



## Board Report

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### PLANNING AND PROGRAMMING COMMITTEE JULY 17, 2019

**SUBJECT: LOS ANGELES - GLENDALE - BURBANK FEASIBILITY STUDY**

**ACTION: RECEIVE AND FILE**

#### **RECOMMENDATION**

RECEIVE AND FILE report on Item #9 at the October 2016 Board Meeting regarding the Los Angeles - Glendale - Burbank Feasibility Study.

#### **ISSUE**

At the October 2016 Board meeting, the Metro Board of Directors directed the CEO to conduct a study (see Attachment A) to evaluate:

1. Up to two new rail stations in the City of Glendale and up to two new rail stations in the City of Los Angeles;
2. Increased passenger rail service from Union Station to the City of Burbank; and
3. Opportunities for increased access to the regional transit network in the City of Glendale.

The Los Angeles - Glendale - Burbank Feasibility (LGBF) Study has been completed and the results are presented in this report.

#### **DISCUSSION**

In June 2018, Metro staff engaged a consultant, Mott MacDonald, to conduct the LGBF Study. The four primary objectives of the LGBF Study were to:

1. Assess potential locations for additional rail stations;
2. Evaluate rail service in the corridor provided by the following technologies:
  - a. Locomotive Hauled Coach, i.e., Metrolink (LHC);
  - b. Rail Multiple Unit (RMU); or
  - c. Light Rail Transit (LRT); and
3. Evaluate increases to passenger rail service;

The LGBF Study also analyzes parking demand along the corridor, identifies infrastructure improvements, capital costs, and operations and maintenance costs to support the study scenarios, and analyzes funding opportunities.

## **Background**

Starting in 1988 through 1992, the Los Angeles County Transportation Commission, predecessor to Los Angeles County Metropolitan Transportation Authority (Metro), undertook studies and ultimately certified the Environmental Impact Report (EIR) for a 13-mile Light Rail Transit (LRT) project that was planned to operate between Los Angeles Union Station (LAUS) and the Hollywood Burbank Airport. In 1991, the Southern California Regional Rail Authority (SCRRA) was created to operate a regional commuter rail service. Limited service began on both the Metrolink Antelope Valley Line (AVL) and Ventura County Line (VCL) in October 1992.

Today, the Los Angeles-Glendale-Burbank corridor (see Attachment B) owned by Metro is double tracked and heavily utilized by passenger and freight rail services between Los Angeles Union Station (LAUS) and Burbank Airport North Station along the Metro-owned Valley Subdivision. Currently, the passenger rail services operating along the corridor include the Metrolink AVL (15 round trips), the Metrolink VCL (17 weekday round trips), the Amtrak Pacific Surfliner (5 daily round trips to Santa Barbara and San Luis Obispo) and the Coast Starlight (1 daily round trip to Seattle). Additionally, the Union Pacific Railroad (UPRR) operates freight service in the corridor. The Metro Gold Line Light Rail Transit (LRT) operates near the corridor between LAUS and the Gold Line Lincoln/Cypress Station.

Approximately 85 Metrolink, Amtrak and UPRR trains traverse the corridor per weekday. Ridership is approximately 7,000 per weekday on the Metrolink AVL, 4,000 per weekday on the Metrolink VCL, and approximately 2,000 per weekday on Amtrak.

## **Other Related Study**

In July 2017, Metro staff was also directed to conduct the Metrolink Antelope Valley Line Study, which assesses capital improvements and operational feasibility on the AVL from the City of Burbank to its terminus in the City of Lancaster. Both studies were developed in concurrence with one another to maintain consistency in operating scenarios, capital improvements, and costs and consistent with California State Rail 2040 Plan.

### **1. Assess Potential Location for Additional Rail Stations**

The station location evaluation examined the entire corridor from LAUS to Burbank Airport North Station in order to identify suitable station sites in both the City of Los Angeles and City of Glendale. A new station was discussed with the City of Burbank, but as they have three existing Metrolink Stations (Burbank Downtown, Burbank Airport North and Burbank Airport South), no additional stations were requested. Factors considered to select the additional sites included existing bus ridership, housing, employment, access to site, operations integration, potential for parking, travel times, service headways, and stakeholder and public input.

Identified potential station locations were discussed with the Corridor Cities Working Group (CCWG) and through a public outreach survey which received over 2,500 respondents. The CCWG comprises key stakeholders including the Cities of Los Angeles, Glendale, and Burbank, as well as staff from elected officials, Metrolink and Metro. CCWG meetings confirmed with the key stakeholders that the frontrunners, River Park for Los Angeles, and Grandview/Sonora for Glendale, would be examined with further analysis for this and future studies.

