Los Angeles County
Metropolitan Transportation Authority

ATTACHMENT B

LB-ELA Multimodal Corridor Investment Plan

Project And Program Performance Evaluation Methodology

Metro®

Contents

Common Assumptions and Definitions

Project Scale

Definitions of Project Scales utilized in various rubrics:

> **Localized:** Intervention applies to small street segment or single location (contained within 1-mile extent /radius)

> **Semi-Localized**: Intervention applies to large street segment (> 1-mile) or multiple locations within a defined area (of greater than 1-mile radius). This often applies to city-wide programs

> **Corridor-wide:** Intervention potentially applies to all jurisdictions and neighborhoods within the LB-ELA Corridor Study Area or applies to a transportation project or corridor that traverses the majority of the length of the Study Area

Equity Focus Communities

Metro's Equity Focus Communities (EFCS)[1] identify where transportation needs aregreatest by considering concentrations of resident and household demographics associated with mobility barriers:

- Low-income households earning less than $60,000 per year
- Black, Indigenous or People of Color (BIPOC) population
- Households that do not have a car

For the prupose of the "Equity-lens" metrics, the following designations were applied to each project to determine whether a project provides substantial benefit to EFCs:

- 0%: No part of project or program is located in an EFC
- 1-33% of project or program is located in an EFC
- 33-66% of project or program is located in an EFC (also applies to corridor-wide programs)
- 67+% of the project or program is located in an EFC

Project Types and Sub Categories

Each project on the initial list was categorized into a project type (e.g. Highway, transit, goods movement, etc) and a subtype. For the purposes of evaluation, some metric rubrics listed below include qualitative scoring based on additional subclassification. These subclassifications and scores can be found in Appendix A.

[1] *Metro: https://www.dropbox.com/s/ew25aelmuvwqizv/equity-focus-communities-overview.pdf?dl=0*

Air Quality

AQ1: Reduce Emissions (NOx, PM2.5)

Detailed Criteria Description: Reduces oxides of nitrogen (NO_X) and fine particulate matter ($PM_{2.5}$) emissions from on-road vehicles or offroad mobile equipment.

Evaluation Method Description (Use of one or more of the following): Travel Demand Forecasting Model (TDM) for a certain suite of projects; EMFAC Model; GIS-based project type locations or other methods for individuals project scores

Data Sources Used:

- EMFAC Model[2] used to calculate on-road vehicle emissions, including changes in emissions due to project implementation
- CARB adjustment factors for recently adopted regulations: Heavy-Duty Inspection and Maintenance Program (HD I/M)[3] , Advanced Clean Cars II (ACC II) [4], and Advanced Clean Fleets (ACF) [5]
- California Air Resources Board (CARB) methodology[6] used to calculate entrained road dust
- OFFROAD Model[7] used to calculate off-road vehicle/equipment emissions, including changes in emissions due to project implementation
- TDM used to model vehicle miles traveled (VMT) and speeds along analyzed roadways; used as input to EMFAC model to determine changes in emissions
- ArcGIS map with project locations
- South Coast Air Quality Management District (South Coast AQMD) Air Quality Significance Thresholds[8]
- South Coast AQMD Localized Significance Threshold Methodology[9]

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[2] *CARB. EMFAC2021v1.02 Emissions Inventory - Onroad Emissions. Available at: https://arb.ca.gov/emfac/emissions-inventory/. Accessed: May 2023.*

[3] *CARB. HD I/M Regulation. December 9, 2021. Available here: https://ww2.arb.ca.gov/rulemaking/2021/hdim2021. Accessed: May 2023.*

[4] *CARB. ACC II Regulation. August 25, 2022. Available here: https://ww2.arb.ca.gov/rulemaking/2022/advanced-clean-cars-ii. Accessed: May 2023.*

[5] *CARB. ACF Regulation. April 28, 2023. Available here: https://ww2.arb.ca.gov/rulemaking/2022/acf2022. Accessed: May 2023.*

[6] *CARB. Miscellaneous Process Methodology 7.9 Entrained Road Travel, Paved Road Dust. March 2021. Available at: https://ww3.arb.ca.gov/ei/areasrc/fullpdf/2021_paved_roads_7_9.pdf. Accessed: May 2023.*

[7] *CARB. Mobile Source Emissions Inventory Documentation – Off-Road – Diesel Equipment. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-documentation-road. Accessed: May 2023*

[8] *South Coast AQMD. 2023. South Coast AQMD Air Quality Significance Thresholds. March. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25. Accessed: May 2023.*

[9] *South Coast AQMD. Final Localized Significance Threshold Methodology. July 2008. Available at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/localized-significance-thresholds. Accessed: May 2023.*

Assumptions:

Not all freeway or arterial roadway projects were included in the TDM modeling. See project information matrix.

- According to the 2021 Metrolink Climate Action Plan[10], Metrolink has a target of becoming a zero-emissions railroad by 2028. As such, this analysis assumes zero emissions from passenger locomotive engines by 2045. Further, the proposed CARB In-Use Locomotive Regulation[10] requires all passenger locomotives to operate in a zero emissions configuration by 2030. Under the proposed In-Use Locomotive Regulation, by 2047, all locomotives operated by fleet operators must have 100% of annual fleet usage as zero emissions. Similar to CARB regulatory analyses, this analysis does not include the indirect emissions that may result from generation of electricity used to power these locomotives.
- As of August 2023, CARB does not consider or calculate non-exhaust emission factors for locomotives in their locomotive models.[11]

SCORING METHODOLOGY*

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No Benefit	Project's measures provide no total emission reductions If total emissions are increased, indicate concerns	
1 – Low Benefit	Total emission reductions are less than 55 pounds per day (lbs/day) for PM2.5 AND NOx compared to future baselines	If total emission reductions are less than 0.1 % of study area emissions, then project should be scored as No Benefit
2 – Medium Benefit	Total emission reductions is greater than or equal to 55 lbs/day to less than 110 lbs/day for PM2.5 or NOX compared to future baselines	If the total emissions reductions for both PM2.5 AND NOX are greater than 55 lbs/days, upgrade to High Benefit
3 – High Benefit	Total emission reductions is greater than or equal to 110 lbs/day for PM2.5 or NOX compared to future baselines	
NA	Project that is not modeled by TDM or does not affect vehicle type, VMT, speed, idle time, or any other parameter affecting emissions	

*For Freeway, Arterial Roadway, and Transit Projects

For Active Transportation/TDM Projects

These projects will be accounted for in AQ3. Not sufficient information/methodologies to calculate the impacts for AQ1, CH1, and EN2 therefore these projects will get a score of NA.

[10] *Metrolink. Climate Action Plan The Link to a Zero Emissions Future. March 26, 2021. Available here: https://metrolinktrains.com/globalassets/about/agency/sustainability/climate-action-plan.pdf. Accessed: August 2023.*

[11] *CARB. DRAFT Truck vs. Train Emissions Analysis FAQ. November 12, 2021. https://ww2.arb.ca.gov/resources/fact-sheets/draft-truck-vs-train-emissions-analysis-faq. Accessed August 2023.*

For Good Movements Projects

Most of these projects will be accounted for in AQ2. Not sufficient information/methodologies to calculate the impacts for AQ1, CH1, and EN2 therefore these projects will get a score of NA.

For Community Programs Projects

These projects will be accounted for in AQ2 or CH2 or EN6. Not sufficient information/methodologies to calculate the impacts for AQ1, CH1, and EN2 therefore these projects will get a score of NA.

Additional Documentation:

> Project emission inventory

> Localized impacts for freeway and arterial roadway suites of projects are provided in the gridded emissions maps with the following legend. Study area and localized concerns are discussed in the Con#5 Potential to localized emissions increases/emission shifting rubric.

$PM_{2.5}$ Incremental Emissions (lb/day)	**NO_X Incremental Emissions (lb/day)**	**Legend**
≤-5	≤-55	High Benefit
≤-5	>-55 to ≤-5	Medium Benefit
≤-5	>-5 to <5 : No change	Medium Benefit
>-0.05 to <0.05 : No change	≤-55	Medium Benefit
>-5 to ≤-0.05	≤-55	Medium Benefit
>-5 to ≤-0.05	>-55 to ≤-5	Low Benefit
>-5 to ≤-0.05	>-5 to <5 : No change	Low Benefit
>-0.05 to <0.05 : No change	>-55 to ≤-5	Low Benefit
>-0.05 to <0.05 : No change	>-5 to <5 : No change	No Benefit
≤-0.05	≥5	Mixed Benefit/Concern
≥0.05 to <5	<-5	Mixed Benefit/Concern
>-0.05 to <0.05 : No change	≥5 to <55	Low Concern
≥0.05 to <5	>-5 to <5 : No change	Low Concern
≥0.05 to <5	≥5 to <55	Low Concern
>-0.05 to <0.05 : No change	≥55	Medium Concern
≥5	>-5 to <5 : No change	Medium Concern
≥0.05 to <5	≥55	Medium Concern
≥5	≥5 to <55	Medium Concern
≥5	≥55	High Concern

AQ2: Facilitates clean technologies & lower emissions vehicles

Detailed Criteria Description: Facilitates the deployment of zero emission (ZE) vehicles/equipment. Examples include but are not limited to funding clean vehicle/equipment technology purchase and zero emission fueling infrastructure.

Evaluation Method Description: Qualitative

Data Sources Used:

- Project descriptions
- California Air Resources Board (CARB) and South Coast Air Quality Management District (South Coast AQMD) rule documents have information on benefits of ZE vehicles/equipment. Examples include but are not limited to rulemaking documents for the Advanced Clean Cars II (ACC II) regulation[12], the Advanced Clean Trucks (ACT) regulation[13], the Advanced Clean Fleet (ACF) regulation[14], Warehouse Indirect Source Rule (ISR)[15].

Assumptions:

- ACC II, ACT, and ACF are adopted and implemented per their schedule
- Need for public charging facilities and local electrical generation/storage
- Need for local trade workforce to construct and maintain new ZE fueling infrastructure and ZE vehicles/equipment
- For ZE truck/car lanes, the benefits will be limited due to the accelerated regulatory ZE purchase/implementation schedule that will result in a significant number of ZE vehicles in 2045. In addition, these lanes would not specifically target the benefits to people in the corridor, but these lanes would mostly benefit people throughout the region who already have electrical cars and trucks.

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Project's clean vehicle or infrastructure component is already captured by existing regulations	Potentially move to low/medium/high benefit if the project implementation is ahead of the regulatory schedule
1 – Low Benefit	Example Projects: ZE truck/car lanes	
2 – Medium Benefit	Example Projects: Workforce training, demonstration projects, grant writing assistance for ZE vehicle and/or infrastructure projects	Grant writing projects that are not coupled with electric vehicle (EV) infrastructure projects or demonstration projects downgrade to low benefit
3 – High Benefit	Example Projects: ZE vehicle/equipment infrastructure projects, ZEV funding projects	High benefit for difficult to electrify equipment/vehicles or greater than 5 megawatts (MW) infrastructure projects, otherwise downgrade to no benefit, low

[12] *CARB. ACC II Regulation. August 25, 2022. Available here: https://ww2.arb.ca.gov/rulemaking/2022/advanced-clean-cars-ii. Accessed: May 2023.*

[13] *CARB. ACT Regulation. June 25, 2020. Available here: https://ww2.arb.ca.gov/rulemaking/2019/advancedcleantrucks. Accessed: May 2023*

[14] *CARB. ACF Regulation. April 28, 2023. Available here: https://ww2.arb.ca.gov/rulemaking/2022/acf2022. Accessed: May 2023.*

[15] *South Coast AQMD. Warehouse ISR. May 7, 2021. Available here: http://www.aqmd.gov/docs/default-source/rule-book/reg-xxiii/r2305.pdf?sfvrsn=15. Accessed: May 2023.*

		benefit, or medium benefit (e.g. vehicles/equipment in current regulation) High benefit for public ZE vehicle infrastructure projects greater than 1 MW, downgrade to no benefit, low benefit, or medium benefit for private ZE vehicle infrastructure
NA	Projects that do not have any clean vehicle or infrastructure component and Projects that include equipment/technologies that are currently and will continue to be all zero emission, for example: Metro Light Rail projects	

AQ3: Mode Shift to cleaner modes

Detailed Criteria Description: Increases the share of trips made by transit, walking and bicycling.

Evaluation Method Description: Quantitative

Data Sources Used:

> SCAG Regional Travel Model, adapted for use in study area analysis.

Assumptions:

> Projects considered in the SCAG 2020 Regional Transportation Plan (RTP) are modeled as defined by the RTP.

> BRT projects assume a 25% increase in speed and a one-half lane reduction in vehicle capacity.

> Transit priority projects assume a 15% increase in speed and a one-quarter lane reduction in vehicle capacity.

> Projects are ranked on a per-mile basis so that large projects are not automatically ranked higher than smaller but locally impactful projects.

> Ranking is considered separately for rail, bus, and active transportation projects.

> For projects that were not modeled, the results of the model were used to estimate benefits of similar projects and programs

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit (vs no info)	Project does not increase transit ridership or provide improve active transportation opportunities.	
1 – Low Benefit	Project results in a slight increase in transit passengers served, generally in the lowest group of projects. Or, project has a low potential to improve non-motorized travel.	

2 – Medium Benefit	Project results in a moderate increase in transit passengers served. Or, project has a moderate potential to improve non-motorized travel.	Project LB-ELA_0164, which increases frequency of Metro buses that currently have low frequency, is scored based on the high overall ridership increase instead of on a per-mile basis.
3 – high Benefit	Project results in a high increase in transit passengers served, generally in the top 20%-30% of projects. Or, project has a high potential to improve non-motorized travel.	

Community and Health

CH1: Reduce Emissions (Health Effects metrics: DPM, PM2.5)

Detailed Criteria Description: Reduces diesel particulate matter (DPM) and fine particulate matter ($PM_{2.5}$) emissions from on-road vehicles which in turn can generate health benefits.

Evaluation Method Description: (Use of one or more of the following): Travel Demand Forecasting Model (TDM) for a certain suite of projects; EMFAC Model; GIS-based project type locations or other methods for individuals project scores

Data Sources Used (see AQ1 for links to sources):

> EMFAC Model used to calculate on-road vehicle emissions, including changes in emissions due to project implementation

> CARB adjustment factors for recently adopted regulations: Heavy-Duty Inspection and Maintenance Program (HD I/M), Advanced Clean Cars II (ACC II), and Advanced Clean Fleets (ACF)

> California Air Resources Board (CARB) methodology used to calculate entrained road dust

> OFFROAD Model used to calculate off-road vehicle/equipment emissions, including changes in emissions due to project implementation

> TDM used to model vehicle miles traveled (VMT) and speeds along analyzed roadways; used as input to EMFAC model to determine changes in emissions

> ArcGIS map with project locations

> South Coast Air Quality Management District (South Coast AQMD) Air Quality Significance Thresholds

> South Coast AQMD Localized Significance Threshold Methodology

> South Coast AQMD Permit Application Package "N" for Use in Conjunction with the Risk Assessment Procedures for Rules 1401, 1401.1, and 212

Assumptions:

> Not all freeway or arterial roadway projects were included in the TDM modeling. See project information matrix.

> According to the 2021 Metrolink Climate Action Plan[10], Metrolink has a target of becoming a zero-emissions railroad by 2028. As such, this analysis assumes zero emissions from

passenger locomotive engines by 2045. Further, the proposed CARB In-Use Locomotive Regulation[11] requires all passenger locomotives to operate in a zero emissions configuration by 2030. Under the proposed In-Use Locomotive Regulation, by 2047, all locomotives operated by fleet operators must have 100% of annual fleet usage as zero emissions. Similar to CARB regulatory analyses, this analysis does not include the indirect emissions that may result from generation of electricity used to power these locomotives.

> As of August 2023, CARB does not consider or calculate non-exhaust emission factors for locomotives in their locomotive models.[12]

> Changes in $PM_{2.5}$ have been associated with mortality/illness impacts. Changes in DPM have been associated with cancer risk. For more information on health and air quality studies, see South Coast AQMD 2022 Air Quality Management Plan (AQMP) Appendix I: Health Effects[13] and South Coast AQMD Multiple Air Toxics Exposure Study V (MATES V) Final Report[14].

SCORING METHODOLOGY*

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Project's measures provide no overall emission reductions If total emissions are increased, indicate concerns	
1 – Low Benefit	Total $PM_{2.5}$ emission reductions are less than 5 pounds per day (lbs/day) compared to future baselines **OR** Total DPM emission reductions are greater than 0 but less than 0.4 lbs/day	If total emission reductions are less than 0.1 % of study area emissions, then project should be scored as No Benefit
2 – Medium Benefit	Total $PM_{2.5}$ emission reductions are greater than or equal to 5 lbs/day compared to future baselines **OR** Total DPM emission reductions are greater than or equal to 0.4 lbs/day	
3 – High Benefit	Total $PM_{2.5}$ emission reductions are greater than 5 lbs/day compared to future baselines **AND** Total DPM emission reductions are greater than 0.4 lbs/day	
NA	Project that is not modeled by TDM or does not affect vehicle type, VMT, speed, idle time, or any other parameter affecting emissions	

*For Freeway, Arterial Roadway, and Transit Projects

For Active Transportation/TDM Projects

These projects will be accounted for in AQ3. Not sufficient information/methodologies to calculate the impacts for AQ1, CH1, and EN2 therefore these projects will get a score of NA.

For Good Movements Projects

Most of these projects will be accounted for in AQ2. Not sufficient information/methodologies to calculate the impacts for AQ1, CH1, and EN2 therefore these projects will get a score of NA.

For Community Programs Projects

These projects will be accounted for in AQ2 or CH2 or EN6. Not sufficient information/methodologies to calculate the impacts for AQ1, CH1, and EN2 therefore these projects will get a score of NA.

Additional Documentation:

- Project emission inventory
- Localized impacts for freeway and arterial roadway suites of projects are provided in the gridded emissions maps with the following legend. Study area and localized concerns are discussed in the *Con#5 Potential to localized emissions increases/emission shifting* section below.

$PM_{2.5}$ Incremental Emissions (lb/day)	**DPM Incremental Emissions (lb/day)**	**Legend**
≤-5	≤-0.4	High Benefit
≤-5	>-0.4 to ≤-0.004	Medium Benefit
≤-5	>-0.004 to <0.004 : No change	Medium Benefit
>-0.05 to <0.05 : No change	≤-0.4	Medium Benefit
>-5 to ≤-0.05	≤-0.4	Medium Benefit
>-5 to ≤-0.05	>-0.4 to ≤-0.004	Low Benefit
>-5 to ≤-0.05	>-0.004 to <0.004 : No change	Low Benefit
>-0.05 to <0.05 : No change	>-0.4 to ≤-0.004	Low Benefit
>-0.05 to <0.05 : No change	>-0.004 to <0.004 : No change	No Benefit
≤-0.05	≥0.004	Mixed Benefit/Concern
≥0.05 to <5	<-0.004	Mixed Benefit/Concern
>-0.05 to <0.05 : No change	≥0.004 to <0.4	Low Concern
≥0.05 to <5	>-0.004 to <0.004 : No change	Low Concern
≥0.05 to <5	≥0.004 to <0.4	Low Concern
>-0.05 to <0.05 : No change	≥0.4	Medium Concern
≥5	>-0.004 to <0.004 : No change	Medium Concern
≥0.05 to <5	≥0.4	Medium Concern
≥5	≥0.004 to <0.4	Medium Concern
≥5	≥0.4	High Concern

CH2: Reduce exposure at receptors (HVAC/HEPA, near-roadway vegetation)

Detailed Criteria Description: Reduces exposure at sensitive receptors (e.g. schools and day care centers, hospitals and healthcare clinics, senior centers, and residences) by installing

filtration systems at these receptors and/or installing near-roadway vegetation between major roadways and these receptors.

