



Regular Meeting of the Board of Directors

Tuesday, February 25, 2020

10:00 a.m.

Antelope Valley Transit Authority Community Room
42210 6th Street West, Lancaster, California
www.avta.com

AGENDA

For record keeping purposes, and if staff may need to contact you, we request that a speaker card, located at the Community Room entrance, be completed and deposited with the AVTA Clerk of the Board. This will then become public information. Please note that you do not have to complete this form or state your name to speak. A three-minute time limit will be imposed on all speakers other than staff members.

In accordance with the Americans with Disabilities Act of 1990, if you require a disability-related modification or accommodation to attend or participate in this meeting, including auxiliary aids or services, please contact the Clerk of the Board at (661) 729-2206 at least 72 hours prior to the scheduled Board of Directors meeting.

Translation services for Limited English Proficiency (LEP) persons are also available by contacting the Clerk of the Board at least 72 hours prior to the meeting.

Please turn off, or set to vibrate, cell phones, pagers, and other electronic devices for the duration of this meeting.

CALL TO ORDER

PLEDGE OF ALLEGIANCE

ROLL CALL:

Chairman Marvin Crist, Vice Chair Dianne Knippel, Director Steve Hofbauer, Angela Underwood-Jacobs, Director Michelle Flanagan, Director Richard Loa

APPROVAL OF AGENDA

PUBLIC BUSINESS – AGENDIZED AND NON-AGENDIZED ITEMS:

If you would like to address the Board on any agendized or non-agendized items, you may present your comments at this time. Please complete a speaker card (available as you enter the Community Room) and provide it to the Clerk of the Board. Speaking clearly, state and spell your name for the record. **State law generally prohibits the Board of Directors from taking action on or discussing non-agenda items; therefore, your matter will be referred to the Authority's Executive Director/CEO for follow-up.** Each speaker is limited to three (3) minutes.

SPECIAL REPORTS, PRESENTATIONS, AND REQUESTS FOR DIRECTION (SRP): During this portion of the meeting, staff will present information not normally covered under regular meeting items. This information may include, but is not limited to budget presentations, staff conference presentations, or information from outside sources that relates to the transit industry. **Staff will seek direction as is necessary from the Board with regard to the following item(s).**

SRP 1 LEGISLATIVE REPORT FOR FEBRUARY – JUDY VACCARO-FRY

SRP 2 OPERATIONS KEY PERFORMANCE INDICATORS (KPI) REPORT – MARTIN TOMPKINS

SRP 3 MAINTENANCE KPI REPORT – CECIL FOUST

CONSENT CALENDAR (CC): Items 1 through 4 consent items that may be received and filed and/or approved by the Board in a single motion. If any member of the Executive Board wishes to discuss a consent item, please request that the item be pulled for further discussion and potential action.

CC 1 BOARD OF DIRECTORS MEETING MINUTES OF JANUARY 28, 2020 – KAREN DARR

Recommended Action: Approve the Board of Directors Regular Meeting Minutes of January 28, 2020.

CC 2 FINANCIAL REPORT FOR FEBRUARY 2020 – JUDY VACCARO-FRY

Recommended Action: Receive and file the Financial Report, including Quarterly Treasurer, Capital Reserve, and Farebox Recovery information, for February 2020.

CC 3 GRANT STATUS REPORT – JUDY VACCARO-FRY

Recommended Action: Receive and file the Grant Status Report.

CC 4 AMEND THE AGENCY'S CLASSIFICATION AND SALARY SCHEDULE – JUDY VACCARO-FRY

Recommended Action: Approve amending the Agency's Classification and Salary Schedule to add an Administrative Assistant position and reclassify the Transit Analyst to Planning Manager.

NEW BUSINESS (NB):

NB 1 MOBILITY FORWARD – THE ANTELOPE VALLEY STRATEGIC MOBILITY PLAN – MACY NESHATI/SASHA PEJCIC

Recommended Action: Authorize the Executive Director/CEO to implement the recommendations contained in the Mobility Forward – The Antelope Valley Strategic Mobility Plan.

NB 2 FREE FARE DAYS - NATIONAL GET ON BOARD DAY AND EARTH DAY – MACY NESHATI

Recommended Action: Adopt a Proclamation establishing National Get on Board Day in the Antelope Valley on April 16, 2020, and approve free fare days for both National Get on Board Day and Earth Day, April 22, 2020.

NB 3 SOLE SOURCE CONTRACT #2020-30 WITH GREENPOWER MOTOR COMPANY INC. FOR ZERO-EMISSION SHUTTLE BUSES – LYLE BLOCK

Recommended Action: Authorize the Executive Director/CEO to execute Sole Source Contract #2020-30 with GreenPower Motor Company Inc., Vancouver, B.C., to purchase six EV-Star zero-emission shuttle buses for an amount not to exceed \$574,683, plus applicable sales tax. Staff is also requesting approval of two future options for an amount of \$191,561, plus applicable sales tax, pending available grant funding.

NB 4 SOLE SOURCE CONTRACT #2020-31 WITH ABB, INC. FOR ELECTRIC VEHICLE CHARGING INFRASTRUCTURE – LYLE BLOCK

Recommended Action: Authorize the Executive Director/CEO to execute Sole Source Contract #2020-31 with ABB, Inc., Phoenix, AZ, to purchase six electric vehicle charging infrastructure equipment for the EV-Star zero-emission shuttle buses for an amount not to exceed \$183,948, plus applicable sales tax. Staff is also requesting approval of two future options for an amount of \$61,316, plus applicable sales tax, pending available grant funding.

CLOSED SESSION (CS):

PRESENTATION BY LEGAL COUNSEL OF ITEM(S) TO BE DISCUSSED IN CLOSED SESSION:

- CS 1 Conference with Legal Counsel – Pursuant to Government Code Section 54956.9(a)
Pending Litigation (tendered to Transdev): Jane Doe v. Transdev et al.
LASC Case No. 19AVCV00835
- CS 2 Conference with Legal Counsel – Pursuant to Government Code Section 54956.9(d)(2)
Significant exposure to litigation (one potential case)
- CS 3 Conference with Legal Counsel – Pursuant to Government Code Section 54956.9(d)(4)
Consideration of whether to initiate litigation (one potential case)
- CS 4 Personnel Matters Pursuant to Government Code Section 54957(b)
Public Employee Performance Evaluation: General Counsel

RECESS TO CLOSED SESSION

RECONVENE TO PUBLIC SESSION

REPORT BY LEGAL COUNSEL OF ACTION TAKEN IN CLOSED SESSION

REPORTS AND ANNOUNCEMENTS (RA):

- RA 1 Report by the Executive Director/CEO

MISCELLANEOUS BUSINESS – NON-AGENDA BOARD OF DIRECTORS ITEMS:

During this portion of the meeting, Board Members may address non-agenda items by briefly responding to statements made or questions posed by the public, asking a question for clarification, making a brief announcement, or making a brief report on their own activities. **State law generally prohibits the AVTA Board of Directors from taking action on or discussing items not on the agenda.** Matters will be referred to the Executive Director/CEO for follow-up.

ADJOURNMENT:

Adjourn to the Regular Meeting of the Board of Directors on March 24, 2020 at 10:00 a.m. in the Antelope Valley Transit Authority Community Room, 42210 6th Street West, Lancaster, CA.

The agenda was posted by 6:00 p.m. on February 20, 2020 at the entrance to the Antelope Valley Transit Authority, 42210 6th Street West, Lancaster, CA 93534.

Copies of the staff reports and attachments or other written documentation relating to each proposed item of business on the agenda presented for discussion by the Board of Directors are on file in the Office of the Executive Director/CEO. Any disclosable public records related to an open session item on a regular meeting agenda and distributed by the AVTA to the Board of Directors less than 72 hours prior to that meeting are on file in the Office of the Executive Director/CEO. These documents are available for public inspection during regular business hours at the Customer Service window of the AVTA at 42210 6th Street West, Lancaster or by contacting the Clerk of the Board at (661) 729-2206.

Legislative Update

Presentation to AVTA Board of Directors
February 25, 2020



STATE



State Update

Two bills have been introduced that would mandate free transit passes for riders in specific age groups:

- **AB 1350 (Gonzalez Fletcher):** would require all transit agencies in California to provide free transit passes to persons 18 years or under as a condition for accessing various state funding sources.
- **AB 2012 (Chu):** would require free transit passes for persons over 65 years of age.



FEDERAL



FY20 Appropriations

	Lancaster / Palmdale UZA		
	5307	5337	5339
2019	\$ 8,448,075	\$ 1,123,286	\$ 616,981
2020	\$ 8,710,893	\$ 1,106,862	\$ 657,491
	\$ 262,818	\$ (16,424)	\$ 40,510



Reauthorization of the Surface Transportation Bill

On February 10, 2020, the President submitted its FY 2021 Budget request, providing \$13.2 billion for public transportation, a \$303 million increase from the FY 2020 enacted levels.

The Administration also outlined a 10-year, \$810 billion surface transportation reauthorization. The proposed reauthorization is \$75 billion above current law levels.

The proposal includes \$155.4 billion for public transit over the 10-year period (FY 2021 – FY 2030), with the Administration stating it will submit a comprehensive surface transportation reauthorization proposal in the coming months.

Separately, the Administration proposes an additional \$190 billion for other infrastructure improvements. The proposed investments include \$60 billion for a new Building Infrastructure Great grants program for "mega-projects".



New Opportunities

- ❖ Low or No Emission Grant program – Due March 17, 2020
Provides funding through a competitive process to states and transit agencies to purchase or lease low or no emission transit buses and related equipment, or to lease, construct, or rehabilitate facilities to support low or no emission transit buses.
- ❖ Bus & Bus Facilities Grant Program – Due March 30, 2020
Provides funding through a competitive allocation process to states and transit agencies to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities.



Thank you!

Questions?



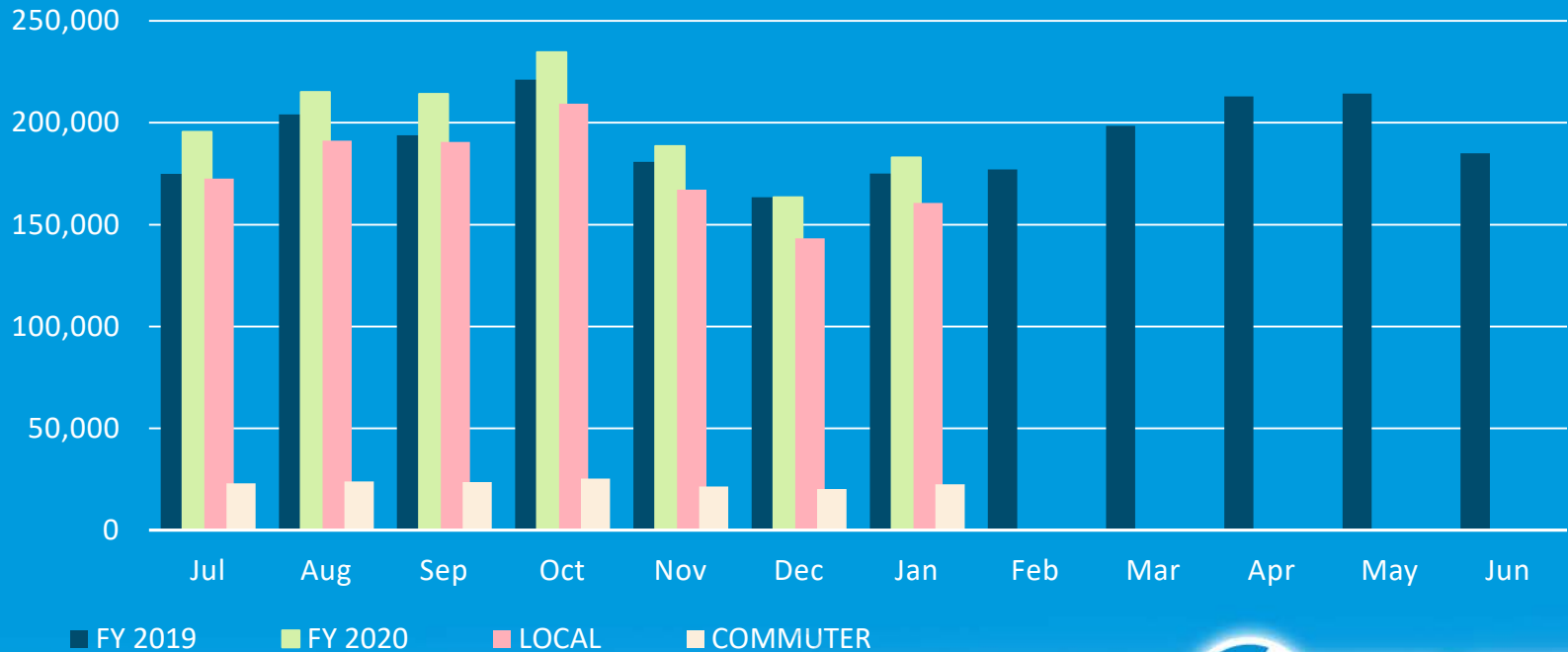
FY 2020 Monthly Operations Key Performance Indicators

Presentation to the Board of Directors
February 25, 2020

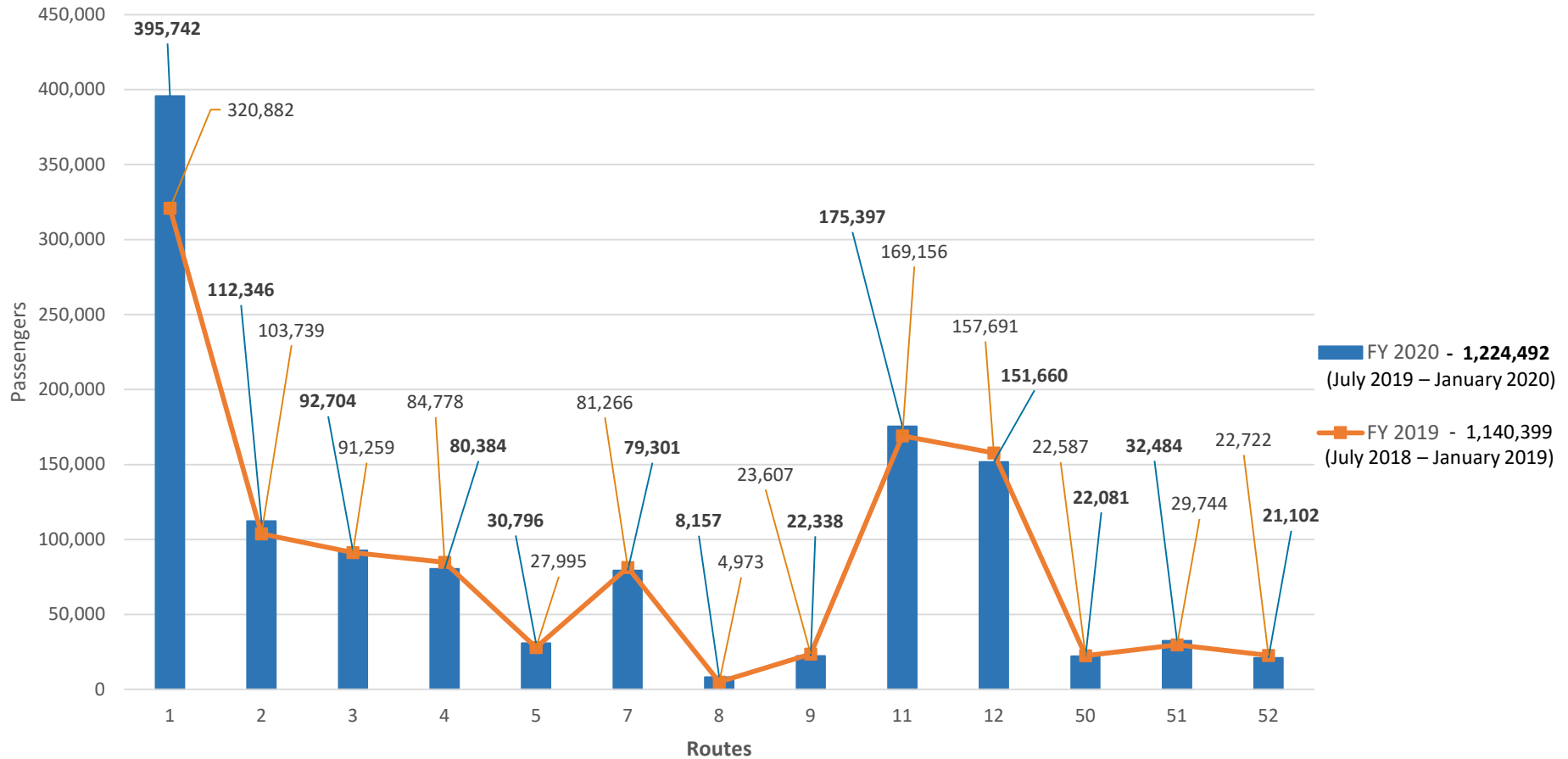


MONTHLY BOARDING ACTIVITY

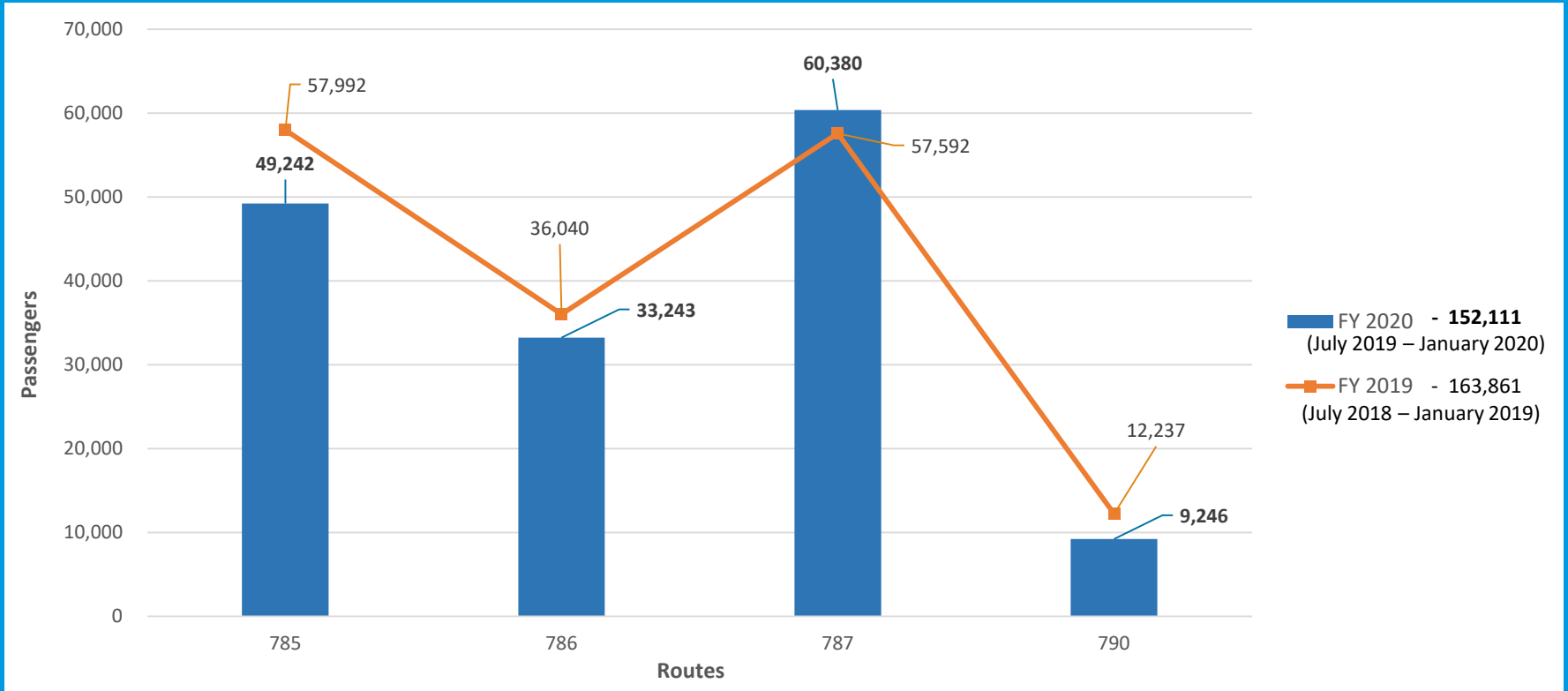
	January FY 2020	December FY 2020
System	183,018	163,392
Local	160,584	143,227
Commuter	22,434	20,165



ANNUAL RIDERSHIP LOCAL ROUTES

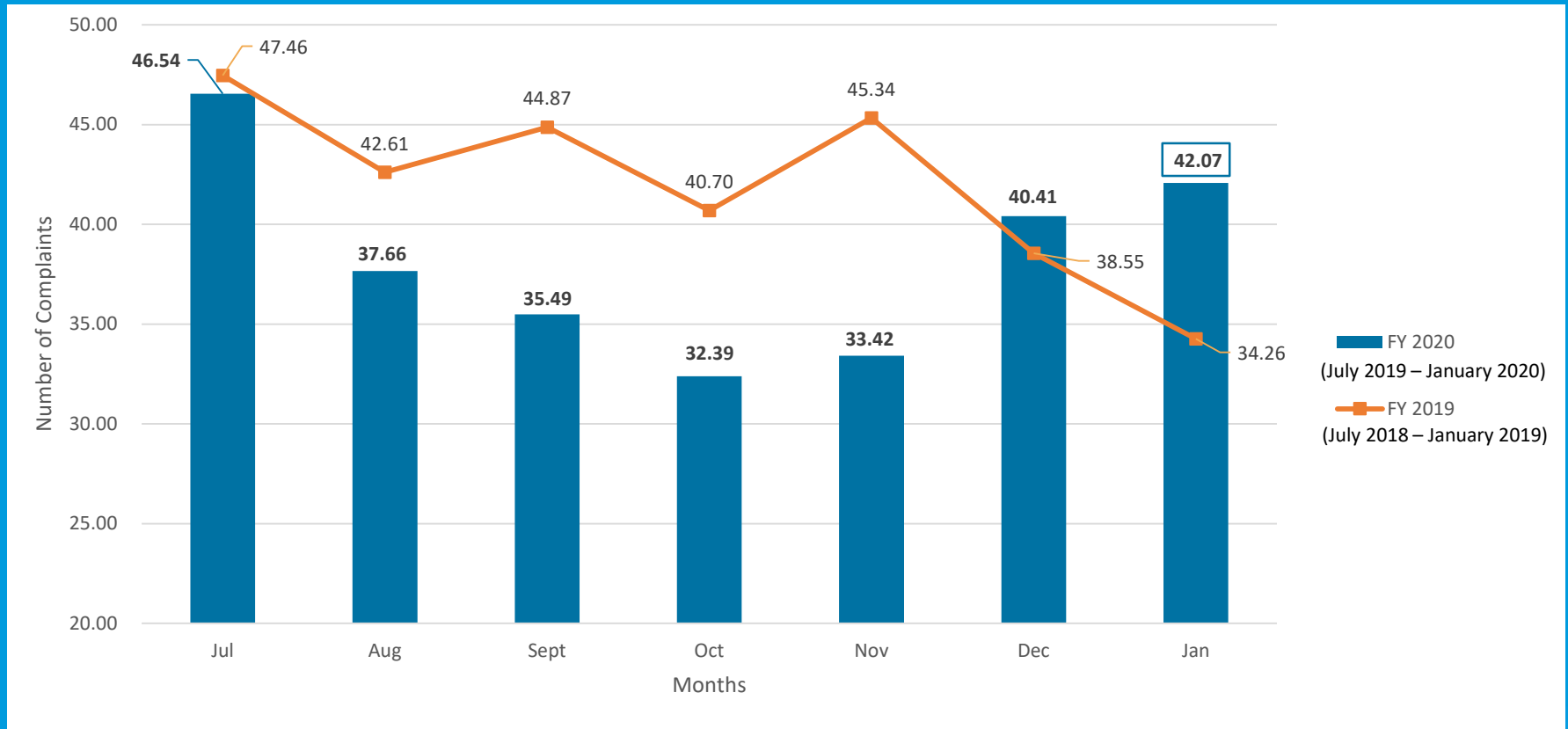


ANNUAL RIDERSHIP COMMUTER ROUTES



COMPLAINTS/100,000 BOARDINGS

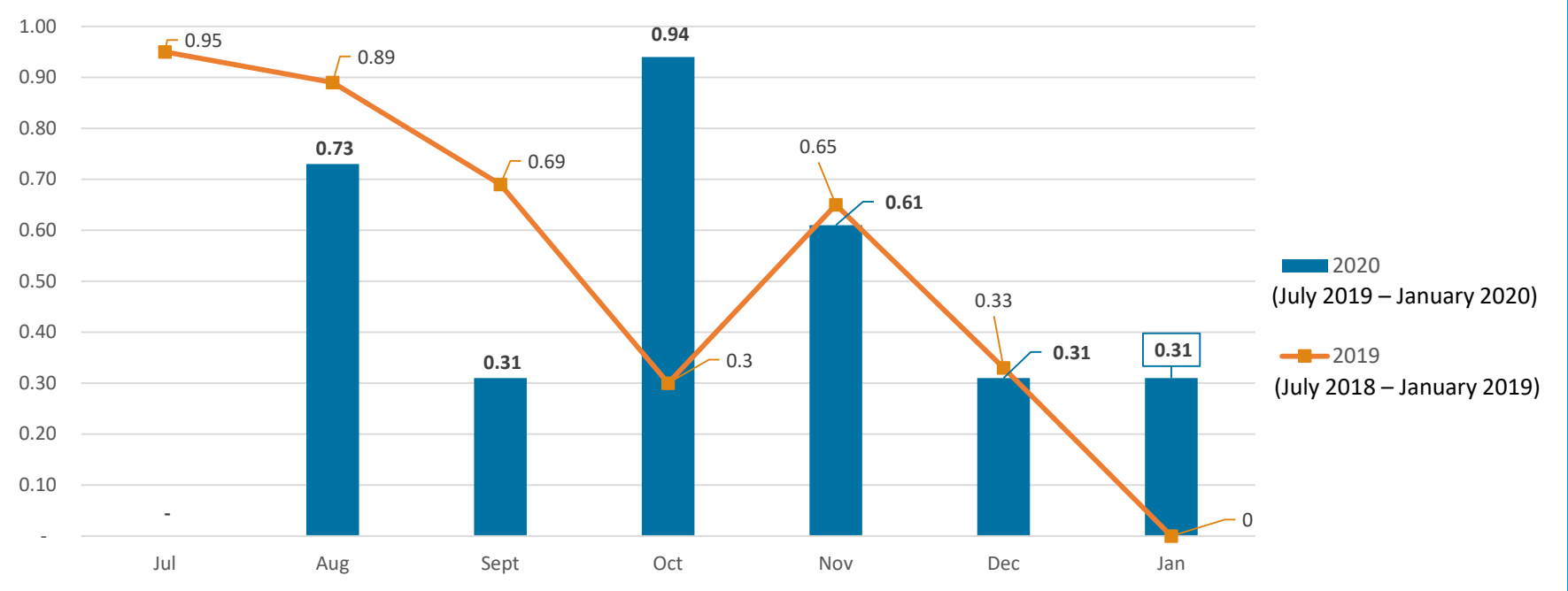
JANUARY - SYSTEM WIDE AVERAGE: 42.07





PREVENTABLE ACCIDENTS/100,000 MILES

JANUARY - SYSTEM WIDE AVERAGE: 0.31



KEY PERFORMANCE INDICATORS

	January FY 2020	December FY 2020	January FY 2019
Boarding Activity	183,018	163,392	172,151
Complaints / 100,000 Boardings	42.07	40.41	34.26
Preventable Accidents / 100,000 Miles	0.31	0.31	0.00

Thank you!

Questions?



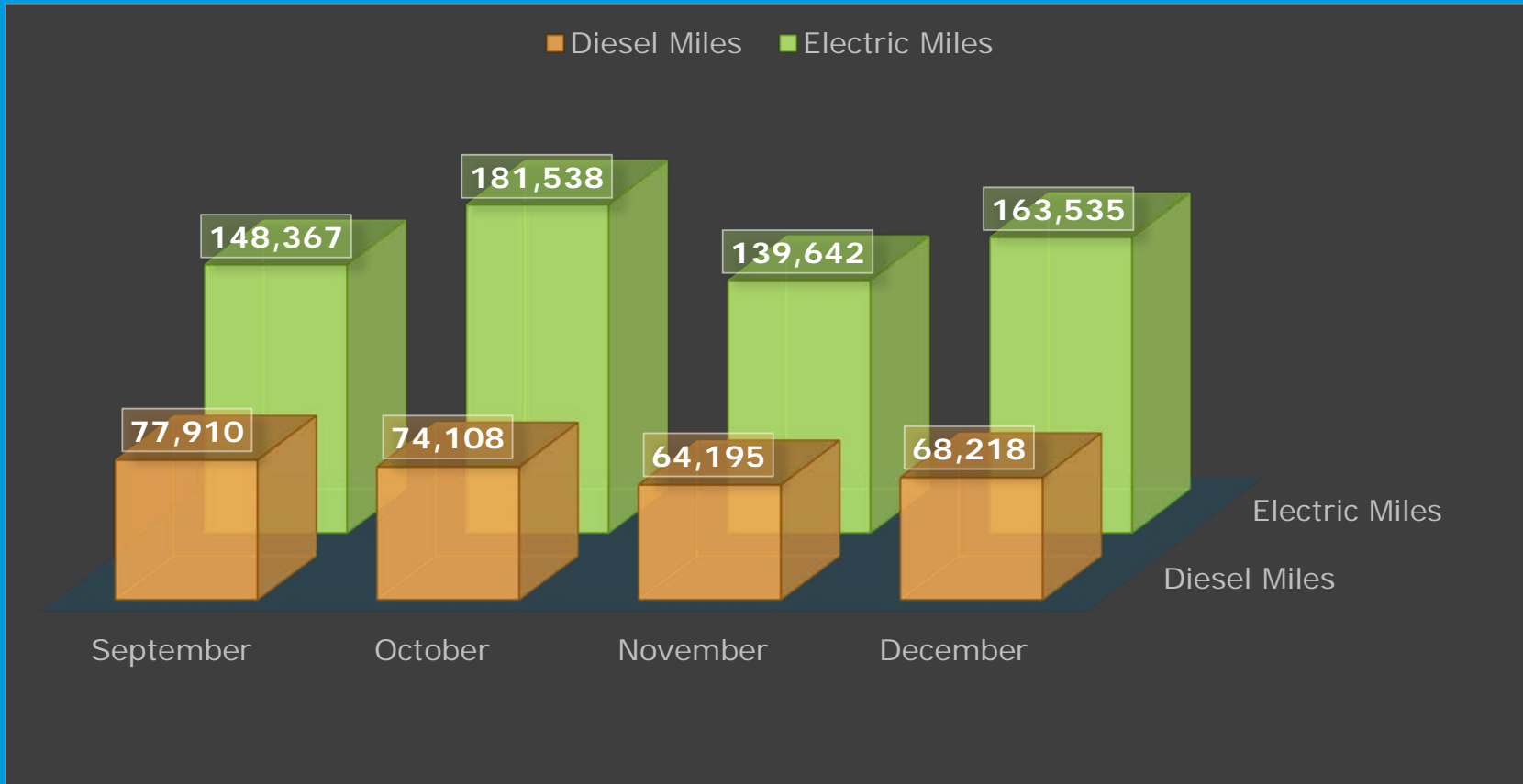
January 2020 Maintenance Key Performance Indicators

Presentation to the Board of Directors

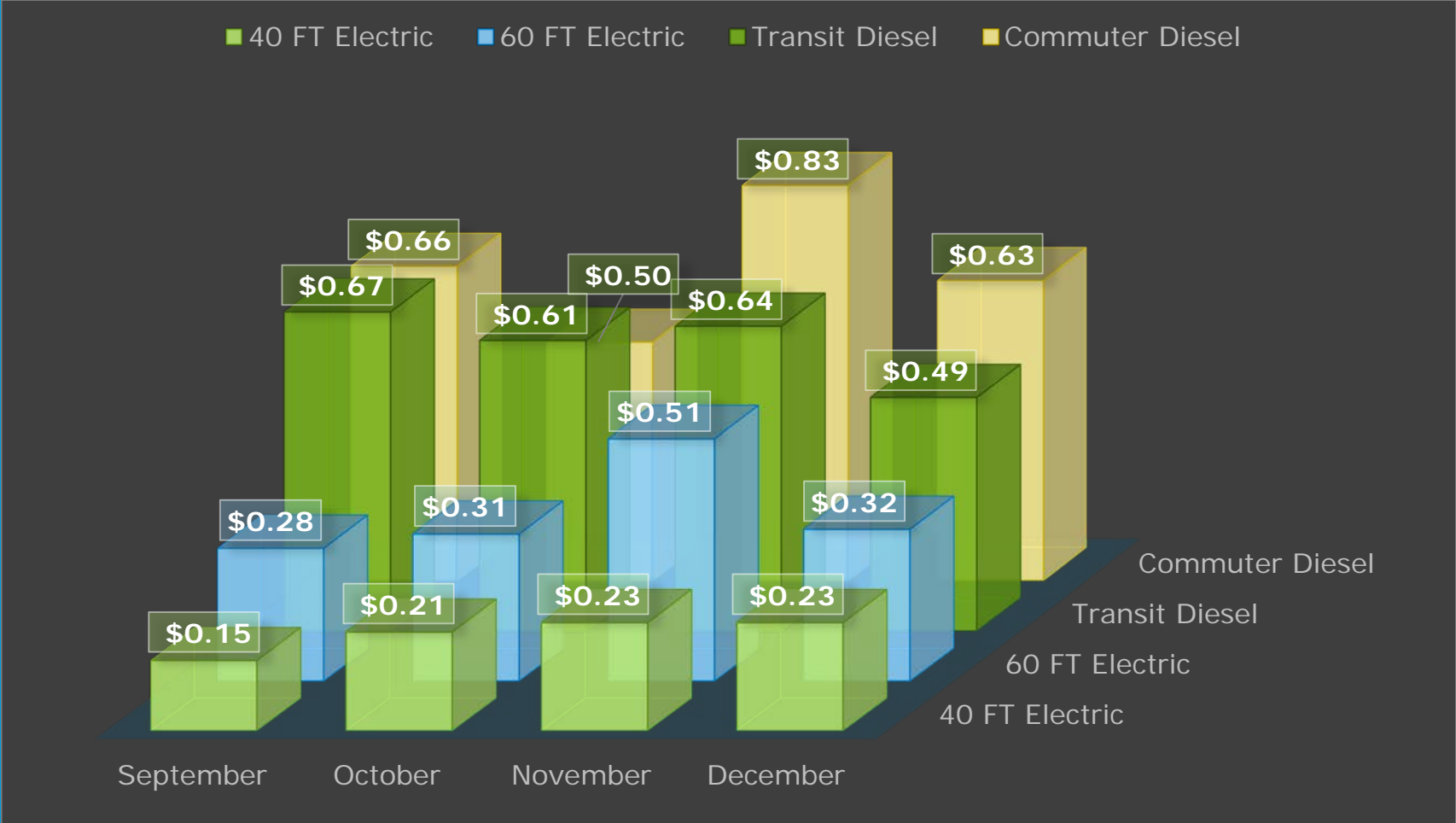
February 25, 2020



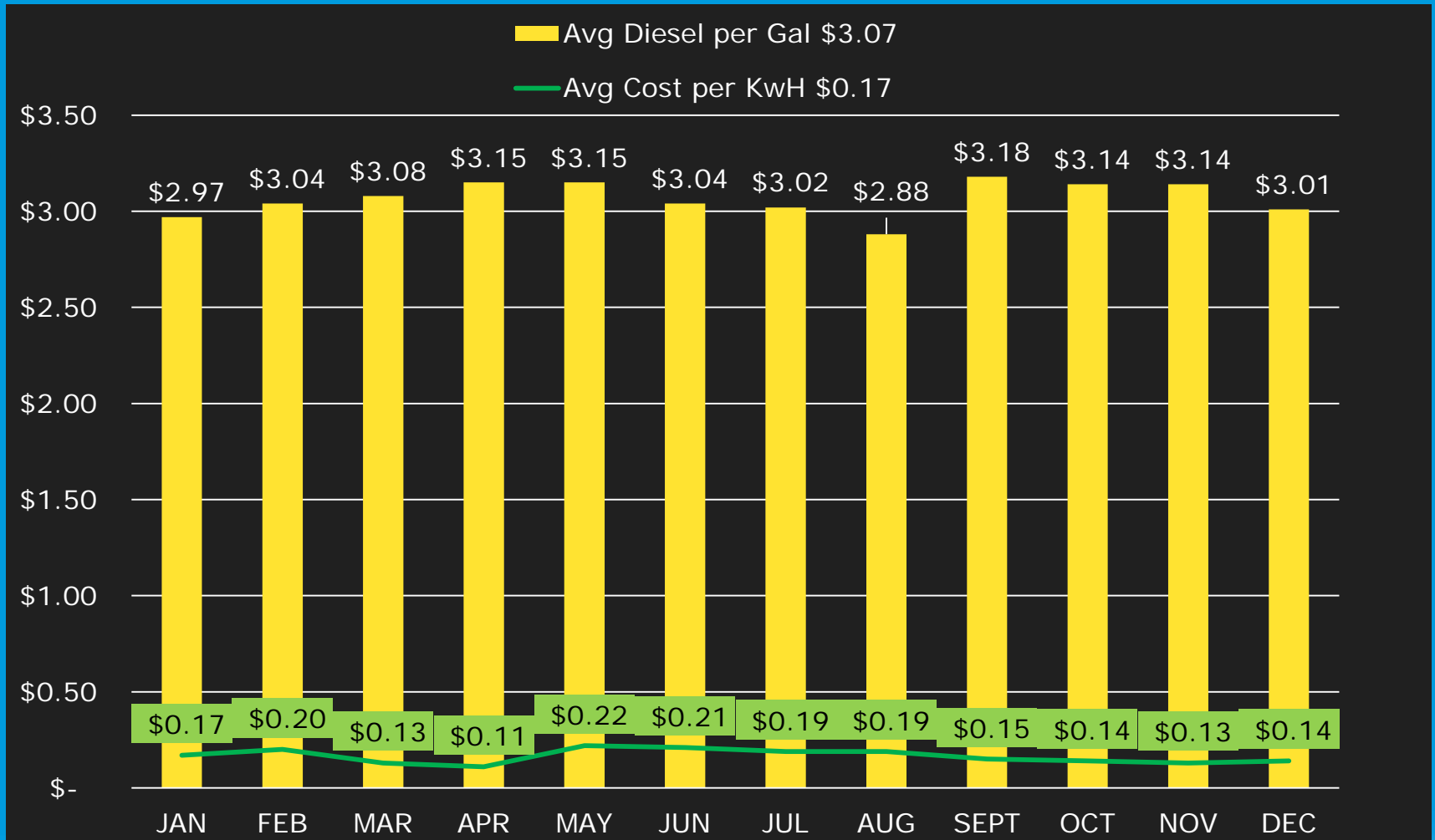
TRANSIT MILES: DIESEL vs ELECTRIC



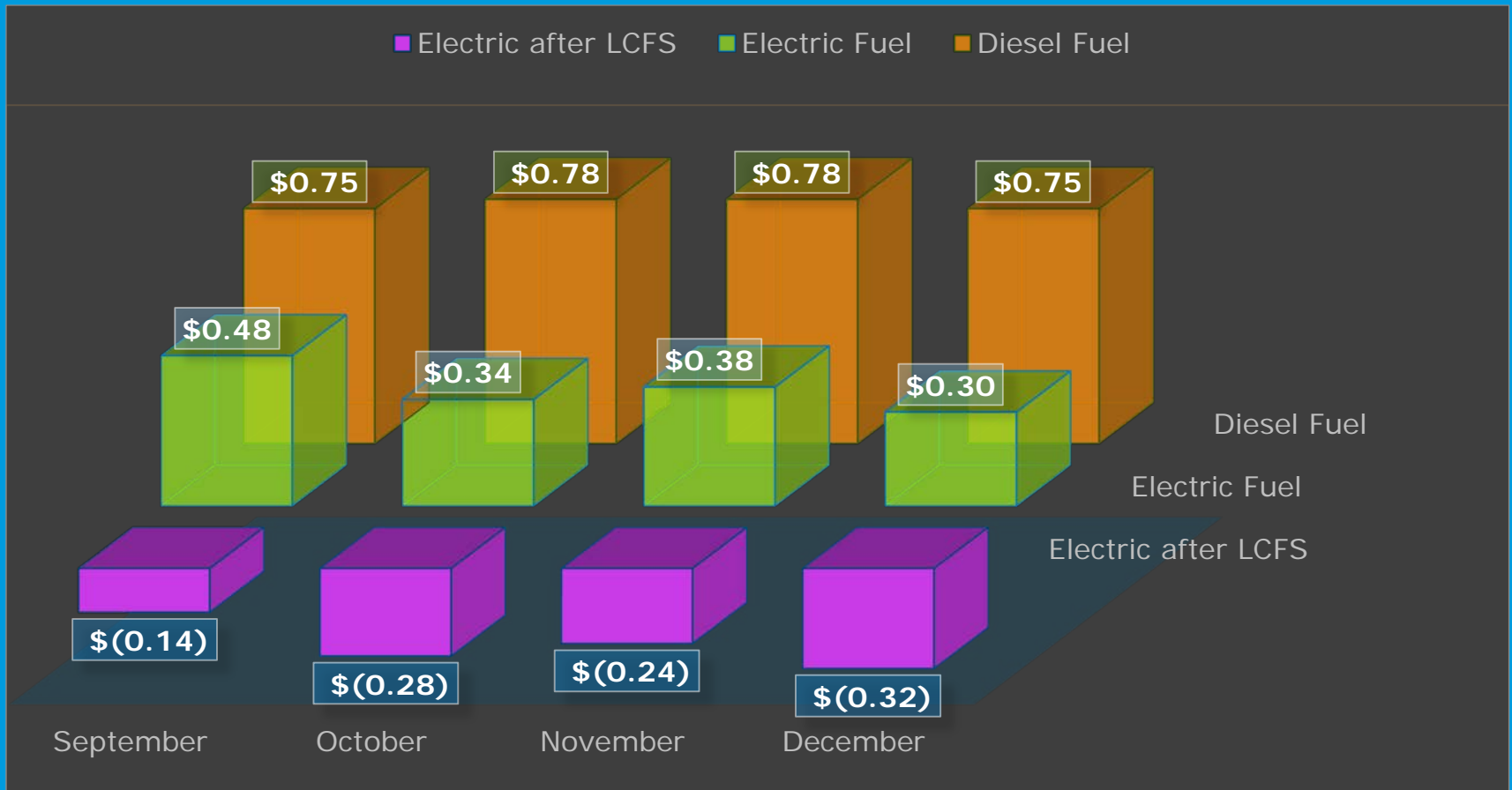
MAINTENANCE COST PER MILE BY FLEET



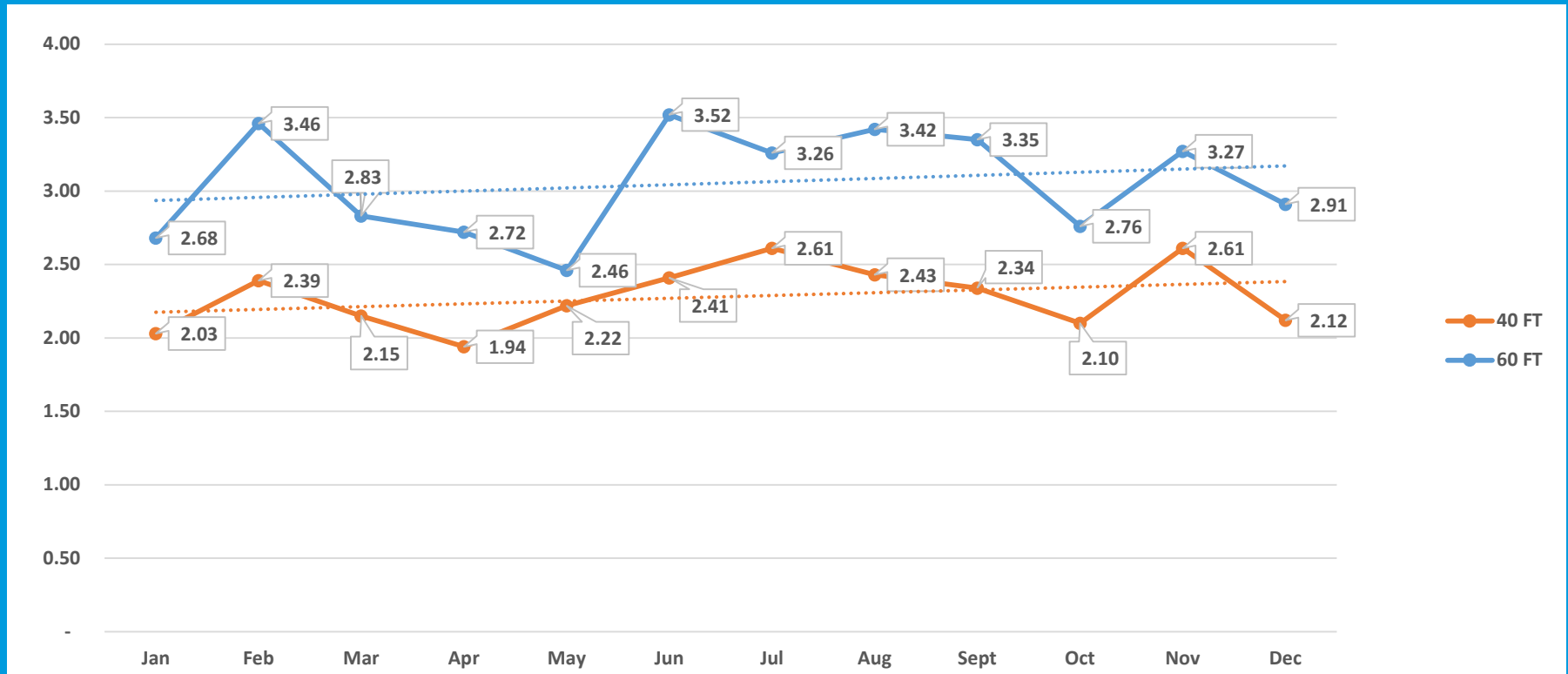
FUEL/ENERGY COST PRIOR 12 MONTHS



PROPULSION FUEL COST PER MILE w/LOW CARBON FUEL STANDARD (LCFS) OFFSET

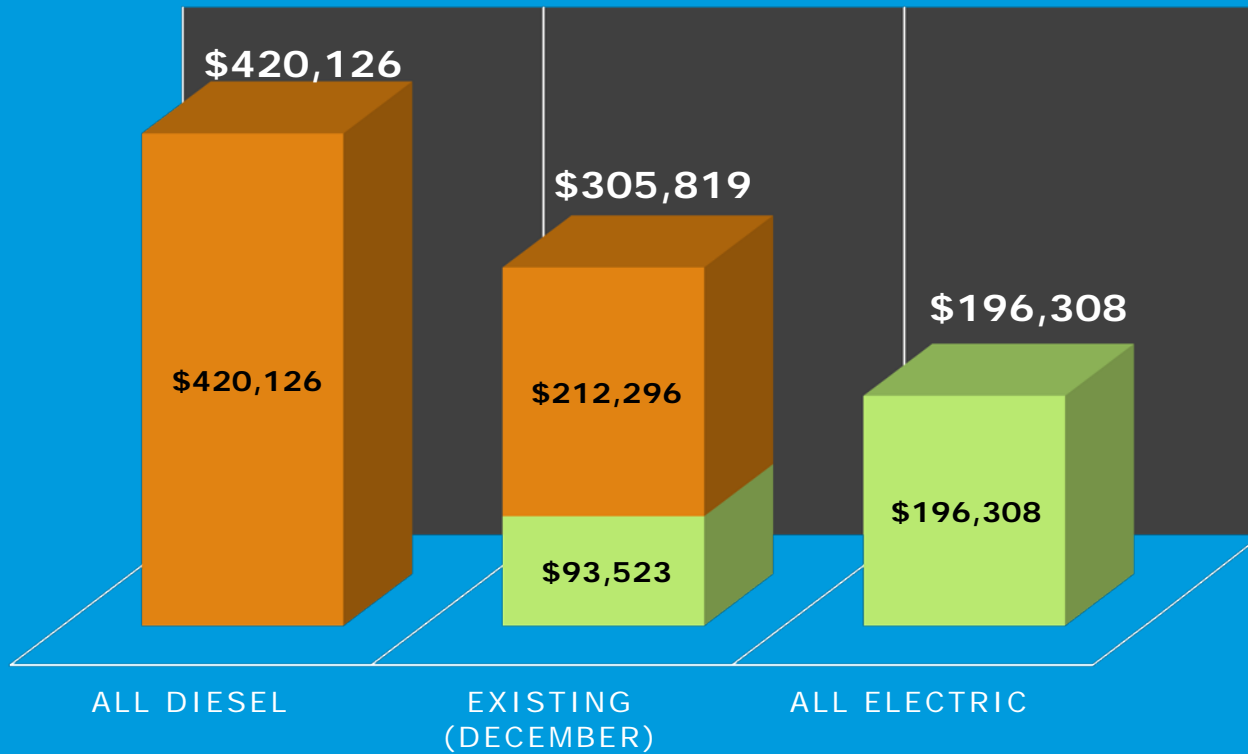


AVERAGE FUEL CONSUMPTION PER MILE (KWPM)



