



Board Report

File #: 2019-0715, **File Type:** Motion / Motion Response

Agenda Number: 7.

**PLANNING AND PROGRAMMING COMMITTEE
OCTOBER 16, 2019**

**SUBJECT: REPORT ON THE IMPLEMENTATION OF THE ANTELOPE VALLEY LINE STUDY IN
RESPONSE TO MOTION 5.1 FROM JULY 2019**

ACTION: RECEIVE AND FILE

RECOMMENDATION

RECEIVE AND FILE report on the implementation of the Antelope Valley Line Study in response to Board Motion 5.1 from July 2019.

ISSUE

At the July 2019 Metro Board meeting, the Board unanimously approved Motion 5.1 (Attachment A) introduced by Directors Barger, Najarian, Krekorian and Solis to support the implementation of three augmented service scenarios, each with a corresponding set of infrastructure improvements, as part of a phased implementation plan to deliver higher quality, faster and safer Metrolink service on the Antelope Valley Line.

Motion 5.1 directed the CEO to report back this month on several items identified in the motion, including project development plans, cash flow considerations, and associated operating costs for the four projects necessary to implement the approved service scenarios, and an update on a discretionary grant strategy coordinated with Metrolink to fund fully these four projects.

This report provides staff's response to these items. Staff will continue to deliver the entirety of Motion 5.1 and report back with additional updates in a timely manner.

BACKGROUND

The Metrolink Antelope Valley Line (AVL) serves as the rail transit corridor that serves the communities between Lancaster in the Antelope Valley and Los Angeles Union Station, offering traffic congestion relief on State Route 14 and Interstate 5 which run parallel to this 76.6-mile class 4 rail corridor route owned by Metro and used primarily by SCRRRA running Metrolink commuter rail service and secondarily by the Union Pacific Railroad for class 1 freight service. Amtrak also operates LOSSAN intercity rail service on the southern portion of the line. Currently Metrolink runs up to 30 commuter trains and Union Pacific Railroad operates 12 freight trains daily on the AVL.

The AVL serves as the only rail transit system linking residents and employment opportunities in the North Los Angeles County region to the Los Angeles basin. Additionally, this line is also the only rail transit serving the cities of Glendale, Burbank, San Fernando and the northeast San Fernando Valley. Running parallel to Interstate 5 and State Route 14, the Metrolink AVL serves as a modal alternative to driving for commuters that live and work near the 11 stations between Lancaster and Glendale, with connections to the line made possible to other Metrolink, Metro Rail, Metro Bus and municipal bus lines that serve the line's southern terminus at Los Angeles Union Station. With future transit lines planned to intersect with the AVL throughout the region, including the East San Fernando Valley Transit Corridor, improvements along the AVL will generate additional benefits and opportunities for the regional transportation system.

The importance of this Metrolink line to Los Angeles County was never more apparent than when the Interstate 5/State Route 14 freeway interchange connector collapsed in the 1994 earthquake, sparking emergency action to extend the line beyond its then-terminus in Santa Clarita to Lancaster to provide a vital transportation alternative for North Los Angeles County communities severed from the regional transportation system for months. Twenty-five years later, this Metrolink corridor has evolved from a transportation lifeline to a growing transportation service of choice for 7,000 weekday passengers, equivalent to the removal of one million car trips annually from the regional highway system. The AVL enjoys its status as Metrolink's third most popular line despite many constraints to speed, capacity, reliability, and expansion of service on the line - these constraints include aging infrastructure, significant grades, curves through mountainous topography, and 60% of the corridor limited to single track.

Recognizing the impact these limitations have on the AVL's ability to meet the transportation, employment and equity goals of the communities along the corridor, the Metro Board commissioned several planning studies-the 2012 Metrolink Antelope Valley Line Infrastructure Improvement Strategic Plan and the 2013 North County Multimodal Integrated Transportation Study (NCMITS)-to begin the examination of these limitations and of the opportunities available to improve mobility in North Los Angeles County and along the AVL.

Building on these studies and the passage of Measure M in 2016, which provided additional funding for Metrolink service, Directors Barger and Najarian introduced Motion 47 (Attachment B) at the July 2017 Metro Board meeting. This motion, approved unanimously by the Board, authorized a more focused study of the Metrolink AVL between Burbank and Lancaster and directed staff to coordinate with Metrolink and the North County Transportation Coalition to:

- A) Determine a range of frequency of service to maximize regional accessibility throughout the day;
- B) Assess the condition of the existing rail infrastructure (e.g. tracks, culverts, tunnels, crossings, etc.) that limits operational flexibility and service reliability; and
- C) Recommend needed infrastructure and capital improvement costs (in level of priority) along with cost-benefit analysis to support the range of frequency of service, service reliability, safety, and on-time performance including latest technologies in rail propulsion, controls and rail stock.