Evaluation Method Description: Qualitative

Data Sources Used:

- Project descriptions
- Heating, Ventilation, and Air Conditioning (HVAC)/High Efficiency Particulate Filter (HEPA) guidance from the following source such as:
    - South Coast Air Quality Management District's (South Coast AQMD's) Project Plan Reducing Air Pollution Exposure in Schools and Other Facilities.[16]
- Near-roadway vegetation research and or recommendations from the following sources such as:
    - U.S. Environmental protection Agency's (EPA's) workshop on The Role of Vegetation in Mitigating Air Quality Impacts from Traffic Emissions[17]
    - EPA's Recommendations for Constructing Roadside Vegetation Barriers to Improve Near-Road Air Quality[18]
    - California Air Resources Board's (CARB's) Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways[19]
- ArcGIS map with project locations and locations of Equity-Focus Community (EFC) areas
    - ArcGIS map of sensitive receptors (e.g. schools and day care centers, hospitals and healthcare clinics, senior centers, residences) developed from the following sources such as:
    - Locations of day care centers, child care centers, adult residential facilities, and senior centers from the Community Care Licensing Division website
    - Location of health care centers from the State of California Office of Statewide Health Planning & Development website, the Los Angeles County GIS Data Portal, and the Network of Care for Mental/Behavioral Health website
    - School locations in the form of point place markers from the GIS data file provided by ESRI for ArcGIS, data from the Los Angeles County GIS Data Portal, and from Google Earth

[16] *South Coast AQMD. Project Plan Reducing Air Pollution Exposure in Schools and Other Facilities. March 2022. Available at: http://www.aqmd.gov/docs/default-source/tao-capp-incentives/ab617---school-air-filtration-project-plan.pdf. Accessed May 2023.*

[17] *EPA The Role of Vegetation in Mitigating Air Quality Impacts from Traffic Emissions Seminar, EPA Campus, Research Triangle Park, North Carolina, April 27-28, 2010. Available at: https://archive.epa.gov/nrmrl/archive-appcd/web/html/workshop.html. Accessed May 2023.*

[18] *EPA. "Recommendations for Constructing Roadside Vegetation Barriers to Improve Near-Road Air Quality". July 2016. Available at: https://www.epa.gov/air-research/recommendations-constructing-roadside-vegetation-barriers-improve-near-road-air*

[19] *CARB. "Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways". April 2017. Available at: https://ww2.arb.ca.gov/sites/default/files/2017-10/rd_technical_advisory_final.pdf*

- Location of nursing and convalescent centers from the Medicare website

Assumptions:

> Not all projects will be able to use near-road vegetation because there are constraints for planting vegetation that are related to safety, availability of water, and fires

> Near roadway vegetation must meet certain criteria to be considered effective at reducing particulate matter (PM)

> HVAC/HEPA systems must meet certain design criteria to be considered effective at reducing PM

SCORING METHODOLOGY:

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Project's specific design features unlikely to provide any benefit. For example, project does not include filters or vegetation. Additionally, project that have these features but filters efficiency is lower than Minimum Efficiency Reporting Value (MERV) 13 or vegetation barriers are not close enough to traffic or not dense enough to reduce PM emissions.	
1 – Low Benefit	Example Projects: High-efficiency air filters on bus and rail transit vehicles [small time fraction in travel, is used by sensitive population (children, ill, and seniors)], soundwalls that meet specific design criteria	If the soundwall does not meet specific design criteria [distance from roadway, traffic level on roadway, barrier design and composition, and length] downgrade rating
2 – Medium Benefit	Example Projects: Roadway vegetation barriers	If the roadway vegetation barrier does not meet specific design criteria [distance from roadway, traffic level on roadway, density of vegetation, type of vegetation, and length] downgrade rating
3 – High Benefit	Example Projects: Air filters of MERV 13 or higher efficiency coupled with HVAC upgrades as needed	If the air filtration does not reduce exposure for large groups of people and/or highly sensitive population (children, ill, and seniors) downgrade rating
NA	Projects do not physically modify the roadway design. For example, signal coordination, TDM, and funding opportunities for zero emissions infrastructure and vehicles	The following project types will also receive a score of a NA: Bike lanes [no on-road vehicle emissions} Bridges [above grade no opportunity for vegetation] Local roadway interchange improvements [no opportunity for vegetation]

CH3: Mode Shift to active transportation, transit

Detailed Criteria Description: Increases the share of trips made by transit, walking and bicycling.

Evaluation Method Description: Quantitative

Data Sources Used:

> SCAG Regional Travel Model, adapted for use in study area analysis.

Assumptions:

> Projects considered in the SCAG 2020 Regional Transportation Plan (RTP) are modeled as defined by the RTP.
> BRT projects assume a 25% increase in speed and a one-half lane reduction in vehicle capacity.
> Transit priority projects assume a 15% increase in speed and a one-quarter lane reduction in vehicle capacity.
> Projects are ranked on a per-mile basis so that large projects are not automatically ranked higher than smaller but locally impactful projects.
> Ranking is considered separately for rail, bus, and active transportation projects.
> For projects that were not modeled, the results of the model were used to estimate benefits of similar projects and programs

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit (vs no info)	Project does not increase transit ridership or provide improve active transportation opportunities.	
1 – Low Benefit	Project results in a slight increase in transit passengers served, generally in the lowest group of projects. Or, project has a low potential to improve non-motorized travel.	
2 – Medium Benefit	Project results in a moderate increase in transit passengers served. Or, project has a moderate potential to improve non-motorized travel.	Project LB-ELA_0164, which increases frequency of Metro buses that currently have low frequency, is scored based on the high overall ridership increase instead of on a per-mile basis.
3 – high Benefit	Project results in a high increase in transit passengers served, generally in the top 20%-30% of projects. Or, project has a high potential to improve non-motorized travel.	

CH4: Improve the User Experience (may be different metrics for different modes)

Detailed Criteria Description: Provides intuitive roadway network for all users, includes gap closures, exclusive pathways for active transportation, provision of wayfinding, access to information regarding directions or transportation options, includes technological solutions that make travel information including directions and modal options more available to the user.

Evaluation Method Description: Qualitative

Data Sources Used:

- Assessment of project's impact on user experience based on project materials and professional judgement – see project materials

Assumptions:

- The "user" is generally assumed to be a member of the public.
- Project score better when they specifically address a multimodal context and enhancing the experience in some way for sustainable transportation options thus benefitting the greater good.
- Improves experience of targeted user group and targeted travel mode of the improvement
- User experience of all roadway users considered. For example, if one mode benefits at the expense of other more sustainable modes, user experience of all modes is considered.
- Also depends on area land uses. For example, pedestrian projects where there are places to walk (such as businesses) will score better than projects without any public destinations.
- Evaluation looks at how the system functions as a whole – longer bike routes benefit the network more than shorter bike routes (for example)
- Individual connections within the bike network are important but rank lower without significant jobs, housing or other attractors/generators (ex: Randolph rail to trail in Bell).
- Because this criterion is specific to the assumed user experience, its rating can be subjective based on the perceived benefit of the project as it is described in the materials.

Scoring Methodology:

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Projects that attempt to address users but may not be the appropriate solution Project replaces or rehabilitates existing infrastructure without indicating any changes to design that improve experience for existing or new user groups	
1 – Low Benefit	Fewer users may benefit due to the location or configuration of the improvement. Benefit may have a small impact on individual user experience > Active Transportation: Minor improvements that facilitate safer navigation of vehicle-oriented roadways > Arterial Roadway: Localized spot improvements in low-traffic locations; traffic system and intersection improvements that primarily benefit vehicle users	Benefits to freeway and electric vehicle users (other than increasing traffic speed) because investment should be focus on promoting alternatives to driving for most users Spot-level roadway improvements (examples: Greenway Traffic Circle, or Telegraph Road Improvements) appear they would not benefit many users due to location and configuration of the project Traffic signal projects, intersection and roadway improvements (such as adding turn lanes or widening) only benefit car drivers (and speeds them up on city roads) unless project specifically states that they will benefit other modes. Maintenance and rehabilitation projects are assumed to have low impact since system is unchanged Video cameras for enforcement (red light running) are assumed to have low impact on the user experience Pedestrian activation buttons because they prioritize auto throughput and require pedestrians to request the ability to cross the street rather than that being an entitlement Rectangular Rapid Flashing Beacons (RRFB) are a suitable treatment for some locations.
2 – Medium Benefit	Benefit appears moderate, or somewhat but not significant, or does not appear to be the right match for the area land uses (eg, industrial land use context) > Active Transportation: Localized scale, low level of change in infrastructure (no major roadway reconfiguration) > Arterial Roadway: Includes benefits for all modes; does not increase vehicle volume or speed near areas of high pedestrian activity	Pedestrian improvements on local/collector streets near schools are assumed to have a medium impact Ped/bike projects such as Class 2/3 facilities or education programs / program-only solutions Interchange improvements for all modes that are NOT near a commercial area, where people are likely to be mostly driving Creating a vehicle for economic benefit such as jobs fairs is assumed to provide

	> Transit: Includes new or upgraded amenities > Various Programs: Contributes to improved air quality	a moderate benefit to job seekers and employers Clean truck program and other individual programs that provide air quality benefits for the surrounding community.
3 – High Benefit	Provides a clear benefit for more than one modal user of the roadway, or at least does not make conditions worse for other users, in a location where multiple types of modal users are likely to be present. Projects that improve conditions for sustainable transportation modes where there demand based on land uses. > Active Transportation: strong 1st / last mile connections to major transit hubs, longer / regionally significant class 1 or 4 bikeways, citywide / plan level bike/ped improvements, strongly beneficial projects in areas with mixed land uses > Arterial Roadway: roadway improvements that strongly benefit all users of the roadway such as complete streets projects in mixed-land-use areas, citywide or area traffic calming > Freeway: if the program benefits freeway users without negative impacting other members of the public > Transit: Major transit infrastructure such as LRT expansions, BRT projects, microtransit programs, systemwide bus stop improvements > Various Programs: promoting telecommuting with local employers; greening initiatives, public art, and homeless programs	Larger scale projects that benefit sustainable modes such as study area wide traffic calming or bus stop safety and amenity programs Interchange improvements for all modes that are near a commercial area where people are likely to be using various modes All class I or IV bike lane implementations are assumed to have a high benefits to the users of those facilities. Gap closures for active modes Economic programs such as local hire and support for local small businesses are assumed to have a high benefit to their recipients (or "users") Any project that includes upgrade for ADA accessibility Most public transit improvements (such as better buses, improved reliability on LRT, signal priority), have a positive but not necessarily a "high" benefit to the community of transit users.
NA	No clear impact on public users	Projects that are a "study" or creation of a "plan" are assumed to have no impact on the user (yet) Projects that are internal to the port, and do not directly impact the general public users of the roadway network or AQ impacts Maintenance station projects, pump plant projects are not assumed to impact the using public

CH5: Bike/Ped Access to parks, recreational areas, or open spaces

Detailed Criteria Description: Provides new or upgraded bike/ped facilities that connect with parks, recreational areas, or open spaces. For the purposes of this analysis, this is defined as within ¼ mile of a recreational space.

Evaluation Method Description: Qualitative in its assessment of the impact of the project on active transportation. Then quantitative if the project is within ¼ mile of recreational space.

Data Sources Used:

- Qualitative assessment (professional judgement based on knowledge of the research and transportation conditions) of the impact of a project on conditions for active transportation users (e.g., bike lanes or paths improve conditions for active transportation users, road widening and increasing traffic speeds reduce the quality of the conditions for the active transportation user)

- Quantitative assessment of the distance between the project and the nearest recreational space using google maps directions

Assumptions:

- This metric is binary:
    - Either the project provides access to parks etc. or it does not.
        - Note – the LA River path is proximate to most of the corridor, so it is treated differently in the rubric below
    - Either it is an active transportation project or it is not
        - Active transportation projects were evaluated based on the level of benefit they are likely to offer to bicyclists and pedestrians:
            - Insignificant benefit – localized crosswalks, small-scale pedestrian improvements
            - Minor projects – such as class 2 bike lanes, bike/ped undercrossing and bridges
            - Major projects – class 1 and 4 bike and pedestrian paths, corridor or city wide safety and/or bike/ped improvements

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Projects which would likely have a negative impact on active transportation and are within ¼ mile of a recreational space Any roadway design projects that don't incorporate active transportation infrastructure due to missed opportunity to improve access.	
1 – Low Benefit	Improvement considered to be insufficient to provide improved safe conditions for active transportation user and are within ¼ mile of a recreational space (example: push button crossing, RRFB) Projects that introduce minor benefits to the bike/ped network but aren't within ¼-mile of a recreational space.	Exception is the micromobility and bikeshare projects (LB-ELA_0220 and LB-ELA_0200) which have a very large, spread out service area which may not be successful in providing enough equipment to serve the community
2 – Medium Benefit	Projects that will benefit the ped/bike network but only serve the Los Angeles River (and I-710) and NOT near any other parks Projects that introduce major benefits to the bike/ped network but aren't within ¼-mile of a recreational space.	
3 – High Benefit	Projects that provide significant benefit and are within ¼ mile of LA River or parks / recreational areas	
NA	Applies to most non-active transportation projects, including rehabilitation projects, with the exception of general arterial projects	

Mobility

MB1: Transit Ridership

Detailed Criteria Description: Increases transit ridership by shifting trips to transit from other modes.

Evaluation Method Description: Quantitative

Data Sources Used:

> SCAG Regional Travel Model, adapted for use in study area analysis.

Assumptions:

> Projects considered in the SCAG 2020 Regional Transportation Plan (RTP) are modeled as defined by the RTP.

> Bus Rapid Transit (BRT) projects assume a 25% increase in speed and a one-half lane reduction in auto capacity.

> Transit priority projects assume a 15% increase in speed and a one-quarter lane reduction in auto capacity.

> For projects that were not modeled, the results of the model were used to estimate benefits of similar projects and programs

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
NA – Not Applicable	Project does not relate to transit mode.	
1 – Low Benefit	Project results in a slight increase in transit passenger miles traveled per project mile, generally in the lowest group of projects. Ranking is considered separately for rail and bus projects.	
2 – Medium Benefit	Project results in a moderate increase in transit passenger miles traveled per project mile.	
3 – high Benefit	Project results in a high increase in transit passenger miles traveled per project mile, generally in the top 20%-30% of projects. Ranking is considered separately for rail and bus projects.	Project LB-ELA_0164, which increases frequency of Metro busses that currently have low frequency, is scored based on the high overall ridership increase instead of on a per-mile basis.

MB2: Speeds / Travel Times (people, goods)

Detailed Criteria Description: Increase roadway speeds (or reduce travel times) for people and goods.

Evaluation Method Description: Quantitative

Data Sources Used:

> SCAG Regional Travel Model, adapted for use in study area analysis.

Assumptions:

> Projects considered in the SCAG 2020 Regional Transportation Plan (RTP) are modeled as defined by the RTP.

> Interchanges, auxiliary lanes, and truck lanes along I-710 were modeled using assumptions consistent with past studies.

> Projects that improve arterial street operations without adding lanes were modeled by increasing speed and capacity in a manner consistent with SCAG modeling practices.

> Project rankings consider project length so that large projects are not automatically ranked higher than smaller but locally impactful projects.

> For projects that were not modeled, the results of the model were used to estimate benefits of similar projects and programs

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
NA – Not applicable	Project does not impact travel times because it is non-mobility related or active transportation.	
0 – No benefit	Project does not reduce travel times and/or may increase travel times.	
1 – Low Benefit	Project results in a slight reduction in travel times based on a weighted combination of passenger miles traveled, severity of congestion under no-build conditions, and reduction in delay for people and goods.	Interchanges were ranked based on the number of vehicles served, as this high-level analysis does not compare the effectiveness of detailed interchange designs.
2 – Medium Benefit	Project results in a moderate reduction in travel times based on a weighted combination of passenger miles traveled, severity of congestion under no-build conditions, and reduction in delay for people and goods.	
3 – high Benefit	Project results in a significant reduction in travel delay based on a weighted combination of passenger miles traveled, severity of congestion under no-build conditions, and reduction in delay for people and goods.	

MB3: Reduce Congestion (hours of delay for people & goods)

Detailed Criteria Description: Reduce hours of delay for people and goods.

Evaluation Method Description: Quantitative

Data Sources Used:

> SCAG Regional Travel Model, adapted for use in study area analysis.

Assumptions:

> Projects considered in the SCAG 2020 Regional Transportation Plan (RTP) are modeled as defined by the RTP.

> Interchanges, auxiliary lanes, and truck lanes along I-710 were modeled using assumptions consistent with past studies.

> Projects that improve arterial street operations without adding lanes were modeled by increasing auto speed and capacity in a manner consistent with SCAG modeling practices.

> For projects that were not modeled, the results of the model were used to estimate benefits of similar projects and programs

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
NA – Not applicable	Project does not impact travel delay because it is non-mobility related or active transportation.	
0 – No benefit	Project does not reduce delay and/or may increase travel delay.	
1 – Low Benefit	Project results in a slight reduction in travel delay. Projects are ranked based on a weighted combination of passenger miles traveled, severity of congestion under no-build conditions, and reduction in auto and truck delay.	Interchanges were ranked based on the number of vehicles served, as this high-level analysis does not compare the effectiveness of detailed interchange design details.
2 – Medium Benefit	Project results in a moderate reduction in travel delay. Projects are ranked based on a weighted combination of passenger miles traveled, severity of congestion under no-build conditions, and reduction in auto and truck delay.	
3 – high Benefit	Project results in a significant reduction in travel delay. Projects are ranked based on a weighted combination of passenger miles traveled, severity of congestion under no-build conditions, and reduction in auto and truck delay.	

MB4: Modal Accessibility (by zone)

Detailed Criteria Description: Improves access to new transportation facilities for residents. Quantifies the population benefiting from the improvement based on a ¼ mile distance from the new transportation facility.

Evaluation Method Description: Quantitative

Data Sources Used:

> Project descriptions/type

> Project location using GIS

> 2020 Census data for population by Census Block Group

Assumptions:

> The scale of the project (localized, semi-localized, corridor-wide) was used in the evaluation of each project (see common definitions section above for definition of project scales)

> Projects were identified as a “new transportation facility” – see the applicability based on sub classification in Appendix A.

Scoring Methodology:

> A ¼ mile buffer was created around all projects

> The population within the buffer was calculated using 2020 census data and the assumption of uniform density throughout the block group

> Projects were scored based on the total population in the buffer

> Programs were evaluated based on the scale of the program

SCORING METHODOLOGY

Scoring	Example/Methodology
0 – No benefit	There are no "No Benefit" for this metric
1 – Low Benefit	Project provides new access for: 1-19,999 people in ¼ buffer Or: A program that is localized
2 – Medium Benefit	Project provides new access for: 20,000-79,999 people in ¼ buffer Or: A program that is "semi-localized"
3 – High Benefit	Project provides new access for: >=80,000 people in ¼ buffer Or: A program that is "Corridor-wide"
NA	Project or program does not provide new transportation facilities

MB5: Reliability (transit, roadway, goods movement)

Detailed Criteria Description: Improves transportation travel time reliability, providing consistent range of predictable travel times across all modes. Reliability is improved by optimizing existing transportation systems and expanding travel capacity and reducing travel delay. Examples of things that improve reliability include: improving safety (reducing crashes/unexpected delay), signal timing, transit signal priority, dedicated transit lanes, separate facilities for active modes, transportation demand management, and dynamic road user charges.

Evaluation Method Description: Qualitative

Data Sources Used:

- Project descriptions and project location

Assumptions:

- Projects received scores based on their type, subtype, and additional sub-classification (see Appendix A). Project descriptions were used to make adjustments to the sub-classification scores if projects contain additional reliability features.

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Project is likely to maintain existing reliability or decrease system reliability. There are no projects that fall into this category	
1 – Low Benefit	Example Projects: Projects that provide small or temporary improvements to reliability, such as street widening, pilot projects, housing/jobs projects, localized spot improvements to connectivity, or maintenance projects that would mitigate system failures in case of emergency (bridge rehab, stormwater improvements)	
2 – Medium Benefit	Example Projects: Projects that provide medium levels of reliability improvement potential, upgrades to infrastructure/technology that could be used to improve reliability (i.e. new signals, fiber upgrades, safety projects.	If complete streets projects have a major safety improvement, they can receive a medium benefit
3 – High Benefit	Example Projects: Projects whose sole purpose is to improve reliability, such as signal synchronization, bike network gap closures, transit signal prioritization, and separate facilities	Active Transportation projects that just enhance existing infrastructure vs filling in gaps are scored a 2
NA	Projects that will not reduce reliability and have little opportunity to improve it such as emission reduction program or ZE transition.	

MB6: Gap Closures

Detailed Criteria Description: Addresses a gap in the transportation network or removes a transportation barrier, by providing a new service or new transportation facility

Evaluation Method Description: Qualitative

Data Sources Used:

- Project descriptions and project location

Assumptions:

- Projects received scores based on their project descriptions. Projects described as new facilities (ie. 'construct,' 'implement,' 'build' 'add') were considered to be net new gap closures and scored a 3, while 'enhance' 'improve' and 'upgrade' were scored as 1. Project types were used to screen out project types that would not have any impact on gap closures, for example, zero emission improvements. Anything that upgraded an existing facility to be ADA compliant received a 2.

- Applied scores to all projects based on the sub classification scores (Appendix A) and then adjusted rating based on details of the project description.

SCORING METHDOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Project is likely to increase gaps in the transportation system	
1 – Low Benefit	Infrastructure Project enhances safety/accessibility to allow more people to use a segment of the transportation system comfortably (For example, upgrading an unprotected bike lane to a buffered bike lane, or adding in curb cuts)	Project that is enhancing/updating a facility to be ADA compliant gets bumped up to a 2
2 – Medium Benefit	Project that provides a new service or expands an existing transportation service option.	
3 – High Benefit	Infrastructure Projects closes a physical gap in the transportation network or extends an existing network to a new place	
NA	Projects that will not reduce or improve transportation network gaps, including non-infrastructure projects and those that do not add new infrastructure.	

