial payment of $100,000 to open the trust account and select CEPPT asset allocation strategy 2. Additionally, the Finance and Administration Committee recommends that the Board authorize the Executive Director to execute the required documentation for participation in the CEPPT.

   E. **Resolution in Support of Allocation Request for Regional Measure 2 Funding for the**

**Shared Autonomous Vehicle Phase 2 Deployment Project**

**Recommendation:** The Projects & Services Committee recommends the Board of Directors approve Resolution 26-2021 in support of an allocation request to the Metropolitan Transportation Commission for $150,000 for the design phase of the Shared Autonomous Vehicle Phase 2 Deployment Project.

**6. Zero-Emission Bus Study Update**

**Recommendation:** None – information only.

**7. Alternate Appointment of LAVTA Board Member to Paratransit Demonstration Project Committee**

**Recommendation:** Staff recommends that the Board of Directors appoint a board member to become the alternate for the Paratransit Demonstration Project Committee.

**8. Executive Director's Report**

**9. Matters Initiated by the Board of Directors**

- Items may be placed on the agenda at the request of three members of the Board.

**10. Next Meeting Date is Scheduled for: October 4, 2021**

**11. Adjournment**

Please refrain from wearing scented products (perfume, cologne, after-shave, etc.) to these meetings, as there may be people in attendance susceptible to environmental illnesses.

*I hereby certify that this agenda was posted 72 hours in advance of the noted meeting.*

| | |
|---|---|
| */s/ Jennifer Suda* | *9/10/2021* |
| *LAVTA, Executive Assistant* | *Date* |

*On request, the Livermore Amador Valley Transit Authority will provide written agenda materials in appropriate alternative formats, or disability-related modification or accommodation, including auxiliary aids or services, to enable individuals with disabilities to participate in public meetings. A written request, including name of the person, mailing address, phone number and brief description of the requested materials and preferred alternative format or auxiliary aid or service should be sent at least seven (7) days before the meeting. Requests should be sent to:*

*Executive Director*
*Livermore Amador Valley Transit Authority*
*1362 Rutan Court, Suite 100*
*Livermore, CA 94551*
*Fax: 925.443.1375*
*Email: frontdesk@lavta.org*

# AGENDA

# ITEM 4

BACK TO AGENDA

**LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY**
**1362 Rutan Court, Suite 100**
**Livermore, CA 94551**

**Tri-Valley Accessible Advisory Committee**

**DATE**: Wednesday, July 7, 2021

**PLACE**: **Zoom Teleconference**

**TIME**: 3:30 p.m.

---

***DRAFT MINUTES***

## 1. Call to Order

The TAAC Chair Herb Hastings called the meeting to order at 3:30 pm.

Members Present:

| | |
|---|---|
| David Weir | City of Livermore |
| Judith LaMarre | City of Livermore |
| Michael Balero | City of Livermore – Alternate |
| Shawn Costello | City of Dublin |
| Connie Mack | City of Dublin |
| Donna Singer | City of Dublin – Alternate |
| Herb Hastings | County of Alameda |
| Kulwant Singh | County of Alameda - Alternate |
| Rachel Prater | Social Services Member |
| Diana Houghtaling | Social Services Member |
| Shay Roberson | Social Services Member – Alternate |
| Esther Waltz | PAPCO Representative |

Staff Present:

| | |
|---|---|
| Toan Tran | LAVTA |
| Kadri Kulm | LAVTA |
| Christian Pereira | MV Transit |
| Juana Lopez | Transdev |
| Rashida Kamara | CCCTA |

Guests:

| | |
|---|---|
| Pricilla Gomez | East Bay Regional Center |



BACK TO AGENDA

2. **Roll Call**

3. **Approval of Agenda and Modifications in necessary**
   Hastings/Mack

4. **Citizens' Forum: An opportunity for members of the audience to comment on a subject not listed on the agenda (under state law, no action may be taken at this meeting)**
   None.

5. **Minutes of the May 5, 2021 meetings of the Committee**
   Approved.
   Mack/Waltz

6. **Election of Chair and Vice Chair for FY22**
   The committee members elected Herb Hastings for the committee Chair position and Shawn Costello for the committee's Vice-Chair position.
   Weir/Prater

7. **TAAC Schedule for FY22**
   The committee voted to have their meetings at following dates at 3:30pm:
   - July 7, 2021,
   - September 1, 2021,
   - November 3, 2021,
   - January 12, 2022,
   - March 2, 2022, and
   - May 4, 2022

   Weir/Waltz

8. **Wheels Fixed Route Service Reinstatement**
   Staff updated the committee on the Wheels fixed route service reinstatement and informed the committee that effective June 14, 2021, weekday service frequencies on the Route 10R and 30R will return to pre-pandemic service of every 15 minutes from approximately 6am-10am and 2pm-6pm.
   Staff is currently working on the Fall schedule that goes into effect on August 7th.

9. **Paratransit Service to Day Programs**
   Staff monitors the trip demand to day programs and explained the subscription/standing order process.

**9. PAPCO Report**

Herb Hastings reported that the Chair and Vice Chair of PAPCO where re-elected, Shawn Costello is in SRAC and Herb Hastings is in Independent Watchdog Committee.

**9. Service Updates and Concerns**

Donna Singer asked about inclusion of East Bay Paratransit into the One Seat Ride Pilot Program, but as of now there is no information on them joining the program. Herb Hastings reported on his One Seat Ride experience from Livermore to Lafayette.

Esther Waltz was asking for clarification if masks are needed at the bus stops. Staff said that LAVTA is following CDC guidelines, which state that masks are required on the buses, but not at the outdoor bus stops.

Shay Roberson inquired about the end date of the One Seat Ride Pilot Program. Staff responded that it is scheduled to sunset at the end of December, 2021.

Judy LaMarre reported that she was given misinformation when she wanted to make reservation for Sunday at 7:30am, but was told by the reservationists that on the holidays service start at 8:30am..

**10. Adjournment**

Meeting adjourned at 4:30 pm.

# AGENDA

# ITEM 5A

BACK TO AGENDA

# MINUTES OF THE JULY 12, 2021 ZOOM TELECONFERENCE
# LAVTA BOARD OF DIRECTORS MEETING

## 1. Call to Order

Meeting was called to order by Board Chair Karla Brown at 4:03pm.

Board Chair Karla Brown informed the public that LAVTA's meeting is being conducted according to the COVID-19 rules that are detailed at the beginning of the agenda explaining why this is a Zoom teleconference.

## 2. Roll Call of Members

**Members Present**
Jean Josey – City of Dublin
Melissa Hernandez – City of Dublin
Kathy Narum – City of Pleasanton
Karla Brown – City of Pleasanton
Gina Bonanno – City of Livermore
David Haubert – County of Alameda

**Members Absent**
Brittni Kiick – City of Livermore

## 3. Meeting Open to Public

No comments.

## 4. Consent Agenda

**Recommend approval of all items on Consent Agenda as follows:**

A. **Minutes of the June 7, 2021 Board of Directors meeting.**

B. **Treasurer's Report for May 2021**

The Board of Directors approved the LAVTA Treasurer's Report for May 2021.

C. **Resolution Authorizing Investment of Livermore Amador Valley Transit Authority (LAVTA) Monies in the State of California Local Agency Investment Fund (LAIF)**

The Board of Directors adopted Resolution 20-2021 reauthorizing investment of LAVTA monies in LAIF.

D. **Declaration of Surplus Property in Compliance with LAVTA Policy for Disposition of Surplus Property**

The Board of Directors declared as surplus one road supervisor van, one transit bus and authorized their disposal through a method consistent with LAVTA's Policy for Disposition of Surplus Property.

E. **Revised Resolution in Support of Participation in the Metropolitan Transportation Commission's Clipper START! Pilot Program**

The Board of Directors authorized the Executive Director to provide the Metropolitan Transportation Commission (MTC) with a revised resolution indicating LAVTA's desire to continue to participate in MTC's Clipper START! pilot program. Resolution 24-2021.

F. **Approve Resolution 21-2021 Accepting Funds from the Alameda County Transportation Commission for Atlantis O&M Facility Bridging Documents Project**

The Board of Directors approved Resolution 21-2021, accepting funds from the Alameda County Transportation Commission for the Atlantis O&M Facility Bridging Documents Project.

G. **Acceptance of Pleasanton BRT Corridor Enhancement Project #2019-08**

The Board of Directors approved Resolution 23-2021, accepting the completion of the Pleasanton BRT Corridor Enhancements Project #2019-08 and directing the Executive Director or his designee to file a Notice of Completion with the Alameda County Clerk-Recorder.

Approved: Haubert/Hernandez
Aye: Narum, Bonanno, Brown, Josey, Hernandez, Haubert
No: None
Abstain: None
Absent: Kiick

**5. Establishing Standing Committees and Memberships**

The Board of Directors confirmed and approved Resolution 25-2021, establishing standing committees, memberships, and officers.

Approved: Hernandez/Narum
Aye: Narum, Bonanno, Brown, Josey, Hernandez, Haubert
No: None
Abstain: None
Absent: Kiick

**6. Appointment of LAVTA Board Members to Paratransit Demonstration Project Committee**

The Board of Directors appointed Chair Karla Brown and Board Member David Haubert to the Paratransit Demonstration Project Committee. The Board of Directors requested to bring back at the next Board meeting an agendized item to add an alternate to the Paratransit Demonstration Project Committee.

Approved: Josey/Bonanno
Aye: Narum, Bonanno, Brown, Josey, Hernandez, Haubert
No: None

Abstain: None
Absent: Kiick

**7. Executive Director's Report**

Director of Planning and Marketing Tony McCaulay provided a brief update on ridership and start of school schedules. Executive Director Michael Tree notified that bus operators in Eastern Alameda County will be fare free in September to provide public incentive to ride public transit.

Executive Director Michael Tree informed that the Blue Ribbon Task Force work should be concluded this summer and they are moving forward with Network Management. The key priorities of the Network Management were included in the report and Executive Director Michael Tree pointed out that he has concerns regarding the capital project prioritization.

Executive Director Michael Tree also highlighted Atlantis Transit Facility, germ barrier/security doors, Dublin Parking Garage Project, Valley Link Project.

The Board of Directors discussed this agenda item with staff. Staff responded to questions from the Board of Directors. Chair Karla Brown asked for corrected Board Statistics, since Attachment 1 had an error.

**8. Matters Initiated by the Board of Directors**

None.

**9. Next Meeting Date is Scheduled for: August 2, 2021**

**10. Adjournment**

Meeting adjourned at 4:57pm.

# AGENDA

# ITEM 5B

BACK TO AGENDA

LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY

# STAFF REPORT

SUBJECT: Preliminary Treasurer's Report for June 2021

FROM: Tamara Edwards, Director of Finance

DATE: September 13, 2021

---

**Action Requested**
Approve the LAVTA Preliminary Treasurer's Report for June 2021.

**Discussion**
***Cash accounts:***
Our petty cash account (101) has a balance of $200, and our ticket sales change account (102) continues with a balance of $240 (these two accounts should not change).

***General checking account activity (105):***

| | |
|---|---|
| Beginning balance June 1, 2021 | $7,326,149.03 |
| Payments made | $1,138,829.59 |
| Deposits made | $2,643,767.25 |
| Ending balance June 30, 2021 | $8,831,086.69 |

***Farebox account activity (106):***

| | |
|---|---|
| Beginning balance June 1, 2021 | $124,661.15 |
| Deposits made | $44,554.62 |
| Ending balance June 30, 2021 | $169,215.77 |

***LAIF investment account activity (135):***

| | |
|---|---|
| Beginning balance June 1, 2021 | $10,985,041.83 |
| Ending balance June 30, 2021 | $10,985,041.83 |

***Operating Expenditures Summary:***
While most accruals have been complete there are a few more coming in, including the June Paratransit billing. The "final" June Treasurers' Report will come in the form of the Annual Comprehensive Financial Report. At this time LAVTA is at 81.56% of budgeted expenses.

***Operating Revenues Summary:***
While expenses are at 81.56%, revenues are at 140.1%, providing for a healthy cashflow.



BACK TO AGENDA

**Recommendation**
The Finance and Administration Committee recommends that the Board of Directors approve the June 2021 (preliminary) Treasurer's Report.

Attachments:

1. June 2021 Treasurer's Report

*Approved:* _____



BACK TO AGENDA

# LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY
## BALANCE SHEET
## FOR THE PERIOD ENDING:
## June 30, 2021

**ASSETS:**

| | | | |
|---|---|---|---|
| 101 | PETTY CASH | 200 | |
| 102 | TICKET SALES CHANGE | 240 | |
| 105 | CASH - GENERAL CHECKING | 8,831,087 | |
| 106 | CASH - FIXED ROUTE ACCOUNT | 169,216 | |
| 107 | Clipper Cash | 284,016 | |
| 108 | Rail | 0 | |
| 109 | BOC | 46 | |
| 120 | ACCOUNTS RECEIVABLE | 5,781,147 | |
| 135 | INVESTMENTS - LAIF | 10,985,954 | |
| 150 | PREPAID EXPENSES | 156,537 | |
| 160 | OPEB ASSET | 802,201 | |
| 165 | DEFFERED OUTFLOW-Pension Related | 588,141 | |
| 166 | DEFFERED OUTFLOW-OPEB | 64,410 | |
| 170 | INVESTMENTS HELD AT CALTIP | 0 | |
| 111 | NET PROPERTY COSTS | 62,519,430 | |
| | **TOTAL ASSETS** | | **90,182,624** |

**LIABILITIES:**

| | | | |
|---|---|---|---|
| 205 | ACCOUNTS PAYABLE | 638,864 | |
| 211 | PRE-PAID REVENUE | 1,595,786 | |
| 21101 | Clipper to be distributed | 156,193 | |
| 22000 | FEDERAL INCOME TAXES PAYABLE | 34 | |
| 22010 | STATE INCOME TAX | (10) | |
| 22020 | FICA MEDICARE | (156) | |
| 22050 | PERS HEALTH PAYABLE | 0 | |
| 22040 | PERS RETIREMENT PAYABLE | (330) | |
| 22030 | SDI TAXES PAYABLE | (15) | |
| 22070 | AMERICAN FIDELITY INSURANCE PAYABLE | 638 | |
| 22090 | WORKERS' COMPENSATION PAYABLE | 12,491 | |
| 22100 | PERS-457 | 0 | |
| 22110 | Direct Deposit Clearing | 0 | |
| 23101 | Net Pension Liability | 1,212,136 | |
| 23105 | Deferred Inflow- OPEB Related | 203,209 | |
| 23104 | Deferred Inflow- Pension Related | 81,681 | |
| 23103 | INSURANCE CLAIMS PAYABLE | 32,868 | |
| 23102 | UNEMPLOYMENT RESERVE | 8,300 | |
| | **TOTAL LIABILITIES** | | **3,941,690** |

**FUND BALANCE:**

| | | | |
|---|---|---|---|
| 301 | FUND RESERVE | (7,645,534) | |
| 304 | GRANTS, DONATIONS, PAID-IN CAPITAL | 72,786,495 | |
| 30401 | SALE OF BUSES & EQUIPMENT | 84,491 | |
| | FUND BALANCE | 21,015,482 | |
| | **TOTAL FUND BALANCE** | | **86,240,933** |
| | **TOTAL LIABILITIES & FUND BALANCE** | | **90,182,623** |

BACK TO AGENDA

**LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY**
**REVENUE REPORT**
**FOR THE PERIOD ENDING:**
**June 30, 2021**

| ACCOUNT | DESCRIPTION | BUDGET | CURRENT MONTH | YEAR TO DATE | BALANCE AVAILABLE | PERCENT BUDGET EXPENDED |
|---|---|---|---|---|---|---|
| 4010100 | Fixed Route Passenger Fares | 340,455 | 72,714 | 310,645 | 29,810 | 91.2% |
| 4020000 | Business Park Revenues | 72,020 | 33,396 | 200,217 | (128,197) | 278.0% |
| 4020500 | Special Contract Fares | 218,288 | 218,683 | 295,320 | (77,032) | 135.3% |
| 4020500 | Special Contract Fares - Paratransit | 30,000 | 0 | 17,273 | 12,727 | 57.6% |
| 4010200 | Paratransit Passenger Fares | 93,750 | 0 | 14,043 | 79,707 | 15.0% |
| 4060100 | Concessions | 20,820 | (15,749) | 25,062 | (4,242) | 120.4% |
| 4060300 | Advertising Revenue | 30,000 | 5,049 | 60,672 | (30,672) | 202.2% |
| 4070400 | Miscellaneous Revenue-Interest | 25,000 | (26,284) | 24,352 | 648 | 97.4% |
| 4070300 | Non tranpsortation revenue | 86,052 | 60,918 | 137,179 | (51,127) | 159.4% |
| 4090100 | Local Transportation revenue | 538,506 | 223,640 | 3,010,044 | (2,471,538) | 559.0% |
| 4099100 | TDA Article 4.0 - Fixed Route | 6,041,384 | 1,959,497 | 8,515,787 | (2,474,403) | 141.0% |
| 4099500 | TDA Article 4.0-BART | 58,163 | 0 | 74,282 | (16,119) | 127.7% |
| 4099200 | TDA Article 4.5 - Paratransit | 87,527 | 0 | 104,923 | (17,396) | 119.9% |
| 4099600 | Bridge Toll- RM2, RM1 | 348,502 | 409,489 | 409,489 | (60,987) | 117.5% |
| 4110100 | STA Funds-Partransit | 66,305 | 0 | 0 | 66,305 | 0.0% |
| 4110500 | STA Funds- Fixed Route BART | 415,450 | 0 | 717,177 | (301,727) | 172.6% |
| 4110100 | STA Funds-pop | 793,498 | 413,262 | 620,982 | 172,516 | 78.3% |
| 4110100 | STA Funds- rev | 208,552 | 0 | 0 | 208,552 | 0.0% |
| 4110100 | STA Block | 888,731 | 0 | 770,975 | 117,756 | 86.8% |
| 4110100 | STA Funds- Lifeline | 38,281 | 0 | 0 | 38,281 | 0.0% |
| 4110100 | Caltrans | 250,000 | 155,264 | 155,264 | 94,736 | 62.1% |
| 4130000 | FTA Section CARES Act | 5,000,000 | 2,307,915 | 6,819,121 | (1,819,121) | 100.0% |
| 4130000 | FTA Section 5307 ADA Paratransit | 412,325 | 0 | 0 | 412,325 | 0.0% |
| 4130000 | FTA TPI | 88,000 | 0 | 0 | 88,000 | 100.0% |
| 4640500 | Measure B Gap | 23,859 | (31,572) | 15,939 | 7,920 | 100.0% |
| 4640500 | Measure B Express Bus | - | 0 | 0 | - | 100.0% |
| 4640100 | Measure B Paratransit Funds-Fixed Route | 559,135 | 85,704 | 872,435 | (313,300) | 156.0% |
| 4640100 | Measure B Paratransit Funds-Paratransit | 103,034 | 0 | 145,021 | (41,987) | 140.8% |
| 4640200 | Measure BB Paratransit Funds-Fixed Route | 413,424 | 63,237 | 646,297 | (232,873) | 156.3% |
| 4640200 | Measure BB Paratransit Funds-Paratransit | 202,370 | 0 | 285,408 | (83,038) | 141.0% |
| | **RAIL** | 0 | 0 | 210,800 | | |
| | **TOTAL REVENUE** | **17,453,431** | **5,935,163** | **24,458,706** | **(6,794,475)** | **140.1%** |

BACK TO AGENDA

**LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY**
**OPERATING EXPENDITURES**
**FOR THE PERIOD ENDING:**
**June 30, 2021**

| | | | BUDGET | CURRENT MONTH | YEAR TO DATE | BALANCE AVAILABLE | PERCENT BUDGET EXPENDED |
|---|---|---|---|---|---|---|---|
| 501 | 02 | Salaries and Wages | $1,670,376 | $131,734 | $1,578,575 | $91,801 | 94.50% |
| 502 | 00 | Personnel Benefits | $999,960 | $15,090 | $853,308 | $146,652 | 85.33% |
| 503 | 00 | Professional Services | $1,148,380 | $50,540 | $486,154 | $662,226 | 42.33% |
| 503 | 05 | Non-Vehicle Maintenance | $825,443 | $74,836 | $816,359 | ($7,503) | 98.90% |
| 503 | 99 | Communications | $5,500 | $516 | $1,462 | $4,038 | 26.58% |
| 504 | 01 | Fuel and Lubricants | $1,021,500 | $59,893 | $426,882 | $594,618 | 41.79% |
| 504 | 03 | Non contracted vehicle maintenance | $3,000 | $60,000 | $67,822 | ($64,822) | 2260.73% |
| 504 | 99 | Office/Operating Supplies | $56,030 | $10,742 | $32,477 | $23,553 | 57.96% |
| 504 | 99 | Printing | $67,000 | $2,416 | $24,325 | $42,675 | 36.31% |
| 505 | 00 | Utilities | $351,235 | $44,494 | $309,209 | $42,026 | 88.03% |
| 506 | 00 | Insurance | $682,703 | $10,292 | $568,157 | $114,546 | 83.22% |
| 507 | 99 | Taxes and Fees | $277,000 | $7,541 | $53,066 | $223,934 | 19.16% |
| 508 | 01 | Purchased Transportation Fixed Route | $8,755,092 | $685,272 | $7,864,560 | $890,532 | 89.83% |
| 2-508 | 02 | Purchased Transportation Paratransit | $1,314,813 | $204,031 | $843,250 | $471,563 | 64.13% |
| 508 | 03 | Purchased Transportation WOD | $76,026 | $42,780 | $272,029 | ($196,003) | 357.81% |
| 509 | 00 | Miscellaneous | $179,477 | $2,531 | $52,104 | $195,442 | 29.03% |
| 509 | 02 | Professional Development | $39,500 | $14,122 | $18,331 | $21,169 | 46.41% |
| 509 | 08 | Advertising | $60,000 | $0 | $31,013 | $28,987 | 51.69% |
| | | **TOTAL** | **$17,533,035** | **$1,416,829** | **$14,299,083** | **$3,285,434** | **81.56%** |

BACK TO AGENDA

**LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY**
**CAPITAL REVENUE AND EXPENDITURE REPORT (Page 1 of 2)**
**FOR THE PERIOD ENDING:**
**June 30, 2021**

| ACCOUNT | DESCRIPTON | BUDGET | CURRENT MONTH | YEAR TO DATE | BALANCE AVAILABLE | PERCENT BUDGET EXPENDED |
|---|---|---|---|---|---|---|
| **REVENUE DETAILS** | | | | | | |
| 4090594 | TDA (office and facility equip) | 199,000 | 0 | 0 | 199,000 | 0.00% |
| 4090194 | TDA Shop repairs and replacement | 100,000 | 113,317 | 113,317 | (13,317) | 113.32% |
| 4091794 | Bus stop improvements | 416,000 | 18,963 | 69,924 | 346,076 | 16.81% |
| 4090994 | Radio Upgrade | 6,700 | 52,406 | 65,106 | (58,406) | 971.72% |
| 4090794 | TDA Transit Center Improvements | 110,000 | 0 | 0 | 110,000 | 0.00% |
| 40904 | TDA BRT | 110,000 | 156,026 | 156,026 | (46,026) | 141.84% |
| 409??94 | TDA (Transit Capital) | 100,000 | 284,780 | 319,770 | (219,770) | 319.77% |
| 4092094 | TDA (Major component rehab) | 410,000 | 0 | 0 | 410,000 | 0.00% |
| 4091294 | TDA Doolan Tower Upgrade | 30,000 | 0 | 0 | 30,000 | 0.00% |
| 4091691 | SAV BAAQMD | 168,194 | 0 | 0 | 168,194 | 0.00% |
| 46405 | CIP Shelters | 1,277,410 | 809,461 | 1,163,751 | 113,659 | 91.10% |
| 4090694 | TDA TSP | 66,000 | 171,815 | 294,276 | (228,276) | 445.87% |
| 409xx94 | Bus add ons | 266,000 | 0 | 0 | 266,000 | 0.00% |
| 4090294 | TDA Atlantis | 350,000 | 417,855 | 437,116 | (87,116) | 124.89% |
| 409xx94 | TDA Real Time APC | 200,000 | 0 | 0 | 200,000 | 0.00% |
| 409xx91 | TVTC TSP | 1,140,000 | 146,334 | 146,334 | | |
| 4111700 | SGR shelters and stops | 80,640 | 12,124 | 12,124 | 68,517 | 15.03% |
| 4110500 | Prop 1B office and facility | 200,962 | 112,510 | 112,510 | 88,452 | 55.99% |
| 411 | Prop 1B Transit Center | 20,000 | 0 | 0 | 20,000 | 0.00% |
| 411 | Dublin Parking garage | 20,000,000 | 0 | 0 | 20,000,000 | 0.00% |
| 41306 | TSP | 100,000 | 0 | 110,022 | (10,022) | 110.02% |
| 41315 | FTA farebox | | 0 | 0 | 0 | #DIV/0! |
| 41320 | FTA Hybrid battery packs | 800,000 | 0 | 0 | 800,000 | 0.00% |
| | FTA Transit Center | 440,000 | 0 | 0 | | 0.00% |
| | **TOTAL REVENUE** | **26,590,906** | **2,295,591** | **3,000,277** | **22,156,963** | **11.28%** |

BACK TO AGENDA

**LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY**
**CAPITAL REVENUE AND EXPENDITURE REPORT (Page 2 of 2)**
**FOR THE PERIOD ENDING:**
**June 30, 2021**

| ACCOUNT | DESCRIPTON | BUDGET | CURRENT MONTH | YEAR TO DATE | BALANCE AVAILABLE | PERCENT BUDGET EXPENDED |
|---|---|---|---|---|---|---|
| **EXPENDITURE DETAILS** | | | | | | |
| | **CAPITAL PROGRAM - COST CENTER 07** | | | | | |
| 5550207 | Atlantis Facility | 350,000 | 23,436 | 368,025 | (18,025) | 105.15% |
| 5550107 | Shop Repairs and replacement | 300,962 | 48,280 | 244,667 | 56,295 | 81.30% |
| 5551607 | SAV | 168,194 | 0 | 9,775 | 158,419 | 5.81% |
| 5550407 | BRT | 168,194 | 32,462 | 969,834 | (801,640) | 576.62% |
| 555xx07 | Bus Add ons | 266,000 | 0 | 208,040 | 57,960 | 78.21% |
| 555xx07 | Real time APC | 200,000 | 0 | 0 | 200,000 | 0.00% |
| 5550507 | Office and Facility Equipment | 199,000 | 7,966 | 23,776 | 175,224 | 11.95% |
| 5550607 | TSP upgrade | 1,206,000 | 0 | 505,870 | 700,130 | 41.95% |
| 5550907 | Radio upgrade | 6,700 | 0 | 96,895 | (90,195) | 1446.20% |
| 5551007 | Transit Center Upgrades and Improvements | 570,000 | 0 | 49,308 | 520,692 | 8.65% |
| 5551207 | Doolan Tower upgrade | 30,000 | 0 | 0 | 30,000 | 0.00% |
| 555xx07 | Dublin Parking Garage | 20,000,000 | 0 | 0 | 20,000,000 | 0.00% |
| 5551707 | Bus Shelters and Stops | 1,774,050 | 0 | 424,153 | 1,349,897 | 23.91% |
| 5551907 | COVID Supplies | 21,343 | 0 | 47,286 | (25,943) | 221.55% |
| 5552007 | Major component rehab | 1,210,000 | 9,518 | 9,518 | 1,200,482 | 0.79% |
| 555??07 | Transit Capital | 100,000 | 0 | 43,130 | 56,870 | 43.13% |
| | **TOTAL CAPITAL EXPENDITURES** | **26,570,443** | **121,662** | **3,000,277** | **23,570,166** | **11.29%** |
| | **FUND BALANCE (CAPITAL)** | **20463.00** | **2,173,929** | **0** | | |
| | **FUND BALANCE (CAPTIAL & OPERATING)** | **-62,141.00** | **6,745,863** | **10,143,036** | | |

BACK TO AGENDA

California State Treasurer
Fiona Ma, CPA

Local Agency Investment Fund
P.O. Box 942809
Sacramento, CA 94209-0001
(916) 653-3001

August 17, 2021

LAIF Home
PMIA Average Monthly Yields

LIVERMORE/AMADOR VALLEY TRANSIT AUTHORITY
GENERAL MANAGER
1362 RUTAN COURT, SUITE 100
LIVERMORE, CA 94550

Tran Type Definitions

**Account Number:** 80-01-002

June 2021 Statement

## Account Summary

| | | | |
|---|---|---|---|
| Total Deposit: | 0.00 | Beginning Balance: | 10,985,041.73 |
| Total Withdrawal: | 0.00 | Ending Balance: | 10,985,041.73 |

LAVTA
Month End Cash Disbursements Report
Prior Period Report for 06-21 BANK ACCOUNT 105



| Period | Check Number | Check Date | Vendor # | (Name) | Disc. Terms | Gross Amount | Disc Amount | Net Amount | Check Description |
|---|---|---|---|---|---|---|---|---|---|
| 06-21 | 000001 | 06/03/21 | VOID | (Voided Check) | | .00 | .00 | .00 | Manual Generated Check PY |
| | 022674 | 06/11/21 | AIM01 | (AIM TO PLEASE JANITORIAL SER | | 2,704.94 | .00 | 2,704.94 | Automatic Generated Check |
| | 022675 | 06/11/21 | ART01 | (ART'S SECURITY LOCKSMITH) | | 13.66 | .00 | 13.66 | Automatic Generated Check |
| | 022676 | 06/11/21 | BAR07 | (SEAN BARNEY) | | 950.00 | .00 | 950.00 | Automatic Generated Check |
| | 022677 | 06/11/21 | BAY08 | (BAY CITY ELECTRIC WORKS) | | 378.00 | .00 | 378.00 | Automatic Generated Check |
| | 022678 | 06/11/21 | CAL13 | (CALIFORNIA TRANSIT) | | 20,346.00 | .00 | 20,346.00 | Automatic Generated Check |
| | 022679 | 06/11/21 | CRH01 | (CARMEN RIVERA-HENDRICKSON) | | 1,578.90 | .00 | 1,578.90 | Automatic Generated Check |
| | 022680 | 06/11/21 | DAY02 | (DAY & NIGHT PEST CONTROL) | | 218.00 | .00 | 218.00 | Automatic Generated Check |
| | 022681 | 06/11/21 | DEL01 | (DELL MARKETING LP) | | 10,928.11 | .00 | 10,928.11 | Automatic Generated Check |
| | 022682 | 06/11/21 | EME01 | (BRIGHTVIEW LANDSCAPE SERVICE | | 1,301.00 | .00 | 1,301.00 | Automatic Generated Check |
| | 022683 | 06/11/21 | FAS01 | (FASTSIGNS) | | 209.56 | .00 | 209.56 | Automatic Generated Check |
| | 022684 | 06/11/21 | GBS01 | (WILLIAM R. GRAY & COMPANY IN | | 2,811.25 | .00 | 2,811.25 | Automatic Generated Check |
| | 022685 | 06/11/21 | GOG01 | (GO GO GRANDPARENT) | | 500.00 | .00 | 500.00 | Automatic Generated Check |
| | 022686 | 06/11/21 | JTH01 | (J. THAYER COMPANY) | | 185.09 | .00 | 185.09 | Automatic Generated Check |
| | 022687 | 06/11/21 | LIV10 | (LIVERMORE SANITATION INC) | | 2,515.66 | .00 | 2,515.66 | Automatic Generated Check |
| | 022688 | 06/11/21 | PAC11 | (PACIFIC ENVIROMENTAL SERV) | | 240.00 | .00 | 240.00 | Automatic Generated Check |
| | 022689 | 06/11/21 | POW03 | (POWER MANUFACTURING INC) | | 60,000.00 | .00 | 60,000.00 | Automatic Generated Check |
| | 022690 | 06/11/21 | QUE01 | (QUENCH) | | 281.87 | .00 | 281.87 | Automatic Generated Check |
| | 022691 | 06/11/21 | RSE01 | (R & S ERECTION) | | 991.00 | .00 | 991.00 | Automatic Generated Check |
| | 022692 | 06/11/21 | SCF01 | (SC FUELS) | | 20,874.18 | .00 | 20,874.18 | Automatic Generated Check |
| | 022693 | 06/11/21 | SHA02 | (SHAMROCK OFFICE SOLUTIONS) | | 31.25 | .00 | 31.25 | Automatic Generated Check |
| | 022694 | 06/11/21 | SOL01 | (SOLUTIONS FOR TRANSIT) | | 2,083.33 | .00 | 2,083.33 | Automatic Generated Check |
| | 022695 | 06/11/21 | TIC01 | (BRIANNA MURRAY) | | 20.00 | .00 | 20.00 | Automatic Generated Check |
| | 022696 | 06/11/21 | TX133 | (SAROJA IYER) | | 139.83 | .00 | 139.83 | Automatic Generated Check |
| | 022697 | 06/11/21 | TX205 | (MUHAMMAD ALI) | | 194.19 | .00 | 194.19 | Automatic Generated Check |
| | 022698 | 06/11/21 | TX212 | (LINDA WAHLE) | | 200.00 | .00 | 200.00 | Automatic Generated Check |
| | 022699 | 06/11/21 | TX240 | (DATTASRAYA KULKARNI) | | 11.05 | .00 | 11.05 | Automatic Generated Check |
| | 022700 | 06/11/21 | VAN01 | (FBD VANGUARD CONSTRUCTION IN | | 39,969.22 | .00 | 39,969.22 | Automatic Generated Check |
| | 022701 | 06/25/21 | AEC01 | (AECOM TECHNICAL SERVICES INC | | 12,327.12 | .00 | 12,327.12 | Automatic Generated Check |
| | 022702 | 06/25/21 | ATT02 | (AT&T ) | | 421.68 | .00 | 421.68 | Automatic Generated Check |
| | 022703 | 06/25/21 | AVI01 | (AMADOR VALLEY INDUSTRIES) | | 517.66 | .00 | 517.66 | Automatic Generated Check |
| | 022704 | 06/25/21 | CIT06 | (CITY OF LIVERMORE SEWER) | | 213.53 | .00 | 213.53 | Automatic Generated Check |
| | 022705 | 06/25/21 | COR01 | (CORBIN WILLITS SYSTEMS) | | 529.40 | .00 | 529.40 | Automatic Generated Check |
| | 022706 | 06/25/21 | CRA01 | (CRADLEPOINT INC.) | | 360.00 | .00 | 360.00 | Automatic Generated Check |
| | 022707 | 06/25/21 | CUR01 | (CURIS SYSTEM LLC) | | 25,179.70 | .00 | 25,179.70 | Automatic Generated Check |
| | 022708 | 06/25/21 | DIR01 | (DIRECT TV) | | 20.25 | .00 | 20.25 | Automatic Generated Check |
| | 022709 | 06/25/21 | EME01 | (BRIGHTVIEW LANDSCAPE SERVICE | | 17,010.92 | .00 | 17,010.92 | Automatic Generated Check |
| | 022710 | 06/25/21 | GEN05 | (GENFARE) | | 2,373.83 | .00 | 2,373.83 | Automatic Generated Check |
| | 022711 | 06/25/21 | GIL01 | (GILLIG LLC) | | 9,517.56 | .00 | 9,517.56 | Automatic Generated Check |
| | 022712 | 06/25/21 | HAN01 | (HANSON BRIDGETT MARCUS) | | 3,147.50 | .00 | 3,147.50 | Automatic Generated Check |
| | 022713 | 06/25/21 | LYF01 | (LYFT, INC) | | 2,313.11 | .00 | 2,313.11 | Automatic Generated Check |
| | 022714 | 06/25/21 | OFF01 | (OFFICE DEPOT) | | 72.69 | .00 | 72.69 | Automatic Generated Check |
| | 022715 | 06/25/21 | PLA02 | (PLANETERIA MEDIA LLC) | | 325.00 | .00 | 325.00 | Automatic Generated Check |
| | 022716 | 06/25/21 | TEL01 | (TPx COMMUNICATIONS) | | 2,774.42 | .00 | 2,774.42 | Automatic Generated Check |
| | 022717 | 06/25/21 | TRA05 | (TRANSDEV NORTH AMERICA INC.) | | 26,762.40 | .00 | 26,762.40 | Automatic Generated Check |
| | 022718 | 06/25/21 | TX205 | (MUHAMMAD ALI) | | 74.90 | .00 | 74.90 | Automatic Generated Check |
| | 022719 | 06/25/21 | VON01 | (TRAPEZE SOFTWARE GROUP) | | 7,771.00 | .00 | 7,771.00 | Automatic Generated Check |
| | H11291 | 06/08/21 | PAC01 | (AT&T ) | | 354.67 | .00 | 354.67 | PAC01,ACCT #436-951-0106, |
| | H11292 | 06/08/21 | PAC01 | (AT&T ) | | 33.34 | .00 | 33.34 | PAC01,ACCT #232-351-6260, |
| | H11293 | 06/08/21 | PAC01 | (AT&T ) | | 389.72 | .00 | 389.72 | PAC01,ACCT #925-243-9029, |
| | H11294 | 06/08/21 | PAC01 | (AT&T ) | | 209.33 | .00 | 209.33 | PAC01, ACCT #925-245-0576 |
| | H11295 | 06/02/21 | VER01 | (VERIZON WIRELESS) | | 1,687.81 | .00 | 1,687.81 | VER01, 9880389644,4/23/21 |
| | H11296 | 06/04/21 | PER04 | (CALPERS RETIREMENT SYSTEM) | | 2,130.07 | .00 | 2,130.07 | PER04, PERS 457 CONTRIBUT |
| | H11297 | 06/04/21 | PER01 | (PERS ) | | 5,787.70 | .00 | 5,787.70 | PER01, PERS NEW CONTRIBUT |
| | H11298 | 06/04/21 | PER01 | (PERS ) | | 3,900.38 | .00 | 3,900.38 | PER01, PERS CLASSIC CONTR |
| | H11299 | 06/04/21 | EMP01 | (EMPLOYMENT DEVEL DEPT) | | 3,507.31 | .00 | 3,507.31 | EMP01, STATE TAX 5/15/21- |
| | H11300 | 06/04/21 | EFT01 | (ELECTRONIC FUND TRANFERS) | | 9,542.36 | .00 | 9,542.36 | EFT01, FEDERAL TAX 5/15/2 |
| | H11301 | 06/04/21 | DIR02 | (DIRECT DEPOSIT OF PAYROLL CH | | 44,206.36 | .00 | 44,206.36 | DIR02, PR DIRECT DEPOSIT |
| | H11302 | 06/09/21 | BAR05 | (JASJIT BARRING) | | 184.25 | .00 | 184.25 | BAR05, 11/13/20-6/7/21 TR |
| | H11303 | 06/10/21 | MVT01 | (MV TRANSPORTATION, INC.) | | 62,436.42 | .00 | 62,436.42 | MVT01, APR-21 FIXED ROUTE |
| | H11304 | 06/10/21 | SHE05 | (SHELL ) | | 35.28 | .00 | 35.28 | SHE05, MAY-21 CC STATEMEN |
| | H11305 | 06/08/21 | AME06 | (AMERICAN FIDELITY ASSURANCE | | 1,020.96 | .00 | 1,020.96 | AME06, JUNE-21 FLEXIBLE S |
| | H11306 | 06/10/21 | DEL05 | (ALLIED ADMIN/DELTA DENTAL) | | 2,285.96 | .00 | 2,285.96 | DEL05, JULY-21 DENTAL BEN |
| | H11307 | 06/09/21 | UBE01 | (UBER ) | | 1,079.91 | .00 | 1,079.91 | UBE01, MAY-2021 BILLING: |
| | H11308 | 06/10/21 | DEC01 | (DECAL APPLICATORS LLC) | | 2,040.00 | .00 | 2,040.00 | DEC01, 15290, MP727 RAPID |
| | H11309 | 06/11/21 | TX242 | (BONNIE WOLF) | | 100.00 | .00 | 100.00 | TX242, PARATAXI REIMBURSE |
| | H11310 | 06/11/21 | TX228 | (DEBORAH BUTLER) | | 82.45 | .00 | 82.45 | TX228, PARATAXI REIMBURSE |
| | H11311 | 06/25/21 | TAX67 | (CHRISTEL RAGER) | | 205.80 | .00 | 205.80 | TAX67, PARATAXI REIMBURSE |
| | H11312 | 06/25/21 | TX228 | (DEBORAH BUTLER) | | 61.63 | .00 | 61.63 | TX228, PARATAXI REIMBURSE |
| | H11313 | 06/25/21 | TRA04 | (TOAN TRAN) | | 39.54 | .00 | 39.54 | TRA04, 6/15/21 MILEAGE RE |
| | H11314 | 06/25/21 | NEL01 | (NELSON\NYGAARD CONSULTING AS | | 1,886.64 | .00 | 1,886.64 | NEL01, 79117, JAN-21 LAVT |
| | H11315 | 06/15/21 | MVT01 | (MV TRANSPORTATION, INC.) | | 300,000.00 | .00 | 300,000.00 | MVT01, 113967, JUN-21 MV |
| | H11316 | 06/25/21 | MVT01 | (MV TRANSPORTATION, INC.) | | 300,000.00 | .00 | 300,000.00 | MVT01, 113968, JUN-21 MV |
| | H11317 | 06/25/21 | STA13 | (STAPLES CREDIT PLAN) | | 390.07 | .00 | 390.07 | STA13, JUNE-21 CC STATEME |
| | H11318 | 06/25/21 | CAL15 | (CALTRONICS BUSINESS SYS) | | 290.93 | .00 | 290.93 | CAL15, 3273849, BIZHUB 5/ |
| | H11319 | 06/25/21 | HDE01 | (HOME DEPOT-CREDIT SERVICES) | | 238.69 | .00 | 238.69 | HDE01, JUNE-21 CC STATEME |
| | H11320 | 06/25/21 | CAS02 | (LISETH CASTRO) | | 44.80 | .00 | 44.80 | CAS02, 1/4/21-6/7/21 MILE |
| | H11321 | 06/25/21 | STA01 | (STATE COMPENSATION FUND) | | 1,496.92 | .00 | 1,496.92 | STA01, JUNE-21 WORKER'S C |
| | H11322 | 06/25/21 | OAK01 | (OAKS BUSINESS PK OWNERS) | | 3,571.00 | .00 | 3,571.00 | OAK01, 3RD QTR BUSINESS P |
| | H11323 | 06/18/21 | DIR02 | (DIRECT DEPOSIT OF PAYROLL CH | | 56,695.85 | .00 | 56,695.85 | DIR02, PR DIRECT DEPOSIT |
| | H11324 | 06/14/21 | EFT01 | (ELECTRONIC FUND TRANFERS) | | 14,132.53 | .00 | 14,132.53 | EFT01, FEDERAL TAX 5/29/2 |
| | H11325 | 06/14/21 | EMP01 | (EMPLOYMENT DEVEL DEPT) | | 4,815.32 | .00 | 4,815.32 | EMP01, STATE TAX 5/29/21- |
| | H11326 | 06/14/21 | PER01 | (PERS ) | | 3,900.40 | .00 | 3,900.40 | PER01, PERS CLASSIC CONTR |
| | H11327 | 06/14/21 | PER01 | (PERS ) | | 5,787.70 | .00 | 5,787.70 | PER01, PERS NEW CONTRIBUT |
| | H11328 | 06/14/21 | PER04 | (CALPERS RETIREMENT SYSTEM) | | 2,132.61 | .00 | 2,132.61 | PER04, PERS 457 CONTRIBUT |
| | H11329 | 06/25/21 | NEL01 | (NELSON\NYGAARD CONSULTING AS | | 419.17 | .00 | 419.17 | NEL01, 79302, FEB-21 LAVT |
| | H11330 | 06/25/21 | NEL01 | (NELSON\NYGAARD CONSULTING AS | | 4,251.42 | .00 | 4,251.42 | NEL01, 79826, MAY-21 LAVT |
| | H11331 | 06/25/21 | NEL01 | (NELSON\NYGAARD CONSULTING AS | | 902.80 | .00 | 902.80 | NEL01, 79043, DEC-20 LAVT |
| | H11332 | 06/30/21 | BRO03 | (KARLA SUE BROWN) | | 200.00 | .00 | 200.00 | BRO03, JUNE-21 BOD STIPEN |
| | H11333 | 06/30/21 | HAU01 | (DAVID HAUBERT) | | 200.00 | .00 | 200.00 | HAU01, JUNE-21 BOD STIPEN |
| | H11334 | 06/30/21 | NAR01 | (KATHERINE NARUM) | | 200.00 | .00 | 200.00 | NAR01, JUNE-21 BOD STIPEN |

BACK TO AGENDA

LAVTA
Month End Cash Disbursements Report
Prior Period Report for 06-21 BANK ACCOUNT 105



| Period | Check Number | Check Date | Vendor # (Name) | Disc. Terms | Gross Amount | Disc Amount | Net Amount | Check Description |
|---|---|---|---|---|---|---|---|---|
| 06-21 | H11335 | 06/30/21 | WOE01 (ROBERT L. WOERNER) | | 100.00 | .00 | 100.00 | WOE01, JUNE-21 BOD STIPEN |
| | H11336 | 06/01/21 | MER01 (MERCHANT SERVICES) | | 25.41 | .00 | 25.41 | MER01, MAY-21 MOA CC STAT |
| | H11337 | 06/01/21 | MER01 (MERCHANT SERVICES) | | 62.19 | .00 | 62.19 | MER01, MAY-21 TRANSIT CEN |
| | H11338 | 06/15/21 | CIT07 (CITY OF LIVERMORE - WATER) | | 55.94 | .00 | 55.94 | CIT07, 139361-00, ATLANTI |
| | H11339 | 06/25/21 | BAN03 (BANKCARD CENTER) | | 1,484.78 | .00 | 1,484.78 | BAN03, MAY-21 BOW CC STAT |
| | H11340 | 06/30/21 | CIT07 (CITY OF LIVERMORE - WATER) | | 36.42 | .00 | 36.42 | CIT07, 139361-00, ATLANTI |
| | H11341 | 06/15/21 | CIT07 (CITY OF LIVERMORE - WATER) | | 31.54 | .00 | 31.54 | CIT07, 139399-00, ATLANTI |
| | H11342 | 06/30/21 | CIT07 (CITY OF LIVERMORE - WATER) | | 26.66 | .00 | 26.66 | CIT07, 139399-00, ATLANTI |
| | H11343 | 06/15/21 | CIT07 (CITY OF LIVERMORE - WATER) | | 16.02 | .00 | 16.02 | CIT07, 138432-00, ATLANTI |
| | H11344 | 06/30/21 | CIT07 (CITY OF LIVERMORE - WATER) | | 16.02 | .00 | 16.02 | CIT07, 138432-00, ATLANTI |
| | H11345 | 06/15/21 | CIT07 (CITY OF LIVERMORE - WATER) | | 183.79 | .00 | 183.79 | CIT07, 138430-01, ATLANTI |
| | H11346 | 06/30/21 | CIT07 (CITY OF LIVERMORE - WATER) | | 180.40 | .00 | 180.40 | CIT07, 138430-01, ATLANTI |
| | H11347 | 06/15/21 | CIT07 (CITY OF LIVERMORE - WATER) | | 129.13 | .00 | 129.13 | CIT07, 139388-00, BUS WAS |
| | H11348 | 06/15/21 | CIT07 (CITY OF LIVERMORE - WATER) | | 46.52 | .00 | 46.52 | CIT07, 138431-00, ATLANTI |
| | H11349 | 06/25/21 | PAC02 (PACIFIC GAS AND ELECTRIC) | | 5,436.60 | .00 | 5,436.60 | PAC02, 5809326332-3, MOA |
| | H11350 | 06/21/21 | PAC02 (PACIFIC GAS AND ELECTRIC) | | 1,062.15 | .00 | 1,062.15 | PAC02, 7264840356-5, BUS |
| | H11351 | 06/21/21 | PAC02 (PACIFIC GAS AND ELECTRIC) | | 1,309.74 | .00 | 1,309.74 | PAC02, 6062256368-6, ATLA |
| | H11352 | 06/15/21 | PAC02 (PACIFIC GAS AND ELECTRIC) | | 87.06 | .00 | 87.06 | PAC02, 7649646868-7, DOOL |
| | H11353 | 06/15/21 | PAC02 (PACIFIC GAS AND ELECTRIC) | | 1,150.35 | .00 | 1,150.35 | PAC02, 9007202117-4, MOA |
| | H11354 | 06/16/21 | CAL04 (CALIFORNIA WATER SERVICE) | | 841.63 | .00 | 841.63 | CAL04, 4616555555, TC IRR |
| | H11355 | 06/15/21 | CAL04 (CALIFORNIA WATER SERVICE) | | 40.40 | .00 | 40.40 | CAL04, 3616555555, TC WAT |
| | H11356 | 06/07/21 | CAL04 (CALIFORNIA WATER SERVICE) | | 1,155.03 | .00 | 1,155.03 | CAL04, 0198655555, BUS WA |
| | H11357 | 06/02/21 | CAL04 (CALIFORNIA WATER SERVICE) | | 865.61 | .00 | 865.61 | CAL04, 9098655555, MOA WA |
| | H11358 | 06/14/21 | CAL04 (CALIFORNIA WATER SERVICE) | | 79.76 | .00 | 79.76 | CAL04, 4755555555, MOA FI |
| | H11359 | 06/15/21 | CAL04 (CALIFORNIA WATER SERVICE) | | 79.76 | .00 | 79.76 | CAL04, 5755555555, CONTRA |
| | H11360 | 06/15/21 | CAL04 (CALIFORNIA WATER SERVICE) | | 59.82 | .00 | 59.82 | CAL04, 2575555555, TC FIR |
| | | | Total for Bank Account 105 -----> | | 1,138,829.59 | .00 | 1,138,829.59 | |
| | | | Grand Total of all Bank Accounts -----> | | 1,138,829.59 | .00 | 1,138,829.59 | |

BACK TO AGENDA

LAVTA
Month End Payable Activity Report
Prior Period Report for 06-21



| Period | Vendor # (Name) | Invoice Number | Invoice Date | Due Date | Disc. Terms | Gross Amount | Description |
|---|---|---|---|---|---|---|---|
| 06-21 | AEC01 (AECOM TECHNICAL SERVICES | IN200506732 | 06/15/21 | 07/15/21 | A | 12327.12 | AEC01, 2000506732, 5/1-5/28/21 REGIONAL BUS |
| 06-21 | AIM01 (AIM TO PLEASE JANITORIAL S | E70-MAY-21 | 06/07/21 | 07/07/21 | A | 2704.94 | AIM01, MAY-21 MONTHLY JANITORIAL SERVICE |
| 06-21 | AME06 (AMERICAN FIDELITY ASSURANCE | FSA06-21H | 06/04/21 | 07/04/21 | A | 1020.96 | AME06, JUNE-21 FLEXIBLE SPENDING ACCOUNT |
| 06-21 | ART01 (ART'S SECURITY LOCKSMITH) | 83971 | 06/09/21 | 07/09/21 | A | 13.66 | ART01, 83971, MP832 PANIC BUTTON RESET KEYS- |
| 06-21 | ATT02 (AT&T ) | 16609910 | 06/13/21 | 07/13/21 | A | 421.68 | ATT02, 16609910, PAYER #9391035694 5/13-6/12 |
| 06-21 | AVI01 (AMADOR VALLEY INDUSTRIES) | 901283 | 05/31/21 | 06/30/21 | A | 517.66 | AVI01, 901283, MAY-21 GARBAGE PICK UP SERVIC |
| 06-21 | BAN03 (BANKCARD CENTER) | MAY-2021H | 05/28/21 | 06/27/21 | A | 1484.78 | BAN03, MAY-21 BOW CC STATEMENT |
| 06-21 | BAR05 (JASJIT BARRING) | 1113-0607H | 06/09/21 | 07/09/21 | A | 184.25 | BAR05, 11/13/20-6/7/21 TRAVEL/MILEAGE REIMBU |
| 06-21 | BAR07 (SEAN BARNEY) | 5-27-21 | 05/27/21 | 06/26/21 | A | 950.00 | BAR07, 5/27/2021 AWNING COVER REPLACEMENT MP |
| 06-21 | BAY08 (BAY CITY ELECTRIC WORKS) | W243546 | 06/07/21 | 07/07/21 | A | 378.00 | BAY08, W243546, MP488 GENERATOR MAINT JUNE-2 |
| 06-21 | BRO03 (KARLA SUE BROWN) | JUNE-2021H | 06/30/21 | 07/30/21 | A | 200.00 | BRO03, JUNE-21 BOD STIPEND |
| 06-21 | CAL04 (CALIFORNIA WATER SERVICE) | 198051721H | 05/17/21 | 06/16/21 | A | 1155.03 | CAL04, 0198655555, BUS WASH 4/16/21-5/13/21 |
| | | 257052621H | 05/26/21 | 06/25/21 | A | 59.82 | CAL04, 2575555555, TC FIRE 6/1/21-6/30/21 |
| | | 361052721H | 05/27/21 | 06/26/21 | A | 40.40 | CAL04, 3616555555, TC WATER 4/28/21-5/26/21 |
| | | 461052821H | 05/28/21 | 06/27/21 | A | 841.63 | CAL04, 4616555555, TC IRRG 4/28/21-5/26/21 |
| | | 475052621H | 05/26/21 | 06/25/21 | A | 79.76 | CAL04, 4755555555, MOA FIRE 6/1/21-6/30/21 |
| | | 575052621H | 05/26/21 | 06/25/21 | A | 79.76 | CAL04, 5755555555, CONTRACTOR FIRE 6/1/21-6/ |
| | | 909051421H | 05/14/21 | 06/13/21 | A | 865.61 | CAL04, 9098655555, MOA WATER 4/16/21-5/13/21 |
| | | | | Vendor's Total -----> | | 3122.01 | |
| 06-21 | CAL13 (CALIFORNIA TRANSIT) | 312021MAY | 06/03/21 | 07/03/21 | A | 20346.00 | CAL13, 31-2021-MAY, MAY-21 INSURANCE CLAIMS |
| 06-21 | CAL15 (CALTRONICS BUSINESS SYS) | 3273849H | 06/16/21 | 07/16/21 | A | 290.93 | CAL15, 3273849, BIZHUB 5/16/21-6/15/21 |
| 06-21 | CAS02 (LISETH CASTRO) | 0104-0607H | 06/15/21 | 07/15/21 | A | 44.80 | CAS02, 1/4/21-6/7/21 MILEAGE REIMBURSE |
| 06-21 | CIT06 (CITY OF LIVERMORE SEWER) | TC060821 | 06/08/21 | 07/08/21 | A | 43.98 | CIT06, 133389-00, TRANSIT CENTER 5/11/21-6/8 |
| | | MOA061521 | 06/15/21 | 07/15/21 | A | 169.55 | CIT06, 133294-00, MOA SEWER 5/18/21-6/15/21 |
| | | | | Vendor's Total -----> | | 213.53 | |
| 06-21 | CIT07 (CITY OF LIVERMORE - WATER) | 361051821H | 05/18/21 | 06/17/21 | A | 55.94 | CIT07, 139361-00, ATLANTIS SEWER 4/20/21-5/1 |
| | | 361061521H | 06/15/21 | 07/15/21 | A | 36.42 | CIT07, 139361-00, ATLANTIS SEWER 5/18/21-6/1 |
| | | 388060121H | 06/01/21 | 07/01/21 | A | 129.13 | CIT07, 139388-00, BUS WASH 5/4/21-6/1/21 |
| | | 399051821H | 05/18/21 | 06/17/21 | A | 31.54 | CIT07, 139399-00, ATLANTIS SEWER 4/20/21-5/1 |
| | | 399061521H | 06/15/21 | 07/15/21 | A | 26.66 | CIT07, 139399-00, ATLANTIS SEWER 5/18/21-6/1 |
| | | 430051821H | 05/18/21 | 06/17/21 | A | 183.79 | CIT07, 138430-01, ATLANTIS INDOOR 4/20/21-5/ |
| | | 430061521H | 06/15/21 | 07/15/21 | A | 180.40 | CIT07, 138430-01, ATLANTIS INDOOR 5/18/21-6/ |
| | | 431060121H | 06/01/21 | 07/01/21 | A | 46.52 | CIT07, 138431-00, ATLANTIS IRRG 5/4/21-6/1/2 |
| | | 432051821H | 05/18/21 | 06/17/21 | A | 16.02 | CIT07, 138432-00, ATLANTIS FIRE 4/20/21-5/18 |
| | | 432061521H | 06/15/21 | 07/15/21 | A | 16.02 | CIT07, 138432-00, ATLANTIS FIRE 5/18/21-6/15 |
| | | | | Vendor's Total -----> | | 722.44 | |
| 06-21 | COR01 (CORBIN WILLITS SYSTEMS) | C10531 | 05/31/21 | 06/30/21 | A | 260.00 | COR01, C10531, 5/31/21 VALLEY LINK PAYROLL S |
| | | C106151 | 06/15/21 | 07/15/21 | A | 269.40 | COR01, C106151, JUNE-21 SERVICE |
| | | | | Vendor's Total -----> | | 529.40 | |
| 06-21 | CRA01 (CRADLEPOINT INC.) | I00212196 | 06/10/21 | 07/10/21 | A | 360.00 | CRA01, I-00212196, MP851 NETCLOUD ANNUAL SUB |
| 06-21 | CRH01 (CARMEN RIVERA-HENDRICKSON) | 6/3RELEAS | 06/09/21 | 07/09/21 | A | 1578.90 | CRH01, 6/3/21 RELEASE OF CLAIM-11/16/18 INCI |
| 06-21 | CUR01 (CURIS SYSTEM LLC) | 1495 | 03/30/21 | 04/29/21 | A | 25179.70 | CUR01, 1495, PO #7532 CUROXIDE FOGGING SOLUT |
| 06-21 | DAY02 (DAY & NIGHT PEST CONTROL) | 163189 | 05/19/21 | 06/18/21 | A | 218.00 | DAY02, 163189, 5/19/21 RUTAN SERVICE |

BACK TO AGENDA

LAVTA
Month End Payable Activity Report
Prior Period Report for 06-21



| Period | Vendor # | (Name) | Invoice Number | Invoice Date | Due Date | Disc. Terms | Gross Amount | Description |
|---|---|---|---|---|---|---|---|---|
| 06-21 | DEC01 | (DECAL APPLICATORS LLC) | 15290H | 06/09/21 | 07/09/21 | A | 2040.00 | DEC01, 15290, MP727 RAPID SHELTER DECAL INST |
| 06-21 | DEL01 | (DELL MARKETING LP) | 484237577 | 04/29/21 | 05/29/21 | A | 10928.11 | DEL01, 10484237577, PO #7534 REPLACEMENT COM |
| 06-21 | DEL05 | (ALLIED ADMIN/DELTA DENTAL) | JULY-2021H | 06/07/21 | 07/07/21 | A | 2285.96 | DEL05, JULY-21 DENTAL BENEFITS |
| 06-21 | DIR01 | (DIRECT TV) | 96X210611 | 06/11/21 | 07/11/21 | A | 20.25 | DIR01, 025118596X210611, JUNE-21 SERVICE |
| 06-21 | DIR02 | (DIRECT DEPOSIT OF PAYROLL C | 20210528H | 06/04/21 | 07/04/21 | A | 44206.36 | DIR02, PR DIRECT DEPOSIT 5/15/21-5/28/21 |
| | | | 20210611H | 06/14/21 | 07/14/21 | A | 56695.85 | DIR02, PR DIRECT DEPOSIT 5/29/21-6/11/21 |
| | | | | | Vendor's Total -----> | | 100902.21 | |
| 06-21 | EFT01 | (ELECTRONIC FUND TRANFERS) | 20210528H | 06/04/21 | 07/04/21 | A | 9542.36 | EFT01, FEDERAL TAX 5/15/21-5/28/21 |
| | | | 20210611H | 06/14/21 | 07/14/21 | A | 14132.53 | EFT01, FEDERAL TAX 5/29/21-6/11/21 |
| | | | | | Vendor's Total -----> | | 23674.89 | |
| 06-21 | EME01 | (BRIGHTVIEW LANDSCAPE SERVIC | 7375890 | 06/01/21 | 07/01/21 | A | 1301.00 | EME01, 7375890, JUN-21 LANDSCAPING SERVICE |
| | | | 7397522 | 05/27/21 | 06/26/21 | A | 17010.92 | EME01, 7397522, PO #7541 TC LANDSCAPE ENHANC |
| | | | | | Vendor's Total -----> | | 18311.92 | |
| 06-21 | EMP01 | (EMPLOYMENT DEVEL DEPT) | 20210528H | 06/04/21 | 07/04/21 | A | 3507.31 | EMP01, STATE TAX 5/15/21-5/28/21 |
| | | | 20210611H | 06/14/21 | 07/14/21 | A | 4815.32 | EMP01, STATE TAX 5/29/21-6/11/21 |
| | | | | | Vendor's Total -----> | | 8322.63 | |
| 06-21 | FAS01 | (FASTSIGNS) | DUB104823 | 05/25/21 | 06/24/21 | A | 209.56 | FAS01, DUB-104823, MP830 NO SMOKING SIGNS |
| 06-21 | GBS01 | (WILLIAM R. GRAY & COMPANY I | 21110 | 06/04/21 | 07/04/21 | A | 2811.25 | GBS01, 21110, SAV ON-CALL ENGINEERING SUPPOR |
| 06-21 | GEN05 | (GENFARE) | 90174226 | 05/26/21 | 06/25/21 | A | 2373.83 | GEN05, 90174226, MP770 20K 24HOUR PASSES |
| 06-21 | GIL01 | (GILLIG LLC) | 40813883 | 06/04/21 | 07/04/21 | A | 9517.56 | GIL01, 40813883, PO #7531 BAE DRIVE MOTOR HA |
| 06-21 | GOG01 | (GO GO GRANDPARENT) | 6/9REPLEN | 05/21/21 | 06/20/21 | A | 500.00 | GOG01, 6/9/21 REPLENISH FUNDS-GOGO GRANDPARE |
| 06-21 | HAN01 | (HANSON BRIDGETT MARCUS) | 1293815 | 06/10/21 | 07/10/21 | A | 3147.50 | HAN01, 1293815, MAY-21 ADMIN LEGAL FEES |
| 06-21 | HAU01 | (DAVID HAUBERT) | JUNE-2021H | 06/30/21 | 07/30/21 | A | 200.00 | HAU01, JUNE-21 BOD STIPEND |
| 06-21 | HDE01 | (HOME DEPOT-CREDIT SERVICES) | JUNE-2021H | 06/13/21 | 07/13/21 | A | 238.69 | HDE01, JUNE-21 CC STATEMENT-MISC SUPPLIES |
| 06-21 | JTH01 | (J. THAYER COMPANY) | 1529132-0 | 06/07/21 | 07/07/21 | A | 185.09 | JTH01, 1529132-0, 6/7/21 PRINTING PAPER |
| 06-21 | LIV10 | (LIVERMORE SANITATION INC) | 1419448 | 05/31/21 | 06/30/21 | A | 2515.66 | LIV10, 1419448, MAY-21 GARBAGE SERVICE |
| 06-21 | LYF01 | (LYFT, INC) | 1012676 | 05/31/21 | 06/30/21 | A | 2313.11 | LYF01, 1001012676, MAY-21 CODE: GO TRIVALLEY |
| 06-21 | MER01 | (MERCHANT SERVICES) | TC053121H | 06/01/21 | 07/01/21 | A | 62.19 | MER01, MAY-21 TRANSIT CENTER CC STATEMENT |
| | | | MOA053121H | 06/01/21 | 07/01/21 | A | 25.41 | MER01, MAY-21 MOA CC STATEMENT |
| | | | | | Vendor's Total -----> | | 87.60 | |
| 06-21 | MVT01 | (MV TRANSPORTATION, INC.) | 113967H | 06/03/21 | 07/03/21 | A | 300000.00 | MVT01, 113967, JUN-21 MV 1ST INSTALL PAYMENT |
| | | | 113968H | 06/03/21 | 07/03/21 | A | 300000.00 | MVT01, 113968, JUN-21 MV 2ND INSTALL PAYMENT |
| | | | APR-2021H | 05/04/21 | 06/03/21 | A | 62436.42 | MVT01, APR-21 FIXED ROUTE MONTHLY SERVICE |
| | | | | | Vendor's Total -----> | | 662436.42 | |
| 06-21 | NAR01 | (KATHERINE NARUM) | JUNE-2021H | 06/30/21 | 07/30/21 | A | 200.00 | NAR01, JUNE-21 BOD STIPEND |
| 06-21 | NEL01 | (NELSON\NYGAARD CONSULTING A | 79043H | 01/29/21 | 02/28/21 | A | 902.80 | NEL01, 79043, DEC-20 LAVTA SRTP/LRTP 11/28-1 |
| | | | 79117H | 02/18/21 | 03/20/21 | A | 1886.64 | NEL01, 79117, JAN-21 LAVTA SRTP/LRTP 1/1-1/2 |
| | | | 79302H | 03/17/21 | 04/16/21 | A | 419.17 | NEL01, 79302, FEB-21 LAVTA SRTP/LRTP 1/30-2/ |
| | | | 79826H | 06/14/21 | 07/14/21 | A | 4251.42 | NEL01, 79826, MAY-21 LAVTA SRTP/LRTP 5/1-5/2 |
| | | | | | Vendor's Total -----> | | 7460.03 | |

BACK TO AGENDA

| Period | Vendor # | (Name) | Invoice Number | Invoice Date | Due Date | Disc. Terms | Gross Amount | Description |
|---|---|---|---|---|---|---|---|---|
| 06-21 | OAK01 | (OAKS BUSINESS PK OWNERS) | 3RDQTR-21H | 06/24/21 | 07/24/21 | A | 3571.00 | OAK01, 3RD QTR BUSINESS PARK DUES-FY22 |
| 06-21 | OFF01 | (OFFICE DEPOT) | 867542001 | 06/07/21 | 07/07/21 | A | 72.69 | OFF01, 176867542001, 6/7/21 OFFICE SUPPLIES |
| 06-21 | PAC01 | (AT&T ) | ATT 05/21H | 05/13/21 | 06/12/21 | A | 209.33 | PAC01, ACCT #925-245-0576, 5/13/21-6/12/21 |
| | | | ATT050721H | 05/07/21 | 06/06/21 | A | 33.34 | PAC01,ACCT #232-351-6260,CONTRACTOR FIRE 5/7 |
| | | | ATT051121H | 05/11/21 | 06/10/21 | A | 354.67 | PAC01,ACCT #436-951-0106,ATLANTIS T1 5/11-6/ |
| | | | ATT051321H | 05/13/21 | 06/12/21 | A | 389.72 | PAC01,ACCT #925-243-9029,ATLANTIS ALARM 5/13 |
| | | | | | Vendor's Total -----> | | 987.06 | |
| 06-21 | PAC02 | (PACIFIC GAS AND ELECTRIC) | 580060821H | 06/08/21 | 07/08/21 | A | 5436.60 | PAC02, 5809326332-3, MOA ELECTRIC 5/3/21-6/1 |
| | | | 606060421H | 06/04/21 | 07/04/21 | A | 1309.74 | PAC02, 6062256368-6, ATLANTIS 4/29/21-5/27/2 |
| | | | 726060221H | 06/02/21 | 07/02/21 | A | 1062.15 | PAC02, 7264840356-5, BUS STOPS 4/22/21-5/20/ |
| | | | 764051921H | 05/19/21 | 06/18/21 | A | 87.06 | PAC02, 7649646868-7, DOOLAN TWR 4/14/21-5/12 |
| | | | 900051421H | 05/14/21 | 06/13/21 | A | 1150.35 | PAC02, 9007202117-4, MOA GAS 4/15/21-5/13/21 |
| | | | | | Vendor's Total -----> | | 9045.90 | |
| 06-21 | PAC11 | (PACIFIC ENVIROMENTAL SERV) | 2104 | 05/30/21 | 06/29/21 | A | 120.00 | PAC11, 2104, MAY-21 RUTAN MONTHLY SERVICE |
| | | | 2105 | 05/30/21 | 06/29/21 | A | 120.00 | PAC11, 2105, MAY-21 ATLANTIS MONTHLY SERVICE |
| | | | | | Vendor's Total -----> | | 240.00 | |
| 06-21 | PER01 | (PERS ) | 20210528CH | 06/04/21 | 07/04/21 | A | 3900.38 | PER01, PERS CLASSIC CONTRIBUTION 5/15/21-5/2 |
| | | | 20210528NH | 06/04/21 | 07/04/21 | A | 5787.70 | PER01, PERS NEW CONTRIBUTION 5/15/21-5/28/21 |
| | | | 20210611CH | 06/14/21 | 07/14/21 | A | 3900.40 | PER01, PERS CLASSIC CONTRIBUTION 5/29/21-6/1 |
| | | | 20210611NH | 06/14/21 | 07/14/21 | A | 5787.70 | PER01, PERS NEW CONTRIBUTION 5/29/21-6/11/21 |
| | | | | | Vendor's Total -----> | | 19376.18 | |
| 06-21 | PER04 | (CALPERS RETIREMENT SYSTEM) | 20210528H | 06/04/21 | 07/04/21 | A | 2130.07 | PER04, PERS 457 CONTRIBUTION 5/15/21-5/28/21 |
| | | | 20210611H | 06/14/21 | 07/14/21 | A | 2132.61 | PER04, PERS 457 CONTRIBUTION 5/29/21-6/11/21 |
| | | | | | Vendor's Total -----> | | 4262.68 | |
| 06-21 | PLA02 | (PLANETERIA MEDIA LLC) | 18514 | 06/15/21 | 07/15/21 | A | 325.00 | PLA02, 18514, WEB HOSTING JUNE-21 |
| 06-21 | POW03 | (POWER MANUFACTURING INC) | 43466 | 12/21/20 | 01/20/21 | A | 60000.00 | POW03, 43466, PO #7524 DRIVERS BARRIERS FOR |
| 06-21 | QUE01 | (QUENCH) | 3143293 | 06/01/21 | 07/01/21 | A | 281.87 | QUE01, 3143293, PO #6616 QUENCH 810 6/21-8/2 |
| 06-21 | RSE01 | (R & S ERECTION) | 120587-GR | 05/31/21 | 06/30/21 | A | 991.00 | RSE01, 120587-GR, MP827 TRANSIT CENTER GATES |
| 06-21 | SCF01 | (SC FUELS) | 4654137 | 06/02/21 | 07/02/21 | A | 20874.18 | SCF01, 4654137, 6/2/21 FUEL DELIVERY |
| 06-21 | SHA02 | (SHAMROCK OFFICE SOLUTIONS) | 529369 | 05/24/21 | 06/23/21 | A | 31.25 | SHA02, 529369, FRONT DESK PRINTER 4/30/21-5/ |
| 06-21 | SHE05 | (SHELL ) | MAY-2021H | 06/04/21 | 07/04/21 | A | 35.28 | SHE05, MAY-21 CC STATEMENT |
| 06-21 | SOL01 | (SOLUTIONS FOR TRANSIT) | 21-0605LA | 06/05/21 | 07/05/21 | A | 2083.33 | SOL01, 21-0605LAVTA, MAY-21 CLIPPER ANALYSIS |
| 06-21 | STA01 | (STATE COMPENSATION FUND) | JUNE-2021H | 05/21/21 | 06/20/21 | A | 1496.92 | STA01, JUNE-21 WORKER'S COMP PREMIUM |
| 06-21 | STA13 | (STAPLES CREDIT PLAN) | JUNE-2021H | 06/08/21 | 07/08/21 | A | 390.07 | STA13, JUNE-21 CC STATEMENT |
| 06-21 | TAX67 | (CHRISTEL RAGER) | 0423-0530H | 06/24/21 | 07/24/21 | A | 205.80 | TAX67, PARATAXI REIMBURSE 4/23/21-5/30/21 |
| 06-21 | TEL01 | (TPx COMMUNICATIONS) | 143479456 | 05/31/21 | 06/30/21 | A | 2774.42 | TEL01, 143479456-0, 6/1/21-6/30/21 SERVICE |
| 06-21 | TIC01 | (BRIANNA MURRAY) | 6-8-21GFI | 06/09/21 | 07/09/21 | A | 20.00 | TIC01, GFI REFUND BRIANNA MURRAY 5/17/2021 |
| 06-21 | TRA04 | (TOAN TRAN) | 6-15-21H | 06/24/21 | 07/24/21 | A | 39.54 | TRA04, 6/15/21 MILEAGE REIMBURSE |
| 06-21 | TRA05 | (TRANSDEV NORTH AMERICA INC. | 655050521 | 05/05/21 | 06/04/21 | A | 13161.80 | TRA05, 655050521, RFP 2019-5 APR-21 ACTIVITY |
| | | | 655060521 | 06/05/21 | 07/05/21 | A | 13600.60 | TRA05, 655060521, RFP 2019-5 MAY-21 ACTIVITY |
| | | | | | Vendor's Total -----> | | 26762.40 | |

BACK TO AGENDA

| Period | Vendor # | (Name) | Invoice Number | Invoice Date | Due Date | Disc. Terms | Gross Amount | Description |
|---|---|---|---|---|---|---|---|---|
| 06-21 | TX133 | (SAROJA IYER) | 0426-0529 | 06/10/21 | 07/10/21 | A | 139.83 | TX133, PARATAXI REIMBURSE 4/26/21-5/29/21 |
| 06-21 | TX205 | (MUHAMMAD ALI) | 0301-0429 | 06/10/21 | 07/10/21 | A | 194.19 | TX205, PARATAXI REIMBURSE 3/1/21-4/29/21 |
| | | | 0506-0520 | 06/24/21 | 07/24/21 | A | 74.90 | TX205, PARATAXI REIMBURSE 5/6/21-5/20/21 |
| | | | | | Vendor's Total -----> | | 269.09 | |
| 06-21 | TX212 | (LINDA WAHLE) | 0503-0529 | 06/10/21 | 07/10/21 | A | 200.00 | TX212, PARATAXI REIMBURSE 5/3/21-5/29/21 |
| 06-21 | TX228 | (DEBORAH BUTLER) | 0512-0529H | 06/10/21 | 07/10/21 | A | 82.45 | TX228, PARATAXI REIMBURSE 5/12/21-5/29/21 |
| | | | 0528-0611H | 06/24/21 | 07/24/21 | A | 61.63 | TX228, PARATAXI REIMBURSE 5/28/21-6/11/21 |
| | | | | | Vendor's Total -----> | | 144.08 | |
| 06-21 | TX240 | (DATTASRAYA KULKARNI) | 4-8-21 | 06/10/21 | 07/10/21 | A | 11.05 | TX240, PARATAXI REIMBURSE 4/8/21 |
| 06-21 | TX242 | (BONNIE WOLF) | 0503-0526H | 06/10/21 | 07/10/21 | A | 100.00 | TX242, PARATAXI REIMBURSE 5/3/21-5/26/21 |
| 06-21 | UBE01 | (UBER ) | MAY-2021H | 06/01/21 | 07/01/21 | A | 1079.91 | UBE01, MAY-2021 BILLING: GO DUBLIN |
| 06-21 | VAN01 | (FBD VANGUARD CONSTRUCTION | I2019-08#6 | 03/31/21 | 04/30/21 | A | 39969.22 | VAN01, 2019-08 PLEASANTON BRT CORRIDOR PROJE |
| 06-21 | VER01 | (VERIZON WIRELESS) | 880389644H | 05/22/21 | 06/21/21 | A | 1687.81 | VER01, 9880389644,4/23/21-5/22/21 CELL, WIFI |
| 06-21 | VON01 | (TRAPEZE SOFTWARE GROUP) | AMSER1161 | 06/21/21 | 07/21/21 | A | 7771.00 | VON01, AMSER0001161, PO #7535 AUTO PASSENGER |
| 06-21 | WOE01 | (ROBERT L. WOERNER) | JUNE-2021H | 06/30/21 | 07/30/21 | A | 100.00 | WOE01, JUNE-21 BOD STIPEND |
| | | | | | Total of Purchases -> | | 1138829.59 | |

BACK TO AGENDA

LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY

# STAFF REPORT

SUBJECT: Treasurer's Report for July 2021

FROM: Tamara Edwards, Director of Finance

DATE: September 13, 2021

---

**Action Requested**
Approve the LAVTA Treasurer's Report for July 2021.

**Discussion**
***Cash accounts:***
Our petty cash account (101) has a balance of $200, and our ticket sales change account (102) continues with a balance of $240 (these two accounts should not change).

***General checking account activity (105):***

| | |
|---|---|
| Beginning balance July 1, 2021 | $8,831,086.69 |
| Payments made | $1,969,095.47 |
| Deposits made | $3,486,040.44 |
| Ending balance July 31, 2021 | $10,348,031.66 |

***Farebox account activity (106):***

| | |
|---|---|
| Beginning balance July 1, 2021 | $169,215.77 |
| Deposits made | $22,727.62 |
| Ending balance July 31, 2021 | $191,943.39 |

***LAIF investment account activity (135):***

| | |
|---|---|
| Beginning balance July 1, 2021 | $10,985,041.83 |
| Q4FY21 Interest | $8,969.34 |
| Ending balance July 31, 2021 | $10,994,011.17 |

***Operating Expenditures Summary:***
As this is the first month of the fiscal year, in order to stay on target for the budget this year expenses (at least the ones that occur on a monthly basis) should not be higher than 8.33%. The agency is at 8.23% overall.

***Operating Revenues Summary:***
While expenses are at 8.23%, revenues are at .2%, which is normal for the start of the year. Fortunately, LAVTA has sufficient cash on hand.



BACK TO AGENDA

**Recommendation**
The Finance and Administration Committee recommends that the Board of Directors approve the July 2021 Treasurer's Report.

