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Summary of Health Considerations in LB-ELA Corridor Plan Evaluation Criteria

Context

Communities within the Long Beach-East Los Angeles (LB-ELA) Corridor face significant health disparities (such as high asthma and cardiovascular disease rates) and experience disproportionate pollution burdens (such as PM2.5 and Diesel PM emissions) compared with other communities in Los Angeles County, as was documented through health and environmental justice screening tools such as CalEnviroScreen, CA Healthy Places Index, the Center for Disease Control and Prevention (CDC) Environmental Justice Index Explorer, and a number of studies related to vehicular pollution and health outcomes surrounding the I-710 freeway and throughout the region.[1,2,3,4] In addition to the high overall health burdens facing the LB-ELA Corridor relative to the County and State as a whole, health burdens within the corridor disproportionately impact people of color and low-income populations.

These health disparities have been consistently elevated by Task Force, Working Group, Community Leadership Committee (CLC), and community members throughout the Task Force's planning process, and have guided staff's technical work in conducting existing conditions research and developing the Initial List of Projects and Programs and Evaluation Criteria. While health criteria have been discussed and incorporated in the context of every goal, "health" is mentioned by name specifically within the Task Force's *Community* goal and *Sustainability* guiding principle as follows:

> ***Community**: "Support thriving communities by enhancing the health and quality of life of residents."*
>
> ***Sustainability**: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. A commitment to sustainability to satisfy and improve basic social, health, and economic needs/conditions, both present and future, and the responsible use and stewardship of the environment, all while maintaining or improving the well-being of the environment on which life depends."*

In developing the evaluation criteria, staff carefully considered the most effective way to evaluate Project Outcomes that would support the Task Force's desired Community Results as identified in the Vision, Goals, and Guiding Principles. A **Community Result**, as defined in Metro's Pilot Equity Planning and Evaluation Tool (EPET), is "the community level condition of well-being we would like to achieve. It lacks disparities based on race, income, ability, or other social demographic." A **Project Outcome** is "a clearly defined future state of being at the program, local, or agency level resulting from the proposed action that ultimately supports the community result.

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[1] HIA-I710-Air-Quality-Plan.pdf (humanimpact.org)
[2] Community Health in the I-710 Corridor – Neighborhood Data for Social Change (myneighborhooddata.org)
[3] PSR-20-19_Boeing_Final-report.pdf (metrans.org)
[4] Improving Environmental Justice and Mobility in Southeast Los Angeles (metrans.org)

Literature and Research

The CDC and World Health Organization (WHO) recommend the Social Determinants of Health Framework as an approach to understand public health holistically. They recognize that many overlapping factors (including genetics, behavior, environmental and physical influences, medical care and social factors) contribute to community health outcomes.[5] It is therefore challenging to quantify, for instance, how a transportation project, or group of projects (as in the case of those being evaluated as part of the investment plan), will directly improve or worsen these outcomes, such as rates of asthma or cardiovascular disease.

The Government Alliance on Race and Equity (GARE) developed a Results Based Accountability framework to support "thinking and taking action that communities and government can use to achieve meaningful improvements, eliminate racial inequities and lift up outcomes for all"[6]. They emphasize the need to clearly delineate between desired end conditions (Community Results) and direct achievements through an action (Project Outcomes). The EPET's distinction between Community Results and Project Outcomes is based on this guidance.

The CDC Recommendations for Improving Health through Transportation Policy highlight health-related objectives that can be achieved through transportation policy and design (Project Outcomes), based in research that ties these objectives to public health outcomes (Community Results). According to the CDC, transportation policy has the opportunity to:

- Reduce injuries associated with motor vehicle crashes
- Encourage healthy community design
- Promote safe and convenient opportunities for physical activity by supporting active transportation infrastructure
- Reduce human exposure to air pollution and adverse health impacts associated with these pollutants
- Ensure that all people have access to safe, healthy, convenient, and affordable transportation[7]

The US Department of Transportation (US DOT) provides Literature and Resources detailing the connections between transportation and public health through these five primary pathways:

- Active transportation — Transportation agencies and their partners can help people lead more active lifestyles by giving them options for getting to places they need to go without driving. They can also reduce the distance between destinations people travel to satisfy daily needs.
- Safety — Motor vehicle crashes are one of the leading causes of death in the United States. By providing transportation options and improving roadway facilities, transportation agencies can reduce the incidence of motor vehicle crashes.