TOTAL FUEL & MAINTENANCE COST ASSUMPTIONS AT FULL BUILDOUT

■ Electric ■ Diesel

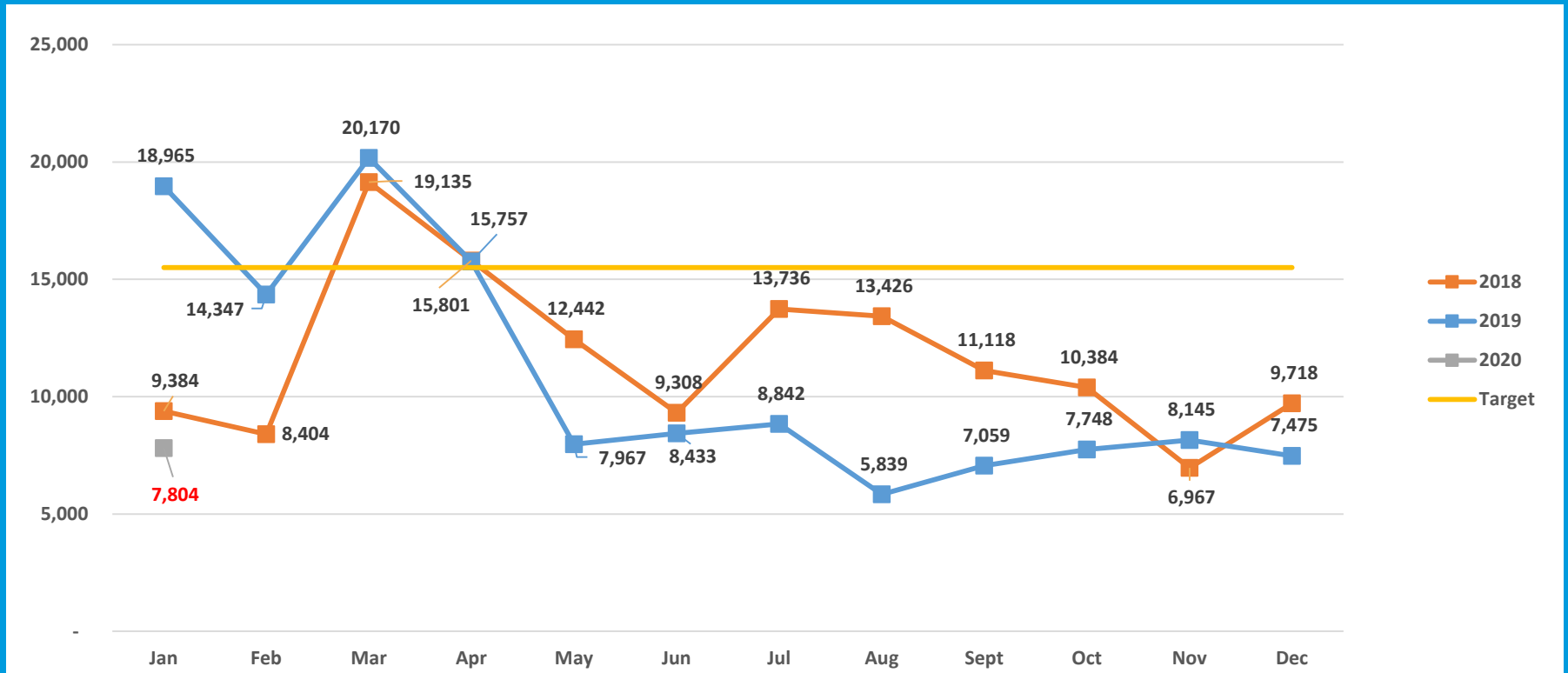


December Savings
\$114,307

AVERAGE MILES BETWEEN SERVICE INTERRUPTIONS

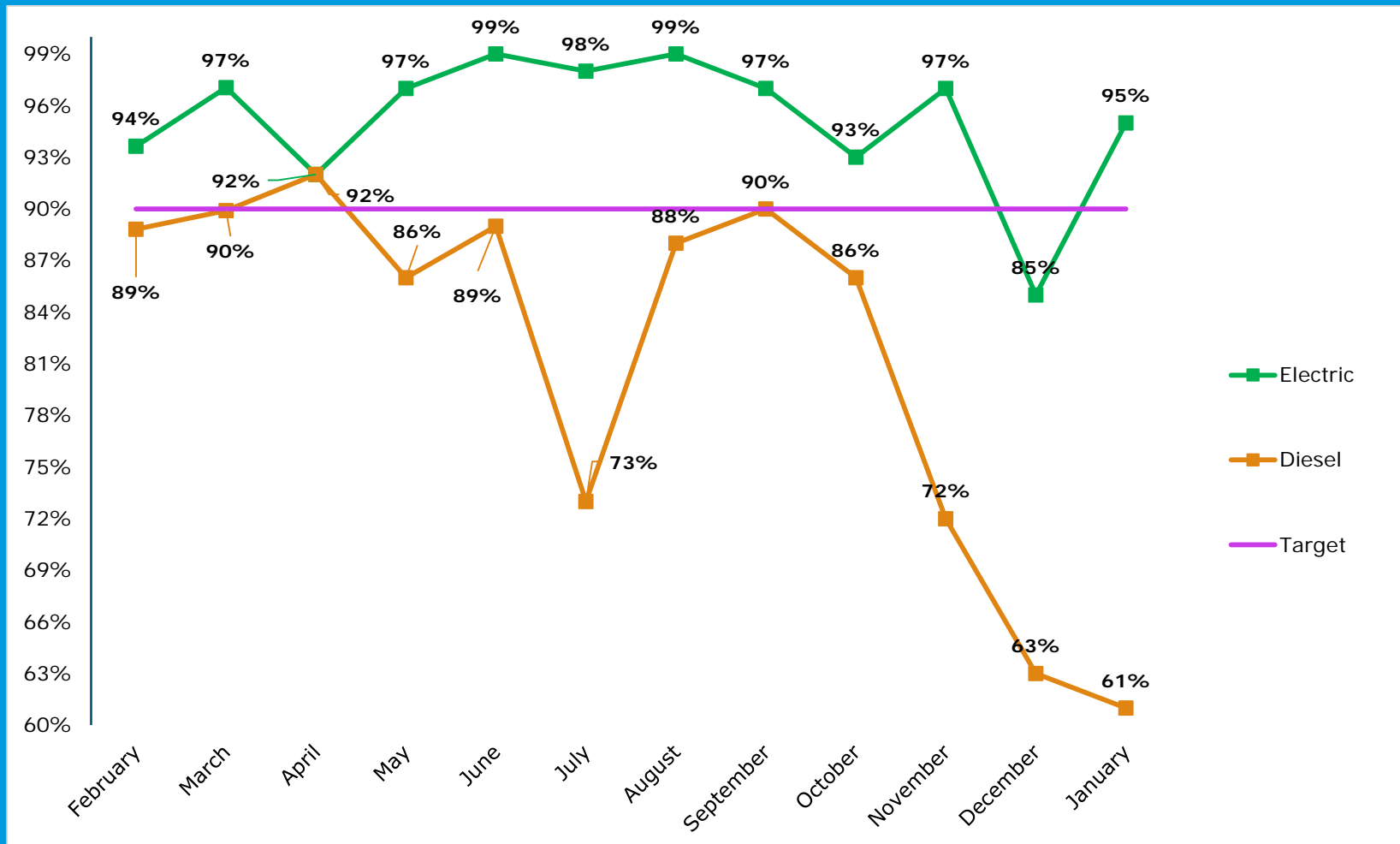
Peer Average: 11,206

Target: 15,500



LOCAL TRANSIT FLEET AVAILABILITY

Peer Average: 77% Target 90%



Summary

Construction projects for WAVE charging centers are progressing and we will be breaking ground on the Lancaster Blvd site soon.

We have two additional 40-foot electric transit buses scheduled for delivery by the end of month.

Transfer of 15 hybrid buses to Memphis Area Transit Authority is nearing completion. FTA documentation is done. Buses are at CCW being prepared for final transfer.

The first of the old diesel buses have been retired and will be auctioned off shortly.

Completed security upgrade at customer service window.



Discussion/Questions?





Regular Meeting of the Board of Directors

Tuesday, January 28, 2020

10:00 a.m.

Antelope Valley Transit Authority Community Room
 42210 6th Street West, Lancaster, California
www.avta.com

UNOFFICIAL MINUTES

CALL TO ORDER

Chairman Crist called the meeting to order at 10:00 a.m.

PLEDGE OF ALLEGIANCE

Director Hofbauer led the Pledge of Allegiance.

ROLL CALL:

Present

Chairman Marvin Crist, Vice-Chair Dianne Knippel, Director Steve Hofbauer, Alternate Director Raj Malhi, Director Michelle Flanagan, Director Richard Loa

APPROVAL OF AGENDA

Motion: Approve the agenda as comprised.

Moved by Director Hofbauer, seconded by Director Loa

Vote: (6-0-0-0)

Ayes: Chairman Crist, Vice-Chair Knippel, Directors Hofbauer, Flanagan, Loa, Alternate Director Malhi

Nays: None

Abstain: None

Absent: None

PUBLIC BUSINESS – AGENDIZED AND NON-AGENDIZED ITEMS:

Michael Rives – spoke about installing bus benches at the stops on M-8 and 50th W. and 10th St. W. in front of Walmart, and suggested numbering the tops of bus shelters and installing cameras for safety reasons. Chairman Crist detailed the process for installing bus benches.

Norma U. – stated some of the bus stops are too far apart for riders to reach their connection in time, and suggested having the Route 50 leave about 10 minutes earlier to help riders make their connection. Senior Director of Operations and Planning Martin Tompkins will meet with Norma to discuss her suggestions.

Transdev Regional Vice President Ibrahima Toure – introduced himself and reiterated his management team’s commitment to providing high-quality service. He stated the management team will implement the T.ex (Transdev Experience) Program to gain rider and operator feedback. Management will use this information to modify their customer service training.

Mr. Toure confirmed Transdev General Manager Rene Alvarez has begun employee incentive programs. Chairman Crist directed Executive Director/CEO Macy Neshati to develop an incentive program in conjunction with Transdev. Vice Chair Knippel recommended Mr. Toure obtain AVTA’s Draft Regional Transit Plan (RTP) to gain additional knowledge regarding customers’ issues. Director Hofbauer spoke about his experience when riding the bus.

Paul Andrews – spoke about the eNow, Inc. roof-mounted solar system and stated the reason why there is a problem with operators staying at Transdev is that the pay is not compatible with LA County Metro and Santa Clarita Transit.

Fran Sereseres – complimented the Clerk of the Board Karen Darr and staff and informed the Board that Metrolink is opening their doors earlier so passengers can get out of inclement weather.

SPECIAL REPORTS, PRESENTATIONS, AND REQUESTS FOR DIRECTION (SRP):

SRP 1 PRESENTATION TO KAREN DARR FOR 10 YEARS OF DEDICATED SERVICE

Executive Director/CEO Macy Neshati presented Clerk of the Board Karen Darr an award for ten years of service.

SRP 2 PRESENTATION TO AVTA EMPLOYEE OF THE SECOND QUARTER FOR FISCAL YEAR 2019/2020 (FY 2020)

Director of Finance and Administration Judy Vaccaro-Fry presented the Employee of the Second Quarter award to Human Resources and Benefits Coordinator Williene Jones.

SRP 3 RECOGNITION OF TRANSDEV OPERATOR AND EMPLOYEE OF THE MONTH FOR NOVEMBER AND DECEMBER 2019

Trandev General Manager Rene Alvarez announced the Employee of the Month for November is Daniel Fabela and the Operator of the Month for December is James Istilart; both Mr. Fabela and Mr. Istilart were unable to attend the meeting. Mr. Alvarez presented awards to Mario Luna, Operator of the Month for November and Ashley Robinson, Employee of the Month for December.

SRP 4 LEGISLATIVE REPORT FOR JANUARY

Ms. Vaccaro-Fry provided a report on Senate Bill 50, Section 5339 – Bus and Bus Facilities grant program, Section 7613 – Limitations on Chinese rolling stock procurement and FY 2020 Appropriations; and detailed the Transportation Development Act (TDA) Reform, specifically the farebox recovery requirement.

The Board discussed the Agency's farebox revenue and urban versus rural designation. Director Hofbauer requested Ms. Vaccaro-Fry send him TDA Reform talking points for his meeting with Senator Jim Beall.

SRP 5 OPERATIONS KEY PERFORMANCE INDICATORS (KPI) REPORT

Mr. Tompkins presented the report. The Board discussed the increased ridership on Route 8 and the average number of commendations received.

SRP 6 MAINTENANCE KPI REPORT

Director of Fleet and Facilities Mark Perry presented the report. The Board discussed the total lifetime cost estimate for the electric and diesel buses, particularly the positive cost impact due to the Low Carbon Fuel Standards (LCFS) credits.

Chairman Crist and Antelope Valley Air Quality Management District (AVAQMD) Executive Director Bret Banks spoke about the partnership between AVAQMD and AVTA for installing phase three charging stations.

CONSENT CALENDAR (CC):

CC 1 BOARD OF DIRECTORS MEETING MINUTES OF NOVEMBER 26, 2019

Approve the Board of Directors Regular Meeting Minutes of November 26, 2019.

CC 2 FINANCIAL REPORTS FOR NOVEMBER AND DECEMBER 2019

Receive and file the Financial Report for November and December 2019.

CC 3 PROPOSED LEGISLATIVE PRINCIPLES FOR 2020

Approve the Proposed Legislative Principles for 2020.

CC 4 FY 2020 SECOND QUARTER LOS ANGELES COUNTY SHERIFF'S DEPARTMENT (LASD) REPORT (OCTOBER 1 – DECEMBER 31, 2019)

Receive and file the FY 2020 Second Quarter LASD report for the period covering October 1 through December 31, 2019.

CC 5 ANNUAL REVIEW OF AVTA'S EQUAL EMPLOYMENT OPPORTUNITY (EEO) POLICY STATEMENT AND TRANSDEV'S EEO PLAN

Review, update, and reaffirm AVTA's EEO Policy Statement and Transdev's EEO Plan.

CC 6 RESOLUTION NO. 2020-001, ADOPTING THE AMENDED CONFLICT OF INTEREST AND DISCLOSURE CODE

Adopt Resolution No. 2020-001, a Resolution of the Board of Directors adopting the amended Conflict of Interest and Disclosure Code and rescinding in its entirety the current Conflict of Interest Code adopted by Resolution No. 2018-001.

Motion: Approve the Consent Calendar.

Moved by Director Hofbauer, seconded by Vice Chair Knippel

Vote: Motion carried (6-0-0-0)

Ayes: Chairman Crist, Vice Chair Knippel, Directors Hofbauer, Flanagan, Loa, Alternate Director Malhi

Nays: None

Abstain: None

Absent: None

NEW BUSINESS (NB):

NB 1 FY 2020 MID-YEAR BUDGET REVIEW AND PROPOSED ADJUSTMENTS

Ms. Vaccaro-Fry presented the staff report. The Board discussed staff using the revenue generated by the LCFS credits to offset the mid-year budget adjustments.

Motion: Approve the Proposed FY 2020 Mid-Year Budget adjustments.

Moved by Director Hofbauer, seconded by Director Loa

Vote: Motion carried (6-0-0-0)

Ayes: Chairman Crist, Vice Chair Knippel, Directors Hofbauer, Flanagan, Loa, Alternate Director Malhi

Nays: None

Abstain: None

Absent: None

NB 2 CONTRACT #2020-20 TO AV TRANSPORTATION SERVICES, LLC, LANCASTER, CA, FOR DIAL-A-RIDE AND OTHER ON-REQUEST SHARED MOBILITY SERVICES

Chairman Crist waived the presentation of the staff report.

Motion: Authorize the Executive Director/CEO to execute Contract #2020-20 for Dial-A-Ride and other on-request shared mobility services to AV Transportation Services, LLC, Lancaster, CA for a base term of five years and five months (5.5) with two (2) one (1) year options for a possible seven years and five months for an estimated amount of \$4,522,500 per service year.

Moved by Vice Chair Knippel, seconded by Director Flanagan

Vote: Motion carried (6-0-0-0)

Ayes: Chairman Crist, Vice Chair Knippel, Directors Hofbauer, Flanagan, Loa, Alternate Director Malhi

Nays: None

Abstain: None

Absent: None

NB 3 SOLE SOURCE CONTRACT AMENDMENT NO. 2 FOR CONTRACT #2014-01 WITH PINNACLE PETROLEUM FOR BULK FUEL SUPPLY AND DELIVERY

Chairman Crist waived the presentation of the staff report.

Motion: Authorize the Executive Director/CEO to execute Sole Source Contract Amendment No. 1 for an additional amount of \$2,500,000, and one-year time extension to Pinnacle Petroleum, Inc., of Huntington Beach, CA, under AVTA's Contract #2014-01, to complete AVTA's change out of its commuter diesel fleet to battery-electric propulsion.

Moved by Vice Chair Knippel, seconded by Director Flanagan

Vote: Motion carried (6-0-0-0)

Ayes: Chairman Crist, Vice Chair Knippel, Directors Hofbauer, Flanagan, Loa, Alternate Director Malhi

Nays: None

Abstain: None

Absent: None

NB 4 SOLE SOURCE CONTRACT AMENDMENT NO. 5 FOR CONTRACT #2019-18 WITH STANTEC CONSULTING SERVICES, INC. FOR OPERATIONAL ANALYSIS AND IMPLEMENTATION SUPPORT

Chairman Crist waived the presentation of the staff report.

Motion: Authorize the Executive Director/CEO to execute Sole Source Contract Amendment No. 5 for Contract #2019-18 for an additional amount of \$74,895, to Stantec Consulting Services, Inc., Los Angeles, CA.

Moved by Vice Chair Knippel, seconded by Director Flanagan

Vote: Motion carried (6-0-0-0)

Ayes: Chairman Crist, Vice Chair Knippel, Directors Hofbauer, Flanagan, Loa, Alternate Director Malhi

Nays: None

Abstain: None

Absent: None

REPORTS AND ANNOUNCEMENTS (RA):

RA 1 Report by the Executive Director/CEO

2019 YEAR IN REVIEW AND UPCOMING PROJECTS IN 2020

Mr. Neshati thanked everyone for their support during his family's grief.

2019 Significant Agency Accomplishments:

- We passed our second million electric miles on December 24, 2019.
- We released our Request for Proposals (RFP) for a Regional Transit Plan (RTP). The RTP has been completed and will be ready to discuss at the February Board meeting.
- We adopted an "early action" plan for Route 1 that added 53,000 riders, effectively reversing a three-year decline in ridership.
- We released our RFP for a Power Purchase Agreement for an all-solar supply with a back-up battery. On February 3, 2020, staff will conduct oral interviews with the top three finishers, including Lancaster Choice Energy.
- We completed our first two inductive charging depots, one at our transit center at Sargent Steve Owen Memorial Park and one at Palmdale Transportation Center.
- We awarded contracts to build our third and fourth inductive charging sites, one adjacent to the South Valley Medical Center and the other at the Lancaster MetroLink Station.
- We received an 8.5 million dollar Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grant.
- We completed our evaluation of the applicability of Micro-Transit for some of our unincorporated areas thereby adding efficiency to our service delivery process and generating cost savings.
- We took aggressive measures to enforce contract compliance with our contractor Transdev.

2020 Goals

- Implement a new Dial-A-Ride system with the new vendor beginning April 1, 2020. Implement MicroTransit, Late Night Service and Non-Emergency Medical Transport in a phased process to be completed by October 1, 2020.
- Complete a procurement for battery electric minibuses for the MicroTransit routes.
- Complete a procurement for ten additional BYD electric buses.
- Implement the system-wide recommendations from the RTP with a goal to be fully implemented by September 1, 2020.

- We have a 100% local transit electric fleet with a minimal back fill of diesel buses in the afternoon.

It has been an exciting year, look forward to the year ahead, and appreciate the Board's continued support. Mr. Neshati invited the Board Members and public to tour the bus with the newly installed operator safety barrier. In response to Director Flanagan's question, Mr. Neshati responded the Agency would operate the five buses for 90 days before assessing their effectiveness.

MISCELLANEOUS BUSINESS – NON-AGENDA BOARD OF DIRECTORS ITEMS:

The Board had no miscellaneous business items to present.

ADJOURNMENT:

Chairman Crist adjourned the meeting at 11:26 a.m. to the Regular Meeting of the Board of Directors on February 25, 2020 at 10:00 a.m. in the Antelope Valley Transit Authority Community Room, 42210 6th Street West, Lancaster, CA.

PASSED, APPROVED, and ADOPTED this February 25, 2020

Marvin Crist, Chairman of the Board

ATTEST:

Karen S. Darr, Clerk of the Board

Audio recordings of the Board of Directors Meetings are maintained in accordance with state law and AVTA's Records Retention Policy. Please contact the Clerk of the Board at (661) 729-2206 to arrange to review a recording.



DATE: February 25, 2020

TO: BOARD OF DIRECTORS

SUBJECT: Financial Report for February 2020

RECOMMENDATION

That the Board of Directors receive and file the Financial Report, including Quarterly Treasurer, Capital Reserve, and Farebox Recovery information, for February 2020.

FISCAL IMPACT

	JANUARY
PAYROLL	298,072
CASH DISBURSEMENTS	2,336,603

FY 2020 Farebox Recovery Ratio - Cumulative Progress

	Q1	Q1+Q2	Q1+Q2+Q3	Total year
Directly Generated Revenue	\$ 1,332,398	\$ 2,666,195		
Operating Expenses	\$ 6,889,835	\$ 12,022,219		
Farebox Recovery Ratio	19%	22%		

Notes: Revenue includes Farebox, Advertisements, Gain on Sale, LCFS Credits, and investment income.

BACKGROUND

To comply with the provisions required by Sections 37202, 37208 and 6505.5 of the Government Code, the Director of Finance and Administration in conjunction with the Controller, provides a monthly payroll total and cash disbursements.

On a quarterly basis, farebox recovery ratio data and a Treasurer's Report, including capital reserve information (Attachment A), will be included as part of the financial report. The Executive Director/CEO and Treasurer certify the availability of funds.

Financial Reports for February 2020

February 25, 2020

Page 2

I, Macy Neshati, Executive Director/CEO of AVTA, declare that the above information is accurate.

Prepared by:

Submitted by:

Judy Vaccaro-Fry
Director of Finance and Administration

Macy Neshati
Executive Director/CEO

Attachment: A – Second Quarter Treasurer’s Report

ANTELOPE VALLEY TRANSIT AUTHORITY
Treasurer's Report
For the quarter ended 12/31/19

Investment Type	Description	Beginning Balance 9/30/19	Deposits	Disbursements	Interest	Ending Balance 12/31/19
Cash and Investments Under the Direction of the Treasurer						
	Local Agency Investment Fund (LAIF) - Capital Reserve	5,667,304		(798,000)	30,063	4,899,367
	Proposition 1B Restricted Fund*	1,027,805		(388,559)	94	639,340
	Union Bank - LCTOP	813,787		(145,320)	97	668,563
	Total Capital Reserves and Restricted Funds	7,508,896	-	(1,331,879)	30,253	6,207,271
	Mission Bank - Investment Op Reserves**		4,000,000		10,524	4,010,524
	Union Bank - Savings Op Reserves**	4,000,163		(4,000,163)		0
	Union Bank - Money Market Fund**	1,866,276		(1,866,276)		0
	Total Operating Reserve	5,866,439	4,000,000	(5,866,439)	10,524	4,010,524
	General Account	11,542,570	18,066,134	(18,728,163)		10,880,541
	Petty Cash Balance	750				750
	Operating Accounts Total	11,543,320	18,066,134	(18,728,163)	-	10,881,291
	TOTAL CASH AND INVESTMENTS	24,918,655	22,066,134	(25,926,481)	40,777	21,099,086

* Deferred revenue, recorded as liability until associated expense incurred.

** Union Bank savings and money market accounts were closed during Q2. Four million dollars were transferred to a new Mission Bank investment account. The remaining \$1,866,439 was moved to the General Account to compensate for cashflow gaps between expenditure outflows and grant reimbursement inflows for new bus payments.

I hereby certify that the investment portfolio of AVTA complies with its investment policy and the California Government Code Sections pertaining to the investment of local agency funds, Union Bank and Wells Fargo Bank. Pending any future actions by the AVTA Board or any and unforeseen occurrences, AVTA has cash flow adequate to meet its expenditure requirements for the next three months.

Prepared by:

Submitted by:

KJ Alcuran
Controller

Judy Vaccaro-Fry
Director of Finance & Administration



DATE: February 25, 2020
TO: BOARD OF DIRECTORS
SUBJECT: Grant Status Report

RECOMMENDATION

That the Board of Directors receive and file the Grant Status Report (Attachment A).

FISCAL IMPACT

Grants approved after the annual budget adoption may require reallocation of funds, which will be addressed in the FY21 budget.

BACKGROUND

The attached Grant Status Report reflects current status of all grant applications submitted on behalf of the Authority through February 15, 2020.

One formula grant was submitted during the last quarter for preventive maintenance activities. On January 23, 2020 the Authority received approval from MTA for funding award to implement a microtransit service for the Enhanced Mobility of Seniors and Individuals with Disabilities. AVTA continues to seek and pursue all viable grant opportunities.

Prepared by:

Submitted by:

Judy Vaccaro-Fry
Director of Finance and Administration

Macy Neshati
Executive Director/CEO

Attachment: A – Grant Status Report

GRANT STATUS REPORT

Discretionary Opportunities Submitted

Grant Program	Project	Amount Applied For	Date Submitted	Status	Amount Awarded	Next Round of Funding
Call for Projects - LACMTA	Bus Replacement + Chargers	\$2,475,103	April 10, 2019	EXPECTED FUNDING AVAILABLE JUNE 2020.	\$2,475,103	TBD
FY19 Low or No Emission Vehicle Program - FTA	10 Transit Buses + 12 Circulator Buses	\$10,760,699	May 14, 2019	NO FUNDS AWARDED TO AVTA	\$0	TBD
FY19 Bus & Bus Facilities - FTA	10 Transit Buses + 10 Circulator Buses	\$9,226,192	June 20, 2019	NO FUNDS AWARDED TO AVTA	\$0	March 2020
FY19 BUILD - FTA	8 Transit Buses + 12 Circulator Buses	\$8,683,480	July 14, 2019	AWARDED	\$8,683,480	TBD
Low Carbon Transit Operations Program (LCTOP) – Cap & Trade	Microtransit Demonstration – Los Angeles County	\$347,194	March 2019	AWARDED JUNE 28, 2019	\$347,194	February 2020
5310 – Enhanced Mobility for Seniors & Individuals with Disabilities - MTA	Microtransit for Seniors & Individuals with Disabilities	\$83,507	July 31, 2019	AWARDED JANUARY 23, 2020	\$83,507	TBD
LoNo – 2018 Grant Award CA-2020-011	1 transit bus	\$705,347	August 3, 2019	GRANT EXECUTED JANUARY 15, 2020.	\$705,347	TBD
	TOTAL DISCRETIONARY OPPORTUNITIES APPLIED FOR:	\$32,281,522		TOTAL DISCRETIONARY GRANT AWARDS:	\$12,294,631	
	TOTAL DISCRETIONARY OPPORTUNITIES NOT AWARDED	\$19,986,891				
	TOTAL DISCRETIONARY OPPORTUNITIES PENDING:	\$0				

Annual Formula Allocations Submitted

Grant Program	Project	Amount Pending	Date Submitted	Status	Amount Awarded
Section 5307	Capital + Operating, Preventative Maintenance	\$3,787,643	July 11, 2019	Awarded July 30, 2019	\$3,787,643
Section 5307	Bus Replacement	\$5,174,108	July 19, 2019	Awarded August 12, 2019	\$5,174,108
Section 5307	Preventive Maintenance	<i>\$3,500,00</i>	February 14, 2020	Ready for Legal and Department of Labor reviews.	\$0
Section 5337	HIMB Commuter: Preventative Maintenance	\$3,156,000	July 5, 2019	Awarded July 24, 2019	\$3,156,000
Section 5339	Bus Replacement	\$2,441,137	July 18, 2019	Awarded August 12, 2019	\$2,441,137
	TOTAL ANNUAL FORMULA ALLOCATIONS PENDING:	\$3,500,000		TOTAL GRANT AWARDS:	\$14,801,087



DATE: February 25, 2020

TO: BOARD OF DIRECTORS

SUBJECT: Amend the Agency's Classification and Salary Schedule

RECOMMENDATION

That the Board of Directors approve amending the Agency's Classification and Salary Schedule to add an Administrative Assistant position and reclassify the Transit Analyst to Planning Manager.

FISCAL IMPACT

The Administrative Assistant position will be established at Range 23 (Min. \$43,607 – Max. \$56,689) and the Planning Manager position is established at Range 40 (Min. \$66,354 – Max. \$86,260). The total fiscal impact for the remainder of FY 2020 is estimated to be \$20,000 plus applicable benefits. The increases will be reflected in the proposed FY 2020/2021 Budget and future fiscal year proposed budgets.

BACKGROUND

The recommendation to add an Administrative Assistant position and reclassify the Transit Analyst to Planning Manager is based on existing and future workload demands and the need to expand staffing in specific areas in order to maintain and enhance organizational performance measures. The Transit Analyst position will remain on the Classification and Salary schedule.

Prepared by:

Submitted by:

Judy Vaccaro-Fry
Director of Finance and Administration

Macy Neshati
Executive Director/CEO



DATE: February 25, 2020

TO: BOARD OF DIRECTORS

SUBJECT: Mobility Forward – The Antelope Valley Strategic Mobility Plan

RECOMMENDATION

That the Board of Directors authorize the Executive Director/CEO to implement the recommendations contained in the *Mobility Forward – The Antelope Valley Strategic Mobility Plan*.

FISCAL IMPACT

There is no current fiscal impact. However, the *Mobility Plan* recommends service rationalization along with service improvements where warranted which will have a future fiscal impact. Moreover, the *Mobility Plan* proposes microtransit as a service substitution solution that was already adopted by the Board in January 2020 through the award of a contract to AV Transportation Services, LLC for on-request shared mobility services. Service improvements are estimated to cost approximately an additional \$1.6 million (a 8% increase in current operating costs) for a full year of operating the new services (the revised local network, on-request services including dial-a-ride, as well as potential changes to the commuter bus network). These cost estimates are high level and can be reduced during scheduling and runcutting to optimize schedules and service hours.

Through these improvements, the Consultant conservatively estimates overall ridership will increase 15-20% from this investment and will serve as the much-needed catalyst to transform mobility and change the mindset on public transit in the Antelope Valley. Other items include capital improvements, particularly for passenger amenities like bus shelters and seating which presents a current barrier to transit use.

Staff will return for Board approval for each item as the timeline for implementation approaches.

BACKGROUND

In November 2018, the Board approved a contract with Stantec Consulting Services Inc. (Stantec) to prepare a regional transit plan. At the time, sustained ridership declines along with new bus technologies and new service delivery methods highlighted the need for a service analysis and a regional plan. The resultant plan focused on transit as well as other mobility strategies to help improve regional mobility and incentivize travel beyond single-occupancy vehicles.

Based on an analysis of current and historical transit performance, a market analysis, robust stakeholder outreach including Transit Advisory Committee meetings, community pop-ups, a survey, community meetings and meetings with AVTA staff, Stantec and AVTA developed a series of recommendations aimed at:

- 1. Enhancing AVTA's core services—Improving the transit network and mobility services.** The recommendations are divided by service category and rely on the fact that services should complement each other, and resources should be deployed prudently and reflect actual demand.
- 2. Improving the customer experience.** Building customer satisfaction has been demonstrated to retain riders, expand the ridership base, and get people to use transit more often. This strategy involves improving communications and customer information for better trip planning and improving customer amenities at bus stops.
- 3. Building and supporting an inclusive, multimodal network.** Transit can't do it all—AVTA needs to offer and cooperate with different transportation modes, particularly walking and cycling. Working with elected officials and advocates from across the Antelope Valley will be crucial for ensuring that the community develops in a manner that supports transit use and offers balance for mobility options.

The *Mobility Forward Plan* recommends, among other items, revising the local network to focus resources on corridors with strong demand, shifting services in the eastern, low-density portion of the service area to an on-request model, revising schedules and route alignments for commuter services, expanding travel training and the accessibility of infrastructure to encourage fixed-route ridership, and collaborating with local and regional decisionmakers to focus on a 'transit-friendly' blueprint for the Antelope Valley. Attachment A provides the Executive Summary of the *Plan*.

One of the early actions arising from the planning process was the Board adoption of increased service on Route 1 during weekdays. Since starting in June 2019, the pilot has increased monthly ridership on Route 1 by an average of 20% compared to same time frame in 2018. This result indicates a strong desire for more frequent service

and latent demand that the *Plan* aims at addressing. Attachment B provides the final *Plan* and report.

Staff recommends adoption of the *Mobility Forward Plan* as it outlines key steps for growing ridership, improving mobility, and ultimately, advancing quality of life in the Antelope Valley.

The table below provides annual high-level cost estimates for the proposed services and existing comparable services. These cost estimates are high level and can be reduced during scheduling and runcutting to optimize schedules and service hours.¹

	Existing	Proposed	Difference
Local and supplemental (excluding Routes 50, 51, 52)	\$13,373,000	\$16,793,500	\$3,420,500
Dial-a-Ride	\$1,648,010	\$1,210,920	\$(437,090)
Routes 50, 51, 52	\$1,530,000	\$986,000	\$(544,000)
Commuters (785, 786, 787, 790)	\$4,134,590	\$2,944,130	\$(1,190,460)
Routes 747, 748	\$406,910	\$406,910	-
Late-night on-request	-	\$232,000	\$232,000
NEMT	-	\$130,500	\$130,500
Total	\$21,092,510	\$22,703,970	\$1,611,460

Submitted by:

Macy Neshati
Executive Director/CEO

Attachments: A—Executive Summary
 B—Mobility Forward Plan

¹ Costs for local services were modeled at \$90/hour, commuter services were modeled at \$142/hour, and on-request services (including proposed DAR service) were modeled at \$58/hour.

What We've Seen

Through a review of important documents that have shaped and will continue to shape the Antelope Valley, along with a review of current service performance and transit markets, the following major themes were identified:

- The more urbanized areas of the Antelope Valley (Lancaster and Palmdale) have long-term objectives of transit-oriented development and are supportive of land use and development decisions that encourage transit use and help to reduce VMT. However, the current state of the Antelope Valley is dispersed, low-density development in a large service area that makes it difficult to provide productive, frequent transit services.
- SCAG's 2016-2040 RTP/SCS outlines plans that encourage integrated land use and transportation strategies that create complete communities and transit-oriented development. In particular, the RTP/SCS identifies a High-Quality Transit Area (HQTA) corridor running along 10th St. W, Sierra Hwy, and Avenue S between Lancaster and Palmdale (currently served by AVTA's Routes 1 and 3).
- The relatively greater population and employment densities of Lancaster and Palmdale better support fixed-route transit compared to the rural areas of Lake LA and unincorporated communities including Quartz Hill, Littlerock, and Pearblossom.
- It is critical to provide transportation services to the disadvantaged communities of the Antelope Valley, including minority populations, low-income residents, car-free households, and seniors.

What We've Heard

Throughout the stakeholder engagement process, common themes emerged that were largely in line with findings uncovered through our analysis of existing conditions, as well as new service issues and opportunities for improvement. Major themes uncovered through stakeholder engagement are summarized below.

- AVTA's current riders are largely dependent riders with no other means of transportation, meaning that many riders are reliant on AVTA as their main source of transportation and AVTA is providing a lifeline service to these individuals. However, among non-riders and the general Antelope Valley community, there is an overall lack of awareness and knowledge about AVTA. While AVTA is actively working to become more visible, it will take time, effort and resources to become easily recognizable in the community.
- Feedback from riders suggests major service issues with operator behavior and attitude, overall quality of service (reliability and convenience), a lack of bus shelters and bus stop amenities, battery electric bus 'growing pains' that are affecting rider experience, and a lack of adequate pedestrian infrastructure. Moreover, many long-time riders expressed the opinion that service quality has declined in recent years despite the agency adding more revenue service hours.
- Commuters feel that commuter service is not a competitive alternative when compared with other options such as Metrolink or personal vehicle use, and new pilot commuter services to Edwards Air Force Base and Mojave Air and Space Port have not materialized into high-ridership routes.
- Municipal stakeholders stressed that the Antelope Valley has long-term goals of smart growth, sustainable development, and creating transit-oriented development along major corridors. While these

are goals that will materialize only in the long-term, it is imperative for AVTA to proactively work with Antelope Valley cities and the county to integrate land use and transportation planning decisions to see these goals become a reality.

- Survey results revealed a majority of rider respondents use AVTA frequently (at least five days a week) and have been using the service for a long time (more than three years). While results were mixed, there was consensus that riders tend to value coverage over frequency due to the dispersed, spread-out development patterns seen in the service area.
- While survey results show 67% of non-riders and 82% of riders have a positive impression of transit services in the Antelope Valley, overall, people who have a transportation alternative do not view AVTA as an attractive or convenient alternative to private vehicle use. Long wait times, a lack of pedestrian infrastructure and bus shelter amenities, and long travel times were frequently cited by non-riders as reasons for not riding AVTA.

What's Needed

We then synthesized all the information gathered to identify needs regarding transit and mobility that may be preventing AVTA from providing attractive and effective transit service, while acknowledging the barriers and challenges to providing this in an area like the Antelope Valley. The following gaps and needs were identified:

- AVTA's services have not changed to accommodate new developments and destinations where riders want service to, and bus stops are disproportionately located in rural areas with low ridership that would be better served through an alternative delivery strategy, such as microtransit or an on-request, shared-ride mobility service.
- Better active transportation and pedestrian infrastructure are needed throughout much of the Antelope Valley to make transit stops more accessible, and to make it easier to reach final destinations after alighting, especially for those individuals requiring mobility devices. A robust multimodal network with active transportation and pedestrian amenities would contribute to the overall appeal and accessibility of transit in the Antelope Valley.
- AVTA's commuter services are duplicative of existing LA Metro services that operate on dedicated rights-of-way. Terminating AVTA's commuter services at higher-order LA Metro transit services (such as the Red Line and Orange Line) will help to improve the efficiency, reliability, and productivity of commuter services, as well as open up transfer opportunities to new destinations (such as Burbank, where many Antelope Valley residents are employed).
- Other needs identified that can potentially improve AVTA's services include schedule changes to match school bell times, paired with fare concessions for students to increase ridership on supplemental routes. AVTA should also take steps, including robust travel training, to accommodate DAR passengers in the Urban Zone on redesigned, accessible conventional routes.
- Again, land use and development decisions were highlighted as a major factor affecting the quality and service of AVTA routes. Because the Antelope Valley is expected to see tremendous growth in the coming decades, it is imperative that AVTA establish a meaningful, working relationship with local officials and developers to ensure new developments are planned with a "transit first" mindset.



- Recommendations were based on the objectives of faster service, more frequent service, shorter traversing opportunities, more reliable service, growing ridership, better integration of land use and transportation, better customer experience, better access to stops and destinations, better regional connectivity, a more inclusive ridership base, more cost-effective service, and enhanced safety and security.
- Performance measures were developed based on AVTA's mission statement of empowering mobility: Getting People Where They Need to Be Safely, Timely, and Cost-Effectively. Recommended performance measures are in line with industry state of the practice, build upon existing performance measures reposted at monthly board meetings, and are broken down into three major categories of *Safely, Timely, and Cost-Effectively*.

Action Plan Overview

The recommendations and strategies support the following three main goals of the strategic mobility plan:

1. **Enhance AVTA's core services—Improve the transit network and mobility services.** The recommendations are divided by service category and rely on the fact that services should complement each other, and resources should be deployed prudently and reflect actual demand.
2. **Improve the customer experience.** Building customer satisfaction has been demonstrated to retain riders, expand the ridership base, and get people to use transit more often. This strategy involves improving communications and customer information for better trip planning and improving customer amenities at bus stops.
3. **Build and support an inclusive, multimodal network.** Transit can't do it all—AVTA needs to offer and cooperate with different transportation modes, particularly walking and cycling. Working with elected officials and advocates from across the Antelope Valley will be crucial for ensuring that the community develops in a manner that supports transit use and offers balance for mobility options.

Enhance AVTA's Core Services

Recommendations are provided for the following categories of AVTA's core services:

- **Local services:** Fixed-route transit service that provides relatively short-distance trips in and between the cities of Palmdale and Lancaster. The local service offering is divided into layers—frequent, local, and community—which dictate the service frequency and span.
- **On-request microtransit and dial-a-ride:** All services that require riders to book trips in advance, accessible transit (currently dial-a-ride) for seniors or riders with a disability, on-request microtransit service substitution for existing fixed routes (50, 51, and 52), on-request transit in rural areas lacking fixed route transit, late-night on-request service, and non-emergency medical transportation (NEMT). AVTA is currently in the process of starting up its new On-Request Shared Mobility service.
- **Commuter services:** Longer distance fixed-route transit that connects riders from the AV to regional employment areas. Commuter services typically include long segments of non-stop service, such as on freeways, to move people quickly across long distances.

- **Supplemental services:** Routes that carry riders who share a common destination, such as an employment center or school. Schedules are coordinated with school or work start and end times, typically providing one or two trips in the morning and one or two trips in the afternoon.

Local Services

Agencies use service layer types or tiers to help prioritize and allocate resources across a transit system in order to serve many purposes and populations. They establish service standards which act as a communication tool to stakeholders of the parameters and criteria that define each layer and how/where they are to be used, including triggers for change. Each layer of service—frequent, local, and community—has route-level recommendations that are in line with the goals and targets of the layer. The layers and associate route-level changes are described below.

- **Frequent layer**
 - This layer aims to move towards an ultimate service frequency of 15 minutes all day but may operate at this higher frequency for the majority of the day (e.g. 6AM to 6PM) or during peak periods only. Frequent services are typically deployed along major corridors with mixed-use development and density of key destinations and transit trip generators.
 - Route 1 and Route 12 are proposed to form the frequent layer of service, providing 15-minute headways (or better) for the majority of the weekday and 30-minute headways on Saturday. AVTA should monitor the success of 30-minute service on Saturdays before Sundays are considered for more frequent service.
 - The alignment of Route 1 is proposed to stay the same, and only a minor change is suggested for Route 12. We recommend that Route 12 stays on Avenue J instead of detouring into Valley Central Shopping Center in order to create a straight, east-west corridor for frequent service in Lancaster.
- **Local layer**
 - Local transit operates along corridors where there is a high level of usage but the density (both jobs and people) is not sufficient to warrant a frequent level of service. The goal of this service is to offer 30-minute service throughout the day. The goal of all local routes is to operate on a clockface headway, but there may be some exceptions depending on the length of routes and the cost of maintaining the discipline of such a schedule. Local routes also bring people to frequent corridors and mobility hubs to promote transfers.
 - Routes 2, 3, 4, 6, and 11 compose the local layer in the proposed network. Each route will operate at 30-minute service on weekdays and feed into the frequent network at key transfer locations such as Palmdale Transportation Center and Sgt. Steve Owen Memorial Park.
 - We proposed terminating Route 11 at Valley Central Shopping Center, where Route 12 will no longer operate. The goal of Route 11 is to provide strong east-west service on Avenue I to help AVTA develop a grid of north-south and east-west routes that increases the number of route options riders have. Importantly, Route 11 will be supported operationally by new on-route charging infrastructure slated for Sierra Hwy just north of Lancaster Blvd.

