Los Angeles County
Metropolitan Transportation
Authority
One Gateway Plaza
3rd Floor Board Room
Los Angeles, CA

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REVISED
PLANNING AND PROGRAMMING COMMMITTEE
CONSTRUCTION COMMITTEE
JULY 16, 2025

SUBJECT: METRO COST BENEFIT ANALYSIS METHODOLOGY

ACTION: APPROVE RECOMMENDATION

RECOMMENDATION

ADOPT the recommended Metro Cost Benefit Analysis Methodology (Attachment A).

ISSUE

Last month, the Planning and Programming Committee and the Construction Committee received a staff report on a Cost Benefit Analysis (CBA) draft methodology. The report represents a significant milestone in Metro's effort to establish a standardized framework for evaluating capital projects' benefits relative to cost. The Committees addressed the proposed methodology and its representation of priorities, weights attributed to objectives and goals, and how Metro CBA results would be used, as one tool among many, to help inform decision-making on project development and prioritization anticipated for longer term planning efforts such as the upcoming Measure M Decennial Review. This report recommends that the Board adopt the final methodology (Attachment A).

BACKGROUND

At its February 2025 meeting, the Board approved Motion 14 (Attachment B) by Directors Dutra, Najarian, Barger, Butts and Solis, and amended by Director Horvath, that directed staff to develop a framework for a Metro Cost Benefit Analysis (CBA) that could be used as one tool among others to support investment and funding decisions for Metro's capital projects. The consistent application of a Metro CBA is intended to inform a more data-driven and transparent decision-making process that also includes economic data and evaluation criteria approved by the Board in October 2023 as part of the Measure M 5-Year Comprehensive Assessment and Equity Report.

In April 2025, as part of the Annual Program Evaluation (APE) report, staff presented an update on a general Metro CBA framework for organizing key project criteria to be evaluated. The framework distinguished criteria included in federal and state grant programs from those reflecting local and regional interests. Key to the framework was that all criteria of federal and state funding programs formed the basis of the Metro CBA, upon which local impacts (like regional economic output and

equity) would be added.

The balance of this report refers to the US Department of Transportation's (USDOT)analysis as "Benefit Cost Analysis," consistent with the federal agency's nomenclature and its updated guidance document, *Benefit Cost Analysis Guidance for Discretionary Grant Programs*, as well as the California Department of Transportation's (Caltrans) California Benefit-Cost Analysis model (Cal-B/C). These guidance tools for conducting benefit cost analysis produce results such as Net Present Value (NPV), Benefit Cost Ratios (BCR), Return on Investment (ROI), Internal Rate of Return (IRR), and Payback Period (years). This Board Report refers to the Metro analysis as the "Metro Cost Benefit Analysis (Metro CBA)," consistent with the nomenclature used in the Board motion, and built upon the USDOT and Caltrans models.

DISCUSSION

In June 2025, staff presented detailed criteria within the framework, including organizing themes (goals) and weights, objectives, and metrics to be used in evaluating capital projects against cost. These goals were based on a 2015 Performance Evaluation Framework adopted by the Board, and modified to reflect updated priorities such as safety, long term operational sustainability, economic impacts to the region necessary for sustaining continued transportation sales tax revenues, and equity.

The proposed goals and weights presented in June 2025 to evaluate projects are summarized below, with equity metrics noted within each objective. Additional information can be found in Attachment A and the June 2025 Metro Cost Benefit Methodology Board Report.

- **Mobility and Accessibility (40%) -** Easing congestion, increasing active transportation, and improving travel times, system connectivity, throughput, and reliability. Equity contributes three percentage points (3%) to the Mobility and Access theme, and represents analyses conducted on outcomes by mode, geography and EFCs, and other socio-economic data.
- **Safety and Health Benefits (15%)** - Transportation projects' benefits to health and safety are measured by reductions in exposure to risks posed by the transportation system across multiple modes, increased access to health-promoting behaviors (such as walking and bicycling), or increased access to health care for particular socio-economic groups; equity contributes one percentage point (1%) to this category.
- **Environmental Sustainability (15%)** - Policy criteria include reductions in greenhouse gas (GHG) emissions and criteria pollutants, reductions in urban heat island effects, reduced stormwater runoff impacts, and reduced biological and habitat impact. Equity in this category contributes one percentage point (1%) related to equitable environmental sustainability, accounting for disproportionate exposure and/or distribution of environmental benefits (i.e. air pollution, green space) by mode, geography and Equity Focus Communities (EFC), or other socioeconomic data.
- **Long-Term Operational Sustainability (15%)** - This goal focuses on the continuity of infrastructure delivery and sustained operations and service over the long term, including measures to evaluate the operational benefits and system productivity over time, the sufficiency of funding for operations and maintenance, improvements to system resiliency and recovery from service disruptions and/or emergencies, and the feasibility of project