MB7: Increase in travel options

Detailed Criteria Description: Makes a range of (sustainable, non-SOV) transportation options more realistic for likely user trips

Evaluation Method Description: Qualitative

Data Sources Used: Project descriptions

Assumptions:

- Projects are scored based on their relative benefit to people who may consider using one or more sustainable transportation options instead of driving alone. Benefits are quantified based on aggregating independent standards listed:
    - Geographic scale – corridors or areas will score better than spot improvements, larger projects better than smaller projects (+/-1)
    - Level of impact – better improvements (eg class 1 or 4 bike facilities) score better than lower impact improvements (class 2 or 3). New light rail service will score better than bus stop improvements. (+/-1)
    - Multimodal – if a project benefits more than one sustainable modal option, it will score better than a project that only benefits one sustainable mode (+/-1 per additional mode)

- Land use – projects in areas where people are, and with a combination of commercial and residential land uses, will score better than projects with just one land use, especially if that is industrial. (+/-1)

- Type of improvement – infrastructure scores better than programmatic and marketing improvements (+/-1)

By travel mode:

- Non-driving modes

  - Investments include improvements to transit, bicycle or pedestrian networks

- Reliability

  - Transit features that are known to prevent delays / increase headways

  - Active transportation features are Class 1 or 4 bike facilities (separated or shared use paths)

  - Although reliability is typically used to quantitively measure transit and vehicular trips, for the purpose of active transportation and bicycles in particular, we consider direct routes that are comfortable for cyclists as reliable. Since this criteria is qualitative for projects/programs where trip origins and destinations are not evaluated, the class of bike facilities is used as a proxy for comfort.

- Accessibility

  - Features are known to improve safety for people with disabilities, the elderly or children

  - Protected bicycle lanes meet standards for All Ages and Abilities (AAA)

Other notes:

- Signal timing, unless for public transit, prioritizes automobile through-put, and speeds up cars. Slowing down traffic fosters better harmony with other users of the roadway.

- Area land uses play an important role. If there are places to go (eg shops) within a reasonable walking distance of the improvement, the multimodal improvement has a stronger impact on increasing travel options. Complete streets projects that benefit less from MB7 might be because there is not significant non-automobile centric attractions along the corridor such as retail and shops.

- Improvements in reliability and availability (frequency, coverage) of public transit and active transportation options benefit travel options.

SCORING METHODOLOGY:

Scoring	Example/Methodology
0 – No benefit	Disbenefits include project/program features known to add delays for sustainable travel modes or that increase the speed of automobile traffic fostering an incentive to continue to use only that one travel mode. Examples include: > Traffic signal upgrades because they are an investment in automobiles rather than multimodal. They effectively speed up traffic which reduces the roadway safety for other modes (exception is if the timing change is for transit or bikes). > Road widening, or adding turn lanes, projects or any project that prioritizes speeding up traffic or improving traffic through-put. > Freeway amenities unless they include upgrades that benefit other modes
1 – Low Benefit	Single-location (spot-level) multimodal improvements that are not in locations well served by mixed area land uses. Examples include: > Interchange improvements for all modes that are NOT near a commercial area (where people are likely to be mostly driving) > Roadway improvements for pedestrians and bicyclists that may not be the right application for the need. Examples include RRFBs, pedestrian buttons, signage, and electrical infrastructure, bike share program which are not likely to be the best solution for the context. > Projects that represent an improvement but are also potentially duplicative of existing infrastructure. > Marketing programs such as BEST, ridesharing, telecommuting likely have a low benefit on travel options without companion infrastructure improvements (which would be shown as a separate project). > Restriping programs, and other non-specific roadway improvements, have a low benefit on travel options by making it slightly safer to share the road between modes.
2 – Medium Benefit	Moderate level of encouragement for one sustainable transportation mode. Examples include > Class 2 or 3 bicycle facilities > Spot-level encouragement for multiple transportation modes. Examples include interchange improvements for all modes that are near a commercial area where people are likely to be using different modes > Corridor-level encouragement for multiple modes but not necessarily in the most efficient location. Examples include: complete streets projects in areas were there is not a strong diversity of land uses > Roadway (pavement) maintenance makes it possible for bicycle commuters to ride safely (vs. on broken up pavement). > Bus stop and shelter improvement programs at the zonal or corridor level (not just one bus stop).
3 – High Benefit	High level of service and encouragement for at least one sustainable transportation mode. Examples include: > Class 1 or 4 bicycle facilities and new or improved high-quality public transit. > Infrastructure that fosters multiple sustainable transportation modes together. Examples include: complete streets in areas where there is existing mixed use development.

	> Sustainable transportation and multimodal project that cover larger geographic areas such as mixed use corridors or areas targeted for high quality improvements. > Transit-Oriented Development (TOD)
NA	Projects that do not impact individual travel modes > Video camera installation > Emergency vehicle preemption > Community / Air quality / community health > Community / environment projects > Housing Stabilization / Land Use except when specific to TOD > Congestion pricing provides discouragement for driving but does not assist with providing new options on its own. > Zero Emissions Lanes on I-710 > Freight Rail / Goods Movement TDM > Port projects unless they specific include improvements for sustainable transportation modes for individuals > Converting bus fleets to sustainable fuel > Metro railyard and infrastructure improvements

Safety

SF1: Protections for Bike / Users (bike class)

Detailed Criteria Description: Provides exclusive and separated pathways for bikes

Evaluation Method Description: Qualitative, binary based on project descriptions

Data Sources Used:

- Project descriptions
- Google maps for view of current roadway conditions

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Roadway improvements for traffic that do not include protections for bikes	General beautification and safety improvements may not apply, and we categorized as "NA"
1 – Low Benefit	Class 3 bike facilities	Wide curb lanes only
2 – Medium Benefit	Class 2 bike facilities	Projects that include both class 2 and 3 but also include other multimodal design features such as traffic calming
3 – High Benefit	Class 1 or 4 facilities Citywide or long corridor (5+ miles) bicycle plans are assumed to provide an integrated improvement in benefits for bicycle protections.	Projects that include enhancements for bike paths such as improved lighting or fences Pedestrian bridges are assumed to provide access for bikes
Na	Projects that do not include any roadway or pathway changes or reconfigurations	Applies to most traffic signal and ITS projects Bikeshare project does not include any bicycle protections though it does include other physical improvements for bike riders

SF2: Traffic Protections (bike/ped)

Detailed Criteria Description: Provides new or upgraded separation between bikes/peds and automobile traffic

Evaluation Method Description: Qualitative, binary by project

Data Sources Used:

- Project descriptions

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Road widening or other modification in favor of automobile throughput without the addition of protections for active modes	
1 – Low Benefit	Projects that provide a low level of improvement for pedestrians – see examples	Generally "intersection improvements" are assumed to have some (low) benefit for pedestrian safety including pedestrian crossings such as "pedestrian buttons, signage, and electrical infrastructure" Restriping alone provides a low level of protections for bikes/peds Undefined "safety" related roadway improvements
2 – Medium Benefit	Projects with a "medium benefit" are generally projects that provide a good protection but will only benefit a relatively small number of people given surrounding land uses	Sidewalk widening and crossing improvements where there is not commercial destinations to draw pedestrians
3 – High Benefit	Physical separation for bicycles and pedestrians such as exclusive paths, widening sidewalks and providing significant crossing improvements in commercial areas	Sidewalk widening and curb extensions provide protections for pedestrians Projects that specifically bring a location into compliance with ADA for pedestrians
Na	Projects that do not impact pedestrian or bicycle conditions	Protected left turn lanes do not impact pedestrian or bicycle protections Applies to most traffic signal and ITS projects

SF3: Personal Security

Detailed Criteria Description: Provides features and/or services to protect individual users from crime and personal harm

Evaluation Method Description: Qualitative and binary

Data Sources Used:

- Project Descriptions

Assumptions:

- High Capacity Transit (Rail & BRT) – Metro's new transit line stations are assumed/known to have safety features such as lighting and security cameras
- Improved maintenance programs are assumed to provide some increase sense of personal security
- Bus Shelters are assumed to include lighting
- Improved transit headways and reliability minimizes time spent waiting at transit stops for transfer passengers or from transit delays

- Transit oriented development projects put more transit riders closer to transit and have more pedestrian activity improving safety for users
- Video cameras are assumed to provide some surveillance and resulting personal security benefit
- Upgrades to existing light is assumed to provide low personal security benefit

SCORING METHODOLOGY

Scoring	Example/Methodology
0 – No benefit	Projects that do not directly mention providing personal security features in categories where other projects specifically mention personal security features
1 – Low Benefit	Examples include: > Upgrades to existing lighting > "Highway lighting" and "highway cameras" likely have a low impact > Programs that include improved maintenance provide a low level of additional personal security > Arterial roadway cameras may provide some surveillance benefit improving personal security after the fact.
2 – Medium Benefit	Smaller size or lower scale projects – such as lighting locations at a single point rather than a corridor, lighting projects in areas with very low pedestrian traffic due to surrounding land uses. Other examples include: > High Capacity Transit (Rail & BRT) – new transit lines > Bus shelters typically include lighting which would benefit personal security. > Improved bus transit reliability and frequency reduces time waiting at bus stops for transfers or from service delays. > Housing stabilization and other economic stabilization programs > Transit oriented development projects and programs
3 – High Benefit	Projects with a specific personal security benefit > Lighting projects along corridors or areas > Personals security projects > Projects that contain specific reference to "personal safety", "security", and "lighting"
Na	Categories where personal security features are not mentioned for any projects. These included: > Zero Emission Lanes > Freight Rail / Goods Movement Projects > Truck Programs/ITS > Job training

SF4: Includes Safety Features

Detailed Criteria Description: Safety from automobile collisions primarily for other modes using the roadway; includes roadway safety for truck use, but not Metro rail safety unless it is interacting with roadway users in the project.

Evaluation Method Description: Qualitative and binary

Data Sources Used:

- Project descriptions

Assumptions:

- Project descriptions are assumed to be an accurate reflection of if they address safety
- Professional judgement used when a project does not specifically mention safety, but likely does contain safety features, or if the safety mentioned is actually personal security

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Any physical project that does not address the safety of users	
1 – Low Benefit	Not used for this metric	
2 – Medium Benefit	Not used for this metric	
3 – High Benefit	If the project says it is a safety improvement project, we assumed it was. There was not enough information to distinguish between the effectiveness of each "safety" project	We did distinguish between "safety" projects (from collisions and road user conflict) and "security" projects (crime, theft, assault) though the words are sometimes used interchangeably. This metric is about "safety" as described in the previous sentence. Changeable message signs provide the opportunity to convey safety-related messages
NA	A program or project that does not have a physical component, or where multiple modes will not interact with each other (such as a recreational multi-use pathway)	Traffic signal projects are generally not specific to safety

SF5: Reducing conflict points (vehicle safety)

Detailed Criteria Description: Reduces the number and severity of conflict points between vehicles traveling on highways and roadways to improve vehicle safety. This metric focuses on vehicle vs. vehicle safety and does not address any interactions of vehicles with active transportation modes such as bicycles or pedestrians.

Evaluation Method Description: Qualitative

Data Sources Used:

- Analysis of I-710 vehicle conflict locations as part of the assessment of Early Action Projects

- FHWA Complete Streets web site[20]

Assumptions:

- Focuses on projects that specifically address auto vehicle movements. Projects that do not specifically address auto/truck movements are assumed to not have an impact on vehicle conflicts

- Addresses vehicle to vehicle interactions and does not consider interactions between auto and truck vehicles and other users of the roadway such as pedestrians or bicycles.

- Ranking is based on the number of vehicles impacted by the improvement as described below. This is based on ADT of the roadways and number of roadways or intersections included in the project.

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
N/A	Projects that do not affect motorized vehicle operations	
0 – No benefit	Roadway infrastructure or traffic operational Projects that don't reduce vehicle conflict points	
1 – Low Benefit	Has localized spot reduction in vehicle/vehicle conflicts (e.g., between 1-5 intersections with traffic signal improvements or adding signal controlled turn lanes)	
2 – Medium Benefit	Has arterial corridor reduction in vehicle/ vehicle conflicts for facilities with 20,000+ ADT and more than 5+ signalized intersections or adding signal controlled turn lanes. Arterial/freeway interchange improvements with 1-3 existing merge/weave conflict that project improves through revised design	Applies to complete streets corridors with more than 5 signalized intersections Applies to arterial/freeway interchange improvements (those with 1-3 existing merge/weave conflicts that project improves through revised design
3 – High Benefit	Has reduction in vehicle/vehicle conflict locations for facilities with 75,000+ ADT	Applies to arterial/freeway interchange improvements (those with 4 or more existing merge/weave conflicts that project improves through revised design, e.g. DDI interchange Improves mainline weave/merge by addition of auxiliary lanes

[20] *https://highways.dot.gov/complete-streets*

SF6: Traffic Calming Features

Detailed Criteria Description: Has the effect of slowing down automobile traffic

Evaluation Method Description: Qualitative

Data Sources Used: Project descriptions

Assumptions:

- Must impact city streets and interaction with traffic (rather than interstate only) – if no impact, then project is "NA"

SCORING METHODOLOGY

Scoring	Example/Methodology
0 – No benefit	Projects that reduce delay or improve flow. Any project that speeds up cars has does not provide traffic calming benefits. Examples include: > Signal upgrades, synchronization and enhancements because the assumption is they are aimed at speeding up cars rather than calming traffic (unless they specifically say they would be timed for bikes), > Arterial improvements > Interchange reconfigurations > Protected turn lanes > Transit grade separation > ITS for congestion
1 – Low Benefit	Low benefit examples include: > RRFBs generally not considered an ideal application for calming traffic flows > Roadway improvements surrounding the bike share system are likely to have a low benefit to traffic calming > "LB-ELA Corridor Vulnerable Road User Connected Vehicle Infrastructure Deployment"(LB-ELA_0166) appears to support all users of the roadway but there isn't any indication that it would slow traffic significantly. > Bus stop amenities such as shelters, benches and lighting – constitute pedestrian amenities but are limited in geographic scope

2 – Medium Benefit	Medium benefit examples include: > BRT and transit-oriented roadway improvements, including addition transit-priority lanes (without additional lanes for car traffic) and transit signal priority and including route-level, have a traffic calming impact. > Projects adding sidewalks and class 3 bike lanes are assumed to have a medium traffic calming affect > Roadway improvements for pedestrian circulation > School zone striping > Urban greening > Bike/Ped adaptation for traffic signals > Adding bike lanes > Intersection improvements for pedestrians at a single location > Bringing roadways into compliance with ADA without other, companion pedestrian upgrades > Public art projects are assumed to provide street-level interest having the effect of drivers slowing down and improving street safety for pedestrians
3 – High Benefit	High benefit projects include: > Widening sidewalks and curb extensions > Implementing the regionally-significant bike network plans, active transportation plans, bicycle gap closer projects > Traffic lane reductions > Complete Streets projects regardless of length or land uses because complete streets will "calm" traffic by definition > Corridor level bike/ped/safety projects including intersection improvements (example: LB-ELA_0126) > 1st/last mile transit improvement projects at for the entire transit line > Citywide, zonal and study-area-wide bike/ped improvements and gap closures – implementation of citywide pedestrian plans
NA	The following project categories are considered to be "not applicable" to the traffic calming metric: > Camera enforcement (when not combined with other signal improvements because impact is after the speeding may have occurred) > Increasing truck traffic speed in the highway because does not impact city streets > Pedestrian bridges do not slow traffic because it does not interface with cars/trucks > Exclusive ped/bike pathways that do not interact with traffic would not have a traffic calming impact > Freeway and Goods movement improvements that do not interact with city streets > Ports projects > Rail line projects > Storm water management > Congestion Pricing

SF7: Improves / rehabilitates existing infrastructure

Detailed Criteria Description: Contains elements specifically targeting state of good repair or makes tangible improvements to existing transportation infrastructure

Evaluation Method Description: Qualitative

Data Sources Used: Project descriptions

Assumptions:

- Projects received scores based on their type, subtype, and additional sub-classification (see Appendix A). Project descriptions were used to make adjustments to the sub-classification scores if projects contain specific elements to maintain or upgrade existing infrastructure.

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	0 – Capital projects with physical infrastructure component in a new right of way	
1 – Low Benefit	Example Projects: Projects in existing rights-of-way that make little improvement to existing infrastructure and/or make no mention of rehabilitation.	
2 – Medium Benefit	Example Projects: Projects that make some improvement to existing infrastructure	Projects with descriptions mention repair, upgrade, maintain, and other terms that otherwise would have gotten a lower score
3 – High Benefit	Example Projects: Projects that make significant improvements to existing infrastructure on high-use corridors. Examples include complete streets projects that include roadway reconfiguration and sewer and utility work.	
NA	Projects or programs that do not make physical changes to infrastructure or built and natural environment.	

Environment

EN1: Improved Environment from Mode Shifts

Detailed Criteria Description: Considers the impact of the mode shift resulting from the project on the surrounding community and environment, takes into consideration the likelihood of mode shift from the project and the benefit of that particular mode shift on others in the community.

Evaluation Method Description: Qualitative

Data Sources Used: Project descriptions

Assumptions:

- The following considerations influenced the development of this metrica:

- **How Realistic mode shift would be based on project impact** – that is, is it physically possible or reasonable for people to make sustainable trips passing by this location? Does a bus run between origins and destinations near this location? Is bicycle infrastructure sufficient that normal people would reasonably choose to bike for trips passing by here? Are there sidewalks and crosswalks here? Is there anything within ¼ mile of this location where people are likely to be going such as schools or shops?

- **Likelihood of mode shift based on project impact** – assuming it is physically possible to use sustainable transportation in the project area, would people actually do it? Are the transportation options travel modes that would be attractive to most people? For example, rail transit is generally more appealing than bus transit. Walking, for reasonable distances, is a more likely option than bicycling for most travelers.

- **Impact of mode shift on the surrounding community and other users** – this metric is about how the mode shift resulting from the project benefits all of the users of the roadway. Small shifts or shifts in more remote locations are less beneficial to everyone. If more people are walking, does that mean they are also shopping and bolstering the local economy? If fewer people are driving due to a new rail transit option, does that mean there is less congestion on the road network?

- Project characteristics that are assumed to provide mode shift benefits:

  - Mixed land use locations

  - Larger geographic area of impact

  - Impact of different modes: Pedestrian and rail projects are likely to have the highest benefit, then bus transit projects, and bicycle projects are last because some people will not be comfortable bicycling for transportation even with the best available infrastructure.

  - Quality of the improvement relative to its target mode (example: class 1 or 4 bike facilities are better than class 2 or 3; wider sidewalks are better for pedestrians then just push-bottom activation crossing facilities)

  - Complete streets projects that score lower in this metric may have fewer destinations along the corridor

  - Safe routes to school programs with improved pedestrian infrastructure could be significant in mitigating traffic impacts because of the single timepoint of school start and end times

SCORING METHODOLOGY

Scoring	Example/Methodology
0 – No benefit	If a project marginalizes other modes at the expense of speeding up cars, it has a negative impact on potential for mode shift and associated improved environment. Examples include roadway widening, auxiliary lanes, interchange and on-ramp improvements (without bike/ped accommodations), adding turn lanes, signal coordination unless specific to prioritizing public transit or bicycle speeds
1 – Low Benefit	> Most projects will not immediately have a positive impact on mode shift > If project fosters positive mode shift but may have minimal impact > Bicycle projects without supporting mixed land uses > Programmatic/marketing/education programs > Bus stop or shelter improvements > Storm water management > Bridge projects with a pedestrian or bicycle component due to the wide area over which the bridge must cover making it unlikely to be impactful in terms of mode shift.
2 – Medium Benefit	> Class 1 or 4 bicycle projects along a corridor with mixed use development and/or a large area/distance; area-wide bicycle plans > Single-location (spot-level) pedestrian improvements in locations with mixed land uses > Complete Streets projects without supporting mixed-use development > New, or improved in frequency or hours, bus services
3 – High Benefit	> Pedestrian improvements in an area or corridor with mixed land uses and/or serving a rail line > Complete Streets projects with existing mixed-use development > New rail transit services > Congestion pricing > Transit oriented development projects or projects supported by transportation-efficient land use principles
NA	> Projects that do not impact individual travel decisions > Freeway projects that do not speed up traffic and do not address pedestrian and bicycle safety > Metro maintenance projects

EN2: GHG Reduction Potential

Detailed Criteria Description: Reduces tailpipe greenhouse gas (GHG) emissions from on-road and off-road vehicles.

Evaluation Method Description: (Use of one or more of the following): Travel Demand Forecasting Model (TDM) for a certain suite of projects; EMFAC Model; GIS-based project type locations or other methods for individuals project scores

Data Sources Used:

- For tailpipe, greenhouse gas emissions, EMFAC Model[21] used to estimate on-road vehicle tailpipe emissions including changes in emissions due to project implementation

- TDM used to model vehicle miles traveled (VMT) and speeds along analyzed roadways; used as input to EMFAC model to determine changes in emissions

- OFFROAD Model[22] or other scientific models to calculate off-road vehicle/equipment emissions, renewable energy projects, solar-power generation, energy efficient lighting, etc.

- ArcGIS map with project locations

- Interim California Environmental Quality Act (CEQA) GHG Significance Threshold for Stationary Sources, Rules and Plans[23]

Assumptions:

- 2024 fleet mix and energy grid mix

- Not all freeway or arterial roadway projects were included in the TDM modeling. See project information matrix.