Metro collaborated with Metrolink, the North Los Angeles County Transportation Coalition, California State Transportation Agency and LOSSAN to develop the AVL study. At the July 2019 Planning and Programming Committee, Metro staff presented its findings with Item 5 (Attachment C), including six service scenarios that aligned with the California State Rail 2040 Plan and Metrolink's Southern California Optimized Rail Expansion (SCORE) Plan, along with a set of cost-effective infrastructure improvements needed to support each scenario, based on a phased implementation plan. Staff found that service Scenarios 1 through 3 offered the potential for tangible improvements in AVL service. Staff also found that the Balboa Siding Project was necessary to support Scenarios 2 through 6, and therefore was a critical path improvement to support additional service levels.

In response to Item 5, Directors Barger, Najarian, Krekorian, and Solis introduced Motion 5.1 and approved unanimously by the Metro Board, that supported the implementation of Scenarios 1 through 3, as detailed in the AVL Study, with the Balboa Siding Project prioritized in this effort. Implementing Scenarios 1 through 3 would result in the following outcomes:

- Three new late evening train trips,
- Bi-directional hourly mid-day service between Lancaster and Los Angeles Union Station, and
- Bi-directional 30-minute service during the regular weekday between Santa Clarita and Los Angeles Union Station.

The motion also called for the CEO to accomplish the following:

- Coordinate with Metrolink on the implementation of Scenarios 1 through 3 and the inclusion and prioritization of the capital projects detailed therein as part of Metrolink's SCORE program;
- Program Multi-year Subregional Program funding from the North County Subregion to bring the four projects supporting Scenarios 1 through 3 to "shovel ready" status;
- Develop project plans, cash flow considerations, and associated operating costs to implement Scenarios 1 through 3;
- Coordinate with Metrolink on a discretionary grant strategy and with the North County Subregion on additional local funding options that could be leveraged to fund the remaining construction costs of the capital projects included in Scenarios 1 through 3;
- Support the implementation of a diesel, electric, battery electric, or hybrid multiple unit train pilot program on the AVL; Coordinate with Metrolink in pursuit of grant funding opportunities that focus on the offsetting of mobile source pollution in order to implement the pilot program; and
- Work in partnership with Metrolink to engage appropriate state agencies and the private sector on additional strategies to implement all directives of the motion.

This report is a first update on the implementation of Motion 5.1 and the elements of the motion that required a report back to the Metro Board during the October 2019 Board cycle.

DISCUSSION

In response to Motion 5.1, Metro staff initiated a recurring task force comprising board staff from the authors of the motion, various internal departments, Metrolink, and staff consultants to realize the full implementation of the motion through a collaborative partnership. As this effort continues to develop, additional stakeholders such as the North County Transportation Coalition and the California State Transportation Agency will be invited to participate in this collaborative effort.

The following updates are highlights responsive to Motion 5.1, with additional updates to be brought to the Board during the November/December 2019 Board cycle and beyond as needed.

Scenarios 1 through 3: Project Development Plans and Cash Flow Considerations

In response to Part C of Motion 5.1, Metro staff will generate a proposed 10-year programming schedule and cash flow to develop the four projects identified in Scenarios 1 through 3 to shovel-ready status and to be implemented by Fiscal Year 2030 should discretionary grant funding be secured for these projects in a timely manner. This proposed schedule will prioritize the Balboa Siding Project (i.e., Double Track Extension) as required by Motion 5.1. The costs and cashflow associated with these capital projects will continue to be refined and solidified to support efforts to secure discretionary grants to implement Scenarios 1 through 3. Metro staff will also coordinate with Metrolink and the North County Subregion to finalize these items and report back on these items during the November/December 2019 Board cycle.

Roles and Responsibilities

Metro and Metrolink will develop a formal agreement delineating roles and responsibilities for implementing the four capital projects necessary for Scenarios 1 through 3. Staff will update the Board on the outcome of this objective when it is completed.

Associated Operating Costs

Metro staff is currently refining the operating costs associated with the service augmentation to be implemented through Scenarios 1 through 3. With concurrence from the Board offices that authored Motion 5.1, staff will update the Board on these costs in full during the November/December 2019 Board cycle.

Local Funding Options

Motion 5.1 called upon Metro staff to coordinate with the North County Subregion on local funding options that could be leveraged to secure discretionary grant funding to deliver Scenarios 1 through 3. Metro staff will develop for the North County Transportation Coalition's consideration in October 2019 a funding source and cash flow proposal that would support competitive grant proposals to

secure state and/or federal funding.

Metro staff will report back to the Board on the progress of this effort during the November/December 2019 Board cycle.

Discretionary Grant Strategy

Metro staff will continue to coordinate with Metrolink staff to develop a comprehensive discretionary grant strategy that will pursue state and federal funding opportunities to leverage limited local resources to fully construct the four projects in Scenarios 1 through 3 of the AVL Study, as approved through Motion 5.1.