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## 2. Evaluate Rail Service in the Corridor Provided by LHC, RMU and LRT Technologies

An evaluation of the three transit modes and potential alignments was conducted in order to determine which modes are the most feasible in the Corridor. The three transit modes are:

- A. Locomotive Hauled Coach - Currently operated on the Metrolink system
- B. Rail Multiple Unit (diesel or electric) - Vehicles of size and dimensions similar to LRT with planned operations in San Bernardino County (Arrow service); Currently operated in San Diego County (Sprinter service) and Sonoma-Marin Counties (SMART service)
- C. Light Rail Transit - Currently operated on the Metro system

A discussion of each mode follows:

- A. **Locomotive Hauled Coach** - Currently Metrolink operates 64 LHCs each weekday through the corridor along the trunk line of the Ventura County and Antelope Valley Lines. They can operate in shared freight corridors. A Tier 4 locomotive is the latest model currently operated on the Metrolink system and is the cleanest diesel locomotive in the nation. Tier 4 locomotives are compliant with the latest Environmental Protection Agency (EPA) emissions standards and reduce emissions by up to 85 percent when compared with Tier 0 locomotives. Metrolink will eventually replace 40 of its existing 52 owned locomotives with new Tier 4 locomotives. Metrolink locomotives are also equipped with Positive Train Control, which is required by the Federal Railroad Administration in order to operate in shared freight corridors.
- B. **Rail Multiple Unit** - RMU trains can either be propelled by electricity (EMU), diesel (DMU) or by new propulsion systems involving fuel cells and hydrogen. RMUs are lighter vehicles which act as a hybrid between LHC and LRT vehicles and can operate in shared freight corridors. Battery technology is currently advancing and other low or zero emissions technologies are being explored with these types of transit vehicles. The following are some key considerations for RMUs:
  - RMUs have the ability to accelerate and decelerate more quickly due to their light weight, resulting in fast travel times. Although RMUs are lighter than the existing locomotives and coaches, they would still need to meet Federal Railroad Administration (FRA) structural standards to operate in shared corridors. This makes them heavier than a standard Light Rail Vehicle.
  - RMUs have similar light maintenance requirements as LHC (e.g. Metrolink or Amtrak), but have differing heavy maintenance requirements. Unlike an LHC, an RMU cannot be easily decoupled for heavy maintenance so synchronized lifting is required. The construction of a new maintenance and service facility may be necessary, or an existing facility would need to be modified if a new fleet of RMUs is procured, as the existing Metrolink facilities are at or near capacity.
  - The passenger-platform interface and maintaining freight traffic at existing Metrolink station along the corridor will be a key consideration to utilizing RMUs. Metrolink and RMU vehicles have different platform levels (8" platforms for Metrolink and 24" platforms for RMUs). Therefore, design modification to the vehicles or the station platforms would be required, in

order to achieve level boarding requirements at the station.

- Lightweight rail vehicles, like RMUs occasionally fail to shunt track circuits, resulting in loss of train detection. Loss-of-shunt is associated with light axle loading, infrequent traffic, wheel tread building-up, and other conditions which raise wheel-rail contact resistance. These shunting issues can be mitigated by implementing modifications to existing train control system and would need to be explored further prior to implementation.
- There are currently no agencies that operate RMUs in the Metrolink system, which spans six counties. San Bernardino County is currently planning a future Diesel Multiple Unit and Zero Emission Multiple Unit service in the near future which will share ROW with Metrolink along the San Bernardino Line. If RMUs are pursued along the AVL corridor, Metro may consider being the operator of the service, however there may be labor relations, fare policy and other issues requiring further evaluation. If the Southern California Regional Rail Authority (SCRRA) desires to be the operator of the service, RMU would operationally align more closely with Metrolink longer distance commuter rail than Metro LRT.

**C. Light Rail Transit** - LRT systems utilize overhead electrically powered vehicles which can travel between suburbs or within urban centers. These vehicles cannot operate on freight railroad tracks unless approved by regulatory bodies. Although shared use arrangements involving LRT on mainline railway tracks are common throughout Europe, they would likely not be agreed to in the United States, primarily due to regulatory differences but also because freight railroads are much more conservative about allowing other operations on shared right-of-way. For these reasons, the LRT alternative has been approached in this analysis as operating on a dedicated rail corridor which is separate from the existing corridor.

During the course of the LGBF Study, comment was received from the City of Glendale regarding desire to evaluate an alternate LRT alignment which would leave the existing right-of-way, to serve the downtown Glendale area, downtown Burbank area, and then rejoin the existing right-of-way and proceed to the Burbank Airport. This alignment was added to the LGBF Study and is referred to as the LRT 2 Option.