- Two new routes, Routes 4 and 6, are proposed to operate in Lancaster to provide greater access to key destinations and facilitate north-south travel. These routes will be interlined to operate as a bi-directional loop but will be marketed as separate routes since the directionality of loops can be confusing for riders to understand. This 30-minute service is an important piece in improving access to medical centers as well as other community destinations, directly from key transfer locations such as Sgt. Steve Owen Memorial Park and Lancaster Metrolink Station.
- **Community Layer**
 - Community service is primarily designed to provide access within residential areas and provide coverage to lower-density communities. This service connects to the local and frequent transit networks to provide transit access to the entire community. The goal of this service is to operate every 60 minutes on weekdays. Community routes that fall below 10 boardings per revenue hour should be investigated to be replaced with on-request microtransit solutions.
 - The proposed community layer includes Routes 5, 7 and 9, which will operate at no worse than 60-minute headways on weekdays or on the weekend. Operating at worse than 60-minute headways means that riders do not have the flexibility to travel where they want, when they want to. Some of AVTA's routes currently operate every 90-120 minutes, which means that passengers must plan their day around the transit schedule. If it is not financially viable for a route operate at 60-minute headways, we recommend that those routes be considered for service substitution via on-request microtransit.
- **Route 747 – Edwards AFB and Route 748 – Mojave**
 - As services to Edwards AFB and Mojave are still new, it is important to continue to monitor ridership. If ridership does not grow, it is recommended to eliminate these routes and instead redeploy these resources on key services. Strategies for reducing single-occupancy vehicle use for commuters traveling to and from these destinations should continue to be explored, such as through partnering with Edwards AFB and Mojave to advertise and expand the use of carpooling and vanpooling services.
 - Implementing an emergency ride home program could help to assuage worries that those using the commuter services will be “stranded” or will not have any alternative ways to get home in the case of an emergency. This could be implemented using an existing emergency ride home service (such as the Regional Guaranteed Ride Home Program) or potentially implemented using forthcoming on-request infrastructure and resources.
- **On-request layer**
 - On-request transit typically operates as curb-to-curb or stop-to-stop service, where customers request rides as needed instead of following a fixed schedule. Routes are created dynamically and can fluctuate throughout the day. On-request transit solutions are nowadays implemented using app-based technology that allows riders to request rides using a smartphone or computer and are commonly deployed in low-density areas that do not have enough demand to support fixed-route transit. Rides can also be booked, traditionally, by calling a booking center as well.

- Routes 50, 51 and 52 are proposed to operate only on-request. The public had previously expressed concerns about these routes, indicating that if they miss their bus, they have no alternative but to wait 90-120 minutes for the next bus. In some cases, this has impacted their employment due to late arrivals at work.
- The substitution of these routes with on-request microtransit will be offered through a shared-ride delivery service that includes late-night, NEMT, and accessible transit services (currently dial-a-ride). More details about the proposed on-request microtransit and dial-a-ride services are provided in the next section.

Figure 1 illustrates the proposed local transit network, which has been adjusted to meet unmet transit needs identified in previous tasks (note, Routes 747 and 748 are not presented on this map). This network aims to provide simplified transit service along key corridors where the greatest demand for transit was observed. For example, providing stronger east-west local transit routes to facilitate short local trips in Lancaster was achieved by increasing the frequency of service along Avenue J (Route 12), providing continuous service on Avenue K (Route 5), and maintaining a local service along Avenue I (Route 11). The redesigned network also provides greater transfer opportunities by feeding local and community routes into major transfer centers including Sgt. Steve Owen and Palmdale Transportation Center or facilitating on-street transfer opportunities at major intersections.

Figure 2 shows the network and the routes colored by layer of transit service.

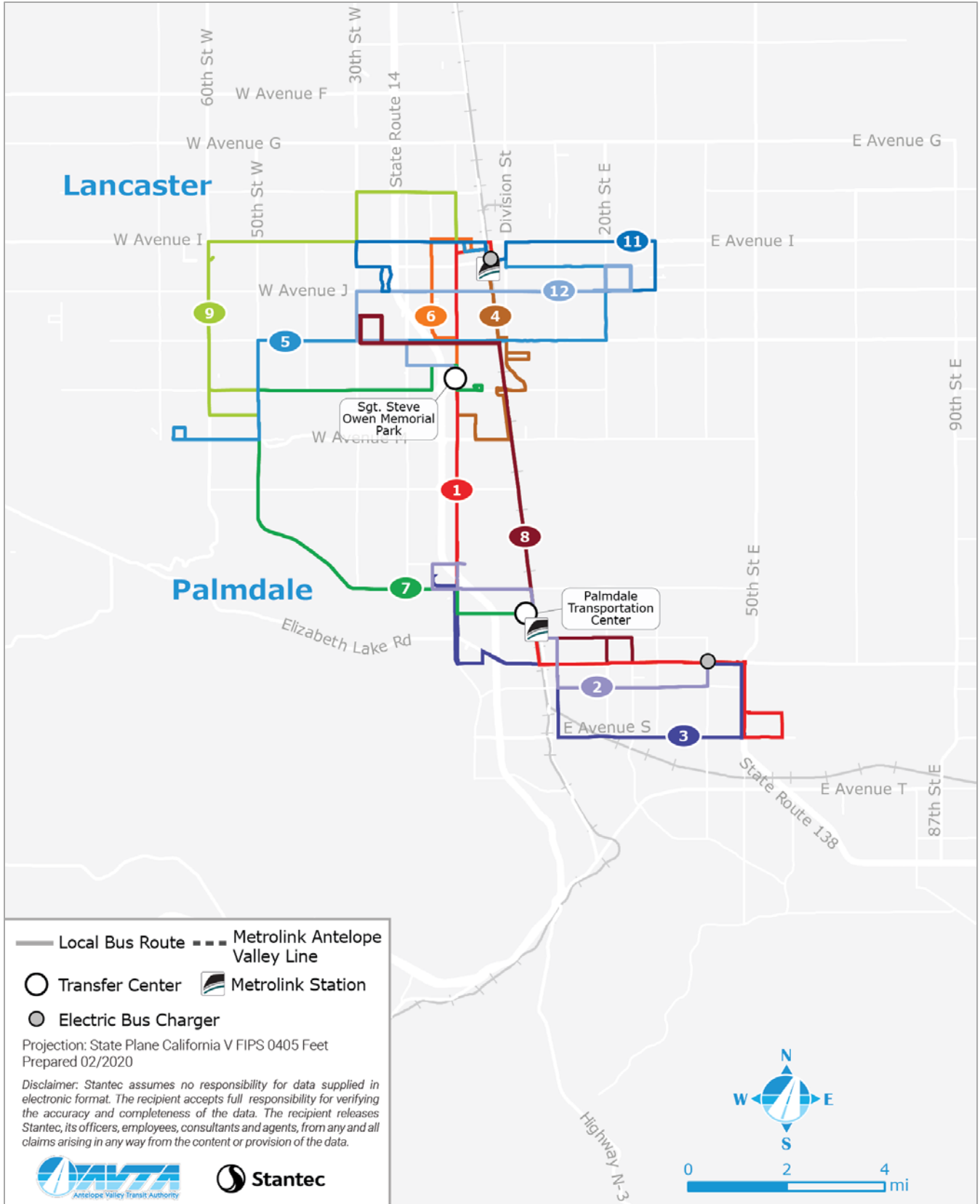


Figure 1: Proposed local transit network

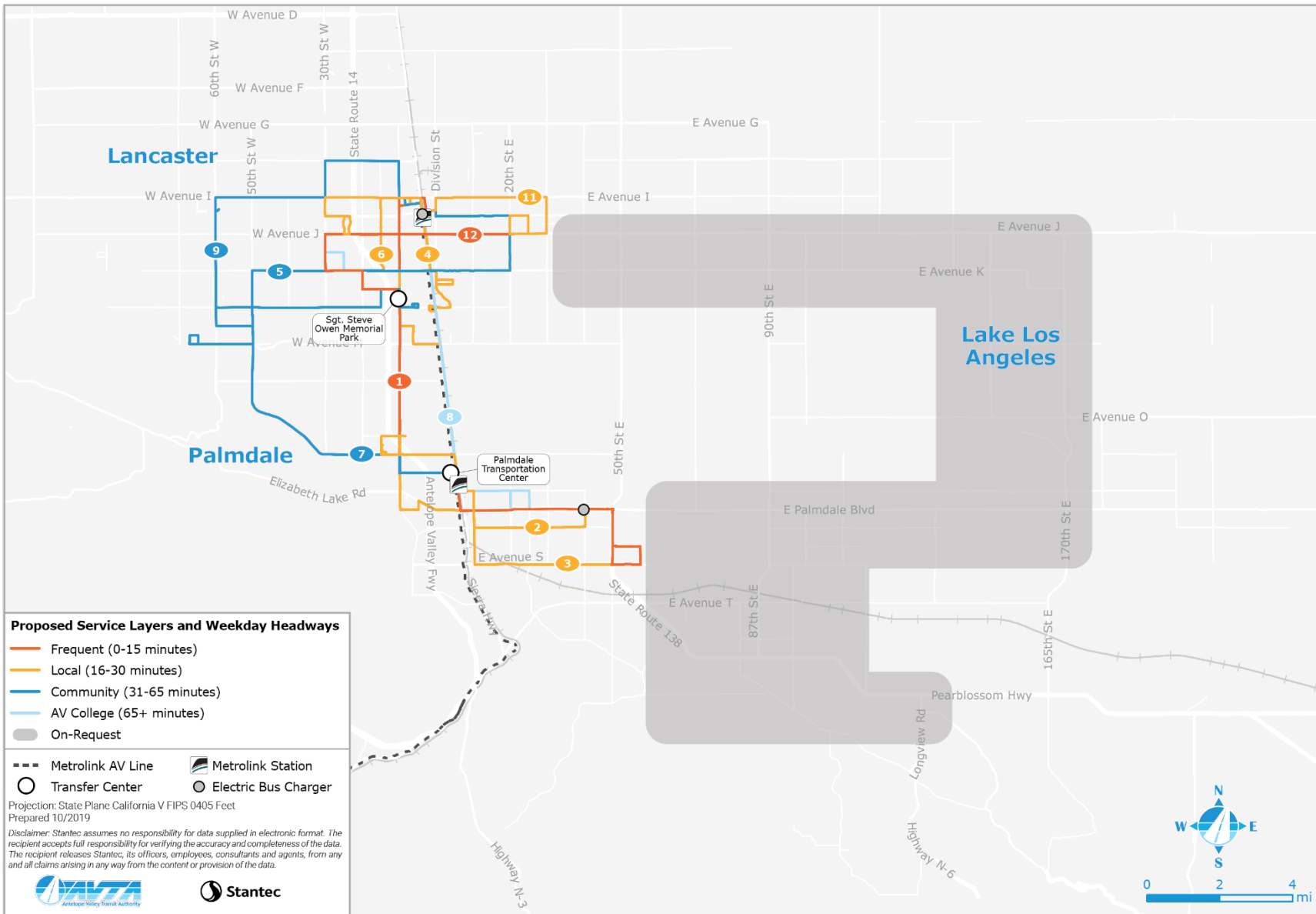


Figure 2: Proposed local service layers and weekday headways

Of course, increasing the frequency on multiple routes in the proposed network will result in greater operating costs. It is anticipated that the changes proposed above will result in an increase in operating costs of approximately \$2 million, not including on-request service delivery—service hours will remain unchanged for 747 and 748, with minor changes for supplemental school routes. The increase in operating costs is largely due to the increase in frequency on routes such as Route 12 (from 30 minutes to 15 minutes on weekdays), Route 9 (to 60 minutes on weekdays and weekends) and Route 5 (extended alignment). The cost estimates presented below were developed using Remix’s transit planning software and represent high-level estimates based on an average cost of \$90 per revenue hour and assuming average speeds comparable to today’s routes to estimate revenue hours. Efficiencies may be found once AVTA develops their vehicle and crew schedules, including interlining routes where appropriate and developing schedules that reflect actual operating conditions.

Forecasted costs are expected to grow by ~10%, while ridership is estimated, conservatively, to grow by ~15-20%. Additional outreach, marketing, and travel training would help boost these ridership numbers, also acknowledging the fact that, as some other agencies have experienced, a large-scale overnight network change may decrease ridership in the short-term as riders learn to use the new network and more riders are attracted. AVTA needs to make the transition as painless as possible with communication and trip planning assistance.

Table 2: Existing and Proposed Annual Service Hours and Cost (Local Service)

	Local service ¹
Existing Hours (est.)	165,600
Proposed Hours	186,620
Difference	21,020
Existing Ridership (est.)	2,075,500
Forecasted Ridership	2,420,600
Difference	345,100
Existing Operating Costs	\$14,903,000
Forecasted Operating Costs	\$16,793,500
Difference	\$1,890,500
Existing Farebox Recovery (est.)	17%
Forecasted Farebox Recovery	18%

These changes in the local network are expected to be accommodated within the existing conventional transit fleet, with potentially a need for 2-4 additional vehicles during peak service. The number of vehicles required will be confirmed as more detailed route schedules are cut.

The investment into improved transit service is expected to result in ridership increases that can recover some of service delivery costs. Removing routes such as Route 50, 51, and 52 (approximately 17,000 annual revenue hours) that have a high cost per boarding can result in a more efficient and cost-effective local transit system. Changes to the commuter network, such as terminating Route 785 at North

¹ Does not include Routes 747 and 748, which would be unchanged (estimated annual cost of \$406,900), but includes the elimination of routes 50, 51, and 52 in the proposed service. Does not include estimates for on-request services. Farebox recovery includes only estimated farebox revenue.

Hollywood Station and eliminating later commuter runs, can also help to offset the cost to provide local service.

On-Request Microtransit and Dial-a-Ride

Several opportunities exist within AVTA's service area for a new, flexible, dynamic, and innovative way(s) to provide transportation services, particularly in areas of Antelope Valley like Lake Los Angeles with low population densities that are difficult to serve with conventional fixed transit. As described in the section above, routes such as 50, 51 and 52 are unproductive due to low-density development. We recommend substituting these unproductive fixed-route services with on-request transit given the prevalence of on-request technology. With the current DAR contract up for renewal at the end of the year, we recommend that a new on-request, shared mobility service be combined with the DAR program into one on-request service for optimal effectiveness and efficiency.

We propose the following the following services to be included in the on-request program:

- **On-request, shared-ride service for DAR-eligible customers.** Transition the current DAR system into an 'on-request' system, merging the on-request service delivery (service substitution for Routes 50, 51 and 52) into a service whereby customers can request a journey through a mobile phone app or by calling a phone number. DAR-eligible customers (seniors and persons with a disability who are unable to take conventional transit) will still qualify for door-to-door accessible transit in any zone (Urban Zone or Rural Zones 1-3).
- **On-request curb-to-curb or home-to-hub service in rural areas lacking fixed-route transit.** For customers living in existing DAR Rural Zone 1 or 2 who do not have access to fixed-route transit, on-request service will be provided to the nearest transit hub or will be delivered curb-to-curb below a certain distance. Rural Zone 3 will be added as service substitution for Routes 50, 51, and 52, which will also operate as curb-to-curb or home-to-hub for non-DAR eligible customers.
- **On-request, late-night service substitution.** Use of on-request transit services to replace conventional fixed routes in evening hours. Primarily app-based, but in the case of AVTA, call center services are envisioned to complement the app since not all customers have access to smart phones. Route 1 and Route 12 will continue to operate until midnight, while other local and community routes will be substituted with on-request service for short local trips or to feed customers into Route 1 and 12 after 10PM on weekdays, 8PM on Saturdays and 7PM on Sundays. This service is a low-cost way of extending the service span to midnight across the entire system. Riders could have the option of being connected with the fixed route which AVTA would pay for, or for an additional fee, have the on-request provider drive them their entire journey which they would then pay the difference.
- **On-request non-emergency medical transportation.** AVTA has secured a grant to provide non-medical emergency transportation (NEMT) as a pilot and will be bundled within the future on-request, shared mobility project. The NEMT service will allow riders and caregivers to book rides in advance of appointments as well as on-request. Riders will also be able to request recurring trips for repeating appointments, such as weekly or monthly appointments. This NEMT pilot will provide mobility as a "last resort" to individuals without any other funding coverage for service

(Private Insurance, Medicaid, etc.) and does not intend to compete with other NEMT providers in the AV.

Stantec suggests rebranding the existing zones of the DAR program into AVTA Mobility Zones according to the map shown below:

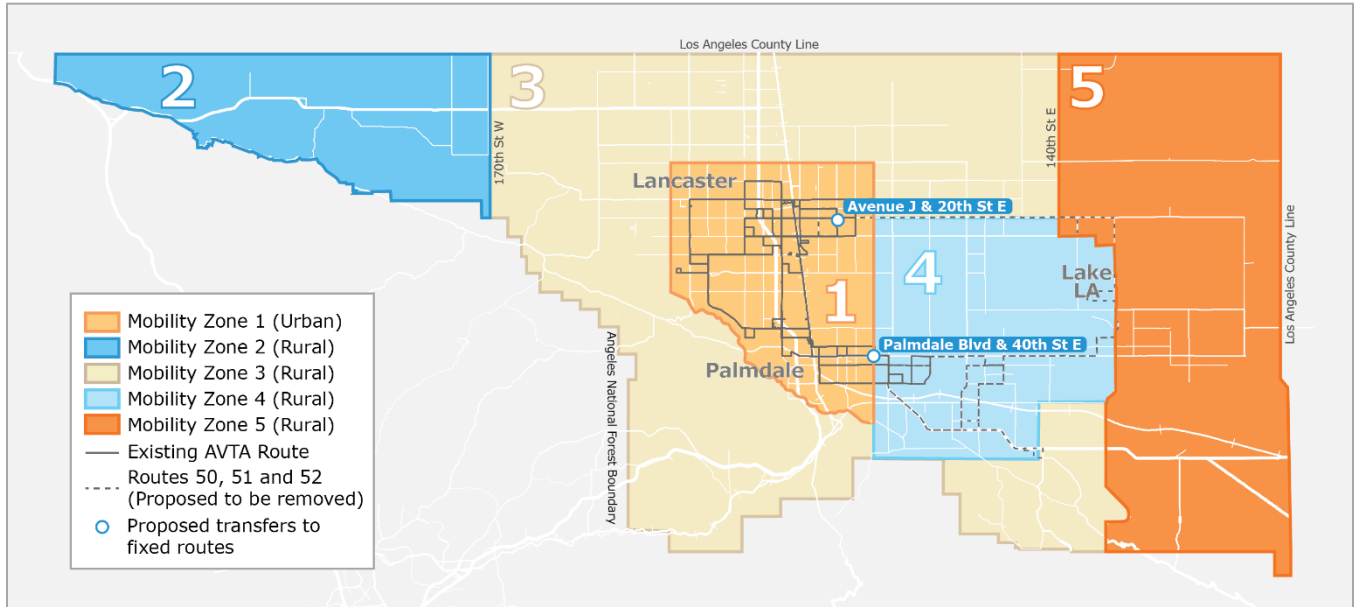


Figure 3: Concept map including a proposed Urban and Rural Mobility Zones

The intent of the rebranding is to indicate that the service is new and improved compared to the legacy DAR program. Initial cost estimates of on-request services, which include service substitution for routes 50-52, DAR, NMET, and late-night service hover around ~\$2.6 annually.

Commuter Services

It's clear that while AVTA's commuter services have shed ridership in recent years, the commuter routes provide important connections to job markets in the region that are oftentimes not well-connected by other transit services. However, our analyses reveal that beyond decreasing ridership, many of the trips on most routes are typically operating with loads of less than 50% occupancy. We recommend the following route-level changes, which are expanded upon in the body of the report:

- **Route 785 – Los Angeles**
 - Realign the route to terminate at the LA Metro North Hollywood Red Line station, so that customers can transfer to the subway which provides a quick travel time to downtown (about 25 minutes travel time to Union Station), as well as offer other connections to the Orange Line and destinations in the San Fernando Valley.
 - With the realignment, AVTA will need to redesign the schedule and should provide earlier departures and eliminate two of the final runs for morning and afternoon services, resulting in 14 total runs rather than 18. AVTA will also need to reduce fares to reflect the shorter distance and the need for customers to transfer. Even though travel time will likely be shorter and more reliable, it may be perceived as less convenient. Providing

information to longtime riders highlighting the benefits of shorter travel times and increased reliability of arrival times may also be an important component to ensure no riders are lost when transitioning services. This is an important consideration for 786 recommendations as well.

- **Route 786 – Century City/West Los Angeles**

- Route 786's multiple variants can be confusing to customers as well as reduce the number of available travel times to certain destinations. AVTA should simplify the alignment to service Westwood and terminate at Santa Monica Blvd. and Wilshire Blvd., and no longer provide the variant beginning at Santa Monica Blvd. and La Brea Ave.; more passenger activity is seen in Westwood and Century City than east of Century City, and both the morning and afternoon runs of the Santa Monica and La Brea variant see median occupancies below 50%. The new terminus at Santa Monica Blvd. and Wilshire Blvd. offer connections to frequent LA Metro bus service along Wilshire Blvd. which remaining passengers can use to complete their trip.
- In addition to consistent routing, we propose eliminating one trip from the morning and afternoon service due to low passenger loads, which reduces the total daily trips from 5 to 4.
- Meetings with Santa Clarita Transit revealed that Santa Clarita is having difficulties accommodating the high demand between Santa Clarita and Century City with their commuter lines 792 and 797. AVTA should consider adding a stop to serve the Newhall station in Santa Clarita to accommodate these travelers.

- **Route 787 – West San Fernando Valley**

- As with Route 786, there is an opportunity for AVTA to provide an additional stop at the Newhall station in Santa Clarita to pick up commuters that could not be accommodated by Santa Clarita's current commuter services.
- AVTA should explore the demand for off-peak service to CSUN, as it is the largest trip generator along the route. Exploring the feasibility of serving other West San Fernando Valley destinations (such as the VA Medical Center in North Hills) or other transit connections (such as the LA Metro Orange Line or Ventura County Metrolink stations) in the area are other considerations. Due to low passenger activity, it is recommended to terminate service at the Warner Center.
- In addition to this alignment change, we propose eliminating two morning and afternoon trips due to low passenger loads, which reduces the total daily trips from 18 to 14.

- **TRANSPorter 790 – Metrolink Connections**

- Revise schedules for 790 to account for new Metrolink departure times and to improve on-time performance (currently approximately 70%). On-time performance should be at 85% since missing a train results in waits in the order of hours, not minutes. AVTA should also examine the feasibility of adding two runs during the day that currently do not have a bus bridge at the Newhall Station.

- Explore collaboration with Santa Clarita Transit. During stakeholder engagement, it became clear that opportunities exist to share ridership by having certain commuter routes stop through Santa Clarita, as mentioned above. AVTA should form a working group to define objectives and action items for collaboration.

Taken together, the proposed changes for commuter services aim at making better use of finite resources, while focusing on connections to other transit services over one-seat rides. In combination with alignment changes and fewer trips, we estimate that these recommendations can result in cost savings of ~\$1.2 million.

Supplemental Services

AVTA’s supplemental routes provide important service to and from local public high schools in different areas of the Antelope Valley. While these services are open to the general public, the main purpose of these routes is to transport students to school in the morning and return trips in the afternoon. Because these routes serve a specific purpose and are currently very productive, no route changes are recommended. However, there are opportunities to improve supplemental routes:

- **Adjust supplemental route schedules to accurately reflect school beginning and end times.** Current supplemental route schedules either do not accurately reflect bell times or do not give students enough time to reach the bus after the dismissal bell. Improving schedules can help increase ridership and improve rider satisfaction. Supplemental routes to and from school should not operate when school is not in session due to the low demand.
- **Partner with schools to create a reduced student fare to boost ridership on supplemental routes as well as encourage students to use the fixed route system for other purposes.** The student population is traditionally one of the largest potential markets for transit agencies. The launch of a reduced fare program presents an opportunity to launch an educational outreach and training campaign to student riders of supplemental routes regarding the importance of paying your fare, which can help reduce fare evasion.

Overall, the high-level costs of the proposed service are presented in Table 3 below. These estimates are based on assumptions that do not account for runcutting, interlining, and scheduling techniques that can optimize service hours, nor do they account for business rules that AVTA can implement to control costs for on-request services.

Table 3: Existing and Proposed Estimated Annual Service Costs

	Existing	Proposed (est.)	Difference
Local (excluding 50, 51, 52)	\$13,373,000	\$16,793,500	\$3,420,500
Dial-a-Ride	\$1,648,010	\$1,210,920	\$(437,090)
50, 51, 52	\$1,530,000	\$986,000	\$(544,000)
Commuters (785, 786, 787, 790)	\$4,134,590	\$2,944,130	\$(1,190,460)
747, 748	\$406,910	\$406,910	\$-
Late-night on-request	\$-	\$232,000	\$232,000
NEMT	\$-	\$130,500	\$130,500
Total	\$21,092,510	\$22,703,970	\$1,611,460

Improve the Customer Experience

- **Improve customer and community awareness of AVTA services.** Continue to leverage social media channels to not only improve awareness and marketing of AVTA, but also provide service information and other information related to riding the bus. AVTA should also improve materials by creating a new map with a clean, clear, and modern aesthetic that does away with the 3D perspective of the current map, as well as ensuring all materials are bilingual. The service changes recommended throughout the plan provide an opportunity for the new information to be improved and for AVTA to undergo a brand refresh.
- **Retrain operators.** Proactively work with AVTA's service contractor to develop operator training and retraining programs and hold service contractor responsible for insufficient performance.
- **Emergency or guaranteed ride home.** We recommend that AVTA explore implementing an emergency ride home service, which many peer agencies offer to customers who may need to return home for an emergency during the midday when commuter services are not operating. An initial step is to survey customers onboard AVTA services to determine home and work locations, interest in the emergency ride home and other pertinent information. AVTA should also inform customers about the Regional Guaranteed Ride Home (GRH) supported by Metro in Los Angeles County.
- **Improve bus stop amenities.** Establish a committee to develop bus stop guidelines and an improvement plan and install new bus shelters, benches, and other amenities as outlined in the improvement plan
- **Collaborate with officials and the community to implement transit-supportive design and development.** Establish a working group of staff from municipalities, community organizations, and AVTA to develop transit-supportive guidelines and implement/monitor developments and their transit supportiveness. These guidelines, in conjunction with transit service guidelines should provide a workable framework for developments and land uses in the Antelope Valley that are supportive of transit ridership, including provisions for pedestrian infrastructure, set-backs, parking guidelines and so on.

Build and Support an Inclusive, Multimodal Network

- **Improve sidewalk and bicycle access to AVTA services.** AVTA should establish a pedestrian and cyclist access working group and action plan. This group should include staff from municipal departments as well as advocacy groups. The group should develop an action plan detailing critical steps for improving pedestrian paths and cycling access to transit.
- **Improve the universal accessibility of AVTA infrastructure.** Working together with the accessibility advisory group and local officials, AVTA needs to develop an action plan for improving the universal (ADA) accessibility of its infrastructure. While AVTA has taken the initiative to improve stop accessibility by ensuring new stops have shelters, benches and meet universal accessibility standards, not all stops are fully compliant with ADA standards, particularly legacy stops that have not been recently upgraded. Steps could also be taken to improve information at stops for people who are blind or have low vision, in addition to providing bilingual

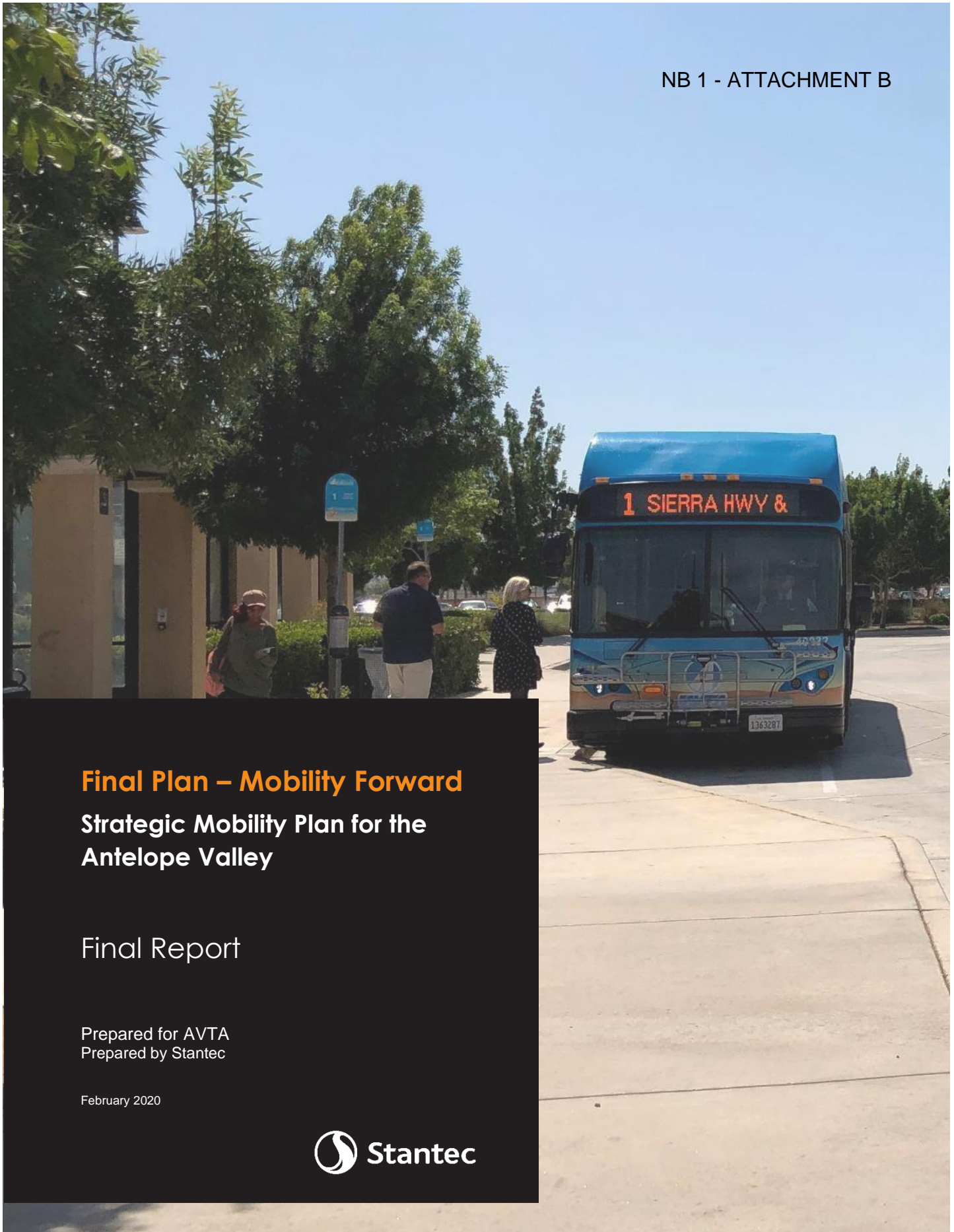
information at AVTA's stops and stations. AVTA should assess the level of accessibility of its bus stops, identify low-hanging fruit, and prioritize investments based on stop usage.

- **Support car-sharing schemes and other modes in the Antelope Valley.** AVTA should do more to promote and foster multimobility in the Antelope Valley, support active transportation and help reduce reliance on SOV. As a leader in zero-emission technology, AVTA could look to explore other GHG-reducing initiatives, such as carpooling, vanpooling, volunteer transportation programs, ridesharing and carsharing. AVTA should also provide priority parking for electric and hybrid vehicles at its main terminals.
- **Develop a marketing plan and implement a brand refresh.** AVTA should develop a marketing plan that includes messaging and strategies for a variety of audiences including customers and non-riders. In addition, the plan should detail strategies for educating and obtaining feedback throughout the implementation of this strategic mobility plan. AVTA should also launch a brand refresh study and engage with the community to evaluate ideas and concepts for a different brand. Branding can also extend to the frequent network and bus stops and new AVTA On-Request, Shared Mobility Service.
- **Develop and internal communication strategy.** AVTA should organize internal working meetings where this plan is presented and discussed and establish an advisory group of internal champions of this plan from across AVTA departments. AVTA should implement and monitor the actions of this plan and develop a detailed funding action plan that builds upon the funding opportunities outlined in this report.

Phasing, Funding and Actions

To implement the action items and recommendations detailed above, a phased approach is proposed and detailed in the table below. The phasing plan recommends implementation over a five-year period and identifies potential funding opportunities and parties responsible for implementation. Action items are broken down into the three major goals our recommendations are built on: enhance AVTA's core services, improve the customer experience, and build and support an inclusive, multimodal network.

	Action	Year 1	Year 2	Year 3	Year 4	Year 5	Potential Funding	Responsible Actor(s)	
Goal 1 - Enhance AVTA's core services - transit network and mobility services									
	Fixed-route								
	1	Layers and network design	Refine network and route concepts and launch new local network (launch in 2020)					5307; CMAQ; Measure R; Props A and C	AVTA
	2	Improve schedules	Redevelop schedules to more accurately reflect on-street operating conditions	Expand street supervision to monitor reliability				5307; CMAQ; Measure R; Props A and C	AVTA; Transdev
	3	Explore transit-dedicated infrastructure	Establish working group for studying transit-dedicated infrastructure	Pilot peak hour reserved lanes on Palmdale Blvd. Pilot peak hour reserved lanes on Ave. J	Pilot peak hour reserved lanes on 10th St.			5307; CMAQ; Measure R; Props A and C; SB-1; BUILD	AVTA; City of Lancaster; City of Palmdale; Los Angeles County
	DAR								
	4	Launch on-request service	Implement on-request shared mobility services	Monitor and adjust services as program evolves				5310 (already procured for NEMT); CMAQ; 5312; Integrated Mobility Innovation	AVTA; Transdev; other party(s)
	5	Rationalize service area and eligibility	Study whether service area requires reduction and if eligibility should be modified	Modify service area and eligibility as necessary					AVTA; community partners
	6	Expand travel training	Refocus program on travel training DAR customers and new fixed-route customers					5310	AVTA; community partners
	7	Explore volunteer transportation programs		Establish working group to examine volunteer transportation programs and non-transit services				5310	AVTA; LA Metro; community partners
	8	Establish accessibility advisory committee	Develop framework for establishing advisory committee on accessibility & establish committee						AVTA; community partners
	Commuter								
	9	Redesign routes	Refine network and route concepts and launch new local network						AVTA
	10	Improve schedules	Redevelop schedules to more accurately reflect on-street operating conditions						AVTA; Transdev
11	Explore collaboration with Santa Clarita	Work with SC Transit to understand opportunities to minimize duplication and best use resources					TIRCP; Props A and C; Measure R	AVTA; Santa Clarita Transit	
Fare policy									
12	Launch a fare study	Implement short-term changes to fares and fare policy	Launch study to rationalize fares due to route and service changes					AVTA	
13	Expand student fares to all students in the AV	Create new fare category for any enrolled-student to obtain a discounted fare					AVAQMD	AVTA; AVUSD; University of Antelope Valley; other schools	
Goal 2 - Improve the customer experience									
	14	Improve customer and community awareness of AVTA services	Work with local groups to understand disability needs for information. Ensure all marketing and informational material is bilingual and up-to-date.	Implement new community outreach program to inform about AVTA at different locations across AV	Work with accessible advisory group to develop accessible information			AVTA; community partners	
	15	Retrain operators		Retrain operators for customer service and safe operations				AVTA; Transdev	
	16	Leverage Metro's Guaranteed Ride Home program and educate customers	Dedicate a customer rep to working with employers and employees to educate about GRH	Hold internal working meetings to track plan implementation and success			Measure R and M; Props A and C	AVTA; LA Metro; employers	
	17	Improve bus stop amenities	Establish committee to develop bus stop guidelines & an improvement plan	Install new bus shelters and benches			5307; CMAQ; Measure R; Props A and C; SB-1; BUILD	AVTA; City of Lancaster; City of Palmdale; Los Angeles County	
	18	Collaborate with officials and community to implement transit supportive design and development	Establish working group of staff from cities, community organizations and AVTA to develop transit-supportive guidelines	Implement and monitor developments and their transit-supportiveness			Measure M; Sustainable Communities Program (SCAG)	AVTA; City of Lancaster; City of Palmdale; Los Angeles County	
Goal 3 - Build and support an inclusive, multimodal network									
	19	Improve sidewalk and bicycle access to AVTA services	Establish pedestrian and cyclist access working group & action plan	Implement pedestrian and cyclist access and integration program			Measure M; Sustainable Communities Program (SCAG)	AVTA; City of Lancaster; City of Palmdale; Los Angeles County	
	20	Improve the accessibility of AVTA infrastructure	Work with accessibility advisory committee and local officials to prioritize accessibility improvements				Measure M; Sustainable Communities Program (SCAG)	AVTA; City of Lancaster; City of Palmdale; Los Angeles County	
	21	Support a car-sharing scheme in the AV	Study potential for car-sharing schemes centered at multimodal hubs				Measure M; 5312	AVTA; LA Metro; car-sharing companies	
	22	Develop a marketing plan and implement a brand refresh	Develop marketing plan to provide public outreach for the plan	Launch a brand refresh study	Implement brand refresh			AVTA	
	23	Develop an internal communication strategy	Establish internal advisory group to support implementation of this plan & identify funding priorities	Implement and monitor the actions of this plan & develop a funding action plan				AVTA	



Final Plan – Mobility Forward
Strategic Mobility Plan for the
Antelope Valley

Final Report

Prepared for AVTA
Prepared by Stantec

February 2020





Task 6 – Final Plan

Strategic Mobility Plan for the Antelope Valley

February 20, 2020

Prepared for:

Antelope Valley Transit Authority

Prepared by:

**Transit Advisory Services,
Stantec Consulting Services Inc.**

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Abbreviations

AFB	Air Force Base
ADA	Americans with Disabilities Act
AV	Antelope Valley
AVTA	Antelope Valley Transit Authority
DAR	Dial-a-ride
GRH	Guaranteed Ride Home
HQTA	High-Quality Transit Area
NEMT	Non-emergency medical transportation
SCAG	Southern California Association of Governments
SOV	Single occupancy vehicle
TOD	Transit-Oriented Development
VMT	Vehicle miles traveled

EXECUTIVE SUMMARY

AVTA provides public transportation services to the Antelope Valley, a sprawling area of nearly 400,000 residents. AVTA operates fixed-route services, regional commuter services, and dial-a-ride (DAR) services for seniors, persons with a disability and residents in the rural areas of Antelope Valley. Despite providing more transit service in recent years, AVTA, like most peers in Southern California and throughout the nation, has been experiencing declining ridership.

The challenge for AVTA is to reorganize its service to better deliver journeys in the Antelope Valley that do not involve single-occupancy vehicles—as such, **we propose that AVTA strengthen its core services and focus on where ridership is strongest while exploring different service delivery models in areas where ridership is the lowest.**

The goal of this mobility plan is to ensure that the types, levels, and quality of the transportation services provided by AVTA can maintain the loyalty of existing riders, connect those in need of vital healthcare services, and are an attractive alternative to using a car for non-riders. Table 1 illustrates the service concepts and strategies that we are proposing in order to meet the objectives of the plan, which were developed throughout the first five tasks of this study.

Table 1: Service concepts and plan objectives.

Service concepts and strategies	Service layers	Transit infrastructure (hubs, stops, etc.) and universal accessibility	Alternative service delivery (microtransit and on-request)	Revised schedules	Operator training	Emergency ride home (and car/vanpooling)	Travel training	Fare policy	Transit-first developments	Information and outreach (bilingual and accessible)	Collaborations and partnerships
Objectives											
Faster service											
More frequent service											
Shorter walks											
More reliable service											
Better integration of land use and transportation											
Better customer experience											
Better bus stop access or access to transit											
Better regional connectivity											
Better access to destinations (jobs, healthcare, etc.)											
More inclusive ridership base											
Safer and more secure											
More cost-effective service											

What We've Seen

Through a review of important documents that have shaped and will continue to shape the Antelope Valley, along with a review of current service performance and transit markets, the following major themes were identified:

- The more urbanized areas of the Antelope Valley (Lancaster and Palmdale) have long-term objectives of transit-oriented development and are supportive of land use and development decisions that encourage transit use and help to reduce VMT. However, the current state of the Antelope Valley is dispersed, low-density development in a large service area that makes it difficult to provide productive, frequent transit services.
- SCAG's 2016-2040 RTP/SCS outlines plans that encourage integrated land use and transportation strategies that create complete communities and transit-oriented development. In particular, the RTP/SCS identifies a High-Quality Transit Area (HQTA) corridor running along 10th St. W, Sierra Hwy, and Avenue S between Lancaster and Palmdale (currently served by AVTA's Routes 1 and 3).
- The relatively greater population and employment densities of Lancaster and Palmdale better support fixed-route transit compared to the rural areas of Lake LA and unincorporated communities including Quartz Hill, Littlerock, and Pearblossom.
- It is critical to provide transportation services to the disadvantaged communities of the Antelope Valley, including minority populations, low-income residents, car-free households, and seniors.

What We've Heard

Throughout the stakeholder engagement process, common themes emerged that were largely in line with findings uncovered through our analysis of existing conditions, as well as new service issues and opportunities for improvement. Major themes uncovered through stakeholder engagement are summarized below.

- AVTA's current riders are largely dependent riders with no other means of transportation, meaning that many riders are reliant on AVTA as their main source of transportation and AVTA is providing a lifeline service to these individuals. However, among non-riders and the general Antelope Valley community, there is an overall lack of awareness and knowledge about AVTA. While AVTA is actively working to become more visible, it will take time, effort and resources to become easily recognizable in the community.
- Feedback from riders suggests major service issues with operator behavior and attitude, overall quality of service (reliability and convenience), a lack of bus shelters and bus stop amenities, battery electric bus 'growing pains' that are affecting rider experience, and a lack of adequate pedestrian infrastructure. Moreover, many long-time riders expressed the opinion that service quality has declined in recent years despite the agency adding more revenue service hours.
- Commuters feel that commuter service is not a competitive alternative when compared with other options such as Metrolink or personal vehicle use, and new pilot commuter services to Edwards Air Force Base and Mojave Air and Space Port have not materialized into high-ridership routes.
- Municipal stakeholders stressed that the Antelope Valley has long-term goals of smart growth, sustainable development, and creating transit-oriented development along major corridors. While these

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are goals that will materialize only in the long-term, it is imperative for AVTA to proactively work with Antelope Valley cities and the county to integrate land use and transportation planning decisions to see these goals become a reality.

- Survey results revealed most rider respondents use AVTA frequently (at least five days a week) and have been using the service for a long time (more than three years). While results were mixed, there was consensus that riders tend to value coverage over frequency due to the dispersed, spread-out development patterns seen in the service area.
- While survey results show 67% of non-riders and 82% of riders have a positive impression of transit services in the Antelope Valley, overall, people who have a transportation alternative do not view AVTA as an attractive or convenient alternative to private vehicle use. Long wait times, a lack of pedestrian infrastructure and bus shelter amenities, and long travel times were frequently cited by non-riders as reasons for not riding AVTA.

What's Needed

We then synthesized all the information gathered to identify needs regarding transit and mobility that may be preventing AVTA from providing attractive and effective transit service, while acknowledging the barriers and challenges to providing this in an area like the Antelope Valley. The following gaps and needs were identified:

- AVTA's services have not changed to accommodate new developments and destinations where riders want service to, and bus stops are disproportionately located in rural areas with low ridership that would be better served through an alternative delivery strategy, such as microtransit or an on-request, shared-ride mobility service.
- Better active transportation and pedestrian infrastructure are needed throughout much of the Antelope Valley to make transit stops more accessible, and to make it easier to reach final destinations after alighting, especially for those individuals requiring mobility devices. A robust multimodal network with active transportation and pedestrian amenities would contribute to the overall appeal and accessibility of transit in the Antelope Valley.
- AVTA's commuter services are duplicative of existing LA Metro services that operate on dedicated rights-of-way. Terminating AVTA's commuter services at higher-order LA Metro transit services (such as the Red Line and Orange Line) will help to improve the efficiency, reliability, and productivity of commuter services, as well as open up transfer opportunities to new destinations (such as Burbank, where many Antelope Valley residents are employed).
- Other needs identified that can potentially improve AVTA's services include schedule changes to match school bell times, paired with fare concessions for students to increase ridership on supplemental routes. AVTA should also take steps, including robust travel training, to accommodate DAR passengers in the Urban Zone on redesigned, accessible conventional routes.
- Again, land use and development decisions were highlighted as a major factor affecting the quality and service of AVTA routes. Because the Antelope Valley is expected to see tremendous growth in the coming decades, it is imperative that AVTA establish a meaningful, working relationship with local officials and developers to ensure new developments are planned with a "transit first" mindset.

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- Recommendations were based on the objectives of faster service, more frequent service, shorter traversing opportunities, more reliable service, growing ridership, better integration of land use and transportation, better customer experience, better access to stops and destinations, better regional connectivity, a more inclusive ridership base, more cost-effective service, and enhanced safety and security.
- Performance measures were developed based on AVTA's mission statement of empowering mobility: Getting People Where They Need to Be Safely, Timely, and Cost-Effectively. Recommended performance measures are in line with industry state of the practice, build upon existing performance measures reposted at monthly board meetings, and are broken down into three major categories of *Safely, Timely, and Cost-Effectively*.

Action Plan Overview

The recommendations and strategies support the following three main goals of the strategic mobility plan:

1. **Enhance AVTA's core services—Improve the transit network and mobility services.** The recommendations are divided by service category and rely on the fact that services should complement each other, and resources should be deployed prudently and reflect actual demand.
2. **Improve the customer experience.** Building customer satisfaction has been demonstrated to retain riders, expand the ridership base, and get people to use transit more often. This strategy involves improving communications and customer information for better trip planning and improving customer amenities at bus stops.
3. **Build and support an inclusive, multimodal network.** Transit can't do it all—AVTA needs to offer and cooperate with different transportation modes, particularly walking and cycling. Working with elected officials and advocates from across the Antelope Valley will be crucial for ensuring that the community develops in a manner that supports transit use and offers balance for mobility options.

Enhance AVTA's Core Services

Recommendations are provided for the following categories of AVTA's core services:

- **Local services:** Fixed-route transit service that provides relatively short-distance trips in and between the cities of Palmdale and Lancaster. The local service offering is divided into layers—frequent, local, and community—which dictate the service frequency and span.
- **On-request microtransit and dial-a-ride:** All services that require riders to book trips in advance, accessible transit (currently dial-a-ride) for seniors or riders with a disability, on-request microtransit service substitution for existing fixed routes (50, 51, and 52), on-request transit in rural areas lacking fixed route transit, late-night on-request service, and non-emergency medical transportation (NEMT). AVTA is currently in the process of starting up its new On-Request Shared Mobility service.
- **Commuter services:** Longer distance fixed-route transit that connects riders from the AV to regional employment areas. Commuter services typically include long segments of non-stop service, such as on freeways, to move people quickly across long distances.

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- **Supplemental services:** Routes that carry riders who share a common destination, such as an employment center or school. Schedules are coordinated with school or work start and end times, typically providing one or two trips in the morning and one or two trips in the afternoon.

Local Services

Agencies use service layer types or tiers to help prioritize and allocate resources across a transit system in order to serve many purposes and populations. They establish service standards which act as a communication tool to stakeholders of the parameters and criteria that define each layer and how/where they are to be used, including triggers for change. Each layer of service—frequent, local, and community—has route-level recommendations that are in line with the goals and targets of the layer. The layers and associate route-level changes are described below.