The most promising - and imminent - discretionary grant opportunity to fund the elements of Motion 5.1 is the 2020 Transit and Intercity Rail Capital Program (TIRCP) administered by the California State Transportation Agency. The TIRCP provides funding for rail capital projects that expand, enhance, or improve existing rail systems and connectivity to existing and future transit systems, including the high-speed rail system. This program was the major source of funding for Metrolink's SCORE program and the Link US project. The capital projects to be delivered through Motion 5.1 will all be eligible for funding in the TIRCP.

The TIRCP also provides an opportunity to fund the pilot program for the AVL using diesel, electric, battery electric, or hybrid multiple unit train technology as identified in the motion.

Staff will work with Metrolink and other stakeholders to develop a competitive grant application for the 2020 TIRCP grant competition that will encompass the capital projects and pilot program approved through Motion 5.1. Project applications for this next funding cycle are due in January 2020, and the amount of funding expected to be available statewide is between \$400 million and \$500 million.

Additionally, the AVL capital improvements are also eligible to be funded through the Senate Bill 1 (SB 1) Solutions for Congested Corridors Program (SCCP) administered by the California Transportation Commission (CTC). This program is funded at \$250 million per year through SB 1 funds and awards grants for construction only to projects that provide transportation, environmental, and community access improvements to reduce congestion throughout the state. The major eligibility criterion for this program is that the project must be part of a completed Comprehensive Multimodal Corridor Planning Study - in this case, the study would have to encompass Interstate 5 and State Route 14 to support an application.

While the NCMITS is helpful in this regard, an updated and augmented Multimodal Corridor Study for Interstate 5 and State Route 14 that meets the requirements of the CTC for the SCCP will allow for Metro to apply for limited SCCP funding in future cycles to implement the projects composing the approved AVL priorities set forth in Motion 5.1.

The SCCP is currently scheduled to provide funding opportunities in two-year cycles, with the next round of funding to be awarded in calendar year 2020. This program is currently in the process of updating its guidelines in advance of the next Call for Projects anticipated in mid-2020.

Metro staff will continue to coordinate with Metrolink on additional opportunities to apply for funding from additional state and federal programs, including but not limited to the following:

- Local Partnership Program (LPP) - administered by the CTC;
- Consolidated Rail Infrastructure and Safety Improvements (CRISI) - administered by the Federal Railroad Administration; and
- Better Utilizing Investments to Leverage Development (BUILD) - administered by the United States Department of Transportation (USDOT).

Based on the existing criteria for the USDOT Infrastructure for Rebuilding America (INFRA) and the CTC Trade Corridor Enhancement Program (TCEP), staff does not consider these competitions to be viable options for Metro and Metrolink to secure discretionary grant funding for the AVL projects. Staff will continue to monitor these programs to determine if updated criteria for future cycles provide new opportunities to seek funding for this program.

Equity Platform

The implementation of Motion 5.1 will employ the Equity Platform Pillar III “Focus and Deliver” by planning resources to invest strategically in high quality mobility options for Los Angeles County, including the additional transit options available for many communities-including those designated as disadvantaged ones-along the Metrolink AVL corridor.

FINANCIAL IMPACT

The financial impact associated with implementing Motion 5.1 will be further refined and reported upon in the November/December 2019 Board cycle.

Impact to Budget

This report has no financial impact.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

The AVL improvements adopted by the Board through Motion 5.1 will support multiple Strategic Plan goals, including the following:

- **Goal #1: Provide high-quality mobility options that enable people to spend less time traveling / Goal #3 Enhance communities and lives through mobility and access to opportunity**
 - By supporting the delivery of infrastructure and service improvements designed to augment and enhance existing Metrolink service on the AVL, Motion 5.1 when implemented will directly serve the movement of people by rail transit to and from communities and employment opportunities along the rail corridor. Metrolink AVL service provides commuters with a high-quality transit alternative to driving on Interstate 5 and State Route 14, and once implemented, Motion 5.1 will allow these commuters to

have faster, safer, more reliable and more frequent rail service.

- **Goal #4: Transform LA County through regional collaboration and national leadership**
 - Motion 5.1 calls for Metro to collaborate with its regional partners in Metrolink, subregional governments, and local jurisdictions to develop an improved level of service on the AVL through infrastructure improvements and service augmentation. Creating a strong incentive for commuters to switch from using single-occupancy car trips to faster rail transit opportunities on the AVL afforded by Motion 5.1 will provide a transformative change in congestion reduction, emission reduction, and economic vitality for Los Angeles County. As part of Motion 5.1, Metro staff will also collaborate with the California State Transportation Agency and the federal government to deliver the funding necessary to deliver the projects necessary to provide improved Metrolink service on the AVL.

NEXT STEPS

Staff will continue to collaborate with Metrolink, regional partners, and CalSTA to develop a competitive grant application for the 2020 TIRCP grant competition that will potentially provide funding necessary to implement Motion 5.1. Staff will also examine other funding opportunities at the state and federal level to provide funding for these projects and report back to the Board during the November/December 2019 Board cycle.

