



Changes in Transit Use and Service and Associated Changes in Driving Near a New Light Rail Transit Line

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Los Angeles is pursuing possibly the most ambitious rail transit investment program in the nation. This report provides policy makers and planners a

Effective management of bus service change with the introduction of new light rail service may help avoid unintended negative consequences.

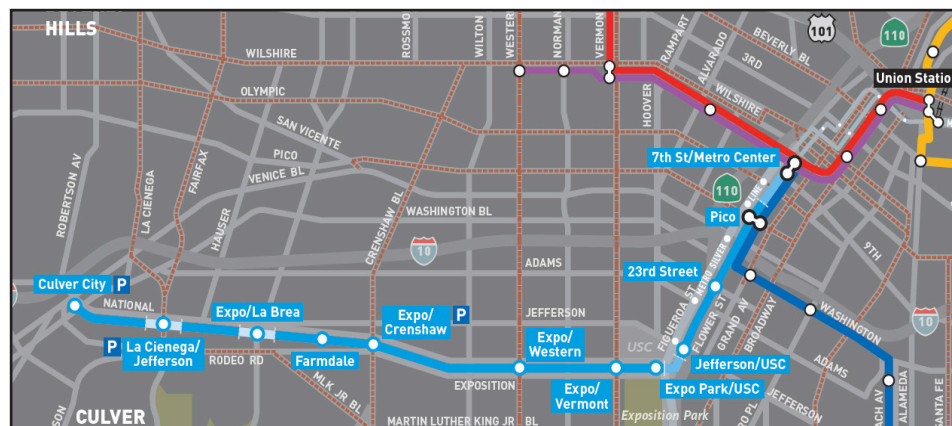
better understanding of the potential impacts of Los Angeles Metro’s major rail transit investment program by assessing the changes in transit use of nearby residents and nearby bus service associated with the Expo Line, a new light rail service extending south and west from downtown Los Angeles. In addition, service and ridership changes associated with the opening of both the Expo Line and the Gold Line Eastside extension are examined.

Study Methods

The authors examine changes in Metro’s light rail transit (LRT) and bus service and ridership associated with the opening of the first phase of the Expo Line in April/June 2012 and the opening of the Gold Line Eastside extension in November 2009. Analysis of the data focuses on answering the following questions:

- How did the light rail opening/extension affect system-level ridership?
- How was the pattern of bus ridership affected by the light rail service change?
- What are the effects of the network restructure and service change on performance?

A seven-day travel survey diary of 193 households living in a 12 square mile area along the Exposition and Crenshaw corridors was conducted in late 2011 before the line opened and in late 2012 after the line opened to assess potential changes in travel behavior. Participants were divided into two groups: an “experimental” group of residents living within 1 km of an Expo station and a “control” group of residents living farther away (under the hypothesis that they were far enough away to be unaffected by the new LRT service).



Exposition Line Vicinity Map (in blue)

Findings

The analysis of transit service and ridership for the Expo Line and Gold Line Extension indicates that the experience differed for the two lines. After the Gold Line extension opened in 2009, Metro decreased the number of buses along the corridor in the morning and afternoon peak by 14% and 13%, respectively, in addition to an 11% reduction in base (off-peak) buses serving the corridor. In contrast, bus service along the Expo Line corridor was only modestly changed, with the number of buses reduced by approximately 2% in the morning and afternoon peak but with an approximate 2% increase in base service. The researchers hypothesize that those service changes are a factor in the different “bus plus rail” ridership along the two corridors. The opening of the Gold Line extension saw a combined reduction in bus and rail transit ridership, while the increase in rail ridership exceeded the drop in bus ridership along the Expo Line corridor.



Gold Line Extension Vicinity Map

For the travel behavior research along the Expo Line, findings indicate that households living with 1 km of a new LRT station reduced their driving by almost 10 miles per day compared to control group households. However, those households living near bus stops that were removed as part of the service changes due to the new LRT service ended up driving more.

Policy Recommendations

The research results provide two important, and linked, lessons.

1. Changes in bus service that are coincident with the introduction of new light rail transit can negatively affect the overall transit ridership in the corridor.
2. Households living near new Expo Line light rail stations reduced their VMT, but those households living near bus stops that were eliminated increased their VMT. This is not definitive, but it suggests the possibility that bus service is a complement to rail transit service, at least for driving reduction.

About the Authors

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To Learn More

For more details about the study, download the full report at transweb.sjsu.edu/project/1108.html