Attachments:

1. July 2021 Treasurer's Report

*Approved:* _____



BACK TO AGENDA

# LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY
## BALANCE SHEET
## FOR THE PERIOD ENDING:
## July 30, 2021

**ASSETS:**

| | | | |
|---|---|---|---|
| 101 | PETTY CASH | 200 | |
| 102 | TICKET SALES CHANGE | 240 | |
| 105 | CASH - GENERAL CHECKING | 10,348,032 | |
| 106 | CASH - FIXED ROUTE ACCOUNT | 191,943 | |
| 107 | Clipper Cash | 401,932 | |
| 108 | Rail | 0 | |
| 109 | BOC | 46 | |
| 120 | ACCOUNTS RECEIVABLE | 2,299,317 | |
| 135 | INVESTMENTS - LAIF | 10,994,923 | |
| 150 | PREPAID EXPENSES | 99,661 | |
| 160 | OPEB ASSET | 802,201 | |
| 165 | DEFFERED OUTFLOW-Pension Related | 588,141 | |
| 166 | DEFFERED OUTFLOW-OPEB | 64,410 | |
| 170 | INVESTMENTS HELD AT CALTIP | 0 | |
| 111 | NET PROPERTY COSTS | 62,519,430 | |
| | **TOTAL ASSETS** | | **88,310,475** |

**LIABILITIES:**

| | | | |
|---|---|---|---|
| 205 | ACCOUNTS PAYABLE | 383,605 | |
| 211 | PRE-PAID REVENUE | 1,595,786 | |
| 21101 | Clipper to be distributed | 274,110 | |
| 22000 | FEDERAL INCOME TAXES PAYABLE | 34 | |
| 22010 | STATE INCOME TAX | (10) | |
| 22020 | FICA MEDICARE | (156) | |
| 22050 | PERS HEALTH PAYABLE | 0 | |
| 22040 | PERS RETIREMENT PAYABLE | (330) | |
| 22030 | SDI TAXES PAYABLE | (15) | |
| 22070 | AMERICAN FIDELITY INSURANCE PAYABLE | 638 | |
| 22090 | WORKERS' COMPENSATION PAYABLE | 14,581 | |
| 22100 | PERS-457 | 0 | |
| 22110 | Direct Deposit Clearing | 0 | |
| 23101 | Net Pension Liability | 1,212,136 | |
| 23105 | Deferred Inflow- OPEB Related | 203,209 | |
| 23104 | Deferred Inflow- Pension Related | 81,681 | |
| 23103 | INSURANCE CLAIMS PAYABLE | 34,527 | |
| 23102 | UNEMPLOYMENT RESERVE | 8,300 | |
| | **TOTAL LIABILITIES** | | **3,808,098** |

**FUND BALANCE:**

| | | | |
|---|---|---|---|
| 301 | FUND RESERVE | (7,645,534) | |
| 304 | GRANTS, DONATIONS, PAID-IN CAPITAL | 72,786,495 | |
| 30401 | SALE OF BUSES & EQUIPMENT | 84,491 | |
| | FUND BALANCE | 19,276,926 | |
| | **TOTAL FUND BALANCE** | | **84,502,377** |
| | **TOTAL LIABILITIES & FUND BALANCE** | | **88,310,475** |

BACK TO AGENDA

**LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY**
**REVENUE REPORT**
**FOR THE PERIOD ENDING:**
**July 30, 2021**

| ACCOUNT | DESCRIPTION | BUDGET | CURRENT MONTH | YEAR TO DATE | BALANCE AVAILABLE | PERCENT BUDGET EXPENDED |
|---|---|---|---|---|---|---|
| 4010100 | Fixed Route Passenger Fares | 786,428 | 0 | 25,085 | 761,343 | 3.2% |
| 4020000 | Business Park Revenues | 200,376 | 0 | 0 | 200,376 | 0.0% |
| 4020500 | Special Contract Fares | 462,065 | 0 | 0 | 462,065 | 0.0% |
| 4020500 | Special Contract Fares - Paratransit | 30,000 | 0 | 0 | 30,000 | 0.0% |
| 4010200 | Paratransit Passenger Fares | 187,500 | 0 | 3,641 | 183,859 | 1.9% |
| 4060100 | Concessions | 20,820 | 0 | 0 | 20,820 | 0.0% |
| 4060300 | Advertising Revenue | 42,000 | 0 | 0 | 42,000 | 0.0% |
| 4070400 | Miscellaneous Revenue-Interest | 25,000 | 0 | 0 | 25,000 | 0.0% |
| 4070300 | Non tranpsortation revenue | 133,147 | 0 | 7,168 | 125,979 | 5.4% |
| 4090100 | Local Transportation revenue | 245,000 | 0 | 0 | 245,000 | 0.0% |
| 4099100 | TDA Article 4.0 - Fixed Route | 11,282,017 | 0 | 0 | 11,282,017 | 0.0% |
| 4099500 | TDA Article 4.0-BART | 104,953 | 0 | 0 | 104,953 | 0.0% |
| 4099200 | TDA Article 4.5 - Paratransit | 159,119 | 0 | 0 | 159,119 | 0.0% |
| 4099600 | Bridge Toll- RM2, RM1 | 409,489 | 0 | 0 | 409,489 | 0.0% |
| 4110100 | STA Funds-Partransit | 87,852 | 0 | 0 | 87,852 | 0.0% |
| 4110500 | STA Funds- Fixed Route BART | 661,131 | 0 | 0 | 661,131 | 0.0% |
| 4110100 | STA Funds-pop | 1,180,335 | 0 | 0 | 1,180,335 | 0.0% |
| 4110100 | STA Funds- rev | 712,236 | 0 | 0 | 712,236 | 0.0% |
| 4110100 | STA Funds- Lifeline | 33,815 | 0 | 0 | 33,815 | 0.0% |
| 4110100 | Caltrans | - | 0 | 0 | - | #DIV/0! |
| 4130000 | FTA Section | 1,636,697 | 0 | 0 | 1,636,697 | 100.0% |
| 4130000 | FTA Section 5307 ADA Paratransit | 422,316 | 0 | 0 | 422,316 | 0.0% |
| 4130000 | FTA TPI | 88,000 | 0 | 0 | 88,000 | 100.0% |
| 4640500 | Measure B Gap | | 0 | 0 | - | 100.0% |
| 4640500 | Measure B Express Bus | - | 0 | 0 | - | 100.0% |
| 4640100 | Measure B Paratransit Funds-Fixed Route | 764,547 | 0 | 0 | 764,547 | 0.0% |
| 4640100 | Measure B Paratransit Funds-Paratransit | 139,703 | 0 | 0 | 139,703 | 0.0% |
| 4640200 | Measure BB Paratransit Funds-Fixed Route | 926,640 | 0 | 0 | 926,640 | 0.0% |
| 4640200 | Measure BB Paratransit Funds-Paratransit | 460,317 | 0 | 0 | 460,317 | 0.0% |
| | **RAIL** | 0 | 0 | 0 | | |
| | **TOTAL REVENUE** | **21,201,503** | **0** | **35,895** | **21,165,608** | **0.2%** |

BACK TO AGENDA

**LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY**
**OPERATING EXPENDITURES**
**FOR THE PERIOD ENDING:**
**July 30, 2021**

| | | | BUDGET | CURRENT MONTH | YEAR TO DATE | BALANCE AVAILABLE | PERCENT BUDGET EXPENDED |
|---|---|---|---|---|---|---|---|
| 501 | 02 | Salaries and Wages | $1,844,031 | $0 | $197,853 | $1,646,178 | 10.73% |
| 502 | 00 | Personnel Benefits | $1,049,873 | $0 | $200,144 | $849,729 | 19.06% |
| 503 | 00 | Professional Services | $817,550 | $0 | $47,642 | $769,908 | 5.83% |
| 503 | 05 | Non-Vehicle Maintenance | $912,131 | $0 | $17,830 | $894,301 | 1.95% |
| 503 | 99 | Communications | $9,500 | $0 | ($9) | $9,509 | -0.09% |
| 504 | 01 | Fuel and Lubricants | $1,386,600 | $0 | $40,554 | $1,346,046 | 2.92% |
| 504 | 03 | Non contracted vehicle maintenance | $3,000 | $0 | $0 | $3,000 | 0.00% |
| 504 | 99 | Office/Operating Supplies | $61,600 | $0 | $441 | $61,159 | 0.72% |
| 504 | 99 | Printing | $139,000 | $0 | $617 | $138,383 | 0.44% |
| 505 | 00 | Utilities | $263,086 | $0 | $40,515 | $222,571 | 15.40% |
| 506 | 00 | Insurance | $666,095 | $0 | $432,981 | $233,114 | 65.00% |
| 507 | 99 | Taxes and Fees | $91,440 | $0 | $4,173 | $87,267 | 4.56% |
| 508 | 01 | Purchased Transportation Fixed Route | $11,207,472 | $0 | $756,212 | $10,451,260 | 6.75% |
| 2-508 | 02 | Purchased Transportation Paratransit | $1,990,623 | $0 | ($30) | $1,990,653 | 0.00% |
| 508 | 03 | Purchased Transportation WOD | $60,000 | $0 | $0 | $60,000 | 0.00% |
| 508 | 03 | Purchased Transportation SAV | $300,000 | $0 | $0 | $300,000 | 0.00% |
| 509 | 00 | Miscellaneous | $192,503 | $0 | $4,347 | $188,156 | 2.26% |
| 509 | 02 | Professional Development | $87,000 | $0 | $931 | $86,069 | 1.07% |
| 509 | 08 | Advertising | $120,000 | $0 | $0 | $120,000 | 0.00% |
| | | **TOTAL** | **$21,201,504** | **$0** | **$1,744,202** | **$19,457,302** | **8.23%** |

BACK TO AGENDA

**LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY**
**CAPITAL REVENUE AND EXPENDITURE REPORT (Page 1 of 2)**
**FOR THE PERIOD ENDING:**
**July 30, 2021**

| ACCOUNT | DESCRIPTON | BUDGET | CURRENT MONTH | YEAR TO DATE | BALANCE AVAILABLE | PERCENT BUDGET EXPENDED |
|---|---|---|---|---|---|---|
| **REVENUE DETAILS** | | | | | | |
| 4090594 | TDA (office and facility equip) | 300,000 | 0 | 0 | 300,000 | 0.00% |
| 4090194 | TDA Shop repairs and replacement | 41,900 | 0 | 0 | 41,900 | 0.00% |
| 4091794 | Bus stop improvements | | 0 | 0 | 0 | #DIV/0! |
| 4090994 | Radio Upgrade | | 0 | 0 | 0 | #DIV/0! |
| 4090794 | TDA Transit Center Improvements | 110,000 | 0 | 0 | 110,000 | 0.00% |
| 409??94 | TDA (Transit Capital) | 100,000 | 0 | 0 | 100,000 | 0.00% |
| 4092094 | TDA (Major component rehab) | 756,420 | 0 | 0 | 756,420 | 0.00% |
| 4091294 | TDA Doolan Tower Upgrade | 124,000 | 0 | 0 | 124,000 | 0.00% |
| 4091194 | TDA bus stops | 857,143 | 0 | 0 | 857,143 | 0.00% |
| 4090994 | TDA buses | 2,893,859 | 0 | 0 | 2,893,859 | 0.00% |
| 4090294 | TDA Atlantis | 902,000 | 0 | 0 | 902,000 | 0.00% |
| 409xx | TDA SAV | 300,000 | 0 | 0 | 300,000 | 0.00% |
| 46405 | CIP Shelters | | 0 | 0 | 0 | #DIV/0! |
| 4090694 | TDA TSP | | 0 | 0 | 0 | #DIV/0! |
| 4091196 | RM2 bus stops | 2,300,000 | 0 | 0 | 2,300,000 | 0.00% |
| 4090294 | TDA Atlantis | | 0 | 0 | 0 | #DIV/0! |
| 409xx94 | TDA Real Time APC | | 0 | 0 | 0 | #DIV/0! |
| 409xx91 | TVTC TSP | | 0 | | | |
| 4111700 | SGR shelters and stops | 50,000 | 0 | 0 | 50,000 | 0.00% |
| 4110500 | Prop 1B office and facility | 100,962 | 0 | 0 | 100,962 | 0.00% |
| 41120 | SGR battery packs | 37,845 | 0 | 0 | 37,845 | 0.00% |
| 411 | Prop 1B Transit Center | 20,000 | 0 | 0 | 20,000 | 0.00% |
| 411xx | Dublin Parking garage | 20,000,000 | 0 | 0 | 20,000,000 | 0.00% |
| 41306 | TSP | | 0 | 0 | 0 | #DIV/0! |
| 41309 | FTA buses | 11,575,437 | 0 | 0 | 11,575,437 | 0.00% |
| 41311 | FTA bus stops | 2,000,000 | | | | |
| 41320 | FTA Hybrid battery packs | 206,000 | 0 | 0 | 206,000 | 0.00% |
| 41310 | FTA Transit Center | 440,000 | 0 | | | 0.00% |
| | **TOTAL REVENUE** | **43,115,566** | **-** | **-** | **40,675,566** | **0.00%** |

BACK TO AGENDA

**LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY**
**CAPITAL REVENUE AND EXPENDITURE REPORT (Page 2 of 2)**
**FOR THE PERIOD ENDING:**
**July 30, 2021**

| ACCOUNT | DESCRIPTON | BUDGET | CURRENT MONTH | YEAR TO DATE | BALANCE AVAILABLE | PERCENT BUDGET EXPENDED |
|---|---|---|---|---|---|---|
| **EXPENDITURE DETAILS** | | | | | | |
| | **CAPITAL PROGRAM - COST CENTER 07** | | | | | |
| 5550207 | Atlantis Facility | 902,000 | 0 | 0 | 902,000 | 0.00% |
| 5550107 | Shop Repairs and replacement | 41,900 | 0 | 0 | 41,900 | 0.00% |
| 5551607 | SAV | 300,000 | 0 | 0 | 300,000 | 0.00% |
| 5550407 | BRT | 4,300,000 | 0 | 0 | 4,300,000 | 0.00% |
| 5552307 | Buses | 14,469,296 | 0 | 0 | 14,469,296 | 0.00% |
| 5550507 | Office and Facility Equipment | 400,962 | 0 | 1,250 | 399,712 | 0.31% |
| 5551007 | Transit Center Upgrades and Improvements | 570,000 | 0 | 0 | 570,000 | 0.00% |
| 5551207 | Doolan Tower upgrade | 124,000 | 0 | 0 | 124,000 | 0.00% |
| 555xx07 | Dublin Parking Garage | 20,000,000 | 0 | 0 | 20,000,000 | 0.00% |
| 5551707 | Bus Shelters and Stops | 907,143 | 0 | 0 | 907,143 | 0.00% |
| 5552007 | Major component rehab | 1,000,265 | 0 | 0 | 1,000,265 | 0.00% |
| 555??07 | Transit Capital | 100,000 | 0 | 0 | 100,000 | 0.00% |
| | **TOTAL CAPITAL EXPENDITURES** | **43,115,566** | **0** | **1,250** | **43,114,316** | **0.00%** |
| | **FUND BALANCE (CAPITAL)** | **0.00** | **0** | **(1,250)** | | |
| | **FUND BALANCE (CAPTIAL & OPERATING)** | **-1.00** | **0** | **(1,738,556)** | | |

BACK TO AGENDA

California State Treasurer
Fiona Ma, CPA

Local Agency Investment Fund
P.O. Box 942809
Sacramento, CA 94209-0001
(916) 653-3001

August 02, 2021

LAIF Home
PMIA Average Monthly Yields

LIVERMORE/AMADOR VALLEY TRANSIT AUTHORITY
GENERAL MANAGER
1362 RUTAN COURT, SUITE 100
LIVERMORE, CA 94550

Tran Type Definitions

**Account Number:** 80-01-002

July 2021 Statement

| Effective Date | Transaction Date | Tran Type | Confirm Number | Web Confirm Number | Authorized Caller | Amount |
|---|---|---|---|---|---|---|
| 7/15/2021 | 7/14/2021 | QRD | 1680007 | N/A | SYSTEM | 8,969.34 |

**Account Summary**

| | | | |
|---|---|---|---|
| Total Deposit: | 8,969.34 | Beginning Balance: | 10,985,041.73 |
| Total Withdrawal: | 0.00 | Ending Balance: | 10,994,011.07 |

LAVTA
Month End Cash Disbursements Report
Prior Period Report for 07-21 BANK ACCOUNT 105



| Period | Check Number | Check Date | Vendor # (Name) | Disc. Terms | Gross Amount | Disc Amount | Net Amount | Check Description |
|---|---|---|---|---|---|---|---|---|
| 07-21 | 022720 | 07/09/21 | AEC01 (AECOM TECHNICAL SERVICES INC | | 4,032.43 | .00 | 4,032.43 | Automatic Generated Check |
| | 022721 | 07/09/21 | AIM01 (AIM TO PLEASE JANITORIAL SER | | 23,356.90 | .00 | 23,356.90 | Automatic Generated Check |
| | 022722 | 07/09/21 | ATT03 (AT&T ) | | 959.02 | .00 | 959.02 | Automatic Generated Check |
| | 022723 | 07/09/21 | CAL12 (CALTIP INSURANCE) | | 428,487.07 | .00 | 428,487.07 | Automatic Generated Check |
| | 022724 | 07/09/21 | CAL13 (CALIFORNIA TRANSIT) | | 1,538.07 | .00 | 1,538.07 | Automatic Generated Check |
| | 022725 | 07/09/21 | CIT06 (CITY OF LIVERMORE SEWER) | | 43.04 | .00 | 43.04 | Automatic Generated Check |
| | 022726 | 07/09/21 | DAI02 (ALLIANT INSURANCE SERVICES I | | 4,640.06 | .00 | 4,640.06 | Automatic Generated Check |
| | 022727 | 07/09/21 | DAY02 (DAY & NIGHT PEST CONTROL) | | 218.00 | .00 | 218.00 | Automatic Generated Check |
| | 022728 | 07/09/21 | EME01 (BRIGHTVIEW LANDSCAPE SERVICE | | 18,113.50 | .00 | 18,113.50 | Automatic Generated Check |
| | 022729 | 07/09/21 | HER05 (MELISSA HERNANDEZ STRAH) | | 200.00 | .00 | 200.00 | Automatic Generated Check |
| | 022730 | 07/09/21 | HUN01 (HUNTER PARTS & SERVICE INC) | | 1,475.09 | .00 | 1,475.09 | Automatic Generated Check |
| | 022731 | 07/09/21 | JOS02 (JEAN INGALLS JOSEY) | | 200.00 | .00 | 200.00 | Automatic Generated Check |
| | 022732 | 07/09/21 | KOF01 (KOFF & ASSOCIATES) | | 2,790.00 | .00 | 2,790.00 | Automatic Generated Check |
| | 022733 | 07/09/21 | LIV10 (LIVERMORE SANITATION INC) | | 2,515.66 | .00 | 2,515.66 | Automatic Generated Check |
| | 022734 | 07/09/21 | MET01 (METROPOLITAN TRANSPORT-) | | 9,518.03 | .00 | 9,518.03 | Automatic Generated Check |
| | 022735 | 07/09/21 | PAC16 (PACIFIC COAST TRANE) | | 1,745.67 | .00 | 1,745.67 | Automatic Generated Check |
| | 022736 | 07/09/21 | SAN03 (SAN JOAQUIN COUNCIL OF GOVER | | 175.00 | .00 | 175.00 | Automatic Generated Check |
| | 022737 | 07/09/21 | SCF01 (SC FUELS) | | 21,558.42 | .00 | 21,558.42 | Automatic Generated Check |
| | 022738 | 07/09/21 | SOL01 (SOLUTIONS FOR TRANSIT) | | 2,083.33 | .00 | 2,083.33 | Automatic Generated Check |
| | 022739 | 07/09/21 | TAC01 (TAC ENERGY) | | 21,146.13 | .00 | 21,146.13 | Automatic Generated Check |
| | 022740 | 07/09/21 | TX244 (SHIYI CHEN) | | 20.00 | .00 | 20.00 | Automatic Generated Check |
| | 022741 | 07/09/21 | VON01 (TRAPEZE SOFTWARE GROUP) | | 24,100.00 | .00 | 24,100.00 | Automatic Generated Check |
| | 022742 | 07/23/21 | ATT02 (AT&T ) | | 419.51 | .00 | 419.51 | Automatic Generated Check |
| | 022743 | 07/23/21 | AVI01 (AMADOR VALLEY INDUSTRIES) | | 517.66 | .00 | 517.66 | Automatic Generated Check |
| | 022744 | 07/23/21 | BON01 (REGINA E. BONANNO) | | 200.00 | .00 | 200.00 | Automatic Generated Check |
| | 022745 | 07/23/21 | CEW01 (CHARLES E. WALKER) | | 300.00 | .00 | 300.00 | Automatic Generated Check |
| | 022746 | 07/23/21 | CIT06 (CITY OF LIVERMORE SEWER) | | 43.98 | .00 | 43.98 | Automatic Generated Check |
| | 022747 | 07/23/21 | COR01 (CORBIN WILLITS SYSTEMS) | | 269.40 | .00 | 269.40 | Automatic Generated Check |
| | 022748 | 07/23/21 | DAI01 (ALLIANT INSURANCE SERVICE) | | 71,268.43 | .00 | 71,268.43 | Automatic Generated Check |
| | 022749 | 07/23/21 | DIR01 (DIRECT TV) | | 14.00 | .00 | 14.00 | Automatic Generated Check |
| | 022750 | 07/23/21 | EBR01 (EBRCSA) | | 37,080.00 | .00 | 37,080.00 | Automatic Generated Check |
| | 022751 | 07/23/21 | GBS01 (WILLIAM R. GRAY & COMPANY IN | | 14,145.00 | .00 | 14,145.00 | Automatic Generated Check |
| | 022752 | 07/23/21 | JTH01 (J. THAYER COMPANY) | | 292.81 | .00 | 292.81 | Automatic Generated Check |
| | 022753 | 07/23/21 | KII01 (BRITTNI KIICK) | | 1,200.00 | .00 | 1,200.00 | Automatic Generated Check |
| | 022754 | 07/23/21 | KIM02 (KIMLEY-HORN AND ASSOC,INC) | | 33,703.46 | .00 | 33,703.46 | Automatic Generated Check |
| | 022755 | 07/23/21 | LYF01 (LYFT, INC) | | 2,340.88 | .00 | 2,340.88 | Automatic Generated Check |
| | 022756 | 07/23/21 | MAP01 (MAPISTRY) | | 10,561.00 | .00 | 10,561.00 | Automatic Generated Check |
| | 022757 | 07/23/21 | PAC11 (PACIFIC ENVIROMENTAL SERV) | | 240.00 | .00 | 240.00 | Automatic Generated Check |
| | 022758 | 07/23/21 | PLA02 (PLANETERIA MEDIA LLC) | | 325.00 | .00 | 325.00 | Automatic Generated Check |
| | 022759 | 07/23/21 | RSE01 (R & S ERECTION) | | 581.70 | .00 | 581.70 | Automatic Generated Check |
| | 022760 | 07/23/21 | SCF01 (SC FUELS) | | 43,033.79 | .00 | 43,033.79 | Automatic Generated Check |
| | 022761 | 07/23/21 | SFS01 (SPECIALTY FIELD SERVICE INC) | | 23,100.00 | .00 | 23,100.00 | Automatic Generated Check |
| | 022762 | 07/23/21 | SHA02 (SHAMROCK OFFICE SOLUTIONS) | | 41.55 | .00 | 41.55 | Automatic Generated Check |
| | 022763 | 07/23/21 | TEL01 (TPx COMMUNICATIONS) | | 2,776.22 | .00 | 2,776.22 | Automatic Generated Check |
| | 022764 | 07/23/21 | WJH01 (W. JEFFREY HEID-LANDSCAPE AR | | 1,250.00 | .00 | 1,250.00 | Automatic Generated Check |
| | H11361 | 07/09/21 | MVT01 (MV TRANSPORTATION, INC.) | | 43,511.23 | .00 | 43,511.23 | MVT01, MAY-21 FIXED ROUTE |
| | H11362 | 07/01/21 | PER04 (CALPERS RETIREMENT SYSTEM) | | 2,130.07 | .00 | 2,130.07 | PER04, PERS 457 CONTRIBUT |
| | H11363 | 07/01/21 | PER01 (PERS ) | | 3,900.38 | .00 | 3,900.38 | PER01, PERS CLASSIC CONTR |
| | H11364 | 07/01/21 | PER01 (PERS ) | | 5,787.70 | .00 | 5,787.70 | PER01, PERS NEW CONTRIBUT |
| | H11365 | 07/01/21 | EMP01 (EMPLOYMENT DEVEL DEPT) | | 1,332.75 | .00 | 1,332.75 | EMP01, STATE TAX-FY21 ADM |
| | H11366 | 07/01/21 | EMP01 (EMPLOYMENT DEVEL DEPT) | | 3,503.65 | .00 | 3,503.65 | EMP01, STATE TAX 6/12/21- |
| | H11367 | 07/01/21 | EFT01 (ELECTRONIC FUND TRANFERS) | | 4,529.81 | .00 | 4,529.81 | EFT01, FEDERAL TAX-FY21 A |
| | H11368 | 07/01/21 | EFT01 (ELECTRONIC FUND TRANFERS) | | 9,471.72 | .00 | 9,471.72 | EFT01, FEDERAL TAX 6/12/2 |
| | H11369 | 07/02/21 | DIR02 (DIRECT DEPOSIT OF PAYROLL CH | | 43,526.46 | .00 | 43,526.46 | DIR02, PR DIRECT DEPOSIT |
| | H11370 | 07/01/21 | DIR02 (DIRECT DEPOSIT OF PAYROLL CH | | 12,379.86 | .00 | 12,379.86 | DIR02, PR DIRECT DEPOSIT- |
| | H11371 | 07/11/21 | PAC01 (AT&T ) | | 354.67 | .00 | 354.67 | PAC01,ACCT #436-951-0106, |
| | H11372 | 07/07/21 | PAC01 (AT&T ) | | 33.34 | .00 | 33.34 | PAC01,ACCT #232-351-6260, |
| | H11373 | 07/06/21 | PAC01 (AT&T ) | | 209.33 | .00 | 209.33 | PAC01, ACCT #925-245-0576 |
| | H11374 | 07/06/21 | PAC01 (AT&T ) | | 389.72 | .00 | 389.72 | PAC01,ACCT #925-243-9029, |
| | H11375 | 07/09/21 | TX243 (SULABHA KONDED) | | 600.00 | .00 | 600.00 | TX243, PARATAXI REIMBURSE |
| | H11376 | 07/09/21 | TX242 (BONNIE WOLF) | | 100.00 | .00 | 100.00 | TX242, PARATAXI REIMBURSE |
| | H11377 | 07/16/21 | STA05 (STATE BOARD OF EQUAL) | | 707.00 | .00 | 707.00 | STA05, 2ND QTR 2021 EXEMP |
| | H11378 | 07/16/21 | STA04 (STATE BOARD OF ) | | 1,209.00 | .00 | 1,209.00 | STA04, 2ND QTR 2021 UNDER |
| | H11379 | 07/16/21 | DIR02 (DIRECT DEPOSIT OF PAYROLL CH | | 56,066.75 | .00 | 56,066.75 | DIR02, PR DIRECT DEPOSIT |
| | H11380 | 07/15/21 | EFT01 (ELECTRONIC FUND TRANFERS) | | 14,263.72 | .00 | 14,263.72 | EFT01, FEDERAL TAX 6/26/2 |
| | H11381 | 07/15/21 | EMP01 (EMPLOYMENT DEVEL DEPT) | | 4,817.63 | .00 | 4,817.63 | EMP01, STATE TAX 6/26/21- |
| | H11382 | 07/15/21 | PER01 (PERS ) | | 3,867.75 | .00 | 3,867.75 | PER01, PERS CLASSIC CONTR |
| | H11383 | 07/15/21 | PER01 (PERS ) | | 5,744.49 | .00 | 5,744.49 | PER01, PERS NEW CONTRIBUT |
| | H11384 | 07/15/21 | PER04 (CALPERS RETIREMENT SYSTEM) | | 2,132.61 | .00 | 2,132.61 | PER04, PERS 457 CONTRIBUT |
| | H11385 | 07/15/21 | MVT01 (MV TRANSPORTATION, INC.) | | 332,000.00 | .00 | 332,000.00 | MVT01, 114396, JULY-21 MV |
| | H11386 | 07/08/21 | VSP01 (VSP ) | | 577.24 | .00 | 577.24 | VSP01, JULY-21 VISION INS |
| | H11387 | 07/08/21 | MUT01 (MUTUAL OF OMAHA) | | 1,188.34 | .00 | 1,188.34 | MUT01, JULY-21 LTD & LIFE |
| | H11388 | 07/08/21 | DEL05 (ALLIED ADMIN/DELTA DENTAL) | | 2,285.96 | .00 | 2,285.96 | DEL05, AUG-21 DENTAL INSU |
| | H11389 | 07/08/21 | PER03 (CAL PUB EMP RETIRE SYSTM) | | 36,903.56 | .00 | 36,903.56 | PER03, JULY-21 HEALTH INS |
| | H11390 | 07/08/21 | PER01 (PERS ) | | 374.40 | .00 | 374.40 | PER01, FY21 1959 SURVIVOR |
| | H11391 | 07/08/21 | PER01 (PERS ) | | 624.00 | .00 | 624.00 | PER01, FY21 1959 SURVIVOR |
| | H11392 | 07/08/21 | AME06 (AMERICAN FIDELITY ASSURANCE | | 1,020.96 | .00 | 1,020.96 | AME06, JULY-21 FLEXIBLE S |
| | H11393 | 07/08/21 | AME06 (AMERICAN FIDELITY ASSURANCE | | 732.22 | .00 | 732.22 | AME06, JUNE-21 SUPPLEMENT |
| | H11394 | 07/09/21 | SHE05 (SHELL ) | | 66.88 | .00 | 66.88 | SHE05, JUNE-21 CC STATEME |
| | H11395 | 07/09/21 | UBE01 (UBER ) | | 889.97 | .00 | 889.97 | UBE01, JUNE-21 BILLING: G |
| | H11396 | 07/08/21 | STA01 (STATE COMPENSATION FUND) | | 1,496.92 | .00 | 1,496.92 | STA01, JULY-21 WORKER'S C |
| | H11397 | 07/16/21 | STA13 (STAPLES CREDIT PLAN) | | 146.25 | .00 | 146.25 | STA13, JULY-21 CC STATEME |
| | H11398 | 07/08/21 | VER01 (VERIZON WIRELESS) | | 4,086.48 | .00 | 4,086.48 | VER01, 9882539696, 5/23-6 |
| | H11399 | 07/09/21 | SUD01 (JENNIFER SUDA) | | 24.99 | .00 | 24.99 | SUD01, 6/29/21 EXPENSE RE |
| | H11400 | 07/08/21 | PER01 (PERS ) | | 93,036.00 | .00 | 93,036.00 | PER01, FY21 UNFUNDED ACCR |
| | H11401 | 07/08/21 | PER01 (PERS ) | | 3,748.00 | .00 | 3,748.00 | PER01, FY21 UNFUNDED ACCR |
| | H11402 | 07/30/21 | MVT01 (MV TRANSPORTATION, INC.) | | 332,000.00 | .00 | 332,000.00 | MVT01, 114397, JULY-21 MV |
| | H11403 | 07/30/21 | CAL04 (CALIFORNIA WATER SERVICE) | | 40.95 | .00 | 40.95 | CAL04, 3616555555, TC WAT |
| | H11404 | 07/30/21 | CAL04 (CALIFORNIA WATER SERVICE) | | 1,206.65 | .00 | 1,206.65 | CAL04, 4616555555, TC IRR |
| | H11405 | 07/30/21 | CAL04 (CALIFORNIA WATER SERVICE) | | 79.76 | .00 | 79.76 | CAL04, 4755555555, MOA FI |
| | H11406 | 07/30/21 | CAL04 (CALIFORNIA WATER SERVICE) | | 79.76 | .00 | 79.76 | CAL04, 5755555555, CONTRA |

BACK TO AGENDA

LAVTA
Month End Cash Disbursements Report
Prior Period Report for 07-21 BANK ACCOUNT 105



| Period | Check Number | Check Date | Vendor # (Name) | Disc. Terms | Gross Amount | Disc Amount | Net Amount | Check Description |
|---|---|---|---|---|---|---|---|---|
| 07-21 | H11407 | 07/30/21 | CAL04 (CALIFORNIA WATER SERVICE) | | 59.82 | .00 | 59.82 | CAL04, 2575555555, TC FIR |
| | H11408 | 07/30/21 | CAL04 (CALIFORNIA WATER SERVICE) | | 1,236.31 | .00 | 1,236.31 | CAL04, 0198655555, BUS WA |
| | H11409 | 07/30/21 | CAL04 (CALIFORNIA WATER SERVICE) | | 952.67 | .00 | 952.67 | CAL04, 9098655555, MOA WA |
| | H11410 | 07/30/21 | PAC02 (PACIFIC GAS AND ELECTRIC) | | 1,688.23 | .00 | 1,688.23 | PAC02, 6062256368-6, ATLA |
| | H11411 | 07/30/21 | PAC02 (PACIFIC GAS AND ELECTRIC) | | 98.54 | .00 | 98.54 | PAC02, 7649646868-7, DOOL |
| | H11412 | 07/30/21 | PAC02 (PACIFIC GAS AND ELECTRIC) | | 854.28 | .00 | 854.28 | PAC02, 9007202117-4, MOA |
| | H11413 | 07/30/21 | PAC02 (PACIFIC GAS AND ELECTRIC) | | 1,207.12 | .00 | 1,207.12 | PAC02, 7264840356-5, BUS |
| | H11414 | 07/30/21 | PAC02 (PACIFIC GAS AND ELECTRIC) | | 6,974.78 | .00 | 6,974.78 | PAC02, 5809326332-3, MOA |
| | H11415 | 07/30/21 | CIT07 (CITY OF LIVERMORE - WATER) | | 135.41 | .00 | 135.41 | CIT07, 139388-00, BUS WAS |
| | H11416 | 07/30/21 | CIT07 (CITY OF LIVERMORE - WATER) | | 46.52 | .00 | 46.52 | CIT07, 138431-00, ATLANTI |
| | H11417 | 07/23/21 | CAL15 (CALTRONICS BUSINESS SYS) | | 216.77 | .00 | 216.77 | CAL15, 3293535, BIZHUB 6/ |
| | H11418 | 07/01/21 | MER01 (MERCHANT SERVICES) | | 85.84 | .00 | 85.84 | MER01, JUNE-21 TRANSIT CE |
| | H11419 | 07/01/21 | MER01 (MERCHANT SERVICES) | | 65.00 | .00 | 65.00 | MER01, JUNE-21 MOA CC STA |
| | H11420 | 07/30/21 | AGM01 (A.G.M. SIGNS) | | 617.40 | .00 | 617.40 | AGM01, INV-07222104, MP90 |
| | H11421 | 07/30/21 | YEA01 (JENNIFER YEAMANS) | | 36.72 | .00 | 36.72 | YEA01, 7/23/21 TRAVEL/MIL |
| | H11422 | 07/30/21 | STA01 (STATE COMPENSATION FUND) | | 1,496.92 | .00 | 1,496.92 | STA01, AUG-21 WORKER'S CO |
| | H11423 | 07/30/21 | HDE01 (HOME DEPOT-CREDIT SERVICES) | | 177.49 | .00 | 177.49 | HDE01, JULY-21 CC STATEME |
| | H11424 | 07/30/21 | DIR02 (DIRECT DEPOSIT OF PAYROLL CH | | 43,922.34 | .00 | 43,922.34 | DIR02, PR DIRECT DEPOSIT |
| | H11425 | 07/30/21 | EFT01 (ELECTRONIC FUND TRANFERS) | | 9,572.58 | .00 | 9,572.58 | EFT01, FEDERAL TAX 7/10/2 |
| | H11426 | 07/30/21 | EMP01 (EMPLOYMENT DEVEL DEPT) | | 3,532.61 | .00 | 3,532.61 | EMP01, STATE TAX 7/10/21- |
| | H11427 | 07/30/21 | PER04 (CALPERS RETIREMENT SYSTEM) | | 2,130.07 | .00 | 2,130.07 | PER04, PERS 457 CONTRIBUT |
| | H11428 | 07/30/21 | PER01 (PERS ) | | 3,867.82 | .00 | 3,867.82 | PER01, PERS CLASSIC CONTR |
| | H11429 | 07/30/21 | PER01 (PERS ) | | 5,731.04 | .00 | 5,731.04 | PER01, PERS NEW CONTRIBUT |
| | H11430 | 07/30/21 | PER03 (CAL PUB EMP RETIRE SYSTM) | | 36,907.24 | .00 | 36,907.24 | PER03, AUG-21 HEALTH INSU |
| | H11431 | 07/30/21 | BAN03 (BANKCARD CENTER) | | 1,683.21 | .00 | 1,683.21 | BAN03, JUNE-21 BOW CC STA |
| | | | Total for Bank Account 105 -----> | | 1,969,095.47 | .00 | 1,969,095.47 | |
| | | | Grand Total of all Bank Accounts -----> | | 1,969,095.47 | .00 | 1,969,095.47 | |

BACK TO AGENDA

LAVTA
Month End Payable Activity Report
Prior Period Report for 07-21



| Period | Vendor # (Name) | Invoice Number | Invoice Date | Due Date | Disc. Terms | Gross Amount | Description |
|---|---|---|---|---|---|---|---|
| 07-21 | AEC01 (AECOM TECHNICAL SERVICES | IN200514400 | 07/07/21 | 08/06/21 | A | 4032.43 | AEC01, 2000514400, 5/29-7/2/21 REGIONAL BUS |
| 07-21 | AGM01 (A.G.M. SIGNS) | 07222104H | 07/22/21 | 08/21/21 | A | 617.40 | AGM01, INV-07222104, MP902 BUS LOADING SIGNS |
| 07-21 | AIM01 (AIM TO PLEASE JANITORIAL SE | 1084 | 04/14/21 | 05/14/21 | A | 7891.32 | AIM01, 1084, MAR-21 BUS STOP CLEANING SERVIC |
| | | 1085 | 04/29/21 | 05/29/21 | A | 6000.00 | AIM01, 1085, APR-21 BUS STOP CLEANING SERVIC |
| | | 1086 | 06/07/21 | 07/07/21 | A | 6000.00 | AIM01, 1086, MAY-21 BUS STOP CLEANING SERVIC |
| | | 71-JUN-21 | 07/06/21 | 08/05/21 | A | 3465.58 | AIM01, JUNE-21 MONTHLY JANITORIAL SERVICE |
| | | | Vendor's Total -----> | | | 23356.90 | |
| 07-21 | AME06 (AMERICAN FIDELITY ASSURANCE | FSA07-21H | 07/02/21 | 08/01/21 | A | 1020.96 | AME06, JULY-21 FLEXIBLE SPENDING ACCOUNT |
| | | SUPP06-21H | 06/30/21 | 07/30/21 | A | 732.22 | AME06, JUNE-21 SUPPLEMENTAL INSURANCE |
| | | | Vendor's Total -----> | | | 1753.18 | |
| 07-21 | ATT02 (AT&T ) | 16756825 | 07/13/21 | 08/12/21 | A | 419.51 | ATT02, 16756825, PAYER #9391035694 6/13/21-7 |
| 07-21 | ATT03 (AT&T ) | 570303603 | 06/19/21 | 07/19/21 | A | 959.02 | ATT03, 0570303603, JUNE-21 INTERNET PRI |
| 07-21 | AVI01 (AMADOR VALLEY INDUSTRIES) | 902428 | 06/30/21 | 07/30/21 | A | 517.66 | AVI01, 902428, JUNE-21 GARBAGE PICK UP SERVI |
| 07-21 | BAN03 (BANKCARD CENTER) | JUNE-2021H | 06/28/21 | 07/28/21 | A | 1683.21 | BAN03, JUNE-21 BOW CC STATEMENT |
| 07-21 | BON01 (REGINA E. BONANNO) | APR-2021 | 04/30/21 | 05/30/21 | A | 100.00 | BON01, APR-21 BOD STIPEND |
| | | JUNE-2021 | 06/30/21 | 07/30/21 | A | 100.00 | BON01, JUNE-21 BOD STIPEND |
| | | | Vendor's Total -----> | | | 200.00 | |
| 07-21 | CAL04 (CALIFORNIA WATER SERVICE) | 198061621H | 06/16/21 | 07/16/21 | A | 1236.31 | CAL04, 0198655555, BUS WASH 5/14/21-6/14/21 |
| | | 257062521H | 06/25/21 | 07/25/21 | A | 59.82 | CAL04, 2575555555, TC FIRE 7/1/21-7/31/21 |
| | | 361062821H | 06/28/21 | 07/28/21 | A | 40.95 | CAL04, 3616555555, TC WATER 5/27/21-6/25/21 |
| | | 461062921H | 06/29/21 | 07/29/21 | A | 1206.65 | CAL04, 4616555555, TC IRRG 5/27/21-6/25/21 |
| | | 475062521H | 06/25/21 | 07/25/21 | A | 79.76 | CAL04, 4755555555, MOA FIRE 7/1/21-7/31/21 |
| | | 575062521H | 06/25/21 | 07/25/21 | A | 79.76 | CAL04, 5755555555, CONTRACTOR FIRE 7/1/21-7/ |
| | | 909061521H | 06/15/21 | 07/15/21 | A | 952.67 | CAL04, 9098655555, MOA WATER 5/14/21-6/14/21 |
| | | | Vendor's Total -----> | | | 3655.92 | |
| 07-21 | CAL12 (CALTIP INSURANCE) | CAL 21-22 | 07/01/21 | 07/31/21 | A | 428487.07 | CAL12, CAL 2021-0085, FY22 LIABILITY INSURAN |
| 07-21 | CAL13 (CALIFORNIA TRANSIT) | 312021JUN | 07/01/21 | 07/31/21 | A | 1538.07 | CAL13, 31-2021-JUN, JUNE-21 INSURANCE CLAIMS |
| 07-21 | CAL15 (CALTRONICS BUSINESS SYS) | 3293535H | 07/16/21 | 08/15/21 | A | 216.77 | CAL15, 3293535, BIZHUB 6/16/21-7/15/21 |
| 07-21 | CEW01 (CHARLES E. WALKER) | 2021H | 07/15/21 | 08/14/21 | A | 300.00 | CEW01, 2021H, REVIEW LAVTA PO DOCUMENTS-2 HR |
| 07-21 | CIT06 (CITY OF LIVERMORE SEWER) | BW061521 | 06/15/21 | 07/15/21 | A | 43.04 | CIT06, 138143-00, BUS WASH 5/18/21-6/15/21 |
| | | TC071321 | 07/13/21 | 08/12/21 | A | 43.98 | CIT06, 133389-00, TRANSIT CENTER 6/8/21-7/13 |
| | | | Vendor's Total -----> | | | 87.02 | |
| 07-21 | CIT07 (CITY OF LIVERMORE - WATER) | 388070621H | 07/06/21 | 08/05/21 | A | 135.41 | CIT07, 139388-00, BUS WASH 6/1/21-7/6/21 |
| | | 431070621H | 07/06/21 | 08/05/21 | A | 46.52 | CIT07, 138431-00, ATLANTIS IRRG. 6/1/21-7/6/ |
| | | | Vendor's Total -----> | | | 181.93 | |
| 07-21 | COR01 (CORBIN WILLITS SYSTEMS) | C107151 | 07/15/21 | 08/14/21 | A | 269.40 | COR01, C107151, JULY-21 SERVICE |
| 07-21 | DAI01 (ALLIANT INSURANCE SERVICE) | 10124553 | 07/16/21 | 08/15/21 | A | 71268.43 | DAI01, 10124553, FY22 ALL RISK LIABILITY INS |
| 07-21 | DAI02 (ALLIANT INSURANCE SERVICES | 1686556 I | 07/01/21 | 07/31/21 | A | 4640.06 | DAI02, 1686556, FY2022 POLLUTION LIABILITY I |
| 07-21 | DAY02 (DAY & NIGHT PEST CONTROL) | 164193 | 06/30/21 | 07/30/21 | A | 218.00 | DAY02, 164193, 6/16/21 RUTAN SERVICE |
| 07-21 | DEL05 (ALLIED ADMIN/DELTA DENTAL) | AUG-2021H | 07/06/21 | 08/05/21 | A | 2285.96 | DEL05, AUG-21 DENTAL INSURANCE |
| 07-21 | DIR01 (DIRECT TV) | 96X210711 | 07/11/21 | 08/10/21 | A | 14.00 | DIR01, 025118596X210711, JULY-21 SERVICE |

BACK TO AGENDA

| Period | Vendor # | (Name) | Invoice Number | Invoice Date | Due Date | Disc. Terms | Gross Amount | Description |
|---|---|---|---|---|---|---|---|---|
| 07-21 | DIR02 | (DIRECT DEPOSIT OF PAYROLL C | 20210625H | 07/02/21 | 08/01/21 | A | 43526.46 | DIR02, PR DIRECT DEPOSIT 6/12/21-6/25/21 |
| | | | 20210630H | 07/01/21 | 07/31/21 | A | 12379.86 | DIR02, PR DIRECT DEPOSIT-FY21 ADMIN LEAVE BU |
| | | | 20210709H | 07/16/21 | 08/15/21 | A | 56066.75 | DIR02, PR DIRECT DEPOSIT 6/26/21-7/9/21 |
| | | | 20210723H | 07/30/21 | 08/29/21 | A | 43922.34 | DIR02, PR DIRECT DEPOSIT 7/10/21-7/23/21 |
| | | | | | Vendor's Total -----> | | 155895.41 | |
| 07-21 | EBR01 | (EBRCSA) | 20220153 | 07/01/21 | 07/31/21 | A | 37080.00 | EBR01, 20220153, PO #7553 FY22 RADIO MAINT S |
| 07-21 | EFT01 | (ELECTRONIC FUND TRANFERS) | 20210625H | 07/01/21 | 07/31/21 | A | 9471.72 | EFT01, FEDERAL TAX 6/12/21-6/25/21 |
| | | | 20210630H | 07/01/21 | 07/31/21 | A | 4529.81 | EFT01, FEDERAL TAX-FY21 ADMIN LEAVE BUYOUT |
| | | | 20210709H | 07/15/21 | 08/14/21 | A | 14263.72 | EFT01, FEDERAL TAX 6/26/21-7/9/21 |
| | | | 20210723H | 07/30/21 | 08/29/21 | A | 9572.58 | EFT01, FEDERAL TAX 7/10/21-7/23/21 |
| | | | | | Vendor's Total -----> | | 37837.83 | |
| 07-21 | EME01 | (BRIGHTVIEW LANDSCAPE SERVIC | 7416861 | 06/28/21 | 07/28/21 | A | 4080.00 | EME01, 7416861, MP843 ATLANTIS TREE PRUNING |
| | | | 7416862 | 06/28/21 | 07/28/21 | A | 3778.00 | EME01, 7416862, MP844 TRANSIT CENTER TREE PR |
| | | | 7416871 | 06/23/21 | 07/23/21 | A | 166.00 | EME01, 7416871, MP865 TRANSIT CENTER IRRG RE |
| | | | 7421671 | 07/01/21 | 07/31/21 | A | 1301.00 | EME01, 7421671, JULY-21 LANDSCAPING SERVICE |
| | | | 7437887 | 06/28/21 | 07/28/21 | A | 1524.25 | EME01, 7437887, MP870 RUTAN BACKFLOW TEST & |
| | | | 7438172 | 06/28/21 | 07/28/21 | A | 1674.25 | EME01, 7438172, MP870 ATLANTIS BACKFLOW TEST |
| | | | 7440550 | 06/28/21 | 07/28/21 | A | 352.00 | EME01, 7440550, MP809 TC IRRG STATUS & REPAI |
| | | | 7440551 | 06/28/21 | 07/28/21 | A | 261.00 | EME01, 7440551, MP808 ATLANTIS IRRG STATUS & |
| | | | 7440552 | 06/28/21 | 07/28/21 | A | 993.00 | EME01, 7440552, MP807 RUTAN IRRG STATUS & RE |
| | | | 7440555 | 06/28/21 | 07/28/21 | A | 3984.00 | EME01, 7440555, MP842 RUTAN TREE PRUNING |
| | | | | | Vendor's Total -----> | | 18113.50 | |
| 07-21 | EMP01 | (EMPLOYMENT DEVEL DEPT) | 20210625H | 07/01/21 | 07/31/21 | A | 3503.65 | EMP01, STATE TAX 6/12/21-6/25/21 |
| | | | 20210630H | 07/01/21 | 07/31/21 | A | 1332.75 | EMP01, STATE TAX-FY21 ADMIN LEAVE BUYOUT |
| | | | 20210709H | 07/15/21 | 08/14/21 | A | 4817.63 | EMP01, STATE TAX 6/26/21-7/9/21 |
| | | | 20210723H | 07/30/21 | 08/29/21 | A | 3532.61 | EMP01, STATE TAX 7/10/21-7/23/21 |
| | | | | | Vendor's Total -----> | | 13186.64 | |
| 07-21 | GBS01 | (WILLIAM R. GRAY & COMPANY I | JUNE-2021 | 07/13/21 | 08/12/21 | A | 14145.00 | GBS01, JUNE-21 SAV ON-CALL ENGINEERING SUPPO |
| 07-21 | HDE01 | (HOME DEPOT-CREDIT SERVICES) | JULY-2021H | 07/13/21 | 08/12/21 | A | 177.49 | HDE01, JULY-21 CC STATEMENT-MISC SUPPLIES |
| 07-21 | HER05 | (MELISSA HERNANDEZ STRAH) | JUNE-2021 | 06/30/21 | 07/30/21 | A | 200.00 | HER05, JUNE-21 BOD STIPEND |
| 07-21 | HUN01 | (HUNTER PARTS & SERVICE INC) | SFO146134 | 07/01/21 | 07/31/21 | A | 1475.09 | HUN01, SFO146134, MP876 LONG BAR SERVICE CAL |
| 07-21 | JOS02 | (JEAN INGALLS JOSEY) | JUNE-2021 | 06/30/21 | 07/30/21 | A | 200.00 | JOS02, JUNE-21 BOD STIPEND |
| 07-21 | JTH01 | (J. THAYER COMPANY) | 1534455-0 | 07/07/21 | 08/06/21 | A | 292.81 | JTH01, 1534455-0, 7/7/21 PRINTING PAPER |
| 07-21 | KII01 | (BRITTNI KIICK) | APR-2021 | 04/30/21 | 05/30/21 | A | 200.00 | KII01, APR-21 BOD STIPEND |
| | | | FEB-2021 | 02/28/21 | 03/30/21 | A | 200.00 | KII01, FEB-21 BOD STIPEND |
| | | | MAR-2021 | 03/31/21 | 04/30/21 | A | 200.00 | KII01, MAR-21 BOD STIPEND |
| | | | MAY-2021 | 05/31/21 | 06/30/21 | A | 300.00 | KII01, MAY-21 BOD STIPEND |
| | | | JUNE-2021 | 06/30/21 | 07/30/21 | A | 300.00 | KII01, JUNE-21 BOD STIPEND |
| | | | | | Vendor's Total -----> | | 1200.00 | |
| 07-21 | KIM02 | (KIMLEY-HORN AND ASSOC,INC) | 18810155 | 04/30/21 | 05/30/21 | A | 8290.50 | KIM02, 18810155, APR-21 TASK 4-ATLANTIS FACI |
| | | | 18940994 | 05/31/21 | 06/30/21 | A | 3850.00 | KIM02, 18940994, MAY-21 TASK 4-ATLANTIS FACI |
| | | | 19194704 | 06/30/21 | 07/30/21 | A | 11295.25 | KIM02, 19194704, JUNE-21 TASK 4-ATLANTIS FAC |
| | | | 19195809 | 07/14/21 | 08/13/21 | A | 6280.47 | KIM02, 19195809, JUNE-21 TSP UPGRADE & EXPAN |
| | | | 19195810 | 06/30/21 | 07/30/21 | A | 3987.24 | KIM02, 19195810, JUNE-21 10R CORRIDOR ENHANC |
| | | | | | Vendor's Total -----> | | 33703.46 | |
| 07-21 | KOF01 | (KOFF & ASSOCIATES) | 013445 | 07/01/21 | 07/31/21 | A | 2790.00 | KOF01, 013445, MP829 HR CONSULTING SERVICE F |
| 07-21 | LIV10 | (LIVERMORE SANITATION INC) | 1421692 | 06/30/21 | 07/30/21 | A | 2515.66 | LIV10, 1421692, JUN-21 GARBAGE SERVICE |
| 07-21 | LYF01 | (LYFT, INC) | 1015184 | 06/30/21 | 07/30/21 | A | 2340.88 | LYF01, 1001015184, JUNE-21 CODE: GO TRIVALLE |
| 07-21 | MAP01 | (MAPISTRY) | INV-3837 | 07/21/21 | 08/20/21 | A | 10561.00 | MAP01, INV-3837, PO #7551 STORMWATER SOFTWAR |
| 07-21 | MER01 | (MERCHANT SERVICES) | TC063021H | 07/01/21 | 07/31/21 | A | 85.84 | MER01, JUNE-21 TRANSIT CENTER CC STATEMENT |

BACK TO AGENDA

| Period | Vendor # (Name) | Invoice Number | Invoice Date | Due Date | Disc. Terms | Gross Amount | Description |
|---|---|---|---|---|---|---|---|
| 07-21 | MER01 (MERCHANT SERVICES) | MOA063021H | 07/01/21 | 07/31/21 | A | 65.00 | MER01, JUNE-21 MOA CC STATEMENT |
| | | | Vendor's Total -----> | | | 150.84 | |
| 07-21 | MET01 (METROPOLITAN TRANSPORT-) | AR025986 | 06/25/21 | 07/25/21 | A | 9518.03 | MET01, AR025986, APR-21 CLIPPER FEES |
| 07-21 | MUT01 (MUTUAL OF OMAHA) | JULY-2021H | 06/15/21 | 07/15/21 | A | 1188.34 | MUT01, JULY-21 LTD & LIFE INSURANCE |
| 07-21 | MVT01 (MV TRANSPORTATION, INC.) | 114396H | 07/03/21 | 08/02/21 | A | 332000.00 | MVT01, 114396, JULY-21 MV 1ST INSTALL PAYMEN |
| | | 114397H | 07/03/21 | 08/02/21 | A | 332000.00 | MVT01, 114397, JULY-21 MV 2ND INSTALL PAYMEN |
| | | MAY-2021H | 06/03/21 | 07/03/21 | A | 43511.23 | MVT01, MAY-21 FIXED ROUTE MONTHLY SERVICE |
| | | | Vendor's Total -----> | | | 707511.23 | |
| 07-21 | PAC01 (AT&T ) | ATT 06/21H | 06/13/21 | 07/13/21 | A | 209.33 | PAC01, ACCT #925-245-0576, 6/13/21-7/12/21 |
| | | ATT060721H | 06/07/21 | 07/07/21 | A | 33.34 | PAC01,ACCT #232-351-6260,CONTRACTOR FIRE 6/7 |
| | | ATT061121H | 06/11/21 | 07/11/21 | A | 354.67 | PAC01,ACCT #436-951-0106,ATLANTIS T1 6/11-7/ |
| | | ATT061321H | 06/13/21 | 07/13/21 | A | 389.72 | PAC01,ACCT #925-243-9029,ATLANTIS ALARM 6/13 |
| | | | Vendor's Total -----> | | | 987.06 | |
| 07-21 | PAC02 (PACIFIC GAS AND ELECTRIC) | 580070821H | 07/08/21 | 08/07/21 | A | 6974.78 | PAC02, 5809326332-3, MOA ELECTRIC 6/2/21-6/3 |
| | | 606070621H | 07/06/21 | 08/05/21 | A | 1688.23 | PAC02, 6062256368-6, ATLANTIS 5/28/21-6/28/2 |
| | | 726070121H | 07/01/21 | 07/31/21 | A | 1207.12 | PAC02, 7264840356-5, BUS STOPS 5/21/21-6/21/ |
| | | 764061821H | 06/18/21 | 07/18/21 | A | 98.54 | PAC02, 7649646868-7, DOOLAN TWR 5/13/21-6/13 |
| | | 900061521H | 06/15/21 | 07/15/21 | A | 854.28 | PAC02, 9007202117-4, MOA GAS 5/14/21-6/14/21 |
| | | | Vendor's Total -----> | | | 10822.95 | |
| 07-21 | PAC11 (PACIFIC ENVIROMENTAL SERV) | 2124 | 07/05/21 | 08/04/21 | A | 120.00 | PAC11, 2124, JUNE-21 RUTAN MONTHLY SERVICE |
| | | 2125 | 07/05/21 | 08/04/21 | A | 120.00 | PAC11, 2125, JUNE-21 ATLANTIS MONTHLY SERVIC |
| | | | Vendor's Total -----> | | | 240.00 | |
| 07-21 | PAC16 (PACIFIC COAST TRANE) | S107824 | 06/28/21 | 07/28/21 | A | 1745.67 | PAC16, S107824, MP882 HVAC SERVICE CALL 5/17 |
| 07-21 | PER01 (PERS ) | 20210625CH | 07/01/21 | 07/31/21 | A | 3900.38 | PER01, PERS CLASSIC CONTRIBUTION 6/12/21-6/2 |
| | | 20210625NH | 07/01/21 | 07/31/21 | A | 5787.70 | PER01, PERS NEW CONTRIBUTION 6/12/21-6/25/21 |
| | | 20210709CH | 07/15/21 | 08/14/21 | A | 3867.75 | PER01, PERS CLASSIC CONTRIBUTION 6/26/21-7/9 |
| | | 20210709NH | 07/15/21 | 08/14/21 | A | 5744.49 | PER01, PERS NEW CONTRIBUTION 6/26/21-7/9/21 |
| | | 20210723CH | 07/30/21 | 08/29/21 | A | 3867.82 | PER01, PERS CLASSIC CONTRIBUTION 7/10/21-7/2 |
| | | 20210723NH | 07/30/21 | 08/29/21 | A | 5731.04 | PER01, PERS NEW CONTRIBUTION 7/10/21-7/23/21 |
| | | FY2021-CLH | 07/01/21 | 07/31/21 | A | 93036.00 | PER01, FY21 UNFUNDED ACCRUED LIABILITY-CLASS |
| | | FY2021-NEH | 07/01/21 | 07/31/21 | A | 3748.00 | PER01, FY21 UNFUNDED ACCRUED LIABILITY-NEW P |
| | | FY211959CH | 06/24/21 | 07/24/21 | A | 374.40 | PER01, FY21 1959 SURVIVOR BENEFIT-CLASSIC PL |
| | | FY211959NH | 06/24/21 | 07/24/21 | A | 624.00 | PER01, FY21 1959 SURVIVOR BENEFIT-NEW PEPRA |
| | | | Vendor's Total -----> | | | 126681.58 | |
| 07-21 | PER03 (CAL PUB EMP RETIRE SYSTM) | AUG-2021H | 07/14/21 | 08/13/21 | A | 36907.24 | PER03, AUG-21 HEALTH INSURANCE |
| | | JULY-2021H | 06/14/21 | 07/14/21 | A | 36903.56 | PER03, JULY-21 HEALTH INSURANCE |
| | | | Vendor's Total -----> | | | 73810.80 | |
| 07-21 | PER04 (CALPERS RETIREMENT SYSTEM) | 20210625H | 07/01/21 | 07/31/21 | A | 2130.07 | PER04, PERS 457 CONTRIBUTION 6/12/21-6/25/21 |
| | | 20210709H | 07/15/21 | 08/14/21 | A | 2132.61 | PER04, PERS 457 CONTRIBUTION 6/26/21-7/9/21 |
| | | 20210723H | 07/30/21 | 08/29/21 | A | 2130.07 | PER04, PERS 457 CONTRIBUTION 7/10/21-7/23/21 |
| | | | Vendor's Total -----> | | | 6392.75 | |
| 07-21 | PLA02 (PLANETERIA MEDIA LLC) | 18578 | 07/15/21 | 08/14/21 | A | 325.00 | PLA02, 18578, JULY-21 WEB HOSTING |
| 07-21 | RSE01 (R & S ERECTION) | 121155-GR | 07/12/21 | 08/11/21 | A | 581.70 | RSE01, 121155-GR, MP888 ATLANTIS GATE REPAIR |
| 07-21 | SAN03 (SAN JOAQUIN COUNCIL OF GOVE | 21ONEVOIC | 07/08/21 | 08/07/21 | A | 175.00 | SAN03, 2021 ONE VOICE TRIP REGISTAR FEE-M TR |
| 07-21 | SCF01 (SC FUELS) | 4677195 | 06/24/21 | 07/24/21 | A | 21558.42 | SCF01, 4677195, 6/24/21 FUEL DELIVERY |
| | | 4690525 | 07/08/21 | 08/07/21 | A | 21316.75 | SCF01, 4690525, 7/8/21 FUEL DELIVERY |
| | | 4701330 | 07/18/21 | 08/17/21 | A | 21717.04 | SCF01, 4701330, 7/18/21 FUEL DELIVERY |
| | | | Vendor's Total -----> | | | 64592.21 | |
| 07-21 | SFS01 (SPECIALTY FIELD SERVICE INC | 2449 | 07/16/21 | 08/15/21 | A | 23100.00 | SFS01, 2449, PO #7533 REPLACE HYBRID MOTOR D |

BACK TO AGENDA

| Period | Vendor # | (Name) | Invoice Number | Invoice Date | Due Date | Disc. Terms | Gross Amount | Description |
|---|---|---|---|---|---|---|---|---|
| 07-21 | SHA02 | (SHAMROCK OFFICE SOLUTIONS) | 534114 | 06/24/21 | 07/24/21 | A | 41.55 | SHA02, 534114, FRONT DESK PRINTER 5/30/21-6/ |
| 07-21 | SHE05 | (SHELL ) | JUNE-2021H | 06/30/21 | 07/30/21 | A | 66.88 | SHE05, JUNE-21 CC STATEMENT |
| 07-21 | SOL01 | (SOLUTIONS FOR TRANSIT) | 21-0705LA | 07/05/21 | 08/04/21 | A | 2083.33 | SOL01, 21-0705LAVTA, JUNE-21 CLIPPER ANALYSI |
| 07-21 | STA01 | (STATE COMPENSATION FUND) | AUG-2021H | 07/22/21 | 08/21/21 | A | 1496.92 | STA01, AUG-21 WORKER'S COMP PREMIUM |
| | | | JULY-2021H | 06/21/21 | 07/21/21 | A | 1496.92 | STA01, JULY-21 WORKER'S COMP PREMIUM |
| | | | | | Vendor's Total -----> | | 2993.84 | |
| 07-21 | STA04 | (STATE BOARD OF ) | QTR2-2021H | 07/15/21 | 08/14/21 | A | 1209.00 | STA04, 2ND QTR 2021 UNDERGROUND STORAGE TANK |
| 07-21 | STA05 | (STATE BOARD OF EQUAL) | QTR2-2021H | 07/15/21 | 08/14/21 | A | 707.00 | STA05, 2ND QTR 2021 EXEMPT BUS OPERATOR TAX |
| 07-21 | STA13 | (STAPLES CREDIT PLAN) | JULY-2021H | 07/09/21 | 08/08/21 | A | 146.25 | STA13, JULY-21 CC STATEMENT |
| 07-21 | SUD01 | (JENNIFER SUDA) | 6-29-21EXH | 06/30/21 | 07/30/21 | A | 24.99 | SUD01, 6/29/21 EXPENSE REIMBURSE |
| 07-21 | TAC01 | (TAC ENERGY) | 1714195 | 06/17/21 | 07/17/21 | A | 21146.13 | TAC01, 1714195, 6/17/21 FUEL DELIVERY |
| 07-21 | TEL01 | (TPx COMMUNICATIONS) | 144630328 | 06/30/21 | 07/30/21 | A | 2776.22 | TEL01, 144630328-0, 7/1/21-7/31/21 SERVICE |
| 07-21 | TX242 | (BONNIE WOLF) | 0603-0630H | 07/08/21 | 08/07/21 | A | 100.00 | TX242, PARATAXI REIMBURSE 6/3/21-6/30/21 |
| 07-21 | TX243 | (SULABHA KONDED) | 0403-0614H | 07/08/21 | 08/07/21 | A | 600.00 | TX243, PARATAXI REIMBURSE 4/3/21-6/14/21 |
| 07-21 | TX244 | (SHIYI CHEN) | 6-12-21 | 07/08/21 | 08/07/21 | A | 20.00 | TX244, PARATAXI REIMBURESE 6/12/21 |
| 07-21 | UBE01 | (UBER ) | JUNE-2021H | 07/01/21 | 07/31/21 | A | 889.97 | UBE01, JUNE-21 BILLING: GO DUBLIN |
| 07-21 | VER01 | (VERIZON WIRELESS) | 882539696H | 06/22/21 | 07/22/21 | A | 4086.48 | VER01, 9882539696, 5/23-6/22/21 CELL, WIFI, |
| 07-21 | VON01 | (TRAPEZE SOFTWARE GROUP) | AMSER1158 | 05/28/21 | 06/27/21 | A | 24100.00 | VON01, AMSER0001158, PO #7490 TRANSITMASTER |
| 07-21 | VSP01 | (VSP ) | JULY-2021H | 06/19/21 | 07/19/21 | A | 577.24 | VSP01, JULY-21 VISION INSURANCE |
| 07-21 | WJH01 | (W. JEFFREY HEID-LANDSCAPE A | 7/22DEPOS | 07/22/21 | 08/21/21 | A | 1250.00 | WJH01, 7/22/21 DEPOSIT-LANDSCAPE DESIGN PROJ |
| 07-21 | YEA01 | (JENNIFER YEAMANS) | 7-23-21EXH | 07/23/21 | 08/22/21 | A | 36.72 | YEA01, 7/23/21 TRAVEL/MILEAGE REIMBURSE |
| | | | | | Total of Purchases -> | | 1969095.47 | |

BACK TO AGENDA

# AGENDA

# ITEM 5C

BACK TO AGENDA

LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY

# STAFF REPORT

SUBJECT: DBE Policy Revision

FROM: Tamara Edwards, Finance and Grants Manager

DATE: September 13, 2021

---

**Action Requested**
Approve Resolution 28-2021 which revises LAVTA's DBE policy.

**Background**
In February 2012 the LAVTA Board approved a change to the DBE policy to include a new requirement and submitted it to the FTA for review and approval. In February 2014 the FTA sent the policy back for an additional revision which was completed, and the policy was resubmitted. In June 2019 the FTA issued a concurrence letter for the DBE policy.

**Discussion**
Recently LAVTA went through an FTA triennial review that looked at 21 different topics, in detail (more information will be provide on this at a later meeting). During that review it was discovered that the policy submitted in 2014, had not been signed by the Executive Director, although the resolution attached to it had been. Additionally, am element needed to be added regarding LAVTA's commitment to analyze and shortfalls when DBE goals are not met, and commit to provide the FTA with Transit Vehicle Manufacturer purchase information when an award is made for bus purchases.

**Recommendation**
The Finance & Administration Committee recommends that the Board of Directors approve Resolution 28-2021 revising LAVTA's DBE policy.

Attachments:

1. Resolution 28-2021
2. DBE Policy

*Approved:* _____



BACK TO AGENDA

**RESOLUTION NO. 28-2021**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY ADOPTING CHANGES TO THE LAVTA DISADVANTAGED BUSINES ENTERPRISE PROGRAM**

***WHEREAS***, the U.S. Department of Transportation and the Federal Transit Administration have periodically changed and updated rules and regulations with regard to Participation by Disadvantaged Business Enterprises (DBE) in Department of Transportation Programs; and

***WHEREAS***, the Livermore Amador Valley Transit Authority has prepared a Disadvantaged Business Program in compliance with 49 CFR Part 26, the Department of Transportation Disadvantaged Business Enterprise Rule; and

***WHEREAS***, the Livermore Amador Valley Transit Authority has added clarification to 49 CFR part 26.47 in regard to committing to completing a "shortfall analysis" when the DBE goal is not met including corrective actions.

***WHEREAS***, the Livermore Amador Valley Transit Authority has added clarification to 49 CFR part 26.49 adding a statement of LAVTA's commitment to send FTA Transit Vehicle purchase information within 30 days of making an award.

**NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS THAT THE DISADVANTAGED BUSINESS ENTERPRISE PROGRAM FOR THE LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY IS HEREBY ADOPTED.**

***PASSED AND ADOPTED*** this 13th day of September 2021.

_____

Karla Brown, Chair

ATTEST:

_____

Michael Tree, Executive Director

BACK TO AGENDA

# LIVERMORE/AMADOR VALLEY TRANSIT AUTHORITY
# DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

*(Adopted September 1999; Revised January 2000;*
*Updated February 2001; Updated February 2006; Updated June 2009, Updated February 2012,*
*Updated March 2014, Updated September 2021)*

**Section 26.1, 26.23 Objectives/Policy Statement**

The Livermore/Amador Valley Transit Authority (LAVTA) has established a Disadvantaged Business Enterprise (DBE) program in accordance with regulations of the U.S. Department of Transportation (DOT), 49 CFR Part 26. LAVTA has received Federal financial assistance from the Department of Transportation, and as a condition of receiving this assistance, LAVTA has signed an assurance that it will comply with 49 CFR Part 26.

It is the policy of LAVTA to ensure that DBEs, as defined in part 26, have an equal opportunity to receive and participate in DOT-assisted contracts. It is also our policy:

1. To ensure nondiscrimination in the award and administration of DOT assisted contracts;
2. To create a level playing field on which DBEs can compete fairly for DOT assisted contracts;
3. To ensure that the DBE Program is narrowly tailored in accordance with applicable law;
4. To ensure that only firms that fully meet 49 CR Part 26 eligibility standards are permitted to participate as DBEs;
5. To help remove barriers to the participation of DBEs in DOT assisted contracts;
6. To assist the development of firms that can compete successfully in the market place outside the DBE Program; and
7. To adhere to the adopted LAVTA purchasing policy principles throughout all aspects of the DBE program.

The Executive Director has assigned the role of DBE Liaison Officer (DBELO) to Tamara Edwards, Director of Finance, tedwards@lavta.org, 925-455-7566. In that capacity, the DBELO is responsible for implementing all aspects of the DBE program. Implementation of the DBE program is accorded the same priority as compliance with all other legal obligations incurred by LAVTA in its financial assistance agreements with the Department of Transportation.

LAVTA has disseminated this policy statement to its Board of Directors and all the components of our organization. We have distributed this statement to DBE and non-DBE business communities that perform work for us on DOT-assisted contracts by including it in all relevant bid and proposal solicitations.

Michael Tree
Executive Director

7/19/21
Date



BACK TO AGENDA

## SUBPART A – GENERAL REQUIREMENTS

### Section 26.1 Objectives

The objectives are found in the policy statement on the first page of this program.

### Section 26.3 Applicability

LAVTA is the recipient of federal transit funds authorized by Congress and administered through the Federal Transit Administration (FTA).

### Section 26.5 Definitions

LAVTA will adopt the definitions contained in Section 26.5 for this program.

### Section 26.7 Nondiscrimination Requirements

LAVTA will never exclude any person from participation in, deny any person the benefits of, or otherwise discriminate against anyone in connection with the award and performance of any contract covered by 49 CFR Part 26 on the basis of race, color, sex, or national origin.

In administering its DBE program, LAVTA will not, directly or through contractual or other arrangements, use criteria or methods of administration that have the effect of defeating or substantially impairing accomplishment of the objectives of the DBE program with respect to individuals of a particular race, color, sex, or national origin.

### Section 26.11 Record Keeping Requirements

Reporting to DOT: 26.11(b)
LAVTA will report DBE participation on a semi-annual basis, using DOT Form 4630. These reports will reflect payments actually made to DBEs on DOT assisted contracts.

Bidders List: 26.11 (c)
LAVTA will create a bidders list, consisting of information about all DBE and non-DBE firms that bid or quote on DOT-assisted contracts. The purpose of this requirement is to allow use of the bidder's list approach to calculate overall goals. The bidders list will include the name, address, DBE/non-DBE status, age and annual gross receipts of firms.

LAVTA will collect this information in the following ways:

1. A contract clause requiring prime bidders to report the names, addresses and other information (as needed) of all firms who quote to them on subcontracts, and/or;
2. A notice in solicitations requesting firms quoting on subcontracts to report information directly to the recipient.

### Section 26.13 Federal Financial Assistance Agreement Assurance

LAVTA has signed the following assurance, applicable to all DOT-assisted contracts and their administration:



BACK TO AGENDA

Assurance: 26.13 (a)

> LAVTA shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of any DOT assisted contract or in the administration of its DBE Program or the requirements of 49 CFR part 26. The recipient shall take all necessary and reasonable steps under 49 CFR part 26 to ensure nondiscrimination in the award and administration of DOT assisted contracts. The recipient's DBE Program, as required by 49 CRF part 26 and as approved by DOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification to LAVTA of its failure to carry out its approved program, the Department may impose sanctions as provided for under part 26 and may, in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31 U.S.C. 3801 et seq.)

This language will appear in financial assistance agreements with sub-recipients.

Contract Assurance: 26.13 (b)
We will ensure that the following clause is placed in every DOT-assisted contract and subcontract:

> The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirement of 49 CFR part 26 in the award and administration of DOT assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

## SUBPART B – ADMINISTRATIVE REQUIREMENTS

### Section 26.21 DBE Program Updates

Since LAVTA has received a grant of $250,000 or more in FTA planning, capital and/or operating assistance in a federal fiscal year, we will continue to carry out this program until all funds from DOT financial assistance have been expended. We will provide to DOT updates representing significant changes in the program.

### Section 26.23 Policy Statement

The Policy Statement is elaborated on the first page of this program.

### Section 26.25 DBE Liaison Officer (DBELO)

The Executive Director will designate a staff member to be our DBE Liaison Officer:

The DBELO is responsible for implementing all aspects of the DBE program and ensuring that LAVTA complies with all provisions of 49 CFR Part 26. The DBELO has direct, independent access to the LAVTA Executive Director concerning DBE program matters. An organization



BACK TO AGENDA

chart displaying the DBELO's position in the organization is found in Attachment 1 to this program.

The DBELO is responsible for developing, implementing and monitoring the DBE program, in coordination with other appropriate officials. Duties and responsibilities include the following:

1. Gathers and reports statistical data and other information as required by DOT.
2. Reviews third party contracts and purchase requisitions for compliance with this program.
3. Works with all departments to set overall annual goals.
4. Ensures that bid notices and requests for proposals are available to DBEs in a timely manner.
5. Identifies contracts and procurements so that DBE goals are included in solicitations (both race-neutral methods and contract specific goals attainment) and identifies ways to improve progress.
6. Analyzes LAVTA's progress toward goal attainment and identifies ways to improve progress.
7. Participates in pre-bid meetings.
8. Advises the Executive Director/Board of Directors on DBE matters and achievement.
9. Provides DBEs with information and assistance in preparing bids, obtaining bonding and insurance.
10. Participates in DBE training seminars.
11. Acts as liaison to the Uniform Certification Process in California.
12. Provides outreach to DBEs and community organizations to advise them of opportunities.

**Section 26.27 DBE Financial Institutions**

It is the policy of LAVTA to investigate the full extent of services offered by financial institutions owned and controlled by socially and economically disadvantaged individuals in the community, to make reasonable efforts to use these institutions, and to encourage prime contractors on DOT-assisted contracts to make use of these institutions. We have made the following efforts to identify and use such institutions:
Reviewed all vendors certified under the Federal Reserve Board of Governors Statistical Release entitled "Minority-Owned Banks" dated September 30, 2005 by using their website http://www.federalreserve.gov/releases/mob/current/default.htm. To date we have not identified any financial institutions owned and controlled by socially and economically disadvantaged individuals in our community. Information on the availability of such institutions can be obtained from the DBE Liaison Officer.

**Section 26.29 Prompt Payment**

LAVTA will include the following clause in each DOT-assisted prime contract:

> The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than 15 working days from the receipt of each payment the prime contractor receives from LAVTA. The prime contractor agrees further to return retainage payments to each subcontractor within 15 working days after the subcontractor's work is satisfactorily complete. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following the written approval of LAVTA. This clause applies to both DBE and non-DBE subcontractors.



BACK TO AGENDA

**Section 26.31 Directory**

LAVTA uses the California Unified Certification Process (CUCP) to identify all firms eligible to participate as DBEs. The directory lists the firm's name, address, phone number, date of the most recent certification, and the type of work the firm has been certified to perform as a DBE. The directory is updated by the CUCP on at least an annual basis. LAVTA makes the directory available as follows:

Citation on LAVTA site: http://www.wheelsbus.com/procurement/dbpolicy.html.

The directory may be access directly at: http://www.dot.ca.gov/hq/bep/dbe_query.htm.

**Section 26.33 Overconcentration**

LAVTA has not identified an overconcentration of DBE firms in any type of work.

**Section 26.35 Business Development Programs**

LAVTA has not established a business development program.

**Section 26.37 Monitoring and Enforcement Mechanisms**

LAVTA will take the following monitoring and enforcement mechanisms to ensure compliance with 49 CFR Part 26.

All prime contractors shall submit monthly progress reports on DBE utilization to LAVTA. Specifically, this report must provide a running tally of actual payments made to DBE firms. (DBE participation is credited toward overall or contract goals only when payments are actually made to DBE firms.) Failure to submit these reports in a timely manner shall result in a penalty of $10 per day, per report.

1. We will bring to the attention of the Department of Transportation any false, fraudulent, or dishonest conduct in connection with the program, so that DOT can take the steps (e.g., referral to the Department of Justice for criminal prosecution, referral to the DOT Inspector General, action under suspension and debarment or Program Fraud and Civil Penalties rules) provided in 26.109.
2. We will consider similar action under our own legal authorities, including responsibility determinations in future contracts. In the event of non-compliance with the DBE regulation by a participant in our procurement activities any of the following administrative remedies may be used:
    a. Liquidated damage;
    b. Suspension of payment to the contractor of any monies held by LAVTA as retained on the contract;
    c. The denial to the contractor of right to participate in future LAVTA contracts for a specified time;
    d. Contract termination.
3. We will also provide a monitoring and enforcement mechanism to verify that work committed to DBEs at contract award will actually be performed by DBEs. This will be accomplished by a review of invoices submitted from contractors that stipulate the DBE portion of the contract actually paid out during the invoice cycle. If DBE sub-contractors



BACK TO AGENDA

are used, a specific citation on the invoice detailing the amount and date of payment to the sub-contractor will be required from the Prime contractor.

4. We will keep a running tally of actual payments to DBE firms for work committed to them at the time of contract award.

**Section 26.39 Fostering Small Business Participation**

The small business element is intended to facilitate compliance with the two objectives in 49 CFR 26.51: 1) To meet the maximum feasible portion of the goal by using race-neutral means of obtaining DBE participation and 2) to establish DBE contract goals to meet any portion of the goal that LAVTA is unable to meet using race-neutral methods alone. LAVTA will implement the small business element within nine months of receiving approval from FTA.

An important part of LAVTA's small business element is its outreach activities. These outreach efforts include active, effective steps to increase small business participation, such as soliciting bids/proposals from DBE's and SBE's, responding to requests for information, participating in prebid and preproposal meetings, and participating at outreach and training events for DBE's and small businesses. As time and resources allow LAVTA will participate in outreach and informational events for DBE's and small businesses that may be coordinate with other U.S. DOT recipients, federal agencies, or local organizations. Discussed during these outreach events will be procedures on how to do business with LAVTA, how to become certified as a DBE or SBE, LAVTA's DEBE Program requirements and other topics of interest to DBE's and small businesses.

Other strategies that LAVTA will consider as part of its small business element include unbundling contracts and setting SBE contract specific goals when subcontracting opportunities are available.

Any firm that wishes to participate in the LAVTA Small Business Program must be an existing, for-profit, small business as defined by the SBA standards and 49 CFR Part 26. To avoid fraud a firm's small business status will be verified when LAVTA utilizes SBE contract goals on a project. A currently certified DBE is presumed eligible to participate in the small business element of LAVTA's DBE program. LAVTA will require that all SBE's and any DBE's not certified by the CUCP provide documentation to verify their certification status. LAVTA may require SBE's to submit additional documents, as necessary, to verify their eligibility.

## SUBPART C – GOALS, GOOD FAITH EFFORTS, AND COUNTING

**Section 26.43 Set-asides or Quotas**

LAVTA does not use quotas in any way in the administration of the DBE program.

**Section 26.45 Overall Goals**

A description of the methodology to calculate the overall goal and the goal calculations can be found in Attachment 2 to this program. This section of the program will be updated as required.

In accordance with Section 26.45(f) LAVTA will submit its overall goal to DOT on August 1 of each year, except in cases where we submit a project goal. Project goals will be submitted at a time determined by the FTA Administrator. Before establishing the overall goal each year, LAVTA will consult with appropriate constituent groups representing minority, women and



BACK TO AGENDA

general contractors' groups, community organizations and other officials or organizations to obtain information concerning the availability of disadvantaged and non-disadvantaged businesses, the effects of discrimination on opportunities for DBEs, and LAVTA's efforts to establish a level playing field for the participation of DBEs.

Following this consultation, we will publish a notice of the proposed overall goal, informing the public that the proposed goal and its rationale are available for inspection during normal business hours at LAVTA's administrative offices for 30 days following the date of the notice, and informing the public that we and DOT will accept comments on the goals for 45 days from the date of the notice. At a minimum this notice will be issued in newspapers and trade publications. Normally, we will issue this notice by June 1 of each year. The notice will include addresses to which comments may be sent and addresses (including offices and websites) where the proposal may be reviewed. Our overall goal submission to DOT will include a summary of information and comments received during this public participation process and our responses.

We will begin using our overall goal on October 1 of each year, unless we have received other instructions from DOT. If we establish a goal on a project basis, we will begin using our goal by the time of the first solicitation for a DOT-assisted contract for the project.

**Section 26.47 Goal Shortfall Analysis**

If LAVTA's awards and commitments, as shown on its Uniform Report of Awards or Commitments and Payments at the end of the three-year goal period are less than the overall goal applicable to that period, LAVTA shall Analyze in detail the reasons for the difference between the overall goa and LAVTA's awards and commitments in that period. Additionally, LAVTA will establish specific steps and milestones to correct the problems identified. The authority will retain the analysis and corrective action in its records, in the FTA, DBE file on the shared drive for seven years and make it available to the FTA upon request.

**Section 26.49 Transit Vehicle Manufacturers Goals**

LAVTA will require each transit vehicle manufacturer, as a condition of being authorized to bid or propose on FTA-assisted transit vehicle procurements, to certify that it has complied with the requirements of this section. The DBELO will submit the TVM certification within 30 days of the contract award. Alternatively, LAVTA may, at its discretion and with FTA approval, establish project-specific goals for DBE participation in the procurement of transit vehicles in lieu of the TVM complying with this element of the program.

**Section 26.51(a-c) Breakout of Estimated Race-Neutral & Race-Conscious Participation**

The breakout of estimated race-neutral and race-conscious participation can be found in Attachment 3 to this program. This section of the program will be updated annually when the goal calculation is updated.

**Section 26.51(d-g) Contract Goals**

LAVTA will use contract goals to meet any portion of the overall goal LAVTA does not project being able to meet using race-neutral means. Contract goals are established so that, over the



BACK TO AGENDA

period to which the overall goal applies, they will cumulatively result in meeting any portion of our overall goal that is not projected to be met through the use of race-neutral means.

We will establish contract goals only on those DOT-assisted contracts that have subcontracting possibilities. We need not establish a contract goal on every such contract, and the size of contract goals will be adapted to the circumstances of each such contract (e.g., type and location of work, availability of DBEs to perform the particular type of work).

We express our contract goals as a percentage of the total amount of a DOT-assisted contract or the Federal share of a DOT-assisted contract.

**Section 26.53 Good Faith Efforts Procedures**

Demonstration of good faith efforts (26.53(a) & (c))

The obligation of the bidder/offeror is to make good faith efforts. The bidder/offeror can demonstrate that it has done so either by meeting the contract goal or documenting good faith efforts. See Attachment 4 for Good Faith Effort forms. Examples of good faith efforts are found in Appendix A to Part 26.

The DBELO is responsible for determining whether a bidder/offeror who has not met the contract goal has documented sufficient good faith efforts to be regarded as responsive or responsible.

We will ensure that all information is complete and accurate and adequately documents the bidder/offeror's good faith efforts before we commit to the performance of the contract by the bidder/offeror.

Information to be submitted (26.53(b))

LAVTA treats bidder/offeror's compliance with good faith efforts' requirements as a matter of responsiveness or responsibility.

Each solicitation for which a contract goal has been established will require the bidders/offerors to submit the following information:

1. The names and addresses of DBE firms that will participate in the contract;
2. A description of the work that each DBE will perform;
3. The dollar amount of the participation of each DBE firm participating;
4. Written and signed documentation of commitment to use a DBE subcontractor whose participation it submits to meet a contract goal;
5. Written and signed confirmation from the DBE that it is participating in the contract as provided in the prime contractors commitment and
6. If the contract goal is not met, evidence of good faith efforts.

Administrative reconsideration (26.53(d))

Within 10 days of being informed by LAVTA that it is not responsive because it has not documented sufficient good faith efforts, a bidder/offeror may request administrative reconsideration. Bidder/offerors should make this request in writing to the following



BACK TO AGENDA

reconsideration official: Legal Counsel, 1362 Rutan Court #100, Livermore, CA 94550, (925) 455-7555. The reconsideration official will not have played any role in the original determination that the bidder/offeror did not document sufficient good faith efforts.

As part of this reconsideration, the bidder/offeror will have the opportunity to provide written documentation or argument concerning the issue of whether it met the goal or made adequate good faith efforts to do so. The bidder/offeror will have the opportunity to meet in person with our reconsideration official to discuss the issue of whether it met the goal or made adequate good faith efforts to do so. We will send the bidder/offeror a written decision on reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. The result of the reconsideration process is not administratively appealable to the Department of Transportation.

Good Faith Efforts when a DBE is replaced on a contract (26.53(f))

We will require a contractor to make good faith efforts to replace a DBE that is terminated or has otherwise failed to complete its work on a contract with another certified DBE, to the extent needed to meet the contract goal. We will require the prime contractor to notify the DBE Liaison Officer immediately of the DBE's inability or unwillingness to perform and provide reasonable documentation.

In this situation, we will require the prime contractor to obtain our prior approval of the substitute DBE and to provide copies of new or amended subcontracts, or documentation of good faith efforts. If the contractor fails or refuses to comply in the time specified, our contracting office will issue an order stopping all or part of payment/work until satisfactory action has been taken. If the contractor still fails to comply, the contracting officer may issue a termination for default proceeding.

Sample Bid Specification:

> The requirements of 49 CFR Part 26, Regulations of the U.S. Department of Transportation, apply to this contract. It is the policy of LAVTA to practice nondiscrimination based on race, color sex, or national origin in the award or performance of this contract. All firms qualifying under this solicitation are encouraged to submit bids/proposals. Award of this contract will be conditioned upon satisfying the requirements of this bid specification. These requirements apply to all bidders/offerors, including those who qualify as a DBE. A DBE contract goal of ____ percent has been established for this contract. The bidder/offeror shall make good faith efforts, as defined in Appendix A, 49 CFR 26 (Attachment 1), to meet the contract goal for DBE participation in the performance of this contract.
>
> The bidder/offeror will be required to submit the following information: (1) the names and addresses of DBE firms that will participate in the contract; (2) a description of the work that each DBE firm will perform; (3) the dollar amount of the participation of each DBE firm participating; (4) Written documentation of the bidder/offeror's commitment to use a DBE subcontractor whose participation it submits to meet the contract goal; (5) Written confirmation from the DBE that it is participating in the contract as provided in the commitment made under (4); and (5) if the contract goal is not met, evidence of good faith efforts.



BACK TO AGENDA

**Section 26.55 Counting DBE Participation**

LAVTA will count DBE participation toward overall and contract goals as provided in 49 CFR 26.55.

## SUBPART D – CERTIFICATION STANDARDS

**Section 26.61 – 26.73 Certification Process**

LAVTA will use the certification standards of Subpart D of Part 26 and the certification procedures of Subpart E of Part 26 to determine the eligibility of firms to participate as DBEs in DOT-assisted contracts. To be certified as a DBE, a firm must meet all certification eligibility standards.

LAVTA uses DBE vendors certified by the Unified California Certification Process of the state of California. Their certification application form and documentation requirements can be found at the following World Wide Web address: http://www.dot.ca.gov/hq/bep/ucp.htm

For information about the certification process or to apply for certification, firms should use the World Wide Web to locate the nearest certifying agency. The website address to obtain the most recent roster of certifying agencies can be found at:

http://www.dot.ca.gov/hq/bep/Roster_of_Certifying_Agencies_09-16-03.doc

## SUBPART E – CERTIFICATION PROCEDURES

**Section 26.81 Unified Certification Programs**

LAVTA uses the statewide Unified Certification Program. As such, LAVTA does not provide certification procedures itself. Interested parties are encouraged to use the World Wide Web to obtain contact information on the most recent roster of certifying agencies.

http://www.dot.ca.gov/hq/bep/Roster_of_Certifying_Agencies_09-16-03.doc

**Section 26.83 Procedures for Certification Decisions**

Re-certifications 26.83(a) & (c)

LAVTA relies on the state-wide CUCP DBE certification program, and currently does not recertify or make certification decisions.

## SUBPART F – COMPLIANCE AND ENFORCEMENT

**Section 26.109 Information, Confidentiality, Cooperation**

We will safeguard from disclosure to third parties information that may reasonably be regarded as confidential business information, consistent with Federal, state and local law.



BACK TO AGENDA

Notwithstanding any contrary provisions of state or local law, we will not release personal financial information submitted in response to the personal net worth requirement to a third party (other than DOT) without the written consent of the submitter.

Monitoring payments to DBEs

We will require prime contractors to maintain records and documents of payments to DBEs for three years following the performance of the contract. These records will be made available for inspection upon request of any authorized representative of LAVTA or DOT. This reporting requirement also extends to any certified DBE subcontractor. We will keep a running tally of actual payments to DBE firms for work committed to them at the time of contract award.

We will perform interim audits of contract payments to DBEs. The audit will review payments to DBE subcontractors to ensure that the actual amount paid to DBE subcontractors equals or exceeds the dollar amounts stated in the schedule of DBE participation.

## ATTACHMENTS

| | |
|---|---|
| Attachment 1 | Organizational Chart |
| Attachment 2 | Overall Goal Calculation |
| Attachment 3 | Breakout of Estimated Race-Neutral & Race-Conscious Participation |
| Attachment 4 | Form 1 & 2 for Demonstration of Good Faith Efforts |

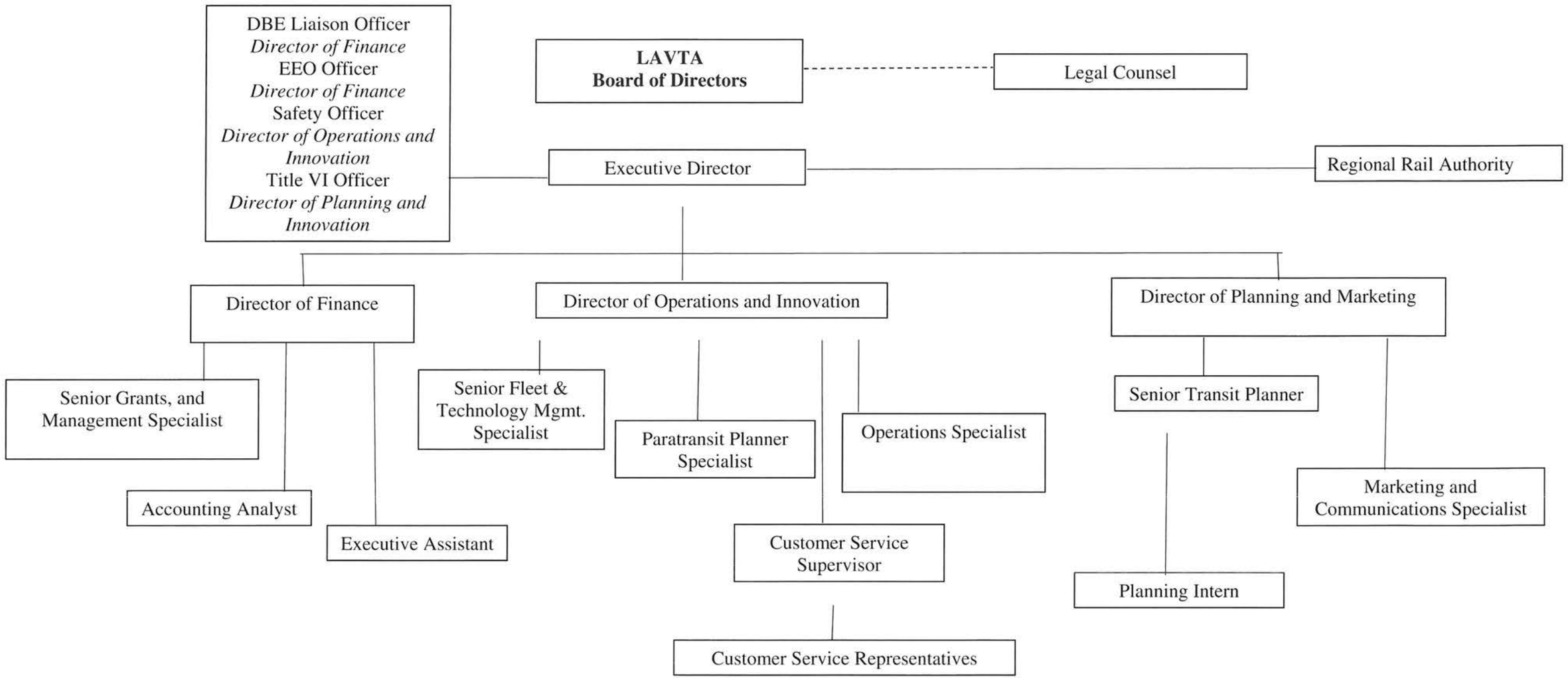


BACK TO AGENDA

# LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY

**Attachment 1**

**Organizational Chart**




BACK TO AGENDA

## Attachment 2

## Section 26.45: Overall Goal Calculation

### Amount of Goal

Pursuant to 49 CFR 26.45, LAVTA will establish overall goal (either annual or project specific) for DBE participation in DOT-assisted contracts.

### Methodology used to Calculate Overall Goal

The following is a summary of the method we used to calculate these goals:

Determining a Base Figure

LAVTA will determine a base figure for the relative availability of DBEs on any project by using one of the following methods (method may vary by project):

1. *DBE Directories and Census Bureau Data.* Determine the number of ready willing and able DBEs in our market from the regional directory. Using the Census Bureau's County Business Pattern data base, determine the number of all ready, willing and able businesses in our market that perform work in the same SIC codes. Divide the number of DBEs by the number of all businesses to derive a base figure for the relative availability of DBEs in our market.
2. *A bidders list.* Determine the number of DBEs that have bid or quoted on our DOT-assisted prime contracts or subcontracts in the previous year. Determine the number of all businesses that have bid or quoted on prime or subcontracts in the same time period. Divide the number of DBE bidders and quoters by the number for all businesses to derive a base figure for the relative availability of DBEs in the market.
3. *Use of a goal of another DOT recipient.* If another DOT recipient in the same or substantially similar market has set an overall goal in compliance with this rule, we may use that goal as a base figure for our goal.
4. *Alternative methods.* A methodology not stated in the rule that provides a goal that is rationally related to the relative availability of DBEs in our market.

Adjusting a Base Figure

As required in the rule, LAVTA will adjust the base figure so that it reflects as accurately as possible the DBE participation we can expect in the absence of discrimination. Possible information used to adjust the based figure is:

1. Demonstrated evidence of DBE capacity to perform work on LAVTA's project;
2. Real market conditions;
3. Disparity studies conducted within the jurisdiction; and
4. Other relevant factors.

## Attachment 3



BACK TO AGENDA

## Section 26.51: Breakout of Estimated Race-Neutral and Race-Conscious Participation

LAVTA will meet the maximum feasible portion of its overall goal by using race-neutral means of facilitating DBE participation. LAVTA uses the following race-neutral means to increase DBE participation:

1. Ensuring the inclusion of DBEs, and other small businesses on recipient mailing lists for bidders;
2. Ensuring the dissemination to bidders on prime contracts of lists of potential subcontractors;
3. Ensuring distribution of our DBE directory through electronic means to the widest feasible audience of potential prime contractors; and
4. Providing assistance in overcoming limitations such as inability to obtain bonding or finances (e.g. by such means as simplifying the bonding process, reducing bonding requirements, eliminating the impact of surety costs from bids).

In order to ensure that our DBE program will be narrowly tailored to overcome the effects of discrimination, we will adjust the estimated breakout of race-neutral and race-conscious participation as needed to reflect actual DBE participation (see 26.51 (f)) and we will track and report race-neutral and race-conscious participation separately. For reporting purposes, race-neutral DBE participation includes, but is not necessarily limited to, the following: DBE participation through a prime contract a DBE obtains through customary competitive procurement procedures; DBE participation through a subcontract on a prime contract that does not carry a DBE goal; DBE participation on a prime contract exceeding a contract goal; and DBE participation through a subcontract from a prime contractor that did not consider a firm's DBE status in making the award.



BACK TO AGENDA

## Attachment 4

## Forms 1 & 2 for Demonstration of Good Faith Efforts

*Forms 1 and 2 will be placed in solicitations where a DBE goal has been set for the project. Forms 1 and 2 will not be incorporated into projects that carry no DBE participation requirement.*

### FORM 1: DISADVANTAGED BUSINESS ENTERPRISE (DBE) UTILIZATION

The undersigned bidder/offeror has satisfied the requirements of the bid specification in the following manner (please check the appropriate space):

_____ the bidder/offeror is committed to a minimum of _____% DBE utilization on this contract.

_____ the bidder/offeror (if unable to meet the DBE goal of ___%) is committed to a minimum of _____% DBE utilization on this contract and submits documentation demonstrating good faith efforts (Documentation must be attached to Form 1).

Name of bidder/offeror's firm: _____

State Registration No. _____

By _____ _____
(Signature) Title



BACK TO AGENDA

**FORM 2: LETTER OF INTENT**

Name of bidder/offer's firm: _____

Address: _____

City: _____ State: _____ Zip: _____

Name of DBE firm: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____

Description of work to be performed by DBE

_____

_____

_____

_____

The bidder/offeror is committed to utilizing the above-named DBE firm for the work described above. The estimated dollar value of this work is $ _____.

**Affirmation**

The above-named DBE firm affirms that it will perform the portion of the contract for the estimated dollar value as stated above.

By _____
(Signature) (Title)

**If the bidder/offeror does not receive award of the prime contract, any and all representations in this Letter of Intent and Affirmation shall be null and void.**

(Submit this page for each DBE subcontractor.)



BACK TO AGENDA

# AGENDA

# ITEM 5D

BACK TO AGENDA

LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY

# STAFF REPORT

SUBJECT: Consideration and approval of the establishment of a California Employers' Pension prefunding trust account with CalPERS

FROM: Tamara Edwards, Finance and Grants Manager

DATE: September 13, 2021

---

**Action Requested**
The Finance and Administration Committee recommends that the Board of Directors Approve Resolution 29-2021 establishing a California Employers' Pension Prefunding Trust (CEPPT) Account with CalPERS for the purpose of prefunding LAVTA's required pension contributions and authorize an initial payment of $100,000 to open the trust account and to select CEPPT asset allocation strategy 2. Additionally, the Finance and Administration Committee recommends that the Board authorize the Executive Director to execute the required documentation for participation in the CEPPT.

**Background**
In September of 2018, the California State Legislature passed Senate Bill 1413 (SB 1413) which created the California Employers' Pension Prefunding Trust (CEPPT). The CEPPT is a special irrevocable trust fund, that allows State and local public agencies that provide a defined benefit pension plan to their employees to prefund the pension contributions. A defined benefit plan is prefunded when it is a trust fund for the purpose of investing employer assets toward future required pension contributions. Required pension contributions include any pension liabilities, ongoing payroll contributions and administrative costs.

**Discussion**
Under SB 1413, CalPERS has implemented a new CEPPT trust fund that allows public employers to prefund their future pension costs. The new program provides the state and public agencies and additional investment vehicle to accumulate assets over time to help manager long-term costs. Establishing a CEPPT trust fund provides an opportunity for LAVTA to address its pension costs and liabilities.

Some of the benefits of the CalPERS CEPPT Trust are:

- Assets in the trust can be used to manage growing pension liabilities, including future normal costs an Unfunded Accrued Liability (UAL) payments.
- Contributions to the trust from both a funding and a timing perspective, are controlled by LAVTA and are voluntary.
- Promotes fiscal responsibility and accountability for LAVTA to deal with long term pension liabilities and costs.



BACK TO AGENDA

- LAVTA can select an asset allocation strategy that matches its tolerance for risk, given the investment time horizon.
- Assets can be used to stabilize rates to offset unexpected contribution rate increases or be used as a rainy-day fund when revenues are impaired based on economic or other conditions.
- The trust is used to reimburse LAVTA for CalPERS pension contributions or for making direct payments to CalPERS pension.
- Provides effective cost management, low administrative fees, investment management, GASB compliant financial reporting, streamlined transfers, and an established working relationship with CalPERS.

**Recommendation**

The Finance &Administration Committee recommends that the Board approve Resolution 29-2021 establishing a California Employers' Pension Prefunding Trust (CEPPT) Account with CalPERS for the purpose of refunding LAVTA's required pension contributions and authorize an initial payment of $100,000 to open the trust account and select CEPPT asset allocation strategy 2. Additionally, the Finance and Administration Committee recommends that the Board authorize the Executive Director to execute the required documentation for participation in the CEPPT.