Staff will also coordinate with stakeholders to develop a rail multiple unit pilot program responsive to the motion and will investigate additional state and federal grant opportunities beyond TIRCP to provide funding necessary to implement this program.

Staff will report back to the Board in the November/December 2019 Board cycle with more details on the project development plans, cash flow considerations and financial assumptions for constructing the projects and operating the service envisioned in Motion 5.1.

Staff will also work with the North County Subregion to develop local funding plans to support the grant applications necessary to deliver the projects and service as approved in Motion 5.1.

ATTACHMENTS

Attachment A - Motion 5.1: July 2019 motion

Attachment B - Motion 47: July 2017 motion

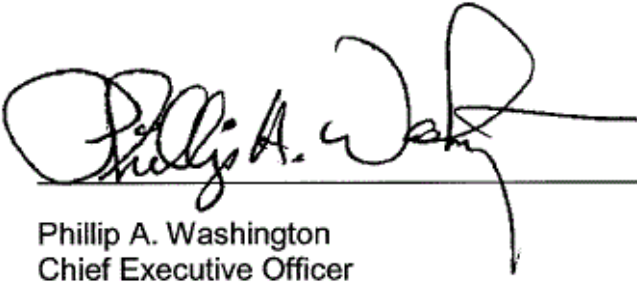
Attachment C - Item 5: July 2019 Board Report on the Metrolink Antelope Valley Study

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Board Report

File #: 2019-0571, File Type: Motion / Motion Response

Agenda Number: 5.1

REGULAR BOARD MEETING
JULY 25, 2019

Motion by:

DIRECTORS BARGER, NAJARIAN, KREKORIAN AND SOLIS

Related to Item 5: Antelope Valley Line Motion

Two recently completed MTA studies, the Metrolink Antelope Valley Line (AVL) Study and the LA-Burbank- Glendale Feasibility Study, recommend both short and mid-term goals to ultimately increase frequency to 30-minute headways with bi-directional service throughout the day. Short term improvements require \$41.8 million in capital improvements and \$4 million more in annual costs. Mid-term improvements would require approximately \$180 million in capital costs, mainly for double-tracking identified in the AVL study as 4 projects. To get these projects through environmental clearance and shovel ready, staff has estimated that \$12.75 million is required. Shovel-ready is an important benchmark to position these projects for grant funding opportunities. Implementation of Scenarios 1 through 3 in the Antelope Valley Line Study will significantly improve service, as detailed in both studies.

The AVL plays a critical role in connecting North Los Angeles County, Union Station and cities in between. It carries the third highest ridership in Metrolink's commuter rail system, and growing, reducing the equivalent of one lane of traffic from major freeways during peak commute hours, and removing approximately 1,000,000 weekday automobile trips per year.

Since the implementation of a now permanent fare reduction program in 2015, the AVL is the only rail transit line in Los Angeles County that has seen consistent, month-over-month ridership growth. As of last year, revenues from this ridership growth surpassed Metro's cost to subsidize the program. In many ways, the AVL is a model for the current regional rail system and it will play a critical role in unlocking regional mobility, as outlined in the State Rail Plan and Metrolink's SCORE program. It also faces serious physical constraints that limit its optimal performance.

SUBJECT: ANTELOPE VALLEY LINE MOTION

APPROVE Motion by Directors Barger, Najarian, Krekorian and Solis that the Board:

- A. Support implementation of Scenarios 1 through 3, as detailed in the Antelope Valley Line Study, and prioritize the Balboa Siding Project so as to open up the expedited delivery of hourly commuter rail service between North Los Angeles County and Los Angeles Union

Station;

- B. Direct the CEO and staff to coordinate with Metrolink on the implementation of Scenarios 1 through 3 and the inclusion and prioritization of the capital projects detailed therein as part of Metrolink's SCORE program;
- C. Authorize the programming of \$6.6 million in unprogrammed FY18-22 Multi-year Subregional Programming (MSP) Transit Program funds and \$6.15 million in FY23 MSP Transit Program funds from the North County Subregion, in order to bring the capital projects included in Scenarios 1 through 3 to "shovel-ready" status, and direct the CEO to report back to the Board in October with project development plans, cash flow considerations, and associated operating costs;
- D. Direct the CEO to coordinate with Metrolink on a discretionary grant strategy, and with the North County Subregion on additional local funding options that could be leveraged, to fully fund the remaining construction costs of the capital projects included in Scenarios 1 through 3, and include an update in the October report back to the Board;
- E. Support the implementation of a diesel, electric, battery electric, or hybrid multiple unit train pilot program on the Antelope Valley Line and direct the CEO to coordinate with Metrolink in the pursuit of grant funding opportunities that focus on the offsetting of mobile source pollution in order to implement the pilot program, and;
- F. Direct the CEO to work in partnership with Metrolink to engage appropriate state agencies and the private sector on additional strategies in order to implement the above directives and unlock the service potential of the Antelope Valley Line, in support of the integrated service goals laid out in the State Rail Plan.