- **Frequent layer**
 - This layer aims to move towards an ultimate service frequency of 15 minutes all day but may operate at this higher frequency for the majority of the day (e.g. 6AM to 6PM) or during peak periods only. Frequent services are typically deployed along major corridors with mixed-use development and density of key destinations and transit trip generators.
 - Route 1 and Route 12 are proposed to form the frequent layer of service, providing 15-minute headways (or better) for the majority of the weekday and 30-minute headways on Saturday. AVTA should monitor the success of 30-minute service on Saturdays before Sundays are considered for more frequent service.
 - The alignment of Route 1 is proposed to stay the same, and only a minor change is suggested for Route 12. We recommend that Route 12 stays on Avenue J instead of detouring into Valley Central Shopping Center in order to create a straight, east-west corridor for frequent service in Lancaster.
- **Local layer**
 - Local transit operates along corridors where there is a high level of usage but the density (both jobs and people) is not sufficient to warrant a frequent level of service. The goal of this service is to offer 30-minute service throughout the day. The goal of all local routes is to operate on a clockface headway, but there may be some exceptions depending on the length of routes and the cost of maintaining the discipline of such a schedule. Local routes also bring people to frequent corridors and mobility hubs to promote transfers.
 - Routes 2, 3, 4, 6, and 11 compose the local layer in the proposed network. Each route will operate at 30-minute service on weekdays and feed into the frequent network at key transfer locations such as Palmdale Transportation Center and Sgt. Steve Owen Memorial Park.
 - We proposed terminating Route 11 at Valley Central Shopping Center, where Route 12 will no longer operate. The goal of Route 11 is to provide strong east-west service on Avenue I to help AVTA develop a grid of north-south and east-west routes that increases the number of route options riders have. Importantly, Route 11 will be supported operationally by new on-route charging infrastructure slated for Sierra Hwy just north of Lancaster Blvd.

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- Two new routes, Routes 4 and 6, are proposed to operate in Lancaster to provide greater access to key destinations and facilitate north-south travel. These routes will be interlined to operate as a bi-directional loop but will be marketed as separate routes since the directionality of loops can be confusing for riders to understand. This 30-minute service is an important piece in improving access to medical centers as well as other community destinations, directly from key transfer locations such as Sgt. Steve Owen Memorial Park and Lancaster Metrolink Station.
- **Community Layer**
 - Community service is primarily designed to provide access within residential areas and provide coverage to lower-density communities. This service connects to the local and frequent transit networks to provide transit access to the entire community. The goal of this service is to operate every 60 minutes on weekdays. Community routes that fall below 10 boardings per revenue hour should be investigated to be replaced with on-request microtransit solutions.
 - The proposed community layer includes Routes 5, 7 and 9, which will operate at no worse than 60-minute headways on weekdays or on the weekend. Operating at worse than 60-minute headways means that riders do not have the flexibility to travel where they want, when they want to. Some of AVTA's routes currently operate every 90-120 minutes, which means that passengers must plan their day around the transit schedule. If it is not financially viable for a route operate at 60-minute headways, we recommend that those routes be considered for service substitution via on-request microtransit.
- **Route 747 – Edwards AFB and Route 748 – Mojave**
 - As services to Edwards AFB and Mojave are still new, it is important to continue to monitor ridership. If ridership does not grow, it is recommended to eliminate these routes and instead redeploy these resources on key services. Strategies for reducing single-occupancy vehicle use for commuters traveling to and from these destinations should continue to be explored, such as through partnering with Edwards AFB and Mojave to advertise and expand the use of carpooling and vanpooling services.
 - Implementing an emergency ride home program could help to assuage worries that those using the commuter services will be “stranded” or will not have any alternative ways to get home in the case of an emergency. This could be implemented using an existing emergency ride home service (such as the Regional Guaranteed Ride Home Program) or potentially implemented using forthcoming on-request infrastructure and resources.
- **On-request layer**
 - On-request transit typically operates as curb-to-curb or stop-to-stop service, where customers request rides as needed instead of following a fixed schedule. Routes are created dynamically and can fluctuate throughout the day. On-request transit solutions are nowadays implemented using app-based technology that allows riders to request rides using a smartphone or computer and are commonly deployed in low-density areas that do not have enough demand to support fixed-route transit. Rides can also be booked, traditionally, by calling a booking center as well.

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- Routes 50, 51 and 52 are proposed to operate only on-request. The public had previously expressed concerns about these routes, indicating that if they miss their bus, they have no alternative but to wait 90-120 minutes for the next bus. In some cases, this has impacted their employment due to late arrivals at work or resulted in missed medical appointments.
- The substitution of these routes with on-request microtransit will be offered through a shared-ride delivery service that includes late-night, NEMT, and accessible transit services (currently dial-a-ride). More details about the proposed on-request microtransit and dial-a-ride services are provided in the next section.

Figure 1 illustrates the proposed local transit network, which has been adjusted to meet unmet transit needs identified in previous tasks (note, Routes 747 and 748 are not presented on this map). This network aims to provide simplified transit service along key corridors where the greatest demand for transit was observed. For example, providing stronger east-west local transit routes to facilitate short local trips in Lancaster was achieved by increasing the frequency of service along Avenue J (Route 12), providing continuous service on Avenue K (Route 5), and maintaining a local service along Avenue I (Route 11). The redesigned network also provides greater transfer opportunities by feeding local and community routes into major transfer centers including Sgt. Steve Owen and Palmdale Transportation Center or facilitating on-street transfer opportunities at major intersections.

Figure 2 shows the network and the routes colored by layer of transit service.

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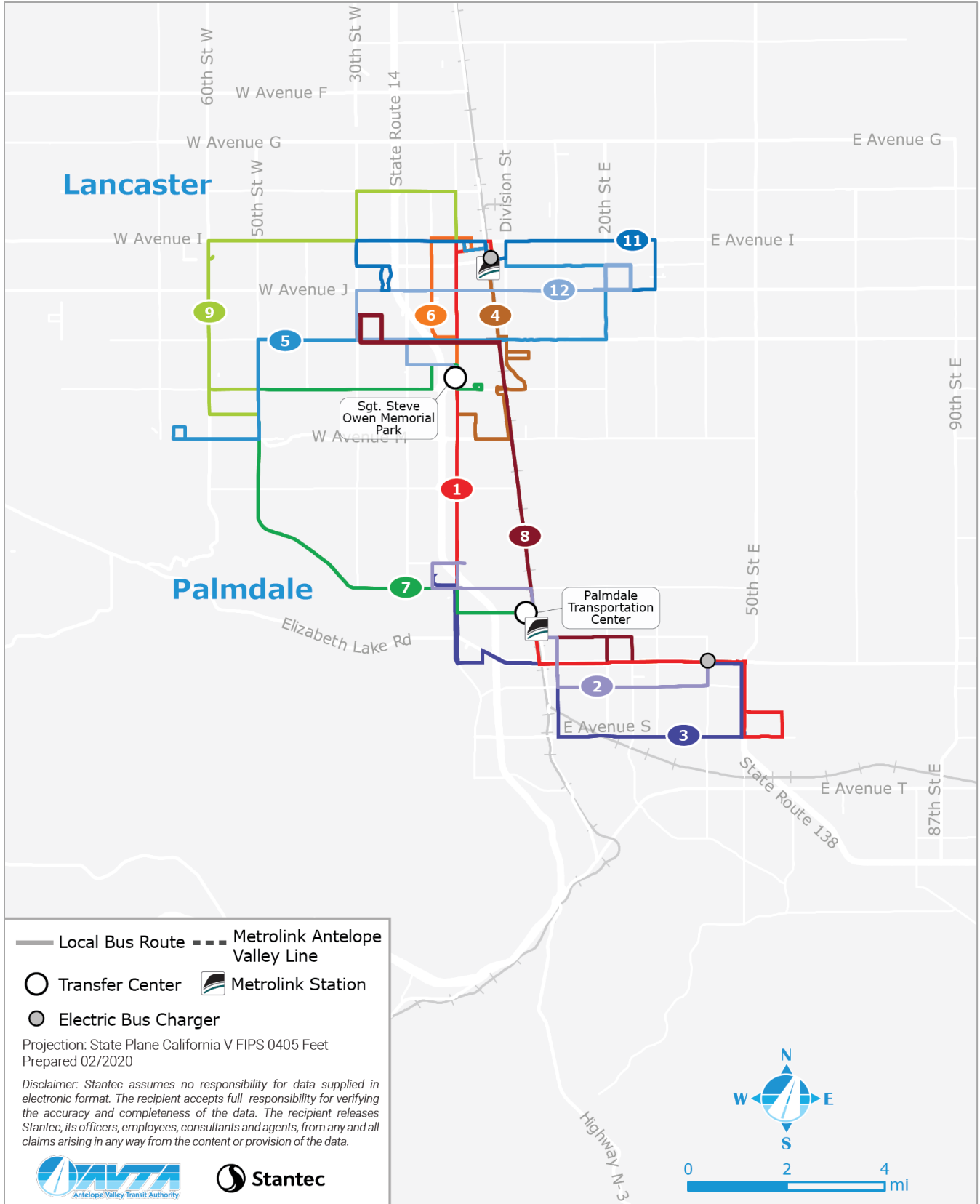


Figure 1: Proposed local transit network

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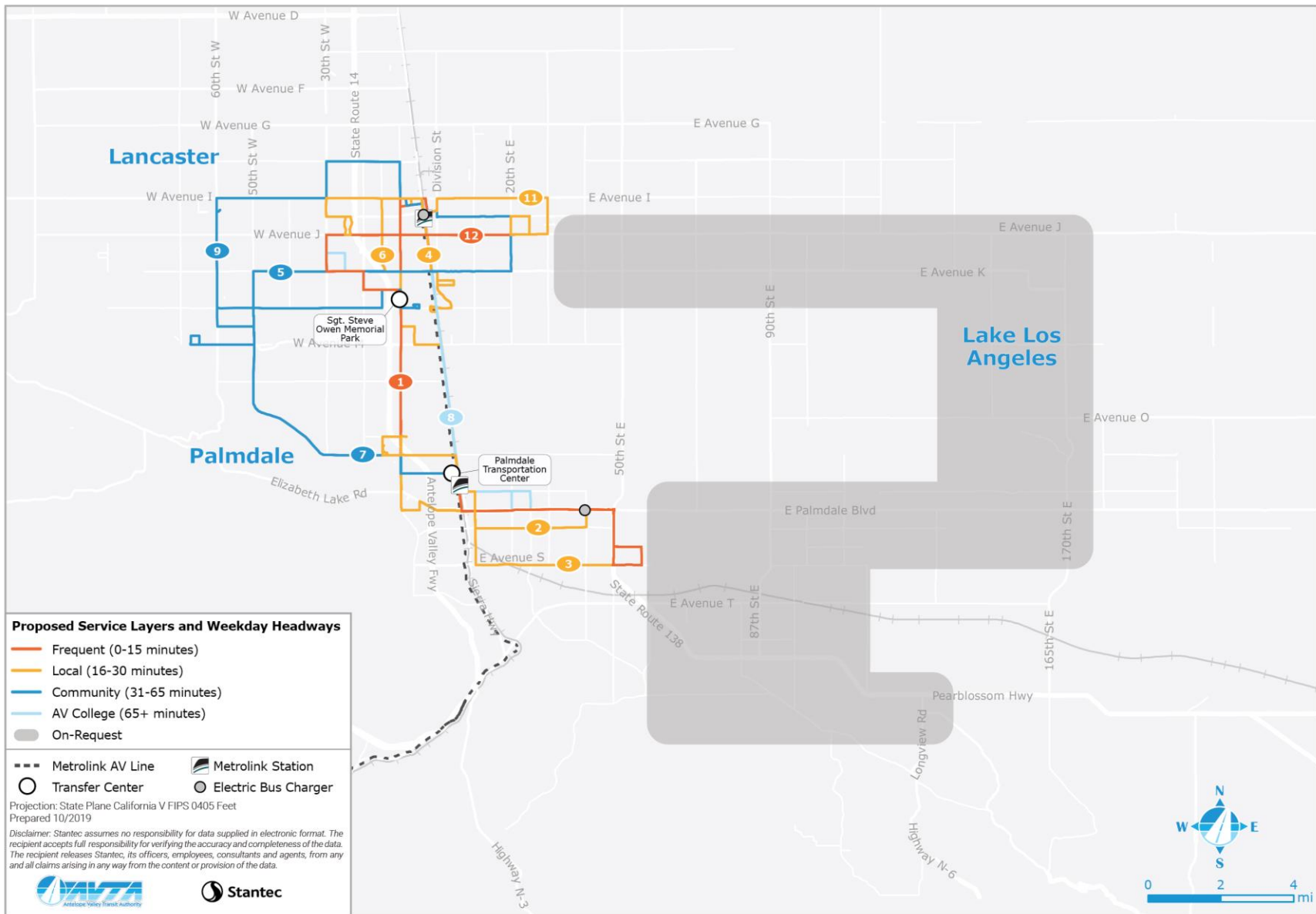


Figure 2: Proposed local service layers and weekday headways

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Of course, increasing the frequency on multiple routes in the proposed network will result in greater operating costs. It is anticipated that the changes proposed above will result in an increase in operating costs of approximately \$1.9 million, not including on-request service delivery—service hours will remain unchanged for 747 and 748, with minor changes for supplemental school routes. The increase in operating costs is largely due to the increase in frequency on routes such as Route 12 (from 30 minutes to 15 minutes on weekdays), Route 9 (to 60 minutes on weekdays and weekends) and Route 5 (extended alignment). The cost estimates presented below were developed using Remix’s transit planning software and represent high-level estimates based on an average cost of \$90 per revenue hour and assuming average speeds comparable to today’s routes to estimate revenue hours. Efficiencies may be found once AVTA develops their vehicle and crew schedules, including interlining routes where appropriate and developing schedules that reflect actual operating conditions.

Forecasted costs for local services are expected to grow by ~13%, while ridership is estimated, conservatively, to grow by ~15-20%. Additional outreach, marketing, and travel training would help boost these ridership numbers, also acknowledging the fact that, as some other agencies have experienced, a large-scale overnight network change may decrease ridership in the short-term as riders learn to use the new network and more riders are attracted. AVTA needs to make the transition as painless as possible with communication and trip planning assistance.

Table 2: Existing and Proposed Annual Service Hours and Cost (Local Service)

	Local service¹
Existing Hours (est.)	165,600
Proposed Hours	186,620
Difference	21,020
Existing Ridership (est.)	2,075,500
Forecasted Ridership	2,420,600
Difference	345,100
Existing Operating Costs	\$14,903,000
Forecasted Operating Costs	\$16,793,500
Difference	\$1,890,500
Existing Farebox Recovery (est.)	17%
Forecasted Farebox Recovery	18%

These changes in the local network are expected to be accommodated within the existing conventional transit fleet, with potentially a need for 2-4 additional vehicles during peak service. The number of vehicles required will be confirmed as more detailed route schedules are cut.

The investment into improved transit service is expected to result in ridership increases that can recover some of service delivery costs. Removing routes such as Route 50, 51, and 52 (approximately 17,000 annual revenue hours) that have a high cost per boarding can result in a more efficient and cost-effective local transit system.

¹ Does not include Routes 747 and 748, which would be unchanged (estimated annual cost of \$406,900), but includes the elimination of Routes 50, 51, and 52 in the proposed service. Does not include estimates for on-request services. Farebox recovery includes only estimated farebox revenue.

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Changes to the commuter network, such as terminating Route 785 at North Hollywood Station and eliminating later commuter runs, can also help to offset the cost to provide local service.

On-Request Microtransit and Dial-a-Ride

Several opportunities exist within AVTA's service area for a new, flexible, dynamic, and innovative way(s) to provide transportation services, particularly in areas of Antelope Valley like Lake Los Angeles with low population densities that are difficult to serve with conventional fixed transit. As described in the section above, routes such as 50, 51 and 52 are unproductive due to low-density development. We recommend substituting these unproductive fixed-route services with on-request transit given the prevalence of on-request technology. With the current DAR contract up for renewal at the end of the year, we recommend that a new on-request, shared mobility service be combined with the DAR program into one on-request service for optimal effectiveness and efficiency.

We propose the following the following services to be included in the on-request program:

- **On-request, shared-ride service for DAR-eligible customers.** Transition the current DAR system into an 'on-request' system, merging the on-request service delivery (service substitution for Routes 50, 51 and 52) into a service whereby customers can request a journey through a mobile phone app or by calling a phone number. DAR-eligible customers (seniors and persons with a disability who are unable to take conventional transit) will still qualify for door-to-door accessible transit in any zone (Urban Zone or Rural Zones 1-3).
- **On-request curb-to-curb or home-to-hub service in rural areas lacking fixed-route transit.** For customers living in existing DAR Rural Zone 1 or 2 who do not have access to fixed-route transit, on-request service will be provided to the nearest transit hub or will be delivered curb-to-curb below a certain distance. Rural Zone 4 will be added as service substitution for Routes 50, 51, and 52, which will also operate as curb-to-curb or home-to-hub for non-DAR eligible customers.
- **On-request, late-night service substitution.** Use of on-request transit services to replace conventional fixed routes in evening hours. Primarily app-based, but in the case of AVTA, call center services are envisioned to complement the app since not all customers have access to smart phones. Route 1 and Route 12 will continue to operate until midnight, while other local and community routes will be substituted with on-request service for short local trips or to feed customers into Route 1 and 12 after 10PM on weekdays, and potentially, after 8PM on Saturdays and 7PM on Sundays. This service is a low-cost way of extending the service span to midnight across the entire system. Riders could have the option of being connected with the fixed route which AVTA would pay for, or for an additional fee, have the on-request provider drive them their entire journey which they would then pay the difference.
- **On-request non-emergency medical transportation.** AVTA has secured a grant to provide non-medical emergency transportation (NEMT) as a pilot and will be bundled within the future on-request, shared mobility project. The NEMT service will allow riders and caregivers to book rides in advance of appointments as well as on-request. Riders will also be able to request recurring trips for repeating appointments, such as weekly or monthly appointments. This NEMT pilot will provide mobility as a "last resort" to individuals without any other funding coverage for service (Private Insurance, Medicaid, etc.) and does not intend to compete with other NEMT providers in the AV.

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Stantec suggests rebranding the existing zones of the DAR program into AVTA Mobility Zones according to the map shown below:

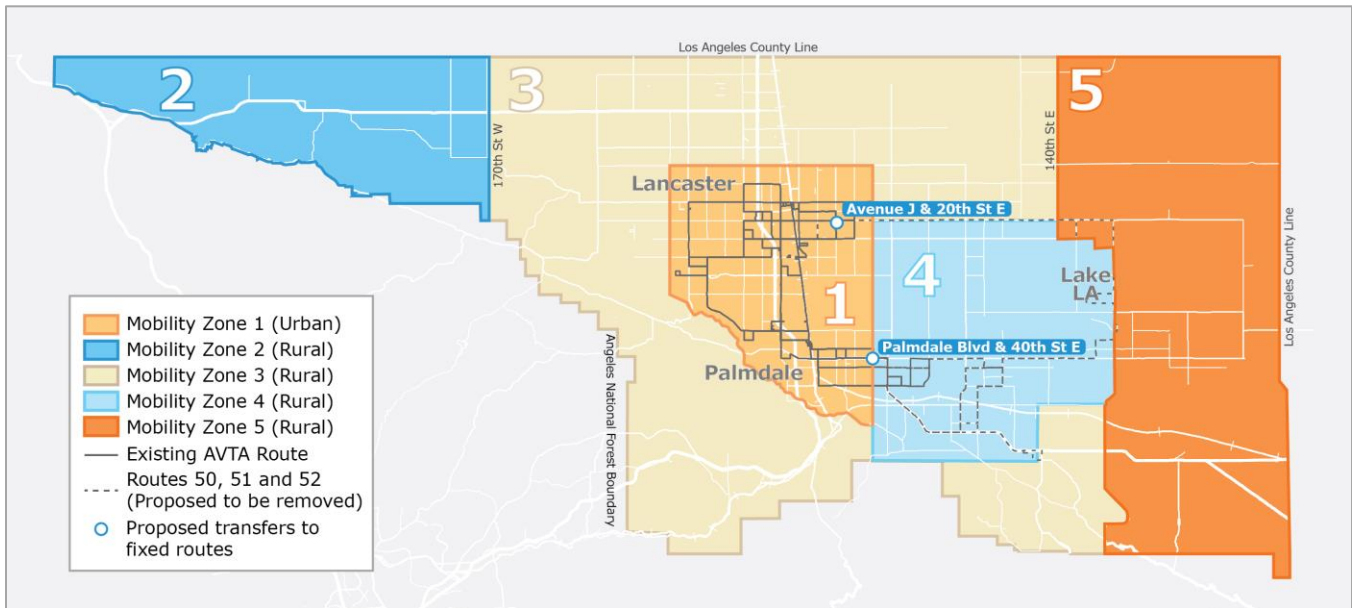


Figure 3: Concept map including a proposed Urban and Rural Mobility Zones

The intent of the rebranding is to indicate that the service is new and improved compared to the legacy DAR program. Initial cost estimates of on-request services, which include service substitution for routes 50-52, DAR, NMET, and late-night service hover around ~\$2.6 annually.

Commuter Services

It's clear that while AVTA's commuter services have shed ridership in recent years, the commuter routes provide important connections to job markets in the region that are oftentimes not well-connected by other transit services. However, our analyses reveal that beyond decreasing ridership, many of the trips on most routes are typically operating with loads of less than 50% occupancy. We recommend the following route-level changes, which are expanded upon in the body of the report:

- **Route 785 – Los Angeles**
 - Realign the route to terminate at the LA Metro North Hollywood Red Line station, so that customers can transfer to the subway which provides a quick travel time to downtown (about 25 minutes travel time to Union Station), as well as offer other connections to the Orange Line and destinations in the San Fernando Valley.
 - With the realignment, AVTA will need to redesign the schedule and should provide earlier departures and eliminate two of the final runs for morning and afternoon services, resulting in 14 total trips rather than 18. AVTA will also need to reduce fares to reflect the shorter distance and the need for customers to transfer. Even though travel time will likely be shorter and more reliable, it may be perceived as less convenient. Providing information to longtime riders highlighting the benefits of shorter travel times and increased reliability of arrival times may also

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be an important component to ensure no riders are lost when transitioning services. This is an important consideration for 786 recommendations as well.

- **Route 786 – Century City/West Los Angeles**

- Route 786's multiple variants can be confusing to customers as well as reduce the number of available travel times to certain destinations. AVTA should simplify the alignment to service Westwood and Century City and terminate at Santa Monica Blvd. and Wilshire Blvd., and no longer provide the variant beginning at Santa Monica Blvd. and La Brea Ave.; more passenger activity is seen in Westwood and Century City than east of Century City, and both the morning and afternoon runs of the Santa Monica and La Brea variant see median occupancies below 50%. The new terminus at Santa Monica Blvd. and Wilshire Blvd. offer connections to frequent LA Metro bus service along Wilshire Blvd. which remaining passengers can use to complete their trip.
- In addition to consistent routing, we propose eliminating one trip from the morning and afternoon service due to low passenger loads, which reduces the total daily trips from 10 to 8.
- Meetings with Santa Clarita Transit revealed that Santa Clarita is having difficulties accommodating the high demand between Santa Clarita and Century City with their commuter lines 792 and 797. AVTA should consider adding a stop to serve the Newhall station in Santa Clarita to accommodate these travelers.

- **Route 787 – West San Fernando Valley**

- As with Route 786, there is an opportunity for AVTA to provide an additional stop at the Newhall station in Santa Clarita to pick up commuters that could not be accommodated by Santa Clarita's current commuter services.
- AVTA should explore the demand for off-peak service to CSUN, as it is the largest trip generator along the route. Exploring the feasibility of serving other West San Fernando Valley destinations (such as the VA Medical Center in North Hills) or other transit connections (such as the LA Metro Orange Line or Ventura County Metrolink stations) in the area are other considerations. Due to low passenger activity, it is recommended to terminate service at the Warner Center.
- In addition to this alignment change, we propose eliminating two morning and afternoon trips due to low passenger loads, which reduces the total daily trips from 18 to 14.

- **TRANSPORTER 790 – Metrolink Connections**

- Revise schedules for 790 to account for new Metrolink departure times and to improve on-time performance (currently approximately 70%). On-time performance should be at 85% since missing a train results in waits in the order of hours, not minutes. AVTA should also examine the feasibility of adding two runs during the day that currently do not have a bus bridge at the Newhall Station.
- Explore collaboration with Santa Clarita Transit. During stakeholder engagement, it became clear that opportunities exist to share ridership by having certain commuter routes stop through Santa

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Clarita, as mentioned above. AVTA should form a working group to define objectives and action items for collaboration.

Taken together, the proposed changes for commuter services aim at making better use of finite resources, while focusing on connections to other transit services over one-seat rides. In combination with alignment changes and fewer trips, we estimate that these recommendations can result in cost savings of ~\$1.2 million.

Supplemental Services

AVTA's supplemental routes provide important service to and from local public high schools in different areas of the Antelope Valley. While these services are open to the general public, the main purpose of these routes is to transport students to school in the morning and return trips in the afternoon. Because these routes serve a specific purpose and are currently very productive, no route changes are recommended. However, there are opportunities to improve supplemental routes:

- Adjust supplemental route schedules to accurately reflect school beginning and end times.**
Current supplemental route schedules either do not accurately reflect bell times or do not give students enough time to reach the bus after the dismissal bell. Improving schedules can help increase ridership and improve rider satisfaction. Supplemental routes to and from school should not operate when school is not in session due to the low demand.
- Partner with schools to create a reduced student fare to boost ridership on supplemental routes as well as encourage students to use the fixed route system for other purposes.** The student population is traditionally one of the largest potential markets for transit agencies. The launch of a reduced fare program presents an opportunity to launch an educational outreach and training campaign to student riders of supplemental routes regarding the importance of paying your fare, which can help reduce fare evasion.

Overall, the high-level costs of the proposed service are presented in Table 3 below. These estimates are based on assumptions that do not account for runcutting, interlining, and scheduling techniques that can optimize service hours, nor do they account for business rules that AVTA can implement to control costs for on-request services.

Table 3: Existing and Proposed Estimated Annual Service Costs

	Existing	Proposed (est.)	Difference
Local & supplemental (excluding 50, 51, 52)	\$13,373,000	\$16,793,500	\$3,420,500
Dial-a-Ride	\$1,648,010	\$1,210,920	\$(437,090)
50, 51, 52	\$1,530,000	\$986,000	\$(544,000)
Commuters (785, 786, 787, 790)	\$4,134,590	\$2,944,130	\$(1,190,460)
747, 748	\$406,910	\$406,910	\$-
Late-night on-request	\$-	\$232,000	\$232,000
NEMT	\$-	\$130,500	\$130,500
Total	\$21,092,510	\$22,703,970	\$1,611,460

Improve the Customer Experience

- **Improve customer and community awareness of AVTA services.** Continue to leverage social media channels to not only improve awareness and marketing of AVTA, but also provide service information and other information related to riding the bus. AVTA should also improve materials by creating a new map with a clean, clear, and modern aesthetic that does away with the 3D perspective of the current map, as well as ensuring all materials are bilingual. The service changes recommended throughout the plan provide an opportunity for the new information to be improved and for AVTA to undergo a brand refresh.
- **Retrain operators.** Proactively work with AVTA's service contractor to develop operator training and retraining programs and hold service contractors responsible for insufficient performance.
- **Emergency or guaranteed ride home.** We recommend that AVTA explore implementing an emergency ride home service, which many peer agencies offer to customers who may need to return home for an emergency during the midday when commuter services are not operating. An initial step is to survey customers onboard AVTA services to determine home and work locations, interest in the emergency ride home and other pertinent information. AVTA should also inform customers about the Regional Guaranteed Ride Home (GRH) supported by LA Metro in Los Angeles County.
- **Improve bus stop amenities.** Establish a committee to develop bus stop guidelines and an improvement plan and install new bus shelters, benches, and other amenities as outlined in the improvement plan.
- **Collaborate with officials and the community to implement transit-supportive design and development.** Establish a working group of staff from municipalities, the county, community organizations, and AVTA to develop transit-supportive guidelines and implement/monitor developments and their transit supportiveness. These guidelines, in conjunction with transit service guidelines, should provide a workable framework for developments and land uses in the Antelope Valley that are supportive of transit ridership, including provisions for pedestrian infrastructure, set-backs, parking guidelines and so on.

Build and Support an Inclusive, Multimodal Network

- **Improve sidewalk and bicycle access to AVTA services.** AVTA should establish a pedestrian and cyclist access working group and action plan. This group should include staff from municipal departments as well as advocacy groups. The group should develop an action plan detailing critical steps for improving pedestrian paths and cycling access to transit.
- **Improve the universal accessibility of AVTA infrastructure.** Working together with the accessibility advisory group and local officials, AVTA needs to develop an action plan for improving the universal (ADA) accessibility of its infrastructure. While AVTA has taken the initiative to improve stop accessibility by ensuring new stops have shelters and benches and meet universal accessibility standards, not all stops are fully compliant with ADA standards, particularly legacy stops that have not been recently upgraded. Steps could also be taken to improve information at stops for people who are blind or have low vision, in addition to providing bilingual information at AVTA's stops and stations. AVTA should assess the level of accessibility of its bus stops, identify low-hanging fruit, and prioritize investments based on stop usage.

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- **Support car-sharing schemes and other modes in the Antelope Valley.** AVTA should do more to promote and foster multimobility in the Antelope Valley, support active transportation and help reduce reliance on SOV. As a leader in zero-emission technology, AVTA could look to explore other GHG-reducing initiatives, such as carpooling, vanpooling, volunteer transportation programs, ridesharing and carsharing. AVTA should also provide priority parking for electric and hybrid vehicles at its main terminals.
- **Develop a marketing plan and implement a brand refresh.** AVTA should develop a marketing plan that includes messaging and strategies for a variety of audiences including customers and non-riders. In addition, the plan should detail strategies for educating and obtaining feedback throughout the implementation of this strategic mobility plan. AVTA should also launch a brand refresh study and engage with the community to evaluate ideas and concepts for a different brand. Branding can also extend to the frequent network and bus stops and the new AVTA On-Request, Shared Mobility Service.
- **Develop and internal communication strategy.** AVTA should organize internal working meetings where this plan is presented and discussed and establish an advisory group of internal champions of this plan from across AVTA departments. AVTA should implement and monitor the actions of this plan and develop a detailed funding action plan that builds upon the funding opportunities outlined in this report.

Phasing, Funding and Actions

To implement the action items and recommendations detailed above, a phased approach is proposed and detailed in the table below. The phasing plan recommends implementation over a five-year period and identifies potential funding opportunities and parties responsible for implementation. Action items are broken down into the three major goals our recommendations are built on: enhance AVTA's core services, improve the customer experience, and build and support an inclusive, multimodal network.

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Action	Year 1	Year 2	Year 3	Year 4	Year 5	Potential Funding	Responsible Actor(s)
Goal 1 - Enhance AVTA's core services - transit network and mobility services							
Fixed-route							
1 Layers and network design	Refine network and route concepts and launch new local network (launch in 2020)					S307; CMAQ; Measure R; Props A and C	AVTA
2 Improve schedules	Redevelop schedules to more accurately reflect on-street operating conditions	Expand street supervision to monitor reliability				S307; CMAQ; Measure R; Props A and C	AVTA
3 Explore transit-dedicated infrastructure	Establish working group for studying transit-dedicated infrastructure	Pilot peak hour reserved lanes on Palmdale Blvd. Pilot peak hour reserved lanes on Ave. J	Pilot peak hour reserved lanes on 10th St.			S307; CMAQ; Measure R; Props A and C; SB-1; BUILD	AVTA; City of Lancaster; City of Palmdale; Los Angeles County
DAR							
4 Launch on-request service	Implement on-request shared mobility services	Monitor and adjust services as program evolves				S310 (already procured for NEMIT); CMAQ; S312; Integrated Mobility Innovation	AVTA
5 Rationalize service area and eligibility	Study whether service area requires reduction and if eligibility should be modified	Modify service area and eligibility as necessary					AVTA; community partners
6 Expand travel training	Refocus program on travel training DAR customers and new fixed-route customers					S310	AVTA; community partners
7 Explore volunteer transportation programs		Establish working group to examine volunteer transportation programs and non-transit services				S310	AVTA; LA Metro; community partners
8 Establish accessibility advisory committee	Develop framework for establishing advisory committee on accessibility & establish committee						AVTA; community partners
Commuter							
9 Redesign routes	Refine network and route concepts and launch new local network						AVTA
10 Improve schedules	Redevelop schedules to more accurately reflect on-street operating conditions						AVTA
11 Explore collaboration with Santa Clarita	Work with SC Transit to understand opportunities to minimize duplication and best use resources					TIRCP; Props A and C; Measure R	AVTA; Santa Clarita Transit
Fare policy							
12 Launch a fare study	Implement short-term changes to fares and fare policy	Launch study to rationalize fares due to route and service changes					AVTA
13 Expand student fares to all students in the AV	Create new fare category for any enrolled student to obtain a discounted fare					AVAQMD	AVTA; AVUSD; University of Antelope Valley; other schools
Goal 2 - Improve the customer experience							
14 Improve customer and community awareness of AVTA services	Work with local groups to understand disability needs for information Ensure all marketing and informational material is bilingual and up-to-date	Implement new community outreach program to inform about AVTA at different locations across AV	Work with accessible advisory group to develop accessible information				AVTA; community partners
15 Retrain operators		Retrain operators for customer service and safe operations					AVTA
16 Leverage Metro's Guaranteed Ride Home program and educate customers	Dedicate a customer rep to working with employers and employees to educate about GRH	Hold internal working meetings to track plan implementation and success				Measure R and M; Props A and C	AVTA; LA Metro; employers
17 Improve bus stop amenities	Establish committee to develop bus stop guidelines & an improvement plan	Install new bus shelters and benches				S307; CMAQ; Measure R; Props A and C; SB-1; BUILD	AVTA; City of Lancaster; City of Palmdale; Los Angeles County
18 Collaborate with officials and community to implement transit supportive design and development	Establish working group of staff from cities, community organizations and AVTA to develop transit-supportive guidelines	Implement and monitor developments and their transit-supportiveness				Measure M; Sustainable Communities Program (SCAG)	AVTA; City of Lancaster; City of Palmdale; Los Angeles County
Goal 3 - Build and support an inclusive, multimodal network							
19 Improve sidewalk and bicycle access to AVTA services	Establish pedestrian and cyclist access working group & action plan	Implement pedestrian and cyclist access and integration program				Measure M; Sustainable Communities Program (SCAG)	AVTA; City of Lancaster; City of Palmdale; Los Angeles County
20 Improve the accessibility of AVTA infrastructure	Work with accessibility advisory committee and local officials to prioritize accessibility improvements					Measure M; Sustainable Communities Program (SCAG)	AVTA; City of Lancaster; City of Palmdale; Los Angeles County
21 Support a car-sharing scheme in the AV	Study potential for car-sharing schemes centered at multimodal hubs					Measure M; S312	AVTA; LA Metro; car-sharing companies
22 Develop a marketing plan and implement a brand refresh	Develop marketing plan to provide public outreach for the plan	Launch a brand refresh study	Implement brand refresh				AVTA
23 Develop an internal communication strategy	Establish internal advisory group to support implementation of this plan & identify funding priorities	Implement and monitor the actions of this plan & develop a funding action plan					AVTA

1.0 THE CHALLENGE

AVTA provides public transportation services to the Antelope Valley, a sprawling area of nearly 400,000 residents. Despite providing more transit service in recent years, AVTA, like most peers in Southern California and throughout the nation, has been experiencing declining ridership (Figure 4).

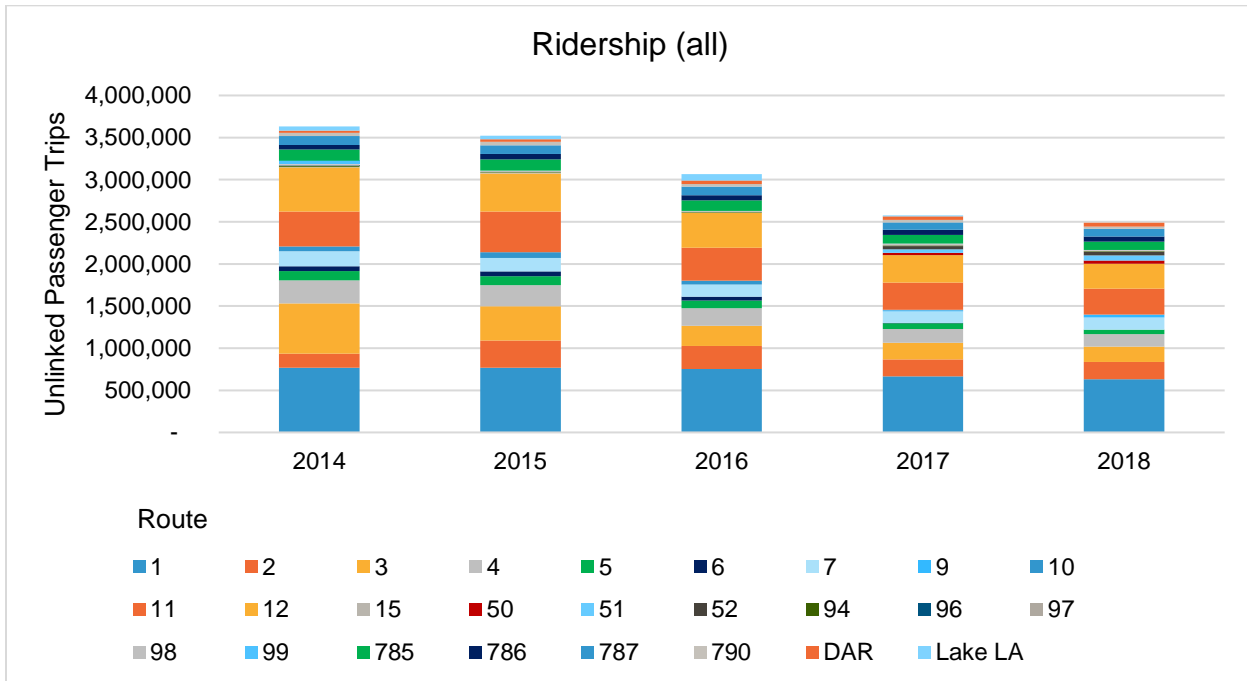


Figure 4: Declining ridership on AVTA services.

A recent report² concluded that while it's difficult to pin the loss of bus ridership on any one factor, a major contributing factor to the decline in bus ridership is the motorization of traditionally transit-dependent populations. In other words, populations who would use transit and use it frequently, such as minorities, low-income residents, and recent immigrants, are acquiring vehicles and reducing their transit use. Southern California is a car-loving culture. In fact, most Southern Californians have never tried public transit. Taken together, this study advises agencies that in order to regain some ridership, efforts should be placed on attracting discretionary riders for occasional trips mainly by improving service quality—frequency, reliability, reducing travel times, and making transit comfortable, convenient, and direct. Note that improving service quality has the important outcome of not only attracting discretionary riders but improving the experience of transit-dependent riders too.

AVTA has additional challenges that make providing efficient and effective transit service particularly difficult—the rural nature of most of its service area, paired with dispersed and segregated land uses and general lack of pedestrian infrastructure. As such, AVTA needs to better tailor service delivery to the market it's trying to serve. In addition, working to educate customers and stakeholders throughout the service area will be essential for helping the Antelope Valley to become more transit-supportive in the future.

² https://www.scag.ca.gov/Documents/ITS_SCAG_Transit_Ridership.pdf

The goal of this mobility plan is to ensure that the types, levels, and quality of the transportation services provided by AVTA can maintain the loyalty of existing riders, connect those in need of vital healthcare through mobility and are an attractive alternative to using a car for non-riders.

AVTA operates fixed-route services, dial-a-ride services as a complementary non-ADA service for seniors and persons with disabilities unable to ride fixed-route services and residents in the rural Antelope Valley, and commuter services focused on connecting the Antelope Valley with Los Angeles.

The challenge for AVTA is to reorganize its service to better deliver journeys that do not involve SOVs—as such, **we propose that AVTA strengthen its core services and focus on where ridership is strongest while exploring different service delivery models** but also potentially leveraging other transportation modes, such as ride and car-sharing.

Based on feedback from customers and non-customers, engagement with key stakeholders across the Antelope Valley, our analysis of data, and best practices from across the industry, we developed service concepts and strategies to meet the objectives in Table 4. These concepts aim to move transit into the forefront of planning in the region to facilitate sustainable mobility options for residents and visitors.

Table 4: Service concepts and plan objectives.

Service concepts and strategies	Service layers	Transit infrastructure (hubs, stops, etc.) and universal accessibility	Alternative service delivery (microtransit and on-request)	Revised schedules	Operator training	Emergency ride home (and car/vanpooling)	Travel training	Fare policy	Transit-first developments	Information and outreach (bilingual and accessible)	Collaborations and partnerships
Objectives											
Faster service											
More frequent service											
Shorter walks											
More reliable service											
Better integration of land use and transportation											
Better customer experience											
Better bus stop access or access to transit											
Better regional connectivity											
Better access to destinations (jobs, healthcare, etc.)											
More inclusive ridership base											
Safer and more secure											
More cost-effective service											

Figure 5 illustrates how these service concepts and plan objectives respond directly to customer feedback received throughout the project, using quotes from our engagement exercises.

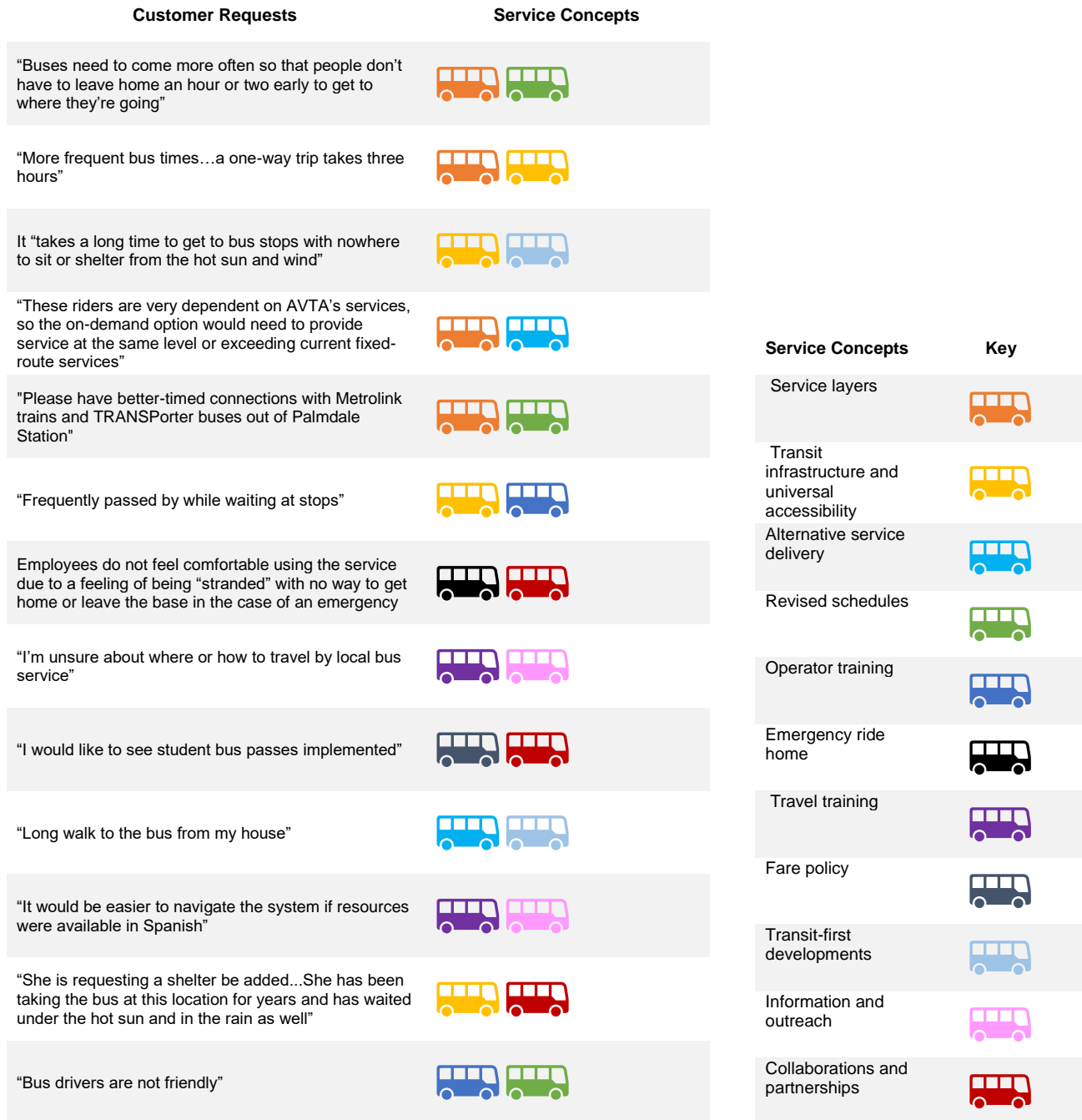


Figure 5: Service concepts addressing customer requests

2.0 WHAT WE'VE SEEN

Our strategic planning process began with a review of pertinent documents and existing conditions that helped to drive stakeholder and community engagement, identify service gaps and needs, and develop initial service concepts and recommendations. Through a review of important documents that have and will continue to shape the Antelope Valley and AVTA and a review of current service performance and transit markets, the following major themes were identified:

- A review of municipal planning documents (including the Lancaster General Plan, Palmdale General Plan, Lancaster Climate Action Plan, and Palmdale Livability Audit Report) reveal that the more urbanized areas of the Antelope Valley (Lancaster and Palmdale) have long-term objectives of transit-oriented development and are supportive of land use and development decisions that encourage transit use and help to reduce VMT. However, the current state of the Antelope Valley is dispersed, low-density development in a large service area that makes it difficult to provide productive, frequent transit services.
- SCAG's 2016-2040 RTP/SCS outlines plans for the more urbanized areas of Palmdale and Lancaster that encourage integrated land use and transportation strategies that create complete communities and transit-oriented development. Such strategies include locating homes and jobs near transit, infill development, and integrating a mix of land uses in a compact area to create walkable neighborhoods with strong connections to transit. **In particular, the RTP/SCS identifies a High-Quality Transit Area (HQTA) corridor running along 10th St. W, Sierra Hwy, and Avenue S between Lancaster and Palmdale (currently served by AVTA's Routes 1 and 3).**
- Palmdale and Lancaster are the areas of the Antelope Valley with the highest transit propensity, compared to the rural areas of Lake LA and unincorporated communities including Quartz Hill, Littlerock, and Pearblossom. The relatively higher population and employment densities of Lancaster and Palmdale are more supportive of fixed-route transit.
- It is critical to provide transportation services to the disadvantaged communities of the Antelope Valley, including minority populations, low-income residents, car-free households, and seniors. Under its current service network, 73% of minority populations, 9% of seniors, 26% of low-income residents, and 9.2% of zero-vehicle households are located within a ¼ mile (5-minute walk) of AVTA transit services.
- A detailed analysis of current services reveals areas of opportunity through which AVTA can improve its service and attract more customers:
 - inconsistent schedules and headways
 - low frequencies across all routes (prior to the recent changes to Route 1's schedule)
 - low weekend frequencies
 - long routes with low ridership segments or detours
 - long travel times and indirect routes
 - service that does not match demand
 - unreliable arrival times
 - service that generates low ridership in low transit propensity areas
 - transit facilities with inadequate amenities for customer comfort
 - poorly-performing commuter routes
 - growing demand for DAR services
 - fare policy considerations and fare evasion.