- According to the 2021 Metrolink Climate Action Plan[24], Metrolink has a target of becoming a zero-emissions railroad by 2028. As such, this analysis assumes zero emissions from passenger locomotive engines by 2045. Further, the proposed CARB In-Use Locomotive Regulation[25] requires all passenger locomotives to operate in a zero emissions configuration by 2030. Under the proposed In-Use Locomotive Regulation, by 2047, all locomotives operated by fleet operators must have 100% of annual fleet usage as zero emissions. Similar to CARB regulatory analyses, this analysis does not include the indirect emissions that may result from generation of electricity used to power these locomotives.

- All emission reductions for MT CO2e/yr (metric tons of carbon dioxide equivalents per year) are annualized.

SCORING METHODOLOGY*

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[21] CARB. EMFAC2021v1.02 Emissions Inventory - Onroad Emissions. Available at: https://arb.ca.gov/emfac/emissions-inventory/

[22] CARB. Mobile Source Emissions Inventory Documentation – Off-Road – Diesel Equipment. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-documentation-road

[23] South Coast AQMD. Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans. December 2008. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2.

[24] Metrolink. Climate Action Plan: The Link to a Zero Emissions Future. March 26, 2021. Available here: https://metrolinktrains.com/globalassets/about/agency/sustainability/climate-action-plan.pdf. Accessed: August 2023

[25] CARB. In-Use Locomotive Regulation. November 17, 2022. Available here: https://ww2.arb.ca.gov/rulemaking/2022/locomotive

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Project's measures provide no overall emission reductions If overall emissions are increased, indicate concerns	
1 – Low Benefit	Total emission reductions are less than 3,000 MT CO_2e/yr (metric tons of carbon dioxide equivalents per year) compared to future baselines	If total emission reductions are less than 0.1 % of study area emissions, then project should be scored as No Benefit
2 – Medium Benefit	Total emission reductions are greater than or equal to 3,000 or less than 10,000 MT CO_2e/yr compared to future baselines	
3 – High Benefit	Total emission reductions are greater than or equal to 10,000 MT CO_2e/yr compared to future baselines	
NA	Project that is not modeled by TDM or does not have a project element related to GHG reduction	

*For Freeway, Arterial Roadway, and Transit Projects

For Active Transportation/TDM Projects

These projects will be accounted for in AQ3. Not sufficient information/methodologies to calculate the impacts for AQ1, CH1, and EN2 therefore these projects will get a score of NA.

For Good Movements Projects

Most of these projects will be accounted for in AQ2. Not sufficient information/methodologies to calculate the impacts for AQ1, CH1, and EN2 therefore these projects will get a score of NA.

For Community Programs Projects

These projects will generally be accounted for in AQ2 or CH2 or EN6. Not sufficient information/methodologies to calculate the impacts for AQ1, CH1, and EN2 therefore these projects will get a score of NA. Explicit GHG reduction programs would be expected to provide funding for projects resulting in a total GHG reductions of more than 10,000 MT CO_2e/year.

EN3: Protects natural habitat (Greening Features)

Detailed Criteria Description: Supports improved health outcomes associated with clean air and water by protecting or enhancing natural habitats through green infrastructure investments, primarily through the provision of trees, parks and vegetation.

Evaluation Method Description: Qualitative

Data Sources Used:

- Project description and location
- Additional project materials and information available

Assumptions:

- The scale of the project (localized, semi-localized, corridor-wide) was used in the evaluation of each project (see common definitions section above for definition of project scales)
- Greening opportunities exist for any project that includes provision of amenities within, or redesign/rehabilitation/expansion of the roadway or sidewalk
- Projects related to railroad infrastructure only are not applicable
- Projects are not assumed to include greening features, unless the available project description and/or documentation directly states that green/blue infrastructure is included as part of the project.

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions/ Adjustments
0 – No benefit	0 – Project/program provides no green/blue infrastructure despite opportunities for greening within similar project types or has potential to damage natural features	
1 – Low Benefit	1 - Provides greening or landscaping maintenance as a secondary element of a localized or semi-localized intervention	
2 – Medium Benefit	2 - Provides greening as a secondary element of a corridor-wide intervention; Provides greening as a primary element of a localized intervention	Corridor-wide freeway projects with secondary landscaping element receive a score of 1 – benefits are primarily aesthetic, and freeway environment provides limited capacity for healthy tree canopy growth or biodiversity
3 – High Benefit	3 - Provides greening as a primary element of a corridor-wide or semi-localized intervention	Corridor-wide freeway projects with primary landscaping element receive a score of 2 – benefits are primarily aesthetic, and freeway environment provides limited capacity for healthy tree canopy growth or biodiversity

NA	N/A – Projects or programs do not make physical changes to infrastructure or built and natural environment, or project type involves changes to the built environment without opportunity for greening elements	

EN4: Water Quality, Water Capture, Drainage, and Flood Management features

Detailed Criteria Description: Does the project improve water quality and/or improve drainage and improve flood management

Evaluation Method Description: Qualitative

Data Sources Used:

- Description of projects in the MSPP list
- Caltrans Highway Design Guidelines
- Other information relevant that is not specific to our projects or project types

Assumptions:

- Arterial roadway improvements of greater than a mile in length will include water quality, drainage and flood management features
- Complete streets include water quality and drainage features
- Freeway improvements are required by Caltrans to have features to manage run-off and improve water quality, drainage and flood management

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit (vs no info)	Project increases amount of impervious surface but does not include features that affect drainage, water quality of flood management	N/A if project does not include features that affect water quality, drainage or flood management
1 – Low Benefit	Project provides localized improvement in water quality, drainage or flood management	(details for exceptions to rules, bonus point systems, etc.)
2 – Medium Benefit	Project provides semi-localized improvement in water quality, drainage or flood management	
3 – High Benefit	Project provides corridor- wide scale improvement in water quality, drainage and flood management	

EN5: Reducing energy use

Detailed Criteria Description: Does the project measurably reduce overall energy use in the corridor (BTUs/passenger-mile (PMT) and/or BTUs/ ton-mile (TM)

Evaluation Method Description: Qualitative.

Data Sources Used:

- Project descriptions
- US Dept. of Energy website

Assumptions:

- Roadway (BTU/PMT):
  - Gas powered auto 3,000-4,000 BTUs per PMT
  - Diesel Bus 2,500-3,000 BTUs per PMT
  - Electric powered auto 1,000-2,000 BTUs per PMT
  - Trains (electric) 800-1,000 BTUs per PMT
  - Electric Bus 800-1,000 BTUs per PMT
  - Active Transportation 0 BTUs per PMT
- Goods Movement (BTU/TM)
  - Trucks average 2,000-6,000 BTUs per TM
  - Trains (Diesel) 400-1,200 BTUs per TM
  - Trains (Electric) 200-600 BTUs per TM
  - Intermodal 200-600 BTUs per TM

- Projects that shift trips from higher energy usage powered vehicles per PMT or TM to lower energy usage powered vehicles or modes per PMT or TM are ranked by project type relative to the PMT or TM reduction potential scale of that mode in the corridor

- The horizon year of 2045 has a much higher percentage of autos, trucks and buses that are EVs and therefore mode shifts have lesser impact on energy use than today's mix of vehicle types

- If project increases VMT or TMT it could use more energy than baseline condition (a concern)

SCORING METHODOLOGY

Scoring	Example/MethodologyActive	Exceptions / Adjustments and Examples
NA – Not Applicable	Project does not contain any features that would reduce total energy consumed by transportation modes	Non-mobility projects, such as soundwalls, rehabilitation projects, and community programs.
0 – No benefit	the project is too small to measurably shift corridor PMT or TM from higher energy use mode to lower use mode	Individual bike projects do not move the mode shift needle from higher energy use modes enough to have benefit. (0) Bike Projects and programs with multiple segments are considered collectively to have low benefit (1)
1 – Low Benefit	Project is judged to have a relatively small shift in corridor PMT from higher energy usage mode(s) to lower usage mode(s)	(details for exceptions to rules, bonus point systems, etc.)
2 – Medium Benefit	Project is judged to have moderate shift in BTUs/ PMT or TM from higher energy usage modes to lower energy usage modes	Larger, corridor scale electric powered transit projects (e.g. LRT or EMU)
3 – High Benefit	Project is judged to have a high level shift of PMT or TM from higher BTU/PMT or TM modes to lower BTU/PMT or TM modes	Zero emission trucks; conversion of diesel electric locomotives to electric locomotives

EN6: Reduce Heat Island Effect; Provide Cooling Features for Users

Detailed Criteria Description: Reduces heat island effect by deploying cooling features like planting urban shade trees, installing reflective roofs, and using light-colored or high-albedo pavements and surfaces.

Evaluation Method Description: Qualitative

Data Sources Used:

- Project descriptions
- ArcGIS map with project locations and locations of Equity-Focus Community (EFC) areas
- California Air Pollution Control Officers Association's Handbook for Analyzing Greenhouse Gas (GHG) Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity[26]

[26] *California Air Pollution Control Officers Association. "Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity". December 2023. Available at:* *https://www.airquality.org/ClimateChange/Documents/Final%20Handbook_AB434.pdf*

- U.S. Environmental Protection Agency's (EPA's) Cooling Summertime Temperatures Strategies to Reduce Urban Heat Islands[27]
- EPA's Heat Island Community Actions Database[28]
- Healthy Air Living's Urban Heat Island Mitigation strategy[29]
- U.S. Green Building Council's (USGBC)'s Heat island reduction strategy[30]

Assumptions:

- Not at projects will be able to add significant vegetation elements because there are constraints for planting vegetation that are related to availability of water and space
- We are using the USGBC "Heat island reduction" requirements section options for scoring below.[31]

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Project's heat island effect reduction or cooling features for users is limited due to acreage and size, or lack of project information	
1 – Low Benefit	Example Projects: Shade through structures or trees, pilot project study, and grant writing assistance	If grant writing is not coupled with project studies, downgrade to no benefit
2 – Medium Benefit	Projects that meet USGBC guidelines for Option 1 or 2 can include tree planting, public green spaces, and changes in surface reflectance	If the project does not meet all the requirements, downgrade to a low benefit If the project exceeds requirements or is sizable, upgrade to high benefit
3 – High Benefit	See exceptions/adjustments for medium benefit	
NA	Projects that do not have any heat island effect reduction or cooling features for users	

[27] *EPA. "Cooling Summertime Temperatures Strategies to Reduce Urban Heat Islands". September 2003. Available at: https://www.epa.gov/sites/default/files/2014-06/documents/hiribrochure.pdf.*

[28] *US States Environmental Protection Agency. "Heat Island Community Actions Database". January 2023. Available at: https://www.epa.gov/heatislands/heat-island-community-actions-database*

[29] *Healthy Air Living. "Urban Heat Island Mitigation: An Innovative way to reduce air pollution and energy usage". March 2011. Available at: http://www.valleyair.org/programs/fasttrack/2011/urban%20heat%20island%20mitigation.pdf*

[30] *USGBC. "Heat island reduction". Available at: https://www.usgbc.org/credits/ss7*

[31] *USGBC. https://www.usgbc.org/credits/new-construction-core-and-shell-schools-new-construction-retail-new-construction-data-cent-5*

EN7: Potential for Noise Reduction

Detailed Criteria Description: Reduces transportation noise pollution or includes noise reduction features, such as sound barriers or low-noise technologies

Evaluation Method Description: Qualitative

Data Sources Used: Project descriptions and project location

Assumptions:

- Projects received scores based on their type, subtype, and additional sub-classification (see Appendix A). Project descriptions were used to make adjustments to the sub-classification scores if projects contain certain noise mitigation features.

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Project is likely to maintain or increase existing noise levels, for example roadway, transit, and freight projects without noise mitigation components	Some roadway or signal projects, like emergency vehicle pre-emption, would be "NA"
1 – Low Benefit	Example Projects: Projects that provide small levels of ambient noise reduction potential, such as vegetation barriers, grade separations, and certain air quality programs	Roadway projects that would otherwise receive a "0" but include landscaping
2 – Medium Benefit	Example Projects: Projects that use low-noise technology, such as fleet electrification projects	
3 – High Benefit	Example Projects: Projects whose sole purpose is to reduce noise pollution, such as soundwall projects	
NA	Projects that will not increase noise and have little opportunity to reduce noise pollution, such as active transportation and community projects.	

EN8: Supports transportation efficient land use principles

Detailed Criteria Description: Benefits, and benefits from, surrounding land uses that foster connectivity with public transit, multimodal trips, and high-density and mixed-use land development

Evaluation Method Description: Qualitative

Data Sources Used:

- Project description
- Google maps

- Employment density based on SCAG Regional Travel Demand Model

Assumptions:

- Defining transportation efficient land use principles -- Transportation and land use are linked through guiding land development and community expansion with the goal of coordination of land use and transportation that accommodates pedestrian and bike safety, mobility, enhances public transportation service, improves road network connectivity, and includes a multi-modal approach to transportation. That is, ensuring that a human living, working, or shopping in this geographic location has more than one option for traveling to, from and around that location, and specifically, can realistically travel using sustainable transportation such as walking, bicycling, or riding public transportation over being dependent on a private automobile. Typically, EN8 is accomplished by concentrating land use development towards urban centers and by making transportation investment in existing developed areas with a range of land uses including commercial, residential and office. In the case of the LB-ELA project, which is in an existing urban area, EN8 suggests that investment should be made in areas with existing commercial and residential development in close proximity to each other. The objective being to provide a balance of transportation investment in support of existing land use activities (and in a few project cases, to support, grow or define land uses in areas with strong transportation infrastructure). Ranking assumptions include the following overarching premises:

- Area-wide or long corridor projects are assumed to benefit from strategic application based on land uses – that is, the project is assumed to be implemented with high levels of investment in mixed-use and/or dense land use portions of the project area.

- This metric benefits projects with a large geographic scale because the study area, as a whole, is urban.

SCORING METHODOLOGY:

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Projects that work against or damage land-use-transportation balance Projects that are inconsistent with land-use-transportation principles, including: > Freeway projects without a pedestrian/bicycle or ADA component > Most traffic signal and ITS projects > Roadway projects (arterials, bridges) that do not indicate inclusion of infrastructure for sustainable transportation modes as they are reinforcing inefficient LU-T principles (consistent with scores for traffic signal/ITS projects)	Telecommuting program because these policies do not leverage employment density to concentrate activities. Infrastructure for private zero emission vehicles perpetuates auto dependency when investing in sustainable travel modes instead would be more conducive to supporting land-use-transportation principles.
1 – Low Benefit	Projects that have a neutral impact on land use transportation balance, including: > Bridge projects crossing over rivers and/or highways (space not occupied by human activity centers), do not meaningfully contribute to land-use-transportation principles due to the large void of space below them. > Freeway projects with a pedestrian/bicycle or ADA component	
2 – Medium Benefit	> Projects adjacent to a light rail station regardless of area land uses > Public art and other aesthetic urban design improvements help support making urban places more interesting to go, live, and shop and encourage pedestrian activity/other non-driving modes that allow for “path as place” travel (journey-based vs. destination-based travel)	
3 – High Benefit	> Projects in amenity rich locations including retail and commercial land uses combined with housing > Area-level or very long corridor projects are assumed to benefit from strategic application based on surrounding land uses > Housing and economic programs in urban areas foster land-use-transportation principles. > All High-Capacity Transit improvements	Rail quad gates make it possible for rail lines and other roadway users to coexist more safely
Na	> Marketing and programmatic projects except for those targeting housing, transit-oriented development, transit ridership, and economics. > Bus vehicle fuel types > Microtransit zones > Freight Rail / Goods Movement TDM	

	> Non-mobility enhancing projects, such as stormwater projects and rehab projects	

Opportunity and Prosperity

OP1: Access to jobs

Detailed Criteria Description: Average number of jobs accessible within a 30-minute time period by transit or a 45-minute time period by auto.

Evaluation Method Description: Quantitative

Data Sources Used:

> SCAG Regional Travel Model, adapted for use in study area analysis.

Assumptions:

> Projects considered in the SCAG 2020 Regional Transportation Plan (RTP) are modeled as defined by the RTP.

> Interchanges, auxiliary lanes, and truck lanes along I-710 were modeled using assumptions consistent with past studies.

> Projects that improve arterial street operations without adding lanes were modeled by increasing auto speed and capacity in a manner consistent with SCAG modeling practices.

> Bus Rapid Transit projects assume a 25% increase in transit speed and a one-half lane of reduction in auto capacity.

> Transit priority projects assume a 15% increase in transit speed and a one-quarter lane of reduction in auto capacity.

> For projects that were not modeled, the results of the model were used to estimate benefits of similar projects and programs

SCORING METHODOLOGY

Scoring	Example/Methodology
0 – No benefit	Project does not increase access to jobs.
1 – Low Benefit	Project provides a small improvement in access to jobs, with respect to improved access, within the freeway, arterial, or transit project package. Packages of projects are ranked by numbers of jobs that can be reached by study area residents. Individual projects are ranked based on the magnitude of work travel served.
2 – Medium Benefit	Project provides a moderate improvement in access to jobs. Packages of projects are ranked by numbers of jobs that can be reached by study area residents. Individual projects are ranked based on the magnitude of work travel served.

3 – high Benefit	Project provides a large improvement in access to jobs, with respect to improved access, within the freeway, arterial, or transit project package. Packages of projects are ranked by numbers of jobs that can be reached by study area residents. Individual projects are ranked based on the magnitude of work travel served.

OP2: Accessibility (improving mobility challenges for all ages and abilities)

Detailed Criteria Description: Provides new or improved transportation options, or removes barriers, for users of all abilities, including serving people with disabilities, very young and very old travelers. Projects include ADA accessibility, protected active transportation facilities (example: 8 to 80), , and other programs that make the transportation network more available to its most vulnerable users

Evaluation Method Description: Qualitative

Data Sources Used: Project Descriptions

Assumptions:

- Accessibility is defined as providing additional transportation options for vulnerable users or people with mobility limitations
- Mobility limitations may be physical, such as use of a wheelchair or other mobility device, financial, such as lack of funds for a car, or intellectual such as needing additional direction (wayfinding) or limitations (such as a child who might be tempted to wander into traffic if that traffic is too close)
- Projects that serve a larger geographic area receive a higher ranking
- Projects that serve more mixed or dense land uses may score better, depending on the type of project

SCORING METHODOLOGY:

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Non -SOV projects that do not improve accessibility of the transportation network	Laws protect accessible services; thus, no projects should fall into this category.
1 – Low Benefit	Projects that encourage the use of non-motorized modes but have a low impact on the accessibility of the network. Specific project examples include: > Bike education programs > Transit amenities	
2 – Medium Benefit	Projects that encourage the use of non-motorized modes but have a medium impact on the accessibility of the network. These projects include: > Transportation Demand Management (TDM, carpool and telecommuting programs) > Transit TDM / fare programs > Bike Blvds > Class 2 and 3 bicycle facilities > First / Last Mile > Micro mobility including bike share > Connected / Autonomous Vehicles (arterial roadway) > Transit Grade separation > Transit Increased service > Transit New station > Transit Real time / Customer Experience (CX) > Transit Safety / Rehab > Transit Speed / Reliability > Transit amenities / security / customer experience > Complete streets / greening – freeway caps / lids improve conditions for active transportation	Less effective active transportation projects such as RRFBs Spot-level projects and/or projects that do not have significant or mixed land use intensity around them
3 – High Benefit	Projects that encourage the use of non-motorized modes and have a high impact on improving the accessibility of the network. Projects that specifically address gaps in service and provide high quality and safe facilities and services for users of all abilities. Examples include: > Class 1 and 4 bikeways, new ADA accommodations, complete streets projects, on-demand transit service, new sidewalks, and new bridges. Projects include: > Housing – this is an urban area and housing programs will improve mobility and accessibility to opportunities/prosperity	Any project that specifically addresses ADA Projects that address bicycle and pedestrian conditions over a large geographic area such as a citywide bicycle plan or a long corridor

	> Class 1 or 4 Bikeway > Pedestrian Improvements: o Ped bridges o Ped crossings o Sidewalks o Groups of bike improvements (eg area bicycle plans) o Groups of bike/ped improvements (eg area active transportation plans) o Groups of Ped improvements (eg area pedestrian plans) > Complete Streets because they benefit all sustainable modes using the network > Complete streets / arterial improvements > New bridges > Traffic calming make the network safer for more of the roadway users > TOD projects bring more people closer to transit options > New Transit improvements /services o Bus Rapid Transit o Light Rail o Metrolink o Microtransit o Shuttle	
NA	Projects focused solely on single occupant vehicle travel and movement of freight are generally not applicable for this metric. Specific Project Types include: • Goods Movement • Community Programs • Freeway (except complete streets / greening projects) • Zero emission transit projects	

OP3: Increases Regional Competitiveness

Detailed description: Increase the region's competitive economic advantage compared to other locations in the U.S. Generates jobs throughout the five county LA region and stimulates regional economic activity.

Evaluation Method Description: Qualitative.