Metro



Board Report

File #:2017-0505, File Type:Motion / Motion
Response

Agenda Number:47

REVISED
PLANNING AND PROGRAMMING COMMITTEE
JULY 19, 2017

Motion by:

DIRECTORS BARGER & NAJARIAN

Study of Metrolink Antelope Valley Line

The Antelope Valley Line (AVL) plays a critical role in connecting North Los Angeles County, Union Station and cities in between, carrying the third highest ridership in Metrolink's commuter rail system, reducing the equivalent of one lane of traffic from major freeways during peak commute hours, and removing approximately 1,000,000 weekday automobile trips per year, the highest percentage of transit-dependent riders.

Currently, due to numerous constraints, a trip from the Antelope Valley to Union Station can take over two hours, with speeds averaging just 35 miles per hour from end-to-end. There are also gaps in service throughout the day which may further discourages ridership.

Through previous board actions, progress has been made to address some of the AVL service issues such as the *Metrolink Antelope Valley Line Infrastructure Improvement Strategic Plan* dated March 2012, the *North County Multimodal Integrated Transportation Study (NCMITS)* dated 2013, and the new *Los Angeles-Burbank-Glendale Corridor Feasibility Study*; but ~~to date~~, a comprehensive study has yet to take place to analyze constraints on the northern segment of the AVL.

~~As Metro embarks on updating its Long Range Transportation Plan,~~ To be compatible with future planning efforts and to best prepare for as new funding sources that will become available to the North County Subregion in the coming years, it is important that stakeholder agencies understand the most cost-effective solutions to break down the constraints that continue to hold back the AVL from maximizing its service potential.

SUBJECT: MOTION BY DIRECTORS BARGER AND NAJARIAN

RECOMMENDATION

WE THEREFORE MOVE that the Metro Board:

AUTHORIZE a study of the Metrolink Antelope Valley Line (AVL) between Burbank and Lancaster

that determines a range of frequency of service to maximize regional accessibility throughout the day; assesses the status of existing tracks, culverts, tunnels, crossings and other infrastructure which limits operational flexibility & service reliability; recommends needed infrastructure & capital improvements (in level of priority) to support the range of frequency of service, service reliability, safety, and on-time performance, including latest technologies in rail propulsion, controls and rail stock; estimates the costs associated with the aforementioned improvements; and provides a cost-benefit analysis with prioritization of said improvements that ~~can~~ could be used to help guide both Metro, and Metrolink agencies and the North County Subregion in a direction to best achieve the above stated goals, while ensuring compatibility with future planning processes;

DIRECT staff to coordinate with Metrolink and local North County stakeholders on this study and to incorporate any previous or ongoing efforts such as the *Antelope Valley Infrastructure Improvements Strategic Plan*, the *NCMITS*, the *Los Angeles-Burbank-Glendale Corridor Feasibility Study* and Metrolink efforts to address state of good repair, so as to avoid being duplicative;

ACKNOWLEDGE that execution of this study shall not hinder any efforts currently underway by Metro or Metrolink to deliver capital improvements or address state of good repair on the AVL; and

DIRECT the CEO to report back to the board in September with an update on stakeholder outreach, identification of potential funding sources for the study, along with a timeline for study implementation.

Metro

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Board Report

File #: 2019-0429, File Type: Informational Report

Agenda Number: 5.

PLANNING AND PROGRAMMING COMMITTEE
JULY 17, 2019

SUBJECT: METROLINK ANTELOPE VALLEY LINE STUDY

ACTION: RECEIVE AND FILE

RECOMMENDATION

RECEIVE AND FILE status report on Motion 47 from the July 2017 Board of Director's meeting regarding the Metrolink Antelope Valley Line study (Refer to Attachment A).

ISSUE

Motion 47 authorized a study of the Metrolink Antelope Valley Line (AVL) between Burbank and Lancaster and directed staff to coordinate with Metrolink and the North County Transportation Coalition to:

- a) Determine a range of frequency of service to maximize regional accessibility throughout the day;
- b) Assess the condition of the existing rail infrastructure (e.g. tracks, culverts, tunnels, crossings, etc.) that limits operational flexibility and service reliability;
- c) Recommend needed infrastructure and capital improvement costs (in level of priority) along with cost benefit analysis to support the range of frequency of service, service reliability, safety, an on-time performance including latest technologies in rail propulsion, controls and rail stock.

In collaboration with Metrolink, the North Los Angeles County Transportation Coalition (NCTC), California State Transportation Agency and LOSSAN, Metro presents the initial results of the Antelope Valley Line Study (Burbank to Lancaster) to incrementally improve rail service along the Antelope Valley Line along with a cost benefit analysis of the corresponding infrastructure and capital improvements.