implementation such as delivery in phases while maintaining high benefits relative to cost.

- **Economic Benefits to the Region (15%)** - Transportation investments are expected to result in economic benefits to the region travel time savings allow more productive activities (for workers and their employers) that generate further economic activity in the region, jobs created (from construction and operations), and more goods carried to market. In addition to identifying productivity and consumption resulting from travel time savings to all users of the transportation system, staff also will estimate the socio-economic composition of those obtaining economic benefits to help with equity assessment of the project. Equity contributes one percentage point (1%) towards Economic Benefits to the Region.

Staff heard a number of questions and comments from the Board related to the proposed methodology, particularly about how benefits would be assessed, including:

- Adequacy of weights for priority goals such as safety and economic output, relative to the other goals;
- Inclusion of other goals and objectives such as Metro's commitment to addressing homelessness and housing, and to improving the security and personal safety of our customers;
- How and when the Metro CBA would be conducted and presented on projects as they are being developed;
- How a Metro CBA will be used to support the upcoming Measure M Decennial Review, which will evaluate the past ten years of Measure M performance and update the next ten years' schedule of expenditures; and
- Potential liability in developing a Metro CBA that may be used to challenge a project's environmental assessment as required by the California Environmental Quality Act (CEQA) and/or National Environmental Protection Act (NEPA).

Staff have considered these comments and recommend that the weights listed above be adopted as a starting point for continuous development of the Metro CBA methodology. These weights and the results they produce for each category will be subject to sensitivity testing to determine how changes in the weights affect the project's total outcomes, relative to the cost (which will include capital cost, soft costs, operations and maintenance and state of good repair estimates).

While the methodology presented in June has not changed, the committee discussions reflected interest in continuing to pursue Metro's commitments to address homelessness and housing, and to improve security and personal safety for our customers. Because the Metro CBA is designed to evaluate transportation capital projects, these objectives are not directly included in the Metro CBA, but a qualitative narrative about these goals will be presented alongside the Metro CBA.

Staff reported during discussions that the Metro CBA would be used as one of a several tools for at least two purposes: (1) evaluating project performance at critical decision milestones, such as alternatives analyses, selection of a Locally Preferred Alternative, project approval, establishment of a Life of Project budget, and evaluating value engineering efforts, etc.; and (2) evaluating projects that will be considered during the upcoming Measure M Decennial Review. As a point of clarification, the Metro CBA will not be used to compare projects of different modes against each other, but will be conducted on different types of projects to provide transparent, data-driven evaluations of expected

performance relative to a project's estimated cost, which will include capital costs, operations and maintenance, and state of good repair to the extent possible depending on level of design available.

Finally, staff reported that conducting a CBA on projects does not conflict with nor increase liability with regard to our CEQA and/or NEPA analyses. CBAs are used in other agencies and across industry in addition to the environmental analysis to support decision-making.

DETERMINATION OF SAFETY IMPACT

The recommended Board action to approve and adopt the Metro CBA methodology itself will have no impact on safety standards for Metro. The approval and implementation of the Metro CBA methodology will evaluate the safety impacts of capital projects.

FINANCIAL IMPACT

Impact to Budget

At this time, there is no impact to budget should the Metro Board approve the methodology and implementation of the Metro CBA. Conducting analyses for project milestones and for the Decennial Review will require technical and professional services which are in Countywide Planning and Development's FY2026 adopted budget. The Chief Planning Officer will ensure sufficiency within the annual budget and staff will return to the Board should there be a need for additional resources.