Attachments:

1. Resolution 29-2021
2. Annual Valuation Report as of June 30,2020 for the Misc. Plan of the LAVTA
3. Annual Valuation Report as of June 30,2020 for the PEPRA Misc. plan of the LAVTA
4. CEPPT Certification of Funding Policy
5. CEPPT Participation Agreement
6. CEPPT Delegation of Authority

*Approved:* _____



BACK TO AGENDA

# RESOLUTION NO. 29-2021

## A RESOLUTION OF THE BOARD OF DIRECTORS OF THE LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY AUTHORIZING THE EXECUTIVE DIRECTOR TO ESTABLISH A CALIFORNIA EMPLOYERS' PENSION PREFUDING TRUST (CEPPT) ACCOUNT WITH CALPERS AND DELEGATION OF AUTHORITY TO REQUEST DISBURSEMENTS FROM CALPERS CEPPT PREFUNDING PLAN

**WHEREAS,** LAVTA has determined it to be in its best interest to set aside funds for the pre-funding of it CalPERS pension obligation, to be held in trust for the exclusive purpose of making future contributions of the LAVTA's required pension contributions and any employer contributions in excess of required contributions; and

**WHEREAS,** LAVTA desires to participate in the California Employers Pension Prefunding Trust (CEPPT) by signing the CEPPT Participation Agreement; and

**WHEREAS,** the Board of Directors delegates the Executive Director and Director of Finance to request, on behalf of LAVTA, disbursements from the Pension Prefunding Trust and to certify as to the purpose for which the disbursed funds will be used.

**NOW, THEREFORE, BE IT RESOLVED** by the Board of Directors of the Livermore Amador Valley Transit Authority:

1. Approves the establishment of an Internal Revenue Cos S115 Irrevocable Trust through California Employers' Pension Prefunding Trust (CEPPT); and
2. Authorizes and directs the Executive Director to execute any and all required documentation, including CEPPT Participation Agreement, CEPPT Delegation of Authority to Request Disbursements; CEPPT Certification of Funding Policy; and any other required documentation.

**PASSED AND ADOPTED** this 13th day of September 2021.

BY_____
Karla Brown, Chair

ATTEST_____
Michael Tree, Executive Director

BACK TO AGENDA

**California Public Employees' Retirement System**
**Actuarial Office**
400 Q Street, Sacramento, CA 95811 | Phone: (916) 795-3000 | Fax: (916) 795-2744
**888 CalPERS** (or **888**-225-7377) | TTY: (877) 249-7442 | **www.calpers.ca.gov**

**July 2021**

**Miscellaneous Plan of the Livermore/Amador Valley Transit Authority**
**(CalPERS ID: 5624616425)**
**Annual Valuation Report as of June 30, 2020**

Dear Employer,

Attached to this letter, you will find the June 30, 2020 actuarial valuation report of your CalPERS pension plan. **Provided in this report is the determination of the minimum required employer contributions for fiscal year 2022-23**. In addition, the report contains important information regarding the current financial status of the plan as well as projections and risk measures to aid in planning for the future.

Because this plan is in a risk pool, the following valuation report has been separated into two sections:

- Section 1 contains specific information for the plan including the development of the current and projected employer contributions, and
- Section 2 contains the Risk Pool Actuarial Valuation appropriate to the plan as of June 30, 2020.

Section 2 can be found on the CalPERS website (calpers.ca.gov). From the home page, go to *"Forms & Publications"* and select *"View All"*. In the search box, enter *"Risk Pool"* and from the results list download the Miscellaneous Risk Pool Actuarial Valuation Report for June 30, 2020.

Your June 30, 2020 actuarial valuation report contains important actuarial information about your pension plan at CalPERS. Your assigned CalPERS staff actuary, whose signature appears in the Actuarial Certification section on page 1, is available to discuss the report with you.

Actuarial valuations are based on assumptions regarding future plan experience including investment return and payroll growth, eligibility for the types of benefits provided, and longevity among retirees. The CalPERS Board of Administration adopts these assumptions after considering the advice of CalPERS actuarial and investment teams and other professionals. Each actuarial valuation reflects all prior differences between actual and assumed experience and adjusts the contribution rates as needed. This valuation is based on an investment return assumption of 7.0% which was adopted by the board in December 2016. Other assumptions used in this report are those recommended in the CalPERS Experience Study and Review of Actuarial Assumptions report from December 2017.

**Required Contribution**

The exhibit below displays the minimum employer contributions for fiscal year 2022-23 along with estimates of the required contributions for fiscal year 2023-24. Member contributions other than cost sharing (whether paid by the employer or the employee) are in addition to the results shown below. **The employer contributions in this report do not reflect any cost sharing arrangements you may have with your employees**.

| Fiscal Year | Employer Normal Cost Rate | Employer Amortization of Unfunded Accrued Liability |
|---|---|---|
| 2022-23 | 10.87% | $113,208 |
| *Projected Results* | | |
| *2023-24* | *10.9%* | *$123,000* |

BACK TO AGENDA

The actual investment return for fiscal year 2020-21 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 7.00%. ***To the extent the actual investment return for fiscal year 2020-21 differs from 7.00%, the actual contribution requirements for fiscal year 2023-24 will differ from those shown above.*** For additional details regarding the assumptions and methods used for these projections please refer to the "Projected Employer Contributions" in the "Highlights and Executive Summary" section. This section also contains projected required contributions through fiscal year 2027-28.

**Changes from Previous Year's Valuation**

There are no significant changes in actuarial assumptions or policies in your 2020 actuarial valuation. Your annual valuation report is an important tool for monitoring the health of your CalPERS pension plan. Your report contains useful information about future required contributions and ways to control your plan's funding progress. In addition to your annual actuarial report my office has developed tools for employers to plan, project and protect the retirement benefits of your employees. Pension Outlook is a tool to help plan and budget pension costs into the future with easy to understand results and charts.

You will be able to view the projected funded status and required employer contributions for pension plans in different potential scenarios for up to 30 years into the future — which will make budgeting more predictable. While Pension Outlook can't predict the future, it can provide valuable planning information based on a variety of future scenarios that you select.

Pension Outlook can help you answer specific questions about your plans, including:

- When is my plan's funded status expected to increase?
- What happens to my required contributions in a down market?
- How does the discount rate assumption affect my contributions?
- What is the impact of making an additional discretionary payment to my plan?

To get started, visit our Pension Outlook page at www.calpers.ca.gov/page/employers/actuarial-resources/pension-outlook-overview and take the steps to register online.

CalPERS will be completing an Asset Liability Management (ALM) review process in November 2021 that will review the capital market assumptions and the strategic asset allocation and ascertain whether a change in the discount rate and other economic assumptions is warranted. In addition, the Actuarial Office will be completing its Experience Study to review the demographic experience within the pension system and make recommendations to modify future assumptions where appropriate.

Furthermore, this valuation does not reflect any impacts from the COVID-19 pandemic on your pension plan. The impact of COVID-19 on retirement plans is not yet known and CalPERS actuaries will continue to monitor the effects and where necessary make future adjustments to actuarial assumptions.

Further descriptions of general changes are included in the "Highlights and Executive Summary" section and in Appendix A of the Section 2 report, "Actuarial Methods and Assumptions."

**Questions**

We understand that you might have questions about these results, and your assigned CalPERS actuary whose signature is on the valuation report is available to discuss. If you have other questions, you may call the Customer Contact Center at (888)-CalPERS or (**888-225-7377**).

Sincerely,

SCOTT TERANDO, ASA, EA, MAAA, FCA, CFA
Chief Actuary

BACK TO AGENDA


# Actuarial Valuation
# as of June 30, 2020

# for the
# Miscellaneous Plan
# of the
# Livermore/Amador Valley Transit Authority
**(CalPERS ID: 5624616425)**

# Required Contributions
# for Fiscal Year
# July 1, 2022 - June 30, 2023

BACK TO AGENDA

# Table of Contents



BACK TO AGENDA

# Section 1

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

---

# Plan Specific Information for the Miscellaneous Plan of the Livermore/Amador Valley Transit Authority

**(CalPERS ID: 5624616425)**
**(Rate Plan ID: 1507)**

BACK TO AGENDA

# Table of Contents

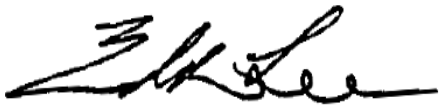
# Actuarial Certification

Section 1 of this report is based on the member and financial data contained in our records as of June 30, 2020 which was provided by your agency and the benefit provisions under your contract with CalPERS. Section 2 of this report is based on the member and financial data as of June 30, 2020 provided by employers participating in the Miscellaneous Risk Pool to which the plan belongs and benefit provisions under the CalPERS contracts for those agencies.

As set forth in Section 2 of this report, the pool actuaries have certified that, in their opinion, the valuation of the risk pool containing your Miscellaneous Plan has been performed in accordance with generally accepted actuarial principles consistent with standards of practice prescribed by the Actuarial Standards Board, and that the assumptions and methods are internally consistent and reasonable for the risk pool as of the date of this valuation and as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

Having relied upon the information set forth in Section 2 of this report and based on the census and benefit provision information for the plan, it is my opinion as the plan actuary that the Unfunded Accrued Liability amortization bases as of June 30, 2020 and employer contribution as of July 1, 2022 have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary who satisfies the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States with regard to pensions.



EDDIE W. LEE, ASA, EA, FCA, MAAA
Senior Pension Actuary, CalPERS



BACK TO AGENDA

# Highlights and Executive Summary

- **Introduction**
- **Purpose of Section 1**
- **Required Employer Contributions**
- **Additional Discretionary Employer Contributions**
- **Plan's Funded Status**
- **Projected Employer Contributions**
- **Other Pooled Miscellaneous Risk Pool Rate Plans**
- **Cost**
- **Changes Since the Prior Year's Valuation**
- **Subsequent Events**

BACK TO AGENDA

# Introduction

This report presents the results of the June 30, 2020 actuarial valuation of the Miscellaneous Plan of the Livermore/Amador Valley Transit Authority of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the required employer contributions for fiscal year 2022-23.

# Purpose of Section 1

This Section 1 report for the Miscellaneous Plan of the Livermore/Amador Valley Transit Authority of CalPERS was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2020;
- Determine the minimum required employer contribution for this plan for the fiscal year July 1, 2022 through June 30, 2023; and
- Provide actuarial information as of June 30, 2020 to the CalPERS Board of Administration and other interested parties.

The pension funding information presented in this report should not be used in financial reports subject to Governmental Accounting Standards Board (GASB) Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available on the CalPERS website.

The measurements shown in this actuarial valuation may not be applicable for other purposes. The employer should contact their actuary before disseminating any portion of this report for any reason that is not explicitly described above.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; changes in actuarial policies; and changes in plan provisions or applicable law.

**Assessment and Disclosure of Risk**

This report includes the following risk disclosures consistent with the recommendations of Actuarial Standards of Practice No. 51 and recommended by the California Actuarial Advisory Panel (CAAP) in the Model Disclosure Elements document:

- A "Scenario Test," projecting future results under different investment income returns.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 6.0% and 8.0%.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming rates of mortality are 10% lower or 10% higher than our current post- retirement mortality assumptions adopted in 2017.
- Pension Plan maturity measures quantifying the risks the employer bears.



BACK TO AGENDA

# Required Employer Contributions

| | Fiscal Year |
|---|---|
| **Required Employer Contributions** | **2022-23** |
| **Employer Normal Cost Rate** | **10.87%** |
| ***Plus*** | |
| **Required Payment on Amortization Bases[1]** | **$113,208** |
| ***Paid either as*** | |
| **1) Monthly Payment** | **$9,434.00** |
| ***Or*** | |
| **2) Annual Prepayment Option*** | **$109,442** |

*The total minimum required employer contribution is the sum of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll and paid as payroll is reported) plus the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly (1) or prepaid annually (2) in dollars).*

** Only the UAL portion of the employer contribution can be prepaid **(which must be received in full no later than July 31)**.*

| | Fiscal Year 2021-22 | Fiscal Year 2022-23 |
|---|---|---|
| **Development of Normal Cost as a Percentage of Payroll** | | |
| Base Total Normal Cost for Formula | 17.25% | 17.24% |
| Surcharge for Class 1 Benefits[2] | | |
| a) FAC 1 | 0.54% | 0.55% |
| Phase out of Normal Cost Difference[3] | 0.00% | 0.00% |
| Plan's Total Normal Cost | 17.79% | 17.79% |
| Formula's Expected Employee Contribution Rate | 6.91% | 6.92% |
| Employer Normal Cost Rate | 10.88% | 10.87% |

[1] The required payment on amortization bases does not take into account any additional discretionary payment made after April 30, 2021.

[2] Section 2 of this report contains a list of Class 1 benefits and corresponding surcharges for each benefit.

[3] The normal cost change is phased out over a five-year period in accordance with the CalPERS contribution allocation policy.



BACK TO AGENDA

# Additional Discretionary Employer Contributions

The minimum required employer contribution towards the Unfunded Accrued Liability (UAL) for this rate plan for the 2022-23 fiscal year is $113,208. CalPERS allows employers to make additional discretionary payments (ADPs) at any time and in any amount. These optional payments serve to reduce the UAL and future required contributions and can result in significant long-term savings. Employers can also use ADPs to stabilize annual contributions as a fixed dollar amount, percent of payroll or percent of revenue.

Provided below are select ADP options for consideration. Making such an ADP during fiscal year 2022-23 does not require an ADP be made in any future year, nor does it change the remaining amortization period of any portion of unfunded liability. For information on permanent changes to amortization periods, see the "Amortization Schedule and Alternatives" section of the report.

If you are considering making an ADP, please contact your actuary for additional information.

**Minimum Required Employer Contribution for Fiscal Year 2022-23**

| Estimated Normal Cost | Minimum UAL Payment | ADP | Total UAL Contribution | Estimated Total Contribution |
|---|---|---|---|---|
| $64,895 | $113,208 | $0 | $113,208 | $178,103 |

**Alternative Fiscal Year 2022-23 Employer Contributions for Greater UAL Reduction**

| Funding Target | Estimated Normal Cost | Minimum UAL Payment | ADP[1] | Total UAL Contribution | Estimated Total Contribution |
|---|---|---|---|---|---|
| 20 years | $64,895 | $113,208 | $21,789 | $134,997 | $199,892 |
| 15 years | $64,895 | $113,208 | $43,815 | $157,023 | $221,918 |
| 10 years | $64,895 | $113,208 | $90,414 | $203,622 | $268,517 |
| 5 years | $64,895 | $113,208 | $235,594 | $348,802 | $413,697 |

[1] The ADP amounts are assumed to be made in the middle of the fiscal year. A payment made earlier or later in the fiscal year would have to be less or more than the amount shown to have the same effect on the UAL amortization.

Note that the calculations above are based on the projected Unfunded Accrued Liability as of June 30, 2022 as determined in the June 30, 2020 actuarial valuation. New unfunded liabilities can emerge in future years due to assumption or method changes, changes in plan provisions and actuarial experience different than assumed. Making an ADP illustrated above for the indicated number of years will not result in a plan that is exactly 100% funded in the indicated number of years. Valuation results will vary from one year to the next and can diverge significantly from projections over a period of several years.



BACK TO AGENDA

# Plan's Funded Status

| | June 30, 2019 | June 30, 2020 |
|---|---|---|
| 1. Present Value of Projected Benefits (PVB) | $6,502,523 | $6,790,870 |
| 2. Entry Age Accrued Liability (AL) | 5,702,119 | 5,986,230 |
| 3. Plan's Market Value of Assets (MVA) | 4,397,903 | 4,530,569 |
| 4. Unfunded Accrued Liability (UAL) [(2) - (3)] | 1,304,216 | 1,455,661 |
| 5. Funded Ratio [(3) / (2)] | 77.1% | 75.7% |

This measure of funded status is an assessment of the need for future employer contributions based on the selected actuarial cost method used to fund the plan. The UAL is the present value of future employer contributions for service that has already been earned and is in addition to future normal cost contributions for active members. For a measure of funded status that is appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" in the "Risk Analysis" section.

# Projected Employer Contributions

The table below shows the required and projected employer contributions (before cost sharing) for the next six fiscal years. The projection assumes that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period. Actual contribution rates during this projection period could be significantly higher or lower than the projection shown below.

| | Required Contribution | Projected Future Employer Contributions (Assumes 7.00% Return for Fiscal Year 2020-21) | | | | |
|---|---|---|---|---|---|---|
| **Fiscal Year** | **2022-23** | **2023-24** | **2024-25** | **2025-26** | **2026-27** | **2027-28** |
| | Rate Plan 1507 Results | | | | | |
| **Normal Cost %** | 10.87% | 10.9% | 10.9% | 10.9% | 10.9% | 10.9% |
| **UAL Payment** | $113,208 | $123,000 | $133,000 | $140,000 | $146,000 | $149,000 |

For some sources of UAL, the change in UAL is amortized using a 5-year ramp up. For more information, please see "Amortization of the Unfunded Actuarial Accrued Liability" under "Actuarial Methods" in Appendix A of the Section 2 Report. This method phases in the impact of the change in UAL over a 5-year period in order to reduce employer cost volatility from year to year. As a result of this methodology, dramatic changes in the required employer contributions in any one year are less likely. However, required contributions can change gradually and significantly over the next five years. In years when there is a large increase in UAL, the relatively small amortization payments during the ramp up period could result in a funded ratio that is projected to decrease initially while the contribution impact of the increase in the UAL is phased in.

For projected contributions under alternate investment return scenarios, please see the "Future Investment Return Scenarios" in the "Risk Analysis" section.

Our online pension plan modeling and projection tool, Pension Outlook, is available in the Employers section of the CalPERS website. Pension Outlook is a tool to help plan and budget pension costs into the future with results and charts that are easy to understand.



BACK TO AGENDA

# Other Pooled Miscellaneous Risk Pool Rate Plans

All of the results presented in this Section 1 report, except those shown below, correspond to rate plan 1507. In many cases, employers have additional rate plans within the same risk pool. For cost analysis and budgeting it is useful to consider contributions for these rate plans as a whole rather than individually. The estimated contribution amounts and rates for all of the employer's rate plans in the Miscellaneous Risk Pool are shown below and assume that the payroll for each rate plan will grow according to the overall payroll growth assumption of 2.75% per year for three years.

| | Fiscal Year 2021-22 | Fiscal Year 2022-23 |
|---|---|---|
| **Estimated Combined Employer Contributions for all Pooled Miscellaneous Rate Plans** | | |
| Projected Payroll for the Contribution Year | $1,374,626 | $1,549,227 |
| Estimated Employer Normal Cost | $123,076 | $136,026 |
| Required Payment on Amortization Bases | $100,114 | $117,750 |
| Estimated Total Employer Contributions | $223,190 | $253,776 |
| Estimated Total Employer Contribution Rate (illustrative only) | 16.24% | 16.38% |



BACK TO AGENDA

# Cost

**Actuarial Determination of Pension Plan Cost**

Contributions to fund the pension plan are comprised of two components:

- Normal Cost, expressed as a percentage of total active payroll
- Amortization of the Unfunded Accrued Liability (UAL), expressed as a dollar amount

For fiscal years prior to 2016-17, the Amortization of UAL component was expressed as a percentage of total active payroll. Starting with fiscal year 2016-17, the Amortization of UAL component was expressed as a dollar amount and invoiced on a monthly basis. There continues to be an option to prepay this amount during July of each fiscal year.

The Normal Cost component is expressed as a percentage of active payroll with employer and employee contributions payable as part of the regular payroll reporting process.

The determination of both components requires complex actuarial calculations. The calculations are based on a set of actuarial assumptions which can be divided into two categories:

- Demographic assumptions (e.g., mortality rates, retirement rates, employment termination rates, disability rates)
- Economic assumptions (e.g., future investment earnings, inflation, salary growth rates)

These assumptions reflect CalPERS' best estimate of future experience of the plan and are long term in nature. We recognize that all assumptions will not be realized in any given year. For example, the investment earnings at CalPERS have averaged 5.5% over the 20 years ending June 30, 2020, yet individual fiscal year returns have ranged from -23.6% to +20.7%. In addition, CalPERS reviews all actuarial assumptions by conducting in-depth experience studies every four years, with the most recent experience study completed in 2017.



BACK TO AGENDA

# Changes Since the Prior Year's Valuation

**Benefits**

The standard actuarial practice at CalPERS is to recognize mandated legislative benefit changes in the first annual valuation following the effective date of the legislation. Voluntary benefit changes by plan amendment are generally included in the first valuation that is prepared after the amendment becomes effective, even if the valuation date is prior to the effective date of the amendment.

This valuation generally reflects plan changes by amendments effective before the date of the report. Please refer to the "Plan's Major Benefit Options" and Appendix B of the Section 2 Report for a summary of the plan provisions used in this valuation.

**Actuarial Methods and Assumptions**

The are no significant changes to the actuarial methods or assumptions for the 2020 actuarial valuation.

# Subsequent Events

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2020. Changes in the value of assets subsequent to that date are not reflected. Investment returns below the assumed rate of return will increase future required contributions while investment returns above the assumed rate of return will decrease future required contributions.

CalPERS will be completing an Asset Liability Management (ALM) process in November 2021 that will review the capital market assumptions and the strategic asset allocation and ascertain whether a change in the discount rate and other economic assumptions is warranted. As part of the ALM process the Actuarial Office will be completing an Experience Study to review the demographic experience of the retirement system and make recommendations to modify future assumptions where appropriate.

Furthermore, this valuation does not reflect any impacts from the COVID-19 pandemic on your pension plan. The impact of COVID-19 on retirement plans is not yet known and CalPERS actuaries will continue to monitor the effects and where necessary make future adjustments to actuarial assumptions.

The projected employer contributions on Page 6 are calculated under the assumption that the discount rate remains at 7.0% going forward and that the realized rate of return on assets for fiscal year 2020-21 is 7.0%.

This actuarial valuation report reflects statutory changes, regulatory changes and CalPERS Board actions through January 2021. Any subsequent changes or actions are not reflected.



BACK TO AGENDA

# Assets and Liabilities

- **Breakdown of Entry Age Accrued Liability**
- **Allocation of Plan's Share of Pool's Experience/Assumption Change**
- **Development of Plan's Share of Pool's Market Value of Assets**
- **Schedule of Plan's Amortization Bases**
- **Amortization Schedule and Alternatives**
- **Employer Contribution History**
- **Funding History**

BACK TO AGENDA

# Breakdown of Entry Age Accrued Liability

| | |
|---|---|
| Active Members | $1,912,986 |
| Transferred Members | 536,549 |
| Terminated Members | 60,090 |
| Members and Beneficiaries Receiving Payments | 3,476,605 |
| Total | $5,986,230 |

# Allocation of Plan's Share of Pool's Experience/Assumption Change

It is the policy of CalPERS to ensure equity within the risk pools by allocating the pool's experience gains/losses and assumption changes in a manner that treats each employer equitably and maintains benefit security for the members of the System while minimizing substantial variations in employer contributions. The Pool's experience gains/losses and impact of assumption/method changes is allocated to the plan as follows:

| | | |
|---|---|---|
| 1. | Plan's Accrued Liability | $5,986,230 |
| 2. | Projected UAL balance at 6/30/2020 | 1,329,903 |
| 3. | Pool's Accrued Liability[1] | 19,314,480,060 |
| 4. | Sum of Pool's Individual Plan UAL Balances at 6/30/2020[1] | 4,306,566,797 |
| 5. | Pool's 2019/20 Investment (Gain)/Loss[1] | 344,968,792 |
| 6. | Pool's 2019/20 Non-Investment (Gain)/Loss[1] | 60,428,629 |
| 7. | Plan's Share of Pool's Investment (Gain)/Loss: [(1) - (2)] ÷ [(3) - (4)] × (5) | 107,029 |
| 8. | Plan's Share of Pool's Non-Investment (Gain)/Loss: (1) ÷ (3) × (6) | 18,729 |
| 9. | Plan's New (Gain)/Loss as of 6/30/2020: (7) + (8) | 125,758 |

[1] Does not include plans that transferred to Pool on the valuation date.

# Development of the Plan's Share of Pool's Market Value of Assets

| | | |
|---|---|---|
| 10. | Plan's UAL: (2) + (9) | $1,455,661 |
| 11. | Plan's Share of Pool's MVA: (1) - (10) | $4,530,569 |



BACK TO AGENDA

# Schedule of Plan's Amortization Bases

Note that there is a two-year lag between the valuation date and the start of the contribution fiscal year.

- The assets, liabilities, and funded status of the plan are measured as of the valuation date: June 30, 2020.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: fiscal year 2022-23.

This two-year lag is necessary due to the amount of time needed to extract and test the membership and financial data, and the need to provide public agencies with their required employer contribution well in advance of the start of the fiscal year.

The Unfunded Accrued Liability (UAL) is used to determine the employer contribution and therefore must be rolled forward two years from the valuation date to the first day of the fiscal year for which the contribution is being determined. The UAL is rolled forward each year by subtracting the expected payment on the UAL for the fiscal year and adjusting for interest. The expected payment for the first fiscal year is determined by the actuarial valuation two years ago and the contribution for the second year is from the actuarial valuation one year ago. Additional discretionary payments are reflected in the Expected Payments column in the fiscal year they were made by the agency.

| Reason for Base | Date Est. | Ramp Level 2022-23 | Ramp Shape | Escala-tion Rate | Amort. Period | Balance 6/30/20 | Expected Payment 2020-21 | Balance 6/30/21 | Expected Payment 2021-22 | Balance 6/30/22 | Minimum Required Payment 2022-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Share of Pre-2013 Pool UAL | 6/30/13 | No Ramp | | 2.75% | 15 | 262,414 | 21,653 | 258,385 | 22,248 | 253,458 | 22,860 |
| Non-Investment (Gain)/Loss | 6/30/13 | 100% | Up/Down | 2.75% | 23 | (4,335) | (294) | (4,334) | (302) | (4,325) | (310) |
| Investment (Gain)/Loss | 6/30/13 | 100% | Up/Down | 2.75% | 23 | 451,060 | 30,599 | 450,982 | 31,440 | 450,029 | 32,305 |
| Non-Investment (Gain)/Loss | 6/30/14 | 100% | Up/Down | 2.75% | 24 | 393 | 26 | 394 | 27 | 394 | 27 |
| Investment (Gain)/Loss | 6/30/14 | 100% | Up/Down | 2.75% | 24 | (370,879) | (24,525) | (371,472) | (25,200) | (371,408) | (25,892) |
| Assumption Change | 6/30/14 | 100% | Up/Down | 2.75% | 14 | 219,389 | 20,862 | 213,166 | 21,435 | 205,915 | 22,025 |
| Non-Investment (Gain)/Loss | 6/30/15 | 100% | Up/Down | 2.75% | 25 | (19,108) | (999) | (19,412) | (1,284) | (19,443) | (1,319) |
| Investment (Gain)/Loss | 6/30/15 | 100% | Up/Down | 2.75% | 25 | 244,808 | 12,804 | 248,700 | 16,446 | 249,097 | 16,898 |
| Non-Investment (Gain)/Loss | 6/30/16 | 100% | Up/Down | 2.75% | 26 | (37,168) | (1,461) | (38,258) | (2,001) | (38,866) | (2,570) |
| Investment (Gain)/Loss | 6/30/16 | 100% | Up/Down | 2.75% | 26 | 315,340 | 12,392 | 324,595 | 16,978 | 329,754 | 21,806 |
| Assumption Change | 6/30/16 | 100% | Up/Down | 2.75% | 16 | 93,028 | 5,065 | 94,301 | 6,939 | 93,724 | 8,912 |
| Non-Investment (Gain)/Loss | 6/30/17 | 80% | Up/Down | 2.75% | 27 | (8,079) | (215) | (8,422) | (331) | (8,669) | (453) |
| Investment (Gain)/Loss | 6/30/17 | 80% | Up/Down | 2.75% | 27 | (164,521) | (4,373) | (171,514) | (6,740) | (176,548) | (9,234) |
| Assumption Change | 6/30/17 | 80% | Up/Down | 2.75% | 17 | 108,473 | 3,956 | 111,974 | 6,096 | 113,506 | 8,352 |
| Non-Investment (Gain)/Loss | 6/30/18 | 60% | Up/Down | 2.75% | 28 | 23,964 | 327 | 25,303 | 673 | 26,378 | 1,037 |
| Investment (Gain)/Loss | 6/30/18 | 60% | Up/Down | 2.75% | 28 | (50,555) | (690) | (53,380) | (1,419) | (55,649) | (2,187) |
| Assumption Change | 6/30/18 | 60% | Up/Down | 2.75% | 18 | 171,861 | 3,204 | 180,577 | 6,585 | 186,406 | 10,149 |
| Method Change | 6/30/18 | 60% | Up/Down | 2.75% | 18 | 47,156 | 879 | 49,548 | 1,807 | 51,147 | 2,785 |
| Non-Investment (Gain)/Loss | 6/30/19 | No Ramp | | 0.00% | 19 | 23,545 | 0 | 25,193 | 2,299 | 24,578 | 2,299 |



BACK TO AGENDA

# Schedule of Plan's Amortization Bases (continued)

| Reason for Base | Date Est. | Ramp Level 2022-23 | Ramp Shape | Escala-tion Rate | Amort. Period | Balance 6/30/20 | Expected Payment 2020-21 | Balance 6/30/21 | Expected Payment 2021-22 | Balance 6/30/22 | Minimum Required Payment 2022-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Investment (Gain)/Loss | 6/30/19 | 40% | Up Only | 0.00% | 19 | 23,117 | 0 | 24,735 | 541 | 25,907 | 1,082 |
| Non-Investment (Gain)/Loss | 6/30/20 | No Ramp | | 0.00% | 20 | 18,729 | 0 | 20,040 | 0 | 21,443 | 1,957 |
| Investment (Gain)/Loss | 6/30/20 | 20% | Up Only | 0.00% | 20 | 107,029 | 0 | 114,521 | 0 | 122,537 | 2,679 |
| **Total** | | | | | | **1,455,661** | **79,210** | **1,475,622** | **96,237** | **1,479,365** | **113,208** |

The (gain)/loss bases are the plan's allocated share of the risk pool's (gain)/loss for the fiscal year as disclosed in "Allocation of Plan's Share of Pool's Experience/Assumption Change" earlier in this section. These (gain)/loss bases will be amortized in accordance with the CalPERS amortization policy in effect at the time the base was established.



BACK TO AGENDA

# Amortization Schedule and Alternatives

The amortization schedule on the previous page shows the minimum contributions required according to the CalPERS amortization policy. Many agencies have expressed a desire for a more stable pattern of payments or have indicated interest in paying off the unfunded accrued liabilities more quickly than required. As such, we have provided alternative amortization schedules to help analyze the current amortization schedule and illustrate the potential savings of accelerating unfunded liability payments.

Shown on the following page are future year amortization payments based on 1) the current amortization schedule reflecting the individual bases and remaining periods shown on the previous page, and 2) alternative "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule. To initiate a Fresh Start, please consult with your plan actuary.

The Current Amortization Schedule typically contains both positive and negative bases. Positive bases result from plan changes, assumption changes, method changes or plan experience that increase unfunded liability. Negative bases result from plan changes, assumption changes, method changes, or plan experience that decrease unfunded liability. The combination of positive and negative bases within an amortization schedule can result in unusual or problematic circumstances in future years, such as:

- When a negative payment would be required on a positive unfunded actuarial liability; or
- When the payment would completely amortize the total unfunded liability in a very short time period, and results in a large change in the employer contribution requirement.

In any year when one of the above scenarios occurs, the actuary will consider corrective action such as replacing the existing unfunded liability bases with a single "fresh start" base and amortizing it over a reasonable period.

The Current Amortization Schedule on the following page may appear to show that, based on the current amortization bases, one of the above scenarios will occur at some point in the future. It is impossible to know today whether such a scenario will in fact arise since there will be additional bases added to the amortization schedule in each future year. Should such a scenario arise in any future year, the actuary will take appropriate action based on guidelines in the CalPERS amortization policy.

# Amortization Schedule and Alternatives (continued)

| | Current Amortization Schedule | | Alternate Schedules | | | |
|---|---|---|---|---|---|---|
| | | | 15 Year Amortization | | 10 Year Amortization | |
| **Date** | **Balance** | **Payment** | **Balance** | **Payment** | **Balance** | **Payment** |
| **6/30/2022** | 1,479,365 | 113,208 | 1,479,365 | 157,023 | 1,479,365 | 203,622 |
| **6/30/2023** | 1,465,814 | 123,009 | 1,420,495 | 157,024 | 1,372,292 | 203,622 |
| **6/30/2024** | 1,441,181 | 133,451 | 1,357,503 | 157,024 | 1,257,724 | 203,622 |
| **6/30/2025** | 1,404,022 | 139,943 | 1,290,101 | 157,023 | 1,135,136 | 203,622 |
| **6/30/2026** | 1,357,544 | 145,986 | 1,217,982 | 157,023 | 1,003,967 | 203,622 |
| **6/30/2027** | 1,301,560 | 149,439 | 1,140,815 | 157,024 | 863,616 | 203,622 |
| **6/30/2028** | 1,238,087 | 152,990 | 1,058,245 | 157,023 | 713,441 | 203,622 |
| **6/30/2029** | 1,166,500 | 156,635 | 969,896 | 157,023 | 552,754 | 203,622 |
| **6/30/2030** | 1,086,133 | 160,385 | 875,363 | 157,024 | 380,819 | 203,622 |
| **6/30/2031** | 996,258 | 164,233 | 774,212 | 157,024 | 196,848 | 203,621 |
| **6/30/2032** | 896,113 | 162,411 | 665,980 | 157,023 | | |
| **6/30/2033** | 790,842 | 160,384 | 550,173 | 157,024 | | |
| **6/30/2034** | 680,299 | 155,665 | 426,258 | 157,023 | | |
| **6/30/2035** | 566,901 | 147,611 | 293,670 | 157,024 | | |
| **6/30/2036** | 453,893 | 132,709 | 151,800 | 157,023 | | |
| **6/30/2037** | 348,391 | 89,168 | | | | |
| **6/30/2038** | 280,545 | 78,435 | | | | |
| **6/30/2039** | 219,050 | 69,881 | | | | |
| **6/30/2040** | 162,098 | 64,219 | | | | |
| **6/30/2041** | 107,017 | 49,710 | | | | |
| **6/30/2042** | 63,088 | 33,191 | | | | |
| **6/30/2043** | 33,170 | 26,427 | | | | |
| **6/30/2044** | 8,156 | 8,437 | | | | |
| **6/30/2045** | | | | | | |
| **6/30/2046** | | | | | | |
| **6/30/2047** | | | | | | |
| **6/30/2048** | | | | | | |
| **6/30/2049** | | | | | | |
| **6/30/2050** | | | | | | |
| **6/30/2051** | | | | | | |
| **Total** | **2,617,527** | | **2,355,352** | | **2,036,219** | |
| **Interest Paid** | **1,138,162** | | **875,987** | | **556,854** | |
| **Estimated Savings** | | | **262,175** | | **581,308** | |



BACK TO AGENDA

# Employer Contribution History

The table below provides a recent history of the required employer contributions for the plan. The amounts are based on the actuarial valuation from two years prior and does not account for prepayments or benefit changes made during a fiscal year. Additional discretionary payments before July 1, 2019 or after June 30, 2020 are not included.

| Fiscal Year | Employer Normal Cost | Unfunded Liability Payment ($) | Additional Discretionary Payments |
|---|---|---|---|
| 2016 - 17 | 8.880% | $30,279 | N/A |
| 2017 - 18 | 8.921% | 39,011 | N/A |
| 2018 - 19 | 9.409% | 52,764 | N/A |
| 2019 - 20 | 10.221% | 67,324 | 0 |
| 2020 - 21 | 11.031% | 79,210 | |
| 2021 - 22 | 10.88% | 96,237 | |
| 2022 - 23 | 10.87% | 113,208 | |

# Funding History

The table below shows the recent history of the actuarial accrued liability, share of the pool's market value of assets, unfunded accrued liability, funded ratio, and annual covered payroll.

| Valuation Date | Accrued Liability (AL) | Share of Pool's Market Value of Assets (MVA) | Unfunded Accrued Liability (UAL) | Funded Ratio | Annual Covered Payroll |
|---|---|---|---|---|---|
| 06/30/2011 | $2,896,996 | $2,370,599 | $526,397 | 81.8% | $963,759 |
| 06/30/2012 | 2,902,914 | 2,240,379 | 662,535 | 77.2% | 963,770 |
| 06/30/2013 | 3,285,199 | 2,669,868 | 615,331 | 81.3% | 888,329 |
| 06/30/2014 | 3,780,028 | 3,251,402 | 528,626 | 86.0% | 758,121 |
| 06/30/2015 | 4,134,997 | 3,423,257 | 711,740 | 82.8% | 762,792 |
| 06/30/2016 | 4,549,003 | 3,516,658 | 1,032,345 | 77.3% | 628,383 |
| 06/30/2017 | 4,981,014 | 3,961,929 | 1,019,085 | 79.5% | 597,599 |
| 06/30/2018 | 5,503,207 | 4,282,160 | 1,221,047 | 77.8% | 504,487 |
| 06/30/2019 | 5,702,119 | 4,397,903 | 1,304,216 | 77.1% | 525,123 |
| 06/30/2020 | 5,986,230 | 4,530,569 | 1,455,661 | 75.7% | 550,347 |



BACK TO AGENDA

# Risk Analysis

- **Future Investment Return Scenarios**
- **Discount Rate Sensitivity**
- **Mortality Rate Sensitivity**
- **Maturity Measures**
- **Maturity Measures History**
- **Hypothetical Termination Liability**

BACK TO AGENDA

# Future Investment Return Scenarios

Analysis was performed to determine the effects of various future investment returns on required employer contributions. The projections below provide a range of results based on five investment return scenarios assumed to occur during the next four fiscal years (2020-21, 2021-22, 2022-23 and 2023-24). The projections also assume that all other actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur.

For fiscal years 2020-21, 2021-22, 2022-23, and 2023-24, each scenario assumes an alternate fixed annual return. The fixed return assumptions for the five scenarios are 1.0%, 4.0%, 7.0%, 9.0% and 12.0%.

These alternate investment returns were chosen based on stochastic analysis of possible future investment returns over the four-year period ending June 30, 2024. Using the expected returns and volatility of the asset classes in which the funds are invested, we produced five thousand stochastic outcomes for this period based on the most recently completed Asset Liability Management process. We then selected annual returns that approximate the 5$^{th}$, 25$^{th}$, 50$^{th}$, 75$^{th}$, and 95$^{th}$ percentiles for these outcomes. For example, of all the 4-year outcomes generated in the stochastic analysis, approximately 25% had an average annual return of 4.0% or less.

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 1.0% or greater than 12.0% over this four-year period, the likelihood of a single investment return less than 1.0% or greater than 12.0% in any given year is much greater.

| Assumed Annual Return From 2020-21 through 2023-24 | Projected Employer Contributions | | | |
|---|---|---|---|---|
| | 2023-24 | 2024-25 | 2025-26 | 2026-27 |
| **1.0%** | | | | |
| Normal Cost | 10.9% | 10.9% | 10.9% | 10.9% |
| UAL Contribution | $130,000 | $154,000 | $181,000 | $214,000 |
| **4.0%** | | | | |
| Normal Cost | 10.9% | 10.9% | 10.9% | 10.9% |
| UAL Contribution | $126,000 | $144,000 | $161,000 | $181,000 |
| **7.0%** | | | | |
| Normal Cost | 10.9% | 10.9% | 10.9% | 10.9% |
| UAL Contribution | $123,000 | $133,000 | $140,000 | $146,000 |
| **9.0%** | | | | |
| Normal Cost | 11.1% | 11.3% | 11.5% | 11.8% |
| UAL Contribution | $121,000 | $128,000 | $130,000 | $129,000 |
| **12.0%** | | | | |
| Normal Cost | 11.1% | 11.3% | 11.5% | 11.8% |
| UAL Contribution | $118,000 | $118,000 | $108,000 | $91,000 |



BACK TO AGENDA

# Discount Rate Sensitivity

The discount rate assumption is calculated as the sum of the assumed real rate of return and the assumed annual price inflation, currently 4.50% and 2.50%, respectively. Changing either the price inflation assumption or the real rate of return assumption will change the discount rate. The sensitivity of the valuation results to the discount rate assumption depends on which component of the discount rate is changed. Shown below are various valuation results as of June 30, 2020 assuming alternate discount rates by changing the two components independently. Results are shown using the current discount rate of 7.0% as well as alternate discount rates of 6.0% and 8.0%. The rates of 6.0% and 8.0% were selected since they illustrate the impact of a 1.0% increase or decrease to the 7.0% assumption.

**Sensitivity to the Real Rate of Return Assumption**

| As of June 30, 2020 | 1% Lower Real Return Rate | Current Assumptions | 1% Higher Real Return Rate |
|---|---|---|---|
| **Discount Rate** | **6.0%** | **7.0%** | **8.0%** |
| Inflation | 2.5% | 2.5% | 2.5% |
| **Real Rate of Return** | **3.5%** | **4.5%** | **5.5%** |
| a) Total Normal Cost | 22.18% | 17.79% | 14.42% |
| b) Accrued Liability | $6,831,746 | $5,986,230 | $5,290,188 |
| c) Market Value of Assets | $4,530,569 | $4,530,569 | $4,530,569 |
| d) Unfunded Liability/(Surplus) [(b) - (c)] | $2,301,177 | $1,455,661 | $759,619 |
| e) Funded Status | 66.3% | 75.7% | 85.6% |

**Sensitivity to the Price Inflation Assumption**

| As of June 30, 2020 | 1% Lower Inflation Rate | Current Assumptions | 1% Higher Inflation Rate |
|---|---|---|---|
| **Discount Rate** | **6.0%** | **7.0%** | **8.0%** |
| **Inflation** | **1.5%** | **2.5%** | **3.5%** |
| Real Rate of Return | 4.5% | 4.5% | 4.5% |
| a) Total Normal Cost | 18.96% | 17.79% | 16.39% |
| b) Accrued Liability | $6,293,940 | $5,986,230 | $5,580,970 |
| c) Market Value of Assets | $4,530,569 | $4,530,569 | $4,530,569 |
| d) Unfunded Liability/(Surplus) [(b) - (c)] | $1,763,371 | $1,455,661 | $1,050,401 |
| e) Funded Status | 72.0% | 75.7% | 81.2% |

# Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2020 plan costs and funded status under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2017. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.

| As of June 30, 2020 | 10% Lower Mortality Rates | Current Assumptions | 10% Higher Mortality Rates |
|---|---|---|---|
| a) Total Normal Cost | 18.10% | 17.79% | 17.50% |
| b) Accrued Liability | $6,113,020 | $5,986,230 | $5,869,722 |
| c) Market Value of Assets | $4,530,569 | $4,530,569 | $4,530,569 |
| d) Unfunded Liability/(Surplus) [(b) - (c)] | $1,582,451 | $1,455,661 | $1,339,153 |
| e) Funded Status | 74.1% | 75.7% | 77.2% |



BACK TO AGENDA

# Maturity Measures

As pension plans mature they become more sensitive to risks. Understanding plan maturity and how it affects the ability of a pension plan sponsor to tolerate risk is important in understanding how the pension plan is impacted by investment return volatility, other economic variables and changes in longevity or other demographic assumptions. Since it is the employer that bears the risk, it is appropriate to perform this analysis on a pension plan level considering all rate plans. The following measures are for one rate plan only.

One way to look at the maturity level of CalPERS and its plans is to look at the ratio of a plan's retiree liability to its total liability. A pension plan in its infancy will have a very low ratio of retiree liability to total liability. As the plan matures, the ratio starts increasing. A mature plan will often have a ratio above 60%-65%.

| **Ratio of Retiree Accrued Liability to Total Accrued Liability** | **June 30, 2019** | **June 30, 2020** |
|---|---|---|
| 1. Retired Accrued Liability | 3,494,018 | 3,476,605 |
| 2. Total Accrued Liability | 5,702,119 | 5,986,230 |
| 3. Ratio of Retiree AL to Total AL [(1) / (2)] | 0.61 | 0.58 |

Another measure of maturity level of CalPERS and its plans is to look at the ratio of actives to retirees, also called the Support Ratio. A pension plan in its infancy will have a very high ratio of active to retired members. As the plan matures, and members retire, the ratio starts declining. A mature plan will often have a ratio near or below one. The average support ratio for CalPERS public agency plans is 1.25.

| **Support Ratio** | **June 30, 2019** | **June 30, 2020** |
|---|---|---|
| 1. Number of Actives | 6 | 6 |
| 2. Number of Retirees | 17 | 17 |
| 3. Support Ratio [(1) / (2)] | 0.35 | 0.35 |



BACK TO AGENDA

# Maturity Measures (Continued)

The actuarial calculations supplied in this communication are based on various assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., terminations, deaths, disabilities, retirements, salary growth, and investment return) are exactly realized each year, there will be differences on a year-to-year basis. The year-to-year differences between actual experience and the assumptions are called actuarial gains and losses and serve to lower or raise required employer contributions from one year to the next. Therefore, employer contributions will inevitably fluctuate, especially due to the ups and downs of investment returns.

**Asset Volatility Ratio (AVR)**

Shown in the table below is the asset volatility ratio (AVR), which is the ratio of market value of assets to payroll. Plans that have higher AVR experience more volatile employer contributions (as a percentage of payroll) due to investment return. For example, a plan with an asset-to-payroll ratio of 8 may experience twice the contribution volatility due to investment return volatility than a plan with an asset-to-payroll ratio of 4. It should be noted that this ratio is a measure of the current situation. It increases over time but generally tends to stabilize as the plan matures.

**Liability Volatility Ratio (LVR)**

Also shown in the table below is the liability volatility ratio (LVR), which is the ratio of accrued liability to payroll. Plans that have a higher LVR experience more volatile employer contributions (as a percentage of payroll) due to investment return and changes in liability. For example, a plan with LVR ratio of 8 is expected to have twice the contribution volatility of a plan with LVR of 4. It should be noted that this ratio indicates a longer-term potential for contribution volatility. The AVR, described above, will tend to move closer to the LVR as a plan matures.

| Contribution Volatility | June 30, 2019 | June 30, 2020 |
|---|---|---|
| 1. Market Value of Assets | $4,397,903 | $4,530,569 |
| 2. Payroll | 525,123 | 550,347 |
| 3. Asset Volatility Ratio (AVR) [(1) / (2)] | 8.4 | 8.2 |
| 4. Accrued Liability | $5,702,119 | $5,986,230 |
| 5. Liability Volatility Ratio (LVR) [(4) / (2)] | 10.9 | 10.9 |

# Maturity Measures History

| Valuation Date | Ratio of Retiree Accrued Liability to Total Accrued Liability | Support Ratio | Asset Volatility Ratio | Liability Volatility Ratio |
|---|---|---|---|---|
| 06/30/2017 | 0.57 | 0.47 | 6.6 | 8.3 |
| 06/30/2018 | 0.63 | 0.38 | 8.5 | 10.9 |
| 06/30/2019 | 0.61 | 0.35 | 8.4 | 10.9 |
| 06/30/2020 | 0.58 | 0.35 | 8.2 | 10.9 |



BACK TO AGENDA

# Hypothetical Termination Liability

The hypothetical termination liability is an estimate of the financial position of the plan had the contract with CalPERS been terminated as of June 30, 2020. The plan liability on a termination basis is calculated differently compared to the plan's ongoing funding liability. For the hypothetical termination liability calculation, both compensation and service are frozen as of the valuation date and no future pay increases or service accruals are assumed. This measure of funded status is not appropriate for assessing the need for future employer contributions in the case of an ongoing plan, that is, for an employer that continues to provide CalPERS retirement benefits to active employees.

A more conservative investment policy and asset allocation strategy was adopted by the CalPERS Board for the Terminated Agency Pool. The Terminated Agency Pool has limited funding sources since no future employer contributions will be made. Therefore, expected benefit payments are secured by risk-free assets and benefit security for members is increased while limiting the funding risk. However, this asset allocation has a lower expected rate of return than the PERF and consequently, a lower discount rate is assumed. The lower discount rate for the Terminated Agency Pool results in higher liabilities for terminated plans.

The effective termination discount rate will depend on actual market rates of return for risk-free securities on the date of termination. As market discount rates are variable, the table below shows a range for the hypothetical termination liability based on the lowest and highest interest rates observed during an approximate 19-month period from 12 months before the valuation date to 7 months after.

| Market Value of Assets (MVA) | Hypothetical Termination Liability[1,2] at 0.75% | Funded Status | Unfunded Termination Liability at 0.75% | Hypothetical Termination Liability[1,2] at 2.50% | Funded Status | Unfunded Termination Liability at 2.50% |
|---|---|---|---|---|---|---|
| $4,530,569 | $13,683,150 | 33.1% | $9,152,581 | $10,163,365 | 44.6% | $5,632,796 |

[1] The hypothetical liabilities calculated above include a 5% mortality contingency load in accordance with Board policy. Other actuarial assumptions can be found in Appendix A of the Section 2 report.

[2] The current discount rate assumption used for termination valuations is a weighted average of the 10-year and 30-year U.S. Treasury yields where the weights are based on matching asset and liability durations as of the termination date. The discount rates used in the table are based on 20-year Treasury bonds, rounded to the nearest quarter percentage point, which is a good proxy for most plans. The 20-year Treasury yield was 1.18% on June 30, 2020, and was 1.68% on January 31, 2021.

In order to terminate the plan, you must first contact our Retirement Services Contract Unit to initiate a Resolution of Intent to Terminate. The completed Resolution will allow the plan actuary to give you a preliminary termination valuation with a more up-to-date estimate of the plan liabilities. CalPERS advises you to consult with the plan actuary before beginning this process.



BACK TO AGENDA

# Participant Data

The table below shows a summary of your plan's member data upon which this valuation is based:

| | June 30, 2019 | June 30, 2020 |
|---|---|---|
| **Active Members** | | |
| Counts | 6 | 6 |
| Average Attained Age | N/A | 44.9 |
| Average Entry Age to Rate Plan | N/A | 30.6 |
| Average Years of Credited Service | N/A | 14.2 |
| Average Annual Covered Pay | $87,521 | $91,725 |
| Annual Covered Payroll | $525,123 | $550,347 |
| Projected Annual Payroll for Contribution Year | $569,648 | $597,011 |
| Present Value of Future Payroll | $5,187,705 | $5,220,748 |
| **Transferred Members** | 8 | 8 |
| **Separated Members** | 4 | 4 |
| **Retired Members and Beneficiaries** | | |
| Counts* | 17 | 17 |
| Average Annual Benefits* | N/A | $17,500 |

Counts of members included in the valuation are counts of the records processed by the valuation. Multiple records may exist for those who have service in more than one valuation group. This does not result in double counting of liabilities.

* Values include community property settlements.

# List of Class 1 Benefit Provisions

This plan has the additional Class 1 Benefit Provisions:

- One Year Final Compensation (FAC 1)



BACK TO AGENDA

# Plan's Major Benefit Options

Shown below is a summary of the major optional benefits for which your agency has contracted. A description of principal standard and optional plan provisions is in Section 2.

| | **Benefit Group** | |
|---|---|---|
| **Member Category** | Misc | |
| **Demographics** | | |
| Actives | Yes | |
| Transfers/Separated | Yes | |
| Receiving | Yes | |
| **Benefit Provision** | | |
| Benefit Formula | 2% @ 55 | |
| Social Security Coverage | No | |
| Full/Modified | Full | |
| Employee Contribution Rate | 7.00% | |
| Final Average Compensation Period | One Year | |
| Sick Leave Credit | Yes | |
| Non-Industrial Disability | Standard | |
| Industrial Disability | No | |
| Pre-Retirement Death Benefits | | |
| Optional Settlement 2 | Yes | |
| 1959 Survivor Benefit Level | Level 4 | |
| Special | No | |
| Alternate (firefighters) | No | |
| Post-Retirement Death Benefits | | |
| Lump Sum | $500 | |
| Survivor Allowance (PRSA) | No | |
| COLA | 2% | |



BACK TO AGENDA

# Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

# Risk Pool Actuarial Valuation Information

## Section 2 may be found on the CalPERS website (calpers.ca.gov) in the Forms and Publications section



BACK TO AGENDA

**California Public Employees' Retirement System**
**Actuarial Office**
400 Q Street, Sacramento, CA 95811 | Phone: (916) 795-3000 | Fax: (916) 795-2744
**888 CalPERS** (or **888**-225-7377) | TTY: (877) 249-7442 | **www.calpers.ca.gov**

**July 2021**

**PEPRA Miscellaneous Plan of the Livermore/Amador Valley Transit Authority**
**(CalPERS ID: 5624616425)**
**Annual Valuation Report as of June 30, 2020**

Dear Employer,

Attached to this letter, you will find the June 30, 2020 actuarial valuation report of your CalPERS pension plan. **Provided in this report is the determination of the minimum required employer contributions for fiscal year 2022-23**. In addition, the report contains important information regarding the current financial status of the plan as well as projections and risk measures to aid in planning for the future.

Because this plan is in a risk pool, the following valuation report has been separated into two sections:

- Section 1 contains specific information for the plan including the development of the current and projected employer contributions, and
- Section 2 contains the Risk Pool Actuarial Valuation appropriate to the plan as of June 30, 2020.

Section 2 can be found on the CalPERS website (calpers.ca.gov). From the home page, go to *"Forms & Publications"* and select *"View All"*. In the search box, enter *"Risk Pool"* and from the results list download the Miscellaneous Risk Pool Actuarial Valuation Report for June 30, 2020.

Your June 30, 2020 actuarial valuation report contains important actuarial information about your pension plan at CalPERS. Your assigned CalPERS staff actuary, whose signature appears in the Actuarial Certification section on page 1, is available to discuss the report with you.

Actuarial valuations are based on assumptions regarding future plan experience including investment return and payroll growth, eligibility for the types of benefits provided, and longevity among retirees. The CalPERS Board of Administration adopts these assumptions after considering the advice of CalPERS actuarial and investment teams and other professionals. Each actuarial valuation reflects all prior differences between actual and assumed experience and adjusts the contribution rates as needed. This valuation is based on an investment return assumption of 7.0% which was adopted by the board in December 2016. Other assumptions used in this report are those recommended in the CalPERS Experience Study and Review of Actuarial Assumptions report from December 2017.

**Required Contribution**

The exhibit below displays the minimum employer contributions and the Employee PEPRA Rate for fiscal year 2022-23 along with estimates of the required contributions for fiscal year 2023-24. Member contributions other than cost sharing (whether paid by the employer or the employee) are in addition to the results shown below. **The employer contributions in this report do not reflect any cost sharing arrangements you may have with your employees**.

| Fiscal Year | Employer Normal Cost Rate | Employer Amortization of Unfunded Accrued Liability | PEPRA Employee Rate |
|---|---|---|---|
| 2022-23 | 7.47% | $4,542 | 6.75% |
| *Projected Results* | | | |
| *2023-24* | *7.5%* | *$5,700* | *TBD* |

BACK TO AGENDA

The actual investment return for fiscal year 2020-21 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 7.00%. ***To the extent the actual investment return for fiscal year 2020-21 differs from 7.00%, the actual contribution requirements for fiscal year 2023-24 will differ from those shown above.*** For additional details regarding the assumptions and methods used for these projections please refer to the "Projected Employer Contributions" in the "Highlights and Executive Summary" section. This section also contains projected required contributions through fiscal year 2027-28.

**Changes from Previous Year's Valuation**

There are no significant changes in actuarial assumptions or policies in your 2020 actuarial valuation. Your annual valuation report is an important tool for monitoring the health of your CalPERS pension plan. Your report contains useful information about future required contributions and ways to control your plan's funding progress. In addition to your annual actuarial report my office has developed tools for employers to plan, project and protect the retirement benefits of your employees. Pension Outlook is a tool to help plan and budget pension costs into the future with easy to understand results and charts.

You will be able to view the projected funded status and required employer contributions for pension plans in different potential scenarios for up to 30 years into the future — which will make budgeting more predictable. While Pension Outlook can't predict the future, it can provide valuable planning information based on a variety of future scenarios that you select.

Pension Outlook can help you answer specific questions about your plans, including:

- When is my plan's funded status expected to increase?
- What happens to my required contributions in a down market?
- How does the discount rate assumption affect my contributions?
- What is the impact of making an additional discretionary payment to my plan?

To get started, visit our Pension Outlook page at www.calpers.ca.gov/page/employers/actuarial-resources/pension-outlook-overview and take the steps to register online.

CalPERS will be completing an Asset Liability Management (ALM) review process in November 2021 that will review the capital market assumptions and the strategic asset allocation and ascertain whether a change in the discount rate and other economic assumptions is warranted. In addition, the Actuarial Office will be completing its Experience Study to review the demographic experience within the pension system and make recommendations to modify future assumptions where appropriate.

Furthermore, this valuation does not reflect any impacts from the COVID-19 pandemic on your pension plan. The impact of COVID-19 on retirement plans is not yet known and CalPERS actuaries will continue to monitor the effects and where necessary make future adjustments to actuarial assumptions.

Further descriptions of general changes are included in the "Highlights and Executive Summary" section and in Appendix A of the Section 2 report, "Actuarial Methods and Assumptions."

**Questions**

We understand that you might have questions about these results, and your assigned CalPERS actuary whose signature is on the valuation report is available to discuss. If you have other questions, you may call the Customer Contact Center at (888)-CalPERS or (**888-225-7377**).

Sincerely,

SCOTT TERANDO, ASA, EA, MAAA, FCA, CFA
Chief Actuary

BACK TO AGENDA


# Actuarial Valuation
# as of June 30, 2020

# for the
# PEPRA Miscellaneous Plan
# of the
# Livermore/Amador Valley Transit Authority
**(CalPERS ID: 5624616425)**

# Required Contributions
# for Fiscal Year
# July 1, 2022 - June 30, 2023

BACK TO AGENDA

# Table of Contents



BACK TO AGENDA

# Section 1

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

---

# Plan Specific Information for the PEPRA Miscellaneous Plan of the Livermore/Amador Valley Transit Authority

**(CalPERS ID: 5624616425)**
**(Rate Plan ID: 27069)**

BACK TO AGENDA

# Table of Contents

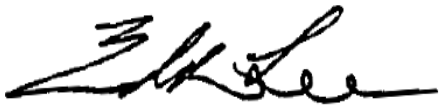
# Actuarial Certification

Section 1 of this report is based on the member and financial data contained in our records as of June 30, 2020 which was provided by your agency and the benefit provisions under your contract with CalPERS. Section 2 of this report is based on the member and financial data as of June 30, 2020 provided by employers participating in the Miscellaneous Risk Pool to which the plan belongs and benefit provisions under the CalPERS contracts for those agencies.

As set forth in Section 2 of this report, the pool actuaries have certified that, in their opinion, the valuation of the risk pool containing your PEPRA Miscellaneous Plan has been performed in accordance with generally accepted actuarial principles consistent with standards of practice prescribed by the Actuarial Standards Board, and that the assumptions and methods are internally consistent and reasonable for the risk pool as of the date of this valuation and as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

Having relied upon the information set forth in Section 2 of this report and based on the census and benefit provision information for the plan, it is my opinion as the plan actuary that the Unfunded Accrued Liability amortization bases as of June 30, 2020 and employer contribution as of July 1, 2022 have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary who satisfies the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States with regard to pensions.



EDDIE W. LEE, ASA, EA, FCA, MAAA
Senior Pension Actuary, CalPERS



BACK TO AGENDA

# Highlights and Executive Summary

- **Introduction**
- **Purpose of Section 1**
- **Required Employer Contributions**
- **Additional Discretionary Employer Contributions**
- **Plan's Funded Status**
- **Projected Employer Contributions**
- **Other Pooled Miscellaneous Risk Pool Rate Plans**
- **Cost**
- **Changes Since the Prior Year's Valuation**
- **Subsequent Events**

BACK TO AGENDA

# Introduction

This report presents the results of the June 30, 2020 actuarial valuation of the PEPRA Miscellaneous Plan of the Livermore/Amador Valley Transit Authority of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the required employer contributions for fiscal year 2022-23.

# Purpose of Section 1

This Section 1 report for the PEPRA Miscellaneous Plan of the Livermore/Amador Valley Transit Authority of CalPERS was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2020;
- Determine the minimum required employer contribution for this plan for the fiscal year July 1, 2022 through June 30, 2023; and
- Provide actuarial information as of June 30, 2020 to the CalPERS Board of Administration and other interested parties.

The pension funding information presented in this report should not be used in financial reports subject to Governmental Accounting Standards Board (GASB) Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available on the CalPERS website.

The measurements shown in this actuarial valuation may not be applicable for other purposes. The employer should contact their actuary before disseminating any portion of this report for any reason that is not explicitly described above.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; changes in actuarial policies; and changes in plan provisions or applicable law.

**Assessment and Disclosure of Risk**

This report includes the following risk disclosures consistent with the recommendations of Actuarial Standards of Practice No. 51 and recommended by the California Actuarial Advisory Panel (CAAP) in the Model Disclosure Elements document:

- A "Scenario Test," projecting future results under different investment income returns.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 6.0% and 8.0%.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming rates of mortality are 10% lower or 10% higher than our current post- retirement mortality assumptions adopted in 2017.
- Pension Plan maturity measures quantifying the risks the employer bears.



BACK TO AGENDA

# Required Employer Contributions

| | Fiscal Year |
|---|---|
| **Required Employer Contributions** | **2022-23** |
| **Employer Normal Cost Rate** | **7.47%** |
| ***Plus*** | |
| **Required Payment on Amortization Bases[1]** | **$4,542** |
| ***Paid either as*** | |
| **1) Monthly Payment** | **$378.50** |
| ***Or*** | |
| **2) Annual Prepayment Option*** | **$4,391** |

*The total minimum required employer contribution is the sum of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll and paid as payroll is reported) plus the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly (1) or prepaid annually (2) in dollars).*

** Only the UAL portion of the employer contribution can be prepaid **(which must be received in full no later than July 31)**.*

| | Fiscal Year 2021-22 | Fiscal Year 2022-23 |
|---|---|---|
| **Development of Normal Cost as a Percentage of Payroll** | | |
| Base Total Normal Cost for Formula | 14.34% | 14.22% |
| Surcharge for Class 1 Benefits[2] | | |
| None | 0.00% | 0.00% |
| Phase out of Normal Cost Difference[3] | 0.00% | 0.00% |
| Plan's Total Normal Cost | 14.34% | 14.22% |
| Plan's Employee Contribution Rate[4] | 6.75% | 6.75% |
| Employer Normal Cost Rate | 7.59% | 7.47% |

[1] The required payment on amortization bases does not take into account any additional discretionary payment made after April 30, 2021.

[2] Section 2 of this report contains a list of Class 1 benefits and corresponding surcharges for each benefit.

[3] The normal cost change is phased out over a five-year period in accordance with the CalPERS contribution allocation policy.

[4] For detail regarding the determination of the required PEPRA employee contribution rate see Section on PEPRA Member Contribution Rates.



BACK TO AGENDA

# Additional Discretionary Employer Contributions

The minimum required employer contribution towards the Unfunded Accrued Liability (UAL) for this rate plan for the 2022-23 fiscal year is $4,542. CalPERS allows employers to make additional discretionary payments (ADPs) at any time and in any amount. These optional payments serve to reduce the UAL and future required contributions and can result in significant long-term savings. Employers can also use ADPs to stabilize annual contributions as a fixed dollar amount, percent of payroll or percent of revenue.

Provided below are select ADP options for consideration. Making such an ADP during fiscal year 2022-23 does not require an ADP be made in any future year, nor does it change the remaining amortization period of any portion of unfunded liability. For information on permanent changes to amortization periods, see the "Amortization Schedule and Alternatives" section of the report.

If you are considering making an ADP, please contact your actuary for additional information.

**Minimum Required Employer Contribution for Fiscal Year 2022-23**

| Estimated Normal Cost | Minimum UAL Payment | ADP | Total UAL Contribution | Estimated Total Contribution |
|---|---|---|---|---|
| $71,131 | $4,542 | $0 | $4,542 | $75,673 |

The minimum required contribution above is less than interest on the UAL. With no ADP the UAL is projected to increase over the following year. If the minimum UAL payment were split between interest and principal, the principal portion would be negative. This situation is referred to as "negative amortization."

**Fiscal Year 2022-23 Employer Contribution Necessary to Avoid Negative Amortization**

| Estimated Normal Cost | Minimum UAL Payment | ADP[1] | Total UAL Contribution | Estimated Total Contribution |
|---|---|---|---|---|
| $71,131 | $4,542 | $468 | $5,010 | $76,141 |

**Alternative Fiscal Year 2022-23 Employer Contributions for Greater UAL Reduction**

| Funding Target | Estimated Normal Cost | Minimum UAL Payment | ADP[1] | Total UAL Contribution | Estimated Total Contribution |
|---|---|---|---|---|---|
| 20 years | $71,131 | $4,542 | $2,214 | $6,756 | $77,887 |
| 15 years | $71,131 | $4,542 | $3,316 | $7,858 | $78,989 |
| 10 years | $71,131 | $4,542 | $5,648 | $10,190 | $81,321 |
| 5 years | $71,131 | $4,542 | $12,914 | $17,456 | $88,587 |

[1] The ADP amounts are assumed to be made in the middle of the fiscal year. A payment made earlier or later in the fiscal year would have to be less or more than the amount shown to have the same effect on the UAL amortization.

Note that the calculations above are based on the projected Unfunded Accrued Liability as of June 30, 2022 as determined in the June 30, 2020 actuarial valuation. New unfunded liabilities can emerge in future years due to assumption or method changes, changes in plan provisions and actuarial experience different than assumed. Making an ADP illustrated above for the indicated number of years will not result in a plan that is exactly 100% funded in the indicated number of years. Valuation results will vary from one year to the next and can diverge significantly from projections over a period of several years.



BACK TO AGENDA

# Plan's Funded Status

| | June 30, 2019 | June 30, 2020 |
|---|---|---|
| 1. Present Value of Projected Benefits (PVB) | $1,524,296 | $1,835,332 |
| 2. Entry Age Accrued Liability (AL) | 476,497 | 634,099 |
| 3. Plan's Market Value of Assets (MVA) | 428,314 | 563,391 |
| 4. Unfunded Accrued Liability (UAL) [(2) - (3)] | 48,183 | 70,708 |
| 5. Funded Ratio [(3) / (2)] | 89.9% | 88.8% |

This measure of funded status is an assessment of the need for future employer contributions based on the selected actuarial cost method used to fund the plan. The UAL is the present value of future employer contributions for service that has already been earned and is in addition to future normal cost contributions for active members. For a measure of funded status that is appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" in the "Risk Analysis" section.

# Projected Employer Contributions

The table below shows the required and projected employer contributions (before cost sharing) for the next six fiscal years. The projection assumes that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period. Actual contribution rates during this projection period could be significantly higher or lower than the projection shown below.

| | Required Contribution | Projected Future Employer Contributions (Assumes 7.00% Return for Fiscal Year 2020-21) | | | | |
|---|---|---|---|---|---|---|
| **Fiscal Year** | **2022-23** | **2023-24** | **2024-25** | **2025-26** | **2026-27** | **2027-28** |
| | Rate Plan 27069 Results | | | | | |
| **Normal Cost %** | 7.47% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% |
| **UAL Payment** | $4,542 | $5,700 | $6,700 | $7,200 | $7,700 | $7,800 |

For some sources of UAL, the change in UAL is amortized using a 5-year ramp up. For more information, please see "Amortization of the Unfunded Actuarial Accrued Liability" under "Actuarial Methods" in Appendix A of the Section 2 Report. This method phases in the impact of the change in UAL over a 5-year period in order to reduce employer cost volatility from year to year. As a result of this methodology, dramatic changes in the required employer contributions in any one year are less likely. However, required contributions can change gradually and significantly over the next five years. In years when there is a large increase in UAL, the relatively small amortization payments during the ramp up period could result in a funded ratio that is projected to decrease initially while the contribution impact of the increase in the UAL is phased in.

For projected contributions under alternate investment return scenarios, please see the "Future Investment Return Scenarios" in the "Risk Analysis" section.

Our online pension plan modeling and projection tool, Pension Outlook, is available in the Employers section of the CalPERS website. Pension Outlook is a tool to help plan and budget pension costs into the future with results and charts that are easy to understand.



BACK TO AGENDA

# Other Pooled Miscellaneous Risk Pool Rate Plans

All of the results presented in this Section 1 report, except those shown below, correspond to rate plan 27069. In many cases, employers have additional rate plans within the same risk pool. For cost analysis and budgeting it is useful to consider contributions for these rate plans as a whole rather than individually. The estimated contribution amounts and rates for all of the employer's rate plans in the Miscellaneous Risk Pool are shown below and assume that the payroll for each rate plan will grow according to the overall payroll growth assumption of 2.75% per year for three years.

| | Fiscal Year 2021-22 | Fiscal Year 2022-23 |
|---|---|---|
| **Estimated Combined Employer Contributions for all Pooled Miscellaneous Rate Plans** | | |
| Projected Payroll for the Contribution Year | $1,374,626 | $1,549,227 |
| Estimated Employer Normal Cost | $123,076 | $136,026 |
| Required Payment on Amortization Bases | $100,114 | $117,750 |
| Estimated Total Employer Contributions | $223,190 | $253,776 |
| Estimated Total Employer Contribution Rate (illustrative only) | 16.24% | 16.38% |



BACK TO AGENDA

# Cost

**Actuarial Determination of Pension Plan Cost**

Contributions to fund the pension plan are comprised of two components:

- Normal Cost, expressed as a percentage of total active payroll
- Amortization of the Unfunded Accrued Liability (UAL), expressed as a dollar amount

For fiscal years prior to 2016-17, the Amortization of UAL component was expressed as a percentage of total active payroll. Starting with fiscal year 2016-17, the Amortization of UAL component was expressed as a dollar amount and invoiced on a monthly basis. There continues to be an option to prepay this amount during July of each fiscal year.

The Normal Cost component is expressed as a percentage of active payroll with employer and employee contributions payable as part of the regular payroll reporting process.

The determination of both components requires complex actuarial calculations. The calculations are based on a set of actuarial assumptions which can be divided into two categories:

- Demographic assumptions (e.g., mortality rates, retirement rates, employment termination rates, disability rates)
- Economic assumptions (e.g., future investment earnings, inflation, salary growth rates)

These assumptions reflect CalPERS' best estimate of future experience of the plan and are long term in nature. We recognize that all assumptions will not be realized in any given year. For example, the investment earnings at CalPERS have averaged 5.5% over the 20 years ending June 30, 2020, yet individual fiscal year returns have ranged from -23.6% to +20.7%. In addition, CalPERS reviews all actuarial assumptions by conducting in-depth experience studies every four years, with the most recent experience study completed in 2017.



BACK TO AGENDA

# Changes Since the Prior Year's Valuation

**Benefits**

The standard actuarial practice at CalPERS is to recognize mandated legislative benefit changes in the first annual valuation following the effective date of the legislation. Voluntary benefit changes by plan amendment are generally included in the first valuation that is prepared after the amendment becomes effective, even if the valuation date is prior to the effective date of the amendment.

This valuation generally reflects plan changes by amendments effective before the date of the report. Please refer to the "Plan's Major Benefit Options" and Appendix B of the Section 2 Report for a summary of the plan provisions used in this valuation.

**Actuarial Methods and Assumptions**

The are no significant changes to the actuarial methods or assumptions for the 2020 actuarial valuation.

# Subsequent Events

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2020. Changes in the value of assets subsequent to that date are not reflected. Investment returns below the assumed rate of return will increase future required contributions while investment returns above the assumed rate of return will decrease future required contributions.

CalPERS will be completing an Asset Liability Management (ALM) process in November 2021 that will review the capital market assumptions and the strategic asset allocation and ascertain whether a change in the discount rate and other economic assumptions is warranted. As part of the ALM process the Actuarial Office will be completing an Experience Study to review the demographic experience of the retirement system and make recommendations to modify future assumptions where appropriate.

Furthermore, this valuation does not reflect any impacts from the COVID-19 pandemic on your pension plan. The impact of COVID-19 on retirement plans is not yet known and CalPERS actuaries will continue to monitor the effects and where necessary make future adjustments to actuarial assumptions.

The projected employer contributions on Page 6 are calculated under the assumption that the discount rate remains at 7.0% going forward and that the realized rate of return on assets for fiscal year 2020-21 is 7.0%.

This actuarial valuation report reflects statutory changes, regulatory changes and CalPERS Board actions through January 2021. Any subsequent changes or actions are not reflected.



BACK TO AGENDA

# Assets and Liabilities

- **Breakdown of Entry Age Accrued Liability**
- **Allocation of Plan's Share of Pool's Experience/Assumption Change**
- **Development of Plan's Share of Pool's Market Value of Assets**
- **Schedule of Plan's Amortization Bases**
- **Amortization Schedule and Alternatives**
- **Employer Contribution History**
- **Funding History**

BACK TO AGENDA

# Breakdown of Entry Age Accrued Liability

| | |
|---|---|
| Active Members | $501,729 |
| Transferred Members | 102,249 |
| Terminated Members | 30,121 |
| Members and Beneficiaries Receiving Payments | 0 |
| Total | $634,099 |

# Allocation of Plan's Share of Pool's Experience/Assumption Change

It is the policy of CalPERS to ensure equity within the risk pools by allocating the pool's experience gains/losses and assumption changes in a manner that treats each employer equitably and maintains benefit security for the members of the System while minimizing substantial variations in employer contributions. The Pool's experience gains/losses and impact of assumption/method changes is allocated to the plan as follows:

| | | |
|---|---|---|
| 1. | Plan's Accrued Liability | $634,099 |
| 2. | Projected UAL balance at 6/30/2020 | 55,423 |
| 3. | Pool's Accrued Liability[1] | 19,314,480,060 |
| 4. | Sum of Pool's Individual Plan UAL Balances at 6/30/2020[1] | 4,306,566,797 |
| 5. | Pool's 2019/20 Investment (Gain)/Loss[1] | 344,968,792 |
| 6. | Pool's 2019/20 Non-Investment (Gain)/Loss[1] | 60,428,629 |
| 7. | Plan's Share of Pool's Investment (Gain)/Loss: [(1) - (2)] ÷ [(3) - (4)] × (5) | 13,301 |
| 8. | Plan's Share of Pool's Non-Investment (Gain)/Loss: (1) ÷ (3) × (6) | 1,984 |
| 9. | Plan's New (Gain)/Loss as of 6/30/2020: (7) + (8) | 15,285 |

[1] Does not include plans that transferred to Pool on the valuation date.

# Development of the Plan's Share of Pool's Market Value of Assets

| | | |
|---|---|---|
| 10. | Plan's UAL: (2) + (9) | $70,708 |
| 11. | Plan's Share of Pool's MVA: (1) - (10) | $563,391 |



BACK TO AGENDA

# Schedule of Plan's Amortization Bases

Note that there is a two-year lag between the valuation date and the start of the contribution fiscal year.

- The assets, liabilities, and funded status of the plan are measured as of the valuation date: June 30, 2020.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: fiscal year 2022-23.

This two-year lag is necessary due to the amount of time needed to extract and test the membership and financial data, and the need to provide public agencies with their required employer contribution well in advance of the start of the fiscal year.

The Unfunded Accrued Liability (UAL) is used to determine the employer contribution and therefore must be rolled forward two years from the valuation date to the first day of the fiscal year for which the contribution is being determined. The UAL is rolled forward each year by subtracting the expected payment on the UAL for the fiscal year and adjusting for interest. The expected payment for the first fiscal year is determined by the actuarial valuation two years ago and the contribution for the second year is from the actuarial valuation one year ago. Additional discretionary payments are reflected in the Expected Payments column in the fiscal year they were made by the agency.

| Reason for Base | Date Est. | Ramp Level 2022-23 | Ramp Shape | Escala-tion Rate | Amort. Period | Balance 6/30/20 | Expected Payment 2020-21 | Balance 6/30/21 | Expected Payment 2021-22 | Balance 6/30/22 | Minimum Required Payment 2022-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fresh Start | 6/30/15 | No Ramp | | 2.75% | 0 | 1,762 | 930 | 923 | 955 | 0 | 0 |
| Non-Investment (Gain)/Loss | 6/30/16 | 100% | Up/Down | 2.75% | 26 | (1,239) | (49) | (1,275) | (67) | (1,295) | (86) |
| Investment (Gain)/Loss | 6/30/16 | 100% | Up/Down | 2.75% | 26 | 12,281 | 483 | 12,641 | 661 | 12,842 | 849 |
| Assumption Change | 6/30/16 | 100% | Up/Down | 2.75% | 16 | 8,956 | 488 | 9,078 | 668 | 9,022 | 858 |
| Non-Investment (Gain)/Loss | 6/30/17 | 80% | Up/Down | 2.75% | 27 | (350) | (9) | (365) | (14) | (376) | (20) |
| Investment (Gain)/Loss | 6/30/17 | 80% | Up/Down | 2.75% | 27 | (8,335) | (222) | (8,689) | (341) | (8,944) | (468) |
| Assumption Change | 6/30/17 | 80% | Up/Down | 2.75% | 17 | 16,070 | 586 | 16,589 | 903 | 16,816 | 1,237 |
| Non-Investment (Gain)/Loss | 6/30/18 | 60% | Up/Down | 2.75% | 28 | 1,439 | 20 | 1,519 | 40 | 1,584 | 62 |
| Investment (Gain)/Loss | 6/30/18 | 60% | Up/Down | 2.75% | 28 | (3,498) | (48) | (3,693) | (98) | (3,850) | (151) |
| Assumption Change | 6/30/18 | 60% | Up/Down | 2.75% | 18 | 20,607 | 384 | 21,652 | 790 | 22,350 | 1,217 |
| Method Change | 6/30/18 | 60% | Up/Down | 2.75% | 18 | 3,512 | 65 | 3,691 | 135 | 3,810 | 207 |
| Non-Investment (Gain)/Loss | 6/30/19 | No Ramp | | 0.00% | 19 | 1,968 | 0 | 2,106 | 192 | 2,055 | 192 |
| Investment (Gain)/Loss | 6/30/19 | 40% | Up Only | 0.00% | 19 | 2,250 | 0 | 2,408 | 53 | 2,522 | 105 |
| Non-Investment (Gain)/Loss | 6/30/20 | No Ramp | | 0.00% | 20 | 1,984 | 0 | 2,123 | 0 | 2,272 | 207 |
| Investment (Gain)/Loss | 6/30/20 | 20% | Up Only | 0.00% | 20 | 13,301 | 0 | 14,232 | 0 | 15,228 | 333 |
| **Total** | | | | | | **70,708** | **2,628** | **72,940** | **3,877** | **74,036** | **4,542** |

The (gain)/loss bases are the plan's allocated share of the risk pool's (gain)/loss for the fiscal year as disclosed in "Allocation of Plan's Share of Pool's Experience/Assumption Change" earlier in this section. These (gain)/loss bases will be amortized in accordance with the CalPERS amortization policy in effect at the time the base was established.



BACK TO AGENDA

# Amortization Schedule and Alternatives

The amortization schedule on the previous page shows the minimum contributions required according to the CalPERS amortization policy. Many agencies have expressed a desire for a more stable pattern of payments or have indicated interest in paying off the unfunded accrued liabilities more quickly than required. As such, we have provided alternative amortization schedules to help analyze the current amortization schedule and illustrate the potential savings of accelerating unfunded liability payments.

Shown on the following page are future year amortization payments based on 1) the current amortization schedule reflecting the individual bases and remaining periods shown on the previous page, and 2) alternative "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule. To initiate a Fresh Start, please consult with your plan actuary.

The Current Amortization Schedule typically contains both positive and negative bases. Positive bases result from plan changes, assumption changes, method changes or plan experience that increase unfunded liability. Negative bases result from plan changes, assumption changes, method changes, or plan experience that decrease unfunded liability. The combination of positive and negative bases within an amortization schedule can result in unusual or problematic circumstances in future years, such as:

- When a negative payment would be required on a positive unfunded actuarial liability; or
- When the payment would completely amortize the total unfunded liability in a very short time period, and results in a large change in the employer contribution requirement.

In any year when one of the above scenarios occurs, the actuary will consider corrective action such as replacing the existing unfunded liability bases with a single "fresh start" base and amortizing it over a reasonable period.

The Current Amortization Schedule on the following page may appear to show that, based on the current amortization bases, one of the above scenarios will occur at some point in the future. It is impossible to know today whether such a scenario will in fact arise since there will be additional bases added to the amortization schedule in each future year. Should such a scenario arise in any future year, the actuary will take appropriate action based on guidelines in the CalPERS amortization policy.

# Amortization Schedule and Alternatives (continued)

| | Current Amortization Schedule | | Alternate Schedules | | | |
|---|---|---|---|---|---|---|
| | | | 15 Year Amortization | | 10 Year Amortization | |
| **Date** | **Balance** | **Payment** | **Balance** | **Payment** | **Balance** | **Payment** |
| **6/30/2022** | 74,036 | 4,542 | 74,037 | 7,858 | 74,037 | 10,191 |
| **6/30/2023** | 74,522 | 5,681 | 71,091 | 7,859 | 68,678 | 10,191 |
| **6/30/2024** | 73,862 | 6,662 | 67,938 | 7,858 | 62,944 | 10,190 |
| **6/30/2025** | 72,140 | 7,184 | 64,565 | 7,858 | 56,809 | 10,190 |
| **6/30/2026** | 69,760 | 7,661 | 60,956 | 7,859 | 50,245 | 10,191 |
| **6/30/2027** | 66,718 | 7,808 | 57,094 | 7,859 | 43,220 | 10,190 |
| **6/30/2028** | 63,311 | 7,957 | 52,961 | 7,858 | 35,705 | 10,190 |
| **6/30/2029** | 59,511 | 8,111 | 48,540 | 7,858 | 27,664 | 10,191 |
| **6/30/2030** | 55,286 | 8,272 | 43,809 | 7,859 | 19,059 | 10,191 |
| **6/30/2031** | 50,600 | 8,435 | 38,746 | 7,858 | 9,851 | 10,190 |
| **6/30/2032** | 45,418 | 8,605 | 33,330 | 7,858 | | |
| **6/30/2033** | 39,695 | 8,774 | 27,535 | 7,859 | | |
| **6/30/2034** | 33,399 | 8,717 | 21,333 | 7,859 | | |
| **6/30/2035** | 26,721 | 8,208 | 14,697 | 7,858 | | |
| **6/30/2036** | 20,102 | 6,974 | 7,597 | 7,858 | | |
| **6/30/2037** | 14,294 | 5,663 | | | | |
| **6/30/2038** | 9,438 | 4,280 | | | | |
| **6/30/2039** | 5,671 | 3,090 | | | | |
| **6/30/2040** | 2,872 | 2,336 | | | | |
| **6/30/2041** | 657 | 680 | | | | |
| **6/30/2042** | | | | | | |
| **6/30/2043** | | | | | | |
| **6/30/2044** | | | | | | |
| **6/30/2045** | | | | | | |
| **6/30/2046** | | | | | | |
| **6/30/2047** | | | | | | |
| **6/30/2048** | | | | | | |
| **6/30/2049** | | | | | | |
| **6/30/2050** | | | | | | |
| **6/30/2051** | | | | | | |
| **Total** | **129,640** | | **117,876** | | **101,905** | |
| **Interest Paid** | **55,604** | | **43,839** | | **27,868** | |
| **Estimated Savings** | | | **11,765** | | **27,736** | |



BACK TO AGENDA

# Employer Contribution History

The table below provides a recent history of the required employer contributions for the plan. The amounts are based on the actuarial valuation from two years prior and does not account for prepayments or benefit changes made during a fiscal year. Additional discretionary payments before July 1, 2019 or after June 30, 2020 are not included.

| Fiscal Year | Employer Normal Cost | Unfunded Liability Payment ($) | Additional Discretionary Payments |
|---|---|---|---|
| 2016 - 17 | 6.555% | $0 | N/A |
| 2017 - 18 | 6.533% | 867 | N/A |
| 2018 - 19 | 6.842% | 1,184 | N/A |
| 2019 - 20 | 6.985% | 1,693 | 0 |
| 2020 - 21 | 7.732% | 2,628 | |
| 2021 - 22 | 7.59% | 3,877 | |
| 2022 - 23 | 7.47% | 4,542 | |

# Funding History

The table below shows the recent history of the actuarial accrued liability, share of the pool's market value of assets, unfunded accrued liability, funded ratio, and annual covered payroll.

| Valuation Date | Accrued Liability (AL) | Share of Pool's Market Value of Assets (MVA) | Unfunded Accrued Liability (UAL) | Funded Ratio | Annual Covered Payroll |
|---|---|---|---|---|---|
| 06/30/2013 | $1,308 | $1,755 | ($447) | 134.2% | $136,000 |
| 06/30/2014 | 22,839 | 24,378 | (1,539) | 106.7% | 162,000 |
| 06/30/2015 | 68,511 | 65,975 | 2,536 | 96.3% | 320,082 |
| 06/30/2016 | 151,777 | 137,175 | 14,602 | 90.4% | 576,762 |
| 06/30/2017 | 215,962 | 201,250 | 14,712 | 93.2% | 694,231 |
| 06/30/2018 | 330,407 | 298,169 | 32,238 | 90.2% | 702,293 |
| 06/30/2019 | 476,497 | 428,314 | 48,183 | 89.9% | 742,059 |
| 06/30/2020 | 634,099 | 563,391 | 70,708 | 88.8% | 877,789 |



BACK TO AGENDA

# Risk Analysis

- **Future Investment Return Scenarios**
- **Discount Rate Sensitivity**
- **Mortality Rate Sensitivity**
- **Maturity Measures**
- **Maturity Measures History**
- **Hypothetical Termination Liability**

BACK TO AGENDA

# Future Investment Return Scenarios

Analysis was performed to determine the effects of various future investment returns on required employer contributions. The projections below provide a range of results based on five investment return scenarios assumed to occur during the next four fiscal years (2020-21, 2021-22, 2022-23 and 2023-24). The projections also assume that all other actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur.

For fiscal years 2020-21, 2021-22, 2022-23, and 2023-24, each scenario assumes an alternate fixed annual return. The fixed return assumptions for the five scenarios are 1.0%, 4.0%, 7.0%, 9.0% and 12.0%.

These alternate investment returns were chosen based on stochastic analysis of possible future investment returns over the four-year period ending June 30, 2024. Using the expected returns and volatility of the asset classes in which the funds are invested, we produced five thousand stochastic outcomes for this period based on the most recently completed Asset Liability Management process. We then selected annual returns that approximate the 5$^{th}$, 25$^{th}$, 50$^{th}$, 75$^{th}$, and 95$^{th}$ percentiles for these outcomes. For example, of all the 4-year outcomes generated in the stochastic analysis, approximately 25% had an average annual return of 4.0% or less.

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 1.0% or greater than 12.0% over this four-year period, the likelihood of a single investment return less than 1.0% or greater than 12.0% in any given year is much greater.

| Assumed Annual Return From 2020-21 through 2023-24 | Projected Employer Contributions | | | |
|---|---|---|---|---|
| | 2023-24 | 2024-25 | 2025-26 | 2026-27 |
| **1.0%** | | | | |
| Normal Cost | 7.5% | 7.5% | 7.5% | 7.5% |
| UAL Contribution | $6,500 | $9,200 | $12,000 | $16,000 |
| **4.0%** | | | | |
| Normal Cost | 7.5% | 7.5% | 7.5% | 7.5% |
| UAL Contribution | $6,100 | $7,900 | $9,800 | $12,000 |
| **7.0%** | | | | |
| Normal Cost | 7.5% | 7.5% | 7.5% | 7.5% |
| UAL Contribution | $5,700 | $6,700 | $7,200 | $7,700 |
| **9.0%** | | | | |
| Normal Cost | 7.6% | 7.8% | 8.0% | 7.4% |
| UAL Contribution | $5,500 | $6,100 | $6,100 | $5,700 |
| **12.0%** | | | | |
| Normal Cost | 7.6% | 7.8% | 8.0% | 7.4% |
| UAL Contribution | $5,100 | $4,800 | $0 | $0 |



BACK TO AGENDA

# Discount Rate Sensitivity

The discount rate assumption is calculated as the sum of the assumed real rate of return and the assumed annual price inflation, currently 4.50% and 2.50%, respectively. Changing either the price inflation assumption or the real rate of return assumption will change the discount rate. The sensitivity of the valuation results to the discount rate assumption depends on which component of the discount rate is changed. Shown below are various valuation results as of June 30, 2020 assuming alternate discount rates by changing the two components independently. Results are shown using the current discount rate of 7.0% as well as alternate discount rates of 6.0% and 8.0%. The rates of 6.0% and 8.0% were selected since they illustrate the impact of a 1.0% increase or decrease to the 7.0% assumption.