3.0 WHAT WE'VE HEARD

While our own analysis of existing conditions and important planning documents identified opportunities for improvement in many areas of AVTA's current service, interfacing with important stakeholders, current AVTA riders, and the larger Antelope Valley community was an imperative next step in developing recommendations to help enhance the accessibility and mobility of those who use AVTA's services as well as attracting non-riders to try the service. Throughout the stakeholder engagement process, common themes emerged that were largely in line with findings uncovered through our analysis of existing conditions, as well as new service issues and opportunities for improvement. Major themes uncovered through stakeholder engagement are summarized below.

- AVTA's current riders are largely captive riders with no other means of transportation, meaning that many riders are reliant on AVTA as their main source of transportation and AVTA is providing a lifeline service to these individuals. However, among non-riders and the general Antelope Valley community, there is an overall lack of awareness and knowledge about AVTA. While AVTA is actively working to become more visible, it will take time and effort to become easily recognizable in the community.
- Feedback from riders suggests major service issues with operator behavior and attitude, overall quality of service (reliability and convenience), a lack of bus shelters and bus stop amenities, battery electric bus 'growing pains' that are affecting rider experience, and a lack of adequate pedestrian infrastructure. Moreover, many long-time riders expressed the opinion that service quality has declined in recent years despite the agency adding more revenue service hours.
- Commuters feel that commuter service is not a competitive alternative when compared with other options such as Metrolink or personal vehicle use, and new pilot commuter services to Edwards Air Force Base and Mojave Air and Space Port have not yet materialized into high-ridership routes, though it should be acknowledged that these employment centers present their own unique challenges.
- Municipal stakeholders stressed that the Antelope Valley has long-term goals of smart growth, sustainable development, and creating transit-oriented development along major corridors. While these are goals that will materialize only in the long-term, it is imperative for AVTA to proactively work with Antelope Valley cities and the county to integrate land use and transportation planning decisions to see these goals become a reality.
- Survey results revealed that the majority of rider respondents use AVTA frequently (at least five days a week) and have been using the service for a long time (more than three years). Riders are most satisfied with amount paid in fare for the service they are receiving, and least satisfied with time spent waiting for the bus. While results were mixed, there was consensus that riders tend to value coverage over frequency due to the dispersed, spread-out development patterns seen in the service area.
- While survey results show 67% of non-riders and 82% of riders have a positive impression of transit services in the Antelope Valley, overall, people who have a transportation alternative do not view AVTA as an attractive or convenient alternative to private vehicle use. Long wait times, a lack of pedestrian infrastructure and bus shelter amenities, and long travel times were frequently cited by non-riders as reasons for not riding AVTA.

4.0 WHAT'S NEEDED

Taking all of the information learned from a review of important documents, analysis of existing conditions, and firsthand feedback from current riders and stakeholders, we then synthesized all of this information to identify gaps or needs regarding transit and mobility that may be preventing AVTA from providing attractive and effective transit service while acknowledging the barriers and challenges to providing this in an area like the Antelope Valley. These helped to shape the recommended strategies and performance measures laid out in Task 5, as well as informing the final strategic plan for integrated transportation outlined in the body of this report.

- Examining how well AVTA's service delivery meets the needs of Antelope Valley residents and what it needs to do in the future to better accommodate demand and improve the customer experience, we uncovered the challenges and opportunities for AVTA. A major theme that emerged during our analysis and echoed during rider outreach was that service on the street does not always match observed travel demand. Specifically, AVTA's services have not changed to accommodate new developments and destinations where riders want service to, and bus stops are disproportionately located in rural areas with low ridership that would be better served through an alternative delivery strategy, such as microtransit or an on-request, shared ride service.
- Better active transportation and pedestrian infrastructure are needed throughout much of the Antelope Valley to make transit stops more accessible to get to, and to make it easier to reach final destinations after alighting, especially for those individuals requiring mobility devices. A robust multimodal network with active transportation and pedestrian amenities would contribute to the overall appeal and accessibility of transit in the Antelope Valley.
- AVTA's commuter services are duplicative of existing LA Metro services that operate on dedicated rights-of-way, and terminating existing commuter services at higher-order LA Metro transit services (such as the Red Line and Orange Line) will help to improve the efficiency, reliability, and productivity of commuter services, as well as opening up transfer opportunities to new destinations (such as Burbank, where many Antelope Valley residents are employed).
- Other needs identified that can potentially improve AVTA's services include schedule changes to match bell times and fare concessions for students to increase ridership on supplemental routes and taking steps to accommodate DAR passengers on redesigned, accessible conventional routes as well as introducing new community circulators.
- Again, land use and development decisions were highlighted as a major factor affecting the quality and service of AVTA routes. Because the Antelope Valley is expected to see tremendous growth in the coming decades, it is imperative that the AVTA establish a meaningful, working relationship with local officials and developers to ensure new developments are planned with transit in mind.
- The series of service concepts and strategies aimed at achieving the objectives of AVTA's regional mobility plan focus on the goal of helping AVTA play a more substantial role in the mobility of the Antelope Valley and provide useful transit service that can be the foundation of a multimodal, equitable, and sustainable community.
- Recommendations were based on the objectives of faster service, more frequent service, shorter traversing opportunities, more reliable service, better integration of land use and transportation, a better

customer experience, better access to stops and destinations, better regional connectivity, a more inclusive ridership base, more cost-effective service, and enhanced safety and security.

- The above objectives will be achieved through the following set of service concepts and strategies: service layers (including frequent, local, community, on-demand, supplemental/school, and commuter), transit infrastructure and universal accessibility, alternative service delivery models, revised schedules, operator training, emergency ride home programs, travel training, fare policy, transit-first developments, accessible and bilingual information and outreach, and collaborations and partnerships.
- Performance measures were developed based on AVTA's mission statement of empowering mobility: *Getting People Where They Need to Be Safely, Timely, and Cost-Effectively*. Recommended performance measures are in line with industry state of the practice, build upon existing performance measures reported at monthly board meetings, and are broken down into three major categories of Safely, Timely, and Cost-Effectively.

5.0 ACTION PLAN OVERVIEW

The following section describes the recommendations and strategies to support the three main goals or pillars of the strategic mobility plan:

- 1. Enhance AVTA's core services—Improve the transit network and mobility services.** The recommendations are divided by service category and rely on the fact that services should complement each other and resources should be deployed prudently and reflect actual demand.
- 2. Improve the customer experience.** Building customer satisfaction has been demonstrated to retain riders, expand the ridership base, and get people to use transit more often. This strategy involves improving communications and customer information for better trip planning and improving customer amenities at bus stops.
- 3. Build and support an inclusive, multimodal network.** Transit can't do it all—AVTA needs to offer and cooperate with different transportation modes, particularly walking and cycling. Working with elected officials and advocates from across the Antelope Valley will be crucial for ensuring that the community develops in a manner that supports transit use and offers balance for mobility options.

The recommendations that follow were built upon the foundations in Task 5 that explored strategies and service concepts.

6.0 ENHANCE AVTA'S CORE SERVICES

6.1 LOCAL SERVICES

6.1.1 Existing Local Service Performance

Our analysis revealed that Route 1 carries the most riders (29% of all daily weekday boardings), while routes 11 and 12 also capture a sizeable amount of ridership (14% each). Figure 6 shows the average weekday daily boardings for AVTA local routes using APC data from 2018.

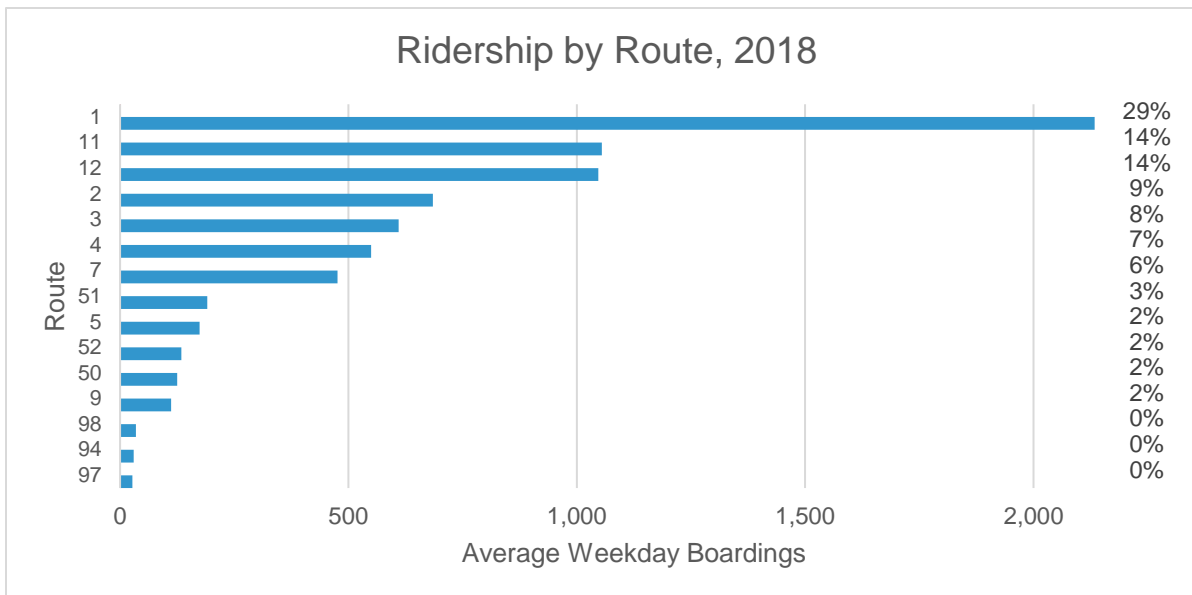


Figure 6: Average weekday boardings by route and as a percent of all fixed-routes, 2018.

Furthermore, as a measure of productivity, boardings per revenue hour provides another perspective showing that beyond Routes 12, 1, and 11, Route 4 is also relatively productive.

Our analysis extended into the stop level to understand corridors, strong routes, or portions of routes that could be combined into stronger routes. We looked to design routes with defined purposes, such as a focus on ridership with frequent service, connecting individuals to strong anchor locations across the network area and coverage services. Furthermore, acknowledging the opportunity to replace low productivity services like Routes 50, 51, and 52 with new microtransit services opens new possibilities to do something new, and redeploy those fixed route resources to where they are more productive, like on Routes 1 and 12.

Route	Avg. weekday boardings	Avg. weekday boardings per rev. hr.
12	1,047	19.6
1	2,134	19.3
4	550	18.3
11	1,055	15.8
7	476	14.4
2	685	12.2
3	610	10.9
51	191	10.8
5	174	10.5
9	112	8.4
52	134	7.6
50	125	6.9

Table 5: Route-level average weekday boardings and productivity, 2018.

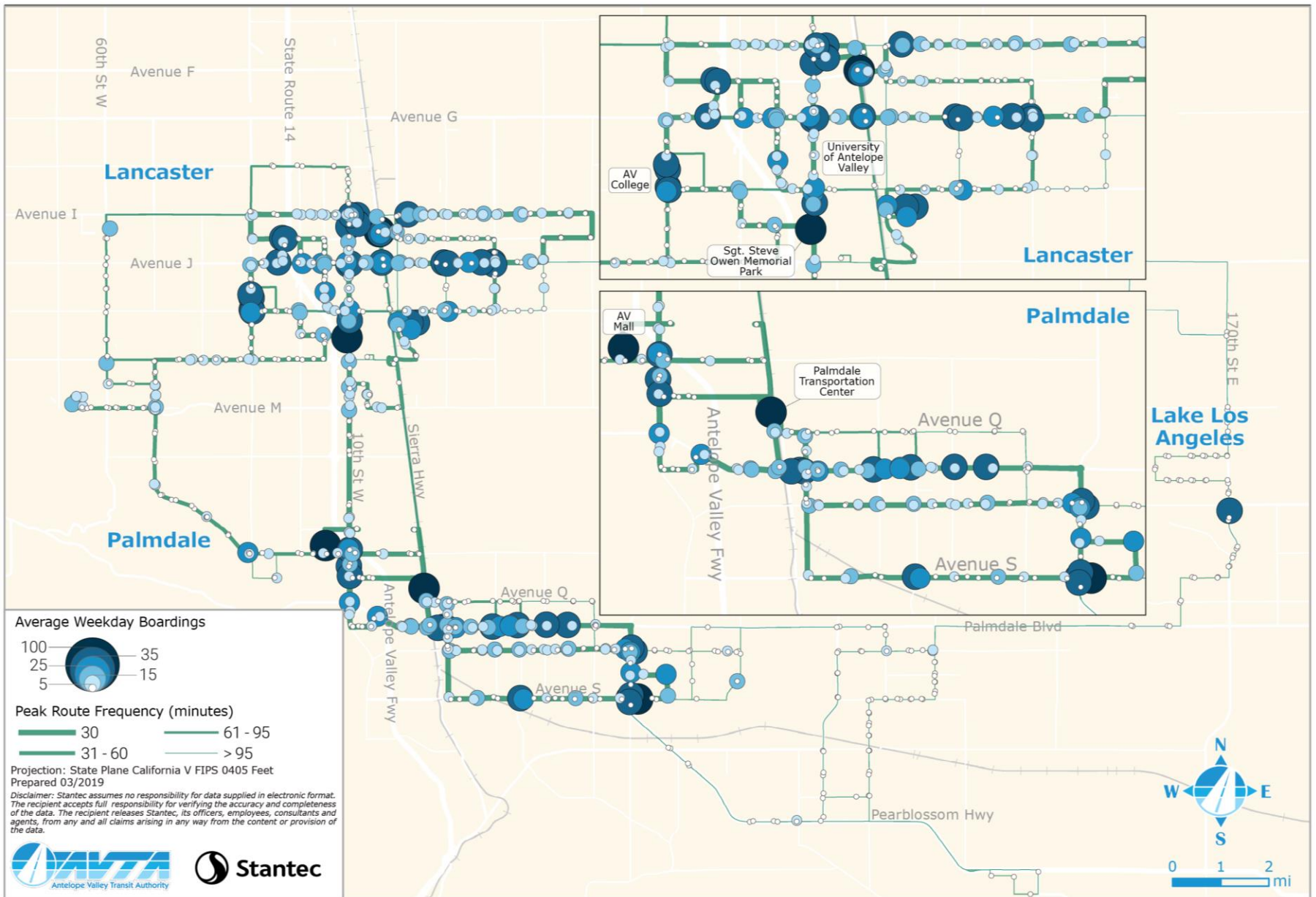


Figure 7: Average weekday boardings for fixed-route services, 2018.

Key findings of the typical weekday stop-level analysis (Figure 7) include:

- In Palmdale, the highest boardings are observed along Palmdale Blvd, which is served by Route 1 and consists primarily of commercial and service land uses.
- Major stops in Palmdale include:
 - Palmdale Transportation Center, where riders can transfer to Metrolink trains and AVTA's Transporter to Santa Clarita;
 - Stops at 47th St E and Avenue S, which provide access to Walmart Superstore, Walgreens, and other commercial destinations; and
 - AV Mall, a large shopping center.
- 10th St W acts as the main transit corridor that connects Palmdale and Lancaster. While passenger activity is observed at major destinations on 10th St W (Figure 8) within Palmdale and Lancaster, stop-level demand along 10th St W is low between W Avenue O 8 and Avenue M, where lands are largely vacant (Figure 9).



Figure 8: 10th St W at Commerce Center Dr



Figure 9: 10th St W at W Avenue N

- Major stops in Lancaster include:
 - Sgt. Steve Owen Memorial Park, where riders can transfer to local bus routes;

- Lancaster Station, which provides access to Metrolink trains as well as local bus transfers;
 - Stops near Antelope Valley College and the University of Antelope Valley; and
 - Avenue J corridor, including key commercial destinations, schools, and healthcare facilities like Antelope Valley Hospital
- The service provided is largely in line with demand, as low ridership corridors are served by low-frequency routes (e.g. 7, 9, 50, 51, 52).
 - The high activity stops of Sgt. Steve Owen Memorial Park, Lancaster Station, and Palmdale Transportation Center reveal that passengers rely on these stops as transfers and a large percentage of transfers occur at a small number of locations. AVTA should establish additional transfer points by redesigning some routes to be more direct and focusing service along key connecting corridors.

6.1.2 Network Reimagining

Through the analysis of origin-destination data, ridership data, stakeholder meetings, and public engagement, it was determined that existing local transit services do not adequately respond to demand in many places. Although most transit trip demand occurs locally within Lancaster, between Palmdale and Lancaster, and within Palmdale, substantial resources are spent providing fixed-route transit service in low-demand areas such as Lake LA, Pearblossom, and Sun Village, where ridership is scant. We acknowledge that providing transit service in these low-demand areas is absolutely necessary to provide mobility options for people who lack alternative travel options; however, fixed-route service that operates every 1.5 to 2 hours does not allow riders the flexibility to travel where they want, when they want. In addition, these existing fixed-route services (i.e. Routes 50, 51 and 52) are costly to provide and have relatively low ridership and productivity. Alternatives to fixed-route transit, such as on-request microtransit, can improve the cost efficiency of providing transit, while also giving riders better service with shorter waiting times. This section redesigns transit services by replacing unproductive services with on-request transit and redeploying resources into more productive routes that serve the greatest number of people and destinations.

Service Layers

Agencies use layer types to help prioritize and allocate resources across a transit system in order to serve many purposes and populations. They establish service standards which act as a communication tool to stakeholders of the parameters and criteria that define each layer and how/where they are to be used, including triggers for change. The following four service types compose the local network and aim to match the highest-demand areas with the greatest amount of service:

- **Frequent** transit service aims to move towards an ultimate service frequency of 15 minutes all day but may operate at this higher frequency for the majority of the day (e.g. 6AM to 6PM) or during peak periods only. Frequent services are typically deployed along major corridors with mixed-use development and density of key destinations and transit trip generators. The target for ridership on frequent routes is 20 boardings per revenue hour or higher. If a route on the local layer reaches this target, it should be investigated and considered for frequent service.
- **Local** transit operates along corridors where there is a high level of usage but the density (both jobs and people) is not enough to warrant a frequent level of service. The goal of this service is to offer 30-minute service throughout the day. The goal of all local routes is to operate on a clock face headway, but there may be some exceptions depending on the length of routes and the cost of maintaining the discipline of

such a schedule. Local routes also bring people to frequent corridors and mobility hubs to promote transfers. The target performance of a local route is 15 boardings per revenue hour, which is currently only met by two routes on the local layer (Route 4 and Route 11).

- **Community** service is primarily designed to provide access within residential areas and provide coverage to lower-density communities. This service connects to the local and frequent transit networks to provide transit access to the entire community. The goal of this service is to operate every 60 minutes on weekdays. Community routes that fall below 10 boardings per revenue hour should be investigated to be replaced with on-request microtransit solutions.
- **On-request** transit typically operates as curb-to-curb or stop-to-stop service, where users are able to request rides as needed instead of following a fixed schedule. Routes are created dynamically and can fluctuate throughout the day. On-demand transit solutions are often implemented using app-based technology that allows riders to request rides using a smartphone or computer and are commonly deployed in low-density areas that do not have enough demand to support fixed-route transit.

Additional service layers include **commuter** and **supplemental** services, which are discussed in the subsequent sections. Commuter and supplemental routes provide a limited number of trips per day to serve a specific purpose, such as school travel or travel to employment centers. A decrease in supplemental revenue hours is proposed based on the elimination of supplemental routes to school during the summer months when school is not in session and demand is low.

The local network described below focuses on the core services that operate during the majority of the day on weekdays and weekends.

Figure 10 illustrates the proposed local transit network, which has been adjusted to meet unmet transit needs identified in previous tasks. This network aims to **provide simplified transit service along key corridors where the greatest demand for transit was observed**. For example, providing stronger east-west local transit routes to facilitate short local trips in Lancaster was achieved by increasing the frequency of service along Avenue J (Route 12), providing continuous service on Avenue K (Route 5), and maintaining a local service along Avenue I (Route 11). The redesigned network also provides greater transfer opportunities by feeding local and community routes into major Transfer Centers including Sgt. Steve Owen and Palmdale Transportation Center or facilitating on-street transfer opportunities at major intersections.

Two new routes, Route 6 and a redesigned Route 4, are proposed to operate in Lancaster to provide greater access to key destinations like the AV Hospital, while a redesigned Route 7 provides access to Kaiser Permanente. Routes 4 and 8 provide 30-minute service and is an important piece to improve access to medical centers as well as other community destinations.

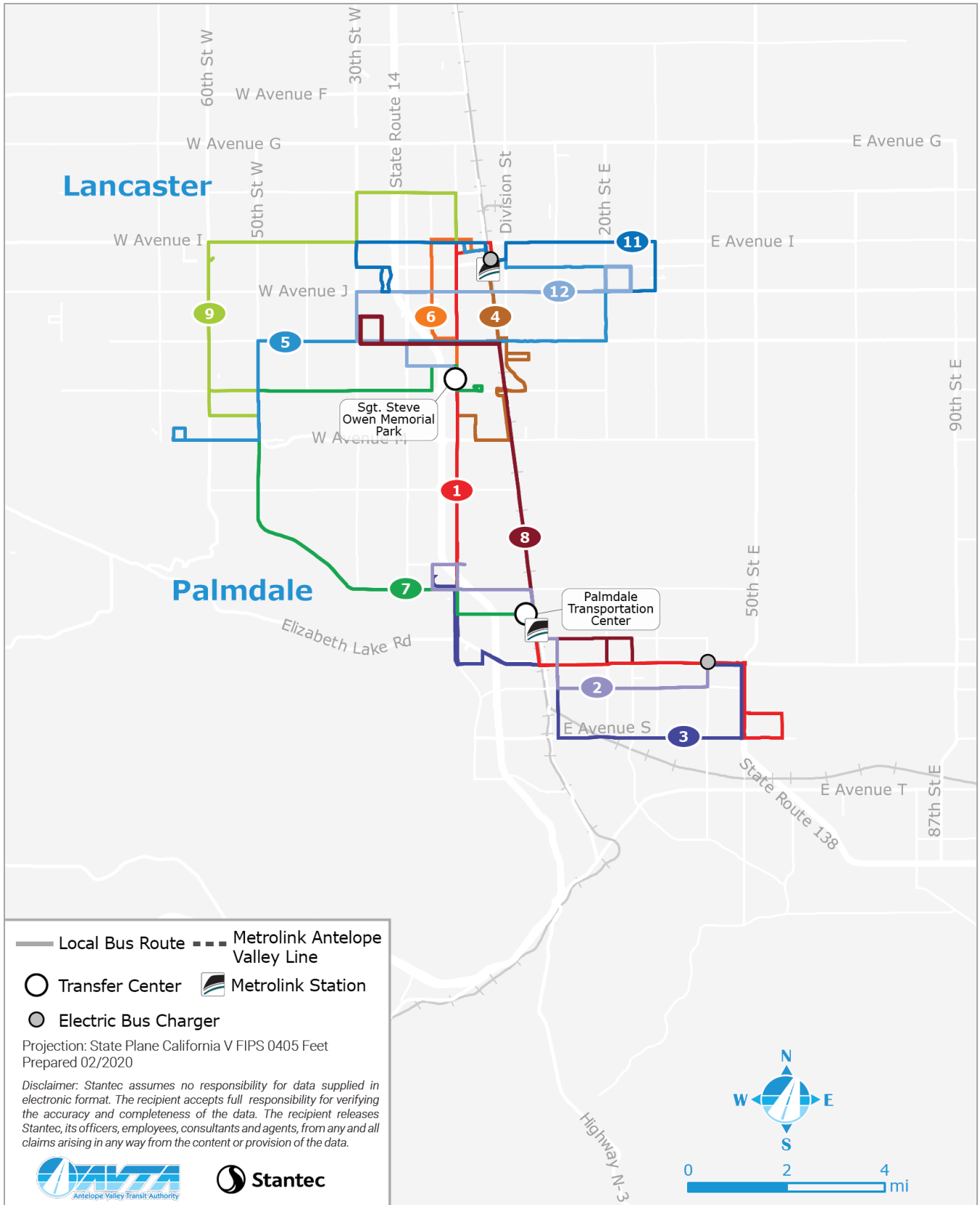


Figure 10: Proposed local transit network

Figure 11 and Figure 12, which depict existing and proposed weekday headways, show how the concept of service layers was applied to create a network that addresses existing travel patterns and prepares AVTA for the planned growth in the Antelope Valley. Most notably, Route 1 and Route 12 have headways of 15 minutes compared to approximately 30 minutes today, and the community routes operate at no more than 60-minute headways. In particular, Route 9 is proposed to operate every 60 minutes, while Routes 50, 51 and 52 are proposed to operate on request. The public had previously expressed concerns about these routes, indicating that if they miss their bus, they have no alternative but to wait 90-120 minutes for the next bus. In some cases, this has impacted their employment due to late arrivals at work. The increase in frequency across the AVTA network increases freedom for riders and is expected to attract new and existing riders to make more trips on transit.

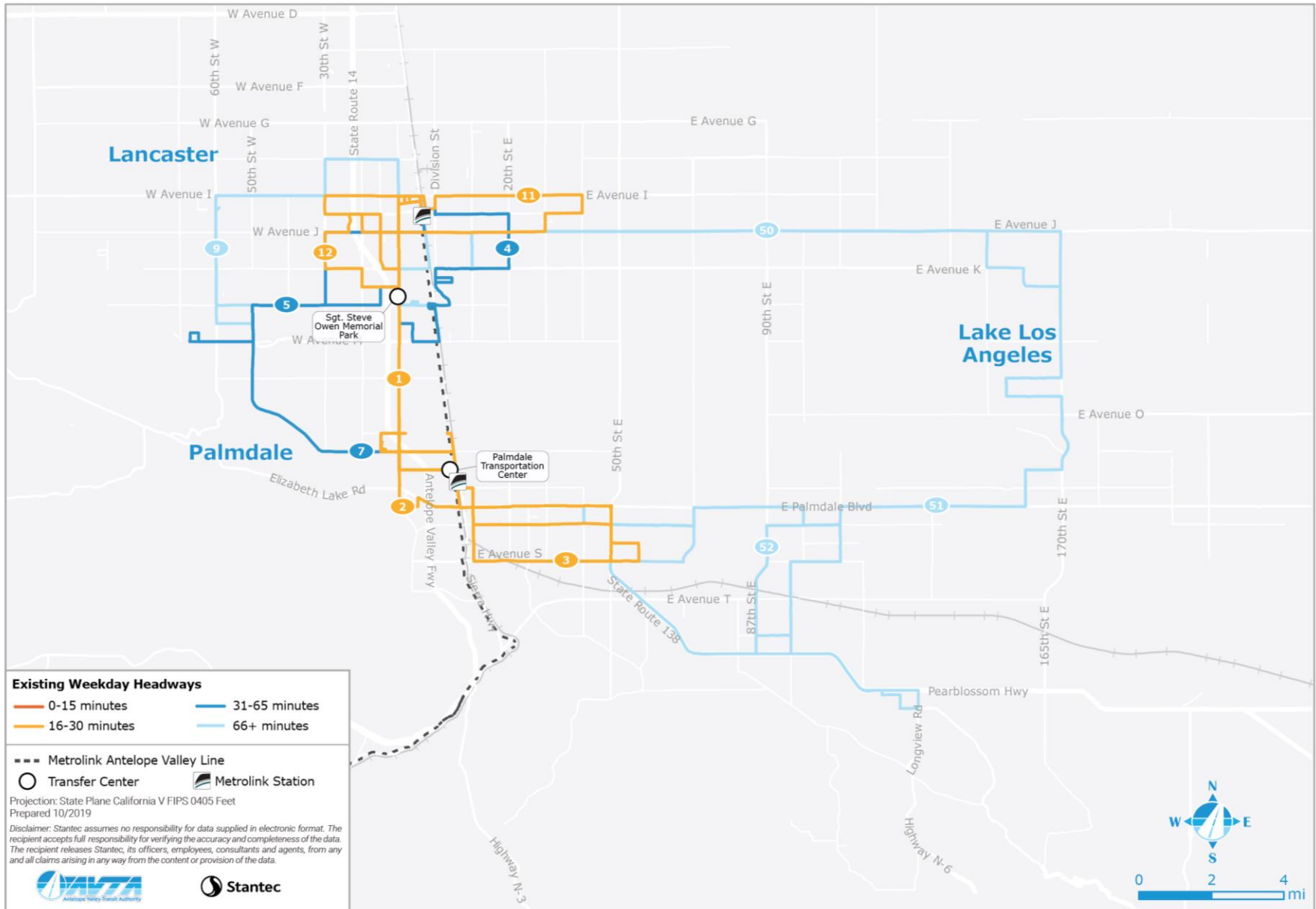


Figure 11: Existing local service weekday headways

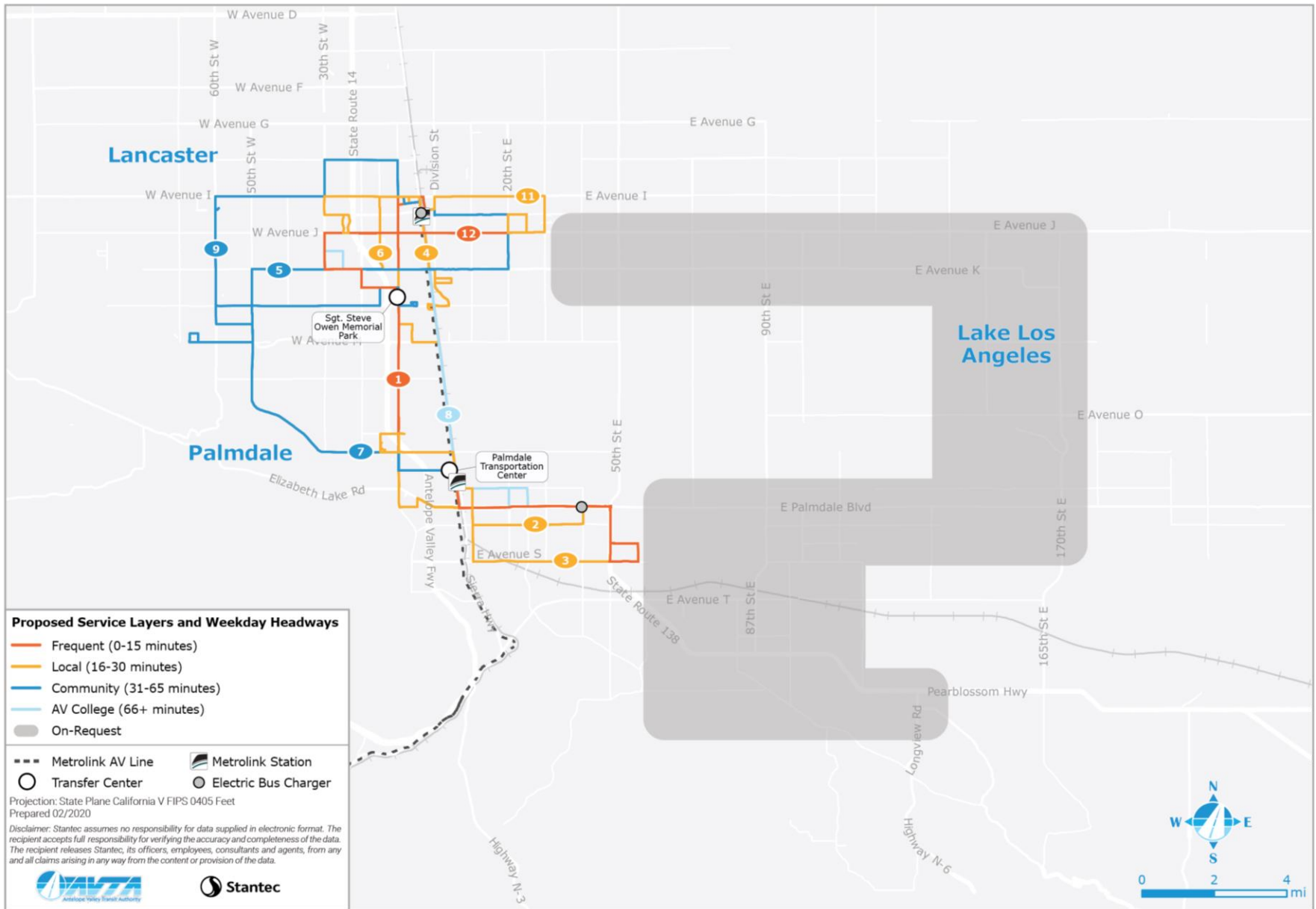


Figure 12: Proposed local service layers and weekday headways

Service Frequency and Span

Service frequency (and its inverse, headway between buses or transit vehicles) **is perhaps the most important attribute for choosing or forgoing transit** as a mode choice, particularly for people with other modes at their disposal. Frequent service, which in North America is understood as headways of 15 minutes or less, allows people in a community to travel with great freedom on transit. The best part of a personal vehicle is the ability to leave whenever one wishes, rather than relying on a scheduled bus. Headways of 15 minutes or better can help transit approach that level of convenience since, on-average, the wait time is approximately 7.5 minutes.

Nevertheless, **increasing service frequency directly increases operating costs**. While costly, analyses of route productivity and frequency from agencies across North America reveal a strong and positive relationship between the two—the greater the **service frequency, the greater the route productivity**. We caution that frequent or **ridership routes** be designed with a purpose, that is, used to connect high-density activity centers (a lot of people and jobs, with mixed land uses) along a relatively straight line.

Route 1 for example, is a good candidate for a frequent route because of the markets it serves and its high ridership (33% of AVTA's ridership is on Route 1). On the other hand, routes into Lake LA and routes that serve peak demand locations like schools, are not good candidates for frequent service and can be classified as **coverage or policy routes** that serve a specific purpose, operate at a lower frequency, and can be circuitous in alignment. Low productivity for coverage routes is acceptable because they serve another goal.

Transit service needs to be available when people travel. **Service span tells customers between what hours transit service operates**. AVTA generally operates between 5 am and midnight on weekdays, but that varies by route; weekends see shorter service spans which generally matches decreased transit demand. However, with the increase in non-traditional work hours, typical service spans generally no longer reflect current travel patterns.

Ensuring transit is available when people need it is important but costly. **Like service frequency, lengthening the service span will increase operating costs (more buses and more operators)**. Adjusting the service span by pruning early morning hours can help re-coup costs to invest in later service hours, or longer weekend hours, although this needs to be done with caution.

Figure 13 and Figure 14 below provide the frequency (headways) and span for each route in the local network on weekdays, Saturdays and Sundays. Specific route-level changes in frequency and span are provided in Section 6.1.3, but a summary of changes is provided below:

- Overall, no decreases in service frequency are recommended. All routes will maintain the same headways or better because service frequency is one of the greatest determinants of ridership. By designing straighter routes with greater frequencies that reduce passenger waiting time, along with priority measures designed to increase the flow of buses, AVTA can work to reduce travel time to a point where bus travel becomes competitive with car travel.
- The Route 1 pilot with 15-minute weekday service should be extended from ending at 3PM to ending at 7PM, with 30-minute headways during the early morning and late night. Route 12 should also operate at 15-minute headways during the same period as Route 1 (7AM to 7PM). On Saturdays, both routes should operate at 30-minute headways, from 8AM to 8PM. Depending on the success of 30-minute service on Saturdays, AVTA can explore the feasibility of providing 30-minute service on Sundays.

- Given the low demand for fixed-route transit during the late evening, the proposed services in the local and community layers should terminate at 8PM on weekdays, with on-request service operating from 8PM to midnight. Since many of the existing local and community routes stop running service at 9 or 10PM, on-request will allow the service span to extend later into the evening at a lower cost than today. Similar recommendations are suggested for weekends as well, where fixed-route service could be supplemented by on-request service after 8PM and 7PM on Saturday and Sunday, respectively.
- As the backbone of the proposed network, Route 1 and Route 12 will continue to operate until midnight on weekdays, 11PM on Saturdays and 10PM on Sundays while other local and community routes will be replaced by late-night on-request microtransit at night.
- Routes 50, 51, and 52 will be replaced with on-request microtransit, which will operate alongside late-night on-request microtransit. AVTA is currently in the process of procuring a turnkey vendor for on-request shared mobility services, which is planned to begin in 2020. Through this process, AVTA will be provided with greater detail on the potential wait times for customers.
- We recommend consolidating existing Dial-a-Ride services, late-night on-request service, on-request microtransit substitution for low-performing routes, and non-emergency medical transportation (NEMT) into one on-request, shared mobility service offering. By doing so, AVTA can find efficiencies in service delivery by matching a variety of different types of trips. More information about shared-ride services can be found in Section 6.2.
- Community routes will continue to begin operation at the same time as today, but the service span will be extended later through on-request service. No community route will see greater than 60 minutes between buses on the weekday, Saturday or Sunday. We recommend using clock-facing headways whenever possible to improve clarity and make it easier for riders and potential riders to understand.
- A set of two interlined routes (Routes 4 and 6) are proposed as part of the local layer, replacing parts of Route 4 and 11. They will operate at 30-minute headways on weekdays and 60-minute headways on Saturdays and Sundays.

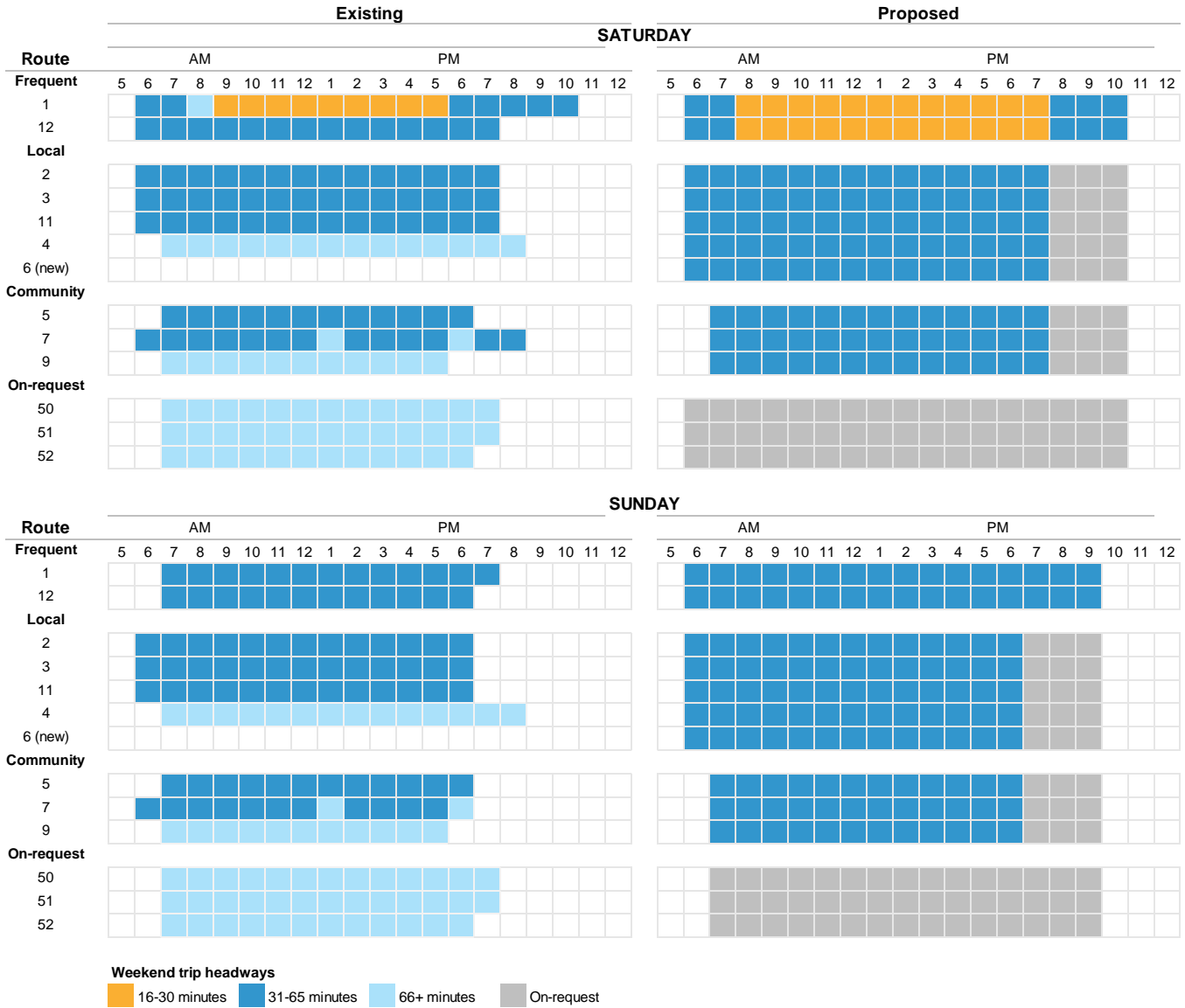


Figure 14: Existing and proposed weekend service headway and span by layer

6.1.3 Route-Level Recommendations

Frequent Routes

Route 1

- Route 1 is a successful route, carrying the greatest number of passengers per weekday, Saturday, and Sunday. Therefore, no changes to the alignment are suggested.
- As part of the frequent service layer, we propose increasing Route 1's frequency to headways of 15 minutes. As an early action item, AVTA implemented a 15-minute pilot in June 2019. As such this route currently operates at 15-minute headways during the morning and midday periods (i.e. until 3PM). We proposed extending frequent service to 7PM to encourage people to use Route 1 for a variety of trip purposes, such as to and from work during peak hours or for discretionary trips during the midday. Since implementation, AVTA has seen an increase in ridership of about 20% on Route 1 compared to the same time frame in the previous year (Figure 15).
- During our engagement activities, riders requested to increase Route 1 service frequency on the weekend. We recommend continuing to operate Route 1 on Saturdays at 30-minute headways but extending 30-minute service until 8PM. At some properties where Stantec has worked, Saturdays can be as busy as a weekday on their workhorse route, thus warranting frequent (less than 15 minute) service. AVTA should monitor both weekday and weekend ridership to determine if increasing service frequency results in ridership increases on this route, at which point improvements to weekend headways can be considered.

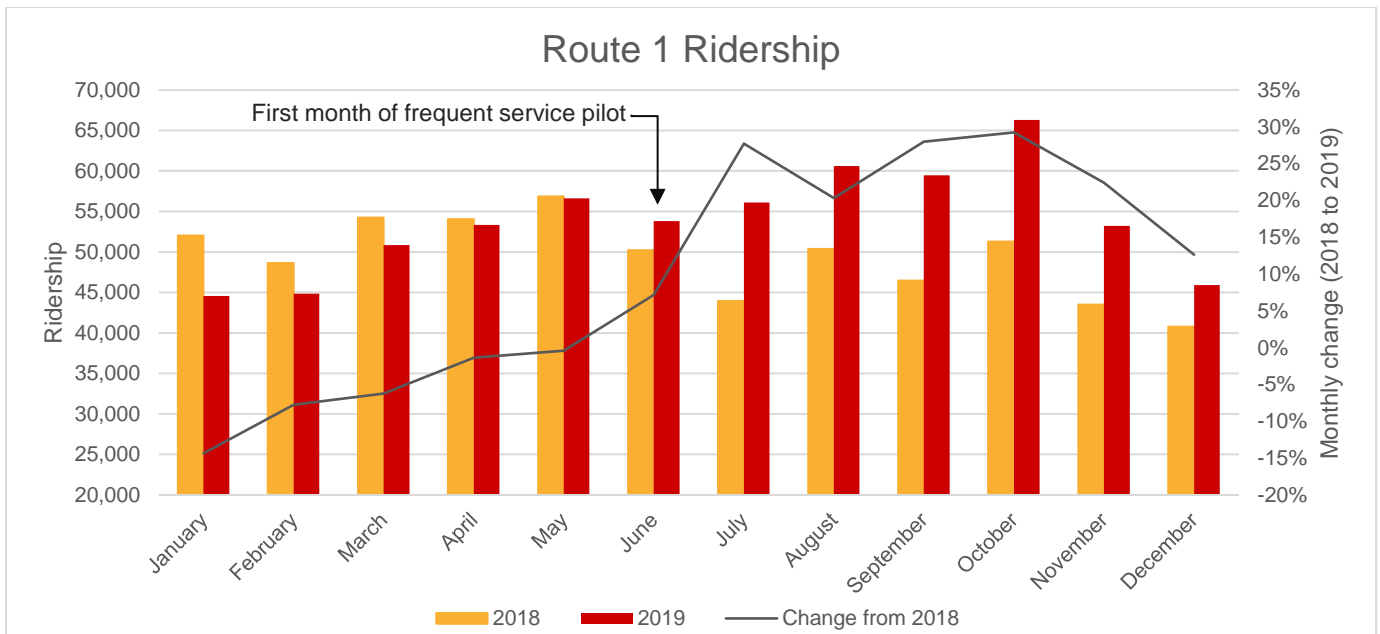


Figure 15: Monthly ridership on Route 1 in 2018 and 2019 showing a stable and sustained increase in ridership after service improvements.