EQUITY PLATFORM

This report provides an overview of the proposed Metro CBA methodology and proposes potential applications of the Metro CBA in project evaluations. A Metro CBA methodology would apply to multimodal transportation investments, and at various milestones of project development. The methodology presented includes equity as embedded within thematic areas of performance, receiving a six percent (6%) total weighting factor.

While traditional CBAs demonstrate aggregated net benefits, Metro's CBA process will examine equity through a quantitative analysis, spatial analysis (maps), qualitative narratives (cultural and/or historical description, etc.) or some combination. Additionally, as the technical methodology continues to be refined and as additional equity tools are developed (e.g., Access to Opportunities, Equity Toolkit, Equity Performance Measurement, etc.) the Metro CBA framework will continue to evolve and incorporate equity as an assessment factor.

VEHICLE MILES TRAVELED OUTCOME

VMT and VMT per capita in Los Angeles County are lower than national averages, the lowest in the SCAG region, and on the lower end of VMT per capita statewide, with these declining VMT trends due in part to Metro's significant investment in rail and bus transit.* Metro's Board-adopted VMT reduction targets align with California's statewide climate goals, including achieving carbon neutrality by 2045. To ensure continued progress, all Board items are assessed for their potential impact on VMT.

While this item does not directly encourage taking transit, sharing a ride, or using active transportation, it is a vital part of Metro operations, as the development and implementation of the Metro CBAs provides a more data-driven and transparent decision-making process to support delivery of the capital program including transit, highways, and major active transportation investments. Because the Metro Board has adopted an agency-wide VMT Reduction Target, and this item supports the overall function of the agency, this item is consistent with the goals of reducing VMT.

*Based on population estimates from the United States Census and VMT estimates from Caltrans' Highway Performance Monitoring System (HPMS) data between 2001-2019.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

The recommendation to implement Cost Benefit Analysis in project development decisions supports the following strategic plan goals:

- Goal 1 - Provide high-quality mobility options that enable people to spend less time traveling
- Goal 2 - Deliver outstanding trip experiences for all users of the transportation system
- Goal 3 - Enhance communities and lives through mobility and access to opportunity
- Goal 4 - Provide responsive, accountable and trustworthy governance within the Metro organization.

The implementation of a Metro CBA provides a tool for evaluating projects against strategic goals and supports Metro's capital investment decisions with transparent, trustworthy, data-based analysis.

ALTERNATIVES CONSIDERED

The Board could choose not to approve the Metro CBA methodology, direct staff to make changes to the methodology before implementation, and/or not approve its implementation at all. Not approving the Metro CBA methodology or its implementation would limit staff's ability to provide data-driven, transparent analysis of costs and benefits intended to inform the Board's milestone decisions on projects and on the upcoming programmatic Measure M Decennial Review. Directing staff to change the methodology before implementation - depending on the magnitude of change - may delay the availability of Metro CBA findings to inform these imminent project decisions.

NEXT STEPS

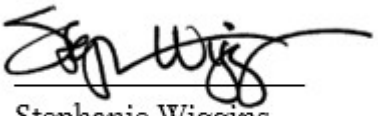
With Board approval of the Metro CBA methodology, staff will conduct analyses and produce project profiles to support milestone planning decisions. As part of our desire to begin evaluations of major projects and to continuously improve our process, staff will validate the models, conduct sensitivity testing, and adjust the methodology to comprehensively reflect projects' costs, benefits, and returns on investment.

ATTACHMENTS

Attachment A - Goals, Objectives and Sample Metrics in Metro CBA
Attachment B - Motion 14: Cost-Benefit Analysis for Metro Capital Projects

Prepared by: Allison Yoh, Executive Officer, Countywide Planning and Development, (213) 922-4812
Nicole Ferrara, Deputy Chief Planning Officer, (213) 547-4322
Arnold Hackett, Senior Advisor to the CEO, (213) 922-5409

Reviewed by: Ray Sosa, Chief Planning Officer, (213) 547-4274



Stephanie Wiggins
Chief Executive Officer

REVISED

Attachment A: Recommended Goals, Objectives and Metrics for Metro Cost Benefit Analysis

The framework below includes project evaluation criteria based on goals consistent with United States Department of Transportation (USDOT) and California Department of Transportation (Caltrans) guidance and models, and incorporates additional criteria aligned with Board adopted objectives and goals. These goals are operationalized into objectives and performance metrics used to evaluate projects. Weights below reflect the importance of the goals relative to each other and are subject to additional validation and sensitivity testing. Costs include capital costs, soft costs, operations and maintenance and state of good repair to the extent possible depending on level of project design available.

