

**Board Report**

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**REVISED
PLANNING AND PROGRAMMING COMMITTEE
MARCH 17, 2021**

SUBJECT: BUS RAPID TRANSIT VISION AND PRINCIPLES STUDY**ACTION: APPROVE RECOMMENDATIONS****RECOMMENDATIONS**

CONSIDER the following BRT Vision and Principles Study recommendations:

1. DIRECT staff to apply both the BRT Standards and Design Guidelines developed through the BRT Vision & Principles study to all Metro-funded BRT projects and initiate the process to refine the design guidelines further into design criteria; and
2. APPROVE the recommended five top-performing Bus Rapid Transit (BRT) candidate corridors for future project development consideration and advance the Broadway corridor as a first decade Measure M project, subject to available funding.

ISSUE

The Bus Rapid Transit Vision and Principles study (BRTV&P) establishes a cohesive set of guidelines and standards to direct Metro investment in on-street BRT projects. Metro's existing BRT guidance pertains almost entirely to projects constructed on exclusive rights-of-way such as the G Line (Orange Line). The adoption of new BRT guidelines and standards will ensure a high-quality customer experience for our transit patrons while increasing transparency with our local agency partners and our community stakeholders by clarifying the types of street improvements required to deliver a BRT project.

The study further identifies and prioritizes strong BRT candidate corridors based on indicators of service demand, equity and capacity for BRT supportive elements. Using a multi-tier screening process that applies both quantitative and qualitative indicators, the study examined potential BRT corridors throughout Los Angeles County to identify where BRT would best be deployed as a mobility solution. The results of the screening provided in the BRTV&P final report (Attachment A) provide a road map for future BRT investments that can be used by Metro, local agencies and municipal bus operators alike.

BACKGROUND

As required under the Measure M Administrative Guidelines, Section XVIII, Countywide BRT Expansion, the BRTV&P develops requisite guidance for Measure M BRT program funds and projects. Specifically, the Measure M guidelines committed Metro to revisit the study of BRT corridors identified in the Metro 2013 Bus Rapid Transit (BRT) and Street Improvement study, Mobility Matrices, and/or any potential corridors that may fill missing gaps in the countywide BRT network, excluding those already funded. The BRTV&P final report (Attachment A) and Design Guideline Manual (Attachment B) complete this analysis, providing the following key deliverables:

- Metro BRT standards
- Metro Design Guideline handbook
- Final Report with a recommended list of potential BRT corridors

The work completed through this study establishes a local definition of BRT, supportive design guidelines and identifies the corridors where BRT can best be deployed to meet Metro mobility goals as defined in the Vision 2028 Strategic Plan.

Relation to Other Metro Bus Improvement Initiatives

This BRT study was closely coordinated with ongoing bus improvement initiatives, including the NextGen Bus Plan and Speed and Reliability program, which fall under the umbrella of the new Better Bus Initiative (to be introduced during the March 2021 Board cycle). Each of these initiatives, BRT included, draws from a common bus improvement toolkit. This toolkit includes, but is not limited to, bus-only lanes, transit signal priority, all-door boarding, station amenities and frequent, reliable service.

While these bus improvement initiatives share a common toolkit and goal of improving service for our customers, the investment of time, resources, planning horizon and scope vary. Nevertheless, the work here is not mutually exclusive and equally important. Planned long-term investments in BRT invite opportunities to engage communities and municipal partners early to explore potential for early action items such as dedicated bus lanes and transit signal priority that can provide immediate benefits to our customers. Additionally, early engagement may lay the groundwork for future BRT investment.

In addition, the intention of Metro's bus projects and programs are to improve service across the bus network as well as focus improvements on specific BRT corridors where warranted. Some projects are intended to build the full complement of improvements in the BRT toolkit along a specified corridor or route, while other projects and programs, such as all-door boarding, transit signal priority, and congestion hot spot treatments through NextGen are aimed at deploying such improvements across the bus network. Ongoing collaboration across these initiatives will ensure that the focus centers on our customers and the community needs.