Route 12

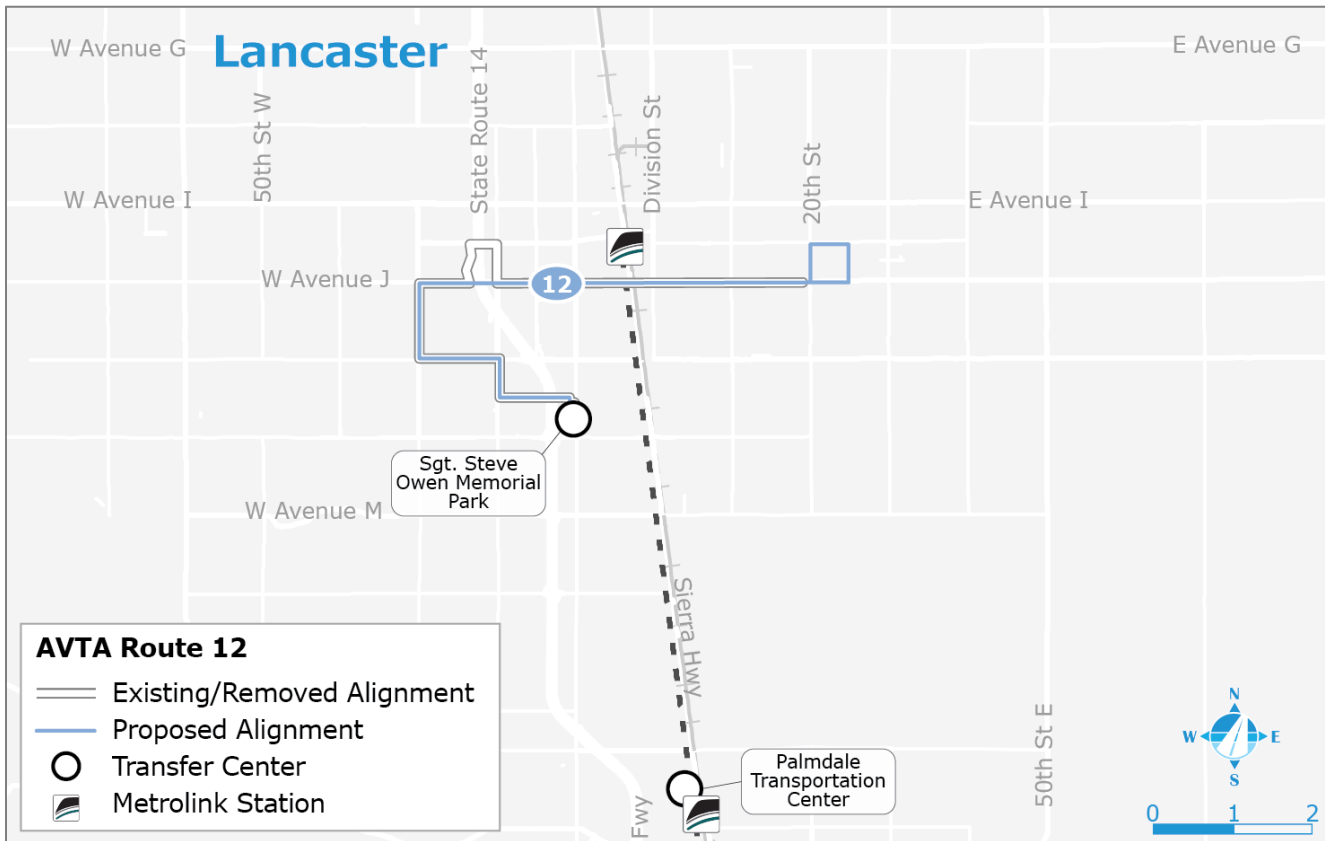


Figure 16: Existing and proposed alignment for Route 12

- Route 12 is the most productive route in the network based on boardings per revenue hour. For that reason, we recommend that AVTA increases its frequency and operates at 15-minute headways instead of 30-minute headways. This would result in a frequent east-west local service in Lancaster, which was identified as a need during the Needs and Opportunities task of this study.
- Therefore, Route 1 and Route 12 will act as the backbone of the reimaged network, providing north-south and east-west frequent service that allow riders to travel spontaneously without planning their trips, knowing that a bus will be arriving shortly, on average every 7.5 minutes. These two routes will also provide service later into the evening than other routes, providing late-night fixed-route coverage on weekdays and weekends in the areas with the highest demand.
- To provide faster and more direct service, the proposed Route 12 does not detour off W Ave J to serve Valley Central Shopping Mall (Walmart Supercenter) off 25th St W. The purpose of frequent transit services is to quickly bring passengers along straight corridors, wherever possible. Valley Central will be served by Route 11.
- Since Route 12 (frequent) will operate on a different service layer than Route 11 (local), these services should no longer be interlined. We recommend that Route 12 terminates near 20th St E, where riders can then transfer to Route 11 if desired. A one-way loop at the east terminus of the route is required for the

bus turnaround and should be kept as short as possible. Turning around in the Walmart parking lot is currently not feasible due to turning radii but could be considered in the future to promote transit use to and from this destination.

Local Routes

Route 2 and 3

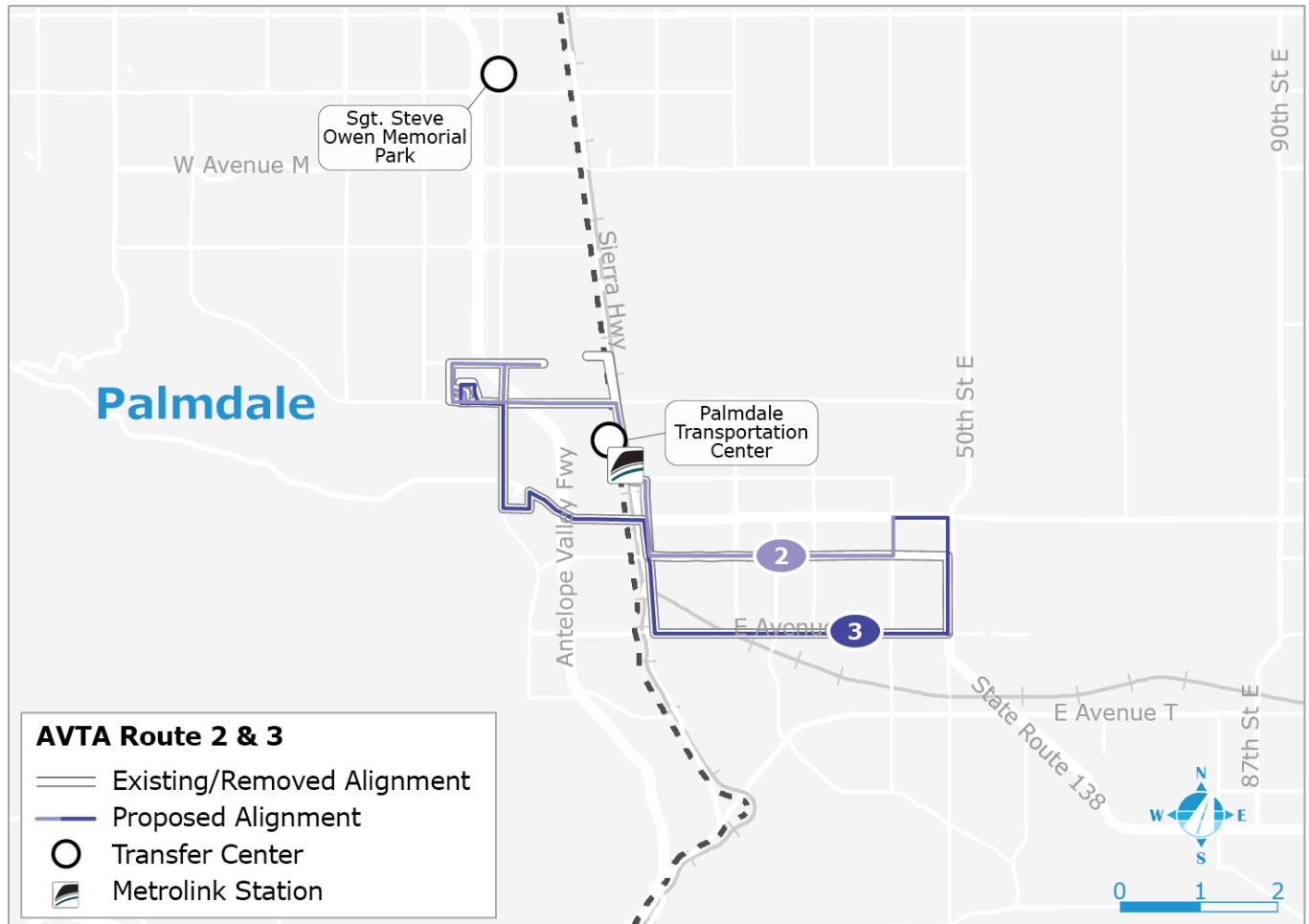


Figure 17: Existing and proposed alignment for Route 2 and Route 3

- Routes 2 and 3 operate as interlined routes, operating at 30-minute weekday headways. These routes provide east-west service to Palmdale and the southern portion of the Antelope Valley. Route 3 provides access to the Palmdale Transportation Center, with available transfers to other local routes, supplemental routes, commuter routes, and Metrolink. For the purposes of this plan, we propose keeping these headways, but in the future, given sufficient development and demand, future demand may support 15-minute frequencies.
- Combined, Routes 2 and 3 account for 19% of total local fixed route ridership, with Route 2 providing slightly more annual passenger trips (205,259) than Route 3 (182,421). These routes are relatively productive routes that do a good job of bringing people to major transfer locations.

- The primary changes proposed to Routes 2 and 3 regard minor routing alterations to account for the construction of an on-route charger at 40th St E and E Palmdale Blvd near the South Valley Health Center. This site will be developed into a hub with passenger amenities and to accommodate on-route charging. This is also one of the proposed transfer hubs from on-request to fixed route service, giving passengers the opportunity to transfer to Routes 1, 2, and 3 at this location.
- One minor change proposed includes the ‘uncrossing’ of route alignments—routes 2 and 3 alignments will be swapped. Route 3 will operate along 10th St W, Palmdale Blvd, and Ave R, while Route 2 will operate along Rancho Vista Blvd/Ave P, Sierra Hwy, 10th St E and Ave S.
- Another proposed change to the alignment of Route 2 is to remove the segment of the route that detours to serve E Avenue O-8 (currently on Route 3). This detour adds approximately 10 minutes to the total cycle time of the route and results in very little ridership. Removal of these stops would result in approximately a 10-minute walk from E Avenue O-8 for a small number of riders and would create a faster and more direct route that serves the area more efficiently and strengthens east-west travel in Palmdale.
- Otherwise, these routes are proposed to stay the same, with 30-minute service during the weekday and 60-minute service on the weekend as part of the local network that carries riders to the frequent routes. Service every 30 minutes will be available until 8PM on weekdays, unlike today where the frequency of service drops after 6PM. These services are proposed to stop operating at 10PM on weekdays and Saturdays and 7PM on Sundays, when it will be replaced with late-night on-request service. The late-night on-request service increases the service span to midnight on weekdays, 11PM on Saturdays and 10PM on Sundays.

Route 11

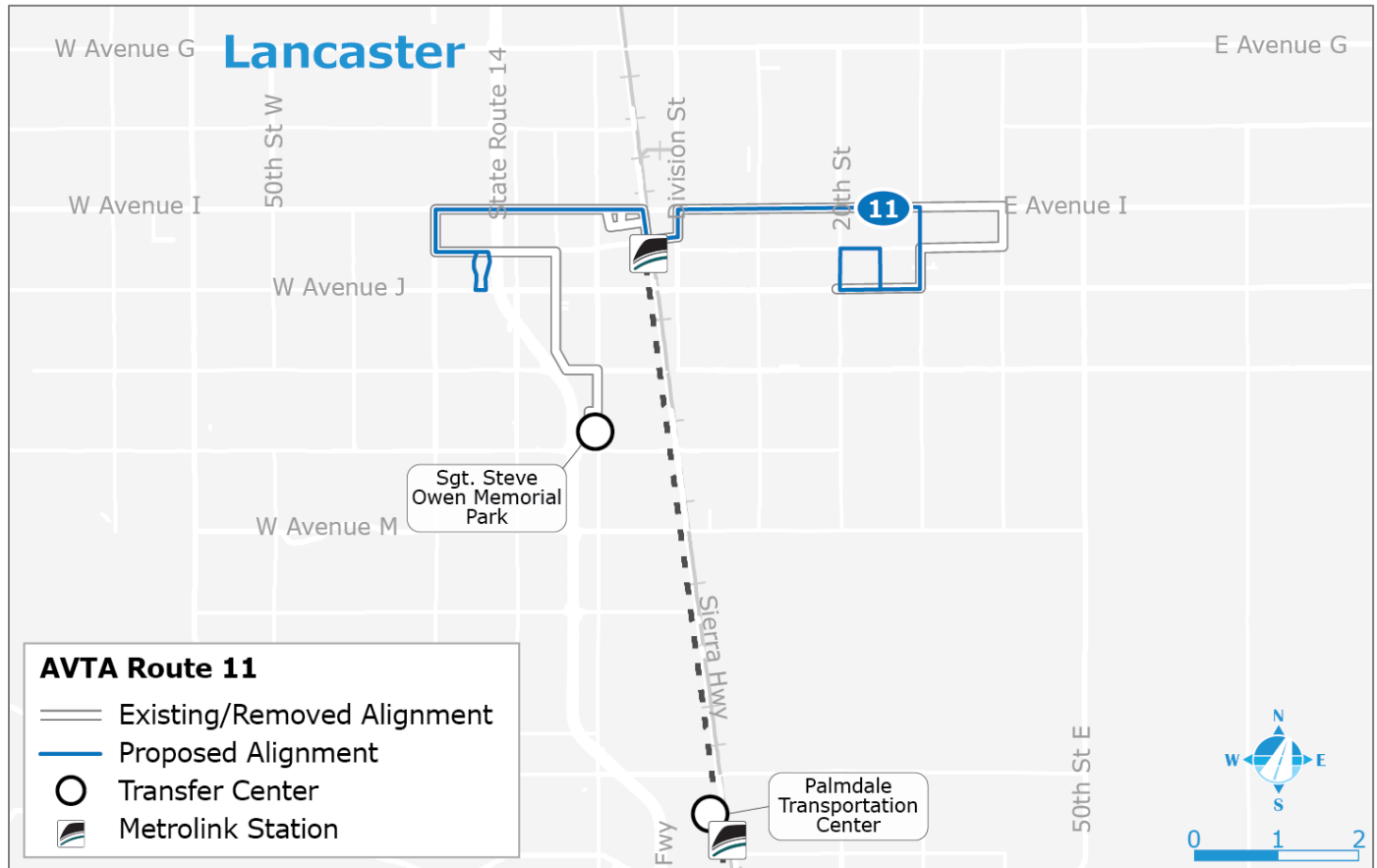


Figure 18: Existing and proposed alignment for Route 11

- Route 11 currently provides access to Sgt. Steve Owen Memorial Park, Lancaster Metrolink Station, and transfer opportunities to supplemental and local routes. It is currently interlined with Route 12 where it operates at 30-minute weekday headways.
- The proposed Route 11 no longer serves Sgt. Steve Owen, and instead turns around at Valley Central Shopping Mall and will continue to operate at 30-minute headways while Route 12 operates at 15-minute headways. These changes allow Route 12 to provide continuous frequent service along Avenue J without detouring into the shopping center.
- For these route changes to be achieved, AVTA may consider installing a bus turnaround at Valley Central Shopping Mall or the Walmart Supercenter at Avenue J and 20th St E (either terminus). Constructing a bus turnaround at this location would also reduce the running time of Route 11 and 12 as they would no longer require a large loop around a residential area.
- The new alignment removes the portion of the route that extends east of 30th St. E due to very low passenger activity between 30th St. E and 40th St. E. However, it is acknowledged that there are special events (such as job fairs) that take place beyond 30th St. E. For these special occasions, temporary route deviations can be scheduled to accommodate these events.

- Transit systems that operate on a grid of north-south and east-west corridors increase the number of route options riders have. Instead of all services pulsing out of Sgt. Steve Owen, a grid system can better facilitate on-street transfers and will increase the efficiency of operation. This local route will strengthen east-west movement within Lancaster and help develop a transit network on a grid of straight and direct services with minimal detours.

Routes 4 and 6

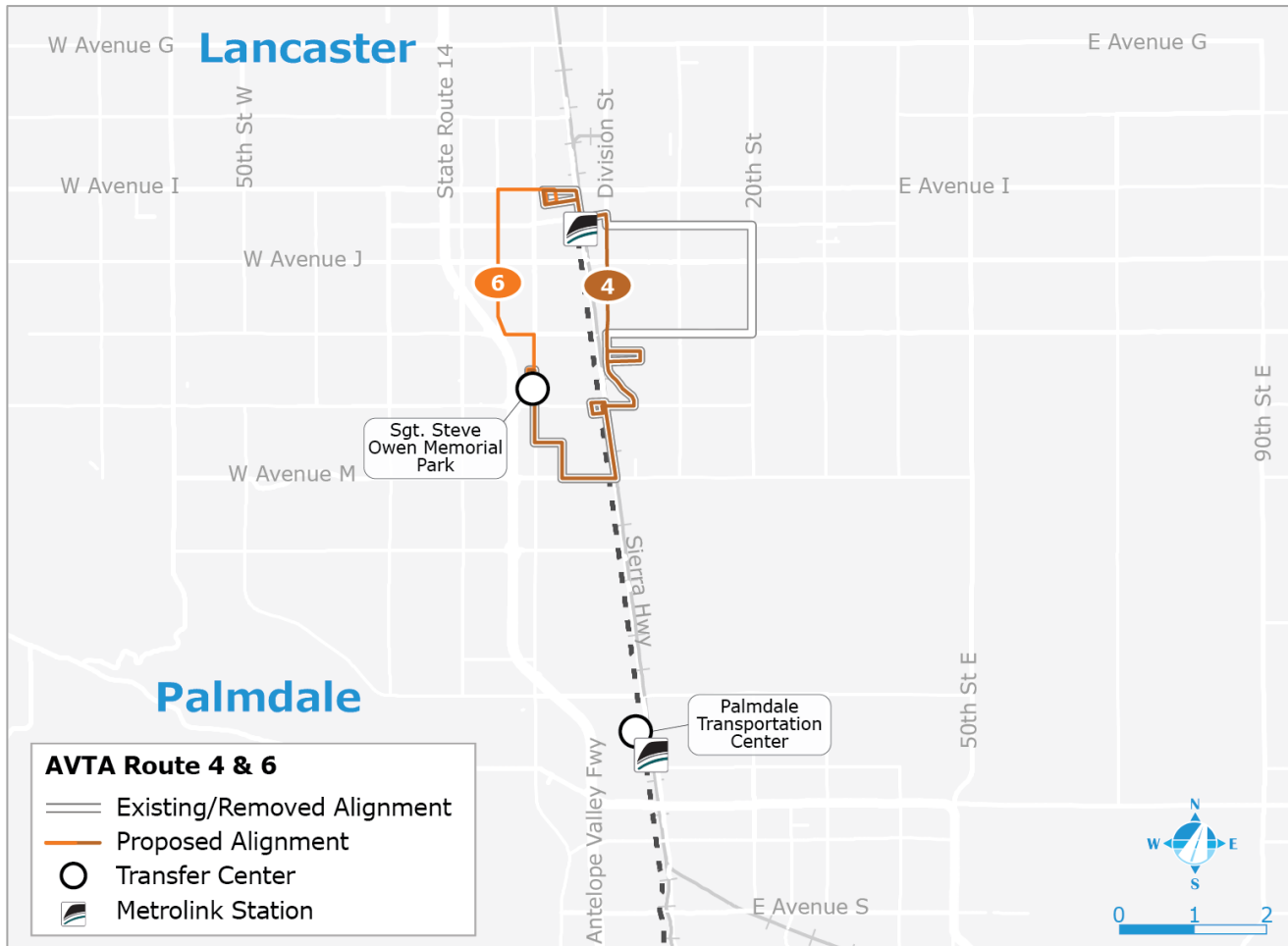


Figure 19: Proposed alignment for Routes 13 and 14

- Modified Route 4 and new Route 6 arose from stakeholder and residents' concerns about the need for improved transportation to important community destinations. Route 4 answers that call by providing service between Lancaster Metrolink Station, the new Lancaster DMV, the courthouse, and Sgt. Steve Owen Memorial Park. Route 6 connects to Route 4 to provide service to Antelope Valley Hospital.
- These proposed local services will operate as interlined routes at 30-minute headways during weekdays and 60-minute headways on the weekend. Riders can transfer to and from these routes from the frequent routes (Route 1 and 12) at multiple transfer locations, providing greater connectivity to health care facilities such as the Antelope Valley Hospital.
- In addition to health care centers, these new routes serve other destinations such as employment opportunities off Division St/Business Center Pkwy. Service headways of 30 minutes all day on weekdays

is therefore important to serve peak commuting patterns as well as off-peak commuting and discretionary trips.

- During our stakeholder workshops and public engagement, a common request from riders was to provide better access to the Lancaster DMV. While the DMV is only approximately seven minutes from the frequent network (Route 1) by walking, the pedestrian environment does not facilitate walking connections as sidewalks are either absent or discontinuous. The Lancaster DMV is a good example of how land use planners and transportation planners must work together to site new developments in transit-friendly environments. The DMV is difficult to serve by transit because it is not *on the way* from one transit destination to another and cannot be served by a relatively direct and efficient route. Instead, routes must detour to serve developments like this one that are surrounded by vacant land. Developments that are located along mixed-use and medium-density corridors are able to be more efficiently served by frequent transit service. As such an important community destination, the DMV is proposed to be served by a deviation of Route 4 at 30-minute headways.
- Improvements to the pedestrian environment along W Avenue L-6, paired with transit-oriented development on the northeast corner of 10th St W and W Avenue L-6 may eliminate the need for transit to detour to the DMV in the future as transit riders may be more willing to walk to their destination.
- The existing Route 4 alignment serves many community destinations, such as the LA County Sheriff's Department, Sgt. Steve Owen Memorial Park, apartment homes, and commercial and employment destinations
- We recommend that Route 4 operate along Division to reduce circuitry, while 20th St E will be served by Route 5.
- Route 6 is recommended to operate along 15th St E, covering portions of existing Route 11.

Community Routes

Route 7

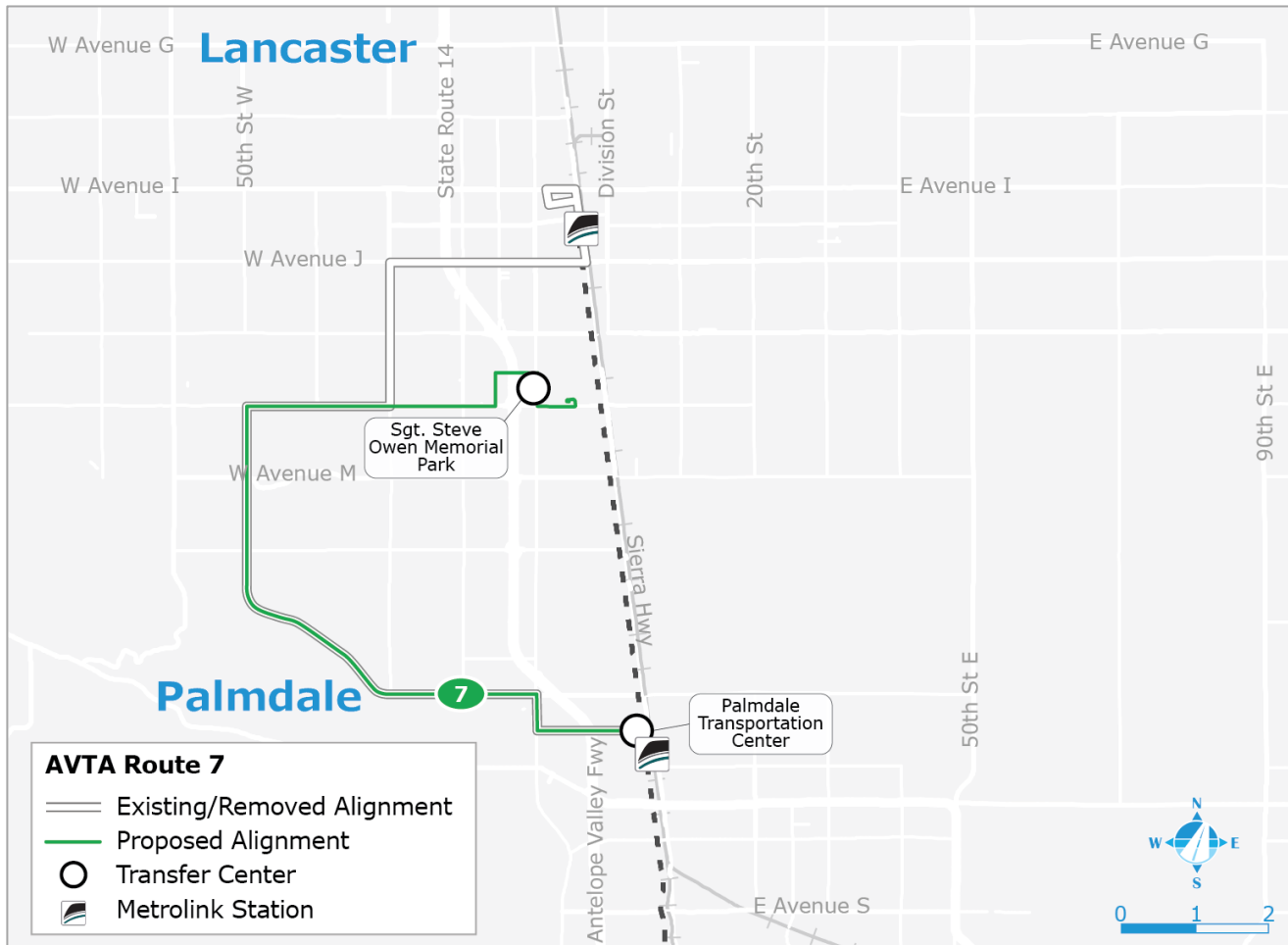


Figure 20: Existing and proposed alignment for Route 7

- The existing Route 7 provides access to destinations such as Antelope Valley College at 30th St. and Ave. K, Quartz Hill Elementary School and Library at 50th St. and Ave. M, and Antelope Valley Mall at 10th St. and Marketplace.
- To avoid duplication with Route 5, the proposed Route 7 alignment removes duplicative service on Avenue L and instead serves Avenue K. Destinations that were not previously served by AVTA’s fixed-route system can now be served by the proposed Route 7, including Endeavour Middle School, which was requested during the public engagement process for this study. The idea to relocate part of Route 7 service to Avenue K and serve Endeavour Middle School was supported by multiple comments from the public.
- The proposed alignment continues past Sgt. Owen to serve the Kaiser Permanente which will lose fixed-route service due to the proposed removal of Route 50. At a 60-minute headway and with connection at Sgt. Owen, more customers will have better access to Kaiser along Ave L. However, we note that

entering the parking lot with a large bus is not ideal—the design of the site and right-of-way makes it impossible to serve without entering the parking lot.

- Existing Route 7 schedules have inconsistent headways during weekday service (between 55 and 68 minutes) and weekend service (between 50 and 70 minutes). It is recommended that Route 7's new schedules follow clock-facing headways to improve clarity for riders, or at the very least, operate with a maximum headway of 60 minutes.

Route 5

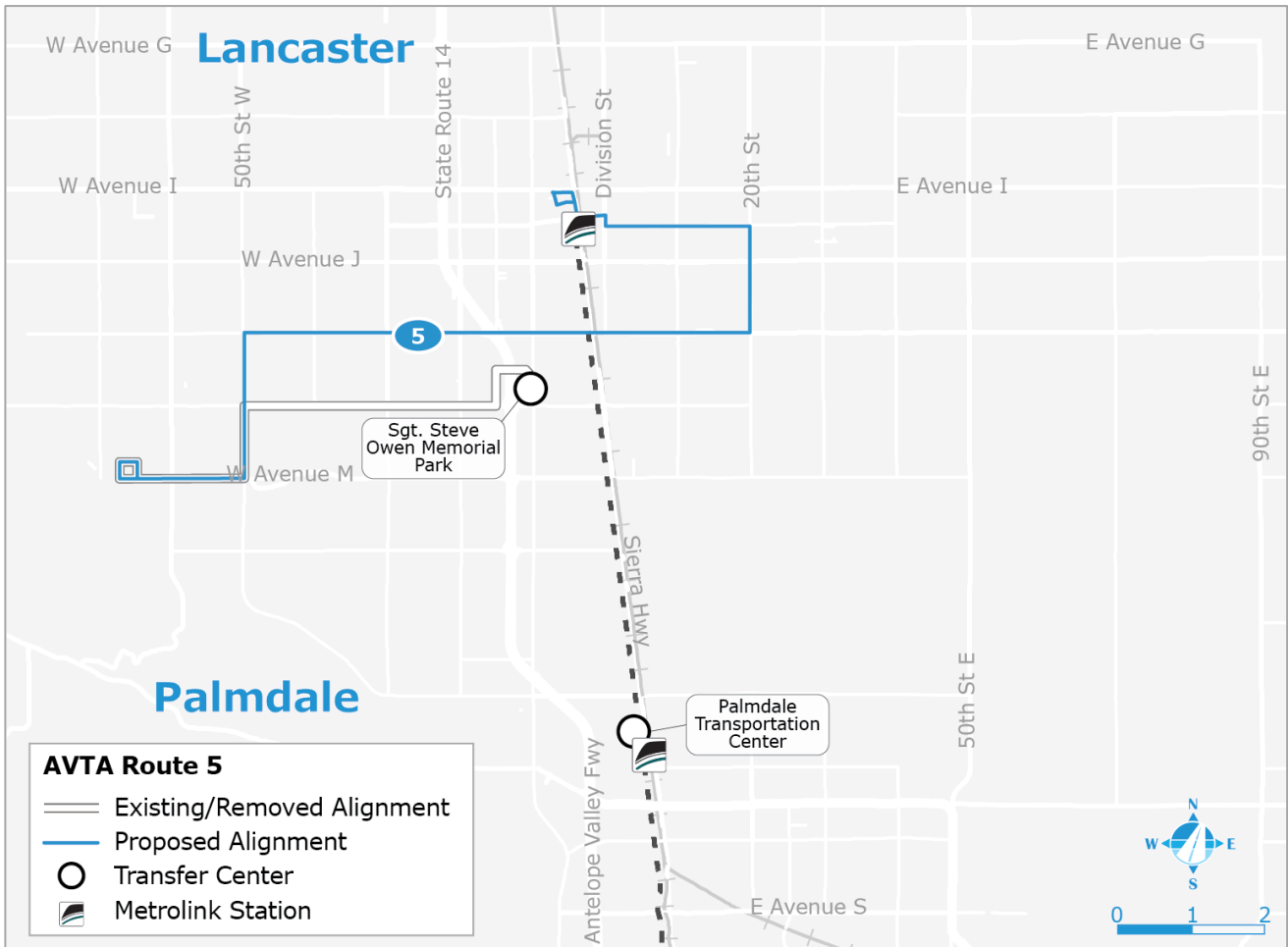


Figure 21: Existing and proposed alignment for Route 5

- Route 5 is proposed to operate along some portions of existing Route 7 along 30th St W, serve Ave K, 20th St E and Lancaster Blvd which is currently served on Route 4 and terminate at Sierra Hwy and Lancaster Blvd.
- Route 5 is part of the community layer and as such will operate at 60-minute headways.

Route 9

- Route 9 began operating service in 2017 and ridership on this route has increased significantly since its inception. However, as a relatively new service operating in a low-density area, this route is one of the least productive routes in the local system.
- Route 9 provides access to the western portion of Lancaster, which provides service coverage to areas with no other transit routes. As the west of Lancaster continues to experience development growth, this service become increasingly important. It is suggested that AVTA works with local planning authorities to ensure new developments are transit-supportive and can be served without deviating from main corridors. Features such as active frontages on main streets, pedestrian facilities and building access doors near transit stops can ensure Route 9 ridership grows alongside development growth.
- New developments are likely to encourage ridership growth, but there are additional steps AVTA can take to improve service on this route as well. We heard from the community that more frequent service is required on this route, so we are proposing that the route operates every 60 minutes during all seven days of the week instead of 90-120 minutes like today. This change is expected to attract more riders to the system by providing greater travel flexibility.
- The only change in alignment suggested for Route 9 is to terminate the route at Lancaster Metrolink Station. Route 4 will now provide service along the eliminated segment of Sierra Hwy. As development growth increases and transit demand increases, new stops can be added along the route to respond to new ridership potential.

Route 8

- Route 8 began operation in Fall 2018. Also known as the AVC Shuttle, Route 8 is intended to provide limited-stop, express service between the Palmdale Transportation Center, the AVC Palmdale Center, and Antelope Valley College.
- In its first year of operation, this route saw 4,507 riders. However, this number rose to 13,975 riders in 2019, an increase of 210%³. This clearly shows that this route is becoming a more popular transportation option for those traveling to and from AVC. Additional ways to incentivize transit use by students should be explored, and ridership should continue to be monitored as time goes on.
- As this route operates for a specific reason and provides a specific purpose (transporting students to and from Antelope Valley College), there are no proposed changes to this route and will remain as-is.

On-Request

- Routes 50, 51, and 52 are proposed to be replaced by an on-request shared-ride service due to low ridership and productivity of the fixed-route services. AVTA currently operates these routes infrequently and riders have asked for greater frequency and availability of transit services in areas such as Lake LA, Littlerock, and Pearblossom. Since the cost per ride is expensive for Routes 50, 51 and 52, and the routes have long segments with very few riders, it is not financially viable to increase their frequency.

³ <https://www.avta.com/downloads/meetings/bod/2020/01282020-agenda.pdf>

Instead, it is more cost-effective to provide on-request services where the trips and resources can match the demand of these neighborhoods. Mobility hubs or transfer locations are still to be determined.

- As part of the on-request layer of transit service, these routes are proposed to be replaced with on-request services. It is anticipated that Dial-A-Ride (DAR), late-night service, and service in these low demand areas will all operate as part of the on-request layer. More details about the proposed on-request shared-ride service can be found in Section 6.2.

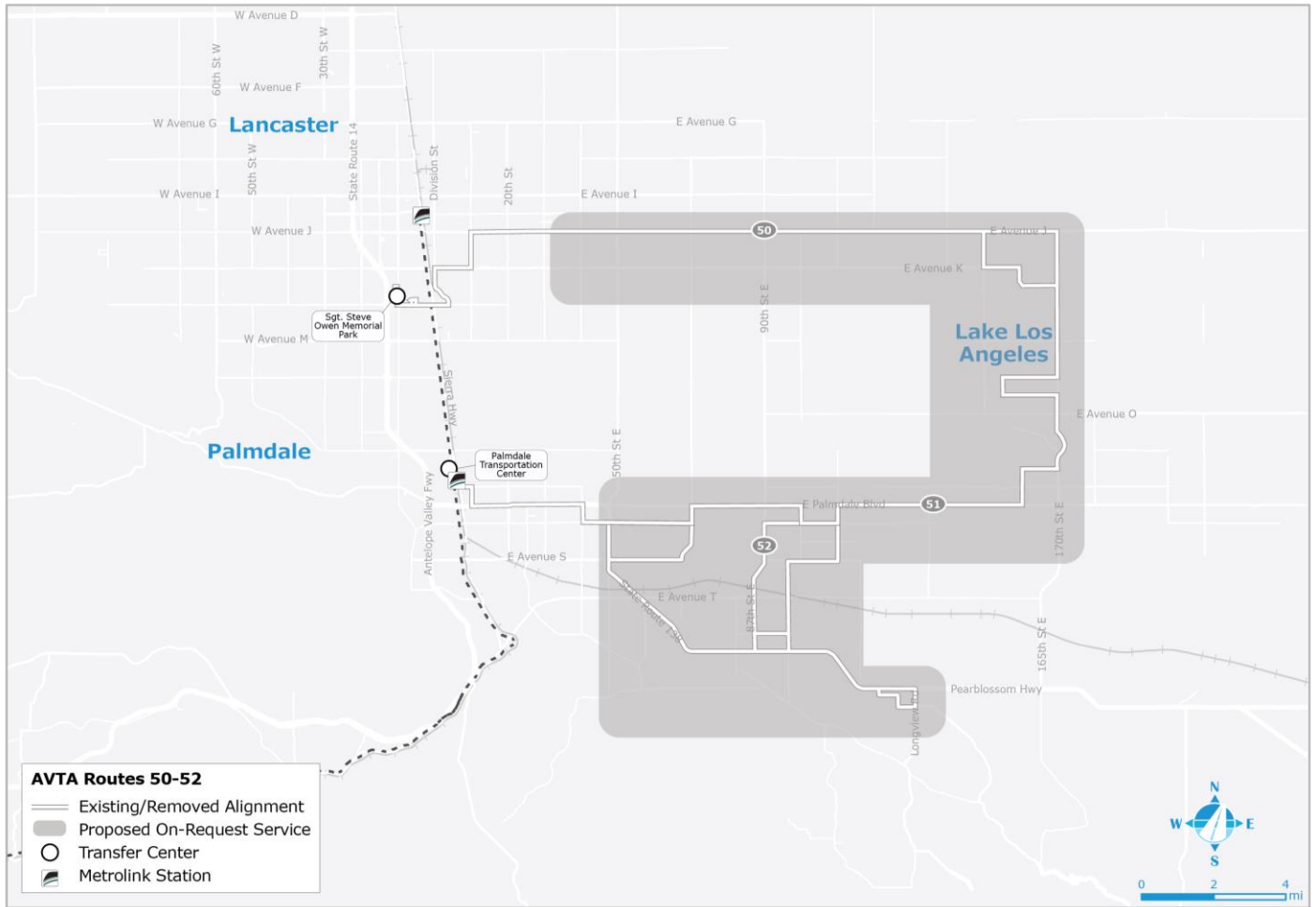


Figure 22: Existing Routes 50, 51, and 52 proposed to be replaced by on-request service

Routes 747 – Edwards AFB and 748 – Mojave

Routes 747 and 748 are newly implemented routes that provide service to the large employment centers of Edwards AFB and Mojave Air and Space Port. Despite the large amount of people commuting from the AV to these destinations and coordination with stakeholders, these routes have not resulted in high ridership due to a myriad of factors. These destinations have large footprints that are difficult to serve conveniently, unconstrained parking, security clearance issues at Edwards AFB, and employee worries regarding emergency rides home. While it is important to continue to monitor ridership before determining whether to terminate these services, there are several other strategies AVTA can explore to reduce SOV trips to and from these destinations.

The recommendations for routes 747 and 748 include:

- As the commuter services to Edwards AFB and Mojave are still new, it is important to continue to monitor ridership.
- Implementing an emergency ride home program could help to assuage worries that those using the commuter services will be “stranded” or will not have any alternative ways to get home in the case of an emergency. This could be implemented using an existing emergency ride home service (such as the Regional Guaranteed Ride Home Program) or potentially implemented using forthcoming on-request infrastructure and resources.
- If ridership does not grow, it is recommended to eliminate these routes and instead redeploy these resources on key services. Strategies for reducing SOV use for commuters traveling to and from these destinations should continue to be explored, such as through partnering with Edwards AFB and Mojave to advertise and expand the use of carpooling and vanpooling services.

Additional Stakeholder and Community Feedback

Throughout the process of developing this plan, the Stantec team heard and collected feedback, comments and requests from riders, stakeholders, and community members. As seen above in the route-level recommendations, these comments were important considerations in crafting recommendations to AVTA. While all comments were considered, not all were accommodated in service recommendations. Some examples of these, along with notes that provide our reasoning, are included in the table below.

Table 6: Additional stakeholder and community comments considered

Comment	Notes
<p>██████████ is inquiring about a bus that will go to 30th Street East and Ave K</p>	<p>As seen in many areas throughout the Antelope Valley, current population and land use densities are too low to support fixed-route transit to this location. As discussed in Task 5, land uses that are transit-supportive need to work together with fixed route transit to provide service that is productive.</p>
<p>Service to Palmdale Blvd and 58th St. E (children go to Aerospace Academy in Palmdale and have to walk because there is no bus service in their neighborhood)</p>	<p>Similar to the request above, this area is currently too low-density to warrant fixed-route service. However, if future development patterns in this area result in higher-density development, AVTA could consider extending service to this area in the future.</p>
<p>██████████ would like to know if there is any chance of a bus going down Ave J. She stated that she lives on Ave J and 45th St West and does not have any transportation out there at this time.</p>	<p>This single-family residential neighborhood displays auto-centric land uses that are not conducive to supporting fixed-route transit.</p>
<p>I believe we should look into a route that goes down Ave K and 30th St E due to new developments</p>	<p>While areas of new development should be analyzed to see if transit service is warranted, the new developments in this area are auto-centric (such as residences with multiple-car garages) and present barriers to pedestrian access, providing further constraints to transit use.</p>
<p>Route 1: should turn down Ave L to Kaiser and then back to 10th St W</p>	<p>The purpose of Route 1 is to provide frequent, direct service with quick travel times. The new proposed network provides access to the Kaiser facility with proposed local Route 14.</p>
<p>Please consider adding a bus route along Pearblossom Highway from 47th Street East to Ave S via 25th Street East. Currently the closest bus connection is along Ave S about a mile away. Lots of homes along that stretch of Pearblossom.</p>	<p>Transit demand in this area is likely too low to warrant fixed-route service due to low density and auto-centric land uses. This area will be better served under the future on-request model.</p>
<p>Line 52 from Littlerock should be able to connect to Palmdale Transportation Center directly by going on Palmdale Blvd or Avenue R and at least every hour</p>	<p>Direct travel between Littlerock and the Palmdale Transportation Center will be possible under the new on-request model.</p>

Impacts of Service Changes

Of course, increasing the frequency on multiple routes in the proposed network will result in greater operating costs. It is anticipated that the changes proposed above in local services will result in an increase in operating costs of approximately \$1.9 million, not including on-request service delivery—service hours will remain unchanged for 747 and 748, with minor changes for supplemental school routes. The increase in operating costs is largely due to the increase in frequency on routes such as Route 12 (from 30 minutes to 15 minutes on weekdays), Route 9 (to 60 minutes on weekdays and weekends) and Route 5 (extended alignment). The cost estimates presented below were developed using Remix’s transit planning software and represent high-level estimates based on an average cost of \$90 per revenue hour⁴ and assuming average speeds comparable to today’s routes to estimate revenue hours. Efficiencies may be found once AVTA develops their vehicle and crew schedules, including interlining routes where appropriate and developing schedules that reflect actual operating conditions.

Forecasted costs for local services are expected to grow by ~13%, while ridership is estimated, conservatively, to grow by ~15-20% (Table 7). Additional outreach, marketing, and travel training would help boost these ridership numbers, also acknowledging the fact that, as some other agencies have experienced, a large-scale overnight network change may decrease ridership in the short-term as riders learn to use the new network and more riders are attracted. AVTA needs to make the transition as painless as possible with communication and trip planning assistance.

Table 7: Existing and Proposed Annual Service Hours and Cost

	Local service ⁵
Existing Hours (est.)	165,600
Proposed Hours	186,620
Difference	15,990
Existing Ridership (est.)	2,075,512
Forecasted Ridership	2,420,574
Difference	345,062
Existing Operating Costs	\$14,903,000
Forecasted Operating Costs	\$16,793,500
Difference	\$1,890,500
Existing Farebox Recovery (est.)	17%
Forecasted Farebox Recovery	18%

These changes in the local network are expected to be accommodated within the existing conventional transit fleet, with potentially a need for 2-4 additional vehicles during peak service. The number of vehicles required will be confirmed as more detailed route schedules are cut.

The investment into improved transit service is expected to result in ridership increases that can recover some of service delivery costs. Removing routes such as Route 50, 51, and 52 (approximately 17,000 annual revenue hours) that have a high cost per boarding will result in a more efficient and cost-effective local transit system.

⁴ This hourly rate was derived from the hourly rate charged by AVTA’s service provider, including an escalation factor for service operated in 2021, when most of this service would be fully implemented.

⁵ Does not include 747 and 748, which would be unchanged, but includes the elimination of Routes 50, 51, and 52. Does not include estimates of on-request service for Routes 50-51. Farebox recovery includes only estimated farebox revenue.

Changes to the commuter network, such as terminating Route 785 at North Hollywood Station, can also help to offset the cost to provide local service. Details about funding opportunities can be found in Section 10.0.

While these services are expected to generally increase access to destinations by transit, there are some individuals whose transit service will be eliminated or replaced in the new network. In a sample of typical weekdays, there is an average of 335 boardings at existing bus stops that will no longer have fixed-route service. Out of the daily weekday boardings of 8,965, this represents 3.7% of daily boardings. Riders who will no longer be able to ride Routes 50, 51 or 52 will have on-request microtransit available to them.

Table 8 below provides a line-by-line estimate of revenue hours and costs on an annual basis, as well as peak vehicle requirements. Note that cost is based on \$90 per hour, except for Routes 50, 51, and 52 in the proposed scheme, where costs are \$58 per hour (for on-request services, assuming a port over of existing revenue hours from scheduled fixed-route to on-request for Routes 50, 51, and 52).

Table 8: Existing and Proposed Annual Service Hours and Cost by Route

Route	Existing Service Hours	Proposed Service Hours	Difference in Service Hours	Existing Cost	Estimated Proposed Cost	Difference in Cost	Est. Peak Vehicles
1	45,900	48,890	2,990	\$4,130,700	\$4,399,700	\$269,000	11
2	17,140	17,110	-30	\$1,542,800	\$1,539,700	\$(3,100)	4
3	17,240	22,280	5,040	\$1,551,900	\$2,004,800	\$452,900	5
4	9,160	14,900	5,740	\$824,000	\$1,341,300	\$517,300	3
5	5,120	11,520	6,400	\$461,000	\$1,036,800	\$575,800	3
6	0	5,030	5,030	\$0	\$452,900	\$452,900	2
7	11,160	10,380	-780	\$1,004,100	\$934,100	\$(70,000)	2
8	1,070	1,070	0	\$96,200	\$96,200	\$0	1
9	4,610	6,480	1,870	\$414,500	\$582,800	\$168,300	2
11	20,000	16,000	-4,000	\$1,800,300	\$1,439,600	\$(360,700)	4
12	15,910	32,160	16,250	\$1,432,200	\$2,894,000	\$1,461,800	7
50	5,940	5,940	0	\$534,300	\$344,520	\$(189,780)	-
51	5,680	5,680	0	\$510,800	\$329,440	\$(181,360)	-
52	5,720	5,720	0	\$514,400	\$331,760	\$(182,640)	-
94	510	430	-80	\$46,200	\$38,500	\$(7,700)	1
97	190	160	-30	\$16,900	\$14,100	\$(2,800)	1
98	250	210	-40	\$22,900	\$19,100	\$(3,800)	1
Total	165,600	186,620	38,360	\$14,903,200	\$17,799,320	\$2,896,120	47

The figures below illustrate the change in total population, jobs, low-income population, and minorities within a 0.25-mile distance (5-minute walk) of fixed-route transit service by service layer.

As shown in Figure 23, the number of people within 0.25 miles (5-minute walk) of frequent service (0-15 minutes) increases from 0 to nearly 60,000 in the proposed network, with increases in the number of people living within 0.25 miles of 30-minute and 60-minute service as well.

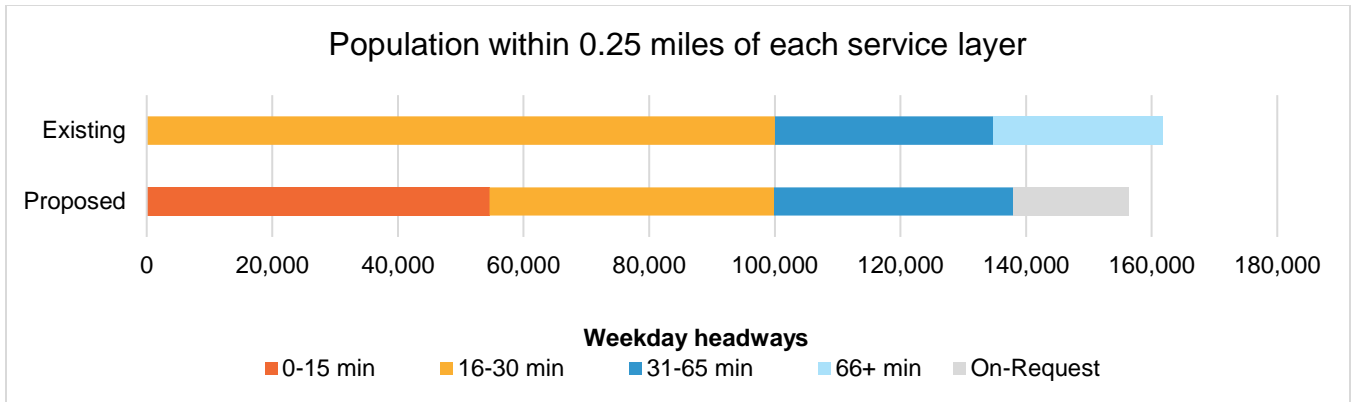


Figure 23: Population within 0.25 miles of each service layer

It is important to also consider the number of jobs, low-income residents, and minority residents who are served by the new network, keeping in mind that additional jobs and residents will be served by the on-request shared service. Figure 24 and Figure 25 and Figure 26 illustrate the increase in jobs, low income residents, and minority residents located within 0.25 miles of 15-minute and 30-minute network.

