State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

MEMORANDUM

To: CHAIR AND COMMISSIONERS
CALIFORNIA TRANSPORTATION COMMISSION

CTC Meeting: October 12-13, 2022

From: STEVEN KECK, Chief Financial Officer

Reference Number: 4.14, Information Item

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Subject: **OVERVIEW OF THE CALTRANS TRANSPORTATION EQUITY INDEX**

SUMMARY:

The California Department of Transportation (Department) will be presenting an overview of its Transportation Equity Index to the California Transportation Commission (Commission) at the October 2022 meeting as an informational item.

BACKGROUND:

As stated in the Caltrans Equity Statement, the Department acknowledges that communities of color and under-served communities experienced fewer benefits and a greater share of negative impacts associated with our state's transportation system. Some of these disparities reflect a history of transportation decision-making, policy, processes, planning, design, and construction that "quite literally put-up barriers, divided communities, and amplified racial inequities, particularly in our Black and Brown neighborhoods." Many tools exist to evaluate various factors that potentially burden communities, but these tools typically consider a wide range of factors and are not specifically focused on transportation. The Department wants to bridge this gap by creating a tool to help address and mitigate inequities in the transportation system. To put the Department's commitments to equity into action, it is developing the Caltrans Transportation Equity Index.

Caltrans Transportation Equity Index (EQI)

The Caltrans EQI will help identify transportation-specific priority population areas. The EQI will support the Department in identifying opportunities to advance equitable outcomes during project planning, development, and design and for applicable funding programs. While the EQI is being designed with the Department's use cases in mind, it will also be broadly applicable to transportation equity analysis more generally and can be a source of information for entities beyond the Department, both within and outside of government.

The EQI resembles some existing equity tools, such as CalEPA's CalEnviroscreen and the White House's Climate and Economic Justice Screening Tool (CEJST), but it also has some differences. For example, the EQI focuses more tightly on transportation issues, especially those that the Department can affect, and it is more spatially granular, operating at the Census block level. Granularity is important because many indicators vary significantly within a larger Census tract, which the other cited tools rely on. By using blocks, the EQI can capture neighborhood-scale impacts and better inform potential solutions.

The Department recently publicly held an informational webinar to present the concept and methodology to Department staff, external partners, and the general public. Department Staff is currently responding to feedback from the workshop, and preparing to release a beta version of the EQI by the end of the year.

Equity Index Methodology:

The EQI employs socioeconomic and transportation indicators, which it combines to produce three separate screens to inform decision-making.

- **The demographic overlay indicator** identifies Census blocks that are either low-income[1] and/or majority non-white[2]. For a block to be screened for inclusion, only one criteria (low-income or majority non-white) needs to be met, although there is significant overlap between the two.
- **The traffic impact indicator** is based on traffic proximity and volume, and crash exposure. This indicator captures burdens created by, or exacerbated by, the State's transportation system. Such burdens include localized air emissions, noise, and safety. Traffic proximity and volume is operationalized as the volume of traffic that a block is exposed to from either the State Highway System (SHS) and/or National Highway System (NHS), weighted by both distance and truck volume. Crash exposure is operationalized as the severity-weighted number of crashes occurring in and around a given block. For both indicators, a percentile rank value is calculated for each block, with blocks at or above the 80th[3] percentile being screened for inclusion as having high traffic impacts.

[1] The EQI adopts the definition of 'low-income community' outlined in AB-1550: "Low-income communities" are census tracts with median household incomes at or below 80 percent of the statewide median income or with median household incomes at or below the threshold designated as low income by the Department of Housing and Community Development's list of state income limits adopted pursuant to Section 50093 of the Health and Safety Code.
[2] The EQI considers race and ethnicity in addition to low-income status, as income alone doesn't adequately capture harms that transportation infrastructure and policy have inflicted on non-white communities, such as the impacts on generational wealth due to highway construction and urban renewal.
[3] The EQI's percentile thresholds are subject to change, pending further engagement and analysis. For reference, SB-535 uses a 75th percentile threshold (top 25 percent scoring tracts) and the Climate and Economic Justice Screening Tool (CEJST) uses a 90th percentile threshold.