DISCUSSION

This AVL Study is focused on the 65.2 mile portion of the rail line between the Burbank Downtown Station and the Lancaster Station. A separate study called Los Angeles-Glendale-Burbank study includes the remaining 11.4 mile portion of the route between Los Angeles Union Station to Burbank Downtown Station. In collaboration with NCTC and Metrolink, this AVL study identified six (6) service scenarios that align with the California State Rail 2040 Plan and Metrolink's Southern California

Optimized Rail Expansion Plan (SCORE), which advance more regular service frequencies in the corridor, along with a set of cost-effective infrastructure improvements needed to support each scenario. Furthermore, this study also developed a phased implementation plan and identified potential funding strategies to enhance regional mobility. The intent of the Antelope Valley Line Study is to define the initial steps, in terms of capital investment and improved rail service, that will set this corridor on a trajectory to achieve the State's and region's ambitious goals for rail transportation for the next twenty years.

Background

The Antelope Valley Line (AVL) is a 76.6 mile class 4 rail corridor route owned by Los Angeles County Metropolitan Transportation Authority (Metro) and used by the Southern California Regional Rail Authority (SCRRA) running Metrolink commuter rail service between Los Angeles Union Station and Lancaster as well as Union Pacific Railroad for class 1 freight service. There are up to 30 Metrolink commuter trains and 12 Union Pacific Railroad freight trains per day on the AVL line. The AVL has a variety of service challenges with largely 60% single track along with aging infrastructure, significant grades and curves through mountainous topography.

The average passenger rail travel time between Lancaster and Los Angeles Union Station with 11 station stops is approximately two (2) hours and 15 minutes. To shorten the commute to 1 hour and 40 minutes, Metrolink operates two weekday roundtrip express service from Los Angeles Union Station to Palmdale with service stops to select stations of Burbank Downtown, Sylmar/San Fernando, Santa Clarita and Palmdale. The Antelope Valley Transit Authority runs five (5) round trips with bus service between Santa Clarita and Lancaster. The AVL is currently Metrolink's third-busiest line with approximately 7,000 weekday passengers which is equivalent to removing more than 1 million car trips annually.

Service Scenarios

The AVL Study proposed six (6) service scenarios, each with a corresponding set of infrastructure improvements, which are based on a phased implementation. The different phases provide for flexibility based on demand for rail service.

1. **Service Scenario 1** - Provide additional one (1) late evening train
2. **Service Scenario 2** - Provide additional two (2) late evening trains and provide bi-directional hourly mid-day service
3. **Service Scenario 3** - Provide bi-directional 30 minute service during the regular weekday between Los Angeles Union Station and Santa Clarita.
4. **Service Scenario 4** - It is the same as Scenario 3 with additional express service.
5. **Service Scenario 5** - It is the same as Scenario 4 service during the regular weekday, additional express service and intermediate turns at Santa Clarita.
6. **Service Scenario 6** - It is the same as Scenario 4 with intermediate turns at Sylmar/San Fernando Station.

The service plans for the six (6) service scenarios were analyzed to determine where additional railroad capacity would be needed to enable trains running in opposite directions to pass each other, and where yard storage would need to be increased to accommodate a larger rolling stock fleet serving the AVL. Collectively, the six (6) service scenarios will require the 14 infrastructure

improvements shown in Table 1 below. The capital cost for each of these projects is categorized by project and description to support each service scenario. Each scenario requires a subset of these projects, most of which extend or add a second track in portions of the line that currently have only a single track.

Table 1: Infrastructure Improvement Capital Costs by Service Scenario

Project	Description	Scenario	Scenario 1	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Estimated Rough Order-of-Magnitude Capital Cost ¹
Lancaster Terminal - 6 train sets	New double track and second station platform, plus two new 1,000-foot storage tracks (4-train sets stored on tracks) OPTION: Conversion to Service Tracks			X			X	\$ 27.3M Option: \$9M
Lancaster Terminal - 8 train sets	New double track and second station platform, plus three new 1,000-foot storage tracks (5-train sets stored on tracks) OPTION: Conversion to Service Tracks				X	X		\$ 30.1M Option: \$12M
Palmdale North	New double track and 2 platform tracks at station (integrated with HSR)					X	X	\$ 127.3M
Acton Siding	New 13,200-foot siding				X			\$ 40.2M
Ravenna South	Extend existing siding by 13,200 feet (new double track)					X	X	\$ 56.3M
Via Princessa-Honby	Extend existing siding by 5,808 feet (new double track)				X			\$ 26.4M
Canyon-Santa Clarita	Extend double track by 8,448 feet			X	X	X	X	\$ 48.8M
Hood-Saugus	Connect sidings at each end and convert to double track				X			\$ 41.6M
Balboa-Tunnel	Extend double track by 6,336 feet		X	X	X	X	X	\$ 41.8M
Sylmar-Roxford	New 8,976-foot double track				X			\$ 42.7M
Sylmar Station	Second track at station (other costs included in Van Nuys - Sylmar)						X	\$ 22.9M
Van Nuys Blvd-Sylmar	New 12,672-foot double track							\$ 47.4M
Sheldon-Van Nuys Blvd	New 13,200-foot double track					X	X	\$ 67.0M
Brighton-McGinley	Connect double track segments at both ends			X	X	X	X	\$ 57.3M

TOTAL TOTAL	\$0	\$41.8	\$175.2	\$328.9	\$428.6	\$448.7	\$ 677.1M
WITH OPTIONS			\$184.2	\$340.9	\$440.6	\$458	\$ 698.1M

NOTE: ESTIMATED CAPITAL COSTS INCLUDE THIRD PARTY AND SOFT COSTS.