Data Sources Used:

- LAEDC Reports
- Other information relevant that is not specific to our projects or project types

Assumptions:

- Components of Regional Competitiveness:
    - Economic Infrastructure
    - Human Capital
    - Innovation and Entrepreneurship
    - Business Environment
    - Connectivity and Access
    - Quality of Life
- Documenting any underlying assumptions to the process that are not project specific

SCORING METHODOLOGY

Scoring	Example/Methodology
N/A	Project has no features that affect competitiveness of the region. This includes projects that are considered "non-mobility" projects.
0 – No benefit	Not used for this metric
1 – Low Benefit	Provides enhanced mobility for goods movement but confined to the corridor. Improved goods movement mobility in the corridor Provides somewhat better connections between jobs and workforce in and outside the corridor, which can enhance corridor and regional employment
2 – Medium Benefit	Provides moderate amount of enhanced mobility and reliability for goods movement in the corridor and beyond which expands economic activity and employment and makes the region more competitive in the sectors of the regional economy tied to goods movement and logistics. Provides comparatively medium improved connections between jobs and workforce in and outside of the corridor, which can enhance corridor and regional employment
3 – High Benefit	Provides high amount of enhanced mobility and reliability for goods movement in the corridor and beyond which expands economic activity and employment and makes the region more competitive in the sectors of the regional economy tied to goods movement and logistics. Provides comparatively best connections between jobs in the region and workforce in the corridor which can enhance corridor and regional employment

OP4: Work Force Development

Detailed Criteria Description: Project/program includes a workforce development component.

Evaluation Method Description: Qualitative

Data Sources Used:

- Project/program website and description
- Agencies with Worforce Development Programs:
    - Metro (link)
    - Caltrans (link)
    - LA County (link)

    - City of Long Beach (link)
    - City of Los Angeles (link)
    - City of Santa Ana (link)
    - City of Maywood (link)
    - City of South Gate (link)
    - City of Carson (link)
    - City of Bellflower (link)
    - City of Huntington Park (link)
    - City of Paramount (link)
    - Metro (enlace)
- Caltrans (enlace)
- Condado de Los Ángeles (enlace)
- Ciudad de Long Beach (enlace)
- Ciudad de Los Ángeles (enlace)
- Ciudad de Santa Ana (enlace)
- Ciudad de Maywood (enlace)
- Ciudad de South Gate (enlace)
- Ciudad de Carson (enlace)
- Ciudad de Bellflower (enlace)
- Ciudad de Huntington Park (enlace)
- Ciudad de Paramount (enlace)
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Assumptions:

- If a City/Agency has a workforce development program within one of its departments (e.g., public works, economic development) it does not mean that a specific program/project has a workforce development component; the scale (large, medium/small) should be considered in making this decision. Specifically, larger programs are more likely to have a WFD than smaller projects.

SCORING METHODOLOGY

Scoring	Example/Methodology
0 – No benefit	Project/program is large in scale and does not include a WFD component, and the lead agency/city does not have a WFD program specifically for program/project
1 – Low Benefit	Project/program includes potential workforce opportunities for emerging technologies (e.g., clean energy)
2 – Medium Benefit	Project/program includes a workforce development component (e.g., training) but it is not the primary purpose of project/program
3 – High Benefit	Primary purpose of project/program is workforce development and related efforts (e.g., local hiring)
NA	Any project/program that is small or medium sized infrastructure.

OP5: Potential Targeted Hire, New Construction Jobs

Evaluation Criteria: OP5: Potential Targeted hire, New Construction Jobs

Detailed Criteria Description: The responsible agency/city has a targeted hiring policy, and scale of construction/infrastructure project.

Evaluation Method Description: For programs, check if lead agency/city has a targeted hiring policy (in general) and if project description mentions targeted hiring specifically in 710 Corridor communities. For construction/infrastructure projects, qualitatively assess the scale of the project based on size and scope.

Data Sources Used:

- Lead agency/city websites (Human Resources/Public Works / Project Site)
- Agencies with Targeted Hiring Policies:
    - Metro (link)
    - Caltrans (link)
    - LA County (link)
    - City of Long Beach (link)
    - City of Los Angeles (link)

Assumptions:

- Larger projects are more likely to create new construction jobs, thus larger projects are given more weight than smaller projects. Projects that cover a larger area receive a higher score than smaller scale projects.
- If not explicitly mentioned in project description, the assumption is that any lead agency/city with a targeted hiring policy would apply that to any relevant programs.
- If description is vague, assumption is it is a small-scale project (construction)
- While OP5 addresses targeted hiring, EQ-OP8 is a different metric. EQ-OP8 asks the question of whether a lead agency/program has a targeted hiring policy, while OP5 asks if a program has a component that includes targeted hiring, OR a project is large enough to have the potential to create new jobs which gets at the ability/potential to create new jobs. The issue with OP5 is that it is, in essence, asking two different questions. EQ-OP8 is asking strictly about targeted hiring, while OP5 is asking about not only targeted hiring, but the potential for new job creation. Thus, OP5 and EQ-OP8 do not have to be consistent across the board.

SCORING METHODOLOGY

Scoring	Example/Methodology
0 – No benefit	Infrastructure project but lead agency/city has no targeted hiring policy
1 – Low Benefit	**Construction/Infrastructure:** Small scale project **Program:** Lead agency/city has a targeted hiring policy
2 – Medium Benefit	**Construction/Infrastructure:** Medium scale project **Program:** Lead agency/city has a targeted hiring policy
3 – High Benefit	**Construction/Infrastructure:**

	Large scale project **Program:** Lead agency/city has a specific targeted hiring policy for 710 Corridor communities
NA	Non-infrasturcture project or program

OP6: Access to QoL amenities (grocery stores, healthcare services, schools)

Detailed Criteria Description: Provides new transportation facilities near QoL amenities. Quantifies the number of quality of life amenities within ¼ mile of new transportation facility.

Evaluation Method Description: Quantitative

Data Sources Used:

- Project descriptions/type
- Project location using GIS
- Quality of life amenities include grocery stores, hospitals, urgent care facilities, and institutions of higher education, using data consistent with the Transit Center's Equity Dashboard[32]

Assumptions:

- The scale of the project (localized, semi-localized, corridor-wide) was used in the evaluation of each project (see common definitions section above for definition of project scales)
- Projects were identified as a "new transportation facility" – see the applicability column in Appendix A.

Scoring Methodology:

- A ¼ mile buffer was created around all projects
- The buffer was used to calculate the number of amenities within ¼ mile of each project
- Projects were scored based on the total number of amenities in the buffer
- Programs were evaluated based on the project scales listed

SCORING METHDOLOGY

[32] *https://dashboard.transitcenter.org/methodology*

Scoring	Example/Methodology
0 – No benefit	There are no "No Benefit" for this metric
1 – Low Benefit	Project provides new access for: 1-139 amenities in ¼ buffer Or: A program that is localized
2 – Medium Benefit	Project provides new access for: 140-599 amenities in ¼ buffer Or: A program that is "semi-localized"
3 – High Benefit	Project provides new access for: >=600 amenities in ¼ buffer Or: A program that is "Corridor-wide"
NA	Project or program does not provide new transportation facilities

OP7: Access to open space, recreation and parks, LA river, etc.

Detailed Criteria Description: Provides new transportation facilities near parks and open spaces. Quantifies the acreage of parks within ¼ mile of new transportation facility.

Evaluation Method Description: Quantitative

Data Sources Used:

- Project descriptions/type
- Project location using GIS
- Park shapefile downloaded from LA County GIS portal[33]

Assumptions:

- The scale of the project (localized, semi-localized, corridor-wide) was used in the evaluation of each project (see common definitions section above for definition of project scales)
- Projects were identified as a "new transportation facility" – see the applicability column in Appendix A.

Scoring Methodology:

- A ¼ mile buffer was created around all projects
- The buffer was used to calculate the acreage within ¼ mile of each project

[33] *https://egis-lacounty.hub.arcgis.com/datasets/local-parks/explore?location=33.876317%2C-118.170948%2C11.81*

- Projects were scored based on the total acreage of parks in the buffer
- Programs were evaluated based on the project scales listed

SCORING METHODOLOGY

Scoring	Example/Methodology
0 – No benefit	There are no "No Benefit" for this metric
1 – Low Benefit	Project provides new access for: 1-24 acres of parks in ¼ buffer Or: A program that is localized
2 – Medium Benefit	Project provides new access for: 25-80 acres of parks in ¼ buffer Or: A program that is "semi-localized"
3 – High Benefit	Project provides new access for: >=80 acres of parks in ¼ buffer Or: A program that is "Corridor-wide"
NA	Project or program does not provide new transportation facilities

Equity

EQ-AQ1: Reduce Emissions (NOx, PM2.5)

Detailed Criteria Description: Reduces oxides of nitrogen (NO_X) and fine particulate matter ($PM_{2.5}$) emissions from on-road vehicles or offroad mobile equipment

Evaluation Method Description: (Use of one or more of the following): Travel Demand Forecasting Model (TDM) for a certain suite of projects; EMFAC Model; GIS-based project type locations or other methods for individuals project scores

Data Sources Used:

- See AQ1 above for data sources
- Results from AQ1 scoring evaluation

Scoring Methodology:

Relies on score from AQ1 and removes/adds points based on the percent of the project or program that is located in an EFC accordingly:

- Project that is 0% in EFC: -2 from AQ1 score (with minimum value of 0 / No Benefit)
- Project that is 1-33% in EFC: -1 from AQ1 score (with minimum value of 0 / No Benefit)

- Project that is 33-66% in EFC: Same as AQ1 score
- Project that is >66: +1 on top of AQ1 score (capped at maximum of 3 / High Benefit)

EQ-AQ3: Mode Shift to cleaner modes

Detailed Criteria Description: Increases the share of trips made by transit, walking and bicycling for equity focused communities relative to non-EFC areas.

Evaluation Method Description: Quantitative

Data Sources Used:

> SCAG Regional Travel Model, adapted for use in study area analysis.

Assumptions:

> Projects considered in the SCAG 2020 Regional Transportation Plan (RTP) are modeled as defined by the RTP.

> BRT projects assume a 25% increase in speed and a one-half lane reduction in vehicle capacity.

> Transit priority projects assume a 15% increase in speed and a one-quarter lane reduction in vehicle capacity.

> Projects are ranked on a per-mile basis so that large projects are not automatically ranked higher than smaller but locally impactful projects.

> Ranking is considered separately for rail, bus, and active transportation projects.

> Project metrics are Evaluated for study area residents of Equity Focus Communities (EFCs) relative to study area residents of non-EFCs

> For projects that were not modeled, the results of the model were used to estimate benefits of similar projects and programs

SCORING METHODOLOGY:

Scoring	Example/Methodology
0 – No benefit	Project does not increase transit ridership or provide improve active transportation opportunities.
1 – Low Benefit	Improved transit serves a lower proportion of EFC residents as compared to other projects in the study area.
2 – Medium Benefit	Improved transit serves a similar proportion of EFC residents as compared to other projects in the study area.
3 – high Benefit	Improved transit serves a higher proportion of EFC residents as compared to other projects in the study area.

EQ-CH1: Reduce Emissions (Health Effects metrics: DPM, PM2.5)

Detailed Criteria Description: Reduces diesel particulate matter (DPM) and fine particulate matter ($PM_{2.5}$) emissions from on-road vehicles which in turn can generate health benefits.

Evaluation Method Description: (Use of one or more of the following): Travel Demand Forecasting Model (TDM) for a certain suite of projects; EMFAC Model; GIS-based project type locations or other methods for individuals project scores

Data Sources Used:

- See CH1 above for data sources
- Results from CH1 scoring evaluation

Scoring Methodology:

Relies on score from CH1 and removes/adds points based on the percent of the project or program that is located in an EFC accordingly:

- Project that is 0% in EFC: -2 from CH1 score (with minimum value of 0 / No Benefit)
- Project that is 1-33% in EFC: -1 from CH1 score (with minimum value of 0 / No Benefit)
- Project that is 33-66% in EFC: Same as CH1 score
- Project that is >66: +1 on top of CH1 score (capped at maximum of 3 / High Benefit)

EQ-CH2: Reduces exposure to air pollution in communities facing high pollution burden and asthma rates

Detailed Criteria Description: Reduces exposure at sensitive receptors (e.g. schools and day care centers, hospitals and healthcare clinics, senior centers, and residences) by installing filtration systems at these receptors and/or installing near-roadway vegetation between major roadways and these receptors.

Evaluation Method Description: Qualitative

Data Sources Used:

> Project descriptions

> See CH2 sources above

> Scoring from CH2

Assumptions:

- Not all projects will be able to use near-road vegetation because there are constraints for planting vegetation that are related to safety, availability of water, and fires
- Near roadway vegetation must meet certain criteria to be considered effective at reducing particulate matter (PM)
- HVAC/HEPA systems must meet certain design criteria to be considered effective at reducing PM
- Equity score is based on the original CH2 score:
    - If the project is >66%located in an area of ≥ to 80 percentile on the asthma or cardiovascular disease indicator maps, the EQ-CH2 is maintained at the same benefit.
    - If the project is not >66% located in an area of ≥ to 80 percentile on the asthma indicator or cardiovascular disease indicator map, the EQ-CH2 is downgraded to a lower benefit.
    - If the project is a corridor-wide program, it is considered to overlap with an area where the asthma or cardiovascular disease percentile ≥ to 80.

SCORING METHODOLOGY

Scoring	**Example/Methodology**
0 – No benefit	Project scores 0 in CH2 or Project scores 1 in CH2 but doesn't overlap areas where the asthma or cardiovascular disease percentile ≥ to 80.
1 – Low Benefit	Project scores 1 in CH2 and Project extent overlaps some areas where the asthma or cardiovascular disease percentile ≥ to 80. or Project scores 2 in CH2 but doesn't overlap areas where the asthma or cardiovascular disease percentile ≥ to 80.
2 – Medium Benefit	Project scores 2 in CH2 and Project extent overlaps some areas where the asthma or cardiovascular disease percentile ≥ to 80. or Project scores 3 in CH2 but doesn't overlap areas where the asthma or cardiovascular disease percentile ≥ to 80.
3 – High Benefit	Project scores 3 in CH2 and Project extent overlaps some areas where the asthma or cardiovascular disease percentile ≥ to 80.
NA	Project/program scores NA in CH2

EQ-CH3: Mode Shift to active transportation, transit

Detailed Criteria Description: Increases the share of trips made by transit, walking and bicycling for equity focused communities relative to non-EFC areas.

Evaluation Method Description: Quantitative

Data Sources Used:

> SCAG Regional Travel Model, adapted for use in study area analysis.

Assumptions:

> Projects considered in the SCAG 2020 Regional Transportation Plan (RTP) are modeled as defined by the RTP.
> BRT projects assume a 25% increase in speed and a one-half lane reduction in vehicle capacity.
> Transit priority projects assume a 15% increase in speed and a one-quarter lane reduction in vehicle capacity.
> Projects are ranked on a per-mile basis so that large projects are not automatically ranked higher than smaller but locally impactful projects.
> Ranking is considered separately for rail, bus, and active transportation projects.
> Project metrics are Evaluated for study area residents of Equity Focus Communities (EFCs) relative to study area residents of non-EFCs
> For projects that were not modeled, the results of the model were used to estimate benefits of similar projects and programs

SCORING METHODOLOGY:

Scoring	Example/Methodology
0 – No benefit	Project does not increase transit ridership or provide improve active transportation opportunities.
1 – Low Benefit	Improved transit serves a lower proportion of EFC residents as compared to other projects in the study area.
2 – Medium Benefit	Improved transit serves a similar proportion of EFC residents as compared to other projects in the study area.
3 – high Benefit	Improved transit serves a higher proportion of EFC residents as compared to other projects in the study area.

EQ-CH5: Increases access to high quality recreational facilities in areas lacking active transportation infrastructure and parks

Detailed Criteria Description: Supports improved health outcomes associated with physical activity and recreation by providing direct linkages to parks and recreation facilities and providing active transportation infrastructure, particularly in areas lacking access to these facilities and infrastructure elements.

Evaluation Method Description: Qualitative

Data Sources Used:

- Score for CH5: Bike/Ped Access to parks, recreational areas, or open spaces
- LA County Park Needs Assessment PNA+ Map Viewer (arcgis.com) - Priority Areas for Increasing Access to Regional Recreation
- Existing Bike Routes
- Project description and location
- Additional project materials and information available

Scoring Methodology:

Scoring	Example/Methodology
0 – No benefit	0 - Projects/programs score 0 in CH5 Or Project/program lacks bike/ped facilities when they could be included based on project type
1 – Low Benefit	1 - Project/program includes new active transportation (bike/ped) facilities Or Project/program adds transit or micro-mobility service in Priority Areas for Increasing Access to Regional Recreation per the LA County Parks Needs Assessment (PNA+)
2 – Medium Benefit	2 - Project scores 2 in CH5 and Project extent overlaps Priority Areas for Increasing Access to Regional Recreation per the LA County Parks Needs Assessment (PNA+) Or Project scores 3 in CH5 and project extent does not overlap with Priority Areas for Increasing Access to Regional Recreation per PNA+
3 – High Benefit	3 - Project scores 3 in CH5 and Project extent overlaps Priority Areas for Increasing Access to Regional Recreation per the LA County Parks Needs Assessment (PNA+)
NA	4 - Project/program type does not have potential to impact active transportation conditions or access to recreation

EQ-MB1: Ridership

Detailed Criteria Description: Increases transit ridership by shifting trips to transit from other modes, for equity focused communities relative to communities that are not equity focused.

Evaluation Method Description: Quantitative

Data Sources Used:

> SCAG Regional Travel Model, adapted for use in study area analysis.

Assumptions:

> Projects considered in the SCAG 2020 Regional Transportation Plan (RTP) are modeled as defined by the RTP.
> BRT projects assume a 25% increase in speed and a one-half lane reduction in auto capacity.
> Transit priority projects assume a 15% increase in speed and a one-quarter lane reduction in auto capacity.
> For projects that were not modeled, the results of the model were used to estimate benefits of similar projects and programs

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Project does not increase transit ridership for persons in EFCs.	
1 – Low Benefit	Project results in a slight increase in transit passenger miles traveled per project mile, generally in the group of projects with smallest increases in transit passenger miles traveled per mile, for persons in EFCs. Ranking is considered separately for rail and bus projects.	
2 – Medium Benefit	Project results in a moderate increase in transit passenger miles traveled per project mile, for persons in EFCs.	
3 – high Benefit	Project results in a high increase in transit passenger miles traveled per project mile, for persons in EFCs. Ranking is considered separately for rail and bus projects.	Project LB-ELA_0164, which increases frequency of Metro busses that currently have low frequency, is scored based on the high overall ridership increase, associated with persons in EFCs, instead of on a per-mile basis.

EQ-MB2: Speeds / Travel Times (people, goods)

Detailed Criteria Description: Increase roadway speeds (or reduce travel times) for people and goods movement in equity focus communities.

Evaluation Method Description: Quantitative

Data Sources Used:

> SCAG Regional Travel Model, adapted for use in study area analysis.

Assumptions:

> Projects considered in the SCAG 2020 Regional Transportation Plan (RTP) are modeled as defined by the RTP.

> Interchanges, auxiliary lanes, and truck lanes along I-710 were modeled using assumptions consistent with past studies.

> Projects that improve arterial street operations without adding lanes were modeled by increasing speed and capacity in a manner consistent with SCAG modeling practices.

> Project metrics are Evaluated for study area residents of Equity Focus Communities (EFCs) relative to study area residents of non-EFCs

> For projects that were not modeled, the results of the model were used to estimate benefits of similar projects and programs

SCORING METHODOLOGY

Scoring	Example/Methodology
0 – No benefit	Project does not improve roadway speeds for residents of Equity Focus Communities (EFCs).
1 – Low Benefit	Project improves roadway speeds and serves a lower proportion of EFC residents as compared to other projects in the study area.
2 – Medium Benefit	Project improves roadway speeds and serves a similar proportion of EFC residents as compared to other projects in the study area.
3 – high Benefit	Project improves roadway speeds and serves a higher proportion of EFC residents as compared to other projects in the study area.

EQ-MB3: Reduce Congestion (hours of delay for people & goods)

Detailed Criteria Description: Reduce hours of delay for persons and goods, for equity focused communities relative to communities that are not equity focused.

Evaluation Method Description: Quantitative

Data Sources Used:

> SCAG Regional Travel Model, adapted for use in study area analysis.

Assumptions:

> Projects considered in the SCAG 2020 Regional Transportation Plan (RTP) are modeled as defined by the RTP.

> BRT projects assume a 25% increase in speed and a one-half lane reduction in auto capacity.

> Transit priority projects assume a 15% increase in speed and a one-quarter lane reduction in auto capacity.

> For projects that were not modeled, the results of the model were used to estimate benefits of similar projects and programs

SCORING METHODOLOGY

Scoring	Example/Methodology
0 – No benefit	Project does not reduce delay for persons in EFCs.
1 – Low Benefit	Project results in a reduction of delay, generally in the group of projects with smallest increases in transit passenger miles traveled per mile, for persons in EFCs. Ranking is considered separately for rail and bus projects.
2 – Medium Benefit	Project results in a moderate reduction in delay, for persons in EFCs.
3 – high Benefit	Project results in a high reduction in delay, for persons in EFCs.