DISCUSSION

BRT offers the potential to deliver reliable, high-quality rail-like service at a substantially lower cost. It

is unconstrained by track or existing rail rights-of-way and can more easily be deployed in an on-street environment to connect communities at pedestrian scale. The inherent flexibility of BRT makes it a valuable tool in Metro’s mobility toolkit that complements parallel efforts such as NextGen, the Bus Speed Improvement Working group and the Measure R & M rail expansion.

Measure M provides funding for both BRT projects and Countywide BRT program funds. In order to ensure that BRT service quality and infrastructure is commensurate with Metro investment, staff have developed BRT standards, design guidelines and identified corridors suitable for BRT investment.

BRT Standards

Standards provide the foundational definition of BRT. The standards define which types of bus improvements and performance standards at what thresholds constitute a BRT project. The purpose of the standards is to provide guidance for Metro BRT projects and establish eligibility criteria for Measure M BRT program funds.

The standards are both prescriptive and performance-based and include the following elements:

Standard	Description
Headway	Average interval of time between vehicles
Speed	Average corridor speed inclusive of dwell time with provisions for percent improvement over existing speeds
On-Time Performance/Reliability	Percentage of on-time arrival at stations
Dwell Time	Average time per person per boarding or average per station
Dedicated Lanes	Percentage of corridor with dedicated bus lanes
Intersection Priority	Percentage of signals in a corridor with active signal priority
Station Amenities	Expressed as percentage of stations that provide specific amenities at each stop
All-Door Boarding	Provided on vehicles and available at all stations
Branding	Design and logo distinguishing BRT from local service

The standards are further delineated into tiers: Full BRT and BRT-Lite. The differentiation in standards is not only to provide for context sensitive solutions in a county as large as Los Angeles but also in recognition that service performance should drive infrastructure investment. In this way, the whole of the standards is greater than the sum of its parts with performance-based standards of speed, dwell time, headway and on-time performance necessitating the use of prescriptive standards to achieve the requisite performance levels identified in the standards. The full description of standards, tiers and thresholds can be found in the BRTV&P final report (Attachment A, page 24, Table 6).

Design Guideline Manual

The design guidelines expand on the BRT standards to define the key attributes and elements that comprise a BRT project. The design guideline manual is made up of both required and recommended elements and provides the necessary guidance to the designer/builder. The six

chapters of the design guideline manual include the following chapters:

- Stations and Platforms: adapting the Metro Rail Kit of Parts to an on-street setting, this chapter details station footprint and configuration, shelter design, materials and finishes, lighting, landscaping, passenger amenities, systems components and public art. The design elements use a kit of parts approach so stations can be expanded and contracted to adapt to space-constrained environments and a variety of BRT running-way alignments: side-running, curb-running and center-running.
- Running Ways: provides guidance on considerations of selecting a running-way alignment such as side-, curb- or center-running. Also details roadway and intersection geometrics, street signing and striping, traffic operations, utility considerations and green streets.
- Intelligent Transportation Systems (ITS): details the technologies and systems deployed for BRT, including roadside elements, stations, vehicles and control center elements, operations & data.
- Operations: provides guidance on route length, station spacing, travel speed, service frequency, span of service, fare collection and boarding protocols, other services sharing a BRT corridor and service reviews.
- Branding: provides guidance on consistent application of graphics tone and images to reinforce an identifiable brand that enhances customer experience. The chapter guidance includes consideration of branding opportunities at stations, on vehicles and running ways.
- Transit Oriented Communities (TOC): reinforces and applies existing TOC policies such as first/last mile access, transfer considerations, joint development opportunities, managing mobility access and addressing the urban heat island effect.

Full details are provided in the design guideline manual (Attachment B).

BRT Corridor Screening Process

The corridor screening process produced two complementary deliverables: Top Five BRT corridors and the Strategic BRT Network. The two deliverables can be seen as a continuum of viable BRT corridors, where the top five identify where BRT investment should begin and the BRT network is where it may continue subject to available funding or investment from local municipalities or municipal bus operators.

