



Caltrans Division of Research,  
Innovation and System Information

# Research



# Results

Planning, Policy,  
and Programming

## Park and Ride (PnR) Linkage to Public Transit Service Productivity

Understanding how park-and-ride investment compares with other transit improvements as a means of increasing transit productivity through the analysis of selected transit providers.

### WHAT IS THE NEED?

In the current era of fiscal challenges for transit agencies, it is important to understand how to achieve transit ridership cost-efficiency. Park-and-Ride (P&R) configurations in theory provide a system for efficiently interfacing transit vehicles with geographically dispersed customers. Preliminary evidence indicates two important benefits accrue from the P&R service model. The first is stimulation of demand among discretionary riders by providing appropriately-priced or even free parking and frequent express transit service. Second, increased efficiency of transit operations results from reducing the need for multi-stop local service to collect commuters. Because of the growing emphasis on transit-oriented-development and walkability around transit pick up points, there is a sense among transportation practitioners that park-and-ride facilities are falling out of favor with public transit decision makers.

### WHAT WAS OUR GOAL?

The goal of the study was to extend insight on the direct benefit of P&R facilities on the productivity of transit operations, which when combined with the popularity of P&R in certain market segments, might support a public interest case for a new public-private business model based on a customer-fee revenue stream and funded with private sector risk capital. This approach, if valid, would hopefully make expansion of P&R facilities and associated transit service affordable for locations such as the periphery of metropolitan regions like the San Francisco Bay Area and the California Southland, as well as the central Puget Sound in Washington State.

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**Project Title:**

Park and Ride Linkage to Public Transit Service Productivity

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Caltrans provides a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.

## WHAT DID WE DO?

This study investigated the effect P&R lots have on the efficiency of bus transit as measured in five bus transit systems in the western U.S. It describes a series of probes with models and data to find objective P&R influence measures that when combined with other readily-available data permit a quantitative assessment of the significance of P&R on transit efficiency. The authors developed and described techniques that examine P&R as an influence on transit boardings at bus stops and on bus boardings along an entire route.

## WHAT WAS THE OUTCOME?

The results from the case studies suggest that availability of parking near bus stops is a much stronger influence on transit ridership than residential housing near bus stops. Results also suggest that expanding parking facilities near suburban bus park-and-ride lots increases the productivity of bus operations as measured by ridership per service hour. The authors also illustrated that reasonable user fees in the form of daily parking charges would provide sufficient capital to build and operate new parking capacity without subsidy from other sources of revenue.

## WHAT IS THE BENEFIT?

The State's public highways serve as important bus transit guideways. For the purposes of congestion management, Caltrans is interested in increasing the people-moving capacity of these highways. More people on buses instead of in cars serves this purpose. This project seeks public policy pathways to achieving a higher highway mode share on transit buses, which could potentially include private sector, user-funded bus services.

Finding a way to expand popular consumer-funded opportunities to take transit instead of driving a personal vehicle is in the best interest of enhancing public safety, environmental quality, and governmental efficiency throughout the State of California for all residents.