EQ-MB4: Modal Accessibility

Detailed Criteria Description: Improves access to new transportation facilities for residents. Quantifies the population benefiting from the improvement based on a ¼ mile distance from the new transportation facility and the extent to which the facility substantially benefits residents in EFC areas.

Evaluation Method Description: Quantitative

Related Metrics: MB4: Modal Accessibility

Data Sources Used:

- Project descriptions/type
- Project location using GIS
- Equity focus communities definition from LA Metro
- MB4 Score

Scoring Methodology:

Relies on score from MB4 and removes/adds points based on the percent of the project that is located in an EFC based on this logic:

- Project or program that is 0% in EFC: -2 from MB4 score (with minimum value of 0 / No Benefit)
- Project or program that is 1-33% in EFC: -1 from MB4 score (with minimum value of 0 / No Benefit)

- Project or program that is 33-66% in EFC (includes corridor-wide programs): Same as MB4 score
- Project that is >66% in EFC: +1 on top of MB4 score (capped at maximum of 3 / High Benefit)

EQ-MB5: Reliability (Transit, Roadway, Goods Movement)

Evaluation Method Description: Quantitative

Related Metrics: MB5 - Reliability

Data Sources Used:

- Project descriptions/type
- Project location using GIS
- Equity focus communities definition from LA Metro
- MB5 Score

Scoring Methodology:

Relies on score from MB5 and removes/adds points based on the percent of the project that is located in an EFC based on this logic:

- Project or program that is 0% in EFC: -2 from MB5 score (with minimum value of 0 / No Benefit)
- Project or program that is 1-33% in EFC: -1 from MB5 score (with minimum value of 0 / No Benefit)
- Project or program that is 33-66% in EFC (includes corridor-wide programs): Same as MB5 score
- Project that is >66% in EFC: +1 on top of MB5 score (capped at maximum of 3 / High Benefit)

EQ-MB6: Gap Closures

Evaluation Method Description: Quantitative

Related Metrics: MB6 – Gap Closure

Data Sources Used:

- Project descriptions/type
- Project location using GIS
- Equity focus communities definition from LA Metro

- MB6 Score

Scoring Methodology:

Relies on score from MB6 and removes/adds points based on the percent of the project that is located in an EFC based on this logic:

- Project or program that is 0% in EFC: -2 from MB6 score (with minimum value of 0 / No Benefit)
- Project or program that is 1-33% in EFC: -1 from MB6 score (with minimum value of 0 / No Benefit)
- Project or program that is 33-66% in EFC (includes corridor-wide programs): Same as MB6 score
- Project that is >66% in EFC: +1 on top of MB6 score (capped at maximum of 3 / High Benefit)

EQ-MB7: Increases reliable and accessible transportation options for those who cannot or prefer not to drive

Detailed Criteria Description: Provides reliability and accessibility improvements to support the viability of non-driving travel modes such as active transportation and transit for populations currently marginalized by auto-centric infrastructure, including zero-vehicle households, children, seniors, individuals with disabilities, and those who choose not to drive for environmental, health-related, or other reasons.

Evaluation Method Description: Qualitative

Data Sources Used:

- Project descriptions
- Reference materials/literature: AAA design Guidance, NACTO

Assumptions:

Benefits are quantified based on aggregating independent standards listed below

Non-driving modes - investments include improvements to transit, bicycle or pedestrian networks

Reliability

- Transit features are known to prevent delays / increase headways
- Active transportation features are Class 1 or 4 bike facilities (separated or shared use paths)
- Although reliability is typically used to quantitively measure transit and vehicular trips, for the purpose of active transportation and bicycles in particular, we as consider direct routes that are comfortable for cyclists as reliable. Since this criteria is qualitative for

projects/programs where trip origins and destinations are not evaluated, the class of bike facilities is used as a proxy for comfort.

Accessibility

- Features are known to improve safety for people with disabilities, the elderly or children
- Protected bicycle lanes meet standards for All Ages and Abilities (AAA)
- Disbenefits include project/program features known to add delays for non-driving travel modes

SCORING METHODOLOGY:

Scoring	Example/Methodology
0 – No benefit	Projects/Programs that improve the movement people through driving
1 – Low Benefit	Project/Program relate to non-driving travel modes
2 – Medium Benefit	Project/Program meets [low benefit] requirement **and** either the reliability or accessibility criteria
3 – High Benefit	Project/Program meets [low benefit] requirement **as well as** the reliability and accessibility criteria
NA	Projects/Programs that are non-mobility related

EQ-SF1: Improves physical safety for people, walking, biking, and rolling

Detailed Criteria Description: Supports health outcomes associated with physical injuries and fatalities by improving safety from automobile collisions or modal conflicts, primarily through the provision of protected and separated pathways and ADA features

Evaluation Method Description: Qualitative

Data Sources Used:

- Project descriptions
- Complete_Street_Design_Guide.pdf (lacity.org)

Definitions of Bike Facilities:

- Class I - Bike Path / Shared use Path
- Class 2 – Striped bike lane
- Class 3 – Bike Route with mixed traffic
- Class 4 – Separated bike lane
- Complete Streets have Class 1 or 4 facilities

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Road widening or other modification in favor of automobile throughput without the addition of protections for active modes	General beautification and safety improvements may not apply, and we categorized as "NA"
1 – Low Benefit	Class 3 bike facilities OR Projects that provide a low level of improvement for pedestrians (e.g RRFB's, Restriping, Undefined "safety" related roadway improvements, general "intersection improvements"	
2 – Medium Benefit	Class 2 bike facilities OR Projects that provide a good protection but will only benefit a relatively small number of people given surrounding land uses	Projects that include both class 2 and 3 but also include other multimodal design features such as traffic calming Sidewalk widening and crossing improvements where there is not commercial destinations to draw pedestrians Grade separation between rail and other mode
3 – High Benefit	Class 1 or 4 facilities OR Physical separation for bicycles and pedestrians such as exclusive paths, widening sidewalks and providing significant crossing improvements in commercial areas, near high capacity transit or schools	Also projects that include enhancements for bike paths such as improved lighting or fences Pedestrian bridges are assumed to provide access for bikes Sidewalk widening and curb extensions provide protections for pedestrians Projects that specifically bring a location into compliance with ADA for pedestrians
NA	Projects that do not include any roadway or pathway changes or reconfigurations Projects that do not impact pedestrian or bicycle conditions	Applies to most traffic signal and ITS projects Bikeshare project does not include any bicycle protections though it does include other physical improvements for bike riders Protected left turn lanes do not impact pedestrian or bicycle protections Applies to most traffic signal and ITS projects

EQ-SF3: Improves perceptions of personal security for people walking, biking, rolling, and taking transit

Detailed Criteria Description: Provides features and/or services that may increase the sense of safety for pedestrians, bicyclists, transit riders, and particularly for those from marginalized groups - from crime and personal harm.

Evaluation Method Description: Qualitative

Data Sources Used: Project Descriptions

Assumptions:

- Upgrades to existing light is assumed to provide low personal security benefit
- High-Capacity Transit (Rail & BRT) – Metro's new transit line stations are assumed/known to include safety features such as lighting and security cameras
- Assume "Transit stop features and amenities" in Complete Street projects include lighting

Scoring Methodology:

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Project/program has unmet potential to include elements that increase feelings of personal security for people walking, biking, rolling, and taking transit	
1 – Low Benefit	Project/Program includes increased maintenance or improvements to existing features such as upgraded lighting and/or Project/program includes dedicated, formalized bike/pedestrian facilities that reduce the need to use informal routes that are out of public view or contain hazards, and help active transportation users avoid confrontation with aggressive drivers	Features that only provide lighting to drivers (e.g., Freeway lighting) score do not contribute to score
2 – Medium Benefit	Project/program includes **one** of the following: > New features that improve perceptions of personal security such as lighting or security cameras > Increases bus frequency or provide other features or services to minimize time spent waiting at transit stops, particularly after dark	Features that only provide lighting to drivers (e.g., Freeway lighting) do not contribute to score

3 – High Benefit	Program increases presence of personnel dedicated to public safety, incident response, and general assistance And/or Project/program includes **two or more** of the following: > New features that improve perceptions of personal security such as lighting or security cameras > Increases bus frequency or provide other features or services to minimize time spent waiting at transit stops, particularly after dark > Dedicated, formalized bike/pedestrian facilities	Features that only provide lighting to drivers (e.g., Freeway lighting) do not contribute to score
NA	Project/program type does not have realistic opportunity to increase feelings of personal security	

EQ-EN3: Contributes to remediation of environmental damage or loss of natural features

Detailed Criteria Description: Supports health outcomes associated with clean soil, air, and water. Contributes to remediation or restoration of natural features such as vegetation, soil, or bodies of water that have been lost or damaged due to previous infrastructure, development, and land use decisions.

Evaluation Method Description: Qualitative

Data Sources Used:

- Project description and location
- Additional project materials and information available
- Low Tree Canopy data from CA Healthy Places Index[34]

Assumptions:

[34] *https://www.healthyplacesindex.org/*

- Areas with <5% Tree Canopy land area coverage (below 50th percentile per CA Healthy Places Index) to be used as a proxy indicator of 'environmental damage or loss of natural features'
- Corridor-wide programs are considered to overlap with area of low tree canopy as overall corridor tree canopy is <5%
- Adding greenery or landscaping features to freeways does not meaningfully constitute remediation of environmental damage or loss of natural features relative to past environmental impact of freeway development on natural features and biodiversity.

Scoring Methodology:

Scoring	Example/Methodology
0 – No benefit	Project/program scores 0 in EN3 or Project/program scores 1 in EN3 but doesn't overlap areas of low tree canopy or Project/program is part of Freeway infrastructure
1 – Low Benefit	1 – Project/program scores 1 in EN3 and Project extent overlaps areas of low tree canopy (under 5% tree canopy coverage = <50th percentile per HPI data) or Project scores 2 in EN3 but does not overlap areas of low tree canopy.
2 – Medium Benefit	2 – Project/program scores 2 or 3 in EN3 and Project extent overlaps areas of low tree canopy (under 5% tree canopy coverage = <50th percentile per HPI data)
3 – High Benefit	3 – Project/program explicitly incorporates environmental restoration and/or brownfield remediation
NA	Project/program scores NA in EN3

EQ-EN6: Includes urban greening and cooling for areas of low tree canopy and high heat island burden

Detailed Criteria Description: This equity metric builds off EN6. It adds a +1 benefit if a project is located either in an area with low tree canopy and/or a +1 if located in an area with high heat island temperatures (>= 40 degrees) to the original score in EN6 (added benefit). EN6 scores were subtracted from EQ-EN6.

Evaluation Method Description: Cross-checked location of projects with Urban Heat Island map in the Existing Conditions folder, and checked for tree canopy coverage < 5% based on the Healthy Place Index

Data Sources Used:

- Urban Heat Island Existing Conditions Map
- Healthy Places Tree Canopy indicator[35]

Assumptions:

[35] *Healthy Places Index. https://policies.healthyplacesindex.org/neighborhood/tree-canopy/about*

- If a multi-project/program did not specify a specific location but did mention areas like "LB-ELA Corridor" or "within 1-mile of the I-710" or some other language that suggests projects will impact communities around the 710 corridor, then this method assumed that at least one of the projects would be located in an area with low tree canopy and one project in an area with high Heat Island temperatures (thus receiving a +2 bonus)

Scoring Methodology:

Scoring	Example/Methodology
1 – Low Benefit	One of these elements > Project/program provides greening/cooling features, in general (same as EN6-does not change) > Project/program provides greening/cooling features in areas of low tree canopy, or > Project/program provides greening/cooling features in areas of high heat island burdens
2 – Medium Benefit	Two of these elements: > Project/program provides greening/cooling features, in general (same as EN6-does not change) > Project/program provides greening/cooling features in areas of low tree canopy, and/or > Project/program provides greening/cooling features in areas of high heat island burdens
3 – High Benefit	All three of these elements: > Project/program provides greening/cooling features, in general (same as EN6-does not change) > Project/program provides greening/cooling features in areas of low tree canopy, and > Project/program provides greening/cooling features in areas of high heat island burdens
NA	Projects that receive N/A in EN6

EQ-EN7: Potential for Noise Reduction

Detailed Criteria Description: Reduces transportation noise pollution or includes noise reduction features, such as sound barriers or low-noise technologies, in EFC areas

Evaluation Method Description: Qualitative

Data Sources Used:

- Project descriptions and project location
- Equity focus communities definition from LA Metro
- EN& Score

Scoring Methodology:

Relies on score from EN7 and removes/adds points based on the percent of the project that is located in an EFC based on this logic:

- Project or program that is 0% in EFC: -2 from EN7 score (with minimum value of 0 / No Benefit)
- Project or program that is 1-33% in EFC: -1 from EN7 score (with minimum value of 0 / No Benefit)
- Project or program that is 33-66% in EFC (includes corridor-wide programs): Same as EN7 score
- Project that is >66% in EFC: +1 on top of EN7 score (capped at maximum of 3 / High Benefit)

EQ-OP1: Access to jobs

Detailed Criteria Description: Increases the average number of jobs accessible within a 30-minute time period by transit or a 45-minute time period by auto, for equity focused communities relative to communities that are not equity focused.

Evaluation Method Description: Quantitative

Data Sources Used:

> SCAG Regional Travel Model, adapted for use in study area analysis.

Assumptions:

> Projects considered in the SCAG 2020 Regional Transportation Plan (RTP) are modeled as defined by the RTP.

> BRT projects assume a 25% increase in speed and a one-half lane reduction in auto capacity.

> Transit priority projects assume a 15% increase in speed and a one-quarter lane reduction in auto capacity.

> For projects that were not modeled, the results of the model were used to estimate benefits of similar projects and programs

SCORING METHODOLOGY:

Scoring	Example/Methodology
0 – No benefit	Project does not increase access to jobs for persons in EFCs.
1 – Low Benefit	Project results in a slight increase in access to jobs, for persons in EFCs.
2 – Medium Benefit	Project results in a moderate increase in access to jobs, for persons in EFCs.
3 – high Benefit	Project results in a high increase in access to jobs, for persons in EFCs. Ranking is considered separately for rail and bus projects.

EQ-OP6: Access to Quality-of-Life amenities (grocery stores, healthcare services, schools)

Detailed Criteria Description: Provides new transportation facilities near QoL amenities (grocery stores, health care, and schools) and project is located substantially within an EFC area

Evaluation Method Description: Quantitative

Related Metrics: OP6

Data Sources Used:

> Project descriptions/type

> Project location using GIS

> Quality of life amenities include grocery stores, hospitals, urgent care facilities, and institutions of higher education, using data consistent with the Transit Center's Equity Dashboard[36]

> Equity focus communities definition from LA Metro

> OP6 Score

Scoring Methodology:

Relies on score from OP6 and removes/adds points based on the percent of the project that is located in an EFC based on this logic:

> Project or program that is 0% in EFC: -2 from OP6 score (with minimum value of 0 / No Benefit)

> Project or program that is 1-33% in EFC: -1 from OP6 score (with minimum value of 0 / No Benefit)

> Project or program that is 33-66% in EFC (includes corridor-wide programs): Same as OP6 score

> Project that is >66% in EFC: +1 on top of OP6 score (capped at maximum of 3 / High Benefit)

EQ-OP7: Access to open space, recreation and parks, LA river, etc.

Detailed Criteria Description: Provides new transportation facilities near parks and open spaces and project is located substantially within an EFC area

Evaluation Method Description: Quantitative

Related Metrics: OP7: Access to open space, recreation and parks

Data Sources Used:

> Project descriptions/type

> Project location using GIS

[36] *https://dashboard.transitcenter.org/methodology*

> Park shapefile downloaded from LA County GIS portal[37]

> Equity focus communities definition from LA Metro

> OP7 Score

Scoring Methodology:

Relies on score from OP7 and removes/adds points based on the percent of the project that is located in an EFC based on this logic:

> Project or program that is 0% in EFC: -2 from OP7 score (with minimum value of 0 / No Benefit)

> Project or program that is 1-33% in EFC: -1 from OP7 score (with minimum value of 0 / No Benefit)

> Project or program that is 33-66% in EFC (includes corridor-wide programs): Same as OP7 score

> Project that is >66% in EFC: +1 on top of OP7 score (capped at maximum of 3 / High Benefit)

EQ-OP8: Increases quantity and quality of employment opportunities for underemployed and low-income workforce

Detailed Criteria Description: Project/program provides new job opportunities for underemployed and low-income individuals in the workforce that have the required level of training or education and also live in a disadvantaged community.

Evaluation Method Description: Whether or not a project/program's leady agency/city has a targeted hiring policy, in general

Data Sources Used:

- Leady agency/city website (e.g., project/program site, HR)

Assumptions:

- Targeted hiring policies would provide job opportunities for residents in the 710 Corridor.
- Clean truck charging station infrastructure projects are construction projects that have the potential to create job opportunities.

Scoring Methodology:

Scoring	Example/Methodology	Exceptions / Adjustments
1 – Low benefit	Lead agency/city does not have a hiring policy	If there is a specific program that has a targeted local hiring in place, even though the city/lead agency as a whole does not.

[37] *https://egis-lacounty.hub.arcgis.com/datasets/local-parks/explore?location=33.876317%2C-118.170948%2C11.81*

2 –Benefit	2- Lead agency/city has a targeted hiring policy	
NA	Projects that do not add new infrastructure	

Additional Documentation: If program/project lead by Metro, Caltrans, City of LA or Long Beach, or LA County, then with was given a moderate benefit score (they have targeted hiring policies); All other agencies/cities were scored 0 due to cities not having a targeted hiring policy; exceptions are made for programs specifically targeting local hire. Language may exist about "inclusive" hiring practices, but that does not mean they are recruiting under employed or low-income individuals.

Note: While OP5 addresses targeted hiring, EQ-OP8 is a different metric. EQ-OP8 asks the question of whether a lead agency/program has a targeted hiring policy, while OP5 asks if a program has a component that includes targeted hiring, OR a project is large enough to have the potential to create new jobs which gets at the ability/potential to create new jobs. The issue with OP5 is that it is, in essence, asking two different questions. EQ-OP8 is asking strictly about targeted hiring, while OP5 is asking about not only targeted hiring, but the potential for new job creation. Thus, OP5 and EQ-OP8 are not necessarily scored the same.

Agencies with Targeted Hiring Policies:

- Metro (link)
- Caltrans (link)
- LA County (link)
- City of Long Beach (link)
- City of Los Angeles (link)

EQ-OP9: Reduces housing or transportation costs for low-income households

Evaluation Criteria: EQ-OP9: Reduces housing or transportation costs for low-income households.

Detailed Criteria Description: Whether project reduces housing or transportation costs for low-income households

Evaluation Method Description: Assessed whether program/project had the potential to reduce housing or transportation costs through improvements in transit frequency, rail lines, pedestrian projects, bike projects. Essentially, projects that made transportation more efficient or housing costs, in general, were given a positive benefit.

Data Sources Used:

- Project Descriptions

Assumptions:

Scoring Methodology:

Scoring	Example/Methodology
0 – No benefit	Not used for this metric
1 –Low Benefit	Not used for this metric •
2 – Medium Benefit	Project or program includes one of the following: • Makes improvements on transit frequency, rail lines, pedestrian projects, bike projects, or Reduces housing costs in general
3 – High Benefit	Project or program includes both of of the following: • Makes improvements on transit frequency, rail lines, pedestrian projects, bike projects, and • Reduces housing costs in general
NA	Project or program has no impact on housing or transportation costs

EQ-OP10: Reduces residential or commercial displacement risk

Detailed Criteria Description: Reduces risk of economic (as opposed to physical) displacement as an adverse effect of infrastructure investment, which may result in new development interest, increasing land prices, property values, and ultimately housing/business costs.

Evaluation Method Description: Qualitative

Data Sources Used:

- Project descriptions and additional project materials

- White Paper on Anti-Displacement Strategy Effectiveness (urbandisplacement.org)
- Strategies - Small Business Anti-Displacement Network (SBAN) (antidisplacement.org)
- Transit-Oriented Displacement or Community Dividends? Understanding the Effects of Smarter Growth on Communities | Books Gateway | MIT Press

SCORING METHODOLOGY

Scoring	**Example/Methodology**
0 – No benefit	0 - Project/Program broadly influences land use, business, or housing conditions without incorporating protections/benefits targeted to at-risk groups Project example: New light rail infrastructure (including stations) is known to have potential for catalyzing speculative investment and economic neighborhood change, which can increase displacement pressure.
1 – Low Benefit	1 – Project/program supports indirect displacement prevention strategies such as affordable housing production and workforce development

2 – Medium Benefit	2 – Project/program incorporates direct/near-term displacement prevention strategies such as affordable housing preservation, rent stabilization, small business loans/business interruption funds
3 – High Benefit	3 – Project/program is specifically dedicated to establishing community stabilization strategies and policies throughout the LB-ELA corridor, utilizing both direct and indirect displacement prevention strategies
NA	NA – Project/program type does not have opportunity to influence displacement outcomes

Sustainability

SA1: Reduces reliance on polluting and energy-intensive modes of travel and goods movement

Detailed Criteria Description: Supports health outcomes associated with clean air by reducing consumption of fossil fuels in mobility through projects or programs that support **electrification, cleaner fuels** or **travel behavior** that reduces **per capita VMT**.