**Sensitivity to the Real Rate of Return Assumption**

| As of June 30, 2020 | 1% Lower Real Return Rate | Current Assumptions | 1% Higher Real Return Rate |
|---|---|---|---|
| **Discount Rate** | **6.0%** | **7.0%** | **8.0%** |
| Inflation | 2.5% | 2.5% | 2.5% |
| **Real Rate of Return** | **3.5%** | **4.5%** | **5.5%** |
| a) Total Normal Cost | 17.65% | 14.22% | 11.59% |
| b) Accrued Liability | $761,896 | $634,099 | $533,333 |
| c) Market Value of Assets | $563,391 | $563,391 | $563,391 |
| d) Unfunded Liability/(Surplus) [(b) - (c)] | $198,505 | $70,708 | ($30,058) |
| e) Funded Status | 73.9% | 88.8% | 105.6% |

**Sensitivity to the Price Inflation Assumption**

| As of June 30, 2020 | 1% Lower Inflation Rate | Current Assumptions | 1% Higher Inflation Rate |
|---|---|---|---|
| **Discount Rate** | **6.0%** | **7.0%** | **8.0%** |
| **Inflation** | **1.5%** | **2.5%** | **3.5%** |
| Real Rate of Return | 4.5% | 4.5% | 4.5% |
| a) Total Normal Cost | 15.20% | 14.22% | 13.05% |
| b) Accrued Liability | $674,349 | $634,099 | $584,502 |
| c) Market Value of Assets | $563,391 | $563,391 | $563,391 |
| d) Unfunded Liability/(Surplus) [(b) - (c)] | $110,958 | $70,708 | $21,111 |
| e) Funded Status | 83.5% | 88.8% | 96.4% |

# Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2020 plan costs and funded status under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2017. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.

| As of June 30, 2020 | 10% Lower Mortality Rates | Current Assumptions | 10% Higher Mortality Rates |
|---|---|---|---|
| a) Total Normal Cost | 14.49% | 14.22% | 13.97% |
| b) Accrued Liability | $647,155 | $634,099 | $622,080 |
| c) Market Value of Assets | $563,391 | $563,391 | $563,391 |
| d) Unfunded Liability/(Surplus) [(b) - (c)] | $83,764 | $70,708 | $58,689 |
| e) Funded Status | 87.1% | 88.8% | 90.6% |



BACK TO AGENDA

# Maturity Measures

As pension plans mature they become more sensitive to risks. Understanding plan maturity and how it affects the ability of a pension plan sponsor to tolerate risk is important in understanding how the pension plan is impacted by investment return volatility, other economic variables and changes in longevity or other demographic assumptions. Since it is the employer that bears the risk, it is appropriate to perform this analysis on a pension plan level considering all rate plans. The following measures are for one rate plan only.

One way to look at the maturity level of CalPERS and its plans is to look at the ratio of a plan's retiree liability to its total liability. A pension plan in its infancy will have a very low ratio of retiree liability to total liability. As the plan matures, the ratio starts increasing. A mature plan will often have a ratio above 60%-65%.

| **Ratio of Retiree Accrued Liability to Total Accrued Liability** | **June 30, 2019** | **June 30, 2020** |
|---|---|---|
| 1. Retired Accrued Liability | 0 | 0 |
| 2. Total Accrued Liability | 476,497 | 634,099 |
| 3. Ratio of Retiree AL to Total AL [(1) / (2)] | 0.00 | 0.00 |

Another measure of maturity level of CalPERS and its plans is to look at the ratio of actives to retirees, also called the Support Ratio. A pension plan in its infancy will have a very high ratio of active to retired members. As the plan matures, and members retire, the ratio starts declining. A mature plan will often have a ratio near or below one. The average support ratio for CalPERS public agency plans is 1.25.

| **Support Ratio** | **June 30, 2019** | **June 30, 2020** |
|---|---|---|
| 1. Number of Actives | 8 | 9 |
| 2. Number of Retirees | 0 | 0 |
| 3. Support Ratio [(1) / (2)] | N/A | N/A |



BACK TO AGENDA

# Maturity Measures (Continued)

The actuarial calculations supplied in this communication are based on various assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., terminations, deaths, disabilities, retirements, salary growth, and investment return) are exactly realized each year, there will be differences on a year-to-year basis. The year-to-year differences between actual experience and the assumptions are called actuarial gains and losses and serve to lower or raise required employer contributions from one year to the next. Therefore, employer contributions will inevitably fluctuate, especially due to the ups and downs of investment returns.

**Asset Volatility Ratio (AVR)**

Shown in the table below is the asset volatility ratio (AVR), which is the ratio of market value of assets to payroll. Plans that have higher AVR experience more volatile employer contributions (as a percentage of payroll) due to investment return. For example, a plan with an asset-to-payroll ratio of 8 may experience twice the contribution volatility due to investment return volatility than a plan with an asset-to-payroll ratio of 4. It should be noted that this ratio is a measure of the current situation. It increases over time but generally tends to stabilize as the plan matures.

**Liability Volatility Ratio (LVR)**

Also shown in the table below is the liability volatility ratio (LVR), which is the ratio of accrued liability to payroll. Plans that have a higher LVR experience more volatile employer contributions (as a percentage of payroll) due to investment return and changes in liability. For example, a plan with LVR ratio of 8 is expected to have twice the contribution volatility of a plan with LVR of 4. It should be noted that this ratio indicates a longer-term potential for contribution volatility. The AVR, described above, will tend to move closer to the LVR as a plan matures.

| Contribution Volatility | June 30, 2019 | June 30, 2020 |
|---|---|---|
| 1. Market Value of Assets | $428,314 | $563,391 |
| 2. Payroll | 742,059 | 877,789 |
| 3. Asset Volatility Ratio (AVR) [(1) / (2)] | 0.6 | 0.6 |
| 4. Accrued Liability | $476,497 | $634,099 |
| 5. Liability Volatility Ratio (LVR) [(4) / (2)] | 0.6 | 0.7 |

# Maturity Measures History

| Valuation Date | Ratio of Retiree Accrued Liability to Total Accrued Liability | Support Ratio | Asset Volatility Ratio | Liability Volatility Ratio |
|---|---|---|---|---|
| 06/30/2017 | 0.00 | N/A | 0.3 | 0.3 |
| 06/30/2018 | 0.00 | N/A | 0.4 | 0.5 |
| 06/30/2019 | 0.00 | N/A | 0.6 | 0.6 |
| 06/30/2020 | 0.00 | N/A | 0.6 | 0.7 |



BACK TO AGENDA

# Hypothetical Termination Liability

The hypothetical termination liability is an estimate of the financial position of the plan had the contract with CalPERS been terminated as of June 30, 2020. The plan liability on a termination basis is calculated differently compared to the plan's ongoing funding liability. For the hypothetical termination liability calculation, both compensation and service are frozen as of the valuation date and no future pay increases or service accruals are assumed. This measure of funded status is not appropriate for assessing the need for future employer contributions in the case of an ongoing plan, that is, for an employer that continues to provide CalPERS retirement benefits to active employees.

A more conservative investment policy and asset allocation strategy was adopted by the CalPERS Board for the Terminated Agency Pool. The Terminated Agency Pool has limited funding sources since no future employer contributions will be made. Therefore, expected benefit payments are secured by risk-free assets and benefit security for members is increased while limiting the funding risk. However, this asset allocation has a lower expected rate of return than the PERF and consequently, a lower discount rate is assumed. The lower discount rate for the Terminated Agency Pool results in higher liabilities for terminated plans.

The effective termination discount rate will depend on actual market rates of return for risk-free securities on the date of termination. As market discount rates are variable, the table below shows a range for the hypothetical termination liability based on the lowest and highest interest rates observed during an approximate 19-month period from 12 months before the valuation date to 7 months after.

| Market Value of Assets (MVA) | Hypothetical Termination Liability[1,2] at 0.75% | Funded Status | Unfunded Termination Liability at 0.75% | Hypothetical Termination Liability[1,2] at 2.50% | Funded Status | Unfunded Termination Liability at 2.50% |
|---|---|---|---|---|---|---|
| $563,391 | $1,840,967 | 30.6% | $1,277,576 | $1,182,128 | 47.7% | $618,737 |

[1] The hypothetical liabilities calculated above include a 5% mortality contingency load in accordance with Board policy. Other actuarial assumptions can be found in Appendix A of the Section 2 report.

[2] The current discount rate assumption used for termination valuations is a weighted average of the 10-year and 30-year U.S. Treasury yields where the weights are based on matching asset and liability durations as of the termination date. The discount rates used in the table are based on 20-year Treasury bonds, rounded to the nearest quarter percentage point, which is a good proxy for most plans. The 20-year Treasury yield was 1.18% on June 30, 2020, and was 1.68% on January 31, 2021.

In order to terminate the plan, you must first contact our Retirement Services Contract Unit to initiate a Resolution of Intent to Terminate. The completed Resolution will allow the plan actuary to give you a preliminary termination valuation with a more up-to-date estimate of the plan liabilities. CalPERS advises you to consult with the plan actuary before beginning this process.



BACK TO AGENDA

# Participant Data

The table below shows a summary of your plan's member data upon which this valuation is based:

| | June 30, 2019 | June 30, 2020 |
|---|---|---|
| **Active Members** | | |
| Counts | 8 | 9 |
| Average Attained Age | N/A | 42.8 |
| Average Entry Age to Rate Plan | N/A | 39.8 |
| Average Years of Credited Service | N/A | 3.1 |
| Average Annual Covered Pay | $92,757 | $97,532 |
| Annual Covered Payroll | $742,059 | $877,789 |
| Projected Annual Payroll for Contribution Year | $804,978 | $952,216 |
| Present Value of Future Payroll | $7,206,406 | $8,136,197 |
| **Transferred Members** | 2 | 3 |
| **Separated Members** | 4 | 4 |
| **Retired Members and Beneficiaries** | | |
| Counts* | 0 | 0 |
| Average Annual Benefits* | N/A | $0 |

Counts of members included in the valuation are counts of the records processed by the valuation. Multiple records may exist for those who have service in more than one valuation group. This does not result in double counting of liabilities.

* Values include community property settlements.

# List of Class 1 Benefit Provisions

This plan has the additional Class 1 Benefit Provisions:

- None



BACK TO AGENDA

# Plan's Major Benefit Options

Shown below is a summary of the major optional benefits for which your agency has contracted. A description of principal standard and optional plan provisions is in Section 2.

| | **Benefit Group** | |
|---|---|---|
| **Member Category** | Misc | |
| **Demographics** | | |
| Actives | Yes | |
| Transfers/Separated | Yes | |
| Receiving | No | |
| **Benefit Provision** | | |
| Benefit Formula | 2% @ 62 | |
| Social Security Coverage | No | |
| Full/Modified | Full | |
| Employee Contribution Rate | 6.75% | |
| Final Average Compensation Period | Three Year | |
| Sick Leave Credit | Yes | |
| Non-Industrial Disability | Standard | |
| Industrial Disability | No | |
| Pre-Retirement Death Benefits | | |
| Optional Settlement 2 | Yes | |
| 1959 Survivor Benefit Level | Level 4 | |
| Special | No | |
| Alternate (firefighters) | No | |
| Post-Retirement Death Benefits | | |
| Lump Sum | $500 | |
| Survivor Allowance (PRSA) | No | |
| COLA | 2% | |



BACK TO AGENDA

# PEPRA Member Contribution Rates

The California Public Employees' Pension Reform Act of 2013 (PEPRA) established new benefit formulas, final compensation period, and contribution requirements for "new" employees (generally those first hired into a CalPERS-covered position on or after January 1, 2013). In accordance with Government Code Section 7522.30(b), "new members … shall have an initial contribution rate of at least 50% of the normal cost rate." The normal cost rate is dependent on the plan of retirement benefits, actuarial assumptions and demographics of the risk pool, particularly members' entry age. Should the total normal cost rate change by more than 1% from the base total normal cost rate, the new member rate shall be 50% of the new normal cost rate rounded to the nearest quarter percent.

The table below shows the determination of the PEPRA member contribution rates effective July 1, 2022, based on 50% of the total normal cost rate as of the June 30, 2020 valuation.

| | | Basis for Current Rate | | Rates Effective July 1, 2022 | | | |
|---|---|---|---|---|---|---|---|
| **Rate Plan Identifier** | **Benefit Group Name** | **Total Normal Cost** | **Member Rate** | **Total Normal Cost** | **Change** | **Change Needed** | **Member Rate** |
| 27069 | Miscellaneous PEPRA Level | 13.735% | 6.75% | 14.22% | 0.485% | No | 6.75% |

# Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

# Risk Pool Actuarial Valuation Information

## Section 2 may be found on the CalPERS website (calpers.ca.gov) in the Forms and Publications section



BACK TO AGENDA

**California Public Employees' Retirement System**
**California Employers' Pension Prefunding Trust (CEPPT)**
400 Q Street, Sacramento, CA 95811
**www.calpers.ca.gov**

# California Employers' Pension Prefunding Trust (CEPPT)
# CERTIFICATION OF FUNDING POLICY

**EMPLOYER NAME:** Livermore Amador Valley Transit Authority

## SECTION I: CEPPT Asset Allocation Strategy Selection

As the employer, I certify that my agency chooses the following CEPPT asset allocation strategy (select one):

| CEPPT Asset Allocation Strategy | 10 Year Expected Rate of Return | Expected Volatility (Standard Deviation) |
|---|---|---|
| ☐ **Strategy 1** | 5.0% | 8.2% |
| ☒ **Strategy 2** | 4.0% | 5.2% |
| ☐ **Concurrent Enrollment** | - | - |

## SECTION II: Contributions and Reimbursements

As the employer, I certify that we intend to make CEPPT contributions and request eligible reimbursements in the following manner:

**Contributions:**

We intend to make an initial contribution of $100,000 on or around 10/2021 (MM/YYYY).

For fiscal year ending June 30, 2023 (YYYY) we intend to contribute the estimated following amount(s) in:

Strategy 1: $_____ and/or

Strategy 2: $100,000

For fiscal year ending June 30, 2024 (YYYY) we intend to contribute the estimated following amount(s) in:

Strategy 1: $_____ and/or

Strategy 2: $100,000

**California Public Employees' Retirement System**
**California Employers' Pension Prefunding Trust (CEPPT)**
400 Q Street, Sacramento, CA 95811
**www.calpers.ca.gov**

# California Employers' Pension Prefunding Trust (CEPPT)
# CERTIFICATION OF FUNDING POLICY

**Reimbursements:**

During the two years period identified above, do you intend to seek a reimbursement?

☐ Yes

☒ No

If you answered yes:

For fiscal year ending June 30, _____ we intend to seek an approximate reimbursement of $_____.
(YYYY)

For fiscal year ending June 30, _____ we intend to seek an approximate reimbursement of $_____.
(YYYY)

**COMMENTS**:

**California Public Employees' Retirement System**
**California Employers' Pension Prefunding Trust (CEPPT)**
400 Q Street, Sacramento, CA 95811
**www.calpers.ca.gov**

# California Employers' Pension Prefunding Trust (CEPPT)
# CERTIFICATION OF FUNDING POLICY

We understand we will be asked to provide information to CalPERS as required to facilitate compliance with Governmental Accounting Standards Board (GASB) reporting requirements and we agree to provide this information to CalPERS on a timely basis.

We understand that CEPPT will be reported in aggregate as a fiduciary fund for CalPERS reporting. CEPPT assets will not be reported under GASB 67/68.

We understand that the cash flow information provided in Section II are estimated amounts and is being used for CEPPT asset management purposes. There is no implied commitment to contribute or reimburse.

Livermore Amador Valley Transit Authority
Employer Name

Michael Tree
Printed Name of Person Signing the Form

Executive Director
Title of Person Signing the Form

Signature Date

Tamara Edwards
Designated Employer Contact Name

Director of Finance
Title of Designated Employer Contact

925-455-7566 tedwards@lavta.org
Phone # Email Address

**California Public Employees' Retirement System**
**California Employers' Pension Prefunding Trust (CEPPT)**
400 Q Street, Sacramento, CA 95811
**www.calpers.ca.gov**

# California Employers' Pension Prefunding Trust (CEPPT)
# CERTIFICATION OF FUNDING POLICY

**This page provides instructions to complete each section of the Certification of Pension Funding Policy.**

**SECTION I: CEPPT Asset Allocation Strategy Selection**

Your CEPPT assets will be invested using the asset allocation strategy checked here. Each strategy has a different assumed 10 year expected rate of return and risk profile.

**SECTION II: Contributions and Reimbursements**

Here we ask you to indicate how you expect to make contributions to, and seek reimbursement from, the trust. All contributions are voluntary and never required. This section is for informational purpose. There is no implied commitment to contribute or reimburse. Information provided is intended for investment forecast and asset management purposes.

**CALIFORNIA EMPLOYERS' PENSION PREFUNDING TRUST PROGRAM**

# AGREEMENT AND ELECTION OF

Livermore Amador Valley Transit Authority

**(NAME OF EMPLOYER)**

## to Prefund Employer Contributions to a Defined Benefit Pension Plan

WHEREAS (1) Government Code (GC) Section 21711(a) establishes in the State Treasury the California Employers' Pension Prefunding Trust Fund (CEPPT), a special trust fund for the purpose of allowing eligible employers to prefund their required pension contributions to a defined benefit pension plan (each an Employer Pension Plan) by receiving and holding in the CEPPT amounts that are intended to be contributed to an Employer Pension Plan at a later date; and

WHEREAS (2) GC Section 21711(b) provides that the California Public Employees' Retirement System (CalPERS) Board of Administration (Board) has sole and exclusive control of the administration and investment of the CEPPT, the purposes of which include, but are not limited to (i) receiving contributions from participating employers; (ii) investing contributed amounts and income thereon, if any, in order to receive yield on the funds; and (iii) disbursing contributed amounts and income thereon, if any, to pay for costs of administration of the CEPPT and to deposit employer contributions into Employer Pension Plans in accordance with their terms; and

WHEREAS (3) Livermore Amador Valley Transit Authority

**(NAME OF EMPLOYER)**

(Employer) desires to participate in the CEPPT upon the terms and conditions set by the Board and as set forth herein; and

WHEREAS (4) Employer may participate in the CEPPT upon (i) approval by the Board and (ii) filing a duly adopted and executed Agreement and Election to Prefund Employer Contributions to a Defined Benefit Pension Plan (Agreement) as provided in the terms and conditions of the Agreement; and

WHEREAS (5) The CEPPT is a trust fund that is intended to perform an essential governmental function (that is, the investment of funds by a State, political subdivision or 115 entity) within the meaning of Internal Revenue Code (Code) Section 115 and Internal Revenue Service Revenue Ruling 77-261, and as an Investment Trust Fund, as defined in Governmental Accounting Standards Board (GASB) Statement No. 84, Paragraph 16, for accounting and financial reporting of fiduciary activities from the



BACK TO AGENDA

external portion of investment pools and individual investment accounts that are held in a trust that meets the criteria in Paragraph 11c(1).

WHEREAS (6) The CEPPT is not a Code Section 401(a) qualified trust and the assets held in the CEPPT are not assets of any Employer Pension Plan or any plan qualified under Code Section 401(a).

NOW, THEREFORE, BE IT RESOLVED THAT EMPLOYER HEREBY MAKES THE FOLLOWING REPRESENTATION AND WARRANTY AND THAT THE BOARD AND EMPLOYER AGREE TO THE FOLLOWING TERMS AND CONDITIONS:

A. Employer Representation and Warranty

Employer hereby represents and warrants that it is the State of California or a political subdivision thereof, or an entity whose income is excluded from gross income under Code Section 115(1).

B. Adoption and Approval of the Agreement; Effective Date; Amendment

(1) Employer's governing body shall elect to participate in the CEPPT by adopting this Agreement and filing with the Board a true and correct original or certified copy of this Agreement as follows:

Filing by mail, send to:
CalPERS
CEPPT
P.O. Box 1494
Sacramento, CA 95812-1494

Filing in person, deliver to:
CalPERS Mailroom
CEPPT
400 Q Street
Sacramento, CA 95811

(2) Upon receipt of the executed Agreement, and after approval by the Board, the Board shall fix an effective date and shall promptly notify Employer of the effective date of the Agreement. Employer shall provide the Board such other documents as the Board may request, including, but not limited to a certified copy of the resolution(s) of the governing body of Employer authorizing the adoption of the Agreement and documentation naming Employer's successor entity in the event that Employer ceases to exist prior to termination of this Agreement.

(3) The terms of this Agreement may be amended only in writing upon the agreement of both the Board and Employer, except as otherwise provided herein. Any such amendment or modification to this Agreement shall be adopted and executed in the same manner as required for the Agreement. Upon receipt of the executed amendment or modification, the Board shall fix the effective date of the amendment or modification.

(4) The Board shall institute such procedures and processes as it deems necessary to administer the CEPPT, to carry out the purposes of this Agreement, and to maintain the tax-exempt status of the CEPPT. Employer agrees to follow such procedures and processes.

C. Employer Reports Provided for the Board's Use in Trust Administration and Financial Reporting and Employer Contributions

(1) Employer shall provide to the Board a defined benefit pension plan cost report on the basis of the actuarial assumptions and methods prescribed by Actuarial Standards of Practice (ASOP) or prescribed by GASB. Such report shall be for the Board's use in trust administration and financial reporting and shall be prepared at least as often as the minimum frequency required by applicable GASB Standards. This defined benefit pension plan cost report may be prepared as an actuarial valuation report or as a GASB compliant financial report. Such report shall be:

1) prepared and signed by a Fellow or Associate of the Society of Actuaries who is also a Member of the American Academy of Actuaries or a person with equivalent qualifications acceptable to the Board;

2) prepared in accordance with ASOP or with GASB; and

3) provided to the Board prior to the Board's acceptance of contributions for the reporting period or as otherwise required by the Board.

(2) In the event that the Board determines, in its sole discretion, that Employer's cost report is not suitable for the Board's purposes and use or if Employer fails to provide a required report, the Board may obtain, at Employer's expense, a report that meets the Board's trust administration and financial reporting needs. At the Board's option, the Board may recover the costs of obtaining the report either by billing and collecting such amount from Employer or through a deduction from Employer's Prefunding Account (as defined in Paragraph D(2) below).

(3) Employer shall notify the Board in writing of the amount and timing of contributions to the CEPPT, which contributions shall be made in the manner established by the Board and in accordance with the terms of this Agreement and any procedures adopted by the Board.

(4) The Board may limit Employer's contributions to the CEPPT to the amount necessary to fully fund the actuarial present value of total projected benefit payments not otherwise prefunded through the applicable Employer Pension Plan (Unfunded PVFB), as set forth in Employer's cost report for the applicable period. If Employer's contribution would cause the assets in Employer's Prefunding Account to exceed the Unfunded PVFB, the Board may refuse to accept the contribution. If Employer's cost report for the applicable period does not set forth the Unfunded PVFB, the Board may

refuse to accept a contribution from Employer if the contribution would cause the assets in Employer's Prefunding Account to exceed Employer's total pension liability, as set forth in Employer's cost report.

(5) No contributions are required. Contributions can be made at any time following the effective date of this Agreement if Employer has first complied with the requirements of this Agreement, including Paragraph C.

(6) Employer acknowledges and agrees that assets held in the CEPPT are not assets of any Employer Pension Plan or any plan qualified under Code Section 401(a), and will not become assets of such a plan unless and until such time as they are distributed from the CEPPT and deposited into an Employer Pension Plan.

D. Administration of Accounts; Investments; Allocation of Income

(1) The Board has established the CEPPT as a trust fund consisting of an aggregation of separate single-employer accounts, with pooled administrative and investment functions.

(2) All Employer contributions and assets attributable to Employer contributions shall be separately accounted for in the CEPPT (Employer's Prefunding Account). Assets in Employer's Prefunding Account will be held for the exclusive purpose of funding Employer's contributions to its Employer Pension Plan(s) and defraying the administrative expenses of the CEPPT.

(3) The assets in Employer's Prefunding Account may be aggregated with the assets of other participating employers and may be co-invested by the Board in any asset classes appropriate for a Code Section 115 trust, subject to any additional requirements set forth in applicable law, including, but not limited to, subdivision (d) of GC Section 21711. Employer shall select between available investment strategies in accordance with applicable Board procedures.

(4) The Board may deduct the costs of administration of the CEPPT from the investment income of the CEPPT or from Employer's Prefunding Account in a manner determined by the Board.

(5) Investment income earned shall be allocated among participating employers and posted to Employer's Prefunding Account daily Monday through Friday, except on holidays, when the allocation will be posted the following business day.

(6) If, at the Board's sole discretion and in compliance with accounting and legal requirements applicable to an Investment Trust Fund and to a Code Section 115 compliant trust, the Board determines to its satisfaction that all obligations to pay defined benefit pension plan benefits in accordance with the applicable Employer Pension Plan terms have been satisfied by payment or by defeasance with no remaining risk regarding the amounts to be paid or the value of assets held in the

CEPPT, then the residual Employer assets held in Employer's Prefunding Account may be returned to Employer.

E. Reports and Statements

(1) Employer shall submit with each contribution a contribution report in the form and containing the information prescribed by the Board.

(2) The Board, at its discretion but at least annually, shall prepare and provide a statement of Employer's Prefunding Account reflecting the balance in Employer's Prefunding Account, contributions made during the period covered by the statement, investment income allocated during such period, and such other information as the Board may determine.

F. Disbursements

(1) Employer may receive disbursements from the CEPPT not to exceed, on an annual basis, the amount of the total annual Employer contributions to Employer's Pension Plan for such year.

(2) Employer shall notify the Board in writing in the manner specified by the Board of the persons authorized to request disbursements from the CEPPT on behalf of Employer.

(3) Employer's request for disbursement shall be in writing signed by Employer's authorized representative, in accordance with procedures established by the Board, and the Board may rely conclusively upon such writing. The Board may, but is not required to, require that Employer certify or otherwise demonstrate that amounts disbursed from Employer's Prefunding Account will be used solely for the purposes of the CEPPT. However, in no event shall the Board have any responsibility regarding the application of distributions from Employer's Prefunding Account.

(4) No disbursement shall be made from the CEPPT which exceeds the balance in Employer's Prefunding Account.

(5) Requests for disbursements that satisfy the above requirements will be processed on at least a monthly basis.

(6) The Board shall not be liable for amounts disbursed in error if it has acted upon the written instruction of an individual authorized by Employer to request disbursements, and is under no duty to make any investigation or inquiry about the correctness of such instruction. In the event of any other erroneous disbursement, the extent of the Board's liability shall be the actual dollar amount of the disbursement, plus interest at the actual earnings rate but not less than zero.

G. Costs of Administration

Employer shall pay its share of the costs of administration of the CEPPT, as determined by the Board and in accordance with Paragraph D.

H. Termination of Employer's Participation in the CEPPT

(1) The Board may terminate Employer's participation in the CEPPT if:

(a) Employer's governing body gives written notice to the Board of its election to terminate; or

(b) The Board determines, in its sole discretion, that Employer has failed to satisfy the terms and conditions of applicable law, this Agreement or the Board's rules, regulations or procedures.

(2) If Employer's participation in the CEPPT terminates for either of the foregoing reasons, all assets in Employer's Prefunding Account shall remain in the CEPPT, except as otherwise provided below, and shall continue to be invested and accrue income as provided in Paragraph D, and Employer shall remain subject to the terms of this Agreement with respect to such assets.

(3) After Employer's participation in the CEPPT terminates, Employer may not make further contributions to the CEPPT.

(4) After Employer's participation in the CEPPT terminates, disbursements from Employer's Prefunding Account may continue upon Employer's instruction or otherwise in accordance with the terms of this Agreement.

(5) After Employer's participation in the CEPPT terminates, the governing body of Employer may request either:

(a) A trustee to trustee transfer of the assets in Employer's Prefunding Account to a trust dedicated to prefunding Employer's required pension contributions; provided that the Board shall have no obligation to make such transfer unless the Board determines that the transfer will satisfy applicable requirements of the Code, other law and accounting standards, and the Board's fiduciary duties. If the Board determines that the transfer will satisfy these requirements, the Board shall then have one hundred fifty (150) days from the date of such determination to effect the transfer. The amount to be transferred shall be the amount in Employer's Prefunding Account as of the date of the transfer (the "transfer date") and shall include investment earnings up to an investment earnings allocation date preceding the transfer date. In no event shall the investment earnings allocation date precede the transfer date by more than 150 days.

(b) A disbursement of the assets in Employer's Prefunding Account; provided that the Board shall have no obligation to make such disbursement unless the Board determines that, in compliance with the Code, other law and accounting standards, and the Board's fiduciary duties, all of Employer's obligations for payment of defined benefit pension plan benefits and reasonable administrative costs of the Board have been satisfied. If the Board determines that the disbursement will satisfy these requirements, the Board shall then have one hundred fifty (150) days from the date of such determination to effect the disbursement. The amount to be disbursed shall be the amount in Employer's Prefunding Account as of the date of the disbursement (the "disbursement date") and shall include investment earnings up to an investment earnings allocation date preceding the disbursement date. In no event shall the investment earnings allocation date precede the disbursement date by more than 150 days.

(6) After Employer's participation in the CEPPT terminates and at such time that no assets remain in Employer's Prefunding Account, this Agreement shall terminate. To the extent that assets remain in Employer's Prefunding Account, this Agreement shall remain in full force and effect.

(7) If, for any reason, the Board terminates the CEPPT, the assets in Employer's Prefunding Account shall be paid to Employer to the extent permitted by law and Code Section 115 after retention of (i) an amount sufficient to pay the Unfunded PVFB as set forth in a current defined benefit pension plan(s) cost report prepared in compliance with ASOP and the requirements of Paragraph C(1), and (ii) amounts sufficient to pay reasonable administrative costs of the Board. Amounts retained by the Board to pay the Unfunded PVFB shall be transferred to (i) another Code Section 115 trust dedicated to prefunding Employer's required pension contributions, subject to the Board's determination that such transfer will satisfy applicable requirements of the Code, other law and accounting standards, and the Board's fiduciary duties or (ii) Employer's Pension Plan, subject to acceptance by Employer's Pension Plan.

(8) If Employer ceases to exist but Employer's Prefunding Account continues to exist, and if no provision has been made to the Board's satisfaction by Employer with respect to Employer's Prefunding Account, the Board shall be permitted to identify and appoint a successor to Employer under this Agreement, provided that the Board first determines, in its sole discretion, that there is a reasonable basis upon which to identify and appoint such a successor and provided further that such successor agrees in writing to be bound by the terms of this Agreement. If the Board is unable to identify or appoint a successor as provided in the preceding sentence, then the Board is authorized to appoint a third-party administrator or other successor to act on behalf of Employer under this Agreement and to otherwise carry out the intent of this Agreement with respect to Employer's Prefunding Account. Any and all costs associated with such appointment shall be paid from the assets attributable to Employer's Prefunding Account. At the Board's option, and subject to acceptance by Employer's Pension Plan,

the Board may instead transfer the assets in Employer's Prefunding Account to Employer's Pension Plan and terminate this Agreement.

(9) If the Board determines, in its sole discretion, that Employer has breached the representation and warranty set forth in Paragraph A., the Board shall take whatever action it deems necessary to preserve the tax-exempt status of the CEPPT.

I. Indemnification

Employer shall indemnify, defend, and hold harmless CalPERS, the Board, the CEPPT, and all of the officers, trustees, agents and employees of the foregoing from and against any loss, liability, claims, causes of action, suits, or expense (including reasonable attorneys' fees and defense costs, lien fees, judgments, fines, penalties, expert witness fees, appeals, and claims for damages of any nature whatsoever) not charged to the CEPPT and imposed as a result of, arising out of, related to or in connection with (1) the performance of the Board's duties or responsibilities under this Agreement, except to the extent that such loss, liability, suit or expense results or arises from the Board's own gross negligence, willful misconduct or material breach of this Agreement, or (2) without limiting the scope of Paragraph F(6) of this Agreement, any acts taken or transactions effected in accordance with written directions from Employer or any of its authorized representatives or any failure of the Board to act in the absence of such written directions to the extent the Board is authorized to act only at the direction of Employer.

J. General Provisions

(1) Books and Records

Employer shall keep accurate books and records connected with the performance of this Agreement. Such books and records shall be kept in a secure location at Employer's office(s) and shall be available for inspection and copying by the Board and its representatives.

(2) Notice

(a) Any notice or other written communication pursuant to this Agreement will be deemed effective immediately upon personal delivery, or if mailed, three (3) days after the date of mailing, or if delivered by express mail or e-mail, immediately upon the date of confirmed delivery, to the following:

For the Board:

Filing by mail, send to:
CalPERS
CEPPT
P.O. Box 1494
Sacramento, CA 95812-1494

Filing in person, deliver to:
CalPERS Mailroom
CEPPT
400 Q Street
Sacramento, CA 95811

For Employer:

Livermore Amador Valley Tr
1362 Rutan Ct. Suite 100
Livermore, Ca 94551

(b) Either party to this Agreement may, from time to time by notice in writing served upon the other, designate a different mailing address to which, or a different person to whom, all such notices thereafter are to be addressed.

(3) Survival

All representations, warranties, and covenants contained in this Agreement, or in any instrument, certificate, exhibit, or other writing intended by the parties to be a part of this Agreement shall survive the termination of this Agreement.

(4) Waiver

No waiver of a breach, failure of any condition, or any right or remedy contained in or granted by the provisions of this Agreement shall be effective unless it is in writing and signed by the party waiving the breach, failure, right, or remedy. No waiver of any breach, failure, right, or remedy shall be deemed a waiver of any other breach, failure, right, or remedy, whether or not similar, nor shall any waiver constitute a continuing waiver unless the writing so specifies.

(5) Necessary Acts; Further Assurances

The parties shall at their own cost and expense execute and deliver such further documents and instruments and shall take such other actions as may be reasonably required or appropriate to evidence or carry out the intent and purposes of this Agreement.

(6) Incorporation of Amendments to Applicable Laws and Accounting Standards

Any references to sections of federal or state statutes or regulations or accounting standards shall be deemed to include a reference to any amendments thereof and any successor provisions thereto.

(7) Days

Wherever in this Agreement a set number of days is stated or allowed for a particular event to occur, the days are understood to include all calendar days, including weekends and holidays, unless otherwise stated.

(8) No Third Party Beneficiaries

Except as expressly provided herein, this Agreement is for the sole benefit of the parties hereto and their permitted successors and assignees, and nothing herein, expressed or implied, will give or be construed to give any other person any legal or equitable rights hereunder. Notwithstanding the foregoing, CalPERS, the CEPPT, and all of the officers, trustees, agents and employees of CalPERS, the CEPPT and the Board shall be considered third party beneficiaries of this Agreement with respect to Paragraph I above.

(9) Counterparts

This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

A majority vote of Employer's Governing Body at a public meeting held on the 13th day of the month of September in the year 2021, authorized entering into this Agreement.

Signature of the Presiding Officer: _____

Printed Name of the Presiding Officer: Karla Brown

Name of Governing Body: Board of Directors

Name of Employer: Livermore Amador Valley Transit Authority

Date: _____

BOARD OF ADMINISTRATION
CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

BY_____
ARNITA PAIGE
DIVISION CHIEF, PENSION CONTRACT AND PREFUNDING PROGRAMS
CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

| To be completed by CalPERS<br><br>The effective date of this Agreement is: _____ |
|---|

**California Public Employees' Retirement System**
**California Employers' Pension Prefunding Trust (CEPPT)**
400 Q Street, Sacramento, CA 95811
**www.calpers.ca.gov**

# Delegation of Authority to Request Disbursements
# California Employers' Pension Prefunding Trust (CEPPT)

**RESOLUTION**
**OF THE**

Board of Directors
**(GOVERNING BODY)**

**OF THE**

Livermore Amador Valley Transit Authority
**(NAME OF EMPLOYER)**

The Board of Directors delegates to the incumbents
**(GOVERNING BODY)**

in the positions of Executive Director and
**(TITLE)**

Director of Finance , and/or
**(TITLE)**

_____ authority to request on behalf of the
**(TITLE)**

Employer disbursements from the Pension Prefunding Trust and to certify as to the purpose for which the disbursed funds will be used.

By Karla Brown

Title Chair of the Board

Witness _____

Date _____

# AGENDA

# ITEM 5E

BACK TO AGENDA

LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY

# STAFF REPORT

SUBJECT: Resolution in Support of Allocation Request for Regional Measure 2 Funding for the Shared Autonomous Vehicle Phase 2 Deployment Project

FROM: Jennifer Yeamans, Senior Grants & Management Specialist

DATE: September 13, 2021

---

**Action Requested**
The Projects & Services Committee recommends the Board of Directors approve Resolution 26-2021 in support of an allocation request to the Metropolitan Transportation Commission (MTC) for $150,000 for the design phase of the Shared Autonomous Vehicle Phase 2 Deployment Project. This resolution is required to request an allocation of this funding from MTC.

**Background**
In 2004, Senate Bill 916 established the Regional Traffic Relief Plan, including a list of projects eligible to receive funding authorized by Regional Measure 2 (RM2), which increased tolls on the seven state-owned toll bridges in the Bay Area by $1 to fund various traffic relief programs and projects in eligible bridge corridors. SB 916 identified the Alameda County Transportation Commission (CTC) as the project sponsor of $65 million in anticipated revenues to be allocated for RM2 Project 32, *I-580 (Tri-Valley) Rapid Transit Corridor Improvements in Alameda County*. To date funds have been allocated in the corridor on construction of the I-580 High Occupancy Toll (HOT) lanes and other HOV improvements, improvements to the I-580/I-680 interchange, and construction of the Dublin-Pleasanton BART Parking Garage.

In late 2020, MTC notified LAVTA staff that a balance of approximately $5 million remained on the Project available for allocation to eligible transit-related projects in the corridor and requested proposal(s) from LAVTA that could utilize the funds. In December 2020, Alameda CTC approved the update to the Countywide Transportation Program, which included several LAVTA priority projects, including $3 million for systemwide passenger facilities rehabilitation and enhancements, and $2 million for capital costs related to Phase 2 deployment of the Shared Autonomous Vehicle (SAV) project. LAVTA initiated formal requests to MTC for RM2 capital funding for both projects as they relate to addressing congestion on the I-580 corridor. In May 2021, MTC approved LAVTA's allocation request for design-engineering funding toward construction of $2.3 million in Rapid Bus Stop Improvements, while discussions continued regarding the SAV proposal.



BACK TO AGENDA

**Discussion**
Per MTC Regional Measure 2 Policies and Procedures (MTC Resolution 3636), project sponsors must submit a governing-board certification of compliance with RM2 provisions (Attachment 1) in order to receive allocations. Because the RM2 legislation identifies Alameda CTC as the project sponsor, Alameda CTC must also submit a resolution of local support for the project. On September 13, Alameda CTC's Programs and Projects Committee is scheduled to consider its resolution to sponsor the project and designate LAVTA as the project's Implementing Agency, delegating responsibility to LAVTA for compliance with all RM2 Policies and Procedures. Contingent upon actions by both the LAVTA Board on September 13 and Alameda CTC on September 23, MTC would consider the allocation request in October.

RM2 Policies and Procedures require each allocation to fund a minimum usable segment and/or deliverable. Thus MTC's initial allocation will fund $150,000 budgeted for the project's design phase only. Pending acceptance of 100% plans, specifications, and estimates for the project, MTC will consider allocating an additional $2.545 million for the construction phase as described in the Initial Project Report (IPR), shown in Attachment 2.

The initial project scope defined in the IPR calls for design-engineering work to support construction of two key facilities necessary to support the expansion of LAVTA's existing SAV route tested in Phase 1 (summarized in Attachment 3):

- Local infrastructure upgrades including vehicle-to-everything (V2X) communication with traffic lights and streetside signage
- Construction of modern, attractive passenger facilities at or near the Ross Headquarters business park to serve as the route endpoint from the Dublin/Pleasanton BART station.

A subsequent construction phase would provide for the construction of these facilities as well as the acquisition of three next-generation SAVs needed to operate on the proposed Phase 2 route, shown in Attachment 4. Storage of the vehicles is provided for in the plans for the new Dublin-Pleasanton BART parking garage scheduled to begin construction next year.

**Budget**
The project budget is funded 100% by RM2 funds in the design phase and by a combination of RM2 and potential future MTC discretionary funds from the Innovative Deployments to Enhance Arterials (IDEA) Shared Autonomous Vehicle (SAV) program in the construction phase, as shown below (all amounts shown in thousands of dollars).

| | **RM2** | **MTC IDEA SAV Program (uncommitted)** | **Total** |
|---|---|---|---|
| PS&E *(current allocation)* | $150 | -- | $150 |
| Construction *(future allocation)* | $2,545 | $600 | $3,145 |
| **Total** | **$2,695** | **$600** | **$3,295** |

**Next Steps**
Following MTC approval of the RM2 allocation in October, LAVTA will initiate one or more Task Order Requests with its on-call design-engineering firm, Kimley-Horn, to finalize the scope of work for the design-engineering phase of the project. The design phase is expected to If additional funding for the future construction phase is not secured from MTC's IDEA SAV Program, staff will seek out other potential funding sources for the project's construction phase.

**Recommendation**
The Projects & Services Committee recommends the Board of Directors approve Resolution 26-2021 in support of an allocation request to the Metropolitan Transportation Commission for $150,000 for the design phase of the Shared Autonomous Vehicle Phase 2 Deployment Project.

Attachments:
1. Resolution 26-2021
2. Initial Project Report: LAVTA Rapid Bus Stop Improvement Project
3. IPR Attachment A: Phase 1 Summary
4. IPR Attachment B: Proposed Phase 2 Route and Vehicle

*Approved:* _____



BACK TO AGENDA

**RESOLUTION NO. 26-2021**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY AS IMPLEMENTING AGENCY FOR REGIONAL MEASURE 2 FUNDING FOR THE SHARED AUTONOMOUS VEHICLE PHASE 2 DEPLOYMENT PROJECT**

**WHEREAS**, SB 916 (Chapter 715, Statutes 2004), commonly referred as Regional Measure 2, identified projects eligible to receive funding under the Regional Traffic Relief Plan; and

**WHEREAS**, the Metropolitan Transportation Commission (MTC) is responsible for funding projects eligible for Regional Measure 2 funds, pursuant to Streets and Highways Code Section 30914(c) and (d); and

**WHEREAS**, MTC has established a process whereby eligible transportation project sponsors may submit allocation requests for Regional Measure 2 funding; and

**WHEREAS**, allocations to MTC must be submitted consistent with procedures and conditions as outlined in Regional Measure 2 Policy and Procedures; and

**WHEREAS**, Streets and Highways Code Section 30914(c) and (d) identifies the Alameda County Transportation Commission as Project Sponsor for RM2 Project 32, I-580 (Tri-Valley) Rapid Transit Corridor Improvements in Alameda County; and

**WHEREAS**, the Alameda County Transportation Commission plans to designate the Livermore Amador Valley Transit Authority (LAVTA) as implementing agency for the design and construction of the Shared Autonomous Vehicle Phase 2 Deployment Project, an eligible project under RM2 Project 32, I-580 (Tri-Valley) Rapid Transit Corridor Improvements; and

**WHEREAS**, LAVTA is an eligible implementing agency for transportation project(s) in Regional Measure 2, Regional Traffic Relief Plan funds; and

**WHEREAS**, the Shared Autonomous Vehicle Phase 2 Deployment Project is eligible for consideration in the Regional Traffic Relief Plan of Regional Measure 2, as identified in California Streets and Highways Code Section 30914(c) or (d); and

**WHEREAS**, the Regional Measure 2 allocation request, attached hereto in the Initial Project Report and incorporated herein as though set forth at length, lists the project, purpose, schedule, budget, expenditure and cash flow plan for which LAVTA is requesting that MTC allocate Regional Measure 2 funds; now, therefore, be it

**RESOLVED**, that LAVTA, and its agents shall comply with the provisions of the Metropolitan Transportation Commission's Regional Measure 2 Policy Guidance (MTC Resolution No. 3636); and be it further

BACK TO AGENDA

**RESOLVED**, that LAVTA certifies that the project is consistent with the Regional Transportation Plan (RTP); and be it further

**RESOLVED**, that the year of funding for any design, right-of-way and/or construction phases has taken into consideration the time necessary to obtain environmental clearance and permitting approval for the project; and be it further

**RESOLVED**, that the Regional Measure 2 phase or segment is fully funded, and results in an operable and useable segment; and be it further

**RESOLVED**, that LAVTA approves the updated Initial Project Report, attached to this resolution; and be it further

**RESOLVED**, that LAVTA approves the cash flow plan, attached to this resolution; and be it further

**RESOLVED**, that LAVTA has reviewed the project needs and has adequate staffing resources to deliver and complete the project within the schedule set forth in the updated Initial Project Report, attached to this resolution; and, be it further

**RESOLVED**, that LAVTA is an eligible sponsor of projects in the Regional Measure 2 Regional Traffic Relief Plan, Capital Program, in accordance with California Streets and Highways Code 30914(c); and be it further

**RESOLVED**, that LAVTA is authorized to submit an application for Regional Measure 2 funds for the Shared Autonomous Vehicle Phase 2 Deployment Project in accordance with California Streets and Highways Code 30914(c); and be it further

**RESOLVED**, that LAVTA certifies that the projects and purposes for which RM2 funds are being requested is in compliance with the requirements of the California Environmental Quality Act (Public Resources Code Section 2l000 et seq.), and with the State Environmental Impact Report Guidelines (l4 California Code of Regulations Section l5000 et seq.) and if relevant the National Environmental Policy Act (NEPA), 42 USC Section 4-1 et. seq. and the applicable regulations thereunder; and be it further

**RESOLVED**, that there is no legal impediment to LAVTA making allocation requests for Regional Measure 2 funds; and be it further

**RESOLVED**, that there is no pending or threatened litigation which might in any way adversely affect the proposed project, or the ability of LAVTA to deliver such project; and be it further

**RESOLVED**, that LAVTA agrees to comply with the requirements of MTC's Transit Coordination Implementation Plan as set forth in MTC Resolution 3866; and be it further

BACK TO AGENDA

**RESOLVED**, that LAVTA indemnifies and holds harmless MTC, its Commissioners, representatives, agents, and employees from and against all claims, injury, suits, demands, liability, losses, damages, and expenses, whether direct or indirect (including any and all costs and expenses in connection therewith), incurred by reason of any act or failure to act of LAVTA, its officers, employees or agents, or subcontractors or any of them in connection with its performance of services under this allocation of RM2 funds. In addition to any other remedy authorized by law, so much of the funding due under this allocation of RM2 funds as shall reasonably be considered necessary by MTC may be retained until disposition has been made of any claim for damages, and be it further

**RESOLVED**, that LAVTA shall, if any revenues or profits from any non-governmental use of property (or project) that those revenues or profits shall be used exclusively for the public transportation services for which the project was initially approved, either for capital improvements or maintenance and operational costs, otherwise the Metropolitan Transportation Commission is entitled to a proportionate share equal to MTC's percentage participation in the projects(s); and be it further

**RESOLVED**, that assets purchased with RM2 funds including facilities and equipment shall be used for the public transportation uses intended, and should said facilities and equipment cease to be operated or maintained for their intended public transportation purposes for its useful life, that the Metropolitan Transportation Commission (MTC) shall be entitled to a present day value refund or credit (at MTC's option) based on MTC's share of the Fair Market Value of the said facilities and equipment at the time the public transportation uses ceased, which shall be paid back to MTC in the same proportion that Regional Measure 2 funds were originally used; and be it further

**RESOLVED**, that LAVTA shall post on both ends of the construction site(s) at least two signs visible to the public stating that the Project is funded with Regional Measure 2 Toll Revenues; and be it further

**RESOLVED**, that LAVTA authorizes its Executive Director or his/her designee to execute and submit an allocation request for the design phase with MTC for Regional Measure 2 funds in the amount of one hundred fifty thousand dollars ($150,000), for the project, purposes and amounts included in the project application attached to this resolution; and be it further

**RESOLVED**, that the Executive Director or his/her designee is hereby delegated the authority to make non-substantive changes or minor amendments to the IPR as he/she deems appropriate; and be it further

**RESOLVED**, that a copy of this resolution shall be transmitted to MTC in conjunction with the filing of the LAVTA application referenced herein; and be it further

**RESOLVED**, that allocation of Regional Measure 2 funding for the Shared Autonomous Vehicle Phase 2 Deployment Project is contingent upon action by the Alameda County Transportation Commission designating LAVTA as implementing agency for the Project and the

BACK TO AGENDA

Metropolitan Transportation Commission's approval of this designation with the allocation request.

**PASSED AND ADOPTED BY** the governing board of the Livermore Amador Valley Transit Authority on this 13th day of September 2021.

_____
Karla Brown, Chair

Attest:

_____
Michael Tree, Executive Director

BACK TO AGENDA

**Regional Measure 2 – INITIAL PROJECT REPORT**

# Regional Measure 2
## Initial Project Report (IPR)

**Project Title:** LAVTA Shared Autonomous Vehicle Phase 2 Deployment

**RM2 Project No.**

**Allocation History:**

| | MTC Approval Date | Amount | Phase |
|---|---|---|---|
| **#1:** | | | |
| **#2** | | | |
| **#3** | | | |

**Total: $**

**Current Allocation Request:**

| IPR Date | Amount Being Requested | Phase Requested |
|---|---|---|
| **June 18, 2021** | **$150,000** | **PS&E: Design-engineering for Passenger Facilities and V2I Intersection Upgrades** |



BACK TO AGENDA

# Regional Measure 2 – INITIAL PROJECT REPORT

## I. OVERALL PROJECT INFORMATION

### A. Project Sponsor / Co-sponsor(s) / Implementing Agency

Alameda County Transportation Commission (TBD) / Livermore Amador Valley Transit Authority (LAVTA)

### B. Project Purpose

The primary purpose of this project is to advance deployment of LAVTA's Shared Autonomous Vehicle (SAV) Project with capital investments necessary to support Phase 2 operations. Phase 2 will build on the success of Phase 1 testing and demonstration activities and involve the following principal components:

- Acquisition of three (3) next-generation SAVs
- Implementation of advanced traffic-signal technologies to enable vehicle-to-infrastructure (V2I)/vehicle-to-everything (V2X) communications
- Construction of attractive, modern passenger facilities at a business park approximately one mile from the East Dublin/Pleasanton BART station in LAVTA's service area.

Advances in SAV technology since LAVTA began road-testing its first SAV in 2019 are moving forward at a rapid pace. With an ability to operate much more efficiently than traditional first- and last-mile shuttles, the electric SAV can leverage the full potential of the region's transit investments by functioning as a reliable first/last mile feeder service into fast, frequent local and regional transit, such as the BART system and the Livermore Amador Valley Transit Authority's (LAVTA) bus rapid transit network.

LAVTA's SAV service between the Ross Headquarters business park (Zeiss and other businesses are also in the high-density office park) will generate new public transit ridership on BART and LAVTA that will reduce congestion on I-580, decrease pollution, and contribute to greater safety on roadways.

### C. Project Description (please provide details)

☒ **Project Graphics to be sent electronically with This Application**

The current LAVTA SAV Demonstration and Deployment Project - Phase 1 route operates between the East Dublin/Pleasanton BART station and the intersection near Persimmon Place, a retail shopping center approximately one-half mile from the BART station (see Attachment A – Project Background and Phase 1 Summary). The proposed extension of this route in Phase 2 will include additional key stops and serve even more passengers at the Zeiss Innovation Center and Ross Headquarters business park approximately one mile from the BART station (see Attachment B – Phase 2 Map and Vehicle).

Design-engineering work will provide for 100% plans, specifications, and estimates (PS&E) for the construction of two key facilities necessary to support this expansion:

- Local infrastructure upgrades including vehicle-to-everything (V2X) communication with traffic lights and streetside signage
- Construction of modern, attractive passenger facilities at or near the Ross Headquarters business park to serve as the route endpoint from the Dublin/Pleasanton BART station.

To support the expanded route, Phase 2 will also include an upgraded and expanded SAV fleet of vehicles capable of traveling up to 25 mph, with greater capacity to accommodate the increase in ridership. LAVTA anticipates these vehicles will be manufactured in the United States. A subsequent allocation request for the construction phase will include:

- Construction of local infrastructure upgrades, such as vehicle-to-everything (V2X) communication with traffic lights and streetside signage.



BACK TO AGENDA

- Construction of the passenger facilities
- Acquisition of three SAVs

The passenger facility improvements are envisioned as an attractive, safe and, convenient place to board and alight the SAVs. LAVTA will work with professional engineering support services in Phase 2 to finalize access and circulation agreements as well as securing any necessary approvals from City of Dublin, the California Department of Motor Vehicles (DMV), and the National Highway Traffic Safety Administration (NHTSA).

The SAV project will continue to be overseen by LAVTA's Director of Operations and Innovation, Toan Tran, as well as the agency's SAV Operations and Maintenance General Manager, Neal Hemenover. Neal is the lead of the Transdev North America Autonomous Vehicle team, focused on implementation and deployment of autonomous vehicles for transit and city services.

LAVTA has also been collaborating closely with City of Dublin's Traffic Engineer, Sai Midididdi, and the Gray-Bowen-Scott engineering consultant team led by Obaid Khan, P.E. Sai and Obaid have extensive experience in implementing traffic signal communication systems and exploring a potential SAV dedicated lane in the project area. LAVTA and the City of Dublin executed an MOU in September 2018 affirming each agency's roles and responsibilities in advancing development of the SAV project within the City of Dublin.

**D. Impediments to Project Completion**

While LAVTA was successful in securing permits for the current Phase 1 route, shared autonomous vehicles are still highly regulated by state and federal entities including NHTSA and the DMV. It is foreseeable that as the technology matures there could be delays from time to time to address unknown issues originating from these agencies in testing and deployment of passenger service. However, LAVTA expects these delays to be sporadic and short-term in nature as the agency has a past successful track record of working with state and federal regulators on the Phase 1 project.

Considering the careful, successful testing and service conducted thus far in Phase 1, LAVTA does not expect to encounter any unanticipated safety issues. Even though unanticipated, future legislation on SAVs at the federal and/or state level could influence the project and/or create potential for delays.

Although the COVID pandemic might create new commuting patterns that could affect the projected ridership of the LAVTA SAV project as well as related transit services, freeways are quickly returning to pre-pandemic congestion levels as previously remote workers are called back to offices. The pent-up demand for freeway space during commute hours given the job and housing imbalance at the regions outskirts is too severe to think otherwise, thereby driving demand for alternative transportation solutions, which can be facilitated by the LAVTA's SAV project.

At this time LAVTA is anticipating full funding of the construction phase to include additional grant funding from MTC's IDEA SAV Program and/or other source(s) to achieve the full scope. Should additional funds as listed in the Project Funding Sheet not be available, the scope of the project can be modified accordingly, such as by acquiring two SAVs to initiate service instead of three.

**E. Operability**

LAVTA projects ridership in Phase 2 (based on a pre-COVID operating environment) to be 40 rides per hour and 300 rides per day on average with these operating assumptions:

# Regional Measure 2 – INITIAL PROJECT REPORT

- 2 revenue vehicles (12-15 minute headways), plus one spare vehicle
- 12 hours/day, Mon-Fri

| | Peak one hour demand, peak direction only | Peak four-hour demand, peak direction only | Total daily ridership – 8 hours per day | Total Daily ridership- 16 hours per day |
|---|---|---|---|---|
| BART only | 40 | 120 | 300* | 380** |
| BART and Valley Link | 99 | 300 | 660* | 740** |

Based on the above assumptions, the estimated annual operating budget is $1.8 million annually. Farebox return is expected at 20-30 percent of operating costs, as operating costs will be low relative to more conventional modes of transit. LAVTA is working with businesses in the Ross Headquarters business park to utilize TDM benefits available to employees toward the SAV and other public transit options.

LCTOP and TDA funds have been identified as potential funding sources for ongoing operations.

For vehicle-storage facilities, LAVTA has included space for secure storage and charging facilities for up to six SAVs to be located on the ground floor of the new Dublin BART Parking Garage being constructed by Alameda County in part with RM2 funds sponsored by the Alameda County Transportation Commission (RM2 Project 32.3). Garage construction is currently expected to be completed in 2023. In the meantime, as may be necessary, vehicles can be transported by flatbed to LAVTA's Livermore O&M facility for overnight storage as is the case now in Phase 1 testing.

## II. PROJECT PHASE DESCRIPTION and STATUS

**F. Environmental –** Does NEPA Apply: ☐ Yes ☒ No

Based on the recent adoption of SB 288, this project is exempt from CEQA.

**G. Design –**

Phase 2 design and engineering work will build on the Phase 1 test environment already in operation, by expanding the number of vehicles deployed and their reach from the BART station. Design and engineering work will involve the following tasks/milestones:

1. Initiate Task Order Contracts with On-Call Engineering Firms for passenger facilities and local infrastructure upgrades - December 2021
2. Complete 100% PS&E for passenger facilities, local infrastructure ready to advertise - May 2022

To complete these tasks, LAVTA currently has an on-call engineering contract in place with Kimley-Horn and Associates. It is anticipated that upon allocation of RM2 funding, LAVTA would execute a Task Order with Kimley-Horn to prepare 100% PS&E documents ready to advertise for construction and equipment acquisition for completion of the V2X Intersection Upgrades and Passenger Facilities projects within 6 months.



BACK TO AGENDA

# Regional Measure 2 – INITIAL PROJECT REPORT

**H. Right-of-Way Activities / Acquisition –**

For initial expansion of the route, LAVTA anticipates the SAVs will operate only in public right-of-way with the passenger facilities being constructed in public right of way adjacent to the Ross Headquarters Business Park and the Zeiss Innovation Center.

**I. Construction / Vehicle Acquisition –**

Once design-engineering work is completed for both the intersection upgrades and to guide the location, design, and construction of the passenger facilities, LAVTA will be ready to advance to the construction phase. This phase will involve construction and equipment acquisition for the passenger facilities as well as the acquisition of three SAVs and upgraded technology that allows for communication between the vehicles and traffic signals via Cellular Vehicle to Everything (CV2X) equipment. LAVTA anticipates that the vehicle acquisition will take approximately 12 months, with three months for procurement and 9 months for manufacture and delivery.

## III. PROJECT BUDGET

**J. Project Budget (Escalated to year of expenditure)**

| **Phase** | Total Amount - Escalated - (Thousands) |
|---|---|
| Environmental Studies & Preliminary Eng (ENV / PE / PA&ED) | N/A |
| Design - Plans, Specifications and Estimates (PS&E) | $150 |
| Right-of-Way Activities /Acquisition (R/W) | N/A |
| Construction / Rolling Stock Acquisition (CON) | $3,145 |
| Total Project Budget (in thousands) | $3,295 |

**K. Project Budget** (De-escalated to current year)

| **Phase** | Total Amount - De-escalated - (Thousands) |
|---|---|
| Environmental Studies & Preliminary Eng (ENV / PE / PA&ED) | N/A |
| Design - Plans, Specifications and Estimates (PS&E) | $150 |
| Right-of-Way Activities /Acquisition (R/W) | N/A |
| Construction / Rolling Stock Acquisition (CON) | $3,074 |
| Total Project Budget (in thousands) | $3,224 |

**L. Project Budget – Deliverable Segment (Escalated to year of expenditure)**

| **Phase** | Total Amount - Escalated - (Thousands) |
|---|---|
| Environmental Studies & Preliminary Eng (ENV / PE / PA&ED) | N/A |
| Design - Plans, Specifications and Estimates (PS&E) | $150 |
| Right-of-Way Activities /Acquisition (R/W) | N/A |
| Construction / Rolling Stock Acquisition (CON) | N/A |
| Total Project Budget (in thousands) | $150 |



BACK TO AGENDA

# Regional Measure 2 – INITIAL PROJECT REPORT

**M. Project Budget – Deliverable Segment (De-escalated to current year)**

| Phase | Total Amount - De-escalated - (Thousands) |
|---|---|
| Environmental Studies & Preliminary Eng (ENV / PE / PA&ED) | N/A |
| Design - Plans, Specifications and Estimates (PS&E) | $150 |
| Right-of-Way Activities /Acquisition (R/W) | N/A |
| Construction / Rolling Stock Acquisition (CON) | N/A |
| Total Project Budget (in thousands) | $150 |

## IV. OVERALL PROJECT SCHEDULE

| Phase-Milestone | Planned (Update as needed) | |
|---|---|---|
| | Start Date | Completion Date |
| Environmental Document | N/A | |
| Environmental Studies, Preliminary Eng. (ENV / PE / PA&ED) | N/A | N/A |
| Final Design - Plans, Specs. & Estimates (PS&E) | November 2021 | May 2022 |
| Right-of-Way Activities /Acquisition (R/W) -- if needed | N/A | N/A |
| Construction (Begin – Open for Use) / Acquisition / Operating Service (CON) | September 2022 | October 2023 |

## V. ALLOCATION REQUEST INFORMATION

**N. Detailed Description of Allocation Request**

**Describe the scope of the allocation request. Provide background and other details as necessary.**

In order to continue expanding the SAV project (Phase 1 progress to date is summarized in Attachment A) and support new revenue service, estimated capital costs for additional SAVs, technology upgrades, and passenger facilities total $3.295 million, as shown in the attached IPR Estimated Budget Plan form, of which $2.695 million would be funded by RM2 over both PS&E and construction phases. The current allocation request as shown below would only be for the PS&E phase, with a subsequent construction allocation request occurring upon completion of all PS&E activities and deliverables listed in **Section P, Workplan**.



BACK TO AGENDA

# Regional Measure 2 – INITIAL PROJECT REPORT

| | |
|---|---|
| Amount being requested (in escalated dollars) | $150,000 |
| Project Phase being requested | PS&E |
| Are there other fund sources involved in this phase? | ☐ Yes ☒ No |
| Date of anticipated Implementing Agency Board approval the RM2 IPR Resolution for the allocation being requested | September 13, 2021 |
| Month/year being requested for MTC Commission approval of allocation | October 2021 |

**O. Status of Previous Allocations (if any)**

Not Applicable.

**P. Workplan** **Workplan in Alternate Format Enclosed** ☐

| TASK NO | Description | Deliverables | Completion Date |
|---|---|---|---|
| 1. | Award Design-Engineering Contract for **Passenger Facilities** | Executed Task Order encompassing design-engineering contract/scope of work + fee | November 2021 |
| 2. | Award Design-Engineering Contract for **V2X Intersection Upgrades** | Executed Task Order encompassing design-engineering contract/scope of work + fee | November 2021 |
| 3. | Design completion/ready to advertise/procure equipment for **Passenger Facilities** | 100% Plans, Specifications & Estimates | May 2022 |
| 4. | Design completion/ready to advertise/procure equipment for **V2X Intersection Upgrades** | 100% Plans, Specifications & Estimates | May 2022 |

**Q. Impediments to Allocation Implementation**

With the exception of minor delays for scoping comments requiring further effort, or alternatives that the Board wishes to study further, no impediments are foreseen in completing the allocation implementation.

## VI. RM-2 FUNDING INFORMATION

**R. RM-2 Funding Expenditures for funds being allocated**

☒ **The companion Microsoft Excel Project Funding Spreadsheet to this IPR is included**

**S. Next Anticipated RM2 Allocation Request. N/A**



BACK TO AGENDA

# Regional Measure 2 – INITIAL PROJECT REPORT

## VII. GOVERNING BOARD ACTION

**Check the box that applies:**

☐ **Governing Board Resolution attached**

☒ **Governing Board Resolution to be provided on or before: September 13, 2021 (in consultation with Alameda CTC)**

## VIII. CONTACT / PREPARATION INFORMATION

**Contact for Applicant's Agency**
Name: Toan Tran
Phone: (925) 455-7562
Title: Director of Operations & Innovation
E-mail: ttran@lavta.org
Address: 1362 Rutan Court Suite #100, Livermore, CA 94551

**Information on Person Preparing IPR**
Name: Jennifer Yeamans
Phone: (925) 455-7564
Title: Senior Grants & Management Specialist
E-mail: jyeamans@lavta.org
Address: 1362 Rutan Court Suite #100, Livermore, CA 94551

**Applicant Agency's Accounting Contact**
Name: Tamara Edwards
Phone: (925) 455-7566
Title: Director of Finance
E-mail: tedwards@lavta.org
Address: 1362 Rutan Court Suite #100, Livermore, CA 94551

# Attachment A

## Project Background and Accomplishments to Date in Phase 1

Being one of the first agencies in the nation to implement a Shared Autonomous Vehicle (SAV) program for public use has required extensive testing of both the vehicle operation and an approved route before passenger service could be initiated. The testing has given LAVTA insight into how the SAV can function on public streets with other pedestrian, cyclist, and vehicular traffic in the same space. Examples of the test route and the type of vehicle used during Phase 1 are attached.

LAVTA's SAV program has operated autonomously for more than 400 miles accident-free over the past year. Testing thus far has included data collection and analysis of schedule adherence, weather impacts, vehicle speed, battery consumption and mileage, reacting to various obstacles that include pedestrians, cyclists, and motorist, and issues requiring manual override. Gradual speed increases have been programmed with the consideration of safe operation of the vehicle and transportation of passengers. Speed increases allow the SAV to operate on streets with higher speed limits with the goal of more seamlessly integrating into the flow of traffic.

Recently, LAVTA reached a milestone in its SAV project by offering rides to the public wanting to experience the SAV technology by traveling from the BART station to a nearby retail shopping center. While the vehicle is fully autonomous, an operator is on board at all times that can take immediate control of the SAV. With respect to COVID-19 precautions, LAVTA has limited the number of riders that are allowed on the vehicle when public-health conditions have required.

LAVTA plans to continue collecting information as this initial phase comes to a close. Upcoming testing includes:

- Auditory and visual boarding/alighting indications to passengers (including disabled and visually impaired)
- Vehicle speed and delay in various crosswalk scenarios, with and without operator validation
- Verifying vehicle location during route and relaying to passengers
- Addressing the Vehicle to Infrastructure (V2I) communication at intersection traffic lights
- Routing and operation for potential service expansions

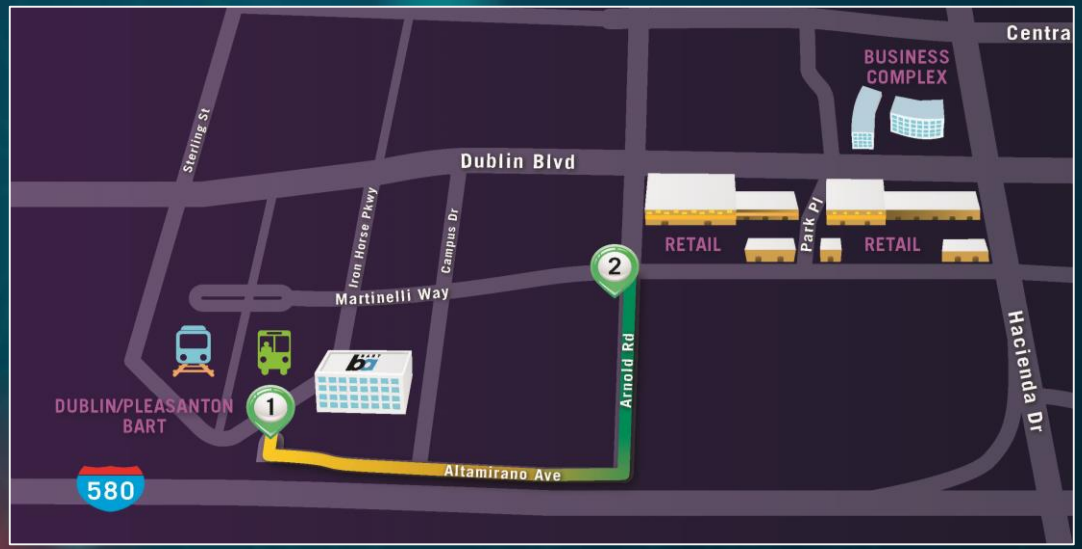
More information can be found at: https://www.wheelsbus.com/sav/

BACK TO AGENDA

# PHASE 1

## VEHICLE SETUP AND TESTING

- Weather
- Speed

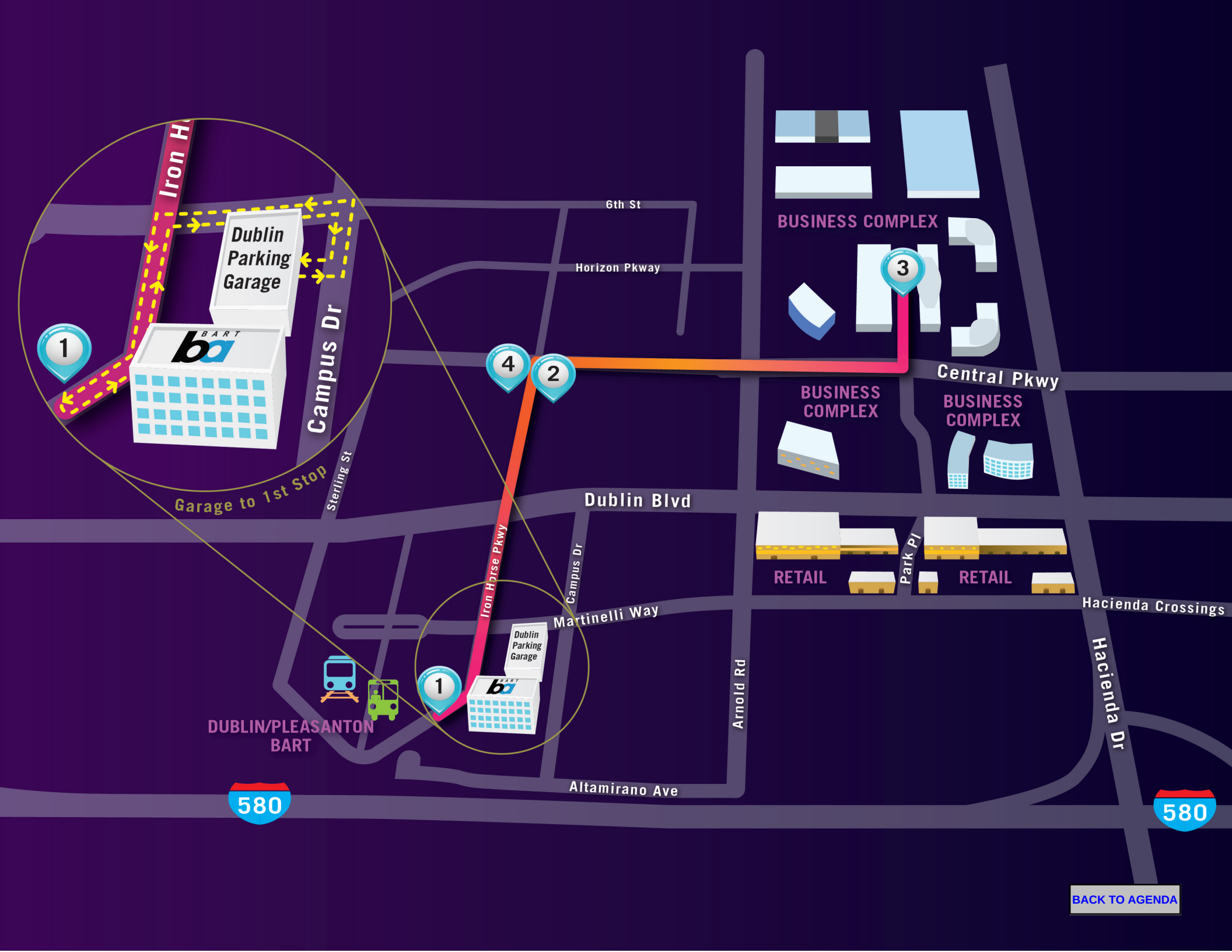




BACK TO AGENDA

# Attachment B:
# Proposed Phase 2 Route and Vehicle

BACK TO AGENDA


Iron H
Dublin Parking Garage
BART
1
Campus Dr
Sterling St
Garage to 1st Stop
6th St
Horizon Pkway
BUSINESS COMPLEX
3
4
2
Central Pkwy
BUSINESS COMPLEX
BUSINESS COMPLEX
Dublin Blvd
Iron Horse Pkwy
Campus Dr
RETAIL
Park Pl
RETAIL
Hacienda Crossings
Martinelli Way
Dublin Parking Garage
BART
1
DUBLIN/PLEASANTON BART
Arnold Rd
Hacienda Dr
Altamirano Ave
580
580
BACK TO AGENDA

# PHASE 2

## UPGRADE VEHICLES

New technology

Increased speed capability

BACK TO AGENDA

# AGENDA

# ITEM 6

BACK TO AGENDA

LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY

# STAFF REPORT

SUBJECT: Zero-Emission Bus Study Update

FROM: Toan Tran, Director of Operations and Innovation

DATE: September 13, 2021

---

**Action Requested**
No action required.

**Background**
Under the California Air Resources Board's (CARB) Innovative Clean Transit Rule, LAVTA's new bus purchases are required to be a minimum of 25% ZEBs beginning in 2026 and ramping up to 100% in 2029, with the goal of transitioning the state's entire transit fleet to 100% ZEBs by 2040.

LAVTA has been working with the Center for Transportation and the Environment (CTE) to perform a ZEB study. The goal of the study is to develop a board-approved transition plan outlining the capital projects required to fully electrify the fleet in accordance with the CARB Innovative Clean Transit Rule and LAVTA's local priorities by July 1, 2023.

**Discussion**
The study analyzed several different zero-emission fleet scenarios and the resources and costs required, and compared them to a baseline. The scenarios were:

1. Battery electric fleet only;
2. Battery electric and fuel cell electric mixed fleet;
3. Fuel cell electric only fleet,

In each scenario, CTE assessed the assumptions and requirements for LAVTA's routes, service and operations, fleet replacement plan timeline, fuel and charging, facilities and infrastructure, maintenance, associated capital costs, and total cost of ownership.

CTE will provide a presentation to the Board of Directors on the overview and findings of the study. Attachment 2 is a draft of the Master Transit Plan for your review in the next few weeks.

**Recommendation**
None – information only.

Attachments:
1. ZEB Transition Study Update presentation
2. ZEB Master Transition Plan Draft

*Approved:* _____



BACK TO AGENDA

BACK TO AGENDA

Attachment 1

# LAVTA ZEB Transition Study Update

September 14, 2021

**Steve Clermont**, Director of Planning & Deployment
**Savannah Gupton**, Lead Managing Consultant
**Niki Rinaldi El-Abd**, Lead Associate

BACK TO AGENDA

# About CTE

## WHO WE ARE

501(c)(3) nonprofit engineering and planning firm

## OUR MISSION

Improve the health of our climate and communities by bringing people together to develop and commercialize clean, efficient, and sustainable transportation technologies

## PORTFOLIO

$600+ million

- *Research, demonstration, deployment*
- *118 Active Projects totaling over $316 million*

## OUR FOCUS

Zero-Emission Transportation Technologies

## NATIONAL PRESENCE

Atlanta, Berkeley, Los Angeles, St. Paul

BACK TO AGENDA

# CTE Service Areas

**Prototype Development & Demonstration**

We support technology providers' cutting edge pilots.

**Smart Deployment**

We support early adopters with technical solutions.

**Fleet Transition**

We help fleet operators implement strategic plans.

**Education & Outreach**

We help organizations of all shapes and sizes stay ahead of the technology curve.

BACK TO AGENDA

# CARB Innovative Clean Transit Regulation

100% ZEB Fleet by 2040 is not a mandate, but a goal
There is only a *purchasing* mandate:

***ZEB Purchase Requirements***

| Starting January 1 | ZEB Percentage of Total New Bus Purchases |
|---|---|
| 2026 | 25% |
| 2027 | 25% |
| 2028 | 25% |
| 2029 | 100% |

- Small CA Transit Agencies (<100 buses) are required to submit a board-approved ZEB Rollout Plan by **July 1, 2023.**
- **If the available depot-charged battery electric buses cannot meet a transit agency's daily mileage needs, the agency may request an exemption**

BACK TO AGENDA

# Battery Electric Buses & Fuel Cell Electric Buses

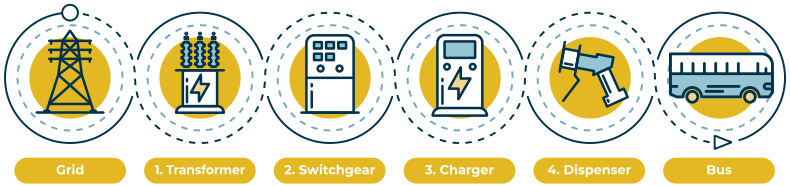
## Battery Electric Buses (BEBs)

- May need to increase fleet size
- Fueling time longer than ICE bus
- Fuel cost highly variable could be higher or lower than fossil fuels
- BEB bus cost approximately 50% higher than ICE bus
- Infrastructure costs increases per bus when scaled up

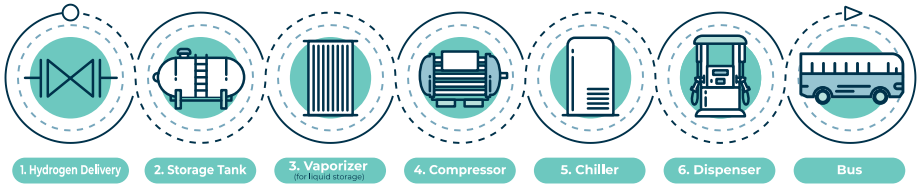
## Fuel Cell Electric Buses (FCEB)

- Comparable range to ICE bus – 1:1 replacement ratio
- Fueling time comparable to ICE bus
- Fuel cost significantly higher than fossil fuel
- Bus cost significantly higher than ICE bus
- Infrastructure costs reduce per bus when scaled up
- Greater resilience

## BEB Fuel Delivery Pathway

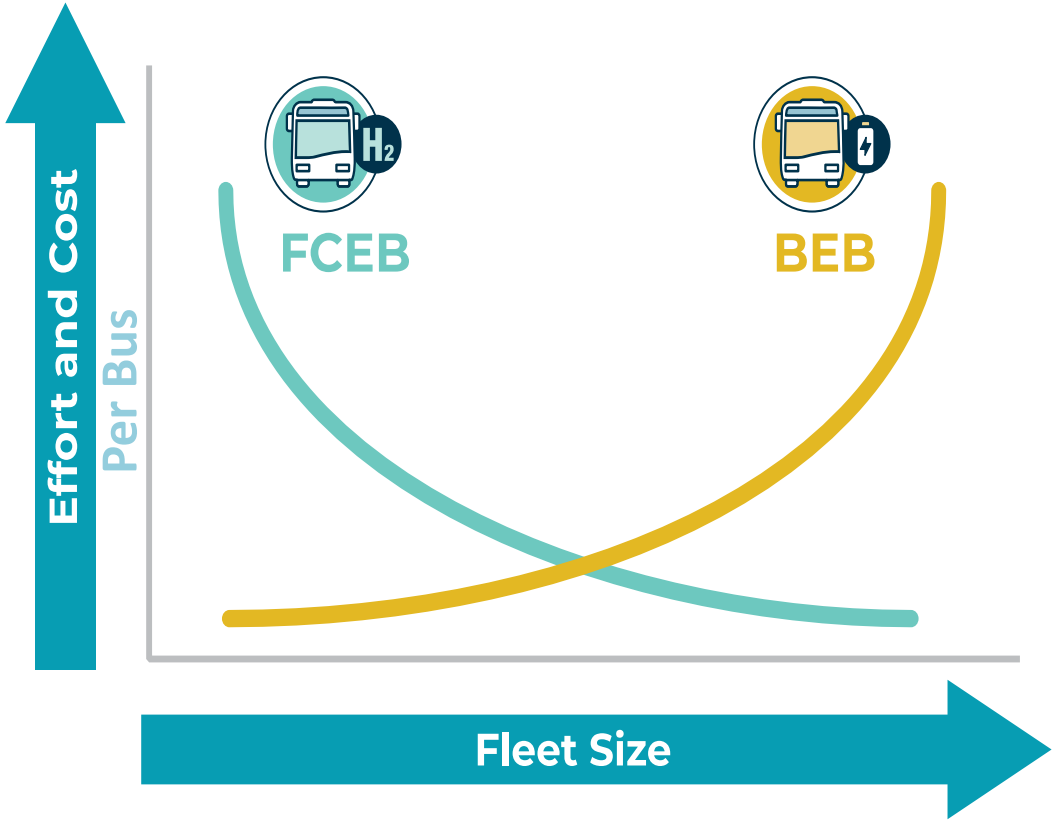



## FCEB Fuel Delivery Pathway



BACK TO AGENDA

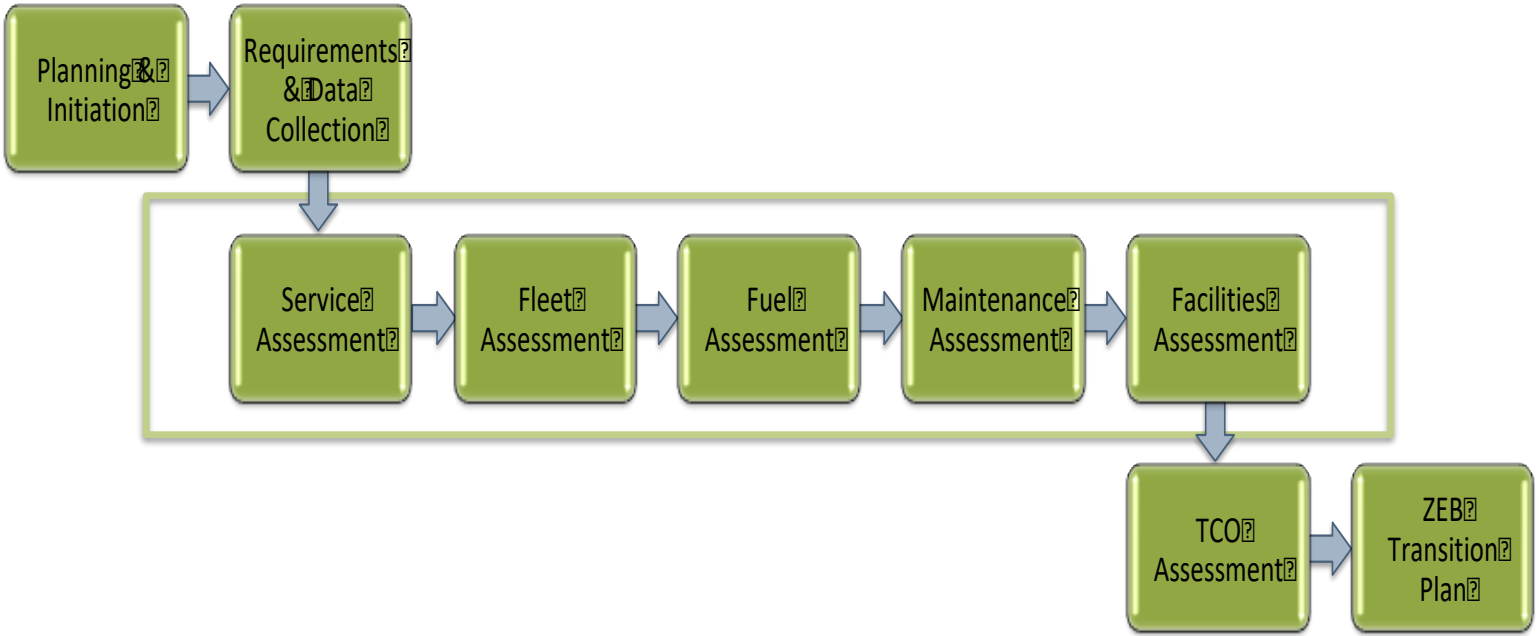
# ZEB Infrastructure Scalability




- FCEB: High initial cost for H2 fueling stations can be leveraged over many buses in larger fleets
- BEB: More equipment and infrastructure is needed to support larger fleets

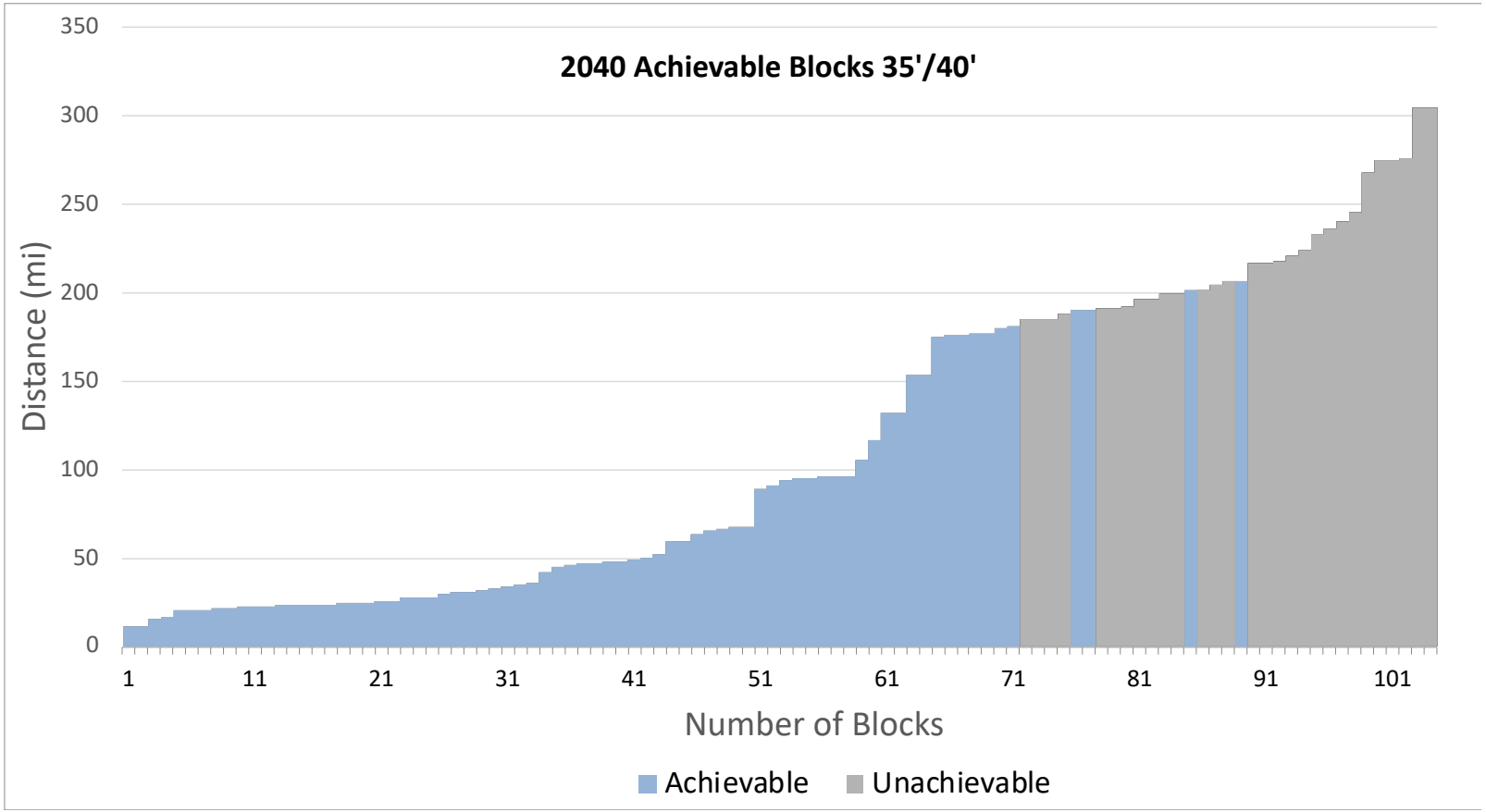
BACK TO AGENDA

# ZEB Transition Methodology



BACK TO AGENDA

# Overnight Depot- Charged Battery-Electric Bus Servic



BACK TO AGENDA

# ZEB Technology Fleet Transition Scenarios

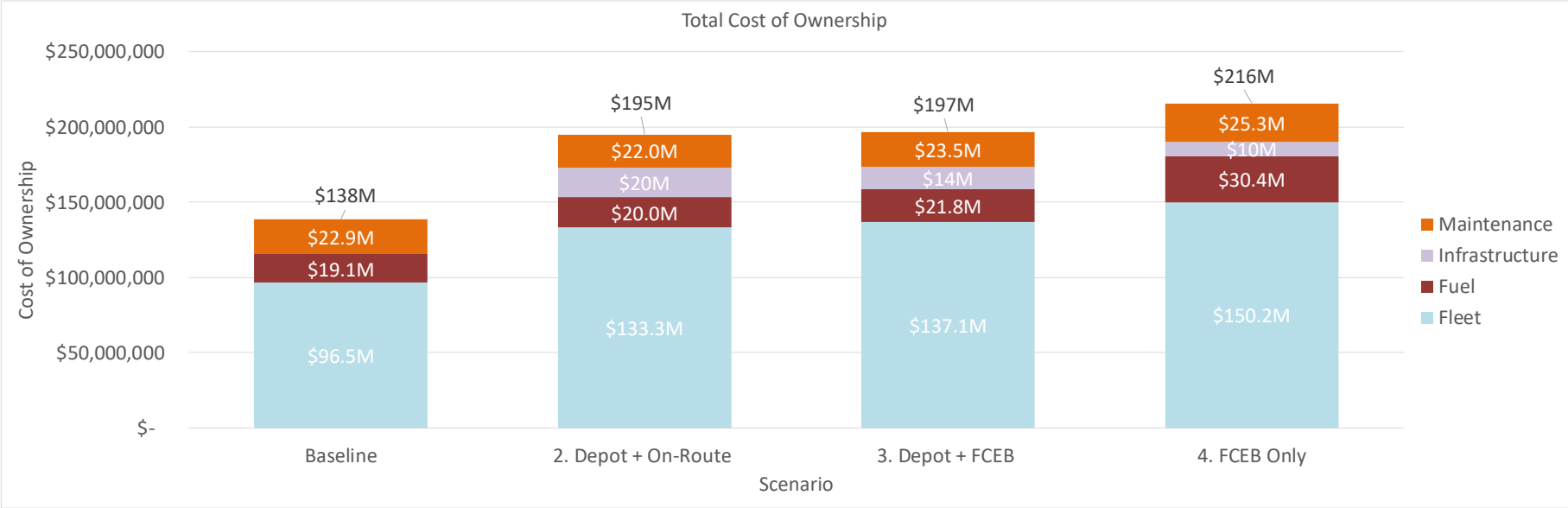
ZEB technology solutions required to achieve a 100% zero-emission fleet transition

1. Depot & on-route charged battery-electric buses (BEBs)
2. Depot charged battery-electric buses (BEBs) & fuel cell electric buses (FCEBs)
3. Fuel cell electric buses (FCEBs) only

BACK TO AGENDA

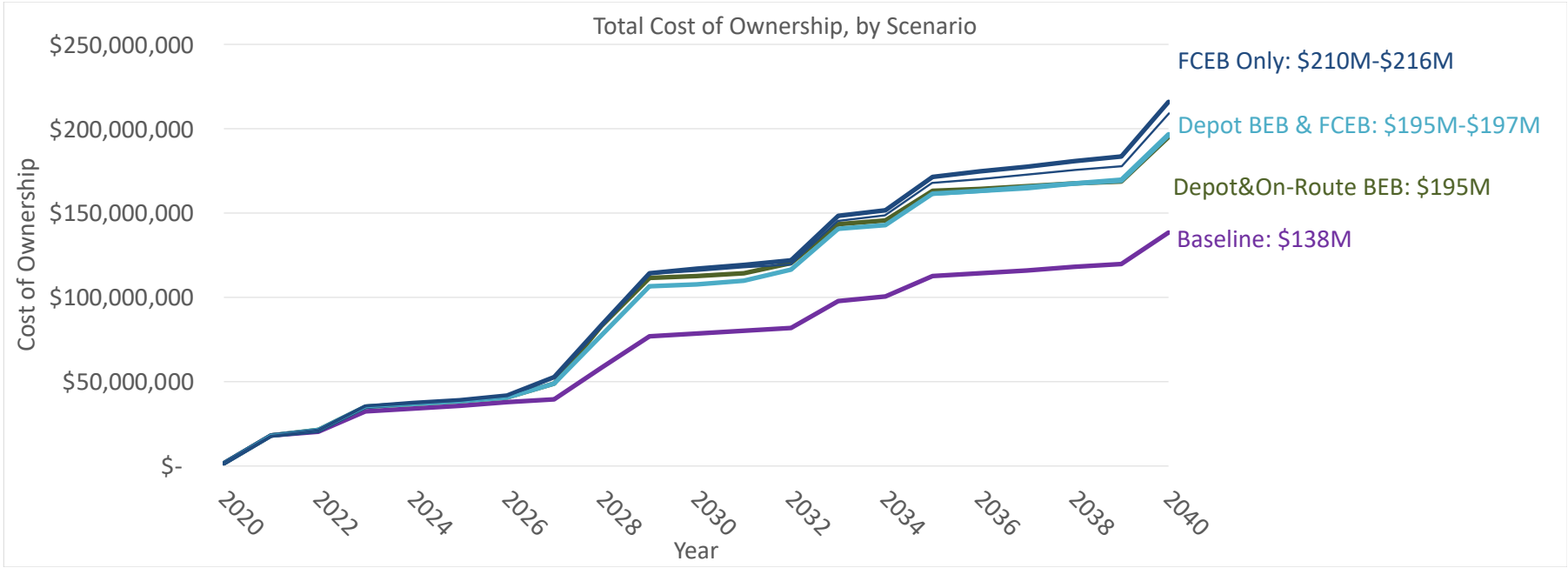
# Total Cumulative Capital & Operating Costs

## All Scenarios, 2020-2040



BACK TO AGENDA

# Cumulative Total Cost of Ownership Summary




*Includes fuel sensitivity analysis for future lower cost $H_2$

BACK TO AGENDA

# Considerations for ZEB Transition Selection

| 1. BEB Fleet, Depot & On-Route Charge | 2. Mixed Fleet, Depot Charged BEBs & FCEBs | 3. FCEB Only Fleet |
|---|---|---|
| - Operationally challenging, may require schedule and/or service changes due to on-route charging requirement | + Two technologies provide greater redundancy and resilience benefits; less reliant on the grid | + Operationally similar to current fleet. No service or schedule changes are required due to the technology |
| - Acquisition costs for on-route charger location is unaccounted for in scenario costs | - Operationally challenging due to the creation of sub fleets by technology | + Anticipated fuel price reduction due to regional renewable $H_2$ supply developments |
| - Requires major infrastructure and operations restructuring in the depot | - Two different fueling infrastructures will be required at depot | + Potential to leverage local station development and fueling access to significantly reduce initial capital infrastructure investment for LAVTA for early FCEB adoption |

BACK TO AGENDA

# Next Steps

- Seek input and approval of ZEB Master Transition Plan at the September P&S and October BOD meetings
- Seek approval ZEB Rollout Plan at the November BOD meeting

BACK TO AGENDA

# Questions?

# Livermore-Amador Valley Transit Authority Zero-Emission Bus Fleet Transition Study

Presented by: The Center for Transportation and the Environment

Date: August 11, 2021

BACK TO AGENDA

## Table of Contents



BACK TO AGENDA

BACK TO AGENDA

BACK TO AGENDA

## List of Figures





BACK TO AGENDA

## List of Tables





BACK TO AGENDA

## Executive Summary

Livermore-Amador Valley Transit Authority (LAVTA) engaged the Center for Transportation and the Environment (CTE) to perform a zero-emission bus (ZEB) transition study in May 2020. The study's goal is to create a plan for a 100% zero-emission fleet by 2040 to comply with the Innovative Clean Transit (ICT) regulation enacted by the California Air Resources Board (CARB). The results of the study will inform LAVTA Board members and LAVTA staff of the estimated costs, benefits, constraints, and risks of the transition to a zero-emission fleet and will guide future planning and decision-making.