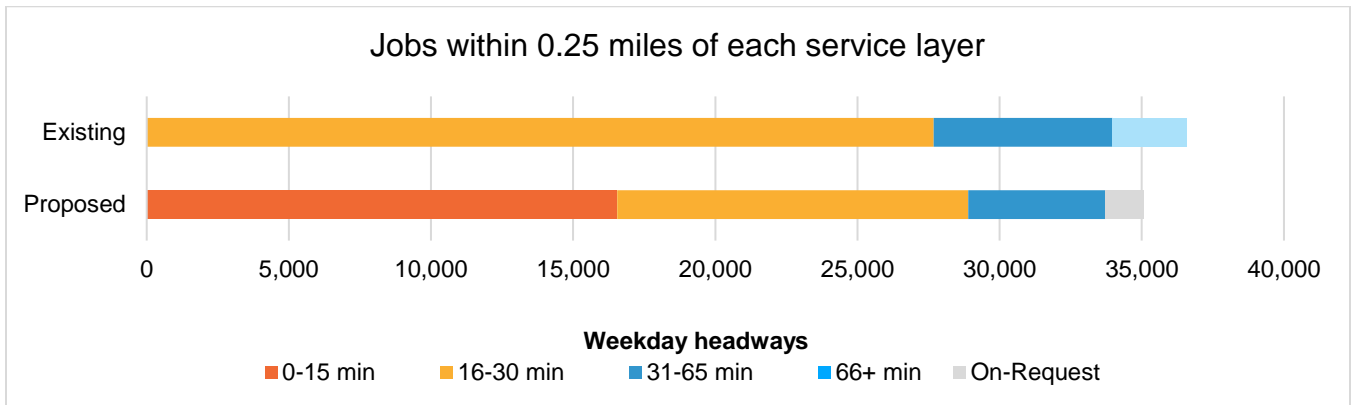


Figure 24: Jobs within 0.25 miles of each service layer

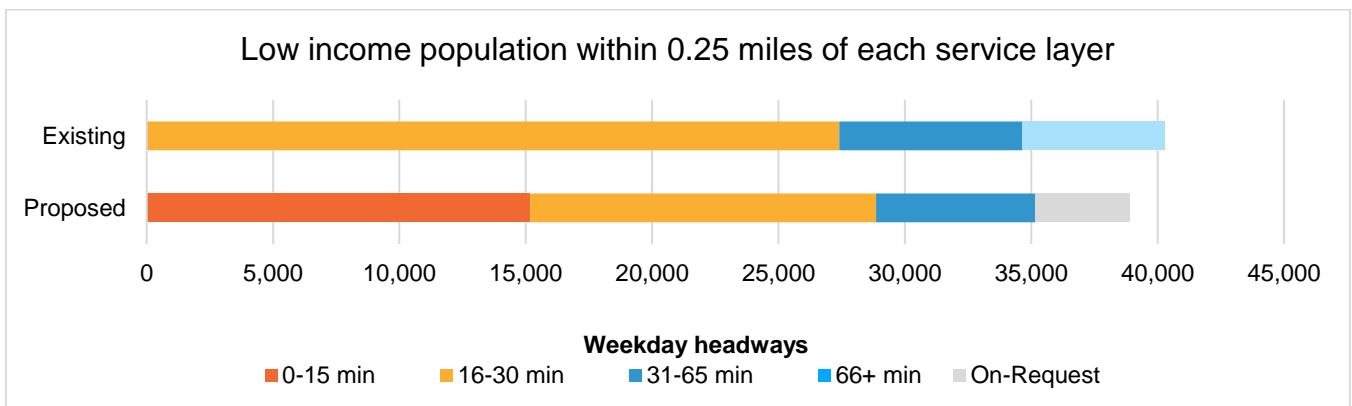


Figure 25: Low-income population within 0.25 miles of each service layer

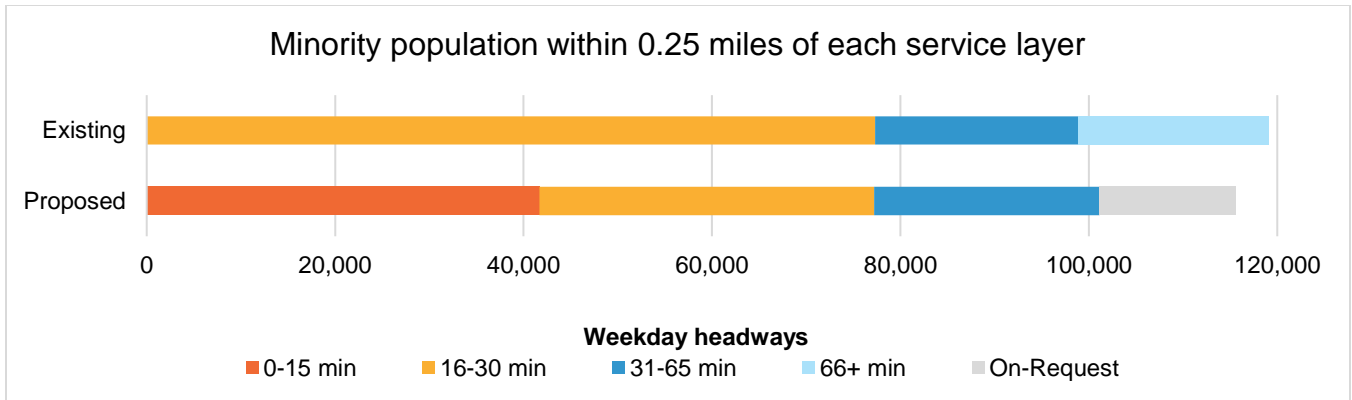


Figure 26: Minority population within 0.25 miles of each service layer

Note that the figures above likely provide a slight undercount of the coverage impacts of the frequent network—that is, for frequent services, the catchment area is actually larger, typically a 10-minute walk (about 0.5 miles) from the route.

As well, the on-request service, based on the proposed service design should result in waits, on average, not longer than 20 minutes, a vast improvement for the customers accustomed to headways of longer than one hour.

Figure 27 below provides an example of residents' enhanced access to Kaiser Permanente in Lancaster under the proposed local system. Improved access to healthcare and medical facilities was a large focus of the plan as well as a common request heard during stakeholder and community engagement, and this visual example shows that proposed service changes help to achieve this goal, specifically through the proposed changes to local routes 4 and 7.

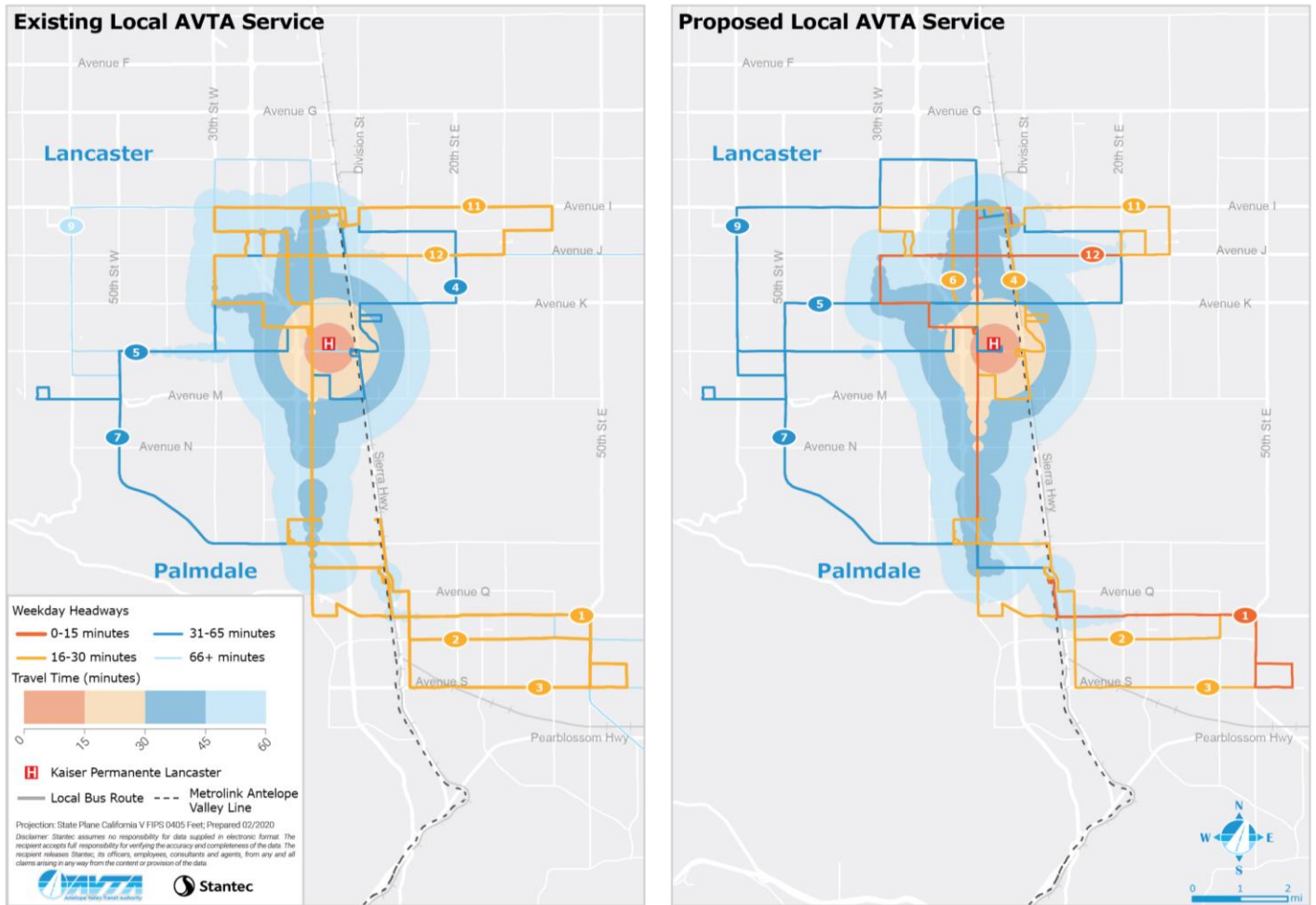


Figure 27: Access of residents to Kaiser Permanente Lancaster comparison of existing and proposed local service

6.2 ON-REQUEST MICROTRANSIT AND DIAL-A-RIDE SERVICES

Several opportunities exist within AVTA’s service area for a new, flexible, dynamic, and innovative way(s) to provide transportation services, particularly in areas of Antelope Valley like Lake Los Angeles with low population densities that are difficult to serve with conventional fixed transit. As described in the section above, routes such as 50, 51 and 52 are unproductive due to low-density and dispersed development. We recommend substituting these unproductive fixed-route services with on-request transit given the prevalence of on-request technology.

AVTA’s Dial-A-Ride (DAR) service is designed as a complementary and voluntary service to Access’s ADA paratransit service. As such, DAR does not strictly conform to ADA requirements, and is not a requirement for AVTA to provide. With the current DAR contract up for renewal, we recommend that a new on-request, shared mobility service be combined with the DAR program into one on-request service for optimal effectiveness and efficiency.

Stantec suggests rebranding the existing zones of the DAR program into AVTA *Mobility Zones* according to Table 9 and Figure 29 below. The intent of the rebranding is to indicate that the service is new and improved compared to the legacy DAR program.

Note that **Mobility Zone 4 (Rural)** is newly created for the purposes of replacing routes 50, 51, and 52.

Table 9: Proposed Mobility Zones replacing existing DAR zones

Proposed Mobility Zone	Existing DAR Zone
Mobility Zone 1 (Urban)	Urban Zone 1
Mobility Zone 2 (Rural)	Rural Zone 2
Mobility Zone 3 (Rural)	Rural Zone 1
Mobility Zone 4 (Rural)	Urban Zone 1/Rural Zone 1
Mobility Zone 5 (Rural)	Rural Zone 2

The maps below provide a conceptual view of the existing DAR zones (Figure 28) and proposed Mobility Zones (Figure 29).

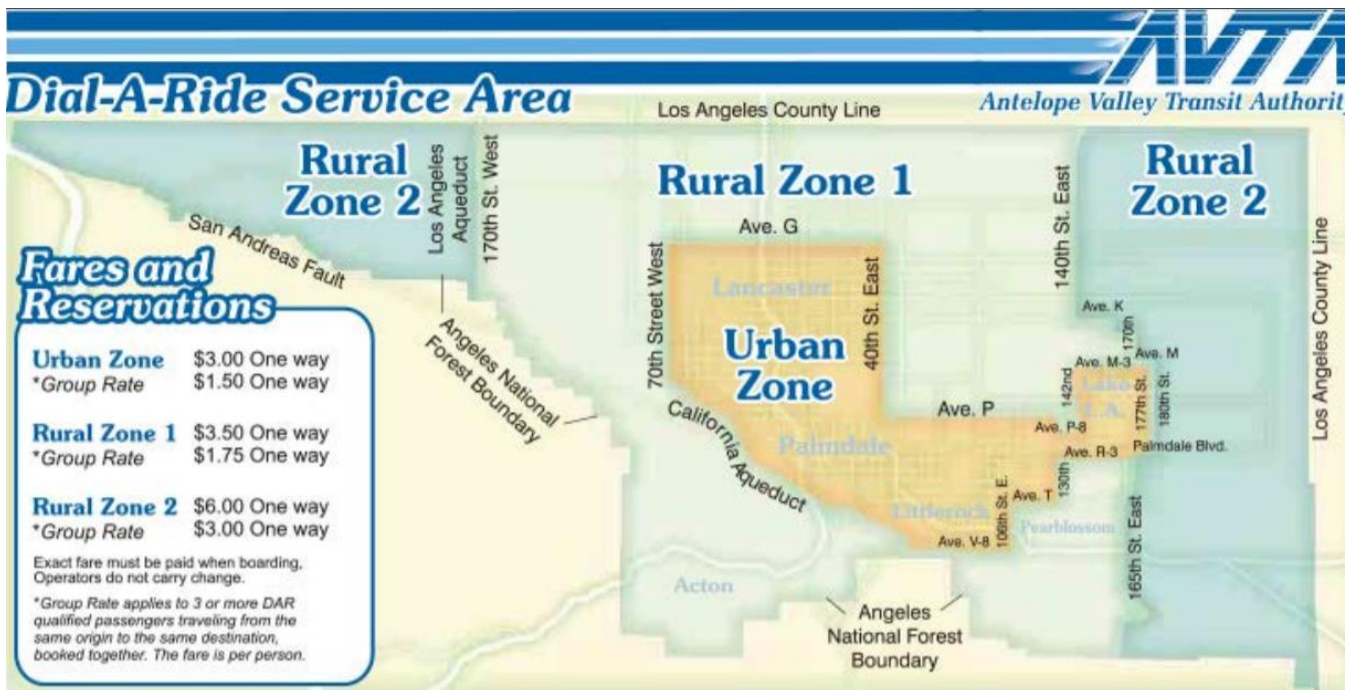


Figure 28: Existing DAR Service Area

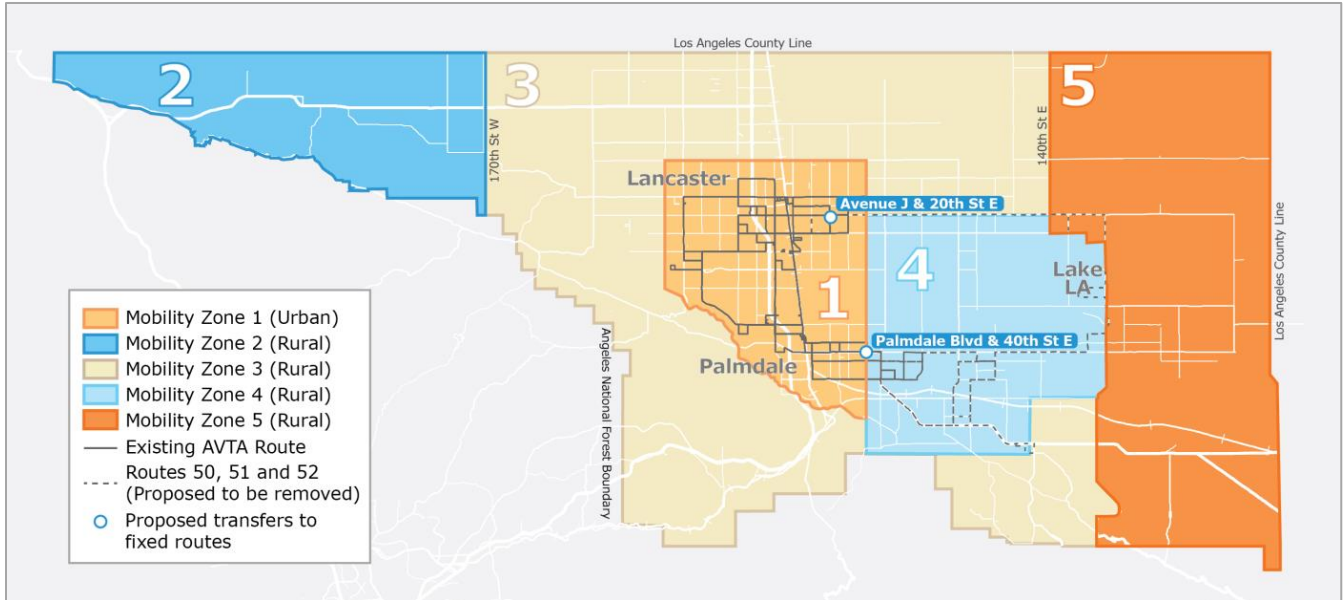


Figure 29: Concept map including a proposed Urban and Rural Mobility Zones

We propose the following the following services to be included in the on-request program:

- **On-request, shared-ride service for DAR-eligible customers.** Transition the current DAR system into an ‘on-request’ system, merging the on-request service delivery (service substitution of Routes 50, 51 and 52) for the eastern portion of the service area (Lake LA, Pearblossom and Littlerock) into a service whereby customers can request a journey through a mobile phone app or by calling a phone number. DAR-eligible customers (seniors and persons with a disability who are unable to take conventional transit) will still qualify for door-to-door accessible transit in any zone (Mobility Zones 1-5, Urban or Rural).
- **On-request curb-to-curb or home-to-hub service in rural areas lacking fixed-route transit.** For customers living in existing DAR Rural Zone 1 or 2 (proposed Mobility Zones 2, 3 and 5) who do not have access to fixed-route transit, on-request service will be provided to the nearest transit hub or will be delivered curb-to-curb below a certain distance. Mobility Zone 4 will be added as service substitution for Routes 50, 51, and 52, which will also operate as curb-to-curb or home-to-hub for non-DAR eligible customers.
 - Hubs for the home-to-hub service from Rural Zones are planned to include Lancaster Blvd. and Sierra Hwy in Lancaster (to connect to Routes 1, 11 and 14 as well as the Lancaster Metrolink station) and Palmdale Blvd & 40th St. E in Palmdale (to connect to Routes 1, 2, and 3). Passengers in Mobility Zone 1 (Urban) traveling to Mobility Zone 4 (Rural) for instance would use fixed-route services to reach one of these hubs and then summon an on-request ride to travel to Mobility Zone 4 (Lake Los Angeles, Pearblossom, etc.). These mobility hubs are still to be confirmed.
 - The trip matrix below (Table 10) represents a high-level view of service delivery for customers **who do not qualify for DAR**—all DAR-eligible customers should continue to receive curb-to-curb service as today but through an on-request scheme. The major differences between the designated rural Mobility Zones will likely include fares and service span.

- On-request, late-night service substitution.** Use of on-request transit services to replace conventional fixed routes in evening hours. Primarily app-based, but in the case of AVTA, call center services are envisioned to complement the app since not all customers have access to smart phones. Route 1 and Route 12 will continue to operate until midnight, while other local and community routes can be substituted with on-request service for short local trips or to feed customers into Route 1 and 12 after 10PM on weekdays, and if resources exist, after 8PM Saturdays and 7PM on Sundays. This service is a low-cost way of extending the service span to midnight across the entire system.
- Non-emergency medical transportation.** AVTA has secured a grant to provide non-medical emergency transportation (NEMT) as a pilot and will be bundled within the future on-request, shared mobility project. The NEMT service will allow riders and caregivers to book rides in advance of appointments as well as on-request. Riders will also be able to request recurring trips for repeating appointments, such as weekly or monthly appointments. This NEMT pilot will provide mobility as a “last resort” to individuals without any other funding coverage for service (Private Insurance, Medicaid, etc.) and does not intend to compete with other NEMT providers in the AV.

Table 10: Conceptual trip matrix for on-request/DAR service for non-eligible DAR customers.

<u>From/To</u>	<u>Mobility Zone 1 (Urban)</u>	<u>Mobility Zone 2 (Rural)</u>	<u>Mobility Zone 3 (Rural)</u>	<u>Mobility Zone 4 (Rural)</u>	<u>Mobility Zone 5 (Rural)</u>
<u>Mobility Zone 1 (Urban)</u>	Fixed route	Fixed-route to hub then on-request	Fixed-route to hub then on-request	Fixed-route to hub then on-request	Fixed-route to hub then on-request
<u>Mobility Zone 2 (Rural)</u>	On-request to hub, then fixed-route	On-request	On-request	On-request	On-request
<u>Mobility Zone 3 (Rural)</u>	On-request to hub, then fixed-route	On-request	On-request	On-request	On-request
<u>Mobility Zone 4 (Rural)</u>	On-request to hub, then fixed-route	On-request	On-request	On-request	On-request
<u>Mobility Zone 5 (Rural)</u>	On-request to hub, then fixed-route	On-request	On-request	On-request	On-request

Because of the evolving nature of on-request, shared-ride mobility services, we recommend that AVTA fully develops concepts and determines what services are feasible for the Antelope Valley through the RFI/RFP process.

- Rationalize the current DAR service area and eligibility criteria.** AVTA should reexamine its eligibility criteria for DAR to ensure that eligibility aligns with service needs and financial realities. DAR is costly to provide and should be available to individuals who need it most. We recommend that AVTA investigate whether to reduce the DAR zones, as well as reexamine fares and eligibility once on-request service concepts are more fully formed.
- Expand travel training by advertising and disseminating information related to the program.** While AVTA already provides some form of travel training, our analysis revealed that AVTA needs to do a better job at communicating this program, particularly for non-English speakers and for persons with disabilities. Travel training for able-bodied persons is a good way to teach potential customers about AVTA and public transit while reducing barriers to transit uptake. AVTA could hire a part-time dedicated travel trainer, or transition an existing staff with excellent customer service skills into that role.

- **Explore volunteer transportation programs.** These programs can be structured and supported by AVTA, and residents throughout the community could post trip requests and drivers can offer rides. This strategy could eventually supplement DAR in the very rural parts of the Antelope Valley.
- **Establish an advisory committee on accessibility.** AVTA should develop the framework and mandate for an advisory committee on accessibility. This committee would meet every two months to discuss issues with accessibility and develop action items to prioritize accessibility needs, such as information accessibility and infrastructure accessibility. This committee would also inform travel training programs and related policies.

Overall, the intent of the rebranding is to indicate that the service is new and improved compared to the legacy DAR program. Initial cost estimates of on-request services, which include service substitution for Routes 50-52, DAR, NMET, and late-night service hover around ~\$2.6 annually.

6.3 COMMUTER SERVICES

It's clear that while AVTA's commuter services have shed ridership in recent years, the commuter routes provide important connections to job markets in the region that are oftentimes not well connected by other transit services. However, our analyses reveal that beyond decreasing ridership, many of the trips on most routes are typically operating with loads of less than 50% occupancy.

A literature review and peer agency scan of commuter bus service shows that agencies tend to measure commuter bus service efficiency and create service standards based on passengers per trip, passengers per revenue hour, and vehicle occupancy. Based on these findings, typical service standards used by other agencies can include 20-25 passengers per trip, 15-20 passengers per revenue hour, and at least 50% seated capacity. Specific runs or lines that do not meet these thresholds are then examined for service changes or termination. Thus, we also recommended that AVTA adopt service standards to assess the efficiency and productivity of their own commuter bus services going forward.

We summarize the key observations that have led to the recommendations and strategies proposed here:

- The most productive or well-used bus trips (based on seat occupancy) are earlier departures from the Antelope Valley to the Los Angeles area. With worsening traffic, travel times are longer and more unpredictable forcing commuters to leave earlier. As such, later departures are mainly empty (Figure 30).

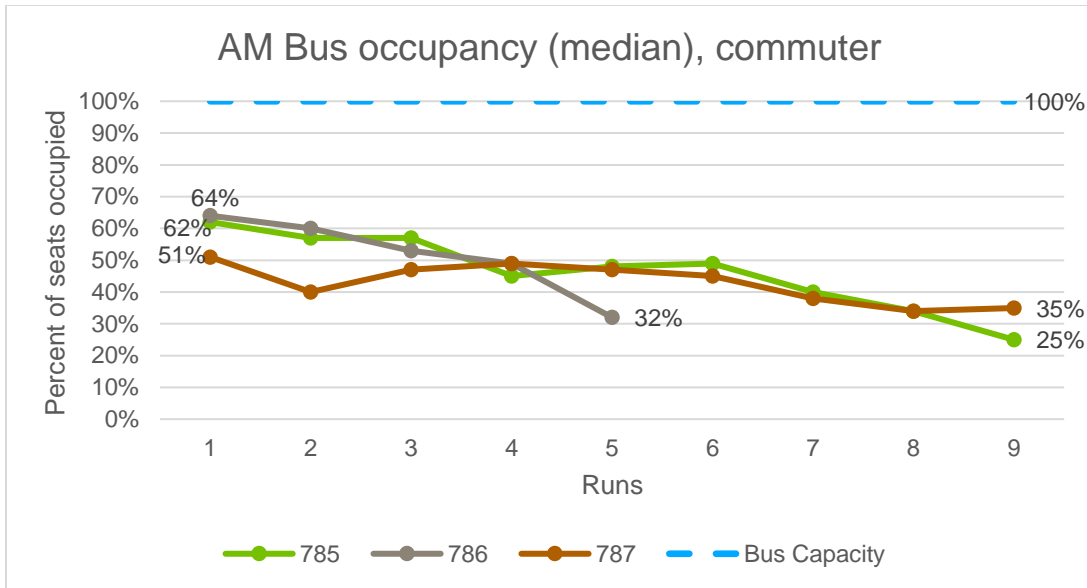


Figure 30: Commuter bus occupancy (median), AM peak

- The same is true for reverse or afternoon trips—earlier departures have greater occupancy than later trips (Figure 31). Again, longer travel times and worsening traffic have eroded most benefits of this type of service (i.e., the cost of not having to find and pay for parking, being stuck in traffic, being productive onboard, etc.)

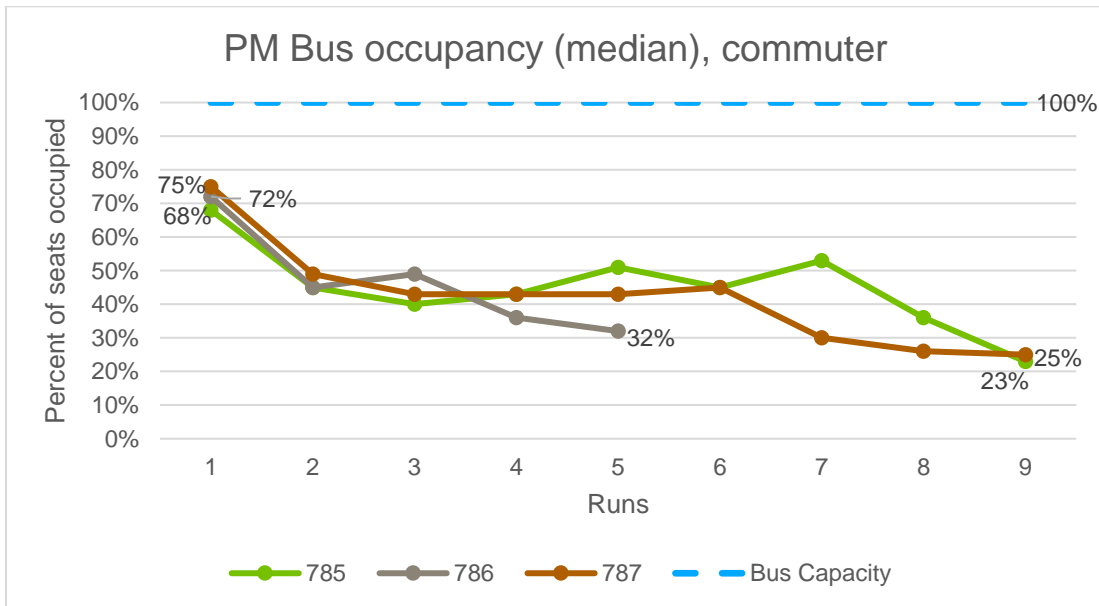


Figure 31: Commuter bus occupancy (median), PM peak

- The commuter market has changed or the routes don't reflect potential customers. For example, service into Century City (route 786) may have too many variants that make it too complicated to use, or the San Fernando service (route 787) may benefit from schedules that provide service for students rather than commuters.

- Collaborating with Santa Clarita Transit offers a new opportunity to expand AVTA's market for services that Santa Clarita Transit does not provide.
- Providing different approaches to commuter type services, including emergency ride homes and vanpooling, may also be effective approaches to reducing SOV commuting beyond a commuter coach or traditional 40-ft. bus.
- And finally, telecommuting is growing as a 'mode share', whereby working remotely from home has simply reduced the number of commuters or commuting journeys.

We propose to **redesign commuter bus routes and improve schedules as discussed for each route below:**

Route 785 – Downtown Los Angeles

The main purpose of this route is to connect the Antelope Valley to downtown Los Angeles, mainly redundant of Metrolink's Antelope Valley Line service, as well as other commuter services, like from Santa Clarita.

The major issues we identified were the lack of ridership considering the number of commuters or persons who live in the Antelope Valley but work in downtown Los Angeles (approximately 71,000 commuters), as well as the slow and unpredictable travel time as noted by AVTA staff and customers we spoke with.

The recommendations for route 785 include:

- Realigning the route to terminate at North Hollywood Red Line station so that customers can transfer to the subway which provides a quick travel time to downtown (about 25 minutes travel time to Union Station), as well as offer other connections to the Orange Line and destinations in the San Fernando Valley. The current downtown bus stops are all within a half-mile of Metro subway stations, so customers who use the 785 would still be able to reach their destinations.
- With the realignment, AVTA will need to redesign the schedule and should provide earlier departures and eliminate those after 6 am. It is also recommended to eliminate the two final trips in each direction as they have the lowest median vehicle occupancy, resulting in a total of 14 daily trips.
- AVTA will need to reduce fares to reflect the shorter distance as well as the fact that the need for customers to transfer may be perceived as inconvenient, even though the travel time will likely be shorter and more consistent (reliable). Providing information to longtime riders highlighting the benefits of shorter travel times and increased reliability of arrival times may also be an important component to ensure no riders are lost when transitioning services. Robust public education is a must.
- AVTA would also need reconsider layover strategies in North Hollywood.



Figure 32: Existing and Proposed Alignment for route 785

Route 786 – Century City/West Los Angeles

This route serving the West Side has the lowest ridership of all the commuter routes as well as the second-highest cost per boarding. Specifically, this route serves those commuting to the West LA/Century City area largely down the Wilshire corridor between La Brea and Westwood Blvd., which includes large employment centers, UCLA campus and medical center, and the Veterans Administration Medical Center. Out of the five morning runs operated by this route, runs 4 and 5 provide a variant to serve Century City via Olympic Blvd., providing access to 20th Century Studios and the VA Medical Center. Afternoon runs 2 and 3 also serve the VA Medical Center. These variants may be perceived as inconvenient to riders and is the main motivation behind our first recommendation.

The recommendations for route 786 include:

- Route 786’s multiple variants can be confusing to customers as well as reduce the number of available travel times to certain destinations. AVTA should simplify the alignment to the one originating in Westwood and terminate at Santa Monica Blvd. and Wilshire Blvd, and no longer provide the variant beginning at Santa Monica Blvd. and La Brea Ave., as more passenger activity is seen in Westwood and

Century City than east of Century City, and both the morning and afternoon runs of the Santa Monica and La Brea variant see median occupancy below 50%.

- We also recommend to eliminate the fifth run in each direction (as these operate at only 32% median vehicle occupancy), resulting in a total of eight daily trips.
- Meetings with Santa Clarita Transit revealed that Santa Clarita is having difficulties accommodating the high demand between Santa Clarita and Century City with their commuter lines 792 and 797. AVTA should consider adding a stop to serve the Newhall station in Santa Clarita to accommodate these travelers.
- Based on the analysis of stop-level passenger activity, demand east of Century City is recommended to be terminated. The following termination and transfer points (seen in Figure 33) are recommended to be explored:
 - Short-term: terminate at Wilshire Blvd. and Santa Monica Blvd., where passengers traveling farther east can transfer to LA Metro 20 or 720, which provides rapid service through dedicated bus-only lanes along Wilshire Blvd. This area also provides transfers to Metro lines 4, 16, 316, and 704.
 - Medium-term: align termination point with LA Metro NextGen Bus Plan changes, scheduled to be rolled out in phases through December 2021. The current draft plan is scheduled to be released for public review in early 2020, and service improvements are set to begin implementation in December 2020. Terminating service and providing transfers to the new proposed Metro R20 line (a consolidation of lines 720 and 20 with five-minute frequencies during AM and PM peak periods) is recommended for those commuters who need to continue to travel east along Wilshire Blvd.
 - Long-term: The currently under-construction Metro Purple Line Extension will eventually provide underground heavy-rail service from downtown Los Angeles down Wilshire Blvd. to terminate at the VA Medical Center. As with the recommendation to terminate Route 785 at the Red Line North Hollywood Station, AVTA can plan for future service changes to terminate service at one of the new Purple Line stops, from which customers will be able to transfer to the subway which will provide fast and reliable service to West Los Angeles and Century City. It is recommended to terminate at the future UCLA/Westwood or Westwood/VA Hospital station.

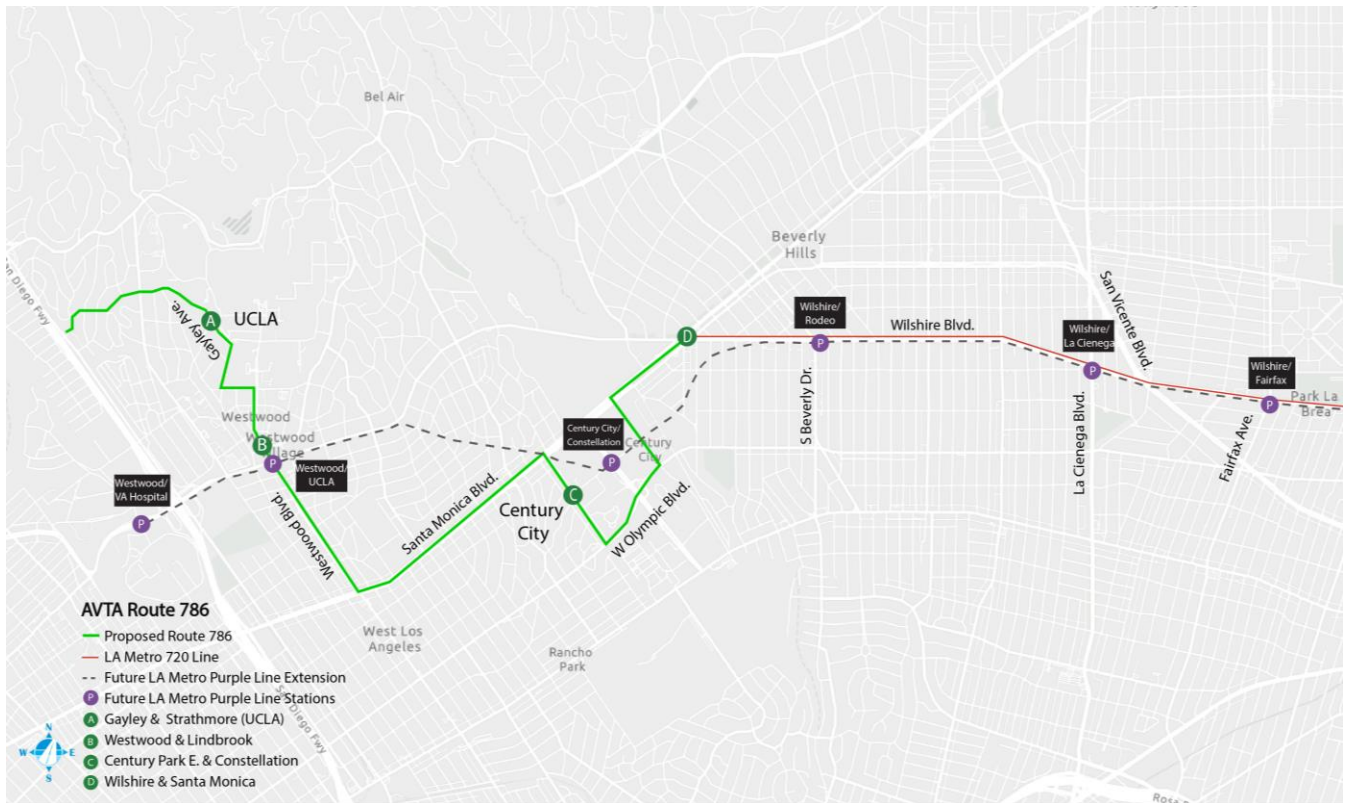


Figure 33: Proposed alignment for route 786

Route 787 – West San Fernando Valley

Route 787 provides service to the West San Fernando Valley, serving destinations such as the Warner Center, Pierce College, and CSUN. Route 787 provides the greatest amount of revenue service hours of all of AVTA’s commuter services with nine weekday runs in each direction.

The recommendations for Route 787 include:

- As with Route 786, there is an opportunity for AVTA to provide an additional stop at the Newhall station in Santa Clarita to pick up commuters that could not be accommodated by Santa Clarita’s current commuter services.
- As the largest trip generator along this route is CSUN, it is likely that a significant portion of total riders are CSUN students. Understanding that students tend to have class schedules that are not aligned with traditional commuter schedules presents an opportunity to provide additional, off-peak service to and from CSUN, such as during the midday or later evening periods.
- As with other commuter services, it is recommended to eliminate poor-performing trips. For the 787, we recommend eliminating two trips in each direction, for a total of 14 daily trips. These could be the last two morning and afternoon trips as they show low median occupancy, but AVTA can also reevaluate morning and afternoon trip times to provide service geared more towards CSUN students while still providing seven trips in each direction.

- We also explore examining the feasibility of modifying the current route alignment to serve West San Fernando Valley area destinations in proximity to, but not currently served by, Route 787, such as the VA Medical Center in North Hills, approximately 2.5 miles east of CSUN (see Figure 34). This routing change also involves using the carpool lanes on the I-5 and I-405 freeways to reach the San Fernando Valley as opposed to the SR-118 and Balboa Blvd. Due to overall low passenger activity, we also recommend to terminate service at the Warner Center. Providing connections to the Metro Orange Line stations or Ventura County Metrolink stations in the area can also be explored. A natural connection point to the Orange Line may be around the Warner Center, where there is a nearby Orange Line station at Canoga Ave. and the Orange Line Busway. The Warner Center is currently served by a Metro circulator (Line 601) that connects with the Orange Line at Canoga Station with 10-minute frequencies.

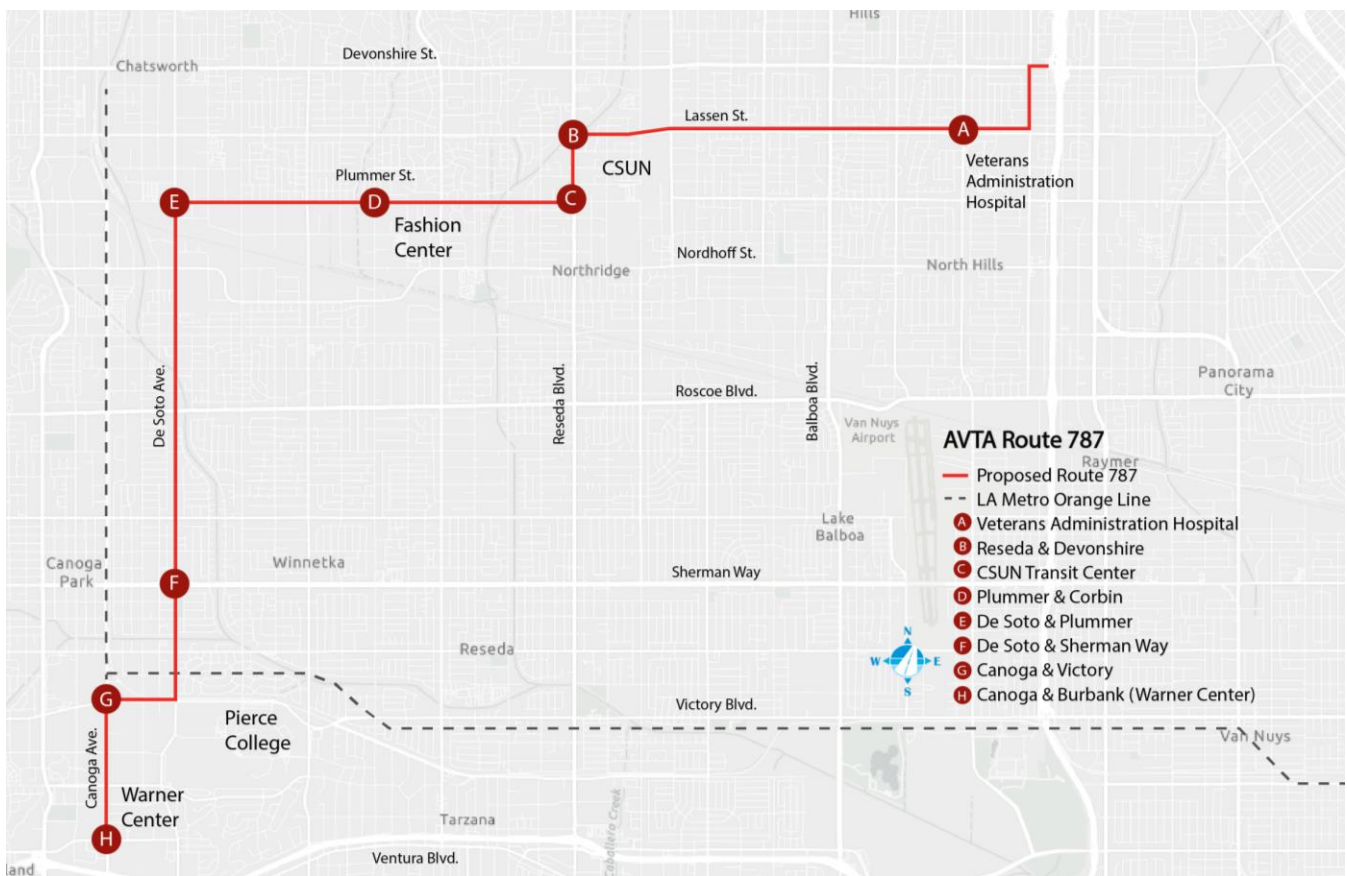


Figure 34: Proposed alignment for route 787

TRANSpporter 790 – Metrolink Connections

Route 790, while a 700-series commuter-type service, is not a commuter route in the sense of the other 700-series routes that focus on the peak hour commute. Instead, route 790 or the TRANSpporter, serves as a bridge for the Antelope Valley to Metrolink service that terminates in Santa Clarita during the midday. As such, the TRANSpporter plays a vital role in providing connections to the region at times when the Antelope Valley line train does not reach the Antelope Valley; in fact, the service is captured in the Metrolink schedule as a bus bridging service.

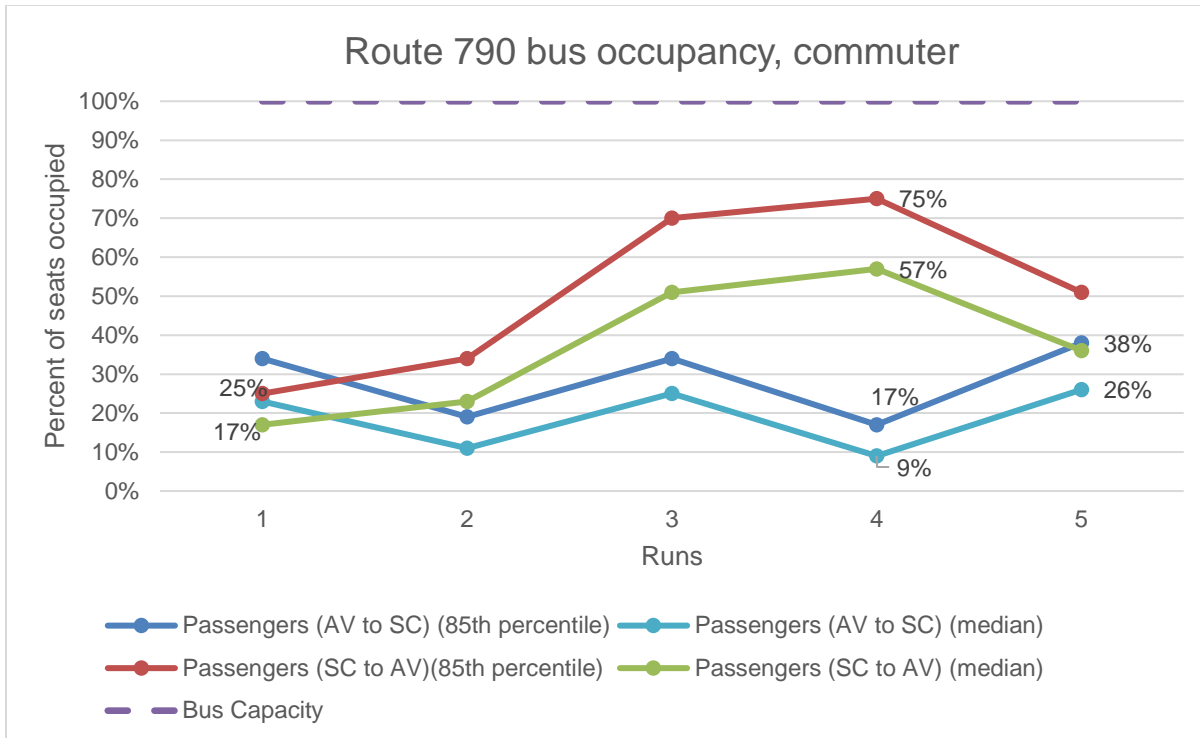


Figure 35: Commuter bus occupancy, midday

- Route 790 appears to be more popular traveling from Santa Clarita to Antelope Valley.** Higher occupancies are observed along runs 3 and 4. Run 3 makes additional stops in Santa Clarita at a regional transit center, Henry Mayo Newhall Memorial Hospital and a local community college (College of the Canyons). Run 4 leaving Newhall Metrolink station at 3PM and arriving in Palmdale just before 4PM and has the greatest occupancy with a median and 85th percentile of 57% and 75%, respectively.
- Between Antelope Valley to Santa Clarita, Route 790 operates with low occupancies** across all 5 runs, remaining within an 85th percentile occupancy of 10-40%. The median occupancies do not exceed 25% full. Despite this low usage, ridership was roughly 26,000 on the 790 in 2018.
- Our analysis of 790 and AV Line schedules revealed that one train departure towards LA Union Station does not have TRANSporter service, while one train arrival from Union Station at Newhall station does not have TRANSporter service. These missing trains result in a gap of over two hours for service to LA, from 12:48PM to 3:03PM—meeting the train at 2:05PM would reduce that by about one hour; for the train from LA, the gap is nearly three hours.
- Moreover, given Metrolink’s recent, but minor schedule adjustments (for example, TRANSporter service is scheduled to arrive at 8:40AM for a 9:21AM train, but the train now departs at 9:19 am) should be accounted for. The 790’s on-time performance is in the 70% range and missing a train departure results in a subsequent wait time of hours, rather than minutes, making on-time performance crucial. The following changes are recommended:

 - Revise schedules for 790 to account for new Metrolink departure times and to improve on-time performance. On-time performance should be at 85% since missing a train results in waits in the order of hours, not minutes.

