

Modal**AUGUST 2024****Project Title:**Equity in Payments for Transit and
Congestion Charging**Task Number:** 4326**Start Date:** April 1, 2024**Completion Date:** October 31, 2025**Task Manager:**Bradley Mizuno
Transportation Engineer, Electrical
bmizuno@dot.ca.gov

Equity in Payments for Transit and Congestion Charging

Develop framework for improving users' equitable access to, and experience of, payment across all modes of transportation.

WHAT IS THE NEED?

Every American must “pay for” transportation and mobility services– whether it’s loading up a contactless payment card such as Clipper and TAP, grabbing \$2.25 for bus fare, downloading a new app to try out a Transportation Networking Companies, putting a transponder in their vehicle to cover bridge/road tolls, or paying a gas tax when at the pump. More and more Americans are relying on credit or debit cards for transportation transactions (Federal Reserve, 2020), yet 25% of Americans remain underbanked or unbanked lacking access to EMV (Europay, Mastercard, and Visa) payment methods (CNBC, 2019). This behavior change substantially increases the need for convoluted payments systems to anticipate various forms of payment.

Simultaneously to this trend, many state Department of Transportations (DOTs) are implementing, or beginning to consider road charge programs, to alleviate the projected gas tax revenue decline as vehicles transition from gas-powered to zero-emission vehicles (ZEV) or electric vehicles. This transition results in the need to have a deeper, first party relationship with the payee/driver, meaning that there will be a significant possible increase in transaction volume handled by state DOTs that are not currently tolling operators.

Currently there is no framework to indicate what elements and standards payment systems provide to achieve the most effective approach for an equitable and interoperable system across a variety of transit providers. As a result, there is a need for complete and intersectional research to guide decision-makers in planning and designing payment systems which address the equity impacts and equity opportunities to increase mobility access to all users across all transportation forms regardless of access to technology, economic status, or banking status.



DRISI provides solutions and
knowledge that improves
California's transportation system.

WHAT ARE WE DOING?

The researchers will produce an inventory of global transit and transportation payment systems and standards to identify the full range of options and implementations while taking note of contextual advantages and limitations. As part of this effort, researchers will review these payment systems' privacy standards and interoperability practices and policies. For transit systems, this will also mean evaluating fare policies and integration models. Early-stage stakeholder engagement will inform our understanding of user needs, and later stakeholder engagement will enable us to incorporate feedback on the framework, to increase confidence in its applicability and equitability.

WHAT IS OUR GOAL?

The proposed research will develop a data-driven and stakeholder-reviewed framework for improving users' equitable access to, and experience of, payment across all modes of transportation. This framework will incorporate proposed shared standards to make it easier for all users to pay for and use the transportation system, increase the efficiency of transactions, and enable cross-modal payments and incentives to encourage mode shift to increase transit ridership.

WHAT IS THE BENEFIT?

Previous research indicates that while an interoperable system is appealing to agencies, many have concerns regarding user access, payment systems, data management and costs. Further, coordination between stakeholders can be one of the most difficult tasks at hand. Issuing framework with a DOT lens allows a clear path towards implementation emphasizing open data standards and ensuring equity measures are incorporated. Without this research, agencies will continue individually without following a unified framework, making it more difficult to synchronize between agencies later.

Additionally, with multiple systems offered at steep costs, this research will allow state DOTs and transit/mobility providers to make better informed decisions on which payment system elements align with a best practices framework for an interoperable and equitable system. Conducting and implementing this research will directly benefit the users first and foremost, as well as state DOTs, transit, and transportation agencies by increasing user access and ease to transportation systems, increasing ridership, lowering overhead costs, and creating equitable fares.

WHAT IS THE PROGRESS TO DATE?

Task 1: Review of Applicable Literature, Payment Standards, and Privacy Models

The researchers began work on the literature review and completed an 85% draft (19 pages). They are waiting to connect with the advisory group before finalizing the literature review.

Task 2: Inventory and Selected Case Studies

The researchers began work on the inventory, creating an Airtable base with information that they will collect for a number of regions and transit operators. The research team have screenshared this base with the Caltrans team for their feedback

Task 3: Stakeholder Engagement

The researchers have conducted initial meetings with some stakeholders and have been developing the advisory group.