Goals (weight)	Objectives	Sources	Examples of Metrics
Mobility and Accessibility (40%)	Reliability, Reduction in Travel Delay, Connectivity to Regional Destinations, Access to Resources and Opportunities, Management of Congestion Growth *Equity (3%): Improved Access to Opportunities, Mobility Improvements for Historically Underserved Areas*	USDOT Guidance Caltrans Methodology Metro 2020 LRTP Metro Vision 2028 2023 MM Evaluation	Travel Time Savings, Reduced Travel Time Variability Person Throughput Mode shift Passenger Miles Traveled Vehicle Hours Traveled Increased Access to Activity Centers
Safety/Health (15%)	Minimize Exposure to Health/Safety Risks Increase Access to Health Opportunities *Equity (1%): Reductions in Exposure to Health/Safety Risks for Sensitive Populations, Improved Access to Health Opportunities*	SB374 Vision Zero 2020 LRTP Metro Vision 2028	Reduced # of injuries, reduced # of fatalities Reduced # of conflict points Reduction in exposure to noise Improved access to facilities protected from vehicular conflict Reduced travel time to health care facilities
Environmental Sustainability (15%)	Reductions in Greenhouse Gas (GHG) Emissions, Urban Heat Island Effects, Stormwater Runoff Impacts, Biological and Habitat Impact *Equity (1%): Reduction in Exposure to Environmental Negative Externalities, Improved Environmental Amenities, Reduction of Impacts to Sensitive Receptors*	USDOT Guidance Caltrans Methodology, SB374 2020 LRTP Metro Vision 2028 2023 MM Evaluation	Reduced GHG per capita Reduced EPA air quality conformity criteria pollutants Reduced stormwater runoff and improved water quality Use of green infrastructure, reflective surfaces
Operational Sustainability (15%)	Sustainable Operations and Service Provision System resiliency Long Term Fiscal Sustainability and System Productivity	USDOT Guidance 2020 LRTP 2023 MM Evaluation	Extended life of facility and equipment Operating costs avoided Sufficiency of O&M funding Security and personal safety program availability System redundancy for emergency recovery
Economic Impact (15%)	Economic Growth, Sales Tax Growth, Industry/Commerce Activities, Goods Movement Efficiency, Workforce Access, Visitors to Region *Equity (1%): Equitable distribution of economic benefits to different socio-economic groups*	2023 MM Evaluation	Economic Output (as a result of transportation investments) Jobs Created (by sector) Land Use and Development, Property Value Increases

Metro

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Board Report

File #: 2025-0149, **File Type:** Motion / Motion Response **Agenda Number:** 14.

REVISED
REGULAR BOARD MEETING
FEBRUARY 27, 2025

Motion by:

DIRECTORS DUTRA, NAJARIAN, BARGER, BUTTS AND SOLIS

COST-BENEFIT ANALYSIS FOR METRO CAPITAL PROJECTS

The U.S. Department of Transportation (USDOT) defines a cost-benefit analysis as a systematic process for identifying, quantifying, and comparing expected benefits of a potential infrastructure project. A cost-benefit analysis provides estimates of the anticipated benefits that are expected to accrue from a project over a specified period and compares them to the anticipated costs of the project.

While a cost-benefit analysis is just one of many tools that can be used to support funding decisions for infrastructure investments, it can be a meaningful method to evaluate and compare potential transportation investments for their contribution to the economic vitality of Los Angeles County and the United States.

Internationally, agencies such as Transport for London also utilize cost-benefit analysis to assess project viability and optimize funding opportunities. Incorporating a standardized cost-benefit analysis will help ensure that the projects Metro advances are positioned competitively for future funding opportunities and policy support.