[5] Social Determinants of Health at CDC | About | CDC
[6] Racial Equity Action Plans - A How to Manual (ca.gov)
[7] CDC - CDC Transportation Recommendations

- Cleaner air — Air pollution has been linked with heart disease and respiratory illnesses, including asthma. Improving transportation system efficiency and supporting cleaner vehicles and fuels can improve air quality.
- Connectivity — Providing a well-connected, multi-modal transportation network increases people's ability to access destinations that can influence their health and well-being, such as jobs, health care services, and parks.
- Equity — Negative health effects related to the transportation system often fall hardest on more vulnerable members of the community, such as low-income residents, communities of color, children, and older adults.[8]

Given existing disparities and associated concerns around air quality and pollution-related health impacts with the LB-ELA corridor, staff also consulted recent research from the South Coast Air Quality Management District (SCAQMD) to develop evaluation criteria and performance metrics to measure primary health impact pollutants.

SCAQMD's 2021 MATES V report identifies Diesel Particulate Matter (DPM) as the lead evaluation indicator for air toxic impacts, stating: "While there has been substantial improvement in air quality regarding air toxics emissions and exposures, the health risks continue to be high, especially near sources of toxic emissions such as the ports and transportation corridors. Diesel PM, while also substantially reduced from past MATES, continues to dominate the overall cancer risk from air toxics." (2021 MATES V Final Report)[9]

SCAQMD's 2022 AQMP Appendix I identifies Particulate Matter 2.5 (PM2.5) as the lead evaluation indicator for criteria pollutant mortality and sickness (including asthma) impacts, stating: "Several studies have found correlations between elevated ambient particulate matter levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks, COPD exacerbation, combined respiratory-diseases and number of hospital admissions in different parts of the United States and in various areas around the world. Higher levels of PM2.5 have also been related to increased mortality due to cardiovascular or respiratory diseases, hospital admissions for acute respiratory conditions, school absences, lost workdays, a decrease in respiratory function in children, and increased medication use in children and adults with asthma." [10] The LB-ELA corridor area is also a non-attainment area for PM2.5. Mobile sources are major sources of direct PM2.5 emissions (exhaust, as well as brake/tire wear and entrained road dust).

Together, the literature and research discussed above informed the development of health-related criteria for the LB-ELA Corridor Investment Plan evaluation, including the identification of a broad range of social, economic, and environmental factors that are known to improve community health; and using specific indicators known to measure changes in air quality, which is directly tied to cardiovascular and respiratory disease.

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[8] Literature and Resources | US Department of Transportation

[9] http://www.aqmd.gov/docs/default-source/planning/mates-v/mates-v-final-report-9-24-21.pdf?sfvrsn=6

[10] 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

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Health-Related Evaluation Criteria Approach

The evaluation criteria are primarily categorized under the Task Force's identified Goals and Guiding Principles. However, criteria related to each goal also relate to one or more of the following health-related project outcomes ("Project Health Outcomes"), which contribute to a variety of health-related community results as discussed in literature from the CDC, U.S. DOT, and SCAQMD (see Figure 1).

1) Exposure to Health Impact Pollutants
2) Conditions for Physical Activity
3) Conditions for Roadway Safety
4) Exposure to Extreme Heat
5) Access to Healthcare, Healthy Food, & Opportunities

Summary of Health-Related Evaluation Criteria

Below is a summary health-related evaluation criteria, organized by categories based on the LB-ELA Corridor Investment Plan adopted Goals (air quality, community benefits, mobility, safety, environment, opportunity and prosperity) and Guiding Principles (equity and sustainability).

Air Quality Benefits

See CH1, CH2 - Health-related emissions and exposure criteria are listed under 'Community Benefits (includes Health)' to account for distinction between primary regional non-attainment pollutants (AQ1) and primary health impact pollutants (CH1).

Community Benefits (includes health)

CH1: Reduce Emissions (Health Effects metrics: Diesel Particulate Matter, PM2.5)
CH2: Reduce exposure at receptors (HVAC/HEPA, near-roadway vegetation)
CH3: Mode Shift to active transportation, transit
CH5: Bike/Ped Access to parks, recreational areas, or open spaces

Mobility Benefits

See CH3, CH5 - Health-related mobility criteria are included under Community Benefits to account for distinction between overall mobility conditions and conditions for health-supportive travel modes.

Safety Benefits

SF1: Protections for Bike / Users (bike class)
SF2: Traffic Protections (bike/ped)
SF4: Includes Safety Features
SF6: Traffic Calming Features

Environment Benefits

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

Opportunity/Prosperity Benefits

OP1: Access to jobs
OP4: Work Force Development

OP5: Potential Targeted Hire, New Construction Jobs
OP6: Access to Quality of Life amenities (grocery stores, healthcare services, schools)
OP7: Access to open space, recreation and parks, LA river, etc.