Evaluation Method Description: Qualitative

Data Sources Used: Project descriptions

Assumptions: Benefits are quantified based on aggregating independent standards listed below

- Improvements relate to active or public transportation networks
- Improvements are known to shift commute trips to cleaner modes / away from SOV
- Improvements are known to support clean goods movement
- Improvements support only zero emission vehicles or equipment

SCORING METHODOLOGY:

Scoring	**Example/Methodology**
0 – No benefit	Projects/Programs relate to moving people or goods but do not meet any standards
1 – Low Benefit	Project/Program meets 1 of the standards
2 – Medium Benefit	Project/Program meets 2 of the standards
3 – High Benefit	Project/Program meets 3 of the standards

NA	Projects/Programs that do not relate to moving people or goods

SA2: Promotes physical activity and health through active transportation and recreation
Evaluation Criteria:

Detailed Criteria Description: Supports physical and mental health outcomes associated with activity by **providing or enhancing access** to infrastructure or services that promotes physical activity.

Evaluation Method Description: Qualitative, based on project descriptions indicating scale

Data Sources Used: Project descriptions

Assumptions:

- The scale of the project (localized, semi-localized, corridor-wide) was used in the evaluation of each project (see common definitions section above for definition of project scales)

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Arterial Projects where improvements are not targeted to enhance active transportation	
1 – Low Benefit	Projects enhance bike/ped infrastructure networks at the localized scale	
2 – Medium Benefit	Projects enhance bike/ped infrastructure networks at the semi-localized scale	Although ped bike bridges are typically under a mile in length, they typically make a connection where there was no access and are considered medium benefit
3 – High Benefit	Projects enhance bike/ped infrastructure networks at the corridor-wide scale	
Na	Projects that do not impact pedestrian or bicycle conditions	

SA3: Improves climate resilience through mitigation of flooding and extreme heat impacts

Detailed Criteria Description: Supports improved health outcomes associated with reducing exposure to hazards. Improves community and infrastructure resilience by mitigating the risks and impacts of flooding or extreme heat.

Evaluation Method Description: Qualitative

Data Sources Used: Project descriptions

Assumptions:

- The scale of the project (localized, semi-localized, corridor-wide) was used in the evaluation of each project (see common definitions section above for definition of project scales)

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit	Physical projects with no mention of greening/drainage	Although active transportation projects may include these features, they were scored 0 if not mentioned
1 – Low Benefit	Projects reduce flood risk or extreme heat through greening, cooling or drainage at the localized scale	
2 – Medium Benefit	Projects reduce flood risk or extreme heat through greening, cooling or drainage at the semi-localized scale	
3 – High Benefit	Projects reduce flood risk or extreme heat through greening, cooling or drainage at the corridor-wide scale	
N/A	Programs that do not lead to physical improvements/infrastructure Physical projects where operational changes are the primary improvement (e.g. freeway lane configurations where no new lanes are added, signal improvements)	

SA4: Supports job creation in, and workforce transitions to green technology and infrastructure sectors

Detailed Criteria Description: Provides workforce development opportunities and job training in green sectors or supports the transition to green jobs.

Evaluation Method Description: Qualitative

Data Sources Used: Project descriptions; workforce opportunities related to green jobs

Definitions:

- **Sustainable investments** are any investments that build greener infrastructure for a future without fossil fuels

- **Green tech** refers to any specific technology that is intended to reverse the effects of human activity on the environment.

Scoring Methodology:

Scoring	Example/Methodology
N/A	Projects that do not add new infrastructure
0 – No benefit	Projects that add new infrastructure but do not support jobs or investments in green sectors
1 –Low Benefit	One of these elements: • Program creates jobs in sustainable investments, • Promotes green tech, or • Program supports workforce transitions to green tech/infra sectors
2 – Medium Benefit	Two of these elements: • Program creates jobs in sustainable investments, • Promotes green tech, and/or • Program supports workforce transitions to green tech/infra sectors
3 – High Benefit	All three of these elements: • Program creates jobs in sustainable investments, • Promotes green tech, and • Program supports workforce transitions to green tech/infra sectors

SA5: Improves cargo efficiencies to minimize trip volumes and emissions from goods movement activity

Detailed Criteria Description: Improves cargo efficiencies to minimize trip volumes and emissions from goods movement activity.

Evaluation Method Description: Quantitative

Data Sources Used:

> SCAG Regional Travel Model, adapted for use in study area analysis.

Assumptions:

> Projects considered in the SCAG 2020 Regional Transportation Plan (RTP) are modeled as defined by the RTP.

> Interchanges, auxiliary lanes, and truck lanes along I-710 were modeled using assumptions consistent with past studies.

> Projects that improve arterial street operations without adding lanes were modeled by increasing auto speed and capacity in a manner consistent with SCAG modeling practices.

> BRT projects assume a 25% increase in transit speed and a one-half lane of reduction in auto capacity.

> Transit priority projects assume a 15% increase in transit speed and a one-quarter lane of reduction in auto capacity.

> Truck VMT is used as an indicator for truck emissions

> For projects that were not modeled, the results of the model were used to estimate benefits of similar projects and programs

SCORING METHODOLOGY:

Scoring	Example/Methodology	Exceptions / Adjustments
0 – No benefit (vs no info)	Project does not reduce truck emissions.	
1 – Low Benefit	Project results in a slight reduction in truck emissions. Projects are ranked based on truck vehicle-miles traveled per mile.	Interchange projects were ranked based on the number of trucks served, as this high-level analysis does not compare the effectiveness of detailed interchange design details. Arterial operations projects were ranked based on the number of trucks served, as arterial-level project were modeled at a high level.
2 – Medium Benefit	Project results in a moderate reduction in truck emissions. Projects are ranked based on truck vehicle-miles traveled per mile.	
3 – high Benefit	Project results in a significant reduction in truck emissions. Projects are ranked based on truck vehicle-miles traveled per mile.	

Concerns

CON1: Potential for Displacements

Detailed Criteria Description: This concern is intended to capture the potential displacements of residences or businesses caused by the construction of a project.

Evaluation Method Description: Qualitative/Engineering Judgement

Related Criteria: CON2: Physical impacts to adjacent right of way

Data Sources Used:

> Project descriptions

> I-710 EIR/EIS Alternative 5C design drawings

Assumptions:

> The study area is highly developed and any transportation project or program that requires additional right of way can cause displacement of adjacent residences and businesses.

> The type of project and its location and length can affect the potential number of displacements

> See appendix A for the applicability of each project types for this metric; applicable projects were reviewed individually to assess potential for adverse impacts.

SCORING METHODOLOGY:

Scoring	Example/Methodology
NA	Project or Program does not add new infrastructure (e.g. rehabilitation/maintenance to existing infrastructure, stations, freeways)
0 – No Impact	Project or Program requires new physical infrastructure, but the improvements are contained within existing ROW with 0 displacements
1 – Low Impact	Project or Program requires new physical infrastructure, but only short segments of the project may require acquisition of adjacent residences or businesses, with a total of less than 3 businesses or residences likely to be displaced
2 – Medium Impact	Project or Program requires new physical infrastructure where the project may require acquisition of adjacent businesses or residences with a total of less than 8 businesses or residences likely to be displaced
3 – High Impact	Project or Program requires new physical infrastructure where the project may require acquisition of adjacent businesses or residences with a total of more than 8 businesses or residences likely to be displaced

CON2: Potential for Physical Impacts (ROW)

Detailed Criteria Description: This concern is intended to capture the potential physical impacts to adjacent right of way (ROW) caused by the construction of a project.

Evaluation Method Description: Qualitative/Engineering Judgement

Related Criteria: CON1: Physical impacts to adjacent right of way

Data Sources Used:

> Project descriptions

> I-710 EIR/EIS Alternative 5C design drawings

Assumptions:

> The study area is highly developed and any transportation project or program that requires additional right of way even without causing the displacement of adjacent residences and businesses can impact adjacent properties.

> The type of project and its location and length can affect the potential number of displacements

> See appendix A for the applicability of each project types for this metric that may cause physical right of way impacts to adjacent properties; applicable projects were reviewed individually to assess potential for adverse impacts.

SCORING METHODOLOGY:

Scoring	Example/Methodology
NA	Project or Program does not add new infrastructure (e.g. rehabilitation/maintenance to existing infrastructure, stations, freeways).
0 – No Impact	Project or Program requires new physical infrastructure but the improvements are contained within existing ROW with no physical impacts.

1 – Low Impact	Project or Program requires new physical infrastructure, but only localized segments of the project may create physical right of way impacts to adjacent properties.
2 – Medium Impact	Project or Program requires new physical infrastructure where several segments of the project may create physical right of way impacts to adjacent properties.
3 – High Impact	Project or Program requires new physical infrastructure where many segments of the project may create physical right of way impacts to adjacent properties.

CON3: Potential for Increased Commute Times

Detailed Criteria Description: Potential for increased commute times.

Evaluation Method Description: Quantitative

Data Sources Used:

- SCAG Regional Travel Model, adapted for use in study area analysis.

Assumptions:

- Projects considered in the SCAG 2020 Regional Transportation Plan (RTP) are modeled as defined by the RTP.
- Interchanges, auxiliary lanes, and truck lanes along I-710 were modeled using assumptions consistent with past studies.
- Projects that improve arterial street operations without adding lanes were modeled by increasing speed and capacity in a manner consistent with SCAG modeling practices.
- BRT projects assume a 25% increase in transit speed and a one-half lane of reduction in vehicle capacity.
- Transit priority projects assume a 15% increase in transit speed and a one-quarter lane of reduction in vehicle capacity.

SCORING METHODOLOGY

Scoring	Example/Methodology
0 – No Concern	Project unlikely to increase commute times.
1 – Low Concern	Project may result in slight increases to travel times for some commuters.
2 – Medium Concern	Project may result in moderate increases to travel times for some commuters.
3 – High Concern	Project may result in considerable increases to travel times for some commuters.

CON4: Potential for Traffic Diversion / Emissions Shifting

Detailed Criteria Description: Potential for Traffic Diversion / Emission Shifting

Evaluation Method Description: Quantitative

Data Sources Used:

- SCAG Regional Travel Model, adapted for use in study area analysis.

Assumptions:

- Projects considered in the SCAG 2020 Regional Transportation Plan (RTP) are modeled as defined by the RTP.
- Interchanges, auxiliary lanes, and truck lanes along I-710 were modeled using assumptions consistent with past studies.
- Projects that improve arterial street operations without adding lanes were modeled by increasing speed and capacity in a manner consistent with SCAG modeling practices.
- BRT projects assume a 25% increase in transit speed and a one-half lane of reduction in vehicle capacity.
- Transit priority projects assume a 15% increase in transit speed and a one-quarter lane of reduction in vehicle capacity.

SCORING METHODOLOGY

Scoring	Example/Methodology
0 – No Concern	Project unlikely to cause traffic diversion or emission shifting.
1 – Low Concern	Slight potential to cause traffic diversion or emission shifting.
2 – Medium Concern	Moderate potential to cause traffic diversion or emission shifting.
3 – High Concern	High potential to cause traffic diversion or emission shifting.

CON5: Potential to Increase Localized Emissions

Detailed Criteria Description: Increases in localized diesel particulate matter (DPM) and fine particulate matter (PM2.5) emissions from on-road vehicles which may be related to health concerns.

Evaluation Method Description: *Quantitative*

Data Sources Used:

- See AQ1 and CH1 data sources. Additional data sources include:
- Gridded Emissions Map
- South Coast AQMD Permit Application Package "N" for Use in Conjunction with the Risk Assessment Procedures for Rules 1401, 1401.1, and 212[38]

Assumptions:

- Not all freeway or arterial roadway projects were included in the TDM modeling. See project information matrix.
- Changes in $PM_{2.5}$ have been associated with mortality/illness impacts. Changes in DPM have been associated with cancer risk. For more information on health and air quality studies, see South Coast AQMD 2022 Air Quality Management Plan (AQMP) Appendix I: Health Effects[39] and South Coast AQMD Multiple Air Toxics Exposure Study V (MATES V) Final Report[40].

Scoring Methodology:

- The highest concern ranking of any grid cell is assigned to the suite of modeled projects based on the localized emission increases using scale/breakpoints shown in the legends below. For transit projects, the maximum concern ranking is determined by regional emission increases because localized emission increases and gridded maps are not available.

[38] *South Coast AQMD. Permit Application Package "N" for Use in Conjunction with the Risk Assessment Procedures for Rules 1401, 1401.1, and 212. October 1, 2017. Available here: http://www.aqmd.gov/docs/default-source/permitting/rule-1401-risk-assessment/attachmentn-v8-1.pdf?sfvrsn=4. Accessed: May 2023.*

[39] *South Coast AQMD. 2022 AQMP Appendix I: Health Effects. December 2, 2022. Available here: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/final-2022-aqmp/appendix-i.pdf?sfvrsn=6. Accessed: May 2023.*

[40] *South Coast AQMD. MATES V Final Report. August 2021. Available here: http://www.aqmd.gov/docs/default-source/planning/mates-v/mates-v-final-report-9-24-21.pdf?sfvrsn=6. Accessed: May 2023.*

Emission Categories for AQ1 Evaluation - Freeway, Arterial Roadway, and Transit Projects

$PM_{2.5}$ Incremental Emissions (lb/day)	**NO_X Incremental Emissions (lb/day)**	**Legend**
≤-5	≤-55	High Benefit
≤-5	>-55 to ≤-5	Medium Benefit
≤-5	>-5 to <5 : No change	Medium Benefit
>-0.05 to <0.05 : No change	≤-55	Medium Benefit
>-5 to ≤-0.05	≤-55	Medium Benefit
>-5 to ≤-0.05	>-55 to ≤-5	Low Benefit
>-5 to ≤-0.05	>-5 to <5 : No change	Low Benefit
>-0.05 to <0.05 : No change	>-55 to ≤-5	Low Benefit
>-0.05 to <0.05 : No change	>-5 to <5 : No change	No Benefit
≤-0.05	≥5	Mixed Benefit/Concern
≥0.05 to <5	<-5	Mixed Benefit/Concern
>-0.05 to <0.05 : No change	≥5 to <55	Low Concern
≥0.05 to <5	>-5 to <5 : No change	Low Concern
≥0.05 to <5	≥5 to <55	Low Concern
>-0.05 to <0.05 : No change	≥55	Medium Concern
≥5	>-5 to <5 : No change	Medium Concern
≥0.05 to <5	≥55	Medium Concern
≥5	≥5 to <55	Medium Concern
≥5	≥55	High Concern

Emission Categories for CH1 Evaluation - - Freeway, Arterial Roadway, and Transit Projects

$PM_{2.5}$ Incremental Emissions (lb/day)	DPM Incremental Emissions (lb/day)	Legend
≤-5	≤-0.4	High Benefit
≤-5	>-0.4 to ≤-0.004	Medium Benefit
≤-5	>-0.004 to <0.004 : No change	Medium Benefit
>-0.05 to <0.05 : No change	≤-0.4	Medium Benefit
>-5 to ≤-0.05	≤-0.4	Medium Benefit
>-5 to ≤-0.05	>-0.4 to ≤-0.004	Low Benefit
>-5 to ≤-0.05	>-0.004 to <0.004 : No change	Low Benefit
>-0.05 to <0.05 : No change	>-0.4 to ≤-0.004	Low Benefit
>-0.05 to <0.05 : No change	>-0.004 to <0.004 : No change	No Benefit
≤-0.05	≥0.004	Mixed Benefit/Concern
≥0.05 to <5	<-0.004	Mixed Benefit/Concern
>-0.05 to <0.05 : No change	≥0.004 to <0.4	Low Concern
≥0.05 to <5	>-0.004 to <0.004 : No change	Low Concern
≥0.05 to <5	≥0.004 to <0.4	Low Concern
>-0.05 to <0.05 : No change	≥0.4	Medium Concern
≥5	>-0.004 to <0.004 : No change	Medium Concern
≥0.05 to <5	≥0.4	Medium Concern
≥5	≥0.004 to <0.4	Medium Concern
≥5	≥0.4	High Concern

For Active Transportation/TDM Projects

These projects will be accounted for in AQ3. Not sufficient information/methodologies to calculate the impacts for AQ1, CH1, and EN2 therefore these projects will get a score of NA.

For Good Movements Projects

Most of these projects will be accounted for in AQ2. Not sufficient information/methodologies to calculate the impacts for AQ1, CH1, and EN2 therefore these projects will get a score of NA.

For Community Programs Projects

These projects will be accounted for in AQ2 or CH2 or EN6. Not sufficient information/methodologies to calculate the impacts for AQ1, CH1, and EN2 therefore these projects will get a score of NA.

CON6: Potential for bike/ped safety impacts

Detailed Criteria Description: Project or program has the potential to introduce new safety hazards or modal conflicts for pedestrians and bicyclists or other active transportation users

Evaluation Method Description: Qualitative

Data Sources Used: Project descriptions

Assumptions:

- Increased street widths encourage higher vehicle speeds, create longer crossing distances, and reduce pedestrian/bike visibility
- Addition of vehicle travel lanes creates additional conflict points for active transportation users navigating lane changes
- Projects that encourage uninterrupted vehicle traffic flow on arterial roadways (e.g., signal synchronization) encourage slightly higher vehicle speeds and lower levels of driver awareness at intersections.

Scoring Methodology:

Scoring	Example/Methodology	Exceptions
N/A	Project or Program does not have opportunity to influence safety of roadway conditions for pedestrians or bike/active transportation users	
0 – No Impact	Project or Program improves or maintains safety of roadway conditions for pedestrians or bike/active transportation users	
1 – Low Impact	Project/Program includes road widening or addition of vehicle travel lanes in favor of automobile throughput without the addition of protections for active modes – Localized Scale Project/program encourages uninterrupted vehicle traffic flow (e.g., signal synchronization)	
2 – Medium Impact	Project/Program includes road widening or addition of vehicle travel lanes in favor of automobile throughput without the addition of protections for active modes – Semi-Localized Scale	
3 – High Impact	Project/Program includes road widening or addition of vehicle travel lanes in favor of automobile throughput without the addition of protections for active modes – Corridor-Wide Scale	Project or program that has bike/ped accomodations receives a 1

CON7: Potential for concentrated congestion impacts

Evaluation Method Description: Quantitative

Detailed Criteria Description: Potential for concentrated congestion impacts

Data Sources Used:

- SCAG Regional Travel Model, adapted for use in study area analysis.

Assumptions:

- Projects considered in the SCAG 2020 Regional Transportation Plan (RTP) are modeled as defined by the RTP.
- Interchanges, auxiliary lanes, and truck lanes along I-710 were modeled using assumptions consistent with past studies.
- Projects that improve arterial street operations without adding lanes were modeled by increasing speed and capacity in a manner consistent with SCAG modeling practices.
- BRT projects assume a 25% increase in transit speed and a one-half lane of reduction in vehicle capacity.
- Transit priority projects assume a 15% increase in transit speed and a one-quarter lane of reduction in vehicle capacity.

SCORING METHODOLOGY

Scoring	Example/Methodology
0 – No Concern	Project unlikely to cause concentrated congestion.
1 – Low Concern	Slight potential to cause concentrated congestion.
2 – Medium Concern	Moderate potential to cause concentrated congestion.
3 – High Concern	High potential to cause concentrated congestion.

CON8: Potential Construction Impacts

Detailed Criteria Description: This concern is intended to capture the potential for construction impacts to communities and travelers caused by the construction of a project.

Evaluation Method Description: Qualitative/Engineering Judgement
Data Sources Used:

- Project descriptions
- I-710 EIR/EIS Alternative 5C design drawings

Assumptions:

- The study area is highly developed and any transportation project or program that requires construction has the potential to create construction impacts while being built.
- The type of project, its complexity, its location and its scale will affect the duration and the magnitude of potential construction impacts.

SCORING METHODOLOGY

Scoring	Example/Methodology
NA	Project or Program does not add new infrastructure (e.g. rehabilitation/maintenance to existing infrastructure, stations, freeways).
0 – No Impact	Project or Program requires new physical infrastructure, but the improvements are small in scale and take a short time to construct.
1 – Low Impact	Project or Program requires new physical infrastructure, but the scale and duration of construction is localized and is of short duration.
2 – Medium Impact	Project or Program requires new physical infrastructure where the scale and duration of construction will impact several communities for several months.
3 – High Impact	Project or Program requires new physical infrastructure where the scale and duration of construction affects many communities and travelers for a duration of nine months or more.