Cost Benefit Analysis

The AVL Study employed rail service modeling and operations analysis that led to the identification of required capital improvements for each service scenario considering five (5) criteria: operations, regional connectivity, costs and financial performance, right-of-way impacts and applied technology.

The evaluation process was designed to assess each individual capital improvement on five (5) factors related to their contribution to improving AVL corridor service: (1) degree to which capital improvement supports sequential service scenario; (2) total capital cost; (3) independent utility of the project; (4) environmental or community impact issues; and (5) required right-of-way acquisitions, on a scale of 10 points to 50 points. The first criterion favors projects that preserve future flexibility to increase service according to a variety of possible service scenarios. Given limited available funding and widespread needs for new infrastructure investments across the entire rail network, proposed improvements with relatively low capital costs will be easier to fund and implement quickly. The independent utility criterion assesses the ability of a project to directly support improved rail service and deliver ridership benefits. The impact and right-of-way criteria measure the degree of risk associated with a project, favoring early action projects that minimize these risks.

The resulting cost to benefit evaluation scores are presented in Table 2 listed on the following page. The top scoring project is the Balboa double-track extension, which is required by Service Scenarios 2 through 6. The regular, repeating hourly service pattern on the AVL that this project enables is expected to be the backbone of any long-term future service plan on the AVL. As a result, this project is robust and logical for the first round of capital improvement investment.

The three proposed additional infrastructure improvements that comprise the second round of capital improvement investment also score high in the evaluation, because they support multiple future service scenarios, are relatively straightforward in terms of construction and are not expected to have significant negative impacts. The four combined infrastructure improvements facilitate Service Scenarios 2 and 3.

Table 2: Evaluation and Ranking of Infrastructure Improvements

Project Name	Description	Estimated Rough Magnitude	Total Capital Weighted Score
Lancaster Terminal – 6 train sets	New double track and second station platform, plus two new 1,000-foot storage tracks (4-train sets stored on tracks) Option to convert storage tracks to service and inspection tracks.	\$ 27,300,000 Op	37
Lancaster Terminal – 8 train sets	New double track and second station platform, plus three new 1,000-foot storage tracks (5-train sets stored on tracks) Option to convert storage tracks to service and inspection tracks.	\$ 30,100,000 Op	33
Palmdale North	New double track and 2 platform tracks at station (integrated with HSR)	\$ 127,300,000	16

Acton Siding	New 13,200-foot siding	\$ 40,200,000	24
Ravenna South	Extend existing siding by 13,200 feet (new double track)	\$ 56,300,000	23
Via Princessa-Honby	Extend existing siding by 5,808 feet (new double track)	\$ 26,400,000	25
Canyon-Sta. Clarita	Extend double track by 8,448 feet	\$ 48,800,000	40
Hood-Saugus	Connect sidings at each end and convert to double track	\$ 41,600,000	24
Balboa-Tunnel	Extend double track by 6,336 feet	\$ 41,800,000	49
Sylmar-Roxford	New 8,976-foot double track	\$ 42,700,000	23
Sylmar Station	Second track at station (other costs included in Van Nuys - Sylmar)	\$ 22,900,000	29
Van Nuys Blvd-Sylmar	New 12,672-foot double track	\$ 47,400,000	21
Sheldon-Van Nuys Blvd	New 13,200-foot double track	\$ 67,000,000	24
Brighton-McGinley	Connect double track segments at both ends	\$ 57,300,000	43
Total ROM Capital Cost		\$ 677,	

NOTE: ESTIMATED CAPITAL COSTS INCLUDE THIRD PARTY AND SOFT COSTS.

Phased Implementation

Based on the evaluation findings and sensitivity analysis along with input from NCTC and Metrolink, it

became clear that improvements to service on the AVL (and the proposed infrastructure improvements needed to support the service scenarios) should be viewed as an incremental service improvement continuum as funding permits, rather than any one scenario being an end-all objective.

The study determined three (3) successive phases potentially at intervals (5 year, 10 year and 20 year) that are consistent with the California State Rail Plan and Metrolink's SCORE Plan. Each of the three phases identified proposed infrastructure improvements at build out conditions that allow Regional Rail operators to further analyze and determine the order of new services within a given phase. The AVL Study (Burbank to Lancaster) also took into consideration potential future growth passenger rail services and freight services by Union Pacific Railroad. The three phases of service improvement include:

Phase 1 (5 year Plan) - This five year plan considers increase in rail services within the existing rail infrastructure and operations and maintenance costs.