On December 14, 2018, CARB enacted the ICT regulation, setting a goal for California public transit agencies to have 100% zero-emission fleets by 2040. The ruling specifies the percentage of new bus procurements that must be zero-emission for each year of the transition period (2023 – 2040). Those annual percentages are outlined in **Table 1** below.

*Table 1 - ICT ZEB Percentage Requirements*

| Starting January 1 | ZEB Percentage of Total New Bus Purchases |
|---|---|
| 2026 | 25% |
| 2027 | 25% |
| 2028 | 25% |
| 2029 | 100% |

This schedule lays out a pathway to reaching 100% zero-emission fleets in 2040 based on a 12-year projected lifespan for a transit bus. There is the opportunity to request waivers, however, that allow purchase deferrals in the event of economic hardship or if zero-emission technology has not matured enough to meet the service requirements of a given route. These concessions recognize that zero-emission technologies may cost more than current internal combustion engine (ICE) technologies on a lifecycle basis and that zero-emission technology may not currently be able to meet all service requirements.

Zero-emission technologies considered in this study include battery-electric buses (BEB) and hydrogen fuel cell electric buses (FCEB). BEBs and FCEBs have similar electric drive systems that feature a traction motor powered by a battery. The primary differences between BEBs and FCEBs are the respective amount of battery storage and the method by which the batteries are recharged. The energy supply in a BEB comes from electricity provided by an external source,

typically the local utility's electrical grid, which is used to recharge the batteries. The energy supply for an FCEB is on-board the bus, where hydrogen, stored in tanks, is converted to electricity using a fuel cell. The electricity from the fuel cell is used to recharge the batteries. The electric drive components and energy source for a BEB and FCEB are illustrated in **Figure 1.**

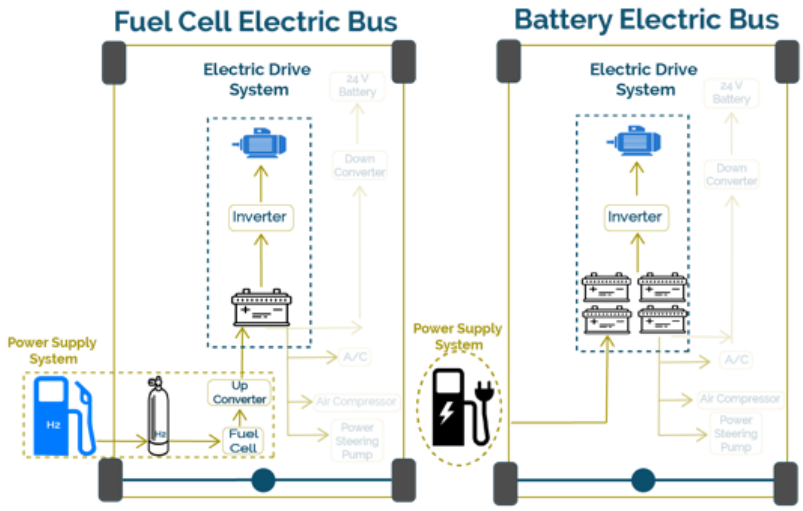



*Figure 1 – Battery and Fuel Cell Bus Schematic*

CTE worked closely with LAVTA staff throughout the project to develop an approach, define assumptions, and confirm the results. The approach for the study is based on analysis of three ZEB technology scenarios compared to a baseline scenario:

1. Baseline
2. BEB Only
3. Mixed Fleet: BEB and FCEB
4. FCEB Only

To accurately project service feasibility for each of these zero-emission technologies, CTE then assessed the block achievability of LAVTA's current service schedules. Block achievability is determined by comparing the estimated energy required to operate a BEB on a given block to the usable onboard energy storage capacity of the bus. If the block energy requirement exceeds the onboard storage capacity, the block is considered unachievable. If the block energy requirement does not exceed the usable onboard storage capacity, the block is considered to be achievable. Although not a zero-emission scenario, this study also includes a baseline scenario that is used to compare the cost of a ZEB transition to a "business-as-usual" case (i.e., without the need to meet ICT requirements).

The BEB Only scenario was developed to model a fleet option with a fleet consisting entirely of battery electric buses that can meet existing service range requirements. Fleets consisting of BEBs that only charge at a depot may not be able to meet the range requirements of many routes and require additional time returning to the depot to charge. These constraints would necessitate additional bus purchases to cover the charging times. On-route charging mitigates the possible need for additional bus purchases by extending the range of in-service buses and



BACK TO AGENDA

reducing the depot time necessary for charging. A uniform technology throughout the fleet allows for the installation of a single fueling technology at the depot. The challenges of on-route charging are finding space along the routes for chargers and the additional costs of land acquisition, equipment, and infrastructure installation.

A Mixed Fleet: BEB and FCEB scenario was developed with the assumption that all of the blocks that could be achieved with depot only charged BEBs. Because the range of FCEBs exceeds that of BEBs, FCEBs are capable of completing blocks that BEBs cannot and are modeled therefore to replace ICE buses at a 1:1 ratio. FCEBs and hydrogen, however, are more expensive than BEBs and electricity, so a mixed fleet allows an agency to use the less expensive BEB technology where possible and cover service needs with FCEBs as needed. A mixed fleet is also more resilient to service interruptions if either fuel becomes temporarily unavailable. For agencies such as LAVTA that operate only one depot, however, mixed fleets present the spatial challenge of hosting both infrastructure types in one depot.

The FCEB scenario was developed to help identify benefits and mitigate challenges associated with switching the entire fleet to fuel cell technology. An FCEB fleet could replace ICE buses on a 1:1 ratio and avoids the need to install two types of fueling infrastructure or purchase additional land for on-route charging. A FCEB fleet, however, lacks the redundancy provided by diverse fuels that a mixed fleet utilizes. Additionally, the cost of the buses and fuel for this scenario make an FCEB fleet the most expensive option despite the savings in infrastructure costs compared to a large-scale fleet transition to BEBs.

Improvements in technology are expected, but there is no indication of when BEB technology may improve to the point of one-for-one replacement of internal combustion engine buses or when the cost of FCEBs and hydrogen fuel will decrease to cost-competitive levels. Given these unknowns and the possible rapid changes in zero-emission technologies as interest in the field grows, this study presents a range of estimated costs that can be expected for LAVTA's ZEB fleet transition.

The underlying basis for the assessment is CTE's ZEB Transition Planning Methodology, a complete set of analyses used to inform agencies planning the conversion of their fleets to zero-emission technologies. The methodology consists of data collection, analysis, and evaluation stages; these stages are sequential and build upon findings in previous steps. In the evaluation stage, CTE assesses energy efficiency and energy use by the buses to calculate the distance that a bus will be able to travel on a single charge or hydrogen fill. CTE collected sample data from eight of LAVTA's routes. Then, using generic ZEB battery capacity specifications for given bus lengths, CTE estimated range and energy consumption on all LAVTA routes and blocks under varying environmental and passenger load conditions. Once this information was established, CTE completed the following assessments to develop cost estimates for each of the three scenarios:

The **Fleet Assessment** develops a projected timeline for replacement of current buses with ZEBs that is consistent with the agency's fleet replacement plan. This assessment also includes a projection of fleet capital cost over the transition lifetime and it can be optimized with regard

to any state mandates, like CARB's ICT regulation, or to meet agency goals, such as minimizing cost or maximizing service levels.

The **Fuel Assessment** merges the results of the Service Assessment and Fleet Assessment to determine annual fuel requirements and associated costs. The Fuel Assessment calculates energy costs through the full life of the transition, including the agency's current fossil fuel buses. As current technologies are phased out in later years of the transition, the Fuel Assessment calculates the increasing energy requirements for ZEBs. The Fuel Assessment also provides a total energy cost over the transition lifetime.

The **Facilities Assessment** determines the necessary infrastructure to support the projected zero-emission fleet based on results from the Fleet Assessment and Fuel Assessment. The Facilities Assessment is calculated to meet the fleet procurement schedules defined in the Fleet Assessment and the and fueling capacity required based on the Fuel Assessments. The result shows quantities of hydrogen and battery electric infrastructure and calculates associated costs.

The **Maintenance Assessment** calculates all projected fleet maintenance costs over the life of the project. This includes costs related to existing fossil fuel buses remaining in the fleet, as well as new BEBs.

The **Total Cost of Ownership Assessment** compiles results from the previous assessment stages and provides a comprehensive view of all associated costs, over the transition lifetime. The table and figure below provide a side-by-side comparison of the cumulative transition costs for each scenario.

*Table 2 - Total Cost of Ownership, by Scenario*

| Assessment Type | Baseline | BEB Only | Mixed Fleet: BEB and FCEB | FCEB Only |
|---|---|---|---|---|
| Fleet | $ 96,507,000 | $ 133,274,000 | $ 137,106,000 | $ 150,188,000 |
| Fuel* | $ 19,050,000 | $ 19,965,000 | $ 21,833,000 | $ 30,399,000 |
| Infrastructure | $ 0 | $ 19,955,000 | $ 14,427,000 | $ 9,752,000 |
| Maintenance | $ 22,902,000 | $ 21,961,000 | $ 23,536,000 | $ 25,303,000 |
| **Total** | **$ 138,459,000** | **$ 195,155,000** | **$ 196,902,000** | **$ 215,642,000** |
| **% ZEB in 2040** | **0%** | **100%** | **100%** | **100%** |

*Excludes any potential LCFS credit revenue

### Battery Electric Bus Only Scenario

As seen in **Table 2**, in an all BEB strategy, ZEB transition costs are likely to be $195 million for the BEB Only scenario (100% of LAVTA's fleet is replaced with BEBs by 2035 without adding additional buses). The costs shown in this graph increase over time because they are cumulative. The capital and maintenance costs for FCEBs exceed the additional costs from on-

route charging infrastructure and utility costs in the BEB scenario. The difference in cost between the Baseline and BEB scenario is largely the result of higher capital costs for BEBs compared to diesel-hybrid buses and the fact that infrastructure is already in place for diesel fueling. It should be noted that only 40-foot buses were considered in all ZEB transition scenarios. These parameters were based on LAVTA's current fleet structure and planned procurements, which include replacing 30-foot buses that are currently in their fleet with 40-foot buses going forward. Also, these bus lengths have passed Altoona testing and are thus allowable under the CARB ICT regulation.

### Mixed Fleet: BEB and FCEB Scenario

The Mixed Fleet: BEB and FCEB scenario resulted in a total cost of approximately $197 million. Though the costs are less for a mixed fleet deployment than for the FCEB Only deployment, there is the added complexity of installing infrastructure for both fuel types. Since LAVTA has only one depot, the space constraint of installing both infrastructure types may be a challenge. Compared to ICE buses, ZEBs may require significantly less maintenance since their engines require no fluids and have fewer components to maintain.[1] It is possible then that a ZEB fleet would require fewer maintenance bays than an ICE fleet, possibly further reducing space constraints.

### Fuel Cell Electric Bus Only Scenario

In the FCEB Only scenario, ZEB transition costs are estimated at $216 million for replacement of 100% of the fleet with FCEBs by 2035. A primary assumption for the FCEB Only scenario is that 40-foot fuel cell electric buses will be available during the entire transition period. It is expected that, due to the limited deployment of FCEBs in service in the United States, capital costs for these buses and hydrogen fuel costs will remain high in the near-term due to low market competition which is expected to change; however, more data is needed to adequately project these cost decreases. As such, this study uses current FCEB and infrastructure pricing for the entirety of the ZEB transition period.

For estimates of FCEB maintenance costs, CTE used data reported from Orange County Transit Authority's (OCTA) FCEB fleet of 10 New Flyer buses in their first year of operation. Fuel cell technology was new to OCTA and, as a result, the maintenance costs were higher than expected. OCTA does expect reductions in the long run. Given the necessary reliance on this early-adoption maintenance data, FCEB maintenance cost data has a wider error margin than BEB cost estimates. More concrete data will become available, and costs will likely fall as a larger number of fuel cell electric buses and hydrogen infrastructure are deployed. Significant investments in hydrogen infrastructure may take years to materialize, however.

[1] Eudy, Leslie and Matthew Jeffers. 2018. Zero-Emission Bus Evaluation Results: County Connection Battery Electric Buses. Golden, CO: National Renewable Energy Laboratory. NREL/TP-5400-72864. https://www.nrel.gov/docs/fy19osti/72864.pdf.

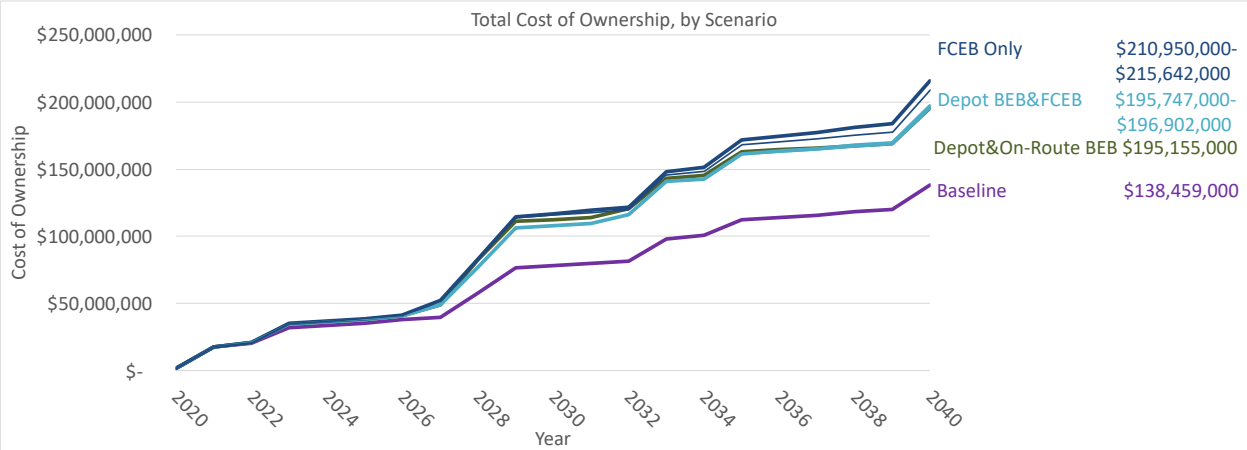



*Figure 2 - Total Cost of Ownership, by Scenario*

## Recommendations

In addition to the uncertainty of technology improvements, there are other risks in trying to estimate costs over the 20-year transition period to consider. Although current BEB range limitations may be improved over time as a result of advancements in battery energy density and more efficient components, battery degradation may re-introduce range limitations, which is a cost and performance risk to an all-BEB fleet over time. In emergency scenarios that require use of BEBs, agencies may face challenges supporting long-range evacuations and providing temporary shelters in support of fire and police operations. Furthermore, fleetwide energy service requirements, power redundancy, and resilience may be difficult to achieve at any given depot in an all-BEB scenario. Although FCEBs may not be subject to these same limitations, higher capital equipment costs and availability of hydrogen may constrain FCEB solutions.

Given these considerations, the recommendations for LAVTA are as follows:

1. **Remain proactive with ZEB deployments:** LAVTA has been proactive in the purchase and deployment of BEBs through their ZEB Program. For successful fleetwide deployment, BEBs will require charge management software, hardware, and standards to manage the fleetwide transition. For FCEB deployment to be competitive, lower fuel costs that will evolve over time with the production of hydrogen at scale will be required. LAVTA should move forward thoughtfully, taking advantage of various grant and incentive programs to offset the incremental cost for ZEB deployment. Incentive programs may be eliminated in future years as ZEB procurements are required instead of being optional.
2. **Target specific routes and blocks for early ZEB deployments:** LAVTA should consider the strengths of given ZEB technologies and focus those technologies on routes and blocks that take advantage of their efficiencies and minimize the impact of the constraints related to the respective technologies. These technologies cannot follow a one-size-fits-all approach from either a performance or cost perspective. Matching the technology to the service will be a critical best practice. Results from early LAVTA ZEB deployment will help to inform these decisions.

The transition to ZEB technologies represents a paradigm shift in bus procurement, operation, maintenance, and infrastructure. It is only through a continual process of deployment with specific goals for advancement that the industry can achieve the goal of economically sustainable, zero-emission transportation sector.

# 1 Introduction

Beginning operation in 1986, LAVTA provides bus services to communities in the cities of Dublin, Livermore, Pleasanton and Alameda County. LAVTA's mission is "to provide equal access to a variety of safe, affordable and reliable public transportation choices, increasing the mobility and improving the quality of life of those who live or work in and visit the Tri-Valley area." LAVTA currently has one facility, located on Rutan Court, but will be moving to Atlantis Court by 2028:

1. LAVTA Current Facility: 1362 Rutan Court, Livermore, CA 94551
2. LAVTA Future Facility: 875 Atlantis Court, Livermore, CA 94551

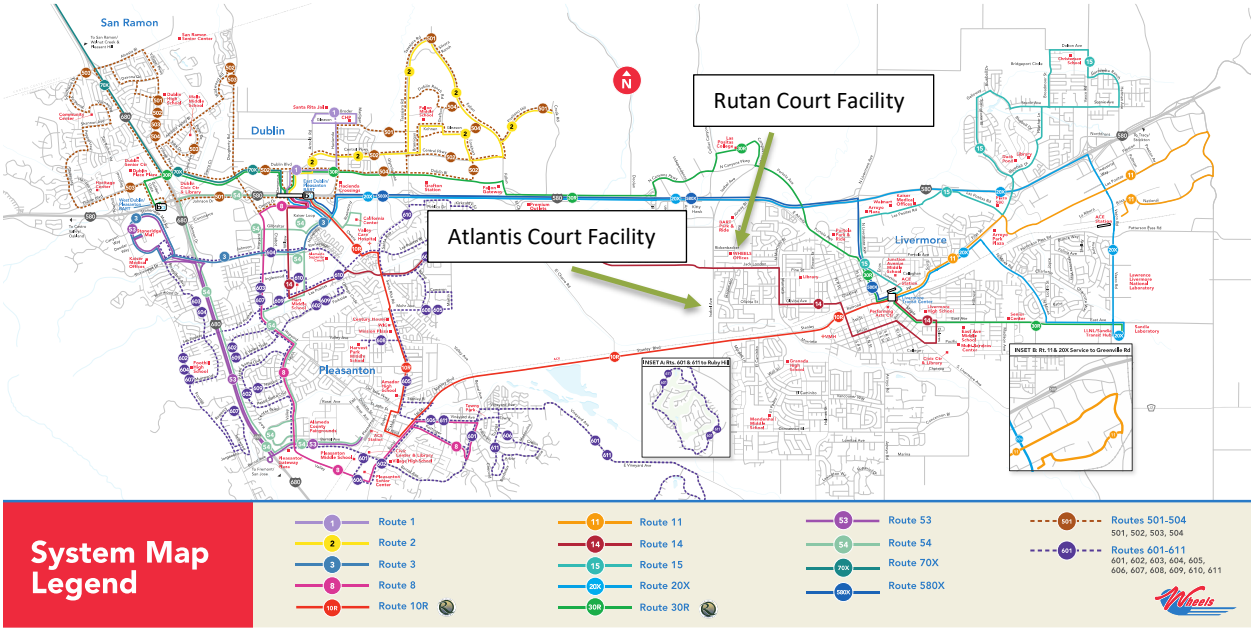



*Figure 3 - LAVTA System Map Highlighting Facility Locations*

LAVTA engaged CTE to perform a ZEB transition study in May 2020. The study's goal is to create a plan for a 100% zero-emission fleet by 2040 to comply with the Innovative Clean Transit (ICT) regulation enacted by California Air Resources Board (CARB). The results of the study will inform LAVTA Board members and LAVTA staff of the estimated costs, benefits, constraints, and risks of the transition to a zero-emission fleet and will guide future planning and decision-making.

Zero-emission technologies considered in this study include battery electric buses (BEBs) and hydrogen fuel cell electric buses (FCEBs). BEBs and FCEBs have similar electric drive systems that feature a traction motor powered by a battery. The primary differences between BEBs and FCEBs are the respective amount of battery storage and the method by which the batteries are recharged. The energy supply in a BEB comes from electricity provided by an external source, typically the local utility's electric grid, which is used to recharge the batteries. The energy supply for an FCEB is completely on-board, where hydrogen is converted to electricity within a fuel cell. The electricity from the fuel cell is used to recharge the batteries. The electric drive



BACK TO AGENDA

components and energy source for a BEB and FCEB are illustrated in

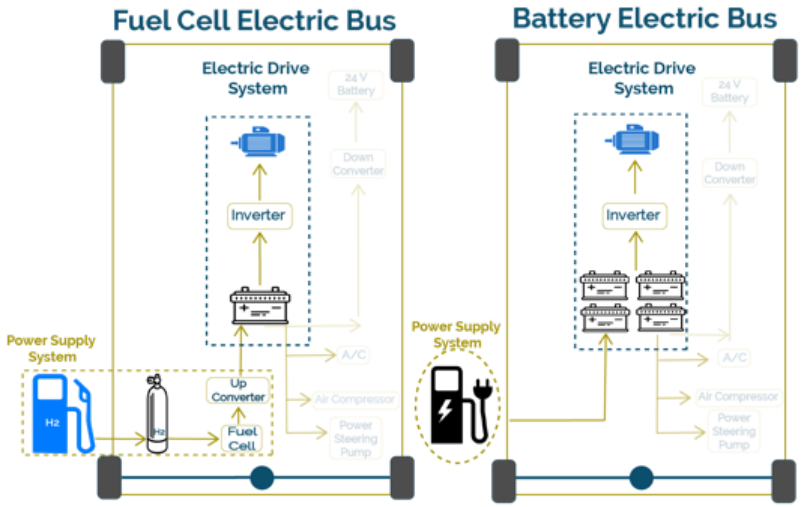



Figure 4 - Battery and Fuel Cell Electric Bus Schematic

.

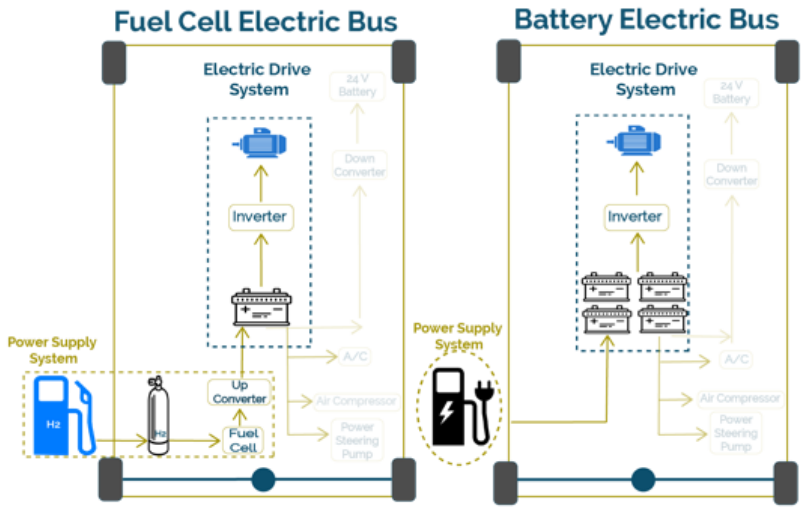



*Figure 4 - Battery and Fuel Cell Electric Bus Schematic*

## CARB's Innovative Clean Transit Regulation

On December 14, 2018, CARB enacted the ICT regulation, requiring all California public transit agencies to purchase only ZEBs from 2029 onward, with partial ZEB purchasing requirements beginning in 2023 for large agencies, and 2026 for small agencies, with the goal of transitioning agencies to ZEB fleets. This section summarizes key elements of the ICT.

### ZEB Purchase Requirements

LAVTA's fleet is designated as a small fleet by the California Air Resources Board (CARB) because the fleet does not exceed 100 vehicles at pullout. The ICT regulation requires that all

new bus purchases include a specified percentage of ZEBs in accordance with the following schedule:

*Table 3 – CARB Innovative Clean Transit (ICT) ZEB Transition Timeline for Small Agencies*

| Starting January 1 | Percent of New Bus Purchases | Purchase Discharge Criteria |
|---|---|---|
| 2023 | | If 850 ZEBs by 12/31/2020 |
| 2024 | | If 1250 ZEBs by 12/31/2020 |
| 2025 | | - |
| 2026 | 25% | - |
| 2027 | 25% | - |
| 2028 | 25% | - |
| 2029 | 100% | - |

New bus purchase requirements may be eliminated in 2023 and 2024 if a minimum number of buses are purchased by a specified date across all transit agencies in California. ZEB bonus credits do not count toward these milestones. Purchase of a cutaway bus, over-the-road bus, double-decker bus, or articulated bus may be deferred until either January 1, 2026 or until a model of a given type has passed the Altoona bus testing procedure and obtained a Bus Testing Report, regardless of if purchasing milestones are met or not.

### ZEB Bonus Credits

Agencies may earn bonus credits for early acquisition of ZEBs, which may be used against future compliance requirements. To earn bonus credits, ZEBs must be placed into service according to the following schedule. Bonus credits expire on December 31, 2028.

*Table 4 - ZEB Bonus Credits Applied to CARB ICT Transition Schedule*

| Technology | Placed in Service | ZEB Bonus Credit |
|---|---|---|
| BEB | Before January 1, 2018 | 1 |
| FCEB | Before January 1, 2018 | 2 |
| FCEB | January 1, 2018 to December 31, 2022 | 1 |

Since LAVTA does not plan to purchase any ZEBs until 2023, it will not be eligible to receive these credits for their purchases.

### ZEB Rollout Plan

LAVTA is required to submit a ZEB Rollout Plan to CARB that has been approved by their governing board by July 1, 2023. ZEB Rollout Plans must include all of the following components:

- A goal of full transition to ZEBs by 2040 with careful planning that avoids early retirement of conventional internal combustion engine (ICE) buses;

- Identification of the types of ZEB technologies a transit agency is planning to deploy, such as battery-electric or fuel cell electric buses;
- A schedule for construction of facilities, infrastructure modifications, or upgrades including charging, fueling, and maintenance facilities to deploy and maintain ZEBs. This schedule must specify the general location of each facility, type of infrastructure, service capacity of an infrastructure, and a timeline for construction;
- A schedule for zero-emission and conventional ICE bus purchases and lease options. This schedule for bus purchases replacements must identify the bus types, fuel types, and number of buses;
- A schedule for conversion of conventional ICE buses to ZEBs, if any. This schedule for bus conversion must identify number of buses, bus types, the propulsion systems being removed and converted to;
- A description on how a transit agency plans to deploy ZEBs in disadvantaged communities as listed in the latest version of CalEnviroScreen at the time the Rollout Plan is submitted;
- A training plan and schedule for ZEB operators and maintenance and repair staff; and
- The identification of potential funding sources.

### Exemptions

Agencies may request exemptions from ZEB purchase requirements in a given year due to circumstances beyond the transit agency's control. Acceptable circumstances include:

- Delay in bus delivery caused by setback of construction schedule of infrastructure needed for the ZEB;
- Available depot-charged BEBs cannot meet a transit agency's daily mileage needs;
- Available ZEBs do not have adequate gradeability performance to meet the transit agency's daily needs;
- When a required ZEB type for the applicable weight class [based on gross vehicle weight rating (GVWR)] is unavailable for purchase because the ZEB has not passed Altoona, cannot meet ADA requirements, or would violate any federal, state, or local regulations or ordinances;
- When a required ZEB type cannot be purchased by a transit agency due to financial hardship.

### Reporting Requirements

Starting March 31, 2021 and continuing every year thereafter through March 31, 2050, each transit agency must submit an annual ICT ZEB compliance report by March 31 for the prior calendar year. The initial report must be submitted by March 31, 2021 and must include the number and information of active buses in the transit agency's fleet as of December 31, 2018.

# 2 ZEB Transition Planning

## Methodology

This study uses CTE's ZEB Transition Planning Methodology, which is a complete set of analyses, used to inform agencies converting their fleets to zero-emission technology. The methodology consists of data collection and analysis and assessment stages; these stages are sequential and build upon findings in previous steps. The work steps specific to this study are outlined below:

1. Planning and Initiation
2. Requirements & Data Collection
3. Service Assessment
4. Fleet Assessment
5. Fuel Assessment
6. Facilities Assessment
7. Maintenance Assessment
8. Total Cost of Ownership Assessment

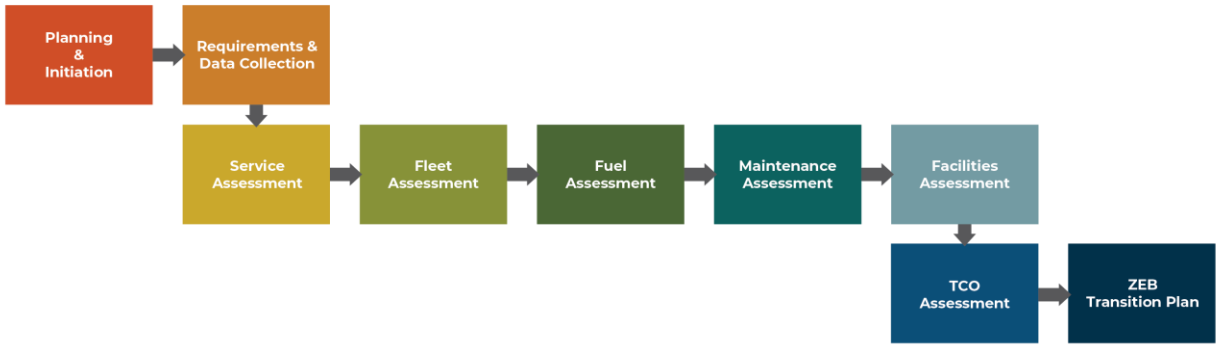



*Figure 5 - CTE's ZEB Transition Study Methodology*

The **Planning and Initiation** phase builds the administrative framework for the transition study. During this phase, the project team drafted the scope, approach, tasks, assignments and timeline for the project. CTE worked with LAVTA staff to plan the overall project scope and all deliverables throughout the full life of the study.

For the **Requirements & Data Collection,** CTE collected GPS data on selected LAVTA routes and used software models to estimate ZEB performance. The outputs from this modeling were used to estimate the achievability of serving every block in LAVTA's network using BEBs and FCEBs.

The **Service Assessment** phase initiated the data collection and technical analysis of the study. CTE met with LAVTA to define assumptions and requirements used throughout the study and to collect operational data. The results from the Service Assessment were used to guide ZEB procurement analysis in the Fleet Assessment and to determine energy requirements (depot charging, on-route charging, and/or hydrogen) in the Fuel Assessment.

The **Fleet Assessment** develops a projected timeline for replacing current buses with ZEBs that is consistent with the agency's fleet replacement plan. Multiple projection scenarios with different combinations of ZEB technologies are created. This assessment also includes a projection of fleet capital costs over the transition timeline, and it can be optimized for any state mandates like CARB's ICT regulation or agency goals such as minimizing cost or maximizing service levels.

The **Fuel Assessment** merges the results of the Service Assessment and Fleet Assessment to determine annual fuel requirements and associated costs. The Fuel Assessment calculates energy costs through the full transition timeline for each scenario, including the agency's current fossil-fuel buses. To more accurately estimate BEB charging costs, a focused Charging Analysis is performed to simulate daily system-wide charging use. As current technologies are phased out in later years of the transition, the Fuel Assessment calculates the increasing energy requirements for ZEBs. The Fuel Assessment also provides a total energy cost over the transition lifetime.

The **Facilities Assessment** determines the necessary infrastructure to support the projected zero-emission fleet based on results from the Fleet Assessment and Fuel Assessment. The Facilities Assessment is calculated for each scenario used in the Fleet and Fuel Assessments. The result shows quantities of hydrogen and battery-electric infrastructure and calculates associated costs.

The **Maintenance Assessment** calculates all projected fleet maintenance costs over the life of the project. This includes costs related to existing fossil-fuel buses remaining in the fleet, as well as new BEBs and FCEBs, calculated for each scenario.

The **Total Cost of Ownership Assessment** compiles results from the previous assessment stages and provides a comprehensive view of all associated costs, organized by scenario, over the transition lifetime.

### Assessment Scenarios

The approach for this ZEB transition study is based on the creation and analysis of three scenarios, as well as a baseline:

0. Baseline
1. BEB Only
2. Mixed Fleet: BEB and FCEB
3. FCEB Only

Current battery electric bus technologies do not have the range to allow for a one-for-one replacement of all types of fossil-fuel buses. Technology and range improvements are expected; however, there are significant challenges to overcome, and the timeline to achieve the goal is uncertain. In many cases, if a transit agency were to maintain service levels after transitioning to a fleet of BEBs charged only at a depot, it would be necessary to replace conventional ICE buses at a 2:1 ratio to cover the range limitations and charging times of the new BEB fleet. Naturally, increasing fleet size to accommodate the 2:1 replacement ratio would result in

increased costs for purchasing, fueling, and maintaining additional buses and the additional infrastructure required to charge them. On-route charging provides an alternative to the larger fleet approach and, as such, the BEB Only scenario was developed to explore this alternative solution for deploying a ZEB fleet. In this scenario, BEBs are charged at the depots when not in-service and are charged on-route when necessary to complete service requirements.

The Mixed Fleet: BEB and FCEB scenario utilizes both battery electric and fuel cell electric technologies. The underlying assumption for the mixed scenario is that neither technology is suitable for 100% of the fleet replacement due to inherent constraints and that including both technologies allows for more flexibility. Additionally, using a mixed fleet of BEBs and FCEBs achieves a 100% zero-emission fleet without the need to add buses.

Finally, the FCEB Only scenario is based on the outputs of the Requirements Analysis, which found that FCEBs can meet all LAVTA's daily service requirements by block. This scenario examines the costs incurred by hydrogen fueling and transitioning to a 100% FCEB fleet.

### Assessment Assumptions

Due to varying conditions over the course of a long-term fleet transition, it is necessary to establish a number of simplifying assumptions. These assumptions were developed based on discussions between CTE and LAVTA:

- Transition period is defined as achieving 100% ZEB fleet purchasing by 2040 to comply with the CARB ICT regulation;
- No change in fleet size will occur during the transition period except where necessary to maintain route achievability;
- Agency's planned procurements are included;
- A 12-year bus lifespan is assumed for future heavy-duty transit buses (i.e. buses are retired after 12 years of service);
- Costs are expressed in 2021 dollars with no escalation, and prices remain constant for the entire transition period;
- Current battery sizes for BEBs and fuel tank sizes for FCEBs are based on existing specifications for buses that have completed Altoona testing;
- A 5% improvement in battery capacity (for BEB) and efficiency (for FCEB) occurs every two years;
- A battery replacement will occur at the midlife of each heavy-duty transit BEB (six years), but the cost of this maintenance is included in the extended warranty cost; and
- A battery replacement and fuel-cell overhaul will occur at the midlife of each heavy-duty transit FCEB (six years) and the cost of this battery maintenance will also be included in the extended warranty. This cost is factored into the estimated maintenance costs as a sum expended in the year of vehicle purchase.

### BEB-Specific Assumptions

Research by the US Department of Energy (DOE) suggests that battery density for electric vehicles has improved by an average of 5% each year.[2] For this study, considering the extended period of a complete fleet transition through 2040, CTE assumes a more conservative 5% improvement of battery density every two years. If the trend continues, buses will continue to increase the amount of energy they carry without incurring a weight penalty or reduction in passenger capacity.

Initially, as more BEBs entered the market, many believed that the costs of BEBs would continue to decrease due to higher production volumes and competition from new vendors. While cost decreases did occur for a time, costs appear to have leveled out in recent years. However, it should be also noted that vendors have added more battery storage over the same time period without increasing base costs.

The terms "fuel" and "energy" are used interchangeably in this assessment, as ZEB technologies do not always require traditional liquid fuel. In the case of BEBs, "fuel" is electricity and costs include energy, demand and other utility charges.

BEB labor and maintenance costs come from an analysis completed by the U.S. DOE National Renewable Laboratory (NREL).[3]

For infrastructure cost estimates, CTE and AECOM developed estimates for components of each project type to build up a total cost estimate by project type. Assumptions used for BEB infrastructure are shown in **Table 26**. Conceptual BEB Scenario layouts, prepared by AECOM, are provided in **Appendix A1** – LAVTA Depot Site Plans, **.**

### FCEB-Specific Assumptions

FCEBs do not have the same range constraints as BEBs. Alameda-Contra Costa Transit District (AC Transit) and Orange County Transportation Authority (OCTA) have reported operational ranges for FCEBs up to 350 miles. Typically, FCEBs can more readily serve an agency's current blocks on a one-to-one basis with fossil fuel buses; however, costs of hydrogen fuel and bus capital costs create financial barriers to entry. This study assumes 5% bi-annual improvement in hydrogen tank size as a proxy for other component improvements such as battery capacity, motor efficiency, and fuel cell efficiency.

FCEB prices are expected to decrease over time as bus orders increase; however, CTE does not currently have an adequate basis to assume reduced costs for future FCEB purchases.

FCEBs are similar to fossil fuel buses in that they are fueled by a gaseous fuel— hydrogen—at a dispenser. In addition to the cost of the fuel itself, however, there are additional operational

[2] U.S. Department of Energy; LONG-RANGE, LOW-COST ELECTRIC VEHICLES ENABLED BY ROBUST ENERGY STORAGE, MRS Energy & Sustainability, Volume 2, Wednesday, September 9, 2015; https://arpa-e.energy.gov/?q=publications/long-range-low-cost-electric-vehicles-enabled-robust-energy-storage

[3] Eudy, Leslie and Matthew Jeffers. 2019. Foothill Transit Agency Battery Electric Bus Progress Report: Data Period Focus: Jul.2018 through Dec. 2018. Golden, CO: National Renewable Energy Laboratory. NREL/PR-5400-72209. https://afdc.energy.gov/files/u/publication/foothill_transit_beb_progress_rpt_5-2019.pdf.

costs for a hydrogen fueling station that must be considered. The fuel prices used in CTE's assessment were based on current prices at OCTA. These prices include fueling infrastructure maintenance, and delivery fees. CARB funded projects are also subject to a 33% renewables requirement, which mandates that 33% of the hydrogen delivered to OCTA must be produced with renewable energy, which further increases this price.

There is limited information on maintenance costs for FCEBs due to the limited number of buses in operation in the United States. Much of the information currently available comes from AC Transit, which has the largest FCEB fleet in the country. Unfortunately, many of these buses are older models that are past their warranty period and require expensive maintenance service from their European manufacturer, thus skewing the available dataset toward more expensive cases. CTE decided to model FCEB maintenance costs based on OCTA's FCEB fleet of 10 New Flyer buses during their first year of operation.

# 3 Requirements Analysis

## Baseline Data Collection

Understanding the key elements of LAVTA's service is essential to evaluating the costs of a complete transition to a zero-emission fleet. LAVTA staff provided key data on current LAVTA service including the following:

- Fleet composition: vehicle propulsion types and lengths currently in operation
- Route and block information including distances and trip frequency
- Mileage and fuel consumption
- Maintenance costs

### Fleet Composition

In 2020, the LAVTA bus fleet totaled 60 diesel hybrid buses including a six-bus contingency fleet. The fleet provided service on 31 fixed routes. A breakdown of the fleet by size is shown in **Table 5**. Bus services operate out of one depot, but since that depot will be moving, it is referred to as "Rutan" while the buses operate out of the Rutan Court depot and "Atlantis" when the ZEBs will operate out of the new facility at Atlantis Court. For the purposes of this document, that is assumed to be by 2028. Operations, maintenance, and fueling functions are performed at the depot.

*Table 5 - Fleet Breakdown by Depot and Length*

| Depot | Bus Length (ft) | | | Total |
|---|---|---|---|---|
| | 30' | 35' | 40' | |
| Rutan | 17 | 10 | 33 | 60 |
| **Total** | 17 | 10 | 33 | 60 |



BACK TO AGENDA

### Routes and Blocks

LAVTA's current service consists of 31 routes run on 102 blocks, as detailed in

**Table** 6.

*Table 6 – Count of Blocks by Depot and Bus Length*

| Depot | Bus Length (ft) | | | Total |
|---|---|---|---|---|
| | 30' | 35' | 40' | |
| Rutan | 18 | 17 | 67 | 102 |
| **Total** | 18 | 17 | 67 | 102 |

### Miles and Fuel Consumption

Data on LAVTA's current fuel use was collected and used to estimate energy costs throughout the transition period. This study assumes that no cost escalation for fuel occurs throughout the transition period. Annual fleet mileage and fuel use are shown in **Table 7** and **Table 8**.

*Table 7 – Annual Service Miles by Depot and Bus Length*

| Depot | Bus Length (ft) | | | Total |
|---|---|---|---|---|
| | 30' | 35' | 40' | |
| Rutan | 583,020 | 523,565 | 983,851 | 2,090,436 |
| **Total** | 583,020 | 523,565 | 983,851 | 2,090,436 |

*Table 8 – Annual Diesel Consumption by Depot and Bus Length [Diesel Gas Equivalence (DGE)]*

| Depot | Bus Length (ft) | | | Total (DGE) |
|---|---|---|---|---|
| | 30' | 35' | 40' | |
| Rutan | 111,029 | 113,724 | 192,186 | 416,938 |
| **Total** | 111,029 | 113,724 | 192,186 | 416,938 |

# 4 Service Assessment

The Service Assessment analyzes the feasibility of maintaining LAVTA's current level of service using BEB and FCEB buses. This assessment does not incorporate any plans for expansions except where necessary to maintain block achievability. The main focus of the Service

Assessment is the Block Analysis, which analyzes bus range limitations to determine if ZEBs could meet the service requirements of the blocks within the transition period. The energy needed to complete a block is compared to the available energy for the prospective bus type that is planned for the block. If the prospective bus's available energy exceeds the block's required energy, then that block is considered achievable for that ZEB type. The Service Assessment also outputs a timeline for when blocks become achievable for zero-emission buses as technology improves. This information is used to then inform ZEB procurements in the Fleet Assessment.

Bus efficiency and range are primarily driven by bus specifications; however, both metrics can be impacted by a number of variables including the route profile (i.e., distance, dwell time, acceleration, sustained top speed over distance, average speed, traffic conditions), topography (i.e. grades), climate (i.e. temperature), driver behavior, and operational conditions (e.g. passenger loads and auxiliary loads). As such, efficiency and range of a given BEB model can vary dramatically from one agency to another. Therefore, it is critical to determine efficiency and range estimates that are based on an accurate representation of LAVTA's operating conditions.

The first task in the Service Assessment is to develop route and bus models to run operating simulations for representative LAVTA routes. Rather than collecting data from all of LAVTA's routes, CTE used a sampling approach in which representative sample routes were identified based on topography and average speed characteristics. CTE then collected GPS data from 8 LAVTA routes that were identified for sampling. GPS data includes time, distance, bus speed, bus acceleration, GPS coordinates, and roadway grade. These variables were used to develop the route model. CTE used component-level specifications and the collected route data to develop a baseline performance model by simulating the operation of an electric bus on each route. Collecting data on and modeling every route in LAVTA's network would be ideal; however, this is impractical due to the amount of time and labor this approach would require.

The modeling outputs of the sample routes were then applied to all routes and blocks that share the same characteristics. Routes selected for the analysis are included in **Table 9** below. CTE uses Autonomie, a powertrain simulation software program developed by Argonne National Labs for the heavy-duty trucking and automotive industry. Within Autonomie, CTE modified software parameters to assess energy efficiencies, energy consumption, and range projections for electric buses specifically.

*Table 9 – Selected Routes for Modeling*

| Depot | Hills/ Low Speed | Hills/High Speed | Flat/Low Speed | Flat/High Speed | Count |
|---|---|---|---|---|---|
| Rutan | 503, 611 | | 2, 8, 14, 30 | 70, 580 | 8 |
| **Count** | **2** | **0** | 4 | 2 | 8 |

The route modeling includes analysis of varying passenger load, accessory load, and battery degradation to estimate real-world bus performance, fuel efficiency, and range. The GPS data from routes and the specifications for each of the bus models are used to simulate operation on

each type of route. The models were run with varying loads to represent "nominal" and "strenuous" loading conditions. Nominal loading conditions assume average passenger loads and moderate temperature over the course of the day, which places marginal demands on the motor and heating, ventilation, and air conditioning (HVAC) system. Strenuous loading conditions assume high or maximum passenger loading and near-maximum output of the HVAC system. This nominal/strenuous approach offers a range of operating efficiencies to use for estimating average annual energy use (nominal) or planning minimum service demands (strenuous).

Route modeling ultimately provides an average energy use per mile (kilowatt-hour/mile [kWh/mi]) for each combination of route, bus size, and load case. System-wide energy use is estimated in subsequent assessments, using the results shown in

**Table** 10.

*Table 10 – Modeling Results Summary*

| Bus Length [ft] | Route | Nominal Efficiency [kWh/mi] | Strenuous Efficiency [kWh/mi] |
|---|---|---|---|
| 40 | 2 | 2.05 | 2.70 |
| | 8 | 2.02 | 2.78 |
| | 14 | 1.90 | 2.52 |
| | 30X | 2.16 | 2.91 |
| | 70X | 2.24 | 2.58 |
| | 503 | 2.14 | 2.86 |
| | 580X | 2.14 | 2.59 |
| | 611 | 1.61 | 2.28 |

The Block Analysis, using the assumed 5% improvement in battery capacity or hydrogen storage capacity every other year, determines the timeline for when routes and blocks become achievable for BEBs and FCEBs. This information is then used to inform ZEB procurement decisions in the Fleet Assessment. Overall, the block analysis helps to determine when, or if, a full transition to BEBs or FCEBs may be feasible. Results from this analysis are also used to determine the specific energy requirements and develop the estimated costs to operate the ZEBs in the Fuel Assessment.

Results from the block analysis are included in **Figure 6** below.

The BEB achievability in **Figure 6** shows that, by 2040, 72% of LAVTA's blocks can be completed by 40-foot BEBs and that all blocks are achievable with FCEBs throughout the transition period. This analysis assumes that FCEBs can already complete any block under 350 total miles.

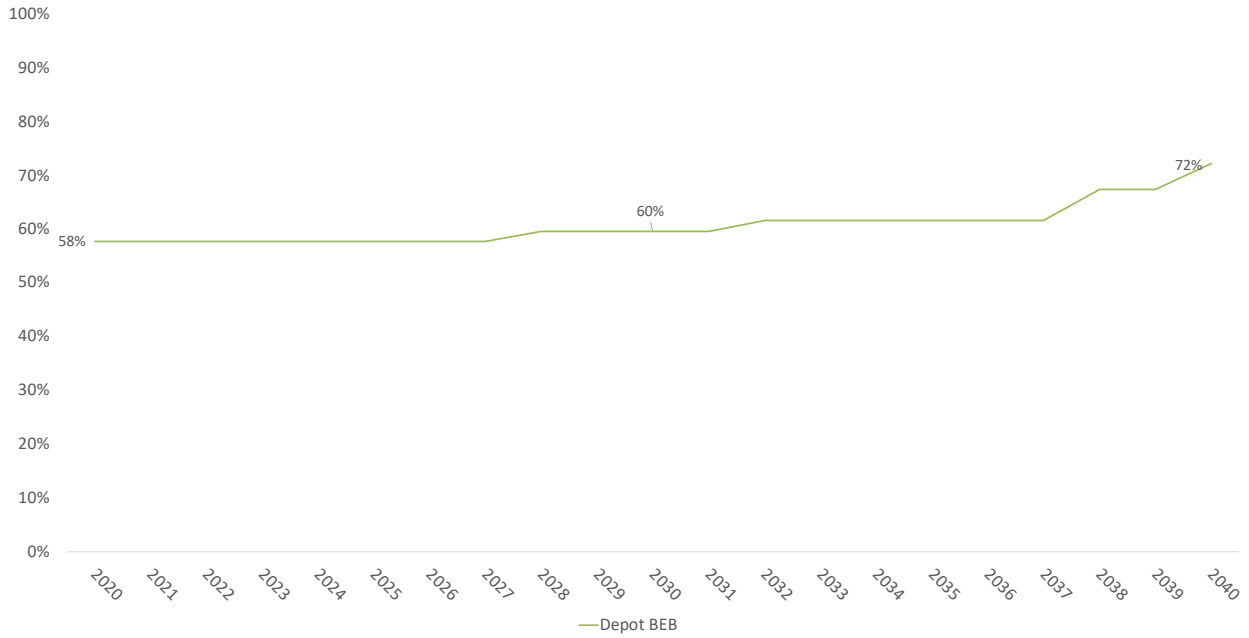



*Figure 6 - 40' BEB Block Achievability Percentage by Year*

While routes and block schedules are unlikely to remain the same over the course of the transition period, these projections assume the blocks maintain a similar distribution of distance, relative speeds, and elevation changes because LAVTA maintains service to similar destinations within the city. This core assumption affects energy use estimates and block achievability in each year.

Another factor affecting block achievability is battery degradation. BEB range is negatively impacted by battery degradation over time. A BEB may be placed in service on a given block with beginning-of-life batteries; however, it may not be able to complete the entire block at some point in the future before the batteries reach end-of-life. End-of-life is typically defined as when batteries reach 80% of available service energy. Conceptually, older buses can be moved to shorter, less demanding blocks and newer buses can be assigned to longer, more demanding blocks. LAVTA can rotate the fleet to meet demand, assuming there is a steady procurement of BEBs each year to match service requirements.

# 5 Fleet Assessment

The goal of the Fleet Assessment is to determine the technology type and quantity of zero-emission buses, as well as the schedule and cost to transition the entire fleet to zero emissions. Results from the Service Assessment are integrated with LAVTA's current fleet replacement plan and purchase schedule to produce two main outputs: a projected bus replacement timeline through the end of the transition period and the total capital costs of those replacements.



BACK TO AGENDA

## Cost Assumptions

CTE and LAVTA developed cost assumptions for each bus length and technology type (e.g. CNG, gasoline hybrid, BEB, FCEB). Key assumptions for bus costs for the LAVTA ZEB Transition Study are as follows:

- Bus costs are based on LAVTA's most recent procurement price and the Metropolitan Transit Commission (MTC) Pricelist
- Bus costs are inclusive of estimates for configurable options and taxes
- Future bus costs are based on year 2020 prices

**Table 11** provides estimated bus costs used in the analysis.

*Table 11 – Fleet Assessment Cost Assumptions*

| Length [ft] | BEB | FCEB |
|---|---|---|
| 40' | $1,270,577 | $1,412,602 |

*Note: Based on MTC Pricelist*

## Baseline

In the Baseline Scenario, LAVTA continues to replace retired buses with diesel-hybrid buses on a 12-year replacement cycle. This scenario illustrates the costs LAVTA would expect over the 20-year period if it purchased no ZEBs. **Figure 7** shows the number of diesel-hybrid buses that would be purchased each year through 2040 in this scenario.


*Figure 7 - Projected Bus Purchases, Baseline Scenario*

**Figure 8** depicts the annual fleet composition through 2040 for the Baseline scenario; the fleet remains composed of diesel-hybrids over the 20-year period.



BACK TO AGENDA


*Figure 8 - Annual Fleet Composition, Baseline Scenario*

**Figure 9** shows the annual total bus capital costs for the diesel-hybrid buses purchased in each year in the Baseline Scenario.

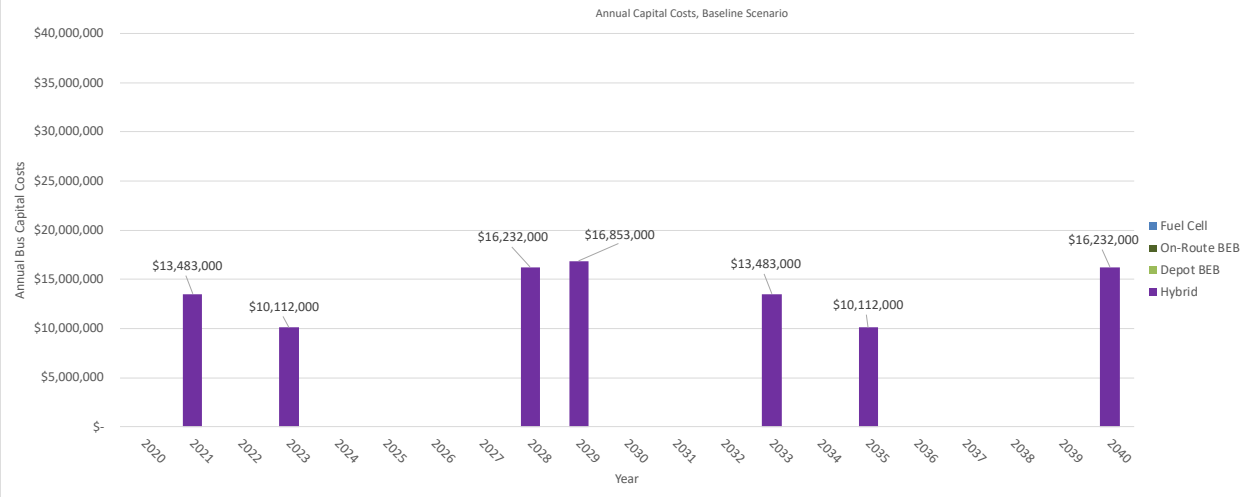



*Figure 9 - Annual Capital Costs, Baseline Scenario*

## BEB Only

On-route charging allows an agency to add energy to buses while the bus is in service, complementing depot charging and improving block achievability for BEBs. On-route charging removes the need to travel extra distance and take extra time to charge at a depot. Based on LAVTA's Service Assessment, on-route charging would be required to accommodate an all-BEB fleet without increasing fleet size by extending the range of on-route charged buses indefinitely.

The figures below show projected purchases, annual fleet composition, and annual total capital costs for the BEB Only scenario. By 2035, the addition of on-route charging allows LAVTA to replace 100% of the fleet with BEBs without needing any additional buses.



BACK TO AGENDA

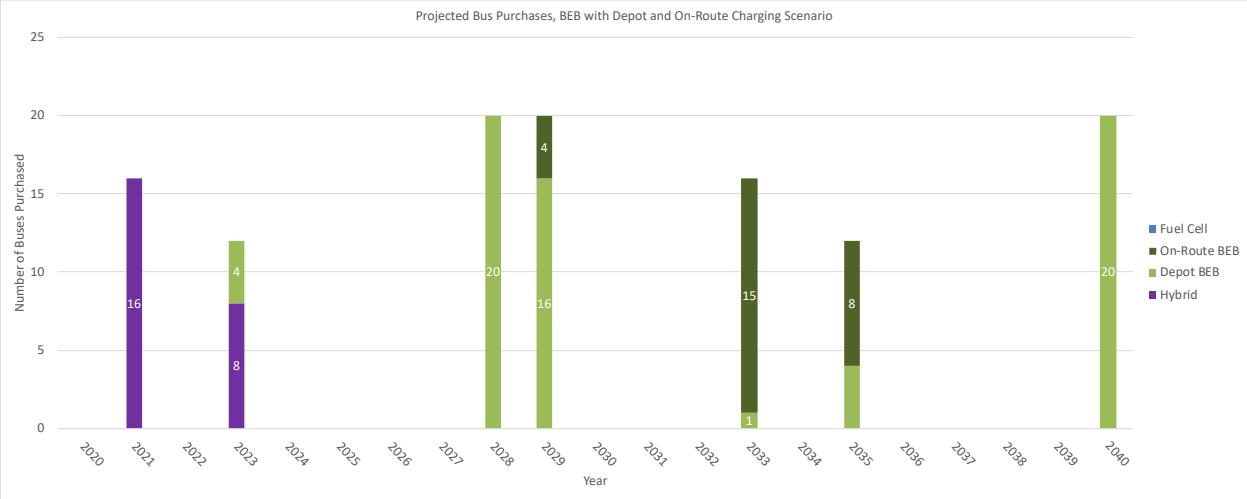



*Figure 10 – Projected Bus Purchases, BEB Only Scenario*

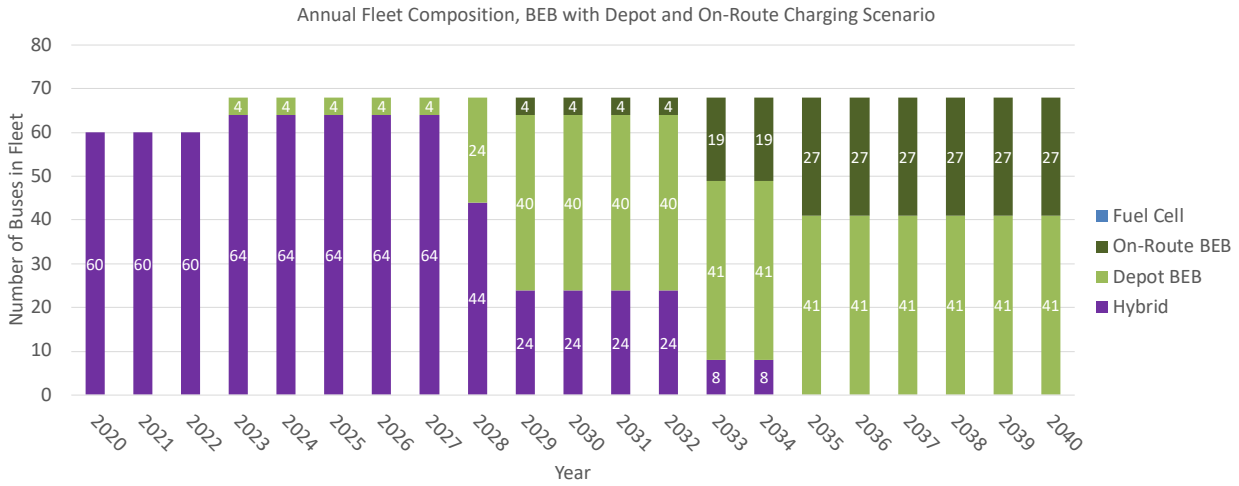



*Figure 11 – Annual Fleet Composition, BEB Only Scenario*



BACK TO AGENDA

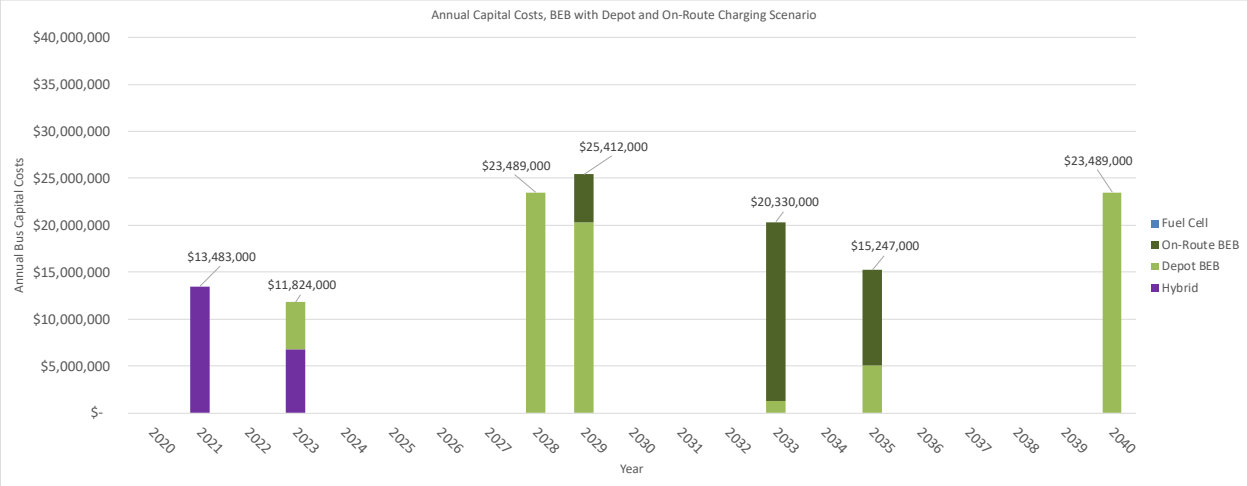



*Figure 12 – Annual Capital Costs, BEB Only Scenario*

## Mixed Fleet: BEB and FCEB

In the Mixed Fleet: BEB and FCEB scenario, LAVTA operates a mixed-technology depot and fleet. The longest blocks are run by FCEBs, allowing LAVTA to take advantage of the greater range of FCEBs. BEBs are then able to run the less demanding routes. Under this approach, LAVTA only incurs the higher costs of FCEBs where necessary to maintain block achievability.

The figures below show projected purchases, annual fleet composition, and annual total capital costs for the Mixed Fleet: BEB and FCEB fleet.

By 2035, LAVTA would be able to replace 100% of its fleet with BEB and FCEBs.

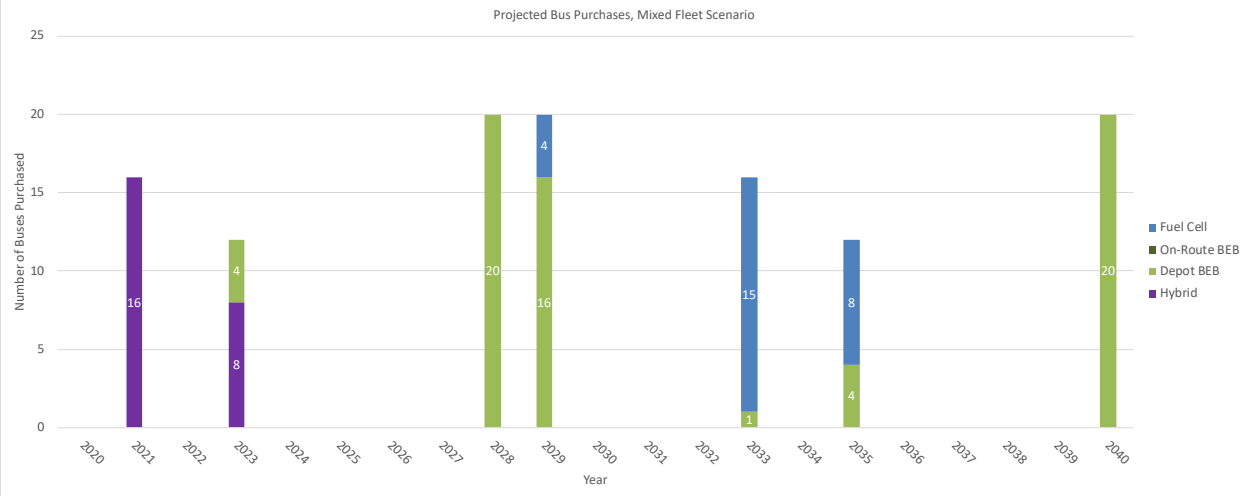



*Figure 13 – Projected Bus Purchases, Mixed Fleet Scenario*

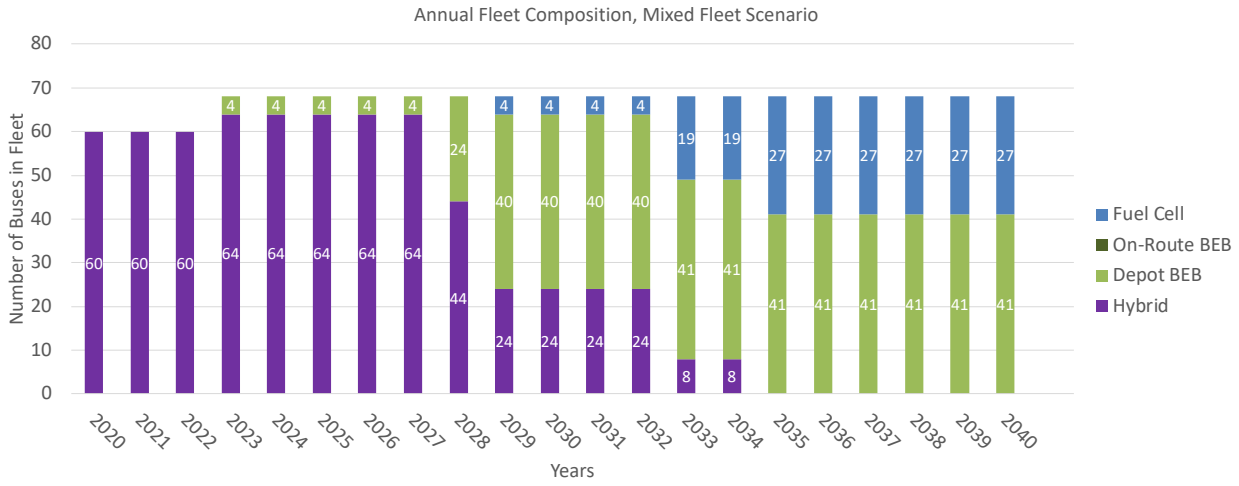



*Figure 14 – Annual Fleet Composition, Mixed Fleet Scenario*

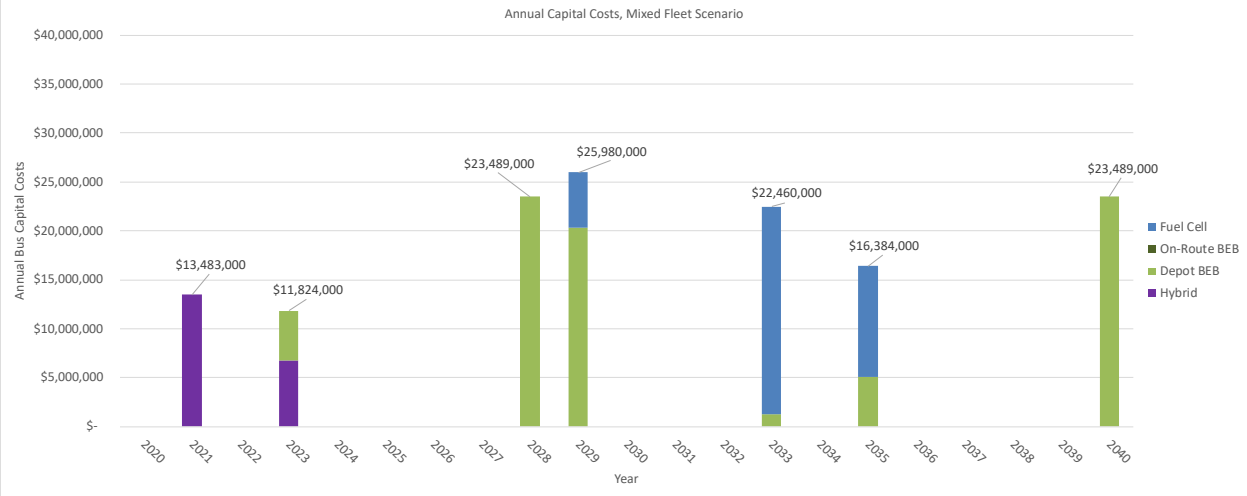



*Figure 15 – Annual Capital Costs, Mixed Fleet Scenario*

## FCEB Only

FCEBs do not have the same range constraints as BEBs. FCEBs are assumed to be able to achieve any block that is up to 350 miles long. Analysis results show that all of LAVTA's blocks can be served by an FCEB on a one-for-one replacement basis to diesel-hybrids by the end of the transition period.

The figures below show projected purchases, annual fleet composition, and annual total capital costs for the FCEB Only scenario.

By 2035, LAVTA is able to replace 100% of its fleet with FCEBs. An accelerated purchasing schedule that illustrates purchasing only FCEBs in 2023 and the additional costs incurred can be found in **Addenda –** Accelerated FCEB Purchase Cost Information.

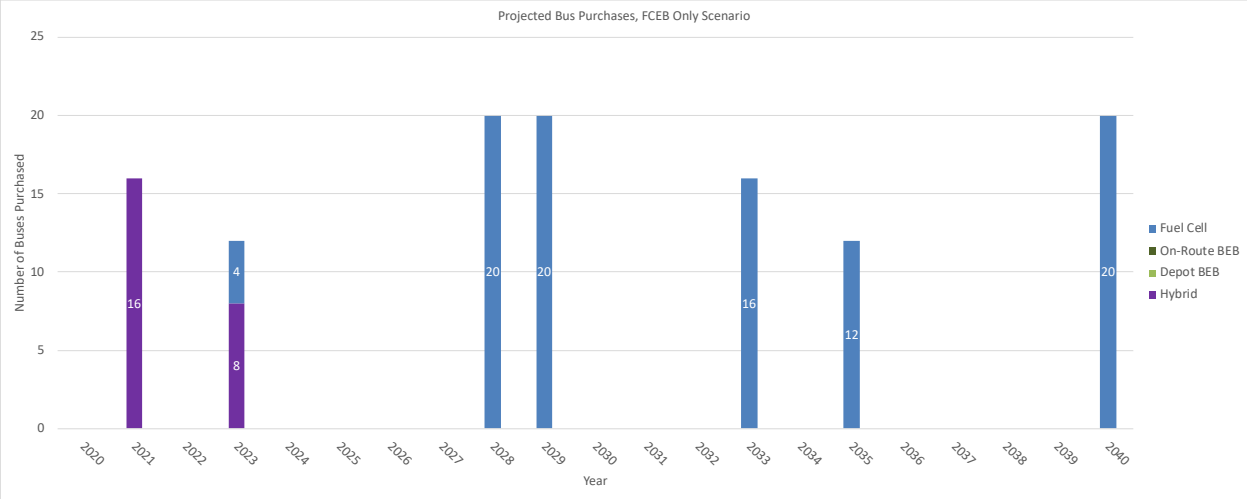



*Figure 16 – Projected Bus Purchases, FCEB Only Scenario*

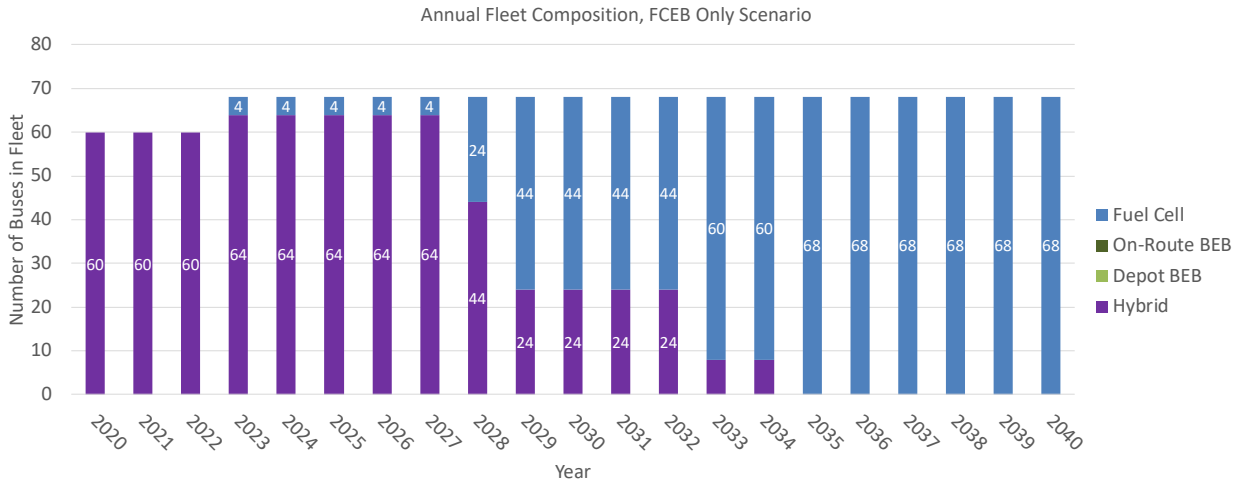



*Figure 17 – Annual Fleet Composition, FCEB Only Scenario*



BACK TO AGENDA

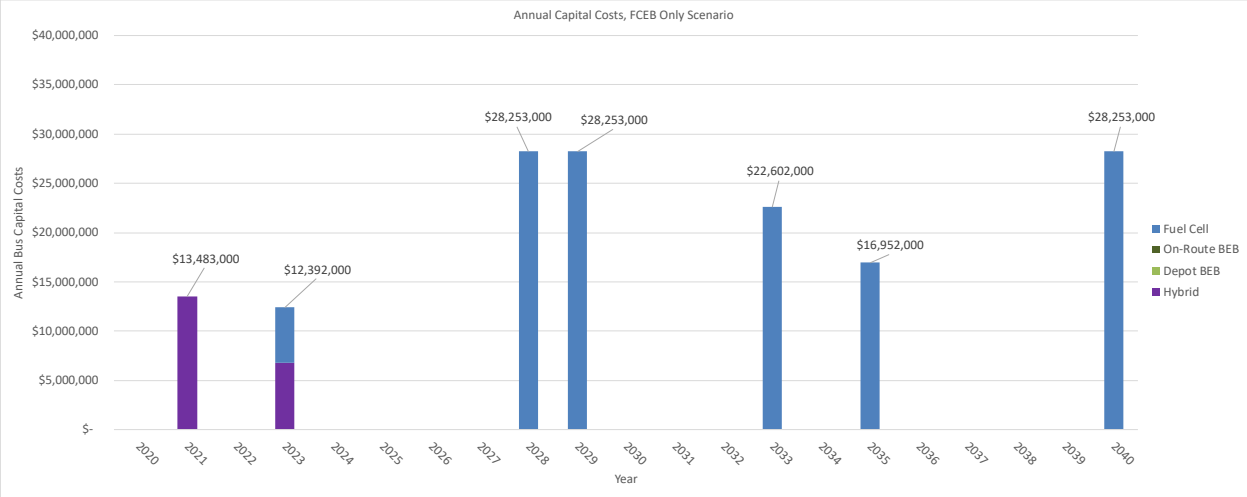



*Figure 18 - Annual Capital Costs, FCEB Only Scenario*

## Fleet Assessment Cost Comparison

The transition and fleet composition schedules were used to develop the total capital cost for bus purchases through the transition period. **Figure 19** shows the cumulative bus purchase costs for each scenario.

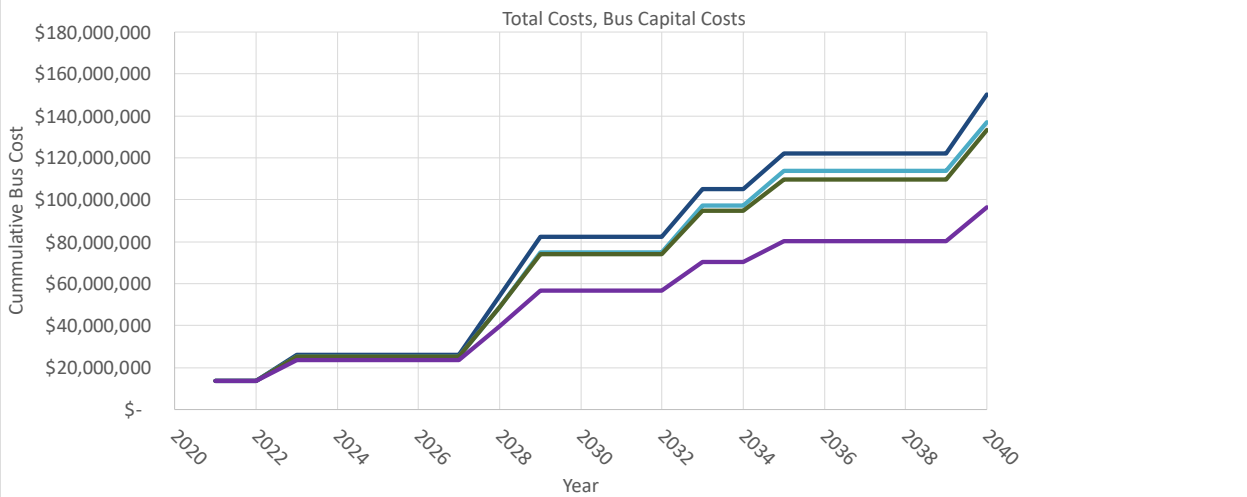



*Figure 19 - Cumulative Bus Capital Costs, Fleet Assessment*

By the end of the transition period, the cumulative bus costs vary substantially according to the technology selected, although all scenarios result in 100% of the fleet transitioning to zero-emission by 2040. **Table 12** provides the combined total costs for each transition scenario and the percentage of ZEBs present in the fleet in 2040 for the scenario.

*Table 12 - Total Bus Capital Costs, Fleet Assessment*

| Scenario | Cost | % ZEB in 2040 |
|---|---|---|
| **Baseline** | $ 95,503,000 | 0% |
| **BEB Only** | $ 133,271,000 | 100% |
| **Mixed Fleet: BEB and FCEB** | $ 137,105,000 | 100% |
| **FCEB Only** | $ 150,182,000 | 100% |

# 6 Fuel Assessment

The Fuel Assessment estimates fuel consumption and cost for each of the fuel technologies—diesel, electric and hydrogen—studied in the relevant scenario. This assessment calculates fuel costs using 2020 prices.

Using ZEB performance data from the route simulation, CTE analyzed expected bus performance on each block in LAVTA's service catalog to calculate daily fuel required to complete that block. CTE completed this analysis for each of the four fleet scenarios, estimating the fuel costs unique to each fleet projection throughout the transition period.

The Fuel Assessment includes operation and maintenance costs for fueling infrastructure for both BEBs and FCEBs. Fuel cost estimates are based on the assumptions shown in **Table 13** below.

*Table 13 – Fuel Cost Assumptions*

| Fuel | Cost | Source |
|---|---|---|
| Diesel | $2.24/DGE | LAVTA-contracted rate |
| Hydrogen (trucked) | $7.95/kg | Contracted rate at OCTA |
| Electricity | Varies | PG&E Commercial EV Tariff Schedule |

The primary source of energy for a BEB comes from the local electrical grid. Utility companies typically charge separate rates for total electrical energy used (kilowatt-hours (kWh) or megawatt-hours (MWh)) and for peak power demand (kilowatts (kW) or megawatts (MW)) on a monthly basis. Peak demand is defined as the maximum amount of energy that a customer pulls from the grid for any 15-minute window within a month. Demand charges are then applied on a per kW basis to that maximum demand in addition to per kWh costs for energy consumption. As a transit agency adds more buses and chargers, the agency's energy consumption and the peak power demand both increase. Rates also vary throughout the year and throughout the day, making costs highly variable if charging is not managed. Charge management includes strategies like charging buses during times of day at which rates are lower, avoiding demand charges, and spreading out the number of buses charging at once to minimize increases in peak power demand.

**Table 14** shows a summary of the PG&E Commercial EV rate schedule used in the Fuel Assessment to estimate electrical costs for BEBs. These rates are averaged from monthly rates and are a summarized version of PG&E's full rate schedule. Since this is a time-of-use (TOU) rate, the rate per kWh changes based on the time of day and year that the kWh was consumed. Since it is assumed that depot charged buses would fuel entirely in the Off-Peak hours between 9:00pm and 9:00am, the depot charge rate is the same as the Off-Peak rate. Since the On-Route charged buses operate partially in the On-Peak period, the On-Route per kWh rate is slightly higher. Most TOU rates also include a demand charge, which is dependent on the maximum demand that the meter measures in a given month. For PG&E's Commercial EV Rate, however, there is a subscription fee of $95.56/50kW of demand, which would apply to the demand at the depot, as well as at each of the On-Route charging stations. The depot charge rate and on-route charge rate included in the table represent the average cost per kilowatt-hour (kWh) rate expected for LAVTA.

*Table 14 – PG&E Rate Schedule*

| | | | | |
|---|---|---|---|---|
| Electric Utility Rates | Per meter charge | NA | | |
| | | summer | winter | annual |
| | On Peak (per kWh) | $0.35 | $0.35 | $0.35 |
| | Off-Peak (per kWh) | $0.14 | $0.14 | $0.14 |
| | Super Off (per kWh) | $0.11 | $0.11 | $0.11 |
| | Depot charge rate | $0.14 | | |
| | On-Route charge rate | $0.19 | | |
| | Depot Demand Charge (per 50kW/month) | $95.56 | | |
| | On-Route Demand charge (per 50kW/month) | $96.56 | | |

## Charging Analysis

To accurately estimate energy consumption, peak power demand, and resulting costs, charging simulations at the depot for each year of the transition were conducted. Electrical energy consumption and peak power demand were estimated based on current block schedules and projections of BEB purchases. CTE then used PG&E tariff schedules to calculate the annual cost of charging. This annual cost is evaluated for each year of the study (2020–2040) to obtain a total charging cost of BEBs with depot charging for the transition period. This estimate of total charging cost is used as the total fuel cost for the BEB Only scenario and is used in the other



BACK TO AGENDA

fleet scenarios, where relevant, in addition to on-route charging costs, hydrogen fuel costs, or fossil-fuel costs.

The local utility, PG&E, calculates total energy costs, measured per kWh, using a time-of-use rate (TOU), as shown in **Table 14**. Ideally, buses would all charge exclusively in the least expensive Super Off-Peak and Off-Peak times for the lowest overall cost, which the buses at LAVTA should be able to achieve by charging at night.

### Hydrogen Pricing Sensitivity Analysis

Although CTE assumes pricing remains at 2020 levels throughout the ZEB transition period, a sensitivity analysis was conducted for LAVTA regarding hydrogen pricing because it is widely believed that these prices will fall over time. The high end of the expected price is the current price paid by OCTA ($7.95/kg) and the bottom rate was estimated based on NREL and DOE projections at $5.50.[4,5] This pricing sensitivity is shown in the summary and total estimates for the fuel cell scenarios in **Figure 35**.

### Low Carbon Fuel Standard Credits

For the zero-emission fleet scenarios, CTE included an estimation of the fuel cost reductions LAVTA would receive if it engages in CARB's Low Carbon Fuel Standard (LCFS) credit program. The LCFS program aims to reduce carbon emissions by setting carbon emissions intensity goals for the transportation sector and then reducing that limit over time. The current program extends through 2030 but is expected to be renewed within the next few years. In the LCFS program, one credit is equivalent to one metric ton of carbon dioxide reduction. Although this program is optional, these credits would allow LAVTA to greatly reduce their expected fuel costs. A graph illustrating an estimate of the potential for each scenario to generate LCFS credits will follow the Fuel Assessment graphs for each scenario; however, since the exact credit revenue would be difficult to predict at this stage, especially considering the uncertainty of potential hydrogen fuel pathways for LAVTA, only the initial Fuel Assessment values were included in the Total Cost Analysis. The discussion of LCFS credits is included illustrate the financial impact participating in the LCFS credit trading program could have on LAVTA's fuel costs and the state incentives related to zero-emission technology deployments.

### Baseline

**Figure 20** depicts energy consumption by fuel type over the transition period for the Baseline scenario. In this scenario, the fleet remains composed of only diesel-hybrid buses. Fleet energy use remains constant over the entire period at around 0.4 million DGE.

---

[4] Melaina, M. and Penev, M. 2013. Hydrogen Station Cost Estimates Comparing Hydrogen Station Cost Calculator Results with Recent Estimates. Golden, CO: National Renewable Energy Laboratory. NREL/TP-5400-56412 https://www.nrel.gov/docs/fy13osti/56412.pdf

[5] Hydrogen Production Tech Team Roadmap. 2017. U.S. DRIVE (Driving Research and Innovation for Vehicle efficiency and Energy sustainability). Washington, DC: Department of Energy. https://www.energy.gov/sites/prod/files/2017/11/f46/HPTT%20Roadmap%20FY17%20Final_Nov%202017.pdf

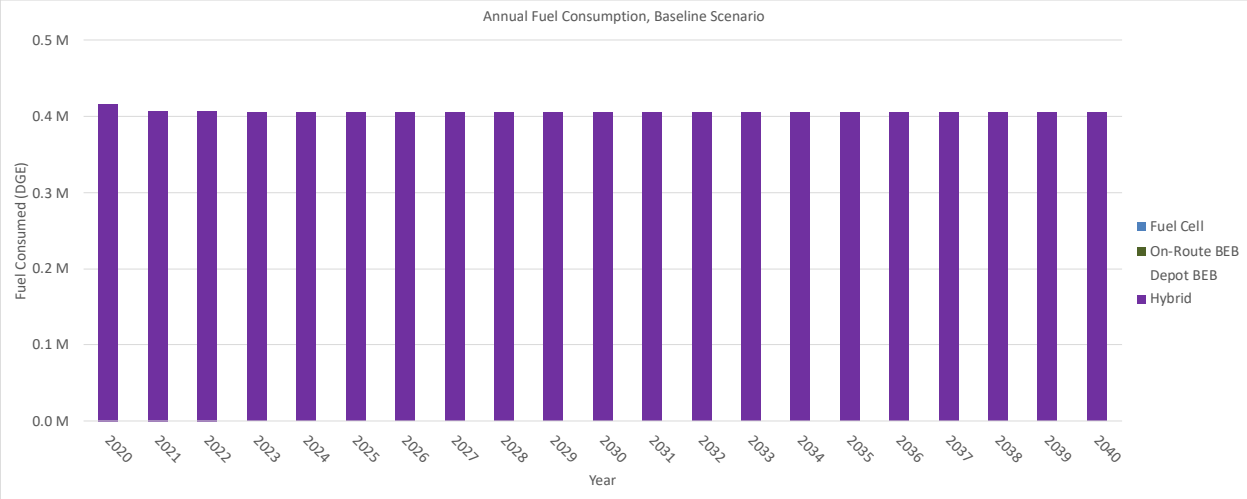



*Figure 20 – Annual Fuel Consumption, Baseline Scenario*

**Figure 21** shows the annual fuel costs for each fuel type in the Baseline scenario, based on the consumption quantities shown in **Figure 20**. Total estimated fuel costs in 2040 are approximately $0.9 million. Since this scenario uses only diesel hybrids, the Baseline scenario fleet would not be eligible for LCFS credits.