Identification of corridors for study began with an initial literature review of prior Metro BRT studies, subregional mobility matrices, as well as any Board motions or directives. To ensure that no potential high-quality BRT corridors were overlooked, a parametric screening tool was applied to develop a heat map of potential corridors using indicators of service demand as well as the Equity Focus Community (EFC) metric that was developed through the Metro Long Range Transportation Plan.

Given the large number of potential corridors, in keeping with common transit planning practice, a three-level screening process was used, wherein each successive screening level introduced additional data to arrive at a prioritized set of corridors. The initial level 1 screening analyzed corridors based on network connectivity, land use, points of interest, education facilities, demographics and Metro's EFC metric.

In the second level screening, additional parameters were entered into the model, including a

corridor's suitability for supporting Transit Oriented Communities, corridor constructability, transit propensity (as developed through NextGen), trip lengths in the corridor, travel delay, network connectivity and EFCs.

The third and final screening process incorporated quantitative and qualitative analysis. Included in this analysis were qualitative evaluations of TOC and transit-friendly plans and policies in the corridors, a qualitative assessment of travel time savings potential, surveys of ground conditions, assessment of alignment with local government's specific modal vision for any identified corridor and input from key stakeholders. This final assessment brought the final list of corridors to a top five list, which are highlighted below. The complete accounting of the screening process and corridors analyzed can be found in the attached final report. A map illustrating the top five corridors has also been attached to this report (Attachment C).

BRT Top 5 Corridors (listed in alphabetic order):

Atlantic Blvd---East Los Angeles Gold Line terminus to downtown Long Beach

The Atlantic corridor is 19.64 miles in length. It provides high-capacity network coverage in southeast LA County, from the San Gabriel Valley to the City of Long Beach. In comparison to the other top five corridors, this corridor has a moderate level of network connectivity. Atlantic had Metro Rapid service until recently as far south as the C Line (Green). Long Beach Transit operates frequent service on the southern end of the corridor. Atlantic also has a moderate opportunity to build BRT-friendly infrastructure and realize travel time savings, although sidewalks are wide relative to other corridors, allowing more opportunity to build stations with full BRT passenger amenities. Although this corridor has a comparatively low ridership score, it does provide access to industrial jobs.

Broadway---Little Tokyo Gold Line Station to Imperial Highway

The Broadway corridor is 9.64 miles in length. It is a vibrant transit corridor with very high network connectivity and is also a NextGen Tier One corridor (and former Metro Rapid corridor). This corridor had a very high score in the Equity Focus Community index. Broadway runs through two City of LA Community Plan areas which feature TOC and transit-supportive policies. This corridor has moderate level ridership and a moderate opportunity to build BRT-friendly infrastructure and realize travel time savings. A future Alternatives Analysis could consider both Broadway and Figueroa, which closely parallel each other and perform comparably.

Cesar Chavez/Sunset--- Atlantic Blvd via Vermont/Los Feliz/Central to Broadway

The Cesar Chavez/Sunset corridor is 13.64 miles in length. It has a very high network connectivity score and connects East Los Angeles through the eastern edge of Hollywood/Los Feliz neighborhood then northwest to downtown Glendale. Cesar Chavez is a NextGen Tier One corridor that has existing Metro Rapid service through East LA. Sunset is a NextGen Tier One corridor that runs through six City of LA Community Plan areas which feature or are being updated to feature TOC and transit-supportive policies. The corridor segment across from Los Feliz to Glendale is also part of a NextGen Tier One corridor. This corridor has a moderate-level ridership and a moderate-level opportunity to build BRT-friendly infrastructure and realize travel time savings.