- a) Add late-night train departure from Los Angeles Union Station at 11 p.m. on Fridays and Saturdays.
- b) Potentially adjust off-peak schedules to improve service frequency and reduce schedule gaps.
- c) No capital investments are needed for this phase.

Phase 2 (10 year Plan) - The next ten years consider increase in rail services with defined set of infrastructure improvements needed to support the service.

- a) Adds two mid-day service round trips to provide hourly frequency between Los Angeles Union Station and Santa Clarita Valley.
- b) Hourly frequency between Los Angeles Union Station and Antelope Valley supported by Antelope Valley Transit Authority bus service. Where the Antelope Valley Transit Authority could reduce the current five round trips of bus service between Santa Clarita and Lancaster to three round trips.
- c) Allows for expanding late night service to remaining weekdays and adds a second frequency on selected days, based on ridership demand.
- d) Requires a capital investment of \$42 million for the Balboa Double Track Extension from Balboa Boulevard to Sierra Highway. Located in the unincorporated Los Angeles County, this project will extend double track to just south of Tunnel 25.

Phase 3 (20 year Plan) - The twenty (20) year plan considers more robust increase in rail service that also includes integration with Metro's San Fernando Light Rail and Sepulveda Corridor.

- a) Doubles volume of daily trains compared with existing service (30 daily round trips).
- b) Marginally increases peak service frequency and adds morning express train to Los Angeles Union Station.
- c) Provides more regular reverse-commute service.
- d) Further increase to mid-day service frequency - 30 minutes between Los Angeles Union

Station and Santa Clarita Valley; hourly between Los Angeles Union Station and Antelope Valley.

- e) Bus service round trips would double from existing conditions to provide 30 minute between Santa Clarita and Lancaster.
- f) Provides more frequent and regular service on weekends and holidays.
- g) Requires a capital investment of \$133.4 million for three additional capital improvements. (1) Lancaster Terminal Improvements (\$27.3 million) shall construct new double track to the end of the corridor, a second station platform and two storage tracks. (2) Canyon to Santa Clarita Double Track Extension (\$48.8 million) from Soledad Canyon Road to Golden Oak Road is located within the City of Santa Clarita. (3) Brighton to McGinley Double Track (\$57.3 million) is a segment of the Brighton to Roxford double track project that connects completes a gap in double track between Burbank and Sun Valley.

It should be noted, the time frame of the three phases of investments (5, 10 and 20 years) can be accelerated based on funding availability.

Findings

Service scenarios 1, 2 and 3 offer the potential for tangible improvements in AVL service, are all consistent with multiple future 2040 year plans, and are recommended for implementation if funding has been identified. The proposed infrastructure improvements identified in this study to support service scenarios 1, 2 and 3 are listed below and estimated at approximately \$175.2 million. At a minimum, the Balboa Double Track Extension is required to support service scenario 2 with hourly bi-directional service on the AVL at an approximate cost of \$41.8 million.

1. Balboa Double Track Extension - \$41.8 million
2. Brighton to McGinley Double Track- \$57.3 million
3. Canyon to Santa Clarita Double Track - \$48.8 million
4. Lancaster Terminal Improvements - \$27.3 million

Staff is working with NCTC and Metrolink to finalize the report by the end of July. It is important to note, the costs shown above only cover the preliminary estimated capital improvements required and does not include annual maintenance costs. Further analysis by each passenger or freight rail operator will be required to implement new service(s).

FINANCIAL IMPACT

This is a Receive and File report for information only with no financial impacts. Implementation of any of the scenarios would require funding to be identified for capital and operations costs.

Impact to Budget

This report has no financial impact.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

Recommendation supports strategic plan goals of the Metro Vision 2028 Strategic Plan:

Goal 1: Provide high-quality mobility options that enable people to spend less time traveling. The incremental service options improve LA County's overall transit network and assets.

Goal 4: Transform LA County through regional collaboration and national leadership. Goal was achieved by partnering with Metrolink, North County Transportation Coalition and the local jurisdictions to identify needed improvements to improve mobility.

NEXT STEPS

Staff will return to the Board on a project by project basis to seek approval to continue to advance any projects or service identified through this study if funding has been identified.

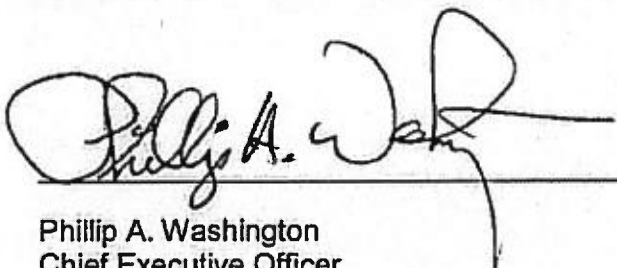
ATTACHMENTS

Attachment A - July 2017 Metro Board Motion 47

Attachment B - Antelope Valley Line Study Presentation

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