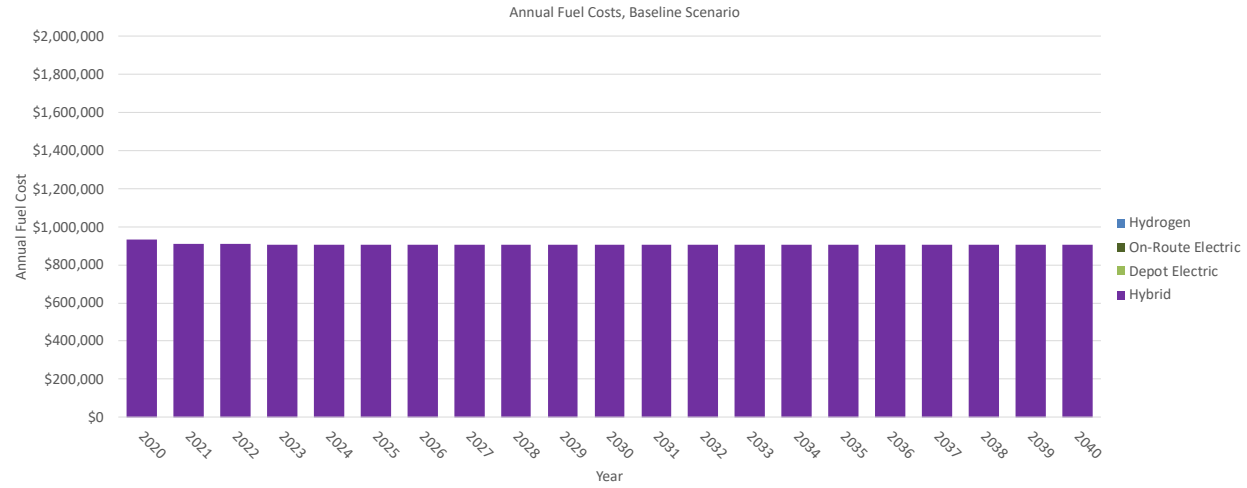



*Figure 21 – Annual Fuel Costs, Baseline Scenario*

## BEB Only

The BEB Only scenario models a transition to an all-BEB fleet that employs depot-charging and on-route charging to extend bus range. The fuel costs for the BEB Only scenario are based on three key assumptions:

1. The total number of buses in the fleet does not increase.
2. The buses that are charged on-route incur additional demand charges and operate partially during peak time-of-use rates, resulting in on-route energy charges that are higher than depot energy charges.
3. The buses are assumed to charge fully at the depot and only require enough charging on-route to make up the difference between the battery capacity and the block demand. The rate for on-route energy consumption is only applied to the portion of the block's energy demand that exceeds the battery capacity of the bus.

Because bus replacements are based on block achievability, there may be instances where block coverage is insufficient and depot-charged BEBs cannot meet service requirements. In this scenario, on-route chargers are used to supplement depot charging to extend the range of buses, thus allowing the achievability of a 100% ZEB fleet. On-route charging allows an agency to add energy to buses while in service, providing the additional energy necessary to complete a block without having to travel the extra distance and take the extra time to return to a depot for charging.

**Figure 22** depicts energy consumption for each fuel type over the transition period, assuming a combination of depot-charged and on-route charged BEBs. Legacy fuels are phased out as electricity consumption increases, reflecting an increasing number of BEBs in the fleet. Fleet energy use is reduced from about 0.4 million DGE in 2020 to just over 0.1 million DGE in 2040, an approximately 75% decrease.

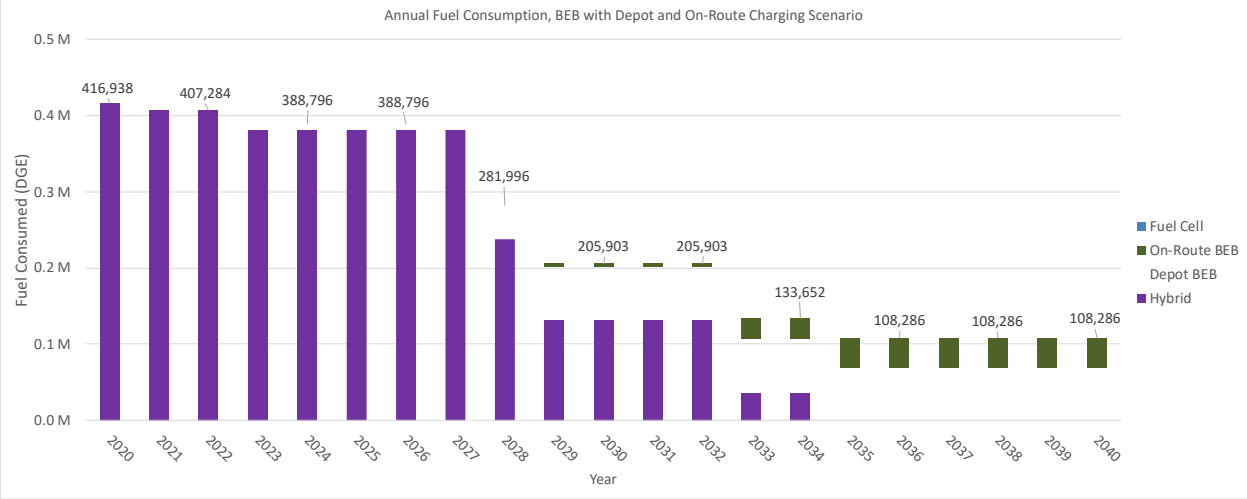



*Figure 22 – Annual Fuel Consumption, BEB Only Scenario*

**Figure 23** shows the annual costs for each fuel type based on the quantities in **Figure 22**. Total estimated fuel costs in 2040 are approximately $1.15 million. The buses charged on-route incur additional demand charges and electricity use costs are slightly higher for on-route charging. These additional costs have been included in the figure below.



BACK TO AGENDA

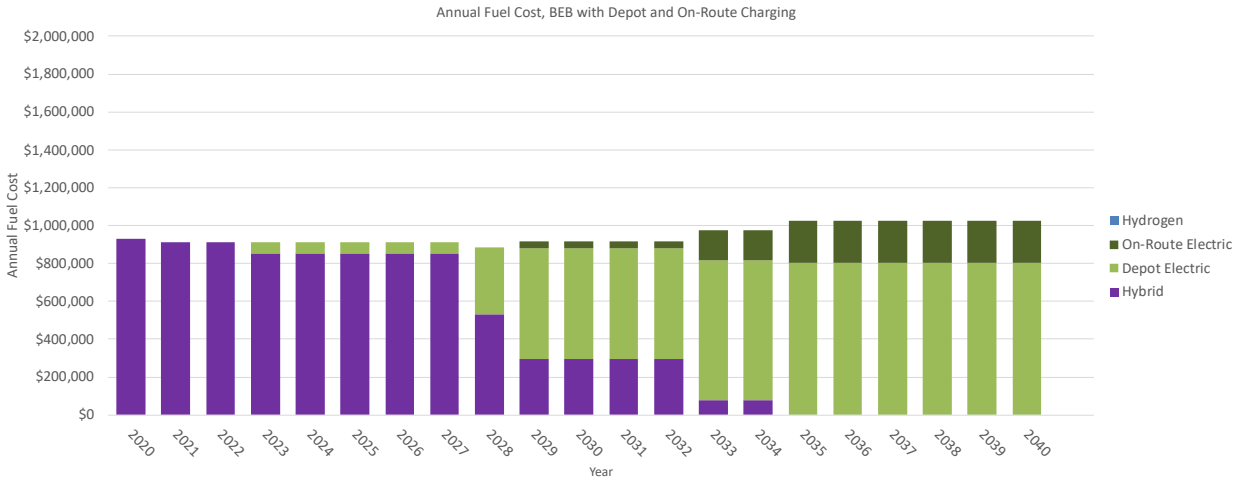



*Figure 23 – Annual Fuel Costs, BEB Only Scenario*

Operating BEBs would also make LAVTA eligible for LCFS credits. Procuring electricity from 100% renewable energy would generate the most credits for LAVTA. Purchasing Renewable Energy Credits (RECs) is one pathway to obtaining renewable energy and would enable LAVTA to qualify for LCFS credits while still receiving its energy from PG&E. **Table 15** below illustrates the credit revenue estimates through 2030.

*Table 15 – LCFS Credit Revenue Estimates by Year, BEB Only Scenario*

| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|---|
| Number of BEBs in Fleet | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 24 | 44 | 44 |
| LCFS Credit Gross Value per BEB | $28,000 | $27,000 | $26,000 | $25,000 | $25,000 | $24,000 | $23,000 | $22,000 | $21,000 | $21,000 |
| Credit Processing Fee | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% |
| LAVTA LCFS Credit Revenue | $ - | $ - | $97,000 | $93,000 | $90,000 | $87,000 | $84,000 | $487,000 | $862,000 | $832,000 |

In this table, the LCFS credit gross value is calculated at an estimated 2% per year reduction rate from current credit pricing. Within this model, a broker service fee of 10% was subtracted from the gross credit value. Finally, although the current LCFS credit program only extends through



BACK TO AGENDA

2030, speculating on how the pricing will trend after the program renewal is challenging. Therefore, in **Figure 24** below, 2030 the per bus LCFS credit revenue remains at 2030 values.

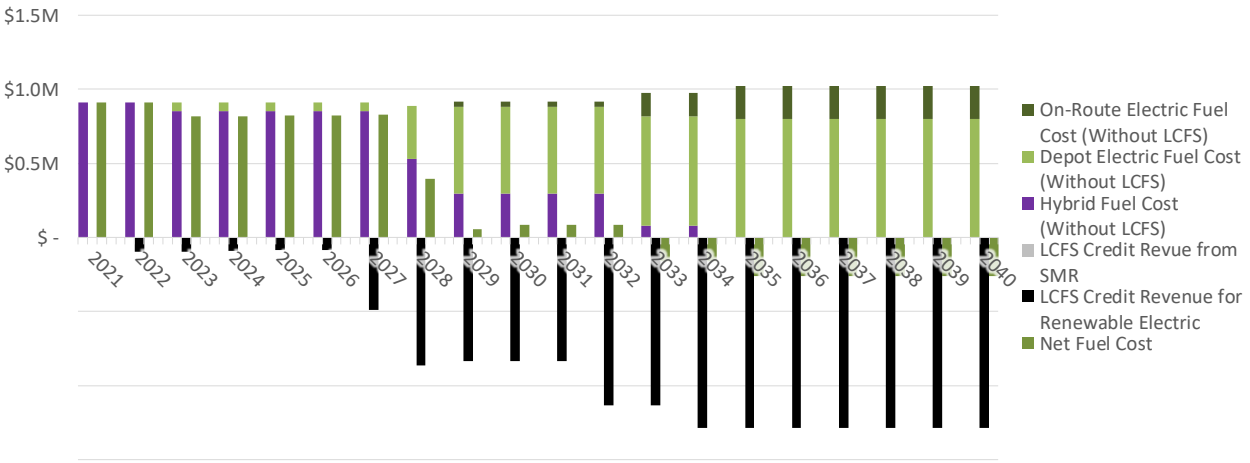



*Figure 24 - Potential LCFS Credit Revenue for 100% Renewable Electric, BEB Only Scenario*

## Mixed Fleet BEB and FCEB

In the Mixed Fleet: BEB and FCEB scenario, BEBs replace diesel-hybrid buses on all achievable blocks. FCEBs supplement the BEB fleet to cover the blocks that are not achievable with battery electric technologies. Building the fleet in this way ensures that all routes are achievable while minimizing the higher costs of FCEBs.

**Figure 25** depicts energy consumption for each fuel type over the transition period for the Mixed Fleet: BEB and FCEB scenario. Legacy fuels are phased out as electricity and hydrogen consumption increases, reflecting an increasing number of BEBs and FCEBs in the fleet. Fleet energy use is reduced from about 0.4 million DGE in 2020 to just under 0.15 million DGE in 2040, an approximately 63% decrease.

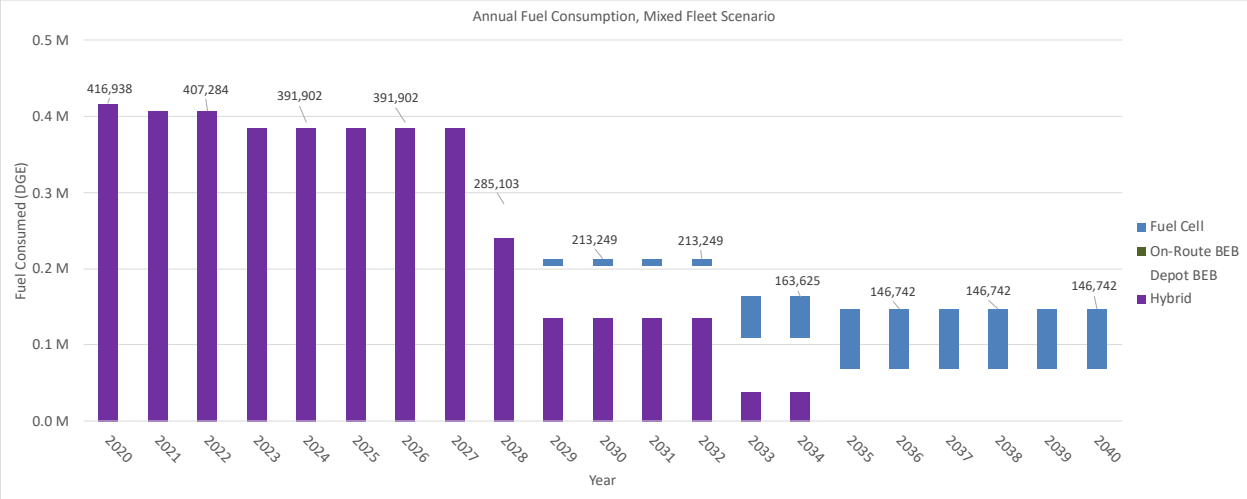



*Figure 25 – Annual Fuel Consumption, Mixed Fleet Scenario*



BACK TO AGENDA

**Figure 26** shows the estimated annual costs for each fuel type based on the quantities consumed, as shown in **Figure 25**. Total estimated fuel costs in 2040 are approximately $1.26 million, which are incurred from electricity use for BEBs and hydrogen fuel for FCEBs. Although the total amount of energy consumed decreases over the ZEB transition period (**Figure 25**), the total fuel costs increase over that timeframe. These trends reflect hydrogen's greater efficiency but also its higher costs compared to diesel fuel.

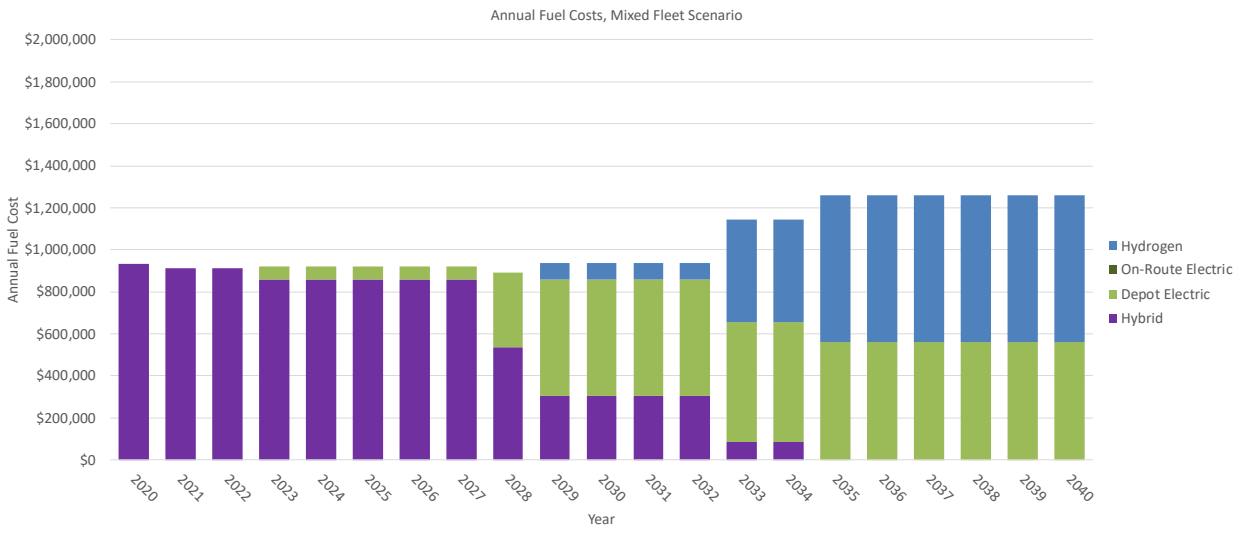



*Figure 26 – Annual Fuel Costs, Mixed Fleet Scenario*

The Mixed Scenario is also eligible for participation in the LCFS Credit Program; however, revenue potential for hydrogen is highly variable depending on how the fuel is produced. CTE therefore explored three potential hydrogen fuel production pathways for LCFS credits. The first pathway, fossil steam methane reformation (SMR), is currently the most common but, given that fossil fuels are used as to produce the hydrogen, this method is not very lucrative on the LCFS market. The second pathway, electrolysis using 100% renewable energy, generates a significant number of LCFS credits. The third pathway, dairy gas SMR, has a negative carbon intensity and would therefore generate the most LCFS credits of any of the pathways explored. For all the hydrogen fuel pathways explored in the Mixed Fleet Scenario, the LCFS credits that would be generated by the BEBs in the fleet remain constant because only the 100% renewable pathway was explored.

*Table 16 – LCFS Credit Revenue Estimates by Year for Fossil Fuel SMR Hydrogen, Mixed Fleet Scenario*

| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|---|
| Number of BEBs in Fleet | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 24 | 40 | 40 |
| Number of FCEBs in Fleet | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 |
| LCFS Credit Gross Value per BEB | $28,000 | $27,000 | $26,000 | $25,000 | $25,000 | $24,000 | $23,000 | $22,000 | $21,000 | $21,000 |
| LCFS Credit Gross Value per FCEB - SMR | $1,392 | $1,136 | $887 | $647 | $419 | $198 | $- | $- | $- | $- |
| Credit Processing Fee | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% |
| LAVTA LCFS Credit Revenue | $ - | $ - | $97,000 | $93,000 | $90,000 | $87,000 | $84,000 | $487,000 | $784,000 | $756,000 |

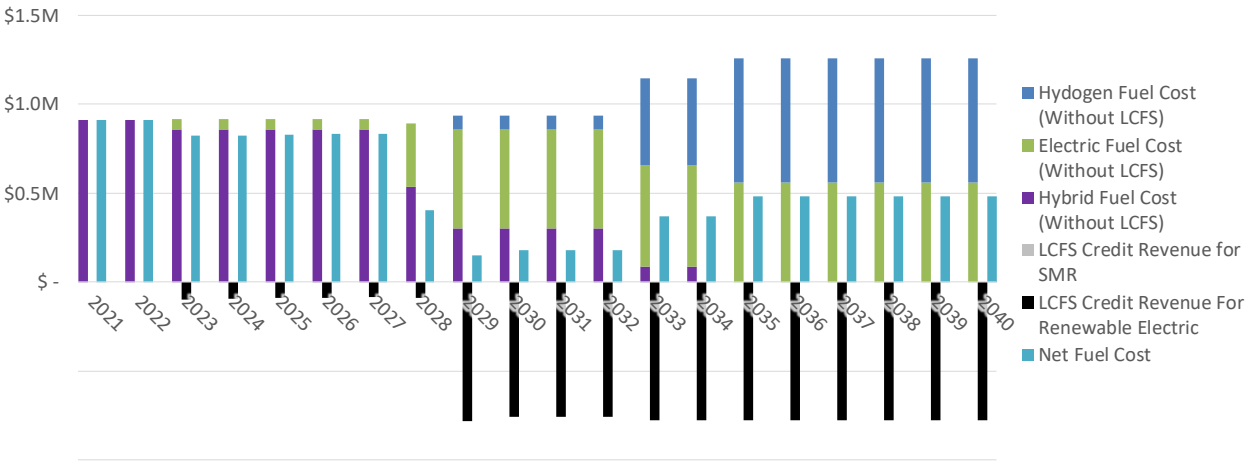



*Figure 27 - Potential LCFS Credit Revenue for Fossil Fuel SMR Hydrogen, Mixed Fleet Scenario*



BACK TO AGENDA

*Table 17 – LCFS Credit Revenue Estimates by Year for 100% Renewable Electrolysis Hydrogen, Mixed Fleet Scenario*

| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|---|
| Number of BEBs in Fleet | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 24 | 40 | 40 |
| Number of FCEBs in Fleet | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 |
| LCFS Credit Gross Value per BEB | $28,000 | $27,000 | $26,000 | $25,000 | $25,000 | $24,000 | $23,000 | $22,000 | $21,000 | $21,000 |
| LCFS Credit Gross Value per FCEB - Electrolysis | $16,000 | $15,000 | $15,000 | $14,000 | $13,000 | $13,000 | $13,000 | $12,000 | $12,000 | $11,000 |
| Credit Processing Fee | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% |
| LAVTA LCFS Credit Revenue | $ - | $ - | $97,000 | $93,000 | $90,000 | $87,000 | $84,000 | $487,000 | $827,000 | $798,000 |

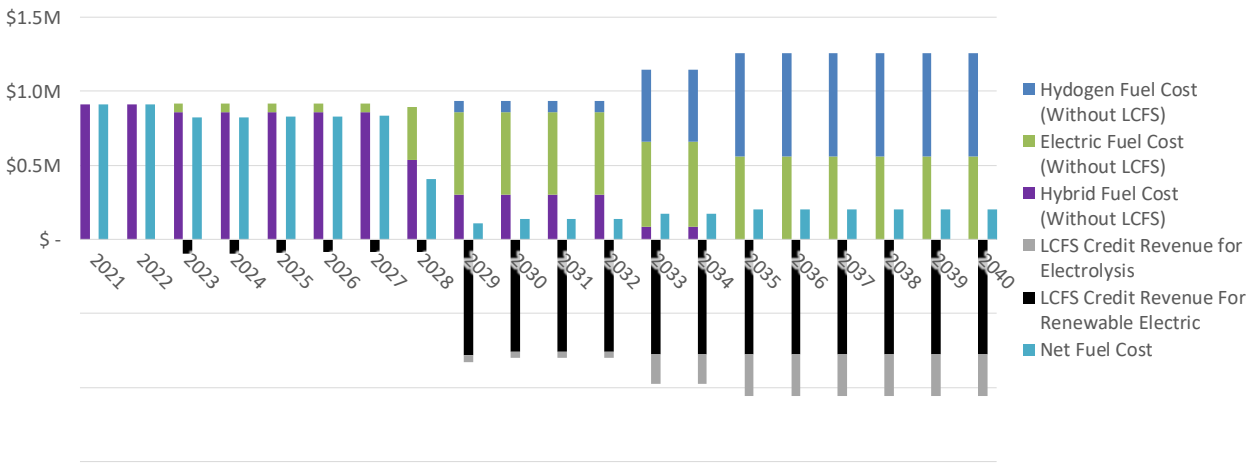



*Figure 28 - Potential LCFS Credit Revenue for 100% Renewable Electrolysis Hydrogen, Mixed Fleet Scenario*



BACK TO AGENDA

*Table 18 – LCFS Credit Revenue Estimates by Year for Dairy Gas SMR Hydrogen, Mixed Fleet*

| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|---|
| Number of BEBs in Fleet | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 24 | 40 | 40 |
| Number of FCEBs in Fleet | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 |
| LCFS Credit Gross Value per BEB | $28,000 | $27,000 | $26,000 | $25,000 | $25,000 | $24,000 | $23,000 | $22,000 | $21,000 | $21,000 |
| LCFS Credit Gross Value per FCEB – Dairy Gas | $42,000 | $41,000 | $40,000 | $39,000 | $38,000 | $37,000 | $36,000 | $35,000 | $34,000 | $33,000 |
| Credit Processing Fee | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% |
| LAVTA LCFS Credit Revenue | $ - | $ - | $97,000 | $93,000 | $90,000 | $87,000 | $84,000 | $487,000 | $906,000 | $875,225 |

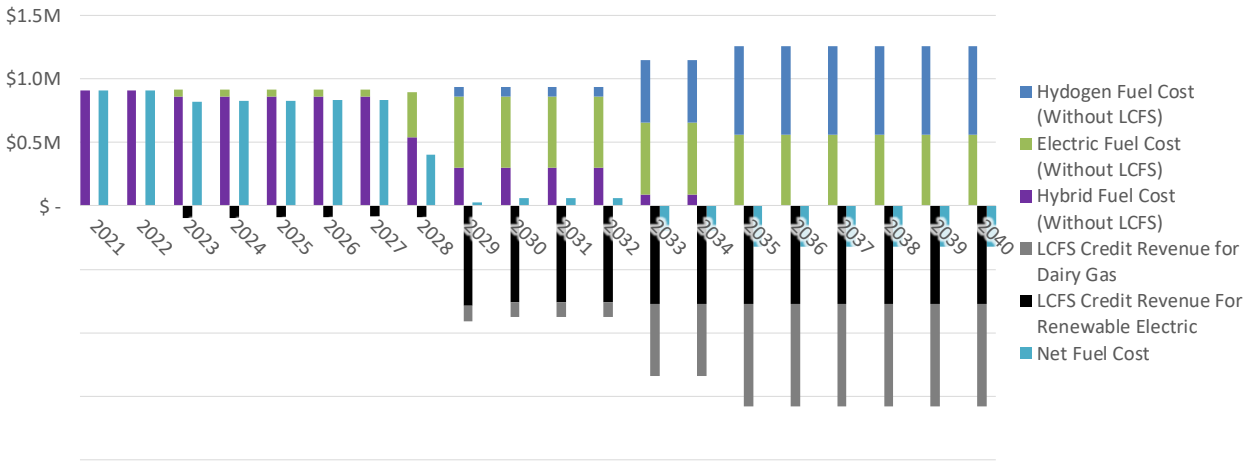



*Figure 29 - Potential LCFS Credit Revenue for Dairy Gas SMR Hydrogen, Mixed Fleet Scenario*

## FCEB Only

Fuel cell electric buses are able to complete all of LAVTA's blocks by the end of the transition period in 2040. **Figure 30** depicts fuel consumption for each fuel type over the transition period for the FCEB Only scenario. Legacy fuels are phased out as hydrogen consumption increases, reflecting an increasing number of FCEBs in the fleet. Fleet energy use is reduced from about 0.4 million DGE in 2020 to just over 0.2 million DGE in 2040, an approximately 50% decrease.

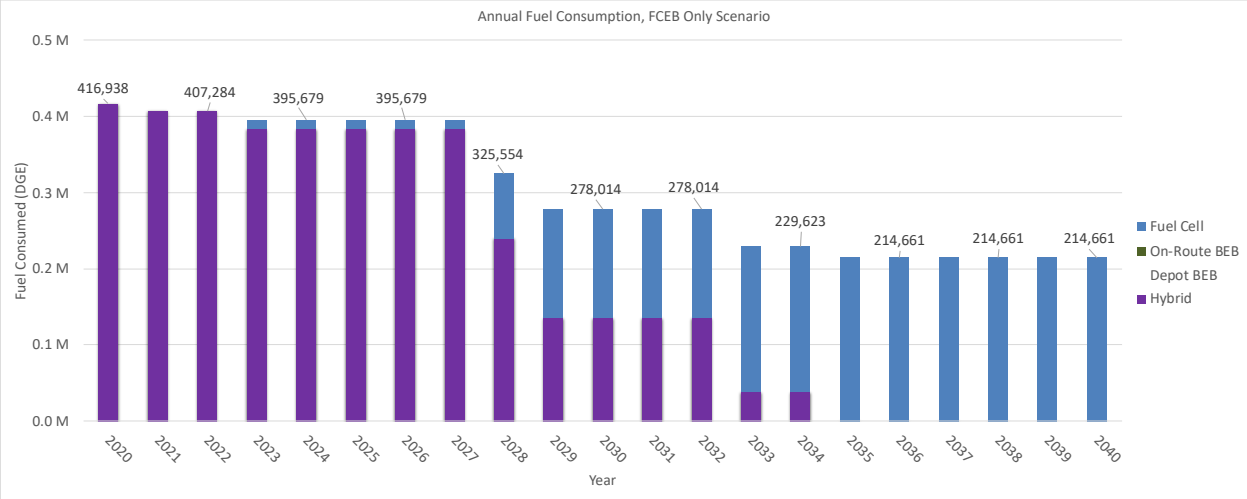



*Figure 30 – Annual Fuel Consumption, FCEB Only Scenario*

**Figure 31** shows estimated annual costs for each fuel type based on the quantities consumed, as shown in **Figure 30**. Total estimated fuel costs, entirely from hydrogen fuel, in 2040 are approximately $2 million. As in the Mixed Fleet Scenario, the fuel costs increase over the transition period while the DGE consumption decreases. These trends reflect hydrogen's greater efficiency but also its higher costs compared to diesel fuel.

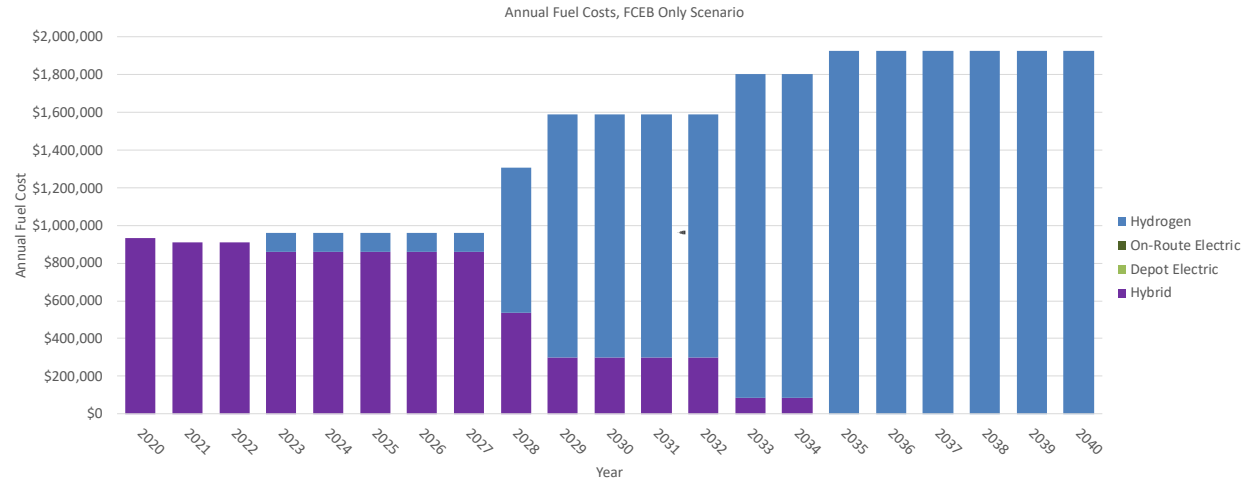



*Figure 31 – Annual Fuel Costs, FCEB Only Scenario*

The LCFS credit revenue in this scenario also depends largely on the method of hydrogen production for the fuel that LAVTA purchases. Fossil fuel SMR generates the least LCFS credits, and dairy gas SMAR generates the most.

*Table 19 – LCFS Credit Revenue Estimates by Year for Fossil Fuel SMR Hydrogen, FCEB Only Scenario*

| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|---|
| Number of FCEBs in Fleet | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 24 | 44 | 44 |
| LCFS Credit Gross Value per FCEB - SMR | $1,392 | $1,136 | $887 | $647 | $419 | $198 | $- | $- | $- | $- |
| Credit Processing Fee | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% |
| LAVTA LCFS Credit Revenue | $ - | $ - | $3,000 | $2,000 | $1,000 | $700 | $ - | $ - | $ - | $ - |

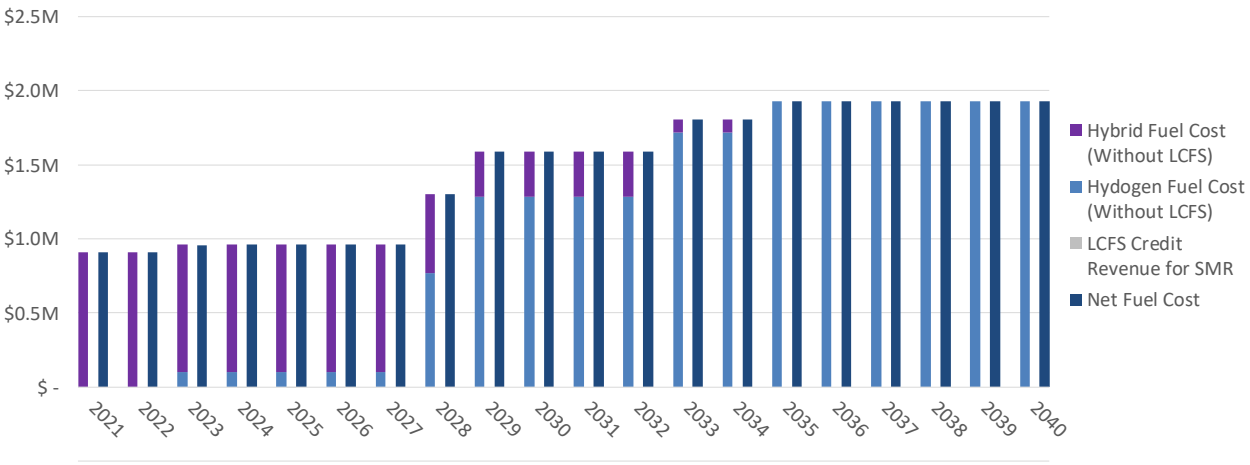



*Figure 32 - Potential LCFS Credit Revenue for Fossil Fuel SMR Hydrogen, FCEB Only Scenario*

*Table 20 – LCFS Credit Revenue Estimates by Year for 100% Renewable Electrolysis Hydrogen, FCEB Only Scenario*

| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|---|
| Number of FCEBs in Fleet | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 24 | 44 | 44 |
| LCFS Credit Gross Value per FCEB - Electrolysis | $16,000 | $15,000 | $15,000 | $14,000 | $13,000 | $13,000 | $13,000 | $12,000 | $12,000 | $11,000 |
| Credit Processing Fee | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% |
| LAVTA LCFS Credit Revenue | $ - | $ - | $54,000 | $52,000 | $50,000 | $48,000 | $47,000 | $271,000 | $479,000 | $462,000 |



BACK TO AGENDA

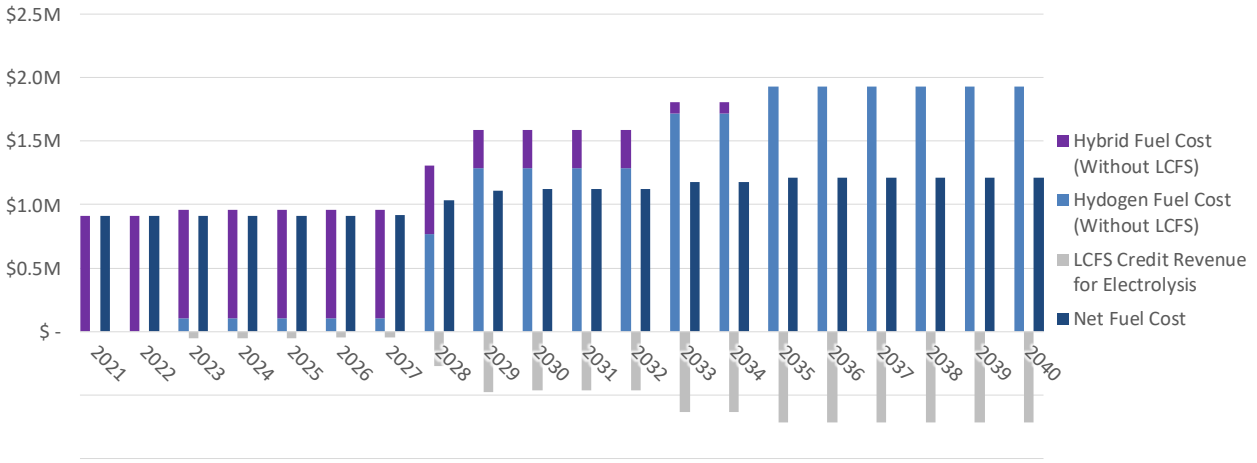



*Figure 33 - Potential LCFS Credit Revenue for 100% Renewable Electrolysis Hydrogen, FCEB Only Scenario*

*Table 21 – LCFS Credit Revenue Estimates by Year for Dairy Gas SMR Hydrogen, FCEB Only Scenario*

| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|---|
| Number of FCEBs in Fleet | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 24 | 44 | 44 |
| LCFS Credit Gross Value per FCEB – Dairy Gas | $42,000 | $41,000 | $40,000 | $39,000 | $38,000 | $37,000 | $36,000 | $35,000 | $34,000 | $33,000 |
| Credit Processing Fee | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% | 10% |
| LAVTA LCFS Credit Revenue | $ - | $ - | $143,000 | $139,000 | $135,000 | $132,000 | $129,000 | $752,000 | $1,343,000 | $1,308,000 |

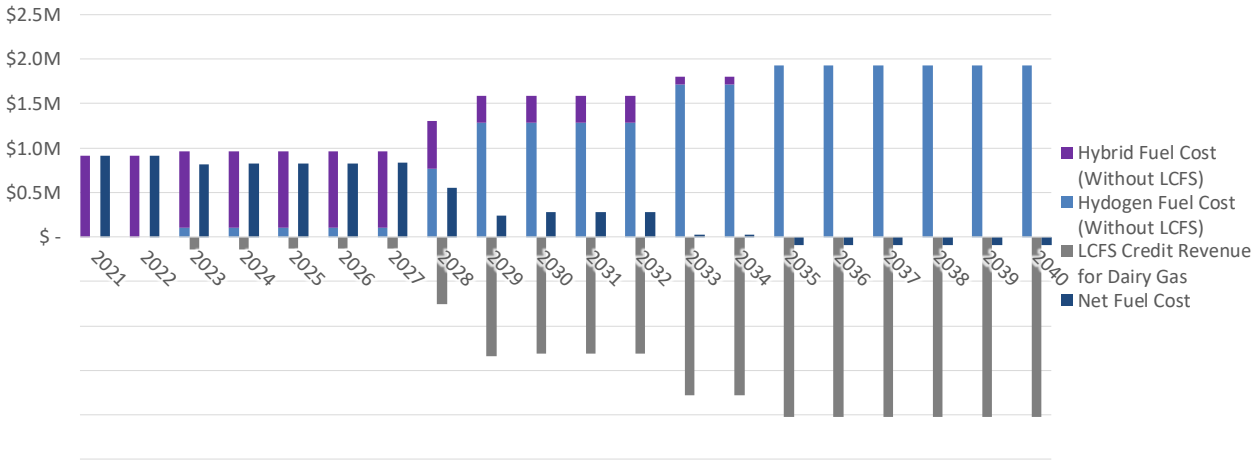



*Figure 34 – Potential LCFS Credit Revenue for Dairy Gas SMR Hydrogen, FCEB Only Scenario*



BACK TO AGENDA

## Fuel Assessment Cost Comparison

The Fuel Assessment includes all fuel costs over the transition for each scenario. **Figure 35** shows the cumulative fuel costs for each scenario over a twenty-year period. **Table 22** - Total Fuel Costs Over Entire Transition Period, Fuel Assessment shows the combined total costs and the percentage of the fleet that is zero-emission in 2040.

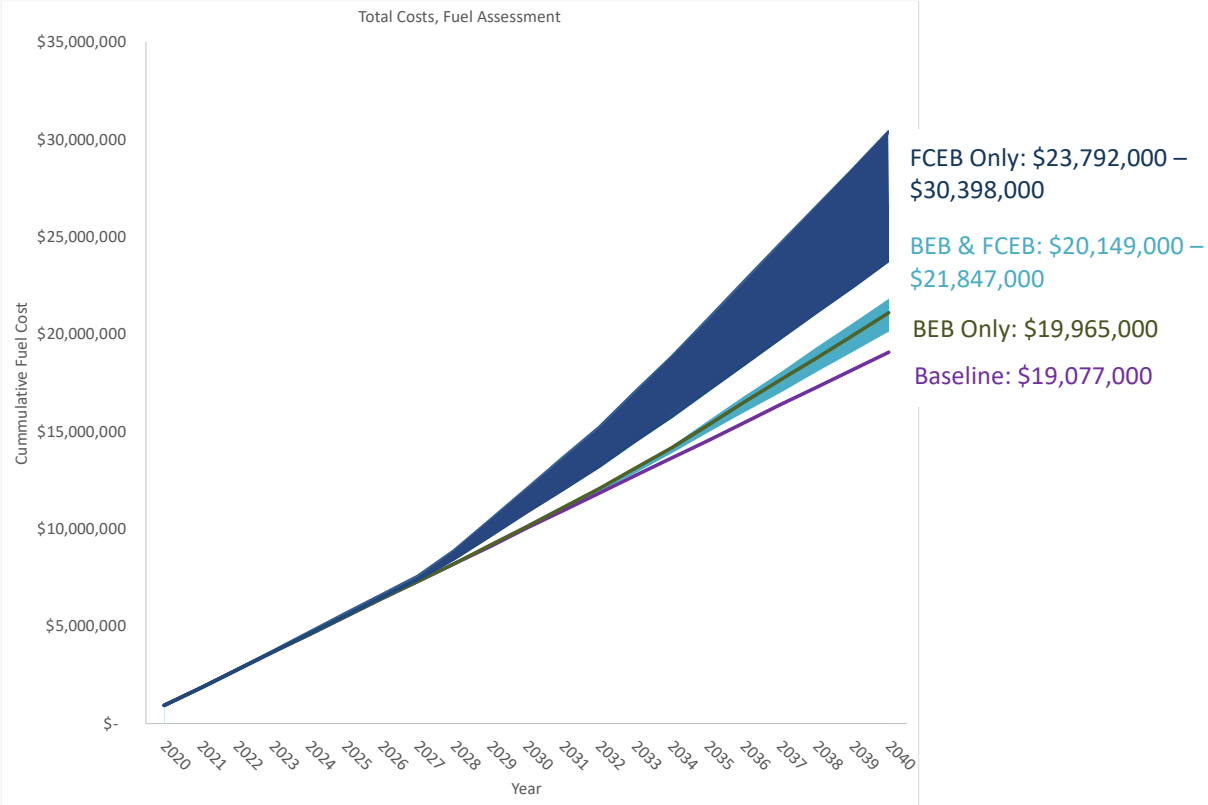



*Figure 35 – Total Costs, Fuel Assessments*

*Table 22 - Total Fuel Costs Over Entire Transition Period, Fuel Assessment*

| Scenario | Cumulative Fuel Cost | Average Annual Fuel Cost | % ZEB in 2040 |
|---|---|---|---|
| **Baseline** | $ 19,077,000 | $ 954,000 | 0% |
| **BEB Only** | $ 19,965,000 | $ 1,025,000 | 100% |
| **Mixed Fleet: BEB and FCEB** | $ 20,149,000 – $ 21,833,000 | $ 1,007,000 – $ 1,092,000 | 100% |
| **FCEB Only** | $ 23,792,000 – $ 30,398,000 | $ 1,190,000 – $ 1,520,000 | 100% |

# 7 Maintenance Assessment

One of the anticipated benefits of operating a BEB or FCEB fleet is reduced maintenance costs. Early adopters of ZEB technologies have reported that a transit agency may attain 30% to 50% in maintenance cost savings for a BEB compared to an ICE vehicle. These savings result from there being fewer fluids to replace (no engine oil or transmission fluid), fewer brake changes due to regenerative braking, and far fewer moving parts than in an internal combustion engine. The savings in traditional maintenance costs may be offset by the cost of battery or fuel cell replacements over the life of the buses. These costs, however, may be covered by extended warranties.

Diesel-hydrid bus labor and maintenance costs were provided by LAVTA for their current fleet. BEB labor and maintenance costs were estimated as a 35% reduction on the diesel-hybrid cost, which was based on industry expectations and labor and maintenance costs from King County as reported by the U.S. DOE National Renewable Energy Laboratory (NREL).[6] Hydrogen maintenance costs were based on OCTA's reported labor and maintenance costs. It should be noted that this FCEB maintenance per mile value is based on the costs for the first year of service at OCTA. Therefore, this cost is likely higher than expected over time since this is a first generation vehicle.

In addition to labor and materials, this study also estimates the cost impact of midlife overhauls for major components for each type of bus. **Table 23** shows the assumed costs of scheduled and unscheduled labor and maintenance used in this analysis.

*Table 23 – Labor and Materials Cost Assumptions*

| Type | Estimate (Per Mile) | Source |
|---|---|---|
| 40' Hybrid | $ 0.38 | LAVTA |
| 40' BEB | $ 0.25 | U.S. DOE & NREL |
| 40' FCEB | $ 0.59 | OCTA price used |

Assumptions used in this analysis are given in **Table 24.** Cost assumptions for fossil-fuel buses are based on LAVTA data. Midlife battery overhaul cost estimates for BEBs are based on extended warranty costs provided by bus OEMs, and the FCEB battery warranty cost is a prorated estimate of that rate based on battery storage capacity.

[6] Eudy, Leslie and Matthew Jeffers. 2019. Foothill Transit Agency Battery Electric Bus Progress Report: Data Period Focus: Jul.2018 through Dec. 2018. Golden, CO: National Renewable Energy Laboratory. NREL/PR-5400-72209. https://afdc.energy.gov/files/u/publication/foothill_transit_beb_progress_rpt_5-2019.pdf.

*Table 24 - Midlife Overhaul Cost Assumptions*

| Type | Overhaul Scope | Estimate | Source |
|---|---|---|---|
| Diesel | Engine/Transmission Overhaul | $50k per bus | LAVTA |
| BEB | Warranty Cost | $75k per bus | Bus OEM |
| FCEB | Battery Replacement Warranty<br>Fuel Cell Overhaul | $16.7k per bus<br>$40k per bus | Estimate Based on Bus OEM<br>Fuel Cell OEM |

Note that there are spikes in the expected maintenance costs six years after a large number of buses are purchased, such as 2021 and 12 years later when those buses are replaced in 2033. The 12-year replacement cycle creates a cyclical pattern in maintenance costs in midlife years because the diesel-hybrids would be expected to incur a midlife overhaul at that time. Since this scenario represents a fleet that stays entirely composed of diesel-hybrid buses, the peaks consistently repeat every 12 years at the midlife of large purchases. In non-midlife years, the annual price is around $780,000 and, in the years, where up to 20 buses are expected to reach the midlife in the same year, the price increases to $1.78 million. **Figure 36** shows the combined labor, materials, and midlife overhaul costs for the Baseline scenario for each year of the transition, in 2020 dollars.

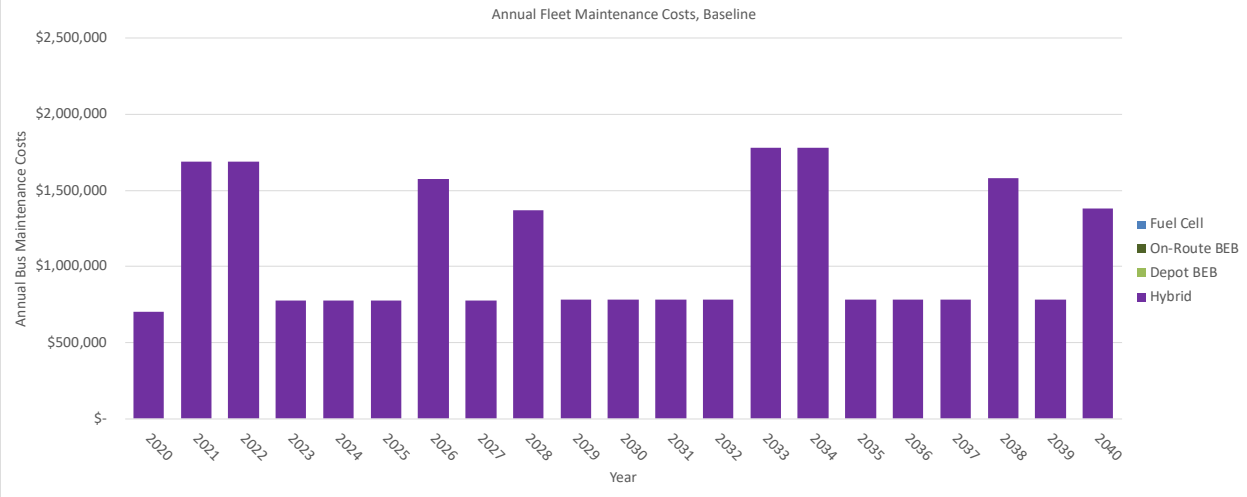



*Figure 36 - Annual Fleet Maintenance Costs, Baseline*

## BEB Only

**Figure 37** shows the combined labor, materials, and midlife overhaul costs for the BEB Only scenario for each year of the transition, in 2020 dollars. For the Depot with On-Route Charging scenario, warranty costs are used in place of the midlife battery replacement, so there are spikes in the expected maintenance costs the same years that a large number of buses are purchased, such as 2028. In this scenario, the 12-year replacement cycle shifts the cyclical

pattern in maintenance costs from non-purchasing years to purchasing years. Comparing 2020 to 2032—a non-purchasing and non-midlife year when the fleet is composed of only hybrids compared to when the fleet is mostly BEBs—the annual maintenance drops from around $780,000 to around $500,000. Despite the $75,000 for the warranty exceeding the $50,000 expected for the midlife overhaul of the hybrids, the reduced per mile maintenance expected for the BEBs results in a 4% reduction of maintenance costs for this scenario compared to the Baseline.

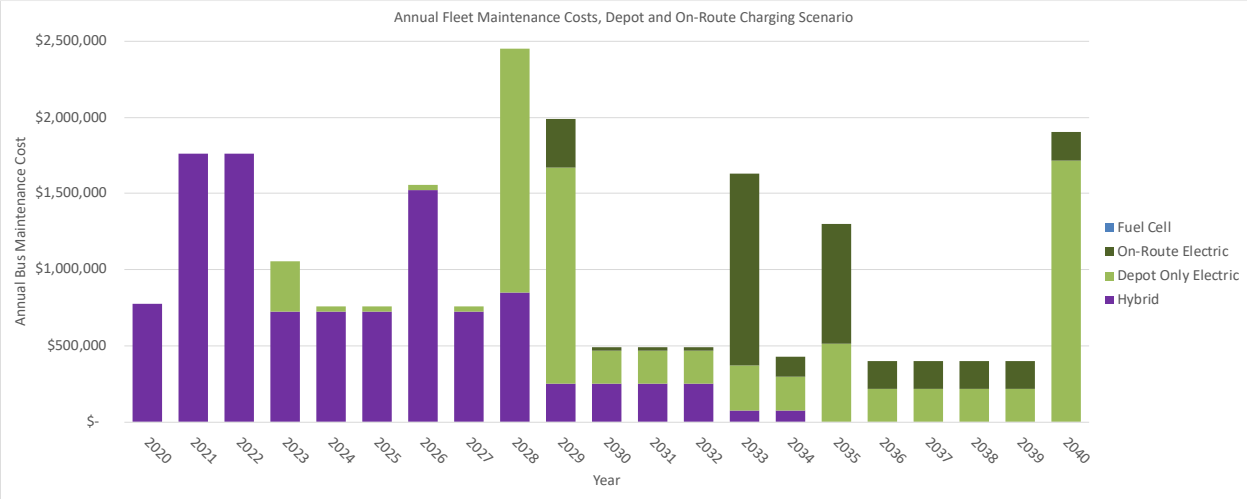



*Figure 37 - Annual Fleet Maintenance Costs, BEB Only Scenario*

## Mixed Fleet: BEB and FCEB

**Figure 38** shows the combined labor, materials, and midlife overhaul costs for the Mixed Fleet: BEB and FCEB scenario for each year of the transition, in 2020 dollars. Unlike in the BEB Only scenario, the FCEB scenarios have their largest maintenance costs at the midlife overhaul. These events coincide because the FCEBs have a smaller warranty cost—$16,700 as opposed to $75,000 for BEBs because FCEBs have a significantly smaller battery on board— that applies to their purchase year. Their fuel cells, however, are expected to be replaced midlife—six years after purchasing. This timing results in the years with the highest expected maintenance amounts being years that are at the buses' midlife. Comparing 2020 to 2032 shows a slight decrease in expected maintenance costs per mile due to the fact that the per-mile maintenance cost for the BEBs is lower than that of the diesel-hybrids.

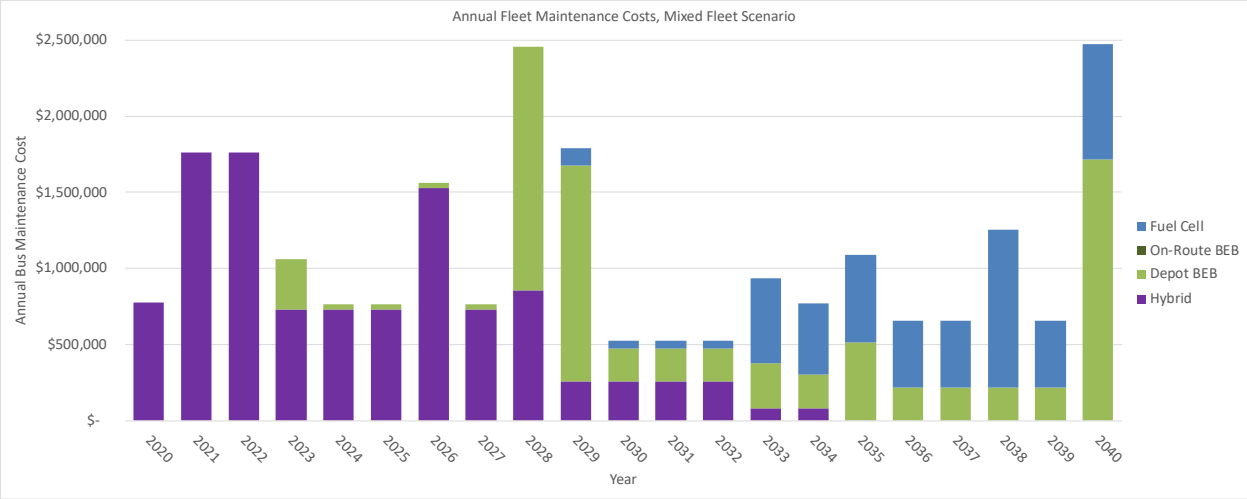



*Figure 38 - Annual Fleet Maintenance Costs, Mixed Fleet Scenario*

## FCEB Only

**Figure 39** shows the combined labor, materials and midlife overhaul costs for the FCEB Only scenario for each year of the transition, in 2020 dollars. As discussed with the Mixed Fleet scenario, FCEB's have significant maintenance costs at their midlife when the fuel cells are expected to be replaced. Comparing 2020 to 2032 reveals a slight increase in expected maintenance costs per mile compared to the Baseline or the BEB Only scenarios. This increase is a result of using OCTA's reported maintenance cost, which was used to estimate the maintenance costs for FCEBs in this study; OCTA's reported costs were higher than the estimates used for the diesel-hybrids or BEBs.

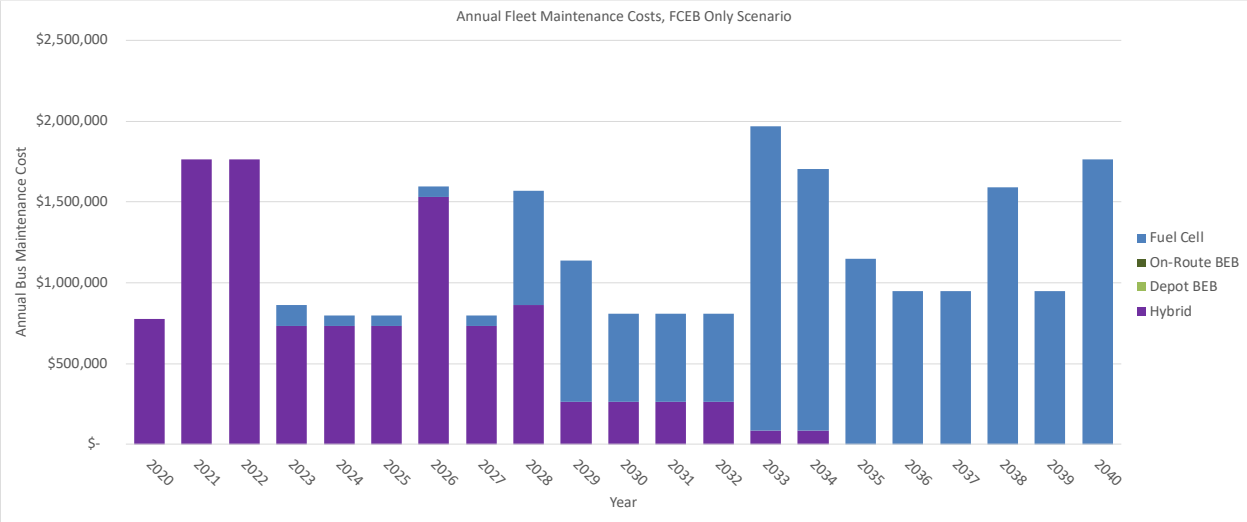



*Figure 39 - Annual Maintenance Costs, FCEB Only Scenario*

## Maintenance Assessment Cost Comparison

The Maintenance Assessment includes all labor, materials and, overhaul costs over the transition for each scenario. **Figure 40** shows the cumulative maintenance costs for each scenario.

**Table 25** shows the total maintenance costs for each scenario. All of these scenarios are within $3 million of each other at the end of the 20-year period. The FCEB Only scenario incurs the most maintenance costs while the BEB Only incurs the least. The fact that the FCEB Only scenario was more expensive than the BEB Only Scenario —despite the difference in the $75,000 for the BEB battery warranty and the $56,700 for the FCEB fuel cell replacement and battery warranty cost—shows that the differential in the per-mile maintenance cost of $0.25 per mile for BEBs and $0.59 per mile for FCEBs had a larger impact on the overall annual maintenance costs for the technologies than the warranties costs. It should also be noted that the BEB Depot and On-Route Charging scenario cost about $1 million less than the Baseline scenario over the 20-year transition period.

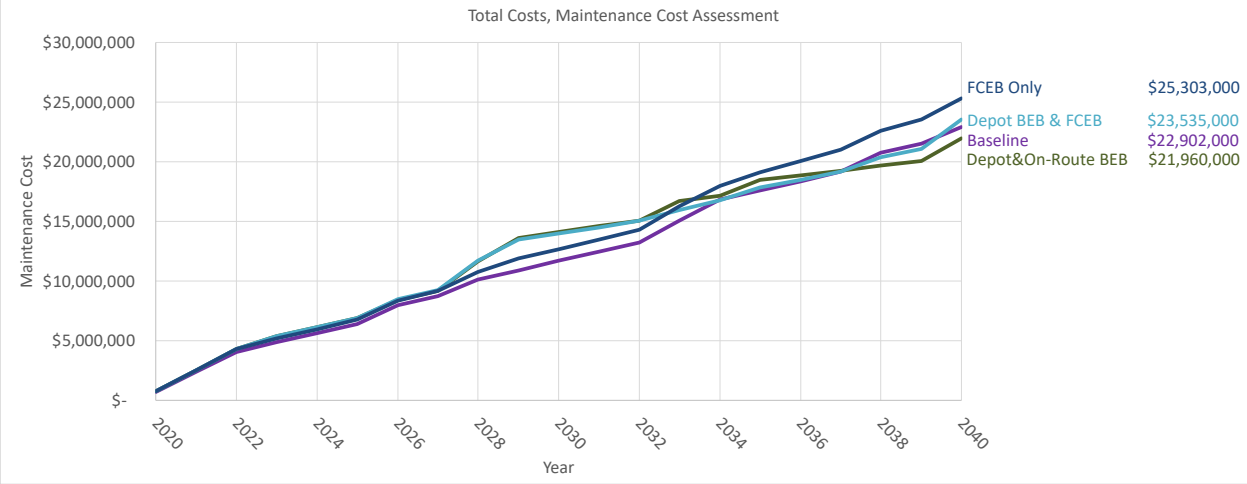



*Figure 40 - Total Costs, Maintenance Assessments*

*Table 25 - Total Costs, Maintenance Assessments*

| Scenario | Cost | % ZEB |
|---|---|---|
| **Baseline** | $ 22,902,000 | 0% |
| **BEB Only** | $ 21,960,000 | 100% |
| **Mixed Fleet: BEB and FCEB** | $ 23,535,000 | 100% |
| **FCEB Only** | $ 25,303,000 | 100% |

# 8 Facilities Assessment

The Facilities Assessment determines the scale of supporting infrastructure—charging infrastructure for BEBs and hydrogen infrastructure for FCEBs—necessary to meet the projected energy use estimated in the Fleet and Fuel Assessments. Facilities costs are then estimated based on the assessed infrastructure requirements for the given fleet. This section is divided between battery-electric infrastructure and hydrogen fueling infrastructure, which are further subdivided by their relevant assessment scenarios. Also, since the Baseline assumes that LAVTA already has the facilities necessary to support their diesel hybrid fleet, the Baseline was not included in the facilities assessment. Since LAVTA will be moving their depot from Rutan Court to their new facility at Atlantis Court, the BEB scenarios will include charging infrastructure at Rutan Court for the initial four bus deployment before the full facility build out occurs at the Atlantis Court facility. The charging infrastructure at Rutan Court would be put in place to support BEBs deployed prior to the shift in depots. Some of the costs of the electrical upgrades may be offset by PG&E's EV Fleet Program. If one of the BEB scenarios is pursued by LAVTA, the agency should apply to participate in this program. Similarly, since the permanent FCEB infrastructure cannot be scaled down to the level of four buses, the FCEB Only Scenario would involve a mobile fueler at Rutan Court before there is permanent infrastructure installed at the Atlantis Court facility.

## Battery-Electric Charging Scenarios Depot Infrastructure

Scaling to a fleetwide BEB deployment requires a significantly different approach to charging and substantial infrastructure upgrades compared to smaller pilot deployments. With small BEB pilot deployments, charging requirements are met relatively easily with a handful of plug-in pedestal chargers and minimal infrastructure investment. For fleetwide BEB transitions, plug-in charging is impractical as charger dispenser cables can create hazards in the bus yard. Instead, the preferred approach is to use overhead pantograph or reel dispensers attached to gantries installed above bus parking lanes.

In addition to the installation of charging stations, improvements to existing electrical infrastructure, such as upgrades to switchgear or service connections, are required to support deployment of BEBs. Planning and design work, including development of detailed electrical and construction drawings required for permitting, is necessary once specific charging equipment has been selected. To define the installation timeline and costs for charging equipment, the scope of work is broken into four key project types: planning, structural, power upgrades, and charger installation. These projects are typically sized and scheduled to meet near-term charging requirements rather than immediately building out all necessary infrastructure for a full fleet transition.

CTE and AECOM developed estimates for components of each project type to build up a total cost estimate by project type. Assumptions used for BEB infrastructure are shown in **Table 26**. Conceptual layouts for the BEB Only Scenario, prepared by AECOM, are provided in **Appendix A1** – LAVTA Depot Site Plans, **.** As previously mentioned, when LAVTA begins its ZEB transition in 2023, the depot and administrative facilities will still be located at the Rutan Court facility, but will be moving to a new facility on Atlantis Court before its next ZEB purchase in 2028. In



BACK TO AGENDA

the BEB scenarios, LAVTA elected to pursue installation of two pedestal chargers at the Rutan facility to support the initial four buses, but the full BEB facility buildout will take place at the Atlantis Court location. AECOM did note that deploying the initial four BEBs from Rutan Court will likely require a transformer upgrade unless the existing load on the transformer is below 60kVA but did not identify any other factors that might impede the four-bus deployment.

AECOM also supplied a report including the power requirements, equipment and raceway routing, gantries, and phasing for Atlantis Court as an electric charging depot for both the BEB Only Scenario and the Mixed Fleet: BEB and FCEB Scenario.

For both the BEB Only Scenario and the Mixed Fleet Scenario, AECOM expects that, in 2027, gantries and chargers are installed for the next 40 buses at Atlantis Court. This installation will require a contractor lay-down area to cover the existing driveway and use of temporary access driveways to the north of the existing driveway. At this stage, there will be hybrid parking on the north half of the parking lot, with BEB parking on the southern half. This stage of the project also encompasses phase 1 of the power upgrade phasing outlined by AECOM. To accommodate the demand resulting from the addition of this series of 120kW chargers, a new 480 volt, 3-phase service and a new 2500kVA transformer will be required. See Appendix A1 – LAVTA Depot Site Plans, Depot and On-Route Charging Scenario Phase 1 - 2027 and **A5** for 2027 phasing plan.

In the BEB Only Scenario, the remaining hybrid parking will be converted to additional BEB parking in 2032. This project will require the contractor lay-down area to shift to the north and cover one of the temporary access driveways. At this stage, lot access is also possible through the primary driveway, as well as one of the temporary driveways. At this stage, the second phase of the power upgrade phasing is scheduled to occur in order to accommodate the 13 chargers being added to charge the 24 additional buses. This will require a 2000kVA transformer, as well as a switchboard rated for 2500A at 480V, three-phase. See **Appendix A2** for 2032 phasing plan.

In that same year for the Mixed Fleet Scenario, the same BEB infrastructure projects and service upgrades would be needed. This is also the time when the hydrogen fueling infrastructure will be installed. See **Appendix A6** for 2032 phasing plan.

The final site plans for the completed transition can be seen in the 2035 site layouts in **Appendix A3** for Depot and On-Route Charging Scenario and **A7** for the Mixed Fleet.

Although some of the costs that AECOM supplied such as the power upgrade costs, were estimated as part of CTE's analysis included in this Master Plan, it is recommended that more detailed cost analysis be done before build and or funding obligation based on AECOM's recommendations.

*Table 26 – BEB Infrastructure Project Cost Assumptions*

| Project | Cost Estimate Metrics | Source |
|---|---|---|
| Infrastructure Planning | $200k per project | Engineer's estimate |
| Structural Projects (Gantries, Conduit, duct banks, etc.) | Design/Construction: avg. $117k per bus | Engineer's estimate, includes 20% contingency |
| Power Upgrade Projects | Design, Construction, & Equip: $96k per MW | Engineer's estimate, includes 20% contingency |
| Charging Projects | Charging Equipment & Installation: $89k per bus | Quotes and estimates, includes 20% contingency |

Key assumptions applied in LAVTA's Facilities Assessment are as follows:

- Gantry structures are used at each depot;
- One plug-in reel or overhead pantograph per bus;
- Two buses per 120 kW charger;
- Two charge windows, i.e. no more than half the buses charge at any given moment;
- Off-peak, overnight charging with automated charge management software; and
- Dispenser capacity to serve up to 80% of the fleet at a time; no movement of buses overnight.

## On-Route Charging Infrastructure

The BEB Only scenario has on-route charging infrastructure in addition to the depot charging infrastructure already developed and presented in the previous section. The addition of on-route charging supports deployment and on-route charging of 27 electric buses in addition to 41 depot-only charged buses before 2040. In this section, the on-route infrastructure costs are summarized along with the depot infrastructure costs.

Although it is not always the case, on-route chargers may not require additional support structures, such as gantries, to be built and may not require any structural project planning, as depot chargers do. Required infrastructure projects for on-route chargers include planning, power upgrade, and charger purchase and installation, which can be summarized as design costs and equipment costs. **On-route** chargers were assumed to be located at transit hubs, the Livermore Transit Center and The East Dublin Pleasanton BART station already planned for and utilized in LAVTA's service.

shows the cost assumptions used in the following sections to estimate costs for on-route charging infrastructure. This study did not include the costs of land acquisition for on-route charging sites. On-route chargers were assumed to be located at transit hubs, the Livermore



BACK TO AGENDA

Transit Center and The East Dublin Pleasanton BART station already planned for and utilized in LAVTA's service.

*Table 27 – On-Route Infrastructure Project Cost Assumptions*

| Project | Cost Estimate Metrics | Source |
|---|---|---|
| Structural Projects (Gantries, Conduit, duct banks, etc.) | Design/Construction: avg. 30k per bus | Engineer's estimate, includes 20% contingency |
| Power Upgrade Projects | Design, Construction, & Equip: $264k per MW | Engineer's estimate, includes 20% contingency |
| Charging Projects | Charging Equipment & Installation: $39k per bus | Quotes and estimates, includes 20% contingency |

### BEB Only On-Route Charging Projects

It is assumed that each on-route charging project will cost around $2.7 million per site. The number of on-route projects occurring in a given year are shown in **Figure 41**, below. A total of two on-route charging sites will be required to serve the additional 27 on-route-charged buses, which is expected to cost around $5.4 million. The East Dublin Pleasanton BART Station and the Livermore Transit Center have been identified as potential sites for on-route stations. Site designs for the two identified potential on-route station sites can be found in **Appendix A9**.

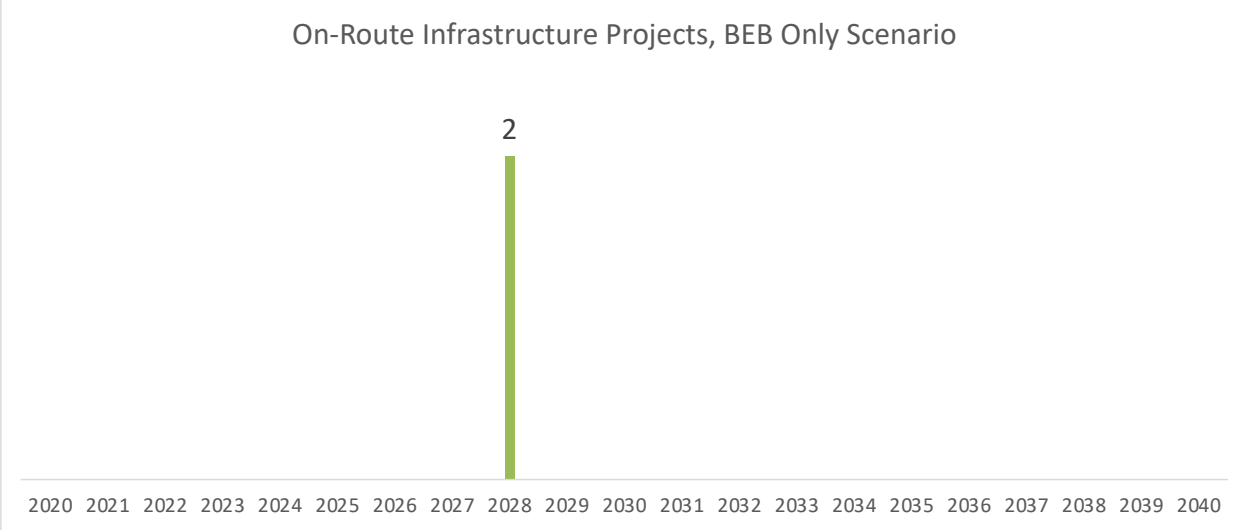



*Figure 41 - On-Route Infrastructure Projects, BEB Only Scenario*

### BEB Only Depot Planning Projects

In addition to on-route charger projects, the Depot and On-Route Scenario also requires infrastructure planning at the depot. Planning is estimated to cost $200,000 at each depot. One $200,000 project is therefore planned for LAVTA over the transition period.

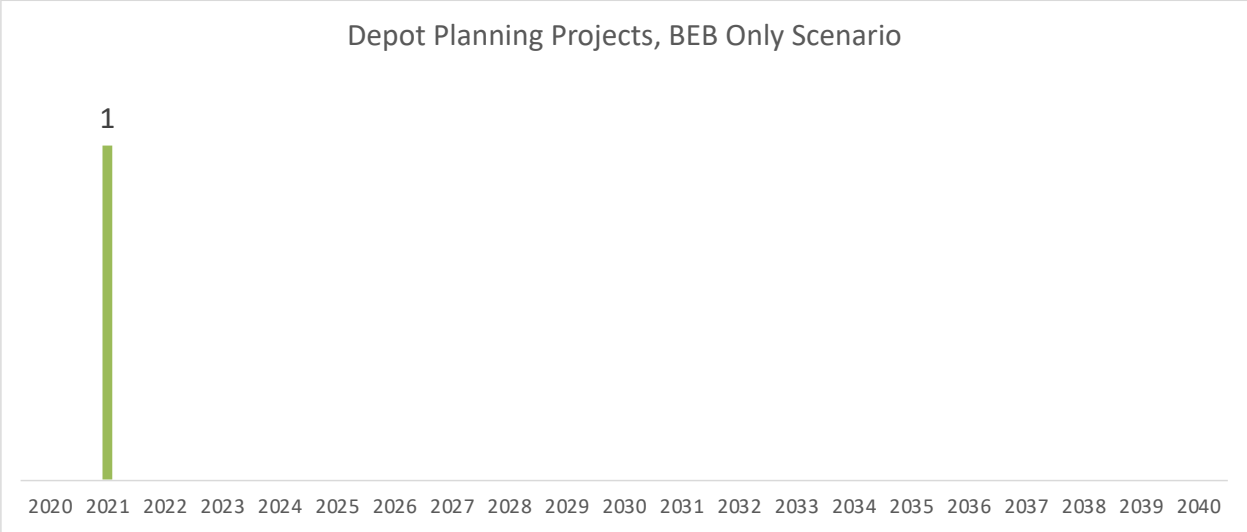



*Figure 42 - Depot Planning Projects, BEB Only Scenario*

### BEB Only Depot Structural Projects

Structural projects include (1) trenching and build out duct banks from the switchgear to the charger pads, (2) construction of charger pads (i.e. foundation for charging equipment), (3) construction of gantry foundations and overhead gantry structures that hold the dispensers, and (4) installation of conduit from switchgear to charger pads and gantries. **Table 28** shows the detailed cost assumptions for structural projects. These cost assumptions also apply to other projection scenarios. Duct bank cost is incurred only once per depot, other costs are on a per gantry basis.

*Table 28 – Structural Project Cost Assumptions*

| Item | Cost | Unit |
|---|---|---|
| **Initial Duct/Bank** | $ 300,000 | per depot |
| **Gantry & Foundation** | $ 450,000 | per gantry |
| **Incremental Duct Bank/Conduit** | $ 22,000 | per gantry |
| **Charger Pad (3 chargers per gantry)** | $ 25,000 | per gantry |
| **Contingency** | 20% | on project costs |
| **Design Engineering** | 6% | on project costs and contingency |

Each bar in the figure below indicates a structural project to add overhead gantry capacity to the depot. **Figure 43** shows the number of gantries added in a given year. Each gantry can serve up to six buses. A total of 12 gantries will be needed at LAVTA's Atlantis depot.

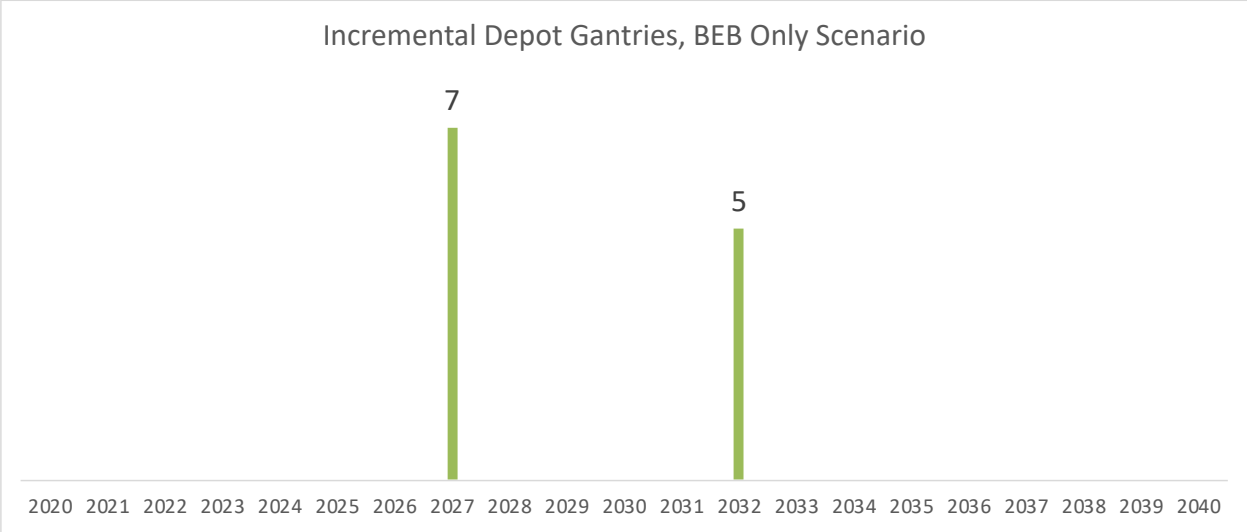



*Figure 43 –Incremental Depot Gantries, BEB Only Scenario*

**Figure 44** shows the total annual costs of structural projects by depot for the BEB Only scenario. These costs include the initial duct bank costs, gantry and foundation costs, incremental duct bank/conduit costs, and charger pad costs per gantry, sequenced in accordance with the costs in the table above. On top of these costs, 20% contingency and 6% engineering costs are added.


*Figure 44 – Annual Depot Structural Projects Cost, BEB Only Scenario*

### BEB Only Power Upgrade Projects

Power upgrade projects include construction of transformer foundations and installation of transformers. It is assumed that transformers will be modular, and incremental power requirements are met over time. The table below shows the estimated costs for depot power upgrade projects.

*Table 29 – Depot Power Upgrade Cost Assumptions, BEB Only Scenario*

| Transformer/Switchback Pad | Cost | Unit |
|---|---|---|
| **Transformer** | Covered by PG&E | |
| **Trench and Ductbank** | $ 30,000 | per project |
| **Construction, Equipment (1 MW)** | $ 125,000 | per project |
| **Construction, Equipment (2 MW)** | $ 125,000 | per project |
| **Construction, Equipment (4 MW)** | $ 250,000 | per project |
| **Contingency** | 20% | on project costs |
| **Design Engineering** | 6% | on project costs and contingency |

**Figure 45** shows incremental required electrical demand, in megawatts, for each depot. Each entry indicates the minimum amount of power that must be added in a given year to meet the growing demand at a given facility as more BEBs are purchased.

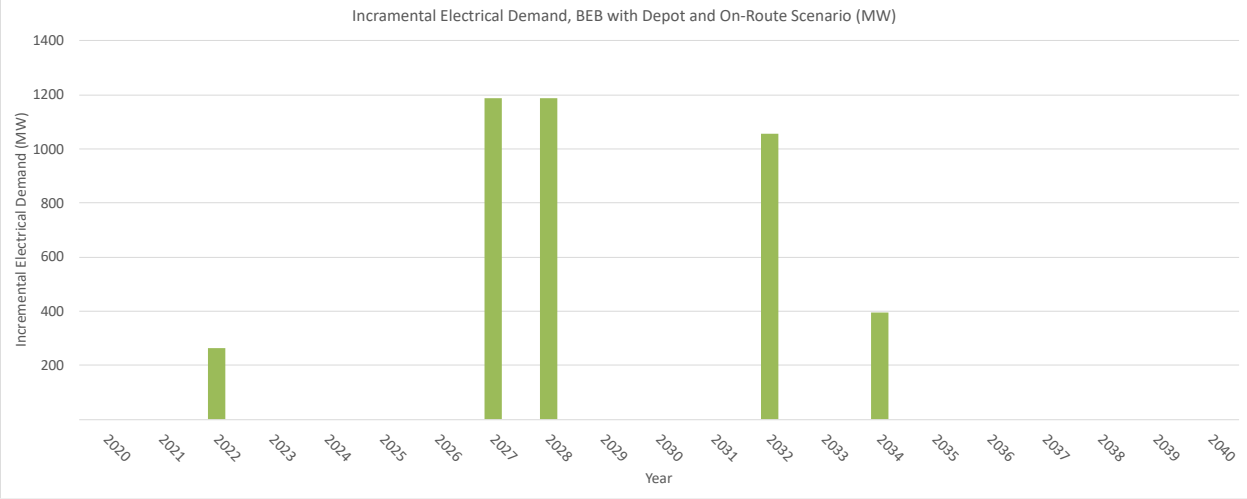



*Figure 45 – Incremental Depot Electrical Demand, BEB Only Scenario (MW)*

Power upgrades are consolidated to occur in selected years, in accordance with the required demand in **Figure 45.** These recommended upgrades are shown in **Figure 46**. LAVTA will need to add an additional estimated 6 MW of capacity to its system by 2040 to accommodate charging for 68 BEBs.

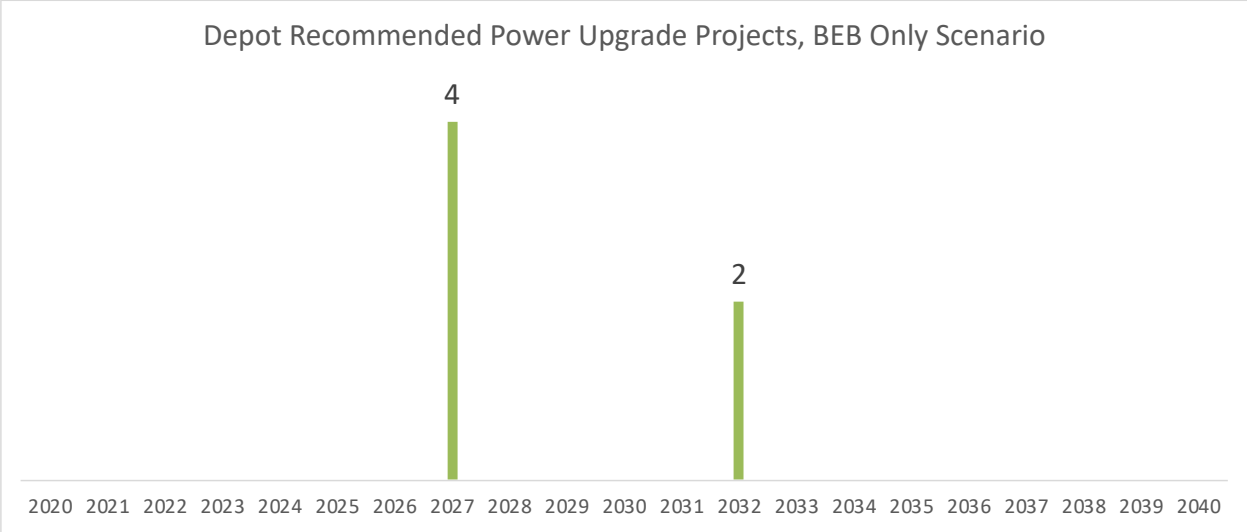



*Figure 46 – Depot Recommended Power Upgrade Projects, BEB Only Scenario (MW)*

The total cumulative cost of power upgrade projects at the depot, in 2020 dollars, is provided in Error! Reference source not found.. Total estimated power upgrade costs over the project life are approximately $0.57 million.

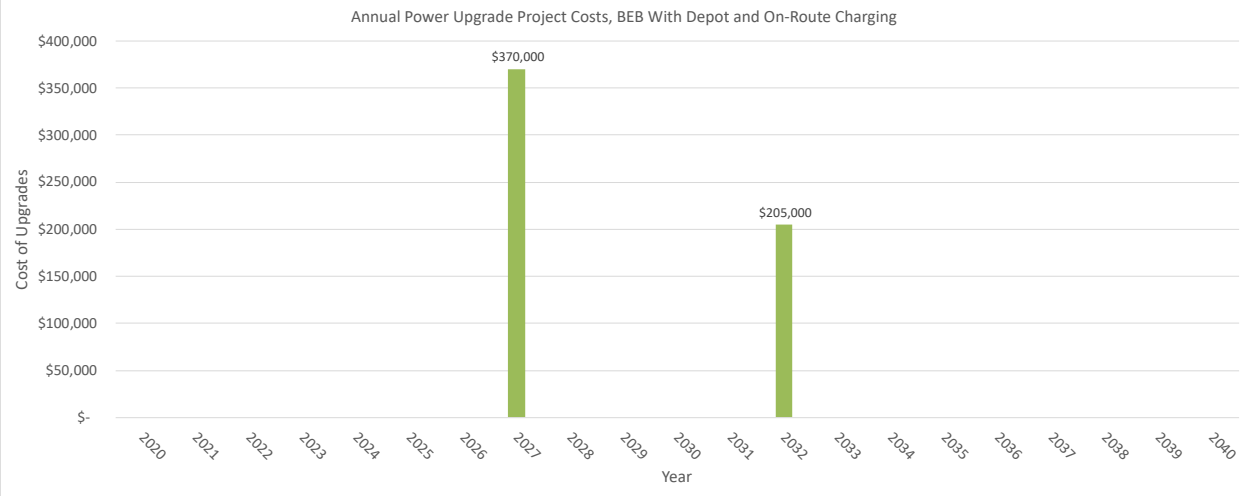



*Figure 47 – Depot Annual Power Upgrade Project Costs, BEB Only Scenario*

### BEB Only Depot Charger Installation Projects

Charging projects include purchase and installation of 120 kW chargers and dispensers. Each bus will require one dispenser. Every two buses (40-foot and larger) will require one charger. Dispensers are expected to be either overhead reel or pantograph style. **Table 30** provides the costs assumed for charger and dispenser installs. As seen in **Figure 48** and **Figure 49**, in total, this scenario would require 33 chargers (66 dispensers) at LAVTA's Atlantis site.

*Table 30 - Dispenser and Charger Project Cost Assumptions*

| Item | Cost | Unit |
|---|---|---|
| **Charger** | $ 120,000 | per 120 kW charger |
| **Charger Installation** | $ 12,000 | per 120 kW charger |
| **Dispenser/Pantograph** | $ 10,000 | per dispenser |
| **Dispenser Installation** | $ 5,000 | per dispenser |
| **Contingency** | 20% | on project costs |

**Figure 48** and **Figure 49** show the annual dispensers and charger installations by depot for each year of the project.

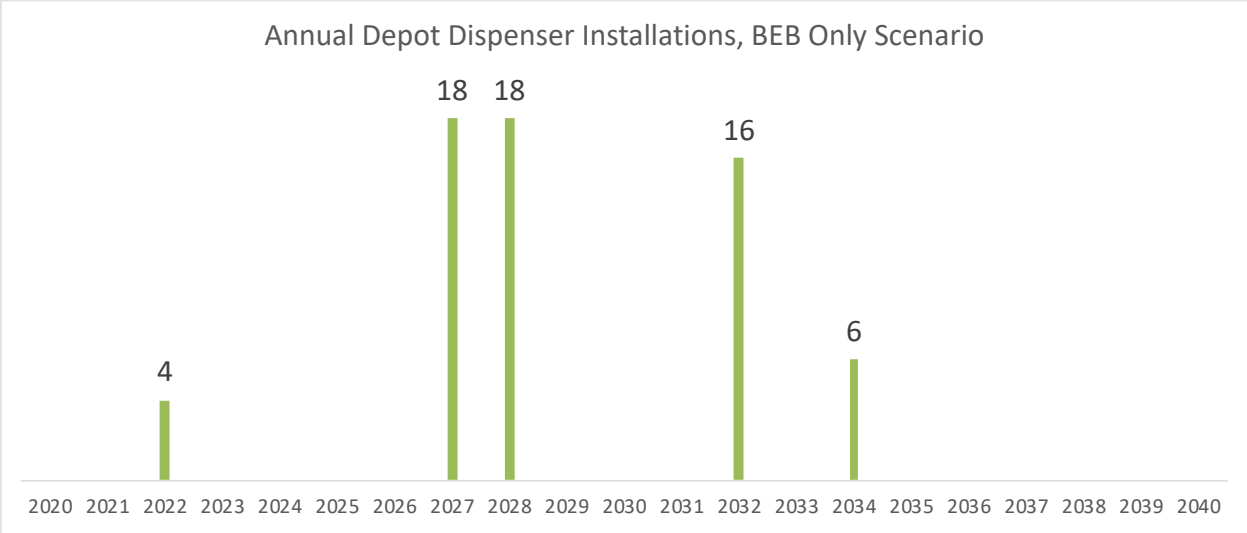



*Figure 48 – Annual Depot Dispenser Installations, BEB Only Scenario*

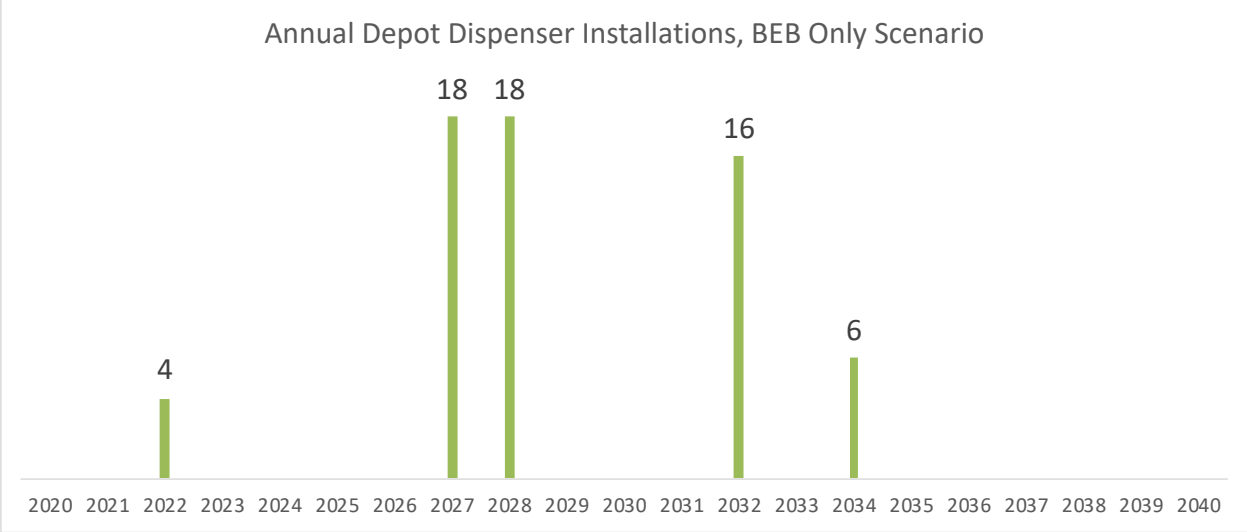



*Figure 49 – Annual Depot Charger Installations, BEB Only Scenario*



BACK TO AGENDA

**Figure 50** shows the annual cost of charger and dispenser installations based on these cost assumptions and the above estimated charger and dispenser quantities.