SUBJECT: COST-BENEFIT ANALYSIS FOR METRO CAPITAL PROJECTS MOTION

RECOMMENDATION

APPROVE Motion by Directors Dutra, Najarian, Barger, Butts and Solis to direct the CEO to ~~incorporate~~ develop a standardized cost-benefit analysis framework, using USDOT analysis or a comparable methodology, for all Metro capital projects to help inform ~~the agency's~~ a more data-driven and transparent decision-making process ~~for projects Metro advances~~. This cost-benefit analysis framework should also include national economic impact data and a comparison to the cost-benefit analysis methodology currently used by Metro and required by State and Federal for significant grant opportunities. An update on this analysis framework shall be presented as part of the Annual Program Evaluation brought to the Board in 2025.

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HORVATH AMENDMENT: Direct the CEO to incorporate the project evaluation criteria approved by the Board in October 2023 and being applied to Metro's Short Range Transportation Plan Update, into the framework of a standardized cost-benefit analysis.

COUNTYWIDE PLANNING AND DEVELOPMENT

Metro Cost Benefit Analysis and Methodology
2025-0543

Planning and Programming Committee
Construction Committee
July 16, 2025

Metro

Metro Cost Benefit Analysis (CBA) Methodology

Recommendation:

ADOPT the recommended Metro Cost Benefit Analysis Methodology

Metro

Weighted Goals and Objectives, Project Costs

(Subject to additional validation and sensitivity analysis)

Mobility and Accessibility (40%)
- Primary benefit area focusing on travel time savings across different user groups and transportation modes
- Reliability, congestion reduction, and connectivity to jobs, housing, and opportunities

Safety and Health Benefits (15%)
- Reductions in transportation system risks across multiple modes
- Improved access to safe active transportation infrastructure and health care facilities

Environmental Sustainability (15%)
- Greenhouse gas emissions reductions, criteria pollutants, urban heat island effects, and biological impacts
- Aligns with SB 375 targets and Metro's climate goals

Long-Term Operational Sustainability (15%)
- New category addressing fiscal decisions ensuring continuity in infrastructure and service delivery
- Operational benefits, system productivity, funding sufficiency for operations and maintenance

Economic Benefits to the Region (15%)
- Regional economic output despite federal funding exclusions
- Job creation analysis, productivity improvements, and sales tax revenue potential

Costs to include (based on level of project design)
- Capital costs
- Operations and maintenance
- State of good repair

June 2025 Staff Presentation and Committee Discussions

- Adequacy of weights for priority goals (i.e., economic output, safety)
  - *Weighted goals are subject to validation and sensitivity testing to determine how weights affect projects' total performance*

- Inclusion of other goals, such as addressing homelessness and housing, and improving security and personal safety of our customers
  - *Quantitative measures of project contributions to these goals is infeasible, but qualitative information will be presented as part of the Project Profile*

- When should CBA be conducted
  - *Strategic milestone decisions in project development considering benefits relative to cost (e.g, alternatives analysis, selection of Locally Preferred Alternative, project approval, etc.)*

- How CBAs will be used to support the Decennial Review process
  - *Evaluations presented will provide information about projects' benefits related to their costs, and are not to be used in comparing projects against each other*

- Potential liability in developing a Metro CBA that may be used to challenge a CEQA/NEPA environmental assessment
  - *CBAs are used in other agencies and across the industry in addition to environmental analyses*

Strengths and Limitations of Cost Benefit Analysis

- Provides an analysis of benefits relative to costs over time
  - Net Present Value (NPV), Return on Investment (ROI), Benefit Cost Ratio (BCR), Payback Period, Internal Rate of Return (IRR)
- Not all benefits or costs are quantifiable or easily monetized
- Project Profiles to include both quantitative and qualitative assessments relative to cost
- Unsuitable for comparing projects of different modes, sizes, types
- Effective for evaluating value of a project across its project development cycle
- Analysis can be data intensive and complex
- Will start with existing state and federal guidance, and build upon existing work

Next Steps

- Apply Metro CBA to projects as they reach critical milestones
- Conduct sensitivity testing and validate the analyses
- Continue to refine the CBA methodology as a continuously evolving tool

Metro