### **3. Evaluate Mode Option Study Scenarios to Increase Passenger Rail Service**

Different operating alternatives were developed for each mode. Each alternative was evaluated for comparison. Ridership forecasts, cost estimates, and operating schedules were developed for each alternative.

The Metrolink/Locomotive Hauled Coach scenarios include:

- a) M 1 Option: Add one evening train on the AVL
- b) M 2 Option: Addition two new stations in the corridor
- c) M 60 Option: 60-minute bi-directional service on the AVL
- d) M 30 Option: 30-minute bi-directional service on the AVL
- e) M 15 Option: 15-minute bi-directional service on the AVL

The Rail Multiple Unit scenario includes:

- RMU Option: Blended Metrolink + RMU service to Via Princessa

The Light Rail Transit scenarios include:

- f) LRT 1 Option: LRT Service - Metrolink Corridor

g) LRT 2 Option: LRT Service - Downtown, Glendale and Burbank

**Study Findings**

The evaluation of the option against the key criteria together with the qualitative review of pros and cons for each has determined that M 30 Option (30-minute bi-directional AVL service) is the most optimal mode option on the Study Area Corridor when implemented in a phased incremental approach. The following table compares how each mode option study scenario performs overall.

Category	M 1	M 2	M 60	M 30	M 15	RMU	L 1	L2
 Transit Accessibility	1	2	2	3	3	3	3	3
 Ridership Capacity	1	1	1	2	3	2	3	3
 Community Stakeholder Preferences	1	2	2	2	3	2	2	3
 ROW Requirements	3	2	3	3	2	2	2	1
 Environmental Constraints	3	2	3	3	2	2	1	1
 Parking Considerations	3	1	3	3	2	2	1	1
 Travel Time & Headways	1	1	1	2	3	3	3	3
 Integration of Operations	3	3	3	3	2	2	1	1
 Capital and O&M Costs	3	3	3	3	2	2	1	1
<b>Total</b>	<b>19</b>	<b>17</b>	<b>21</b>	<b>24</b>	<b>22</b>	<b>20</b>	<b>17</b>	<b>17</b>

Further detail and information on the mode option study scenarios is provided in Attachment C. With limited capital and operational funding currently available, a phased approach should be explored that would build on M 1 and 2 Options and the M 60 Option, resulting in the implementation of the M 30 Option, 30-minute bi-directional service on the AVL. Factoring in existing service on the VCL, the M 30 Option would result in combined approximate 20-minute bi-directional service between LAUS and Burbank.

**New Metrolink Stations** - It is also feasible that new Metrolink stations along the corridor be further studied and refined to identify and address maintenance and funding needs and gather community feedback. If one or two stations were to be constructed on the line, adding more express service for

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the peak-direction should be explored to enhance service to long distance commuters from north of Santa Clarita.

**RMU Pilot Program** - While implementing a large-scale RMU system in the short term in the study area may not be feasible due to high capital costs, RMUs could be explored to operate as limited and off-peak service to supplement existing AVL service. An RMU Pilot Program to test operations on the AVL, identify an operator and labor agreements, maintenance needs, system infrastructure upgrades, federal needs and requirements, and funding sources for such a program could be implemented.

**FINANCIAL IMPACT**

This is a receive and file item only. Adoption of the LGBF Study has no financial impact to the agency. Should the Board provide further direction, there would be financial impacts to conduct further analysis on the service scenarios, RMU Pilot Program, and/or advance capital projects in the rail corridor.

Impact to Budget

Should the Board provide further direction with budget impact, funds would need to be added to the FY2019-20 budget in Cost Center 2415 in order to award a contract for further study, engineering, construction and/or to operate additional service.

**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, the CCWG and local stakeholder groups to identify needed improvements to improve mobility.

**NEXT STEPS**

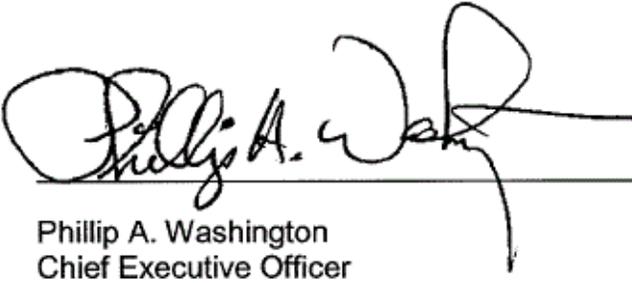
Receive and File the LGBF Study, subject to further direction from the Metro Board

**ATTACHMENTS**

- Attachment A - Board Item #9 from October 2016
- Attachment B - LGBF Corridor Map
- Attachment C - LGBF Options Results Summary

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