CON9: Potential for VMT Increases

Detailed Criteria Description: Evaluates whether a project or program has the potential to increase vehicle miles traveled (VMT)

Evaluation Method Description: Qualitative

Data Sources Used:

- Project Description and type

Assumptions:

- Projects that promote single occupant vehicle travel are have the potential to increase VMT
- Projects and programs were evaluated based on the type and sub classification (See appendix A) as well as the scale of the project.
- The scale of the project (localized, semi-localized, corridor-wide) was used in the evaluation of each project (see common definitions section above for definition of project scales)

SCORING METHODOLOGY

Scoring	Example/Methodology
NA	A project or program that does not impact vehicle miles traveled (generally non-roadway projects)
0 – No Concern	A mobilty project or program that is unlikely to increase VMT
1 – Low Concern	Project or program that has the potential to impact VMT at a semi-localized scale
2 – Medium Concern	Project or program that has the potential to impact VMT at a corridor-wide scale
3 – High Concern	Not used for this metric

CON10: Potential to increase user costs

Detailed Criteria Description: Evaluates whether a project or program has the potential to increase user costs, either directly or indirectly.

Evaluation Method Description: Qualitative

Related Criteria: EQ-OP9 (Reduces Housing or Transportation Costs for Low-Income Households)

Data Sources Used:

- Project Description

Assumptions:

- Initial concern focused around increases in direct user costs, i.e., congestion pricing
- Concerns capture "direct" and "indirect" impacts on user costs. Direct impacts refer to projects/programs that directly impact user costs (i.e., congestion pricing). Indirect impacts refer to projects/programs that are assumed to decrease user cost due to more efficient transportation/transit systems, reduced wait times, etc.

SCORING METHODOLOGY

Scoring	Example/Methodology
0 – No Concern	Project/program has no impact on user costs related to transportation or housing
1 – Low Concern	Project/program minimally and indirectly increases user costs related to transportation or housing (e.g., congestion pricing)
2 – Medium Concern	Project/program moderately and directly or indirectly increases user costs related to transportation or housing (e.g., congestion pricing)
3 – High Concern	Project/program directly and substantially increases user costs related to transportation or housing (e.g., congestion pricing)

CON11: Potential to increase impervious cover

Detailed Criteria Description: This concern is intended to capture the potential negative impacts related to the **addition** of impervious surfaces that could increase stormwater run-off, environmental heat gain, or worsen water quality – all of which have negative impacts on ecosystems and human health.

Evaluation Method Description: Qualitative

Related Criteria:

> EN-3: Protects natural habitat (Greening Features)

> EN-4: Water Quality, Water Capture, Drainage, and Flood Management features

> EN-6: Reduce Heat Island Effect; Provide Cooling Features for Users

> EQ-EN6: Includes urban greening and cooling for areas of low tree canopy and high heat island burden

> SA3: Improves climate resilience through infrastructure that mitigates the impacts of flooding and increased heat

Data Sources Used:

- Project descriptions

Assumptions:

- The study area is highly developed with little to no projects occurring on greenfield, agricultural or open space land.
- Any project which mentioned the addition of landscaping, vegetation or greening were not considered as concerns.
- This criterion does not consider land cover change, which would require more detailed design information but rather whether projects - by their scale and type, are likely to increase heat gain and stormwater run-off or hinder stormwater absorption.
- The scale of the project (localized, semi-localized, corridor-wide) was used in the evaluation of each project (see common definitions section above for definition of project scales)

SCORING METHODOLOGY:

Scoring	Example/Methodology	Exceptions / Adjustments
NA	Project or Program does not add new infrastructure (e.g. rehabilitation/maintenance to existing infrastructure, stations, freeways)	
0 – No Impact	Project or Program requires new physical infrastructure but includes landscaping, storm water mitigation, or porous surfaces.	Includes street furniture and transit amenities - which are not assumed to have a negative impact
1 – Low Impact	Project or Program requires new physical infrastructure at the localized scale (roadway, freeway, transit) or localized / semi-localized scale (active transportation, pedestrian)	Some semi-localized or corridor-wide projects/programs that add miminal infrasctructure
2 – Medium Impact	Project or Program requires new physical infrastructure at the semi- localized scale (roadway, freeway, transit) or corridor wide scale (active transportation, pedestrian)	
3 – High Impact	Project or Program requires new physical infrastructure at the corridor wide scale (roadway, freeway, transit)	

CON12: Potential to increase economic displacement

Detailed Criteria Description: This concern is intended to capture potential for increased vulnerability to economic (as opposed to physical) displacement of residents or businesses as an adverse effect of infrastructure investment, which may result in new development interest, increasing land prices, property values, and ultimately housing/business costs.

Evaluation Method Description: Qualitative/GIS

Related Criteria: EQ-OP10: Reduces residential or commercial displacement risk

Data Sources Used:

- Project descriptions
- Estimated Displacement Risk Model (Urban Displacement Project)
    - Estimated Displacement Risk - Overall Displacement | Estimated Displacement Risk - Overall Displacement | AFFH Data and Mapping Resources (arcgis.com)
    - California Estimated Displacement Risk Model – Urban Displacement
- Reference materials/literature
    - Transit-Oriented Displacement or Community Dividends? Understanding the Effects of Smarter Growth on Communities | Books Gateway | MIT Press (Karen Chapple & Anastasia Loukaitou-Sideris)
    - Green gentrification or 'just green enough': Do park location, size and function affect whether a place gentrifies or not? - Alessandro Rigolon, Jeremy Németh, 2020 (sagepub.com) (Alessandro Rigolon & Jeremy Nemeth)

Assumptions:

- This metric is applicable to new class 1 and 4 bike paths and rail transit projects:
    - Major transit investment (new rail lines and stations) is one of many factors associated with gentrification and displacement in urban areas. While a simple causal relationship has not been established between transit investment and displacement, research based in Los Angeles and beyond demonstrates that housing instability can be exacerbated by transit investment. (Chapple & Loukaitou-Sideris)
    - New greenway parks with an active transportation component may foster gentrification and increase vulnerability to displacement (Rigolon & Nemeth).
        - "Greenway" refers to a recreational active transportation corridor of longer than 1-mile.
- The Urban Displacement Project's Estimated Displacement Risk Methodology is the best available assessment of displacement risk for all communities within the LB-ELA corridor.
- Levels of residential displacement risk established in EDR model scores can be assumed to reflect relative levels of commercial displacement risk for disadvantaged/small business tenants as well.

- Projects are mapped against the Estimated Displacement Risk map, and joined with associated census tracts (those overlapping and within 500 feet of the project). Displacement risk scores for associated census tracts will be averaged using a numeric scale as described in the scoring matrix

EDR Model Methdology

The Urban Displacement Project's Estimated Displacement Risk (EDR) model uses several household-level and census tract-level metrics including 2014 & 2019 American Community Survey (ACS) data to identify vulnerability to displacement for low-income renter households within each census tract. Using machine learning, the model identifies variables closely associated with household-level displacement to estimate displacement risk at the census tract level. Each census tract is scored for Overall Displacement Risk, with categories of "None," "Probable Displacement," "1 Income Group," or "2 Income Groups." These scores are explained in more detail in the table at the end of this rubric.

The model uses net loss of extremely low-income (ELI: 0-30% of Area Median Income), very low-income (VLI: 30-50% of AMI) and low-income (LI: 50-80% of AMI) households as a proxy for displacement. In the EDR mapping tool, ELI and VLI groups are consolidated into one "very low-income" group (0%-50% of AMI). If the model predicts a net loss within these income groups, the tract is categorized into three degrees of displacement (in order of decreasing severity: 'Extreme,' 'High,' or 'Elevated'); if net loss is uncertain, tracts are categorized as experiencing 'Probable' displacement.

SCORING METHODOLOGY

Scoring	Example/Methodology
0 – No Impact	Project does not include a new transit or greenway investment (No displacement risk)
1 – Low Impact	Project includes a new transit or greenway investment, and average estimated displacement risk of associated census tracts is none to low (0-1)
2 – Medium Impact	Project includes a new transit or greenway investment, and average estimated displacement risk of associated census tracts is low to moderate (1.1-2.0)
3 – High Impact	Project includes a new transit or greenway investment, and average estimated displacement risk of associated census tracts is moderate to high (2.1-3.0)

CON13: Potential to increase noise pollution

Detailed Criteria Description: Evaluates whether a project or program has the potential to increase noise pollution

Evaluation Method Description: Qualitative

Related Criteria: EN7

Data Sources Used:

- Project Description
- Rating from EN7

Assumptions:

- The scale of the project (localized, semi-localized, corridor-wide) was used in the evaluation of each project (see common definitions section above for definition of project scales)
- Projects that scored a "0" or "No Benefit" on EN7 were screened to determine if they have the potential to increase noise beyond the status quo. This screening occurred at the sub category level first and was refined in the actual rating. See Appendix A below for the applicability of each sub category.

SCORING METHODOLOGY

Scoring	Example/Methodology	Exceptions / Adjustments
NA	Project/program does not have the potential to increase or decrease noise (Rated NA on EN-7)	
0 – No Impact	Project includes noise mitigation features (Rated 1-3 on EN-7) or Projects with no noise mitigation benefit (Rated 0 on EN7) and is "localized"	Projects located within the Ports of LA/LB
1 – Low Impact	Projects with no noise mitigation benefit (Rated 0 on EN7) and is semi-localized	Corridor-wide or projects that shift from one mode to another (e.g. trucks to freight rail) where noise impacts are unclear Signal synchronization and bus ITS projects are "Low impact" regardless of scale
2 – Medium Impact	Projects with no noise mitigation benefit (Rated 0 on EN7) and is corridor-wide	
3 – High Impact	No High Concerns	

CON14: Potential for reduced transit ridership

Detailed Criteria Description: Evaluates whether a project or program has the potential to decrease transit ridership

Evaluation Method Description: Qualitative

Data Sources Used:

- Project Description and type

Assumptions:

Projects and programs were evaluated based on the type and sub classification (See appendix A) as well as the scale of the project.

- The scale of the project (localized, semi-localized, corridor-wide) was used in the evaluation of each project (see common definitions section above for definition of project scales)

SCORING METHODOLOGY

Scoring	Example/Methodology
NA	A project or program that does not impact transit ridership (non-mobility projects)
0 – No Concern	A mobilty project or program that is unlikely to decrease transit ridership (transit and active transportation projects)
1 – Low Concern	Project or program that has the potential to reduce transit ridership at a semi-localized scale
2 – Medium Concern	Project or program that has the potential to reduce transit ridership at a corridor-wide scale
3 – High Concern	Not used for this metric

CON15: Potential for new physical transportation barriers

Detailed Criteria Description: Evaluates whether a project or program has the potential to decrease access through the addition of a new physical barrier

Evaluation Method Description: Qualitative

Data Sources Used:

- Project Description and type

Assumptions:

- Only transit rail projects are applicable for this concern. There are no new roadway projects that add barriers (no new freeways) and no new active transportation projects that add new barriers
-

SCORING METHODOLOGY

Scoring	Example/Methodology
NA	A project or program that does not have new physical infrastructure
0 – No Concern	Infrastructure projects that do not have access barriers (arterial roadways, bus projects, active transportation projects)
1 – Low Concern	Transit projects that mostly use existing rights of way and/or are likely to be elevated
2 – Medium Concern	Transit projects with new right of way and likely to be at-grade
3 – High Concern	Not used for this metric

CON16: Potential increased storm water runoff and/or increased flood risk

Detailed Criteria Description: This concern is intended to capture the potential negative impacts related to the addition of infrastructure that does not include specific features that address storm water run off or flood management. Risk of flooding is increased when water cannot soak into the ground and instead runs off of impervious surfaces. When rain is heavy, this can lead to flooding, erosion and damage to surrounding infrastructure. These risks increase with weather changes associated with global warming.

Evaluation Method Description: Qualitative

Related Criteria:

> EN-3: Protects natural habitat (Greening Features)

> EN-4: Water Quality, Water Capture, Drainage, and Flood Management features

> EN-6: Reduce Heat Island Effect; Provide Cooling Features for Users

> EQ-EN6: Includes urban greening and cooling for areas of low tree canopy and high heat island burden

> SA3: Improves climate resilience through infrastructure that mitigates the impacts of flooding and increased heat

Data Sources Used:

- Project descriptions

Assumptions:

- The study area is highly developed with little to no projects occurring on greenfield, agricultural or open space land.
- Any project which mentioned the addition of landscaping, vegetation or greening were not considered as concerns.
- This criterion does not consider land cover change, which would require more detailed design information but rather whether projects - by their scale and type, are likely to increase heat gain and stormwater run-off or hinder stormwater absorption.
- The scale of the project (localized, semi-localized, corridor-wide) was used in the evaluation of each project (see common definitions section above for definition of project scales)

SCORING METHODOLOGY:

Scoring	Example/Methodology	Exceptions / Adjustments
NA	Project or Program does not add new infrastructure (e.g. rehabilitation/maintenance to existing infrastructure, stations, freeways)	

0 – No Impact	Project or Program requires new physical infrastructure but includes landscaping, storm water mitigation, or porous surfaces.	Includes street furniture and transit amenities - which are not assumed to have a negative impact
1 – Low Impact	Project or Program requires new physical infrastructure at the localized scale (roadway, freeway, transit) or localized / semi-localized scale (active transportation, pedestrian)	Some semi-localized or corridor-wide projects/programs that add miminal infrasctructure
2 – Medium Impact	Project or Program requires new physical infrastructure at the semi- localized scale (roadway, freeway, transit) or corridor wide scale (active transportation, pedestrian)	
3 – High Impact	Project or Program requires new physical infrastructure at the corridor wide scale (roadway, freeway, transit)	

Appendix A - Sub Classification Scoring and Applicability

Project Type	Sub Classification	Sub Classification Scoring				Metric Applicability								
		MB5	MB6	SF7	EN7	MB4	OP6	OP7	CON1	CON2	CON8	CON9	CON14	CON13
Active Transportation / TDM	Bike Blvds	1	1 or 3	1	NA	Y	Y	Y	NA	NA	NA	NA	NA	NA
	Bike education	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Class 1 or 4 Bikeway	2	1 or 3	1	NA	Y	Y	Y	Y	Y	Y	NA	NA	NA
	First Last Mile	1	1 or 3	1	NA	Y	Y	Y	NA	NA	Y	NA	NA	NA
	Micro mobility	1	NA	NA	NA	Y	Y	Y	NA	NA	NA	NA	NA	NA
	Pedestrian (ped) bridge	2	1 or 3	NA	NA	Y	Y	Y	Y	Y	Y	NA	NA	NA
	Pedestrian crossing	1	1 or 3	1	NA	Y	Y	Y	NA	NA	NA	NA	NA	NA
	Sidewalk	2	1 or 3	2	NA	Y	Y	Y	Y	Y	Y	NA	NA	NA
	Sidewalk, Class 2, other	1	1 or 3	2	NA	Y	Y	Y	NA	NA	NA	NA	NA	NA
	Transportation Demand Management	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Various bike improvements	2	1 or 3	2	NA	Y	Y	Y	NA	NA	NA	NA	NA	NA
	Various bike/ped improvements	2	1 or 3	2	NA	Y	Y	Y	NA	NA	NA	NA	NA	NA
	Various Ped improvements	2	1 or 3	2	NA	Y	Y	Y	NA	NA	NA	NA	NA	NA
Arterial Roadway	Arterial improvement	2	NA	3	0	NA	NA	NA	Y	Y	Y	Y	Y	NA
	Arterial widening	2	NA	1	0	NA	NA	NA	Y	Y	Y	Y	Y	Y
	Connected/Autonomous Vehicles	1	NA	1	NA	NA	NA	NA	NA	NA	NA	Y	Y	NA

Project Type	Sub Classification	Sub Classification Scoring				Metric Applicability								
		MB5	MB6	SF7	EN7	MB4	OP6	OP7	CON1	CON2	CON8	CON9	CON14	CON13
	Complete Streets	1	Varies	3	NA	Y	Y	Y	Y	Y	Y	NA	NA	NA
	Complete streets / arterial improvements	1	Varies	3	NA	Y	Y	Y	Y	Y	Y	NA	NA	NA
	Fiber	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Integrated Corridor Management	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	Y	Y	NA
	Intersection improvement	2	NA	2	0	NA	NA	NA	Y	Y	Y	NA	NA	NA
	Upgrade Bridge	1	NA	3	0	NA	NA	NA	NA	NA	Y	NA	NA	NA
	New Bridge	2	3	0	0	Y	Y	Y	Y	Y	Y	Y	NA	Y
	Restriping	2	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Safety/Operational	2	Varies	2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA
	Signal Synchronization	3	NA	NA	0	NA	NA	NA	NA	NA	NA	Y	Y	Y
	Signal upgrade	2	NA	2	NA	NA	NA	NA	NA	NA	NA	Y	Y	NA
	Storm water	1	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Traffic calming	1	Varies	1	1	NA	NA	NA	Y	Y	Y	NA	NA	NA
	Video	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	Y	Y	NA
Community Programs	Emissions mitigation	NA	NA	NA	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Housing	NA*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Jobs	NA*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Landscaping/amenities	NA	NA	1	1	NA	NA	NA	NA	NA	Y	NA	NA	NA
	Zero Emission Autos	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	NA

Project Type	Sub Classification	Sub Classification Scoring				Metric Applicability								
		MB5	MB6	SF7	EN7	MB4	OP6	OP7	CON1	CON2	CON8	CON9	CON14	CON13
	Zero Emission Transit	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Freeway	Auxiliary lanes	2	NA	1	0	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Upgrade Bridge	2	1	3	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA
	Building	1	NA	NA	NA	NA	NA	NA	Y	Y	Y	NA	NA	NA
	Congestion Pricing	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Emissions mitigation	NA	NA	NA	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Express Lanes	3	NA	1	0	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Interchange	1	Varies	1	0	NA	NA	NA	Y	Y	Y	Y	Y	NA
	Landscaping/amenities	NA	NA	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Maintenance	1	NA	3	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA
	Rehab (Freeway signs)	0	NA	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Safety/Operational	2	Varies	2	NA	NA	NA	NA	Y	Y	Y	NA	NA	NA
	Signal upgrade	2	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Soundwalls	NA	NA	NA	3	NA	NA	NA	Y	Y	Y	NA	NA	NA
	Storm water	NA	NA	2	NA	NA	NA	NA	Y	Y	Y	NA	NA	NA
	Transportation Management System upgrade	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Truck bypass	2	Varies	0	0	NA	NA	NA	Y	Y	Y	Y	NA	Y
	Zero Emission Trucks	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Greening	NA	1	1	1	Y	Y	Y	NA	Y	Y	NA	NA	NA

Project Type	Sub Classification	Sub Classification Scoring				Metric Applicability								
		MB5	MB6	SF7	EN7	MB4	OP6	OP7	CON1	CON2	CON8	CON9	CON14	CON13
	Rehab (Freeway)	2	NA	3	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA
Goods Movement	Arterial improvement	1	Varies	3	0	NA	NA	NA	Y	Y	Y	Y	NA	NA
	Emissions mitigation	NA	NA	NA	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Freight operation	3	Varies	NA	0	NA	NA	NA	Y	Y	Y	NA	NA	NA
	Freight rail	1	Varies	0	0	NA	NA	NA	Y	Y	Y	NA	NA	Y
	Grade sep	3	1	1	1	NA	NA	NA	Y	Y	Y	NA	NA	NA
	Interchange	2	Varies	1	0	NA	NA	NA	Y	Y	Y	Y	NA	Y
	New Bridge	2	3	0	0	NA	NA	NA	Y	Y	Y	NA	NA	NA
	Zero Emission Trucks	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zero Emission Freight	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zero Emission Rail	NA	NA	NA	2	NA	NA	NA	Y	NA	NA	NA	NA	NA
Transit	Bus Rapid Transit	3	1	1	0	Y	Y	Y	Y	Y	Y	NA	NA	Y
	First Last Mile / Customer Experience	2	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Grade separation	3	1	1	1	NA	NA	NA	Y	Y	Y	NA	NA	NA
	Increased service	2	3	NA	0	NA	NA	NA	NA	NA	NA	NA	NA	Y
	Light Rail	3	3	0	0	Y	Y	Y	Y	Y	Y	NA	NA	Y
	Metrolink	3	3	0	0	Y	Y	Y	Y	Y	Y	NA	NA	Y
	Microtransit	2	3	NA	0	Y	Y	Y	NA	NA	NA	NA	NA	NA
	New station	3	3	0	0	Y	Y	Y	Y	Y	Y	NA	NA	Y

Project Type	Sub Classification	Sub Classification Scoring				Metric Applicability								
		MB5	MB6	SF7	EN7	MB4	OP6	OP7	CON1	CON2	CON8	CON9	CON14	CON13
	Real time /Customer Experience	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Safety/Rehab	2	NA	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Shuttle	1	2	NA	0	Y	Y	Y	NA	NA	NA	NA	NA	NA
	Speed/Reliability Improvements	3	NA	NA	0	Y	Y	Y	NA	NA	NA	NA	NA	Y
	Speed/Reliability & Transit amenities	3	1	NA	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Transportation Demand Management / Fare Policy	1	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Transit amenities	1	1	NA	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA
	Transit amenities & Security	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Transit amenities/security/CX	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Zero Emission Transit	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	NA