La Cienega---Santa Monica Blvd via Obama/Jefferson to Slauson

The La Cienega corridor provides high-capacity north-south network coverage on the westside,

linking cities and communities including West Hollywood, Beverly Grove, eastern Beverly Hills, Pico-Robertson and Culver City. It runs through three City of LA Community Plan areas which feature or are being updated to feature TOC and transit-supportive policies. Culver City has recently completed a TOD Visioning Study, and West Hollywood has TOC-supportive policies in place that could support the implementation of a BRT on the La Cienega corridor. La Cienega has a moderate-level opportunity to build BRT-friendly infrastructure and realize travel time savings. This corridor has a low network connectivity score, low ridership score, it is a NextGen Tier One corridor and has previously enjoyed Metro Rapid service. It has a low score in the Equity Focus Community Index.

Venice Blvd---Pacific Avenue via Flower Street to 7th Street

Venice has a very high network connectivity score and a very high ridership score. Venice is a NextGen Tier One corridor with existing Metro Rapid service and with a high-level opportunity to build BRT-friendly infrastructure and realize travel time savings. This corridor has pedestrian-friendly features along much of its distance with a strong mix of land uses oriented to the street. The Venice corridor runs through seven City of LA Community Plan areas which feature TOC and transit-supportive policies. Culver City has recently completed a TOD Visioning Study, which includes Venice. Venice has communities with strong transit-supportive policies along corridor and it is an LADOT high-priority corridor.

Recommended Corridor for Further Study

Staff recommends that Broadway be advanced for further study as the initial BRT corridor eligible for Countywide BRT program funds. Each of the top five corridors presents excellent opportunities for BRT investment, but none are without challenges. Among the top corridors, Broadway ranks highest in terms of equity considerations as measured through the EFC metric, scoring near the top of all corridors analyzed. With the Board's recent adoption of the NextGen bus plan, Broadway is also slated for five-minute service frequencies.

Supportive BRT infrastructure in the Broadway corridor would ensure the most prudent use of service hours and improve travel speeds for our transit riders. In addition, the Broadway corridor has been identified for multiple potential improvements by the City of Los Angeles, which could be leveraged to advance a Broadway BRT corridor project.

Subsequent decisions on sequencing of the remaining top four corridors should be coordinated concurrent with the decennial Measure M review process which, per the Measure M ordinance, begins in Fiscal Year 2027. This would allow the Board discretion to review funding availability and mobility needs supported by the most current data.

Strategic BRT Network

The Strategic BRT Network is a complementary effort that builds on the top five BRT corridors. It is a strategic unfunded list of potential BRT projects that Metro or other local agencies could pursue should additional funding become available. The Strategic BRT network builds upon the strong candidate corridors that were identified in the multi-step screening process used to develop the top five corridors and applies a gap analysis to connect potential BRT corridors to Metro's existing and planned BRT and rail system. A map of the Strategic BRT network is included in Attachment A, including a list of corridors and a full description of the process.

Project Coordination

Metro currently has multiple initiatives underway to improve bus speeds and bus service. Most visible among these efforts are the NextGen Bus Study, which encompasses routing, frequency and network design improvements as well as speed and reliability improvements through the Bus Speed Engineering Working Group.

Identification and selection of the top five corridors was closely coordinated with these groups throughout the study process in the interest of sharing information, identifying areas for potential improvements and validating findings. In addition, Metro is poised to launch the Better Bus Initiative in March 2021, which seeks to align all bus improvement efforts under one umbrella to establish a comprehensive and unified approach to elevating the quality of the bus system to the benefit for the riders.

Outreach

Staff developed a comprehensive outreach program designed to inform, educate and solicit input from a variety of stakeholders, including Metro employees, municipal transit operators, city officials, elected officials, community and transit organizations and members of the general public. Throughout the project, stakeholder engagement at all levels was conducted to complement and help inform the technical process. Activities have included stakeholder workshops, presentations and project briefings, countywide survey engagement, and formation of a Technical Advisory Committee.

Staff also worked closely with Metro's NextGen Bus Plan project staff to leverage opportunities for outreach at public meetings and collaborate where possible to assist in maximizing outreach options and stakeholder relationships and share data relevant for both projects. Outreach was tailored to be inclusive and gather feedback that accurately reflects the diversity of LA County's population including ethnicity, race, age, language, income levels and level of transit access and utilization.