- Add a trip to meet the 2:05PM southbound (LA Union Station) trip at Newhall Station (train number 218).
- Add a trip to meet the 12:54PM northbound arrival at Newhall Station (train number 211).
- **Explore collaboration with Santa Clarita Transit.** Santa Clarita Transit is a neighboring agency and during stakeholder engagement, it became clear that opportunities exist to share ridership by having certain commuter routes stop through Santa Clarita. AVTA should form a working group to define objectives and action items for collaboration.

Taken together, the proposed changes for commuter services aim at making better use of finite resources, while focusing on connections to other transit services over one-seat rides. In combination with alignment changes and fewer trips, we estimate that these recommendations can result in cost savings of ~\$1.2 million.

6.4 SUPPLEMENTAL SERVICES

AVTA's supplemental routes provide important service to and from local public high schools in different areas of the Antelope Valley. While these services are open to the general public, the main purpose of these routes is to transport students to school in the AM and return trips in the PM. Because these routes serve a specific purpose and are currently very productive, no route changes are recommended. However, opportunities to improve supplemental routes include adjusting schedules to accurately reflect student schedules, expanding services to those living one-three miles from school, and address issues of fare evasion, which was an issue heard multiple times during community and stakeholder outreach.

The recommendations for supplemental routes include:

- Supplemental routes are designed to take students to and from school; however, current supplemental route schedules either do not accurately reflect bell times or do not give students enough time to reach the bus after the dismissal bell. Adjusting supplemental route schedules to both accurately reflect school beginning and end times, as well as providing sufficient time for students to reach the bus, can help to increase ridership and improve rider satisfaction. However, it should be noted that schools release bell times approximately one month prior to the beginning of the school year, which provides insufficient time to adjust schedules for supplemental service. Because of this, more communication between AVTA and the schools is recommended to find a solution to this issue.
- In addition, supplemental routes currently operate year-round, even when school is not in session. While supplemental routes are open to the general public and some riders are of the non-student population, demand is not high enough to warrant service when school is out of session.
- There are approximately 14,450 high school students living within a three-mile radius of their schools. As these students are not eligible for the school bus service provided by the Antelope Valley Schools Transportation Agency, this is an opportunity for AVTA to fill this gap through existing supplemental routes. While it is likely that many of those living within one mile of their schools are likely able to walk, there are over 10,000 students between one and three miles from their schools that AVTA could provide service to, either through supplemental routes or fixed route service.
- The student population is traditionally one of the largest potential markets for transit agencies. Partnering with schools to create a reduced student fare could help to boost ridership on supplemental routes as well

as encourage students to use the fixed-route system for other purposes. The launch of a reduced fare program also presents an opportunity to launch an educational outreach and training campaign to student riders of supplemental routes regarding the importance of paying your fare, which can help reduce fare evasion.

6.5 COST ESTIMATES

The following table provides an high-level estimate of annual costs. Fixed-route services were modeled at \$90 per hour, commuter services at \$142, and on-request services (including DAR, night service, NMET, Routes 50, 51, and 51 replacement) at \$58 per hour.

Table 11: Total Estimated Annual Costs for AVTA Services.

	Existing	Proposed	Difference
Local and supplemental (excluding Routes 50, 51, 52)	\$13,373,000	\$16,793,500	\$3,420,500
Dial-a-Ride	\$1,648,010	\$1,210,920	\$(437,090)
Routes 50, 51, 52	\$1,530,000	\$986,000	\$(544,000)
Commuters (785, 786, 787, 790)	\$4,134,590	\$2,944,130	\$(1,190,460)
Routes 747, 748	\$406,910	\$406,910	-
Late-night on-request	-	\$232,000	\$232,000
NEMT	-	\$130,500	\$130,500
Total	\$21,092,510	\$22,703,970	\$1,611,460

Based on the assumptions and recommendations discussed throughout this report, we estimate that annual operating expenses will increase by about \$1.6 million, or by about 8% of current operating costs. Together with aggressive marketing and outreach, optimized runcutting, scheduling, and route design, we estimate that ridership, overall, could grow by 15-20%. Below, we discuss some approaches to address fare policy, another lever in the ridership recipe.

6.6 FARE STRATEGIES

Fare policy is important to manage demand for transit services while recouping a reasonable amount of operating costs from fare revenues. A difficulty arises when fares are set too low to sustain service improvements or develop an attractive and useful bus service, as well when they are set too high that the system loses riders, particularly riders who switch to driving since the bus provides no added incentive, such as not needing to pay for parking or using priority lanes, cutting travel times. Inappropriate fare structures can also add to instances of fare evasion unintentionally if fare tables are overly complicated but also deliberately from perceived low value for money and poor service quality.

Based on our outreach, feedback, and analysis of AVTA's fare structures, we provide the following recommendations and strategies.

- **Implement short term changes in fare policy including:**
 - For local fixed-route services, raise the base fare every couple of years in a predictable manner, such as \$0.25 to ensure that fares track with the increased cost of doing business. Regular, predictable fare increases, particularly with service improvements, help customers plan for fare

increases and reduces the need for AVTA to increase fares suddenly in a large increment in order to adjust fares that have not kept pace with inflation.

- Discontinue the 4-hour pass. This fare product is not well used based on customer feedback (and data we never received from AVTA) and having fewer products streamlines fare purchasing. Moreover, by removing this product, more customers may switch to day passes, increasing revenue for AVTA while providing unlimited trips to customers using that day pass.
- Identifying new partnerships with local employers to distribute employee passes. EcoPasses are transit passes that are subsidized by employers and distributed to their employees for a reduced fare. These passes provide benefits for all parties involved:
 - i. Employees have an incentive to take transit to work and leave their car at home, reducing traffic congestion and increasing the transit mode share.
 - ii. Employers who do not have enough parking spots to accommodate workers can provide an alternative travel option, and work towards their goals of creating a more sustainable workplace.
 - iii. Transit agencies receive a consistent revenue stream from participating employers and improve productivity by carrying more riders.
- Promote TAP card adoption and LIFE fares for those who qualify.
- Provide day passes with pre-loaded day fares to healthcare facilities.
- **Launch a fare study to rationalize commuter fares and other fares when implementing route restructuring.** In particular, shortening commuter routes will necessitate fare adjustment. This offers a great opportunity to also examine other fares and policy in general. In addition, a reimaged fixed route network is likely to increase ridership; this effect should be considered in the context of fares.
- **Partner with universities, colleges, and school districts in the Antelope Valley to develop a discounted student fare associated with a TAP card.** Student ridership is an area of opportunity for AVTA, particularly improving ridership by students who already use supplemental routes to get to school. Providing a discounted fare in partnership with local schools can incentivize transit use for purposes other than schools—improving ridership. Moreover, by having a student pass with a bulk purchase agreement, AVTA can have a secured revenue stream for financial planning.

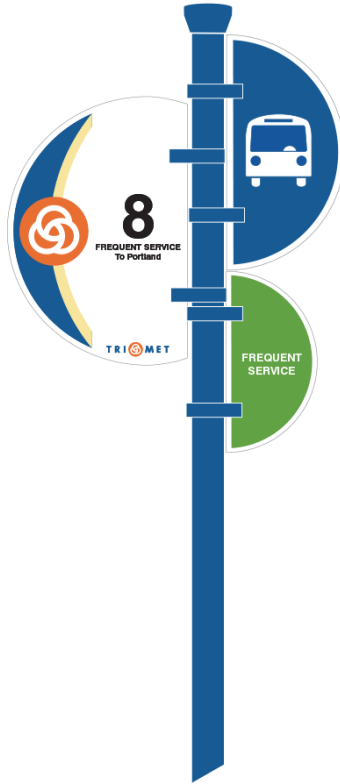
7.0 IMPROVE THE CUSTOMER EXPERIENCE

Putting the customer at the heart every decision AVTA makes will help ensure that outcomes and policies are geared to improving the rider experience, translating into ridership loyalty and growth.

7.1 IMPROVE CUSTOMER AND COMMUNITY AWARENESS OF AVTA SERVICE

It became clear during our stakeholder engagement activities, particularly the focus group meetings, that the public, even AVTA customers, have little knowledge about the agency. For example, half of the riders were aware of the AVTA mobile application that enables live arrival information tracking. Most participants believed that AVTA was a privately owned and operated company. Riders were unanimous in the belief that AVTA has not grown its services in response to the growth of the Antelope Valley, and agree that AVTA does not do enough marketing or communicating with them as frequent riders. Furthermore, non-riders mentioned that while walking is probably the best way to access an AVTA bus stop, they did not know the location of the bus stop closest to their home. One non-rider stated that she would “love to ride the bus” but she didn’t know enough about the service to try AVTA nor how to access the information. This signals a potential need for travel training and more promotion of AVTA’s online trip planning services and information portals, so that non-riders can feel more confident about using the service to replace some trips they would normally take in their private vehicles.

- **Improve awareness among current customers and non-customers by actively participating in the Antelope Valley community, particularly on transportation-related matters.**
 - Continue to leverage social media channels to not only improve awareness and marketing of AVTA, but also provide service information and other information related to riding the bus.
 - Use large initiatives, such as redesigned bus routes or services, to update a brand refresh or brand frequent services using a certain moniker. For example, TriMet in Portland, Oregon brands its frequent services with a green marker at bus stops, while TransLink in Vancouver, British Columbia brands its frequent service as the Frequent Transit Network (FTN). AVTA could look to provide a distinct bus stop brand for the frequent network product we propose here as part of a larger brand refresh or marketing outreach.




TriMet's Frequent Service bus lines and MAX Light Rail run every 15 minutes or better most of the day, every day.

Figure 36: Frequent service branding from TriMet, Portland, Oregon.

Frequent Transit Services

Many transit agencies develop a ‘brand’ or ‘sub-brand’ for routes or services that are ‘frequent’, typified by headways that are usually 15-minutes or less during most of the day. These services are great enablers of access and freedom because they remove the need to use a schedule to use transit—people can pick up and go. Frequent service also means that workers who need to leave work early for any reason can rely on transit to do so since frequency isn’t necessarily tied to peak morning or afternoon rush hours.

In addition to branding this service, differentiating it at bus stops and on maps, AVTA could also develop a primer on the benefits of frequent services, similar to the fact sheet from TransLink shown below (and found here: https://www.translink.ca/-/media/Documents/plans_and_projects/ftn/Frequent-Transit-Network-Fact-Sheet.pdf).



Frequent Transit Network
15-minute or better service, 7 days a week

Metro Vancouver’s Frequent Transit Network (FTN) is a network of corridors where transit service runs at least every 15 minutes in both directions throughout the day and into the evening, every day of the week. This 15-minute or better service runs until 9 p.m. every day, and starts at 6 a.m. on weekdays, 7 a.m. on Saturdays and 8 a.m. on Sundays. This level of service might be provided by one or more types of transit, such as buses or SkyTrain.

People traveling along FTN corridors can expect convenient, reliable, easy-to-use services that are frequent enough that they do not need to refer to a schedule. For municipalities and the development community, the FTN provides a strong organizing framework around which to focus growth and development.

BENEFITS FOR TRANSIT USERS

- Easy to use and convenient
- Service is frequent enough to not need a schedule for most trips
- Quicker travel times because wait times are shorter
- Easier to make spontaneous trips and know a service will be there if plans change
- The “hop on” and “hop off” level of service makes it easier for people to stop off to run an errand or shop during their commutes



BENEFITS FOR MUNICIPALITIES

- High-quality transit service connects urban centres and major activity areas
- Supports municipal and regional objectives to reduce energy use, air pollution, greenhouse gas emissions and congestion
- Increased certainty about where high-quality transit service is located
- Provides an organizing framework for coordinating land use and transportation

BENEFITS FOR DEVELOPERS

- Increased certainty about where high-quality transit is located helps for making development decisions and investments
- Makes development near rapid transit stations and along the frequent transit network more desirable and easier to market
- May increase rents per square foot and lower vacancy rates for office developments that are within walking distance of a rapid transit station

View the Frequent Transit Network map at translink.ca/ftn

- Redesign and reissue a new network map, particularly after route changes. The new map should focus on a clean, clear, and modern aesthetic that does away with the 3D perspective of the current map. Route alignments should be colored or line-weighted by service type or hierarchy, like a thick line weight for frequent routes, and lighter line weights for less frequent services. On-request areas should be cleared demarcated.
- Host open houses or pop-ups to discuss this strategic mobility plan with the community to obtain buy-in. While an important component of developing this plan was talking to customers and other stakeholders and gathering ideas, it will now be important for AVTA to own the final product and inform and educate the broader community, including customers, local businesses, transportation allies, municipal and elected officials, and other interested stakeholders about the plans recommendations and strategies and to get buy-in for implementation. In particular, developing working relationships and collaboration with key stakeholders—like city planning, transportation planning, Metrolink, Metro—will be crucial to the success of many of this plan’s strategies.
- Ensure that information is available in English and in Spanish, as well as in accessible formats for persons with disabilities.
- Update all information regarding DAR to be cohesive. Currently, the brochure available online specifies that anyone 65 years or older is eligible, while the main AVTA website specifies anyone over 62 years old. AVTA should ensure that information is consistent to remove confusion or potential challenges from customers. Additionally, with the launch of the new on-request service, new marketing materials should be developed outlining the program and how it works. Stantec suggests short videos be created explaining the new program. These short videos could also serve as a tutorial on how to use the app which will be the foundation of the new program.

7.2 RETRAIN OPERATORS

- **Develop operator training and retraining programs.** Working with the third-party service contractor to develop them, these programs should focus on ensuring safe and efficient bus operations as well as customer service. As the frontline, operators must be brand ambassadors of AVTA.
- **Train and retrain operators and monitor performance.** Proactively work with AVTA’s service contractor to ensure the program is robust. Hold service contractor responsible for insufficient performance.
- **Include operators as stakeholders during service change and planning exercises.** Being inclusive and considering operator input can help improve operator buy-in to service changes and help them become champions of AVTA.

7.3 EMERGENCY OR GUARANTEED RIDE HOME

Many transit agencies that operate commuter services similar to AVTA’s offer emergency ride home services that offer flexibility to customers who may need to return home for an emergency during the midday when commuter services are not operating. Offering this service is typically costly, as it involves dispatching a vehicle to pick-up a person and then returning to the Antelope Valley, roughly a three-and-half-hour return trip to Los Angeles; as such agencies, typically offer only a limited number per year per customer to prevent abuses and maintain costs.

- **We recommend that AVTA explore implementing an emergency ride home service.**
 1. Survey customers onboard AVTA services to determine home and work locations, interest in the emergency ride home and other pertinent information.
 2. Inform customers about the Regional Guaranteed Ride Home (GRH) supported by Metro in Los Angeles County.
 - The GRH program requires that employers are enrolled in the program, but AVTA should help customers become aware of this program.

7.4 IMPROVE BUS STOP AMENITIES

To a large degree, particularly for agencies like AVTA with services that for the most part are not frequent, the bus stop waiting environment plays a substantial role in customer experience and satisfaction. Providing shade, in particular, would go a long way to improving customer experience during the waiting portion of a transit journey.

- **Establish a committee to develop bus stop guidelines and an improvement plan.** This committee should use industry best practices to identify proper infrastructure for bus stops and develop an action plan that prioritizes stops based on need. AVTA should leverage information provided in Task 5 (section 3.2.1) when developing guidelines.
- **Install new bus shelters, benches, and other amenities as outlined in the improvement plan.** Installation and new infrastructure provide an excellent marketing opportunity for social media.

7.5 COLLABORATE WITH OFFICIALS AND THE COMMUNITY TO IMPLEMENT TRANSIT-SUPPORTIVE DESIGN AND DEVELOPMENT

AVTA should work cross-collaboratively across the greater Antelope Valley community to demonstrate the value and benefits of public transit and how public transit provides economic opportunities to residents and businesses. Leading an educative campaign and establishing partnerships with community-based and faith-based organizations, with decisionmakers and other stakeholders, particularly development firms and other players responsible for *how* the community develops will ensure that development supports rather than detracts from transit's appeal.

- **Establish a working group of staff from municipalities, community organizations, and AVTA to develop transit-supportive guidelines.** These guidelines, in conjunction with *transit service guidelines* should provide a workable framework for developments and land uses in the Antelope Valley that are supportive of transit ridership, including provisions for pedestrian infrastructure, set-backs, parking guidelines and so on. This group should develop an actionable list of low-hanging fruit for infrastructure to make part of the service area more transit-friendly, such as implementing pedestrian crosswalks near the Antelope Valley Mall to facilitate access to Route 1 along 10th St. W.
- **Implement and monitor developments and their transit supportiveness.** AVTA and the working group should also develop a set of indicators or metrics to measure success of transit-supportive guidelines, such as ridership or passenger activity near new developments, or vehicle miles-traveled by

residents of new developments near transit. This group should leverage existing work, like the Palmdale TOD Overlay Zone Land Use Framework Plan⁶ as well as resources from Metro⁷.

⁶ http://media.metro.net/projects_studies/tod/images/plan-tod-R3-Palmdale.pdf

⁷ <https://www.metro.net/projects/transit-oriented-communities/>.

8.0 BUILD AND SUPPORT AN INCLUSIVE, MULTIMODAL NETWORK

The attractiveness of transit that produces ridership depends to a large extent upon the environment around bus stops—does a customer feel safe and comfortable when waiting for a bus? Are bus stops accessible with sidewalk infrastructure? Is cycling a viable range extender of transit? If transit is not viable, are other non-single-occupancy vehicle modes available?

8.1 IMPROVE SIDEWALK AND BICYCLE ACCESS TO AVTA SERVICES

Our analysis revealed that nearly 90% of fixed-route customers access AVTA bus by walking, strongly indicating that where possible, AVTA must work with the cities of Lancaster and Palmdale to improve sidewalk infrastructure at and around bus stop. Furthermore, to improve first-last mile connectivity and extend the range of transit, bicycle infrastructure needs to provide a safe and viable opportunity for cyclists wishing to combine cycling and transit.

- **AVTA should establish a pedestrian and cyclist access working group and action plan.** This group should include staff from municipal departments as well as advocacy groups. The group should develop an action plan detailing critical steps for improving pedestrian paths and cycling access to transit.

8.2 IMPROVE THE UNIVERSAL ACCESSIBILITY OF AVTA INFRASTRUCTURE

- **Working together with the accessibility advisory group and local officials, AVTA needs to develop an action plan for improving the universal (ADA) accessibility of its infrastructure.** This action item works in conjunction with 8.1.
- In recent years, AVTA has taken the initiative to improve stop accessibility by ensuring new stops have shelters, benches and meet universal accessibility standards. AVTA even provides designated waiting areas in shelters for persons with a disability. However, not all stops are fully compliant with ADA standards, particularly legacy stops that have not been recently upgraded.
- In addition to barriers for persons with physical disabilities, AVTA should improve its amenities for persons with a sensory disability, such as providing tactile information for people who are blind or have low vision. Providing bilingual stop and agency information at AVTA's stops and stations would also improve the universal accessibility of its amenities.
- AVTA should assess the level of accessibility of its bus stops, identify low-hanging fruit, and prioritize investments based on stop usage. Moreover, AVTA could examine usage of stops by persons with disabilities and develop an accessibility advisory group to help inform stop design and other accessibility issues in an inclusive manner.

8.3 SUPPORT CAR-SHARING SCHEMES AND OTHER MODES IN THE ANTELOPE VALLEY

Beyond traditional transit services, AVTA should do more to promote and foster multimobility in the Antelope Valley, support active transportation and help reduce reliance on SOV. As a leader in zero-emission technology, AVTA could look to explore other GHG-reducing initiatives, such as:

- **Supporting carpooling, vanpooling and volunteer transportation programs.** Vanpooling and carpooling programs help commuters with similar schedules and destinations get to and from work easily, aid in removing single-occupancy vehicle trips, reduces per-person emissions and improves air quality. It is also estimated that van and carpoolers in Southern California reduce their commute trips by 20 minutes in each direction, and those in participating programs can reduce their commuting costs by 70% when switching from driving alone. AVTA should work with local employers and Metro to support carpooling and vanpooling programs.
- **Supporting car-sharing at major hubs.** Stantec advocates that AVTA study the potential for car-sharing service at major hubs, either through new providers like Getaround, or more established providers like Enterprise CarShare. Either way, providing or supporting the use of shared cars can help reduce car ownership rates, provide vehicles to those who need them but are unable to afford personal vehicles.
- **Provide priority parking for electric and hybrid vehicles.** As industry leaders in the zero-mobility space, AVTA should examine parking allocation at its main terminals and worked with owners and developers to prioritize or dedicate parking spaces for low- and/or no-emission personal vehicles as incentives.

8.4 DEVELOP A MARKETING PLAN AND IMPLEMENT A BRAND REFRESH

Educating residents about AVTA and its service, demonstrating value to the community and establishing a 'transit is cool' brand can help boost ridership and promote services throughout the community. Furthermore, service changes and implementing strategic plans like this one provides AVTA an excellent opportunity to engage with customers at bus stops and on vehicles, as well as public events to promote agency initiatives, like zero-emission vehicles, frequent service on Route 1, and soon, microtransit or on-request services.

- **AVTA should develop a marketing plan that includes messaging and strategies for a variety of audiences** including customers and non-riders. In addition, the plan should detail strategies for educating and obtaining feedback throughout the implementation of this strategic mobility plan.
- **AVTA should launch a brand refresh study** and engage with the community to evaluate ideas and concepts for a different brand. Branding can also extend to the frequent network and bus stops.

8.5 DEVELOP AN INTERNAL COMMUNICATION STRATEGY

Finally, most of the preceding recommendations were customer focused. However, AVTA staff must be the biggest champions of the agency, its mission, and of this strategic mobility plan in order for it to succeed.

- **AVTA should organize internal working meetings** where this plan is presented and then discussions are had about how to implement. The presentations can be tailored to different audiences, but the main goals should include identifying priorities and champions for the plan.
- **AVTA should establish an advisory group of internal champions of this plan from across AVTA departments.** This group should include staff from all functional divisions, including AVTA's third-party operator(s). Ensuring that AVTA has internal advocates for this plan can help prioritize implementation steps and identify appropriate actors to ensure this plan succeeds.

- **AVTA should implement and monitor the actions of this plan and develop a funding action plan.**
While this plan describes potential funding sources below (and which source of funding is most suitable), AVTA needs to identify the appropriate funding sources and opportunities to implement a prioritized set of action items and responsible staff.

9.0 PHASING

To implement the action items and recommendations detailed above, the proposed phasing plan is provided below. The phasing plan recommends implementation over a five-year period and identifies potential funding opportunities and parties responsible for implementation. Action items are broken down into the three major goals our recommendations are built on: enhance AVTA's core services, improve the customer experience, and build and support an inclusive, multimodal network.

Action	Year 1	Year 2	Year 3	Year 4	Year 5	Potential Funding	Responsible Actor(s)
Goal 1 - Enhance AVTA's core services - transit network and mobility services							
Fixed-route							
1 Layers and network design	Refine network and route concepts and launch new local network (launch in 2020)					5307; CMAQ; Measure R; Props A and C	AVTA
2 Improve schedules	Redevelop schedules to more accurately reflect on-street operating conditions	Expand street supervision to monitor reliability				5307; CMAQ; Measure R; Props A and C	AVTA
3 Explore transit-dedicated infrastructure	Establish working group for studying transit-dedicated infrastructure	Pilot peak hour reserved lanes on Palmdale Blvd. Pilot peak hour reserved lanes on Ave. J	Pilot peak hour reserved lanes on 10th St.			5307; CMAQ; Measure R; Props A and C; SB-1; BUILD	AVTA; City of Lancaster; City of Palmdale; Los Angeles County
DAR							
4 Launch on-request service	Implement on-request shared mobility services	Monitor and adjust services as program evolves				5310 (already procured for NEMT); CMAQ; 5312; Integrated Mobility Innovation	AVTA
5 Rationalize service area and eligibility	Study whether service area requires reduction and if eligibility should be modified	Modify service area and eligibility as necessary					AVTA; community partners
6 Expand travel training	Refocus program on travel training DAR customers and new fixed-route customers					5310	AVTA; community partners
7 Explore volunteer transportation programs		Establish working group to examine volunteer transportation programs and non-transit services				5310	AVTA; LA Metro; community partners
8 Establish accessibility advisory committee	Develop framework for establishing advisory committee on accessibility & establish committee						AVTA; community partners
Commuter							
9 Redesign routes	Refine network and route concepts and launch new local network						AVTA
10 Improve schedules	Redevelop schedules to more accurately reflect on-street operating conditions						AVTA
11 Explore collaboration with Santa Clarita	Work with SC Transit to understand opportunities to minimize duplication and best use resources					TIRCP; Props A and C; Measure R	AVTA; Santa Clarita Transit
Fare policy							
12 Launch a fare study	Implement short-term changes to fares and fare policy	Launch study to rationalize fares due to route and service changes					AVTA
13 Expand student fares to all students in the AV	Create new fare category for any enrolled-student to obtain a discounted fare					AVAQMD	AVTA; AVUSD; University of Antelope Valley; other schools
Goal 2 - Improve the customer experience							
14 Improve customer and community awareness of AVTA services	Work with local groups to understand disability needs for information. Ensure all marketing and informational material is bilingual and up-to-date	Implement new community outreach program to inform about AVTA at different locations across AV	Work with accessible advisory group to develop accessible information				AVTA; community partners
15 Retrain operators		Retrain operators for customer service and safe operations					AVTA
16 Leverage Metro's Guaranteed Ride Home program and educate customers	Dedicate a customer rep to working with employers and employees to educate about GRH	Hold internal working meetings to track plan implementation and success				Measure R and M; Props A and C	AVTA; LA Metro; employers
17 Improve bus stop amenities	Establish committee to develop bus stop guidelines & an improvement plan	Install new bus shelters and benches				5307; CMAQ; Measure R; Props A and C; SB-1; BUILD	AVTA; City of Lancaster; City of Palmdale; Los Angeles County
18 Collaborate with officials and community to implement transit supportive design and development	Establish working group of staff from cities, community organizations and AVTA to develop transit-supportive guidelines	Implement and monitor developments and their transit-supportiveness				Measure M; Sustainable Communities Program (SCAG)	AVTA; City of Lancaster; City of Palmdale; Los Angeles County
Goal 3 - Build and support an inclusive, multimodal network							
19 Improve sidewalk and bicycle access to AVTA services	Establish pedestrian and cyclist access working group & action plan	Implement pedestrian and cyclist access and integration program				Measure M; Sustainable Communities Program (SCAG)	AVTA; City of Lancaster; City of Palmdale; Los Angeles County
20 Improve the accessibility of AVTA infrastructure	Work with accessibility advisory committee and local officials to prioritize accessibility improvements					Measure M; Sustainable Communities Program (SCAG)	AVTA; City of Lancaster; City of Palmdale; Los Angeles County
21 Support a car-sharing scheme in the AV	Study potential for car-sharing schemes centered at multimodal hubs					Measure M; 5312	AVTA; LA Metro; car-sharing companies
22 Develop a marketing plan and implement a brand refresh	Develop marketing plan to provide public outreach for the plan	Launch a brand refresh study	Implement brand refresh				AVTA
23 Develop an internal communication strategy	Establish internal advisory group to support implementation of this plan & identify funding priorities	Implement and monitor the actions of this plan & develop a funding action plan					AVTA

Figure 37: AVTA five-year phasing plan.

10.0 FUNDING AND ACTIONS

AVTA is funded through state and local sales tax funds, federal transportation funds, and farebox and advertisement revenue.

The majority of funds are transportation subsidies allocated by the Regional Transportation Planning entity, LA Metro, to Los Angeles County fixed-route transit operators through the Formula Allocation Procedure (FAP) and the Capital Allocation Procedure (CAP). The FAP uses vehicle service miles and passenger revenues to apportion the available revenues into percentage shares for the operators within Los Angeles County. The CAP uses total vehicle miles and active fleet size (based on NTD reporting) to apportion shares. AVTA is also very active in applying for discretionary funding particularly for its zero-emission bus transition.

The various available funding sources are discussed below, while we provide some recommendations for funding for some key recommendations or strategies that follow.

10.1 FEDERAL OPPORTUNITIES

1. FTA 5307 Urbanized Area Formula Grants

- Major funding for urban area transit systems with urbanized areas (UZAs) above 50,000.
- Distributed using a capital allocation formula based on total vehicle miles, number of vehicles, unlinked boardings, passenger revenue and base fare.
- Used for capital procurements or preventative maintenance expenditures and requires a 20% local match.

2. FTA 5339 Buses and Bus Facilities Formula Program

- This program will be particularly useful for acquiring new vehicles and expanding or rehabbing AVTA's facilities.
- In addition to formula funding, two discretionary opportunities are also available
 - Bus and Bus Facilities Discretionary Program to replace, rehab or purchase vehicle and related equipment and facilities
 - Low or No Emissions Bus Discretionary Program to assist with the conversion to a zero-emission fleet.
- AVTA has applied for this funding and been successful at securing these funds for its electric bus transition.

3. FTA 5337 State of Good Repair Program

- Mainly used for state of good repair of high-intensity transit systems and requiring a 20% local match, 5337 funding can be used for developing and implementing transit asset management plans.
- AVTA could explore applying for this formula funding in developing a new transit asset management plan, particularly given its zero-emission bus fleet.

4. FTA 5310 Enhanced Mobility of Seniors and Individuals with Disabilities

- AVTA has recently applied for this grant that provides funding to transit agencies and non-profits that transport seniors and individuals with disabilities.
- The recent grant involves a microtransit strategy for seniors and individuals with disabilities.

5. CMAQ

- Congestion Mitigation and Air Quality Program funding mainly targets areas with non-attainment or maintenance of greenhouse gas or other noxious emissions.
- This grant requires a 20% local match.

6. BUILD

- Formerly TIGER grants, BUILD provides funding for transportation infrastructure investment.
- This competitive grant could provide some funding for AVTA's facility needs, and well as passenger-facing infrastructure.

7. Other federal programs

- Given the range of new mobility modes and technology innovation disrupting tradition fixed-route transit, the FTA provides competitive grants for agencies wishing to demonstrate new mobility modes, partnerships, service delivery alternatives and other schemes, such as:
 - **Integrated Mobility Innovation** to demonstrate innovative and effective practices, pilot new technologies and so on. Many receipts have identified partnerships, so this application requires some up-front work. AVTA could look to partner with local stakeholders for microtransit-type solutions.
 - **5312 Public Transportation Innovation** for the development of innovative products and services for transit agencies. As AVTA begins exploring microtransit concepts and strategies, 5312 funding could be a viable source for deployment and evaluation of the pilot-type program.

10.2 STATE OPPORTUNITIES

8. Transportation Development Act (TDA) Article 4

- TDA is a statewide quarter-cent sales tax that is deposited into the State Local Transportation Fund (LTF) and State Transit Assistance (STA) Funds (from sales tax on fuel). TDA funds are eligible for capital and operating expenses and are administered by Metro.
- LTF is based on county sales tax revenue and apportioned within the county based on population, while STA is formula based on a transit agency's revenues and population.
- Historically, AVTA has not been awarded TDA funding through local sources.

9. SB 1 (State of Good Repair Program)

- Enacted in 2017, the Road Repair and Accountability Act of 2017 or SB 1, provides nearly double the funding to the STA. SB 1 is focused on reporting and transparency to deliver California's transportation programs.
- Funds are distributed in the same way as STA formula funding.
- SB 1 funding is eligible for maintenance, rehabilitation, and capital projects.

10. Low Carbon Transit Operations Program (LCTOP)

- As part of CARB's Cap-and-Trade program and deposited into the Greenhouse Gas Reduction Fund, LCTOP (in SB 852 and 862) aims at reducing greenhouse gas emissions (GHGs).
- LCTOP funds are eligible for operating and capital projects aimed at reducing GHGs.
- LCTOP is formula-based on STA formula.
- AVTA has used LCTOP to acquire new vehicles for revenue service.

11. Proposition 1B, Public Transportation Modernization, Improvement, and Service Enhancement Account (PTMISEA)

- This formula funding program is nearing its end, but has been previously used by AVTA, along with the Transit Security portion of Prop 1B.

12. Transit and Intercity Rail Capital Program (TIRCP)

- Created by SB 862 and modified by SB 9, TIRCP provides competitive funding for "transformative capital improvements that will modernize California's intercity, commuter and urban rail systems, and bus and ferry transit systems to reduce emissions of greenhouse gases by reducing congestion and vehicle miles traveled throughout California."
- We are not aware of any TIRCP grants or grant applications from AVTA, but this program can be used for AVTA's commuter services, such as for vehicles or related infrastructure. AVTA may look to partner with Santa Clarita to submit a TIRCP grant application.

13. Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program)

- Carl Moyer is funded through tire fees and smog impact vehicle registration fees and aims to reduce pollution from transportation.
- It is administered by local air quality boards, and for AVTA, the Antelope Valley Air Quality Management District (AVAQMD).
- Carl Moyer can be used to offset the cost of purchasing zero-emission vehicles (heavy-duty), helpful for AVTA in its transition to a zero-emission fleet.

14. Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP)

- CALSTART and CARB launched HVIP to help agencies acquire costly zero-emission buses by providing funding through a voucher system.
- While funding is currently exhausted for this 2019, additional funds will be made available in January 2020.
- AVTA could apply for HVIP vouchers to offset some of the capital costs of acquiring zero-emission buses.
- Relatedly, through CARB and the Low Carbon Fuel Standard, agencies like AVTA using fuel and fuel with carbon intensity below the established threshold receive credit incentives, with additional incentives for electric charging stations.

15. Other sources

- Volkswagen (VW) Environmental Mitigation Trust provides about \$423 million for California to mitigate NOx emissions caused by VW's illegal emissions testing defeat devices for certain VW diesel vehicles. Administered by CARB, the funding process is expected to begin fall 2019.
 - AVTA should monitor this opportunity from CARB related to acquiring zero-emission buses.

10.3 LOCAL AND COUNTY OPPORTUNITIES

16. Proposition A

- Prop A funding is one-half of 1% tax on most retail sales in LA County distributed by Metro.
- Twenty-five percent is distributed to cities for local transportation, 35% for rail, and 40% for discretionary purposes which is typically used to fund bus service by Metro and the munis, including AVTA.

17. Proposition C

- Prop C funding is also one-half of 1% tax on retail sales in LA County distribute by Metro.
- The difference between Prop A and C is the proportion of fund allocation for different purposes, such as construction and operation, rail expansion, and bus security for Prop C.
- Both Prop A and C are eligible for capital and operational expenditures.

18. Measure R

- Approved in 2008, Measure R is an additional one-half of 1% sales tax to fund traffic relief and rail expansion.
- Twenty-percent is allocated for operations including bus operations.

19. Measure M

- Approved in 2016, Measure M is similar to Measure R but is a permanent half-cent sales tax to expedite rail expansion and other improvements.

10.4 OTHER SOURCES

20. Fares

- AVTA's current network-wide farebox recovery ratio is around 20%. Local transit routes have lower farebox recovery compared to commuter services.
- As discussed in Section 6.6, we propose fare policy recommendations, but recommend a more in-depth fare study once AVTA implements other components of this plan.
- Developing new concessions for students, and potentially negotiating bulk rates for schools could provide a guaranteed revenue stream for AVTA.
- Similarly, developing an ecopass or employer pass program (or working through Metro) can provide AVTA with a revenue stream for discounted bulk pass purchases. Leveraging vanpooling or carpooling through Metro as discussed in Task 5 is also a potential stream of revenue.

21. Advertising

- Currently, AVTA uses advertising aboard buses (posters) as well as bus wraps to generate ad revenue. It is important to make sure that bus wraps still reveal the transit agency's brand or logo, as well as any other important information such as bus ID numbers.
- AVTA should look to expand on its brand equity by doing more in ad billings and promotional work, like with the Jethawks and other local businesses, as well as advertisements at bus stops and hubs.

Tips for grant success

To compete more effectively when applying for competitive grants, AVTA should consider the following strategies:

1. **Developing Success Narratives.** Current grant programs focus on benefit-cost analyses, showing value-added benefits to the community and potential public-private-partnerships when submissions are ranked. Highly ranked projects contain narratives of success, and the FTA is encouraging transit properties to send them good news stories and pictures of transit projects to highlight the positive outcomes of grant-funded projects via social media.
2. **Developing Community Partnerships/Alliances.** Highlight partnerships with local community groups, schools, or other strategic alliances that assist AVTA in building capacity or assisting with organizational needs.
3. **Consider Potential Value Capture Strategies.** Value capture refers to a toolbox of project strategies meant to incorporate a share of land value increases to recover and reinvest that may allow for long term revenue streams. Some examples include:
 - a. Joint development
 - b. Right of way leasing
 - c. Development impact fees
 - d. Naming rights
 - e. Parking fees
 - f. Solar/wind installations
4. **Requesting Grant Application Debrief.** Knowing why a grant wasn't successful is imperative to designing stronger cases for the next time.




22. Medicaid reimbursement

- Some California transit properties have pursued Medicaid reimbursements for medical trips. Although the process of becoming eligible for reimbursement is cumbersome, this may be worth pursuing.

23. Hospital partnerships

- NEMT partnerships using AVTA's service (current and/or future on-request services) could be negotiated with hospitals on a per-trip basis, helping AVTA recover some of the expenses in providing trips to and from healthcare facilities.

Summary of Actions, Potential Funding, and Responsible Actors

	Action	Potential Funding	Responsible Actor(s)
Goal 1 - Enhance AVTA's core services - transit network and mobility services			
	Fixed-route		
	1 Layers and network design	5307; CMAQ; Measure R; Props A and C	AVTA
	2 Improve schedules	5307; CMAQ; Measure R; Props A and C	AVTA
	3 Explore transit-dedicated infrastructure	5307; CMAQ; Measure R; Props A and C; SB-1; BUILD	AVTA; City of Lancaster; City of Palmdale; Los Angeles County
	DAR		
	4 Launch on-request service	5310; CMAQ; 5312; Integrated Mobility Innovation	AVTA
	5 Rationalize service area and eligibility		AVTA; community partners
	6 Expand travel training	5310	AVTA; community partners
	7 Explore volunteer transportation programs	5310	AVTA; LA Metro; community partners
	8 Establish accessibility advisory committee		AVTA; community partners
	Commuter		
	9 Redesign routes		AVTA
	10 Improve schedules		AVTA
11 Explore collaboration with Santa Clarita	TIRCP; Props A and C; Measure R	AVTA; Santa Clarita Transit	
Fare policy			
12 Launch a fare study		AVTA	
13 Expand student fares to all students in the AV	AVAQMD	AVTA; AVUSD; University of Antelope Valley; other schools	
Goal 2 - Improve the customer experience			
	14 Improve customer and community awareness of AVTA services		AVTA; community partners
	15 Retrain operators		AVTA
	16 Leverage Metro's Guaranteed Ride Home program and educate customers	Measure R and M; Props A and C	AVTA; LA Metro; employers
	17 Improve bus stop amenities	5307; CMAQ; Measure R; Props A and C; SB-1; BUILD	AVTA; City of Lancaster; City of Palmdale; Los Angeles County
	18 Collaborate with officials and community to implement transit supportive design and development	Measure M; Sustainable Communities Program (SCAG)	AVTA; City of Lancaster; City of Palmdale; Los Angeles County
Goal 3 - Build and support an inclusive, multimodal network			
	19 Improve sidewalk and bicycle access to AVTA services	Measure M; Sustainable Communities Program (SCAG)	AVTA; City of Lancaster; City of Palmdale; Los Angeles County
	20 Improve the accessibility of AVTA infrastructure	Measure M; Sustainable Communities Program (SCAG)	AVTA; City of Lancaster; City of Palmdale; Los Angeles County
	21 Support a car-sharing scheme in the AV	Measure M; 5312	AVTA; LA Metro; car-sharing companies
	22 Develop a marketing plan and implement a brand refresh		AVTA
	23 Develop an internal communication strategy		AVTA



DATE: February 25, 2020

TO: BOARD OF DIRECTORS

SUBJECT: Free Fare Days - National Get on Board Day and Earth Day

RECOMMENDATION

That the Board of Directors adopt a Proclamation establishing National Get on Board Day in the Antelope Valley on April 16, 2020, and approve free fare days for both National Get on Board Day and Earth Day, April 22, 2020.

FISCAL IMPACT

The cost to provide free fare bus service on all local and commuter routes on April 16, 2020 and on April 22, 2020 will be approximately \$26,000.

BACKGROUND

April 16, 2019 is National Get on Board Day, a day to showcase the benefits and build support for public transportation. April 22 is Earth Day, a day to promote environmentally-friendly transportation and energy sources. Both days are excellent opportunities to educate our riders and the community on the benefits of public transportation and the advances made in our goal for an all-electric bus fleet.

LA Metro and other peer agencies will offer free bus service on Earth Day 2020 to promote awareness of the positive impact public transportation has on our environment.

Public transportation is a \$71 billion industry that directly employs 430,000 people and supports millions of private sector jobs. Public transit trips directly impact the economy by connecting people to jobs or retail and entertainment venues. Public transportation saves people money, helps the environment, and improves America's quality of life.

Prepared by:

Submitted by:

James Royal
Marketing Manager

Macy Neshati
Executive Director/CEO

Attachment: A – Proclamation

**ANTELOPE VALLEY TRANSIT AUTHORITY PROCLAMATION ESTABLISHING
NATIONAL GET ON BOARD DAY
IN THE ANTELOPE VALLEY ON APRIL 16, 2020**

WHEREAS April 16, 2020, marks National Get on Board Day, a day to showcase the benefits and build support for public transportation, as public transit offers economic opportunity and powers community growth by driving economic development and revitalizing neighborhoods;

WHEREAS every \$1 invested in public transportation generates approximately \$4 in economic returns;

WHEREAS public transportation is a \$71 billion industry that directly employs 430,000 people and supports millions of private sector jobs;

WHEREAS 87 percent of public transit trips directly impact the economy by connecting people to jobs or retail and entertainment venues;

NOW, THEREFORE, THE ANTELOPE TRANSIT AUTHORITY (AVTA) BOARD OF DIRECTORS RESOLVES AS FOLLOWS:

SECTION 1. Declares that the AVTA will join with public transportation systems across the country and participate in National Get on Board Day on April 16, 2020, by showcasing the benefits and building support for public transportation;

SECTION 2. That the AVTA declares that public transportation is an important part of our nation’s transportation system and provides citizens with travel options;

SECTION 3. That the AVTA declares that public transportation, helps people save money, helps the environment, and improves America’s quality of life;

SECTION 4. Further orders that the AVTA participate in National Get on Board Day by providing free fare bus service on all local and commuter routes, a press release, social media coverage, and staff at transit centers to distribute promotional materials and information.

PASSED AND ADOPTED THIS 25th DAY OF FEBRUARY, 2020

AYES: _____

NAYS: _____ ABSTAIN: _____ ABSENT: _____

Marvin Crist, Board Chairman

ATTEST:

APPROVED AS TO FORM:

Karen S. Darr, Clerk of the Board

Allison E. Burns, General Counsel



DATE: February 25, 2020

TO: BOARD OF DIRECTORS

SUBJECT: Sole Source Contract #2020-30 with GreenPower Motor Company Inc. for Zero-Emission Shuttle Buses

RECOMMENDATION

That the Board of Directors authorize the Executive Director/CEO to execute Sole Source Contract #2020-30 with GreenPower Motor Company Inc., Vancouver, B.C., to purchase six EV-Star zero-emission shuttle buses for an amount not to exceed \$574,683, plus applicable sales tax. Staff is also requesting approval of two future options for an amount of \$191,561, plus applicable sales tax, pending available grant funding.

FISCAL IMPACT

Sufficient funds are included in the Fiscal Year 2020 Budget to pay for this service.

BACKGROUND

January 2020, the Board authorized an On-request Shared Mobility Services contract with AV Transportation Services. These services will utilize the purchase of the EV-Star zero-emission shuttle buses, which will empower greater mobility by getting our riders where they need to be safely, timely and cost effectively. The level three electric chargers needed for these units will be under a future contract. The purchase of these zero-emission buses will assist in the implementation of the new regional transit plan.

The California Air Resources Board (CARB), in partnership with CALSTART, launched the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP). The HVIP credit of \$100,000 per vehicle are included in the purchase price of each zero-emission shuttle bus. GreenPower is the only manufacturer that offers a 25' electric-battery-powered bus that is not on a third-party manufacturer chassis, which makes it eligible for the HVIP incentive.

The EV-Star is a purpose built battery electric shuttle bus that has a ten (10) year vehicle service life. All other vehicles in this class are on a cutaway chassis by removing the gasoline engine and converting to an electric drive system. AVTA has had negative experience with cutaway chassis in the past.

Prepared by:

Submitted by:

Lyle A. Block, CPPB
Procurement and Contracts Officer

Macy Neshati
Executive Director/CEO



DATE: February 25, 2020

TO: BOARD OF DIRECTORS

SUBJECT: Sole Source Contract #2020-31 with ABB, Inc. for Electric Vehicle Charging Infrastructure

RECOMMENDATION

That the Board of Directors authorize the Executive Director/CEO to execute Sole Source Contract #2020-31 with ABB, Inc., Phoenix, AZ, to purchase six electric vehicle charging infrastructure equipment for the EV-Star zero-emission shuttle buses for an amount not to exceed \$183,948, plus applicable sales tax. Staff is also requesting approval of two future options for an amount of \$61,316, plus applicable sales tax, pending available grant funding.

FISCAL IMPACT

Sufficient funds are included in the Fiscal Year 2020 Budget to pay for this service.

BACKGROUND

January 2020, the Board authorized an On-request Shared Mobility Services contract with AV Transportation Services. These services will utilize the purchase of the EV-Star zero-emission shuttle buses under AVTA's sole source contract #2020-30.

The charging equipment infrastructure under this sole source contract will provide the equipment necessary for transfer of electric power to the EV-Star batteries for optimal operation. The purchase of these chargers will also assist in the implementation of the new regional transit plan.

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