Equity Benefits
See associated criteria from Goal categories

Sustainability Benefits
SA1: Reduces reliance on polluting and energy-intensive modes of travel and goods movement
SA2: Promotes physical activity and health through active transportation and recreation
SA3: Improves climate resilience through mitigation of flooding and extreme heat impacts
SA4: Supports job creation in, and workforce transitions to green technology and infrastructure sectors
SA5: Improves cargo efficiencies to minimize trip volumes and emissions from goods movement activity

Project Concerns
CON4: Potential for Traffic Diversion / Emission Shifting
CON5: Potential for New Hot Spots (Congestion, AQ, Ped/Bike Safety)
CON7: Potential for VMT Increases

Consideration of Health Impact Assessments

Health Impact Assessments (HIAs) are sometimes used by planning agencies to conduct a more precise evaluation of health impacts from projects or programs that fall outside traditional public health arenas, such as transportation and land use.[11] Some members of the Task Force have encouraged Metro to conduct an HIA for the Initial List of Projects and Programs to establish criteria and analyze potential impacts for direct health outcomes (such as rates of asthma, cardiovascular disease, cancer, premature deaths, birth outcomes). In consideration of this recommendation, staff has reviewed HIA guidance from the CDC and County of LA, along with prior HIA documents produced for comparable transportation planning efforts such as the City of LA's Mobility Plan 2035 and the initial I-710 Corridor Project Health Impact Assessment prepared as part of the Gateway Cities Air Quality Action Plan.

Review of guidance and prior HIA documentation supported staff's conclusion that an HIA-level evaluation is inappropriate for this early stage of the LB-ELA Corridor Plan process, requiring a much more detailed project definition to achieve meaningful outputs given the complexity of overlapping risk exposures, and social, economic, and environmental risk modifiers. Furthermore, the evaluation criteria list currently integrates many of the health-related indicators (project outcomes) that an HIA uses to predict health outcomes. Individual projects and programs that continue into the investment plan will eventually be subject to environmental review with more detailed analyses as part of their planning and design processes.

Staff will continue to elevate health in the Task Force process and commits to incorporating health in future phases of the Investment Plan development and implementation. Staff has presented the Task

[11] CDC - Healthy Places - Health impact assessment (HIA)

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Force with the following proposals for ongoing health-related efforts to be developed in partnership with Task Force, Working Group, and CLC members:

- Development of a Health Equity Dashboard to provide ongoing health-related data in the LB-ELA Corridor (Example: Marin County Health Equity and Social Justice Dashboard).
- Development of community health-focused project design and implementation guidelines to be incorporated in the Investment Plan (Example: Riverside Healthy Development Checklist)
- Collaboration with other departments, agencies, and organizations who are working on evaluating and improving health equity in the LB-ELA Corridor area

Figure 1

Project Health Outcomes	Example Community Results
Exposure to Health Impact Pollutants	Chronic Disease Rates (Asthma, Cardiovascular Disease, Cancer)
Conditions for Physical Activity	Chronic Disease Rates, Mental Health, Strength and Coordination
Conditions for Roadway Safety	Collision-Related Injury, Disability, and Death Rates
Exposure to Extreme Heat	Heat-Related Illness Rates (Heatstroke, Heat Exhaustion, Dehydration)
Access to Healthcare, Healthy Food, & Opportunities	Preventative Care, Food Security and Nutrition, Social Determinants of Health

Evaluation Criteria with Associated Project Health Outcomes

CH1	Reduce Emissions (Health Effects metrics: Diesel Particulate Matter, PM2.5)	
CH2	Reduce exposure at receptors (HVAC/ HEPA, near-roadway vegetation)	
CH3	Mode Shift to active transportation, transit	
CH5	Bike/Ped Access to parks, recreational areas, or open spaces	
SF1	Protections for Bike / Users (bike class)	
SF2	Traffic Protections (bike/ped)	
SF4	Includes Safety Features	
SF6	Traffic Calming Features	
EN6	Reduce Heat Island Effect; Provide Cooling Features for Users	
OP1	Access to jobs	
OP4	Work Force Development	
OP5	Potential Targeted Hire, New Construction Jobs	
OP6	Access to Quality of Life amenities (grocery stores, healthcare services, schools)	
OP7	Access to open space, recreation and parks, LA river, etc.	
SA1	Reduces reliance on polluting and energy-intensive modes of travel and goods movement	
SA2	Promotes physical activity and health through active transportation and recreation	
SA3	Improves climate resilience through mitigation of flooding and extreme heat impacts	
SA4	Supports job creation in, and workforce transitions to green technology and infrastructure sectors	
SA5	Improves cargo efficiencies to minimize trip volumes and emissions from goods movement activity	
CON4	Potential for Traffic Diversion / Emission Shifting	
CON5	Potential for New Hot Spots (Congestion, AQ, Ped/Bike Safety)	
CON7	Potential for VMT Increases	