A full accounting of the outreach effort can be found in the outreach summary (Attachment C).

Equity Platform

The BRT Vision & Principles study leverages Pillar I of the Equity Platform: Define and Measure. Per Board direction the Equity Focus Communities (EFC) criteria was applied and carried through the corridor prioritization screening process of candidate corridors to ensure consideration of vulnerable communities.

DETERMINATION OF SAFETY IMPACT

The BRT Vision & Principles study did prioritize safety in its design criteria. This Board action will have no adverse impact on safety standards for Metro.

FINANCIAL IMPACT

Approval of the recommended actions would have no financial impact to the agency.

Impact to Budget

There is no impact to the current fiscal year budget. Completion of the study was included in the

current fiscal year budget.

The recommended actions identify a top five list of potential BRT candidate corridors, one of which may be carried into project development at a future date based on available funding. Any programming of funds and recommendation to carry a BRT corridor into project development would be a subsequent action presented to the Board. Any prospective study should identify funding of capital investment in BRT infrastructure, fleet and service levels. Ongoing service operations and facility maintenance would be fiscally sustained and operationally integrated with the existing NextGen network.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

The BRT Vision & Principles study furthers the first strategic plan goal to “provide high quality mobility options that enable people to spend less time traveling.”

Specifically, Goal 1.2 calls for improvements to LA County’s overall transit network and assets, committing Metro to:

- Expand the BRT program along major arterials and highways throughout Los Angeles County
- Use Metro funds to provide incentives for regional partners to accelerate the delivery of elements that are critical to BRT success, such as signal priority and exclusive lanes
- Convert strategic Metro Rapid corridors to BRT corridors
- Develop BRT implementation details through the BRT Vision & Principles study

The completion of the BRT Vision & Principles study including the adoption of the standards, design guidelines and top five priority corridors provides the foundational steps to delivery of the above strategic plan goals.

ALTERNATIVES CONSIDERED

The Board could elect to plan BRT projects absent a cohesive set of standards and guidelines. This is not recommended as BRT project development is a collaborative process with our local agency partners that is best facilitated with clear standards and guidelines that provide transparency in each partners’ respective roles and responsibilities. The Board could also reject the prioritization of BRT corridors. This is also not recommended as the top five corridors provide staff with guidance on which BRT corridors to advance in future years and to guide future programming decisions relative to the Measure M Countywide BRT program funds.

NEXT STEPS

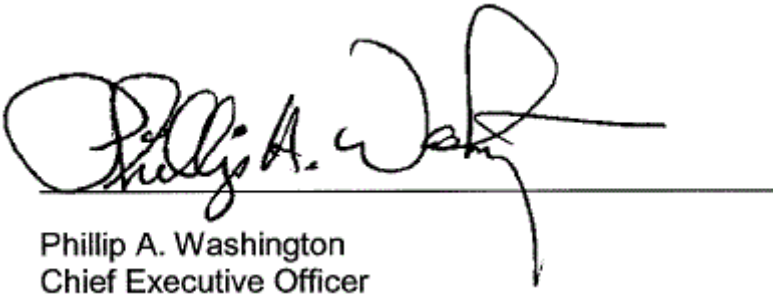
Upon Board approval, staff will proceed with the continued application of BRT standards and design guidelines to our BRT mobility corridor studies. In addition, staff will take the necessary steps to incorporate the design guidelines into select administrative and technical documents where necessary to ensure adherence to the adopted guidance. Staff will return to the Board with recommended programming actions of Measure M Countywide BRT Program funds to advance one of the top five BRT corridors into project development, subject to available funding.

ATTACHMENTS

- Attachment A - BRT Vision and Principles Final Report
- Attachment B - BRT Vision and Principles Design Guideline Manual
- Attachment C - Outreach Summary Report
- Attachment D - Amendment by Directors Bonin, Solis, and Hahn

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