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CALTRANS DIVISION OF RESEARCH, INNOVATION AND SYSTEM INFORMATION

TRANSFORMING IDEAS INTO SOLUTIONS

Research Notes

Impacts of Private Development on Transit Ridership

This research project will lay the groundwork for creating an easy-to-use calculator for estimating the ridership impacts of transit-oriented development projects by reviewing the existing literature on the topic and identifying an actionable plan and concrete model structure to implement the calculator.

Planning, Policy, and Programming

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Project Title: Impacts of Private Development on Transit Ridership

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WHAT IS THE NEED?

Transit Oriented Development (TOD) is the creation of compact, walkable, pedestrian-oriented, mixed-use communities centered around stations along transit priority corridors (rail, bus rapid transit). The State of California has established several policies to support TOD, as have local jurisdictions and the Federal Transit Administration (FTA). There is a need for research on the quantifiable impacts of TOD on transit ridership to guide policy and investments in TOD for future transit plans. There is good literature on the impacts of various factors (fares, gas prices, service levels, Transportation Network Companies (TNCs), etc.) on ridership levels. There is also literature on the impact of land use generally (employment/population density, land use types) on transit ridership. TOD impacts on ridership, however, are not well researched to date because data on TODs and the residents that move into them is not available at a consistent level. Agencies and municipalities applying for grants such as Transit and Intercity Rail Capital Program (TIRCP) and the Affordable Housing and Sustainable Communities Program (AHSC) provide estimates of ridership impacts and new development catalyzed by the project, but producing well-supported, reliable numbers in their applications remains a challenge. Some regions have regional ridership models they use in service planning, but these models are generally not designed to forecast changes associated with a single building or neighborhood. Other regions lack ridership models altogether and must rely on ad-hoc approaches to estimate ridership impacts. There is also a need to provide consistent and transparent transit ridership estimates so that more-resourced agencies applying for grants do not out-compete less-resourced agencies that lack their own regional ridership

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models. Different local or regional transit ridership model methodologies may not be transparent to audiences, including grant application evaluators.

One way to standardize the process and level the playing field between agencies is through the creation of an easy-to-use calculator for estimating the ridership impacts of TOD projects, similar to the Induced Travel calculator that already exists and is in wide use in planning in California (https://travelcalculator.ncst.ucdavis.edu/).

WHAT ARE WE DOING?

The linkage between TOD and ridership has several important sub-research questions. The researchers anticipate there being relatively few studies specifically on the relationship between TOD policies and ridership, hence the need for this study. For this reason, the literature review will cover studies on several different processes through which TOD affects ridership.

The second portion of this project shall develop a research agenda to bring the proposed TOD calculator to fruition. Based on the literature review and interviews with subject matter experts, the Contractor shall determine what additional research needs to be conducted to develop a model or system of models to forecast the ridership impact of new TOD construction, and whether any additional data needs to be collected.

WHAT IS OUR GOAL?

The goal of the project shall be a comprehensive literature review and concrete architectures for various implementation of the calculator, including what models should be estimated, what data is needed, how the models will interact with one another, and any foreseen pitfalls that may need to be addressed during implementation.

WHAT IS THE BENEFIT?

Through this calculator, ridership estimates for applicants seeking funding or zoning variances for TOD projects will be able to document how the projects will impact ridership. These estimates will be comparable across projects thanks to using a standardized methodology. This project will lay the groundwork for creating such a calculator, by reviewing the existing literature on the topic and identifying an actionable plan and concrete model structure to implement the calculator.

WHAT IS THE PROGRESS TO DATE?

The project team began the project and held a kick-off meeting with the California Department of Transportation (Caltrans) staff and the project panel. They initiated the literature review and finalized a plan for the literature review, including the following points: what search terms to use, exclusion criteria, and a process for assessing papers for inclusion. The researchers performed a literature search in three databases and identified potentially relevant articles. The project team developed a spreadsheet detailing what information to extract from each paper included in the review and began entering papers into the spreadsheet format. The project is on schedule and on budget.

Details on the work completed during the current period and the results thus far were presented to the project panel at the scheduled quarterly meeting.