- **The access to destinations indicator** is based on the ability of travelers to reach destinations such as shopping, school and open spaces, by non-auto modes. It is operationalized as the ratio of multimodal (transit and walking) accessibility to auto accessibility. This relative approach means that smaller walkable town centers score comparably to larger cities, despite the large difference in total regional destinations between the two place types. For the EQI, any block having a ratio below 0.2 is screened as having poor multimodal accessibility.

Employing these indicators, the EQI provides three output screens. Each screen includes a demographic overlay and at least one transportation-specific indicator.

- **The traffic exposure screen** includes Census blocks that are screened by the demographic overlay and the traffic exposure indicator (traffic proximity and volume and/or crash exposure). The screen is intended to identify population areas that face the most burden from traffic exposure. It suggests both that such areas should not be further burdened with additional traffic, and that traffic reductions or other mitigations would be appropriate. The tool serves not only to identify burdened areas, but also to help focus on the appropriate mitigations; planners and project developers can use the tool to understand the nature and source of traffic impacts, and how potential improvements might affect scores.
- **The access to destination screen** includes blocks screened by the demographic overlay and access to destinations indicator. The screen is intended to identify populations that lack good multimodal access and are thus unable to access important destinations and/or face cost burden imposed by vehicle ownership, use, and maintenance. As with the traffic impact screen, the tool can not only identify communities with poor access, but also help inform potential solutions to enhance multimodal accessibility.
- **The priority populations screen** includes the demographic overlay, and the traffic exposure indicators and access to destinations indicators. The screen identifies priority populations in the state that are the most burdened by the transportation system, while receiving the least benefit from it. This screen would likely be most useful in targeting resources.

Figure 1 shows the relationship between the EQI indicators and screens.

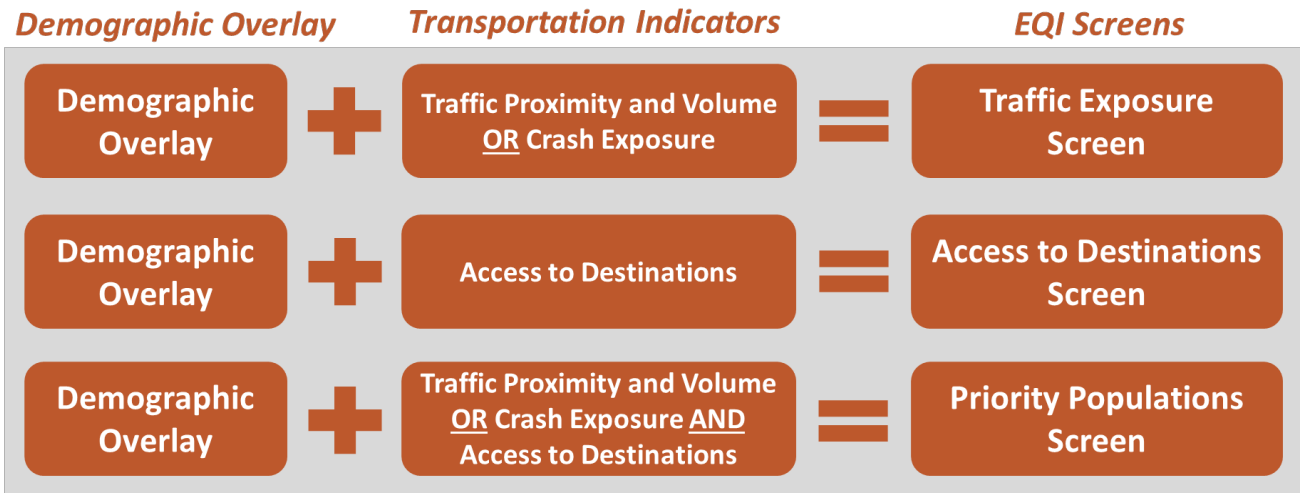

Figure 1. EQI indicators and screens.

The tool will be available both as a series of detailed web-based maps that require little to no training to access, and as shapefiles that planners and project developers can employ in Geographic Information Systems (GIS), e.g. by drawing buffers around corridors to identify screened communities in a corridor or project area.