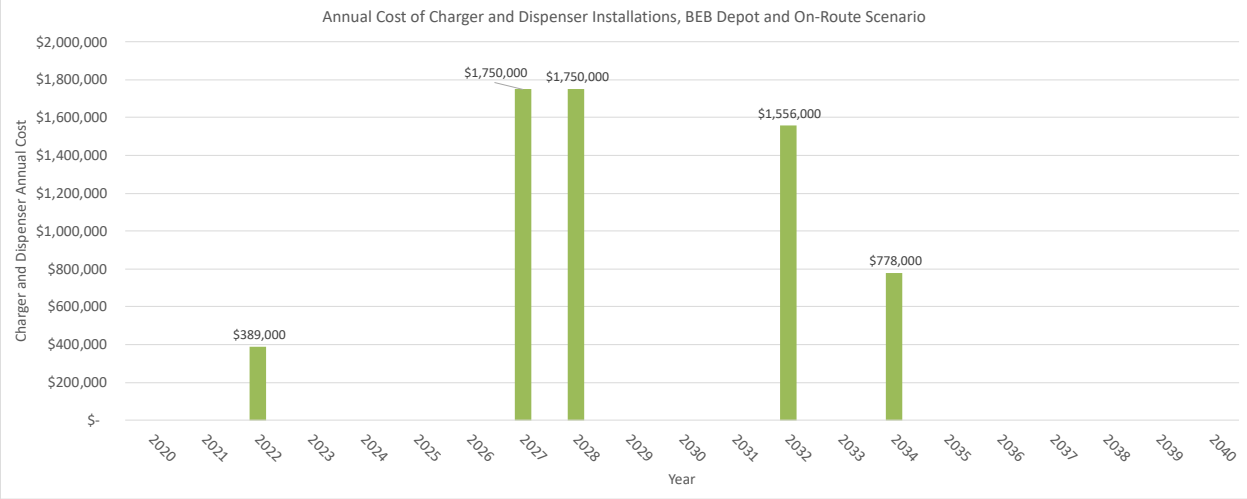



*Figure 50 - Annual Cost of Depot Charger and Dispenser Installations, BEB Only Scenario*

### BEB Only (with Depot and On-Route Charging) Infrastructure Cost Summary

**Table 31** summarizes all costs for charging infrastructure for the BEB Only scenario. **Figure 51** - Cumulative Total Infrastructure Costs, BEB Only Scenario shows the cumulative total cost breakdown. The estimated total infrastructure costs for the BEB Only scenario is approximately $20 million. This total cost includes all gantry structural projects, all power upgrade projects, all charger and dispenser installations, all planning projects, design engineering costs and the added 20% contingency on all costs, as well as the design and equipment costs for on-route charging infrastructure.

*Table 31 - Total Infrastructure Costs, BEB Only Scenario*

| Depot | Cost |
|---|---|
| Atlantis | $ 14,387,000 |
| On-Route | $ 5,370,000 |
| **Total** | **$ 19,757,000** |

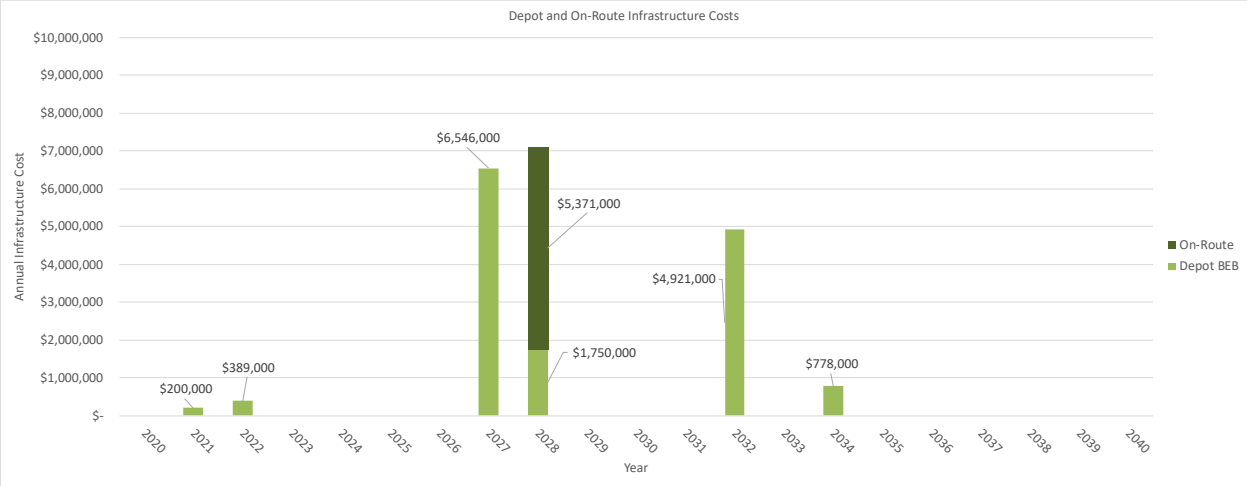



*Figure 51 - Cumulative Total Infrastructure Costs, BEB Only Scenario*

## Mixed Fleet: BEB and FCEB Scenario – BEB Facility

### Mixed Fleet Charging Scenario Depot Planning Projects

In the Mixed Fleet Scenario, BEB infrastructure planning will be required at the depot. Planning is estimated to cost $200,000 for planning the infrastructure transition at the Atlantis depot. One $200,000 project is therefore planned for LAVTA over the transition period.

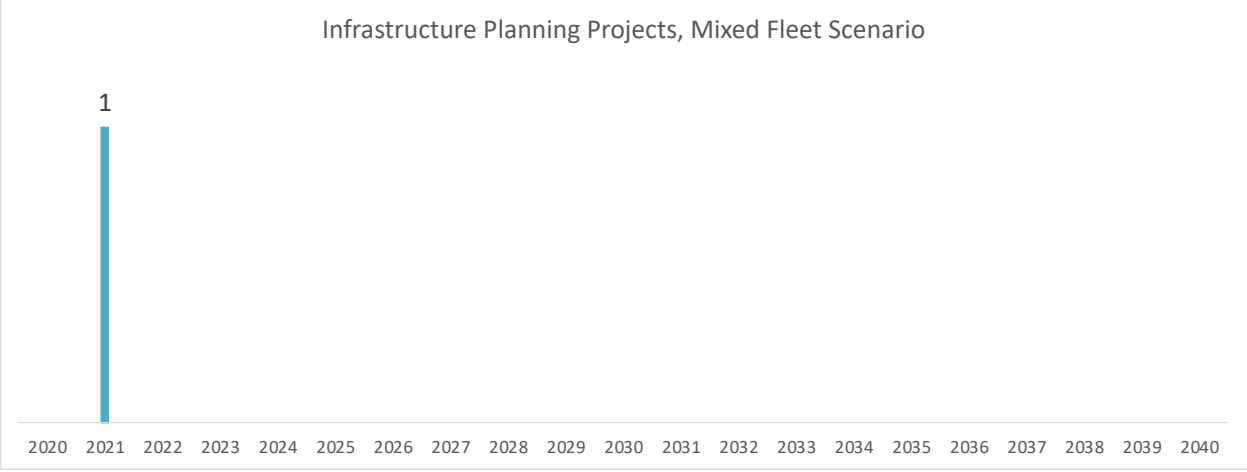



*Figure 52 - Planning Projects, Mixed Fleet Charging Scenario*

### Mixed Fleet Charging Structural Projects

Structural projects include (1) trenching and build out duct banks from the switchgear to the charger pads, (2) construction of charger pads (i.e., foundation for charging equipment), (3) construction of gantry foundations and overhead gantry structures that hold the dispensers, and (4) installation of conduit from switchgear to charger pads and gantries. See **Table 32** for

the detailed cost assumptions for structural projects. Duct bank cost is incurred only once per depot, other costs are on a per gantry basis.

*Table 32 - Structural Project Cost Assumptions*

| Item | Cost | Unit |
|---|---|---|
| **Initial Duct/Bank** | $ 300,000 | per depot |
| **Gantry & Foundation** | $ 450,000 | per gantry |
| **Incremental Duct Bank/Conduit** | $ 22,000 | per gantry |
| **Charger Pad (3 chargers per gantry)** | $ 25,000 | per gantry |
| **Contingency** | 20% | on project costs |
| **Design Engineering** | 6% | on project costs and contingency |

Each entry in the table below indicates a structural project to add overhead gantry capacity to the depot. **Figure 53** shows the number of gantries added in a given year at the depot. Each gantry can serve up to eight buses. A total of 7 gantries will be needed at LAVTA to support BEB charging in this scenario.

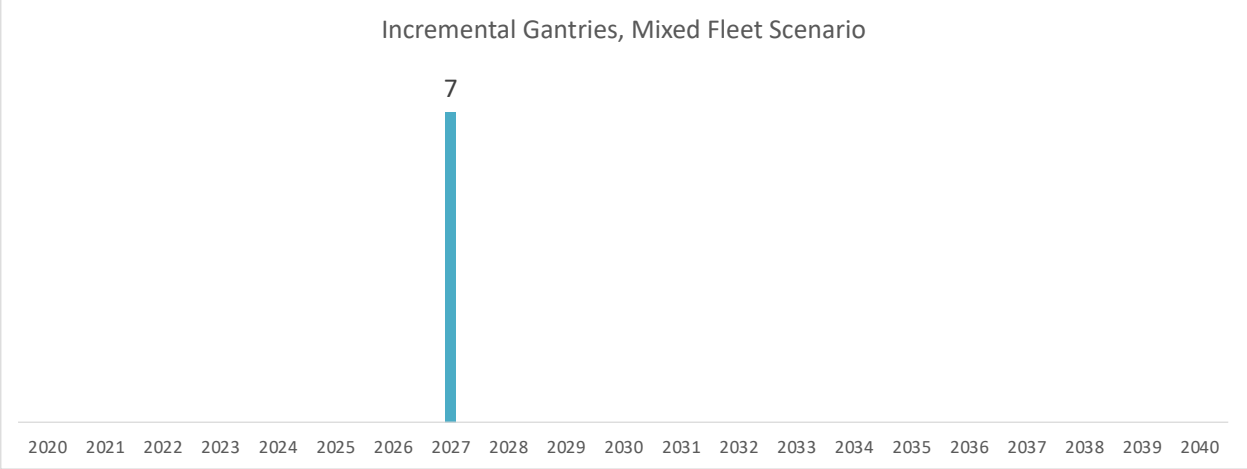



*Figure 53 – Incremental Gantries, Mixed Fleet Charging Scenario*

**Figure 54** – Annual Structural Projects Cost, Mixed Fleet Scenario shows the total annual costs of structural projects by depot for the Mixed Fleet Charging scenario. These costs include the initial duct bank costs at each depot, plus gantry and foundation costs, incremental duct bank/conduit costs and charger pad costs per gantry, sequenced in accordance with the above tables. On top of these costs, 20% contingency and 6% engineering costs are added.

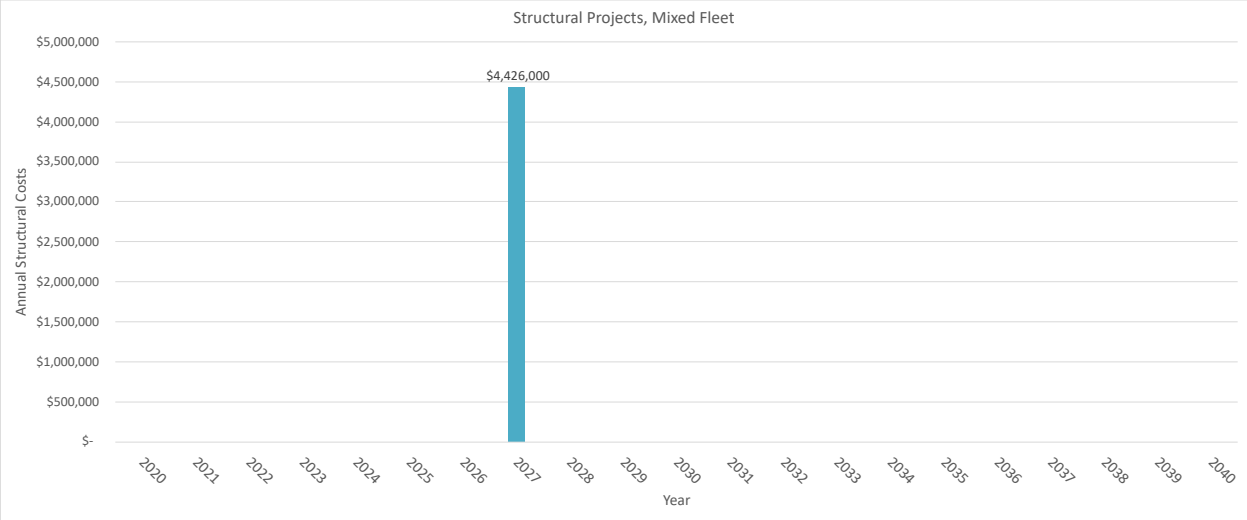



*Figure 54 – Annual Structural Projects Cost, Mixed Fleet Scenario*

## Mixed Fleet Power Upgrade Projects

Power upgrade projects include construction of transformer foundations and installation of transformers. It is assumed that transformers will be modular, and incremental power requirements are met over time. **Table 29** shows the estimated costs for depot power upgrade projects.

**Figure 55** shows incremental required electrical demand, in megawatts, for each depot. Each entry indicates the minimum amount of power that must be added in a given year to meet the growing demand at a given facility as more BEBs are purchased.

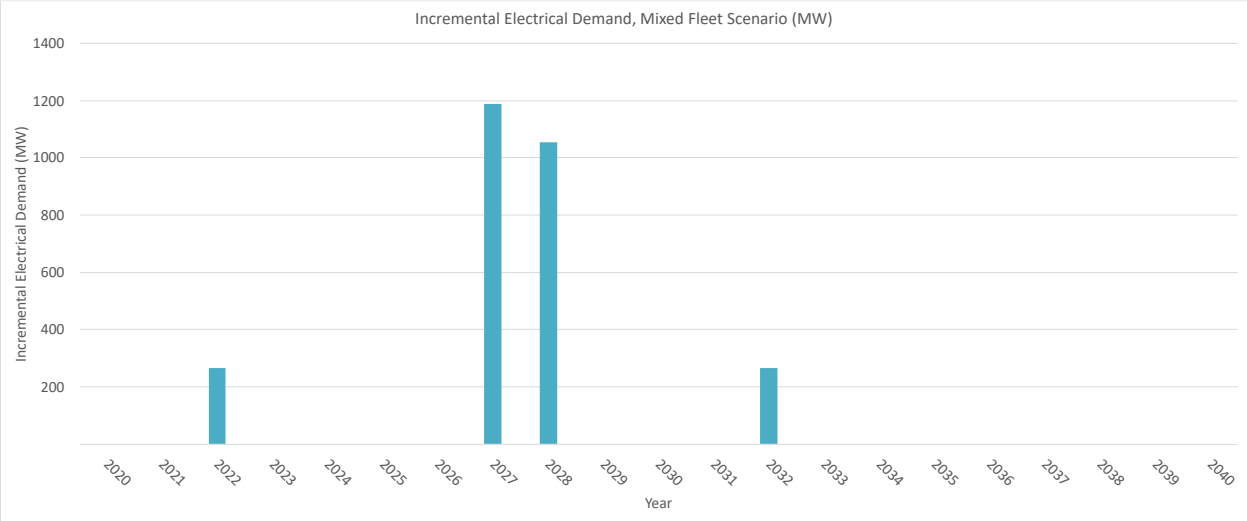



*Figure 55 – Incremental Electrical Demand, Mixed Fleet Scenario (MW)*



BACK TO AGENDA

Power upgrades are consolidated to occur in selected years, in accordance with the required demand in **Figure 55.** These recommended upgrades are shown in **Figure 56**. LAVTA will need to add an additional estimated 4 MW of capacity to its system by 2040 to accommodate charging for 41 BEBs.

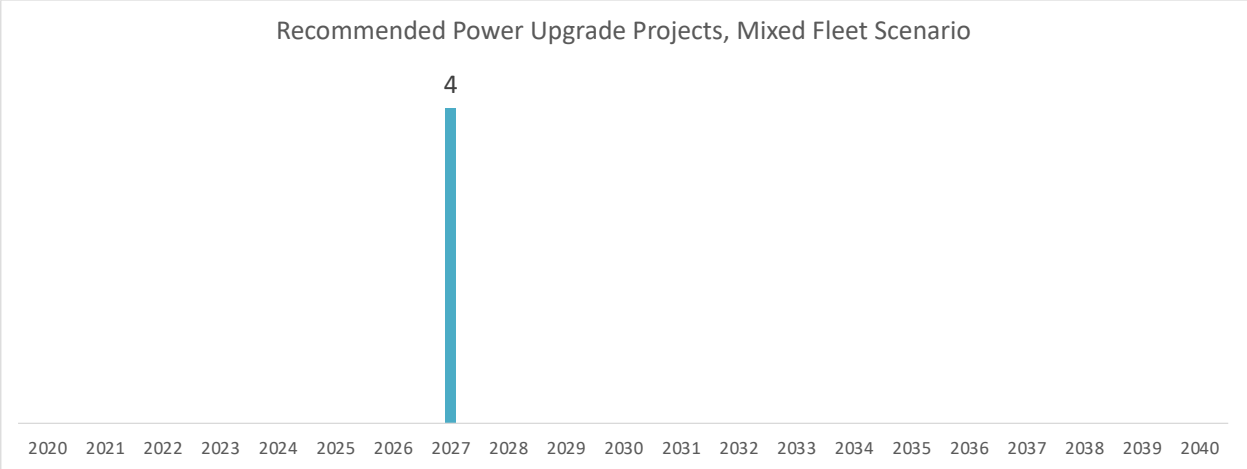



*Figure 56 – Recommended Power Upgrade Projects, Mixed Fleet Charging Scenario (MW)*

The total cumulative cost of power upgrade projects at the depot, in 2020 dollars, is provided in **Figure 57** – Annual Power Upgrade Project Costs, Mixed Fleet Charging Scenario. Total estimated power upgrade costs over the project life are approximately $0.3 million.


*Figure 57 – Annual Power Upgrade Project Costs, Mixed Fleet Charging Scenario*

### Mixed Fleet Charger Installation Projects

Charging projects include purchase and installation of 120 kW chargers and dispensers. Each bus will require one dispenser. Every two buses (40-foot and larger) will require one charger with two dispensers. Dispensers are expected to be either overhead reel or pantograph style.

**Table 30** above provides the costs assumed for charger and dispenser installs. As seen in **Figure 58** – Annual Dispenser Installations, Mixed Fleet Charging Scenario **and Figure 59** – Annual Charger Installations, Mixed Fleet Charging Scenarioin total, this scenario would require 21 chargers (42 dispensers) at LAVTA.

**Figure 58** – Annual Dispenser Installations, Mixed Fleet Charging Scenario **and Figure 59** – Annual Charger Installations, Mixed Fleet Charging Scenarioshow the annual dispensers and charger installations by depot for each year of the project.

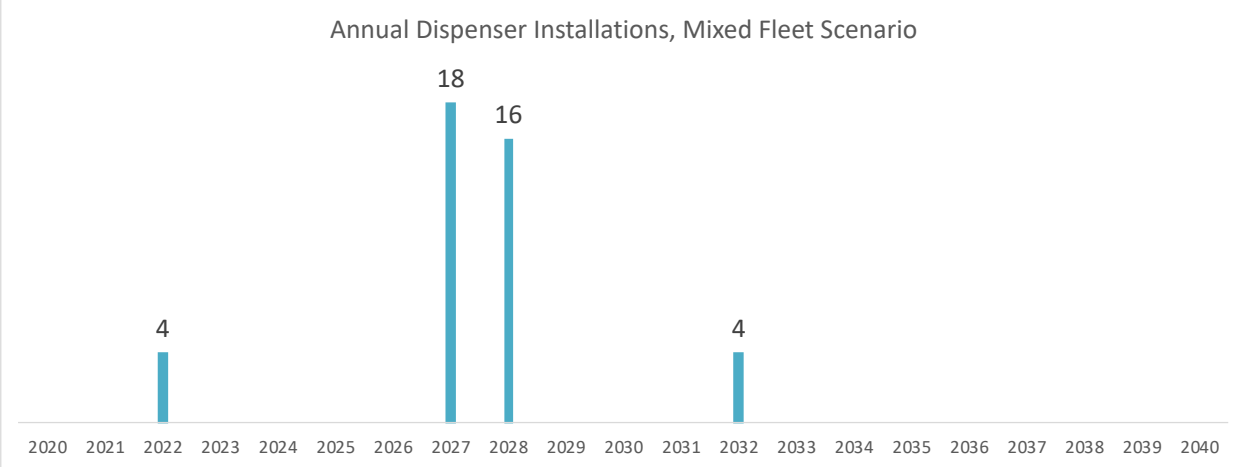



*Figure 58 – Annual Dispenser Installations, Mixed Fleet Charging Scenario*

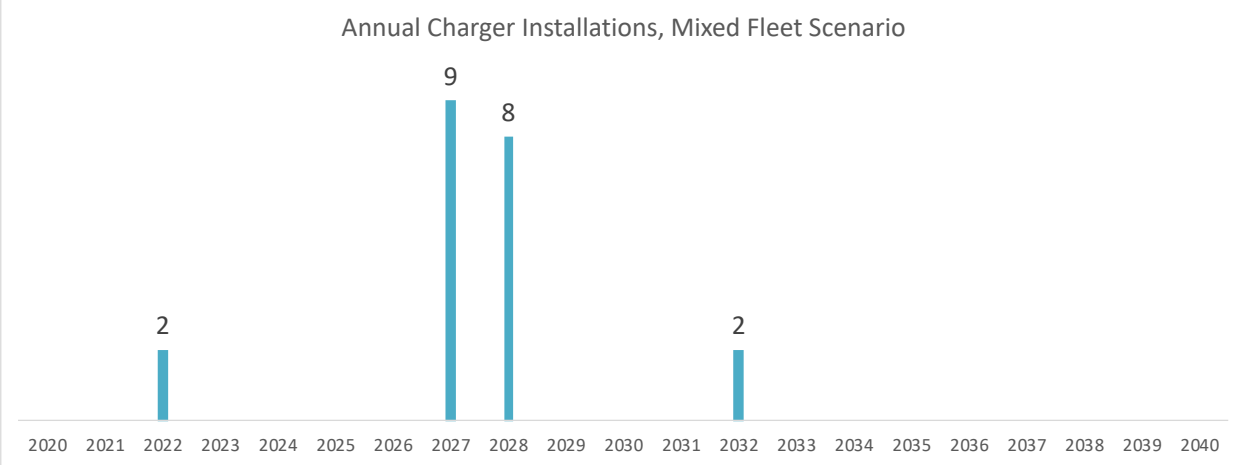



*Figure 59 – Annual Charger Installations, Mixed Fleet Charging Scenario*

**Figure 60** shows the annual cost of charger and dispenser installations based on these cost assumptions and the above estimated charger and dispenser quantities.

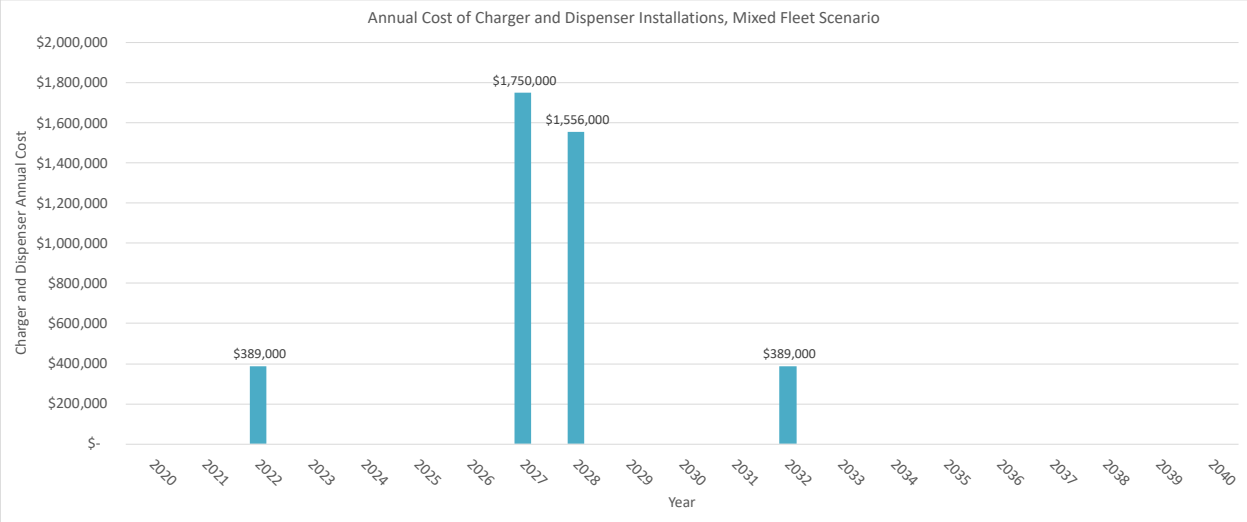



*Figure 60 - Annual Cost of Charger and Dispenser Installations, Mixed Fleet Charging Scenario*

## Mixed Fleet Charging Infrastructure Cost Summary

**Table 33** summarizes all costs for charging infrastructure for the Mixed Fleet scenario. **Figure 61** shows the cumulative total cost breakdown for the BEBs in the fleet. The estimated total BEB infrastructure costs for the Mixed Fleet scenario are approximately $9.0 million. This total cost includes all gantry structural projects, all power upgrade projects, all charger and dispenser installations, all planning projects, design engineering costs and the added 20% contingency on all costs, as well as the design and equipment costs for on-route charging infrastructure.

*Table 33 - Total BEB Infrastructure Costs, Mixed Fleet Scenario*

| Depot | Cost |
|---|---|
| Atlantis | $ 9,011,000 |
| **Total** | **$9,011,000** |

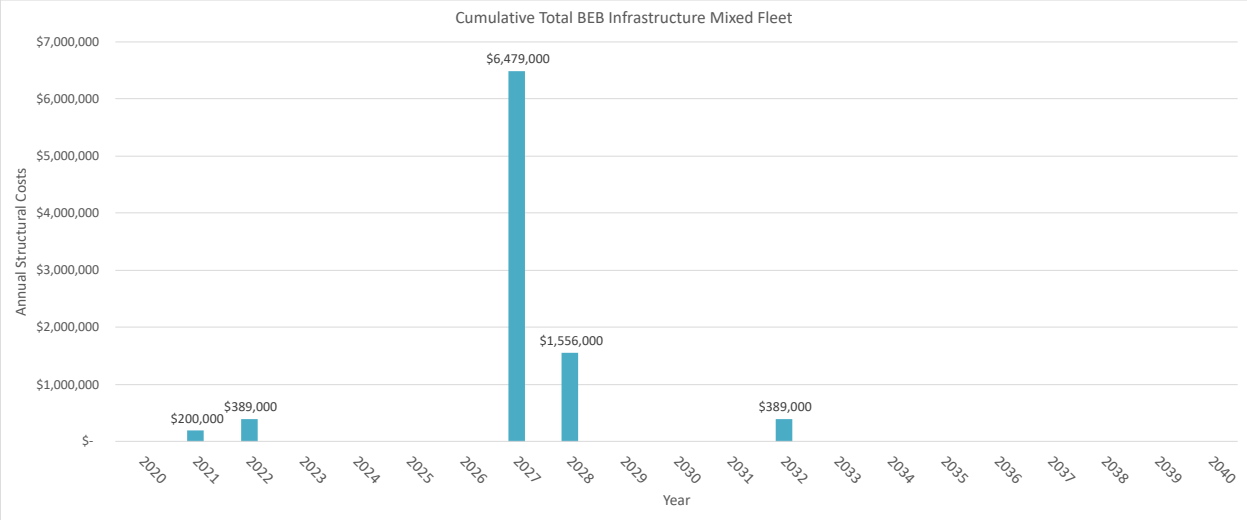



*Figure 61 - Cumulative Total BEB Infrastructure Costs, Mixed Fleet Scenario*

## Hydrogen Fuel Cell Infrastructure Scenarios

To define the timeline and costs to build hydrogen fueling infrastructure, CTE breaks the scope of work into four key project types: (1) planning, (2) structural, (3) maintenance bay upgrades, and (4) fueling. Rather than building out the infrastructure all at once, projects are sized and scheduled to meet near-term fueling requirements.

### 50-Bus Mechanical Projects

For hydrogen fueling equipment, it is economical to package projects in 50-bus increments with all necessary mechanical and fueling components included except for liquid hydrogen storage tanks. Storage tanks can be added in a modular fashion as demand increases, separately from other fueling components. The 50-bus mechanical projects include:

1. Two dispensers (additional dispensers may be added);
2. All mechanical process equipment and hydrogen wetted components;
3. Design, engineering, and permitting;
4. Construction;
5. Demolition of existing pavement, and excavation;
6. Installation of new equipment foundations;
7. All electrical conduit, conductors, and termination;
8. Emergency shut down and notification system;
9. Mechanical installation; and
10. Electrical utilities and switchgear.

For LAVTA, Fiedler Group conducted an assessment of the FCEB infrastructure requirements at this facility for the Mixed Fleet: BEB and FCEB scenario and the FCEB Only Scenario. Fiedler

Group has over 60 years of experience working on innovative engineering and design projects and is widely viewed as the industry expert on hydrogen fueling station design.

Since both of the scenarios involving FCEBs had several years where there would only be four or five FCEBs in the yard, in the Mixed Scenario and the FCEB Only Scenario respectively, Fiedler Group recommends using a mobile fueler until the number of FCEBs meets or exceeds 19 buses. The infrastructure for a mobile fueler is expected to cost around $72,000 per year. In the Mixed Scenario, that cost is incurred for four years and in the FCEB Only Scenario, it is incurred for five years. When the permanent station is installed, the 50-bus incremental design cost is estimated at around $4.2 million with the incremental capacity expected at $300,000. The other major cost of hydrogen infrastructure is the maintenance bay upgrades required to make the bays hydrogen safety compliant. Upgrading all 14 of the bays at Atlantis Court is estimated at $1.9 million. This cost also assumes that some gas detection equipment will already be installed in the Atlantis Court maintenance bays during construction.

Hydrogen storage must comply with safety distance requirements outlined by the National Fire Protection Association (NFPA). These requirements are primarily outlined in NFPA 2 8.3.2.3.1.6(A) and NFPA 2 8.3.2.3.1.6(B) and are designed to prevent ignition of the hydrogen. Fiedler Group reviewed these hydrogen storage requirements, including siting location with consideration of physical protection minimum distances and alternate minimum distances, as well as hydrogen dispensing requirements and selected a location for the hydrogen storage and fueling infrastructure that complies with these regulations. This site layout can be seen in **Appendix A5-A7** for the Mixed Fleet Scenario and **A8** for the final FCEB Only Layout.

For the assessment of the permanent fueling facility, Fiedler Group assumed liquid hydrogen would be trucked in and stored on site in an above-ground tank. According to Fiedler Group's estimates, for each 50-bus increment, a 15,000-gallon tank will be needed. In the Mixed Scenario, that tank is expected to be installed in 2033 when there are 19 FCEBs in the fleet. In the FCEB Only Scenario, it will be installed when the capacity for the full 68 bus transition is reached in 2028. The size of these tanks allows for storage of four service days' worth of fuel. Two dispensers will be required, both to allow for all the buses to be fueled within an eight-hour window and for the purpose of redundancy.

Fiedler Group worked with AECOM to integrate hydrogen fueling infrastructure into the BEB project design phasing. These designs can be seen in **Appendix A5-A7**. The FCEB Only Scenario site design can be seen in **Appendix A8**.

The cost estimates that Fiedler Group provided for FCEB infrastructure were integrated into CTE's Facilities Assessment and are summarized in **Table 34.** These estimates are based on the 50-bus increments employed by Fiedler Group.

*Table 34 – FCEB Infrastructure Planning Assumptions*

| Project | Cost Estimate | Source |
|---|---|---|
| Infrastructure Planning | $200,000 per depot | Engineer's estimate |
| 50-Bus Incremental Mechanical Equipment and Installation Package | Varies by facility; Includes design, permitting, and installation for two (2) dispensers; all mechanical process equipment; electrical utilities and switchgear. Excludes storage tanks. | Engineer's estimate, vendor quotes |
| Incremental Addition of 15,000 Liquid Hydrogen Tank | $300,000 per tank for installation | Engineer's estimate, vendor quotes |
| Maintenance Upgrades | Electrical, Lighting, Ventilation, and Gas Detection<br>- $191,500 to upgrade all of LAVTA's maintenance bays | Engineer's estimate |

### Storage Capacity Projects

Storage capacity projects include the incremental addition of one or more 15,000-gallon liquid hydrogen storage tanks. Tanks are sized at 15,000 gallons to accommodate one truckload of liquid hydrogen, or approximately 3,000 kilograms. Storage capacity projects are planned in conjunction with bus mechanical projects to reduce disruptions for construction projects. This practice is standard and has been successfully implemented at OCTA and AC Transit and was recommended by Fiedler Group to San Diego Metropolitan Transit System and Long Beach Transit. The required capacity of hydrogen storage at a given depot is sized to accommodate an approximately four-day supply of average daily fuel use.

## Mixed Fleet: BEB and FCEB Scenario – FCEB Facilities

In the Mixed Fleet: BEB and FCEB scenario, charging infrastructure is required to service a total of 41 BEBs while additional hydrogen fueling infrastructure services 27 FCEBs. All buses transition to zero-emission in this scenario.

In addition to BEB charging, hydrogen fueling is required to support the Mixed Fleet: BEB and FCEB scenario. For the FCEB fueling costs, the scope of work is broken into four key project types: (1) planning, (2) structural, (3) maintenance bay upgrades, and (4) fueling. Infrastructure is built out over time as necessary to support FCEB deployment.

### Planning Projects

The building of hydrogen infrastructure will require planning at the depot. It is assumed that a planning project costs $200,000, occurring as shown in the table below, and occurs only once per depot. The total cost of planning projects for the one depot is therefore approximately $200,000.

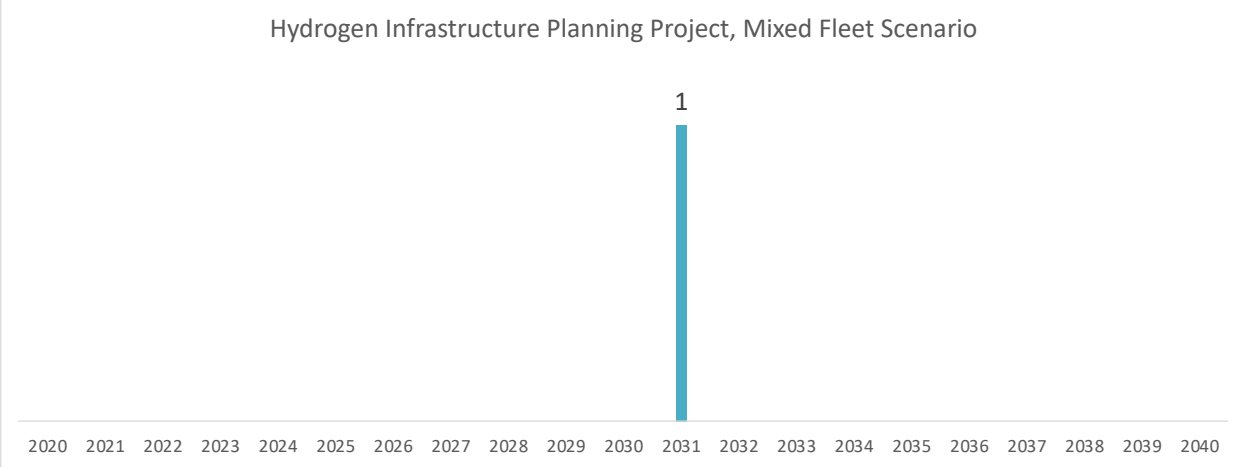



*Figure 62 - Planning Projects, Mixed Fleet Scenario*

**Figure 63** shows the estimated mechanical projects by year. Costs vary per project in a given year due to the scale of the implementation at each depot. Building mechanical infrastructure is grouped into one phase to minimize disruption of service and capital expenses. The total cost of mechanical projects to support the Mixed Fleet scenario is approximately $4.1 million for the one project expected in this scenario.

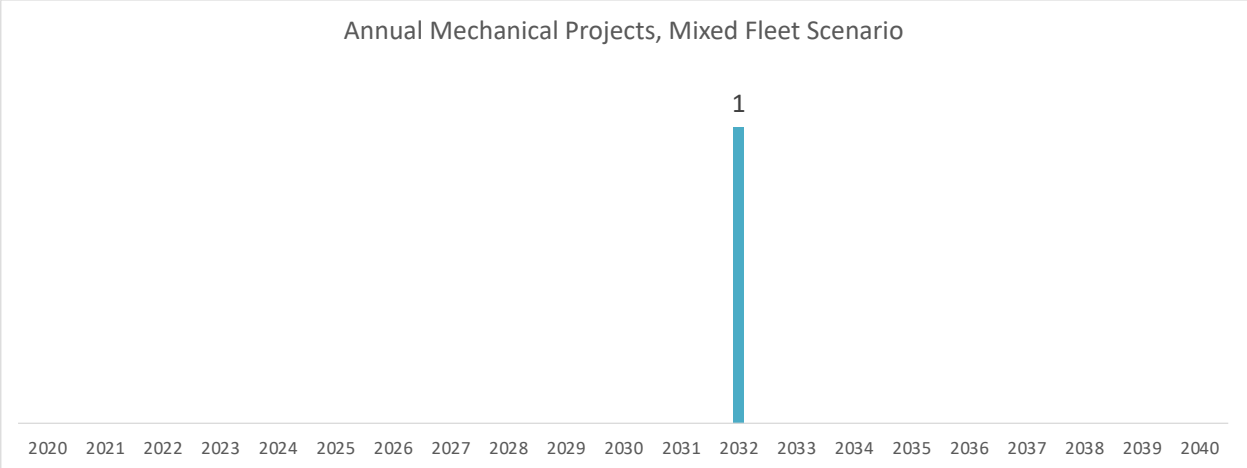



*Figure 63 - Mechanical Projects, Mixed Fleet Scenario*

### Storage Capacity Projects

**Figure 64** shows the planned storage capacity project and costs by year. The total storage capacity projects costs approximately $300,000 over the life of the study with one project in 2028 at LAVTA.

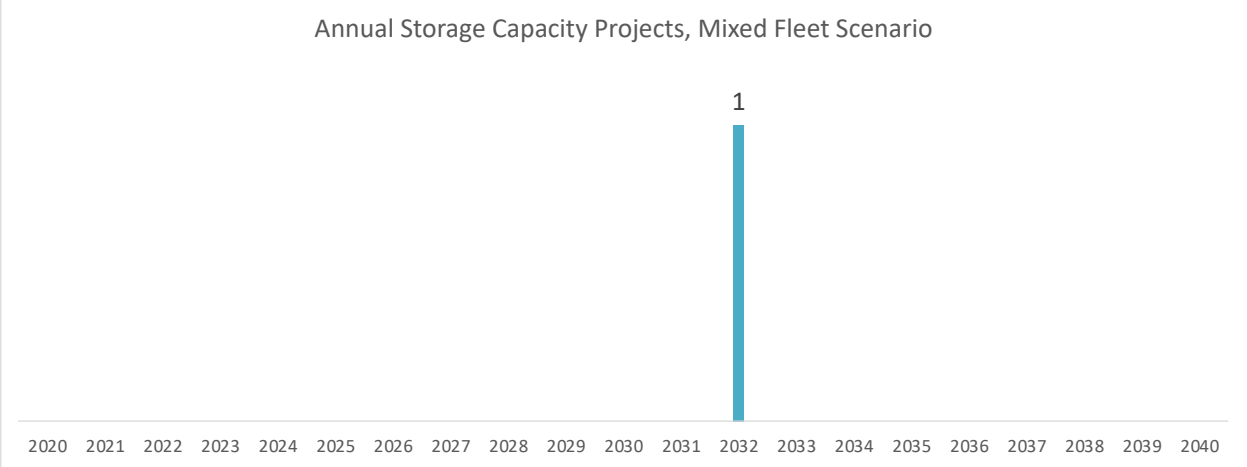



*Figure 64 - Storage Capacity Projects, Mixed Fleet Scenario*

### Maintenance Bay Upgrade Projects

Maintenance bays at each depot require hydrogen detection and exhaust equipment to ensure safety. **Figure 65** indicates the timing and location of upgrade projects, as well as the number of bays that require upgrades at each depot. All 14 maintenance bays will require upgrades so that all bays will be able to service FCEBs.

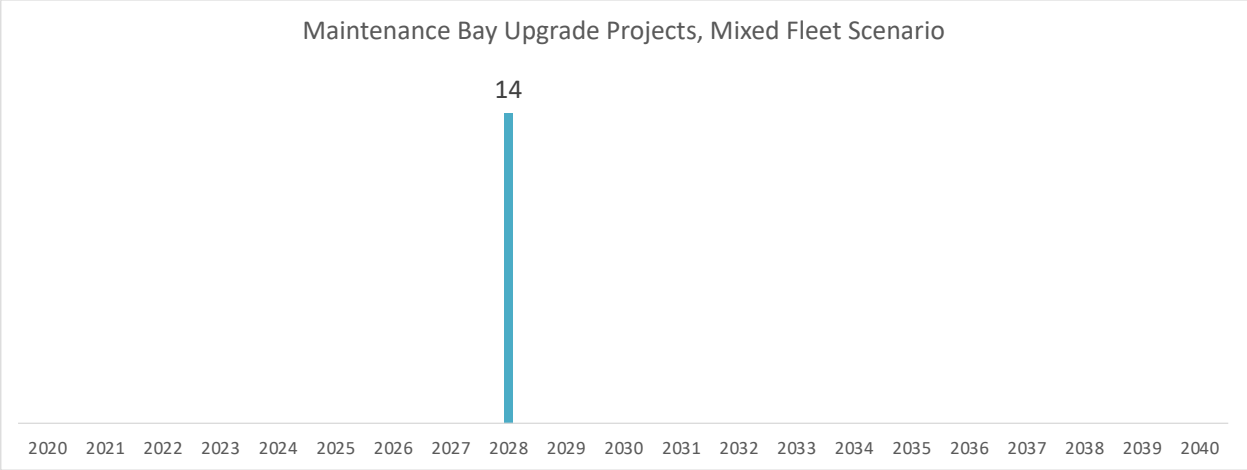



*Figure 65 - Hydrogen Maintenance Bay Upgrade Projects, Mixed Fleet Scenario*

At LAVTA, CTE assumed nearly $14,000 per bay for the required upgrades. This cost comes from the requirement of additional ventilation systems necessary for hydrogen detection. Since LAVTA is in the process of building a new facility, these costs are reduced from what they would usually be for upgrading a diesel maintenance bay, because designing the bays for servicing FCEBs will be less expensive than retrofitting an existing bay. For maintenance bay upgrade projects, CTE estimates a total cost of $1,900,000 at LAVTA in 2028.

## Mixed Fleet FCEB Infrastructure Summary

**Figure 61** provides the total infrastructure costs for the Mixed Fleet scenario for the entire transition period. The total build of required FCEB infrastructure will cost approximately $5.1 million for the FCEB Only scenario. It is important to note that this scenario also includes procurement of 41 BEBs between 2023 and 2033, which will require additional charging infrastructure, as outlined in the BEB infrastructure section. The cost of these projects combined would be around $19.8 million. **Figure 67** shows a cumulative summary of infrastructure costs by year.

Annual costs for the FCEB infrastructure portion of the mixed fleet are provided in **Figure 66**. The total combined infrastructure costs for the Mixed Fleet Scenario can be seen in **Figure 67** - Cumulative Infrastructure Costs, Mixed Fleet: BEB and FCEB Scenario**.**

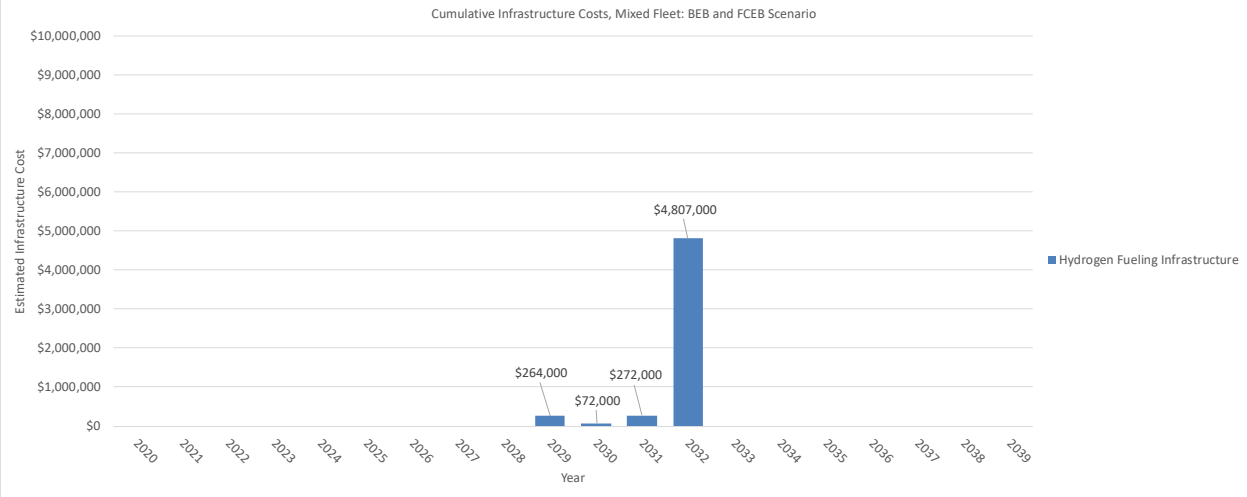



*Figure 66 - Annual FCEB Infrastructure Costs, Mixed Fleet: BEB and FCEB Scenario*

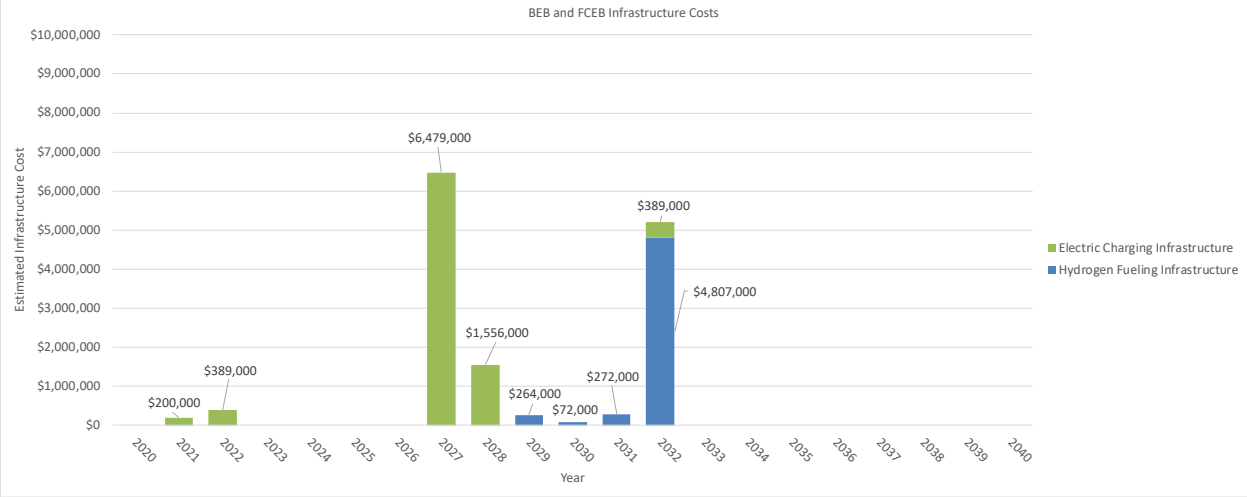



*Figure 67 - Cumulative Infrastructure Costs, Mixed Fleet: BEB and FCEB Scenario*

## FCEB Only

The FCEB Only scenario assumes that FCEBs are utilized to run all of LAVTA's routes by 2035. The following estimates calculate necessary hydrogen infrastructure costs to support a fleet of 68 FCEBs by 2035.

### Planning Projects

The building of permanent hydrogen infrastructure will require planning at each depot. It is assumed that each planning project will cost $200,000, occurring as shown in the graph below, and only once per depot. The total cost of planning projects for the one depot is therefore approximately $200,000.

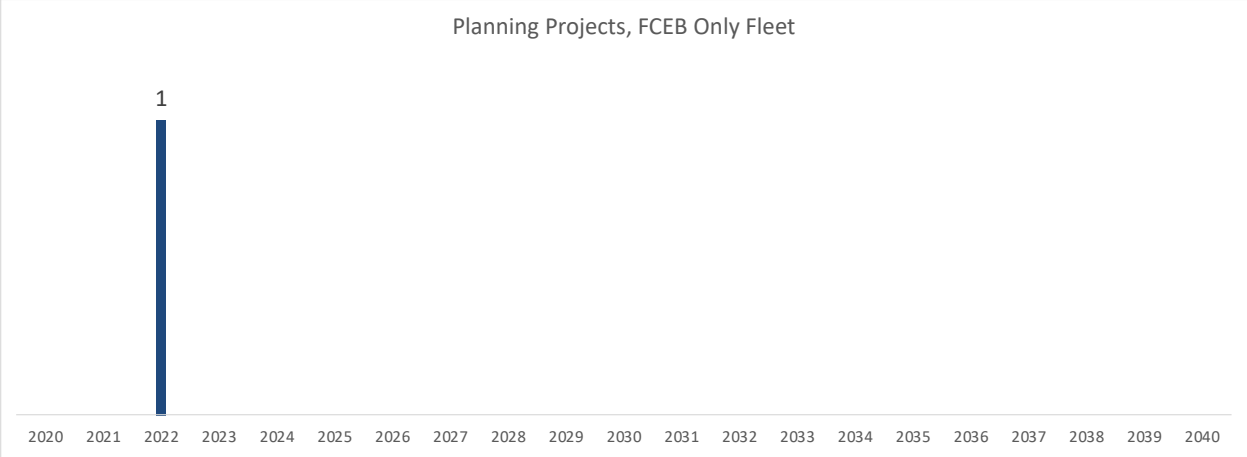
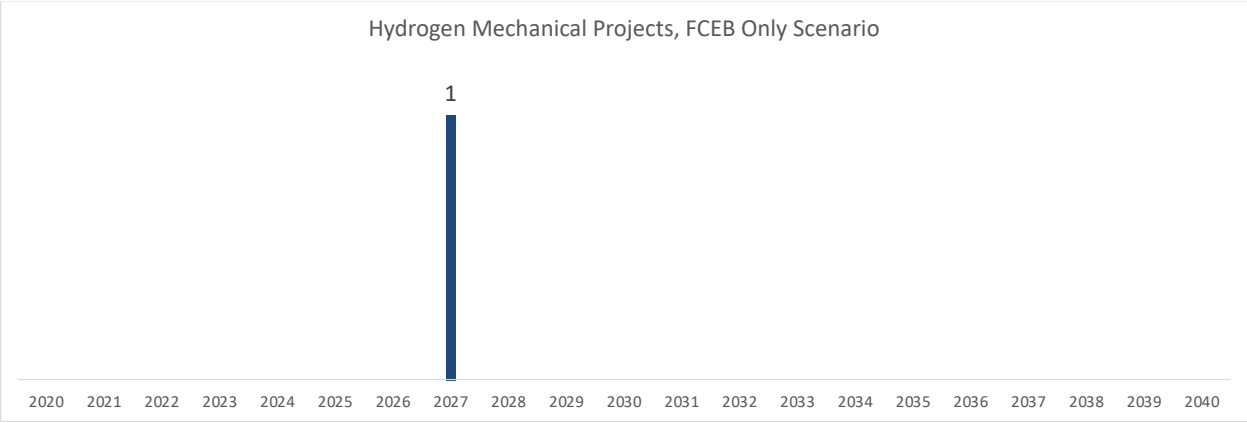



*Figure 68 – Planning Projects, FCEB Only Scenario*

**Figure 69** shows the estimated mechanical projects by year. Costs vary per project in a given year due to the scale of the implementation at each depot. Building mechanical infrastructure at each depot are grouped into no more than two phases to minimize disruption of service and capital expenses. The total cost of mechanical projects to support the FCEB Only scenario is approximately $4.2 million, and the project is scheduled in 2027.






BACK TO AGENDA

*Figure 69 – Hydrogen Mechanical Projects, FCEB Only Scenario*

### Storage Capacity Projects

**Figure 70** - Hydrogen Storage Capacity Projects, FCEB Only Scenarioshows the planned storage capacity projects and costs by year and depot. The total storage capacity projects will cost approximately $0.6 million over the life of the study. There will be a single project in 2027 that will add the capacity for the initial 50-bus capacity tank, as well as the additional capacity for the 18 additional buses required in the full fleet transition.

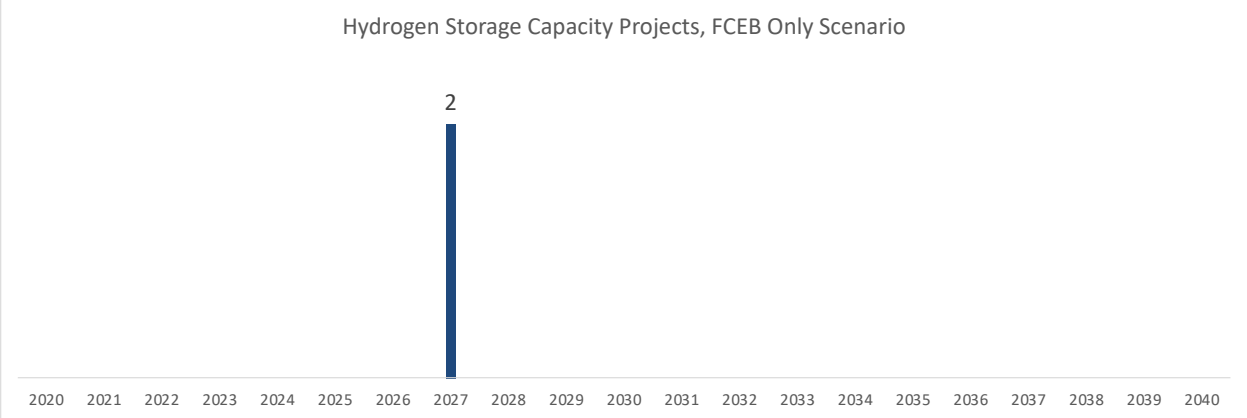



*Figure 70 - Hydrogen Storage Capacity Projects, FCEB Only Scenario*

### Maintenance Bay Upgrade Projects

Maintenance bays at each depot will require hydrogen detection and exhaust equipment to ensure safety. **Figure 71** indicates the timing and location of upgrade projects, as well as the number of bays that require upgrades. A total of 14 maintenance bays will require upgrades.

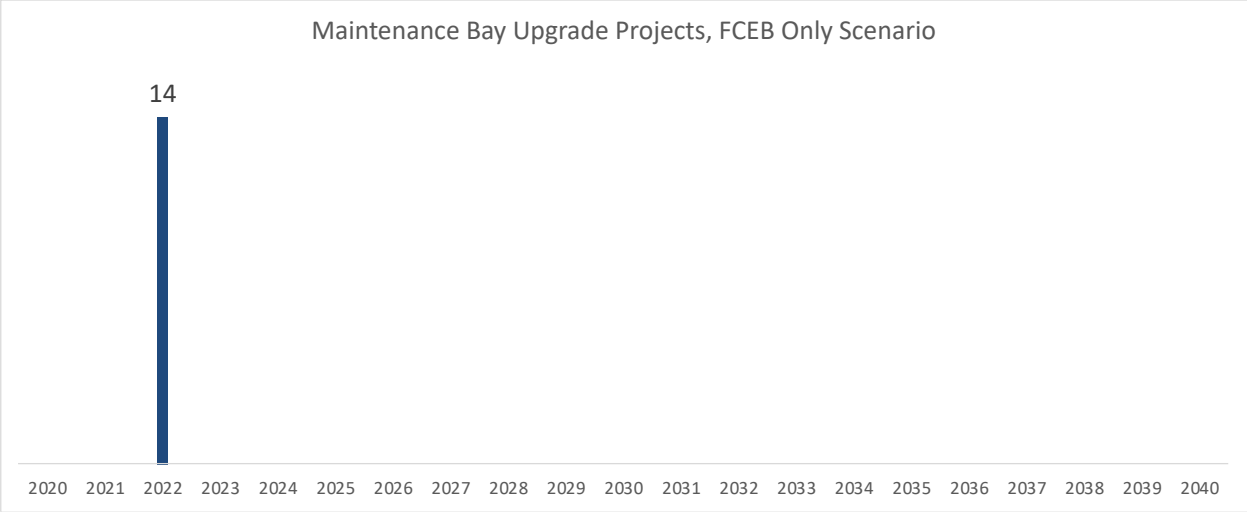



*Figure 71 - Hydrogen Maintenance Bay Upgrade Projects, FCEB Only Scenario*

CTE assumed $13,600 per bay for the required upgrades. This cost comes from the requirement of additional ventilation systems. For maintenance bay upgrade projects, CTE estimates a total cost of $1,900,000 for LAVTA in 2022.

### FCEB Only Infrastructure Summary

**Table 35** provides the total infrastructure costs for the FCEB Only scenario for the entire transition period. The total build of required FCEB infrastructure will require approximately $9.8 million for the FCEB Only scenario. **Figure 72** shows a cumulative summary of infrastructure costs by year at the depot including the cost of the mobile fuelers prior to the install of the permanent infrastructure in 2027.

*Table 35 – Total Infrastructure Costs, FCEB Only Scenario*

| Depot | Cost |
|---|---|
| **Atlantis** | $ 9,752,000 |
| **Total** | **$ 9,752,000** |

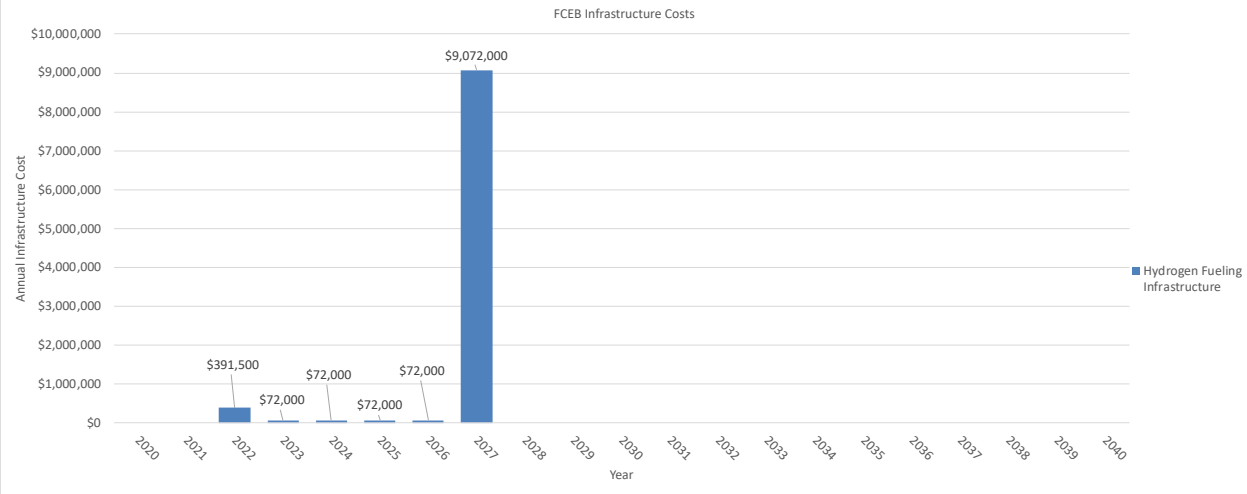



*Figure 72 - Cumulative Infrastructure Costs, FCEB Only Scenario*

## Facilities Assessment Cost Comparison

The Facilities Assessment includes all infrastructure-related costs over the transition for each scenario. **Figure 73** shows the cumulative infrastructure costs for each scenario. **Table 36** shows the combined total costs and percentage of ZEBs in the fleet in 2040.

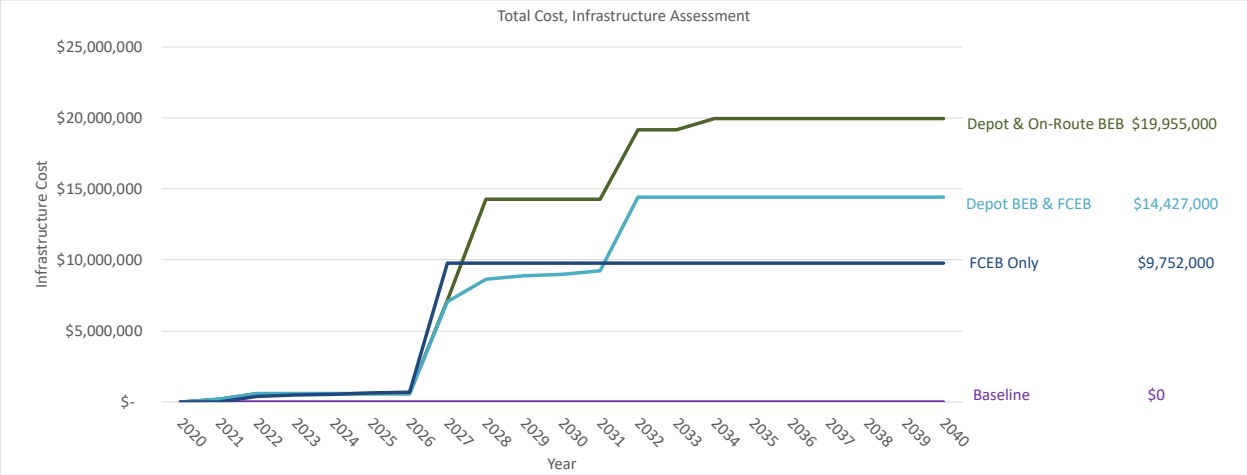



*Figure 73 - Total Cumulative Costs, Facilities Assessment*

*Table 36 - Total Cumulative Costs, Facilities Assessment*

| Scenario | Cost | % ZEB in 2040 |
|---|---|---|
| **Baseline** | $ 0 | 0% |
| **BEB Only** | $ 19,955,000 | 100% |
| **Mixed Fleet: BEB and FCEB** | $ 14,427,000 | 100% |
| **FCEB Only** | $ 9,752,000 | 100% |

# 9 Total Cost of Ownership Assessment

The Total Cost of Ownership Assessment compiles the results from the Fleet, Fuel, Facilities, and Maintenance Assessments to show cumulative and annual costs throughout the transition period for each scenario. It includes selected capital and operating costs of each fleet scenario over the transition timeline. Other costs may be incurred (e.g. incremental operator and maintenance training) during a fleet transition; however, these four assessment categories are the key drivers in ZEB transition decision-making.

This study assumes no cost escalation or any cost reduction due to economies of scale for ZEB technology because there is no historical basis for these assumptions. Future changes to LAVTA's service level, depot locations, route alignments, block scheduling, or other operations are unknown. The analyses below provide best estimates using the information currently available and the assumptions detailed throughout this report.

## Costs by Scenario

The following sections show total costs per scenario, broken down by assessment type.

### Baseline

**Figure 74** shows the combined fleet, fuel, facilities, and maintenance costs for the Baseline scenario in 2020 dollars. Since bus capital costs represent the most expensive cost examined, the peaks in these expenses occur during large purchasing years. Compared to bus costs, the fluctuations in fueling and maintenance cost are minimal and appear fairly stable from one year to the next. Since this scenario assumes that the necessary infrastructure is already present at the depot, there are no infrastructure costs associated with the Baseline scenario. The total combined cost is approximately $138 million over twenty years from 2020 to 2040. This scenario estimates a total of 68 diesel-hybrids in service in 2040.


*Figure 74 – Total Costs by Type, Baseline Scenario*

### BEB Only

**Figure 75** shows the combined fleet, fuel, facilities, and maintenance costs for the BEB Only scenario in 2020 dollars. The total combined cost is approximately $195 million over the length



BACK TO AGENDA

of the transition, from 2020 to 2040. This scenario estimates a total of 68 total BEBs in service by 2040. The trends in the total cost fluctuations between years are largely the same as the Baseline and are also the result of bus capital costs being the main component of yearly costs. Infrastructure costs factor in towards the beginning of the project and maintenance and fueling costs remain relatively stable from year to year.

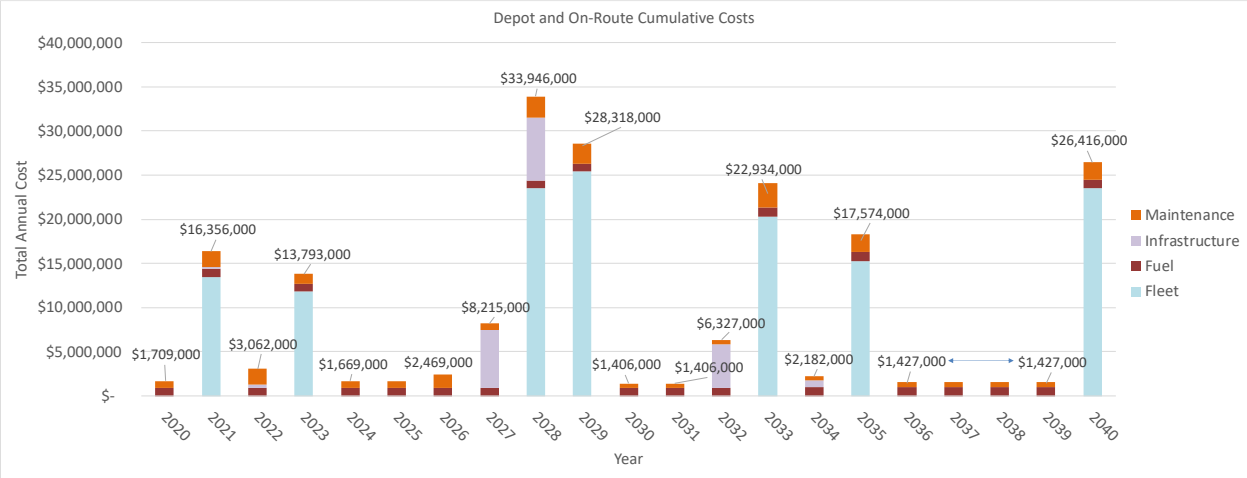



*Figure 75 – Total Costs by Type, Depot and On-Route Charging Scenario*

## Mixed Fleet: BEB and FCEB

**Figure 76** shows the combined fleet, fuel, facilities, and maintenance costs related to the Mixed Fleet: BEB and FCEB scenario in 2020 dollars. The total combined cost is approximately $197 million over the length of the transition, from 2020 to 2040. This scenario estimates a total of 41 BEBs and 27 FCEBs (68 total ZEBs) in service by 2040. The patterns of this scenario's bus purchasing, maintenance costs, and fueling costs are similar to those of the previously discussed scenarios with the infrastructure costs being even more isolated towards the beginning of the project.

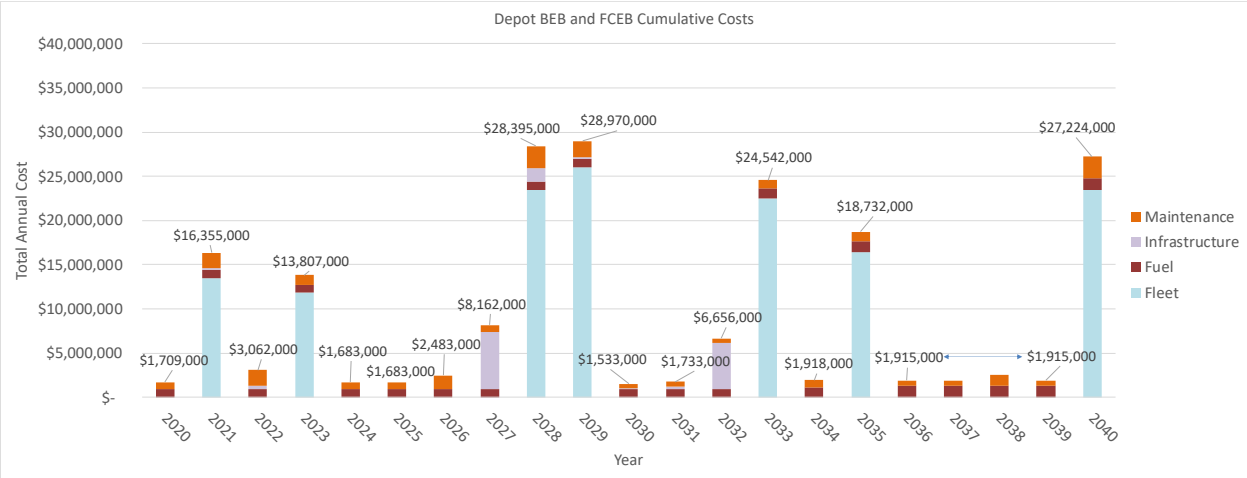



*Figure 76 – Total Costs by Type, Mixed Fleet: BEB and FCEB Scenario*



BACK TO AGENDA

## FCEB Only

**Figure 77** shows the combined fleet, fuel, facilities, and maintenance costs related to the FCEB Only scenario in 2020 dollars. The total combined cost is approximately $216 million over the length of the transition, from 2020 to 2040. This scenario estimates a total of 68 FCEBs in service by 2040. The general trends of this scenario are similar to the previous two ZEB scenarios discussed although this scenario has the highest overall expense of any of the scenarios; however, because the infrastructure costs for FCEBs are significantly lower than the costs for FCEBs, this scenario's annual expenses never exceed $32 million, whereas the two scenarios with BEBs both have years that exceed $33 million.

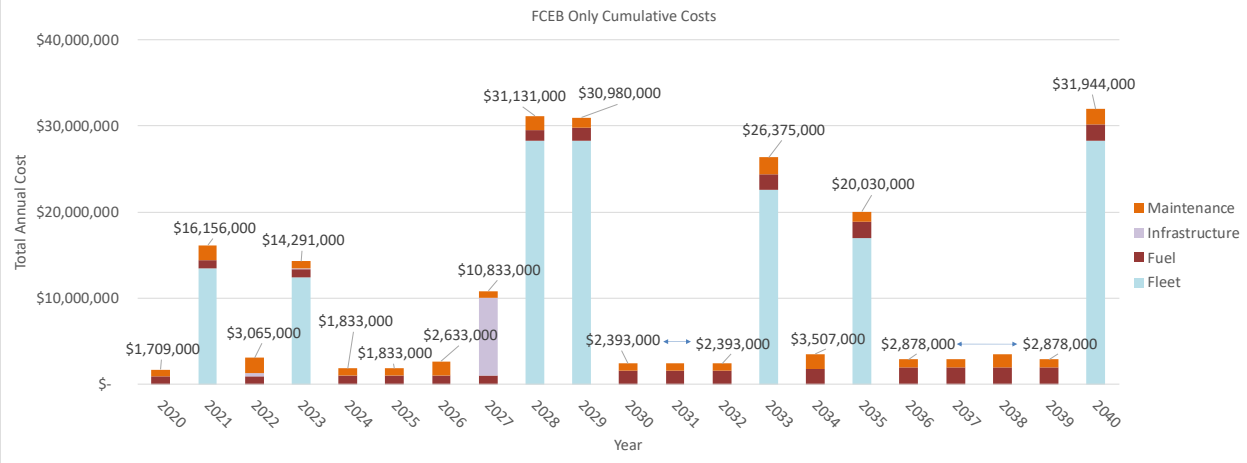



*Figure 77 – Total Costs by Type, FCEB Only Scenario*

## Total Estimated Costs

**Figure 78** shows the combined total costs from the assessments above, broken down by scenario. **Table 37** shows the detailed cost totals.

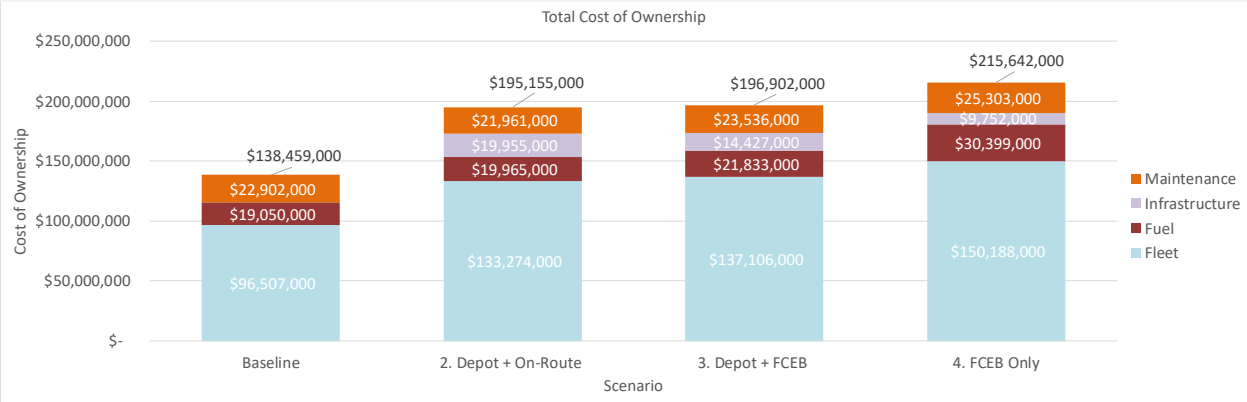



*Figure 78 – Total Cost of Ownership, by Scenario*



BACK TO AGENDA

*Table 37 – Total Cost of Ownership, by Scenario*

| Assessment Type | Baseline | BEB Only | Mixed Fleet: BEB and FCEB | FCEB Only |
|---|---|---|---|---|
| **Fleet** | $ 96,507,000 | $ 133,274,000 | $ 137,106,000 | $ 150,188,000 |
| **Fuel*** | $ 19,050,000 | $ 19,965,000 | $ 21,833,000 | $ 30,399,000 |
| **Infrastructure** | $ 0 | $ 19,955,000 | $ 14,427,000 | $ 9,752,000 |
| **Maintenance** | $ 22,902,000 | $ 21,961,000 | $ 23,536,000 | $ 25,303,000 |
| **Total** | **$ 138,459,000** | **$ 195,155,000** | **$ 196,902,000** | **$ 215,642,000** |
| **% ZEB in 2040** | **0%** | **100%** | **100%** | **100%** |

*Excludes any potential LCFS credit revenue

# 10 Conclusions and Recommendations

ZEB technologies are in a period of rapid development and change. While the technologies have been proven in many pilot deployments, they are not yet matured to the point where they can easily replace current fossil-fuel technologies on a large scale. BEBs require significant investment in facilities and infrastructure and may require changes to service and operations to manage their constraints. On the other hand, FCEBs can provide an operational equivalent to diesel or CNG buses; however, the cost of buses, fueling infrastructure, and fuel are a significant hurdle.

CARB's ICT regulation is an achievement toward addressing the challenges of climate change and improving local air quality with a goal of 100% zero-emission transit fleets by 2040. However, as demonstrated in this analysis, there will be substantial costs and technical challenges to overcome. Transit agencies may be challenged to meet this goal while maintaining the same level of passenger service.

In an all-BEB strategy, total ZEB transitional costs are likely to be around $195 million not including LCFS credit revenue to offset fuel costs. By adding on-route charging, LAVTA could achieve a transition to a 100% battery-electric fleet without increasing fleet size or sacrificing block achievability. The difference in cost between this scenario and the Baseline scenario is largely the result of the price difference between diesel-hybrid buses and BEBs. Both 40-foot and 60-foot BEBs have completed Altoona testing and are acceptable under the CARB ICT regulation. The BEB Only scenario meets the CARB ICT regulation.

The Mixed Fleet: BEB and FCEB scenario achieves the transition of LAVTA's fleet to 100% zero-emission by 2040 with an estimated total cost of $197 million (not including LCFS credit revenue on fuel). This total cost falls between the BEB-only strategy on the low-cost end and the FCEB-only strategy on the high-cost end. Though the costs are considerably less for a mixed fleet deployment than the FCEB Only scenario, managing a mixed fleet through a transition presents its own complexities, such as installing new BEB infrastructure and installing new FCEB fueling infrastructure in a time frame that does not disrupt service. In this scenario, the depot would also need to have the capacity to fit both kinds of fueling infrastructure. LAVTA may also experience additional benefits as a result of the transition to ZEBs; one commonly cited benefit of ZEBs in the reduction in maintenance requirements. Less maintenance for ZEBs may result in the need for fewer maintenance bays.

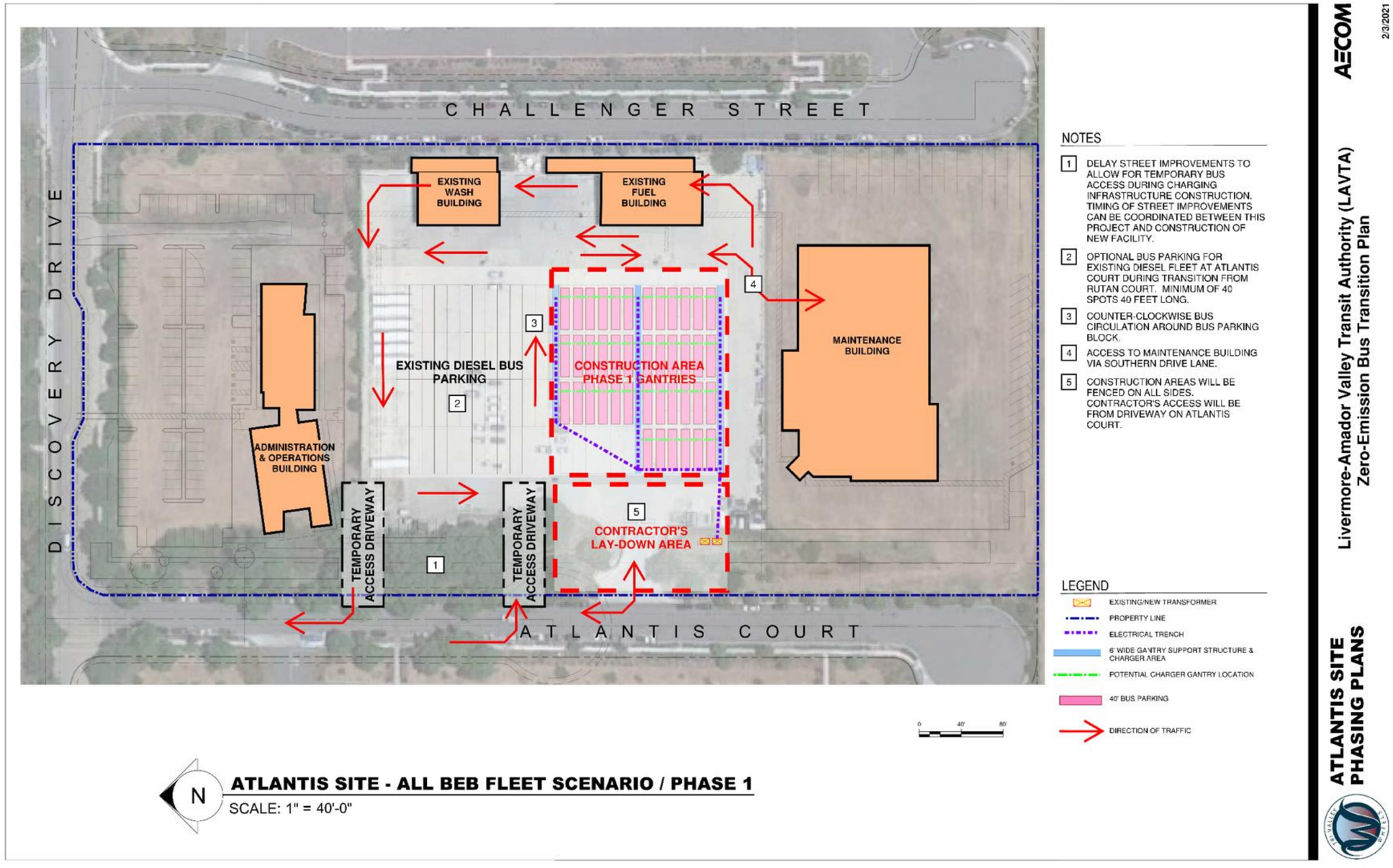
If LAVTA selects an FCEB Only strategy, total ZEB transitional costs are estimated at approximately $216 million (not including LCFS credit revenue on fuel) for replacement of 100% of the fleet with FCEBs by 2040. FCEB technology would allow service to continue unaltered without increasing fleet size. A primary assumption for the FCEB analysis is that FCEB buses will be available for all bus types and lengths during the transition period. Due to the lack of market diversity of FCEBs and hydrogen available in the United States, fuel costs and bus capital costs remain high. These costs are expected to come down in the future as more buses are deployed; however, more data is needed to understand how much they may fall. Additionally, data for FCEB maintenance costs reflect higher costs than what might be expected as agencies become

more familiar with the technology. As such, there are more unknowns associated with costs for the FCEB Only scenario, and costs are more subject to change.

Given these considerations, the recommendations for LAVTA are as follows:

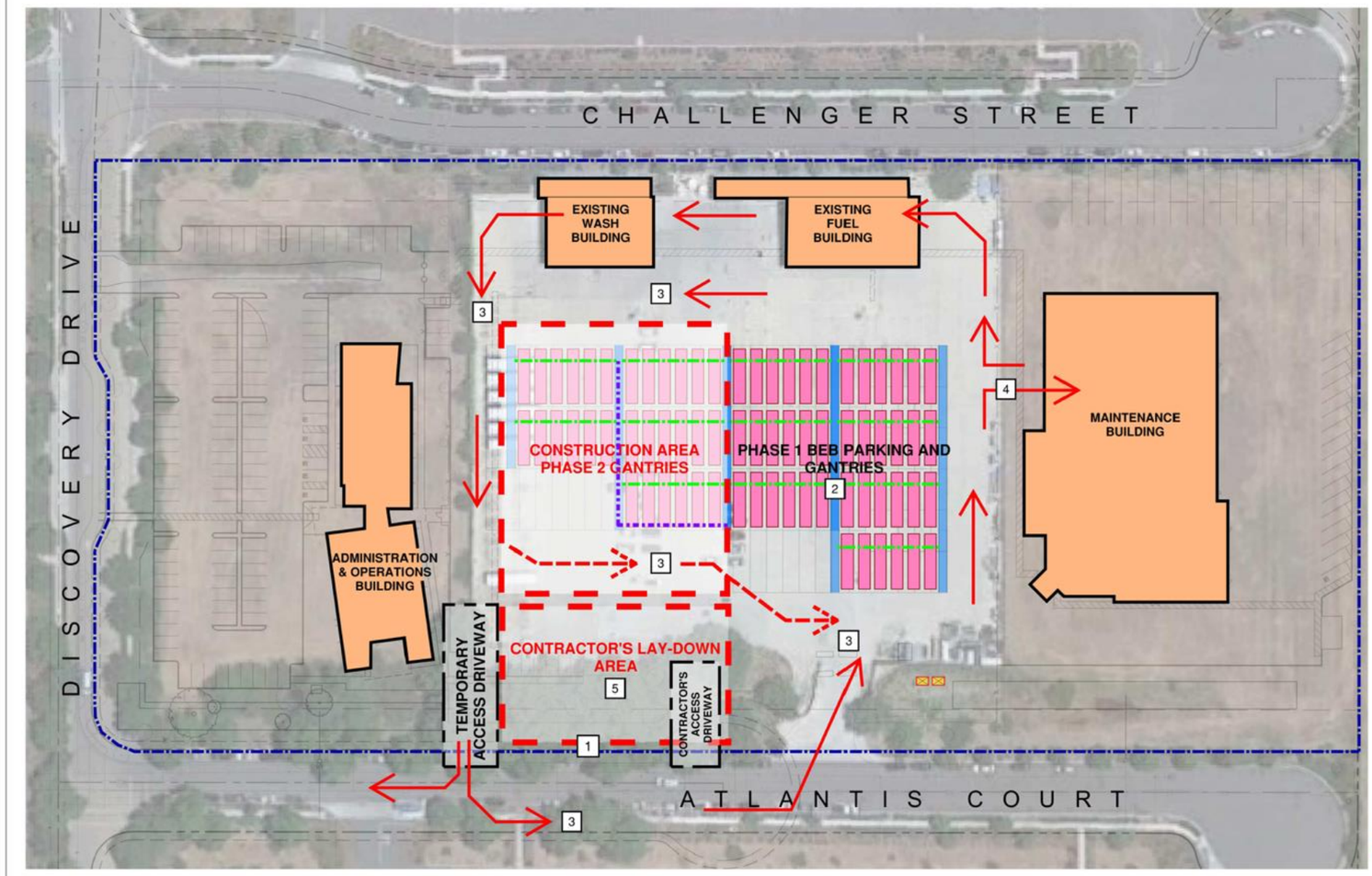
1. **Remain proactive with ZEB deployments:** For successful fleetwide deployment, BEBs will require charge management software, hardware, and standards to manage the fleetwide transition. For FCEB deployment to be competitive, lower fuel costs that will evolve over time with the production of hydrogen at scale will be required. LAVTA should move forward thoughtfully, taking advantage of various grant and incentive programs to offset the incremental cost for ZEB deployment. Incentive programs may be eliminated in future years as ZEB procurements are required instead of being optional.
2. **Target specific routes and blocks for early ZEB deployments:** LAVTA should consider the strengths of given ZEB technologies and focus those technologies on routes and blocks that take advantage of their efficiencies and minimize the impact of the constraints related to the respective technologies. For example, depot-charged BEBs for shorter routes and blocks, on-route charged BEBs for mid-range routes with layovers at a transit center, and FCEBs for long routes or routes with higher speeds and/or heavier loads, is recommended. These technologies cannot follow a one-size-fits-all approach from either a performance or cost perspective. Matching the technology to the service will be a critical best practice. Results from the ZEB Pilot Program will help to inform these decisions.

The transition to ZEB technologies represents a paradigm shift in bus procurement, operation, maintenance, and infrastructure. It is only through a continual process of deployment with specific goals for advancement that the industry can achieve the goal of economically sustainable, zero-emission public transit.






BACK TO AGENDA




NOTES

1. STREET IMPROVEMENTS TO BE COMPLETED AFTER CHARGING INFRASTRUCTURE CONSTRUCTION IS FINISHED.
2. COMPLETED BUS PARKING & CHARGING FOR 35 NEW BEBs. REMAINING EXISTING DIESEL FLEET TO BE BASED AT RUTAN COURT DURING PHASE 2 CONSTRUCTION.
3. COUNTER-CLOCKWISE BUS CIRCULATION AROUND BUS PARKING BLOCK AND CONSTRUCTION AREA. BUSSES LEAVING FUEL/WASH AND MAINTENANCE FACILITIES WILL EITHER TRAVEL THROUGH CONSTRUCTION AREA, AT CONTRACTOR'S OPTION, OR CYCLE OUT ON ATLANTIS COURT THEN RE-ENTER SITE IN ORDER TO PARK UNDER CHARGING GANTRIES.
4. ACCESS TO MAINTENANCE BUILDING VIA COUNTER-CLOCKWISE YARD DRIVE LANE.
5. CONSTRUCTION AREAS WILL BE FENCED ON ALL SIDES. HOWEVER, CONTRACTOR MAY ALLOW BUS THROUGH TRAFFIC DURING AGREED UPON HOURS. CONTRACTOR'S ACCESS WILL BE FROM DRIVEWAY ON ATLANTIS COURT.

