



Caltrans Division of Research,
Innovation and System Information

Research

Notes

Modal

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Project Title:
Steps to Supplement Popular Park-
and-Ride Transit Access with Ride-
and-Ride That's More Attractive

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Steps to Supplement Popular Park- and-Ride Transit Access with Ride- and-Ride That's More Attractive

A report listing parameters and specifications that define cost-effective carrier ride services between residential locations and park-and-ride lots.

WHAT IS THE NEED?

The Mineta Transportation Institute (MTI) research team will prepare a report addressed to transportation policy makers and policy implementers, listing and explaining a set of forward-looking parameters and specifications. Parameters and specifications will define and characterize cost-effective common carrier ride services on roads, between suburban residential locations and existing transit center park-and-ride lots in California urban areas, as well as recognize the existing catchment areas for potential transit customers seeking access at particular facilities.

The parameters and specifications will cover human-driven and other vehicles with levels of automation up to and including future, completely driverless, autonomous operation. The objective of such ride services is to generate a desired level of additional fixed-route transit boardings filling existing service capacity in practical, implementable ways that do not require prospective transit riders to utilize the park-and-ride capacity at the transit center.

The research will be based on systems analysis and design work founded upon a review and synthesis of information found in existing literature and gleaned in interviews with knowledgeable practitioners in relevant fields. The research will build on existing study results from MTI that found new insights into the relationship between park-and-ride utilization and cost-effective transit ridership.



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The underlying paradigm for mobility improvement in peak commuting periods is that high-capacity fixed-route public transit is well served by a limited number of high capacity access points that efficiently load high capacity transit routes to a level of more cost-effective mobility. The cost and non-financial dimensions of the trade-off between private vehicle access to the transit center loading points via park-and-ride utilization on the one hand, and multi-passenger, common-carrier ride services in appropriate-sized vehicles on the other, will be covered in the specifications developed within this task order research.

The potential implementation of the recommended configurations will be displayed in two to four scenarios based upon a variety of needs and physical circumstances found at a sample of example facilities of Santa Clara Valley Transit Authority (VTA).

WHAT ARE WE DOING?

Premise of this study is that a multi-passenger shuttle can compete cost-effectively with private car use for seamless customer conveyance to a transit center, only by leveraging technology-rich processes for delivery of traveler information, fleet scheduling and dispatching, and (eventually) automated vehicle control. The specifications required of such systems will be identified by this project.

Moving daily commuters to and from their residential locations that no fixed-route transit is assigned to serve because of agency resource limitations. It is a major challenge for intermodal connectivity for suburban commuters who seek transit for the final leg of their daily journey to dense employment centers.

This project will describe new facility design features and associated operational processes in multimodal transit centers that support the deployment and cost-effective use of small, multi-passenger vehicles for the morning first mile and

the evening last mile (FM/LM) trips to residential neighborhoods, within a specified range that represent a catchment zone.

WHAT IS OUR GOAL?

Preliminary specifications will be developed for a multi-passenger, on-demand, opportunistically-scheduled, shuttle that can compete with private car use in providing seamless customer conveyance to a transit center. The resulting preliminary specifications document will be in sufficient detail that it could be used as the work statement of a request for information (RFI) or request for proposal (RFP) that could be issued to potential ride provider vendors by a California transit agency such as Santa Clara VTA.

The researchers will also generate a description of a process for planning new physical features and characteristics for multimodal transit centers that support the deployment and cost-effective use of small, multi-passenger vehicles for the FM/LM trips to residential neighborhoods. The document will be in sufficient detail and can be used as a best practice guideline for California public transit agencies seeking guidance on the topic.

WHAT IS THE BENEFIT?

An early first draft report of the main deliverable was scheduled to be delivered to Caltrans on September 30, 2020. This deliverable was not completed timely but is in work and set for delivery 33 days late from the self-imposed deadline.

Engagement with Santa Clara Valley Transportation Authority (VTA) staff and its consultants plus retrieval of additional VTA public documents and data provided the task team with sufficient understanding of potential ridership expansion and productivity improvement in the vicinity of two selected transit station sites. Design of service is based on catchment zones covering census blocks having above average mobility

disadvantaged population numbers and existing service that could be rearranged for better response to first/last mile demand.

In this quarter per work plan, the research team also selected two first/last mile service delivery concepts base on VTA interest and the research on existing North American practice. They made progress in understanding demographic inputs in the catchment zone by examining existing maps and data provided by VTA, the Metropolitan Transportation Commission metropolitan planning organization and City of San Jose. All previously described reporting is being worked into the draft deliverable.

WHAT IS THE PROGRESS TO DATE?

All milestones, as redefined to cover ride and ride shuttles for more widespread access to the transit network than nearby Park-and-Ride lots, are now complete. Analysis of all the data is now complete. A meeting was held with Caltrans staff on November 2 to review the project status and scope expansion of focus. The scope expansion reflects to the new ridership and financial crises in public transit that began in the early months of the project due to COVID-19. Writing of the final report has begun with numerous diverse, pertinent inputs and ideas are being pulled together for the first time.