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Evaluating Benefits from Transportation Investments aligned with the Climate Action Plan for Transportation Infrastructure (CAPTI)

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Introduction

Transportation and climate change are undeniably interrelated. Both in California and in the U.S., the transportation sector is the largest source of greenhouse gas (GHG) emissions across all sectors of the economy. On the other hand, climate change already impacts the transportation infrastructure and services, and by extension, the way we travel. New and expanded federal and state investment programs in transportation infrastructure offer a chance to transform mobility and build a more sustainable, equitable, and resilient system. The State of California spends approximately $30 billion on transportation investments each year. The California State Transportation Agency (CalSTA) adopted the Climate Action Plan for Transportation Infrastructure (CAPTI) in 2021 to help align transportation infrastructure decisions with the state's climate, health, and equity goals. The purpose of this project was to help evaluate benefits from transportation investments across the State of California.

Study Methods

With support from Caltrans, the research team provided a holistic evaluation framework that involved three main phases: 1) an economic impact analysis, 2) an analysis of vehicle miles traveled (VMT) and emissions impacts, and 3) equity analysis of transportation investments in California. The first phase offers an economic impact analysis of California's transportation investments and seeks to understand if the policy changes enacted with CAPTI resulted in substantial differences in economic impact and job quality. The research team used IMPLAN—an Input-Output model—to estimate the economic impacts of all transportation investments across all seven state transportation investment programs. The second phase involved estimating and comparing the VMT, and consequently, emissions impact of CAPTI on these investment programs. The research team used qualitative and quantitative methods to develop a VMT rating method to examine whether the investment outputs, such as addition of new active transportation facilities, have a neutral, positive, or negative impact on VMT. Building upon these two phases, the third phase analyzes the distributional and equity impacts of various investment programs. The research team used spatial analysis and maps to examine how projects with various VMT ratings are distributed across the state and in relationship with disadvantaged communities.

Findings

Overall, findings indicate that CAPTI has had a positive impact on California communities by helping align transportation investments with the state's climate and equity goals while continuing to generate significant economic activity through investments in transportation infrastructure. The adoption of CAPTI has resulted in an overall reduction of GHG emissions generated across the portfolio of programs, an increase in the number of investments that do not generate higher GHG emissions and other pollutants, and an increase in the number of investments that do not induce VMT. Investments approved after the adoption of CAPTI generated consistent economic impact across California as compared to previous rounds of investments. Also, policy changes enacted in the CAPTI process did not result in the diminution of job quality and did not alter the accessibility of jobs to California workers. This contradicts the popular

belief that only certain types of infrastructure projects generate high-paying jobs with benefits for Californians. Lastly, equity considerations are at the center of CAPTI implementation. Newly updated guidelines incentivize enhanced community engagement, and the newly established Equity Advisory Committee weighs on funding recommendations. Transportation infrastructure investments are reaching disadvantaged communities and areas with the greatest need for mobility improvements.

California should continue investing in transportation infrastructure in a manner that is equitable and reduces VMT and emissions while creating quality jobs and positive economic impacts.

Policy/Practice Recommendations

- California should continue investing in transportation infrastructure in a manner that is equitable and that reduces VMT and emissions while creating quality jobs and positive economic impacts.
- California should streamline monitoring and evaluation of CAPTI by developing a standardized online dashboard that displays current investment data across all state investment programs. The dashboard can be used to examine the economic, VMT, and equity impacts of transportation investments across the state over time or during a specific period.
- Decarbonizing transportation is only achievable if stronger emphasis is put on investing more in alternative transportation modes to make transit and active transportation modes more accessible and more appealing than driving.
- All key aspects of equity—process, input, output, and outcome—should be considered for a comprehensive evaluation of CAPTI.
- Both horizontal and vertical equity are goals worth attaining in the CAPTI implementation process, but if tradeoffs are necessary between different equity objectives, the needs of disadvantaged communities should be prioritized.
- Transportation infrastructure planning can focus on equity of opportunity as a step toward equity of outcome (or vertical equity).

About the Authors

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To Learn More

For more details about the study, download the full report at transweb.sjsu.edu/research/2227

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