LEGEND

- EXISTING/NEW TRANSFORMER
- PROPERTY LINE
- ELECTRICAL TRENCH
- 6' WIDE GANTRY SUPPORT STRUCTURE & CHARGER AREA
- POTENTIAL CHARGER GANTRY LOCATION
- 40' BUS PARKING
- DIRECTION OF TRAFFIC

N

**ATLANTIS SITE - ALL BEB FLEET SCENARIO / PHASE 2**

SCALE: 1" = 40'-0"

AECOM

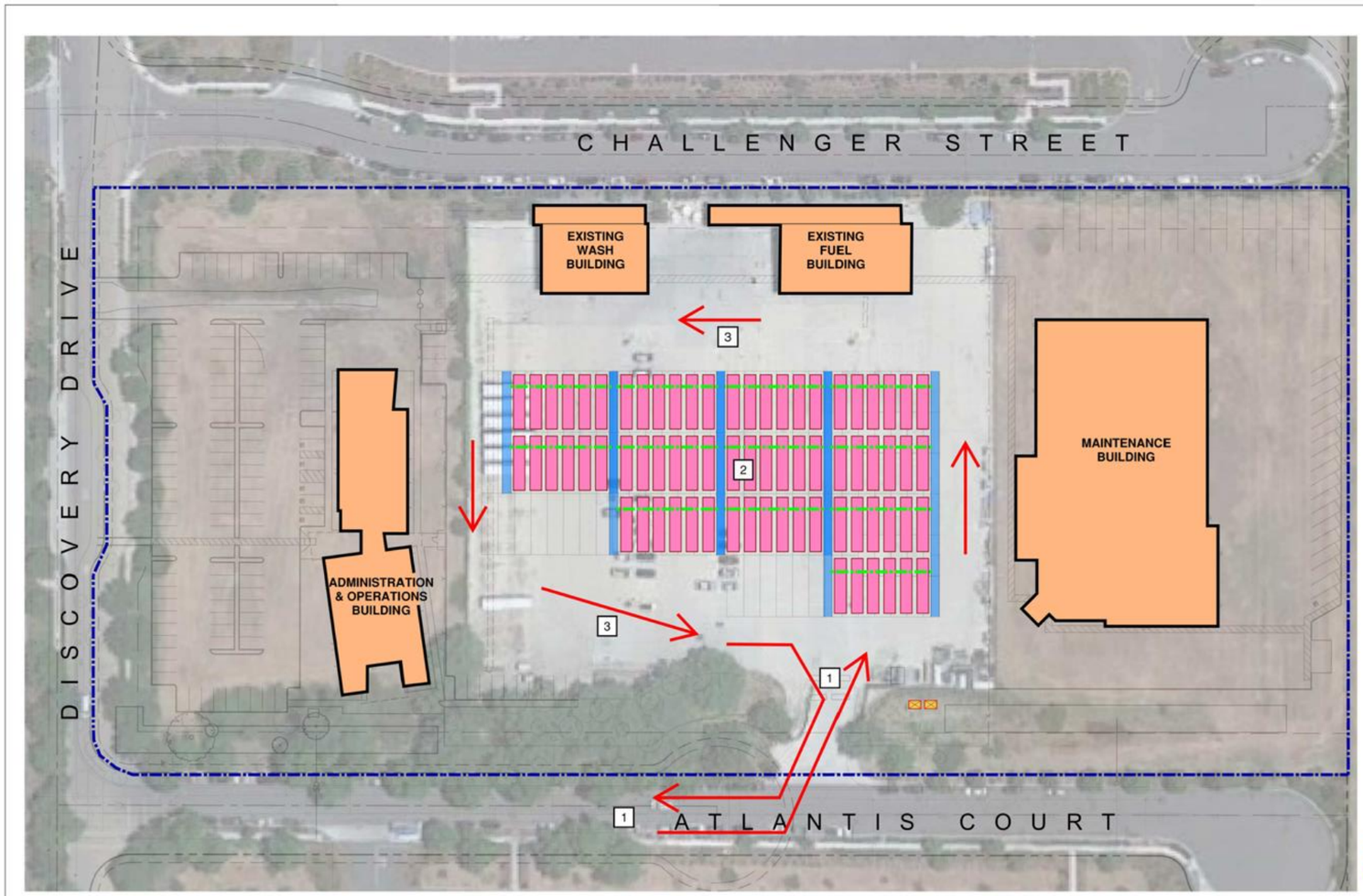
2/3/2021

Livermore-Amador Valley Transit Authority (LAVTA)
Zero-Emission Bus Transition Plan

**ATLANTIS SITE PHASING PLANS**



BACK TO AGENDA




NOTES

1. ALL BUS YARD ACCESS FROM ATLANTIS CT.
2. BATTERY ELECTRIC BUS (BEB) PARKING: 72 MAXIMUM CHARGING SPOTS 40 FEET LONG.
3. COUNTER-CLOCKWISE BUS CIRCULATION AROUND BUS PARKING BLOCK.

LEGEND

- EXISTING/NEW TRANSFORMER
- PROPERTY LINE
- ELECTRICAL TRENCH
- 6' WIDE GANTRY SUPPORT STRUCTURE & CHARGER AREA
- POTENTIAL CHARGER GANTRY LOCATION
- 40' BUS PARKING
- DIRECTION OF TRAFFIC

0 40' 80'

N

**ATLANTIS SITE - ALL BEB FLEET SCENARIO / BUILD-OUT**

SCALE: 1" = 40'-0"

AECOM

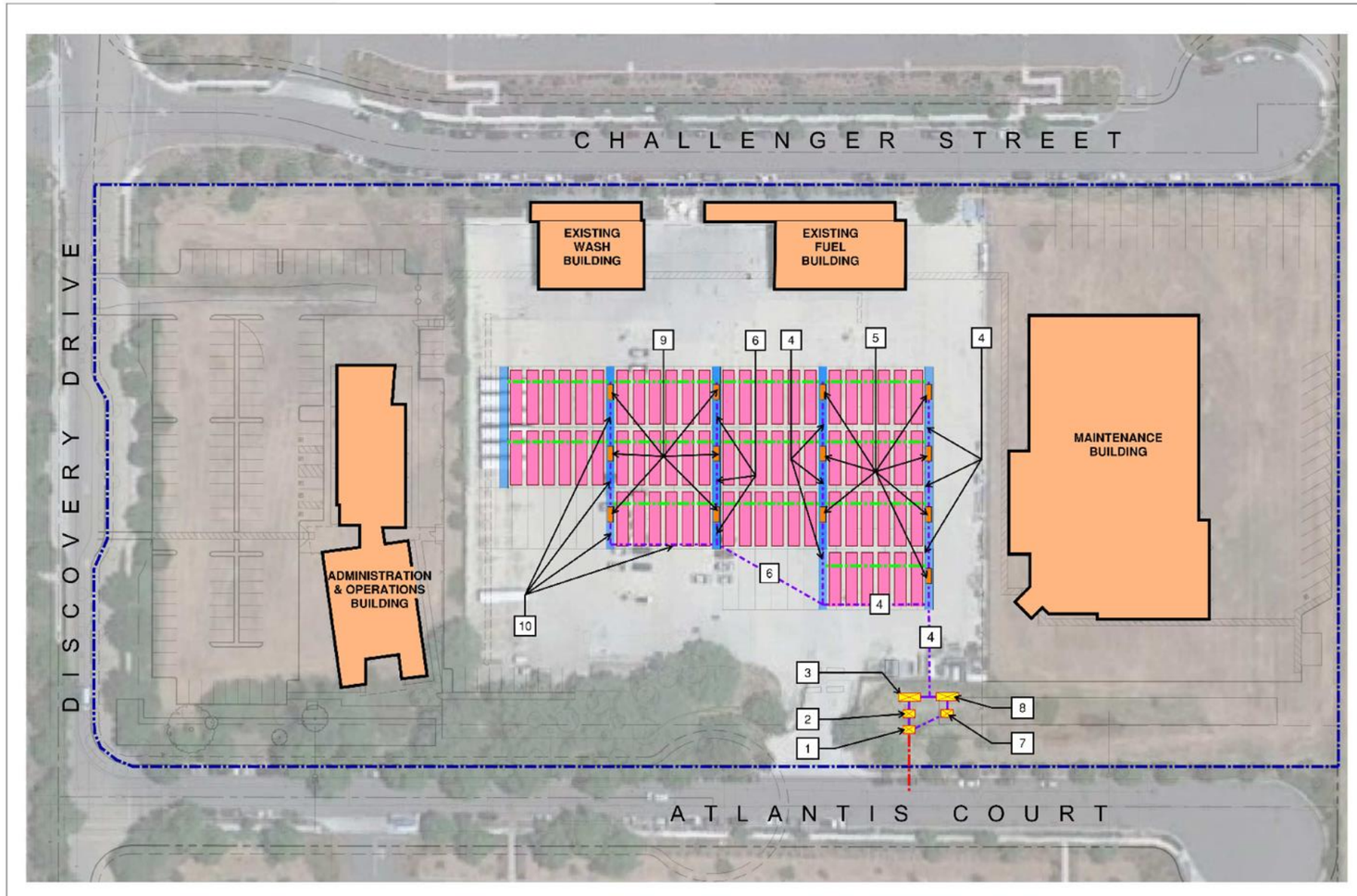
2/3/2021

Livermore-Amador Valley Transit Authority (LAVTA)
Zero-Emission Bus Transition Plan

**ATLANTIS SITE PHASING PLANS**



BACK TO AGENDA




## GENERAL ELECTRICAL NOTES

1) FEEDER ROUTE FROM UTILITY TO BE DETERMINED BY UTILITY.
2) REVENUE METERING TO BE DONE AT 480V SWITCHGEAR UNLESS UTILITY REQUIRES CONSOLIDATED METERING AT DISTRIBUTION VOLTAGE.

## NOTES

### PHASE 1 ELECTRICAL WORK

1. NEW UTILITY-OWNED PMH-9 SWITCH (OR EQUIVALENT)
2. PROPOSED NEW PAD MOUNTED TRANSFORMER, 2500KVA, 480/277V SECONDARY
3. NEW 4000A, 480/277V, 4W SWITCHBOARD "A", NEMA 3R
4. NEW UNDERGROUND CONDUIT DUCT BANK, CONCRETE ENCASED
5. (3) CHARGING CABINETS AT EA. GANTRY (DISPENSERS/PANTOGRAPHS ARE MOUNTED ON OVERHEAD GANTRY), TYP.
6. NEW UNDERGROUND CONDUIT DUCT BANK, TO FUTURE CHARGERS IN PHASE 2. CONDUCTORS, CHARGERS, AND DISPENSERS/PANTOGRAPHS WILL BE INSTALLED DURING PHASE 2.

### PHASE 2 ELECTRICAL WORK

7. PROPOSED NEW PAD MOUNTED TRANSFORMER, 2500KVA, 480/277V SECONDARY
8. (N) 2000A, 480/277V, 4W SWITCHBOARD "B", NEMA 3R
9. (3) CHARGING CABINETS AT EA. GANTRY (DISPENSERS/PANTOGRAPHS ARE MOUNTED ON OVERHEAD GANTRY), TYP.
10. NEW UNDERGROUND CONDUIT DUCT BANK, CONCRETE ENCASED

## LEGEND

- EXISTING/NEW TRANSFORMER OR SWITCH
- PROPERTY LINE
- ELECTRICAL FEED FROM PG&E
- ELECTRICAL TRENCH
- 6' WIDE GANTRY SUPPORT STRUCTURE & CHARGER AREA
- POTENTIAL CHARGER GANTRY LOCATION
- 40' BUS PARKING

N

**ATLANTIS SITE - ALL BEB FLEET SCENARIO / PHASES 1 & 2**

SCALE: 1" = 40'-0"

AECOM

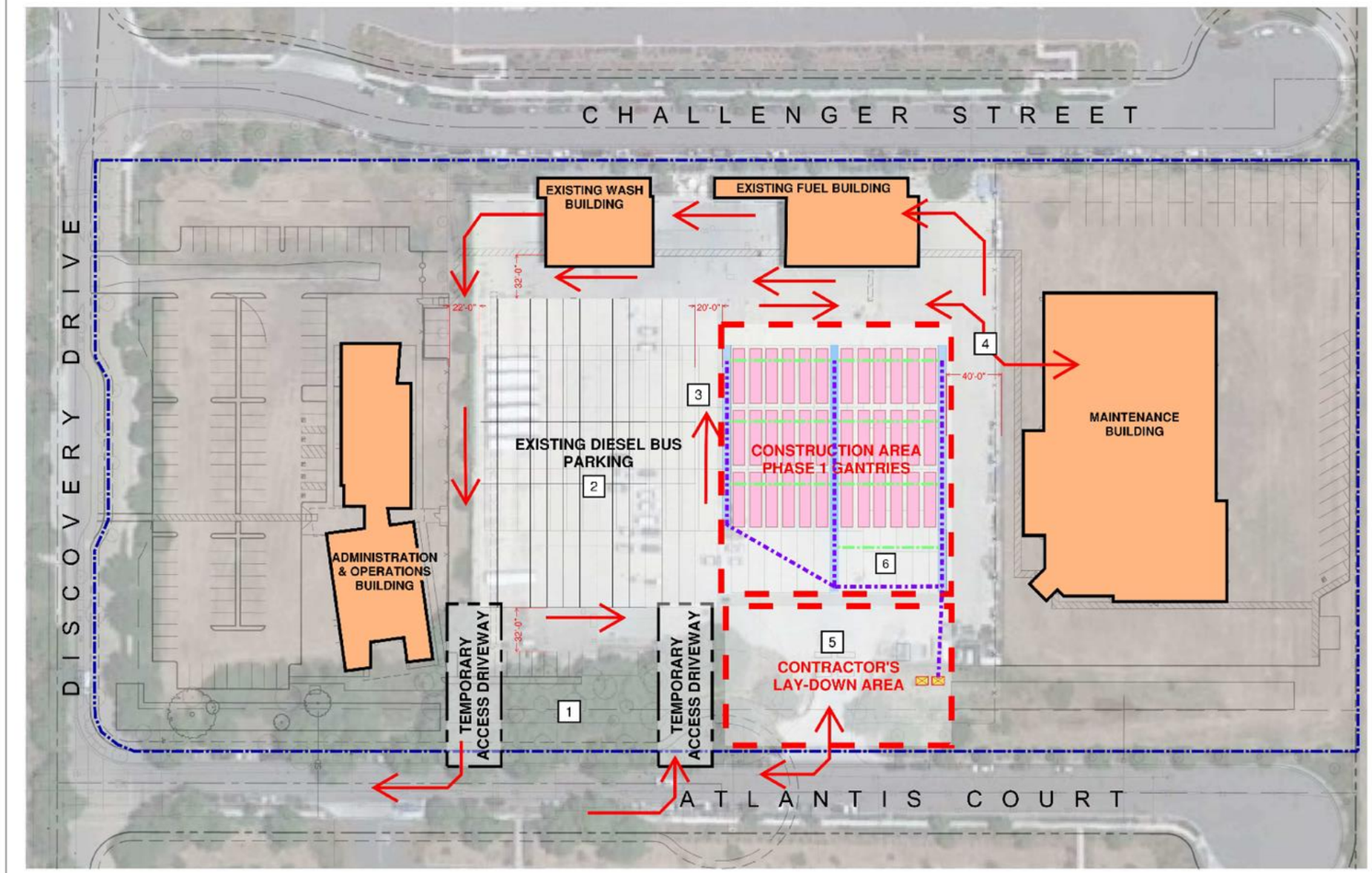
2/3/2021

**Livermore-Amador Valley Transit Authority (LAVTA)**
**Zero-Emission Bus Transition Plan**

**ATLANTIS SITE**
**CHARGING INFRASTRUCTURE**
**MASTER PLAN**



BACK TO AGENDA




NOTES

1. DELAY STREET IMPROVEMENTS TO ALLOW FOR TEMPORARY BUS ACCESS DURING CHARGING INFRASTRUCTURE CONSTRUCTION. TIMING OF STREET IMPROVEMENTS CAN BE COORDINATED BETWEEN THIS PROJECT AND CONSTRUCTION OF NEW FACILITY.
2. OPTIONAL BUS PARKING FOR EXISTING DIESEL FLEET AT ATLANTIS COURT DURING TRANSITION FROM RUTAN COURT. MAXIMUM OF 65 SPOTS 40 FEET LONG. (TIGHT)
3. COUNTER-CLOCKWISE BUS CIRCULATION AROUND BUS PARKING BLOCK.
4. ACCESS TO MAINTENANCE BUILDING VIA SOUTHERN DRIVE LANE.
5. CONSTRUCTION AREAS WILL BE FENCED ON ALL SIDES. CONTRACTOR'S ACCESS WILL BE FROM DRIVEWAY ON ATLANTIS COURT.
6. CONSTRUCTION OF PHASE 2 GANTRY ONLY DURING PHASE 1, ALONG WITH ELECTRICAL CONDUIT. CABLES, CHARGERS, AND DISPENSERS/PANTOGRAPHS TO BE INSTALLED DURING PHASE 2.

LEGEND

- EXISTING/NEW TRANSFORMER
- PROPERTY LINE
- ELECTRICAL TRENCH
- 6' WIDE GANTRY SUPPORT STRUCTURE & CHARGER AREA
- POTENTIAL CHARGER GANTRY LOCATION
- 40' BUS PARKING
- DIRECTION OF TRAFFIC

N

**ATLANTIS SITE - MIXED BEB-FCEB FLEET SCENARIO / PHASE 1**

SCALE: 1" = 40'-0"

AECOM

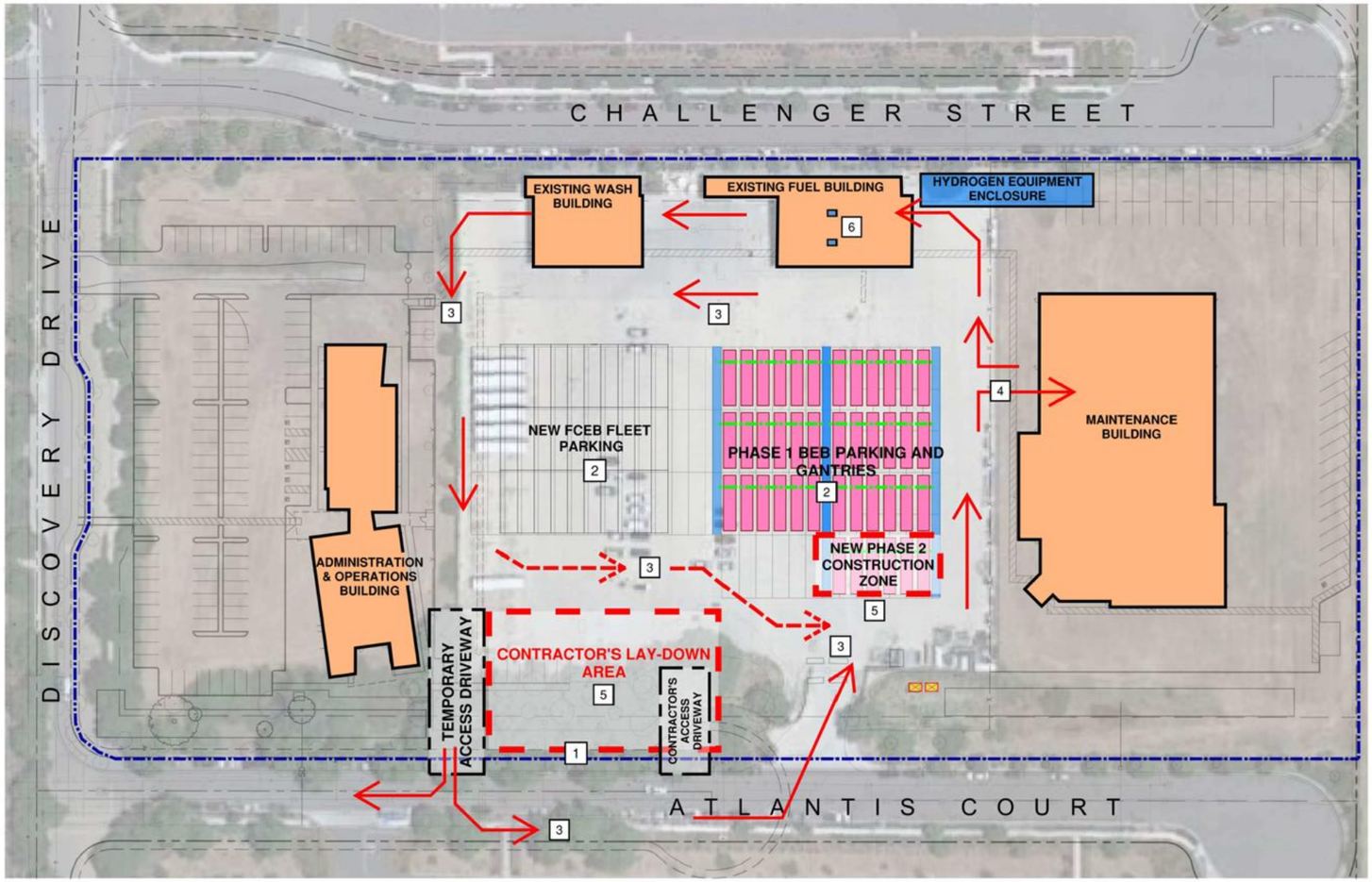
2/3/2021

Livermore-Amador Valley Transit Authority (LAVTA)
Zero-Emission Bus Transition Plan

**ATLANTIS SITE PHASING PLANS**



BACK TO AGENDA




NOTES

1. STREET IMPROVEMENTS TO BE COMPLETED AFTER CHARGING INFRASTRUCTURE CONSTRUCTION IS FINISHED.
2. BUS PARKING FOR NEW HYDROGEN FCEBs. MINIMUM OF 40 SPOTS 40 FEET LONG.
3. COUNTER-CLOCKWISE BUS CIRCULATION AROUND BUS PARKING BLOCKS AND CONSTRUCTION AREA. BUSSES LEAVING SERVICE AND MAINTENANCE FACILITIES WILL EITHER TRAVEL THROUGH CONSTRUCTION AREA, AT CONTRACTOR'S OPTION, OR CYCLE OUT ON ATLANTIS COURT THEN RE-ENTER SITE IN ORDER TO PARK UNDER CHARGING GANTRIES.
4. ACCESS TO MAINTENANCE BUILDING VIA COUNTER-CLOCKWISE YARD DRIVE LANE.
5. CONSTRUCTION LAY-DOWN AREA WILL BE FENCED ON ALL SIDES. PHASE 2 CHARGER/DISPENSER INSTALLATION AREA WILL NOT BE FENCED, ALLOWING BEBs TO DRIVE UNDER GANTRY TO ACCESS SOUTHERNMOST CHARGING GANTRIES. CONSTRUCTION ACTIVITIES ON PHASE 2 GANTRY WILL BE LIMITED TO COMMUTE HOURS WHILE MOST BEBs WILL BE OUT OF THE YARD.
6. HYDROGEN FUELING DISPENSER ON ISLANDS UNDER CANOPY.

LEGEND

- EXISTING/NEW TRANSFORMER
- PROPERTY LINE
- ELECTRICAL TRENCH
- 6' WIDE GANTRY SUPPORT STRUCTURE & CHARGER AREA
- POTENTIAL CHARGER GANTRY LOCATION
- 40' BUS PARKING
- DIRECTION OF TRAFFIC

0 40' 80'

N

**ATLANTIS SITE - MIXED BEB-FCEB FLEET SCENARIO / PHASE 2**

SCALE: 1" = 40'-0"

AECOM

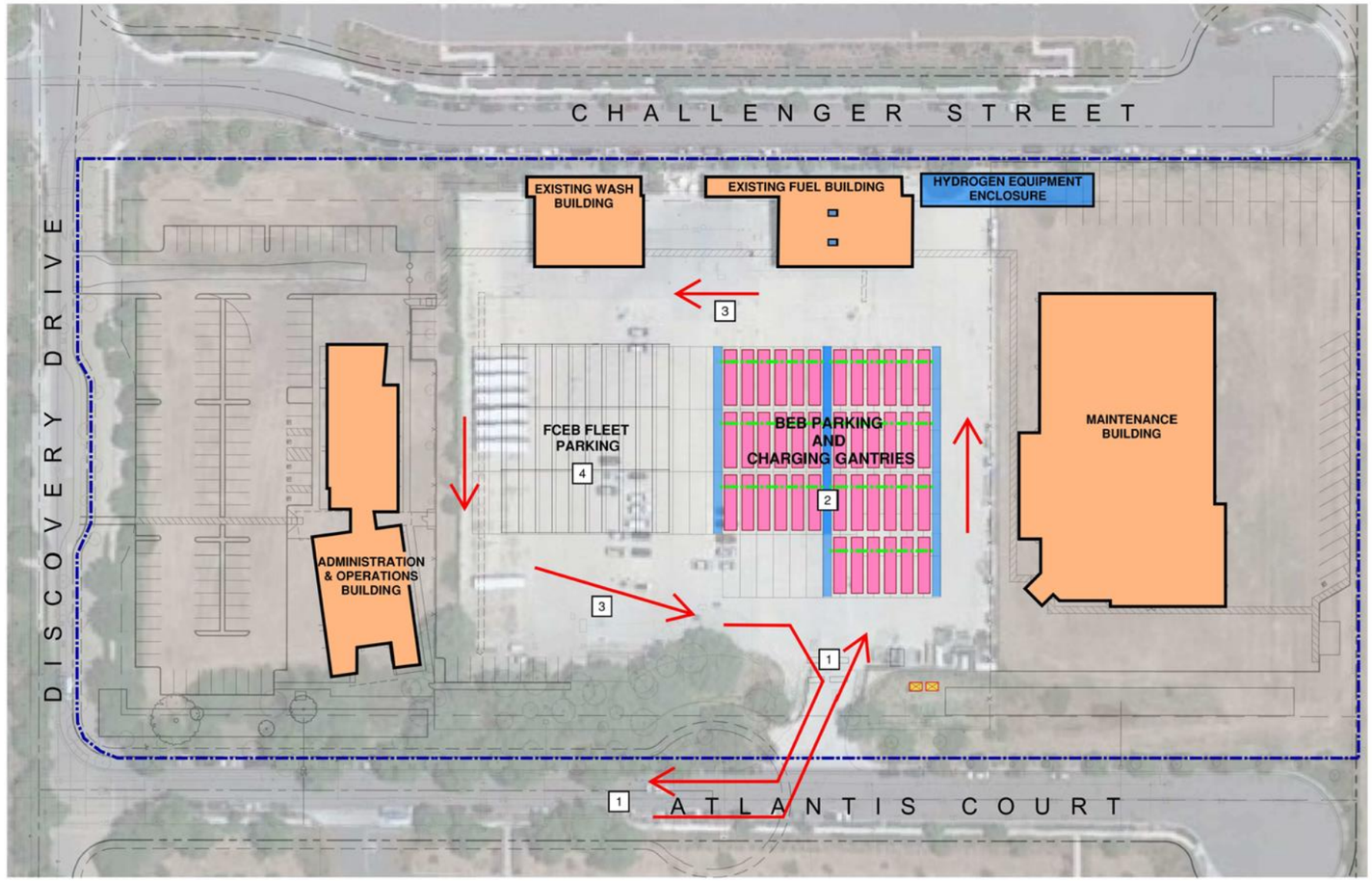
2/3/2021

Livermore-Amador Valley Transit Authority (LAVTA)
Zero-Emission Bus Transition Plan

**ATLANTIS SITE PHASING PLANS**



BACK TO AGENDA




NOTES

1. ALL BUS YARD ACCESS FROM ATLANTIS CT.
2. BATTERY ELECTRIC BUS (BEB) PARKING: 42 MAXIMUM CHARGING SPOTS 40 FEET LONG.
3. COUNTER-CLOCKWISE BUS CIRCULATION AROUND BUS PARKING BLOCK.
4. HYDROGEN FUEL CELL ELECTRIC BUS (FCEB) PARKING: 30 SPOTS 40 FEET LONG.

LEGEND

- EXISTING/NEW TRANSFORMER
- PROPERTY LINE
- ELECTRICAL TRENCH
- 6' WIDE GANTRY SUPPORT STRUCTURE & CHARGER AREA
- POTENTIAL CHARGER GANTRY LOCATION
- 40' BUS PARKING
- DIRECTION OF TRAFFIC

N

**ATLANTIS SITE - MIXED BEB-FCEB FLEET SCENARIO / BUILD-OUT**

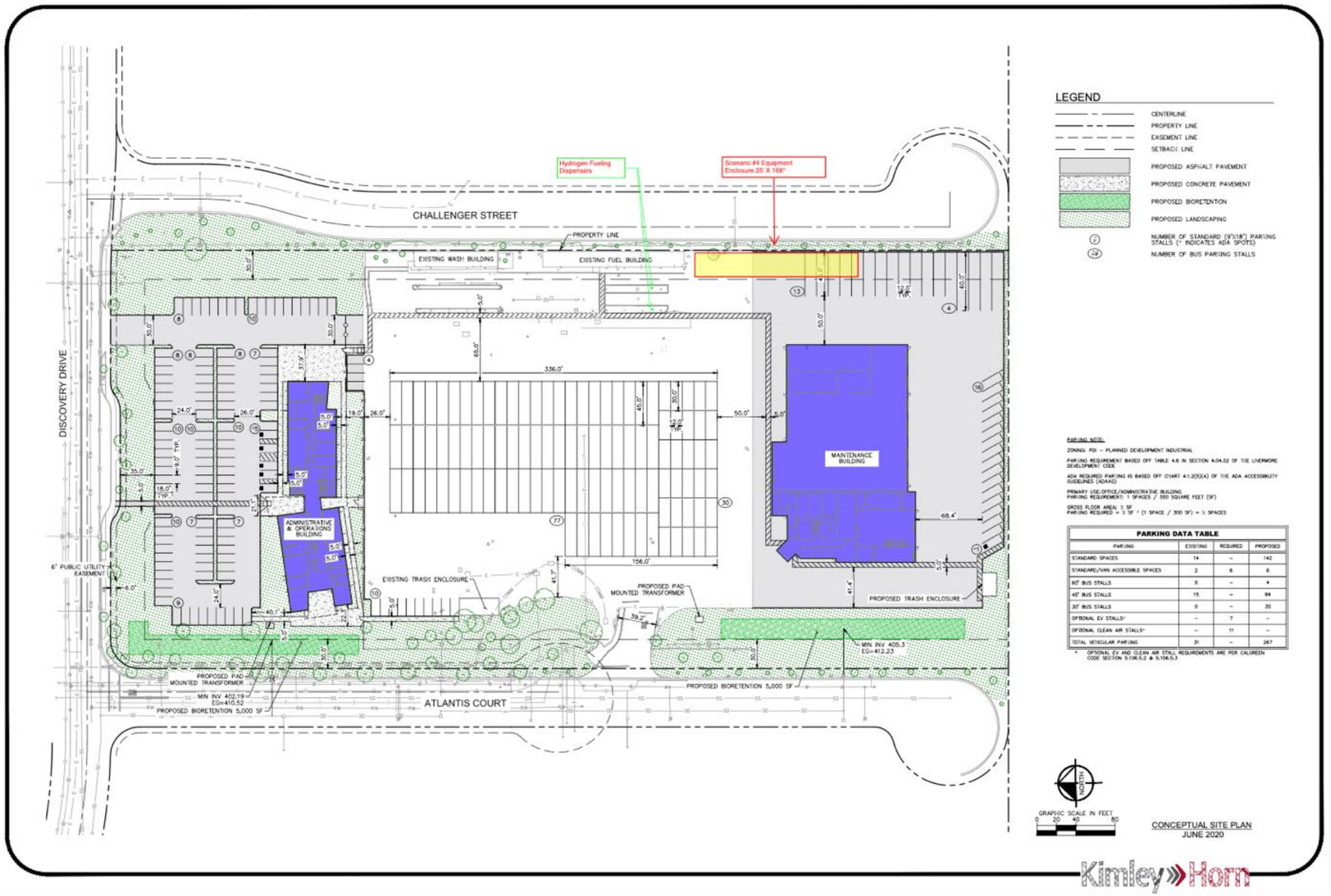
SCALE: 1" = 40'-0"

AECOM

2/3/2021

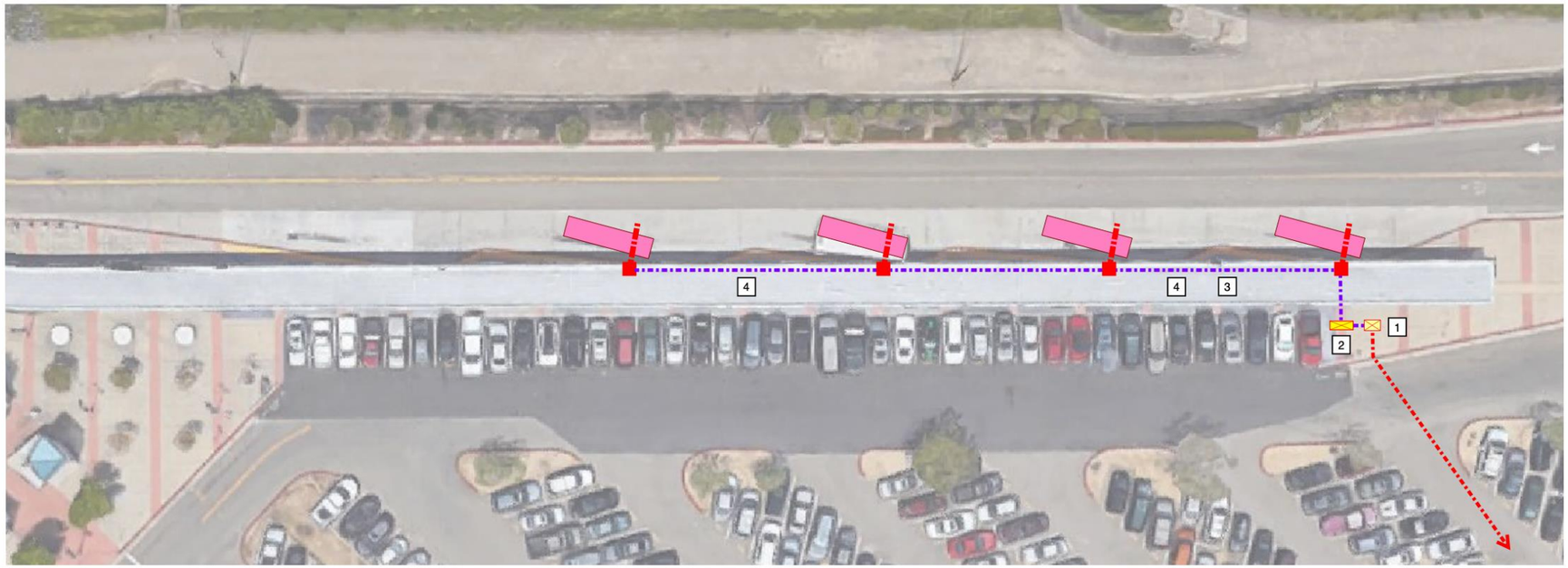
Livermore-Amador Valley Transit Authority (LAVTA)
Zero-Emission Bus Transition Plan

**ATLANTIS SITE PHASING PLANS**






BACK TO AGENDA




N

**SITE PLAN**

SCALE: 1" = 30'-0"

NOTES

1. PROPOSED NEW PAD MOUNTED TRANSFORMER, 500KVA, 480/277V SECONDARY (IN ENCLOSURE).
2. NEW 800A, 480/277V, 4W SWITCHBOARD "A", NEMA 3R (IN ENCLOSURE).
3. NEW UNDERGROUND CONDUIT DUCT BANK, CONCRETE ENCASED.
4. CHARGING CABINETS BETWEEN PANTOGRAPH COLUMN PAIRS (UNDER CANOPY).

0 30' 60'

LEGEND

- NEW TRANSFORMER OR SWITCH
- ELECTRICAL FEED FROM PG&E
- ELECTRICAL TRENCH
- PROPOSED PANTOGRAPH CHARGER LOCATION
- 40' BUS PARKING

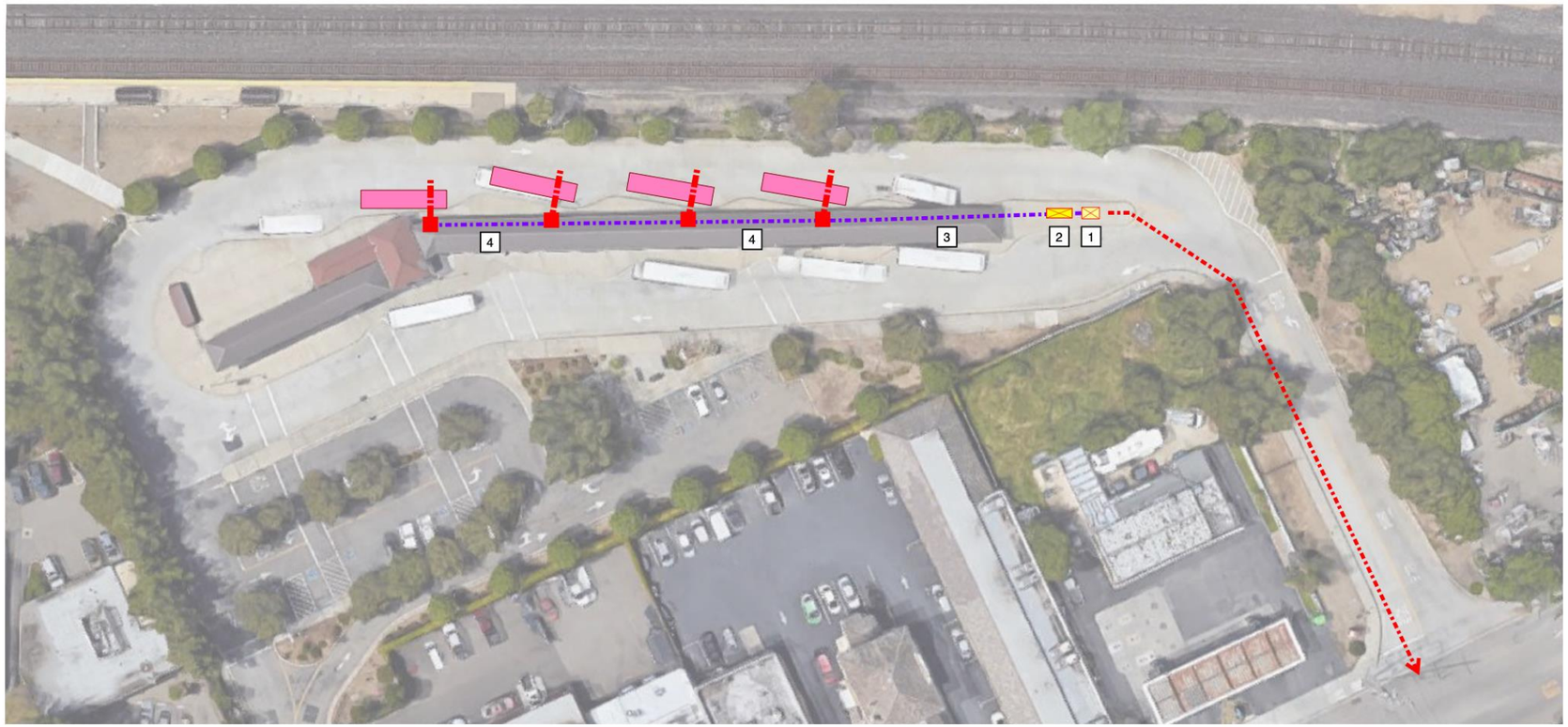
AECOM

Livermore-Amador Valley Transit Authority (LAVTA)
Zero-Emission Bus Transition Plan

**BART TRANSIT CENTER**
**CHARGING INFRASTRUCTURE**
**PLAN**



BACK TO AGENDA




N

**SITE PLAN**

SCALE: 1" = 30'-0"

NOTES

1. PROPOSED NEW PAD MOUNTED TRANSFORMER, 500KVA, 480/277V SECONDARY (IN ENCLOSURE).
2. NEW 800A, 480/277V, 4W SWITCHBOARD "A", NEMA 3R (IN ENCLOSURE)A.
3. NEW UNDERGROUND CONDUIT DUCT BANK, CONCRETE ENCASED, TYPICAL.
4. CHARGING CABINETS BETWEEN PANTOGRAPH COLUMN PAIRS (UNDER CANOPY).

0 30' 60'

LEGEND

- NEW TRANSFORMER OR SWITCH
- ELECTRICAL FEED FROM PG&E
- ELECTRICAL TRENCH
- PROPOSED PANTOGRAPH CHARGER LOCATION
- 40' BUS PARKING

AECOM

Livermore-Amador Valley Transit Authority (LAVTA)
Zero-Emission Bus Transition Plan

**LIVERMORE TRANSIT CENTER**
**CHARGING INFRASTRUCTURE PLAN**

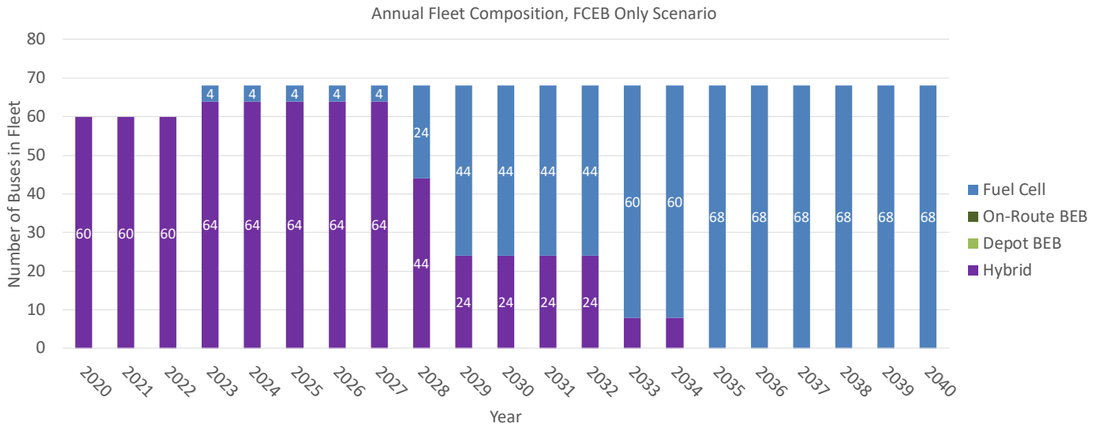
## Addenda – Accelerated FCEB Purchase Cost Information

In the event that LAVTA chooses to purchase 12 FCEBs in 2023 rather than the previously projected 4 FCEBs and 8 Hybrids, additional costs would be incurred in 2023 for the capital cost of the bus purchases that year. Additionally, since there would be 8 additional FCEBs in the fleet from 2023-2035 compared to the original scenario (as demonstrated in **Addenda Figure 79:** Original Scenario (4 FCEB/8 Hybrid Purchased in 2023) Addenda Figure 1b: Accelerated 2023 FCEB Purchase Scenario (12 FCEB/0 Hybrid Purchased in 2023)**and 1b**), the maintenance and fuel costs would also differ from the 4 FCEB/8 Hybrid scenario since those additional FCEBs would be incurring slightly higher fuel and maintenance costs over their lifespan. However, since no additional infrastructure would be required by LAVTA if 4 or 12 FCEBs were purchased in 2023 due to the ability to easily scale the mobile fueler to accommodate and service 8 more FCEBs than modeled in the previous projections, there are no added infrastructure costs if 12 FCEBs are purchased in place of 4 FCEBs and 8 Hybrids.

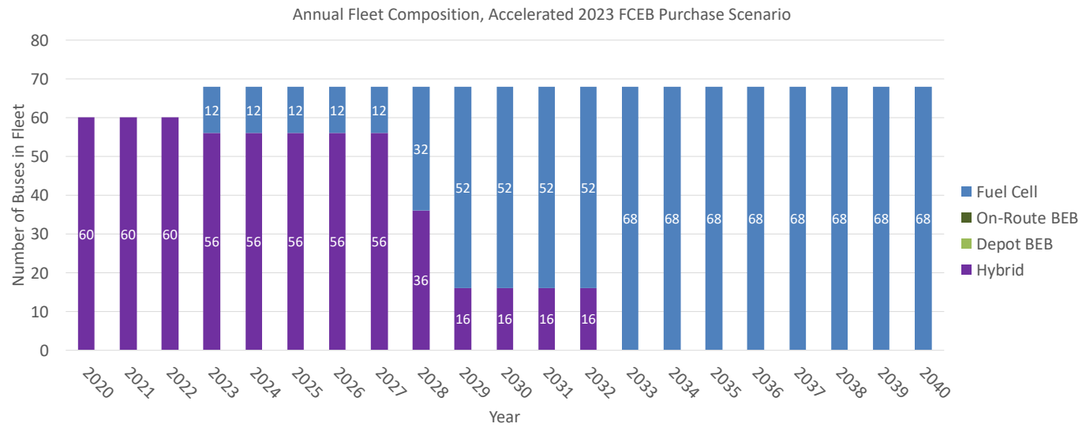
The additional costs that would be incurred by purchasing 12 FCEBs in 2023 as opposed to 4 FCEBs and 8 Hybrids are outlined below. Additional costs incurred are summarized as incremental relative to the original scenario and as the cumulative total for the accelerated 2023 FCEB Purchase Scenario:

| | Costs incurred in 4 FCEB/8 Hybrid 2023 Purchase Scenario | Additional costs incurred 12 FCEB/0 Hybrid 2023 Purchase Scenario | Total Cumulative Costs Incurred 12 FCEB/0 Hybrid 2023 Purchase Scenario |
|---|---|---|---|
| Fleet | $150,188,000 | $4,560,000 | $154,748,000 |
| Fuel | $30,399,000 | $1,492,000 | $31,890,000 |
| Maintenance | $25,303,000 | $617,000 | $25,920,000 |
| Facilities | $9,752,000 | No additional cost | $9,752,000 |
| **TOTAL** | **$215,642,000** | **$6,669,000** | **$222,310,000** |

In summary, purchasing an additional 8 FCEBs instead of 8 hybrids in 2023, would incur an additional $6,669,000 over the lifetime of those vehicles.



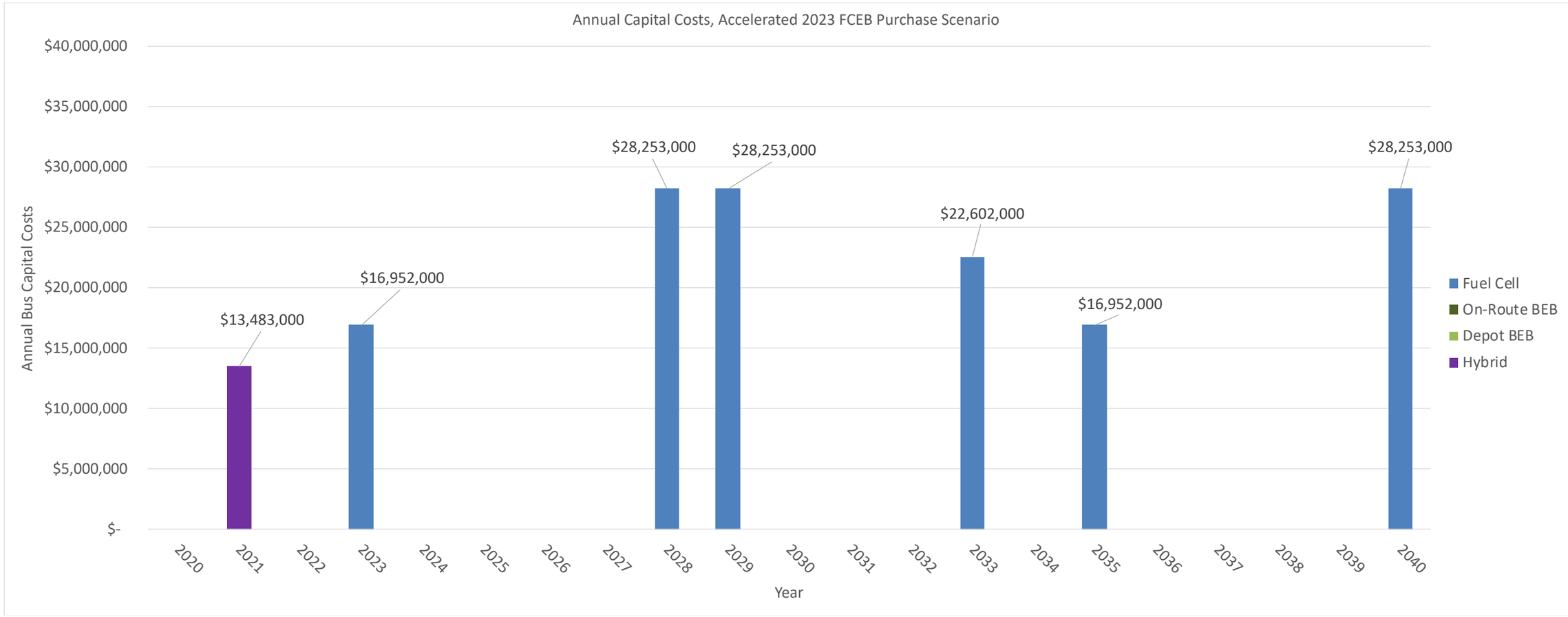

*Addenda Figure 79: Original Scenario (4 FCEB/8 Hybrid Purchased in 2023)*




*Addenda Figure 1b: Accelerated 2023 FCEB Purchase Scenario (12 FCEB/0 Hybrid Purchased in 2023)*



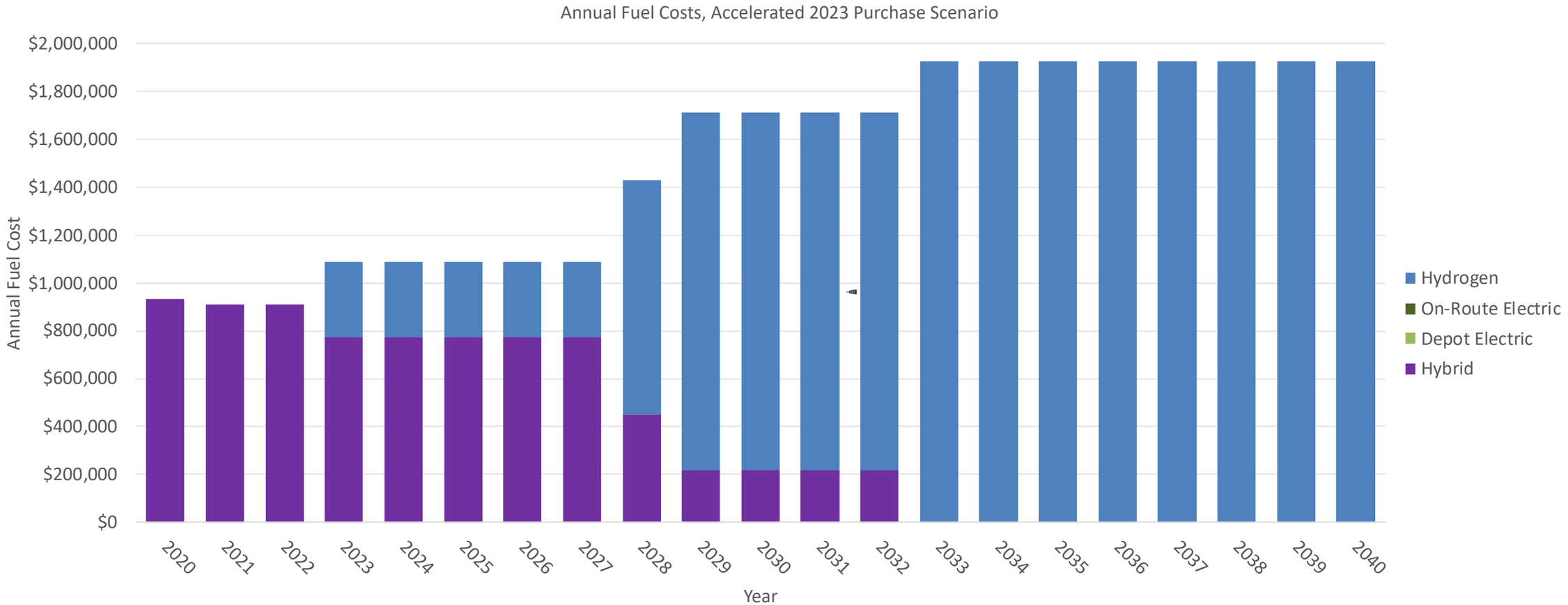
BACK TO AGENDA




*Addenda Figure 2: Annual Bus Capital Costs, Accelerated 2023 FCEB Purchase Scenario*



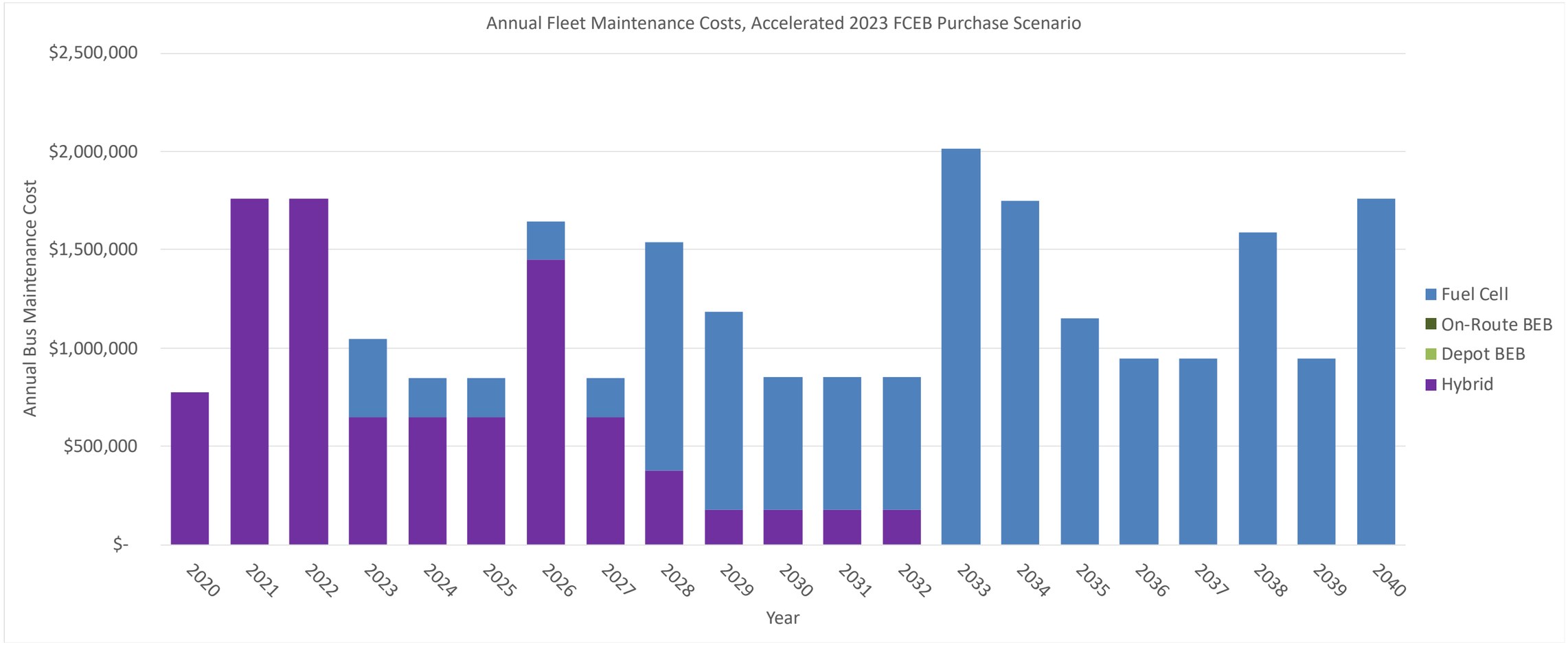
BACK TO AGENDA




*Addenda Figure 3: Annual Fuel Costs, Accelerated 2023 FCEB Purchase Scenario*



BACK TO AGENDA




*Addenda Figure 4: Annual Bus Maintenance Costs, Accelerated 2023 FCEB Purchase Scenario*



BACK TO AGENDA

# AGENDA

# ITEM 7

BACK TO AGENDA

LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY

# STAFF REPORT

SUBJECT: Alternate Appointment of LAVTA Board Member to Paratransit Demonstration Project Committee

FROM: Michael Tree, Executive Director

DATE: September 13, 2021

---

**Action Requested**
The recommendation is that the LAVTA Board appoint a board member to become the alternate for the Paratransit Demonstration Project Committee.

**Background/Discussion**

LAVTA and CCCTA created a joint committee between the two authorities. The committee consists of two LAVTA Board Members and two County Connection Board Members. The Paratransit Demonstration Project Committee will establish goals, policies, and metrics to monitor the success of the program during the demonstration project.

At the Board of Director's meeting on July 12 2021, Chair Karla Brown and Board Member David Haubert were appointed to serve on the Paratransit Demonstration Project Committee. During the meeting Board Members requested a third Board Member to become an alternate.

**Fiscal Impact**
N/A

**Recommendation**
Staff recommends that the Board of Directors appoint a board member to become the alternate for the Paratransit Demonstration Project Committee.

Attachments:

1. Draft Minutes to February 1, 2021 Board Meeting

*Submitted:* _____

# MINUTES OF THE JULY 12, 2021 ZOOM TELECONFERENCE LAVTA BOARD OF DIRECTORS MEETING

## 1. Call to Order

Meeting was called to order by Board Chair Karla Brown at 4:03pm.

Board Chair Karla Brown informed the public that LAVTA's meeting is being conducted according to the COVID-19 rules that are detailed at the beginning of the agenda explaining why this is a Zoom teleconference.

## 2. Roll Call of Members

**Members Present**
Jean Josey – City of Dublin
Melissa Hernandez – City of Dublin
Kathy Narum – City of Pleasanton
Karla Brown – City of Pleasanton
Gina Bonanno – City of Livermore
David Haubert – County of Alameda

**Members Absent**
Brittni Kiick – City of Livermore

## 3. Meeting Open to Public

No comments.

## 4. Consent Agenda

**Recommend approval of all items on Consent Agenda as follows:**

A. **Minutes of the June 7, 2021 Board of Directors meeting.**

B. **Treasurer's Report for May 2021**

The Board of Directors approved the LAVTA Treasurer's Report for May 2021.

C. **Resolution Authorizing Investment of Livermore Amador Valley Transit Authority (LAVTA) Monies in the State of California Local Agency Investment Fund (LAIF)**

The Board of Directors adopted Resolution 20-2021 reauthorizing investment of LAVTA monies in LAIF.

D. **Declaration of Surplus Property in Compliance with LAVTA Policy for Disposition of Surplus Property**

The Board of Directors declared as surplus one road supervisor van, one transit bus and authorized their disposal through a method consistent with LAVTA's Policy for Disposition of Surplus Property.

E. **Revised Resolution in Support of Participation in the Metropolitan Transportation Commission's Clipper START! Pilot Program**

The Board of Directors authorized the Executive Director to provide the Metropolitan Transportation Commission (MTC) with a revised resolution indicating LAVTA's desire to continue to participate in MTC's Clipper START! pilot program. Resolution 24-2021.

F. **Approve Resolution 21-2021 Accepting Funds from the Alameda County Transportation Commission for Atlantis O&M Facility Bridging Documents Project**

The Board of Directors approved Resolution 21-2021, accepting funds from the Alameda County Transportation Commission for the Atlantis O&M Facility Bridging Documents Project.

G. **Acceptance of Pleasanton BRT Corridor Enhancement Project #2019-08**

The Board of Directors approved Resolution 23-2021, accepting the completion of the Pleasanton BRT Corridor Enhancements Project #2019-08 and directing the Executive Director or his designee to file a Notice of Completion with the Alameda County Clerk-Recorder.

Approved: Haubert/Hernandez
Aye: Narum, Bonanno, Brown, Josey, Hernandez, Haubert
No: None
Abstain: None
Absent: Kiick

**5. Establishing Standing Committees and Memberships**

The Board of Directors confirmed and approved Resolution 25-2021, establishing standing committees, memberships, and officers.

Approved: Hernandez/Narum
Aye: Narum, Bonanno, Brown, Josey, Hernandez, Haubert
No: None
Abstain: None
Absent: Kiick

**6. Appointment of LAVTA Board Members to Paratransit Demonstration Project Committee**

The Board of Directors appointed Chair Karla Brown and Board Member David Haubert to the Paratransit Demonstration Project Committee. The Board of Directors requested to bring back at the next Board meeting an agendized item to add an alternate to the Paratransit Demonstration Project Committee.

Approved: Josey/Bonanno
Aye: Narum, Bonanno, Brown, Josey, Hernandez, Haubert
No: None

Abstain: None
Absent: Kiick

**7. Executive Director's Report**

Director of Planning and Marketing Tony McCaulay provided a brief update on ridership and start of school schedules. Executive Director Michael Tree notified that bus operators in Eastern Alameda County will be fare free in September to provide public incentive to ride public transit.

Executive Director Michael Tree informed that the Blue Ribbon Task Force work should be concluded this summer and they are moving forward with Network Management. The key priorities of the Network Management were included in the report and Executive Director Michael Tree pointed out that he has concerns regarding the capital project prioritization.

Executive Director Michael Tree also highlighted Atlantis Transit Facility, germ barrier/security doors, Dublin Parking Garage Project, Valley Link Project.

The Board of Directors discussed this agenda item with staff. Staff responded to questions from the Board of Directors. Chair Karla Brown asked for corrected Board Statistics, since Attachment 1 had an error.

**8. Matters Initiated by the Board of Directors**

None.

**9. Next Meeting Date is Scheduled for: August 2, 2021**

**10. Adjournment**

Meeting adjourned at 4:57pm.

# AGENDA

# ITEM 8

BACK TO AGENDA

Livermore/Amador Valley Transit Authority

# EXECUTIVE DIRECTOR'S REPORT

September 2021

***New Text Alerts for Routes Serving Schools***


Most of our routes to middle and high schools offer a single trip in the morning and a single trip in the afternoon. As a result, when one of the buses on those routes is running late due to traffic, road construction or heavy loads, parents and students wonder if the bus has already has passed or is just running late. Starting this weekend, we will be offering parents and students the opportunity to receive text alerts when the bus they are waiting for is running more than five minutes late. Sign up can be for a single route or multiple routes. Details are available on our website at: https://www.wheelsbus.com/school-routes/

***MTC Approves $5 Million in Federal COVID Emergency Relief to LAVTA***

On July 28, the Metropolitan Transportation Commission (MTC) programmed over $5 million to LAVTA in federal emergency relief funding authorized by Congress in March under the American Rescue Plan Act. This is the third and likely final round of federal stimulus relief aimed at assisting public transit agencies facing revenue shortfalls due to the COVID-19 pandemic. Funds were programmed to the region's transit operators principally on the basis of actual revenue losses since the start of the pandemic and funding received to date in the previous two rounds of federal stimulus funding. LAVTA will use the funding to continue to maintain existing and restore previously reduced service as ridership returns throughout FY22.

***SAV Phase 2 Deployment Project Slated to Receive $2.7 million in Regional Funding***

This month LAVTA staff learned that the Metropolitan Transportation Commission (MTC) intends to allocate $150,000 in Regional Measure 2 Bridge Toll funds for design-engineering work to advance the Phase 2 Deployment of the Shared Autonomous Vehicle Project, putting it in line to receive a subsequent allocation of over $2.5 million toward the construction phase, including the acquisition of three next-generation SAVs similar to the type shown, which are capable of traveling up to 25 mph. The SAV Phase 2 Deployment will extend the current SAV route to the Ross Headquarters Business Park and enable timed transfers to BART trains every 15 minutes from 7am to 7pm. The Alameda County Transportation Commission is scheduled to formalize their sponsorship of the project at their September 13 Programs and Projects Committee meeting in advance of their September 23 Commission meeting. MTC will then consider the allocation request in October.

***Zero-Emission Bus Study***

The draft Zero-Emission Bus (ZEB) Transition Master Plan is complete. At the September meeting the Board will receive the draft and an introductory presentation on the recommendations.

***Paratransit Services Update***
The pilot program with Central Contra Costa Transit Authority (CCCTA) was launched on April 1. The Joint Ad-Hoc Committee has been formed to review and monitor the program goals and objectives and met today, September 13, 2021.

In terms of service performance, on-time performance and productivity have improved from the previous contractor. Additionally, the new My Transit Manager app, which allows customers to monitor their trip and see real-time location of their vehicle, has been well-received.

***U.S. Senate Passes Historic Infrastructure Bill Including Reauthorization of Federal Transit Programs***
Following the House of Representatives' passage of the INVEST in America Act in July, on August 10, the Senate passed their bipartisan version of a $1 trillion investment in the nation's infrastructure known as the Infrastructure Investment and Jobs (IIJ) Act, which includes a comprehensive five-year surface-transportation reauthorization package to replace the FAST Act, which expires September 30. Notably within the transportation reauthorization sections are increases of 35-37% in Federal Transit Administration (FTA) formula and competitive grant funds that LAVTA uses for capital needs and maintaining a state of good repair. The House is expected to take up the reconciliation process with the Senate bill sometime after they return from recess at the end of August.

***American Public Transit Association (APTA) Conference***
Each year, the American Public Transportation Association (APTA) holds the TRANSform Conference. This is the premier APTA Conference of the year. Once every three years, the conference also includes an EXPO, where thousands of vendors and suppliers of transit related goods and services display their products and answer questions for attendees in a convention center setting. Attendance during EXPO years is typically around 15,000, including transit agency staff, Board members and vendors.

The TRANSform Conference is also where APTA presents its annual awards. Last year's conference was held virtually due to COVID. As a result, we received our Transit Agency of the Year Award in a "Zoom ceremony". This year, the conference/expo is an in-person event and will be held in Orlando at the Orange County Convention Center from November 7-10. We have been told by APTA that this year's awards ceremony will honor winners from this year as well as last year, which means we will formally receive our Agency of the Year Award at that ceremony. In addition, our Marketing staff was named as a winner of a Grand Prize AdWheel Award, which will be presented at the same event.

You can learn more about the conference on APTA's website at:
https://www.aptaexpo.com/apta2021/public/enter.aspx

Please let staff know as soon as possible if you have a desire to attend the conference. The FY 2021-22 LAVTA Budget includes funding for a couple Board members to attend.

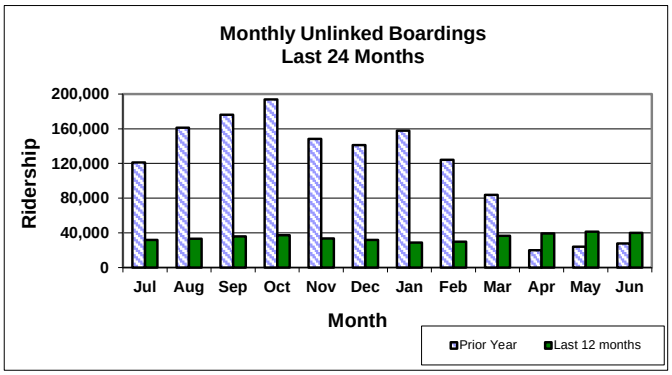
Attachments:
1. Board Statistics June 2021
2. Board Statistics July 2021
3. FY22 Upcoming Items

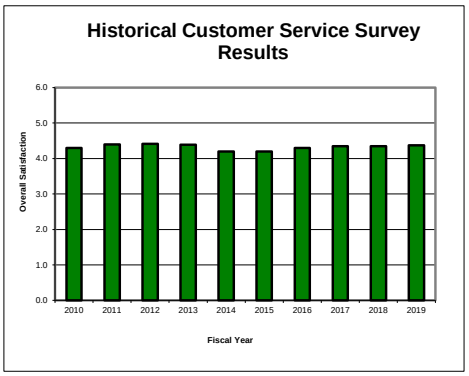
# Monthly Summary Statistics for Wheels

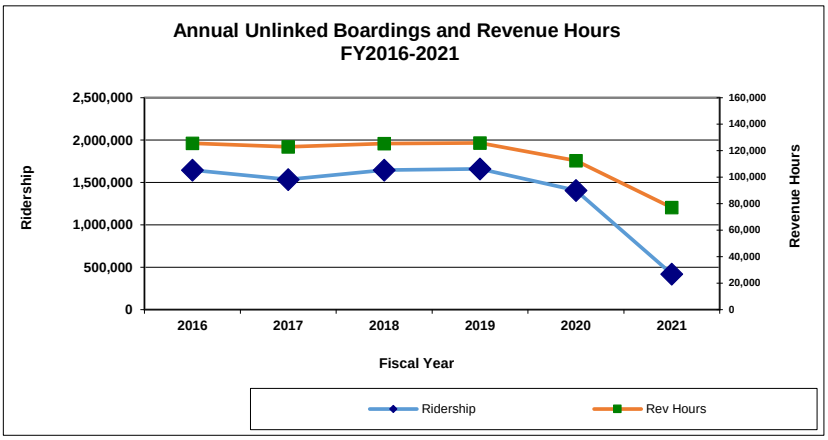
***June 2021***

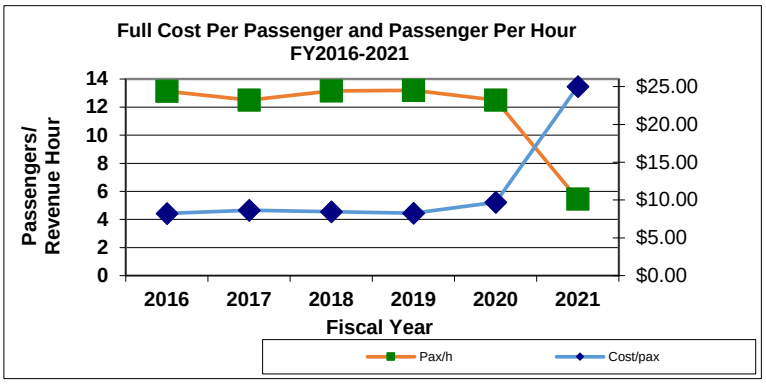
## FIXED ROUTE

| | June 2021 | | | % change from one year ago | | |
|---|---|---|---|---|---|---|
| **Total Ridership FY 2021 To Date** | **420,226** | | | ***-70.1%*** | | |
| **Total Ridership For Month** | **40,099** | | | ***44.5%*** | | |
| **Fully Allocated Cost per Passenger** | **$24.52** | | | ***-2.3%*** | | |
| | Weekday | Saturday | Sunday | *Weekday* | *Saturday* | *Sunday* |
| **Average Daily Ridership** | **1,515** | **925** | **765** | ***47.7%*** | ***29.7%*** | ***31.9%*** |
| **Passengers Per Hour** | **5.5** | **6.3** | **5.2** | ***10.5%*** | ***29.6%*** | ***32.0%*** |
| | June 2021 | | | *% change from last month* | | |
| **On Time Performance** | **92.5%** | | | **2.8%** | | |




BACK TO AGENDA

# Monthly Summary Statistics for Wheels

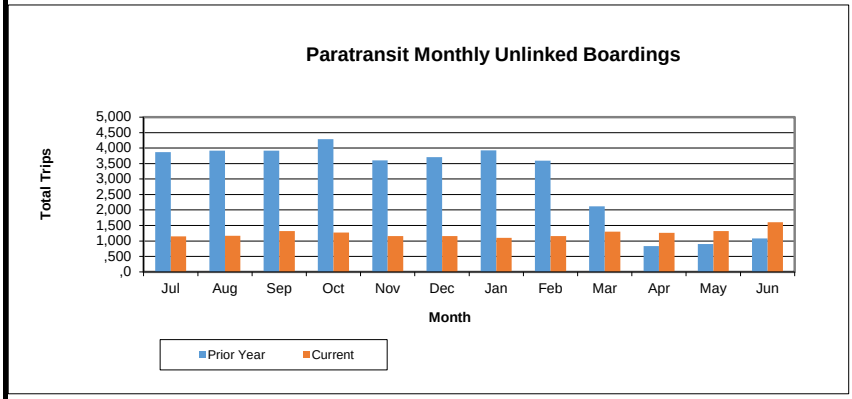
## *June 2021*

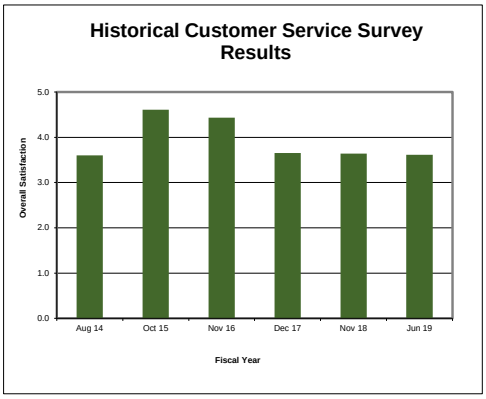
## PARATRANSIT

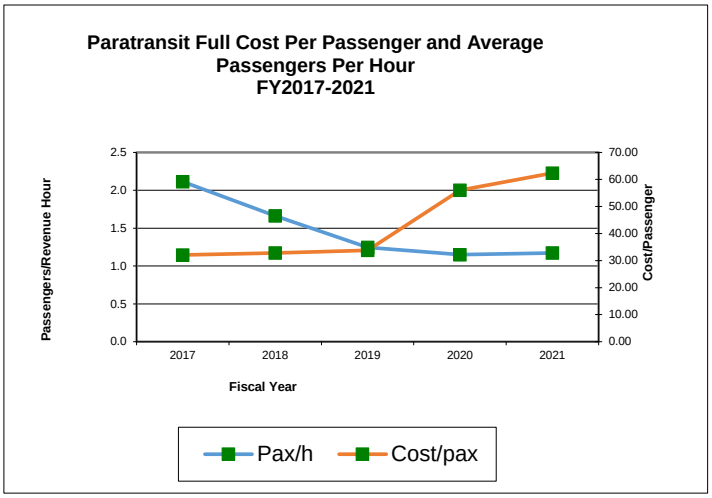
| General Statistics | June 2021 | % Change from last year | Year to Date |
|---|---|---|---|
| Total Monthly Passengers | 1,602 | 48.1% | 14,960 |
| Average Passengers Per Hour | 1.36 | 11.5% | 1.24 |
| On Time Performance | 98.3% | 1.9% | 97.97% |
| Cost per Trip | $66.21 | 17.7% | $71.76 |
| Number of Paratransit Assessments | 0 | n/a | 0 |
| Avg. wait time for reservation calls (in minutes) | 0:00:16 | n/a | n/a |

**There were no in-person assessments due to Covid-19, but the applicants received temporary presumptive eligibility based on their application and doctor's verification until the in-person assessments can be resumed.*

| Missed Services Summary | June 2021 | Year to Date |
|---|---|---|
| 1st Sanction - Phone Call | 0 | 2 |
| 2nd Sanction - Written Letter | 0 | 0 |
| 3rd Sanction - 15 Day Suspension | 0 | 0 |
| 4th Sanction - 30 Day Suspension | 0 | 0 |
| 5th Sanction - 60 Day Suspension | 0 | 0 |
| 6th Sanction - 90 Day Suspension | 0 | 0 |




BACK TO AGENDA

# Monthly Summary Statistics for Wheels

## *June 2021*

### SAFETY

| ACCIDENT DATA | June 2021 | | | | Fiscal Year to Date | | | |
|---|---|---|---|---|---|---|---|---|
| | Fixed Route | | Paratransit | | Fixed Route | | Paratransit | |
| **Total** | **3** | | **0** | | **16** | | **0** | |
| **Preventable** | **0** | | **0** | | **8** | | **0** | |
| **Non-Preventable** | **3** | | **0** | | **8** | | **0** | |
| **Physical Damage** | | | | | | | | |
| **Major** | **0** | | **0** | | **0** | | **0** | |
| **Minor** | **3** | | **0** | | **14** | | **0** | |
| **Bodily Injury** | | | | | | | | |
| **Yes** | **0** | | **0** | | **0** | | **0** | |
| **No** | **3** | | **0** | | **15** | | **0** | |

| MONTHLY CLAIMS ACTIVITY | Totals |
|---|---|
| **Amount Paid** | |
| **This Month** | **$1,538.07** |
| **To Date This Fiscal Year** | **$29,426.01** |
| | |
| **Budget** | **$100,000.00** |
| **% Expended** | **29%** |

### CUSTOMER SERVICE - ADMINISTRATION

| CATEGORY | Number of Requests | |
|---|---|---|
| | June 2021 | Year To Date |
| | | |
| Praise | 1 | 4 |
| Bus Stop | 0 | 15 |
| Incident | 0 | 3 |
| Trip Planning | 0 | 15 |
| Fares/Tickets/Passes | 1 | 16 |
| Route/Schedule Planning | 1 | 30 |
| Marketing/Website | 0 | 2 |
| ADA | 0 | 7 |
| COVID Inquiries | 1 | 11 |
| Lost/Found | 0 | 6 |
| **TOTAL** | 4 | 109 |

### CUSTOMER SERVICE - OPERATIONS

| CATEGORY | FIXED ROUTE | | | | PARATRANSIT | | | |
|---|---|---|---|---|---|---|---|---|
| | VALID | NOT VALID | UNABLE TO VALIDATE | VALID YEAR TO DATE | VALID | NOT VALID | UNABLE TO VALIDATE | VALID YEAR TO DATE |
| Praise | 2 | 0 | 0 | 10 | 0 | 0 | 1 | 2 |
| Safety | 2 | 0 | 2 | 24 | 0 | 0 | 0 | 4 |
| Driver/Dispatch Discourtesy | 0 | 2 | 0 | 7 | 0 | 0 | 0 | 0 |
| Early | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Late | 1 | 2 | 1 | 6 | 0 | 1 | 0 | 0 |
| No Show | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| Incident | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| Driver/Dispatch Training | 2 | 0 | 0 | 8 | 0 | 0 | 0 | 11 |
| Maintenance | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bypass | 2 | 2 | 0 | 17 | 0 | 0 | 0 | 0 |
| **TOTAL COMPLAINTS** | **9** | **6** | **4** | 64 | **0** | **1** | **2** | 19 |
| **Valid Complaints** | | | | | | | | |
| Per 10,000 riders | **2.24** | | | | | | | |
| Per 1,000 riders | | | | | **0.00** | | | |

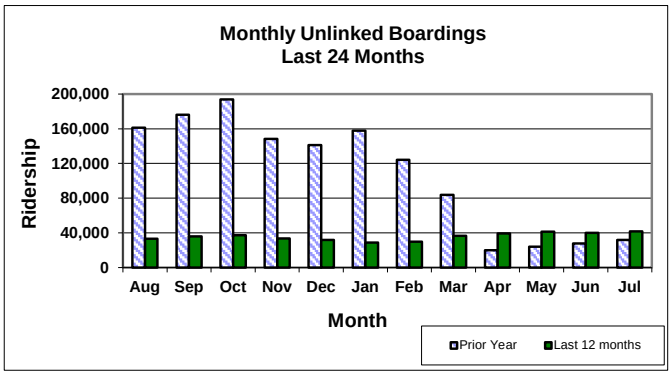
BACK TO AGENDA

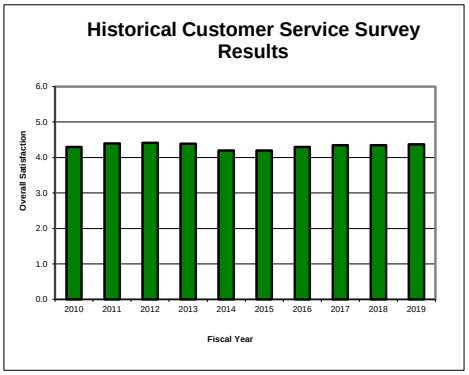
# Monthly Summary Statistics for Wheels

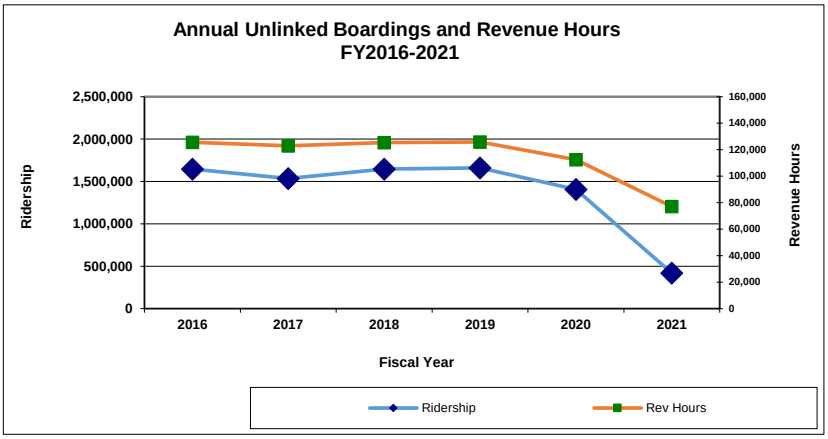
***July 2021***

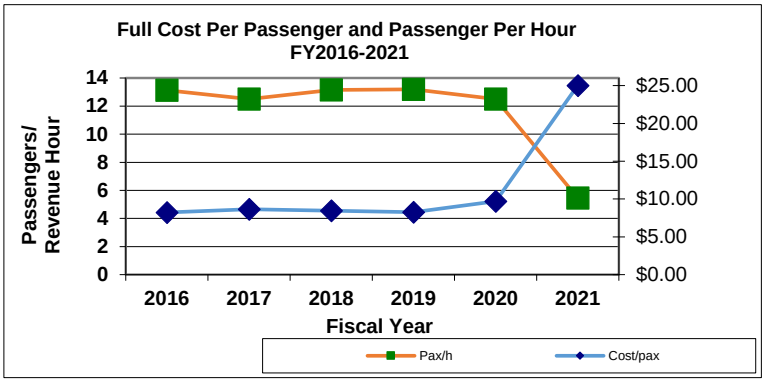
## FIXED ROUTE

| | July 2021 | | | % change from one year ago | | |
|---|---|---|---|---|---|---|
| **Total Ridership FY 2021 To Date** | **41,800** | | | ***31.0%*** | | |
| **Total Ridership For Month** | **41,800** | | | ***31.0%*** | | |
| **Fully Allocated Cost per Passenger** | **$26.28** | | | ***15.4%*** | | |
| | Weekday | Saturday | Sunday | *Weekday* | *Saturday* | *Sunday* |
| **Average Daily Ridership** | **1,574** | **900** | **851** | ***35.3%*** | ***18.4%*** | ***29.5%*** |
| **Passengers Per Hour** | **5.0** | **6.1** | **5.8** | ***-8.4%*** | ***18.3%*** | ***29.6%*** |
| | July 2021 | | | % change from last month | | |
| **On Time Performance** | **92.1%** | | | **-0.4%** | | |




BACK TO AGENDA

# Monthly Summary Statistics for Wheels

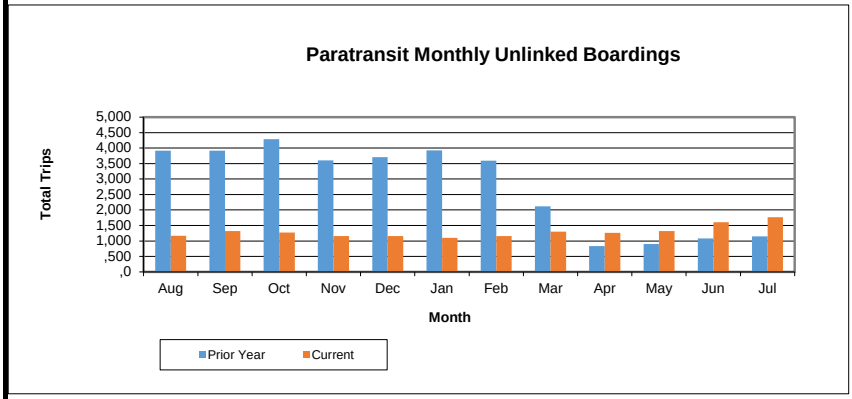
***July 2021***

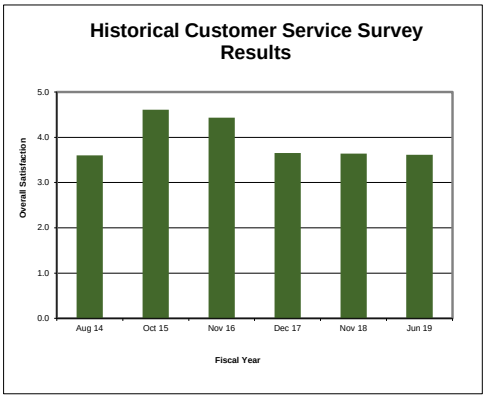
## PARATRANSIT

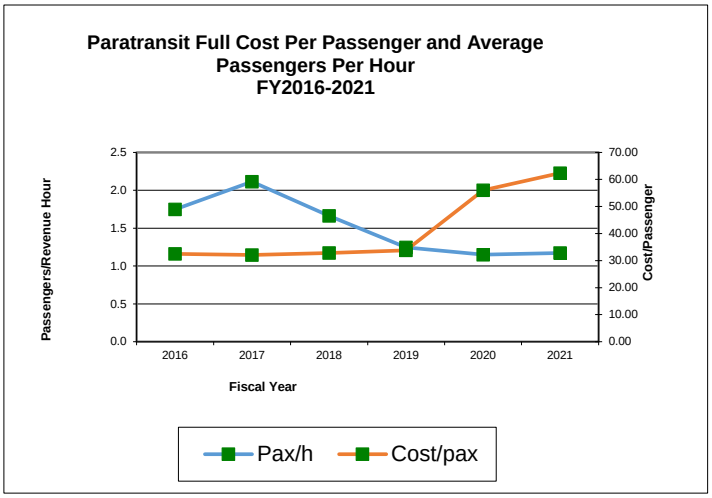
| General Statistics | July 2021 | % Change from last year | Year to Date |
|---|---|---|---|
| Total Monthly Passengers | 1,765 | 53.3% | 1,765 |
| Average Passengers Per Hour | 1.40 | 16.7% | 1.40 |
| On Time Performance | 97.8% | 1.1% | 97.8% |
| Cost per Trip | $61.88 | 15.2% | $ 61.88 |
| Number of Paratransit Assessments | 0 | n/a | 0 |
| Avg. wait time for reservation calls (in minutes) | 0:00:44 | n/a | 0:00:44 |

**There were no in-person assessments due to Covid-19, but the applicants received temporary presumptive eligibility based on their application and doctor's verification until the in-person assessments can be resumed.*

| Missed Services Summary | July 2021 | Year to Date |
|---|---|---|
| 1st Sanction - Phone Call | 0 | 0 |
| 2nd Sanction - Written Letter | 0 | 0 |
| 3rd Sanction - 15 Day Suspension | 0 | 0 |
| 4th Sanction - 30 Day Suspension | 0 | 0 |
| 5th Sanction - 60 Day Suspension | 0 | 0 |
| 6th Sanction - 90 Day Suspension | 0 | 0 |




BACK TO AGENDA

# Monthly Summary Statistics for Wheels

***July 2021***

## SAFETY

| ACCIDENT DATA | July 2021 | | | | Fiscal Year to Date | | | |
|---|---|---|---|---|---|---|---|---|
| | Fixed Route | | Paratransit | | Fixed Route | | Paratransit | |
| **Total** | **0** | | **0** | | **0** | | **0** | |
| **Preventable** | **0** | | **0** | | **0** | | **0** | |
| **Non-Preventable** | **0** | | **0** | | **0** | | **0** | |
| **Physical Damage** | | | | | | | | |
| **Major** | **0** | | **0** | | **0** | | **0** | |
| **Minor** | **0** | | **0** | | **0** | | **0** | |
| **Bodily Injury** | | | | | | | | |
| **Yes** | **0** | | **0** | | **0** | | **0** | |
| **No** | **0** | | **0** | | **0** | | **0** | |

| MONTHLY CLAIMS ACTIVITY | Totals |
|---|---|
| **Amount Paid** | |
| **This Month** | **$3,201.88** |
| **To Date This Fiscal Year** | **$3,201.88** |
| | |
| **Budget** | **$100,000.00** |
| **% Expended** | **3%** |

## CUSTOMER SERVICE - ADMINISTRATION

| CATEGORY | Number of Requests | |
|---|---|---|
| | July 2021 | Year To Date |
| | | |
| Praise | 0 | 0 |
| Bus Stop | 11 | 11 |
| Incident | 0 | 0 |
| Trip Planning | 0 | 0 |
| Fares/Tickets/Passes | 2 | 2 |
| Route/Schedule Planning | 8 | 8 |
| Marketing/Website | 4 | 4 |
| ADA | 0 | 0 |
| COVID Inquiries | 2 | 2 |
| Lost/Found | 0 | 0 |
| **TOTAL** | 27 | 27 |

## CUSTOMER SERVICE - OPERATIONS

| CATEGORY | FIXED ROUTE | | | | PARATRANSIT | | | |
|---|---|---|---|---|---|---|---|---|
| | VALID | NOT VALID | UNABLE TO VALIDATE | VALID YEAR TO DATE | VALID | NOT VALID | UNABLE TO VALIDATE | VALID YEAR TO DATE |
| Praise | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Safety | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Driver/Dispatch Discourtesy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Early | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Late | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| No Show | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| Incident | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Driver/Dispatch Training | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Maintenance | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bypass | 5 | 2 | 0 | 5 | 0 | 0 | 0 | 0 |
| **TOTAL COMPLAINTS** | **9** | **5** | **1** | 9 | **0** | **3** | **0** | 0 |
| **Valid Complaints** | | | | | | | | |
| Per 10,000 riders | **2.15** | | | | | | | |
| Per 1,000 riders | | | | | **0.00** | | | |

BACK TO AGENDA

# LAVTA COMMITTEE ITEMS - September 2021 - January 2022

## Finance & Administration Committee

| **September** | Action | Info |
|---|---|---|
| Minutes | X | |
| Treasurers Report | X | |

| **October** | Action | Info |
|---|---|---|
| Minutes | X | |
| Treasurers Report | X | |
| Annual Comprehensive Financial Report (ACFR) | X | |
| FTA Triennial Review | X | |

| **November** | Action | Info |
|---|---|---|
| Minutes | X | |
| Treasurers Report | X | |

| **December** | Action |
|---|---|
| Minutes | X |
| Treasurers Report | X |

*Typically December committee meetings are cancelled

| **January** | Action | Info |
|---|---|---|
| Minutes | X | |
| Treasurers Report | X | |
| Draft 2022 Legislative Program | X | |

BACK TO AGENDA

# LAVTA COMMITTEE ITEMS - September 2021 - January 2022

## Projects & Services Committee

| **September** | Action | Info |
|---|---|---|
| Minutes | X | |
| ZEB Rollout Plan | X | |

| **October** | Action | Info |
|---|---|---|
| Minutes | X | |

| **November** | Action | Info |
|---|---|---|
| Minutes | X | |

| **December** | Action | Info |
|---|---|---|
| Minutes | X | |

*Typically December committee meetings are cancelled

| **January** | Action | Info |
|---|---|---|
| Minutes | X | |

BACK TO AGENDA